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Travel and the Built Environment in Rural Communities

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Issue

Reducing greenhouse gas (GHG) emissions from transportation poses a significant challenge in rural communities and at the edges of metropolitan areas where rural and urban populations meet, otherwise known as exurban fringe. Populations living in these areas rely more heavily on personal vehicle travel than nonrural populations do and are more likely to have trouble getting to and from important destinations. One approach to curtailing transportation GHG emissions is through land use planning, for example by directing population growth into compact, walkable communities with access to transit. However, nearly all research to date on this topic has focused on urban and suburban areas, leaving decision-makers in exurban and rural communities with little guidance for how to effectively reduce GHGs through changes to land use and development in their communities.

Researchers at the University of Vermont sought to answer the question: is the relationship between travel and the built environment the same in urban and rural areas? They analyzed nationwide data from the United States Federal Highway Administration on nearly 110,000 people and detailed information on land use and development from the United States Environmental Protection Agency Smart Location Database. They determined what aspects of the built environment in different types of locations (urban, rural, etc.) were associated with sustainable travel behaviors such as greater rates of walking and biking, less reliance on automobile travel, and fewer vehicle miles traveled or VMT, which is the number of miles driven in a car.

Key Findings

Local access and regional accessibility are associated with sustainable travel choices in rural areas. The study indicated that higher *local* access (population and job density) and greater *regional* access (jobs reachable by car in 45 minutes) were associated with lower VMT, less reliance on automobile travel, and higher rates of walking and biking. This finding is consistent with prior research.

The relationship between travel and the built environment differs between rural and urban areas. The effects of local access and regional access are not the same in rural and urban areas. Local access has a stronger relationship with sustainable travel behaviors in urban communities than in rural communities. Conversely, regional access has a relationship with driving in rural communities but not in urban communities.

Rural populations face fewer travel choices and are more vehicle reliant. The relationship between personal characteristics and sustainable travel choices is much weaker in rural areas than in urban ones. This is likely because people in rural areas need to travel farther than their urban counterparts and have fewer options in how they travel, as many rural areas lack public transit coverage and other viable alternatives to personal vehicle travel. Notably, in rural areas, even individuals who do not own a car are largely dependent on cars for travel.

Further research is needed to isolate the causes of sustainable travel choices in rural areas. This study points to differences in travel choices across rural and urban areas, highlighting the importance of using context-specific insights to inform decision-making. However, the study did not evaluate differences in travel behavior across different types of rural contexts. It also compared different areas at a given point in time and could

not conclusively determine the extent to which changes to the built environment cause changes in travel behavior. Further research is needed to establish these cause-and-effect relationships in rural areas.

Policy Implications

The findings of the study suggest that researchers and practitioners should proceed with caution when applying findings from urban-focused research on travel and the built environment to rural areas. Specifically:

- Rural populations' reliance on automobiles and the lack of non-vehicle travel options in rural areas make it more challenging to shift travel away from driving.
- Compact development in rural areas is positively related to more sustainable travel, but this relationship is weaker than what is observed in urban areas.
- More research is needed to evaluate differences in travel behavior across different types of rural areas and to establish the causal connections between travel and the built environment in these areas.
- Strategies that target land use change in rural areas may not have the impact predicted based on research conducted in urban areas.

More Information

This policy brief is drawn from "Can Smart Growth Reduce Vehicle Travel in Rural Communities?," a report from the National Center for Sustainable Transportation, authored by Harrison Schukei and Dana Rowangould of the University of Vermont. The full report can be found on the NCST website at <https://ncst.ucdavis.edu/project/evaluation-travel-and-built-environment-small-and-rural-communities>.

For more information about the findings presented in this brief, contact Dana Rowangould at Dana.Rowangould@uvm.edu.

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