Tucson Region Sidewalk Inventory

Pedestrian and Bicycle Information Center

Problem

The Tucson region's metropolitan planning organization, Pima Association of Governments (PAG), needed to assess regional sidewalk connectivity and accessibility in order to establish priorities for funding and construction.

Background

The Tucson Region Sidewalk Inventory began in the mid-1990s when City of Tucson Department of Transportation interns videotaped every major bus route and recorded sidewalk connections and ramps into an AutoCAD map file. This became the basis for PAG's expanded inventory.

Meanwhile, members of Tucson's Commission on Disability Issues (CODI) and other key advocates for the disabled community pushed for more sidewalks and better region-wide accessibility. Responding to their concerns, PAG undertook to revise and expand the Tucson area's sidewalk inventory beginning in 2003. The project was completed in 2005.

Solution

The Tucson Region Sidewalk Inventory resulted in a comprehensive assessment of sidewalks and Americans with Disabilities Act (ADA) access along all major roadways in the Tucson region. PAG planned to use the inventory to identify gaps and prioritize the sidewalk projects necessary to complete a regional network of pedestrian-accessible transportation corridors.

The inventory focused specifically on the major roadway grid network which consisted of approximately 4,000 directional miles of arterials and collectors. Existing shared-use pathways, most of which parallel major arterials and river parks, also were included. Sidewalks were inventoried based on half-mile to one-mile roadway segments, or between major intersection points. This level of detail was sufficient to analyze sidewalk needs on a regional scale.

Advocates for the disabled stayed involved throughout the project. A project working group made up of representatives from CODI and other organizations, transportation officials from local jurisdictions, and PAG staff met several times to discuss the inventory process, the ranking system, and expected outcomes of the project. Disabled community members helped PAG staff gain insight into accessibility issues when they all spent several hours on the streets in manual and electric wheelchairs. This exercise identified many barriers to accessibility: missing or poorly maintained sidewalks and wheelchair ramps, misplaced utility poles and signs, old railroad crossings and underpasses, steep-sloped driveways, sandwich signs, and vehicle parking encroachment.

Some barriers to accessibility become obvious only when experienced first-hand.

PAG began to update and expand the inventory in early 2003 using new tools and techniques in a particular sequence. In what was essentially a process of elimination, staff first recorded what they knew for sure. Then they did as much as possible using aerial maps and online photos; whatever areas were left had to be field-verified.

To begin, local staff used their knowledge of regional road conditions to identify segments with no sidewalks. (Approximately 25 percent of roadways surveyed were rural roads commonly known not to have sidewalks, much less other basic infrastructure.) Then staff created a survey using PAG's 2002 digital aerial imagery covering the entire road system in the Tucson region to identify areas where sidewalks were needed. The color imagery showed the landscape in great detail at high resolution. In the third step of the process, the Tucson Department of Transportation's Transview Web site was used to get a clear horizontal view of urban arterials using a series of photo images packaged in a "Virtual Ride" function. By clicking a button, the viewer can "drive" a selected roadway at a set speed and scan the sidewalk area and other roadway features. Finally, field surveys were conducted to verify any unknown areas as well as roadways under construction.

When the sidewalk inventory fieldwork was completed, each half-mile to mile roadway segment was recorded into a Microsoft Excel database and mapped using a GIS-based program. The database contains pertinent information on each roadway segment such as location, roadway type and classification (arterial, collector), jurisdictional control, transit routes, and sidewalk status.

Once the inventory was complete, planners and advocates needed to create a rational process to guide local officials in identifying priority sidewalk projects. A 100-point ranking system using nine criteria was developed with input from local jurisdictional staff, pedestrian planners, and members of the disabled community. Fortunately, PAG had all the necessary data to determine population density, average daily traffic, transit route ridership, and proximity to business districts, school, parks, and medical facilities -- the main criteria used in the ranking system.

Results

The project resulted in a detailed inventory of sidewalks and ramps along major roadways throughout the Tucson region. It also established a systematic process for prioritizing and programming sidewalk projects in local jurisdictions.

The list of high-priority projects served as the foundation for the pedestrian element of the $2.1 billion, 20-year Regional Transportation Authority (RTA) plan, approved by voters in 2006. The RTA plan allocates approximately $30 million for construction of sidewalks, ramps, and signalized crosswalks. To show the community that its money is being spent as promised, some of the first RTA projects to be completed were those identified in the plan.

Many miles of new sidewalks and ramps have been built since the RTA plan passed. The City of Tucson Department of Transportation has used the inventory to focus on completing key sidewalk gaps along major urban roadways and has already completed several sidewalk projects with RTA funds. (Most of the 50 top-ranked sidewalk projects are in the urban core, 32 of them located on just five major roads. Not surprisingly, frequent pedestrian-related crashes occurred along these same corridors.) Jurisdictions will complete their prioritized projects as they request RTA funds over the next 19 years.

Costs

The inventory project cost approximately $25,000 in staff time and materials. The cost included about 19 full-time weeks of staff time spent working on the inventory, developing maps, writing the report, and printing, assembling and distributing copies of the report. A private citizen on the project committee donated 40 hours to help with data input. Using online digital maps saved time because staff did less field work.

Web sites

Link to the Tucson Region Sidewalk Inventory Report:
http://www.pagnet.org/documents/Pedestrian/SidewalkInventory2005.pdf

Link to the Tucson Regional Transportation Authority:
http://www.rtamobility.com/index.php?option=com_content&task=view&id=188&Itemid=152

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