

Assessing Social Equity in Highway Asset Management Plans

Chirag Kothari¹ and William J.O' Brien, Ph.D., P.E., M.ASCE²

¹ Ph.D. Candidate, Dept. of Civil, Architectural, and Environmental Engineering, Univ. of Texas at Austin, 301 E. Dean Keeton Street, ECJ 5.412, Austin, TX 78712, (corresponding author).
Email: chiragkothari@utexas.edu

² Professor, Dept. of Civil, Architectural, and Environmental Engineering, Univ. of Texas at Austin, 301 E. Dean Keeton Street, ECJ 5.412, Austin, TX 78712. Email: wjob@mail.utexas.edu

ABSTRACT

The U.S. Department of Transportation aims to comprehensively incorporate social equity goals into its nationwide programs and policies. Accordingly, state highway agencies seek to integrate social equity goals in their asset management plans. To better accommodate social equity goals in their decision-making, it is essential to quantitatively assess the current level of social equity in the transportation network. However, the existing literature on social equity has been primarily qualitative in nature, making it difficult to assess social equity quantitatively. This paper aims to address this gap by exploring different numerical approaches and visualization techniques to systematically evaluate levels of social equity and other measures of network performance. The study expands on quantitative techniques developed by the authors in an earlier study and incorporates GIS-based visualization techniques to assess the level of social equity. Highway network data for New York City is studied in conjunction with the CDC's Social Vulnerability Index (CDC SCI) and the community's socio-economic demographics to gauge the current levels of social equity in the community. The representations of this study expand the use of quantitative metrics of social equity to support decision-making for infrastructure.