

Sustainable and Equitable Financing for Pedestrian Infrastructure Maintenance

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PI: Dr. Gregory Rowangould
(UNM)

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Identifying and evaluating equitable financial models for sidewalk maintenance through a case study in Albuquerque, New Mexico

Cities across the country hold responsibility for maintaining streets and roadways. However, many cities, such as Albuquerque, New Mexico, place the responsibility of maintaining sidewalks on adjacent property owners. Property owners are not only responsible for upkeep and maintenance of the sidewalks in front of their homes, they are also liable for paying any repairs that may be needed. Requiring individual property owners to inspect their sidewalks and contract out their repair when necessary is difficult to enforce and may partially explain why sidewalks in many communities are in poor condition. Furthermore, paying for sidewalk maintenance may not be possible for lower income households. Members of low income households and communities are also more likely to make trips by walking or by walking to public transportation, and are therefore disproportionately impacted by relatively high sidewalk repair costs and poor sidewalk conditions. This research is focused on finding alternative means of paying for pedestrian infrastructure repairs that provide a sustainable source of revenue and more equitable outcomes. While the project focuses on Albuquerque, the study results are expected to be useful for cities across the country.

Problem Statement

In the United States, pedestrian infrastructure construction and maintenance is often funded differently than other types of transportation infrastructure such as roads, transit, and even bicycle facilities. The planning process is also typically separate from these other modes or absent. Many municipalities face a long and growing backlog of pedestrian infrastructure in need of repair or replacement. The lack of adequate and sustainable financing coupled with a lack of comprehensive planning seem to be a large part of this problem. This project uses Albuquerque, New Mexico as a case study to evaluate alternative financing methods identified through a literature review. The analysis, which uses field data collected from Albuquerque and other local data sources, focuses primarily on how households with different incomes are burdened

by different financing methods and the sustainability of each method's revenue over time.

In addition to their ineffectiveness, current financing methods can also be highly inequitable. Methods that fail to provide necessary maintenance may disproportionately burden low-income and minority communities whose residents rely on walking by itself or accessing transit for their primary mode of transportation.

Summary

To evaluate different financial models for sidewalk maintenance, the initial quality of sidewalks must be established to determine the annual cost of sidewalk repairs. For this study, the city of Albuquerque serves as a case study. A sample of sidewalks extending from randomly selected intersections in 50 randomly selected neighborhoods are surveyed for holes, cracks, and slab displacements that might hinder the use of the sidewalk (see Figures 1 and 2).



Figure 1. Typical sidewalk defects in Albuquerque.

The evaluation criteria are based on ADA Standards, which require sidewalks to be built and kept up to a standard that allows those with disabilities to use them. Each defect is recorded in a GIS database and a spatial interpolation model is used to estimate sidewalk conditions for neighborhoods that were not sampled. Unit repair costs obtained from the City of Albuquerque are then used to estimate the repair costs for the city's sidewalks as well as those in each neighborhood.



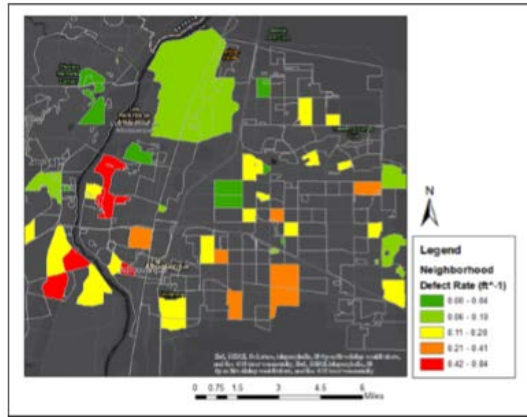


Figure 2. Average defect rates (defects per linear foot) for sampled neighborhoods in Albuquerque.

Findings

With the field work phase of the project complete, the research team is now conducting a spatial analysis to evaluate the distribution of sidewalk maintenance and repair costs across the city that will inform financial modeling and equity analysis. An initial scan of the data indicates that sidewalks located in lower income neighborhoods have more defects than more recently built sidewalks which are predominantly located in more affluent neighborhoods (see Figure 3).

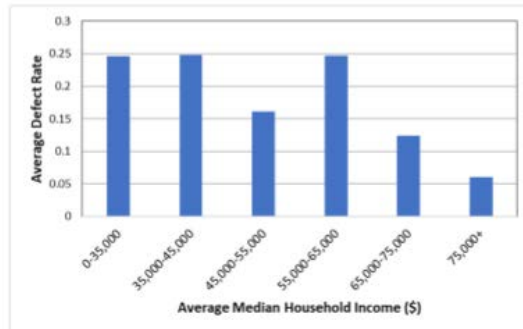


Figure 3. Average Defect Rate for Average Median Household Income categories in Albuquerque.

The next steps of the analysis will evaluate the sustainability and equity of several alternative funding models. These include incrementing the local portion of the gasoline excise tax, increasing property taxes, and increasing the city's gross receipts tax (i.e., sales tax) and comparing these to a "business as usual" property owner model. The ability of each funding mechanism to provide adequate funding over time will be evaluated (e.g., increasing fuel economy and electric vehicles could quickly reduce the value of an incremented gas tax) as well as the tax burden across communities and households with different socioeconomic status.

Impacts

The goal of this project is to find a more robust solution to pay for sidewalk repairs without the

burden to inspect and contract out repairs being placed on homeowners and to address equity concerns. A more sustainable and equitable sidewalk financing model will not only help bring sidewalks up to ADA standards, increasing mobility for the disabled, but will also provide higher quality infrastructure that encourages walking and its many benefits.

Tran-SET

Tran-SET is Region 6's University Transportation Center. It is a collaborative partnership between 11 institutions (see below) across 5 states (AR, LA, NM, OK, and TX). Tran-SET is led by Louisiana State University. It was established in late November 2016 "to address the accelerated deterioration of transportation infrastructure through the development, evaluation, and implementation of cutting-edge technologies, novel materials, and innovative construction management processes".

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