Research Note

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Department of Transportation

The Impacts of Tolling on Low-income Persons in the Puget Sound Region

Information needed about effects of tolling on persons of low-and-moderate income
Tolls on roads and bridges are becoming a major source of funding for transportation improvements in Washington State as a strategy to reduce congestion. The project to replace the State Route (SR) 520 Bridge in Seattle is an example of such a tolling project.

To comply with federal laws and regulations related to Environmental Justice, the state needs to understand the effects of tolling, especially on low-income populations.

What is Environmental Justice?
Environmental justice acknowledges that the quality of our environment influences our lives, and negative environmental effects should not disproportionately burden low-income or minority communities. Negative environmental effects associated with transportation projects may include, among others:

- disruptions in community cohesion
- restricted access to commercial areas
- presence of hazardous materials
- raised noise levels
- increased water and/or air pollution.

Estimating tolling effects for the SR 520 bridge project
In 2005, when WSDOT wrote the Draft Environmental Impact Statement (DEIS) for the SR 520 Bridge replacement project, we knew the demographics of the region, but we did not know the demographics of those who use the bridge. This meant that we also did not know what influence construction and tolling of the bridge would have on people who use it. Our information about the effects of tolling came from other states.

Our experience with this analysis demonstrated that we needed to know more about how tolling might affect people generally, and whether the effect on low-income and or minority populations would be different.

Other studies informed this research.
This research has four objectives.
- Review existing research
- Assess usefulness of existing data
- Develop a preliminary estimate of the impact of tolling
- Create strategies for future research

This study did not include collecting new data, but rather used existing research and census data. We reviewed national studies on tolling effects and demographic surveys done in Washington state.

Researchers used Geographic Information System (GIS) layers to identify where low-income populations lived and worked in the central Puget Sound area. Researchers used data from U.S. Census Bureau's

American Community Survey, the state Office of Financial Management's "Washington State Population Survey," and the Puget Sound Regional Council's "Household Activity Survey."

Study found low-income persons pay more, but use less
Earlier research as well as current data is limited. Most studies concluded tolling takes a larger percentage of income from low-income than from high-income people, since everyone pays the same, regardless of income level.

Researchers concluded that poor households would spend less on tolls because:
- They are less likely to include a worker.
- Poor workers are less likely to drive private cars.
- They are less likely to drive on tolled highway segments.

In relative terms however, those who choose to use tolled highways will pay a greater percentage of their income.
We used findings from the new analysis to illustrate costs of a one-way toll of $2 on the SR 520 bridge. For a regular commuter, such a toll amounts to $960 per year, or about 5.5 percent of annual income for a poor household. For the median King County household, this is about 1.4 percent.

Map of research area in central Puget Sound

Additional data is needed
Our researchers suggest future research is needed to get more origin and destination data and a larger sample size to learn about subgroups. In addition, they suggest the criteria for evaluating the fairness of tolls also will require further research.

Research Useful in Project Review
WSDOT plans to use the criteria identified by the UW researchers during our project review process to determine the impacts of tolling on low-income people. The literature search and the suggested improvements to current data gathering will be beneficial for future project uses.

Because of this research, the Puget Sound Regional Council and WSDOT will work together to address related issues for the "PSRC Vision 2040" and the next update of the "PSRC Household Activities Survey."

Planners and engineers who are developing environmental documents for WSDOT construction projects such as the SR 520 Bridge, I-405 projects, and the Alaskan Way Viaduct replacement will use this data.

WSDOT shares the research results with other DOTs, the Federal Highway Administration, the Transportation Research Board (TRB), and other transportation organizations having an interest in the impact of tolling on low-income populations.

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