

Background Paper #4

Equity, Fairness, and Uniformity in Tolling

■ National Review of Equity and Fairness

Unlike most other issues initially raised with regards to tolling and pricing, such as privacy and the reliability of technology, issues of fairness and equity continue to be raised as an issue in tolling as often today as they were 10 years ago. Left unanswered, equity and fairness concerns can constitute an insurmountable barrier to implementation.

The Policy Foundation

The analytical basis of equity and fairness in transportation infrastructure and services is found in several policies and directives, in chronological order:

- *Title VI of the Civil Rights Act of 1964*, which states, “No person in the United States shall, on the ground of race, color, or national origin be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance.”³
- *National Environmental Policy Act of 1969*, which decided in favor of community-oriented analysis of policy-making.⁴ For proposed major transportation facilities, an analysis of environmental impacts was now required that went beyond the infrastructure itself to include a broader geographic area.
- *Federal Aid Highway Act of 1970*, which assured that transportation facilities be approved “in the best overall public interest” with efforts to eliminate or minimize effects on community cohesion, employment effects, and displacement of people.⁵

³ United States Code. *Title VI: Nondiscrimination in Federally Assisted Programs*, Civil Rights Act of 1964, 42 USC 2000(d) – 2000(d)(1).

⁴ United States Code. *The National Environmental Policy Act*, 42 USC 4321-4347, Public Law 91-190 (1970), Public Law 94-52 (1975), Public Law 94-83 (1975), and Public Law 97-258 (1982).

⁵ United States Code. *Federal-Aid Highway Act of 1970*, 23 USC 109(h), 1970.

- ***Civil Rights Restoration Act of 1987***, which identified the extent to which Title VI applied, to include all Federal-aid recipients, sub-recipients, and contractors regardless of whether specific activities in question are Federally funded or not.⁶
- ***Executive Order 12898 of 1994***, which established the precedent that environmental justice consideration be extended to low-income populations and to avoid “disproportionately high and adverse” effects.⁷
- ***U.S. Department of Transportation implementation actions***, which provided requirements upon and guidance for transportation agencies and professionals in incorporating environmental justice principles in all transportation activities.^{8,9}

These actions combine to provide the fundamental concerns of Environmental Justice:¹⁰

1. To avoid, minimize, or mitigate disproportionately high and adverse human health or environmental effects, including social and economic effects, on minority populations and low-income populations;
2. To ensure the full and fair participation by all potentially affected communities in the transportation decision-making process; and
3. To prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority populations and low-income populations.

Environmental Justice may be the basis for issues of equity and fairness in the consideration of funding and planning process; however, the concepts of equity and fairness are not wholly comprised by Environmental Justice when interpreted literally. For example, if a project has benefits to a low-income population (defined by FHWA to mean a population below the Department of Health and Human Services’ poverty guidelines)¹¹ yet is detrimental to a community just above the poverty level, does this

⁶ United States Public Laws. *Civil Rights Restoration Act*, Public Law 100-259 (S. 557), March 1988.

⁷ Executive Order 12898. *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, Federal Register, Volume 59, Number 32, February 16, 1994.

⁸ U.S. Department of Transportation. *DOT Order on Environmental Justice to Address Environmental Justice in Minority Populations and Low-Income Populations*, DOT Order 5610.2, April 1997.

⁹ U.S. Department of Transportation. *FHWA Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, DOT Order 6640.23, December 1998.

¹⁰ Federal Highway Administration. *Questions and Answers on Environmental Justice and Title VI*, <http://www.fhwa.dot.gov/environment/ejustice/facts/index.htm>, accessed October 9, 2005.

¹¹ U.S. Department of Transportation. *FHWA Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, DOT Order 6640.23, December 1998. This order references eligibility criteria for the Community Services Block Grant Program, found at <http://aspe.os.dhhs.gov/poverty/poverty.htm>.

make the project a fair and equitable project simply because it achieves the literal definition of environmental justice? In order to account for issues similar to these, many practitioners advocate for considering the context, perspective, and timeframe of policy decisions on the broader definition of disadvantaged groups. Another related equity issue is the situation of two communities with similar demographics, where one community has extensive toll facilities and the other community does not.

As articulated by a publication from the Institute for Transportation Studies at the University of California at Berkeley, equity and fairness issues most frequently arise when:¹²

- Some communities get the benefits of improved accessibility, faster trips, and congestion relief, while others experience fewer benefits;
- Some communities suffer disproportionately from transportation programs' negative impacts, like air pollution;
- Some communities have to pay higher transportation taxes or higher fares than others in relation to the services that they receive; or
- Some communities are less represented than others when policy-making bodies debate and decide what should be done with transportation resources.

These four issues are generally identified within the concepts of *geographic equity*, *income equity*, and *participation equity*. However, there are additional measures of equity and fairness.

The Victoria Transport Policy Institute identifies *opportunity equity* issues as they pertain to mobility need and accessibility, whereby certain communities may disproportionately benefit from actions taken by the State. In a violation of opportunity equity, the extent of mobility needs may be greater for population A than population B, but mobility enhancements are offered disproportionately to population B.¹³ Put differently, if a toll road is implemented serving a high-income community rather than a needed road from a low-income community solely due to cost recovery, this would violate the concept of opportunity equity.

¹²Cairns, Shannon; Greig, Jessica; and Wachs, Martin. *Environmental Justice and Transportation: A Citizen's Handbook*, Institute of Transportation Studies, University of California at Berkeley, January 2003, <http://www.its.berkeley.edu/publications/ejhandbook/ejhandbook.html>, accessed October 9, 2005.

¹³Littman, Todd. *Evaluating Transportation Equity: Guidance for Incorporating Distributional Impacts in Transportation Planning*, Victoria Transport Policy Institute, September 2005, <http://www.vtpi.org/equity.pdf>, accessed October 9, 2005.

In a study for the Santa Clara Valley Transportation Authority in regards to the specific evaluation of equity for High-Occupancy Toll (HOT) lane facilities, researchers identified a fifth type of equity consideration: *modal equity*, which pertains to the perceived attractiveness of commuting by single-occupant vehicles in HOT lanes relative to the travel-time benefits extended to high-occupant vehicle users under HOV lane operations.¹⁴ In other words, public opinion on the part of carpoolers and bus riders may be predisposed against toll roads, as they feel that one should “do the right thing” in order to have the travel-time benefits these facilities provide. This would be an example of perceived modal equity.

Equity Issues in Toll Proposals

A fair and equitable policy regarding tolls must be viewed under a contemporary context. Eighty years ago, publicly financed roads were perceived as unfair, as an extremely small portion of the population owned an automobile. Tolls were used extensively in the first few centuries of this country’s existence, into the first five and a half decades of the 20th century. Eventually, however, fuel taxes won out as the primary financing tool for the development of the modern highway system, as the correlation between road use and fuel was viewed as a sufficient nexus. Today, vehicle ownership is pervasive, and the vast majority of the adult population personally drives a vehicle at some point on a public road.¹⁵ As a result, public opinion now tends to view roads as a public good. Due to rising fuel efficiencies and fixed taxation levels, fuel tax revenue as a percentage of transportation need has been declining substantially, and actual tax receipts may soon be in decline.^{16,17} As governments turn to tolls as a way of shoring-up transportation funding, public opinion concerns with equity also have risen with it.

Tolling has many applications currently in the United States. The various applications can be summarized into four general categories, with the understanding that some proposed projects do not fit neatly in these four categories: flat-rate tolls on highways and bridges

¹⁴Weinstein, Asha and Sciara, Gian-Claudia. *Assessing the Equity Implications of HOT Lanes*, Santa Clara Valley Transportation Authority, November 2004.

¹⁵According to the 2000 Census, Summary File 3 data, approximately 96 percent of owner-occupied households and 78 percent of renter-occupied households throughout the United States have a personal vehicle available. In the State of Washington, an even greater share of the population uses the roads, with 97 percent of owner-occupied households and 84 percent of renter-occupied households have a personal vehicle available.

¹⁶Oregon Department of Transportation. *Road User Fee Task Force*, Office of Innovative Partnerships and Alternative Funding, http://www.oregon.gov/ODOT/HWY/OIPP/ruftf_faq.shtml, accessed October 9, 2005.

¹⁷Taylor, Brian; Weinstein, Asha; and Wachs, Martin. *Reforming Highway Finance: California’s Policy Options*, University of California Transportation Center, 2001, <http://www.uctc.net/papers/488.pdf>, accessed October 9, 2005.

(traditional toll facilities), variable-rate tolls on highways and bridges (value pricing), variable tolls on exclusive facilities within corridors (express toll lanes), and variable tolls on exclusive HOV facilities (HOT lanes). A fifth category also deserves mention – vehicular use pricing – which includes advanced implementations such as a Vehicle Miles Traveled (VMT) toll and cordon toll. These applications have not been implemented in the United States or Canada, but have had some limited applications in Great Britain, Singapore, Norway, and Germany.¹⁸

Although different in their implementation and focus on the five areas of equity outlined above, these categories all face the same test of fairness: the distribution of costs and benefits and the public acceptance of that distribution. Public opposition has been the overriding factor in tolling projects that have failed to come to implementation, rather than a technical evaluation of equity. As a result, the review of equity issues in toll projects is largely a study of public opinion.¹⁹

The concept of tolling is new in many states, and proposed projects have inevitably been controversial to one extent or another everywhere they have been considered. A variety of reasons contribute to toll projects remaining controversial. As it pertains to equity and fairness, this includes concerns for low-income individuals; geographic distribution of toll benefits and costs; and fairness to user classes. Addressing concerns of equity and fairness has taken a considerable amount of time to nurture in states even with implemented projects, such as California, New York, Minnesota, and Texas. In all states, public opinion was generally lukewarm, at best, to start.^{20,21,22}

Limited studies have been conducted regarding the fairness of new toll facilities. Generally, proposed new road or bridge projects with a tolling element have been successfully criticized on established environmental documentation procedures, even if the principal (unofficial) objection on the part of opinion-setters has been the fairness of tolling. Examples can be found with the Jefferson Parkway (W-470) proposed toll corridor

¹⁸California, Colorado, Minnesota, Oregon, and Washington additionally studied applications of areawide pricing in the past 10 years. No specific proposals ever moved forward, and as such, data is conceptual only.

¹⁹It is not the purpose of this section to review public opinion and attitudes regarding tolling and pricing in general. Rather, this section reviews public opinion strictly from the perspective of equity and fairness.

²⁰Munnich, Lee and Loveland, Joseph. *Value Pricing and Public Outreach: Minnesota's Lessons Learned*, Transportation Research Board, Paper 05-0394, 84th Annual Meeting, January 2005.

²¹Ungemah, David; Swisher, Myron; and Tighe, Charles Daniel. *You're Making Me HOT: Talking High Occupancy Toll (HOT) Lanes with the Denver Public*, Transportation Research Board, Paper 05-1191, 84th Annual Meeting, January 2005.

²²Stockton, W.R.; Grant, C.L.; McFarland, F.; Edmonson, N.R.; and Ogden, M.A. *Feasibility of Priority Lane Pricing on the Katy HOV Lane: Feasibility Assessment*, Research Report 2701-F, Texas Transportation Institute, Texas A&M University, June 1997.

in Colorado, the Mid-State Tollway in Alameda and Contra Costa counties in California, and the Trans-Texas Corridor in Texas. As a result, separating issues of equity from other facility development issues is difficult.

By comparison, a greater amount of data is available regarding the study of equity for recent Value Pricing Program projects. Extensive evaluation efforts of the State Route 91 (express toll lanes) and I-15 (HOT lanes) have yielded significant data. Additional efforts to investigate and document equity issues have been conducted for I-394 (HOT lanes), I-25 (HOT lanes), Tappan Zee Bridge (value pricing), and Leeway toll bridge (value pricing). Some of the more conclusive findings from this body of research are reported below:

1. The Center for Transportation Research at the University of Texas conducted a statewide public opinion assessment of new toll roads, new toll lanes, and HOT lanes in various areas of Texas for the Texas Department of Transportation. In general, a majority of respondents throughout Texas indicated that toll roads were unfair (55 percent), should not be used to finance new roads (51 percent), and should not be used to finance improvements to existing roads (71 percent). Negative perceptions of the fairness of toll roads occurred more often for respondents in areas currently without toll roads (such as Lubbock, Corpus Christi, and San Antonio) than areas with toll roads (such as Houston and Dallas), typically by 10 to 15 percent. Although the negative responses are strong, and indicate a clear public perception issue with the fairness of tolls, it should be noted that Texans favored tolling over fuel taxes in all areas except San Antonio. Finally, although support for tolls on new and existing roads was low, support for HOT lanes was much stronger, with 52 percent in favor.²³
2. The California Polytechnic State University evaluated the user profiles of travelers on State Route 91, an express toll lane, immediately following implementation and opening of that facility. Findings from this evaluation, repeated often to counter criticism of equity and fairness issues in express toll lanes and HOT lanes, indicated that low-income drivers use the express lanes and that they approve of them as much as those of higher incomes. Over 50 percent of commuters with household incomes less than \$25,000 approved of the express toll lane concept on SR 91, again similar to opinions of those with higher household incomes.²⁴
3. A Villanova University study of transponder acquisition on the SR 91 express lanes found an inequitable hurdle for low-income to access the facility due to the unavailability of credit cards, checking accounts, or sufficient cash savings to pay for

²³Podgorski, Kaethe and Kockelman, Kara. *Public Perceptions of Toll Roads: A Survey of the Texas Perspective*, Center for Transportation Research, University of Texas, 2005, http://www.ce.utexas.edu/prof/kockelman/public_html/TRB05PublicResponsetoTRs.pdf, accessed October 9, 2005.

²⁴Sullivan, Edward. *Continuation Study to Evaluate the Impacts of the SR 91 Value-Priced Express Lanes Final Report*, California Polytechnic State University, December 2000, http://ceenve.calpoly.edu/sullivan/SR91/final_rpt/FinalRep2000.pdf, accessed October 9, 2005.

transponder deposits. These barriers become a greater barrier to usage of the facility than trip cost when modeled for lower-income users.²⁵

4. Research efforts for the I-15 HOT lanes included attitudinal and use studies of the existing I-15 HOT lanes, and, stated-preference surveys for the I-15 Managed Lane expansion proposal. Results showed lower-income drivers used the HOT lanes (as toll-payers) less than a normalized model would reflect for the facility, but expressed opinions favorable to the program and to its fairness.²⁶ This attitude was confirmed in an extensive stated-preference survey for the proposed managed lane expansion. This survey found 60 percent of low-income respondents approved of the HOT lane concept (roughly equivalent to the percentage of higher-income respondents), 78 percent of low-income respondents believed the concept of using the lanes for a toll was fair (no statistical difference between income levels), and 75 percent of low-income respondents expressed support for the concept of managed lanes in general (higher than middle-income respondents).

The highest stated desired uses of revenue were:

- Improve all San Diego freeways (31 percent);
- Improve I-15 general purpose lanes (28 percent);
- Improve I-15 express lanes (20 percent);
- Extend I-15 express lanes (15 percent); and
- Add more general purpose lanes to I-15 (12 percent).

Overall, this survey found significant evidence that HOT lanes do not negatively impact lower-income communities.²⁷

1. Researchers at San Jose State University and the University of California at Berkeley investigated equity issues regarding HOT lanes in particular for the Santa Clara Valley Transportation Authority. Their findings indicated that:

²⁵Parkany, Emily. *Environmental Justice Issues Related to Transponder Ownership and Road Pricing*, Transportation Research Board, 84th Annual Meeting, January 2005.

²⁶Supernak, Janusz; Brownstone, David; Golob, Jacqueline; Golob, Thomas; Kaschade, Christine; Kazimi, Camilla; Schreffler, Eric; and Steffey, Duane. *I-15 Congestion Pricing Project Monitoring and Evaluation Services Phase II Year Two Overall Report*, San Diego Association of Governments, May 2000, http://argo.sandag.org/fastrak/pdfs/yr2_overall.pdf, accessed October 9, 2005.

²⁷Redman, Deborah; Norman, Judith; and Wilson, Frank. *I-15 Managed Lanes Value Pricing Project Planning Study Volume 2 Public Outreach*, San Diego Association of Governments, February 2002, http://argo.sandag.org/fastrak/pdfs/concept_plan_vol2.pdf, accessed October 9, 2005.

- Income equity is the most frequently cited equity concern.
 - Geographic equity concerns arise where project benefits and costs have strong spatial patterns or where different constituencies are noticeably segregated. For example, the authors specifically cited an example of proposed HOT lanes in Maryland. Residents who lived closer to Washington, D.C. feared that the toll rate for them to use the HOT lanes would be made higher by the volume of travelers commuting from further out. As a result, they perceived HOT lanes to be inequitable as the proposed lanes would not benefit them (on a cost-per-use basis) as much as it would residents further out from D.C. This is similar to complaints often heard on the city’s Metro rail system – trains already are full by the time they reach the inner stations.
 - Modal equity is a real concern to groups that promote transit, carpools, or other modes. Concerned participants do not believe it is fair to offer the same travel-time savings to those who pay a toll as for those that “do the right thing” by sharing a ride or riding the bus.²⁸
2. For new toll roads and bridges, the World Bank identified toll roads as a way to positively impact equity by supporting infrastructure networks in areas that are less wealthy than others. In order to accomplish these objectives, toll revenues must be redistributed with the expressed goal of aiding less developed areas. Additional ways tolls can be used to benefit equity include financial support and/or lower tolls for targeted communities.^{29,30} This concept is counter to the conventional wisdom in the United States, where there is a strong bias towards the idea that toll revenues should be used within the corridor or area where they were generated.

Addressing Equity Concerns

National experience has shown that equity issues can become a factor in the consideration of proposed toll projects. Often, these concerns may derive from a poor understanding of the potential benefits from tolling. Regardless, careful and deliberate planning may help mitigate equity concerns. As Washington moves forward with the consideration of tolls in the State, planners and policy-makers should address key questions designed to identify:

²⁸Weinstein, Asha and Sciara, Gian-Claudia, November 2004.

²⁹The World Bank. *Review of Recent Toll Road Experience in Selected Countries and Preliminary Tool Kit for Toll Road Development*, Asian Toll Road Development Program, Draft Final Report, May 1999.

³⁰The World Bank. *Toll Roads and Concessions*, unknown date/ongoing knowledge base, http://www.worldbank.org/transport/roads/toll_rds.htm, accessed October 9, 2005.

1) potential equity concerns, and, 2) ways to mitigate those that may occur.³¹ Some of these questions include:

- Are proposed toll facilities located in the areas of highest need?
- Are proposed facilities disproportionately influenced by potential cost recovery?
- Are the distributions of benefits aligned with the principles of environmental justice?
- Are there ways to redistribute revenues to disadvantaged communities?
- Have alternative access options been considered for the facility, such as free use by HOVs or discounted toll rates for low-income households?
- If electronic tolling is included, have issues related to credit cards and account debits been resolved in order to permit the broadest opportunity as possible to participate?
- Are interest and citizen groups properly involved throughout the process of identifying projects and considering the impacts on their communities?

Although no assessment can completely address all potential issues or equity and fairness, the principle of environmental justice requires transportation professionals to evaluate proposed toll projects with an open eye and open mind. Ultimately, no project needs to be unnecessarily delayed or tabled due to issues of equity. Rather, correctly identifying concerns and mitigating them through deliberate action can ensure a win-win solution for project development.

■ Equity of the Current Financing System

Any analysis of the fairness of toll projects needs to consider the fairness of the current system of financing. Washington is one of only four states without an income tax, declared unconstitutional in the 1930s. Given the State's reliance upon property and excise taxes, the State has been criticized for relying on regressive taxes, which place a greater burden upon lower-income citizens. In 2002, the Washington Tax Structure Study Committee found the state taxation system to contain significant inequities: *"The finding for the Washington State tax system is that there are inequities for households and businesses. Washington's tax structure is regressive. The lowest-income households pay 15.7 percent of*

³¹The consideration of equity concerns does not occur within a vacuum. Certainly, any proper policy decision must evaluate concerns in the context of benefits. The discussion of benefits from tolling, unless particular to disadvantaged communities, is a topic of Background Paper #1: The Uses of Tolling.

income for total excise and property taxes, while the highest-income households pay 4.4 percent of income for the same taxes.”³²

One particular criticism from the statewide evaluation was that taxes based upon sales (for which, fuel and vehicles taxes could be included) fluctuate with economic performance, with no correlation to need. As it pertains to transportation, the committee articulated the desire of correlating the payment of fees with those who receive the benefit of services:

Taxes and user fees are different. Taxes are compulsory payments to fund public services, and by definition there is not any necessary connection between those who pay taxes and those who receive services. User fees are charges paid directly by those who receive specific goods or services from government or by those whose activities burden the public.

User fees often make sense, given the public’s increased concern about the level of taxes and the feeling that it is more fair to allocate costs to consumers when users can be readily identified. At the same time, the most important public goods, like schools and libraries, should remain as public goods financed by taxes.

The State should consider shifting a greater share – perhaps the entire share – of all highway and roads costs to motor vehicle users. This could be accomplished by higher gas taxes, tolls, and congestion pricing, or by fees that have an even closer relationship to impacts on our roads, such as weight-and-mileage charges. It would permit a reduction in the property tax. If motor vehicle user fees and taxes covered more of the cost of city and county roads, local property taxes could be reduced and/or shifted to other purposes. User fees also can be effective in allocating costs of environmental protection and clean-up directly to the activities that harm the public’s natural resources.³³

Policy-makers generally consider fuel taxes to be a reasonable proxy for use fees, as the more one travels on the state highway network, the greater the taxes that will be paid. Although fuel taxes do correlate use with payment, they are a “brute-force” tactic that poorly conforms to the actual cost of building, maintaining, and operating facilities at maximum effectiveness.

³²Department of Revenue. *Tax Alternatives for Washington State: A Report to the Legislature*, Washington State Tax Structure Study, November 2002, http://dor.wa.gov/content/statistics/wataxstudy/volume_1.pdf, last accessed November 22, 2005.

³³Ibid.

Examining national trends, a Brookings Institution report identified state gas taxes as only covering one-third of total highway investment revenue.³⁴ Washington reflects this trend, with only 34 percent of all highway funds in 2001 coming from the state fuel tax.³⁵ Even accounting for Federal sources, almost half of all highway revenue in Washington is derived from nongas-tax sources. Thus, highway improvements in Washington are only partially funded by direct user fees.

In addition to overall funding of transportation investments, the fuel tax itself is a poor proxy for the actual *value* of transportation services and resources. As indicated by the Brookings Institution report, and confirmed by other resources, the growth in vehicle miles traveled (VMT) has greatly outpaced the growth in gasoline consumption. Through the 1970s, VMT growth tracked nearly one-to-one in gasoline consumption growth. Starting in the 1980s, though, increasing fuel efficiencies of automobiles and use of alternative-fuel vehicles widened the gap between VMT and gasoline consumption. To the extent that VMT reflects actual use of the transportation system, the fuel tax became less of a direct payment for use. According to the California Policy Research Center in 1999, “The result is that, as less tax revenue per gallon is generated, Americans drive about twice as many miles per gallon; therefore, fuel tax revenues have plummeted when measured per mile of driving. What is more, congestion is worsening throughout the nation as revenues from user fees level off in current dollars and decline in buying power, and decline even more per vehicle-mile traveled.”³⁶

The imbalance between use of highway facilities and payment for those facilities has been manifest in increasing congestion. Congestion reflects a market-based shortage between capacity (supply) and vehicular volume (demand). Provided fuel taxes remain a poor proxy for use, the “price” of using any given highway at any given point in time is set too low relative to demand and supply. Travel-time delay is the unintended consequence from the inability to meet use with payment through fuel taxes. FHWA estimated that auto users only paid 70 percent of their use of highways, with certain classifications of trucks contributing only 40 percent.³⁷ Travel-time delay resulting from the inefficient use pricing not only affects the actual users of highways at the time of use, but also nonhighway users (such as transit riders) and consumers (reflected as an indirect cost of goods movement). Altogether, congestion creates an inequitable consequence – nonusers are penalized by the inability to correctly price users.

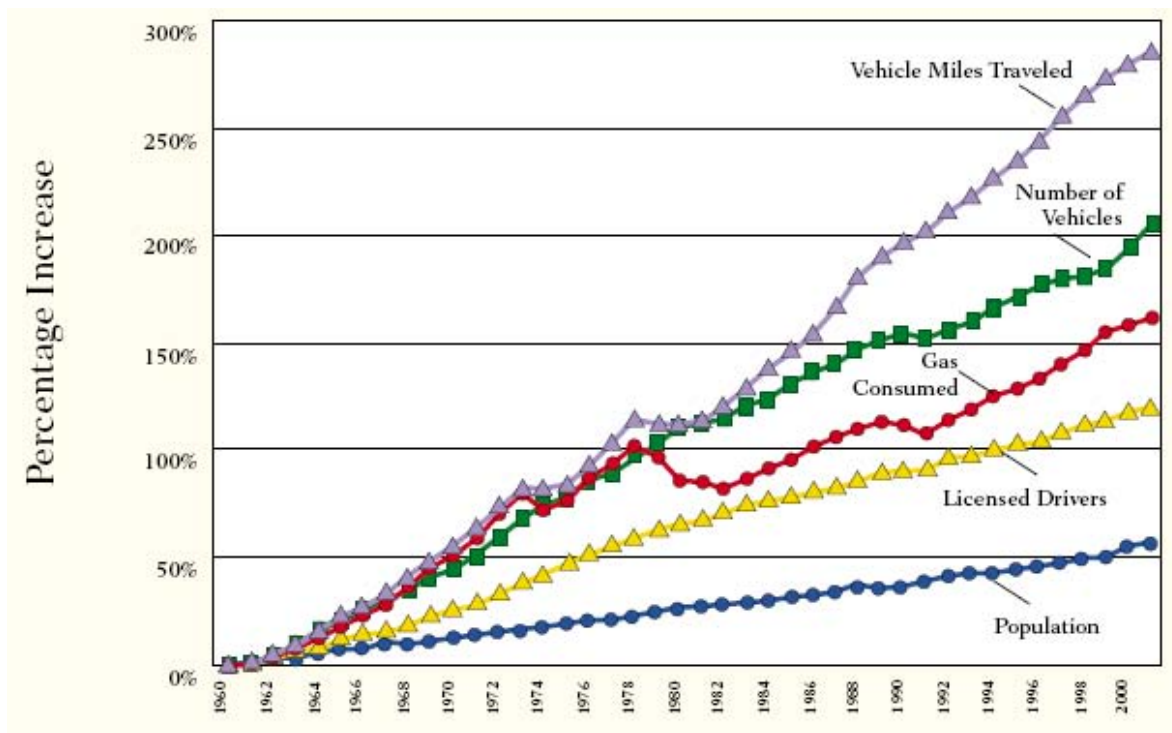
³⁴Puentes, Robert and Prince, Ryan. *Fueling Transportation Finance: A Primer on the Gas Tax*, Brookings Institution, 2003, <http://www.brookings.edu/es/urban/publications/gastax.pdf>, last accessed: November 22, 2005.

³⁵Ibid.

³⁶As reported by: Wachs, Martin. *Improving Efficiency and Equity in Transportation Finance*, Center on Urban and Mobility Policy, Brookings Institution, April 2003, <http://www.brookings.edu/es/urban/publications/wachstransportation.pdf>, last accessed November 22, 2005.

³⁷March, James. *Federal Highway Cost Allocation Study*, Federal Highway Administration, Public Roads, Volume 61, Number 4, January/February 1998, <http://www.tfrc.gov/pubrds/janpr/cost.htm>, last accessed: November 22, 2005.

Exhibit 4.1 Growth in VMT and Fuel Consumption at the National Level³⁸



In the long term, pricing and tolling offer opportunities to address this inequity, best summarized by a separate Brookings Institution paper:

Some argue that congestion pricing discriminates against the poor. Yet the current system of transportation finance is not at all neutral with respect to income, and a system of direct charges for actual benefits gained from using the system is inherently fairer than a complex system of cross-subsidies. For many trips, the proposed approach would lower trip costs compared with the current means of pricing travel...

As recognized in the 1920s, directly charging users at the time and place of use is the fairest and most efficient way of financing transportation systems. A change over time to electronic user fees could correct other inequities in the current system of user charges.³⁹

³⁸Ibid.

³⁹Wachs, 2003.

■ Analysis and Recommendations for Washington

The National Review of Equity and Fairness issues identified five principal types of equity considerations, all related to the *distribution of benefits and costs*:

- **Geographic Equity** – Concerning the distribution throughout the State of Washington. Are improvements distributed in a logical and rational manner, based upon some objective and measurable criteria?
- **Income Equity** – Concerning the distribution upon economically disadvantaged communities. Do improvements negatively impact disadvantaged communities? Are improvements with negative consequences necessary for greater state or regional vitality?
- **Participation Equity** – Concerning the involvement of affected communities in the decision-making process for the distribution. Do disadvantaged communities have a voice in the decision-making process, and, is that voice adequately represented relative to the scale of impact?
- **Opportunity Equity** – concerning the specific distribution throughout the State relative to decision criteria. Are decision-making criteria, such as cost recovery, influenced by secondary affects, such as income status?
- **Modal Equity** – concerning the distribution upon preferred travel behavior. Do activities conflict with public perception for the encouragement of multimodal transportation?

All five equity and fairness issues can pertain to the consideration of toll and pricing concepts. Furthermore, these five issues are not separate from one another. For example, determining what is fair regarding the geographic distribution of toll projects (geographic equity) invariably involves the public participation process, an element of participation equity. In order to minimize confusion, we focus the discussion on geographic and income equity, with the remaining elements covered in the context of these two focus areas.

For proposed toll corridors in the greater Puget Sound region, we have built upon the established project identification, selection, and allocation process already in use in the region, to show how toll corridor selection can conform, where appropriate, to established procedures. By maintaining a consistent and knowable *process* in selecting toll projects, it should be possible to minimize fairness and equity controversy

Framework for Analysis

WSDOT currently has primary responsibility for planning and financing toll facilities in Washington. When particular regions are involved, such as the Puget Sound,

Portland/Vancouver metro area or the Spokane/Coeur d’Alene metro area, then additional agencies may be involved, including the respective Metropolitan Planning Organizations (MPOs), Oregon Department of Transportation (ODOT), and the Idaho Transportation Department (ITD). The specific detail for each corridor and/or selection may be different, but the general process of evaluation outlined in this report will not differ.

The existing planning process provides the framework for analyzing fairness and equity. To the extent toll projects are considered within the normal planning process – a known system with established rules – fairness can be readily evaluated and acted upon by regional and statewide decision-makers. In other parts of the country, fairness concerns in tolling arose precisely because toll decisions were conducted outside the normal planning process.

Many of the projects under consideration are in the Puget Sound region, so our analysis includes a special focus on procedures in that region. Puget Sound Regional Council’s (PSRC) planning process provides the established framework prioritizing transportation investments, though two sources:

- **Vision 2020.** Vision 2020 established that regional transportation resources are to be distributed consistent with a four-part policy direction:
 - Optimize and manage the use of transportation facilities and services
 - Manage travel demand addressing traffic congestion and environmental objectives
 - Focus transportation investments on supporting transit and pedestrian-oriented land use patterns
 - Expand transportation capacity offering greater mobility options
- **Destination 2030.** Destination 2030 provided greater specificity for Vision 2020s direction, through a “*sequence for the development of new facilities: maintaining and preserving what we have, optimizing systems, and investing in capacity.*” Additional principles to guide investment include:
 - The first priority should be to maintain, preserve, make safe, and optimize existing transportation infrastructure and services.
 - Investments should emphasize continuity and complete discrete elements of the transportation system. Completing missing pieces of larger systems is a regional investment priority.
 - Appropriate investments in all modes should be emphasized to provide an array of travel choices.
 - Transportation investments should be directly linked with measurable transportation, environmental and land use outcomes, and should support the achievement of regional and state benchmarks.

- Cost-effective transportation options for addressing identified problems should be demonstrated and implemented.
- Compact development of designated urban centers, high-capacity transit station areas, and other communities should be supported through direct investment.

The planning process in the Puget Sound region serves as the template from which the equity analysis of tolling is applied in the area. Relevant regional planning processes and documents would be utilized as the starting point for equity analysis in other regions throughout the State.

Geographic Equity

Geographic Equity as Reflected by Public Opinion

Geographic equity is guided by public opinion and awareness. Public opinion shapes local policy choices, which are then articulated on the regional level in the pursuit of projects. If a local population believes they are not receiving their “fair share” from Federal and state transportation financing sources, this concern will inevitably be raised with regional, state, and in some cases Federal policy-makers. In the regional and statewide planning processes, geographic equity is one of the principal considerations for Federal and state project selection. Given the desire to apply a consistent project selection process, the existing planning process has a significant role in geographic equity.

Put simply, geographic equity, as manifest in public opinion, addresses two basic types of concerns:

- **Geographic Impacts of Deciding to Toll a Facility** – The public often express concerns about 1) the fairness for charging a toll on one facility, but not another; 2) the use of transportation funding “freed-up” by tolls on a facility; and 3) local accessibility burdened by tolls, which are in turn, addressing regional demand.
- **The Selection Process for Toll Projects** – The public also express concerns regarding the selection of toll facilities and consistency in application and process.

Prior to understanding how tolling and pricing of transportation facilities may detract or enhance geographic equity, it is necessary to understand the fairness of the current distribution of transportation resources. If the general public does not believe the current system is fair, then their evaluation of toll concepts will be influenced by this determination. Toll equity cannot be examined in a vacuum independent of the current distribution of resources.

The first step involves defining *fair* in the regional and statewide transportation planning and financing processes. A dictionary definition of *fair* uses descriptors such as: “lack of favoritism,” “free from preference in judgment,” “dictated by reason,” and “unbiased.” The public may hope for an idealized decision-making process that is applied upon

objectively established criteria, but when transportation funding is limited, some form of preference is inevitable. Even an objective process will have criteria measured by subjective weighting: how much preference is given to regional congestion relief, for example, as opposed to local accessibility?

Basis for Concern on Toll Corridors

Geographic equity has been a key concern on the Tacoma Narrows Bridge project. The legislation directing this study requires the development of “*equitable policies regarding the distribution of financial obligations imposed on those paying the tolls*” and investigation of “*options for reducing the outstanding indebtedness on the bridge project, including... means of spreading the cost of the project more equitably.*” Clearly, if this is an issue on Tacoma Narrows Bridge, it will continue to be an issue anywhere tolling is proposed in Washington.

There has been a considerable amount of market research and outreach conducted recently of Gig Harbor residents and Tacoma Narrows Bridge users.⁴⁰ The prevailing public attitude is that if Bridge users are to be charged tolls to finance a project that benefits them, then other projects in the State should likewise be financed with tolls. In short, this implies that an equitable geographic distribution of toll corridors would involve the identification of toll corridors throughout the State where a definitive need can be determined. However, installing toll projects around the State may not completely satisfy the public attitude towards unfairness. Tellingly, the market research indicates that Bridge users have moved beyond opposition to the project, to trying to negotiate the best deal for them as individual users, including the request for toll buy-downs from the State.



Although the Tacoma Narrows Bridge community has opposed the use of tolls on the bridge, there is historical precedent for tolls in this location. The original Tacoma Narrows Bridge and its successor were financed by toll revenue, as established by the Washington Toll Bridge Authority. Another 13 bridges have been financed statewide by tolls since 1930. Once tolls are in place on Tacoma Narrows Bridge, Kitsap Peninsula travel to and from the east of Puget Sound have to pay a toll, either on

the bridge or on the Washington State Ferries. Interestingly, this pay-for-use is more readily accepted on ferries than on bridges, at least in today’s environment where there are no more toll bridges in Washington.

Like all transportation facilities, the ferries and toll bridges can serve two purposes: accessibility for local trips and mobility for regional trips. Addressing geographic equity

⁴⁰Market research activities are a component of this Interim Report to the Washington State Transportation Commission.

involves examining toll proposals that enhance regional mobility, but have the perceived impact of burdening local accessibility (or, potentially, vice versa). In other words, if a new toll project involves improvements to better serve regional trip-making, local residents may perceive themselves as unreasonably paying for a regional improvement, as they may have no realistic option to avoid the toll. This is primarily a public opinion challenge. Understanding what is acceptable for local communities is ultimately addressing public education and attitudes, and these already will be influenced by the perceived fairness of regional tax dollars distribution for transportation.

Invariably, the issue of geographic equity for all transportation improvements is a matter of political choice: when resources are less than needs, choices must be made. In addressing geographic equity for toll projects, the Statewide Tolling Study is not the appropriate forum to evaluate the fairness of existing political choices. However, it does provide an opportunity to evaluate the geographic distribution of toll corridors based upon the underlying principles of those political choices. To that effort, this section will address the following three questions:

- By what process are current transportation resources allocated?
- Are potential toll corridors allocated in a consistent manner?
- Do toll corridors carry new and significant local concerns?

By What Process are Current Transportation Resources Allocated?

Three levels of geography relate to transportation improvements: 1) statewide, 2) regional, and 3) local. These geographies do not necessarily correspond with the funding source, just the type of project.

Statewide improvements are those transportation facilities and corridors of significant value to either person- or freight-movement between regions. Obvious facilities in Washington include the interstate and U.S. highway network (I-5, I-90, I-82, U.S. 97, etc.) as well as less-obvious state ferry and aviation systems. Statewide improvements generally fall to investments that ensure efficient and effective travel throughout the State of Washington. Although many (if not most) state residents will never directly use the specific improvement corridor, especially if outside the interstate network, the secondary effects of improvements on goods and person movement will be realized throughout regional and local economies.

Related in purpose to statewide improvements, but whose benefits are primarily identified within confined areas, *regional* improvements involve transportation facilities that enhance person and goods movements within a prescribed region. Certainly, many regional improvements will benefit residents outside of the region, much as statewide improvements do. However, the intent of regional improvements is to benefit travelers and freight movement for trips within the region. These trips will likely extend across multiple jurisdictions, but be contained within the extended regional area.

Local improvements rarely involve the broad mobility enhancements of statewide and regional improvements. Rather, these improvements offer local accessibility to regional and statewide corridors. Wholly contained within one or two jurisdictions, local improvements will provide a service or facility whose benefits are likely tendered to the residents or businesses within a short distance of that facility.

All three types of transportation improvements are important to the public, yet the funding mechanisms for these improvements are relatively discrete. Federal and state funds are generally applied to regional and statewide improvements (with exceptions), and local funds are generally applied to local improvements (again, with exceptions). Generally, the public does not understand these distinctions. For example, a resident may equally desire improvements to local and regional facilities – and believes a decision for both comes from the same “pot” of funding (e.g., “my gas taxes”). This can lead to equity-related questions that may not be appropriate to the scope of project, leading to inappropriate comparisons, such as: “it’s not fair” that community X on the opposite side of town has congestion-free arterials when my arterials are clogged daily (local versus local fairness, viewed under an incorrect regional-lens).

As illustrated in the example, the public perception dilemma with fairness is not easily addressed within the context of only one or two of the geographic applications – what may be perceived by the implementing agency as a fair distribution of regional or statewide resources may not be viewed as fair by residents. However, the existing system of funding transportation improvements requires this geographic separation.

The consideration of toll corridors primarily involves the consideration of regional and statewide improvements. As a result, the context of improvements should address regional and/or statewide mobility and efficiency.

Policy Basis of Distribution

Altogether, fairness in transportation finance, with a new layer of toll financing, can be simplified to three fundamental categories of questions for application on a geographic scale. These questions remain at the forefront of the planning process, and equally involve the consideration of tax- or toll-financed projects:

- **Current Allocation of Benefits and Costs** – As any decision-making process involves some allocation of preference, is the current system of distribution based upon a selection system that is *applied* in a just and consistent manner with transparent and measurable criteria? Is there an opportunity for input into this selection process?
- **Future Allocation of New Benefits** – Is the allocation of new project concepts (in the context of this study, toll corridors) likewise based upon a selection system that is applied justly and consistently? Is the selection process compatible with the existing system? Again, is there an opportunity for input into this selection process?
- **Future Allocation of New Burdens** – Are there statewide or regional needs that are unjustly ignored or penalized in the consideration of the new project concepts? Are

local communities, who may be dependent upon regional facilities for local access, unjustly financing regional improvements for their access? Or, is the burden for the regional improvement shared throughout the region? And, has the previous distribution of statewide and regional resources for local accessibility potentially offset this concern?

As applied in Washington, statewide improvements are identified by the appropriate agency (WSDOT) and financed using state and Federal funds. Planning for statewide facilities involves the adoption of the Washington Transportation Plan (WTP) – a 20-year planning horizon document. Three-year funding programs of projects included in the WTP are completed by the Statewide Transportation Improvement Program (STIP). The STIP and WTP identify a variety of transportation improvement projects with activities, including preliminary engineering, right-of-way acquisition, operations and other service implementation, and construction.

The process for project identification involves a decision-making process that is refined and updated through public comment:

WSDOT uses a priority programming process that first identifies needs for a 20-year period that can be accomplished within financial constraints. This is done through the State Highway System Plan (HSP). In order to be eligible for programming, a need must be first identified in the HSP. The needs contained in the HSP do not have start dates and can occur anytime during the 20-year period. The HSP is updated every two years and defines service-level objectives, action strategies, and costs. It includes an extensive public involvement process. From the HSP, a six-year implementation plan is developed. The Six-Year Plan is constrained to the investment level for a three-biennium period and is used in the budget development process. Only the first two years of the Six-Year Plan contains specific projects. The last four years contains funding levels for the different programs. Projects are then included for programming in the two-year budget from the Six-Year Plan.⁴¹

Of significant note, all improvements included on the National Highway System (NHS), including Interstate and U.S. highways, are selected and prioritized by WSDOT even if the project has a regional application. This includes construction, maintenance, and bridge projects. WSDOT receives the NHS allocation of funding in the STIP, providing a compensatory amount to regional entities from the Surface Transportation Program (STP). For any highway or bridge project that is designated for improvement, WSDOT prioritizes improvements based upon, “*available revenues and cost/benefit analyses. Each subprogram uses benefit/cost methodologies applicable to the specific subprogram. From the list of Benefit/Cost (B/C) prioritized projects, the Transportation Commission selects a mix of projects providing the*

⁴¹Washington State Department of Transportation. *Statewide Transportation Improvement Program 2005–2007*, Section I: Introduction, <http://www.wsdot.wa.gov/TA/ProgMgt/STIP/STIPHP.htm>, last accessed: November 20, 2005.

greatest net benefit to transportation users. This prioritized program is submitted biennially to the Legislature for funding authorization and is included in this STIP.”⁴²

Regional improvements are identified by the appropriate agency, such as the regional Metropolitan Planning Organization (MPO) or Regional Transportation Planning Organization (RTPO). Each regional entity provides regionally significant projects from the Metropolitan Transportation Improvement Programs (MTIP) to the STIP. As a result, the STIP reflects both regional and statewide improvements. The MTIP not only reflects regionally significant highway and bridge improvements, but also local accessibility projects (using Federal or state sources of revenue) that include local funding. As most of the proposed toll corridors under active discussion are in the Puget Sound region, we reference PSRC’s MTIP process for the remainder of this section.

PSRC is responsible for the distribution of STP, Congestion Mitigation Air Quality (CMAQ) and Federal Transit Administration (FTA) funding. These categories comprise the facility improvements typically associated with regional enhancements, in addition to NHS improvements identified by WSDOT. PSRC refines its project selection criteria every two years, concurrent with the adoption of the TIP in the following year. For the 2005-2007 Regional TIP, PSRC established the following process:

The PSRC coordinates a shared regional/countywide process to recommend and select projects to receive STP and CMAQ funds. The total estimated STP and CMAQ funds are split between the regional and countywide forums based on a preapproved funding split, and competitive processes are used by the forums to identify and recommend projects to receive the funds, as follows:

- Regional Process – The PSRC’s Regional Project Evaluation Committee (RPEC), with support from the PSRC, is responsible for coordinating a Regional Project Competition to identify and recommend projects to the Transportation Policy Board (TPB) to receive the regional portion of the STP and CMAQ funds.
- Countywide Processes – The four countywide forums are responsible for coordinating countywide project competitions to identify and recommend projects to the TPB to receive the countywide portions of the STP and CMAQ funds.⁴³

⁴²Ibid., Section III: Consistency with Statewide Plan.

⁴³Puget Sound Regional Council. *Policy Framework for the PSRC’s Project Selection Process*, Section: PSRC’s STP and CMAQ Funds, <http://www.psrc.org/projects/tip/selection/2005/2004policyframeAmend4.05.pdf>, last accessed: November 20, 2005.

Transportation Funding as Applied

The policy basis for statewide and regional transportation funding indicates a process that is identifiable, compatible with preestablished criteria, and offers an opportunity to comment and revise consistently over time. The next step reviews how resource allocation has occurred in practice.

One common concern cited by many within the Puget Sound region is that the region already is a net-donor of transportation funding to the State. Recent study by PSRC indicates this is correct, with an average return of only 91 percent. Furthermore, particular counties within the region contribute an even greater net share of revenue to the State than the region in abstract.

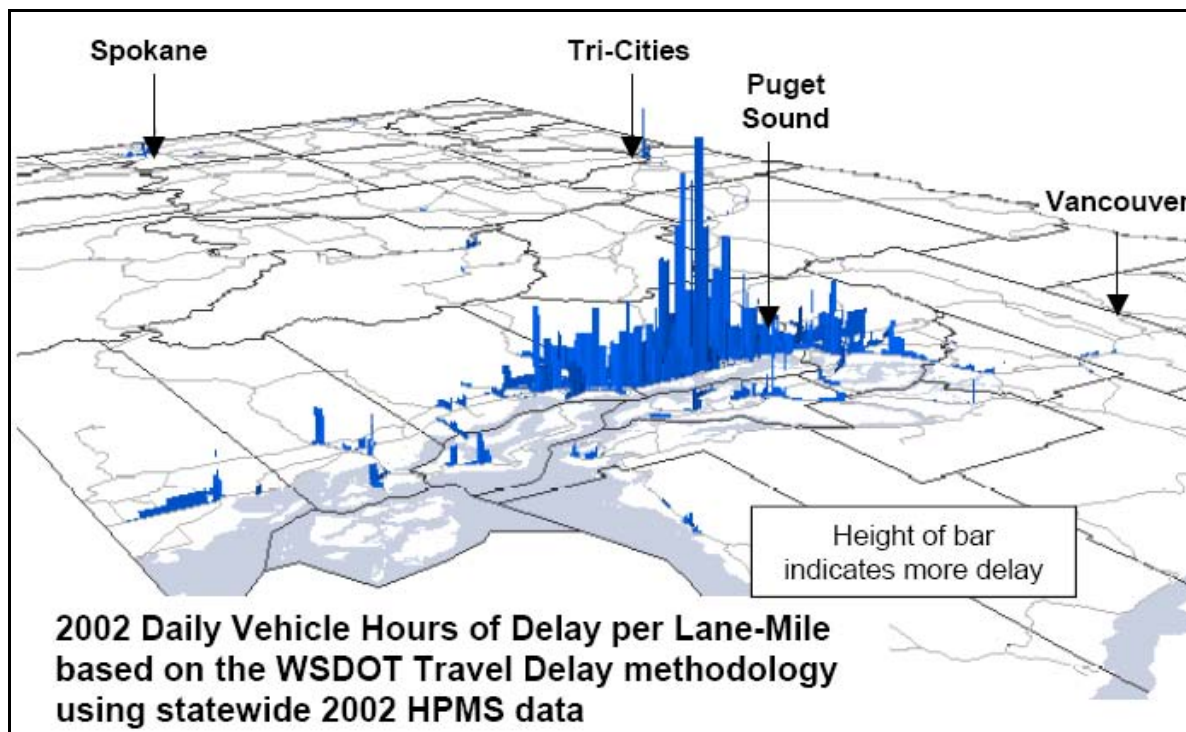
If the region already is not receiving its “fair share” from tax revenue, tolls then represent an additional cost on the region. However, the elimination of the Motor Vehicle Excise Tax (MVET) revenue from statewide funding indicates highway and ferry program funding also will decrease. PSRC identified the dilemma facing the region from the imbalance between need and known funding:

[This places a greater] reliance upon operating revenues, sales tax, and other (general tax) sources. The data also shows a declining reliance upon fuel taxes and vehicle registration charges (as proceeds shrink against inflation), as well as revenues from taxes on vehicle value (a result of the elimination of the statewide motor vehicle excise tax). These changes are structural, and are expected to continue to be reflected in future data. These changes are resulting in an increasing reliance upon funding sources that fluctuate with regional economic performance. This has both positive and negative implications. Sources that track with economic performance grow at the same time that the expanding economy puts greater general demands upon infrastructure investment. On the down side, these revenues do not necessarily match the demand driven investment needs that are specific to individual transportation facilities. In addition, fluctuations in economic performance create greater fiscal uncertainty, and suggest the need for different approaches to agency-level fiscal management. And in the mid- to long range, the nature of urban transportation needs (large capital projects in physically constrained urban environments) may require new finance instruments that free public agencies from the limitations of a pay-as-you-go investment approach.⁴⁴

This approach is not as simple, though, as it may otherwise appear. As the Puget Sound region accounts for the greatest percentage of statewide population, and, economic activity, statewide investment in the Puget Sound region is high, but so is congestion (see Exhibit 4.2).

⁴⁴Ibid.

Exhibit 4.2 Statewide Congestion⁴⁵



Altogether, this implies that regional need is high. Even with a 100 percent return to source of statewide funds, it is unlikely that funds would be sufficient to meet needs. *Destination 2030* indicates over \$100 billion in needed transportation investments, yet even a 110 percent distribution would not even account for 10 percent of the projected shortfall. Furthermore, *Destination 2030* already shows an increasing reliance on nonstate funds, with only 11 percent of all regional transportation funds derived from the State.⁴⁶

In short, new funding sources have been identified as necessary in order to resolve Puget Sound regional mobility needs. Sufficient funding is unlikely to come from the State, even with a “more equitable” distribution of revenue from the source.

⁴⁵Puget Sound Regional Council. *Destination 2030 Update: Congestion, Mobility, and System Efficiency*, September 14, 2005, <http://www.psrc.org/projects/mtp/presentations/congestion.pdf>, last accessed November 20, 2005.

⁴⁶PSRC. *Transportation Finance 1989–2000*.

Are Potential Toll Corridors Allocated in a Consistent Manner?

Destination 2030 identifies six financial principles for funding the shortfall between needed facilities and anticipated revenues. Four of these principles are directly relevant to tolling:

1. New revenue sources must bear a relationship to system cost and system use;
2. System financing must be sustainable;
3. New financing tools or changes to the financing structure should strive to simplify and add flexibility to the overall structure; and
4. Ensure a reasonable rate of return on revenues raised within a region, for investments within the region.⁴⁷

Of particular note in Destination 2030 is a policy declaration to “promote transportation financing methods that are based on use, and help optimize system efficiency with the long-term goal of introducing variable roadway pricing.”⁴⁸ This is coupled with a caution that tolls can have a “punitive [effect], penalizing travel without offering substantially improved mobility.”⁴⁹ This caution is less grounded in transportation economics (which would argue in favor of social utility as a result of system management) than it is in public opinion (which views tolls without a means of avoiding tolls as punitive).

As an application of public opinion, the Tacoma Narrows Bridge project provides valuable data. A public vote of approval for the Tacoma Narrows Bridge expansion project has indicated support for tolls for system finance amongst those who were included in the voting area.⁵⁰ Pricing for system management, except for High-Occupancy/Toll (HOT) lanes where tolls extend use to new vehicle classes, has been generally opposed nationwide. It can then be argued that tolls are acceptable when they improve reliability and offer new options.⁵¹ As indicated in the ETC Market Survey Research conducted in February 2005, in the case of the Tacoma Narrows Bridge improvement, public concern is more about how toll financing of the bridge may be freeing up tax revenue for projects elsewhere.

⁴⁷PSRC. *Destination 2030*, Chapter 6: Finance.

⁴⁸Ibid.

⁴⁹Ibid.

⁵⁰It should be noted that criticism of the Tacoma Narrows Bridge project has included concern that the election boundaries were not representative of the users of the bridge.

⁵¹Podgorski, Kaethe; and Kockelman, Kara. *Public Perceptions of Toll Roads: A Survey of the Texas Perspective*, Transportation Research Board, Paper 05-1857, 84th Annual Meeting, January 2005.

Destination 2030 answers the concern about revenue reallocation through its proposed use of new toll-based revenues for projects of regional and statewide significance: “Investments in new or expanded state highways could in part be financed through user fees other than the statewide gas tax. This is a finding supported by the Blue Ribbon Commission Final Report. Use-based financing of new capacity will require regional implementation of these new financing tools.”⁵² This policy guidance establishes three important precedents: 1) that new capacity could be financed *in part* by use fees coupled with gas tax; 2) new and expanded facilities are equally eligible; and 3) that pricing should be implemented regionally. It should be noted that this policy does not establish a procedure or preference for regional implementation, but simply a policy option for the region.

Applying this policy guidance, prospective toll projects should be derived only from improvements of regional significance appearing on the *Destination 2030* plan. As tolling and pricing concepts can change the operations and design of facilities, it is not as important to discuss the specific implementation as identified in the plan, as it is to identify how the toll corridor achieves the mobility enhancements that serve as the foundation of the project in the plan. The purpose of this effort is not to identify the specific project selection process, but to underscore that the process itself conforms to the established regional planning process.

Do Toll Corridors Carry New and Significant Local Concerns?

Certain corridors identified in the *Destination 2030* plan require significant resources to address transportation deficiencies. Although a regional nexus may be present for the toll facility, local perceptions of equity may be exacerbated if that toll corridor is viewed as “the only option” for residents or users. A toll corridor will be fair for local users if they:

1. Are impacted to a similar degree as regional users; or
2. Have received a net increase in mobility options.

For the case of Tacoma Narrows Bridge, Gig Harbor residents previously expressed concern regarding the fairness of use fees (tolls), for the bridge expansion (especially if one does not account for state improvements to the highway on either side of the bridge). These residents will use the bridge frequently, so there is an anticipated exacerbation to existing travel options – that the toll is a *new* cost. However, Tacoma Narrows Bridge also serves Kitsap County residents. Previously, Kitsap County residents could either travel via ferry (which requires payment of a use fee) or use the Bridge. Gig Harbor residents, although on the same side of the Sound as Kitsap County residents, had a built-in advantage insofar as the bridge was a convenient and less expensive alternative than the ferries. Tolls on the bridge can be considered as balancing the responsibility of Kitsap County (“impacted to a similar degree” criterion). Furthermore, the Bridge satisfies the second criterion (“net increase in mobility options”) as the expansion provides new

⁵²PSRC. *Destination 2030*, Chapter 6: Finance.

capacity and travel options (through the extension of HOV lanes) consistent with Destination 2030.

For a toll project to be geographically fair, the local social cost of paying a toll should be similar to the regional social cost. As proposed toll corridors are identified on major regional corridors, specific implementations that enhance travel options are preferable. Toll corridors also may improve local system efficiency, even if travel options are not enhanced by the toll. The local social cost of paying the toll should reflect the extent local system efficiency improvements create a net benefit on the community.

In short, there are no easy answers to what is fair from a geographic perspective. As stated at the beginning, selecting any project (tax- or toll-financed) involves a political choice. Therefore, the framework for choosing projects must be consistent and the process fair, which has been outlined here. What this means is that any toll policies that might emerge from this study should be carried out statewide, and incorporated into the larger project development and selection process.

Income Equity

Unlike Geographic Equity, the analysis of which is primarily in the realm of public opinion and policy setting, Income Equity analysis is based within the principles of environmental justice. Following Federal and state action since 1964, fundamental policy-making principles have been articulated for environmental justice:

1. To avoid, minimize, or mitigate disproportionately high and adverse human health or environmental effects, including social and economic effects, on minority populations and low-income populations;
2. To ensure the full and fair participation by all potentially affected communities in the transportation decision-making process; and
3. To prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority populations and low-income populations.⁵³

Earlier, we identified key questions pertaining to the potential effects of tolling upon lower-income and poverty-stricken communities, consistent with the application of environmental justice. For toll projects, the particular question is whether payment of a toll may be an additional cost. The evaluation needs to consider the net benefit or net cost of the toll itself upon these communities; the access to the system because of the ability (or lack thereof) to pay a toll; and available alternatives to paying the toll.

⁵³Federal Highway Administration. *Questions and Answers on Environmental Justice and Title VI*, <http://www.fhwa.dot.gov/environment/ejustice/facts/index.htm>, accessed October 9, 2005.

Toll projects are not necessarily negative for low-income populations. Particular situations in which toll projects avoid negative impacts upon low-income populations include:

1. **Toll projects create a positive spillover effect on adjacent facilities** – If demand management through tolling creates net-localized or net-systemwide benefits to traffic, congestion, and mobility, low-income travelers may benefit from toll facilities even if they never actually paid the toll charges. This scenario typically occurs in capacity enhancement projects, but also can occur in system management toll applications.
2. **Lower-income situational value of time is higher than the prevailing toll charge** – As witnessed on SR 91 in California, low-income drivers use and benefit from the toll facilities because their situational value of time sometimes exceeds the toll charge. For example, qualitative research on SR 91 indicated that low-income, working, single parents had a high value of time in the p.m. peak period, when the threat of overtime charges at day care facilities was greater than the prevailing toll charge. In this situation, lower-income travelers still have a net financial benefit from the use of the facility. Situational value of time comes into play more often for lower-income travelers than higher-income travelers, as the willingness to pay may depend upon certain travel situations only.
3. **Toll projects provide an enhancement of mobility options** – The principles of environmental justice ensure that benefits are not reduced or delayed. In the situation of toll projects that enhance mobility options (such as advancing new regional capacity for travel-time savings or extending modal benefits), the net effect is positive regardless of the mechanism of payment, provided the alternative (existing) options are not harmed by the enhancement. HOT lanes are almost always a net enhancement, provided existing benefits to carpools and vanpools are maintained, accessibility is not made more difficult, and travel times are sustained on the HOT lane facility.

New toll roads also may be net enhancements; however the key comparison here is the proposed funding and development situation without the use of toll charges. The net present value of the facility with tolls should be compared side-by-side with the net present value of the facility without tolls constructed at a later date.

Conversely, particular applications of tolling which hold the prospect of burdensome impacts on lower-income communities include:

1. **Toll projects which do not ensure accessibility to the facility, independent of ability to pay** – One pervasive concern of income equity in toll projects is the use of electronic tolling. To the extent that electronic tolling completely replaces cash-based transactions, then the criteria necessary to obtain an account undergoes scrutiny for disproportionate effects. If mechanisms are embraced that minimize hardship (such as ability to obtain transponders for a minimal cash outlay – without need for credit cards or checking accounts for validation), then these concerns become moot.

2. **Toll projects on existing capacity** – There may be situations whereby tolling existing capacity or infrastructure is prudent for policy-making, such as building revenue for rehabilitation, or managing system capacity. However, these situations could lead to burdens on low-income communities when the traveler’s cash outlay needed to use a particular facility increases. Even though pricing may improve overall system effectiveness (such as spreading peak periods and reducing congestion), and thereby deliver net economic benefits to society at large, the out of pocket cost to low-income travelers may far outweigh their own value of time. Hence, the price to use the facility is a net cost on the low-income traveler in this scenario.
3. **Projects that jump to the head of the priority queue because of toll revenue** – Cost recovery from tolls is one of the primary reasons to pursue toll-financed projects. However, it also is the clearest path to disproportionate harm to lower-income communities. To the extent that traffic and revenue models use income as a component to willingness to pay, then it is likely toll projects adjacent to or contained within higher-income communities will show greater cost recovery than lower-income communities. In these scenarios, projects are chosen not so much for overall need as they are an ability to pay to meet improvements. If a project in a low-income community could significantly enhance mobility, but is passed by due to cost recovery concerns, this is a net cost on the low-income community.

To evaluate these circumstances, three analytical questions have been identified:

1. How are lower-income communities defined?
2. What are the net effects upon mobility for lower-income communities?
3. How is system accessibility addressed in toll projects?

How are Lower-Income Communities Defined?

The standards established in the environmental justice context prevail when discussing income equity. PSRC uses two approaches for defining and measuring communities by income in the Puget Sound region:

The first is a measure of poverty status from the 1990 Census. This analysis examines census block group data to understand spatial patterns of poverty concentration. Within the central Puget Sound region, 9.3 percent of all persons were under the poverty threshold in 1989. The second measure is regional median household income – which was estimated to be \$52,335 in 1997, using a Regional Council model to update 1990 Census data. This analysis examines census tract-level estimates of household median income when comparing income levels to the regional median. Low-income populations are identified as census tracts where the median household income is at or below 50 percent of the regional median.⁵⁴

⁵⁴PSRC. *Destination 2030*, Appendix 2: Environmental Justice.

PSRC's analysis indicates that low-income populations are concentrated in Seattle, Tacoma, and Everett.

What are the Net Effects upon Mobility for Lower-Income Communities?

Destination 2030 provides a graphical representation of impoverished block groups and lower-income census tracts, consistent with the definition above, relative to regional transportation improvements in the 30-year plan (2001-2030). For each measure (poverty and income), there are two corresponding infrastructure analyses – roadway improvements and transit facilities. Of particular note in the plan is the correlation between rapid transit facilities and areas of lower-income populations. PSRC argues this shows a positive benefit to environmental justice, as these facilities not only address regional mobility needs but also connect lower-income communities with employment opportunities.

The consideration of tolling and pricing in any given region requires a similar analysis for that of transportation infrastructure allocation. Following a similar analysis, we must consider the net effect of tolling on lower-income communities. Do investments enable disadvantaged residents to more efficiently and effectively access opportunities for income advancement? Are existing costs addressed through the allocation of facilities and/or revenues? To answer these questions of income equity, we must understand the nature of the type of toll proposed. The impacts for these general classifications will differ. General guidance by type of project include:

- **New Facility Tolls** - provide a mobility option that currently does not exist. Provided the facility itself is warranted and meets geographic equity analysis, the only question that pertains to mobility is how toll operations affect the community's mobility options and efficiency.
- **Truck Only Toll (TOT)** - The concept of a TOT lane is to help reduce traffic and congestion *in* the general purpose lanes. This objective is counter to the prevailing wisdom of High-Occupancy Toll (HOT) lane facilities, where the express lane is viewed as a traffic relief option *from* the general purpose lanes. The basis for the TOT lane policy is the perspective that by consolidating truck and freight operations into a separate facility, vehicular throughput on the general purpose lanes is benefited to a degree greater than simply the difference in vehicular density. If TOT operations are shown to reduce traffic and congestion in the general purpose lanes (of which users will include lower-income travelers), while maintaining or improving net economic cost to freight movement, then TOT operations would likely be a net positive action for general-purpose lane users.
- **High-Occupancy/Toll (HOT)** - HOT lanes with free access to HOV users provide a new mobility option for avoiding congestion within a corridor, with little or no effect on general-purpose lane users. Provided HOT lane operations enhance HOV lane operations, with no net harm to HOV lane users by the increased travel on the facility, then HOT lanes provide a new mobility option without detriment. Furthermore, to

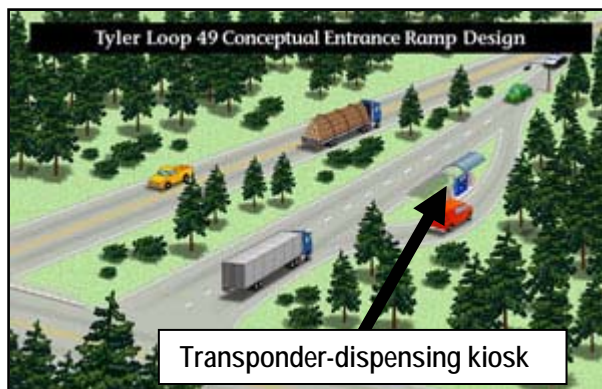
the extent that HOT lane revenues can be used to pay for more corridor-based services (such as improved transit services, park-and-rides, or operational improvements), this will only further extend the equity to lower-income communities.

- **Express Toll** – Express Toll lane (ETL) concepts involve charging all users for use of the lanes. The principal purpose of ETL is congestion relief and revenue generation. ETL analysis and net impacts will differ significantly, depending upon the specific proposal. For example, if the ETL involves new capacity construction, then the net effects of TOT and New Capacity tolls apply. If an ETL also involves the conversion of an HOV lane, the loss of free use of the HOV lane constitutes a loss of congestion relief for those unwilling to pay the toll. Although capacity enhancement will have occurred in this corridor, the loss of a mobility option today may constitute a social cost on lower-income communities. However, as with any toll project, the use of revenue can offset impacts. For example, if ETL revenues advance the construction of new transit facilities or enhance transit services (such as Bus Rapid Transit), then lower-income community affects may be minimized, depending upon the nature and routing of the services.
- **System Management Tolls** – System management tolls involve tolling all users to a facility in order to reduce congestion and enhance throughput. Like ETL tolling, system management tolls have too many variables to generally classify the concept as a net benefit or net cost to lower-income communities. For example, if tolls may be avoided through the use of HOV3+ and transit modes of travels, net mobility may be improved – either through a reduction in congestion as an SOV or HOV2 user, or, as an HOV3+ user with toll avoidance. However, if the value of time for lower-income travelers is significantly less than the prevailing toll charge and there is an economic cost to carpool formation, even HOV3+ use without toll may still yield a net cost on lower-income communities. It also should be noted that as indicated in public research, any applications of tolling on existing nontolled, general-purpose lane capacity is extremely controversial and rarely successful.

How is System Accessibility Addressed in Toll Projects?

In addition to the ability to access and use toll facilities, addressed as a mobility question above, system accessibility is an important consideration in income equity. For this purpose, “system accessibility” is defined as the specific procedures employed for toll payment. For most of the proposed toll corridors, electronic toll collection will be the primary method for toll payment. However, as indicated in the national research, barriers to the acquisition of transponders and toll accounts constitute a social cost to lower-income communities. These barriers include the requirement to maintain checking and/or credit card accounts for automatic debits, or even the outlay of a substantial volume of cash if automatic debits are not mandated. To many lower-income households, these barriers are significant.

WSDOT has opted to use the “eGo” tag for the Tacoma Narrows Bridge. A relatively inexpensive transponder option, this technology selection allows WSDOT an opportunity to address system accessibility concerns. The Texas Department of Transportation selected the eGo tag for a small-city toll road, partially due to the fact it can be dispensed without human interaction and can be done with minimal cost. Through the use of in-road kiosks and/or retail outlets, travelers can obtain an account with a minimum of \$20.00 cash, with no requirement to register or provide any additional financial information. For communities along toll corridors, WSDOT could decide to make a similar acquisition policy, or even reduce the initial cost of acquisition. Either way, WSDOT has the ability to overcome this concern through its selected technology.



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