

National Accessibility Evaluation

Access Across America

DRAFT Pooled Fund Proposal — August 5, 2014

Study Description

Background

We undertake transportation project to provide connectivity — the ability for people or things to physically travel — between locations, or to lower travel times where connectivity already exists. As long-term infrastructure investments, transportation systems are not built to satisfy individual trips at specific times, but rather to provide capacity that can be used to satisfy a huge variety of potential trips over the system's lifetime. This potential for interaction can be regarded as the fundamental product of transportation systems. Accessibility metrics directly reflect this potential by combining network travel times with the locations and value of the many origins and destinations served by a multimodal transportation system. Accessibility combines the simpler concept of mobility with an understanding that travel is driven by a desire to reach destinations.

This project will implement a measurement of accessibility to jobs across the entire U.S. For every Census block, it will calculate the number of jobs that can be reached, by driving or by transit, within various travel time thresholds. For example, from a given Census block it may be possible to reach 150,000 jobs by driving within 20 minutes, or to reach 75,000 jobs by transit within 30 minutes. This detailed dataset will be available to project partners, and an annual report will summarize the accessibility dataset for metropolitan areas across the country.

Accessibility evaluation has applications in a variety of areas:

- **Performance Management**
Accessibility evaluation can directly measure a fundamental goal of transportation: connecting people to useful destinations. By tracking accessibility over time, state DOTs, MPOs, and transit agencies can better understand how well their transportation network support this goal. Accessibility evaluation can be applied to MAP-21 performance goals related to congestion, reliability, and sustainability.
- **Scenario Evaluation and Analysis**
Transportation planning organization can use accessibility evaluation to help select between project alternatives and to prioritize investments. Because they incorporate land use information, accessibility metrics can provide a more comprehensive picture of how investments will change users' ability to reach destinations.

- **Transportation and Land Use Research**
Accessibility calculations can provide a valuable data source for transportation and land use research. Researchers at the University of Minnesota have employed accessibility in models of mode choice and other aspects of travel behavior, linked accessibility to residential property values, and used accessibility to explore the spatial relationship between jobs and worker locations.
- **Transportation Equity**
Detailed accessibility evaluation can help reveal how the costs and benefits of transportation investments are distributed over space and society. Understanding the accessibility characteristics of different origins and destinations can help agencies make equitable decisions in transportation planning.

The Access Across America project builds on earlier work sponsored by the Minnesota Department of Transportation (MnDOT) and the University of Minnesota's Center for Transportation Studies (CTS). The Access to Destinations project laid the groundwork for detailed accessibility evaluation. This multi-phase effort incorporated theoretical as well as practical research and included researchers from a variety of fields. The project delivered an accessibility evaluation methodology for the Minneapolis – Saint Paul, MN metropolitan area. CTS sponsored an additional development effort to expand the scope and increase the resolution of this methodology, making it suitable for application at a national level. CTS also established the Accessibility Observatory at the University of Minnesota, a research organization focused on developing and applying accessibility evaluation tools. More information about the Access to Destinations project and the Accessibility Observatory is available at <http://ao.umn.edu>.

Objectives

This project has two main objectives. First, it will create a new, national Census block-level accessibility dataset that can be used by partners in local transportation system evaluation, performance management, planning, and research efforts. Second, it will produce and publish a series of annual reports describing accessibility to jobs by driving and by transit in metropolitan areas across America.

Accessibility Dataset

This project will create a national Census-block level dataset describing accessibility to jobs from locations across the country, updated annually. Accessibility calculations will rely on detailed travel time calculations for both driving and transit, which will be implemented using commercially-available, GPS-based speed measurements and published transit schedules. Each Access Across America partner will have direct digital access to the accessibility datasets covering the jurisdictions of all partners.

Annual Report

The annual *Access Across America* report will provide summaries of the detailed accessibility datasets for the 50 largest metropolitan areas across America. This

report will be released to national and local media outlets and supported by publicity and communications efforts. Partners will be recognized in the report for their sponsorship and support.

Scope of Work

This project is comprised of the following major tasks on an annual basis:

1. **Establish Technical Advisory Panel**
Each project partner will be invited to nominate a representative to the TAP. The TAP's role will be to review the project's implementation to ensure that the project outputs will be useful to all partners, and to guide the project's evolution in response to potential advancements in data sources and evaluation methodology. TAP membership will be reviewed annually.
2. **TAP Review of Project Methodology**
The TAP will meet annually to review and comment on project methodology. TAP meetings will be scheduled and located to coincide with relevant conferences or professional meetings (such as AASHTO committee annual meetings or the annual TRB meeting). Teleconferencing participation options will also be provided.
3. **Collect Input Datasets**
Input datasets will be updated annually to reflect the most recent state of transportation and land use systems
4. **Calculate Accessibility Dataset**
Each year, accessibility data will be calculated using travel times and land use patterns for the trailing 12-month period.
5. **Prepare and Publish Access Across America Report**
The annual report will summarize the most recent accessibility dataset and comment on trends over the duration of the project.

Financial Summary

(Estimates as of August 5, 2014. Final costs and contributions will be determined based on expected participation and data licensing costs.)

Commitment Start Year: 2014

Commitment End Year: 2019

Commitments Required: \$1,500,000 (\$300,000 annually, 5 years)