Study finds serious challenges to 'New Urbanist' communities

June 10 2014

As New Urbanist communities expand nationwide, a study from the University of Colorado Denver shows the increasing challenges of balancing complex traffic engineering systems with the ideals of walkable, sustainable neighborhoods.

As a leading public research university located in the urban core, CU Denver researchers have ample opportunity to connect their work to the city of Denver and surrounding communities. This study focused on Denver's Stapleton neighborhood, one of the largest New Urbanist developments in the nation, specifically examining its street network, street design and intersections.

"I was investigating the inconsistencies of what was built with respect to the latest research and state-of-the-art New Urbanist thinking," said study author Wesley Marshall, PhD, PE, assistant professor of civil engineering at CU Denver College of Engineering and Applied Science. "The deviations from the standard model of New Urbanism were then considered in terms of how people are actually using the system, by way of vehicle speed studies and travel diaries."

Marshall said Stapleton, like similar developments, began with a set of guiding principles but made compromises due to competing conventional traffic engineering standards.

One of those principles relies on narrow streets to restrict travel speeds for increased safety. Yet while on-street parking is a New Urbanist tool

to slow traffic and buffer pedestrians, it isn't as effective in Stapleton since most homes come with mandated off-street parking, the study said.

"Underutilized on-street parking has been shown by various researchers to be associated with higher vehicle speeds as well as higher crash rates," Marshall said. "Even where on-street parking is well used, many of Stapleton's residential streets are still too wide; as a result, unsafe vehicle speeds are the norm."

Stapleton's street network also includes two overly-wide major thoroughfares – Martin Luther King and Central Park Blvds, he said. Marshall found that the 35 mph speed limit on Martin Luther King Blvd. was exceeded 18 percent of the time while the 30 mph on Central Park was exceeded 22 percent of the time.

"If we have streets in a New Urbanist neighborhood where it's possible for drivers to go 50, 60 or 70 mph, then we've done something wrong," Marshall said. "The problem is not a lack of police enforcement; it's a lack of self-enforcing streets."

The study also found that Stapleton and Lowry, a similar development nearby, lagged behind older Denver neighborhoods in terms of walking, biking and public transit use. That may change in 2016, Marshall said, when a commuter line from the central business district to Stapleton is completed, but that is not quite enough.

Marshall said Stapleton, with over 14,000 residents, does many things right. There is a lot of connectivity for pedestrians and bikes, there are great sidewalks, the schools and restaurants are close, and the area looks inviting.

But he said the downsides are also real.

"Stapleton serves as a reminder that the transportation design ideals of New Urbanism can too easily be compromised by a conventional traffic engineering mindset," Marshall said. "The results are higher-than-desired vehicle speeds on every kind of street; higher driving mode shares, and less walking, biking and transit use than peer neighborhoods in the region."

The solution requires a return to the original ideals of Stapleton with narrow, connected streets, less off-street parking, and less dependency on automobiles, he said.

"If we don't better deal with this disconnect between New Urbanist ideals and conventional engineering solutions, then Stapleton will end up just like any other auto-oriented development," Marshall said.

More information: The study was published March 31, 2014 in the *Journal of Urbanism: International Research on Placemaking and Urban Sustainability*.

Provided by University of Colorado Denver