

The Metropolitan Accessibility Project

The purpose of a transportation system is to meet people's needs and get them where they want to go. Rapid mobility may seem like the best way to do this most efficiently, but planning transportation systems based on mobility alone can have the effect of spreading development out over wide areas, making destinations harder to reach and making the system less sustainable in every sense. Researchers at the University of Michigan and the University of Maryland are addressing the problems of this common and misguided approach to transportation and land-use planning through their Metropolitan Accessibility Project. This three year project, now in year two, compares 30 of the largest metropolitan areas in the US in terms of accessibility. It gives planners a means to evaluate transportation plans based on how well they provide people with access to needs rather than strictly based on mobility considerations, which are not, in the end, transportation's fundamental purpose. The first product of this project, a forthcoming journal article, compares the San Francisco and Washington DC metropolitan areas and demonstrates a tool for calculating an "accessibility index" of US metropolitan regions.

The Problem with Current Transportation Planning

When it focuses on mobility, transportation planning promotes only one means of serving its broader purpose of accessibility. For example, an business traveler reports that is able schedule four meetings in one day in Australia, five when he is in Europe, and only three when he is in the US, even though travel speeds are higher in the US than in Australia or Europe (Kenworthy and Laube 2002). The reason for this is that the people he meets in the US are further away from each other than the people he meets in Australia and Europe. This story illustrates that it's not the travel itself that is important to people, but rather what the travel allows them to do.

Accessibility-based Transportation Planning

Based on this story, it makes most sense for transportation planning to focus on the best way to provide access to needs, not on getting people farther faster. There are three ways to increase the accessibility of communities and regions. Increasing mobility, the current criterion for “good” transportation planning, is one way to increase accessibility, but it can also work *against* accessibility. Transportation systems designed with only faster mobility in mind can encourage development that is spread out over a wide area (Transportation Research Board, 1995), which may make it more difficult to access as many destinations in the same amount of time that it would take in more compactly developed environments. Another approach to enhancing accessibility is to bring destinations in closer proximity to one another. However, as current transportation planning demonstrates, denser development can increase congestion and travel time can go up. The third way to increase accessibility is to connect remotely, as in telecommuting, conference calls, tele-shopping, tele-banking, even tele-education and tele-medicine. An accessible system incorporates all three approaches and views them as means to a greater end.

This project starts by focusing on mobility and proximity and the tension between them. It aims to give transportation planners the tools they need to base transportation plans and decisions on accessibility, not purely mobility. A forthcoming journal article, the first product of research for this project, compares accessibility in the San Francisco and Washington DC metropolitan areas. It provides a tool for comparing levels of accessibility to work and non-work destinations for residents of these areas. This tool, based on the gravity model of trip distribution, focuses its first input on the opportunities available in an area, calculating opportunities for both work and non-

work purposes. The other input is the cost of travel (taking conditions in San Francisco and Washington DC into account in all calculations to make it possible to compare the results for these two cities fairly). The output of this model is an “accessibility index” that transportation planners can use to compare the accessibility outcomes of different transportation systems and urban forms in US metropolitan areas. Planners can then incorporate this information into decisions on transportation and land-use. The accessibility index gives planners a powerful foundation for designing transportation systems that prioritize accessibility, the true goal of any transportation system.

We know that the transportation systems available to people have a powerful effect on their daily lives, and that designing these systems well is important. But planners cannot design transportation systems as well if they don't have ends and means straight. Accessibility-based planning will benefit transportation users in terms of the time and money they save in meeting their needs and reaching their destinations. It will also help decision makers and planners develop and maintain more efficient and sustainable systems. This accessibility index is an important and practical step in making it possible for planners to use accessibility, not mobility and speed as the true goal of transportation and land-use planning.

References

- Kenworthy, Jeff and Felix Laube (2002). *Urban Transport Patterns in a Global Sample of Cities and Their Linkages to Transport Infrastructure, Land Use, Economics, and Environment*. *World Transport Policy and Practice*, 8(3), 5-19.
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