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THE CTR PERFORMANCE GRANT PROGRAM:
STRENGTHENING THE PROGRAM'S STRUCTURE AND MARKET

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16. ABSTRACT

Through the Commute Trip Reduction (CTR) Performance Grant program, the Washington State Department of Transportation (WSDOT) is breaking new ground by testing whether the state can obtain transportation capacity by purchasing single occupant vehicle trips as well as roadway infrastructure. WSDOT hired a research team at the Evans School of Public Affairs to examine the program's design and market structure to identify ways both could be modified to better achieve program goals.

The research team determined that WSDOT is a true innovator in seeking ways to increase capacity and reduce congestion, but that the CTR Performance Grant program could be more effective if WSDOT clarified whether its primary goal is trip removal or innovation. Furthermore, the state could more easily remove high impact trips from the transportation system if the program focused more narrowly on peak hour trips in high-use corridors.

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EXECUTIVE SUMMARY

The Commute Trip Reduction (CTR) Performance Grant (PG) program is breaking new ground in testing whether the Washington State Department of Transportation (WSDOT) can obtain transportation capacity by purchasing single occupant vehicle (SOV) trips as well as roadway infrastructure. The Performance Grant program awards one-year grants on a competitive basis to private employers, public agencies, nonprofit organizations, developers, and property managers who offer financial incentives to reduce the number of single-occupancy vehicle commute trips taken by employees and tenants. WSDOT's launching of the Performance Grant program in 2004, which moves away from a traditional grant-making format toward paying for actual results, makes it a national trip reduction innovator.

WSDOT hired a research team at the Evans School of Public Affairs to examine the program's design and market structure to identify ways both could be modified to better achieve program goals. The research team analyzed the program's purpose and structure, examined trip reduction markets, researched different strategies for pricing a removed trip, considered performance measures, and created recommendations for strengthening the program.

Program Purpose and Structure

The Performance Grant program is intended to

- purchase avoided SOV trips from willing sellers
- attract entrepreneurs to trip reduction by offering profit opportunities
- encourage development of innovative trip reduction strategies.

The Performance Grant program has a grant program's process and a market's emphasis on performance, but as currently formulated, the program's legislation, rules, and communications emphasize the grant structure over the market structure. Program participants are confused about the program's purpose and are uncertain whether it is designed to test innovative strategies or to reduce trips. 2004 participants shied away from proposing risky, innovative trip reduction strategies because funding was contingent on performance. Hence,

an internal tension exists that dampens the potential of success of either innovation or trip reduction.

Trip Reduction Markets

Through the Performance Grant program, WSDOT is breaking new ground by trying to create a market that the agency can use to purchase trips from willing sellers, such as profit-seeking entrepreneurs in the private, non-profit, and public sectors. The research team determined that two types of trip reduction markets are possible:

- a single-buyer market, in which there is one buyer and multiple sellers
- a private trading market, in which there are multiple buyers and sellers.

The Performance Grant program is a small-scale, single-buyer market. When WSDOT buys roadway infrastructure, it does so through a large-scale, single-buyer market. Two other market models for removing trips could be employed in the future:

- a trip capacity market: a large-scale market that combines WSDOT's two single-buyer markets—trip reduction and infrastructure—into one market that requests bids for capacity from both supply-side and demand-side sellers
- a trip-trading market: a market exchange in which multiple buyers and sellers purchase trips that have been limited through regulation.

Trip Price

WSDOT currently sets one price ($460) for any trip removed within the state. In order to remove the highest impact trips from the system, WSDOT should consider targeting trips along high-use corridors. The research team found three possible approaches to setting trip price:

- establish trip value on the basis of the tolling rate required for congestion reduction
- set trip value on the basis of the cost of building additional infrastructure
- set trip value on the basis of the number of needed trip reductions and available funding.

Program Measures

The current PG measure of performance is the number of SOV trips removed. In the first PG rounds in 2004, participants committed to remove 5,000 trips. However, this single measure does not enable managers and policy makers to know what, if any, progress is being made toward increasing trip capacity or reducing congestion in the metro areas and transportation corridors where the problems exist. The CTR-PG does not include any performance targets to manage to or measure against. Program measures could be related to two existing state benchmarks tailored to metro or corridor areas: non-SOV trips taken during commute periods and per capita vehicle miles traveled (VMT). Key congestion points on state highways could be monitored for change due to PG activity.

Recommendations

On the basis of the findings listed above, the research team created a series of recommendations for future rounds of the Performance Grant program. Those recommendations are as follows.

Program purpose and structure

- Clarify the CTR Performance Grant program purpose by separating support for innovation from support for SOV trip removal.
- Emphasize markets and market signals in legislation, process, and communications.
- Use a bidding process rather than an application process.
- Buy trips over multiple years.
- Identify and target likely trip sellers within organizations (the chief financial officer rather than the employee transportation coordinator).

Trip reduction markets

- Emphasize the program's single-buyer market structure.
- Use the Performance Grant program to move toward a trip capacity single-buyer market.
- Focus the program on areas where the transportation system needs additional capacity.

Trip price

- Allow variation in trip value according to the time, distance, and location of a commute trip.
- Remove price caps and instead allow sellers to bid for trips removed.
- Focus trip removal efforts on high-use corridors.

Program measures

- Develop measures that probe whether the program is achieving its intended impact.
- Set targets to manage for and measure results. Relate program targets (SOV trips removed) to metro or corridor-wide results (increased roadway capacity and/or reduced emissions).

I. INTRODUCTION

The Commute Trip Reduction (CTR) Performance Grant program is breaking new ground in testing whether the Washington State Department of Transportation (WSDOT) can obtain transportation capacity by purchasing single occupant vehicle (SOV) trips as well as roadway infrastructure. First proposed by the CTR Task Force, the program's aim is to create a market for trip reduction in which WSDOT pays trip sellers for the capacity they create on the highway system by removing commute trips.

Among programs in state departments of transportation (DOTs), the Performance Grant program stands alone as the only program trying to involve the state in a market for avoided trips. Conversations with experts in transportation demand management (TDM) and a survey of other state DOTs suggest that transportation planners around the country are looking to learn from the Performance Grant experience.

Program Background

In 2003, the Washington State Legislature created a skeleton for the Performance Grant program and charged the CTR Task Force with fleshing out the details in administrative rules. Rather than spending several years perfecting the program's design, the CTR Task Force "fast-tracked" development, focusing on creating a simple program that could be implemented quickly. The Task Force's aim was to get the program going as soon as possible, and then perfect it over time with the benefit of experience. Less than a year after passage of the authorizing legislation, WSDOT offered the first round of performance grants.

The Performance Grant program awards one-year grants on a competitive basis to private employers, public agencies, nonprofit organizations, developers, and property managers who offer financial incentives to reduce the number of single-occupancy vehicle commute trips taken by employees and tenants. "Financial incentives" are policies, procedures, capital investments, or payments intended to provide employees and tenants with a financial gain if they commute by modes other than SOV.

Grantees are awarded funds on the basis of the number of SOV trips their financial incentives eliminate. The award amount is determined on the basis of trip price—a monetary value assigned to the avoided trip—multiplied by the number of trips that the project will remove. Trip prices are proposed by the grantee in the application process up to a maximum amount set by WSDOT. Grantees are eligible to receive up to 50 percent of the award during the grant period to cover start-up costs. The balance of the award is based on performance. In other words, the remainder is awarded on the basis of the number of trips the grantee succeeds in eliminating. If the grantee removes 100 percent of the estimated trips, the organization receives the full award. If the grantee removes only 75 percent of the trips, the organization receives 75 percent of the award. Performance is determined by before-and-after surveys of employees' commute patterns.

WSDOT awarded two rounds of Performance Grants in April and June 2004. In total, WSDOT accepted 32 projects, which aim to eliminate over 5,000 commute trips. Avoided trips were purchased at prices ranging between $56 and $460, the maximum price allowed. The average trip price was $296. Grantees from the 2004 rounds must remove the trips by June 2005 to meet the grant's performance requirement.

Study Overview

Demonstrating an early commitment to learn from its experience with the Performance Grant program, WSDOT hired a research team at the Evans School of Public Affairs to analyze the program's structure just six months after the award of the first grants. WSDOT asked the research team to examine the program's design and market structure to identify ways both could be modified to better achieve program goals. To focus the inquiry, the study's scope of work put forward these broad questions:

- Is there a market for avoided trips?
- Is the CTR Performance Grant program addressing that market and is it structured to create such a market?
- Do the existing price signals and priorities of the CTR Performance Grant program target areas with the most roadway congestion?

- Do potential market participants understand the CTR Performance Grant process? Do they participate? What would encourage understanding and participation?

To answer these study questions and others that arose during the course of study, the research team

- examined the Performance Grant program's authorizing legislation, administrative rules, and application process to analyze the current design of the program
- surveyed program participants and potential participants to understand how the program was perceived and received, as well as grantee performance to date
- investigated market structures in order to understand what types of trip reduction markets are possible
- researched potential trip pricing systems to understand how WSDOT could use price to target congested areas with the greatest capacity needs
- convened individuals with expertise in transportation programs to provide feedback on the program's structure and market.

Report Overview

This report organizes the research team's findings into four areas: program structure and purpose, trip reduction markets, trip price, and program measures. Following a discussion of the findings, the report offers recommendations on ways to strengthen the Performance Grant program.

Section II discusses the Performance Grant program's purpose and structure. It identifies three purposes presented during the program's creation, and it suggests that the program's structure has both grant and market characteristics but that the grant elements are predominant. The section also notes that many Performance Grant participants do not understand the program's purpose and process. Finally, it highlights guidance provided by the study's advisors at a Roundtable discussion.

Section III takes a look at trip reduction markets. It examines the market structures that are well suited to trip reduction and identifies the Performance Grant program's market structure. The section also explores what other market options exist for trip reduction.

Section IV looks at trip price. It identifies methods for calculating trip price and probes whether the buyer or seller should set the price of an avoided trip. The section also examines how trip price can be used to target congested areas where WSDOT wants to buy roadway capacity.

Section V discusses program measures. It examines what the Performance Grant program's current measures are, what alternatives exist, and how the measures can be used to assess progress toward WSDOT's desired outcome.

Section VI recognizes the innovation in the Performance Grant program and recommends ways the program and its market can be strengthened to better achieve WSDOT's goals. The section organizes its recommendations into four parts, which parallel the sections of findings outlined above.

Attached to this report are four appendices, which provide more detailed findings from the study. Appendix A is a summary of results from a survey of program participants. Appendix B is a summary of the study's Roundtable Discussion, which convened experts to analyze the Performance Grant's purpose, structure, and market. Appendix C is a technical memo describing methods for calculating trip price. Appendix D is detailed review of the Performance Grant's existing legal mandates and program structure.

II. PROGRAM PURPOSE AND STRUCTURE

What Is the Purpose of the Performance Grant Program?

The Performance Grant's authorizing legislation does not have a "purpose" section, but the program's purposes can be gleaned from a survey of its history and communications. Understanding the purpose is important because it helps us analyze the program's design and determine whether that design does what WSDOT wants it to do. The history outlined below reveals that the Performance Grant program was motivated by the CTR Task Force's desire to try market-based trip reduction strategies. The survey of program communications reveals that the program also grew out of the Legislature's desire to promote innovation in trip reduction.

The Performance Grant program grew out of a desire to create a trip reduction market

Since the passage of the CTR Act in 1991, Washington State has worked to remove trips from the highway system. The CTR Act focuses on removing trips by encouraging local jurisdictions and large employers to develop plans that motivate employees to commute in ways other than driving alone. Looking to expand the state's trip reduction tools, the CTR Task Force suggested that the Legislature develop other strategies for removing trips from the state's highway system. One recommended strategy was directly involving the state in trip removal by creating a market in which it could purchase avoided trips from willing sellers. The willing sellers, the CTR Task Force presumed, would be entrepreneurs who saw a profit opportunity in removing trips from congested roadways.

The Task Force posited that creating opportunities to profit from removing trips would provide a strong incentive for entrepreneurs to invest in trip reduction and would create private sector interest in removing trips where additional roadway infrastructure is prohibitively expensive. In addition, the WSDOT staff noted that involving the state in market transactions would provide a direct link between state investment and removed trips and would provide an opportunity to test whether measurable capacity can be created through trip reduction.

In its 2001 Legislative Report, the CTR Task Force recommended that the State Legislature create a trip reduction market that would allow WSDOT to buy removed trips from entrepreneurs.[1] In 2003, acting on this recommendation, the Legislature enacted RCW 70.94.996, which created a performance-based grant program to fund projects that offer financial incentives to commuters to switch from SOV travel.

From this history of the program's development, we can identify two purposes for the Performance Grant program:

1. enable WSDOT to purchase avoided trips from willing sellers
2. attract entrepreneurs to trip reduction by offering profit opportunities.

The Performance Grant program was created to test innovative trip reduction strategies

A survey of WSDOT's Performance Grant communications materials suggested a third purpose, which is not mentioned in the Task Force's earlier recommendations. In fact, it is the only purpose described in program communications. The website states that the Legislature created the Performance Grant program to

3. "Encourage and test innovation" in trip reduction strategies.[2]

Identifying a program's purposes is an important part of analyzing it. With the backdrop of purpose, this section looks at the program's structure and signals, participants' understanding of the program, and advisors' guidance from the Performance Grant Roundtable.

What Is the Performance Grant Program's Structure?

The Performance Grant program's structure has been characterized two ways: as a market and as a grant program. The operation and aims of grant programs and markets are often in tension. Grant programs give monetary awards to projects that advance the goals of the grant maker (e.g., innovation), and the awards are not necessarily contingent upon achieving specific results. Markets allow buyers to purchase goods, and purchase is always contingent on receipt of the good.

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[1] See *2001 Report to the Legislature*, Commute Trip Reduction Task Force, available at: http://www.wsdot.wa.gov/TDM/tripreduction/download/CTR_Report_01.pdf

[2] See *Guide to CTR Performance Grants*, Washington State Department of Transportation, available at: http://www.wsdot.wa.gov/TDM/program_summaries/pg_guide.cfm

The tension between grant and market structures can be seen in the Performance Grant program's design, and also in its name. On the one hand, the program is a typical *grant* program: it awards grants to organizations that submit proposals. On the other hand, the program buys *performance*: grantees are not paid for the projects they run but for the trips they remove. In short, the Performance Grant program has a dual structure: it has a grant program's process and a market's emphasis on performance. But, as the following discussion explains, the grant structure predominates.

The program's legislation, process, and communications all point to a grant program

Starting with the authorizing legislation's title, nearly all signals embedded in the Performance Grant program's design suggest that it is a grant program, not a market. The Performance Grant's legislation is titled a "Grant program for ridesharing." The legislation calls the program a "performance-based grant program" and mentions grants six other times in its text. By contrast, the legislation makes no mention of a market, nor of buying or selling trips.

The legislation's emphasis on grants is also seen in the program's process, laid out in WAC 468-60-010. The administrative rules describe a traditional grant application process: WSDOT requests proposals describing projects that will reduce trips. A selection committee reviews the project proposals on the basis of grant criteria that measure the merit of the proposed projects, and it funds the projects that best fit the criteria. Here too, there is no mention of markets, nor of trip buyers or trip sellers. In fact, the administrative rules detail "what kinds of projects will be funded" rather than what types of trips will be purchased.[3] Furthermore, nothing in the administrative rules suggests that applicants can make a profit from trip reduction.

The grant structure is further emphasized by WSDOT's written communications describing the program. Readers of the website learn about a grant program and find answers to questions that a grant seeker would have about funding amount, project details, and selection criteria. The website's overview of the program never mentions markets or the fact that WSDOT wants to be a buyer of trips. It does not talk about the program's history or the Task Force's interest in attracting

[3] WAC 468-60-101 (4) (2004).

entrepreneurs to trip reduction. There is no guidance on how to calculate the value of an avoided trip, nor any mention that profit is possible.

Readers of the legislation, administrative rules, and program communications would never get the impression that the Performance Grant program is a market that allows WSDOT to buy avoided trips from willing sellers. Grantees would likely see an opportunity for project funding. Profit-seeking entrepreneurs would likely not see the program as a business opportunity.

The performance requirement point to a market, but award of start-up costs sends mixed signals

Though described as a grant requirement, the program's performance requirement is a signal of a market. Grantees are not paid for the projects they run but are paid for the number of trips they reduce. In paying only for the trips that are actually removed, WSDOT is creating a market in which it purchases trips rather than funds programs. However, the Performance Grant program also reimburses grantees for start-up project costs of up to 50 percent of the award, regardless of the number of trips removed. Understandably, the start-up cost provision was developed to mitigate the risks that inherently accompany trip reduction. However, the provision sends a mixed signal: WSDOT is a funder of projects half the time, and a buyer of trips the other half of the time.

Do Participants Understand the Performance Grant's Purpose and Structure?

One of the questions posed in this study's scope of work is: Do potential participants understand the Performance Grant process? The research team found that participants and potential participants not only do not understand the program's process, but more fundamentally, they do not understand its purpose.

The study team sent electronic surveys to every organization that applied for a Performance Grant in 2004, as well as to a number of organizations that had not applied. The research team received responses to the survey from more than half Performance Grant applicants and responses from a quarter of those organizations that had not applied.

The purpose of the electronic surveys was to explore whether current and potential participants understood the program's purpose and process. Results from the electronic survey are

summarized below, and a more detailed summary is attached in Appendix A. In the following discussion, the term "participants" includes both organizations that received a 2004 Performance Grant and those that applied but did not receive a grant. "Potential participants" are CTR worksites that did not apply for a Performance Grant.

Participants saw themselves as program applicants not trip sellers

Participants saw the performance grants as a *government grant program* to encourage innovation in trip reduction rather than as a *market* in which they could sell avoided trips to WSDOT. Some participants noted that they heard mixed messages from WSDOT about whether the program gave grants or bought trips. The application process followed a traditional grant program format, but verbal communication from CTR staff suggested that the program was supposed to be a market for WSDOT to purchase trips.

Participants saw the grant as a way to strengthen their CTR programs not as a way to make a profit

Almost universally, participants said that they were motivated to apply for a performance grant out of a desire to strengthen their CTR programs and meet their employee transportation needs. Most participants said they did not understand that grant funding could be used to make a profit for the organization. Of those participants that did understand the potential for profit, very few organizations said it was a motivating factor in applying for the grant.

Participants were uncertain about how to set trip price

Participants said they heard mixed messages from WSDOT regarding how to set the value of an avoided trip. The grant criteria prioritized proposals that removed the most trips at the lowest cost, meaning that, all else being equal, proposals with the lowest trip value would be funded. However, communications from CTR staff told participants that requested funds could exceed program costs. Some participants were torn over whether to propose the lowest possible value or build a cushion into their estimates.

Judging by many participants' anxiety over the grant's performance requirement, it appears that a number of participants established their trip price by dividing program costs by the estimated number of trips their program would remove. This method makes sense in applying for a traditional grant program, but it is more problematic in applying for funding contingent on performance. Some

participants are now worried they will not be able to cover all of their incurred costs because of less-than-expected performance.

Participants felt a tension between the program's dual emphasis on results and innovation

The grant announcement and application encourage proposals that offer innovative trip reduction strategies, yet most of the grant criteria and the performance requirements prioritize results—removed trips—over innovation. Participants noted that innovation involves a significant risk of failure. Because funding was contingent on trip removal, most participants opted for less risky, and less innovative, trip reduction strategies that offered more certainty of success.

Participants feel that the one-year grant period is inadequate to ensure success

A number of grantees said that trip reduction programs work best with significant planning. Grantees that did not have programs already designed before the performance grant announcement expressed concern that they will not be able to complete their project during the one-year grant period. Some grantees noted that they did not have enough time to flesh out the details of their programs during the application period, which caused them to delay program start-up by several months.

Most potential participants did not know about the Performance Grant program

Of potential participants that responded to the survey, over half did not apply for a performance grant because they were unaware of the program. Others said that they had found out about the program too close to the application deadline. One potential participant said his organization did not apply because he felt the application process was too onerous. Another indicated that her organization did not apply because she did not believe her organization could be successful at removing trips. Yet another participant indicated that his organization was only interested in complying with the minimum requirements of the CTR law.

What Guidance Did Roundtable Advisors Offer on Program Purpose and Structure?

The study team, in collaboration with WSDOT, held a Performance Grant Roundtable Discussion to receive feedback and advice from individuals with expertise in trip reduction, transportation program design, and market structures. Roundtable participants represented public,

private, and non-profit organizations working on TDM, real estate development, transportation choices, business administration, and market development. To distinguish roundtable participants and program participants, this report refers to roundtable participants as "advisors."

At the Roundtable, the study team presented the findings from its program analysis and electronic survey and invited the advisors' feedback on program design and market structure. Relevant portions of the Roundtable Discussion are summarized below, and a more detailed summary of the discussion is provided in Appendix B.

WSDOT should clarify program goals

During the discussion, a number of advisors raised the question: What is WSDOT trying to accomplish by creating a market? They noted that they were asked to comment on how to create a market without hearing why a trip market is necessary. They encouraged WSDOT to examine what end it is using the market to accomplish. Does the agency want to reduce trips? Does it want to encourage innovation? Advisors suggested that the program's structure will look very different depending on its ultimate goal. Results-based trip reduction might be best accomplished through a market, but innovation might be best encouraged through a traditional grant program.

Innovation should have its own program

The advisors agreed that WSDOT should promote innovation and results in its trip reduction efforts, but they felt that the two aims should be encouraged in separate programs. The current Performance Grant program, with funding contingent on performance, rewards results and discourages risk. And while trip reduction can happen alongside innovation, it is not guaranteed. Participants recommended eliminating the innovation emphasis in the Performance Grant program, but they encouraged WSDOT to create a second program that provides incentives for organizations to try risky, innovative trip reduction strategies.

Performance Grant opportunity should be marketed to trip sellers, not grantees

Roundtable advisors noted that within any organization some individuals will see the Performance Grant program as another grant opportunity, and others will see it as a business opportunity. For example, Roundtable advisors suggested that WSDOT market the program to a chief financial officer (CFO) rather than an employee transportation coordinator (ETC). CFOs are

more likely to see the program as a business opportunity in removing trips, whereas ETCs are more likely to see it is as a grant to strengthen their transportation programs.

If the intent of the CTR Performance Grant program is to create a market, program design should resemble a business transaction, not a grant application

Roundtable advisors encouraged WSDOT to streamline program requirements as much as possible and recommended that WSDOT consider making the Performance Grant program a bid process.

One-year trip purchases will not entice entrepreneurs to be sellers

Participants noted that profit-seeking entrepreneurs are not likely to enter a new market for a one-year opportunity because most business opportunities require significant upfront expenditures, which are gradually recouped over several years. They encouraged WSDOT to consider extending the timeframe of the purchase. For example, WSDOT could agree to buy 5,000 trips over a three- to five-year period. The advisors recommended three to five years because it is long enough that most businesses will be able to project a profit, and it is short enough that WSDOT could reasonably expect to guarantee funds for that period. They also encouraged WSDOT to consider whether it could be a ten-year trip buyer. Ten years would give sellers the opportunity to develop long-term trip reduction strategies, such as land-use changes, that may result in more sustainable trip reduction.

Trip sellers may be motivated by factors other than profit

The advisors pointed to types of applicants in the first two rounds to demonstrate that profit-seeking entrepreneurs are not the only trip sellers. They encouraged WSDOT to probe its assumption that profit-seeking entrepreneurs should be the primary target sellers. Organizations are motivated to sell trips to WSDOT for a number of reasons; for example, trip reduction may be part of their organizational mission, or they may want to serve the needs of their employees.

Summary of Program Purpose and Structure Findings

- The Performance Grant's history and communications reveal three purposes for the program:
    1. enable WSDOT to purchase avoided trips from willing sellers
    2. attract entrepreneurs to trip reduction with profit opportunities

3. encourage development of innovative trip reduction strategies.

- The Performance Grant program has a dual structure: it has a grant program's process and a market's emphasis on performance. But, the program's legislation, rules, and communications emphasize the grant structure over the market structure.
- Purposes 1 and 2—purchasing avoided trips and attracting entrepreneurs—are best accomplished with a market structure, such as bidding, because the markets provide an efficient economic mechanism for selling removed trips. Purpose 3—encouraging innovation—is best done with a grant structure because grants reduce the risks that often inhibit innovation.
- Program participants are confused about the program's purpose. They are uncertain whether it is a program to test innovative strategies or a program to reduce trips. 2004 participants shied away from proposing risky, innovative trip reduction strategies because funding was contingent on performance.
- Most participants think that the Performance Grants are part of a traditional grant program to strengthen CTR programs, rather than a market in which WSDOT buys avoided trips.
- Not all willing sellers are profit seeking; trip sellers can be motivated by factors other than profit, such as mission or employee needs.
- A market-based program should be marketed to likely trip sellers, not likely grantees.
- A one-year grant period limits grantees' chances for success and dissuades entrepreneurs from getting involved in trip reduction.

III. TRIP REDUCTION MARKETS

Is There a Market for Avoided Trips?

Through the Performance Grant program, WSDOT is breaking new ground by trying to create a market that the agency can use to purchase trips from willing sellers, such as profit-seeking entrepreneurs. One of the core aims of this study was to determine whether a trip reduction market is possible.

As University of Washington business professor Ted Klastorin has explained, markets come in all shapes and sizes. There is no single definition of a market. Instead, the word "market" is a general term used to describe many types of economic structures in which buyers and sellers exchange goods and services. Markets can be informal, like a neighborhood lemonade stand, or formal, like the New York Stock Exchange. Therefore, a trip reduction market exists pretty much any time someone removes a trip in exchange for something of value.

Having identified that trip markets can exist, the next logical inquiry is: what types of market structures are best for negotiating agreements for removing trips? During the course of this study, the research team identified two market structures that have potential for buying and selling commute trips: 1) a single-buyer market and 2) a private trading market.

A single-buyer market is a market in which only one buyer reviews offers from multiple sellers. The single buyer decides how many trips will be purchased and at what price. As discussed below, WSDOT operates in a single-buyer market when it buys highway infrastructure, and the Performance Grant program is currently structured as a single-buyer market.

A private trading market is a market in which multiple buyers and sellers use an exchange to negotiate the purchase of a good. The price of the trip is determined by the intersection of the good's supply and demand curves. In recent years, national and international trading markets have been created as a way to regulate air emissions. Buyers purchase emission credits from sellers through an emission exchange, an organization much like a stock exchange.

Both of these market structures are explored further in the following sections.

Is the Performance Grant Program a Market?

The Performance Grant program is a single-buyer market

Although couched in grant terms, applicants offer to sell trips to WSDOT—the only buyer—by proposing trip reduction programs and projecting the number of trips the program will eliminate. In turn, WSDOT buys $1.5 million worth of the offered trips by paying grantees for the trips they remove. WSDOT ensures that it buys trips rather than funds programs because grantees are not paid for program costs (as is typical in grant programs) but are paid only for the trips that they remove.[4] Although the "good" that WSDOT buys through the Performance Grant market is avoided trips, the agency's ultimate aim is to obtain roadway capacity by freeing up space on existing roadways.

The Performance Grant program is a small-scale market

During 2004, WSDOT agreed to pay $1.5 million for just over 5,000 avoided commute trips at an average price of $296 per trip. With millions of commute trips statewide each day[5] and a 2005-2007 WSDOT capital budget of $2.4 billion, the Performance Grant program is a small market testing whether organizations and individuals will offer avoided trips to WSDOT.

The Performance Grant program is not WSDOT's only single-buyer market

The agency also creates a single-buyer market when it buys additional roadway capacity through infrastructure improvements. WSDOT, as the only buyer of roadways, requests bids for a specific construction project to which multiple sellers respond. Like the Performance Grant market, the purpose of the infrastructure single-buyer market is to obtain roadway capacity. The "good" that WSDOT buys through the infrastructure market is additional roadway space, which expands the capacity of Washington's transportation network.

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[4] As discussed in Section II, the program's emphasis on the purchase of trips is diminished somewhat by the provision that WSDOT will reimburse grantees for program costs up to 50 percent of the award amount, regardless of trip reduction performance.

[5] A precise estimate of daily commute trips in Washington State does not exist. However, estimates from the Washington State Department of Employment Security on the number of state jobs and the United States Census on the number of workers who telecommute suggest that there are at least 4 million commute trips taken daily statewide.

What Other Market Options Are Possible for Trip Reduction?

A trip capacity market

A trip capacity market would combine WSDOT's Performance Grant trip market and its infrastructure market into one large-scale, single-buyer market. In both markets, WSDOT purchases roadway capacity. Through the Performance Grant market, the agency buys demand-side capacity solutions, which remove trips from the existing transportation system. In the infrastructure market, WSDOT buys supply-side capacity solutions, which expand the transportation system.

Some transportation planners have suggested that state DOTs ought not look at demand and supply capacity solutions separately, as they currently do by separating infrastructure and trip reduction programs. Planners have suggested *least cost planning* as a way for state DOTs to bridge the gap between demand and supply solutions. Least cost planning is a resource planning tool that considers demand management strategies that remove trips on equal footing with supply strategies that increase infrastructure capacity. Least-cost planning suggests that public agencies such as WSDOT should examine the costs and benefits of both demand and supply strategies, and select the strategy that is most efficient and cost effective.

A *trip capacity market* would be the result of least cost planning principles applied to the market world. It would be a bidding process that allowed both supply-side sellers of infrastructure and demand-side sellers of avoided trips to compete for the same people-moving capacity project. In order to combine the Performance Grant and infrastructure markets, WSDOT's transportation capacity needs would have to be defined in terms of trips. For example, WSDOT might decide it needed capacity for an additional 10,000 daily commute trips on a specific corridor. Using a combined single-buyer market, WSDOT would request bids that provided the needed capacity, accepting proposals that either removed existing trips or added roadway space.

A trip capacity single-buyer market is an ambitious, long-range goal because of challenges in comparing supply-side and demand-side solutions. Nonetheless, it is a market solution worth investigating further. Transportation planners have found least-cost planning difficult to implement because of disparities in the certainty and longevity of the benefits between demand-side strategies and supply-side strategies. For example, if WSDOT builds an additional lane on a corridor, it can

expect that the lane will provide its capacity for many years. By contrast, if WSDOT buys existing trips off a corridor, it has no guarantee that the trips will stay off the corridor in the future, or that the removed trips are trips that actually contributed to the corridor's congestion. The challenges standing in the way of a trip capacity market are the development of models that predict with relative certainty the capacity benefits of a trip removed and the existence of ongoing funds to keep a trip removed over time.

A private trip-trading market

A private trip-trading market is an exchange in which multiple buyers and sellers purchase avoided trips from one another. Currently, no private trip-trading market exists in Washington State. In fact, to our knowledge, no private trip-trading market exists anywhere. A private trading market for trips could be modeled on the work done recently by national and international environmental regulatory agencies, which are attempting to manage air pollution through private emissions-trading markets. The environmental agencies provide each business with a set number of emission credits, which allow the business to emit a specific amount of air pollutants. Businesses then buy or sell emission credits on the basis of whether their output is below or above the base amount.

Creating a private trading market for a good requires that the good have value. A good's value is usually determined by its scarcity, meaning that demand exceeds supply. In the emissions trading world, emissions are scarce (and thus have value) because of government-regulated caps on the amount of air pollutants each business may produce.

A private trip-trading market would require scarcity of SOV trips. Under present laws, there is no trip scarcity because SOV drivers are allowed to take as many trips as they wish during a year, and thus have no need to buy additional trips. A private market for trading trips would become possible only if there were a cap on the number of SOV trips each vehicle could take, likely achieved through governmental regulation. Possible regulatory mechanisms include limits on the number of miles traveled annually by the vehicles, limits on the number of trips that land-use developments may produce, and limits on parking.

At the Performance Grant Roundtable, the advisors cautioned against pursuing a trading market at this time. They cited political and legal hurdles in setting caps on commute trips, uncertainty about whether private trading of trips would result in the desired congestion relief, and open questions about whether emissions trading markets have been a useful strategy for managing air pollution. In addition, a private trip-trading market would require significant technical investment to monitor trips.

Summary of Trip Reduction Market Findings

- Two types of trip reduction markets are possible:
    1. single-buyer market, in which there is one buyer and multiple sellers
    2. private trading market, in which there are multiple buyers and sellers.
- The Performance Grant program is a small-scale, single-buyer market
- WSDOT buys roadway infrastructure through a large-scale, single-buyer market.
- Two other market options exist for removing trips:
    1. trip capacity market: a large-scale market that would combine WSDOT's two single-buyer markets—trip reduction and infrastructure—into one market that requested bids for capacity from both supply-side and demand-side sellers
    2. trip-trading market: a market exchange in which multiple buyers and sellers would purchase trips that had been limited through regulation.
- A private trip-trading market faces significant legal, political, and technical challenges, and is not recommended at this time.
- A trip capacity single-buyer market is difficult to implement because of uncertainty about the capacity benefits of trip reduction, both in the short and long term, but should be investigated further.

IV. TRIP PRICE

What Approaches Can Be Used to Set Trip Price?

A number of factors must be balanced when the value of an avoided trip is established. There is a symbiotic relationship between the amount of available funding, the number of trips to be removed, the efficacy and method of establishing price caps, and the role of market forces. WSDOT currently sets one statewide cap for all trips removed based on the efficient tolling rate of highways in the Puget Sound region. This study examined other trip valuation methods that WSDOT could consider for future rounds of the Performance Grant program. Possible models are outlined below.

Establish trip value on the basis of the tolling rate required for congestion reduction

This approach suggests that the most appropriate means of setting trip value is based on the toll amount drivers would pay to drive under reduced congestion. In its most pure form, this model proposes that different people would set a different value on their trip on the basis of a number of variable criteria, including time of day, commute distance, and the geographic area of the commute trip. This model helped form the underlying thinking behind the current Performance Grant pricing structure, although it was greatly simplified in an effort to create one statewide price cap.

Set trip value on the basis of the cost of building additional infrastructure

This model argues that trip values should be based on the costs associated with building additional capacity. This model would not incorporate the costs of existing capital infrastructure because that is already a sunk cost. Rather, it would incorporate the costs of building additional capacity and then determine trip value on the basis of the number of *peak users* in the corridor. According to this model, non-peak users should not be used in determining value because they are not creating the need for additional capacity.

Set trip value on the basis of the number of needed trip reductions and available funding

The City of Bellevue and King County identified the value of a trip removed by using a very simple formula: they determined the available budget they had for trip reduction and divided that

amount by the number of trips they sought to reduce. While this method did not use free market supply and demand to set the trip price, it was successful at removing the desired number of trips. It is a simple method for valuation, but it allowed Bellevue and King County to achieve their ultimate goal, which was removing a specific number of commute trips from local roadways.

Should the Value of a Trip Be Capped?

Once an approach for price setting has been determined, WSDOT must consider what role, if any, price caps should play. There are three different approaches to capping prices.

Set one cap statewide

Under current practice, there is one cap ($460) for trips removed anywhere in the state. All trips removed, regardless of location or commute distance, are given the same value. When the value of trips is established, there is an inherent tension between efficient and variable valuation on the one hand, and simplicity on the other hand. The current system sacrifices any variability in terms of geography and distance for the simplicity of one uniform, statewide price cap.

Create variable caps depending on the time, distance, or location of a commute trip

A variable cap, as its name suggests, would allow for price variation depending on the time of day, the distance of the commute trip, and the location of the commute trip. WSDOT could establish two or more price caps that targeted different commuters. A peak-hour commute trip could be valued more highly than a non-peak trip; a 20-mile commute could be valued more highly than a 5-mile commute; and travel within the central Puget Sound region could be valued more highly than travel in much smaller communities.

The risk of introducing any variability into the pricing structure is that it also introduces complexity. Accordingly, adoption of this model would have to maintain a significant element of simplicity to ensure that commuters and grantees understood the price structure clearly. One means of achieving this simplicity is to only target peak-hour trips within certain geographic areas. The value of a non-peak trip in a rural location would likely be so low that it would not warrant inclusion in the Performance Grant program.

Remove all caps and let market forces set the value of a trip removed

If WSDOT wants the CTR Performance Grant program to truly operate in a market-driven environment, one option is to remove the notion of the price cap entirely. During the application process, bidders could simply identify the value *they* assign to given removed trips, and WSDOT could offer performance grants to the lowest qualifying bidders. Removing the cap would eliminate non-market driven price signals and would maximize the economic efficiency of the program. This option would likely require changes to the Performance Grant's authorizing legislation.

See Appendix C for more information on and discussion of trip valuation models and methods.

Should WSDOT Use Trip Price to Target Congested Areas?

The CTR Performance Grant program currently valuates all removed trips within the state of Washington equally, as outlined above. Given that some areas are significantly more congested than others, the net result of this is that some trips are removed from areas with roadway congestion, but other trips are removed from roadways without congestion. If WSDOT's aim is to buy capacity by selling trips, it is not necessary to remove trips from uncongested roadways. More simply, by casting a wide geographic net in paying for trip removal, the state is paying for capacity in some roadways where there is already an abundance of capacity.

WSDOT could remove the highest impact trips from local roadways by specifically targeting congested regional corridors. By employing regional targeting, WSDOT could remove trips in the most congested urban areas of the state. Corridor targeting would allow WSDOT to have an even greater impact within a more targeted area. The Performance Grant program could identify one or two highly congested roadways and seek to remove trips exclusively in those locations. Not only might this help achieve the greatest impact in congestion reduction, but it could also help WSDOT achieve the most measurable results. Targeting trips on congested corridors would likely not require changes to the Performance Grant's authorizing legislation, but it would require changes to the associated administrative rule.

Summary of Trip Price Findings

- Three different approaches can be employed to set the value of a trip:
    - Establish trip value on the basis of the tolling rate required for congestion reduction.
    - Set trip value on the basis of the cost of building additional infrastructure.
    - Set trip value on the basis of the number of needed trip reductions and available funding.
- There are three different approaches to capping prices:
    - Set one cap statewide.
    - Create variable caps depending on the time of day, distance, and location of a commute trip.
    - Remove all caps and let market forces set the value of a trip removed.
- In order to remove the highest impact trips from the system, WSDOT should consider targeting trips along congested corridors.

V. PROGRAM MEASURES

What Is the Performance Grant Program's Current Measure?

The current measure for each project funded by Performance Grants, and the aggregate measure for the Performance Grant program as a whole, is the number of SOV trips removed from Washington State roadways during peak hour commute periods. In 2004, the Performance Grant program will remove an estimated 5,000 commute trips from state highways.

This measure is useful as a means of assessing performance for individual Performance Grant-funded projects, but by itself it is not a complete measure for determining whether the program is affecting the state highway system as intended. This section looks at ways WSDOT can develop performance measures that target the overall impact that WSDOT hopes to achieve from the Performance Grant program. A review of the program's history and structure suggests that the intended overall impact of the Performance Grant program is adding capacity where it is needed (i.e., congested regions and corridors) by removing trips.

Are Additional Measures Already Collected by WSDOT?

Other measures to assess the Performance Grant program's success can be found among the Washington State Transportation Benchmarks. Two benchmarks may prove particularly useful in relating individual program/activity performance to the aggregate result of increased trip capacity and less congestion on the roadway. These benchmarks are 1) non-SOV trips taken during commute periods and 2) per capita SOV vehicle miles traveled (VMT).

Do Statewide Measures Focus WSDOT's Efforts on Areas of Needed Capacity?

Trips removed, non-SOV trips taken, and per capita SOV VMT are all measured statewide. A statewide measure—and consequently a statewide effort—*may* result in adding capacity where it is needed, but there is no way to guarantee that result. There is no guarantee because the scale of the program measure is not at the same scale as the desired result. Capacity needs are generally measured at the corridor or regional level, but the Performance Grant program measures trips

removed anywhere in the state's transportation system regardless of whether capacity is needed on the roadways affected by the removed trip. A statewide measure does not enable WSDOT to link the Performance Grant trips removed with desired results.

To best assess whether WSDOT is adding capacity where it is needed, the performance measure should be at the regional level or, preferably, at a corridor-specific level. A regional or corridor focus would enable WSDOT to target specific areas that need additional capacity and would make it much easier for WSDOT to determine whether the Performance Grant program is affecting long-term congestion outcomes.

Can WSDOT Measure the Capacity Gained by Removing Trips?

One straightforward approach to measuring impact would be to select key congestion points on state highways targeted by CTR-PG and monitor change. Measuring capacity gains from removed trips is particularly difficult on congested roadways. In growing metropolitan areas the laws of triple convergence and latent demand suggest that other vehicles will take the place of those removed through Performance Grant efforts, resulting in no net change in congestion levels.

Even if congestion levels do not change, however, it does not mean that capacity has not increased. If WSDOT defines additional capacity as increased efficiency in the transportation system, even with congestion levels staying the same, capacity could be created if the trips taking the place of the removed ones are of greater economic value or if the number of people moved on the specific roadway increases. Higher value trips and more people-moving capacity are both indications that additional capacity has been created, even if congestion levels stay the same.

Trip reduction is an important tool for increasing roadway capacity because adding road lanes in metropolitan areas is costly, politically divisive, and disruptive to businesses, residents and the environment. In an era of greatly reduced funds for new highway construction, trip reduction is also a practical strategy. WSDOT should carefully consider ways to measure—and acknowledge—trip reduction's capacity benefits even where congestion remains.

Does the Performance Grant Program Have Performance Targets?

The Performance Grant program does not have performance targets. Without a performance target, it is unclear what WSDOT and program participants are trying to achieve and what incentives or management tools ought to be applied to achieve the desired results.

Performance targets are important because they set a standard against which to measure efforts. Useful as a management tool, performance targets have a specific time period in which they are to be achieved. Setting the right target for the Performance Grant program will be a challenge, particularly because of the difficulties in measuring whether capacity has been created on congested roadways (as discussed above).

WSDOT could set numerical targets for SOV trips removed of 3 to 7 percent, similar to targets for annual same-store sales increases in the private sector. However, this study encourages WSDOT to carefully consider how the targets can be designed to encourage development of capacity where it is needed. For example, the targets could be geographically limited to those areas that need additional roadway capacity, such as congested regions or corridors.

Summary of Program Measure Findings

- The current aggregate measure of Performance Grant program performance is the number of SOV trips removed statewide during peak commute periods.
- The intended impact of the Performance Grant program is adding capacity where it is needed to Washington's roadways.
- Two Washington State Transportation Benchmarks offer relational outcome measures for CTR-PG activities as a whole:
    1. non-SOV trips taken during commute periods
    2. per capita vehicle miles traveled (VMT).
- A better scale for the outcome measures is at the metropolitan level or, preferably, at the corridor-specific level. A straightforward approach is to measure change at key congestion points on state highways.

- Measuring the capacity gains from removing trips on congested roadways is difficult because of the laws of 'triple convergence' and latent demand for the roadway space, whereby new trips will replace those removed by CTR-PG.
- The Performance Grant program does not have numerical targets to manage toward and measure against.

VI. RECOMMENDATIONS: STRENGTHENING THE PERFORMANCE GRANT PROGRAM

WSDOT made great strides in innovation when it created the Performance Grant program. Though this report dissects the program to identify ways it can be improved, the significance of the first steps over the last year should not be underestimated. One of this study's key findings is that WSDOT is a trip reduction innovator. It is the first state transportation agency to try to find ways that it can obtain roadway capacity by purchasing removed trips.

This study's ultimate aim is to suggest ways to modify the Performance Grant program to better achieve its purposes. The following are recommendations for ways to adjust the program's structure and signals to promote its purposes and targets, to emphasize the program's trip reduction market, to strategically calculate trip price, and to move WSDOT toward a capacity market that considers demand and supply solutions concurrently. This section organizes the recommendations into four parts that parallel the previous sections.

Program Purpose and Structure

Modify the structure to promote the program's purpose

The program's predominant grant structure limits its ability to accomplish its market-oriented purposes: enabling WSDOT to remove trips from willing sellers and attracting entrepreneurs with profit opportunities. By contrast, the program's performance requirement—a market structure—limits its ability to accomplish its grant-oriented purposes: encouraging innovation in trip reduction. This study recommends that WSDOT modify the existing program to advance WSDOT's market purposes and that the agency also consider implementing a second, more traditional grant program to encourage and test innovation.

Change the grant signals to market signals in the program's legislation, process, and communications

Participants and observers perceive the Performance Grant program as a government grant program with an emphasis on performance outcomes. They perceive it as such in part because the program's legislation, process, and communications all emphasize the program's grant

characteristics while diminishing its market aspects. This study recommends that WSDOT work with the CTR Task Force and State Legislature to create the legislation, process, and communications necessary to promote a market structure. Recommended changes include the following:

- remove "grant" from the legislation title and program name
- include a purpose statement in the legislation, administrative rules, and communications materials that explains the market motivation
- eliminate the start-up cost reimbursement provision
- develop selection criteria that focus more on the trip reduction outcome than on how trip reduction is accomplished.

Use a bidding process rather than an application process

The Performance Grant program currently asks organizations to submit program-oriented grant proposals rather than offers to sell trips. This study recommends that one structural modification particularly worth pursuing is changing the application process to a bidding process. As opposed to a request for grant proposals, a request for bids is seen as a market activity in which WSDOT receives offers of trip removal from willing sellers. Typically, a bid request describes the outcome WSDOT wants—be it a new lane or a maintenance contract—as opposed to the types of programs it wants to fund. In a trip reduction bidding process, WSDOT would request bids to remove a set number of trips from the highway system, either from specified congested areas or the entire state system. For example, WSDOT could request bids to remove 5,000 commute trips off Highway 167.

Buy trips over several years

WSDOT currently buys trips in one-year increments. Both program participants and Roundtable advisors said that one year is insufficient time to implement a trip reduction program and see sustainable, profitable results. This study recommends that WSDOT buy trips from sellers in multi-year increments. The length of time will depend on WSDOT's budget constraints, but the Roundtable advisors suggested that three to five years should be adequate to build sustainable trip reduction programs and create profit opportunities.

Identify and target likely trip sellers

The Roundtable advisors suggested that if WSDOT wants to attract entrepreneurs, it needs to promote the program to people who are likely to see trip removal as a business opportunity rather than grant opportunity. In 2004, the Performance Grant program was primarily targeted at the Employee Transportation Coordinators at CTR worksites, a person who is likely to see the program as an opportunity to expand employee transportation benefits. This study recommends that WSDOT conduct a market analysis to identify organizations and the people within those organizations that are most likely to see the program as a business opportunity to provide WSDOT with transportation capacity through trip removal.

Trip Reduction Markets

Emphasize program's single-buyer market structure

One of WSDOT's core aims in developing the Performance Grant program was to test whether there was a market for trip reduction. In fact, this study was charged with identifying ways WSDOT can use the Performance Grant program to create a market for trip reduction. This study identified the Performance Grant program as a small-scale, single-buyer market but noted that program participants and observers do not see it as a market. Therefore, this study recommends that WSDOT change the program signals—its process, requirements, and communications—to emphasize that it is a trip reduction market.

Use the Performance Grant program to move toward a trip capacity single-buyer market

By providing a way to measure the capacity benefits of trip removal, the Performance Grant program presents WSDOT with the unique opportunity to move toward a trip capacity single-buyer market. As mentioned in Section III, the biggest hurdles standing in the way of a combined single-buyer market are the difficulty of determining with certainty the capacity benefits of removing trips from a given roadway and guaranteeing funds to keep trips off the road over time.

Calculating the capacity benefits of infrastructure projects is relatively simple; the Highway Capacity Manual provides formulas that reliably predict infrastructure's capacity benefits. By contrast, there is no capacity manual for trip reduction that provides formulas for calculating

benefits (although WSDOT's TDM Effectiveness Estimation Methodology may offer such an alternative). Moreover, trips must be removed on a daily basis; the capacity benefits seen one day may not be there the next. Subject to daily transportation choices, trip removal may not have the guaranteed longevity of an infrastructure improvement.

Despite these limits, many planners believe that trip reduction can be a more efficient and cost effective way of obtaining transportation capacity. However, they need to know how to measure and guarantee the benefits. The Performance Grant program provides an ideal, low-risk opportunity for WSDOT to test different methods of measuring and sustaining capacity from trip reduction. This study recommends that WSDOT use the Performance Grant program to test and demonstrate models for predicting the capacity benefits of removing trips.

Focus the program on areas where the transportation system needs additional capacity

The CTR Task Force first proposed involving entrepreneurs in trip reduction as a way to obtain roadway capacity where infrastructure improvements were prohibitively expensive. This desire to create roadway capacity is not emphasized in the current program. Instead, the Performance Grant program will pay for trips removed anywhere in the transportation system, regardless of whether capacity is needed. This study recommends that WSDOT be explicit about that fact that Performance Grant program is a way to buy needed capacity. WSDOT can achieve this goal by limiting its trip purchases to those corridors or regions where additional capacity is needed. Limiting the program to areas where capacity is needed will also help WSDOT identify whether trip removal provides meaningful, measurable, and long-standing capacity benefits.

Trip Price

Allow variation in value according to time, distance, and location of a commute trip

The current CTR Performance Grant program sets one value for trip removal and does not vary this amount by time, distance, or location. In reality, it is of much greater value to WSDOT and Washington State citizens to remove peak-hour high mileage trips in congested urban corridors than to remove off-peak low mileage trips in uncongested areas. Accordingly, WSDOT should be willing to reimburse sellers more for removal of these higher value trips. Whether or not WSDOT

chooses to maintain a price cap on trips removed, sellers should have the opportunity for greater reimbursement when they remove higher value trips.

Remove price caps and instead allow sellers to bid for trips removed

Setting a cap on the price of a removed trip is an artificial price signal that interferes with market forces and creates inefficiencies in trip removal. If WSDOT seeks to introduce true market principles into the CTR Performance Grant program, the $460 cap (or any other cap) should be removed in future rounds of the program.

Focus trip removal efforts on high use corridors

To maximize effectiveness in removing high value trips from Washington State roadways, the Performance Grant program should target trips in high value locations. For example, there are a number of highly congested corridors within the Central Puget Sound region, and trip removal is of much greater value in any of these corridors than in less congested outlying areas. Therefore, future rounds of the Performance Grant program should specifically target trip removal within congested corridors.

Program Measures

Relate performance measures to desired outcomes, such as increased roadway capacity or lessened congestion

The existing CTR Performance Grant measure is the number of SOV trips (vehicles) removed from the roadway. This is an important and useful measure of individual program performance or output. However, at present it remains unrelated to increased trip capacity on the roadways and lessened congestion during peak hours, or the outcomes of the Performance Grant effort. Relating Performance Grant results to existing Washington State benchmarks regarding drive alone trips and per capita VMT would be a start in relating performance to outcomes. Tailoring these statewide benchmarks to the metropolitan and corridor levels is more desirable.

Measure change at key congestion points on state highways

A straightforward approach would be to identify major congestion points on state highways that are targets of the Performance Grant and count the number of SOV trips removed from those

bottlenecks. (The difficulty of this measurement is that in growing metropolitan areas new trips would likely replace those removed until the point of congestion was again reached.)

Set a program target to provide a standard against which to measure success

The Performance Grant program currently does not have a performance target toward which WSDOT can manage for results. This study recommends that WSDOT set a numerical target for number of trips removed. This target could be further focused on adding capacity where it is most needed. For example, WSDOT could set a target of the number of SOV trips removed in a specific metro area or corridor.

APPENDIX A: CTR Performance Grant Survey—Results Summary

The study team sent electronic surveys to three groups of organizations—1) **grantees**, 2) **applicants** who were not awarded grants, and 3) **non-applicants** who were selected from CTR worksites—to understand their experience with the Performance Grant program.

Group 1 - Grantees: We sent electronic surveys to all 30 organizations that received Performance Grants in 2004. Nineteen grantee organizations responded to our survey, a response rate of 63 percent. We asked grantees questions about their perception of the grant program, why they applied for the grant, whether revenue generation was a motivating factor, what barriers they encountered during the grant period, and how WSDOT could provide more support.

Group 2 – Applicants: We sent electronic surveys to all 24 organizations that applied for a 2004 Performance Grant but did not receive one. Thirteen applicant organizations responded to our survey, a response rate of 54 percent. We asked applicants questions about why they applied for the grant, whether revenue generation was a motivating factor, whether they planned to apply again, and how WSDOT could provide more support during the application process.

Group 3 – Non-Applicants: We sent electronic surveys to 30 CTR Worksites that did not apply for a Performance Grant. Eight worksites responded to our survey, a response rate of 27 percent. We asked the Worksites questions about why they did not apply for a performance grant and what might encourage them to apply for one in the future.

Key Results

The key results from the e-survey fall within three general categories:

1. **Motivation and Application**
   - **Applicants** and **grantees** were motivated to apply out of a desire to strengthen CTR programs and meet employee needs.
   - Some **grantees**, **applicants**, and **non-applicants** felt the application requirements were bureaucratic.

- Most **non-applicants** said they did not apply for a Performance Grant because they did not know about the program.

2. **Performance, Measurement, and Reward**
   - Some **grantees** and **applicants** said they will be discouraged from applying for a Performance Grant in the future because of the complicated application process, mixed messages about the program's purpose, and measurement and performance requirements.
   - Uncertainty of success (and therefore award amount) is a frustration to some **grantees**.
   - Measurement and reimbursement requirements are confusing for some **grantees**.
3. **Limited Information**
   - Most **grantees** and **applicants** did not know they could use the grant program to generate revenue for their organization.
   - **Grantees** and **applicants** felt they did not have a good idea of what types of projects WSDOT was looking for.
   - Over half of the **non-applicant** respondents did not apply because they did not hear about the performance grant program.

Results Discussion

What motivated organizations to apply for a performance grant?

Nearly all grantees and applicants applied for the performance grant as a way to strengthen their existing CTR programs. A few also applied for the performance grant as a way to serve the needs of their employees. Three grantees and one applicant applied for a grant because they wanted to generate revenue for their organization.

Why did organizations not apply for a performance grant?

Of the individuals at CTR Worksites who responded to our survey, over half did not apply for a performance grant because they were unaware of the program or because they found out about the program too close to the application deadline. One individual indicated that he did not apply because he felt the application process was too onerous. Another indicated that she didn't apply because she didn't think her organization would be successful at removing trips. Yet another

individual indicated that his organization was only interested in complying with the minimum requirements of the CTR law.

Although two individuals indicated that their organizations are not interested in applying for a performance grant under any circumstances, the other respondents indicated that they might apply if WSDOT advertised the program widely, provided longer lead time between grant announcement and application deadline, and made the application process as simple as possible. Respondents noted that a big hurdle to applying for a performance grant is the fact that CTR duties are a small part of their normal job and that they don't have the time to devote to a lengthy application and monitoring process.

Did grantees and applicants understand that they could use the grants to generate revenue?

Most grantees and applicants did not understand that the grant funding could cover more than the actual cost of the CTR program, thereby generating income for the organization. Of those that did understand the potential for profit, only four organizations said it was a motivating factor in applying for the grant.

Will applicants and grantees submit a proposal in the next round?

Two-thirds of the grantees and roughly half of the applicants said that they would consider submitting a proposal in the next round, but only a few said they would definitely apply. Those who expressed hesitancy identified a number of barriers to applying, including the following:

- difficult application and measurement requirements
- mixed messages from WSDOT staff
- complicated process for requesting start-up reimbursements
- not enough staff time to develop innovative programs and comply with measurement and reporting requirements
- perception that they can't use funds to support existing, successful programs
- one-year grant period, which limits their ability to promise employees an ongoing benefit
- uncertainty of success, and therefore of grant award.

What would encourage grantees and applicants to apply again?

- simple, clear application and reporting requirements
- no performance requirement
- longer grant period or ability to apply for continued funding in subsequent years
- automatic award of 50 percent of funds for start-up costs
- at least six months between grant announcement and application deadline
- clear, consistent communications from WSDOT staff
- example projects that demonstrate what WSDOT is looking for
- assistance from WSDOT in developing potential programs
- more training sessions on grant preparation and follow-up after training.

What could WSDOT do to assist in grant performance?

- improve and simplify the measurement tool
- allow grantees to use CTR surveys from more than one year ago
- provide regular contact between Performance Grant coordinator and grantees
- provide technical support once the project is under way
- simplify the reimbursement process for start-up costs.

Results Analysis

Grantees and applicants did not view themselves as trip sellers

Grantees and applicants saw the performance grant program as a *government grant program* to strengthen commute trip reduction rather than as *market* in which they could sell avoided trips to WSDOT. Overwhelmingly, grantees and applicants said that they were motivated to apply for a performance grant out of a desire to strengthen their CTR programs and meet their employee transportation needs.

Profit was not a serious consideration among grantees and applicants

Nearly all applicants and grantees said that they did not know that the Performance Grant award could generate a profit for their organization. Most applicants and grantees created their proposal by dividing program costs by the estimated number of trips avoided.

Most grantees and applicants did not build a cushion into their value to cover program costs if they did not succeed in removing all estimated trips

Because grantees and applicants did not know they could generate profit, they created performance grant budgets like they would for any other grant application: the funding request covered only the cost of the program. The absence of a cushion, coupled with funding contingent on performance, is causing anxiety among a number of grantees, who are worried that they will not be able to cover all of the program costs because of less-than-expected performance.

A short application period and grant period will keep some grantees from achieving their trip reduction goal

A number of grantees said that trip reduction programs work best with significant upfront planning. Those grantees that didn't have programs already designed before the performance grant announcement are concerned that they will not be able to complete their project during the one-year grant period. Some grantees noted that they didn't have enough time to flesh out the details of their programs during the application period, which caused them to delay program start-up by several months.

Grantees heard mixed messages from WSDOT

Applicants and grantees said they were unsure what types of projects to propose for a performance grant because WSDOT was sending conflicting messages. Nearly half of the applicant and grantee respondents asked that WSDOT work on providing clear, consistent information about the program, particularly about its goals and measurement requirements. Respondents identified three mixed messages.

1. The application process indicated that the performance grants were a traditional grant program. But grantees and applicants said verbal communication from CTR staff suggested that the program was supposed to be a way for WSDOT to purchase trips.
2. The grant announcement and application encouraged proposals that offered innovative trip reduction strategies, yet the funding contingent on performance encouraged applicants to propose tested strategies with guaranteed results.
3. The grant criteria prioritized proposals that removed the most trips at the lowest cost, meaning that, all else being equal, proposals with the lowest trip value would be funded.

However, communications from CTR staff told applicants that requested funds could exceed program costs.

Grantees and applicants want clear examples of potential projects

Many grantees and applicants appreciated the training provided during the application process. However, some added that the application process would have been less confusing if WSDOT had provided clearer example projects and proposals. Several grantees commented that the example of annualized VMT reduction was confusing. They suggested that WSDOT provide standardized formulas in Excel spreadsheets to help applicants project costs and trip reductions.

Grantees would like regular contact from WSDOT

Several grantees noted that while WSDOT staff was very helpful during the application process, they have received minimal support during the grant period. Grantees asked for regular contact from a coordinator and assistance in measurement. They felt this contact was particularly important given the short time period—one year—they had to be successful.

Grantees are confused by the reimbursement process

A number of grantees suggested that WSDOT streamline the reimbursement process for start-up costs. Several grantees said that they had not requested reimbursement because they didn't have time to fill out the necessary paperwork. Others said that they had a difficult time understanding how to get reimbursed for start-up costs.

APPENDIX B: CTR Performance Grant Roundtable—Summary

Appendix B includes a summary of the Roundtable discussion, the Roundtable agenda, and biographies for each of the non-WSDOT attendees.

Discussion Summary

The Commute Trip Reduction (CTR) Performance Grant Roundtable Discussion was a collaborative effort of the Washington State Department of Transportation (WSDOT) and the Evans School of Public Affairs. The event took place on January 27, 2005, at the Evans School of Public Affairs on the University of Washington campus. The roundtable was a convening of public, private, and non-profit representatives with backgrounds in business, transportation management, commute trip reduction, and/or market behavior. The attendees are listed below, and their biographies are provided at the end of Appendix B.

Public Sector	Private and Non-Profit Sector
Brian Lagerberg - WSDOT	Peter Hurley, Transportation Choices
Ed Hillsman, WSDOT	Ted Horobiowski, Avista Utilities
Kathy Sillis, WSDOT	Steve Gerritson, Commuter Challenge
Charles Prestrud, WSDOT	Carrie Blanco, Downtown Transportation Alliance
Keith Cotton, WSDOT	Rick Williams, Lloyd Center TMA and Melvin Mark
Matt Hanson, King County Metro	John Resha, Greater Redmond TMA
Bill Roach, King County Metro	Phil Winters, Center for Urban Trans. Research
Ted Klastorin, UW School of Business	
Aubrey Davis, PSRC Pricing Project	
University of Washington Project Team	
Dan Carlson, Alex Atchison, Jill Simmons, Zack Hill	

Commute Trip Reduction Act Overview

Brian Lagerberg, WSDOT CTR Program Manager, gave an update on Washington's CTR Act. The Act is an employer-based program, but really it is based in jurisdictions. The CTR program has been successful by taking 19,000 trips off the road every day.

Commute Trip Performance Grant Program

Jill Simmons, Evans School research analyst, gave a brief presentation summarizing the results of an e-survey that was sent to three groups of organizations (grantees, applicants, and CTR worksites that did not apply for the grant) asking them about their experience with the Performance Grant program. Key results of the survey indicated the following:

- Applicants and grantees were motivated to apply for the grant out of a desire to strengthen CTR programs and meet employee needs, not to make a profit.
- Grantees felt that the application process was complicated and the grant criteria were ambiguous.
- Grantees and applicants felt that the grant requirements discouraged them from trying new, risky trip reduction strategies.
- Grantees and applicants felt that they did not have a good idea of what type of projects WSDOT was looking for.

Brian Lagerberg explained that a key challenge with the grant program has been taking an abstract idea, implementing it quickly, handing it to the clients, and asking them to implement it quickly. The grant's one-year time frame does not give clients a long time to achieve success. Additionally, WSDOT has focused on being a "buyer of trips." The goal of the CTR Grant program is to expand and work with entrepreneurs in the field.

Discussions proceeded around the table concerning general observations about the CTR Grant program. Representatives from the private sector highlighted several points, including the following:

- Employers view the grant program as a way to comply with CTR laws, not as an opportunity to make a profit.
- Participants did not feel that they were "buyers" of trips.
- The goals of the CTR grant program were unclear. Participants were unclear whether the CTR grant program was striving for trip reduction or innovation.

- The application process and timeline of the CTR grant program was restrictive for private businesses and entrepreneurs, as it required a lot of upfront work in a short amount of time.

Suggested Modifications to the CTR Performance Grant Program

Over the course of the discussion, several suggestions were offered by the Roundtable participants on ways to improve the CTR performance grant program. Suggestions included the following:

- The goals of the CTR program need to be clarified. Is the CTR grant striving for trip reduction or innovation? These two concepts should be separated in order to create a more viable, sustainable grant program.
- The timeframe of the program needs to be expanded beyond one year in order to effectively measure results and to be sustainable in the long run.
- The application and grant process needs to be streamlined to make the program more attractive to private businesses and entrepreneurs.
- The grants need to be marketed to the right audience. The ETC representative at a company may not be the appropriate person to be a seller of trips, as he or she may not recognize the potential for profits from this program.
- Reorganize the program to offer incentives, other than cash, to participants of the grant program.

Is There a Market for Trips?

The Roundtable participants were asked to consider if there was a possibility for creating a private market for trips. Key points that arose from this discussion included the following:

- WSDOT should focus on removing trips in the best way possible and not focus on whether there is a market for reducing trips.
- Perhaps the market for avoided trips is coming from limits in existing infrastructure and costs of adding new infrastructure.

- Instead of one market for removing trips, there may be a series of markets that interact with one another. Creating a market for removing trips can be difficult when there are limited transportation alternatives.
- WSDOT might be able to see a greater investment in permanent trip reduction if the grant program was extended beyond one year and the program allowed employers to sell trips over several years.
- A market could be created if employers in different areas could trade trips between different locations in order to reduce overall trips.
- There is a need to recognize that the value of a trip varies on the basis of time of day, location, and purpose.

How Does CTR Fit into the Broader Context of WSDOT?

Finally, the Roundtable discussion covered how the Commute Trip Reduction Grant program fits in the broader context of WSDOT. Key points from this discussion included the following:

- The need to implement demand management in addition to creating capacity has not been institutionalized in WSDOT.
- Because the state cannot afford to build an infrastructure to meet full demand, the options of demand management must be addressed.
- The magnitude of the opportunity of demand management is not yet well understood within WSDOT.
- WSDOT's long-term goals for TDM need to be defined. Is the goal to reduce trips or to build more capacity on the roadways?
- WSDOT's goals for TDM should be integrated into the long-term planning process, especially in regards to land-use planning and how it correlates with transportation.

Conclusions

Key points of the CTR Performance Grant roundtable included the following:

- The time frame of the performance grant needs to be expanded beyond one year. The short time frame lacks a sustainability element.
- WSDOT needs to clearly define the goals of the CTR grant program: is the CTR grant striving for trip reduction or innovation?
- The application and grant process needs to be streamlined to make it more attractive to private businesses and entrepreneurs.
- The grants need to be marketed to the right audience. The ETC representative at a company may not be the appropriate person to be a seller of trips.
- There is a need to recognize that values are different for each trip. The value of a trip varies on the basis of time of day, location, and purpose. A better formula is needed for varying the value of trips avoided.
- The long-term goals of WSDOT for TDM need to be defined. Is the goal to reduce trips or to build more capacity on the roadways? This goal should be integrated into the long-term planning process, especially in regard to land-use planning and how it correlates with transportation.

Agenda

CTR Performance Grant Roundtable

January 27, 2005
9:30 a.m. – 2:00 p.m.

9:30 Introductions

9:40 Commute Trip Reduction Act @ Year 14:
- a. Review of law
- b. Overview of achievements

9:50 CTR Performance Grant Program:
- a. Overview of program, including 2004 rounds
- b. Summary of survey results
- c. Project observations: what's working/opportunities for change?

10:15 DISCUSSION: The Future of the CTR Performance Grant Program
- a. Is there a market for avoided trips?
  - CTR Performance Grant Program: A Limited Market for Trips Avoided
  - Least-Cost Planning in Transportation
  - Creating a private market for trading trips-avoided

10:45 BREAK

11:00 DISCUSSION: Refreshing the CTR Law
- a. How could CTR law be improved?
  - Focus on specific metro areas?
  - Focus on congested corridors?
  - Expand to small employers?
  - Relationship of Performance Grants to CTR law

11:45 DISCUSSION: Performance Grants and CTR within the broader context of managing the transportation system
- a. How do PG and CTR fit into WSDOT's strategic transportation vision?
- b. How do they fit into WSDOT's role in TDM?

12:30 Lunch, informal discussion and report back

1:15 Summary and Wrap Up

Attendee Biographies

Carrie Blanco, Urban Mobility Group Director – Downtown Transit Alliance

Carrie received an Accounting & Finance degree from Whitworth College and began working in Commercial Real Estate for a property management company in downtown Spokane. Carrie moved to Seattle in 1993 and continued to work in high-rise property management for The Koll Company, Wright Runstad & Company, and finally Equity Office Properties until 2004. In 2000, working as the Property Manager for Equity Office, Carrie worked with the City of Seattle and King County Metro to put together a Commute Options Program for Bank of America Tower in an effort to make the building the most attractive location for companies. Carrie's interest in working on the nexus between the economic development of downtown Seattle and the reduction of single occupancy vehicle drivers commuting Downtown brought her to the Downtown Transportation Alliance. DTA is a private / public partnership working to support the economic development of downtown Seattle by achieving a six percentage point reduction in single occupancy drivers to downtown by 2015 while receiving 48,000 new jobs into downtown Seattle by that same date.

Aubrey Davis – Puget Sound Regional Council Pricing Project

Aubrey began his career in public policy over 60 years ago and has spent 40 years working on transportation issues. He has had a rich and varied career, including serving as the mayor of Mercer Island, the head of the US Department of Transportation's regional office, and chairman of the Washington State Transportation Commission, a post he just retired from last year. Currently, Aubrey is serving as an advisor to PSRC's Pricing Project.

Steve Gerritson, Executive Director – Commuter Challenge

Commuter Challenge is a non-profit organization dedicated to reducing single-occupancy vehicle use on the roadways of the Puget Sound region. Steve has a strong background in environmental protection and air quality improvement, and he serves as an advisor to the Washington Department of Ecology and the Puget Sound Clean Air Agency. He holds a B.A. from the University of Massachusetts and an M.P.A. from the Woodrow Wilson School at Princeton University.

Matt Hansen, Market Development Supervisor – King County Metro

Matt began working for the Market Development Section of King County Metro Transit in October 1994. At Market Development he has focused on developing new commute products, developing tax incentives for employers that provide commuting subsidies to employees, and developing financial partnerships with employers and local jurisdictions. Matt co-authored and coordinated King County Metro's winning entry in the Ford Foundation's 2000 Innovations in American Government Award competition. In August 2002, Matt became the supervisor of the Market Development group. Matt received a B.A. degree from Reed College in 1989 and a M.P.A. from the University of Washington in 1994.

Ted Horobiowski – Avista Utilities

Ted has been involved on the Commute Trip Reduction Task Force since its inception in 1991 as a representative both of Eastern Washington and private employers. He also served on the City of Spokane Plan Commission from 1990-2002 while the city was updating its comprehensive plan,

land-use plan and zoning regulations to comply with the state's Growth Management Act. Ted has been employed with the Avista corporation, an electric and gas utility in Spokane, for 23 years.

Peter Hurley, Executive – Transportation Choices Coalition

A former Snohomish County Commissioner, Peter is currently head of the Transportation Choices Coalition in Seattle, Washington. He is also a member of the Commute Trip Reduction Task Force.

Ted Klastorin – University of Washington School of Business

Ted is the Burlington Northern/Burlington Resources Professor of Operations Management in the Department of Management Science (School of Business), Adjunct Professor in the Department of Health Services (School of Public Health and Community Medicine), and Adjunct Professor of Industrial Engineering (College of Engineering) at the University of Washington, Seattle, Washington. He is a senior research fellow at the IC^2 Institute, The University of Texas at Austin. He holds a B.S. degree from Carnegie-Mellon University (1969) and a Ph.D. from the University of Texas at Austin (1973).

Ted was the founding chair of the Management Science Department and a co-founder of the PEMM Program (Program in Engineering and Manufacturing Management) at the University of Washington. His research interests include project management, and supply chain management issues in manufacturing and service organizations. He is the author of *Project Management: Tools and Trade-offs*, John Wiley & Sons, 2004. He has consulted with numerous organizations, including Boeing, Starbucks, Fluke Corp, and Microsoft. He is a member of INFORMS, MSOM Society, POMS, and IIE and serves on the editorial boards of *Manufacturing & Service Operations Management (M&SOM)* and *IIE Transactions*.

John Resha, Executive Director – Greater Redmond Transportation Management Association

John has over fourteen years in senior and executive transportation management positions that include program development and management of college campus fee-based parking and transportation programs, consulting as a transportation demand management senior planner (with a private transportation engineering firm), National Transportation Manager for a Fortune 100 corporation, and NW Regional Vice President for a private parking corporation; and he has served in all capacities of transportation management association boards from general director and founding member to president. Currently, John is the Executive Director of Greater Redmond Transportation Management Association (GRTMA) and serves as an elected City Councilmember in Redmond, Wash.

Bill Roach – King County Metro

Bill has been active in transportation demand management since 1974, first with the City of Seattle and since 1984 with King County Metro. Bill helped develop the Commute Trip Reduction Law and has been a member of the CTR Task Force since its inception in 1993, representing transit. Bill has worked on a number of transportation innovations over the years, introducing vanpooling to the Northwest, developing the UPASS program, and developing the Employer B&O Tax Credit, Flexpass, Guaranteed Ride Home, Bikes on Buses and Carsharing, among others. Bill retired from full-time management in 2001 and continues to assist in TDM development at Metro on a part-time basis.

Rick Williams – Melvin Mark

Rick's background is in parking and transportation demand management. He spent eight years as the Executive Vice President of the Association for Portland Progress, a private, non-profit business association representing the 75 largest employers in downtown Portland, Oregon. In 1995, he left APP to form his own consulting firm focusing on parking development and demand management program design. In 1998, Rick merged his business into the consulting wing of Melvin Mark Development Company where he expanded his consulting capacity and assumed responsibility for the management of Melvin Mark's seven garage parking system. Rick also serves as Executive Director of the Lloyd District Transportation Management Association (LDTMA). The LDTMA is a private, non-profit business association providing parking management, transit, bike, ride sharing and outreach programs to 55 Lloyd District based businesses and property owners.

Philip L. Winters – Center for Urban Transportation Research

Phil joined the Center for Urban Transportation Research (CUTR) at the University of South Florida as TDM Program Director in 1993. He has nearly 25 years of experience with transportation demand management (TDM) research, planning, operations, training and evaluation. Prior to joining CUTR, he worked for 2.5 years in corporate relocation and TDM consulting and 10 years directing a regional non-profit TDM program in Virginia. Among his program's recent accomplishments are the development of the *Transportation Management Association Handbook*, *Vanpool Pricing and Financing Guide*, and the new *Worksite Trip Reduction Model and Manual.* He manages the National TDM and Telework Clearinghouse, co-hosts the *"Learn More. Travel Less"* Netconference series in partnership with the Association for Commuter Transportation (ACT) that has connected as many as 150 attendees in 15 locations at one time. He also created the TRANSP-TDM listserv that has nearly 800 subscribers.

CTR Performance Grant Roundtable Discussion Moderator

Daniel Carlson, Senior Lecturer – University of Washington

Daniel is a senior lecturer and director of the public service clinics at the Daniel J. Evans School of Public Affairs at the University of Washington. His research and teaching interests are community and economic development and transportation and land use in metropolitan areas. He is the author or co-author of reports and books on these subjects, including *At Road's End: Transportation and Land Use Choices for Communities*; *ReUsing America's Schools; Transportation Corridor Management: Are We Linking Transportation and Land Use Yet?*; *Turning Regional Visions into Regional Results*; *Ten Steps to a High Tech Future: The New Economy in Metropolitan Seattle*; *What the IT Revolution Means for Regional Economic Development* (with Paul Sommers); *Learning From Truckers*; and *Transportation Concurrency in Washington State.*

APPENDIX C: Pricing Trips—Models for Valuating Avoided Trips

The CTR Performance Grant program establishes one value for all commute trips statewide. However, alternative models employed locally may prove fruitful for WSDOT to consider when establishing trip values in future rounds of the Performance Grant program. All of these models seek to reduce congestion and increase capacity, but they do so by utilizing a variety of different pricing approaches.

A brief overview of the current CTR Performance Grant approach and other models follows.

Current WSDOT CTR Performance Grant Model

Overview

The current state model uses one value for all commute trips at all times for any distance and in any geographic area. The tolling rate was established by calculating the maximum cost per trip based on the economically efficient tolling rate in the Puget Sound Region for maximizing throughput and covering maintenance costs for the highway system. This tolling rate incorporated the average commute distance for employees of companies affected by the CTR law.

For the sake of simplicity in implementation, WSDOT settled on using a single figure statewide. The current statewide figure is $460.

Why use this model?

The clear advantage to this model is its simplicity. By using one value for all trips statewide, implementation is much easier than with more variable models.

What are the drawbacks to this model?

Not surprisingly, the single-valuation component of this model is also its biggest drawback. It is an inefficient use of state resources to pay the same reimbursement cost for a trip removed in an uncongested area as a trip removed in Downtown Seattle or Bellevue. There is value to the state in removing trips from congested areas; there is much less value in a removing a trip from an uncongested location.

PSRC Model for "Capacity Burdening Costs"

Overview

This model considers time of commute (peak/non-peak), length of trip (pricing is based on a per-mile rate), and geographic area (targets highways and major arterials in Central Puget Sound area). On the basis of the assumptions below, this model established an average annual commute trip value of $1,040. This value can be modified for different individuals by altering the assumptions. The average annual trip value is based upon the following assumptions:

- Assume average peak period round trip commute: 12.9 miles
- Assume 50/50 Freeway/Arterial split
    - Freeway = $0.45/mile
    - Arterial = $0.22.5/mile
- Average trip value = $4.35/day
- Assume 240 commute days
- Average annual trip value = $1,040

Why use this model?

By incorporating variability for time of day, length of trip, and geographic area of trip, this model offers the most accurate picture of how a specific commuter values his or her trip.

What are the drawbacks to this model?

The high degree of pricing variability from one commuter to the next would make implementation of this model more difficult than other models.

Bellevue/King County Model

Overview

Bellevue and Metro King County developed an incentive program in which they used a number of components to determine the value of a trip. They used a PSRC report entitled "The Costs of Transportation: Expenditures on Surface Transportation" to determine the total cost per commute trip. The calculation included direct public costs (capital/debt highways, capital/debt for streets/roads, maintenance and operations for highways, maintenance and operations for

streets/roads, and city/county services) and indirect public and private costs (congestion – wasted fuel, air pollution, water impacts, and noise impacts). They determined that the average cost per commute trip was $0.73 (2002 dollars). Assuming 480 commute trips per year, they arrived at total annual cost per commute trip of $348.

Though they determined that the average commute trip *cost* $348, they did not use this figure to determine their subsidy amount. Rather, the subsidy amount was based on a more simple calculation: They determined the amount of money they had for their trip reduction program, divided it by the number of commute trips they wanted to reduce, and arrived at a subsidy of $175.

Why use this model?

In the absence of accurate commuter data (i.e., market-driven data on how much commuters would require to be paid in order to not drive), this approach is the simplest way to determine the nexus between *how much funding is available* and *the number of commute trips that must be eliminated*.

What are the drawbacks to this model?

The drawbacks for this model are the same as those for the current CTR Performance Grant model.

Commuter Challenge Model

Overview

Like the Bellevue Model, the Commuter Challenge Model is very simple. It is based on the following two criteria:

- The Clean Air Campaign in Atlanta offered commuters a $3 incentive per day for not driving an SOV.
- $3 per day was the most Commuter Challenge could afford to offer commuters not to drive, given their funding allotment and their goals for trip reduction.

While the model is simple, it had clear resonance in the market, demonstrated by the fact that Commuter Challenge had to close registration early because it reached the maximum number of registrants.

Why use this model?

As with the current CTR Performance Grant model, the Commuter Challenge Model is simple and easy to understand.

What are the drawbacks to this model?

The drawbacks for this model are the same as those for the current CTR Performance Grant model.

Additional Capacity Model

Overview

Phil Winters of the National Center for Transit Research reported on some limited work on determining trip values on the basis of the costs associated with building additional capacity in a given corridor. This model would not incorporate the costs of existing capital infrastructure because that is already a sunk cost. Rather, it would incorporate the costs of building additional capacity and then determine trip value on the basis of the number of *peak users* in the corridor. According to this model, non-peak users should not be used in determining value because they are not creating the need for additional capacity.

This model has not been implemented in Washington State at any point, and accordingly, there are no relevant data on actual trip values. However, the model is still instructive as a tool for thinking about trip valuation.

Why use this model?

This model could be utilized as a form of least-cost planning and could help limit the ongoing construction of additional roadways. Determining the value of a commute on the basis of the cost of providing additional roadway capacity would help more clearly delineate the costs associated with building more roads versus removing commuters from existing roads.

What are the drawbacks to this model?

There are very clear costs of and easily demonstrable benefits from building additional roadway capacity. However, it is much more difficult to identify and prove the benefits of

removing trips from the roadway. This is the dilemma currently faced by all advocates of least-cost planning.

Additional Valuation Considerations

The difficulty with valuation in this context is that there is an inherent tension between efficiency and simplicity. The current WSDOT model is the most simple imaginable—there is one value ($460) across the state. A more precise model would incorporate some of the following:

- **Time variability** – Peak trips should be valued more highly than non-peak trips. In fact, non-peak trips are probably not an appropriate target for the CTR Performance Grant program.
- **Trip length** – A commute of 1 mile on arterial streets should be valued at a lower amount than a trip of 15 miles mostly on the highway.
- **Geography** – Some cities and corridors have greater congestion than others. Accordingly, trips taken in those areas should be valued more highly than those in less congested locations.

There is clearly a risk associated with incorporating too much variability into pricing models because greater variability means lesser simplicity. In order to attract sellers, there must be a high degree of simplicity to the trip valuation system.

APPENDIX D: CTR Performance Grant Program—Current Structure

RCW 70.94.996; WAC 460-60-010

Overview

In 2003, on the recommendation of the CTR Task Force, the Washington Legislature created the CTR Performance Grant program to reward innovation in single occupancy vehicle (SOV) commute trip reduction. The program awards grants on a competitive basis to private employers, public agencies, nonprofit organizations, developers, and property managers who offer financial incentives to their employees and tenants that reduce the number of SOV commute trips taken by their employees and tenants. "Financial incentives" are policies, procedures, capital investments, or payments intended to provide employees a financial gain if they commute in ways other than by driving alone.

Grantees are awarded funds on the basis of the number of SOV trips eliminated. Each eliminated trip is assigned a monetary value, and the total grant award is the number of trips eliminated multiplied by the monetary value of one less SOV trip. Currently, the trip values are established by the grantee in the grant application process. Grantees are given 50 percent of the award up front to cover start-up costs. The balance of the award is based on performance; in other words, the remainder is awarded only if the grantee succeeds in eliminating the trips. Performance is determined by before-and-after surveys of employees.

Requirements of the CTR Performance Grant Legislation

These requirements can only be changed by the Legislature by amending RCW 70.94.996.

- **Determination of Grant Amounts.** The amount of the grant is determined on the basis of the value to the transportation system of the vehicle trips reduced.
- **Cost Effectiveness Priority.** The CTR Task Force shall develop an award rate giving priority to applications achieving the greatest reduction in trips and commute miles per public dollar requested and considering the following criteria: The local cost of providing new highway capacity, congestion levels, and geographic distribution.

- **Annual Award Limits.** The total of grants provided under this section may not exceed $750,000 in any fiscal year. This subsection does not apply during the 2003-2005 fiscal biennium.
- **Applicant Award Limits.** No private employer, public agency, nonprofit organization, developer, or property manager is eligible for grants under this section in excess of one hundred thousand dollars in any fiscal year.
- **Source of Funds.** The source of funds for this grant program is the multimodal transportation account.

Requirements of CTR Performance Grant Administrative Rules

These requirements can be changed by WSDOT by amending WAC 486-60-010.

- **Available Funding.** The amount of funding available for the performance grant program is established in the state transportation budget. For the 2003-2005 biennium, $1,500,000 is budgeted for the grants. No more than $750,000 will be available for each fiscal year (July-June).
- **Award Limits.**
    - No grants will be awarded to an applicant requesting compensation at a rate higher than the annualized cost of providing new roadway capacity. The annualized cost of providing new capacity will be provided by WSDOT as part of the application document.
    - Multiple partner applicants may receive awards up to $100,000 per partner or $250,000, whichever amount is smaller, in a single fiscal year.
- **Multiple Applications.** Grantees may submit more than one application but may not request grant funds in excess of $100,000.
- **Two-Year Proposals.** Applicants are encouraged to submit proposals covering two years. Proposals covering two years must estimate the number of vehicle trips and VMT reduced for each of the two fiscal years. Only one base measurement will be required for a two-year

application. Recipients of two-year grants may receive the start-up portion of their award in the first year and the performance portion in the second year. In this situation, funding for the trips and VMT reduced will be assumed to have occurred in the second year of the project.

- **Funding Zones.** A minimum amount of the grant funds is guaranteed to be available in each of three funding zones: Ten percent of available funds for Central Puget Sound (CPS) (King, Pierce, Snohomish counties), ten percent of available funds for non-Central Puget Sound applications, and ten percent of available funds for statewide applications (applications with worksites in the CPS and outside the CPS). The remaining grant funds will be awarded based on the project's ranking and available funds.

Performance Grant Criteria

The grant applications are reviewed on the basis of the following criteria:

(a) **Financial incentives**. To be eligible for the grant, the applicant must provide financial incentives to their own or other employees for ridesharing, using public transportation, car sharing, or non-motorized commuting.

(b) **Project predictability**. Are the estimates of employee participation and overall trip and VMT reduction likely to be achieved?

(c) **Measurability**. The performance of the project must be measurable. If the applicant submits its own measurement approach, the measurement plan submitted must be as accurate an estimate of the trips reduced as would be generated if the applicant made use of the WSDOT-developed measurement tool.

(d) **Cost effectiveness**. Does the project have a high likelihood of achieving its benefits at a relatively low expenditure of performance grant funds? Are the projected benefits achievable at a cost less than providing the equivalent roadway capacity?

(e) **Sustainability**. If this project is funded, will its benefits continue after the grant-funded element of the project has been completed? Do the project design and partnerships indicate a high probability for continuing the project after all grant funds are used?

(f) **Thoroughness.** Has the project been thoroughly researched and carefully thought out? Are adequate details presented?

(g) **Redundancy**. Does the project propose to provide services that are already available for the employees?

Award of Funds

Funds are provided to grantees through the following three approaches:

(a) **Start-up:** The grantee may request up to fifty percent of awarded funds to cover project start-up. Start-up funding will be provided dollar for dollar on a cost-reimbursable basis, but in no circumstances will this amount exceed fifty percent of the total project award.

(b) **Grant performance:** The remaining funds will be available to the grantee following the performance measurement. The grantee has the option to measure their performance halfway through the project and at the end of the year. If the grantee conducts a midterm measurement, they will be eligible to receive half of the performance funding following this measurement with the balance available after the second measurement survey. If the grantee elects to measure only at the end of the project, all of the remaining funds will be available, depending on the performance they achieved through their project. No performance funds will be available for any project that fails to perform.

(c) **Performance bonus:** The grantee will be eligible to receive up to twenty percent additional funds if the performance of their project exceeds their anticipated performance. These funds will only be provided at the end of the contract period and the grantee will receive the funds for additional performance based on the same award rate per trip reduced and same award rate per VMT reduced as identified in their application and subsequent contract. Note: No one employer, etc., may receive more than one hundred thousand dollars in a FY. The performance bonus portion of the funding will only be available if funds are remaining in the grant account.

Performance Measurement

Performance is measured on the basis of actual counts of vehicle trips and VMT made by employees, before and after the grant period. Unless the grantee submits an alternative measurement approach (which must be approved by WSDOT), the following methodology is used to measure number of trips and VMT:

(a) **Baseline survey.** At the beginning of the program, the worksite(s) will survey their employees about their commuting behavior using the standard WSDOT commute trip reduction employee survey form. This initial survey is called the baseline survey. WSDOT will calculate a baseline mode split, based on results from the baseline survey.

(b) **Performance measurement survey.** The grantee will survey the eligible project employees at the end of the grant period. WSDOT will calculate a performance mode split, based on the results from the performance measurement survey.

(c) **Calculating Mode Split.** In calculating this mode split, and those from subsequent surveys, WSDOT will calculate assumptions to adjust for missing data, days reported by employees as not worked, inconsistency between commute mode and vehicle occupancy data, and reported use of compressed workweeks as specified in the CTR guidelines published by WSDOT and available on the Internet http://www.wsdot.wa.gov/tdm/tripreduction/CTRguide/SEC3.cfm.

(d) **Determining change in SOV trips.** The difference between the two SOV trip numbers calculated in the base survey and performance measurement survey is the change in the average number of trips per day at the site.

(e) **Determining change in VMT.** WSDOT will calculate the average one-way distance for trips made by each mode in the performance measurement survey, and multiply this by the change in the average number of trips by that mode per day. The sum of these values for motorized commuting modes is the change in VMT.

(f) **Changes in Employee Populations.** Determination of change in SOV trips and VMT accounts for changes in employment at the site; the employer will not be entitled to increased

payments due to a reduction in force or be penalized because of an increase in employment.

Selection Committee

The selection committee consists of between six and nine members, selected by the chair of the CTR task force. The committee includes at least two members of the CTR task force; at least one member from Central Puget Sound and one from the rest of the state; at least one employer; at least one transit member; and at least one city government representative.

Summary of Round One and Two Awards

Round One:

- Awarded April 2004.
- Award total of $557,000.
- Awards given to 10 projects.
- Grantee Profile:
  - 4 cities
  - 2 counties
  - 1 Transportation Management Association
  - 1 Council of Governments
  - 1 Transit Agency
  - 1 partnership between a property developer and CTR nonprofit

Round Two:

- Awarded June 2004
- Award total of $ $911,000
- Awards given to 22 projects.
- Grantee Profile
  - 7 private, public employers
  - 3 nonprofit organizations focused on CTR

- 3 public colleges
- 3 transit agencies
- 2 counties
- 2 cities
- 1 state agency

First Year Statistics:

- Projects will eliminate 5,022 trips in 2004-05 and reduce daily vehicle miles traveled by 137,000 miles.
- Lowest eliminated trip value: $56
- Highest eliminated trip value: $460 (maximum allowed)
- Average eliminated trip value: $296