

## RESEARCH YOU CAN USE

### Another bonanza

For this roundup column, I had a good crop of planning articles to pick from. (My last roundup, “A Bonanza of Journal Articles,” appeared in February 2010.) In this fall’s *Journal of Planning Education and Research*, Lan Deng and Lance Freeman introduce planners to a quasi-experimental study design known as regression discontinuity. From earlier columns (in November 2006 and April 2010), you may recall that quasi-experimental research studies allow stronger statements about cause and effect than is possible with the usual cross-sectional statistical studies. The latter typically are limited to statements about correlation—a far less interesting phenomenon than causation.

Deng and Freeman illustrate the use of regression discontinuity with an evaluation of the federal low-income housing tax credit in three cities. Only in San Antonio is there evidence that the tax credit produced more low-income housing units than would otherwise be expected.

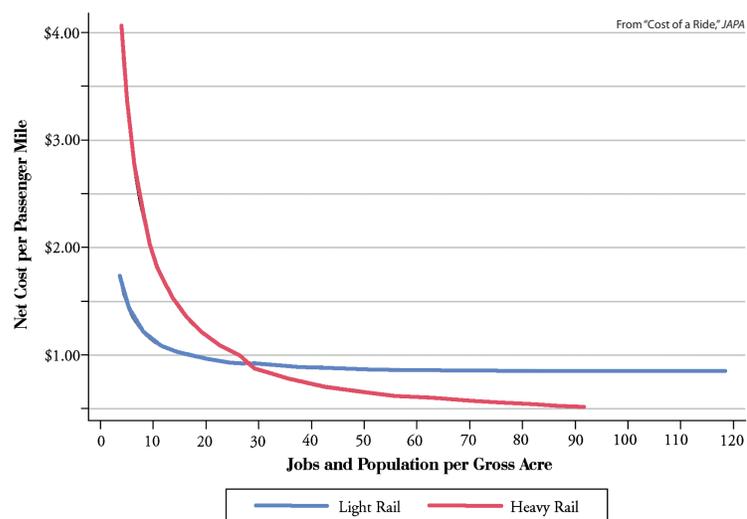
In the May 2011 *Journal of Planning Literature*, Orion Stewart reviews the now voluminous literature on walking and bicycling to school and explores implications for Safe Routes to School programs. The strongest and most consistent factor influencing walking or biking is the distance from home to school, suggesting that schools with lots of students living nearby are ripe for sidewalks and other SRTS investments.

Walking and biking to school is also more prevalent in neighborhoods that are densely populated, feature mixed land uses, and have highly connected street networks. Finally, areas that are socioeconomically disadvantaged are likely to have a higher proportion of schoolchildren on bike or foot. Stewart thus concludes that the most cost-effective SRTS investments are those targeted to such areas.

The Summer 2011 issue of the *Journal of the American Planning Association* includes three articles that may be of particular use to planners. In “Cost of a Ride: The Effects of Densities on Fixed Ridership and Costs,” Erick Guerra and Robert Cervero reopen

the question of how much density is needed to support rail transit. Density standards found in transit-oriented development manuals around the U.S. trace back to a 1977 book, Pushkarev and Zupan’s *Public Transportation and Land Use Policy*. But that classic reference, admirable in many ways, relied principally on data from the New York region and was sorely in need of updating.

Guerra and Cervero have done the job in a most rigorous manner. Their findings suggest that, on average, light rail is more cost-effective than heavy rail for corridors with a density of approximately 28 people and jobs per gross acre. Thus, three cities that opted for heavy-rail systems, Atlanta, Miami, and Baltimore, each with densities of less than 20 people and jobs per acre, would have been better suited to light rail.



Cost-effectiveness of rail transit versus density in average cities.

The same *JAPA* issue includes an article on scenario planning as it is practiced by metropolitan planning organizations. Arnab Chakraborty, Nikhil Kaza, Gerrit Knaap, and Brian Deal criticize standard transportation and land-use analyses for focusing on a single preferred scenario and failing to adequately consider future uncertainties.

They demonstrate their approach with the example of the Baltimore–Washington metropolitan region. Forces beyond the region’s control are represented by scenarios related to energy prices (business-as-usual prices versus dramatically higher prices). Other, controllable scenarios focus on decisions about transportation investments

(whether to invest in a new outer beltway, new transit stations, and a new bay bridge). In terms of road congestion and loss of farmland, investing in new transportation infrastructure is shown to be a robust decision, regardless of energy prices.

My favorite of the *JAPA* articles is by Zhan Guo, Asha Weinstein Agrawal, and Jennifer Dill. They evaluate an innovative demonstration program in Portland, Oregon, that charged drivers a mileage fee depending on the level of congestion at the time of travel. In our 2008 ULI book *Growing Cooler: The Evidence on Urban Development and Climate Change*, my coauthors and I concluded that compact development, fewer new highways, and more transit—combined with road use pricing—could reduce vehicle miles traveled enough to meet climate

targets. Guo et al. take our argument one step further. While land-use strategies and road pricing are often depicted as substitutes for one another, they find that the two are actually complementary. With congestion pricing, VMT reduction is greater in traditional (dense and mixed use) neighborhoods than in suburban (single-use, low-density) neighborhoods, probably because of the travel alternatives available in the former.

My compliments to all of these authors.

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Ewing is a professor of city and metropolitan planning at the University of Utah and an associate editor of the *Journal of the American Planning Association*. Past columns are available at [http://cmpweb.arch.utah.edu/research\\_projects/research-you-can-use](http://cmpweb.arch.utah.edu/research_projects/research-you-can-use).