



Transitway Impacts Research Program (TIRP) Research Brief

Strategies for Encouraging Travelers to Choose Transit

"Getting people to choose transit depends on much more than building excellent transitways in the right places. It takes a complex mix of strategies shaping the broader transportation system and the urban form of the region."

—Jason Cao, Principal Investigator

Key Findings

- Transit travel times compared with automotive travel times are an important predictor of the decision to drive or use transit.
- Density at trip origins and destinations is crucial for attracting people to transit, with destination density having the greater importance.
- Policies that promote pedestrian infrastructure (sidewalks) and affordable housing boost ridership in station areas, but only if there is sufficient commercial activity nearby.

Project Background

Providing a choice for road users is often a key motive for transitway investment. While transitways' proven ability to attract "choice" riders (people who can drive and can afford cars, but choose to take transit instead) is compelling, the reality of their mode-shifting impacts can be complicated. Some riders do directly replace auto trips with transit trips; others may use existing buses or non-motorized transportation without the transitway, for example.

This study explored the effects of travel cost, travel time, and demand density on mode choice. The research aims to help policymakers and planners better understand and plan for these complicated impacts and maximize public investments in transitways.

Case Studies and Literature Review

Researchers began by completing case studies of two cities—Chicago and Ottawa—that have had success shifting trips from personal vehicles to transit. Then, they

synthesized the latest knowledge of 11 common strategies that can be used to promote automotive-to-transit mode shifts. The strategies are:

- Transit scheduling and frequency
- Bus routing and coverage
- Transit pricing and fares
- Park-and-ride facilities
- Parking pricing and fees
- Parking management and supply
- Road pricing and HOT lanes
- Land use and site design
- Transit-oriented development
- Pedestrian and bike facilities
- Employer and institutional travel demand management strategies

Taken together, the case studies and literature review demonstrate the importance of high-quality regional transit in achieving high transit-mode shares, but also indicate that other metropolitan characteristics and transit-supportive strategies are crucial as well.

TIRP Sponsors and Supporters:

- Anoka County
- Center for Transportation Studies, University of Minnesota
- Center for Urban and Regional Affairs, University of Minnesota
- Central Corridor Funders Collaborative
- City of Bloomington
- City of Minneapolis
- City of Saint Paul
- Dakota County
- Federal Transit Administration
- Hennepin County
- Hennepin–University Partnership
- Metropolitan Council
- Metro Transit
- Minnesota Department of Transportation
- Ramsey County
- State and Local Policy Program, Humphrey School of Public Affairs, University of Minnesota
- University Metropolitan Consortium, University of Minnesota
- Washington County

CTS Research Brief
2016-03 May 2016

Mode Choice in the Twin Cities

Next, researchers used data from the Metropolitan Council’s Travel Behavior Inventory to empirically examine mode choice in the Twin Cities region. In particular, they looked at the travel choices of driving alone, shared ride (carpool), transit with park and ride, and transit with walk access. Findings include:

- In the Twin Cities and 19 surrounding counties, the monetary value of in-vehicle travel time is about \$17.50 an hour, with a “penalty” of \$10 per transfer (equivalent to 35 minutes of in-vehicle travel time).
- For driving alone and shared ride, population density at the destination is more important than population density at the origin, especially for shared ride.
- Density at both origins and destinations has a critical impact on the choice of transit, but it did not show an influence on the mode of access to transit (i.e., drive versus walk).
- Parking pricing is an important factor in core cities and at educational and medical institutions.
- Travel time is the key for promoting the shift from auto to transit.

Station-Level Ridership

The final part of the project examined transitway ridership at the station level. Transitways have a ridership impact of their own, but stations exist in an environment of municipal policies that may not aim to maximize transitway use, and often maximize auto use.

Researchers examined the Twin Cities and 15 peer regions to discover what role transit-supportive public policies play in boosting transitway ridership. They used a multiple regression analysis to predict boarding at the station level as a function of transit-supportive policies while controlling for the built environment, transit service, and socioeconomic characteristics.

“This research reinforces that in addition to fully building out our regional transitway network, we also need to be intentional about investments and policies that support transit-oriented development.” —John Doan, Southwest LRT Senior Project Manager, Hennepin County

They found that policies supporting affordable housing and pedestrian infrastructure (e.g., sidewalks) consistently increase transitway ridership *if* they are applied in station areas with a sufficient level of activity. In other words, regardless of the level of regional mobility or job access living near a transitway station offers, if people cannot meet their basic needs (such as groceries and daycare) in the station area, they are likely to own a car.

Conclusions and Policy Implications

Based on these results, researchers stress the importance of station-area affordable housing as a transit system efficiency measure. In addition, they recommend growing density and improving urban design (sidewalks, smaller parcels) on the edges of already dense areas, such as the Metropolitan Council’s second- and third-tier transit markets; supporting and encouraging neighborhood-scale commercial development in Twin Cities station areas and strengthening the pro-affordable housing policies and pro-sidewalk policies such development allows to serve as ridership attractors; and continuing the implementation of those policies on a regional scale as the transit system expands.

Ultimately, the central thread of the research is that providing the greatest opportunity for travelers to use transit as an option not only requires building excellent transitways—it also requires a focus on the broader transportation system and on the urban form of the region.

About the Research

Exploring Strategies for Promoting Modal Shifts to Transitways was authored by a team from the Humphrey School of Public Affairs: associate professors Jason Cao (principal investigator) and Yingling Fan, and research fellow Andrew Guthrie.