



Environmental Justice and Tolling: A Review of Tolling and Potential Impacts to Environmental Justice Populations

Increasingly, tolling has become an integral part of transportation infrastructure as cities and States respond to urban mobility challenges and face decreased funding for transportation projects. Toll revenues are often essential to pay the capital cost of the toll facility, as well as its operations and maintenance. Expanded use of tolling has also been promoted during the last several Federal-aid Highway Program authorization periods. Environmental Justice (EJ) populations can be affected by tolling, but the impacts vary widely by context and type of project (i.e., full facility tolling or partial facility tolling; a.k.a., “managed lanes”). This fact sheet describes different planning-level tolling scenarios and their potential impacts on EJ populations as well as a project-level evaluation of tolling projects and questions that should be answered to understand the socio-economic impact of tolls.

What is an EJ Population?

Per FHWA Order 6640.23A, the following defines an Environmental Justice population:

Low-Income Population - Any readily identifiable group of low-income persons¹ who live in geographic proximity, and, if circumstances warrant, geographically dispersed/transient persons who will be similarly affected by a proposed FHWA program, policy, or activity.

Minority Population - Any readily identifiable group of minority persons² who live in geographic proximity, and, if circumstances warrant, geographically dispersed/transient persons who will be similarly affected by a proposed FHWA program, policy, or activity.



Figure 1: SR 520 Bridge in Seattle, WA, is a fully tolled facility
Image Source: Washington State Dept. of Transportation

Frequently Asked Questions to Understand the Socio-Economic Impacts of Tolls:

- How will low-income and non-low-income households use the transportation facilities after a toll is imposed?
- How would tolls affect the economic status of low-income and non-low-income households on average?
- For residents who choose to use tolled routes, how much time will they save? For those who would use non-tolled routes or shift to public transportation or car pools, how much extra time will they spend in travel?
- How will the potential behavioral changes differ by income status?

Source: Plotnick, Robert, Romich, Jennifer, and Thacker, Jennifer. The Impacts of Tolling on Low-income Persons in the Puget Sound Region. (2009) Washington State Dept. of Transportation, Office of Research and Library Services

¹ Persons whose median household income is at or below the Department of Health and Human Services poverty guidelines.

² Minority persons include individuals who are Black, Hispanic or Latino, Asian American, American Indian and Alaskan Native, or Native Hawaiian and other Pacific Islander.

What is the difference between full-facility tolling and managed-lanes tolling?

- **Full-facility tolling** – All users of the facility pay the toll.
- **Managed-lanes tolling** – Users of the facility have a choice to remain in a non-tolled general purpose lane, or use tolled express or High Occupancy Toll (HOT) lanes. Toll pricing on managed lanes may vary in response to changing congestion conditions, and High Occupancy Vehicles (HOVs) may travel free or at discounted toll rates.

What is the difference between high-occupancy vehicle lanes and high-occupancy toll lanes?

- **HOV lanes** – A preferential lane designated for exclusive use by vehicles with the required minimum number of occupants, for all or part of a day. Required minimum occupancy is set by the public agency operating the facility, and is generally two or three persons; a.k.a., HOV 2+ or HOV 3+.
- **HOT lanes** – Any HOV lane that allows vehicles not meeting minimum occupancy requirements to use the lane by paying a toll. Qualified carpool vehicles and transit vehicles may be able to use HOT lanes free or at a discount. All vehicles continue to have the option of traveling in free general purpose lanes.

Categorization of Toll Projects and Potential Environmental Justice Impacts

Physical Configuration	Conditions prior to tolling	Potential EJ Impact of tolls	Examples
Full facility tolling	Facility did not exist	New travel choice becomes available for EJ populations, and non-tolled network may see a reduction in volume	<ul style="list-style-type: none"> • SR 125, San Diego, CA • SR 895, Pocahontas Parkway, Richmond, VA • SR 267, Dulles Greenway, Northern VA • SH 130, Austin, TX
	Existing and Expanded Toll Facilities	Increased toll rate poses potential increased financial challenge for EJ populations	<ul style="list-style-type: none"> • New Jersey Turnpike (NJTP) widening, NJ* • SR 520, Seattle, WA • Downtown and Midtown Tunnels, Norfolk, VA • SR 265, Downtown Louisville bridge over Ohio River, KY-IN
Managed lanes tolling	Lanes did not exist	New travel choice becomes available for EJ populations and additional capacity is added	<ul style="list-style-type: none"> • I-495 Capital Beltway, Northern VA • I-635, LBJ Freeway, Dallas, TX • I-35W, North Tarrant Expressway, Ft. Worth, TX
	Lanes existed as an HOV facility with the same HOV eligibility requirements	New travel choice may become available for EJ populations (e.g., if they do not meet HOV occupancy requirements)	<ul style="list-style-type: none"> • SR 167 HOT lanes, Seattle, WA • I-15 HOT lanes, San Diego, CA • I-95 HOT lanes, Northern VA • I-10, Katy Freeway HOT lanes, Houston, TX • I-405 HOT lanes, Seattle, WA
	Lanes existed as an HOV facility with more liberal HOV eligibility requirements	New travel choice may become available for EJ populations, but more restrictive HOV eligibility requirements can reduce choice for HOVs	<ul style="list-style-type: none"> • I-95 HOT lanes, Miami, FL • I-85 HOT lanes, Atlanta, GA

*Notes an existing toll facility that is being improved

What is the impact of tolling and road pricing projects on EJ populations?

Consideration of who bears the burden of road pricing, who benefits from improved mobility, and how the revenues are used is critical to ensure that equitable decisions are made regarding road pricing programs. While all income groups value the time savings and greater reliability for certain trips due to implementing managed lanes and tolling facilities, it is important to consider the impacts to low-income populations. Below are planning-level and project-level considerations for tolling.

Planning-level considerations:

The creation of a toll road typically entails using anticipated toll revenue to pay for the initial project construction and annual operations and maintenance costs. The financial feasibility of a potential toll project is based on the comparison of the toll revenue that could be generated in support of construction and other costs versus the project's actual cost of implementation. Projects considered typically include limited access roadway or bridge facilities to provide congestion relief and reliability. Public participation is essential to effectively communicate the tolling plan to the public and understand the level of public support,

comments and concerns. Project planning involves defining the general characteristics of the project's improvements, including estimating the project's cost and the affordability of tolls, especially for low-income population relative to their income. Consideration is also given to accommodation for pedestrians, disabled persons, bicycle access; network connectivity for people without cars; and transit service expansion for vulnerable populations such as low-income populations and some minority populations.

Strategies to address tolling impacts on EJ Populations

To address EJ concerns, it is important to meaningfully involve all communities and stakeholders potentially affected by a road-pricing project and ensure that people have an opportunity to fully participate in developing pricing plans. The LA Metro's I-10 and I-110 Express Lanes project did extensive outreach including 640 briefings, a thorough assessment methodology, and the development of Corridor Advisory Groups, which served as citizen advisors to LA Metro on potential uses of toll revenue.

Considerations for Project-level Evaluation of Toll Facilities

- Available non-tolled facilities (that can be used as substitutes for the tolled facility).
- Travel time differences between tolled and non-tolled routes.
- Transit vehicle toll policies.
- Methods of toll collection and how they may affect access and cost.
- Cost differences between acquiring toll tag with credit card or with cash.
- Remediation measures to address potential EJ impacts.
- Expected use of toll revenues.
- Toll rates and/or toll ranges.
- Location of toll gantries, particularly in relation to identified EJ areas.
- Potential economic impact to individuals (toll costs as a proportion of income).
- EJ related demographic data by traffic analysis zone (TAZ).
- Accommodations for travelers with Limited English Proficiency and travelers with disabilities to use the toll facility.
- Identification of potential users and travel time changes (both for the tolled facility and the alternative toll-free routes).
- Assumptions and limitations of any travel-demand models used in the study.

Source: Adapted from Guidebook for State, Regional, and Local Governments on Addressing Potential Equity Impacts of Road Pricing. April 2013. FHWA-HOP-13-033

The project introduced a [Low Income Assistance Program](#) that provides a one-time \$25 credit and waives the monthly account maintenance fee for those with an annual household income equal to or less than double the federal poverty level. The Metro Express Lanes were among the first in the U.S. to provide a toll discount for low-income commuters. The program also reinvests net toll revenues in transit and/or carpool lane improvements. Participation in similar programs should be considered throughout the planning and National Environmental Policy Act (NEPA) process as well as during project implementation, operation, and evaluation.

What is FHWA doing to address the issue?

The FHWA is partnering with the Transportation Research Board to conduct research and provide a toolbox that practitioners can use to evaluate and address environmental justice issues that arise when implementing tolls or rate changes. The toolbox will be used to assist transportation decision makers with methods to assess and offset any potential impacts on minority populations and low-income populations as a result of tolling. The research project titled *Environmental Justice Analyses When Considering Toll Implementation or Rate Change* ([NCHRP 08-100](#)) is underway and is anticipated to be complete by December 2016.

More information on environmental justice, tolling, and managed lanes is available on the following FHWA websites:

- Environmental Justice - http://www.fhwa.dot.gov/environment/environmental_justice/
- Tolling Program - http://www.fhwa.dot.gov/ipd/revenue/road_pricing/tolling_pricing/
- Managed Lanes and HOV Facilities - http://www.ops.fhwa.dot.gov/freewaymgmt/mngd_ins_hov.htm

Additional resources:

HOV Lanes, Tolling and NEPA Process

- [Federal-aid Highway Program Guidance on High Occupancy Vehicle \(HOV\) Lanes \(FHWA, November 2012\)](#)
- [AASHTO Practitioners Handbook – Managing the NEPA Process for Toll Lanes and Toll Roads \(AASHTO, July 2006\)](#)

Congestion Pricing

- [Contemporary Approaches in Congestion Pricing: Lessons Learned from the National Evaluation of Congestion Pricing Strategies at Six Sites \(FHWA-JPO, August 2015\)](#)

Regional Congestion Reduction and Travel Behavior Analysis

- [Los Angeles County Congestion Reduction Demonstration National Evaluation Plan \(FHWA-JPO, January 2010\)](#)
- [Effects of an HOV-2 to HOT-3 Conversion on Traveler Behavior: Evidence from a Panel Study of the I-85 Corridor in Atlanta \(FHWA, April 2014\)](#)
- [Effects of Full-Facility Variable Tolling on Traveler Behavior: Evidence from a Panel Study of the SR-520 Corridor in Seattle \(FHWA, March 2014\)](#)
- [Urban Partnership Agreement and Congestion Reduction Demonstration Programs: Lessons Learned on Congestion Pricing from the Seattle and Atlanta Household Travel Behavior Surveys \(FHWA, April 2014\)](#)

EJ and Equity Considerations

- [Exploring the Equity Impacts of Two Road Pricing Implementations Using a Traveler Behavior Panel Survey: Full Facility Pricing on SR 520 in Seattle and the I-85 HOV-2 to HOT-3 Conversion in Atlanta \(FHWA, April 2014\)](#)
- [Guidebook for State, Regional, and Local Governments on Addressing Potential Equity Impacts of Road Pricing \(FHWA, April 2013\)](#)
- [Environmental Justice Emerging Trends and Best Practices Guidebook \(FHWA, November 2011\)](#)

Bicycle and Pedestrian Considerations

- [Achieving Multimodal Networks: Applying Design Flexibility and Reducing Conflicts \(FHWA, August 2016\)](#)
- [Pursuing Equity in Pedestrian and Bicycle Planning \(FHWA, April 2016\)](#)
- [SR 520 Bicycle and Pedestrian Connections \(Washington State Department of Transportation, 2016\)](#)