

## RESEARCH YOU CAN USE

### Peer Review Clarifies Lots of Things, Including the Relationship of Sprawl and Air Pollution

Until the middle of the last century, peer review wasn't universally practiced outside the field of medicine. For example, Albert Einstein's revolutionary "Annus Mirabilis" papers in the 1905 issue of *Annalen der Physik* were not peer reviewed by anyone other than the journal's editor.

Today, of course, peer review is the touchstone of the scientific method. It's used in all academic fields to maintain high standards and to give credibility to published works. Almost all scholarly work is subjected to the scrutiny of "peers"—experts in the same field who perform anonymous and impartial reviews. The *Journal of the American Planning Association* and other journals featured in this column regularly use peer review to screen submitted manuscripts. Publications that aren't peer reviewed are regarded with suspicion by scholars and professionals alike. One of the recent criticisms of the Intergovernmental Panel on Climate Change was that some of the research that the panel relied on was not peer reviewed.

A few years ago, if anyone had asked for my opinion of the peer review process in the planning field, I might have hesitated. Too often, I would have said, narrowly focused technical papers, some of them largely irrelevant to practice, are likely to review well and be published. Meanwhile, some very insightful—but subjective—pieces may well be screened out by peer review.

A great example of the latter is "Toward an Urban Design Manifesto," the classic article by two top planning theorists, Allan Jacobs and Donald Appleyard (see my column of December 2009, "Top Academics vs. Top Thinkers"). In a prologue to their article, the two lament the six years it took to get it published by *JAPA* in 1987. They note that the response from practicing planners was universally positive, but "it was not so warmly received . . . by the editors and reviewers of *JAPA*, who wondered where the research was to support our assertions."

Recently, mainly through my editorial contact with the journal, I have been moved to take a more benign attitude. I now believe that, despite such examples as the Jacobs-Appleyard article, the fundamental truth about peer review is that it makes good papers better, often much better.

A case in point is "Neighborhood Air Quality Outcomes in Compact and Sprawled Regions," which is featured in the summer issue of *JAPA*, and is described here with permission of the authors, Lisa Schweitzer and Jiangping Zhou of the University of Southern California. As a featured article, it is available to the general public online, even without a journal subscription. That means

### Success at last

I won't go into the heartburn that three revision cycles caused both the authors and the reviewers. The point is that all the reviewers and the journal editors are now wild about the final, newly titled version, which focuses on the quantitative relationship between sprawl and air quality—the final section of the original paper.

What I particularly like about the article is its fine-tuned view of smart growth. It affirms the assertion by smart growth proponents that compact metropolitan areas look better in the aggregate than sprawling regions. Specifically, say Schweitzer and Zhou, compact metropolitan regions have lower

ozone concentrations overall. However, ozone exposures are higher in compact regions because people are concentrated in hot spots. (To make their point, they use an index created years ago by Rolf Pendall of Cornell University; Don Chen, who was then with Smart Growth America; and me.) Fine particulate exposures are also higher in compact regions.

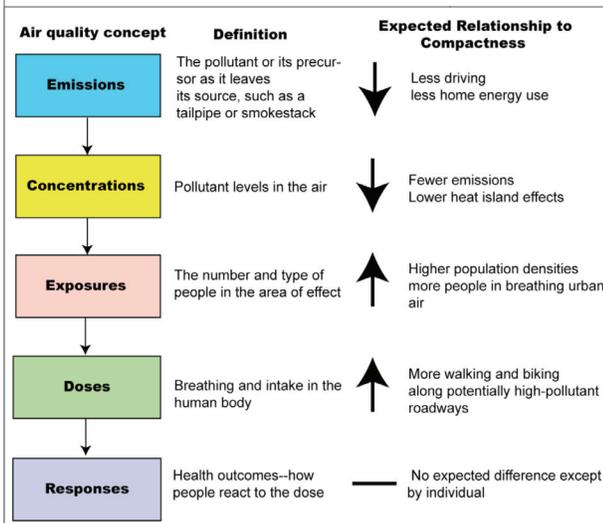
Their conclusion: "Compact development and infill are not one-size-fits-all air quality strategies

among regions or among residents within regions. We should take into account neighborhood differences in air quality and human exposures when planning for new compact developments."

As a smart growther, I don't particularly welcome this conclusion. However, I am happy to know the truth, assuming it is so. It is not surprising that smart growth would have both benefits and costs, since most things in life involve trade-offs.

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Schweitzer and Zhou make it clear that compact development and infill are not one-size-fits-all approaches.

that the editors view this paper as a particularly fine example of planning scholarship, of interest to a broad group of readers.

As submitted originally under the title, "Growing Smart about Air Quality: Fifty Years of Federal Air Quality Policy, Local Sprawl, and Urban Inequality," it was actually three papers—a comprehensive review of federal policy on air quality, a qualitative analysis of gaps in federal policy, and a quantitative analysis of the relationship between urban development patterns and air quality in metropolitan areas. That is a lot for one article to cover, and its lack of focus and poor organization left reviewers cold. The reviewers also felt that the authors had overreached in their conclusions.