Most urban transport projects have focused on improving the ability of citizens to move freely and swiftly about the city. Typically, that ability has been measured by the share of the population living within, say, 0.5 kilometer of a transit stop, or the maximum travel distance per unit of time, or the amount of transportation infrastructure in a city. Using such “proximity” measures to monitor urban mobility has led to congested highway networks and public transit systems that have failed to bring jobs and services within the practical reach of residents—especially the poor. These proximity-based measures represent indirect attempts to capture the real objective of transit systems: the accessibility of opportunities. New technologies and richer databases now make accessibility—the number of jobs, health facilities, schools, and other essential services that are available without a car, in, say, 30–75 minutes—a practical criterion for judging the state of mobility and for designing ways to improve it. Using the accessibility criterion will be critical to achieving SDG 11, the United Nations’ Sustainable Development Goal to “make cities and human settlements inclusive, safe, resilient and sustainable.”

The ability of residents and businesses to access markets, employment opportunities, and service centers such as schools and hospitals is critical to urban economic development. Recognizing the importance of mobility, the UN has included transport in SDG 11 as Target 11.2, which reads, in part, “By 2030, provide access to … sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations….”

Quantifying the Goal

The SDGs tackle the question of how to measure the targets by providing draft indicators. The two indicators for Target 11.2 cover cities with a population greater than 500,000: “Percentage of people living within 0.5 km of public transit” (Indicator 11.2.1) and “Km of high capacity (BRT, light rail, metro) public transport per person” (Indicator 11.2.2).

However, these indicators miss the essential goal of transport and mobility, and planners should move away from these and other proximity-based indica-
tors in assessing urban mobility, for at least three reasons:

- For households and firms, the transport system itself is not important. Rather, its key attribute is the access it provides to resources and employment opportunities.
- Defined in this way, accessibility can be a powerful design tool that allows planners to gauge the effects of changes in transport and land-use systems.
- For policymakers, citizens, and businesses, the accessibility of jobs, services, and markets offers the clearest way to discuss the state of the transport system.

A Better Measure

An “accessibility analysis”—building on the work of urban economist Alain Bertaud—calculates the number of jobs, educational centers, health centers, or other resources that are reachable within a certain travel time, either from a selected place or on average by all residents.

Accessibility analysis has not always been feasible. Today, however, with the growing availability of standardized data and better computing resources, a transport project’s benefits to the residents of, say, a low-income neighborhood can be assessed with a metric more meaningful than a projection of reduced congestion or transit ridership.

For example, road congestion may be a constraint in a dispersed urban setting with inadequate transit, walking, and cycling options. But an accessibility analysis can show that improving multimodal options may yield far greater mobility benefits than a focus on infrastructure or travel times.

From Research to Practice

The transition of the accessibility indicator from research into practice is yielding a better understanding of their value in promoting sustainable urban mobility. For instance, Bertaud has constructed a measure that defines the effective size of the labor market in a metropolitan area by calculating the share of the area’s jobs accessible within 60 minutes. Applying the measure to greater Buenos Aires indicates that, on average, a resident there can access approximately 34 percent of the jobs in the metropolitan area in 60 minutes (recognizing that actual accessibility varies by specific location).

The accessibility type of indicator provides a clear and relevant way to compare transportation scenarios in one city or compare cities across regions. And it provides a fruitful basis on which to publicly communicate the value of different transportation interventions.

Current Applications

Indeed, the accessibility-based indicator has already been applied in numerous other cities to calculate citywide accessibility of employment opportunities, schools, hospitals, retail centers, and so on. The calculations have revealed areas that, for example, are densely populated yet have poor accessibility to one or many types of service. Similarly, the analysis can identify areas that have good accessibility but have a low population density and thus have the potential for greater development.

An open-source software platform for measuring accessibility, the Open Trip Planner Analyst (OTPA) accessibility tool, is available to government officials and all urban transport practitioners. Developed by the World Bank in conjunction with Conveyal (http://conveyal.com), this tool leverages the power of the OTPA engine and open standardized data to model block-level accessibility. The added value of the tool (free and user friendly) is its ability to easily calculate the accessibility of various opportunities and transportation scenarios.

Conclusion

To evaluate the true benefits of urban transport investments and policies, the SDG indicator for Target 11.2 should measure accessibility. That type of indicator offers the most comprehensive measure of transport impacts on access to employment and commercial opportunities, health, education, and other essential services of urban life.

For more information on this topic: