



# Project Summary

Texas Department of Transportation

## 0-6544: Appraisal of Available Analytical Tools to Assess Environmental Justice Impacts of Toll Road Projects

### *Background*

Given the fiscal constraints of traditional roadway funding sources, the financing of new roads and modernization of existing roads through investments that will be recovered through toll charges has been promoted at the national and state level. At the national level, the National Surface Transportation Infrastructure Financing Commission (2008) recommended greater use of tolling and direct road user charges. In Texas, road pricing (e.g., toll roads or managed lanes) is considered a key tool to build needed transportation infrastructure. This has raised questions about environmental justice (EJ) and how it relates to tolling.

During 2004-2006, TxDOT project 0-5208 developed a method for the identification, measurement, and mitigation of adverse impacts imposed on EJ communities. The methodology proposed had two components: an analysis/quantitative component and an effective EJ participation component. However, the research team raised concerns about the ability of analytical techniques to measure the potential impacts imposed on EJ communities by toll roads relative to non-toll roads. The objective of this study was to extend the work that was conducted under TxDOT research project 0-5208.

### *What the Researchers Did*

The research effort involved the following:

- Updating and expanding the previous “desk study” review of analytical tools and techniques to measure potential EJ impacts associated with toll roads.
- Reviewing case law, U.S. Congressional activity, and analyzing agency policy regarding EJ.
- Stakeholder telephone interviews with Federal Highway Administration, the Environmental Protection Agency, and TxDOT’s Environmental Affairs Division to define key terms and definitions that apply to EJ.
- Meeting with North Central Texas Council of Governments (NCTCOG) to review and develop an understanding of how the NCTCOG travel demand model is used in assessing the impacts of toll roads/systems on EJ communities.
- Telephone interviews with representatives of 46 states to assess the state-of-the-practice on how Departments of Transportation, Metropolitan Planning Organizations, and Turnpike Authorities have defined a toll system, identified EJ impacts, measured EJ impacts, addressed challenges, and effectively communicated with impacted EJ communities.
- Eight case studies to understand the methodologies and analysis tools used by agencies that have considered the EJ impacts of toll roads.
- Describing travel demand model steps, assumptions, and limitations, and the implications they hold when modeling is used for EJ impact analysis in the context of a case study.

### *Research Performed by:*

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- Reviewing the characteristics that typically define EJ households, their activity patterns, and transportation requirements.
- Recommending specific data needed to determine a toll road's impact on EJ households or communities, as well as appropriate techniques that should be considered when collecting this type of data.

## What They Found

The literature review revealed that federal agencies have been criticized by the GAO and Internal Audit Offices (EPA and DOT) for not providing direction for states to follow regarding EJ. It was also clear that the legal community is becoming more sophisticated in how they structure new EJ cases. Each iteration of pleadings and complaints has become more sophisticated in structure, argument, and language utilized. To some extent, this may be a product of the Supreme Court decision in *Sandoval V. Alexander* that precluded an individual and community from bringing a suit if they could not prove the requisite 'racial animus'. Academic discourse after this case suggested two avenues under which an EJ complaint may see more success: (1) file under traditional NEPA provisions, and (2) file against any segmented environmental assessments or environmental impact statements.

The survey of 46 states uncovered that many states have not undertaken EJ analysis for toll facilities because they do not have toll roads (25 states) or have toll roads that were built before the Executive Order and NEPA were enacted or because the facility was built and operated by the private sector (nine states). States that have attempted to quantify EJ impacts have employed FHWA's Noise Model, used GIS to visualize the demographic analysis of the impacted area, and utilized the four-step travel demand model as tools to either qualitatively or quantitatively measure a limited number of impacts. Most agencies recommend public outreach as an effective method to assess and mitigate the impacts of concern on communities potentially impacted by a toll road or toll road system.

## What This Means

Current analytical tools can be used to identify EJ communities, but they do not necessarily identify the travel patterns and transportation modes that EJ individuals may engage in, which is essential to understand how a toll road or toll road system may impact EJ communities. For example, EJ households are typically headed by single mothers, EJ individuals hold multiple jobs, often tend to be responsible for elderly dependents, and often have more complicated childcare arrangements. The research team identified the data (i.e., survey questions) that need to be collected on EJ activity patterns and travel dimensions (e.g., mode, origin/destination, vehicle occupancy, travel time, cost, and routes) that are necessary to assess the EJ impacts imposed by toll road(s). The research team also recommended that outreach techniques be implemented that disseminate information or solicit inputs from EJ individuals at a convenient location. These techniques may include walkabouts (i.e., going door-to-door in a community), the creation of a local team, the creation of school programs, games, and outreach booths at locations already frequented by these communities. Effective and meaningful public outreach can be used by most transportation agencies to assess EJ impacts imposed by toll roads or toll road systems, since it does not require sophisticated modeling to overcome the limitations of currently used analytical tools.

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