Uncovering the Complexities in Using Land Use Planning to Affect Travel Behavior

Concerns about traffic congestion, urban sprawl, and urban growth are among the most important issues facing the United States. These concerns now edge out more traditional matters, such as crime and education. In response, public officials, business interests, and citizens are aggressively seeking strategies to curb automobile reliance and the consequences it engenders (e.g., excessively long commutes, seas of parking lots, increased rates of natural resource consumption). In fact, one would be hard pressed to identify planning efforts from any growing community *not* striving to make their built environment less auto reliant and more pedestrian-friendly.

These concerns are a motivating force behind a powerful new paradigm in urban planning called "smart growth" in some circles—new urbanism or sustainable development in others. The strength of this movement hinges in part on the often touted relationship between land use and transportation planning. It is posited that land use planning that furthers compact development, a mix of uses, plus urban design improvements (e.g., gridded streets, sidewalks, street crossings) will lead to increased walking and spur transit use. Citizens, political leaders, and land use and transportation planners locally and nationwide have fervently embraced this development concept, hoping that such benefits will come to fruition. The debate over light rail lines nationwide is a prime example of such discussion.

But is there sufficient evidence to suggest that land use planning can effectively manage the demand for travel? To what degree will land use policy help community efforts meet their goals of reduced auto use? These issues prompt an interesting research agenda; more importantly, they present important issues for policy officials to understand so as to help guard against unintended or overstated results. Answers will undoubtedly help better position such initiatives against the myriad other policies competing for support and funding.

"Smart Growth" advocates claim that households living in urban neighborhoods walk more, use transit, and drive less. These assertions may well be the case; intuitively, they make sense. Advocates also point to several empirical results of studies showing inverse correlations between density and auto use. As with any aspect of behavioral research, however, such matters are inherently complex. There are important issues—often overlooked in most analysis and discussion—that relate to understanding human behavior, preferences, and the broader societal factors limiting the development of such neighborhoods. Research aiming to help to shed light on these complex matters has formed the crux of my recent research endeavors. I describe three of these matters in the following paragraphs that are helping inform land use and transportation planning initiatives nationwide.

A first issue requires us to better understand basic patterns of travel as they relate to linked trips. Many research efforts separate work trips from non-work trips and analyze each independently. The theory in doing so is that work trips tend to be more structured, temporally and geographically, while non-work trips remain more flexible. Bringing non-work related land uses closer to people's residence or workplace, it is suggested, will encourage households to shop locally. But any analysis that evaluates trips independently masks the sequential and multi-purpose travel that exists. In my research, I have discovered that on average, individuals link one or more trips together every other time they leave home. This chaining behavior is important to consider before we make projections about changing how and where people shop.

Consider the following two scenarios. Both Mrs. Smith and Mr. Jones live in a compact neighborhood. Mrs. Smith drives to work and completes several errands (e.g., groceries, appointments) on her way to or from work; each stop is close to her workplace. Despite living close to basic services, her daily travel and shopping preferences prompt choices to shop outside of her neighborhood. Or consider Mr. Jones who once a week drives from home to the dry cleaner. His decision to drive, however, is not because a car was required for his trip to the dry cleaner; rather, it is because he completes the trip to the dry cleaner as part of his weekly trip to the grocer—a trip that requires a car in the first place. In each of these cases, the individual's highly compact neighborhood played a small, if not insignificant, role in driving less. This is because the *sequence* and *combination* of trips, not the individual trips themselves, were important considerations. It is therefore important to examine the larger pattern of linked trips because they are what work with basic forces that dictate the nature of one's travel. Analyzing a subset of travel behavior—either just non-work trips or non-linked trips—helps understand an important piece of the puzzle. It is, however, only one piece. And, this is a piece which, as my research shows, if considered independently may lead to overestimating the effect that land use policy as proposed by smart growth proponents has on travel.

A second issue addresses matters of self-selection. Residents many times select residential locations in part to match their travel preferences. For example, they move to a neighborhood where they can walk to the grocery store because this is an option that they prefer to have. But this suggests that differences in travel between households with different neighborhood design should *not* be credited to the urban form alone; the differences could be attributed to the broader *preferences* that triggered the choice to locate in a given neighborhood. An important point is that the two effects—urban form versus preferences—need to be disentangled. This is an important issue to recognize but a troubling endeavor because of the difficulties in measuring preferences.

The point is that the relative magnitude of the independent effect of urban form on travel may become marginalized once preferences are accounted for. Put another way, efforts to use urban form to induce unwilling auto-oriented households to drive less may be futile for at least two reasons. First, their auto-using behavior may be a function of larger issues such as their overall preference for auto-oriented behavior (e.g., you can take the family out of the suburbs but you can't take reliance on the Chevy Suburban out of the family). Second, it is unlikely that such auto-oriented households would locate in heavily transit-oriented neighborhoods in the first place. This in turn suggests that the success of the "smart growth" movement may be limited to the relatively small market of households who currently live in transit oriented neighborhoods and/or those who will bring their non-auto using behavior with them to newer neighborhoods. If there is a self-selection bias at work, policies designed to induce changes in household travel through altering land uses may not have the expected or desired effect—or, their impact may be marginal. Too often, policy officials fail to recognize the role that attitudes and preferences play in influencing travel and residential location decisions.

A final issue to understand relates to the myriad obstacles that must be overcome for such forms of development to come to fruition. Some of these hurdles can be quickly identified. They include, but are not limited to, the difficulty in retrofitting existing development, the questionable demand for such types of neighborhoods, the ex-urban location of large tracts of developable land. Largely unrecognized, however, are public policies currently on the books that impede development based on the ideals of smart growth. It is important for policy officials not to overlook the existing regulatory constraints that shape metropolitan development but run counter to the above mentioned goals. Take, for example, zoning that bounds upper densities, mandates land use separation, and limits tracts of development to only single-family homes. How about transportation standards calling for wide streets, requiring generous parking requirements, and failing to require sidewalks? Or consider institutional structures that isolate land use planning decisions from transportation planning decisions. Some critics have gone so far as to suggest that "urban planners have met the enemy and it is us!" The urban planning and policy community are the ones who have furthered templates (e.g., zoning codes) that continue to be used as a blueprint for shaping auto-reliant urban form. It is this template that impedes progress because the process for obtaining exceptions to the rule is often arduous. A community may endeavor to develop a transit-friendly neighborhood; but, without a developer willing to wade through the policy molasses involved with seeking variances and the sort, such development rarely comes to fruition. Policy officials often fail to acknowledge how such irony plays out especially for land use-transportation initiatives.

As urban planners and policy officials strive to reduce auto-reliant travel, it is important for them to fully understand the myriad issues in doing so. This requires, in part, furthering a dialogue that better understands the reasons households make the decisions they do and differences between assertions and reality. Advocates, progressive policy makers, and other like minded individuals are good at furthering an agenda that in effect says "increasing density, furthering pedestrian friendly design, and building transit will reduce driving." They presume that "smarter" land use-transportation policy trumps existing behavior, attitudes, and other obstacles. They claim there is a substantial latent demand for more pedestrian friendly design.

This may be the case. But the bottom line is that we do not yet know. My research to date has helped identify reasons why this message needs to be approached with caution and why rationales for furthering this agenda may even need to be redirected! The three important matters described above—trip chaining, household preferences, and existing land use-transportation policy—receive little attention in policy discussions. The reality underlying these matters may not cast an optimistic light on the potential of the "smart growth" movement. But at the same time, it does not necessarily undermine its aim. My primary purpose has been twofold: (1) to draw attention to issues imperative for policy officials to understand before such policies are advanced, and (2) to help articulate sound basis on which such efforts should be advanced.

It is unlikely that any amount of research will satisfactorily resolve what has now become the proverbial "sprawl-smart growth" debate. Many go so far as to suggest this is irresolvable because of the normative, ethical, and moral issues it brings forth. But that does not mean we should not be uncovering rationales on which different policies should be advanced. For example, it may be necessary to motivate "Smart growth" initiatives less on the merits in reducing congestion and auto-reliant travel. They could be oriented more towards increasing the array of travel and residential choices for households to choose from. In many respects, these are the very choices that have been constrained in recent years (because of the above policies); these are the choices that may have subsequently prevented households from successfully matching their land use and transportation environments to their needs and preferences. Land use-transportation policy efforts should focus less on the potential to take cars off the road and more on land-use strategies that increase choice for where to live and how to get around. Doing so may provide a cleaner justification in furthering such initiatives and may even be met with less resistance. In the long run, then, we may end up with less congestion.

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