



# Understanding Transit Ridership Demand for a Multi-Destination, Multimodal Transit Network in a Mid-Sized American Metropolitan Area: Lessons for Increasing Choice Ridership While Maintaining Transit Dependent Ridership

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Recent research indicates that multi-destination transit systems are far more effective in attracting passengers than central business district (CBD)-focused systems. However, the same research suggests that multi-destination systems appeal largely to transit-dependent riders, whose demand for transit service appears to be highly elastic with respect to the shortening of transit travel time between origin and destination. This study of transit demand in Atlanta offers suggestions for improving multi-destination transit systems to make transit service more attractive to automobile users (choice riders) while also preserving their utility to the transit dependent.

## Study Methods

Using a series of statistical models that predict bus and rail transit work trips from one part of the Atlanta metropolitan area to another, we identify the determinants of transit demand for both self-identified bus riders (who overwhelmingly exhibit transit-dependent characteristics) and self-identified rail riders (who exhibit more choice rider characteristics). The variables used in the models include transit ridership data and socioeconomic variables from the 2000 Census, land use variables defined by the metropolitan planning organization, and variables that measure transit service quality (broken into three components: in-vehicle, out-of-vehicle, and transfer time) obtained from the travel time skims of the regional travel demand model.

## Findings

Self-identified bus riders value more direct routes with shorter travel times that connect them to places of employment, as do self-identified rail riders. Both groups also

***Self-identified bus riders value more direct routes with shorter travel times that connect them to places of employment, as do self-identified rail riders. Both sets of riders seek destinations with large numbers of jobs, but are not attracted in large numbers to the highest density employment centers. Rail riders are attracted to destinations in the central business district and to certain types of transit-oriented development, but these types of destinations are not important attractors of bus trips beyond what would be expected from total employment alone.***

place a premium on shorter transfer times when required to transfer to complete their trips. Rail riders place a higher premium on walk time to transit than do bus riders, reflecting the smaller number of destinations within easy walking distance of rail stations. Interestingly, areas with the highest densities of employment are not significant attractors of either bus or rail transit trips, although areas with large total numbers of jobs do attract large numbers of trips. Rail riders are attracted to destinations in the central business district and to certain types of transit-oriented development, but these types of destinations are not important attractors of bus trips beyond what would be expected from total employment alone.

### **Policy Recommendations**

Transit commuters who consider themselves bus riders seem to want a grid of routes connecting the region's employment centers with faster, more direct, and more frequent service. Many of these riders appear to use trains to speedily move from one part of the region to the other, relying on buses at one or both ends of the trip, so good transfer connections between buses and trains also will increase ridership of transit-dependent riders.

Transit commuters who consider themselves rail riders, who primarily access transit by automobile, want trains to take them to major employment destinations, including the CBD and some TODs. Attracting more choice riders will require extending lines into job-rich corridors and developing stations and station environments in those corridors with those qualities typical of the TODs like North Avenue and Midtown. The more that can be done with a network of several regional rapid transit lines, the greater will be the number of choice riders using transit in the Atlanta region.

It goes without saying that the grid of local buses tied into such a regional rapid transit system would greatly increase the number of transit-dependent riders, as well, because it would enable them to reach additional employment opportunities that are presently difficult or impossible for them to reach by transit. These results derive from a study of Atlanta, Georgia, but given their consistency with lessons derived from other locales, they provide important policy guidance to transit agencies seeking to increase ridership by both rider groups.

### **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/1003.html](http://transweb.sjsu.edu/project/1003.html)