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HOW MUCH DO PEOPLE DRIVE AT TRANSIT-ORIENTED DEVELOPMENTS?

NITC researchers collected data on auto trips and parking demand to help transit-oriented developments (TODs) supply the right amount of parking.

The Issue

The decision of how best to allocate land near transit stations is a debated topic, with transit officials often opting for park-and-ride lots over active uses such as multifamily housing, office, and retail. In practice, guidelines for providing parking and mitigating vehicle trips come mainly from the Institute of Transportation Engineers (ITE) Trip Generation Manual and the ITE Parking Generation Manual. However, both manuals are based on suburban locations with little or no transit service.

Transit-oriented developments, or TODs, are mixed-use housing, office and retail developments organized around a transit station. The growing demand for walkable, urban environments has made TOD a key development strategy all around the country. Parking is expensive, and the quarter-mile of land closest to the transit station is the most valuable, so the question of how much parking is actually needed at TODs becomes a very important one. An oversupply of parking can render projects financially unviable and can impact the affordability of whatever is built.

The Research

NITC researcher Reid Ewing of the University of Utah studied five TODs in the United States: Redmond TOD in the Seattle region, Rhode Island Row in the Washington, D.C. region, Fruitvale Village in the San Francisco/Oakland region, Englewood TOD in the Denver region, and Wilshire/Vermont TOD in the Los Angeles region. Two transportation consulting firms, Fehr & Peers and Nelson\Nygaard, helped with data collection.

THE ISSUE

Parking guidelines are based on locations with less transit service. TODs with ample transit may need less space for parking.

THE RESEARCH

The research team focused on five TODs and collected data from:

- Site visits, manual counts and intercept surveys;
- Interviews with regional transit agencies;
- Google satellite imagery for aerial views.

IMPLICATIONS

The TODs included in this study generated fewer vehicle trips than the ITE manuals estimated, and used less parking than many regulations require for the same types of land uses.

Photo: Wilshire/Vermont Transit Station in Los Angeles

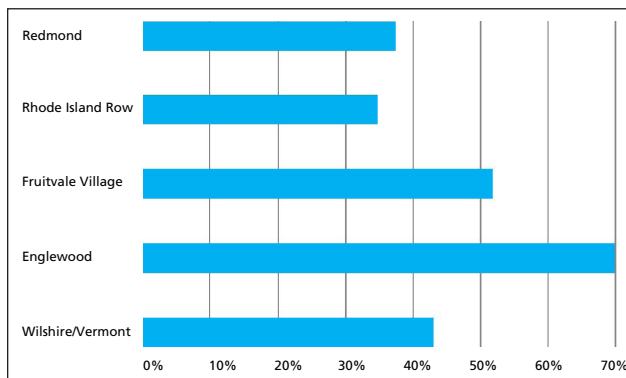
The team chose fully developed TODs with self-contained parking. This was an important criterion because they needed to count parked cars at the TOD, which wouldn't be possible in the typical downtown where parking is shared in public garages. The consultancies conducted parking supply and occupancy studies and building access counts as well as intercept surveys at the five TODs. Researchers would use these data to analyze travel mode splits, vehicle trip generation, and peak parking demand, including the maximum residential demand during the late night/early morning hours.

Researchers compared the number of vehicle trips generated at each TOD with the ITE rates, and found that parking supply far outweighed parking demand at each site. The studied TODs produced just one-third to two-thirds of the vehicle trips predicted by the ITE Trip Generation Manual. Even the most auto-oriented development in the study, which supplies abundant free parking, still generates fewer than 70 percent of the auto trips the manual predicts.

Implications

Transportation professionals using standard sources overestimate the number of vehicle trips around mixed-use developments by an average of 35%. In the absence of hard numbers about what TODs actually need, officials typically default to the standard sources and assume that TODs require the same number of parking spaces as conventional developments, and that TOD-based transit stations require the same number of park-and-ride spaces as non-TOD stations. This research effort was aimed at improving the accuracy of the trip and parking generation estimates by providing the necessary data.

For example, if Redmond TOD in Seattle had been build to ITE standards, the parking would have cost \$14 million, and \$8 million of it would be unused at the peak demand time. As it is, they spent \$8 million on parking and \$2 million



Vehicle Trip Rates as Percentage of ITE Rates

This graph shows the vehicle trip rates for each transit-oriented development studied, expressed as a percentage of the ITE rates that would have been recommended for each study site.

of it is unused at peak demand times. At every site studied, the peak parking demand was less than half of what the ITE manual suggests.

Such an oversupply of parking drives up the cost of living, working and shopping near transit. The results of this study, showing how large a gap exists between guidelines and actual use, may help developers, planners and policymakers make better use of land near transit. The data presented in this report are particular to the studied developments and their contexts, but when used in tandem with regional travel model forecasts, they could assist in the planning of other TODs.

PROJECT INFORMATION

TITLE: Trip and Parking Generation at Transit-Oriented Developments

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