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Expanding Commuter Choice Tax Benefit Options

Final Report

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16. Abstract There are three primary goals associated with this project. The first goal is to evaluate the current level of use of Commuter Choice among employers. The evaluation will begin with a review of previous studies focused on Commuter Choice programs in order to gain a historical perspective. Following a review of previous projects, CUTR will examine how and if tax data can be used determine the current level of participation in Commuter Choice programs, and specifically the use of the Qualified Transportation Fringe Benefit; IRS Code Section 132(f). If current use cannot be determined though tax data, CUTR will distribute a survey to employers in order to determine current usage rates. The second goal of the project is to explore how Commuter Choice Programs can be expanded to provide maximum utility to employers beyond what is currently offered to employees. CUTR will conduct interviews with employers to determine methods for expanding Commuter Choice benefits. From these interviews and the data collected in previous steps, CUTR's final goal is to develop a set of recommendations for expanding the benefits of Commuter Choice programs.					
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DISCLAIMER

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Executive Summary

Introduction

Throughout the United States, traffic congestion continues to increase causing vast amount of wasted time, money, and fuel. According to Texas Transportation Institute, the average annual delay per peak road traveler climbed from 16 hours in 1982 to 62 hours in 2000.¹ Traffic congestion is exacerbated by the continued reliance on the single-occupant vehicle for peak hour commuting. Despite an approximate 35 percent increase in vehicle miles traveled (VMT) over the last 10 years, air quality trends have shown some improvements in regard to carbon monoxide (CO) levels. However, even at these lower levels, air pollutants continue to have a significant impact on our nation's health and our environment, according to the United State Environmental Protection Agency.² About 60 percent of CO emissions stem from motor vehicle exhaust, and the highest concentrations of CO generally occur in areas of heavy traffic congestion.

During the 2003 State of the Union Address, President Bush stated that the United States must take steps to promote energy independence. There are a variety of ways in which the United States can accomplish this goal, from increasing domestic energy production and increasing the fuel efficiency of motor vehicles to developing hybrid electric cars. These methods, however, require the coordination of numerous private and public entities, enormous funding, and perhaps decades before results are realized. On the other hand, one way in which every American can immediately participate in the reduction of foreign oil dependence is by switching from single occupant vehicle commuting to an alternative mode, such as transit or vanpooling.

Currently, federal tax law allows employers to provide tax-free transit and vanpool benefits as in economic incentive to encourage the use of these alternative modes. These benefits are described as *qualified transportation fringe benefits* in Internal Revenue Code Section 132(f). By expanding *qualified transportation fringe benefits* to include other modes, such as carpooling, bicycling, walking, and even perhaps telecommuting, an economic incentive would be provided to further encourage each and every American's ability to reduce traffic congestion, improve air quality, and reduce our reliance on foreign energy sources. Similarly, by creating choice equity, a greater portion of transit and vanpool fares will be fully covered under an increased tax limit, and the irony of a higher benefit for qualified parking would be eliminated.

Project Objectives

There are five objectives of this research:

1. Evaluate the current level of use of commuter benefits among employers;
2. Examine how commuter choice programs can be expanded to provide maximum utility to employers and employees, and the creation of commuter choice equity;
3. Survey and interview employers to understand their reaction to expansion and equity;
4. Estimate the tax revenue impact of those changes; and
5. Develop a set of recommendations for expanding commuter tax benefit programs.

Current Use of Commuter Benefits

According the Bureau of Labor Statistics' National Compensation Survey, approximately three percent of employers in the United States offer some kind of subsidized commuting benefit. For medium and large establishments, those with 100 or more employees, the participation rate is 5 percent, and for establishment with less than 100 employees, the participation rate is just 1 percent.

¹ Texas Transportation Institute. 2002 Urban Mobility Study. http://mobility.tamu.edu/ums/study/short_report.stm

² US EPA. National Air Quality 2001 Status and Trends. <http://epa.gov/oar/aqtrnd01/carbon.html>

According to TCRP's Strategies for Increasing the Effectiveness of Commuter Choice Programs, a wide variety of commute benefit programs are implemented by employers. The proportion of employee pre-tax (55%) and employer-paid benefit programs (45%) identified during data collection is used to estimate the tax revenue impact of expanding commuter tax benefits.

Expansion of Commuter Benefits and Commuter Choice Equity

By expanding the definition of qualified transportation fringe benefits to include other modes, employers can provide more incentives to their employees to use an alternative to the SOV while also reducing their corporate taxes. The benefits of alternative mode use are numerous and include reducing traffic congestion and improving air quality. The modes that are examined in this study are carpooling, bicycling, walking, telecommuting, and carsharing. The key issues to address in terms of the inclusion of these modes in an expanded definition are:

1. eligibility requirements, such as how the mode is legally defined or a minimum number of days per week that mode must be used;
2. how and if benefits can be combined— for example, a transit user that parks in a transit station park and ride lot is eligible for both benefits;
3. the tax limit— currently there is a \$100 tax limit for transit and vanpools, and a \$190 limit for qualified parking; and
4. the potential tax revenue impact associated with the inclusion of additional modes.

Since each of the alternative modes in question do contribute to the reduction of vehicle miles, vehicle trips and/or auto emissions, policymakers could consider the inclusion of carpooling, bicycling, walking, telecommuting and carsharing for an expanded definition of qualified transportation fringe benefits. By considering the following recommendations, policymakers can help reduce the complexity of planning and implementing a commuter tax benefit program for employers.

If policymakers choose to expand the definition of qualified transportation fringe benefits, this study also recommends that they consider the following:

1. Employees are eligible for a particular mode if they use that mode for the majority of their weekly commute trips³, and only the qualified parking benefit can be combined with the benefits of other modes, or
2. Employees may combine the benefits two modes only when those modes are used together to complete a home-based work trip.
 - a. For example, a bikes-on-bus user combines bicycling and transit in a single trip from his or her home to his or her place of work and therefore could combine the two benefits.
 - b. On the other hand, a car-sharing club member who uses transit to get to and from work is not using more than one mode to complete his or her work trip and therefore would not be eligible for a combined benefit.
 - c. Since walking is a part of every commute, it should not be combined with the benefits of any other modes. The purpose of this recommendation is to avoid the dilemma of having to determine what portion of a trip would an employee need to walk to qualify.
 - d. No triple combinations should be allowed in order to reduce complexity. For example, a possible triple combination would be a bikes-on-bus user who pays for secure bicycle parking and could be eligible for bicycling, transit and parking benefits.

Instead of providing a specific recommendation of the tax limits associated with each of these benefits, this study provides a tax revenue impact (TRI) estimate for each mode at the \$25 and \$50 levels. Policymakers can use these figures to determine which level represents the most viable option. Of course, employers should be allowed, in the end, to determine which of these new modes they want to include in their programs.

While the inclusion of carpooling, bicycling and walking is already supported in draft legislation, the inclusion of telecommuting and carsharing is problematic under certain options policymakers have in

³ With the possible exception of vanpooling which is already defined differently in the tax law.

regard to combining benefits and/or eligibility requirements. In general, carsharers already use alternative modes for work trips, and telecommuters generally work at home two days or less per week. If policymakers decide to allow only the combining of benefits when both modes are used to complete a single trip or an employee must use a particular mode for the majority of their work trips, then a telecommuting and/or carsharing benefit may be difficult to justify.

Commuter Choice Equity

This study also recommends that policymakers consider the establishment of commuter choice equity, meaning the increase of the federal tax limit for transit and vanpooling so that the amounts are equal to the qualified parking benefit. By creating commuter choice equity, a greater portion of monthly transit passes and vanpool fares would be fully covered under the increased tax limit of \$190 per month. Although all monthly bus passes are under \$100 and are, therefore, fully covered under the current tax limit of \$100, there are several monthly light and commuter rail passes that exceed the limit in major transit markets. Also, in some markets, transit rides may need to purchase monthly passes from more than one transit agency. According to VPSI, one of the leading vanpool providers in the nation, the average cost of monthly vanpool fares in major metropolitan areas is \$125; increasing the tax limit will provide a greater incentive to switch to vanpooling from the single-occupant vehicle.

Forecasted Mode Share Changes

To forecast the impact of expanding the definition of qualified transportation fringe benefits and creating Commuter Choice Equity, the Environmental Protection Agency's (EPA) COMMUTER Model was used. The COMMUTER Model is a tool used to estimate the impacts of transportation demand management (TDM) and other transportation strategies on mode shares, vehicle miles traveled (VMT), vehicle trips, and auto emissions. In this case, CUTR used the model to forecast the impact of the financial incentives associated with expansion and equity and increased employer participation on mode share. The adjusted mode shares were then used in the calculations of the tax revenue impact (TRI) of the proposed commuter tax benefits.

Table E.1: COMMUTER Model forecasts

Factor	Current situation	Source	COMMUTER Level 1*	COMMUTER Level 2**
Mode Share				
Drive Alone	76.0%	2000 US Census	-1.9%	-2.3%
Carpool	12.0%	2000 US Census minus 7 or more carpools and taxis	+1.0%	+1.2%
Vanpool	0.2%	2000 US Census= 7 or more carpools	+0.1%	+0.1%
Transit	4.5%	2000 US Census	+0.8%	+1.0%
Bicycle	0.4%	2000 US Census	<0.1%	<0.1%
Walk	2.9%	2000 US Census	+0.2%	+0.2%
Reductions				
VMT Reduction		COMMUTER Model	1.6%	1.9%
Trip Reduction		COMMUTER Model	1.8%	2.2%

*Level 1= Takes into account proposed tax benefits for alternative modes

**Level 2= Takes into account proposed tax benefits and an increased employer participation rates

Tax Revenue Impact (TRI) of Expansion

It is estimated that cost of expanding the definition of qualified transportation fringe benefits will cost the federal government between \$154.7 (\$25 tax limit for new modes) to \$309.3 million per year (\$50 tax limit for new modes) depending on the size of the tax limit. It is important to note that these figures are based on BLS employer participation rates, 2000 Census mode splits, and COMMUTER Model forecasts and assumes that every employee that uses a particular mode and works for an employer that offers a commute benefit takes the full amount of the tax limit. These figures do include increased costs due to increased participation or shifts in the mode shares caused by the new financial incentives.

Currently, it costs the federal government approximately \$114.6 million dollars per year to maintain vanpool and transit benefits for employers and employees. This figure assumes that every employee that uses either vanpooling or transit to get to work and works for a company that offers the benefit is taking the full \$100. It is estimated that to create commuter choice equity, it will cost the federal government an additional \$81.6 million dollars per year, with a total estimated TRI of \$196.2 million per year.

As a result, the total cost of both expanding the commuter tax benefits to include new modes and creating commuter choice equity is estimated to range from \$236.3 million to \$390.9 million depending on either a \$25 or \$50 tax limit for new modes respectively. Since the qualified parking benefit is incongruent with the goals of commuter choice programs, the freezing or elimination of the qualified parking benefits can mitigate the cost of providing the new benefits. It is estimated that the TRI on federal government for providing the qualified parking benefit is \$136.2 million per year, which is more than the cost of creating Commuter Choice Equity. It should be noted that all these estimates were purposely calculated to be on the high end of the potential range of costs.

By increasing the mode share of non-SOV commuting, the cost of expanding and modifying commuter tax benefits will also be mitigated by improved public health, air quality, and national security, and reduced traffic congestion which together cost billions of dollars per year.

Table E.2: Total TRI estimates (in millions)

Mode	At \$25 tax limit	At \$50 tax limit
Carpooling	\$98.1	\$196.1
Bicycling	\$3.0	\$6.0
Walking	\$3.0	\$6.0
Telecommuting	\$30.2	\$60.4
Additional Cost of Commuter Choice Equity	\$23.4	\$46.8
TOTAL	\$236.3	\$390.9

Employer Reactions to Expansion and Equity

Twenty employers from five metropolitan regions were surveyed and interviewed to determine employer reactions to expanding the definition of qualified transportation fringe benefits and the creation of commuter choice equity. In general, employers support the inclusion of carpooling, bicycling, and walking, but are more hesitant towards telecommuting. Carsharing had not been considered at the time of surveying. They also support increased tax limits for transit and vanpooling. The main reasons cited for supporting the expansion of commute tax benefits were to reduce traffic congestion and emissions. Most believed that implementation of an expanded program would be fairly easy since they already had similar programs in place.

However, employers definitely had concerns regarding the rules of eligibility for each of these modes. In general, employers want the rules clearly defined, especially in terms of how many days per week an employee would need to use a mode to qualify for the benefit. Employers were also concerned about how such mode could or would be combined and the process of monitoring the program.

Recommendations

Since policymakers are considering that the Internal Revenue Code Section 132(f) be modified so that carpooling, bicycling, telecommuting and carsharing are included as qualified transportation fringe benefits, the following are the study's recommendations:

1. Policymakers should consider equalizing the Internal Revenue Code Section 132(f) tax limits for transit and vanpooling with qualified parking. This change would establish equity where the existing inequity seems to employers to be an inconsistent with transportation, environmental, and energy policies to reduce traffic congestion, improve air quality, and reduce dependence on foreign oil.
2. Policymakers should consider freezing only the qualified parking benefit at its current tax-free level (\$190 per month). Annual adjustments due to inflation may to increase the gap between parking and transit and vanpools. In addition, freezing the qualified parking benefit would generate revenue and provide a source of funds for offsetting the cost of expanding the definition of qualified transportation fringe benefits, and creating commuter choice equity
3. Policymakers should clearly state how each mode is defined.
4. Policymakers should clearly state if and how qualified transportation fringe benefits can be combined to foster program development and ease of implementation for employers

Chapter 1: Introduction and Research Methodology

Background

According to the US Census, 76.3 percent of U.S. workers drove alone to work and of those workers that drove alone, 95 percent receive free parking at their worksite.⁴ The provision of free parking to 72.5 percent of U.S. workers who drive alone to work is a significant obstacle to overcome in the encouragement of alternative mode use. Employer-subsidized parking also contributes to increased traffic congestion, air pollution, fuel consumption, and subsequently, America's dependence on foreign energy sources.

However, Internal Revenue Code Section 132(f) does provide incentives for employers to encourage alternative mode use, specifically transit and vanpooling, through commuter benefits to employees. Under the current tax law, an employer may offer one or more options from a variety of commuter benefits, including:

- 1) An employer-provided commute subsidy, such as a subsidy for riding transit, vanpooling, or parking, which is tax-free up to specified limits;
- 2) A pre-tax commute benefit program in which employees are permitted to use pre-tax income for qualified parking, transit, or vanpooling on a pre-tax basis;
- 3) A parking cash out program, in which employees are given the option of accepting taxable income and/or tax-free transit/vanpool benefits in lieu of a free or subsidized parking space at work; or
- 4) A combination of the above.

This study focused primarily on the federal tax laws that allow employers to subsidize or have their employees use pre-tax salary to pay for qualified transit, vanpooling and parking costs. These benefits are described as *qualified transportation fringe benefits* in Internal Revenue Code Section 132(f). In 2003, the tax-free limit for transit and vanpool expenses increased to \$100 per month from \$65, but the limit for qualified parking went from \$185 to \$190 per month.

The questions that provided an impetus for this research include:

- How many employers are implementing and maintaining pre-tax commute benefit programs?
- Can other modes, such as carpooling, bicycling, walking, telecommuting, and carsharing also be defined as *qualified transportation fringe benefits*?
- What would be the impact of expanding the definition of *qualified transportation fringe benefits* on employers, employees and federal tax revenue?
- What would be the impact of creating Commuter Choice Equity, i.e., raising the tax limits of transit and vanpooling to equal the tax limit of qualified parking?

As a result, there were five objectives of this research:

1. Evaluate the current level of use of commuter benefits among employers;
2. Examine how commuter choice programs can be expanded to provide maximum utility to employers and employees, and the creation of commuter choice equity;
3. Survey and interview employers to understand their reaction to expansion and equity;
4. Estimate the tax revenue impact of those changes; and
5. Develop a set of recommendations for expanding commuter tax benefit programs.

In fact, there has already been a legislative effort to expand the definition of qualified transportation fringe benefits to include other alternative modes. In 2000, Rep. Earl Blumenauer (D-OR) and Mark Foley (R-

⁴ Shoup, Donald C. and Mary Jane Breinholt. "Employer-Paid Parking" *The Full Costs and Benefits of Transportation*. Eds. David Greene, Donald Jones, Mark Delucchi. Springer 1997, pp. 371-385.

FL) introduced legislation that would allow employees who bike to work to receive the same financial incentives as vanpoolers and public transit users. According to Congressman Earl Blumenauer:

Bicycling is one of the cleanest, healthiest and environmentally friendly modes of transportation that exists today. Common sense dictates that people who bike to work should have the same financial incentives as those who car-pool or who participate in a qualified parking plan.

In early 2003, Congressman James McGovern (D-MA) held a press conference to introduce legislation that would create equity between parking and transit/vanpool portions of the commute benefit. When passed into law, the new legislation will cap the transit/vanpool portion of the benefit at \$190, which is where the parking benefit is capped today. In his remarks, Congressman McGovern highlighted the need to remove ourselves from dependency on foreign oil and that “one way to do so is to give commuters incentives to make use of public transit rather than to commute to work by themselves.”⁵

During the same press conference, Larry Filler, President of the National Transit Benefit Association, addressed the history of the commute benefit, and how it has increased in the past twenty years from \$15/month to \$100/month. Mr. Filler partially credited the rise in transit ridership to the increase in the benefit level and also discussed the need to create equity in the benefits in today’s economy. According to Filler, “It is vitally important that we eliminate any distinction between the transit and parking benefit, especially considering the economy today.”⁶

Research Methodology

The research methodology was divided into several tasks, including reviewing existing literature, estimating current use of commuter tax benefits, examining the expansion of qualified transportation fringe benefits, and developing recommendations.

Due to the lack of information on the availability of tax benefit program information and employer participation, contingency plans were included in the methodology to provide research options if tax data was not available.

Task 1: Literature and Program review

The purpose of the literature review was to examine current studies on commuter tax benefits as well as reports from programs that are designed to take advantage of Commuter Choice regulations, such as Commuter Check and Transitchek. Most significant to the research were the results of the Transit Cooperation Research Project H-25, “Strategies for Increasing the Effectiveness of Commuter Choice Programs”, which was conducted by ICF Consulting, Inc. and CUTR.

Task 2: Preliminary Investigation into availability of tax information

The purpose of this task was to determine whether a significant amount of resources should be spent in trying to recover information about the use of commuter tax benefits. Specifically, CUTR was looking for information on employer commuter benefit programs through reported tax data. CUTR contacted the IRS and other federal agencies, including the Bureau of Labor Statistics, which conducts the National Compensation Survey.

⁵ ACT. TDM e-Review, Volume 3, Issue 4

⁶ ACT, *ibid*.

Task 3: Assessment of results of Task 2

Upon the completion of Task 2, CUTR made an assessment of the value of the results produced and the likelihood that further investigation will result in solid, usable data on the actual current level of use of Commuter Choice benefits. The assessment was done in cooperation with the FDOT project manager.

Task 4: Complete assessment of tax information available

CUTR continued gathering data from federal, state, and local governments applicable for the use of Commuter Choice as a benefit for commuters. CUTR also profiled use of Commuter Choice benefits by geographic area and by size of employer. The review of tax information was national in scope in order to provide a basis for comparison and generate new applications for major employers and metropolitan areas in Florida.

Task 5: Develop recommendations

Using the results of Task 4, in combination with the literature review, recommendations were developed for expanding and improving the performance of commuter tax benefit programs. This task included surveys involving employers from across the country. The surveys were augmented by the data collected in the TCRP project (see Task 1), which identifies difficulties employers face with Commuter Choice programs and formulates recommendations for increasing the effectiveness of current Commuter Choice programs. The lessons learned from the TCRP project will provide a starting point for discussions on the expansion of commuter tax benefits. The surveys focused on how Commuter Choice programs can be expanded and improved through new approaches, wider applications, or streamlining of procedures. CUTR developed a set of recommendations for expanding Commuter Choice benefits in this final report. Specifically, CUTR examined the redefinition of qualified transportation fringe benefits, the tax revenue impact of expanding the definition to new modes, and employer responses to these ideas.

Chapter 2: Review of Commuter Tax Benefits

Background

The provision of free parking to 95 percent of U.S. workers who drive alone to work is a significant obstacle to encouraging the use of alternative modes. To provide an incentive to use transit or vanpools as an alternative to driving alone, the U.S. government has adopted a federal tax law that provides tax benefits to commuters who use these alternatives through employer implemented benefit programs.

The Deficit Reduction Act of 1984 established that tax free transit passes could be provided by employers, but these were allowed to be offered only as a *de minimis fringe* benefit, meaning that they could be offered tax-free only if they were of small value, no more than \$15 per month.⁷ The Internal Revenue Service later adjusted the value to \$21 per month. The Energy Policy Act of 1992 (EPACT) expanded the term *qualified transportation fringe* to include transit passes and vanpool expenses in addition to qualified parking. EPACT also capped the monthly limit on tax-free parking and provided for annual changes to the tax-free limits based on changes in the Consumer Price Index (CPI), but only in \$5 increments.

The scope of tax-free commuter benefits was expanded greatly in 1998 with passage of the Taxpayer Relief Act of 1997 and the Transportation Equity Act for the 21st Century (TEA-21). Under Section 132(f) of the revised tax code, employers are able to offer qualified transportation fringe benefits to their employees either in addition to income or in lieu of taxable income.

For tax year 2001, the tax limits for transit and vanpool expenses rose to \$65 per month (\$780 per year) and qualified parking expenses up to \$180 per month (\$2,160 per year). In 2002, the tax-free limit for transit and vanpool expenses went up to \$100 per month (\$1200 per year) and \$185 per month (\$2,220 per year) for qualified parking. The monthly tax-free limits are also indexed to inflation. In 2003, the qualified parking limit rose to \$190 per month (\$2,280 per year), while the tax limits of transit and vanpooling remained at \$100 per month.

Qualified Transportation Fringe Benefits

Federal tax law allows employers to offer transit, vanpool, or parking costs as a tax-free benefit to employees. Collectively, these benefits are known as *qualified transportation fringe benefits*, as described in Internal Revenue Code Section 132(f). It is important to note that employees cannot take advantage of qualified transportation fringe benefits on their own; they can participate only through their employer's program. Furthermore, if an employee's transit pass, for example, costs more than the tax-free limit, the employee and employer must pay taxes on the amount that exceeds the tax-free limit.

It is important to note that the inclusion of parking as a qualified transportation fringe benefit has raised questions among employers interviewed for TCRP's "Strategies for Increasing the Effectiveness of Commuter Choice Programs." Employers expressed concern that if the purpose of the tax law is to promote and encourage the use of alternative modes of commuting, then why is parking included in the first place and why does it have a higher tax-free limit? The significance of this irony is even greater when taking into account the theory that the price of parking is a contributing factor in determining mode choice for work trips.

⁷ A *de minimis* benefit is a service or item of such small value or provided so infrequently as to make accounting for it impractical or impossible. Examples of *de minimis* benefits include occasional personal use of a company copying machine, occasional parties or picnics for employees, occasional taxi fare for employees working overtime, occasional tickets for entertainment events, coffee and donuts furnished to employees, and group-term life insurance provided by the employer for a spouse or dependent of the employee with a face amount of \$2,000 or less.

Any qualified transportation fringe benefit may be offered either in addition to or in lieu of salary. In implementing a commuter benefits program, employers have three tax-free options of how the benefit may be provided to their employees:

1. Employer provides full benefit to employees

Up to \$100 per month for transit and vanpool expenses and \$190 per month for qualified parking expenses is offered tax-free to employees. Neither the employer nor employee incurs payroll or income taxes for the amount provided.

2. Employer offers a “pre-tax” benefit to employees

Employees can use up to \$100 per month out of their monthly pay toward the cost of commuting on transit or in vanpools, and up to \$190 per month for qualified parking expenses, before taxes are applied. As a result, employees save federal income and payroll taxes. The employer also saves money because FICA and unemployment taxes do not apply.

3. Employer and employee share costs

Under this option, the employer and employee each contribute to the benefit. The employer, for example, might offer \$30 per month in transit/vanpool benefits and allow the employee to use pre-tax income of up to \$70 per month as a pre-tax benefit (total tax-free benefit maximum remains \$100 per month). The employer could also offer subsidized parking, paying \$60 per month for a \$100 space, and allowing the employee to pay for the other \$40 through a pre-tax salary deduction.

Parking cash out is a fourth option of providing qualified transportation fringe benefits; however, it is a taxable benefit. In a parking cash out program, the employee is offered the choice between a tax-free parking space at work or additional taxable salary. This option is commonly used for employees who take an alternative mode of commuting and give up their parking space in exchange for the additional salary.

An employer can offer a qualified transportation fringe benefit to all employees or groups of employees. However, employers can decide which employees are offered the benefit, and the amount of the benefit can vary. There are only limited restrictions on who can receive the qualified transportation fringe benefits. For example, individuals who are employed as partners in a company, who are self-employed, or who are shareholders of subchapter S corporations are not eligible.

According to the law, an employee who pays to park at a qualified parking area (such as a transit station) and then takes mass transit or vanpools to work can receive a combination of transit/vanpool and qualified parking benefits, up to a combined benefit of \$290 per month (\$100 for the transit/vanpool benefit and \$190 per month for parking).

Tax Savings and Benefits of Qualified Transportation Fringe Benefits

Both employers and employees can save taxes by implementing tax-free qualified transportation fringe benefits. However, the tax savings and benefits will depend on which of the options is used. The methodology for determining tax savings for each of the options is taken from TCRP's "Strategies for Increasing the Effectiveness of Commuter Choice Programs" and the "Commuter Benefits" Course developed by the National Transit Institute. The methodology for estimating tax savings is based on three key assumptions:

1. The average salary figure is assumed to be \$31,800.⁸
2. The average corporate tax deduction is set at 34 percent.
3. The average employee's federal taxes are based on being married with 2 exemptions.

The next three sections outline the tax savings of employers and/or employees.

1. Employer-Paid Benefits:

In an employer paid option, employers provide their employees with up to \$100/month in fare media or vouchers to commute via transit or vanpools and/or up to \$190/month in qualified parking. Since no payroll taxes are paid on the value of the benefit, the employer avoids added FICA taxes that would have been incurred if this benefit were treated as salary. The employee, in turn, does not pay taxes on the value of the benefit. As a result, employer-paid transportation benefits are cheaper to provide than an increase in taxable salary, and provide more value to employees. For example, by providing a \$100 per month (\$1200 per year) transit/vanpool benefit rather than an increase in salary to an employee (with an annual salary less than the FICA wage base), the employer saves \$7.65 per month or \$91.80 per year in payroll taxes (\$1,200 times 7.65% FICA). The employer can deduct both the commuter benefit and the salary increase as a business expense on its federal corporate income taxes.

Meanwhile, the employee saves approximately \$500 in taxes compared to receiving taxable income (based on a 28% federal income tax, 6% state income tax, and 7.65% FICA). With taxable salary, the employee never sees over 40 percent of the salary increase. In contrast, the employee receives the full \$1,200 per year (\$100 per month) in transit/vanpool benefits paid by the employer. To net an increase in after-tax income of \$1,200, the employee would need to receive a salary increase of over \$2,000.

Since estimating the tax revenue impact is one of the main objectives of this study, the tax savings associated with employer-paid commute benefit programs are shown below at four tax limit levels; \$25, \$50, \$100, and \$190. In an employer-paid program, only the employer receives tax savings resulting in tax revenue loss for the federal government. According to the following tables:

- By providing a \$25 subsidy, employers would reduce their annual taxes by approximately \$102 for every participating employee.
- By providing a \$50 subsidy, employers would reduce their annual taxes by approximately \$204 for every participating employee.
- By providing a \$100 subsidy, employers would reduce their annual taxes by approximately \$408 for every participating employee.
- By providing a \$190 subsidy, employers would reduce their annual taxes by approximately \$775 for every participating employee.

⁸ This figure is taken from the U.S. Census Bureau Statistics of U.S. Business as determined by dividing the total payroll cost by the number of all private sector establishment employees;
<http://www.census.gov/epcd/susb/1999/us/US--.htm>

Table 2.1: Employer-paid benefit at \$25 tax limit level

Employer perspective		BASE	Employer	Monthly savings	Yearly savings
Annual Cost in Salary		\$31,800	\$31,800		
Monthly Cost in Salary		\$2,650.00	\$2,650.00		
FICA taxes	7.65%	\$202.73	\$202.73		
Salary and Payroll Cost		\$2,852.73	\$2,852.73		
Tax Savings with Deduction	34%	\$969.93	\$969.93		
Total Cost to Provide Salary		\$1,882.80	\$1,882.80		
Employer Paid Benefit		\$0.00	\$25.00		
Tax Savings with Deduction	34%	\$0.00	\$8.50	\$8.50	\$102.00

Table 2.2: Employer-paid benefit at \$50 tax limit level

Employer perspective		BASE	Employer	Monthly savings	Yearly savings
Annual Cost in Salary		\$31,800	\$31,800		
Monthly Cost in Salary		\$2,650.00	\$2,650.00		
FICA taxes	7.65%	\$202.73	\$202.73		
Salary and Payroll Cost		\$2,852.73	\$2,852.73		
Tax Savings with Deduction	34%	\$969.93	\$969.93		
Total Cost to Provide Salary		\$1,882.80	\$1,882.80		
Employer Paid Benefit		\$0.00	\$50.00		
Tax Savings with Deduction	34%	\$0.00	\$17.00	\$17.00	\$204.00

Table 2.3: Employer-paid benefit at \$100 tax limit level

Employer perspective		BASE	Employer	Monthly savings	Yearly savings
Annual Cost in Salary		\$31,800	\$31,800		
Monthly Cost in Salary		\$2,650.00	\$2,650.00		
FICA taxes	7.65%	\$202.73	\$202.73		
Salary and Payroll Cost		\$2,852.73	\$2,852.73		
Tax Savings with Deduction	34%	\$969.93	\$969.93		
Total Cost to Provide Salary		\$1,882.80	\$1,882.80		
Employer Paid Benefit		\$0.00	\$100.00		
Tax Savings with Deduction	34%	\$0.00	\$34.00	\$34.00	\$408.00

Table 2.4: Employer-paid benefit at \$190 tax limit level

Employer perspective		BASE	Employer	Monthly savings	Yearly savings
Annual Cost in Salary		\$31,800	\$31,800		
Monthly Cost in Salary		\$2,650.00	\$2,650.00		
FICA taxes	7.65%	\$202.73	\$202.73		
Salary and Payroll Cost		\$2,852.73	\$2,852.73		
Tax Savings with Deduction	34%	\$969.93	\$969.93		
Total Cost to Provide Salary		\$1,882.80	\$1,882.80		
Employer Paid Benefit		\$0.00	\$190.00		
Tax Savings with Deduction	34%	\$0.00	\$64.60	\$64.60	\$775.20

2. Employee Pre-Tax Option:

Under the employee pre-tax option, employers allow employees to use up to \$100/month in pre-tax income to pay for transit or vanpools and/or up to \$190/month to pay for parking. The employer saves since no payroll taxes are paid on the income that is used by the employee. The employee saves on both income tax and payroll taxes, as the amount of the benefit is not part of their taxable salary.

If the employer does not pay for the fringe benefit, but deducts the pass and/or parking cost from an employee's pre-tax income, the employer sees a reduction in payroll taxes, and the employee does not pay federal income, payroll, and possibly state income taxes on the deducted amount.

Employers do not pay any payroll (FICA) taxes on the amount of income that is used by the employee from taxable income. FICA consists of Social Security and Medicare taxes paid on wages. As a result, for every dollar that an employee uses for a pre-tax transportation fringe benefit, the employer saves about 7.65 cents (for employees making less than \$87,000 per year).⁹ An employee who uses \$100 per month for transit or vanpools will save over \$91 per year for the employer in reduced FICA taxes. However, the total tax savings per employee for an employer providing a \$100 pre-tax benefit is approximately \$61 per year because the lower FICA taxes decreases the tax deduction corporations can take on payroll costs. If an employee reserves the full \$190 per month for qualified parking, employer tax savings would be approximately \$115 per year.

Employees also receive substantial tax savings. An employee who is married with 2 exemptions who reduces his or her pre-tax income by \$100 per month to pay for transit or vanpooling expenses could save approximately \$212 per year in income taxes. Employees could also save on state income taxes that piggyback on the federal tax definitions of compensation. For example, in a state with a 6 percent state income tax, employees could save an additional \$72 in taxes, bringing the total savings to almost \$280 per year.

According to the following tables, the tax savings associated with the pre-tax option for the employers and employees at the same four tax limits, \$25, \$50, \$100, \$190 and \$290, which is the maximum limit of combined benefits, are:

Table 2.5: Annual tax savings

Tax limit	Annual employer savings	Annual employee savings	Total annual tax revenue impact per participating employee
\$25	\$15.15	\$52.95	\$68.10
\$50	\$30.29	\$105.90	\$136.19
\$100	\$59.60	\$211.80	\$271.40
\$190	\$115.12	\$402.42	\$517.54
\$290	\$175.71	\$614.22	\$789.93

⁹ Because Social Security taxes do not apply on income above \$87,000 per year (in 2003), employer and employee tax savings from Commuter Choice programs would be less for an employer with many higher paid employees than one with lower paid employees. Source: <http://www.irs.gov/pub/irs-pdf/p15.pdf>, p. 15

Table 2.6: Pre-tax benefit at \$25 tax limit level

Employer perspective		BASE	Employer	Monthly savings	Yearly savings
Annual Cost in Salary		\$31,800	\$31,800		
Monthly Cost in Salary		\$2,650.00	\$2,650.00		
Employee Pre-tax benefit		\$0.00	\$25.00		
Taxable Salary		\$2,650.00	\$2,625.00		
FICA Taxes	7.65%	\$202.73	\$200.81	\$1.91	\$22.95
Salary and Payroll Cost		\$2,852.73	\$2,850.81		
Tax Deduction	34%	\$969.93	\$969.28	\$0.65	\$7.80
Total Cost to Provide Salary		\$1,882.80	\$1,881.54		
Total Federal Tax Savings				\$1.26	\$15.15

Table 2.7: Pre-tax benefit at \$25 tax limit level

Employee perspective		BASE	With pre-tax	Yearly savings	Steps
Adjusted Gross Income	a	\$31,800.00			
Yearly Commute Benefit	b	\$300.00			
Exemptions	c	2			
Withholding Allowance	d	\$3,100.00			
FICA	e	7.65%			
Standard Deduction	f	\$9,000.00			
Marital Status	g	Married			
	h				
Adjusted Gross Income	i	\$31,800.00	\$31,800.00		i=a
Pre-Tax Benefit	j		\$300.00		j=b
Taxable Adjusted Income	k	\$31,800.00	\$31,500.00		k=i-j
Standard Deduction	l	-\$9,000.00	-\$9,000.00		l=f
Exemptions x Withholding	m	-\$6,200.00	-\$6,200.00		m=c x d
Taxable Income	n	\$16,600.00	\$16,300.00		n=k+l+m
Withholding Tax	o	-\$860.00	-\$830.00	-30.00	
FICA	p	-\$2,432.70	-\$2,409.75	-22.95	p=k x e
Net Income	q	\$28,507.30	\$28,260.25		q=k +o+p
Federal Tax Savings/year	r			\$52.95	r=o+p difference
Federal Tax Savings/month	s			\$4.41	s=r/12

Table 2.8: Pre-tax benefit at \$50 tax limit level

Employer perspective		BASE	Employer	Monthly savings	Yearly savings
Annual Cost in Salary		\$31,800	\$31,800		
Monthly Cost in Salary		\$2,650.00	\$2,650.00		
Employee Pre-tax benefit		\$0.00	\$50.00		
Taxable Salary		\$2,650.00	\$2,600.00		
FICA Taxes	7.65%	\$202.73	\$198.90	\$3.82	\$45.90
Salary and Payroll Cost		\$2,852.73	\$2,848.90		
Tax Deduction	34%	\$969.93	\$968.63	\$1.30	\$15.61
Total Cost to Provide Salary		\$1,882.80	\$1,880.27		
Total Federal Tax Savings				\$2.52	\$30.29

Table 2.9: Pre-tax benefit at \$50 tax limit level

Employee Perspective		BASE	With pre-tax	Yearly savings	Steps
Adjusted Gross Income	a	\$31,800.00			
Yearly Commute Benefit	b	\$600.00			
Exemptions	c	2			
Withholding Allowance	d	\$3,100.00			
FICA	e	7.65%			
Standard Deduction	f	\$9,000.00			
Marital Status	g	Married			
	h				
Adjusted Gross Income	i	\$31,800.00	\$31,800.00		i=a
Pre-Tax Benefit	j		\$600.00		j=b
Taxable Adjusted Income	k	\$31,800.00	\$31,200.00		k=i-j
Standard Deduction	l	-\$9,000.00	-\$9,000.00		l=f
Exemptions x Withholding	m	-\$6,200.00	-\$6,200.00		m=c x d
Taxable Income	n	\$16,600.00	\$16,000.00		n=k+l+m
Withholding Tax	o	-\$860.00	-\$800.00	-60.00	
FICA	p	-\$2,432.70	-\$2,386.80	-45.90	p=k x e
Net Income	q	\$28,507.30	\$28,013.20		q=k +o+p
Federal Tax Savings/year	r			\$105.90	r=o+p difference
Federal Tax Savings/month	s			\$8.82	s=r/12

Table 2.10: Pre-tax benefit at \$100 tax limit level

Employer Perspective		BASE	Employer	Monthly savings	Yearly savings
Annual Cost in Salary		\$31,800	\$31,800		
Monthly Cost in Salary		\$2,650.00	\$2,650.00		
Employee Pre-tax benefit		\$0.00	\$100.00		
Taxable Salary		\$2,650.00	\$2,550.00		
FICA Taxes	7.65%	\$202.73	\$195.08	\$7.65	\$91.80
Salary and Payroll Cost		\$2,852.73	\$2,845.08		
Tax Deduction	34%	\$969.93	\$967.33	\$2.60	\$31.21
Total Cost to Provide Salary		\$1,882.80	\$1,877.75		
Total Federal Tax Savings				\$5.05	\$60.59

Table 2.11: Pre-tax benefit at \$100 tax limit level

Employee Perspective		BASE	With pre-tax	Yearly savings	Steps
Adjusted Gross Income	a	\$31,800.00			
Yearly Commute Benefit	b	\$1,200.00			
Exemptions	c	2			
Withholding Allowance	d	\$3,100.00			
FICA	e	7.65%			
Standard Deduction	f	\$9,000.00			
Marital Status	g	Married			
	h				
Adjusted Gross Income	i	\$31,800.00	\$31,800.00		i=a
Pre-Tax Benefit	j		\$1,200.00		j=b
Taxable Adjusted Income	k	\$31,800.00	\$30,600.00		k=i-j
Standard Deduction	l	-\$9,000.00	-\$9,000.00		l=f
Exemptions x Withholding	m	-\$6,200.00	-\$6,200.00		m=c x d
Taxable Income	n	\$16,600.00	\$15,400.00		n=k+l+m
Withholding Tax	o	-\$860.00	-\$740.00	-120.00	
FICA	p	-\$2,432.70	-\$2,340.90	-91.80	p=k x e
Net Income	q	\$28,507.30	\$27,519.10		q=k +o+p
Federal Tax Savings/year	r			\$211.80	r=o+p difference
Federal Tax Savings/month	s			\$17.65	s=r/12

Table 2.12: Pre-tax benefit at \$190 tax limit level

Employer Perspective		BASE	Employer	Monthly savings	Yearly savings
Annual Cost in Salary		\$31,800	\$31,800		
Monthly Cost in Salary		\$2,650.00	\$2,650.00		
Employee Pre-tax benefit		\$0.00	\$290.00		
Taxable Salary		\$2,650.00	\$2,360.00		
FICA Taxes	7.65%	\$202.73	\$180.59	\$22.14	\$174.42
Salary and Payroll Cost		\$2,852.73	\$2,540.59		
Tax Deduction	34%	\$969.93	\$863.80	\$4.94	\$59.30
Total Cost to Provide Salary		\$1,882.80	\$1,676.79		
Total Federal Tax Savings				\$9.59	\$115.12

Table 2.13: Pre-tax benefit at \$190 tax limit level

Employee Perspective		BASE	With pre-tax	Yearly savings	Steps
Adjusted Gross Income	a	\$31,800.00			
Yearly Commute Benefit	b	\$2,280.00			
Exemptions	c	2			
Withholding Allowance	d	\$3,100.00			
FICA	e	7.65%			
Standard Deduction	f	\$9,000.00			
Marital Status	g	Married			
	h				
Adjusted Gross Income	i	\$31,800.00	\$31,800.00		i=a
Pre-Tax Benefit	j		\$2,280.00		j=b
Taxable Adjusted Income	k	\$31,800.00	\$29,520.00		k=i-j
Standard Deduction	l	-\$9,000.00	-\$9,000.00		l=f
Exemptions x Withholding	m	-\$6,200.00	-\$6,200.00		m=c x d
Taxable Income	n	\$16,600.00	\$14,320.00		n=k+l+m
Withholding Tax	o	-\$860.00	-\$632.00	-228.00	
FICA	p	-\$2,432.70	-\$2,258.28	-174.42	p=k x e
Net Income	q	\$28,507.30	\$26,629.72		q=k +o+p
Federal Tax Savings/year	r			\$402.42	r=o+p difference
Federal Tax Savings/month	s			\$33.54	s=r/12

Table 2.14: Pre-tax benefit at \$290 tax limit level

Employer Perspective		BASE	Employer	Monthly savings	Yearly savings
Annual Cost in Salary		\$31,800	\$31,800		
Monthly Cost in Salary		\$2,650.00	\$2,650.00		
Employee Pre-tax benefit		\$0.00	\$290.00		
Taxable Salary		\$2,650.00	\$2,360.00		
FICA Taxes	7.65%	\$202.73	\$180.54	\$22.19	\$266.22
Salary and Payroll Cost		\$2,852.73	\$2,830.54		
Tax Deduction	34%	\$969.93	\$962.38	\$7.54	\$90.51
Total Cost to Provide Salary		\$1,882.80	\$1,868.16		
Total Federal Tax Savings				\$14.65	\$175.71

Table 2.15: Pre-tax benefit at \$290 tax limit level

Employee Perspective		BASE	With pre-tax	Yearly savings	Steps
Adjusted Gross Income	a	\$31,800.00			
Yearly Commute Benefit	b	\$3,480.00			
Exemptions	c	2			
Withholding Allowance	d	\$3,100.00			
FICA	e	7.65%			
Standard Deduction	f	\$9,000.00			
Marital Status	g	Married			
	h				
Adjusted Gross Income	i	\$31,800.00	\$31,800.00		i=a
Pre-Tax Benefit	j		\$3,480.00		j=b
Taxable Adjusted Income	k	\$31,800.00	\$28,320.00		k=i-j
Standard Deduction	l	-\$9,000.00	-\$9,000.00		l=f
Exemptions x Withholding	m	-\$6,200.00	-\$6,200.00		m=c x d
Taxable Income	n	\$16,600.00	\$13,120.00		n=k+l+m
Withholding Tax	o	-\$860.00	-\$512.00	-348.00	
FICA	p	-\$2,432.70	-\$2,166.48	-266.22	p=k x e
Net Income	q	\$28,507.30	\$25,641.52		q=k +o+p
Federal Tax Savings/year	r			\$614.22	r=o+p difference
Federal Tax Savings/month	s			\$51.19	s=r/12

Employee and Employer Share Cost:

For the third option, in which the employee and the employer share the cost of the benefit, the employer saves in two ways. First the employer saves on payroll taxes on the portion of the subsidy paid by the employee through a pre-tax deduction, and secondly, on the value of the benefit provided to the employee compared to providing a salary increase. The employee does not have to pay any taxes on the portion of the benefit provided by the employer. Additionally, the employee saves on income tax and payroll taxes by taking a pre-tax deduction to pay for the remainder of his/her commuting costs.

By combining an employer contribution and an employee pre-tax salary deduction for commuting expenses, employers and employees both can benefit. In this case, they both achieve cost savings. The employer pays no payroll taxes on its contribution and saves payroll taxes on the income the employee reserves on a pre-tax basis. The employee receives a direct, non-taxable subsidy from the employer and pays no payroll or federal income taxes on income that is reserved aside on a pre-tax basis.

As a salary substitute, an additional benefit, or a combination of the two, commuter benefits provide more value for less money than cash. Moreover, many employers may be able to achieve other substantial benefits in terms of reduced parking expenses and improved employee recruitment and retention. Tax savings were not figured for the shared cost option, since there was insufficient data to determine the average employee and employer contributions. Also, the shared cost option is not used in the determination of tax revenue impact.

Chapter Summary

This chapter focused on estimating the tax savings to employers and/or employees based on varying tax limits. Depending on the tax limit and the program option used, the annual tax savings for employers and/or employees can vary significantly. While it does cost employers to provide a subsidized benefit, they do reduce the cost of providing that benefit in federal income taxes. Under the employee-paid pre-tax option, the tax revenue impact on the federal government increases as both the employee and the employer reduce the amount they each pay in taxes.

To determine the financial impact, or tax revenue impact (TRI), on the federal government if commuter tax benefits were expanded or modified, the next step is to estimate the current number of employers that are offering these kinds of benefits to their employees. The next chapter will illustrate how data from the Bureau of Labor Statistics can be used to estimate employer participation rates.

Chapter 3: Estimating Employer Use of Commuter Tax Benefits

One of the primary purposes of this research is to determine current levels of participation in commuter tax benefit programs. Despite the tax benefits to employers and employees explained in Chapter 2, the vast majority of employers currently do not offer transit/vanpool benefits or parking cash out options to their employees.

Since employers are not required to submit any paper work to the IRS about their commute benefit program, there is no record of an employer's program. However, since 1979, the Department of Labor's Bureau of Labor Statistics (BLS) has been conducting surveys on employee benefits.¹⁰ In 1985, the Bureau added a question on subsidized commuting to the survey. In 1996, the BLS piloted the National Compensation Survey (NCS), which combined several different surveys including the survey on employee benefits.

According to the BLS, subsidized commuting benefits provide full or partial payment for the cost of an employee's commute to work via public transportation, a company sponsored vanpool, discount subway fares, or bus tokens. Use of a company car does not qualify as subsidized commuting. The survey specifically asks if employees have access to commuting subsidy, but does not ask about actual employee participation. From 1985 to 1991, data on free or subsidized parking was also available.

In 1999, the survey found that four percent of all employees had access to subsidized commute benefits. This figure declined to three percent in the 2000 survey. From 1985 to 2000, the percent of employees of medium and large employers (100 or more workers) with access to subsidized commute benefits remained steady at five percent with only the 1997 and 1999 figures rising to six percent before dropping back down to five percent in 2000. See Tables 3.1 through 3.4 for complete listing of data and finding available from the Bureau of Labor Statistics.

NCS Methodology

The purpose of the NCS is to provide comprehensive measures of occupational earnings, compensation cost trends, and details of benefit provisions. Surveys are sent to both state and local government agencies and private establishments.

According to the BLS, the sampling plan for the NCS is divided into three stages. The first stage includes the creation of a sample of 154 metropolitan and non-metropolitan areas out of the country's 326 metropolitan statistical areas. The second stage involves the selection of establishments based on a method of sampling referred to as probability proportional to employment size. Essentially this means that larger employers have a greater chance of being selected for the sample. The third stage of the sampling process is performed in the field and involves the selection by occupation. The field economist selects a specific number of sample occupations depending on the size of the establishment.

For the purposes of the survey, an establishment is "an economic unit that produces goods or services, a central administration office, or an auxiliary unit providing support services to a company."¹¹ Small businesses are defined as those with less than 100 employees, and medium and large companies are lumped together and are defined as companies with over 100 employees. However, large and medium businesses are further categorized with medium businesses have 100 to 999 employees and large businesses having 1000 or more employees. For the 2000 NCS, survey data was obtained from 1,436 private industry establishments, representing over 107 million workers.

¹⁰ Data from this chapter can be found at <http://stats.bls.gov/ncs/ebs/home.htm>.

¹¹ Bureau of Labor Statistics (2002) NCS glossary: <http://stats.bls.gov/ncs/ebs/glossary.htm>.

Key Findings

- **Current Rates and Trends**

Of the data available, the most comprehensive trend data is that of employees of medium to large employers who have access or are eligible for subsidized commuting benefits. From 1985 to 1995, the figure remained at 5 percent. From 1997 to 1999, it rose slightly to 6 percent, only to fall back to 5 percent in 2000.

- **Regional Differences**

For the 1999 NCS, the findings were broken down by region: Northeast, Midwest, South and West. While the Northeast and the Midwest each had 4 percent of employees of all private industries having access to subsidized commuting benefits, the South was slightly lower at 3 percent. However, in the West region, 9 percent of employees have access to subsidized commute benefits.

- **Large versus Small Employers**

The 1999 NCS, also provided a more comprehensive breakdown of employee access to subsidized commuting. While only 3 percent of employees of companies with less than 100 workers had access to the benefit, 6 percent of employees of companies with over 100 workers had access. Furthermore, 13 percent of employees of companies with between 1,000 and 2,499 had access to the benefit, 12 percent of employees of companies with over 2,500 workers had access. In 2000, 2 percent of employees of companies with less than 100 workers had access to the benefit, while 5 percent of employees of companies with over 100 workers had access. Possibly indicating a slight decline in access to subsidized commuting benefits.

- **Worker Classification and Unions**

According to the 1999 NCS data, three times as many professional or white-collar workers had access to subsidized commute benefits than blue-collar or service employees, 9 percent and 3 percent respectively. In 2000, these percentages all declined proportionally to 6 percent and 2 percent.

In 1999, unionized employees were almost twice as likely to have access to commute benefits than non-union employees, 7 percent and 4 percent respectively. However, in 2000, union access dropped to 2 percent and non-union access to 3 percent. The Bureau did not provide an explanation for this substantial decline.

Table 3.1: Subsidized Commuting Benefits for All Private Establishments

Year	Description	Percent
2000	Percent of Private Industry Workers with access to subsidized commuting	3% subsidized commuting
1999	Percent of Private Industry Workers with access to subsidized commuting	4% subsidized commuting

Table 3.2 Subsidized Commuting Benefits for Medium and Large Establishments

Year	Description	Percent
2000	Percent of Private Industry Workers with access to subsidized commuting; medium to large employers	5% subsidized commuting
1999	Percent of Private Industry Workers with access to subsidized commuting; medium to large employers	6% subsidized commuting
1997	Percent of Medium to Large employers that offer subsidized commuting benefit	6% subsidized commuting
1995	Percent of Medium to Large employers that offer subsidized commuting benefit	5% subsidized commuting
1991	Percent of Full-time employees of medium to large employers eligible for subsidized commuting and free and subsidized parking benefits	5% subsidized commuting 88% free or subsidized parking
1989	Percent of Full-time employees of medium to large employers eligible for subsidized commuting and free and subsidized parking benefits	5% subsidized commuting 90% free or subsidized parking
1988	Percent of Full-time employees of medium to large employers eligible for subsidized commuting and free and subsidized parking benefits	5% subsidized commuting 85% free or subsidized parking
1985	Percent of Full-time employees of medium to large employers eligible for subsidized commuting and free and subsidized parking benefits	5% subsidized commuting 86% free or subsidized parking

Table 3.3: Subsidized Commuting Benefits for Small Establishments

Year	Description	Percent
2000	Percent of Small employers that offer subsidized commuting benefit	2% subsidized commuting
1996	Percent of Small employers that offer subsidized commuting benefit	1% subsidized commuting
1994	Percent of Small employers that offer subsidized commuting benefit	1% subsidized commuting

Table 3.4: Subsidized Commuting Benefits for State and Local Governments

Year	Description	Percent
1998	Percent of Full and Part-time state and local government employees eligible for subsidized commuting	6% subsidized commuting
1994	Percent of Full-time state and local government employees eligible for subsidized commuting	7% subsidized commuting
1987	Percent of Full-time state and local government employees eligible for subsidized commuting and free and subsidized parking benefits	5% subsidized commuting 73% free or subsidized parking

Types of Programs Offered by Employers

For TCRP's "Strategies for Increasing the Effectiveness of Commuter Choice Programs," employers from four major metropolitan areas, Miami, Minneapolis, Boston, and San Francisco, were surveyed and interviewed to determine the type of program implemented, the barriers of implementations, and ways in which those barriers were overcome. The data also illustrated that employers implement a variety of commuter benefit programs. Of the 22 employers that were interviewed that currently offer a commuter tax benefit, 10 offer a pre-tax benefit, 7 offer an employer-paid subsidy, and 5 offered a combination of pre-tax and subsidy.

Since the participation rates of employers offering subsidized commuting quantified in BLS surveys does not differentiate between employer-paid or pre-tax options, this data will be used to adjust participation rates when determining the tax revenue impacts of expanding commuter tax benefits (see Chapter 6).¹²

To simplify the method for determining portion of the participation rate for the different commute benefit options, the portion attributed to combination programs is divided between the employer-paid and pre-tax portions. Therefore, instead of having 10 offering a pre-tax benefit, 7 offering an employer-paid subsidy, and 5 offering a combination of pre-tax and subsidy, for the purpose of estimating tax revenue impact, the proportion is 12 offering a pre-tax program and 10 offering an employer-paid subsidy program, assuming that the combination programs will even out the distribution. The result is that 55 percent of the participation rate is attributed to pre-tax programs, and 45 percent to employer-paid programs. For example, the percent of medium and large employers offering subsidized commuting benefits is 5 percent. If the tax revenue impact estimate were determined just using pre-tax program savings incurred by employers and employees, the estimate would be disproportionately high because the tax saving is higher for the pre-tax option (see the section on *Tax Savings and Benefits of Qualified Transportation Fringe Benefits* in Chapter 2.) It is more accurate to divide that 5 percent participation rate into 2.75 percent pretax (55% of 5%) and 2.25 percent employer-paid rates (45% of 5%).

Since there were no cases of state or local government agencies using the employer-paid program were found in the TCRP project, all 6 percent of the state and local government NCS participation rate is attributed to the pre-tax option in determining the tax revenue impact. Table 3.5 illustrates how the amount of the NCS participation rates that is attributed to each benefit option.

Table 3.5: Benefit Program Proportions of NCS Employer Participation Rates

Sector	NCS Participation Rate	Estimated Employer Paid Portion (45%)	Estimated Pre-tax Portion (55%)
Small Establishments	2%	0.90%	1.10%
Medium-Large Establishments	5%	2.25%	2.75%
State and Local Governments	6%	-	6%

¹² It should be noted that employers were not randomly selected for the TCRP H-25 study and the distinction between the pre-tax and employer-paid portions is based on a small sample size.

Chapter Summary

According the NCS, it is estimated that 2 percent of small establishments, 5 percent of medium to large establishments, and 6 percent of state and local government agencies offer their employees some kind of commuting benefit. There does not appear to be any significant changes in these figures since the BLS has collected the data.

Data collected during the TCRP project, Strategies for Increasing the Effectiveness of Commuter Choice Programs, suggests that there is a wide variation in the types of programs that employers design and implement. Of the 22 employers that were interviewed that currently offer a commuter tax benefit, 10 offer a pre-tax benefit, 7 offer an employer-paid subsidy, and 5 offered a combination of pre-tax and subsidy. For the purpose of estimating the tax revenue impact, the combination programs are divided between the pre-tax and employer-paid option. As a result, the employer participation rates are divided into pre-tax and employer-paid proportions at the rate of 55 percent and 45 percent respectively.

The participation rates reported in this chapter are used in Chapter 6 to estimate the potential tax revenue impacts of expanding or modifying commuter tax benefits. It is important to note that the use of these NCS participation rates will produce a higher cost estimate, since they include all “subsidized commuting benefit.” They are not limited to the benefits associated with IRC Section 132 and qualified transportation fringe benefits, which are the focus of this study. When providing cost estimates, it is better to err high than underestimate potential tax revenue impact. Also, the high estimates also then take into account some increased participation upon any expansion or modification of the tax benefits.

Chapter 4: Expanding and Modifying Commuter Tax Benefits

Since passage of TEA-21, there has been a national effort to raise awareness of the new options and to expand employer adoption of commuter benefits. In 1999, the Federal Transit Administration (FTA) released its Commuter Choice toolkit, providing information on transit/vanpool pass programs nationwide. Together the U.S. Environmental Protection Agency (EPA), Federal Highway Administration (FHWA), and FTA launched a national Commuter Choice Leadership Initiative (CCLI) to challenge and reward employers who provide a high level of commuter choice benefits to their employees. The federal team, consisting of EPA, FHWA, and FTA also began promoting a broader concept of the term Commuter Choice to mean not only qualified transportation fringe benefits (transit and vanpool), but other modes (e.g., carpooling, walking, and bicycling), as well as increased choices for commuting at different times of the day (e.g., flex-time and compressed work weeks), and even different locations (e.g., telework). Although these efforts have had much success, many employers still do not offer commuter benefits.

In 2003, Representatives Blumenauer (D-OR) and Foley (R-FL), and Senator Boxer (D-CA) introduced two bills on expanding commuter choice. Each of the draft bills includes carpooling, bicycling and walking, but the Blumenauer bill also includes carsharing. In each draft bill, the tax limits are set at \$50.

There are a number of ways in which to expand or modify commuter tax benefits.

1. Increasing effectiveness
2. Expanding definition of qualified transportation fringe benefit
3. Creating Commuter Choice equity

The implications of expanding and modifying commuter tax benefits depend on how it is carried out.

For TCRP H-25, CUTR conducted interviews with employers from five metropolitan areas that have implemented commuter benefit programs. In order to maximize cost-effectiveness by making use of existing data and profiles on these employer programs, these same employers were surveyed and interviewed to obtain their reactions to the expansion of commuter tax benefits. While the TCRP project interviews focused on improving the effectiveness of commuter tax programs, the surveys and interviews of this study focus on employer opinions regarding expanding and modifying commuter tax laws.

Increasing Effectiveness of Commuter Tax Benefit Programs

TCRP's "Strategies for Increasing the Effectiveness of Commuter Choice Programs" identified several barriers to the implementation of commuter benefit programs as well as employer characteristics that promote their development. According to the study, employer characteristics that contribute to successful commuter benefit programs include:

- ❖ Proximity to high-quality transit
- ❖ Significant number of employees already using transit or vanpools
- ❖ Severe or complicated parking problems
- ❖ Relocation of work site
- ❖ Environmentally friendly corporate culture

On the other hand, some of the key barriers to implementation included:

- ❖ High cost to implement and maintain program versus actual tax savings
- ❖ Internal coordination and administrative issues
- ❖ Lack of understanding how benefits work
- ❖ Development of policies and procedures and equity issues
- ❖ Concerns about cheating
- ❖ Convincing upper management and other key departments

To overcome these barriers, the TCRP Guidebook provided employers with a series of flowcharts to illustrate the types of decisions that have to be made in the development of the program. The guidebook also provides a detailed explanation of the tax laws and examples of how the employers and employees save money.¹³

Expanding the Definition of Qualified Transportation Fringe Benefits

Currently, the definition of qualified transportation fringe benefits includes transit, commuter highway vehicles (vanpools), and parking. The transit passes that employers can offer in their programs are defined as “any pass, token, farecard, voucher, or similar item that entitles a person to transportation

- a) on mass transit facilities, or
- b) provided by any person in the business of transporting persons for compensation or hire in a highway vehicle with a seating capacity of at least 6 adults (excluding driver).”

According to the tax law, vanpooling is considered transportation in a commuter highway vehicle.

“Transportation in a commuter highway vehicle is transportation provided by an employer to the employee in connection with travel between the employee’s residence and place of employment. A commuter highway vehicle is a highway vehicle with a seating capacity of at least 6 adults (excluding the driver) and with respect to which at least 80% of the vehicle’s mileage for a year is reasonably expected to be

- a) For transporting employees in connection with travel between their residences and place of employment; and
- b) On trips during which the number of employees transported for commuting is at least one-half of the adult seating capacity of the vehicle (excluding the driver).”¹⁴

Qualified parking is defined as “parking provided to an employee by an employer on or near the employer’s business premises or at a location from which the employees commute to work (including commuting by carpool, commuter highway vehicle, mass transit facilities, or transportation provided by any person in the business of transporting persons for compensation or hire.”¹⁵ Parking is provided by an employer if:

- a) the parking is on the property that the employer owns or leases, or
- b) the employer pays for the parking, or
- c) the employer reimburses the employee for parking expenses.

One of the main purposes of this study is to investigate the impact of expanding the definition of qualified transportation fringe benefits to include other modes. In particular, the modes in question include carpooling, bicycling, walking, telecommuting, and, to a lesser extent, car-sharing. In the next section, each of these modes will be discussed in reference to their inclusion in an expanded definition of transportation fringe benefits. Specifically, the section addresses possible ways to define each mode and tax limits. Tax revenue impacts on the federal government will be examined in the next chapter.

Benefits accrue for employees, employers, and society from switching from single occupant vehicle commuting. Employees can save money and reduce their taxable income, reduce wear and tear on their vehicle, and save on gas and parking costs. In the case of walking and bicycling, employees’ health can also improve, which can result in less absence due to illness. Employers can, in turn, reduce parking demand, reduce or avoid added payroll and federal taxes, and improve their corporate image as an environment-friendly company. Society benefits from reduced congestion and improved air quality, and greater energy independence.

¹³ The guidebook can be found online at http://gulliver.trb.org/publications/tcrp/tcrp_rpt_87.pdf

¹⁴ Internal Revenue Code Section 132(F)

¹⁵ Ibid.

For each mode, it is important to examine several questions in regard to eligibility. These key questions include:

- What are the reasons to consider each mode for inclusion in an expanded definition of qualified transportation fringe benefits?
- Is there a minimum number of days an employee must use that mode in order to receive a benefit?
- What is an appropriate monetary level for the benefit's tax limit?
- How and when could a mode be combined with another mode, or even more than one other mode?
- What will be the potential impact of including a particular mode in an expanded definition?

Carpooling

According to the 2000 Census, 12.2 percent of commuters carpool to work, which translates to over 15,600,000 commuters. However, 0.2 percent of these commuters are in carpools of 7 or more persons, which effectively makes them vanpoolers. As a result, 12 percent will be used throughout this report as the percentage of US commuters using carpools as their main means of transportation to work. Of course not all these commuters would be eligible for the benefit, since the employer must implement the tax benefit program. According to the BLS, only 5 percent of medium and large establishments, and 2 percent of small establishments offer subsidized commuting benefits. Therefore, applying these facts to 2000 Census and BLS data, the estimated number of carpoolers working for employers that offer some kind of subsidized commuting program is 531,000.

Since carpoolers do not incur additional commute costs and actually save money in comparison to driving alone to work, it can be assumed that one of the primary reasons for including carpooling as a qualified transportation fringe benefit is to provide a financial incentive to both employers and employees to encourage switching from single occupant vehicle commuting to ridesharing. Unlike carpoolers, transit riders and vanpool participants do incur commute costs directly related to that mode (although still not as high as single-occupant vehicle commuting) and the tax benefit helps defer all or a portion of that cost.

For the purpose of the tax code, carpooling essentially can be defined in two ways. The first way is to focus on occupancy and define carpooling as two or more commuters sharing a private vehicle from home to work. An alternative is to define carpooling as a "ridesharing arrangement." For example, the State of Virginia defines ridesharing arrangement as a "means of transportation of persons in a motor vehicle when such transportation is incidental to the principal purpose of the driver, which is to reach a destination and not to transport persons for profit. The term includes ridesharing arrangements known as carpools, vanpools, and bus pools."¹⁶ In Florida, ridesharing is defined as "an arrangement between persons with a common destination, or destinations, within the same proximity, to share the use of a motor vehicle on a recurring basis for roundtrip transportation to and from their place of employment or other common destination."¹⁷

In terms of eligibility, answers to various questions will determine the impact:

- Will there be a minimum usage requirement as with commuter highway vehicles, such as percent an employee must carpool to work?
- Are carpooling partners restricted to co-workers?
- Can carpooling be combined with other benefits, such as a transit benefit if co-workers carpool to transit station park and ride lots?
- What should the tax limit be for carpooling? In the draft legislation developed by Rep. Blumenauer, the recommended tax limit is \$50 per month for carpoolers.

In terms of the eligibility requirements, the tax code could be written very specific or it can be left open-ended in order to allow employers to define eligibility for their own program. According to the employer

¹⁶ <http://www.drpt.state.va.us/resource/downloads/VanStartVanSave.pdf>

¹⁷ <http://www.dot.state.fl.us/publictransportation/Documents/FAC/fac14073.pdf>

interviews, discussed later in Chapter 6, employers, in general, preferred a more specific tax code rather than one open to employer interpretation.

Bicycling

The 2000 Census reports that there are approximately 488,500 bicycle commuters in the United States, representing 0.4 percent of the mode share. Taking into account BLS data on employer commuting benefits and 2000 Census data, it is estimated that only 21,000 bicycle commuters are working for employers that offer some kind of commuting benefit.

Bicycling advocacy groups, such as the League of American Bicyclists have been at the forefront pushing for the expansion of the definition of qualified transportation fringe benefits. The 2003 National Bike Summit held in Washington, D.C. brought together nearly 400 bicyclists from 47 states and abroad, representing the worlds of advocacy, industry, transportation and public health to share important concerns and best practices. Participants met with some 80 Senators and over 300 Representatives or their staffs to educate Congress on the bike issues at stake in the reauthorization of TEA-21.

As a result, new bipartisan legislation regarding bike transportation was introduced in conjunction with the National Bike Summit. Senators Dick Durbin (D-IL) and Susan Collins (R-ME) introduced the Conserve by Bike Act (S. 547) and Representatives Earl Blumenauer (D-OR) and Mark Foley (R-FL) reintroduced the Bike Commuter Act (H.R. 1052). The Conserve by Bike Act would provide \$6.2 million to establish a 10-city pilot program to facilitate and maximize bicycling programs and study the feasibility of converting motor vehicle trips to bicycle trips.

The Bike Commuter Act would include bicycle commuting within the definition of transportation modes eligible for the tax benefits available under the Transportation Fringe Benefit Program. H.R. 1052, with 16 cosponsors, was referred to the House Ways and Means Committee. Noting that more than 50 percent of the working population has a work commute of 5 miles or less, Senators Snowe (R-ME) and Wyen (D-OR) have introduced legislation that would add bicycle commuting as an eligible mode of alternative transportation under the Qualified Transportation Fringe Benefit program.

As with carpooling, there are many issues that need to be resolved in terms of eligibility:

- How frequently does an employee have to bicycle to work to be eligible?
- Does an employee have to bicycle the entire route from home to work?
- Could the bicycling benefit be combined with other tax benefits?
- What should the tax limit be for bicycle commuters? As with carpooling, a \$50 tax limit has been proposed.

In terms of combining benefits, many bicycle commuters also use bikes-on-transit programs during their work commute. Policymakers will need to decide if these commuters will be able to take both a bicycle and a transit tax benefit. Especially considering the fact that many bike and transit commuters may rent bicycle lockers at rail station or commuter centers that represents an additional cost incurred by the commuter that could be covered by the bicycle portion of combined bicycle and transit benefits. The renting of bicycle lockers also begs the question of whether or not the definition of qualified parking be expanded to include secure bicycle parking, such as lockers at transit stations or valet bicycle parking. In a valet bicycle parking operation, bicyclists “check in” their bicycles to an attendant who store them in a secure area and return them when they are claimed.¹⁸ Another option would be to allow bicyclists to use a transit benefit to cover the costs of locker rental at a transit station.

Another issue to address with bicycle commuters is that geographic location may be a factor in season changes in the employees’ mode choice. While in a state like Florida, commuters can bicycle to work year-round, commuters in Boston, for example, can only bicycle a few months of the year. Therefore, any programs that an employer establishes must be flexible enough to address this issue.

¹⁸ For examples of valet bicycle parking, see <http://www.bikestation.org>

Walking

According to the 2000 Census, 2.9 percent or over 3.7 million commuters typically walk to work. Approximately, 151,000 commuters walk to work and are employed with a company that offers some kind of commuting benefit. Since all commuters walk some portion of their trip from their home to work, eligibility for a walking tax benefit will need to be carefully defined. As with all these modes, several questions need to be addressed:

- How frequently would an employee have to walk?
- What portion of the total commute distance would an employee need to walk?
- To what extent could the walking benefit be combined with other benefits?
- How can employers verify that an employee is walking to work?
- What should the tax limit be for walking?

In its most strict form, only employees that walk the entire distance to and from work would be eligible for the tax benefit. A less strict definition would be that an employee would be eligible for the benefit if he or she walks at minimum a certain percentage, such as 80 percent, of their total commuting trip. Of course, it would be difficult for an employer to verify the distance and proportion of a work trip an employee walks.

One possible difficulty in justifying the inclusion of walking in an amended tax code of commuter benefits is that people who walk to work essentially incur no cost associated with their commute, except perhaps wear and tear on walking shoes and need for all-weather apparel. As a result, the inclusion of walking in an expanded definition would primarily serve as a financial incentive to promote switching from single occupant vehicle use to walking or as a reward for those employees already doing it.

Telecommuting

Depending on the source of information, the amount of U.S. workers that telecommute at least one day per week varies substantially. According to the May 2001 Current Population Survey of the Bureau of Labor Statistics, 19.8 million persons did some work at home as part of their primary job. However, only 17 percent of those workers “had a formal arrangement with their employer to be paid for work they did at home.”¹⁹ Assuming that “formal arrangements” can be equated with telecommuting, then the amount of telecommuters is estimated at 3.4 million. The survey also reported that these telecommuters work at home about 2 days per week.

On the other hand, Telework America estimates that approximately 28 million American workers that do some work at home, on the road, at satellite work centers, or some combination of these.²⁰ Of those 28 million, CUTR estimates that approximately 4.4 million workers are employees that telecommute at least one day per week.²¹ Using that figure, an estimated 208,000 telecommuters also work for employers that offer some kind of commuting benefit based on BLS employer participation rates.

Telecommuting can have a significant impact on traffic congestion, energy use and emissions since it completely eliminates a portion of an employees work trips. However, since the telecommuter does not incur direct commuting costs but the employer does, it may be difficult to justify a tax benefit. If policymakers choose not to include telecommuting in an expanded definition, a potential option would be to offer employers a tax credit for each telecommuter since employers may incur costs in providing the technology for the home-based worker.

¹⁹ Bureau of Labor Statistics (2001). “Work at Home in 2001.” <http://www.bls.gov/news.release/homey.nr0.htm>

²⁰ Nilles, Jack (2000) “Telework America 2000 Research: Key Findings”:
<http://www.workingfromanywhere.org/pdf/ITACTeleworkAmerica2000KeyFindings.pdf>

²¹ See Appendix B for explanation of the Expected Telecommuting Growth Rate

If, on the other hand, telecommuting is included in an expanded definition of qualified transportation fringe benefits, policymakers will have to decide on eligibility criteria:

- How many days would an employee have to telecommute to be eligible for the tax benefit? Eligibility could also be defined in terms of the percentage of work an employee does at home in comparison to work completed at the primary employment site.
- Would employees that telework at satellite offices or telework centers also be eligible for the benefits? If the reasoning behind including telecommuting as a qualified transportation fringe benefit is that telecommuting eliminates peak hour work trips, then the use of telework centers or satellite offices would be problematic since employees still may have to travel at peak times to and from the telework centers or satellite offices.
- Would employees that work at home full time be eligible for the benefit?
- Could the telecommuting benefit be combined with other benefits? For example, an employee may telecommute 50 percent of the time and take transit the other 50 percent.
- What should the tax limit be for telecommuters?

If it is decided that a mode must be used for the majority of work trips, the inclusion of telecommuting is problematic since most traditional telecommuters typically work at home only one or two days per week. If users of other alternative modes are required to use the mode for the majority of their commutes (i.e. three days of a five day work week) then few telecommuters would be eligible. Furthermore, if it were decided that in order to combine benefits of two modes, those modes must be used together to complete a single work trip, then telecommuting could not be combined with another mode since a telecommuter is not making a work trip.

Carsharing (Shared-use vehicles)

Shared-use vehicle programs can expand the mobility of individuals who prefer to use an alternative mode of transportation, such as bicycling or transit, but still need occasional use of a private vehicle. Individuals that are members of a shared-use vehicle program receive the benefits of a private car without incurring the costs and responsibilities of ownership. In most programs, members pay per trip based on time and vehicle mileage, as well as annual membership fees. Members can also reserve a vehicle by phone or by the Internet.

Shared-use vehicles can be divided into two main classifications; station cars and car-sharing programs. Station cars are used to facilitate transit access either on the home or destination-end of a trip. Car-sharing programs are essentially organized short-term car rental programs accessible in convenient locations throughout neighborhoods, office parks, and university or corporate campuses.

As of June 2002, shared-use vehicle programs in the United States collectively claimed to have approximately 11,500 members operating 567 vehicles (Shaheen and Meyn 2002). According to www.carsharing.net, car-sharing is geared toward individuals that drive less than 7,500 miles per year and do not need a car to get to work. Individuals in shared-use vehicle programs, in general, live in the most densely populated metropolitan areas of the country, and make over 50 percent of their trips using transit.

According to Autoshare, shared-use vehicle program members do, in fact, typically use transit to commute to and from work.²² As a result, it is most likely that these individuals will be using another one of the alternative modes, such as transit, to commute, and would be eligible for the tax benefits associated with that mode. According to a study of carsharing in Portland, only 3 percent of members trips were for commuting while almost 60 percent of trips were for either entertainment and dining (19%), shopping errands (34%), or medical appointments (6%).²³ According to the Portland study, carsharing is less expensive than private vehicle ownership. Katzev estimates that standard vehicle trip fees are

²² <http://www.carsharing.net>

²³ Katzev, Richard (1999) "Carsharing Portland: Review and Analysis of Its First Year" Oregon Department of Environmental Quality: Portland: p. 42.

\$1.50/hour and 40 cents per mile, with a \$45 daily cap; estimates do not factor in annual membership fees.²⁴

Since carsharing employees are most likely already taking an alternative form of transportation to work and carsharing is often a form of SOV commuting, is it necessary to add carsharing to an expanded definition of qualified transportation fringe benefits? And if it is added, could it be combined with any other benefits, or would the employee only get to choose one, presumably the higher benefit of the two. The issues that these two questions raise may make adding carsharing somewhat difficult for policymakers to justify. If the federal government wants to provide an incentive for carsharing, perhaps an alternative is to provide individual tax deductions to members of car-sharing organizations. For example, an individual could deduct the cost of joining a carsharing organization or annual fees on their individual tax return. This would eliminate issues of combining and take it out of the employer's hands, yet still help to offset the costs of becoming a carsharing member. In this case, an individual's ability to benefit from their personal decision to join a carsharing organization would not be dependent on their employer's willingness to implement a commute tax benefit program.

Recommended Status of Benefits

Another issue to examine is whether or not all the suggested modes, carpooling, bicycling, walking, telecommuting, and carsharing, should all be recommended for inclusion in an expanded definition of qualified transportation fringe benefits. A number of different factors could be used in determining the status classification of each mode. For example, policymakers may identify to what extent is each alternative mode associated with:

- Vehicle trip reduction
- Vehicle miles traveled (VMT) reduction
- Shift from peak hour congestion
- Emission reduction
- Decreasing foreign energy dependence and promoting energy conservation
- Additional costs incurred by employee and/or employer
- Supporting of a healthy lifestyle

By expanding the definition of commuter tax benefits, financial incentives are created to encourage employers and employees to use one of the other alternative modes and employees that are currently using those modes are rewarded for their efforts. Four of the primary reasons for encouraging alternative modes of commuting are vehicle trip reduction, VMT reduction, shifting away from peak hour travel, and reducing auto emissions. Two secondary reasons for expanding commuter tax benefits are to offset the costs of switching to these alternative modes, thus making the switch more attractive, and for bicycling and walking, supporting a healthy lifestyle. Obviously, any employee that switches from single-occupant commuting to an alternative mode will most likely save some money. However, there are specific costs associated with each mode as well. For example, a bicycle commuter may need to rent a locker or a space at secure parking Bikestation or a carpool may still have to pay for parking.

There is little doubt that bicycling and walking are the best ways for anyone to get the minimum daily exercise that is needed to maintain health. However, according to the Surface Transportation Policy Project's Mean Streets 2002, "the portion of people who walk to work dropped by 26 percent between 1990 and 2000, at the same time that the portion of the population who are obese or overweight has jumped more than 60 percent."²⁵ It is estimated that the cost of treating diseases associated with our more sedentary lifestyle and significant decreases in bicycling and walking is \$76 billion a year.²⁶

²⁴ Ibid: p. 16.

²⁵ STTP (2002), "Mean Streets 2002": <http://www.transact.org>

²⁶ Pratt, M, Macera, C.A., and Wang, G. (2000). "Higher Direct Medical Costs Associated with Physical Inactivity." *The Physician and Sports Medicine*: Vol. 28, No. 10, pp: 63-70.

Table 4.1: Reasons of Expansion

Mode	Reduce vehicle trips	Reduce VMT	Shifts from peak	Reduce emissions	Incurring cost	Supports healthy lifestyle
Carpool	Yes	Yes	Not necessarily	Yes	Employees save money on gas, wear and tear, maintenance, parking costs	No
Bicycling	Yes	Yes	Not necessarily	Yes	Employees save money by not driving, but direct costs include equipment, bikes-on-bus permits, and or bicycle locker rental	Yes
Walking	Yes	Yes	Not necessarily	Yes	Employees save money by not driving, but costs possibly include equipment such as walking shoes and special clothing	Yes
Tele-commuting	Yes	Yes	Yes	Yes	Employer incurs cost, employee saves money by eliminating all or a portion of commuting cost	No
Carsharing	Depends on mode used for commute	Depends on mode used for commute	Depends on mode used for commute	Depends on mode used for commute	Employees save money since carsharing membership and use fees are lower than car ownership costs	Depends on mode used for commute

In terms of the status of each mode, it is recommended that carpooling, bicycling, walking, carsharing and telecommuting and walking should be considered for an expanded definition of commuter tax benefits, since each of the mode do contribute to the reduction of vehicle trips, VMT, and auto emissions. While carpooling, bicycling, and walking are already supported by draft legislation, telecommuting and carsharing could be harder to justify. With telecommuting, it is the employer that is incurring cost and there are issues concerning minimum requirements and combination of benefits. In regard to carsharing, it can easily be argued that a carsharing member will most likely already be taking an alternative and should be only eligible for benefits associated with that alternative.

Combination of Benefits

By expanding the definition of qualified transportation fringe benefits, still more issues arise concerning if and how specific benefits can be combined. Current tax law allows the combination of qualified parking and transit or vanpool benefits. This section will examine the various ways in which modes could be combined and employees eligible for dual benefits.

Policymakers have a variety of options on how and if particular modes can be combined.

1. Full combination: For example, if the bicycling tax limit were set at \$50, the tax limit for a bikes-on-transit user who combines bicycling and transit to get to and from work would be eligible for up to \$150 per month.
2. Combine up to the higher of the two modes: For example, instead of a bicycle-on-transit user getting \$150 per month (assuming a \$50 bicycle tax limit), he or she could only receive up to a \$100 benefit, the higher of the two. If the bikes-on-transit user's monthly bus pass is only \$50, he or she could still receive up to a \$50 bicycle benefit for a total of \$100 per month.
3. One or the other but not both: For example, the same bikes-on-transit user would only be eligible to receive either the transit or the bicycle benefit, but not both. Compared to the previous option, bikes-on-transit users in the same \$50 per month transit pass market would not be able to receive the bicycle benefit.

4. No combination, except with a qualified parking benefit: Currently either transit or vanpooling can be combined with qualified parking. In this case, the bikes-on-transit user would not be eligible for both a bicycle and a transit benefit, but would be able to combine transit and qualified parking if he or she is renting a bicycle locker, for example, at a transit station. **By maintaining this rule, and allowing only combination with parking, policymakers can reduce a potentially confusing situation for employers developing policies for their programs.**

There are some other issues to address. A key distinction to make is whether the combined modes have to be used together or if they could also be used separately. For example, an employee may bicycle to a rail station, board the train with their bicycle, and then bicycle from the end station to their workplace. This would be using the modes together. The other situation would be, for example, if an employee bicycles to work three days per week and carools the other two days. This would be using the modes separately. The ability to combine modes used separately would ultimately depend on the eligibility requirements. If employees were required to use a particular mode for the majority of their weekly work trips (i.e. three days of the traditional five day work week), then combining separate modes would be a moot point. **By requiring a mode be used for the majority of work trips, a potentially confusing situation for employers trying to develop programs can be eliminated.**

Another issue to address is the possibility of allowing for triple combinations. For example, if a bikes-on-transit user pays for a bicycle locker at a transit station, that employee could be eligible for a transit, bicycle, and qualified parking benefit. Of course, in this case, even the possibility of a triple combination is dependent on whether or not bicycle parking is included in the definition of qualified parking. To grasp the potential complexity that the combination issue entails, each of the possible 25 combinations will be discussed:

1. Transit and Carpooling: It is likely that there are employees that carpool together to a transit stations park and ride lot and therefore, this combination benefit should be considered. The two modes are used together to complete a single work trip. However, this combination also begs the question of whether or not, such employees would be eligible for a triple benefit including qualified parking since they may have to pay to park in the park and ride lot.
2. Transit and Bicycling: Bikes-on-bus and bikes-on-rail programs are widespread across the United States. The modes are combined to complete a single work trip. A triple benefit is also possible if a bikes-on-bus user pays for secure bicycle parking.
3. Transit and Walking: Since walking is a part of all work trips to some extent, any combinations including walking may be difficult to justify. Just how far would an employee need to walk to be considered both a walker and a transit user. To reduce potential confusion, it may be necessary to deny any combinations with walking.
4. Transit and Telecommuting: It is possible for a telecommuter to use transit on the days they do not stay at home. However, this means that the two modes are not combined to complete a single work trip instead they are used separately. Depending on what policymakers decide in regard to minimum days per week or the need to combine mode in a single trip, this combination may not be valid.
5. Transit and Carsharing: As stated earlier, the majority of carsharers already use transit since many have given up their private automobile. Like telecommuting, two modes are not being combined to complete a single trip and therefore, this combination may not be valid depending on what policymakers decide.
6. Vanpool and Carpooling: This seems to be an unlikely combination, unless there are employees that carpool to a vanpool staging area. In that case, the two modes would be combined to complete a single work trip.
7. Vanpool and Bicycling: Although this seems to be an unlikely combination, it is possible that an employee could bicycle to a vanpool staging area.
8. Vanpool and Walking: As with transit and walking, any combination including walking are problematic.
9. Vanpool and Telecommuting: See Transit and Telecommuting.
10. Vanpool and Carsharing: See Transit and Carsharing.
11. Parking and Carpooling: Carpoolers who still must pay for parking should be eligible for a combination benefit just as transit users or vanpoolers can currently combine benefits with qualified parking.

12. Parking and Bicycling: In many cities, bicyclist can and do pay for secure bicycle parking. Bicycle commuters should also be allowed to combine a bicycle and qualified parking benefit.
13. Parking and Walking: The combination of these benefits is not possible.
14. Parking and Telecommuting: The only way these benefits could be combined is in a triple combination of some sort, which for the sake of reducing complexity should probably not be allowed.
15. Parking and Carsharing: Same as Parking and Telecommuting
16. Carpooling and Bicycling: While it is possible to combine these modes to complete a single work trip, it is most likely a rare combination.
17. Carpooling and Walking: While an employee may walk to a co-workers house to carpool, for the sake of reducing confusion, policymakers should avoid allowing a walking benefit to be combine with other benefits.
18. Carpooling and Telecommuting: If policymakers decide that modes must be combined, then employees would not be eligible to combine these benefits.
19. Carpooling and Carsharing: Carsharers that do not take transit, may often carpool to work. However, these do not represent two modes used together to complete a single trip.
20. Bicycling and Walking: This seems like an unlikely combination, unless a bicycle commuter parks a long distance from his or her worksite.
21. Bicycling and Telecommuting: These modes are not used together to complete a single work trip. Telecommuters who bicycle on the days they are not telecommuting would only be eligible for one or the other benefit if policymakers decide to require that modes be used together to complete a single trip.
22. Bicycling and Carsharing: It is possible that carsharers are able to give up their private car because they are bicycle commuters. However, two modes are not being combined and if policymakers decide on a minimum number of days requirement than they would need to bicycle the majority of their trips just to be eligible for that benefit.
23. Walking and Telecommuting: Telecommuters who walk on the days they are not telecommuting would only be eligible for one or the other benefit if policymakers decide to require that modes be used together to complete a single trip.
24. Walking and Carsharing: It is likely that there are carsharers that walk to work. However, as previously stated, problems can arise when combining walking with other modes since walking is always a part of someone's commute.
25. Carsharing and Telecommuting: It is possible that carsharers are able to give up their private car because they are telecommuters. However, two modes are not being combined and if policymakers decide on a minimum number of days requirement than they would need to telecommute the majority of the time just to be eligible for a telecommuting benefit.

Walking combinations in general: Since walking is a part of all commute trips to some extent, policymakers should consider not allowing walking to be combined with other modes. By restricting combinations with walking, one potential problem for employers planning and implementing programs would be eliminated. If an employee walks to work they should be eligible to receive a commute benefit.

Carsharing combinations in general: Research indicates that only 3 percent of carsharing trips are used for commuting and that carsharers generally use transit or another alternative mode to commute to and from work. It is likely that an employee who is a member of a carsharing organization either carpools, vanpools, takes transit, bicycles, or walks to work. Therefore, if carsharing were added to the list of qualified transportation fringe benefits, policymakers would need to decide if the carsharing benefit could be combined with other alternative mode benefits. If combinations are not allowed, employees could be allowed to take the higher of the two benefits, i.e., either the carsharing benefit or the benefit of the alternative mode used.

Telecommuting combinations in general: If telecommuting is added to the list of qualified benefits, it is possible for an employee to use an alternative mode on the days he or she does not telecommute. As a result, the issue of whether or not that employee could combine benefits would need to be addressed. However, the ability to combine would depend on the eligibility requirements associated with each mode. For example, if an employee were required to use a particular mode for the majority

of his or her commutes (i.e., three out of the five day work week), then the combination of any modes with telecommuting would be a moot point.

As the list above indicates, there are numerous possible combinations of benefits. Some are unlikely combinations, others may occur with greater frequency. Some should be allowed if the commuter tax benefits are expanded. If policymakers want to avoid issues related to combining of questionable benefits, they could choose to allow employees to choose the higher benefit of the two, especially in cases where benefits can really only be combined separately. The table below lists combinations that are currently allowed or should be allowed if policymakers decide that either the new alternative modes can be combined with parking or that benefits can be combined when the modes are used together to complete a single work trip.

Table 4.2: Combination of Benefits

Combination	Status	Reasoning
Parking and Transit	Currently allowed	Employees may have to pay to park at transit station park and ride lots.
Parking and Vanpool	Currently allowed	Employees may have to pay for parking van at park-and-ride lot; limited to "prime member."
Transit and Vanpool	Currently allowed	Transit and vanpool benefits can be combined within the \$100 tax limit.
Parking and Carpool	Should be considered	Carpoolers still incur parking costs and should be allowed to combine benefits with parking as vanpoolers and transit users already can.
Parking and Bike	Should be considered	Employees that bicycle commute may have to pay for secure bicycle parking and should be allowed to combine benefits.
Bike and Transit	Should be considered	Employees may have to pay for permits to use bikes-on-transit programs.
Carpooling and Transit	Should be considered	Employees may carpool to transit stations.

In summary, it is recommended that all alternative modes be considered for inclusion in an expanding definition of qualified transportation fringe benefits. When evaluating each of the modes, policymakers need to decide the monetary level of the benefit, any eligibility requirements in terms of days per week mode must be used, and when and if combinations are allowed.

By requiring a particular mode to be used for the majority of work commute trips and only allowing a combination with qualified parking or by allowing only combinations in which the modes in questions are used together to complete a single work journey, many combinations could be eliminated thus reducing potentially confusion due to the complexity of possible combinations and ease the process of planning and implementing programs for employers.

Creating Commuter Choice Equity

A third way to modify or expand commuter tax benefits is to create “commuter choice equity” by increasing the transit and vanpool tax limits to match the limit for qualified parking (currently \$190 per month). According to TCRP “Strategies for Increasing the Effectiveness of Commuter Choice Programs, the inequity between the tax limits is often thought of by employers as being inconsistent with the perceived objectives of the tax benefits, namely, the reduction of single-occupant vehicle work trips to reduce congestion and improve air quality. Employers find it ironic that the tax limit for parking is higher than that of transit or vanpools especially when some commuter rail passes far exceeds the current limit for transit and vanpools.

Transit Equity

By raising the tax limits associated with vanpooling and transit, a greater portion of transit passes would be fully covered if an employer used the full amount in their commuter benefits program. According to the 2002 APTA Fare Summary document, six monthly passes over \$100 include:²⁷

1. Southeastern PA Transit Authority (\$126)
2. Northern Virginia Transportation Commuter Rail (\$103)
3. MTA Long Island Rail Road (\$103),
4. Virginia Railway Express (DC area) (\$103)
5. Massachusetts Bay Transit (Boston) (\$136), and
6. Washington Metro (heavy rail) (\$100).

However, a closer look at agency websites revealed that some higher priced monthly passes exist. For two of the commuter rail lines, MTA Long Island Rail Road and Virginia Railway Express, monthly passes can be over \$200 depending on the length of the commute and stations used. For the MTA Long Island Rail Road, the most expensive monthly pass is \$225 and for the Virginia Railway Express, the most expensive monthly pass is \$204. Also, it is important to note that in some metropolitan areas with multiple transit agencies, such as Washington D.C., Los Angeles and San Francisco, the need to transfer between systems may require the purchase of more than one monthly pass.

The 2002 APTA Fare Summary also revealed that all of the monthly transit passes that are over \$100 are light or commuter rail, and not bus passes. The most expensive monthly bus pass is \$75 for Chicago CTA. Therefore, by increasing the tax limit for transit to \$190, only a handful of passes would become covered that are not fully covered currently, and there would be relatively few monthly passes that would still not be fully covered, such as some New York and Washington D.C. area commuter or light rail passes.

Only 0.5 percent of public transportation ridership is done on rail, according to the 2000 Census Summary File 3. On the other hand, the bus or trolley bus mode represents 2.5 percent of the total 4.7 percent public transportation mode share. Since the vast majority of monthly passes are under \$100, and bus ridership is over half of all transit, it is likely that the actual amount of taken out of an employee's pre-tax salary or the amount subsidized by the employer would be significantly lower than the tax limit.

²⁷ APTA (2002) Fare Summary Report

Vanpools

According to the 2000 Census, approximately 0.2 percent of commuters travel to work in carpools of 7 persons or more, which equates to approximately 250,000 commuters. For the purpose of this study, this figure will be used as the vanpool mode share. VPSI is the world's largest supplier of vanpool and transportation services operating 3,500 vehicles that provide vanpools for 30,000 commuters daily traveling over 25 million passenger miles annually. According to VPSI, the nation's leading vanpool provider, unsubsidized vanpool fares are often over the \$100 limit.²⁸ Sample fares include:

- Miami: \$54 per person (subsidized)
- Minneapolis: \$123.00 (unsubsidized); \$61.00 (subsidized)
- Washington, DC: \$125.00 (unsubsidized)
- San Francisco: \$125.00 - \$150.00 (unsubsidized)
- Boston: approximately \$125 per person per month

Therefore, legislation to create commuter choice equity would help cover the full cost of vanpool fares for the major metropolitan areas of the country.

According to the National Transit Database (NTD), since 1996 there has been a steady increase in the number of vans operated by transit agencies. VPSI has also reported a steady growth in the number of vans on the road and the number of passenger trips. It is important to note that when the NTD and VPSI figures are added together, they have approximately 64,000 vanpoolers in their combined programs.²⁹ This, in turn, means that there are almost 190,000 vanpoolers that ride in vans operated by other vanpool companies or employer-supplied vans. As the table below indicates, a significant increase in the amount of transit agency vanpools occurred following the increase of the tax limit to \$65 in 1998.

Table 4.3 NTD Vanpool Data

Year	Number of transit agencies reporting vanpool programs	Total number of vans operating
1996	26	1,919
1997	26	2,545
1998	32	3,329
1999	39	3,580
2000	41	3,692
2001	39	3,932

Source: National Transit Database

If commuter choice equity is established and a greater portion of vanpool fares would be fully covered by a higher tax limit, vanpool ridership is likely to increase its growth rate. Increasing commute distance and travel times will also help to increase the vanpool mode share. The increase of the vanpool tax limit may also reduce the need for subsidized markets. In summary, by creating commuter choice equity, a greater portion of transit passes and vanpool fares will be further covered and the perceived irony of the encourage of parking due to a higher tax limit will be eliminated.

²⁸ Personal communication, Cathleen N. McIntyre, Eastern Area Manager, VPSI.

²⁹ Assuming that the occupancy of NTD vanpools is equivalent to VPSI's average vanpool occupancy of 8.5 riders per van.

Chapter Summary

Expanding Definition

In sum, it is recommended that policymakers consider expanding the definition of qualified transportation fringe benefits to include carpooling, bicycling, walking, telecommuting and carsharing. The nature of both carsharing and telecommuting does raise issues, in particular, concerning how benefits can be combined when they are used separately and not together during a work trip, and therefore may be harder to justify. However since all of these modes contribute to the reduction of vehicle trips, VMT, and auto emissions, they should all be considered.

It will be important that policymakers carefully define eligibility requirements for each mode, in particular frequency of use, and how benefits are combined. The possible inclusion of five new alternative modes creates a complex web of possible combinations, as well as triple combinations. Some combinations would be automatically eliminated if it were decided to set a minimum number of days per week the mode must be used or if only modes that are used together to complete a single work trip were eligible for combination.

As the next chapter illustrates, employers want clear and easy to understand rules and regulations, so be reducing the complexity of designing and implement employer programs, policymakers can help increase the use of these commuter tax benefits.

Commuter Choice Equity

It is also recommended that legislation be developed that will create commuter choice equity by increasing the tax limits for transit and vanpooling to match qualified parking limits. Although most monthly transit passes do not exceed the current tax limit, there are a few rail passes that do, and therefore would be covered by an increased tax limit. There are also some commuters that combine rail and transit and pay fares that exceed \$100 per month. A greater portion of monthly vanpool fares would be covered if the tax limit were made equal to that of qualified parking.

Expanding the definition and creating commuter choice equity will bolster financial incentives bolstered that encourage employers and their employees to use an alternative mode of transportation. In turn, increasing alternative mode use will help to reduce vehicle trips, vehicle miles, and auto emissions, while increasing America's energy independence.

In the next chapter, the impact of expansion and equity on mode shares will be examined using the EPA's COMMUTER Model. In later chapters, the tax revenue impact will be estimated and employer reactions to the expansion of benefits and commuter choice equity will be examined.

Chapter 5: Forecasting Impact on Mode Shares

Introduction

It can be argued that by expanding the definition of qualified transportation fringe benefits and/or creating commuter choice equity, a shift in the mode share for work trips will occur as more employers and their employees take advantage of the financial incentives. In order to forecast the potential impact on mode share, the EPA's COMMUTER Model was used. This pivot-point model is used to forecast changes in the mode share, reductions in vehicle miles and trips, and emissions due to various types of TDM programs, transit improvements and financial incentives.

The changes in mode share figures from two scenarios will be used in the calculation of the tax revenue impacts. The first scenario represents the current situation with approximately 5 percent of employers offering commute benefit programs, but includes the increased financial incentives associated with tax benefits of expansion and equity. The second scenario represents a combination of increased financial incentives combined with a 1 percent increase in employer participation. The purpose of the second scenario is to take into account the possibility that more employers will design and implement programs if policymakers expand the definition of qualified transportation fringe benefits and/or create commuter choice equity.

Potential Impacts of Expanding Definition of Qualified Transportation Fringe Benefits

One of the main questions associated with expanding the definition of qualified transportation fringe benefits is whether or not it will serve to motivate mode shift or reward and help retain those commuters already using an alternative to the single occupant vehicle.

Carpooling: Carpooling is perhaps the most likely mode to see measurable increases due to the expansion of qualified transportation fringe benefits. Along with already having the highest mode share of the alternative forms of transportation, the technology and programs already exist among regional commuter assistance programs and local transportation management associations (TMAs) that can help raise the carpooling mode share. Ride-matching software continues to improve. Program evaluations of commuter assistance programs and TMAs lead to improvements in marketing efforts and employer outreach methods. It is important to note that an increase in the carpool mode share may be at the expense of transit, vanpools, and other alternative modes.

Bicycling: Bicycling, on the other hand, will not likely see a minimal increase in mode share if included in an expanded definition. Many limitations exist in regard to bicycle commuting. For example, bicycle commuting requires that employees live a reasonable distance from work and/or have access to a quality bikes-on-transit³⁰ service. While unreasonable long commutes immediately eliminate bicycling as a viable option for some commuters, according to the NPTS 2000, more than half of commute trips are less than 5 miles, and quite suitable for bicycle commuting.³¹

Personal safety not commute length may be the most important factor limiting the bicycle mode share. The lack of bicycle facilities, such as bike lanes, and a general sense of high risk associated with bicycling, limits further limits the potential of bicycle commuting. In fact, the United States has one of the highest rates of bicycle and pedestrian crashes, injuries and

³⁰ Bikes-on-transit refers to both bikes-on-bus and bikes-on-rail programs.

³¹ The 2001 NHTS reports that the average bicycle trip length for work purposes is 2.68 miles.

fatalities in the industrialized world and concerns for safety is a major obstacle in any effort to increase the number of bicycle commuters.³² According to one North American survey, 89 percent of respondents indicated that concern for safety discouraged bicycle usage.³³

Walking: The impact on the walking mode share following any potential changes in the tax code would probably not be significant. As with bicycling, walking is dependent on distance to and from work and safety concerns. According to the 2001 NHTS, the average walk trip length for work purposes is 1.35 miles. While there appears to be significant room for improvement for the walking mode share as approximately 40 percent of all trips are less than 2 miles in length and just over 25 percent of all trips are one mile or less, safety is a major issue. Nationwide, 5.4 percent of trips are made on foot, but 13 percent of all traffic fatalities are pedestrians, according to the Surface Transportation Policy Project's Mean Streets report. Due to issues of commute distance and safety, the walking mode share is unlikely to rise substantially due to changes in the tax code. Unless there are significant changes in how land is developed and pedestrian safety, the walking mode share for work trips is unlikely to rise dramatically even with a tax benefit.

Telecommuting: According to research conducted at the Center for Urban Transportation Research and the International Telework Association and Council (ITAC), telecommuting is expected to rise significantly over the next decade. According to the Hillsborough and Pinellas Counties Long Range TDM Plans, which utilized ITAC telecommuting data and forecasts, the percentage of employees telecommuting at least once per week is expected to increase from 4 percent to 13 percent by 2025.³⁴ If telecommuting were added to the tax code or employers were given a tax credit for each telecommuter, this increase could be even greater. As a result, tax revenue impact on the federal treasury would be significant if telecommuting were added to the list of qualified transportation fringe benefits, perhaps tripling the tax revenue impacts on the Treasury that of transit.

Carsharing: As with telecommuting, carsharing appears to be growing naturally as the idea spreads and advancements improve cost-effectiveness and service quality.³⁵ However, the question of whether or not carsharing will see any significant increases due to a potential tax benefit is hard to say. In general, carsharing is a small niche for people that live in high-density areas, have access to quality transit, and drive on average less than 7500 miles per year, and therefore, has a limited long term growth potential compared to other modes without significant changes in American culture and its dependence on the automobile.

Potential Impacts of Commuter Choice Equity

By increasing the tax limit for transit and vanpool to \$190 per month, a greater proportion of transit passes and vanpool fares will be covered. As a result, a change in mode share is expected as well.

Transit: According to the TCRP project, "Strategies for Increasing the Effectiveness of Commuter Choice Programs," 50 percent of employers that implemented a pre-tax or commute subsidy program saw an increased number of employees using transit. However, due to the lack of pre- and post-implementation data from those employers, it is not known how much of an increase actually occurred. TCRP has funded a follow-up study to look into the impact of employer programs on employee commute patterns.

³² FHWA (1993) "Reasons Why Bicycling and Walking Are and Are Not Being Used More Extensively as Travel Modes. Case Study #1: FHWA National Bicycling and Walking Study

³³ www.bicyclinginfo.org/research/

³⁴ Winters, Phil and Christopher Hagelin. (2001) Pinellas County Long Range TDM Plan. Pinellas County MPO: 68

³⁵ Shaheen, Susan and Mollyanne Meyn. (2003) "Shared-use Vehicle Services: A Survey of North American Market Developments: p. 5

In terms of transit ridership:

- The transit mode share among employees offered a pre-tax benefit was 4.4 percent following implementation.
- The transit mode share among employees offered an employer-paid benefit was 8.7 percent following implementation.
- 73 percent of employers who offered a transit subsidy reported an increase in transit ridership compared to 40 percent for employers that offered a pre-tax transit benefit

In some cases, employer-paid subsidies can dramatically increase transit ridership. According to Hennepin County government, when employer paid transit subsidy was added to benefits package for county employees: "County-wide bus participants increased from 400 to over 1600. The FICA savings generated from pre-tax parking and vanpool programs help pay for the 40 percent employer paid bus subsidy."³⁶

However, past increases in the amount of the benefit were not associated with significant changes in ridership according National Transit Database (NTD) and US Census figures. In 1998, the pre-tax benefit program came into effect. In looking at unlinked passenger trips, from the 2000 NTD statistics, there was a steady increase in ridership between 1995 and 1999. However, there is not a significant leap in trips between 1998 and 1999. In fact, the growth in trips between 1998 and 1999 is smaller than the growth in trips between 1996 and 1997.

Table 5.1: National Transit Database 2000 Trips

Mode	Unlinked passenger trips (millions)				
Mode	1995	1996	1997	1998	1999
Motor bus	4,848	4,887	5,013	5,399	5,648
Heavy rail	2,033	2,157	2,430	2,393	2,521
Light rail	251	261	262	276	292
Trolley bus	119	117	121	117	120
Demand responsive	88	93	99	95	100
Ferry boat	47	48	51	52	53
Commuter rail	344	352	357	381	396
Other	33	33	41	37	38
Total	7,763	7,948	8,374	8,750	9,168

Furthermore, Census Summary 3 data indicates that between 1990 and 2000 there were approximately half a million more transit rides, but in terms of percentage, there was a slight decrease in the public transportation mode share.³⁷ Based on this information, it does seem to indicate that there has not been an obvious impact on transit ridership due to tax benefits. As a result, the average pre-tax amount used by employees, for example, would significantly less than the proposed tax limit of \$190.

Table 5.2: US Census Data on Public Transportation Mode Share

Mode	1990 Amount	1990 Percent	2000 Amount	2000 Percent
Public transportation:	6,069,589	5.3%	6,574,861	4.7%

Vanpooling: The creation of commuter choice equity would mean that a greater proportion of vanpool fares would be fully covered by the tax benefit limit. According to the National Transit Database, there are approximately 4,000 vans operated by 39 transit agencies. VPSI, the nation's largest vanpool provider reports they have an additional 3,500 vans in operation with

³⁶ ICF Consulting et al. (2001) Strategies for Increasing the Effectiveness of Commuter Choice Programs: http://gulliver.trb.org/publications/tcrp/tcrp_rpt_87.pdf

³⁷ Central Transportation Planning Package (CTPP)

approximately 30,000 participants. Therefore, the average van occupancy for VPSI is 8.5. If this same occupancy rate were applied to the vanpools operated by transit agencies, the number of commuters they serve would be approximately 34,000. As a result, between transit agencies that operate vanpools and VPSI, there are approximately 64,000 vanpoolers. With the 2000 Census indicating that 0.2 percent of commuters travel to work in carpools of 7 or more, that leaves approximately 190,000 vanpoolers that use employer-supplied vans or vans supplied by other private vanpool providers.

Use of EPA's COMMUTER Model to Test Impacts

To test how the expansion of the definition of qualified transportation fringe benefits will impact mode share, the EPA's COMMUTER Model was used. The model does have some limitations. The model unfortunately cannot combine a pre-tax and a subsidy together, so the subsidy amount was used to provide a high estimate. The model also is unable to determine a change in the telecommuting mode share as a result of financial incentives. The table below shows the main inputs used in the two scenarios.

Table 5.3: COMMUTER Model Inputs

Factor	Figure Used	Source
# of commuters	128,000,000	2000 US Census
Mode Share		
Drive Alone	76.0%	2000 US Census
Carpool	12.0%	2000 US Census minus 7 or more carpools and taxis
Vanpool	0.2%	2000 US Census= 7 or more carpools
Transit	4.5%	2000 US Census
Bicycle	0.4%	2000 US Census
Walk	2.9%	2000 US Census
Other	4%	Telecommuting/Work at Home
Average Trip Length		
Person Trip	12.2	2001 NHTS
Vanpool	17.7	COMMUTER Model default
Bicycle	3.2	1995 NPTS
Walk	1.0	COMMUTER Model default
Vehicle Occupancy		
Carpool	2.2	COMMUTER Model default
Vanpool	8.5	VPSI

Scenario 1: Expansion and Equity

In this first scenario, financial incentives associated with expansion and equity were entered into the COMMUTER Model to determine the potential changes in mode share. Since the model unfortunately cannot combine a pre-tax and a subsidy together, all financial incentives in the model were assumed to be subsidies. In order to provide a high rather than low estimate for the eventual calculation of tax revenue impacts, \$50 per month incentive was given for carpooling, vanpooling, bicycling and walking. For transit, the amount used in the model was \$120 per month, which is the approximate average of 4 percent of bus users getting \$100 per month, and 0.5 percent of rail users receiving \$190 per month.

The table below shows the changes as forecasted by the COMMUTER Model based on the inputs:

Table 5.4 Expansion and Equity Scenario

Category	Model Output
Mode Share	
Drive Alone	-1.9%
Carpool	+1.0%
Vanpool	+0.1%
Transit	+0.8%
Bicycle	<0.1%
Walk	+0.2%
Other Factors	
VMT Reduction	1.6%
Trip Reduction	1.8%

Scenario 2: Increased Employer Participation

In this scenario, the employer participation level is increased by 1 percent from 5 percent to 6 percent of employers offering commuter tax benefit programs. By increasing employer participation by just 1 percent, SOV commuting is reduced 0.4 percent more than the first scenario.

Table 5.5 Increased Employer Participation Scenario

Category	Model Output
Mode Share	
Drive Alone	-2.3%
Carpool	+1.2%
Vanpool	+0.1%
Transit	+1.0%
Bicycle	<0.1%
Walk	+0.2%
Other Factors	
VMT Reduction	1.9%
Trip Reduction	2.2%

Please note that the COMMUTER Model indicated an increase in the bicycle mode share, but that increase was less than 0.1 percent. In order to reflect some change in the bicycle mode share for the tax revenue impact calculations, 0.45 percent will be used for Levels 2 and 3.

Chapter Summary

To forecast potential changes in mode share as a result of expanding the definition of qualified transportation fringe benefits and creating commuter choice equity, the EPA's COMMUTER Model was used. Two scenarios were developed. The first scenario included the increased financial incentives associated with expansion and equity. The second scenario added an increased rate of employer participation. The resulting changes in mode share will be used in the next chapter to estimate the tax revenue impacts on the Federal Treasury due to increased commuter tax benefits.

Chapter 6: Tax Revenue Impacts of Expanding and Modifying Commuter Tax Benefits

In this chapter, the method for determining the tax revenue impact on the federal government will be explained. Tax revenue impact (TRI) is a term that refers to the amount of money the federal government will not collect as a result of providing additional tax benefits for commuting. Following an explanation of the methodology, the TRI of expansion and equity will be examined by each specific mode.

Tax Revenue Impact (TRI) Methodology

To determine the tax revenue impact (TRI) of expanding the definition of qualified transportation benefits, a series of equations were developed. There are also many assumptions that are made in the methodology:

- The estimates assume an equal distribution of employees among employers within each category size, i.e., small establishment, medium-large establishments, and state and local government agencies.
- \$50 and \$25 Tax-free limits were tested in the methodology.
- Estimate will be equivalent to the amount of revenue not collected by the Treasury if all those who take an alternative and work for employers that currently offer subsidized commuting benefits participated with 55 percent being offered a pre-tax option and 45 percent an employer-paid option.

The methodology of estimating TRI is broken down into several steps that use data from a variety of sources and contain several assumptions. The first step is to look at each mode individually. Then for each mode, the total TRI is determined by adding together the employer tax saving and the employee tax savings for both private and public sectors. To estimate the employer tax savings several factors must be taken into account, such as the estimated number of employees that both use the selected mode and work for employers that offer the benefit, the type of program (pre-tax or employer-paid), the amount of the benefit, and the average tax savings for the employer per year per participating employee. To estimate the total employee tax savings, the number of employees using mode and working for employers that offer the program, the amount of the benefit, and the average tax savings for each employee using the benefit must be taken into account.

Please note that estimates were not conducted for carsharing, since the estimated number of carsharers in the United States is less than 12,000 or 0.009 percent of the commuting population. The estimates for increasing the transit/vanpool tax limits will be discussed later in this chapter.

Also, these estimates do not include 2.4 million federal workers since no data is available on the percent of federal agencies/departments/institutions that offer subsidized commuting benefits. However, 126 million private and state/local government employees and approximately 6.3 million private establishments are accounted for in the estimations.

Tables 6.1 and 6.2 illustrate the steps used in determining the TRI after first delineating by mode and tax limit amount. For the private sector, the steps also divided in pre-tax and employer-paid parts.

Table 6.1: Private Sector TRI Steps

Private Sector Steps		
Step	Description	Source or Equation
1	Total number of establishments	Bureau of Labor Statistics (BLS)
2	% of establishments offering subsidized commuting	National Compensation Survey (NCS)
3	Estimate of total number of establishments offering	Step 1 x Step 2 = Step 3
4	Total number of employees	BLS
5	Estimate of employees working for offering establishments	Step 4 x Step 2 = Step 5
6	% of employees using mode	2000 Census
7	Estimate of total number of employees that used mode	Step 4 x Step 6 = Step 7
8	Estimate of employees that use mode and work for offering establishments	Step 7 x Step 2 = Step 8
9	Estimate Corporate TRI per employee per year	See Chapter 2 Tax Savings tables
10	Estimate Employee TRI per year	See Chapter 2 Tax Savings tables
11	Total Estimate Corporate TRI	Step 9 x Step 8 = Step 11
12	Total Estimate Employee TRI	Step 10 x Step 8 = Step 12
13	Estimated TRI of offering benefit	Step 11 + Step 12

Table 6.2: Public Sector TRI Steps

Public Sector Steps		
Step	Description	Source or Equation
1	State and Local Govt employees	BLS
2	Federal Govt employees	NCS
3	Total Govt employees	Step 1 + Step 2 = Step 3
4	% of employees that use mode	2000 Census
5	Estimate of total govt employees that use mode	Step 3 x Step 4 = Step 5
6	Estimate of state and local govt employees that use mode	Step 1 x Step 4 = Step 6
7	Estimate for state and local governments that offer benefit	NCS
8	Estimate of employees that use mode and work for offering state and local govs	Step 6 x Step 7 = Step 8
9	Estimate agency TRI per employee per year	See Chapter 2 Tax Savings tables
10	Estimate Employee TRI per year	See Chapter 2 Tax Savings tables
11	Total Estimate Government TRI	Step 8 x Step 9 = Step 11
12	Total Estimate Employee TRI	Step 8 x Step 10 = Step 12
13	Estimated TRI of offering benefit	Step 11 + Step 12 = Step 13

Levels of Tax Revenue Impact

For each mode in question, three levels of TRI will be examined. The first level represents the current situation in terms of mode share and employer participation. The second level uses the modified mode split from Scenario 1 of the previous chapter, and the third level includes the modified mode split and increased employer participation rate of Scenario 2 of previous chapter. For the modes included in the expanded definition of qualified transportation benefits, two tax limit levels are tested; \$25 per month and \$50 per month benefits.

Level 1: Current Situation

This represents the current situation. Mode shares are from the 2000 Census and the current employer participation rate is used. The table below lists the data used and sources for Level 1:

Table 6.3: Sources and data used to determine Tax Revenue Impact (TRI); Level 1

Variable	Source	Figure
Carpooling mode share*	2000 Census Summary 3	12.0%
Vanpool mode share*	2000 Census Summary 3	0.2%
Transit total mode share	2000 Census Summary 3	4.5%
Bus portion of mode share	2000 Census Summary 3	4.0%
Rail portion of mode share	2000 Census Summary 3	0.5%
Bicycling mode share	2000 Census Summary 3	0.4%
Walking mode share	2000 Census Summary 3	2.9%
Telecommuting mode share	ITAC and CUTR estimates	4.0%
Percent of private establishments that offer commuting benefits**	Bureau of Labor Statistics' National Compensation Survey	5% medium-large (100+ employees) 2% small (<99 employees)
Percent of local/state government employees eligible for commuting benefits	Bureau of Labor Statistics' National Compensation Survey	6%
Average US salary	Bureau of Labor Statistics	\$31,800
Tax benefit limit	Tested limits	\$25, \$50 for carpooling, biking, walking and telecommuting
Number of private establishments	Bureau of Labor Statistics	7,008,444
Number of employees (commuting)	2000 Census	127,437,475
Number of private sector employees	Bureau of Labor Statistics	110,705,661
Number of local/state gov't employees	Bureau of Labor Statistics	15,378,924

* Carpool mode share excluding carpools of 7 or more persons. Carpools of seven or more are moved to the vanpool mode share, since the tax code defines a commuter highway vehicle as six riders excluding the driver.

** Note that the percentage of participating employers is divided into pre-tax (55%) and employer-paid (45%) portions. See Chapter 3's section on "Types of Programs Offered by Employers."

Level 2: Expansion and Equity

This scenario incorporates the changes in mode share forecasted by the COMMUTER Model due to the increased financial incentives of expansion and equity.

Table 6.4: Sources and Data Used to Determine Tax Revenue Impact (TRI): Level 2

Variable	Source	Figure
Carpooling mode share	COMMUTER Model Results	13.0%
Vanpool mode share	COMMUTER Model Results	0.3%
Transit mode share	COMMUTER Model Results	5.3%
Bus portion of mode share	CUTR estimate	4.7%
Rail portion of mode share	CUTR estimate	0.6%
Bicycling mode share	COMMUTER Model Results	0.45%
Walking mode share	COMMUTER Model Results	3.1%
Telecommuting mode share	ITAC and CUTR estimates	4%
Percent of private establishments that offer commuting benefits**	Bureau of Labor Statistics' National Compensation Survey	5% medium-large (100+ employees) 2% small (<99 employees)
Percent of local/state government employees eligible for benefits	Bureau of Labor Statistics' National Compensation Survey	6%
Average US salary	Bureau of Labor Statistics	\$31,800
Pre-tax benefit amount	Tested limits	\$25, \$50 for expansion modes
Number of private establishments	Bureau of Labor Statistics	7,008,444
Number of employees (commuting)	2000 Census	127,437,475
Number of private sector employees	Bureau of Labor Statistics	110,705,661
Number of local/state gov't employees	Bureau of Labor Statistics	15,378,924

* See Table 6.3

** See Table 6.3

Level 3: Increased Employer Participation

This scenario incorporates the changes in mode share that the COMMUTER Model predicted as a result of the financial incentives of expansion and equity and an increased employer participation rate.

Table 6.5: Sources and Data Used to Determine Tax Revenue Impact (TRI): Level 3

Variable	Source	Figure
Carpooling mode share	COMMUTER Model Results	13.2%
Vanpool mode share	COMMUTER Model Results	0.3%
Transit mode share	COMMUTER Model Results	5.5%
Bus portion of mode share	CUTR estimate	4.8%
Rail portion of mode share	CUTR estimate	0.7%
Bicycling mode share	COMMUTER Model Results	0.45%
Walking mode share	COMMUTER Model Results	3.1%
Telecommuting mode share	ITAC and CUTR estimates	4%
Percent of private establishments that offer commuting benefits**	Bureau of Labor Statistics' National Compensation Survey plus 1%	6% medium-large (100+ employees) 3% small (<99 employees)
Percent of local/state government employees eligible for benefits	Bureau of Labor Statistics' National Compensation Survey plus 1%	7%
Average US salary	Bureau of Labor Statistics	\$31,800
Pre-tax benefit amount	Tested limits	\$25, \$50 for expansion modes
Number of private establishments	Bureau of Labor Statistics	7,008,444
Number of employees (commuting)	2000 Census	127,437,475
Number of private sector employees	Bureau of Labor Statistics	110,705,661
Number of local/state gov't employees	Bureau of Labor Statistics	15,378,924

* See Table 6.3

** See Table 6.3

Expanding Definition of Qualified Transportation Fringe Benefits TRI

According to the calculations, the cost of expanding the definition of qualified transportation fringe benefits varies depending mode share, employer participation rates, and tax limits. As explained above, Level 1 represents the current situation, an estimate of how much it would cost to provide these commute benefits under the present mode split and employer participation rate. Level 2 represents the revenue impact that can be expected if these modes are included in an expanded definition and use of these modes increases as a result. The modified mode shares were forecasted using the COMMUTER Model. The third level is similar to Level 2 but included a 1% increase in public and private (for both small and medium to large establishments) employer participation rates to take into account increased implementation of employer programs as a result of any new legislation. Since the COMMUTER Model cannot forecast changes in the telecommuting mode share due to the financial incentives associated with commuter tax benefits, Level 2 estimates were not calculated and Level 3 estimates take into account only a 1 percent increase in employer participation rates for public agencies and private establishments

Table 6.6 shows the results of the TRI calculations for those modes that could be part of an expanded definition of qualified transportation fringe benefits. For each mode, a TRI is provided for each level and at both the \$25 and \$50 per month tax limits. The calculations from which these figures are derived are located in Appendix B.

Table 6.6: Estimated TRI per year of Expansion (millions)*

Mode	Tax Limit	Level 1	Level 2	Level 3
Carpooling	\$25	\$ 73.2	\$79.3	\$98.1
	\$50	\$146.3	\$158.5	\$196.1
Bicycling	\$25	\$2.4	\$2.7	\$3.0
	\$50	\$4.9	\$5.5	\$6.0
Walking	\$25	\$17.7	\$18.9	\$23.4
	\$50	\$35.4	\$37.8	\$46.8
Telecommuting	\$25	\$24.4	NA	**\$30.2
	\$50	\$48.8	NA	**\$60.4
Total TRI	\$25			\$154.7
	\$50			\$309.3

* Estimates have been rounded to the nearest 100,000

** Level 3 for Telecommuting only included a 1 percent increase in employer participation rates since the COMMUTER Model cannot forecast telecommuting increases due to financial incentives

If it is assumed that Level 3 represents the most realistic impact of an expanded definition of commuter tax benefits because it takes into account increased alternative mode use and employer participation, the total estimated TRI of expanding the definition of transportation fringe benefits is \$154.7 million at the \$25 per month tax limit, and \$309.3 million at the \$50 per month limit.

See Appendix D Tables D1-D.22 for calculation details.

TRI of Commuter Choice Equity

Commuter Choice Equity is a phrase used to describe the act of raising the transit and vanpool tax limits to the same amount as qualified parking. Currently, transit and vanpool tax limits are set at \$100 per month, while the qualified parking tax limit is \$190 per month. The higher tax limit of qualified parking is often perceived as counter-productive as it seems to encourage single-occupant commuting while the general perception is that transit and vanpool benefits are offered to reduce single-occupant commuting.

In this section, the TRI of raising the tax limits of transit and vanpool is examined. In order to do this, the first step is to estimate the current TRI associated with transit and vanpool benefits. The next step is to estimate the potential impact of raising the limit to \$190. However, since most monthly public transportation passes do not approach or exceed the \$190 limit, except for a few rail passes, and the average unsubsidized monthly vanpool fares are only approximately \$125, it is likely that very few transit or vanpool riders or their employers will use the entire \$190. Therefore it is important to take into account these factors when estimating the TRI of commuter choice equity.

Transit

According to the 2000 Census, the transit mode share for work trips is 4.5 percent, excluding the use of taxis. Over half of those taking public transportation are riding buses or trolley buses, and approximately 11 percent of commuters using public transportation are riding rail, which is the more expensive of the two public transportation modes. According to APTA's 2002 Transit Fare Summary Report, there are no monthly bus passes over \$100, and only a handful of monthly light, heavy or commuter rail passes are fully covered under the current tax limit.

Table 6.7: 2000 Census Public Transportation Mode Share

Mode	2000 Census Figures
Public Transportation	4.7%
Bus or Trolley Bus	2.5%
Street car or trolley car	0.1%
Subway or elevated	1.5%
Rail	0.5%
Ferry Boat	< 0.0%
Taxi	0.2%

Level 1: Current Situation

To calculate a better estimate, the TRI can be estimated using a 4 percent mode share at the \$100 level and 0.5 percent mode share at the \$190 level. This reflects that the vast majority of public transportation commuters would not be taking the full \$190 if commuter choice equity were created, since there are no bus passes over \$100 and the only monthly passes that approach or exceed the limit are for rail.

Level 2: Increased Mode Share

According to the COMMUTER Model, the transit mode share is forecasted to increase to 5.3 percent under the condition of Commuter Choice Equity. As a result, CUTR used 4.7 percent for the new bus mode share and 0.6 percent for the new rail share in order to calculate this level's TRI. As explained above, the estimated bus tax benefit used is \$100 while the estimated tax benefit used by rail riders is \$190.

Level 3: Increased Employer Participation and Mode Share

When the employer participation rates are increased by 1 percent, the COMMUTER Model predicts that the transit mode share would increase to 5.5 percent. As a result, CUTR used 4.8 percent for the new bus mode share and 0.7 percent for the new rail share in order to calculate this level's TRI. As with all levels, the estimated bus tax benefit used is \$100 while the estimated tax benefit used by rail riders is \$190.

Vanpooling

As with transit, it is unlikely that most vanpooling employees would need to use the full \$190 if the tax limits were increased to be equal with qualified parking. However, according to VPSI, the average monthly cost of vanpooling generally exceeds the current limit of \$100. Therefore, the creation of commuter choice equity would help fully cover the cost of unsubsidized vanpooling. As a result, VPSI's estimate of an average cost of \$125 per month for vanpool riders is used for Levels 2 and 3 as discussed in the section on vanpooling in Chapter 4.

Level 1: Current Situation

For Level 1, the vanpool mode share is 0.2 percent and the tax benefit limit of \$100 per month is used. This represents the best estimate for the current amount of tax revenue not collected by the federal government as a result of the current IRS 132(f) tax laws.

Level 2: Increased Mode Share

For Level 2, the vanpool mode share is 0.3 percent and the estimated tax benefit used by employees is set at \$125 per month. The increased mode share based on COMMUTER Model forecasts

Level 3: Increased Employer Participation and Mode Share

For Level 3, the vanpool mode share is 0.3 percent and the estimated tax benefit used by employees is set at \$125 per month, and the employer participation rates are increased by 1 percent for public agencies and private establishments. This Level represents the best estimate for the tax revenue impact upon the creation of Commuter Choice Equity.

Total Impact of Commuter Choice Equity

The total impact of creating commuter choice equity is determined by adding together the estimated tax revenue impacts of vanpooling and transit. The table below illustrates that the federal government would further reduce revenue by \$81.9 million by raising the transit and vanpool tax limits to equality with qualified parking. However, that reduction in revenue also "buys" them an expanded program with potential to increase transit and vanpool ridership, and reduce auto emissions and traffic congestion.

Table 6.8: Estimated TRI per year for Equity (millions)*

Mode	Level 1	Level 2	Level 3	Difference
Transit total	\$109.7	\$142.4	\$184.9	
Bus	NA	\$114.6	\$144.8	
Rail	NA	\$27.8	\$40.1	
Vanpool	\$4.9	\$9.1	\$11.3	
TOTAL	\$114.60	\$151.50	\$196.20	\$81.6

* Estimates have been rounded to the nearest 100,000

If every commuter taking public transportation (excluding taxis) who also works for an employer that offers a commuting benefit is currently taking the \$100 tax limit, the estimated TRI is \$109.7 million per year. If commuter choice equity were created, which resulted in a higher transit mode share and increased employer participation, the estimated TRI increases to 184.9 million.

Currently at the \$100 limit, the estimated TRI is \$4.9 million per year for vanpooling. If commuter choice equity were created and every vanpooler who worked for a company that offered the benefit took an average of \$125 per month, the estimate TRI would be approximately \$9.1 million per year. And if you take into account an increase in the amount of employers that offer such benefits, the estimated tax revenue impact increased to \$11.3 million per year.

Therefore, based on these calculations, it costs the federal government approximately 114.6 million per year in tax revenue to provide the current qualified transportation fringe benefits for transit and vanpooling. If the government were to raise the tax limit to \$190 per month for transit and vanpool, CUTR estimates that the cost would rise to approximately \$196.2 million per year, a difference of \$81.6 million per year.

See Appendix D Tables D.22 to D.30 for calculation details.

TRI of Expanding Qualified Transportation Fringe Benefits and Creating Commuter Choice Equity

If the definition of qualified transportation fringe benefits was expanded to include carpooling, bicycling, walking, and telecommuting, and commuter choice equity was created by increasing the limits for transit and vanpool to \$190 per month, the Total TRI is estimated at \$236.3 million (at the \$25 level for new modes) or \$390.9 million (at the \$50 level for new modes). This estimate assumes that Level 3 calculations provide the most realistic impact of expansion and equity because it takes into account forecasted changes in mode shares and increased employer participation rates.

Table 6.9: Total TRI of Expansion and Equity

Mode	At \$25 Tax Limit	At \$50 Tax Limit
Carpooling	\$98.1	\$196.1
Bicycling	\$3.0	\$6.0
Walking	\$3.0	\$6.0
Telecommuting	\$30.2	\$60.4
Additional Cost of Commuter Choice Equity	\$23.4	\$46.8
TOTAL	\$236.3	\$390.9

Although the Total TRI may seem like a substantial impact on the federal government, there are ways to mitigate the cost. Furthermore, there are many direct or indirect benefits of increasing alternative mode shares, and reducing SOV work trips. One way to mitigate the cost of expanding and equity is to not include telecommuting as one of the new modes of an expanded definition. First, the question whether or not to include telecommuting could become a moot point if policymakers decide on a minimum number of days a mode must be used to qualify for benefits. Second, the cost-savings of not including telecommuting is estimated at \$30 million to \$60 million per year depending on the tax limit at the present time, but if telecommuting grows at the rates predicted by CUTR (See Appendix B), the cost will become significantly higher over time.

In the next section, the freezing or elimination of the qualified parking benefit will be examined, and the direct benefits of reduced congestion, improved air quality, and increased energy independence will be discussed. It is also important to remember that the average US household spends almost 20 percent of their gross income on transportation-related expenses and any reduction in that amount will help families, especially low-income families, better meet other needs.³⁸

³⁸ EPA (2001) Commuter Choice Leadership Initiative: Facts and Figures
<http://www.commuterchoice.gov/about/facts.htm>

Mitigating TRI

Qualified Parking Benefit Freeze or Elimination

Perhaps the most effective means of mitigating the impact of expanding commuter tax benefits is focused on qualified parking. According to the US Census, 76.3 percent of U.S. workers drove alone to work and of those workers that drove alone, 95 percent receive free parking at their worksite. The provision of free parking to 72.5 percent of U.S. workers who drive alone to work is a significant obstacle to overcome in the encouragement of alternative mode use. With 95 percent receiving free parking, that leaves 3.8 percent of SOV commuters paying for parking and potentially being eligible for qualified parking benefits if their employer offers such a program.

One option could be to freeze the qualified parking benefit while increasing the tax limits for the other qualified modes. According to the IRS tax code, tax limits can be increased annually to account for inflation. By freezing the tax limit for qualified parking while increasing the tax limits for transit, vanpools, and possibly other modes, commuter choice equity would be established and the irony of greater benefits for SOV commuting would be eased. The loss of the parking benefit to carpoolers, vanpoolers, and transit riders would be offset by new or increased benefits for those modes.

A more radical, but more cost-effective, approach is to eliminate the tax benefits of qualified parking and, in turn, the economic incentive for SOV commuting. Various research studies indicate that the price of parking has a strong influence on mode choice.³⁹ Eliminating the tax benefit for parking will help mitigate the tax revenue loss associated with expanding the definition to include other modes and creating commuter choice equity while at the same time truly discouraging SOV commuting. According to a study in Portland, with free parking in the CBD, 62 percent of commuters will drive alone, 16 percent will carpool, and 22 percent will ride transit. With a \$6.00 daily parking charge, just 46 percent will drive alone and 50 percent will ride transit.⁴⁰

According to Colliers International, the average cost of employee parking is \$147 per month.⁴¹ Colliers' survey results are based on the average parking rates of 50 central business districts in North America. If this figure is used as the average amount that each employer and/or employer takes as a benefit, the current TRI estimate for qualified parking is \$136.2 million per year (See Appendix D Table D.31 for calculation details). If the qualified parking benefit were eliminated, the federal government would save approximately \$136.2 million per year, and could significantly decrease the impact of expanding the definition to include alternative modes and increasing the tax limits of transit and vanpooling.

Table 6.10: Mitigating Impact of Eliminating Qualified Parking Benefit

Commute Benefit	Estimated TRI (\$25 level for Expansion)	Estimated TRI (\$50 level for Expansion)
Expansion of Definition	\$154.7 million	\$309.3 million
Commuter Choice Equity	\$81.6 million	\$81.6 million
Total cost of benefits	\$236.3million	\$390.9 million
Qualified Parking	\$136.2 million	\$136.2 million
Total minus Qualified parking	\$100.1million	\$254.7million

³⁹ See Hess (2001); Harvey and Deakin (1998); KT Analytics (1995); and Pratt (1999).

⁴⁰ Hess (2001) "Effect of Free Parking on Commuter Mode Choice" *Transportation Research Record* No: 1753

⁴¹ Colliers International (2002) "North American CBD Parking Rate Survey Highlights". www.colliers.com

Residual Benefits

By encouraging the use of alternative modes of transportation for work trips through an expanded definition of commuter tax benefits and commuter choice equity, residual benefits will come to fruition. These residual benefits, such as reduced congestion, improved air quality, and increased energy independence, will also help mitigate the cost of modifying commuter tax benefits.

Congestion Reduction

According to the Texas Transportation Institute (TTI), congestion is growing in areas of every size. The average annual delay per peak road traveler climbed from 16 hours in 1982 to 62 hours in 2000.

Calculating the cost of this congestion is difficult and can be expressed relying on different factors. TTI estimates that the “total congestion bill for the areas studied in 2000 came to \$67.5 billion, which is the value of 3.6 billion hours of delay and 5.7 billion gallons of excess fuel consumed.”⁴²

Although road widening and expansion of road networks can slow the growth of congestion, they are not the sole answer to the problem. Congestion must be confronted using a wide variety of strategies, including shifting trips from peak periods, reducing trips in general or specifically single-occupant vehicle trips.

In forecasting the impact on mode share with the COMMUTER Model, a reduction in SOV work trips is also provided. According to the model, estimates that with the expansion and equity (assuming an overall 6 percent employer participation rate and tax limits of \$50 per month for new modes and \$190 per month for vanpool and transit), the SOV work trip mode share would decrease by 2.3 percent. The model also predicts a 1.9 percent reduction in vehicle miles, and a 2.2 percent reduction in vehicle trips by commuting employees.

Air Quality Improvements

Automobiles, in combination with traffic congestion, are a significant source of CO, one of the six emissions. In metropolitan areas with significant traffic congestion, increased CO can lead to health problems associated with high costs to local and state governments.⁴³

Emissions from cars and light trucks also threaten our environment, as well as our public health. CO₂ emissions from automobiles are directly responsible for global warming trends and HC emissions are a key source of smog and possibly carcinogenic.⁴⁴

The cost of automobile emissions’ impact on health and the environment are difficult to estimate. However, it is clear that reducing single-occupant vehicle commuting through economic incentives will help to curb the impacts of emission on public health as well as local and global environments.

Foreign Energy Dependence

The United States is just 4 percent of the world’s population, but consumes approximately 25 percent of the world’s oil resources. Transportation is by far the largest consumer of petroleum products in the United States. In 2000, American drivers consumed more than 120 billion gallons of gasoline at the cost of \$180 billion dollars. In total, the United States spent \$106 billion importing crude oil and petroleum products in 2000, according to the Department of Energy.⁴⁵

⁴² TTI: Urban Mobility Report: http://mobility.tamu.edu/ums/study/short_report.stm

⁴³ EPA (2001) National Air Quality Status and Trends: <http://www.epa.gov/oar/aqtrnd01.carbon.html>.

⁴⁴ Alliance to Save Energy (2002) “Increasing America’s Fuel Economy.”
<http://www.ase.org/policy/CAFEbriefingbk.pdf>

⁴⁵ Department of Energy (1996) Annual Energy Outlook: Washington DC: DOE

Slightly more than half of U.S. transportation energy is consumed by light vehicles, including automobiles, pickup trucks, utility vehicles, and vans.⁴⁶ Transportation alone consumes more oil than the United States produces, and also more oil than it imports, each year.

America's increasing dependence on foreign energy sources also threatens national security. Over 65 percent of the world's known reserves lie beneath Persian Gulf states.⁴⁷ As domestic production decreases and foreign dependence increases, America's need to maintain a political and military presence in the unstable Middle East region perpetuates the United States and its interests as targets of terrorism.⁴⁸

According to the Natural Resources Defense Council, the best ways to reduce America's high level of consumption are to produce more fuel-efficient cars and reduce the amount of vehicle miles traveled.⁴⁹ By providing greater incentives for employers to encourage and employees to use alternative transportation modes, America can begin to stem the trend of increasing oil consumption and heighten national security.

Chapter Summary

It is estimated that cost of expanding the definition of qualified transportation fringe benefits will cost the federal government between \$154.7 (\$25 tax limit for new modes) to \$309.3 million per year (\$50 tax limit for new modes) depending on the size of the tax limit. It is important to note that these figures are based on BLS employer participation rates, 2000 Census mode splits, COMMUTER Model forecasts, and assumes that every employee that uses a particular mode and works for an employer that offers a commute benefit takes the full amount of the tax limit. These figures do include increased costs due to increased participation or shifts in the mode shares caused by the new financial incentives.

Currently, it costs the federal government approximately \$114.6 million dollars per year to maintain vanpool and transit benefits for employers and employees. This figure assumes that every employee that uses either vanpooling or transit to get to work and works for a company that offers the benefit is taking the full \$100. It is estimated that to create commuter choice equity, it will cost the federal government an additional \$81.6 million dollars per year with a total estimated TRI of \$196.2 million per year.

As a result, the total cost of both expanding the commuter tax benefits to include new modes and creating commuter choice equity is estimated to range from \$236.3 million to \$390.9 million depending on either a \$25 or \$50 tax limit for new modes respectively. Since the qualified parking benefit is incongruent with the goals of commuter choice programs, freezing or eliminating it can help mitigate the cost of providing new benefits. It is estimated that the TRI on federal government for providing the qualified parking benefit is \$136.2 million per year, which is more than the cost of creating Commuter Choice Equity.

By increasing the mode share of non-SOV commuting, the cost of expanding and modifying commuter tax benefits will also be mitigated by improved public health, air quality, and national security, and reduced traffic congestion which together cost billions of dollars per year.

⁴⁶ Office of Technology Assessment (1994) Saving Energy in U.S. Transportation: Washington DC: OTA.

⁴⁷ Natural Resources Defense Council (NRDC) (2002) Ending America's Oil Dependence.
<http://www.nrdc.org/air/transportation/oilsecurity/execsum.asp>

⁴⁸ Alliance to Save Energy (2002) "Increasing America's Fuel Economy."
<http://www.ase.org/policy/CAFEbriefingbk.pdf>

⁴⁹ NRDC *ibid*.

Chapter 7: Employer Reactions to Commuter Tax Benefit Changes

Background

To examine the potential for expanding the definition of qualified transportation fringe benefits, employers from five metropolitan regions were surveyed and interviewed. The sample population of employers who participated was the same as was used by CUTR during the TCRP-H-25 project. This method was selected to increase cost-effectiveness and project efficiency since a large amount of data was already analyzed regarding these employers and the commute benefit programs they have implemented.

The purpose of the surveys and interviews was to:

1. examine employer perceptions of an expanded definition of qualified transportation fringe benefits;
2. identify the reasons why employers might be for or against expansion in regard to each of the modes;
3. examine employer perceptions regarding the increase of the tax benefit of transit and vanpools to match the benefit for qualified parking;
4. examine the needs of employers in regard to policy design and program implementation; and
5. discover potential concerns of employers.

Methodology

The methodology used to gather information from employers was a phone-survey-phone design. In this research design, the employer representatives are contacted first by phone, then given a survey to fill out, and finally phoned for a follow-up interview. The primary advantage of this methodology is that it allows for the collection of both quantitative and qualitative data. The survey is used to gather the more quantitative data on the basics of the company's current commuter benefits program and initial thoughts on expansion, while the follow-up phone interview is specifically tailored for each company to clarify survey answers, delve more deeply into reasons behind those answers, and allow the representatives to elaborate on their thoughts, reasons, needs and concerns.

Initial Phone Contact

During the initial phone contact, the employer representatives are given the purpose of the project, the funding sources, an estimation of the time it will take to participate, how the data will be used, and conditions of anonymity and confidentiality. This first step, therefore, serves as a means of establishing informed consent.

Since the survey and follow-up interview discuss only potential, and not actual, company policies that have not been fully discussed with all the necessary departments and supervisors of any company, participants were told that no specific company names will appear in any published or public document.

When representatives agreed to participation, they provided with a survey with the option of receiving it by email as a write-protected document or by mail as a survey to be filled out by hand.

Survey

The survey was designed to gather basic information on the company and its current commute benefit program. Data collected included:

- Mode split
- Cost of parking
- Current commute benefits offered for parking, transit and vanpool
- Employee participation in commute benefit program
- Current benefits for modes other than transit and vanpool
- Initial perceptions on expanding the definition of qualified transportation fringe benefits

Please note that at the time of the surveys and interviews, carsharing was not an option that had been considered for the research project. Carsharing was only added later when it was included in a list of modes in draft legislation submitted by Rep. Blaumenauer in January of 2003.

Follow-up Interview

Follow-up interviews were tailored for each employer representative based on his or her responses to the survey questions. The first part of the follow-up focused on verifying and clarifying the survey responses. The participants were also given the opportunity to elaborate on their answers because of the open-ended structure of the interview. Participants were asked to further explain the initial perceptions on expanding the benefits, and then speak to their needs and concerns.

Company Profiles

A total of 20 employers were surveyed and interviewed for this research project. The companies are located in six major metropolitan areas of the United States: Minneapolis, Boston, San Francisco, Washington D.C., Chicago, and Miami.

Among the companies, wide ranges of commute programs have been implemented. Approximately 50 percent of companies have a commute benefit program based on the pre-tax option, 40 percent subsidized transit and vanpool passes and 10 percent offered a combination of pre-tax and subsidies. Those companies that subsidize passes are often involved in their local transit agency's corporate discount pass program.

Three-quarters of the companies have multiple sites and company sizes range from just 35 employees to over 64,000 nationwide. In terms of their economic sector, a large range of variation exists, from small law firms and new software companies, to major manufacturing and multinational banking and insurance corporations.

The employees of these companies typically have access to high quality access to transit, bus, rail or both. As a result, the vast majority of companies have above the national average transit ridership despite the presence of free parking in most instances. Some of the companies offer a wide range of transportation benefits other than transit, vanpool and parking benefits. A couple of them even operate their own shuttles to and from nearby transit stations.

Findings

Although the small sample size does not yield statistically significant results, the research methodology provided for the collection of valuable qualitative data. The findings from the survey and interviews are grouped into four areas:

1. Perceptions on expanding the definition of qualified transportation fringe benefits
2. Reasons behind those perceptions
3. Needs of employers in regard to program design
4. Concerns related to expansion

Perceptions on Expansion

Carpooling: In total, the vast majority of respondents believed that their company would add carpooling to their employee commute benefit program if the tax laws were changed. Those in favor of adding carpooling generally expressed the need to ease parking pressure and reduce peak traffic congestion. Others added that people who are doing the “right thing” should be rewarded for the choice of an alternative mode. Two of the companies surveyed already provide a benefit to carpoolers, in terms preferential and reduced parking costs.

The two respondents that believed that carpoolers would not be given a subsidy or the pre-tax option both stated that employees who carpool are already saving money and do not need any additional financial incentives. They were also concerned with the task of monitoring who was carpooling.

Bike: As with carpooling, the vast majority also believe that their company would extend a commute benefit to bicycle commuters if the tax law were changed. However, only five of the respondents believed that they currently had employees that were bicycle commuters. In general, respondents believed that the benefit would be offered because it would be a way for the company to promote both a “healthy lifestyle” and a “pollution-free” alternative.

A few respondents expressed concern over the safety of bicycle commuters due to a general belief that it is not safe to bicycle because of traffic conditions. Three-quarters of the respondents believed that their company would have to add bicycle parking and/or shower facilities if they were to offer the benefit, which might be an minor obstacle to overcome.

Walk: Only the majority of respondents believed their company would offer a benefit to people that walk to work. Those in favor of adding walking to a benefit package generally believed that promoting any alternative to the automobile was the “right thing to do” given that “traffic congestion is only getting worse.”

The two main cases against adding walking to a commute benefits package was that people that live close enough to walk to work are already doing it without any incentive, or that their company is located in an area without safe pedestrian access. One respondent also added that they already offer a parking cash-out program for people that walk or bicycle to work.

Telecommuting: Only less than half of respondents favored the expansion of benefits to add telecommuting. The primary reasons for this low support of telecommuting were that some companies were not interested in promoting telecommuting, or that their employees that do telecommute typically do it only one or two days per week. Respondents did not think that was enough days to qualify for a benefit. Some respondents also remarked on the irony of getting a commute benefit for not commuting. It was also mentioned that it already costs the company money to set up a telecommuter, and that if there is a tax benefit, the company should receive it.

Those respondents that supported telecommuting used the same reasoning used to back bicycling and walking, in that it would help relieve traffic congestion. However, most respondents asked what the minimum number of days an employee would need to telecommute to be eligible for the benefit.

Commuter Choice Equity: Many employer representatives wondered why parking is given a higher tax limit than transit or vanpools, since the general perception is that these tax benefits exist to encourage employees to use alternative forms of transportation. As a result all respondents believed that the tax limits for vanpooling and transit should be the same as parking. Several did note that the cost of transit passes in their area is not as high as the parking tax limit, but on principle, the tax limits should be equal. However, respondents from the Washington DC and Boston areas did state that some of their employees' rail passes were not fully covered under the current \$100 limit.

Reasons

Those respondents that were generally in favor of expanding their commute benefit programs to all the modes believed that an important factor would be the ease of implementation. Although, as TCRP H-25 pointed out, many employers had to overcome several different obstacles during the design and implementation of their programs, they were now "up and running" and adding employees would be "very easy."

Respondents also noted the responsibility of every company to "do their part" to reduce traffic congestion and air quality. However, the vast majority of respondents did not believe that modes, such as carpooling, walking or bicycling, should have the same tax limits as transit or vanpooling. When asked what was reasonable amount, eight said \$20, eight suggested \$25, and two suggested \$50. The primary reason for the lower amounts was that these modes "don't really cost anything to the employee."

Needs

Despite the belief that implementation would be relatively easy, respondents did identify the need for very clear guidelines. For the most part, this meant clear rules of eligibility, especially the minimum number of days an employee would have to use a specific mode to qualify for the benefit, and how such benefits could or would be combined.

When asked whether they would prefer the strict federal guidelines or guidelines that allowed more flexibility, the majority opted for strict guidelines. The consensus was that the stricter and clearer the guidelines were the less decisions that would have to be made and, therefore, fewer disagreements between involved departments. The only exception was to the amount that companies would have to give in benefits. In general, the respondents liked the idea of a limit under which the company could decide how much to give their employees.

Several respondents pointed out that employees can currently combine parking and transit or vanpooling and wondered if and how these other modes would be eligible for combination. A few respondents joked that walking could be combined with everything. In regard to combining benefits, respondents did not have many ideas of which combination should be allowed, only that the federal guidelines should determine which modes could be combined and under what circumstances.

Concerns

As previously discussed, employers were concerned with how eligibility would be defined, how much room there would be for employer interpretation, and which benefits could be defined. Other concerns identified by respondents included issues of monitoring and liability.

In terms of monitoring, several respondents were concerned that it may be difficult to verify whether or not an employee is using one of the potential new modes. It was argued that an employer could see a transit pass as evidence, but what would verify that an employee was walking to work or involved in a carpool, especially if they were carpooling with a neighbor, for example, who did not work with them.

Four respondents also expressed concern about “promoting bicycling” and if the company would be liable if an employee was injured bicycling to work.

Chapter Summary

The vast majority of companies are in favor of adding carpooling, bicycling, and walking as qualified transportation fringe benefits, but were more hesitant regarding telecommuting. The main reasons cited for supporting the expansion of commute tax benefits were to reduce traffic congestion and emissions. Most believed that implementation of an expanded program would be fairly easy since they already had similar programs in place.

However, employers definitely had concerns regarding the rules of eligibility for each of these modes. In general, employers want the rules clearly defined, especially in terms of how many days per week an employee would need to use a mode to qualify for the benefit. Employers were also concerned about how such mode could or would be combined and the process of monitoring the program.

In the next chapter, the tax revenue impact of expansion and commuter choice equity is examined based on the conclusion of previous chapters on the amount of tax savings per participating employee, and the percentage of employers that offer commuting benefits.

Chapter 8: Conclusions and Recommendations

There were five objectives of this research:

1. Evaluate the current level of use of commuter benefits among employers;
2. Examine how commuter choice programs can be expanded to provide maximum utility to employers and employees, and the creation of commuter choice equity;
3. Survey and interview employers to understand their reaction to expansion and equity;
4. Estimate the tax revenue impact of those changes; and
5. Develop a set of recommendations for expanding commuter tax benefit programs.

Current Use of Commuter Benefits

According to the NCS, it is estimated that 2 percent of small establishments, 5 percent of medium to large establishments and 6 percent of state and local government agencies offer their employees some kind of commuting benefit. Of the data available, the most comprehensive trend data is that of employees of medium to large employers who have access or are eligible for subsidized commuting benefits. From 1985 to 1995, the figure remained at 5 percent. From 1997 to 1999, it rose slightly to 6 percent, only to fall back to 5 percent in 2000.

For the 1999 NCS, the findings were broken down by region: Northeast, Midwest, South and West. While the Northeast and the Midwest each had 4 percent of employees of all private industries having access to subsidized commuting benefits, the South was slightly lower at 3 percent. However, in the West region, 9 percent of employees have access to subsidized commute benefits.

The 1999 NCS, also provided a more comprehensive breakdown of employee access to subsidized commuting. While only 3 percent of employees of companies with less than 100 workers had access to the benefit, 6 percent of employees of companies with over 100 workers had access. Furthermore, 13 percent of employees of companies with between 1,000 and 2,499 had access to the benefit, 12 percent of employees of companies with over 2500 workers had access. In 2000, 2 percent of employees of companies with less than 100 workers had access to the benefit, while 5 percent of employees of companies with over 100 workers had access. Possibly indicating a slight decline in access to subsidized commuting benefits.

Data collected during the TCRP project, Strategies for Increasing the Effectiveness of Commuter Choice Programs, suggests that there is a wide variation in the types of programs that employers design and implement. Of the 22 employers that were interviewed that currently offer a commuter tax benefit, 10 offer a pre-tax benefit, 7 offer an employer-paid subsidy, and 5 offered a combination of pre-tax and subsidy. For the purpose of estimating the tax revenue impact, the combination programs are divided between the pre-tax and employer-paid option. As a result, the employer participation rates are divided into pre-tax and employer-paid proportions at the rate of 55 percent and 45 percent respectively. The participation rates are used to estimate the potential tax revenue impacts of expanding or modifying commuter tax benefits.

Expansion of Commuter Benefits and Creation of Commuter Choice Equity

Two purposes of this study are to examine how and if the definition of qualified transportation fringe benefits should be expanded to include new alternative modes of transportation, and the creation of commuter choice equity. The alternative modes examined included carpooling, bicycling, walking, telecommuting, and carsharing. Commuter choice equity refers to the act of increasing the tax limits of transit and vanpooling so that they are equal to qualified parking tax limits.

By expanding the definition of qualified transportation fringe benefits to include other modes, employers can provide more incentives to their employees to use an alternative to the SOV while also reducing their corporate taxes. The benefits of alternative mode use are numerous and include reducing traffic congestion and improving air quality. The modes that are examined in this study are carpooling, bicycling, walking, telecommuting, and carsharing. The key issues to address in terms of the inclusion of these modes in an expanded definition are:

1. eligibility requirements, such as how the mode is legally defined or a minimum number of days per week that mode must be used;
2. how and if benefits can be combined- for example, a transit user that parks in a transit station park and ride lot is eligible for both benefits;
3. the tax limit- currently there is a \$100 tax limit for transit and vanpools, and a \$190 limit for qualified parking; and
4. the potential tax revenue impact associated with the inclusion of additional modes.

Since each of the alternative modes in question do contribute to the reduction of vehicle miles, vehicle trips and/or auto emissions, it is recommended that policymakers consider the inclusion of carpooling, bicycling, walking, telecommuting and carsharing for an expanded definition of qualified transportation fringe benefits. Policymakers should also consider modifying the definition of qualified parking to specifically include bicycle parking as well.

If policymakers choose to expand the definition of qualified transportation fringe benefits, this study also recommends that they consider the following:

1. Employees are eligible for a particular mode if they use that mode for the majority of their weekly commute trips, and only the qualified parking benefit can be combined with the benefits of other modes, or
2. Employees may combine the benefits two modes only when those modes are used together to complete a home-based work trip.
 - a. For example, a bikes-on-bus user combines bicycling and transit in a single trip from his or her home to his or her place of work and therefore could combine the two benefits.
 - b. On the other hand, a car-sharing club member who uses transit to get to and from work is not using more than one mode to complete his or her work trip and therefore would not be eligible for a combined benefit.
 - c. Since walking is a part of every commute, it should not be combined with the benefits of any other modes. The purpose of this recommendation is to avoid the dilemma of having to determine what portion of a trip would an employee need to walk to qualify.
 - d. No triple combinations should be allow in order to reduce complexity

By considering these recommendations, policymakers can help reduce the complexity of planning and implementing a commuter tax benefit program for employers.

Instead of providing a specific recommendation of the tax limits associated with each of these benefits, this study provides a tax revenue impact (TRI) estimate for each mode at the \$25 and \$50 levels. Policymakers can use these figure to determine which level represents. Of course, employers should be allowed, in the end, to determine which of these new modes they want to include in their programs.

While the inclusion of carpooling, bicycling and walking is already supported in draft legislation and is supported by this study, the inclusion of telecommuting and carsharing may be a harder sell. The inclusion of telecommuting and carsharing is problematic under certain options in regard to combining benefits and/or eligibility requirements. In general, carsharers already use alternative modes for work trips, and telecommuters generally work at home two days or less per week. If policymakers decide to allow only the combining of benefits when both modes are used to complete a single trip or an employee must use a particular mode for the majority of their work trips, then a telecommuting and/or carsharing benefit may be difficult to justify.

This study also recommends that policymakers consider the creation of commuter choice equity, meaning the increase of the federal tax limit for transit and vanpooling so that the amounts are equal to the qualified parking benefit. By creating commuter choice equity, a greater portion of monthly transit passes and vanpool fares would be fully covered under the increased tax limit of \$190 per month. Although all monthly bus passes are under \$100 and are, therefore, fully covered under the current tax limit of \$100, there are several monthly light and commuter rail passes that exceed the limit in major transit markets. Also, in some markets, transit rides may need to purchase monthly passes from more than one transit agency. According to VPSI, the average cost of monthly vanpool fares in major metropolitan areas is \$125; increasing the tax limit will provide a greater incentive to switch to vanpooling.

Tax Revenue Impact of Expansion

It is estimated that cost of expanding the definition of qualified transportation fringe benefits will cost the federal government between \$154.7 (\$25 tax limit for new modes) to \$309.3 million per year (\$50 tax limit for new modes) depending on the size of the tax limit. It is important to note that these figures are based on BLS employer participation rates, 2000 Census mode splits, and COMMUTER Model forecasts and assumes that every employee that uses a particular mode and works for an employer that offers a commute benefit takes the full amount of the tax limit. These figures do include increased costs due to increased participation or shifts in the mode shares caused by the new financial incentives.

Currently, it costs the federal government approximately \$114.6 million dollars per year to maintain vanpool and transit benefits for employers and employees. This figure assumes that every employee that uses either vanpooling or transit to get to work and works for a company that offers the benefit is taking the full \$100. It is estimated that to create commuter choice equity, it will cost the federal government an additional \$81.6 million dollars per year, with a total estimated TRI of \$196.2 million per year.

As a result, the total cost of both expanding the commuter tax benefits to include new modes and creating commuter choice equity is estimated to range from \$236.3 million to \$390.9 million depending on either a \$25 or \$50 tax limit for new modes respectively. Freezing or eliminating the qualified parking benefit, which is incongruent with the goals of commuter choice programs, can mitigate the cost of providing these new benefits. It is estimated that the TRI on federal government for providing the qualified parking benefit is \$136.2 million per year, which is more than the cost of creating Commuter Choice Equity. It should be noted that all these estimates were purposely calculated to be on the high end of the potential range of costs.

By increasing the mode share of non-SOV commuting, the cost of expanding and modifying commuter tax benefits will also be mitigated by improved public health, air quality, and national security, and reduced traffic congestion which together cost billions of dollars per year.

Table 8.1 Total TRI Estimates (in millions)

Mode	At \$25 Tax Limit	At \$50 Tax Limit
Carpooling	\$98.1	\$196.1
Bicycling	\$3.0	\$6.0
Walking	\$3.0	\$6.0
Telecommuting	\$30.2	\$60.4
Additional Cost of Commuter Choice Equity	\$23.4	\$46.8
TOTAL	\$236.3	\$390.9

Employer Reaction to Expansion and Equity

The employer surveys and interviews support CUTR recommendations in regard to commuter tax benefit expansion and commuter choice equity. The vast majority of companies surveyed are in favor of adding carpooling, bicycling, and walking as qualified transportation fringe benefits, but were more hesitant regarding telecommuting. Carsharing was not included in the surveys. The main reasons cited for supporting the expansion of commute tax benefits were to reduce traffic congestion and emissions. Most believed that implementation of an expanded program would be fairly easy since they already had similar programs in place.

However, employers definitely had concerns regarding the rules of eligibility for each of these modes. In general, employers want the rules clearly defined, especially in terms of how many days per week an employee would need to use a mode to qualify for the benefit. Employers were also concerned about how such mode could or would be combined and the process of monitoring the program.

Summary of Recommendations

Since policymakers are considering that the Internal Revenue Code Section 132(f) be modified so that carpooling, bicycling, telecommuting and carsharing are included as qualified transportation fringe benefits, the following are the study's recommendations:

1. Policymakers should consider equalizing the Internal Revenue Code Section 132(f) tax limits for transit and vanpooling with qualified parking. This change would establish equity where the existing inequity seems to employers to be an inconsistent with transportation, environmental, and energy policies to reduce traffic congestion, improve air quality, and reduce dependence on foreign oil.
2. Policymakers should consider freezing only the qualified parking benefit at its current tax-free level (\$190 per month). Annual adjustments due to inflation may to increase the gap between parking and transit and vanpools. In addition, freezing the qualified parking benefit would generate revenue and provide a source of funds for offsetting the cost of expanding the definition of qualified transportation fringe benefits, and creating commuter choice equity.
3. Policymakers should clearly state how each mode is defined.
4. Policymakers should clearly state if and how qualified transportation fringe benefits can be combined to foster program development and ease of implementation for employers.

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Appendix A: Employer Survey

Dear _____:

Thank you for participating in this research project. The purpose of this study is to examine the possibility of expanding Commuter Choice Benefits to other modes, by surveying and interviewing employees of companies that previously participated in the “Strategies for Increasing the Effectiveness of Commuter Choice” project. This study is funded by the Florida Department of Transportation and the National Center for Transit Research. The information you provide will be used by the Center for Urban Transportation Research to develop a final report entitled, “Expanding Commuter Choice Tax Benefit Options. The final report, “Strategies for Increasing the Effectiveness of Commuter Choice”, will be a public document.

To investigate the expansion of Commuter Choice programs for all employers, we have designed the following questionnaire to learn about your organization's ideas and practices. We anticipate that completing this questionnaire will take one to two hours of your time. You may need to consult with other people within your company to be able to answer all the questions.

Please return your completed survey form via e-mail to hagelin@cutr.eng.usf.edu or to:

Chris Hagelin
CUTR-USF
4202 E. Fowler Ave., CUT 100
Tampa, FL 33620

If you have questions about completing this survey, please call Chris Hagelin at 813-974-2977 or send an e-mail to hagelin@cutr.eng.usf.edu

Sincerely,
CHRIS HAGELIN
Research Associate, Center for Urban Transportation Research

Nature of Commuter Choice and Other Benefit Programs

Since your program may have changes since the last survey, please answer the following questions, even if there were no changes.

- 1) What is the estimated % of site employees who...
 - a) Drive alone to work ? _____ %
 - b) Carpool to work? _____ %
 - c) Take transit to work? _____ %
 - d) Use a vanpool (7 or more employees sharing a ride in one vehicle) to get to work? _____ %
 - e) Were dropped off at work? _____ %
 - f) Bicycle to work? _____ %
 - g) Walk to work _____ %

- 2) Do you provide free or subsidized parking for your employees?
 - a) Yes, free parking
What percentage of your workforce receives free parking? _____ %
 - b) Yes, subsidized parking
How much do you charge for parking? \$ _____
What is the level of the subsidy? \$ _____
 - c) No. Employees pay for parking at market rates.

- 3) Which of the following benefits does your company's Commuter Choice program offer? (*Please circle all that apply.*)
 - a) Allows employees to set aside pre-tax salary to pay for vanpool or transit costs
 - b) Allows employees to set aside pre-tax salary to pay parking costs
 - c) Provides a transit or vanpool subsidy to employees
 - i) What is the monthly subsidy amount: \$ _____
 - d) Offers parking cash-out for employees
 - i) What is the monthly cash-out value: \$ _____

- 4) How does your company provide the transit/vanpool benefit?
 - a) By providing vouchers that are good on multiple transit services, (e.g. TransitChecks or Commuter Checks, etc.). Please name: _____
 - b) By providing transit passes. Please name the types of passes that are provided: _____
 - c) Through bona-fide cash reimbursement **SKIP TO QUESTION 5**
 - d) N/A: Our Commuter Choice program does not provide a transit/vanpool subsidy or allow pre-tax set-aside for transit or vanpool costs. **SKIP TO QUESTION 5**
 - e) Other _____

_____ **SKIP TO QUESTION 5**

- 5) How does your company distribute vouchers or transit passes?
 - a) Employees pick-up from a centralized location at the work site
 - b) An employee distributes the vouchers/passes to employees
 - c) Distributed with paychecks
 - d) Vouchers/passes are mailed to a person's home
 - e) Vouchers/passes are sent through inter-office mail
 - f) Other _____

- 6) How does your company provide Commuter Choice benefits related to parking? *(Please circle all that apply.)*
- a) Employees pay for their parking through payroll deduction using pre-tax salary.
 - b) Employees submit documentation of parking expenses to receive pre-tax salary that can be used for parking expenses (bona-fide cash reimbursement)
 - c) Employees can receive taxable cash, or a transit/vanpool subsidy in-lieu of a parking space (i.e. parking cash-out)
 - d) Not applicable. Our company does not offer Commuter Choice parking benefits.
- 7) Please answer this question if your company provides any Commuter Choice through bona-fide cash reimbursement *(i.e. If you answered c in question 3 and/or b in question 5.)*
- a) What documentation are employees required to submit? _____

 - b) How often are employees required to submit documentation? _____

 - c) Please describe the process by which employees submit documentation? _____

 - d) Has your company's documentation method been approved by anyone? For example, the IRS or your company's Internal Audit department. _____

- 8) How many employees have enrolled in: *(Please provide a # for each applicable aspect of your Commuter Choice program. Please write N/A if not applicable. Please write "unknown" if the program is applicable, but you don't know the number. It is okay to provide estimates if the exact # is not available.)*
- a) the pretax set-aside for parking (if applicable): _____
 - b) the pretax set-aside for transit (if applicable): _____
 - c) the pretax set-aside for vanpooling (if applicable): _____
 - d) the transit subsidy program (if applicable): _____
 - e) the vanpool subsidy program (if applicable): _____
 - f) the parking cash-out program (if applicable): _____
- 9) What other commute-related benefits does your company offer? *Please circle all that apply.*
- a) Financial incentives for bicycling or walking
 - b) Financial incentives for carpooling
 - c) Financial incentives for telecommuting
 - d) Other incentives to encourage people not to drive alone (e.g. prize drawings)
 - e) Guaranteed ride home program
 - f) Preferential parking for carpoolers or vanpoolers
 - g) Ridematching to facilitate carpools and vanpools
 - h) Information about commuter options (e.g. provision of bus schedules, etc.)
 - i) Events to promote use of alternatives to driving alone (e.g. transportation fairs, bike to work day, contests, etc)
 - j) A commute information office or staff
 - k) Newsletter (or newsletter articles in company newsletter) about commute alternatives, website, or features on internal company media outlets, etc.
 - l) Other: _____
 - m) None

10) Please describe in detail any benefits currently related to:

a) Carpooling:

b) Walking:

c) Bicycling:

d) Telecommuting:

11) If federal regulations regarding qualified transportation fringe benefits were expanded to include bicycling, walking, carpooling and/or telecommuting would you company consider providing these benefits:

a) Carpooling ____ Yes ____ No

i) Why or why not?

b) Walking ____ Yes ____ No

i) Why or why not?

c) Bicycling ____ Yes ____ No

i) Why or why not?

d) Telecommuting ____ Yes ____ No

i) Why or why not?

Thank you for completing this survey

Appendix B: Forecasting Telecommuting Demand for 2025

If there is one travel option other than driving alone that has had substantial growth rates, it is working from home. The U.S. Censuses of Population show that the number of home-based workers increased from 2.2 million in 1980 to 3.4 million in 1990. A survey in 1997 by the Bureau of Labor Statistics reported more than 21 million persons did some work at home as part of their primary job in May 1997⁵⁰ with a dramatic increase in the number of wage and salary workers doing paid work at home.

The adoption of working from home or *teleworking* is a relatively new and fast growing “travel” option that may have ramifications on the transportation system. Teleworking may find a would-be traveler substituting a vehicle trip with a trip on the information highway. The challenge is to estimate the growth of teleworking and assess the impact on travel behavior.

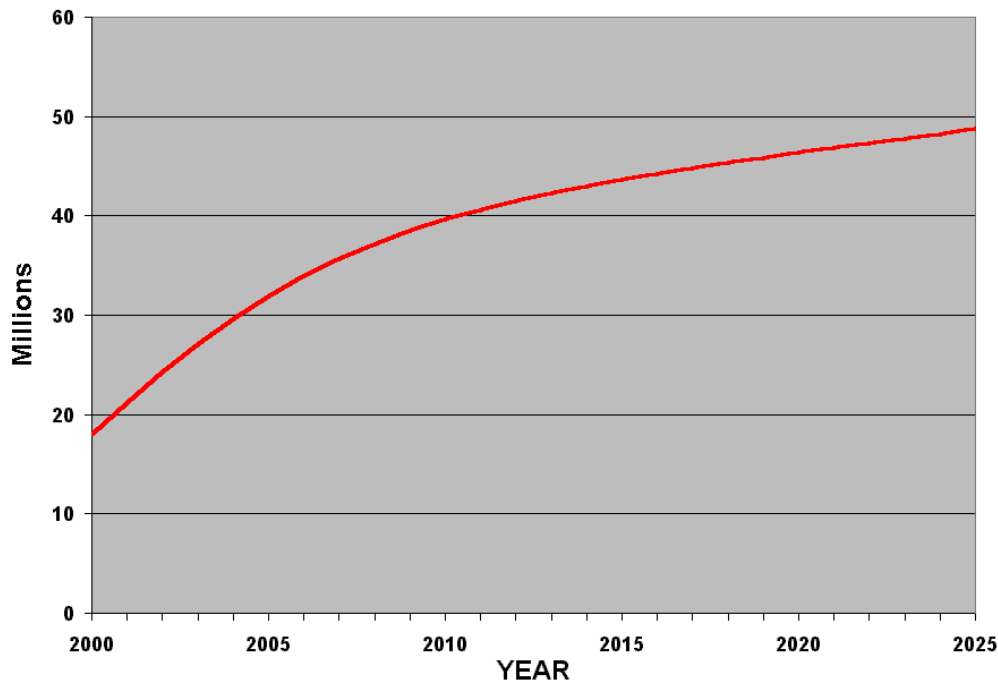
The lack of a single definition hinders the ability to forecast growth. Census information provides much of the information used to forecast transportation needs in the planning models. However, the Census collects information on working from home but that definition includes self-employed people and those who operate businesses from their home as well as telecommuters. Other groups such as the International Telework Association and Council, Find/SVP and CyberDialogue conduct annual surveys on teleworking.

It is important to draw the distinction between *teleworking* and *telecommuting*. Jack Nilles, who coined the term *telecommuting* in the 1970's, defines ***telecommuting*** as “periodic work out of the principal office, one or more days per week, either at home, a client's site, or in a telework center; the partial or total substitution of information technologies for the commute to work. The emphasis here is on *reduction or elimination of the daily commute* to and from the workplace.” Nilles also defines ***teleworking*** as “ANY form of substitution of information technologies (such as telecommunications and/or computers) for normal work-related travel. Nilles classifies telecommuting as a subset of teleworking.

Forecasting the growth in teleworking over the next 25 years is based on making several assumptions. Will teleworking grow steadily in direct proportion with the change in population or employment levels? Or will the growth rate for teleworking continue to accelerate rapidly? With driving forces for telework such as continuing advances in technology, changing employer attitudes toward work methods, savings from reductions in overhead, and, increasing demand from employees for more work-life programs.

A review of the literature finds that most of the focus is on estimating the level of telecommuting usage today or short term estimates rather than forecasting growth over a long period. Nilles forecasts the growth in teleworking to grow to nearly 50 million by 2025 from the 16.5 million in 2000 (teleworking at least one day monthly.) Though the once per month usage rate was used, Nilles reports the average use is half-time.

⁵⁰ U.S. Department of Labor. Bureau of Labor Statistics. Current Population Survey. May 1997.



Source: Jala International, Inc. (2000)

CUTR used two approaches to estimate demand: linear regression analysis and the diffusion of innovation model.

Our analysis focused on telecommuting, rather than telework since that is the option available for using in the COMMUTER model used in our analysis. Since telecommuting is a form of teleworking, adjustments to telework estimates were made by applying a discount factor. The share of telecommuters was calculated as the percent of teleworkers who are either employees and contract workers who telecommute from home or a telework center using the results of a survey conducted by Nilles on behalf of the International Telework Association and Council in 2000. In other words, we excluded teleworking operators of home businesses or self-employed teleworkers from the telecommuting forecast used in the preparation of the Hillsborough County TDM Plan. Based on the data from the survey, approximately 69 percent of teleworkers are telecommuters.

Distribution of Teleworkers by Teleworking Location and Type of Employment

Teleworkers		Pct of Teleworkers by Teleworking Location	Pct of Total Teleworkers	Telecommuters
Solely home-based (89%);		89.0%		
Employees		54.0%	48.1%	48.1%
Contract workers		13.0%	11.6%	11.6%
Teleworking operators of home businesses		9.0%	8.0%	
Self-employed teleworkers		27.0%	24.0%	
Solely telework-center-based (7%)		7.0%		
Employees		61.0%	4.3%	4.3%
Contract workers		18.0%	1.3%	1.3%
Teleworking operators of home businesses		4.0%	0.3%	
Self-employed teleworkers		18.0%	1.3%	
		100%		
Both home- and telework center-based (4%).		4.0%	4.0%	4.0%
			Total	69.2%

Linear Regression Model

The first modeling approach, linear regression, assumes a constant growth rate. The following regression equation was developed using the data from surveys conducted by Find/SVP and CyberDialogue which have tracked work at home trends since 1990. Furthermore, we assumed telecommuting began in 1970.

$$Y = 0.475236542x - 938.598$$

$$\text{Adjusted } R^2 = 0.74$$

Where

Y = No. of Telecommuters

X = Year

Using this model, there will be nearly 24 million teleworkers or 16.5 telecommuters (assuming 69% of teleworkers are telecommuters) in the U.S. by 2025.

Diffusion of Innovations Model

Economists and market researchers often represent the adoption of new products or technologies as an "s-curve" of growth (i.e., diffusion). This s-curve illustrates how the number of users of a new product or technology grows over time. The curve starts slowly upward and then at some point becomes much steeper (as the technology spreads rapidly, like cell phone and Internet use in the past several years), and in due course evens out because there are fewer potential workers who have not already adopted the product or technology. In effect, the curve represents five groups of potential adopters:

- **innovators** are the enterprising group who have the resources and desire to be first to offer telecommuting.
- **early adopters** are the group who quickly see a strategic advantage in adopting telecommuting.
- **early majority** group could be characterized as followers who make a deliberate choice to use telecommuting.
- **late majority** group are skeptical and risk averse to telecommuting.
- **laggards group** is very unlikely to begin telecommuting.

Experience from many other earlier new products or technologies shows that the s-curve can be represented by the *Bass formula*:

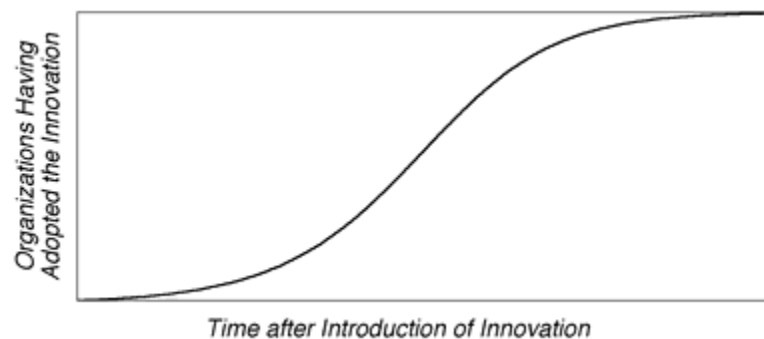
$$N_t = N_{t-1} + p(m - N_{t-1}) + q \frac{N_{t-1}}{m}(m - N_{t-1})$$

The Bass Diffusion Model is designed to answer the question when will customers adopt a new product or technology.⁵¹

The three parameters of the model are:

- p = the coefficient of external influence; the likelihood that somebody who is not yet telecommuting will start telecommuting because of external factors.
- q = the coefficient of internal influence; the likelihood that somebody who is not yet telecommuting will start using it because of "word-of-mouth" or other influence from those already telecommuting.
- m = the market potential; the total number of people who will eventually telecommute (cumulative number of telecommuters per year).

The standard Bass curve (with the average values of p and q of 0.03 and 0.38, respectively) looks like this:



The standard Bass curve for the diffusion of innovations over time.

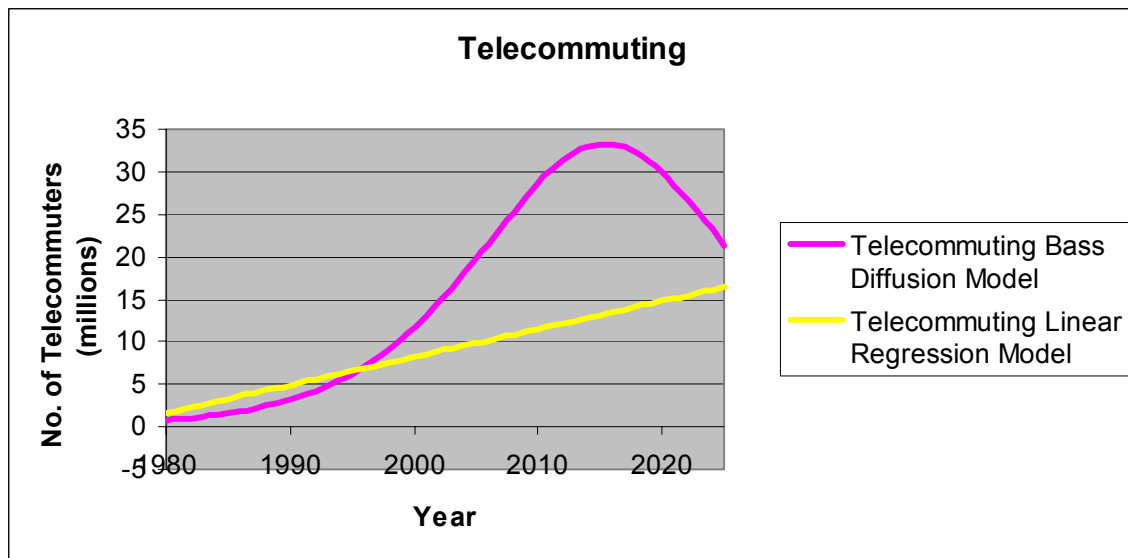
If one describes the maximum demand for teleworking to be a function of the job tasks (not job titles), then an estimate of 68% of the tasks are "teleworkable"⁵². It is also fair to assume that not all employees whose jobs or portions thereof could be teleworkable are interested in home-based telecommuting. Using data collected from a large survey, an estimated 59% of employees are

⁵¹ Mahajan, V., Muller, E., and Bass, F.M. "New product diffusion models in marketing: A review and directions for research." *Journal of Marketing* 54, 1 (January 1990), 1-26.

⁵² Gareis, Karsten and Norbert Kordey. "The Spread of Telework in 2005". *Electronic Commerce and Telework Trends*. <http://www.ecatt.com/ecatt/>

interested.⁵³ Finally, we'd also discount the number percent of those who are able and willing by the share that actually follows through. One leading telework researcher estimates this rate to be 76%.⁵⁴ Therefore, the maximum share of telecommuters is the product of these three factors or approximately 30% of employment.

Solving for q and p to minimize the square of the differences and imposing a limit of 30%, and adjusting for the share of telecommuters among teleworkers yields the growth pattern shown in Figure XX below ($p = 0.000173847$, $q = 0.143684412$, and the number of telecommuters peaks at 33 million in 2015)



Results

The Bass Model forecasts telecommuting to grow to 33 million by 2015 (approximately 30% of the workforce). However, if telecommuting adoption patterns follow those of other new products or innovations then some loss may occur after the peak (e.g., these telecommuters may become self-employed and thus no longer be classified as telecommuters). By 2025, the model estimates 13% of the workforce or 22 million people in the U.S will be telecommuting at least one day per week. CUTR used this share (13%) of the workforce to estimate changes in the key performance measures (e.g., change in vehicle miles of travel, etc.)

⁵³ Ibid

⁵⁴ Mokhtarian, Patricia L. "A Synthetic Approach to Estimating the Impacts of Telecommuting on Travel." Urban Design, Telecommunication and Travel Forecasting Conference: Summary, Recommendations and Compendium of Papers. Final Report, August 1997

Appendix C: Additional Tax Estimates

Appendix C contains additional tax tables used for determining the tax revenue impacts for parking and vanpooling:

Table C.1: Pre-tax benefit at \$147 tax limit level

Employee Perspective		BASE	Employer	Monthly Savings	Yearly Savings
Annual Salary		\$31,800.00	\$31,800.00		
Month Gross Pay		\$2,650.00	\$2,650.00		
Pre-tax benefit		\$0.00	\$147.00		
Taxable Salary		\$2,650.00	\$2,503.00		
Federal Income Tax	28%	\$742.00	\$700.84	\$41.16	\$493.92
State tax	6%	\$159.00	\$150.18	\$8.82	\$105.84
FICA	7.65%	\$202.73	\$191.48	\$11.25	\$134.95
Total taxes		\$1,103.73	\$1,042.50	\$61.23	\$734.71
Take-home pay		\$1,546.28	\$1,607.50		
Total Federal Tax Savings				\$52.41	\$628.87

Table C.2: Pre-tax benefit at \$147 tax limit level

Employee Perspective		BASE	With Pre-Tax	Yearly Savings	Steps
Adjusted Gross Income	a	\$31,800.00			
Yearly Commute Benefit	b	\$1,764.00			
Exemptions	c	2			
Withholding Allowance	d	\$3,100.00			
FICA	e	7.65%			
Standard Deduction	f	\$9,000.00			
Marital Status	g	Married			
	h				
Adjusted Gross Income	i	\$31,800.00	\$31,800.00		i=a
Pre-Tax Benefit	j		\$1,764.00		j=b
Taxable Adjusted Income	k	\$31,800.00	\$30,036.00		k=i-j
Standard Deduction	l	-\$9,000.00	-\$9,000.00		l=f
Exemptions x Withholding	m	-\$6,200.00	-\$6,200.00		m=c x d
Taxable Income	n	\$16,600.00	\$14,836.00		n=k+l+m
Withholding Tax	o	-\$860.00	-\$683.60	-176.40	look up tables
FICA	p	-\$2,432.70	-\$2,297.75	-134.95	p=k x e
Net Income	q	\$28,507.30	\$27,054.65		q=k +o+p
Federal Tax Savings/year	r			\$311.35	r=o+p difference
Federal Tax Savings/month	s			\$25.95	s=r/12

Table C.3: Pre-tax benefit at \$125 tax limit level

Employee Perspective		BASE	Employer	Monthly Savings	Yearly Savings
Annual Salary		\$31,800.00	\$31,800.00		
Month Gross Pay		\$2,650.00	\$2,650.00		
Pre-tax benefit		\$0.00	\$125.00		
Taxable Salary		\$2,650.00	\$2,525.00		
Federal Income Tax	28%	\$742.00	\$707.00	\$35.00	\$420.00
State tax	6%	\$159.00	\$151.50	\$7.50	\$90.00
FICA	7.65%	\$202.73	\$193.16	\$9.56	\$114.75
Total taxes		\$1,103.73	\$1,051.66	\$52.06	\$624.75
Take-home pay		\$1,546.28	\$1,598.34		
Total Federal Tax Savings				\$44.56	\$534.75

Table C.4: Pre-tax benefit at \$125 tax limit level

Employee Perspective		BASE	With Pre-Tax	Yearly Savings	Steps
Adjusted Gross Income	a	\$31,800.00			
Yearly Commute Benefit	b	\$1,500.00			
Exemptions	c	2			
Withholding Allowance	d	\$3,100.00			
FICA	e	7.65%			
Standard Deduction	f	\$9,000.00			
Marital Status	g	Married			
	h				
Adjusted Gross Income	i	\$31,800.00	\$31,800.00		i=a
Pre-Tax Benefit	j		\$1,500.00		j=b
Taxable Adjusted Income	k	\$31,800.00	\$30,300.00		k=i-j
Standard Deduction	l	-\$9,000.00	-\$9,000.00		l=f
Exemptions x Withholding	m	-\$6,200.00	-\$6,200.00		m=c x d
Taxable Income	n	\$16,600.00	\$15,100.00		n=k+l+m
Withholding Tax	o	-\$860.00	-\$710.00	-150.00	look up tables
FICA	p	-\$2,432.70	-\$2,317.95	-114.75	p=k x e
Net Income	q	\$28,507.30	\$27,272.05		q=k +o+p
Federal Tax Savings/year	r			\$264.75	r=o+p difference
Federal Tax Savings/month	s			\$22.06	s=r/12

Appendix D:

Appendix D contains the spread sheets used to calculate the Tax Revenue Impacts of all the modes examined in this study.

Table D.1: Estimated Tax Revenue Impact (TRI) for carpooling with a \$25 tax limit; Level 1

	SMALL ESTABLISHMENTS	Source or Equation	Employer Paid	Pre-tax	TOTAL
1	Total number of establishments	Bureau of Labor Statistics (BLS)	5,026,928	5,026,928	
2	% of establishments offering subsidized commuting 2% total	National Compensation Survey (NCS)	0.90%	1.10%	
3	Estimate of total number of establishments offering	Step 1 x Step 2 = Step 3	45,242	55,296	
4	Total number of employees	BLS	40,091,449	40,091,449	
5	Estimate of employees working for offering establishments	Step 4 x Step 2 = Step 5	360,823	441,006	
6	% of employees using mode	2000 Census	12.0%	12.0%	
7	Estimate of total number of employees that used mode	Step 4 x Step 6 = Step 7	4,810,974	4,810,974	
8	Estimate of employees that use mode and work for offering establishments	Step 7 x Step 2 = Step 8	43,299	52,921	
9	Estimate Corporate TRI per employee per year	See Chapter 2 tables	\$102.00	\$15.15	
10	Estimate Employee TRI per year	See Chapter 2 tables	\$0.00	\$106.95	
11	Total Estimate Corporate TRI	Step 9 x Step 8= Step 11	\$4,416,474.02	\$801,748.80	
12	Total Estimate Employee TRI	Step 10 x Step 8= Step 12	\$0.00	\$5,659,870.22	
13	Estimated TRI of offering benefit	Step 11 + Step 12	\$4,416,474.02	\$6,461,619.02	
					\$10,878,093.04
	MEDIUM AND LARGE ESTABLISHMENTS	Source or Equation	Employer Paid	Pre-tax	
1	Total number of establishments	Bureau of Labor Statistics (BLS)	1,269,529	1,269,529	
2	% of establishments offering subsidized commuting 5% total	National Compensation Survey (NCS)	2.25%	2.75%	
3	Estimate of total number of establishments offering	Step 1 x Step 2 = Step 3	28,564	34,912	
4	Total number of employees	BLS	70,614,212	70,614,212	
5	Estimate of employees working for offering establishments	Step 4 x Step 2 = Step 5	1,588,820	1,941,891	
6	% of employees using mode	2000 Census	12.0%	12.0%	
7	Estimate of total number of employees that used mode	Step 4 x Step 6 = Step 7	8,473,705	8,473,705	
8	Estimate of employees that use mode and work for offering establishments	Step 7 x Step 2 = Step 8	190,658	233,027	
9	Estimate Corporate TRI per employee per year	See Chapter 2 tables	\$102.00	\$15.15	
10	Estimate Employee TRI per year	See Chapter 2 tables	\$0.00	\$106.95	
11	Total Estimate Corporate TRI	Step 9 x Step 8= Step 11	\$19,447,153.98	\$3,530,357.53	
12	Total Estimate Employee TRI	Step 10 x Step 8= Step 12	\$0.00	\$24,922,226.91	
13	Estimated TRI of offering benefit	Step 11 + Step 12 = Step 13	\$19,447,153.98	\$28,452,584.44	
					\$47,899,738.43
	PUBLIC SECTOR	Source or Equation		Pre-tax	
1	State and Local Govt employees	BLS		15,378,924	
2	Federal Govt employees	NCS		2,411,630	
3	Total Govt employees	Step 1 + Step 2 = Step 3		17,790,554	
4	% of employees that use mode	2000 Census		12.0%	
5	Estimate of total govt employees that use mode	Step 3 x Step 4 = Step 5		2,134,866	
6	Estimate of state and local govt employees that use mode	Step 1 x Step 4 = Step 6		1,845,471	
7	Estimate for state and local governments that offer benefit	NCS		6%	
8	Estimate of employees that use mode and work for offering state and local govs	Step 6 x Step 7 = Step 8		110,728	
9	Estimate agency TRI per employee per year	See Chapter 2 tables		\$22.95	
10	Estimate Employee TRI per year	See Chapter 2 tables		\$106.95	
11	Total Estimate Government TRI	Step 8 x Step 9 = Step 11		\$2,541,213.40	
12	Total Estimate Employee TRI	Step 8 x Step 10 = Step 12		\$11,842,386.64	
13	Estimated TRI of offering benefit	Step 11 + Step 12 = Step 13		\$14,383,600.04	
					\$14,383,600.04
	Total Estimated TRI				\$73,161,431.50

Table D.2: Estimated Tax Revenue Impact (TRI) for carpooling with a \$50 tax limit: Level 1

	SMALL ESTABLISHMENTS	Source or Equation	Employer Paid	Pre-tax	TOTAL
1	Total number of establishments	Bureau of Labor Statistics (BLS)	5,026,928	5,026,928	
2	% of establishments offering subsidized commuting 2% total	National Compensation Survey (NCS)	0.90%	1.10%	
3	Estimate of total number of establishments offering	Step 1 x Step 2 = Step 3	45,242	55,296	
4	Total number of employees	BLS	40,091,449	40,091,449	
5	Estimate of employees working for offering establishments	Step 4 x Step 2 = Step 5	360,823	441,006	
6	% of employees using mode	2000 Census	12.0%	12.0%	
7	Estimate of total number of employees that used mode	Step 4 x Step 6 = Step 7	4,810,974	4,810,974	
8	Estimate of employees that use mode and work for offering establishments	Step 7 x Step 2 = Step 8	43,299	52,921	
9	Estimate Corporate TRI per employee per year	See Chapter 2 tables	\$204.00	\$30.29	
10	Estimate Employee TRI per year	See Chapter 2 tables	\$0.00	\$213.90	
11	Total Estimate Corporate TRI	Step 9 x Step 8= Step 11	\$8,832,948.04	\$1,602,968.39	
12	Total Estimate Employee TRI	Step 10 x Step 8= Step 12	\$0.00	\$11,319,740.44	
13	Estimated TRI of offering benefit	Step 11 + Step 12	\$8,832,948.04	\$12,922,708.83	
					\$21,755,656.87
	MEDIUM AND LARGE ESTABLISHMENTS	Source or Equation	Employer Paid	Pre-tax	
1	Total number of establishments	Bureau of Labor Statistics (BLS)	1,269,529	1,269,529	
2	% of establishments offering subsidized commuting 5% total	National Compensation Survey (NCS)	2.25%	2.75%	
3	Estimate of total number of establishments offering	Step 1 x Step 2 = Step 3	28,564	34,912	
4	Total number of employees	BLS	70,614,212	70,614,212	
5	Estimate of employees working for offering establishments	Step 4 x Step 2 = Step 5	1,588,820	1,941,891	
6	% of employees using mode	2000 Census	12.0%	12.0%	
7	Estimate of total number of employees that used mode	Step 4 x Step 6 = Step 7	8,473,705	8,473,705	
8	Estimate of employees that use mode and work for offering establishments	Step 7 x Step 2 = Step 8	190,658	233,027	
9	Estimate Corporate TRI per employee per year	See Chapter 2 tables	\$204.00	\$30.29	
10	Estimate Employee TRI per year	See Chapter 2 tables	\$0.00	\$213.90	
11	Total Estimate Corporate TRI	Step 9 x Step 8= Step 11	\$38,894,307.97	\$7,058,384.79	
12	Total Estimate Employee TRI	Step 10 x Step 8= Step 12	\$0.00	\$49,844,453.82	
13	Estimated TRI of offering benefit	Step 11 + Step 12 = Step 13	\$38,894,307.97	\$56,902,838.61	
					\$95,797,146.58
	PUBLIC SECTOR	Source or Equation		Pre-tax	
1	State and Local Govt employees	BLS		15,378,924	
2	Federal Govt employees	NCS		2,411,630	
3	Total Govt employees	Step 1 + Step 2 = Step 3		17,790,554	
4	% of employees that use mode	2000 Census		12.0%	
5	Estimate of total govt employees that use mode	Step 3 x Step 4 = Step 5		2,134,866	
6	Estimate of state and local govt employees that use mode	Step 1 x Step 4 = Step 6		1,845,471	
7	Estimate for state and local governments that offer benefit	NCS		6%	
8	Estimate of employees that use mode and work for offering state and local govts	Step 6 x Step 7 = Step 8		110,728	
9	Estimate agency TRI per employee per year	See Chapter 2 tables		\$45.90	
10	Estimate Employee TRI per year	See Chapter 2 tables		\$213.90	
11	Total Estimate Government TRI	Step 8 x Step 9 = Step 11		\$5,082,426.80	
12	Total Estimate Employee TRI	Step 8 x Step 10 = Step 12		\$23,684,773.27	
13	Estimated TRI of offering benefit	Step 11 + Step 12 = Step 13		\$28,767,200.08	
					\$28,767,200.08
	Total Estimated TRI				\$146,320,003.53

Table D.3: Estimated Tax Revenue Impact (TRI) for bicycling with a \$25 tax limit; Level 1

	SMALL ESTABLISHMENTS	Source or Equation	Employer Paid	Pre-tax	TOTAL
1	Total number of establishments	Bureau of Labor Statistics (BLS)	5,026,928	5,026,928	
2	% of establishments offering subsidized commuting 2% total	National Compensation Survey (NCS)	0.90%	1.10%	
3	Estimate of total number of establishments offering	Step 1 x Step 2 = Step 3	45,242	55,296	
4	Total number of employees	BLS	40,091,449	40,091,449	
5	Estimate of employees working for offering establishments	Step 4 x Step 2 = Step 5	360,823	441,006	
6	% of employees using mode	2000 Census	0.4%	0.4%	
7	Estimate of total number of employees that used mode	Step 4 x Step 6 = Step 7	160,366	160,366	
8	Estimate of employees that use mode and work for offering establishments	Step 7 x Step 2 = Step 8	1,443	1,764	
9	Estimate Corporate TRI per employee per year	See Chapter 2 tables	\$102.00	\$15.15	
10	Estimate Employee TRI per year	See Chapter 2 tables	\$0.00	\$106.95	
11	Total Estimate Corporate TRI	Step 9 x Step 8= Step 11	\$147,215.80	\$26,724.96	
12	Total Estimate Employee TRI	Step 10 x Step 8= Step 12	\$0.00	\$188,662.34	
13	Estimated TRI of offering benefit	Step 11 + Step 12	\$147,215.80	\$215,387.30	
					\$362,603.10
	MEDIUM AND LARGE ESTABLISHMENTS	Source or Equation	Employer Paid	Pre-tax	
1	Total number of establishments	Bureau of Labor Statistics (BLS)	1,269,529	1,269,529	
2	% of establishments offering subsidized commuting 5% total	National Compensation Survey (NCS)	2.25%	2.75%	
3	Estimate of total number of establishments offering	Step 1 x Step 2 = Step 3	28,564	34,912	
4	Total number of employees	BLS	70,614,212	70,614,212	
5	Estimate of employees working for offering establishments	Step 4 x Step 2 = Step 5	1,588,820	1,941,891	
6	% of employees using mode	2000 Census	0.4%	0.4%	
7	Estimate of total number of employees that used mode	Step 4 x Step 6 = Step 7	282,457	282,457	
8	Estimate of employees that use mode and work for offering establishments	Step 7 x Step 2 = Step 8	6,355	7,768	
9	Estimate Corporate TRI per employee per year	See Chapter 2 tables	\$102.00	\$15.15	
10	Estimate Employee TRI per year	See Chapter 2 tables	\$0.00	\$106.95	
11	Total Estimate Corporate TRI	Step 9 x Step 8= Step 11	\$648,238.47	\$117,678.58	
12	Total Estimate Employee TRI	Step 10 x Step 8= Step 12	\$0.00	\$830,740.90	
13	Estimated TRI of offering benefit	Step 11 + Step 12 = Step 13	\$648,238.47	\$948,419.48	
					\$1,596,657.95
	PUBLIC SECTOR	Source or Equation		Pre-tax	
1	State and Local Govt employees	BLS		15,378,924	
2	Federal Govt employees	NCS		2,411,630	
3	Total Govt employees	Step 1 + Step 2 = Step 3		17,790,554	
4	% of employees that use mode	2000 Census		0.4%	
5	Estimate of total govt employees that use mode	Step 3 x Step 4 = Step 5		71,162	
6	Estimate of state and local govt employees that use mode	Step 1 x Step 4 = Step 6		61,516	
7	Estimate for state and local governments that offer benefit	NCS		6%	
8	Estimate of employees that use mode and work for offering state and local govts	Step 6 x Step 7 = Step 8		3,691	
9	Estimate agency TRI per employee per year	See Chapter 2 tables		\$22.95	
10	Estimate Employee TRI per year	See Chapter 2 tables		\$106.95	
11	Total Estimate Government TRI	Step 8 x Step 9 = Step 11		\$84,707.11	
12	Total Estimate Employee TRI	Step 8 x Step 10 = Step 12		\$394,746.22	
13	Estimated TRI of offering benefit	Step 11 + Step 12 = Step 13		\$479,453.33	
					\$479,453.33
	Total Estimated TRI				\$2,438,714.38

Table D.4: Estimated Tax Revenue Impact (TRI) for bicycling with a \$50 tax limit; Level 1

	SMALL ESTABLISHMENTS	Source or Equation	Employer Paid	Pre-tax	TOTAL
1	Total number of establishments	Bureau of Labor Statistics (BLS)	5,026,928	5,026,928	
2	% of establishments offering subsidized commuting 2% total	National Compensation Survey (NCS)	0.90%	1.10%	
3	Estimate of total number of establishments offering	Step 1 x Step 2 = Step 3	45,242	55,296	
4	Total number of employees	BLS	40,091,449	40,091,449	
5	Estimate of employees working for offering establishments	Step 4 x Step 2 = Step 5	360,823	441,006	
6	% of employees using mode	2000 Census	0.4%	0.4%	
7	Estimate of total number of employees that used mode	Step 4 x Step 6 = Step 7	160,366	160,366	
8	Estimate of employees that use mode and work for offering establishments	Step 7 x Step 2 = Step 8	1,443	1,764	
9	Estimate Corporate TRI per employee per year	See Chapter 2 tables	\$204.00	\$30.29	
10	Estimate Employee TRI per year	See Chapter 2 tables	\$0.00	\$213.90	
11	Total Estimate Corporate TRI	Step 9 x Step 8= Step 11	\$294,431.60	\$53,432.28	
12	Total Estimate Employee TRI	Step 10 x Step 8= Step 12	\$0.00	\$377,324.68	
13	Estimated TRI of offering benefit	Step 11 + Step 12	\$294,431.60	\$430,756.96	
					\$725,188.56
	MEDIUM AND LARGE ESTABLISHMENTS	Source or Equation	Employer Paid	Pre-tax	
1	Total number of establishments	Bureau of Labor Statistics (BLS)	1,269,529	1,269,529	
2	% of establishments offering subsidized commuting 5% total	National Compensation Survey (NCS)	2.25%	2.75%	
3	Estimate of total number of establishments offering	Step 1 x Step 2 = Step 3	28,564	34,912	
4	Total number of employees	BLS	70,614,212	70,614,212	
5	Estimate of employees working for offering establishments	Step 4 x Step 2 = Step 5	1,588,820	1,941,891	
6	% of employees using mode	2000 Census	0.4%	0.4%	
7	Estimate of total number of employees that used mode	Step 4 x Step 6 = Step 7	282,457	282,457	
8	Estimate of employees that use mode and work for offering establishments	Step 7 x Step 2 = Step 8	6,355	7,768	
9	Estimate Corporate TRI per employee per year	See Chapter 2 tables	\$204.00	\$30.29	
10	Estimate Employee TRI per year	See Chapter 2 tables	\$0.00	\$213.90	
11	Total Estimate Corporate TRI	Step 9 x Step 8= Step 11	\$1,296,476.93	\$235,279.49	
12	Total Estimate Employee TRI	Step 10 x Step 8= Step 12	\$0.00	\$1,661,481.79	
13	Estimated TRI of offering benefit	Step 11 + Step 12 = Step 13	\$1,296,476.93	\$1,896,761.29	
					\$3,193,238.22
	PUBLIC SECTOR	Source or Equation		Pre-tax	
1	State and Local Govt employees	BLS		15,378,924	
2	Federal Govt employees	NCS		2,411,630	
3	Total Govt employees	Step 1 + Step 2 = Step 3		17,790,554	
4	% of employees that use mode	2000 Census		0.4%	
5	Estimate of total govt employees that use mode	Step 3 x Step 4 = Step 5		71,162	
6	Estimate of state and local govt employees that use mode	Step 1 x Step 4 = Step 6		61,516	
7	Estimate for state and local governments that offer benefit	NCS		6%	
8	Estimate of employees that use mode and work for offering state and local govts	Step 6 x Step 7 = Step 8		3,691	
9	Estimate agency TRI per employee per year	See Chapter 2 tables		\$45.90	
10	Estimate Employee TRI per year	See Chapter 2 tables		\$213.90	
11	Total Estimate Government TRI	Step 8 x Step 9 = Step 11		\$169,414.23	
12	Total Estimate Employee TRI	Step 8 x Step 10 = Step 12		\$789,492.44	
13	Estimated TRI of offering benefit	Step 11 + Step 12 = Step 13		\$958,906.67	
					\$958,906.67
	Total Estimated TRI				\$4,877,333.45

Table D.5: Estimated Tax Revenue Impact (TRI) for walking with a \$25 tax limit; Level 1

	SMALL ESTABLISHMENTS	Source or Equation	Employer Paid	Pre-tax	TOTAL
1	Total number of establishments	Bureau of Labor Statistics (BLS)	5,026,928	5,026,928	
2	% of establishments offering subsidized commuting 2% total	National Compensation Survey (NCS)	0.90%	1.10%	
3	Estimate of total number of establishments offering	Step 1 x Step 2 = Step 3	45,242	55,296	
4	Total number of employees	BLS	40,091,449	40,091,449	
5	Estimate of employees working for offering establishments	Step 4 x Step 2 = Step 5	360,823	441,006	
6	% of employees using mode	2000 Census	2.9%	2.9%	
7	Estimate of total number of employees that used mode	Step 4 x Step 6 = Step 7	1,162,652	1,162,652	
8	Estimate of employees that use mode and work for offering establishments	Step 7 x Step 2 = Step 8	10,464	12,789	
9	Estimate Corporate TRI per employee per year	See Chapter 2 tables	\$102.00	\$15.15	
10	Estimate Employee TRI per year	See Chapter 2 tables	\$0.00	\$106.95	
11	Total Estimate Corporate TRI	Step 9 x Step 8= Step 11	\$1,067,314.56	\$193,755.96	
12	Total Estimate Employee TRI	Step 10 x Step 8= Step 12	\$0.00	\$1,367,801.97	
13	Estimated TRI of offering benefit	Step 11 + Step 12	\$1,067,314.56	\$1,561,557.93	
					\$2,628,872.48
	MEDIUM AND LARGE ESTABLISHMENTS	Source or Equation	Employer Paid	Pre-tax	
1	Total number of establishments	Bureau of Labor Statistics (BLS)	1,269,529	1,269,529	
2	% of establishments offering subsidized commuting 5% total	National Compensation Survey (NCS)	2.25%	2.75%	
3	Estimate of total number of establishments offering	Step 1 x Step 2 = Step 3	28,564	34,912	
4	Total number of employees	BLS	70,614,212	70,614,212	
5	Estimate of employees working for offering establishments	Step 4 x Step 2 = Step 5	1,588,820	1,941,891	
6	% of employees using mode	2000 Census	2.9%	2.9%	
7	Estimate of total number of employees that used mode	Step 4 x Step 6 = Step 7	2,047,812	2,047,812	
8	Estimate of employees that use mode and work for offering establishments	Step 7 x Step 2 = Step 8	46,076	56,315	
9	Estimate Corporate TRI per employee per year	See Chapter 2 tables	\$102.00	\$15.15	
10	Estimate Employee TRI per year	See Chapter 2 tables	\$0.00	\$106.95	
11	Total Estimate Corporate TRI	Step 9 x Step 8= Step 11	\$4,699,728.88	\$853,169.74	
12	Total Estimate Employee TRI	Step 10 x Step 8= Step 12	\$0.00	\$6,022,871.50	
13	Estimated TRI of offering benefit	Step 11 + Step 12 = Step 13	\$4,699,728.88	\$6,876,041.24	
					\$11,575,770.12
	PUBLIC SECTOR	Source or Equation		Pre-tax	
1	State and Local Govt employees	BLS		15,378,924	
2	Federal Govt employees	NCS		2,411,630	
3	Total Govt employees	Step 1 + Step 2 = Step 3		17,790,554	
4	% of employees that use mode	2000 Census		2.9%	
5	Estimate of total govt employees that use mode	Step 3 x Step 4 = Step 5		515,926	
6	Estimate of state and local govt employees that use mode	Step 1 x Step 4 = Step 6		445,989	
7	Estimate for state and local governments that offer benefit	NCS		6%	
8	Estimate of employees that use mode and work for offering state and local govts	Step 6 x Step 7 = Step 8		26,759	
9	Estimate agency TRI per employee per year	See Chapter 2 tables		\$22.95	
10	Estimate Employee TRI per year	See Chapter 2 tables		\$106.95	
11	Total Estimate Government TRI	Step 8 x Step 9 = Step 11		\$614,126.57	
12	Total Estimate Employee TRI	Step 8 x Step 10 = Step 12		\$2,861,910.10	
13	Estimated TRI of offering benefit	Step 11 + Step 12 = Step 13		\$3,476,036.68	
					\$3,476,036.68
	Total Estimated TRI				\$17,680,679.28

Table D.6: Estimated Tax Revenue Impact (TRI) for walking with a \$50 tax limit; Level 1

	SMALL ESTABLISHMENTS	Source or Equation	Employer Paid	Pre-tax	TOTAL
1	Total number of establishments	Bureau of Labor Statistics (BLS)	5,026,928	5,026,928	
2	% of establishments offering subsidized commuting 2% total	National Compensation Survey (NCS)	0.90%	1.10%	
3	Estimate of total number of establishments offering	Step 1 x Step 2 = Step 3	45,242	55,296	
4	Total number of employees	BLS	40,091,449	40,091,449	
5	Estimate of employees working for offering establishments	Step 4 x Step 2 = Step 5	360,823	441,006	
6	% of employees using mode	2000 Census	2.9%	2.9%	
7	Estimate of total number of employees that used mode	Step 4 x Step 6 = Step 7	1,162,652	1,162,652	
8	Estimate of employees that use mode and work for offering establishments	Step 7 x Step 2 = Step 8	10,464	12,789	
9	Estimate Corporate TRI per employee per year	See Chapter 2 tables	\$204.00	\$30.29	
10	Estimate Employee TRI per year	See Chapter 2 tables	\$0.00	\$213.90	
11	Total Estimate Corporate TRI	Step 9 x Step 8= Step 11	\$2,134,629.11	\$387,384.03	
12	Total Estimate Employee TRI	Step 10 x Step 8= Step 12	\$0.00	\$2,735,603.94	
13	Estimated TRI of offering benefit	Step 11 + Step 12	\$2,134,629.11	\$3,122,987.97	
					\$5,257,617.08
	MEDIUM AND LARGE ESTABLISHMENTS	Source or Equation	Employer Paid	Pre-tax	
1	Total number of establishments	Bureau of Labor Statistics (BLS)	1,269,529	1,269,529	
2	% of establishments offering subsidized commuting 5% total	National Compensation Survey (NCS)	2.25%	2.75%	
3	Estimate of total number of establishments offering	Step 1 x Step 2 = Step 3	28,564	34,912	
4	Total number of employees	BLS	70,614,212	70,614,212	
5	Estimate of employees working for offering establishments	Step 4 x Step 2 = Step 5	1,588,820	1,941,891	
6	% of employees using mode	2000 Census	2.9%	2.9%	
7	Estimate of total number of employees that used mode	Step 4 x Step 6 = Step 7	2,047,812	2,047,812	
8	Estimate of employees that use mode and work for offering establishments	Step 7 x Step 2 = Step 8	46,076	56,315	
9	Estimate Corporate TRI per employee per year	See Chapter 2 tables	\$204.00	\$30.29	
10	Estimate Employee TRI per year	See Chapter 2 tables	\$0.00	\$213.90	
11	Total Estimate Corporate TRI	Step 9 x Step 8= Step 11	\$9,399,457.76	\$1,705,776.32	
12	Total Estimate Employee TRI	Step 10 x Step 8= Step 12	\$0.00	\$12,045,743.01	
13	Estimated TRI of offering benefit	Step 11 + Step 12 = Step 13	\$9,399,457.76	\$13,751,519.33	
					\$23,150,977.09
	PUBLIC SECTOR	Source or Equation		Pre-tax	
1	State and Local Govt employees	BLS		15,378,924	
2	Federal Govt employees	NCS		2,411,630	
3	Total Govt employees	Step 1 + Step 2 = Step 3		17,790,554	
4	% of employees that use mode	2000 Census		2.9%	
5	Estimate of total govt employees that use mode	Step 3 x Step 4 = Step 5		515,926	
6	Estimate of state and local govt employees that use mode	Step 1 x Step 4 = Step 6		445,989	
7	Estimate for state and local governments that offer benefit	NCS		6%	
8	Estimate of employees that use mode and work for offering state and local govts	Step 6 x Step 7 = Step 8		26,759	
9	Estimate agency TRI per employee per year	See Chapter 2 tables		\$45.90	
10	Estimate Employee TRI per year	See Chapter 2 tables		\$213.90	
11	Total Estimate Government TRI	Step 8 x Step 9 = Step 11		\$1,228,253.14	
12	Total Estimate Employee TRI	Step 8 x Step 10 = Step 12		\$5,723,820.21	
13	Estimated TRI of offering benefit	Step 11 + Step 12 = Step 13		\$6,952,073.35	
					\$6,952,073.35
	Total Estimated TRI				\$35,360,667.52

Table D.7: Estimated Tax Revenue Impact (TRI) for telecommuting with a \$25 tax limit; Level 1

	SMALL ESTABLISHMENTS	Source or Equation	Employer Paid	Pre-tax	TOTAL
1	Total number of establishments	Bureau of Labor Statistics (BLS)	5,026,928	5,026,928	
2	% of establishments offering subsidized commuting 2% total	National Compensation Survey (NCS)	0.90%	1.10%	
3	Estimate of total number of establishments offering	Step 1 x Step 2 = Step 3	45,242	55,296	
4	Total number of employees	BLS	40,091,449	40,091,449	
5	Estimate of employees working for offering establishments	Step 4 x Step 2 = Step 5	360,823	441,006	
6	% of employees using mode	2000 Census	4.0%	4.0%	
7	Estimate of total number of employees that used mode	Step 4 x Step 6 = Step 7	1,603,658	1,603,658	
8	Estimate of employees that use mode and work for offering establishments	Step 7 x Step 2 = Step 8	14,433	17,640	
9	Estimate Corporate TRI per employee per year	See Chapter 2 tables	\$102.00	\$15.15	
10	Estimate Employee TRI per year	See Chapter 2 tables	\$0.00	\$106.95	
11	Total Estimate Corporate TRI	Step 9 x Step 8= Step 11	\$1,472,158.01	\$267,249.60	
12	Total Estimate Employee TRI	Step 10 x Step 8= Step 12	\$0.00	\$1,886,623.41	
13	Estimated TRI of offering benefit	Step 11 + Step 12	\$1,472,158.01	\$2,153,873.01	
					\$3,626,031.01
	MEDIUM AND LARGE ESTABLISHMENTS	Source or Equation	Employer Paid	Pre-tax	
1	Total number of establishments	Bureau of Labor Statistics (BLS)	1,269,529	1,269,529	
2	% of establishments offering subsidized commuting 5% total	National Compensation Survey (NCS)	2.25%	2.75%	
3	Estimate of total number of establishments offering	Step 1 x Step 2 = Step 3	28,564	34,912	
4	Total number of employees	BLS	70,614,212	70,614,212	
5	Estimate of employees working for offering establishments	Step 4 x Step 2 = Step 5	1,588,820	1,941,891	
6	% of employees using mode	2000 Census	4.0%	4.0%	
7	Estimate of total number of employees that used mode	Step 4 x Step 6 = Step 7	2,824,568	2,824,568	
8	Estimate of employees that use mode and work for offering establishments	Step 7 x Step 2 = Step 8	63,553	77,676	
9	Estimate Corporate TRI per employee per year	See Chapter 2 tables	\$102.00	\$15.15	
10	Estimate Employee TRI per year	See Chapter 2 tables	\$0.00	\$106.95	
11	Total Estimate Corporate TRI	Step 9 x Step 8= Step 11	\$6,482,384.66	\$1,176,785.84	
12	Total Estimate Employee TRI	Step 10 x Step 8= Step 12	\$0.00	\$8,307,408.97	
13	Estimated TRI of offering benefit	Step 11 + Step 12 = Step 13	\$6,482,384.66	\$9,484,194.81	
					\$15,966,579.48
	PUBLIC SECTOR	Source or Equation		Pre-tax	
1	State and Local Govt employees	BLS		15,378,924	
2	Federal Govt employees	NCS		2,411,630	
3	Total Govt employees	Step 1 + Step 2 = Step 3		17,790,554	
4	% of employees that use mode	2000 Census		4.00%	
5	Estimate of total govt employees that use mode	Step 3 x Step 4 = Step 5		711,622	
6	Estimate of state and local govt employees that use mode	Step 1 x Step 4 = Step 6		615,157	
7	Estimate for state and local governments that offer benefit	NCS		6%	
8	Estimate of employees that use mode and work for offering state and local govts	Step 6 x Step 7 = Step 8		36,909	
9	Estimate agency TRI per employee per year	See Chapter 2 tables		\$22.95	
10	Estimate Employee TRI per year	See Chapter 2 tables		\$106.95	
11	Total Estimate Government TRI	Step 8 x Step 9 = Step 11		\$847,071.13	
12	Total Estimate Employee TRI	Step 8 x Step 10 = Step 12		\$3,947,462.21	
13	Estimated TRI of offering benefit	Step 11 + Step 12 = Step 13		\$4,794,533.35	
					\$4,794,533.35
	Total Estimated TRI				\$24,387,143.83

Table D.8: Estimated Tax Revenue Impact (TRI) for telecommuting with a \$50 tax limit; Level 1

	SMALL ESTABLISHMENTS	Source or Equation	Employer Paid	Pre-tax	TOTAL
1	Total number of establishments	Bureau of Labor Statistics (BLS)	5,026,928	5,026,928	
2	% of establishments offering subsidized commuting 2% total	National Compensation Survey (NCS)	0.90%	1.10%	
3	Estimate of total number of establishments offering	Step 1 x Step 2 = Step 3	45,242	55,296	
4	Total number of employees	BLS	40,091,449	40,091,449	
5	Estimate of employees working for offering establishments	Step 4 x Step 2 = Step 5	360,823	441,006	
6	% of employees using mode	2000 Census	4.0%	4.0%	
7	Estimate of total number of employees that used mode	Step 4 x Step 6 = Step 7	1,603,658	1,603,658	
8	Estimate of employees that use mode and work for offering establishments	Step 7 x Step 2 = Step 8	14,433	17,640	
9	Estimate Corporate TRI per employee per year	See Chapter 2 tables	\$204.00	\$30.29	
10	Estimate Employee TRI per year	See Chapter 2 tables	\$0.00	\$213.90	
11	Total Estimate Corporate TRI	Step 9 x Step 8= Step 11	\$2,944,316.01	\$534,322.80	
12	Total Estimate Employee TRI	Step 10 x Step 8= Step 12	\$0.00	\$3,773,246.81	
13	Estimated TRI of offering benefit	Step 11 + Step 12	\$2,944,316.01	\$4,307,569.61	
					\$7,251,885.62
	MEDIUM AND LARGE ESTABLISHMENTS	Source or Equation	Employer Paid	Pre-tax	
1	Total number of establishments	Bureau of Labor Statistics (BLS)	1,269,529	1,269,529	
2	% of establishments offering subsidized commuting 5% total	National Compensation Survey (NCS)	2.25%	2.75%	
3	Estimate of total number of establishments offering	Step 1 x Step 2 = Step 3	28,564	34,912	
4	Total number of employees	BLS	70,614,212	70,614,212	
5	Estimate of employees working for offering establishments	Step 4 x Step 2 = Step 5	1,588,820	1,941,891	
6	% of employees using mode	2000 Census	4.0%	4.0%	
7	Estimate of total number of employees that used mode	Step 4 x Step 6 = Step 7	2,824,568	2,824,568	
8	Estimate of employees that use mode and work for offering establishments	Step 7 x Step 2 = Step 8	63,553	77,676	
9	Estimate Corporate TRI per employee per year	See Chapter 2 tables	\$204.00	\$30.29	
10	Estimate Employee TRI per year	See Chapter 2 tables	\$0.00	\$213.90	
11	Total Estimate Corporate TRI	Step 9 x Step 8= Step 11	\$12,964,769.32	\$2,352,794.93	
12	Total Estimate Employee TRI	Step 10 x Step 8= Step 12	\$0.00	\$16,614,817.94	
13	Estimated TRI of offering benefit	Step 11 + Step 12 = Step 13	\$12,964,769.32	\$18,967,612.87	
					\$31,932,382.19
	PUBLIC SECTOR	Source or Equation		Pre-tax	
1	State and Local Govt employees	BLS		15,378,924	
2	Federal Govt employees	NCS		2,411,630	
3	Total Govt employees	Step 1 + Step 2 = Step 3		17,790,554	
4	% of employees that use mode	2000 Census		4.00%	
5	Estimate of total govt employees that use mode	Step 3 x Step 4 = Step 5		711,622	
6	Estimate of state and local govt employees that use mode	Step 1 x Step 4 = Step 6		615,157	
7	Estimate for state and local governments that offer benefit	NCS		6%	
8	Estimate of employees that use mode and work for offering state and local govts	Step 6 x Step 7 = Step 8		36,909	
9	Estimate agency TRI per employee per year	See Chapter 2 tables		\$45.90	
10	Estimate Employee TRI per year	See Chapter 2 tables		\$213.90	
11	Total Estimate Government TRI	Step 8 x Step 9 = Step 11		\$1,694,142.27	
12	Total Estimate Employee TRI	Step 8 x Step 10 = Step 12		\$7,894,924.42	
13	Estimated TRI of offering benefit	Step 11 + Step 12 = Step 13		\$9,589,066.69	
					\$9,589,066.69
	Total Estimated TRI				\$48,773,334.51

Table D.9: Estimated Tax Revenue Impact (TRI) for carpooling with a \$25 tax limit: Level 2

	SMALL ESTABLISHMENTS	Source or Equation	Employer Paid	Pre-tax	TOTAL
1	Total number of establishments	Bureau of Labor Statistics (BLS)	5,026,928	5,026,928	
2	% of establishments offering subsidized commuting 2% total	National Compensation Survey (NCS)	0.90%	1.10%	
3	Estimate of total number of establishments offering	Step 1 x Step 2 = Step 3	45,242	55,296	
4	Total number of employees	BLS	40,091,449	40,091,449	
5	Estimate of employees working for offering establishments	Step 4 x Step 2 = Step 5	360,823	441,006	
6	% of employees using mode	EPA Commuter Model	13.0%	13.0%	
7	Estimate of total number of employees that used mode	Step 4 x Step 6 = Step 7	5,211,888	5,211,888	
8	Estimate of employees that use mode and work for offering establishments	Step 7 x Step 2 = Step 8	46,907	57,331	
9	Estimate Corporate TRI per employee per year	See Chapter 2 Tables	\$102.00	\$15.15	
10	Estimate Employee TRI per year	See Chapter 2 Tables	\$0.00	\$106.95	
11	Total Estimate Corporate TRI	Step 9 x Step 8= Step 11	\$4,784,513.52	\$868,561.20	
12	Total Estimate Employee TRI	Step 10 x Step 8= Step 12	\$0.00	\$6,131,526.07	
13	Estimated TRI of offering benefit	Step 11 + Step 12	\$4,784,513.52	\$7,000,087.27	
					\$11,784,600.79
	MEDIUM AND LARGE ESTABLISHMENTS	Source or Equation	Employer Paid	Pre-tax	
1	Total number of establishments	Bureau of Labor Statistics (BLS)	1,269,529	1,269,529	
2	% of establishments offering subsidized commuting 5% total	National Compensation Survey (NCS)	2.25%	2.75%	
3	Estimate of total number of establishments offering	Step 1 x Step 2 = Step 3	28,564	34,912	
4	Total number of employees	BLS	70,614,212	70,614,212	
5	Estimate of employees working for offering establishments	Step 4 x Step 2 = Step 5	1,588,820	1,941,891	
6	% of employees using mode	EPA Commuter Model	13.0%	13.0%	
7	Estimate of total number of employees that used mode	Step 4 x Step 6 = Step 7	9,179,848	9,179,848	
8	Estimate of employees that use mode and work for offering establishments	Step 7 x Step 2 = Step 8	206,547	252,446	
9	Estimate Corporate TRI per employee per year	See Chapter 2 Tables	\$102.00	\$15.15	
10	Estimate Employee TRI per year	See Chapter 2 Tables	\$0.00	\$106.95	
11	Total Estimate Corporate TRI	Step 9 x Step 8= Step 11	\$21,067,750.15	\$3,824,553.99	
12	Total Estimate Employee TRI	Step 10 x Step 8= Step 12	\$0.00	\$26,999,079.15	
13	Estimated TRI of offering benefit	Step 11 + Step 12 = Step 13	\$21,067,750.15	\$30,823,633.14	
					\$51,891,383.29
	PUBLIC SECTOR	Source or Equation		Pre-tax	
1	State and Local Govt employees	BLS		15,378,924	
2	Federal Govt employees	NCS		2,411,630	
3	Total Govt employees	Step 1 + Step 2 = Step 3		17,790,554	
4	% of employees that use mode	EPA Commuter Model		13.0%	
5	Estimate of total govt employees that use mode	Step 3 x Step 4 = Step 5		2,312,772	
6	Estimate of state and local govt employees that use mode	Step 1 x Step 4 = Step 6		1,999,260	
7	Estimate for state and local governments that offer benefit	NCS		6%	
8	Estimate of employees that use mode and work for offering state and local govts	Step 6 x Step 7 = Step 8		119,956	
9	Estimate agency TRI per employee per year	See Chapter 2 Tables		\$22.95	
10	Estimate Employee TRI per year	See Chapter 2 Tables		\$106.95	
11	Total Estimate Government TRI	Step 8 x Step 9 = Step 11		\$2,752,981.19	
12	Total Estimate Employee TRI	Step 8 x Step 10 = Step 12		\$12,829,252.19	
13	Estimated TRI of offering benefit	Step 11 + Step 12 = Step 13		\$15,582,233.38	
					\$15,582,233.38
	Total Estimated TRI				\$79,258,217.46

Table D.10: Estimated Tax Revenue Impact (TRI) for carpooling with a \$50 tax limit: Level 2

	SMALL ESTABLISHMENTS	Source or Equation	Employer Paid	Pre-tax	TOTAL
1	Total number of establishments	Bureau of Labor Statistics (BLS)	5,026,928	5,026,928	
2	% of establishments offering subsidized commuting 2% total	National Compensation Survey (NCS)	0.90%	1.10%	
3	Estimate of total number of establishments offering	Step 1 x Step 2 = Step 3	45,242	55,296	
4	Total number of employees	BLS	40,091,449	40,091,449	
5	Estimate of employees working for offering establishments	Step 4 x Step 2 = Step 5	360,823	441,006	
6	% of employees using mode	EPA Commuter Model	13.0%	13.0%	
7	Estimate of total number of employees that used mode	Step 4 x Step 6 = Step 7	5,211,888	5,211,888	
8	Estimate of employees that use mode and work for offering establishments	Step 7 x Step 2 = Step 8	46,907	57,331	
9	Estimate Corporate TRI per employee per year	See Chapter 2 tables	\$204.00	\$30.29	
10	Estimate Employee TRI per year	See Chapter 2 tables	\$0.00	\$213.90	
11	Total Estimate Corporate TRI	Step 9 x Step 8= Step 11	\$9,569,027.05	\$1,736,549.09	
12	Total Estimate Employee TRI	Step 10 x Step 8= Step 12	\$0.00	\$12,263,052.15	
13	Estimated TRI of offering benefit	Step 11 + Step 12	\$9,569,027.05	\$13,999,601.23	
					\$23,568,628.28
	MEDIUM AND LARGE ESTABLISHMENTS	Source or Equation	Employer Paid	Pre-tax	
1	Total number of establishments	Bureau of Labor Statistics (BLS)	1,269,529	1,269,529	
2	% of establishments offering subsidized commuting 5% total	National Compensation Survey (NCS)	2.25%	2.75%	
3	Estimate of total number of establishments offering	Step 1 x Step 2 = Step 3	28,564	34,912	
4	Total number of employees	BLS	70,614,212	70,614,212	
5	Estimate of employees working for offering establishments	Step 4 x Step 2 = Step 5	1,588,820	1,941,891	
6	% of employees using mode	EPA Commuter Model	13.0%	13.0%	
7	Estimate of total number of employees that used mode	Step 4 x Step 6 = Step 7	9,179,848	9,179,848	
8	Estimate of employees that use mode and work for offering establishments	Step 7 x Step 2 = Step 8	206,547	252,446	
9	Estimate Corporate TRI per employee per year	See Chapter 2 tables	\$204.00	\$30.29	
10	Estimate Employee TRI per year	See Chapter 2 tables	\$0.00	\$213.90	
11	Total Estimate Corporate TRI	Step 9 x Step 8= Step 11	\$42,135,500.30	\$7,646,583.52	
12	Total Estimate Employee TRI	Step 10 x Step 8= Step 12	\$0.00	\$53,998,158.31	
13	Estimated TRI of offering benefit	Step 11 + Step 12 = Step 13	\$42,135,500.30	\$61,644,741.83	
					\$103,780,242.13
	PUBLIC SECTOR	Source or Equation		Pre-tax	
1	State and Local Govt employees	BLS		15,378,924	
2	Federal Govt employees	NCS		2,411,630	
3	Total Govt employees	Step 1 + Step 2 = Step 3		17,790,554	
4	% of employees that use mode	EPA Commuter Model		13.0%	
5	Estimate of total govt employees that use mode	Step 3 x Step 4 = Step 5		2,312,772	
6	Estimate of state and local govt employees that use mode	Step 1 x Step 4 = Step 6		1,999,260	
7	Estimate for state and local governments that offer benefit	NCS		6%	
8	Estimate of employees that use mode and work for offering state and local govts	Step 6 x Step 7 = Step 8		119,956	
9	Estimate agency TRI per employee per year	See Chapter 2 tables		\$45.90	
10	Estimate Employee TRI per year	See Chapter 2 tables		\$213.90	
11	Total Estimate Government TRI	Step 8 x Step 9 = Step 11		\$5,505,962.37	
12	Total Estimate Employee TRI	Step 8 x Step 10 = Step 12		\$25,658,504.38	
13	Estimated TRI of offering benefit	Step 11 + Step 12 = Step 13		\$31,164,466.75	
					\$31,164,466.75
	Total Estimated TRI				\$158,513,337.16

Table D.11: Estimated Tax Revenue Impact (TRI) for bicycling with a \$25 tax limit: Level 2

	SMALL ESTABLISHMENTS	Source or Equation	Employer Paid	Pre-tax	TOTAL
1	Total number of establishments	Bureau of Labor Statistics (BLS)	5,026,928	5,026,928	
2	% of establishments offering subsidized commuting 2% total	National Compensation Survey (NCS)	0.90%	1.10%	
3	Estimate of total number of establishments offering	Step 1 x Step 2 = Step 3	45,242	55,296	
4	Total number of employees	BLS	40,091,449	40,091,449	
5	Estimate of employees working for offering establishments	Step 4 x Step 2 = Step 5	360,823	441,006	
6	% of employees using mode	EPA Commuter Model	0.5%	0.5%	
7	Estimate of total number of employees that used mode	Step 4 x Step 6 = Step 7	180,412	180,412	
8	Estimate of employees that use mode and work for offering establishments	Step 7 x Step 2 = Step 8	1,624	1,985	
9	Estimate Corporate TRI per employee per year	See Chapter 2 tables	\$102.00	\$15.15	
10	Estimate Employee TRI per year	See Chapter 2 tables	\$0.00	\$106.95	
11	Total Estimate Corporate TRI	Step 9 x Step 8= Step 11	\$165,617.78	\$30,065.58	
12	Total Estimate Employee TRI	Step 10 x Step 8= Step 12	\$0.00	\$212,245.13	
13	Estimated TRI of offering benefit	Step 11 + Step 12	\$165,617.78	\$242,310.71	
					\$407,928.49
	MEDIUM AND LARGE ESTABLISHMENTS	Source or Equation	Employer Paid	Pre-tax	
1	Total number of establishments	Bureau of Labor Statistics (BLS)	1,269,529	1,269,529	
2	% of establishments offering subsidized commuting 5% total	National Compensation Survey (NCS)	2.25%	2.75%	
3	Estimate of total number of establishments offering	Step 1 x Step 2 = Step 3	28,564	34,912	
4	Total number of employees	BLS	70,614,212	70,614,212	
5	Estimate of employees working for offering establishments	Step 4 x Step 2 = Step 5	1,588,820	1,941,891	
6	% of employees using mode	EPA Commuter Model	0.5%	0.5%	
7	Estimate of total number of employees that used mode	Step 4 x Step 6 = Step 7	317,764	317,764	
8	Estimate of employees that use mode and work for offering establishments	Step 7 x Step 2 = Step 8	7,150	8,739	
9	Estimate Corporate TRI per employee per year	See Chapter 2 tables	\$102.00	\$15.15	
10	Estimate Employee TRI per year	See Chapter 2 tables	\$0.00	\$106.95	
11	Total Estimate Corporate TRI	Step 9 x Step 8= Step 11	\$729,268.27	\$132,388.41	
12	Total Estimate Employee TRI	Step 10 x Step 8= Step 12	\$0.00	\$934,583.51	
13	Estimated TRI of offering benefit	Step 11 + Step 12 = Step 13	\$729,268.27	\$1,066,971.92	
					\$1,796,240.19
	PUBLIC SECTOR	Source or Equation		Pre-tax	
1	State and Local Govt employees	BLS		15,378,924	
2	Federal Govt employees	NCS		2,411,630	
3	Total Govt employees	Step 1 + Step 2 = Step 3		17,790,554	
4	% of employees that use mode	EPA Commuter Model		0.5%	
5	Estimate of total govt employees that use mode	Step 3 x Step 4 = Step 5		80,057	
6	Estimate of state and local govt employees that use mode	Step 1 x Step 4 = Step 6		69,205	
7	Estimate for state and local governments that offer benefit	NCS		6%	
8	Estimate of employees that use mode and work for offering state and local govts	Step 6 x Step 7 = Step 8		4,152	
9	Estimate agency TRI per employee per year	See Chapter 2 tables		\$22.95	
10	Estimate Employee TRI per year	See Chapter 2 tables		\$106.95	
11	Total Estimate Government TRI	Step 8 x Step 9 = Step 11		\$95,295.50	
12	Total Estimate Employee TRI	Step 8 x Step 10 = Step 12		\$444,089.50	
13	Estimated TRI of offering benefit	Step 11 + Step 12 = Step 13		\$539,385.00	
					\$539,385.00

Table D.12: Estimated Tax Revenue Impact (TRI) for bicycling with a \$50 tax limit: Level 2

	SMALL ESTABLISHMENTS	Source or Equation	Employer Paid	Pre-tax	TOTAL
1	Total number of establishments	Bureau of Labor Statistics (BLS)	5,026,928	5,026,928	
2	% of establishments offering subsidized commuting 2% total	National Compensation Survey (NCS)	0.90%	1.10%	
3	Estimate of total number of establishments offering	Step 1 x Step 2 = Step 3	45,242	55,296	
4	Total number of employees	BLS	40,091,449	40,091,449	
5	Estimate of employees working for offering establishments	Step 4 x Step 2 = Step 5	360,823	441,006	
6	% of employees using mode	EPA Commuter Model	0.5%	0.5%	
7	Estimate of total number of employees that used mode	Step 4 x Step 6 = Step 7	180,412	180,412	
8	Estimate of employees that use mode and work for offering establishments	Step 7 x Step 2 = Step 8	1,624	1,985	
9	Estimate Corporate TRI per employee per year	See Chapter 2 tables	\$204.00	\$30.29	
10	Estimate Employee TRI per year	See Chapter 2 tables	\$0.00	\$213.90	
11	Total Estimate Corporate TRI	Step 9 x Step 8= Step 11	\$331,235.55	\$60,111.31	
12	Total Estimate Employee TRI	Step 10 x Step 8= Step 12	\$0.00	\$424,490.27	
13	Estimated TRI of offering benefit	Step 11 + Step 12	\$331,235.55	\$484,601.58	
					\$815,837.13
	MEDIUM AND LARGE ESTABLISHMENTS	Source or Equation	Employer Paid	Pre-tax	
1	Total number of establishments	Bureau of Labor Statistics (BLS)	1,269,529	1,269,529	
2	% of establishments offering subsidized commuting 5% total	National Compensation Survey (NCS)	2.25%	2.75%	
3	Estimate of total number of establishments offering	Step 1 x Step 2 = Step 3	28,564	34,912	
4	Total number of employees	BLS	70,614,212	70,614,212	
5	Estimate of employees working for offering establishments	Step 4 x Step 2 = Step 5	1,588,820	1,941,891	
6	% of employees using mode	EPA Commuter Model	0.5%	0.5%	
7	Estimate of total number of employees that used mode	Step 4 x Step 6 = Step 7	317,764	317,764	
8	Estimate of employees that use mode and work for offering establishments	Step 7 x Step 2 = Step 8	7,150	8,739	
9	Estimate Corporate TRI per employee per year	See Chapter 2 tables	\$204.00	\$30.29	
10	Estimate Employee TRI per year	See Chapter 2 tables	\$0.00	\$213.90	
11	Total Estimate Corporate TRI	Step 9 x Step 8= Step 11	\$1,458,536.55	\$264,689.43	
12	Total Estimate Employee TRI	Step 10 x Step 8= Step 12	\$0.00	\$1,869,167.02	
13	Estimated TRI of offering benefit	Step 11 + Step 12 = Step 13	\$1,458,536.55	\$2,133,856.45	
					\$3,592,393.00
	PUBLIC SECTOR	Source or Equation		Pre-tax	
1	State and Local Govt employees	BLS		15,378,924	
2	Federal Govt employees	NCS		2,411,630	
3	Total Govt employees	Step 1 + Step 2 = Step 3		17,790,554	
4	% of employees that use mode	EPA Commuter Model		0.5%	
5	Estimate of total govt employees that use mode	Step 3 x Step 4 = Step 5		80,057	
6	Estimate of state and local govt employees that use mode	Step 1 x Step 4 = Step 6		69,205	
7	Estimate for state and local governments that offer benefit	NCS		6%	
8	Estimate of employees that use mode and work for offering state and local govts	Step 6 x Step 7 = Step 8		4,152	
9	Estimate agency TRI per employee per year	See Chapter 2 tables		\$45.90	
10	Estimate Employee TRI per year	See Chapter 2 tables		\$213.90	
11	Total Estimate Government TRI	Step 8 x Step 9 = Step 11		\$190,591.01	
12	Total Estimate Employee TRI	Step 8 x Step 10 = Step 12		\$888,179.00	
13	Estimated TRI of offering benefit	Step 11 + Step 12 = Step 13		\$1,078,770.00	
					\$1,078,770.00
	Total Estimated TRI				\$5,487,000.13

Table D.13: Estimated Tax Revenue Impact (TRI) for walking with a \$25 tax limit: Level 2

	SMALL ESTABLISHMENTS	Source or Equation	Employer Paid	Pre-tax	TOTAL
1	Total number of establishments	Bureau of Labor Statistics (BLS)	5,026,928	5,026,928	
2	% of establishments offering subsidized commuting 2% total	National Compensation Survey (NCS)	0.90%	1.10%	
3	Estimate of total number of establishments offering	Step 1 x Step 2 = Step 3	45,242	55,296	
4	Total number of employees	BLS	40,091,449	40,091,449	
5	Estimate of employees working for offering establishments	Step 4 x Step 2 = Step 5	360,823	441,006	
6	% of employees using mode	EPA Commuter Model	3.1%	3.1%	
7	Estimate of total number of employees that used mode	Step 4 x Step 6 = Step 7	1,242,835	1,242,835	
8	Estimate of employees that use mode and work for offering establishments	Step 7 x Step 2 = Step 8	11,186	13,671	
9	Estimate Corporate TRI per employee per year	See Chapter 2 tables	\$102.00	\$15.15	
10	Estimate Employee TRI per year	See Chapter 2 tables	\$0.00	\$106.95	
11	Total Estimate Corporate TRI	Step 9 x Step 8= Step 11	\$1,140,922.46	\$207,118.44	
12	Total Estimate Employee TRI	Step 10 x Step 8= Step 12	\$0.00	\$1,462,133.14	
13	Estimated TRI of offering benefit	Step 11 + Step 12	\$1,140,922.46	\$1,669,251.58	
					\$2,810,174.04
	MEDIUM AND LARGE ESTABLISHMENTS	Source or Equation	Employer Paid	Pre-tax	
1	Total number of establishments	Bureau of Labor Statistics (BLS)	1,269,529	1,269,529	
2	% of establishments offering subsidized commuting 5% total	National Compensation Survey (NCS)	2.25%	2.75%	
3	Estimate of total number of establishments offering	Step 1 x Step 2 = Step 3	28,564	34,912	
4	Total number of employees	BLS	70,614,212	70,614,212	
5	Estimate of employees working for offering establishments	Step 4 x Step 2 = Step 5	1,588,820	1,941,891	
6	% of employees using mode	EPA Commuter Model	3.1%	3.1%	
7	Estimate of total number of employees that used mode	Step 4 x Step 6 = Step 7	2,189,041	2,189,041	
8	Estimate of employees that use mode and work for offering establishments	Step 7 x Step 2 = Step 8	49,253	60,199	
9	Estimate Corporate TRI per employee per year	See Chapter 2 tables	\$102.00	\$15.15	
10	Estimate Employee TRI per year	See Chapter 2 tables	\$0.00	\$106.95	
11	Total Estimate Corporate TRI	Step 9 x Step 8= Step 11	\$5,023,848.11	\$912,009.03	
12	Total Estimate Employee TRI	Step 10 x Step 8= Step 12	\$0.00	\$6,438,241.95	
13	Estimated TRI of offering benefit	Step 11 + Step 12 = Step 13	\$5,023,848.11	\$7,350,250.98	
					\$12,374,099.09
	PUBLIC SECTOR	Source or Equation		Pre-tax	
1	State and Local Govt employees	BLS		15,378,924	
2	Federal Govt employees	NCS		2,411,630	
3	Total Govt employees	Step 1 + Step 2 = Step 3		17,790,554	
4	% of employees that use mode	EPA Commuter Model		3.1%	
5	Estimate of total govt employees that use mode	Step 3 x Step 4 = Step 5		551,507	
6	Estimate of state and local govt employees that use mode	Step 1 x Step 4 = Step 6		476,747	
7	Estimate for state and local governments that offer benefit	NCS		6%	
8	Estimate of employees that use mode and work for offering state and local govts	Step 6 x Step 7 = Step 8		28,605	
9	Estimate agency TRI per employee per year	See Chapter 2 tables		\$22.95	
10	Estimate Employee TRI per year	See Chapter 2 tables		\$106.95	
11	Total Estimate Government TRI	Step 8 x Step 9 = Step 11		\$656,480.13	
12	Total Estimate Employee TRI	Step 8 x Step 10 = Step 12		\$3,059,283.21	
13	Estimated TRI of offering benefit	Step 11 + Step 12 = Step 13		\$3,715,763.34	
					\$3,715,763.34
	Total Estimated TRI				\$18,900,036.47

Table D.14: Estimated Tax Revenue Impact (TRI) for walking with a \$50 tax limit: Level 2

	SMALL ESTABLISHMENTS	Source or Equation	Employer Paid	Pre-tax	TOTAL
1	Total number of establishments	Bureau of Labor Statistics (BLS)	5,026,928	5,026,928	
2	% of establishments offering subsidized commuting 2% total	National Compensation Survey (NCS)	0.90%	1.10%	
3	Estimate of total number of establishments offering	Step 1 x Step 2 = Step 3	45,242	55,296	
4	Total number of employees	BLS	40,091,449	40,091,449	
5	Estimate of employees working for offering establishments	Step 4 x Step 2 = Step 5	360,823	441,006	
6	% of employees using mode	EPA Commuter Model	3.1%	3.1%	
7	Estimate of total number of employees that used mode	Step 4 x Step 6 = Step 7	1,242,835	1,242,835	
8	Estimate of employees that use mode and work for offering establishments	Step 7 x Step 2 = Step 8	11,186	13,671	
9	Estimate Corporate TRI per employee per year	See Chapter 2 tables	\$204.00	\$30.29	
10	Estimate Employee TRI per year	See Chapter 2 tables	\$0.00	\$213.90	
11	Total Estimate Corporate TRI	Step 9 x Step 8= Step 11	\$2,281,844.91	\$414,100.17	
12	Total Estimate Employee TRI	Step 10 x Step 8= Step 12	\$0.00	\$2,924,266.28	
13	Estimated TRI of offering benefit	Step 11 + Step 12	\$2,281,844.91	\$3,338,366.45	
					\$5,620,211.36
	MEDIUM AND LARGE ESTABLISHMENTS	Source or Equation	Employer Paid	Pre-tax	
1	Total number of establishments	Bureau of Labor Statistics (BLS)	1,269,529	1,269,529	
2	% of establishments offering subsidized commuting 5% total	National Compensation Survey (NCS)	2.25%	2.75%	
3	Estimate of total number of establishments offering	Step 1 x Step 2 = Step 3	28,564	34,912	
4	Total number of employees	BLS	70,614,212	70,614,212	
5	Estimate of employees working for offering establishments	Step 4 x Step 2 = Step 5	1,588,820	1,941,891	
6	% of employees using mode	EPA Commuter Model	3.1%	3.1%	
7	Estimate of total number of employees that used mode	Step 4 x Step 6 = Step 7	2,189,041	2,189,041	
8	Estimate of employees that use mode and work for offering establishments	Step 7 x Step 2 = Step 8	49,253	60,199	
9	Estimate Corporate TRI per employee per year	See Chapter 2 tables	\$204.00	\$30.29	
10	Estimate Employee TRI per year	See Chapter 2 tables	\$0.00	\$213.90	
11	Total Estimate Corporate TRI	Step 9 x Step 8= Step 11	\$10,047,696.23	\$1,823,416.07	
12	Total Estimate Employee TRI	Step 10 x Step 8= Step 12	\$0.00	\$12,876,483.90	
13	Estimated TRI of offering benefit	Step 11 + Step 12 = Step 13	\$10,047,696.23	\$14,699,899.98	
					\$24,747,596.20
	PUBLIC SECTOR	Source or Equation		Pre-tax	
1	State and Local Govt employees	BLS		15,378,924	
2	Federal Govt employees	NCS		2,411,630	
3	Total Govt employees	Step 1 + Step 2 = Step 3		17,790,554	
4	% of employees that use mode	EPA Commuter Model		3.1%	
5	Estimate of total govt employees that use mode	Step 3 x Step 4 = Step 5		551,507	
6	Estimate of state and local govt employees that use mode	Step 1 x Step 4 = Step 6		476,747	
7	Estimate for state and local governments that offer benefit	NCS		6%	
8	Estimate of employees that use mode and work for offering state and local govts	Step 6 x Step 7 = Step 8		28,605	
9	Estimate agency TRI per employee per year	See Chapter 2 tables		\$45.90	
10	Estimate Employee TRI per year	See Chapter 2 tables		\$213.90	
11	Total Estimate Government TRI	Step 8 x Step 9 = Step 11		\$1,312,960.26	
12	Total Estimate Employee TRI	Step 8 x Step 10 = Step 12		\$6,118,566.43	
13	Estimated TRI of offering benefit	Step 11 + Step 12 = Step 13		\$7,431,526.69	
					\$7,431,526.69
	Total Estimated TRI				\$37,799,334.25

Table D.15: Estimated Tax Revenue Impact (TRI) for carpooling with a \$25 tax limit: Level 3

	SMALL ESTABLISHMENTS	Source or Equation	Employer Paid	Pre-tax	TOTAL
1	Total number of establishments	Bureau of Labor Statistics (BLS)	5,026,928	5,026,928	
2	% of establishments offering subsidized commuting 3% total	NCS rate plus 1%	1.40%	1.60%	
3	Estimate of total number of establishments offering	Step 1 x Step 2 = Step 3	70,377	80,431	
4	Total number of employees	BLS	40,091,449	40,091,449	
5	Estimate of employees working for offering establishments	Step 4 x Step 2 = Step 5	561,280	641,463	
6	% of employees using mode	EPA Commuter Model	13.0%	13.0%	
7	Estimate of total number of employees that used mode	Step 4 x Step 6 = Step 7	5,211,888	5,211,888	
8	Estimate of employees that use mode and work for offering establishments	Step 7 x Step 2 = Step 8	72,966	83,390	
9	Estimate Corporate TRI per employee per year	See Chapter 2 tables	\$102.00	\$15.15	
10	Estimate Employee TRI per year	See Chapter 2 tables	\$0.00	\$106.95	
11	Total Estimate Corporate TRI	Step 9 x Step 8= Step 11	\$7,442,576.59	\$1,263,361.74	
12	Total Estimate Employee TRI	Step 10 x Step 8= Step 12	\$0.00	\$8,918,583.38	
13	Estimated TRI of offering benefit	Step 11 + Step 12	\$7,442,576.59	\$10,181,945.12	
					\$17,624,521.71
	MEDIUM AND LARGE ESTABLISHMENTS	Source or Equation	Employer Paid	Pre-tax	
1	Total number of establishments	Bureau of Labor Statistics (BLS)	1,269,529	1,269,529	
2	% of establishments offering subsidized commuting 6% total	NCS rate plus 1%	2.70%	3.30%	
3	Estimate of total number of establishments offering	Step 1 x Step 2 = Step 3	34,277	41,894	
4	Total number of employees	BLS	70,614,212	70,614,212	
5	Estimate of employees working for offering establishments	Step 4 x Step 2 = Step 5	1,906,584	2,330,269	
6	% of employees using mode	EPA Commuter Model	13.0%	13.0%	
7	Estimate of total number of employees that used mode	Step 4 x Step 6 = Step 7	9,179,848	9,179,848	
8	Estimate of employees that use mode and work for offering establishments	Step 7 x Step 2 = Step 8	247,856	302,935	
9	Estimate Corporate TRI per employee per year	See Chapter 2 tables	\$102.00	\$15.15	
10	Estimate Employee TRI per year	See Chapter 2 tables	\$0.00	\$106.95	
11	Total Estimate Corporate TRI	Step 9 x Step 8= Step 11	\$25,281,300.18	\$4,589,464.79	
12	Total Estimate Employee TRI	Step 10 x Step 8= Step 12	\$0.00	\$32,398,894.99	
13	Estimated TRI of offering benefit	Step 11 + Step 12 = Step 13	\$25,281,300.18	\$36,988,359.77	
					\$62,269,659.95
	PUBLIC SECTOR	Source or Equation		Pre-tax	
1	State and Local Govt employees	BLS		15,378,924	
2	Federal Govt employees	NCS		2,411,630	
3	Total Govt employees	Step 1 + Step 2 = Step 3		17,790,554	
4	% of employees that use mode	EPA Commuter Model		13.0%	
5	Estimate of total govt employees that use mode	Step 3 x Step 4 = Step 5		2,312,772	
6	Estimate of state and local govt employees that use mode	Step 1 x Step 4 = Step 6		1,999,260	
7	Estimate for state and local governments that offer benefit	NCS rate plus 1%		7%	
8	Estimate of employees that use mode and work for offering state and local govts	Step 6 x Step 7 = Step 8		139,948	
9	Estimate agency TRI per employee per year	See Chapter 2 tables		\$22.95	
10	Estimate Employee TRI per year	See Chapter 2 tables		\$106.95	
11	Total Estimate Government TRI	Step 8 x Step 9 = Step 11		\$3,211,811.38	
12	Total Estimate Employee TRI	Step 8 x Step 10 = Step 12		\$14,967,460.89	
13	Estimated TRI of offering benefit	Step 11 + Step 12 = Step 13		\$18,179,272.27	
					\$18,179,272.27
	Total Estimated TRI				\$98,073,453.94

Table D.16: Estimated Tax Revenue Impact (TRI) for carpooling with a \$50 tax limit: Level 3

	SMALL ESTABLISHMENTS	Source or Equation	Employer Paid	Pre-tax	TOTAL
1	Total number of establishments	Bureau of Labor Statistics (BLS)	5,026,928	5,026,928	
2	% of establishments offering subsidized commuting 3% total	NCS rate plus 1%	1.40%	1.60%	
3	Estimate of total number of establishments offering	Step 1 x Step 2 = Step 3	70,377	80,431	
4	Total number of employees	BLS	40,091,449	40,091,449	
5	Estimate of employees working for offering establishments	Step 4 x Step 2 = Step 5	561,280	641,463	
6	% of employees using mode	EPA Commuter Model	13.0%	13.0%	
7	Estimate of total number of employees that used mode	Step 4 x Step 6 = Step 7	5,211,888	5,211,888	
8	Estimate of employees that use mode and work for offering establishments	Step 7 x Step 2 = Step 8	72,966	83,390	
9	Estimate Corporate TRI per employee per year	See Chapter 2 tables	\$204.00	\$30.29	
10	Estimate Employee TRI per year	See Chapter 2 tables	\$0.00	\$213.90	
11	Total Estimate Corporate TRI	Step 9 x Step 8= Step 11	\$14,885,153.18	\$2,525,889.58	
12	Total Estimate Employee TRI	Step 10 x Step 8= Step 12	\$0.00	\$17,837,166.76	
13	Estimated TRI of offering benefit	Step 11 + Step 12	\$14,885,153.18	\$20,363,056.34	
					\$35,248,209.52
	MEDIUM AND LARGE ESTABLISHMENTS	Source or Equation	Employer Paid	Pre-tax	
1	Total number of establishments	Bureau of Labor Statistics (BLS)	1,269,529	1,269,529	
2	% of establishments offering subsidized commuting 6% total	NCS rate plus 1%	2.70%	3.30%	
3	Estimate of total number of establishments offering	Step 1 x Step 2 = Step 3	34,277	41,894	
4	Total number of employees	BLS	70,614,212	70,614,212	
5	Estimate of employees working for offering establishments	Step 4 x Step 2 = Step 5	1,906,584	2,330,269	
6	% of employees using mode	EPA Commuter Model	13.0%	13.0%	
7	Estimate of total number of employees that used mode	Step 4 x Step 6 = Step 7	9,179,848	9,179,848	
8	Estimate of employees that use mode and work for offering establishments	Step 7 x Step 2 = Step 8	247,856	302,935	
9	Estimate Corporate TRI per employee per year	See Chapter 2 tables	\$204.00	\$30.29	
10	Estimate Employee TRI per year	See Chapter 2 tables	\$0.00	\$213.90	
11	Total Estimate Corporate TRI	Step 9 x Step 8= Step 11	\$50,562,600.36	\$9,175,900.23	
12	Total Estimate Employee TRI	Step 10 x Step 8= Step 12	\$0.00	\$64,797,789.97	
13	Estimated TRI of offering benefit	Step 11 + Step 12 = Step 13	\$50,562,600.36	\$73,973,690.20	
					\$124,536,290.56
	PUBLIC SECTOR	Source or Equation		Pre-tax	
1	State and Local Govt employees	BLS		15,378,924	
2	Federal Govt employees	NCS		2,411,630	
3	Total Govt employees	Step 1 + Step 2 = Step 3		17,790,554	
4	% of employees that use mode	EPA Commuter Model		13.0%	
5	Estimate of total govt employees that use mode	Step 3 x Step 4 = Step 5		2,312,772	
6	Estimate of state and local govt employees that use mode	Step 1 x Step 4 = Step 6		1,999,260	
7	Estimate for state and local governments that offer benefit	NCS rate plus 1%		7%	
8	Estimate of employees that use mode and work for offering state and local govs	Step 6 x Step 7 = Step 8		139,948	
9	Estimate agency TRI per employee per year	See Chapter 2 tables		\$45.90	
10	Estimate Employee TRI per year	See Chapter 2 tables		\$213.90	
11	Total Estimate Government TRI	Step 8 x Step 9 = Step 11		\$6,423,622.77	
12	Total Estimate Employee TRI	Step 8 x Step 10 = Step 12		\$29,934,921.78	
13	Estimated TRI of offering benefit	Step 11 + Step 12 = Step 13		\$36,358,544.54	
					\$36,358,544.54
	Total Estimated TRI				\$196,143,044.62

Table D.17: Estimated Tax Revenue Impact (TRI) for bicycling with a \$25 tax limit: Level 3

	SMALL ESTABLISHMENTS	Source or Equation	Employer Paid	Pre-tax	TOTAL
1	Total number of establishments	Bureau of Labor Statistics (BLS)	5,026,928	5,026,928	
2	% of establishments offering subsidized commuting 3% total	NCS rate plus 1%	1.40%	1.60%	
3	Estimate of total number of establishments offering	Step 1 x Step 2 = Step 3	70,377	80,431	
4	Total number of employees	BLS	40,091,449	40,091,449	
5	Estimate of employees working for offering establishments	Step 4 x Step 2 = Step 5	561,280	641,463	
6	% of employees using mode	EPA Commuter Model	0.4%	0.4%	
7	Estimate of total number of employees that used mode	Step 4 x Step 6 = Step 7	160,366	160,366	
8	Estimate of employees that use mode and work for offering establishments	Step 7 x Step 2 = Step 8	2,245	2,566	
9	Estimate Corporate TRI per employee per year	See Chapter 2 tables	\$102.00	\$15.15	
10	Estimate Employee TRI per year	See Chapter 2 tables	\$0.00	\$106.95	
11	Total Estimate Corporate TRI	Step 9 x Step 8= Step 11	\$229,002.36	\$38,872.67	
12	Total Estimate Employee TRI	Step 10 x Step 8= Step 12	\$0.00	\$274,417.95	
13	Estimated TRI of offering benefit	Step 11 + Step 12	\$229,002.36	\$313,290.62	
					\$542,292.98
	MEDIUM AND LARGE ESTABLISHMENTS	Source or Equation	Employer Paid	Pre-tax	
1	Total number of establishments	Bureau of Labor Statistics (BLS)	1,269,529	1,269,529	
2	% of establishments offering subsidized commuting 6% total	NCS rate plus 1%	2.70%	3.30%	
3	Estimate of total number of establishments offering	Step 1 x Step 2 = Step 3	34,277	41,894	
4	Total number of employees	BLS	70,614,212	70,614,212	
5	Estimate of employees working for offering establishments	Step 4 x Step 2 = Step 5	1,906,584	2,330,269	
6	% of employees using mode	EPA Commuter Model	0.4%	0.4%	
7	Estimate of total number of employees that used mode	Step 4 x Step 6 = Step 7	282,457	282,457	
8	Estimate of employees that use mode and work for offering establishments	Step 7 x Step 2 = Step 8	7,626	9,321	
9	Estimate Corporate TRI per employee per year	See Chapter 2 tables	\$102.00	\$15.15	
10	Estimate Employee TRI per year	See Chapter 2 tables	\$0.00	\$106.95	
11	Total Estimate Corporate TRI	Step 9 x Step 8= Step 11	\$777,886.16	\$141,214.30	
12	Total Estimate Employee TRI	Step 10 x Step 8= Step 12	\$0.00	\$996,889.08	
13	Estimated TRI of offering benefit	Step 11 + Step 12 = Step 13	\$777,886.16	\$1,138,103.38	
					\$1,915,989.54
	PUBLIC SECTOR	Source or Equation		Pre-tax	
1	State and Local Govt employees	BLS		15,378,924	
2	Federal Govt employees	NCS		2,411,630	
3	Total Govt employees	Step 1 + Step 2 = Step 3		17,790,554	
4	% of employees that use mode	EPA Commuter Model		0.4%	
5	Estimate of total govt employees that use mode	Step 3 x Step 4 = Step 5		71,162	
6	Estimate of state and local govt employees that use mode	Step 1 x Step 4 = Step 6		61,516	
7	Estimate for state and local governments that offer benefit	NCS rate plus 1%		7%	
8	Estimate of employees that use mode and work for offering state and local govts	Step 6 x Step 7 = Step 8		4,306	
9	Estimate agency TRI per employee per year	See Chapter 2 tables		\$22.95	
10	Estimate Employee TRI per year	See Chapter 2 tables		\$106.95	
11	Total Estimate Government TRI	Step 8 x Step 9 = Step 11		\$98,824.97	
12	Total Estimate Employee TRI	Step 8 x Step 10 = Step 12		\$460,537.22	
13	Estimated TRI of offering benefit	Step 11 + Step 12 = Step 13		\$559,362.22	
					\$559,362.22
	Total Estimated TRI				\$3,017,644.74

Table D.18: Estimated Tax Revenue Impact (TRI) for bicycling with a \$50 tax limit: Level 3

	SMALL ESTABLISHMENTS	Source or Equation	Employer Paid	Pre-tax	TOTAL
1	Total number of establishments	Bureau of Labor Statistics (BLS)	5,026,928	5,026,928	
2	% of establishments offering subsidized commuting 3% total	NCS rate plus 1%	1.40%	1.60%	
3	Estimate of total number of establishments offering	Step 1 x Step 2 = Step 3	70,377	80,431	
4	Total number of employees	BLS	40,091,449	40,091,449	
5	Estimate of employees working for offering establishments	Step 4 x Step 2 = Step 5	561,280	641,463	
6	% of employees using mode	EPA Commuter Model	0.4%	0.4%	
7	Estimate of total number of employees that used mode	Step 4 x Step 6 = Step 7	160,366	160,366	
8	Estimate of employees that use mode and work for offering establishments	Step 7 x Step 2 = Step 8	2,245	2,566	
9	Estimate Corporate TRI per employee per year	See Chapter 2 tables	\$204.00	\$30.29	
10	Estimate Employee TRI per year	See Chapter 2 tables	\$0.00	\$213.90	
11	Total Estimate Corporate TRI	Step 9 x Step 8= Step 11	\$458,004.71	\$77,719.68	
12	Total Estimate Employee TRI	Step 10 x Step 8= Step 12	\$0.00	\$548,835.90	
13	Estimated TRI of offering benefit	Step 11 + Step 12	\$458,004.71	\$626,555.58	
					\$1,084,560.29
	MEDIUM AND LARGE ESTABLISHMENTS	Source or Equation	Employer Paid	Pre-tax	
1	Total number of establishments	Bureau of Labor Statistics (BLS)	1,269,529	1,269,529	
2	% of establishments offering subsidized commuting 6% total	NCS rate plus 1%	2.70%	3.30%	
3	Estimate of total number of establishments offering	Step 1 x Step 2 = Step 3	34,277	41,894	
4	Total number of employees	BLS	70,614,212	70,614,212	
5	Estimate of employees working for offering establishments	Step 4 x Step 2 = Step 5	1,906,584	2,330,269	
6	% of employees using mode	EPA Commuter Model	0.4%	0.4%	
7	Estimate of total number of employees that used mode	Step 4 x Step 6 = Step 7	282,457	282,457	
8	Estimate of employees that use mode and work for offering establishments	Step 7 x Step 2 = Step 8	7,626	9,321	
9	Estimate Corporate TRI per employee per year	See Chapter 2 tables	\$204.00	\$30.29	
10	Estimate Employee TRI per year	See Chapter 2 tables	\$0.00	\$213.90	
11	Total Estimate Corporate TRI	Step 9 x Step 8= Step 11	\$1,555,772.32	\$282,335.39	
12	Total Estimate Employee TRI	Step 10 x Step 8= Step 12	\$0.00	\$1,993,778.15	
13	Estimated TRI of offering benefit	Step 11 + Step 12 = Step 13	\$1,555,772.32	\$2,276,113.54	
					\$3,831,885.86
	PUBLIC SECTOR	Source or Equation		Pre-tax	
1	State and Local Govt employees	BLS		15,378,924	
2	Federal Govt employees	NCS		2,411,630	
3	Total Govt employees	Step 1 + Step 2 = Step 3		17,790,554	
4	% of employees that use mode	EPA Commuter Model		0.4%	
5	Estimate of total govt employees that use mode	Step 3 x Step 4 = Step 5		71,162	
6	Estimate of state and local govt employees that use mode	Step 1 x Step 4 = Step 6		61,516	
7	Estimate for state and local governments that offer benefit	NCS rate plus 1%		7%	
8	Estimate of employees that use mode and work for offering state and local govts	Step 6 x Step 7 = Step 8		4,306	
9	Estimate agency TRI per employee per year	See Chapter 2 tables		\$45.90	
10	Estimate Employee TRI per year	See Chapter 2 tables		\$213.90	
11	Total Estimate Government TRI	Step 8 x Step 9 = Step 11		\$197,649.93	
12	Total Estimate Employee TRI	Step 8 x Step 10 = Step 12		\$921,074.52	
13	Estimated TRI of offering benefit	Step 11 + Step 12 = Step 13		\$1,118,724.45	
					\$1,118,724.45
	Total Estimated TRI				\$6,035,170.60

Table D.19: Estimated Tax Revenue Impact (TRI) for walking with a \$25 tax limit: Level 3

	SMALL ESTABLISHMENTS	Source or Equation	Employer Paid	Pre-tax	TOTAL
1	Total number of establishments	Bureau of Labor Statistics (BLS)	5,026,928	5,026,928	
2	% of establishments offering subsidized commuting 3% total	NCS rate plus 1%	1.40%	1.60%	
3	Estimate of total number of establishments offering	Step 1 x Step 2 = Step 3	70,377	80,431	
4	Total number of employees	BLS	40,091,449	40,091,449	
5	Estimate of employees working for offering establishments	Step 4 x Step 2 = Step 5	561,280	641,463	
6	% of employees using mode	EPA Commuter Model	3.1%	3.1%	
7	Estimate of total number of employees that used mode	Step 4 x Step 6 = Step 7	1,242,835	1,242,835	
8	Estimate of employees that use mode and work for offering establishments	Step 7 x Step 2 = Step 8	17,400	19,885	
9	Estimate Corporate TRI per employee per year	See Chapter 2 tables	\$102.00	\$15.15	
10	Estimate Employee TRI per year	See Chapter 2 tables	\$0.00	\$106.95	
11	Total Estimate Corporate TRI	Step 9 x Step 8= Step 11	\$1,774,768.26	\$301,263.18	
12	Total Estimate Employee TRI	Step 10 x Step 8= Step 12	\$0.00	\$2,126,739.11	
13	Estimated TRI of offering benefit	Step 11 + Step 12	\$1,774,768.26	\$2,428,002.30	
					\$4,202,770.56
	MEDIUM AND LARGE ESTABLISHMENTS	Source or Equation	Employer Paid	Pre-tax	
1	Total number of establishments	Bureau of Labor Statistics (BLS)	1,269,529	1,269,529	
2	% of establishments offering subsidized commuting 6% total	NCS rate plus 1%	2.70%	3.30%	
3	Estimate of total number of establishments offering	Step 1 x Step 2 = Step 3	34,277	41,894	
4	Total number of employees	BLS	70,614,212	70,614,212	
5	Estimate of employees working for offering establishments	Step 4 x Step 2 = Step 5	1,906,584	2,330,269	
6	% of employees using mode	EPA Commuter Model	3.1%	3.1%	
7	Estimate of total number of employees that used mode	Step 4 x Step 6 = Step 7	2,189,041	2,189,041	
8	Estimate of employees that use mode and work for offering establishments	Step 7 x Step 2 = Step 8	59,104	72,238	
9	Estimate Corporate TRI per employee per year	See Chapter 2 tables	\$102.00	\$15.15	
10	Estimate Employee TRI per year	See Chapter 2 tables	\$0.00	\$106.95	
11	Total Estimate Corporate TRI	Step 9 x Step 8= Step 11	\$6,028,617.74	\$1,094,410.83	
12	Total Estimate Employee TRI	Step 10 x Step 8= Step 12	\$0.00	\$7,725,890.34	
13	Estimated TRI of offering benefit	Step 11 + Step 12 = Step 13	\$6,028,617.74	\$8,820,301.18	
					\$14,848,918.91
	PUBLIC SECTOR	Source or Equation		Pre-tax	
1	State and Local Govt employees	BLS		15,378,924	
2	Federal Govt employees	NCS		2,411,630	
3	Total Govt employees	Step 1 + Step 2 = Step 3		17,790,554	
4	% of employees that use mode	EPA Commuter Model		3.1%	
5	Estimate of total govt employees that use mode	Step 3 x Step 4 = Step 5		551,507	
6	Estimate of state and local govt employees that use mode	Step 1 x Step 4 = Step 6		476,747	
7	Estimate for state and local governments that offer benefit	NCS rate plus 1%		7%	
8	Estimate of employees that use mode and work for offering state and local govts	Step 6 x Step 7 = Step 8		33,372	
9	Estimate agency TRI per employee per year	See Chapter 2 tables		\$22.95	
10	Estimate Employee TRI per year	See Chapter 2 tables		\$106.95	
11	Total Estimate Government TRI	Step 8 x Step 9 = Step 11		\$765,893.48	
12	Total Estimate Employee TRI	Step 8 x Step 10 = Step 12		\$3,569,163.75	
13	Estimated TRI of offering benefit	Step 11 + Step 12 = Step 13		\$4,335,057.23	
					\$4,335,057.23
	Total Estimated TRI				\$23,386,746.71

Table D.20: Estimated Tax Revenue Impact (TRI) for walking with a \$50 tax limit: Level 3

	SMALL ESTABLISHMENTS	Source or Equation	Employer Paid	Pre-tax	TOTAL
1	Total number of establishments	Bureau of Labor Statistics (BLS)	5,026,928	5,026,928	
2	% of establishments offering subsidized commuting 3% total	NCS rate plus 1%	1.40%	1.60%	
3	Estimate of total number of establishments offering	Step 1 x Step 2 = Step 3	70,377	80,431	
4	Total number of employees	BLS	40,091,449	40,091,449	
5	Estimate of employees working for offering establishments	Step 4 x Step 2 = Step 5	561,280	641,463	
6	% of employees using mode	EPA Commuter Model	3.1%	3.1%	
7	Estimate of total number of employees that used mode	Step 4 x Step 6 = Step 7	1,242,835	1,242,835	
8	Estimate of employees that use mode and work for offering establishments	Step 7 x Step 2 = Step 8	17,400	19,885	
9	Estimate Corporate TRI per employee per year	See Chapter 2 tables	\$204.00	\$30.29	
10	Estimate Employee TRI per year	See Chapter 2 tables	\$0.00	\$213.90	
11	Total Estimate Corporate TRI	Step 9 x Step 8= Step 11	\$3,549,536.53	\$602,327.52	
12	Total Estimate Employee TRI	Step 10 x Step 8= Step 12	\$0.00	\$4,253,478.23	
13	Estimated TRI of offering benefit	Step 11 + Step 12	\$3,549,536.53	\$4,855,805.74	
					\$8,405,342.27
	MEDIUM AND LARGE ESTABLISHMENTS	Source or Equation	Employer Paid	Pre-tax	
1	Total number of establishments	Bureau of Labor Statistics (BLS)	1,269,529	1,269,529	
2	% of establishments offering subsidized commuting 6% total	NCS rate plus 1%	2.70%	3.30%	
3	Estimate of total number of establishments offering	Step 1 x Step 2 = Step 3	34,277	41,894	
4	Total number of employees	BLS	70,614,212	70,614,212	
5	Estimate of employees working for offering establishments	Step 4 x Step 2 = Step 5	1,906,584	2,330,269	
6	% of employees using mode	EPA Commuter Model	3.1%	3.1%	
7	Estimate of total number of employees that used mode	Step 4 x Step 6 = Step 7	2,189,041	2,189,041	
8	Estimate of employees that use mode and work for offering establishments	Step 7 x Step 2 = Step 8	59,104	72,238	
9	Estimate Corporate TRI per employee per year	See Chapter 2 tables	\$204.00	\$30.29	
10	Estimate Employee TRI per year	See Chapter 2 tables	\$0.00	\$213.90	
11	Total Estimate Corporate TRI	Step 9 x Step 8= Step 11	\$12,057,235.47	\$2,188,099.28	
12	Total Estimate Employee TRI	Step 10 x Step 8= Step 12	\$0.00	\$15,451,780.69	
13	Estimated TRI of offering benefit	Step 11 + Step 12 = Step 13	\$12,057,235.47	\$17,639,879.97	
					\$29,697,115.44
	PUBLIC SECTOR	Source or Equation		Pre-tax	
1	State and Local Govt employees	BLS		15,378,924	
2	Federal Govt employees	NCS		2,411,630	
3	Total Govt employees	Step 1 + Step 2 = Step 3		17,790,554	
4	% of employees that use mode	EPA Commuter Model		3.1%	
5	Estimate of total govt employees that use mode	Step 3 x Step 4 = Step 5		551,507	
6	Estimate of state and local govt employees that use mode	Step 1 x Step 4 = Step 6		476,747	
7	Estimate for state and local governments that offer benefit	NCS rate plus 1%		7%	
8	Estimate of employees that use mode and work for offering state and local govts	Step 6 x Step 7 = Step 8		33,372	
9	Estimate agency TRI per employee per year	See Chapter 2 tables		\$45.90	
10	Estimate Employee TRI per year	See Chapter 2 tables		\$213.90	
11	Total Estimate Government TRI	Step 8 x Step 9 = Step 11		\$1,531,786.97	
12	Total Estimate Employee TRI	Step 8 x Step 10 = Step 12		\$7,138,327.50	
13	Estimated TRI of offering benefit	Step 11 + Step 12 = Step 13		\$8,670,114.47	
					\$8,670,114.47
	Total Estimated TRI				\$46,772,572.18

Table D.21: Estimated Tax Revenue Impact (TRI) for telecommuting with a \$25 tax limit: Level 3

	SMALL ESTABLISHMENTS	Source or Equation	Employer Paid	Pre-tax	TOTAL
1	Total number of establishments	Bureau of Labor Statistics (BLS)	5,026,928	5,026,928	
2	% of establishments offering subsidized commuting 3% total	NCS rate plus 1%	1.40%	1.60%	
3	Estimate of total number of establishments offering	Step 1 x Step 2 = Step 3	70,377	80,431	
4	Total number of employees	BLS	40,091,449	40,091,449	
5	Estimate of employees working for offering establishments	Step 4 x Step 2 = Step 5	561,280	641,463	
6	% of employees using mode	EPA Commuter Model	4.0%	4.0%	
7	Estimate of total number of employees that used mode	Step 4 x Step 6 = Step 7	1,603,658	1,603,658	
8	Estimate of employees that use mode and work for offering establishments	Step 7 x Step 2 = Step 8	22,451	25,659	
9	Estimate Corporate TRI per employee per year	See Chapter 2 tables	\$102.00	\$15.15	
10	Estimate Employee TRI per year	See Chapter 2 tables	\$0.00	\$106.95	
11	Total Estimate Corporate TRI	Step 9 x Step 8= Step 11	\$2,290,023.57	\$388,726.69	
12	Total Estimate Employee TRI	Step 10 x Step 8= Step 12	\$0.00	\$2,744,179.50	
13	Estimated TRI of offering benefit	Step 11 + Step 12	\$2,290,023.57	\$3,132,906.19	
					\$5,422,929.76
	MEDIUM AND LARGE ESTABLISHMENTS	Source or Equation	Employer Paid	Pre-tax	
1	Total number of establishments	Bureau of Labor Statistics (BLS)	1,269,529	1,269,529	
2	% of establishments offering subsidized commuting 6% total	NCS rate plus 1%	2.70%	3.30%	
3	Estimate of total number of establishments offering	Step 1 x Step 2 = Step 3	34,277	41,894	
4	Total number of employees	BLS	70,614,212	70,614,212	
5	Estimate of employees working for offering establishments	Step 4 x Step 2 = Step 5	1,906,584	2,330,269	
6	% of employees using mode	EPA Commuter Model	4.0%	4.0%	
7	Estimate of total number of employees that used mode	Step 4 x Step 6 = Step 7	2,824,568	2,824,568	
8	Estimate of employees that use mode and work for offering establishments	Step 7 x Step 2 = Step 8	76,263	93,211	
9	Estimate Corporate TRI per employee per year	See Chapter 2 tables	\$102.00	\$15.15	
10	Estimate Employee TRI per year	See Chapter 2 tables	\$0.00	\$106.95	
11	Total Estimate Corporate TRI	Step 9 x Step 8= Step 11	\$7,778,861.59	\$1,412,143.01	
12	Total Estimate Employee TRI	Step 10 x Step 8= Step 12	\$0.00	\$9,968,890.76	
13	Estimated TRI of offering benefit	Step 11 + Step 12 = Step 13	\$7,778,861.59	\$11,381,033.78	
					\$19,159,895.37
	PUBLIC SECTOR	Source or Equation		Pre-tax	
1	State and Local Govt employees	BLS		15,378,924	
2	Federal Govt employees	NCS		2,411,630	
3	Total Govt employees	Step 1 + Step 2 = Step 3		17,790,554	
4	% of employees that use mode	EPA Commuter Model		4.00%	
5	Estimate of total govt employees that use mode	Step 3 x Step 4 = Step 5		711,622	
6	Estimate of state and local govt employees that use mode	Step 1 x Step 4 = Step 6		615,157	
7	Estimate for state and local governments that offer benefit	NCS rate plus 1%		7%	
8	Estimate of employees that use mode and work for offering state and local govts	Step 6 x Step 7 = Step 8		43,061	
9	Estimate agency TRI per employee per year	See Chapter 2 tables		\$22.95	
10	Estimate Employee TRI per year	See Chapter 2 tables		\$106.95	
11	Total Estimate Government TRI	Step 8 x Step 9 = Step 11		\$988,249.66	
12	Total Estimate Employee TRI	Step 8 x Step 10 = Step 12		\$4,605,372.58	
13	Estimated TRI of offering benefit	Step 11 + Step 12 = Step 13		\$5,593,622.24	
					\$5,593,622.24
	Total Estimated TRI				\$30,176,447.37

Table D.22: Estimated Tax Revenue Impact (TRI) for telecommuting with a \$50 tax limit: Level 3

	SMALL ESTABLISHMENTS	Source or Equation	Employer Paid	Pre-tax	TOTAL
1	Total number of establishments	Bureau of Labor Statistics (BLS)	5,026,928	5,026,928	
2	% of establishments offering subsidized commuting 3% total	NCS rate plus 1%	1.40%	1.60%	
3	Estimate of total number of establishments offering	Step 1 x Step 2 = Step 3	70,377	80,431	
4	Total number of employees	BLS	40,091,449	40,091,449	
5	Estimate of employees working for offering establishments	Step 4 x Step 2 = Step 5	561,280	641,463	
6	% of employees using mode	EPA Commuter Model	4.0%	4.0%	
7	Estimate of total number of employees that used mode	Step 4 x Step 6 = Step 7	1,603,658	1,603,658	
8	Estimate of employees that use mode and work for offering establishments	Step 7 x Step 2 = Step 8	22,451	25,659	
9	Estimate Corporate TRI per employee per year	See Chapter 2 tables	\$204.00	\$30.29	
10	Estimate Employee TRI per year	See Chapter 2 tables	\$0.00	\$213.90	
11	Total Estimate Corporate TRI	Step 9 x Step 8= Step 11	\$4,580,047.13	\$777,196.79	
12	Total Estimate Employee TRI	Step 10 x Step 8= Step 12	\$0.00	\$5,488,359.00	
13	Estimated TRI of offering benefit	Step 11 + Step 12	\$4,580,047.13	\$6,265,555.80	
					\$10,845,602.93
	MEDIUM AND LARGE ESTABLISHMENTS	Source or Equation	Employer Paid	Pre-tax	
1	Total number of establishments	Bureau of Labor Statistics (BLS)	1,269,529	1,269,529	
2	% of establishments offering subsidized commuting 6% total	NCS rate plus 1%	2.70%	3.30%	
3	Estimate of total number of establishments offering	Step 1 x Step 2 = Step 3	34,277	41,894	
4	Total number of employees	BLS	70,614,212	70,614,212	
5	Estimate of employees working for offering establishments	Step 4 x Step 2 = Step 5	1,906,584	2,330,269	
6	% of employees using mode	EPA Commuter Model	4.0%	4.0%	
7	Estimate of total number of employees that used mode	Step 4 x Step 6 = Step 7	2,824,568	2,824,568	
8	Estimate of employees that use mode and work for offering establishments	Step 7 x Step 2 = Step 8	76,263	93,211	
9	Estimate Corporate TRI per employee per year	See Chapter 2 tables	\$204.00	\$30.29	
10	Estimate Employee TRI per year	See Chapter 2 tables	\$0.00	\$213.90	
11	Total Estimate Corporate TRI	Step 9 x Step 8= Step 11	\$15,557,723.19	\$2,823,353.92	
12	Total Estimate Employee TRI	Step 10 x Step 8= Step 12	\$0.00	\$19,937,781.53	
13	Estimated TRI of offering benefit	Step 11 + Step 12 = Step 13	\$15,557,723.19	\$22,761,135.45	
					\$38,318,858.63
	PUBLIC SECTOR	Source or Equation		Pre-tax	
1	State and Local Govt employees	BLS		15,378,924	
2	Federal Govt employees	NCS		2,411,630	
3	Total Govt employees	Step 1 + Step 2 = Step 3		17,790,554	
4	% of employees that use mode	EPA Commuter Model		4.00%	
5	Estimate of total govt employees that use mode	Step 3 x Step 4 = Step 5		711,622	
6	Estimate of state and local govt employees that use mode	Step 1 x Step 4 = Step 6		615,157	
7	Estimate for state and local governments that offer benefit	NCS rate plus 1%		7%	
8	Estimate of employees that use mode and work for offering state and local govts	Step 6 x Step 7 = Step 8		43,061	
9	Estimate agency TRI per employee per year	See Chapter 2 tables		\$45.90	
10	Estimate Employee TRI per year	See Chapter 2 tables		\$213.90	
11	Total Estimate Government TRI	Step 8 x Step 9 = Step 11		\$1,976,499.31	
12	Total Estimate Employee TRI	Step 8 x Step 10 = Step 12		\$9,210,745.16	
13	Estimated TRI of offering benefit	Step 11 + Step 12 = Step 13		\$11,187,244.47	
					\$11,187,244.47
	Total Estimated TRI				\$60,351,706.04

Table D.23: Estimated Tax Revenue Impact (TRI) for transit with a \$100 tax limit: Level 1

	SMALL ESTABLISHMENTS	Source or Equation	Employer Paid	Pre-tax	TOTAL
1	Total number of establishments	Bureau of Labor Statistics (BLS)	5,026,928	5,026,928	
2	% of establishments offering subsidized commuting 2% total	National Compensation Survey (NCS)	0.90%	1.10%	
3	Estimate of total number of establishments offering	Step 1 x Step 2 = Step 3	45,242	55,296	
4	Total number of employees	BLS	40,091,449	40,091,449	
5	Estimate of employees working for offering establishments	Step 4 x Step 2 = Step 5	360,823	441,006	
6	% of employees using mode	2000 Census	4.5%	4.5%	
7	Estimate of total number of employees that used mode	Step 4 x Step 6 = Step 7	1,804,115	1,804,115	
8	Estimate of employees that use mode and work for offering establishments	Step 7 x Step 2 = Step 8	16,237	19,845	
9	Estimate Corporate TRI per employee per year	See Figure X.x	\$408.00	\$60.59	
10	Estimate Employee TRI per year	See Figure X.x	\$0.00	\$427.80	
11	Total Estimate Corporate TRI	Step 9 x Step 8 = Step 11	\$6,624,711.03	\$1,202,424.74	
12	Total Estimate Employee TRI	Step 10 x Step 8 = Step 12	\$0.00	\$8,489,805.33	
13	Estimated TRI of offering benefit	Step 11 + Step 12	\$6,624,711.03	\$9,692,230.07	
					\$16,316,941.11
	MEDIUM AND LARGE ESTABLISHMENTS	Source or Equation	Employer Paid	Pre-tax	
1	Total number of establishments	Bureau of Labor Statistics (BLS)	1,269,529	1,269,529	
2	% of establishments offering subsidized commuting 5% total	National Compensation Survey (NCS)	2.25%	2.75%	
3	Estimate of total number of establishments offering	Step 1 x Step 2 = Step 3	28,564	34,912	
4	Total number of employees	BLS	70,614,212	70,614,212	
5	Estimate of employees working for offering establishments	Step 4 x Step 2 = Step 5	1,588,820	1,941,891	
6	% of employees using mode	2000 Census	4.5%	4.5%	
7	Estimate of total number of employees that used mode	Step 4 x Step 6 = Step 7	3,177,640	3,177,640	
8	Estimate of employees that use mode and work for offering establishments	Step 7 x Step 2 = Step 8	71,497	87,385	
9	Estimate Corporate TRI per employee per year	See Figure X.x	\$408.00	\$60.59	
10	Estimate Employee TRI per year	See Figure X.x	\$0.00	\$427.80	
11	Total Estimate Corporate TRI	Step 9 x Step 8 = Step 11	\$29,170,730.98	\$5,294,662.44	
12	Total Estimate Employee TRI	Step 10 x Step 8 = Step 12	\$0.00	\$37,383,340.37	
13	Estimated TRI of offering benefit	Step 11 + Step 12 = Step 13	\$29,170,730.98	\$42,678,002.81	
					\$71,848,733.79
	PUBLIC SECTOR	Source or Equation		Pre-tax	
1	State and Local Govt employees	BLS		15,378,924	
2	Federal Govt employees	NCS		2,411,630	
3	Total Govt employees	Step 1 + Step 2 = Step 3		17,790,554	
4	% of employees that use mode	2000 Census		4.5%	
5	Estimate of total govt employees that use mode	Step 3 x Step 4 = Step 5		800,575	
6	Estimate of state and local govt employees that use mode	Step 1 x Step 4 = Step 6		692,052	
7	Estimate for state and local governments that offer benefit	NCS		6%	
8	Estimate of employees that use mode and work for offering state and local govts	Step 6 x Step 7 = Step 8		41,523	
9	Estimate agency TRI per employee per year	See Figure X.x		\$91.80	
10	Estimate Employee TRI per year	See Figure X.x		\$427.80	
11	Total Estimate Government TRI	Step 8 x Step 9 = Step 11		\$3,811,820.10	
12	Total Estimate Employee TRI	Step 8 x Step 10 = Step 12		\$17,763,579.96	
13	Estimated TRI of offering benefit	Step 11 + Step 12 = Step 13		\$21,575,400.06	
					\$21,575,400.06
	Total Estimated TRI				\$109,741,074.95

Table D.24: Estimated Tax Revenue Impact (TRI) for transit with a \$100 estimate for buses: Level 2

	SMALL ESTABLISHMENTS	Source or Equation	Employer Paid	Pre-tax	TOTAL
1	Total number of establishments	Bureau of Labor Statistics (BLS)	5,026,928	5,026,928	
2	% of establishments offering subsidized commuting 2% total	National Compensation Survey (NCS)	0.90%	1.10%	
3	Estimate of total number of establishments offering	Step 1 x Step 2 = Step 3	45,242	55,296	
4	Total number of employees	BLS	40,091,449	40,091,449	
5	Estimate of employees working for offering establishments	Step 4 x Step 2 = Step 5	360,823	441,006	
6	% of employees using mode	EPA Commuter Model	4.7%	4.7%	
7	Estimate of total number of employees that used mode	Step 4 x Step 6 = Step 7	1,884,298	1,884,298	
8	Estimate of employees that use mode and work for offering establishments	Step 7 x Step 2 = Step 8	16,959	20,727	
9	Estimate Corporate TRI per employee per year	See Chapter 2 tables	\$408.00	\$60.59	
10	Estimate Employee TRI per year	See Chapter 2 tables	\$0.00	\$427.80	
11	Total Estimate Corporate TRI	Step 9 x Step 8= Step 11	\$6,919,142.63	\$1,255,865.84	
12	Total Estimate Employee TRI	Step 10 x Step 8= Step 12	\$0.00	\$8,867,130.01	
13	Estimated TRI of offering benefit	Step 11 + Step 12	\$6,919,142.63	\$10,122,995.86	
					\$17,042,138.49
	MEDIUM AND LARGE ESTABLISHMENTS	Source or Equation	Employer Paid	Pre-tax	
1	Total number of establishments	Bureau of Labor Statistics (BLS)	1,269,529	1,269,529	
2	% of establishments offering subsidized commuting 5% total	National Compensation Survey (NCS)	2.25%	2.75%	
3	Estimate of total number of establishments offering	Step 1 x Step 2 = Step 3	28,564	34,912	
4	Total number of employees	BLS	70,614,212	70,614,212	
5	Estimate of employees working for offering establishments	Step 4 x Step 2 = Step 5	1,588,820	1,941,891	
6	% of employees using mode	EPA Commuter Model	4.7%	4.7%	
7	Estimate of total number of employees that used mode	Step 4 x Step 6 = Step 7	3,318,868	3,318,868	
8	Estimate of employees that use mode and work for offering establishments	Step 7 x Step 2 = Step 8	74,675	91,269	
9	Estimate Corporate TRI per employee per year	See Chapter 2 tables	\$408.00	\$60.59	
10	Estimate Employee TRI per year	See Chapter 2 tables	\$0.00	\$427.80	
11	Total Estimate Corporate TRI	Step 9 x Step 8= Step 11	\$30,467,207.91	\$5,529,980.77	
12	Total Estimate Employee TRI	Step 10 x Step 8= Step 12	\$0.00	\$39,044,822.16	
13	Estimated TRI of offering benefit	Step 11 + Step 12 = Step 13	\$30,467,207.91	\$44,574,802.94	
					\$75,042,010.85
	PUBLIC SECTOR	Source or Equation		Pre-tax	
1	State and Local Govt employees	BLS		15,378,924	
2	Federal Govt employees	NCS		2,411,630	
3	Total Govt employees	Step 1 + Step 2 = Step 3		17,790,554	
4	% of employees that use mode	EPA Commuter Model		4.7%	
5	Estimate of total govt employees that use mode	Step 3 x Step 4 = Step 5		836,156	
6	Estimate of state and local govt employees that use mode	Step 1 x Step 4 = Step 6		722,809	
7	Estimate for state and local governments that offer benefit	NCS		6%	
8	Estimate of employees that use mode and work for offering state and local govts	Step 6 x Step 7 = Step 8		43,369	
9	Estimate agency TRI per employee per year	See Chapter 2 tables		\$91.80	
10	Estimate Employee TRI per year	See Chapter 2 tables		\$427.80	
11	Total Estimate Government TRI	Step 8 x Step 9 = Step 11		\$3,981,234.33	
12	Total Estimate Employee TRI	Step 8 x Step 10 = Step 12		\$18,553,072.40	
13	Estimated TRI of offering benefit	Step 11 + Step 12 = Step 13		\$22,534,306.73	
					\$22,534,306.73
	Total Estimated TRI				\$114,618,456.06

Table D.25: Estimated Tax Revenue Impact (TRI) for rail at \$190 limit: Level 2

	SMALL ESTABLISHMENTS	Source or Equation	Employer Paid	Pre-tax	TOTAL
1	Total number of establishments	Bureau of Labor Statistics (BLS)	5,026,928	5,026,928	
2	% of establishments offering subsidized commuting 2% total	National Compensation Survey (NCS)	0.90%	1.10%	
3	Estimate of total number of establishments offering	Step 1 x Step 2 = Step 3	45,242	55,296	
4	Total number of employees	BLS	40,091,449	40,091,449	
5	Estimate of employees working for offering establishments	Step 4 x Step 2 = Step 5	360,823	441,006	
6	% of employees using mode	EPA Commuter Model	0.6%	0.6%	
7	Estimate of total number of employees that used mode	Step 4 x Step 6 = Step 7	240,549	240,549	
8	Estimate of employees that use mode and work for offering establishments	Step 7 x Step 2 = Step 8	2,165	2,646	
9	Estimate Corporate TRI per employee per year	See Chapter 2 tables	\$775.20	\$115.12	
10	Estimate Employee TRI per year	See Chapter 2 tables	\$0.00	\$812.82	
11	Total Estimate Corporate TRI	Step 9 x Step 8= Step 11	\$1,678,260.13	\$304,611.62	
12	Total Estimate Employee TRI	Step 10 x Step 8= Step 12	\$0.00	\$2,150,750.68	
13	Estimated TRI of offering benefit	Step 11 + Step 12	\$1,678,260.13	\$2,455,362.31	
					\$4,133,622.43
	MEDIUM AND LARGE ESTABLISHMENTS	Source or Equation	Employer Paid	Pre-tax	
1	Total number of establishments	Bureau of Labor Statistics (BLS)	1,269,529	1,269,529	
2	% of establishments offering subsidized commuting 5% total	National Compensation Survey (NCS)	2.25%	2.75%	
3	Estimate of total number of establishments offering	Step 1 x Step 2 = Step 3	28,564	34,912	
4	Total number of employees	BLS	70,614,212	70,614,212	
5	Estimate of employees working for offering establishments	Step 4 x Step 2 = Step 5	1,588,820	1,941,891	
6	% of employees using mode	EPA Commuter Model	0.6%	0.6%	
7	Estimate of total number of employees that used mode	Step 4 x Step 6 = Step 7	423,685	423,685	
8	Estimate of employees that use mode and work for offering establishments	Step 7 x Step 2 = Step 8	9,533	11,651	
9	Estimate Corporate TRI per employee per year	See Chapter 2 tables	\$775.20	\$115.12	
10	Estimate Employee TRI per year	See Chapter 2 tables	\$0.00	\$812.82	
11	Total Estimate Corporate TRI	Step 9 x Step 8= Step 11	\$7,389,918.51	\$1,341,302.83	
12	Total Estimate Employee TRI	Step 10 x Step 8= Step 12	\$0.00	\$9,470,446.23	
13	Estimated TRI of offering benefit	Step 11 + Step 12 = Step 13	\$7,389,918.51	\$10,811,749.06	
					\$18,201,667.57
	PUBLIC SECTOR	Source or Equation		Pre-tax	
1	State and Local Govt employees	BLS		15,378,924	
2	Federal Govt employees	NCS		2,411,630	
3	Total Govt employees	Step 1 + Step 2 = Step 3		17,790,554	
4	% of employees that use mode	EPA Commuter Model		0.6%	
5	Estimate of total govt employees that use mode	Step 3 x Step 4 = Step 5		106,743	
6	Estimate of state and local govt employees that use mode	Step 1 x Step 4 = Step 6		92,274	
7	Estimate for state and local governments that offer benefit	NCS		6%	
8	Estimate of employees that use mode and work for offering state and local govts	Step 6 x Step 7 = Step 8		5,536	
9	Estimate agency TRI per employee per year	See Chapter 2 tables		\$174.42	
10	Estimate Employee TRI per year	See Chapter 2 tables		\$812.82	
11	Total Estimate Government TRI	Step 8 x Step 9 = Step 11		\$965,661.09	
12	Total Estimate Employee TRI	Step 8 x Step 10 = Step 12		\$4,500,106.92	
13	Estimated TRI of offering benefit	Step 11 + Step 12 = Step 13		\$5,465,768.01	
					\$5,465,768.01
	Total Estimated TRI				\$27,801,058.02

Table D.26: Estimated Tax Revenue Impact (TRI) for transit with a \$100 estimate for buses: Level 3

	SMALL ESTABLISHMENTS	Source or Equation	Employer Paid	Pre-tax	TOTAL
1	Total number of establishments	Bureau of Labor Statistics (BLS)	5,026,928	5,026,928	
2	% of establishments offering subsidized commuting 3% total	NCS rate plus 1%	1.40%	1.60%	
3	Estimate of total number of establishments offering	Step 1 x Step 2 = Step 3	70,377	80,431	
4	Total number of employees	BLS	40,091,449	40,091,449	
5	Estimate of employees working for offering establishments	Step 4 x Step 2 = Step 5	561,280	641,463	
6	% of employees using mode	EPA Commuter Model	4.8%	4.8%	
7	Estimate of total number of employees that used mode	Step 4 x Step 6 = Step 7	1,924,390	1,924,390	
8	Estimate of employees that use mode and work for offering establishments	Step 7 x Step 2 = Step 8	26,941	30,790	
9	Estimate Corporate TRI per employee per year	Chapter 2 tables	\$408.00	\$60.59	
10	Estimate Employee TRI per year	Chapter 2 tables	\$0.00	\$427.80	
11	Total Estimate Corporate TRI	Step 9 x Step 8= Step 11	\$10,992,113.12	\$1,865,580.21	
12	Total Estimate Employee TRI	Step 10 x Step 8= Step 12	\$0.00	\$13,172,061.61	
13	Estimated TRI of offering benefit	Step 11 + Step 12	\$10,992,113.12	\$15,037,641.81	
					\$26,029,754.93
	MEDIUM AND LARGE ESTABLISHMENTS	Source or Equation	Employer Paid	Pre-tax	
1	Total number of establishments	Bureau of Labor Statistics (BLS)	1,269,529	1,269,529	
2	% of establishments offering subsidized commuting 6% total	NCS rate plus 1%	2.70%	3.30%	
3	Estimate of total number of establishments offering	Step 1 x Step 2 = Step 3	34,277	41,894	
4	Total number of employees	BLS	70,614,212	70,614,212	
5	Estimate of employees working for offering establishments	Step 4 x Step 2 = Step 5	1,906,584	2,330,269	
6	% of employees using mode	EPA Commuter Model	4.8%	4.8%	
7	Estimate of total number of employees that used mode	Step 4 x Step 6 = Step 7	3,389,482	3,389,482	
8	Estimate of employees that use mode and work for offering establishments	Step 7 x Step 2 = Step 8	91,516	111,853	
9	Estimate Corporate TRI per employee per year	Chapter 2 tables	\$408.00	\$60.59	
10	Estimate Employee TRI per year	Chapter 2 tables	\$0.00	\$427.80	
11	Total Estimate Corporate TRI	Step 9 x Step 8= Step 11	\$37,338,535.65	\$6,777,167.93	
12	Total Estimate Employee TRI	Step 10 x Step 8= Step 12	\$0.00	\$47,850,675.67	
13	Estimated TRI of offering benefit	Step 11 + Step 12 = Step 13	\$37,338,535.65	\$54,627,843.60	
					\$91,966,379.25
	PUBLIC SECTOR	Source or Equation		Pre-tax	
1	State and Local Govt employees	BLS		15,378,924	
2	Federal Govt employees	NCS		2,411,630	
3	Total Govt employees	Step 1 + Step 2 = Step 3		17,790,554	
4	% of employees that use mode	EPA Commuter Model		4.8%	
5	Estimate of total govt employees that use mode	Step 3 x Step 4 = Step 5		853,947	
6	Estimate of state and local govt employees that use mode	Step 1 x Step 4 = Step 6		738,188	
7	Estimate for state and local governments that offer benefit	NCS rate plus 1%		7%	
8	Estimate of employees that use mode and work for offering state and local govts	Step 6 x Step 7 = Step 8		51,673	
9	Estimate agency TRI per employee per year	Chapter 2 tables		\$91.80	
10	Estimate Employee TRI per year	Chapter 2 tables		\$427.80	
11	Total Estimate Government TRI	Step 8 x Step 9 = Step 11		\$4,743,598.35	
12	Total Estimate Employee TRI	Step 8 x Step 10 = Step 12		\$22,105,788.39	
13	Estimated TRI of offering benefit	Step 11 + Step 12 = Step 13		\$26,849,386.74	
					\$26,849,386.74
	Total Estimated TRI				\$144,845,520.92

Table D.27: Estimated Tax Revenue Impact (TRI) for rail at \$190 limit: Level 3

	SMALL ESTABLISHMENTS	Source or Equation	Employer Paid	Pre-tax	TOTAL
1	Total number of establishments	Bureau of Labor Statistics (BLS)	5,026,928	5,026,928	
2	% of establishments offering subsidized commuting 3% total	NCS rate plus 1%	1.40%	1.60%	
3	Estimate of total number of establishments offering	Step 1 x Step 2 = Step 3	70,377	80,431	
4	Total number of employees	BLS	40,091,449	40,091,449	
5	Estimate of employees working for offering establishments	Step 4 x Step 2 = Step 5	561,280	641,463	
6	% of employees using mode	EPA Commuter Model	0.7%	0.7%	
7	Estimate of total number of employees that used mode	Step 4 x Step 6 = Step 7	280,640	280,640	
8	Estimate of employees that use mode and work for offering establishments	Step 7 x Step 2 = Step 8	3,929	4,490	
9	Estimate Corporate TRI per employee per year	See Chapter 2 tables	\$775.20	\$115.12	
10	Estimate Employee TRI per year	See Chapter 2 tables	\$0.00	\$812.82	
11	Total Estimate Corporate TRI	Step 9 x Step 8= Step 11	\$3,045,731.34	\$516,916.69	
12	Total Estimate Employee TRI	Step 10 x Step 8= Step 12	\$0.00	\$3,649,758.74	
13	Estimated TRI of offering benefit	Step 11 + Step 12	\$3,045,731.34	\$4,166,675.43	
					\$7,212,406.77
	MEDIUM AND LARGE ESTABLISHMENTS	Source or Equation	Employer Paid	Pre-tax	
1	Total number of establishments	Bureau of Labor Statistics (BLS)	1,269,529	1,269,529	
2	% of establishments offering subsidized commuting 6% total	NCS rate plus 1%	2.70%	3.30%	
3	Estimate of total number of establishments offering	Step 1 x Step 2 = Step 3	34,277	41,894	
4	Total number of employees	BLS	70,614,212	70,614,212	
5	Estimate of employees working for offering establishments	Step 4 x Step 2 = Step 5	1,906,584	2,330,269	
6	% of employees using mode	EPA Commuter Model	0.7%	0.7%	
7	Estimate of total number of employees that used mode	Step 4 x Step 6 = Step 7	494,299	494,299	
8	Estimate of employees that use mode and work for offering establishments	Step 7 x Step 2 = Step 8	13,346	16,312	
9	Estimate Corporate TRI per employee per year	See Chapter 2 tables	\$775.20	\$115.12	
10	Estimate Employee TRI per year	See Chapter 2 tables	\$0.00	\$812.82	
11	Total Estimate Corporate TRI	Step 9 x Step 8= Step 11	\$10,345,885.92	\$1,877,823.97	
12	Total Estimate Employee TRI	Step 10 x Step 8= Step 12	\$0.00	\$13,258,624.72	
13	Estimated TRI of offering benefit	Step 11 + Step 12 = Step 13	\$10,345,885.92	\$15,136,448.69	
					\$25,482,334.60
	PUBLIC SECTOR	Source or Equation		Pre-tax	
1	State and Local Govt employees	BLS		15,378,924	
2	Federal Govt employees	NCS		2,411,630	
3	Total Govt employees	Step 1 + Step 2 = Step 3		17,790,554	
4	% of employees that use mode	EPA Commuter Model		0.7%	
5	Estimate of total govt employees that use mode	Step 3 x Step 4 = Step 5		124,534	
6	Estimate of state and local govt employees that use mode	Step 1 x Step 4 = Step 6		107,652	
7	Estimate for state and local governments that offer benefit	NCS rate plus 1%		7%	
8	Estimate of employees that use mode and work for offering state and local govts	Step 6 x Step 7 = Step 8		7,536	
9	Estimate agency TRI per employee per year	See Chapter 2 tables		\$174.42	
10	Estimate Employee TRI per year	See Chapter 2 tables		\$812.82	
11	Total Estimate Government TRI	Step 8 x Step 9 = Step 11		\$1,314,372.04	
12	Total Estimate Employee TRI	Step 8 x Step 10 = Step 12		\$6,125,145.53	
13	Estimated TRI of offering benefit	Step 11 + Step 12 = Step 13		\$7,439,517.58	
					\$7,439,517.58
	Total Estimated TRI				\$40,134,258.95

Table D.28: Estimated Tax Revenue Impact (TRI) for vanpool with a \$100 tax limit: Level 1

	SMALL ESTABLISHMENTS	Source or Equation	Employer Paid	Pre-tax	TOTAL
1	Total number of establishments	Bureau of Labor Statistics (BLS)	5,026,928	5,026,928	
2	% of establishments offering subsidized commuting 2% total	National Compensation Survey (NCS)	0.90%	1.10%	
3	Estimate of total number of establishments offering	Step 1 x Step 2 = Step 3	45,242	55,296	
4	Total number of employees	BLS	40,091,449	40,091,449	
5	Estimate of employees working for offering establishments	Step 4 x Step 2 = Step 5	360,823	441,006	
6	% of employees using mode	2000 Census	0.2%	0.2%	
7	Estimate of total number of employees that used mode	Step 4 x Step 6 = Step 7	80,183	80,183	
8	Estimate of employees that use mode and work for offering establishments	Step 7 x Step 2 = Step 8	722	882	
9	Estimate Corporate TRI per employee per year	See Chapter 2 tables	\$408.00	\$60.59	
10	Estimate Employee TRI per year	See Chapter 2 tables	\$0.00	\$427.80	
11	Total Estimate Corporate TRI	Step 9 x Step 8= Step 11	\$294,431.60	\$53,441.10	
12	Total Estimate Employee TRI	Step 10 x Step 8= Step 12	\$0.00	\$377,324.68	
13	Estimated TRI of offering benefit	Step 11 + Step 12	\$294,431.60	\$430,765.78	
					\$725,197.38
	MEDIUM AND LARGE ESTABLISHMENTS	Source or Equation	Employer Paid	Pre-tax	
1	Total number of establishments	Bureau of Labor Statistics (BLS)	1,269,529	1,269,529	
2	% of establishments offering subsidized commuting 5% total	National Compensation Survey (NCS)	2.25%	2.75%	
3	Estimate of total number of establishments offering	Step 1 x Step 2 = Step 3	28,564	34,912	
4	Total number of employees	BLS	70,614,212	70,614,212	
5	Estimate of employees working for offering establishments	Step 4 x Step 2 = Step 5	1,588,820	1,941,891	
6	% of employees using mode	2000 Census	0.2%	0.2%	
7	Estimate of total number of employees that used mode	Step 4 x Step 6 = Step 7	141,228	141,228	
8	Estimate of employees that use mode and work for offering establishments	Step 7 x Step 2 = Step 8	3,178	3,884	
9	Estimate Corporate TRI per employee per year	See Chapter 2 tables	\$408.00	\$60.59	
10	Estimate Employee TRI per year	See Chapter 2 tables	\$0.00	\$427.80	
11	Total Estimate Corporate TRI	Step 9 x Step 8= Step 11	\$1,296,476.93	\$235,318.33	
12	Total Estimate Employee TRI	Step 10 x Step 8= Step 12	\$0.00	\$1,661,481.79	
13	Estimated TRI of offering benefit	Step 11 + Step 12 = Step 13	\$1,296,476.93	\$1,896,800.12	
					\$3,193,277.06
	PUBLIC SECTOR	Source or Equation		Pre-tax	
1	State and Local Govt employees	BLS		15,378,924	
2	Federal Govt employees	NCS		2,411,630	
3	Total Govt employees	Step 1 + Step 2 = Step 3		17,790,554	
4	% of employees that use mode	2000 Census		0.2%	
5	Estimate of total govt employees that use mode	Step 3 x Step 4 = Step 5		35,581	
6	Estimate of state and local govt employees that use mode	Step 1 x Step 4 = Step 6		30,758	
7	Estimate for state and local governments that offer benefit	NCS		6%	
8	Estimate of employees that use mode and work for offering state and local govts	Step 6 x Step 7 = Step 8		1,845	
9	Estimate agency TRI per employee per year	See Chapter 2 tables		\$91.80	
10	Estimate Employee TRI per year	See Chapter 2 tables		\$427.80	
11	Total Estimate Government TRI	Step 8 x Step 9 = Step 11		\$169,414.23	
12	Total Estimate Employee TRI	Step 8 x Step 10 = Step 12		\$789,492.44	
13	Estimated TRI of offering benefit	Step 11 + Step 12 = Step 13		\$958,906.67	
					\$958,906.67
	Total Estimated TRI				\$4,877,381.11

Table D.29: Estimated Tax Revenue Impact (TRI) for vanpool with a \$125 estimate: Level 2

	SMALL ESTABLISHMENTS	Source or Equation	Employer Paid	Pre-tax	TOTAL
1	Total number of establishments	Bureau of Labor Statistics (BLS)	5,026,928	5,026,928	
2	% of establishments offering subsidized commuting 2% total	National Compensation Survey (NCS)	0.90%	1.10%	
3	Estimate of total number of establishments offering	Step 1 x Step 2 = Step 3	45,242	55,296	
4	Total number of employees	BLS	40,091,449	40,091,449	
5	Estimate of employees working for offering establishments	Step 4 x Step 2 = Step 5	360,823	441,006	
6	% of employees using mode	EPA Commuter Model	0.3%	0.3%	
7	Estimate of total number of employees that used mode	Step 4 x Step 6 = Step 7	120,274	120,274	
8	Estimate of employees that use mode and work for offering establishments	Step 7 x Step 2 = Step 8	1,082	1,323	
9	Estimate Corporate TRI per employee per year	See Chapter 2 tables	\$510.00	\$75.73	
10	Estimate Employee TRI per year	See Chapter 2 tables	\$0.00	\$534.75	
11	Total Estimate Corporate TRI	Step 9 x Step 8= Step 11	\$552,059.25	\$100,192.14	
12	Total Estimate Employee TRI	Step 10 x Step 8= Step 12	\$0.00	\$707,483.78	
13	Estimated TRI of offering benefit	Step 11 + Step 12	\$552,059.25	\$807,675.92	
					\$1,359,735.17
	MEDIUM AND LARGE ESTABLISHMENTS	Source or Equation	Employer Paid	Pre-tax	
1	Total number of establishments	Bureau of Labor Statistics (BLS)	1,269,529	1,269,529	
2	% of establishments offering subsidized commuting 5% total	National Compensation Survey (NCS)	2.25%	2.75%	
3	Estimate of total number of establishments offering	Step 1 x Step 2 = Step 3	28,564	34,912	
4	Total number of employees	BLS	70,614,212	70,614,212	
5	Estimate of employees working for offering establishments	Step 4 x Step 2 = Step 5	1,588,820	1,941,891	
6	% of employees using mode	EPA Commuter Model	0.3%	0.3%	
7	Estimate of total number of employees that used mode	Step 4 x Step 6 = Step 7	211,843	211,843	
8	Estimate of employees that use mode and work for offering establishments	Step 7 x Step 2 = Step 8	4,766	5,826	
9	Estimate Corporate TRI per employee per year	See Chapter 2 tables	\$510.00	\$75.73	
10	Estimate Employee TRI per year	See Chapter 2 tables	\$0.00	\$534.75	
11	Total Estimate Corporate TRI	Step 9 x Step 8= Step 11	\$2,430,894.25	\$441,178.18	
12	Total Estimate Employee TRI	Step 10 x Step 8= Step 12	\$0.00	\$3,115,278.36	
13	Estimated TRI of offering benefit	Step 11 + Step 12 = Step 13	\$2,430,894.25	\$3,556,456.54	
					\$5,987,350.79
	PUBLIC SECTOR	Source or Equation		Pre-tax	
1	State and Local Govt employees	BLS		15,378,924	
2	Federal Govt employees	NCS		2,411,630	
3	Total Govt employees	Step 1 + Step 2 = Step 3		17,790,554	
4	% of employees that use mode	EPA Commuter Model		0.3%	
5	Estimate of total govt employees that use mode	Step 3 x Step 4 = Step 5		53,372	
6	Estimate of state and local govt employees that use mode	Step 1 x Step 4 = Step 6		46,137	
7	Estimate for state and local governments that offer benefit	NCS		6%	
8	Estimate of employees that use mode and work for offering state and local govts	Step 6 x Step 7 = Step 8		2,768	
9	Estimate agency TRI per employee per year	See Chapter 2 tables		\$114.75	
10	Estimate Employee TRI per year	See Chapter 2 tables		\$534.75	
11	Total Estimate Government TRI	Step 8 x Step 9 = Step 11		\$317,651.68	
12	Total Estimate Employee TRI	Step 8 x Step 10 = Step 12		\$1,480,298.33	
13	Estimated TRI of offering benefit	Step 11 + Step 12 = Step 13		\$1,797,950.00	
					\$1,797,950.00
	Total Estimated TRI				\$9,145,035.96

Table D.30: Estimated Tax Revenue Impact (TRI) for vanpool with a \$125 estimate: Level 3

	SMALL ESTABLISHMENTS	Source or Equation	Employer Paid	Pre-tax	TOTAL
1	Total number of establishments	Bureau of Labor Statistics (BLS)	5,026,928	5,026,928	
2	% of establishments offering subsidized commuting 3% total	NCS rate plus 1%	1.40%	1.60%	
3	Estimate of total number of establishments offering	Step 1 x Step 2 = Step 3	70,377	80,431	
4	Total number of employees	BLS	40,091,449	40,091,449	
5	Estimate of employees working for offering establishments	Step 4 x Step 2 = Step 5	561,280	641,463	
6	% of employees using mode	EPA Commuter Model	0.3%	0.3%	
7	Estimate of total number of employees that used mode	Step 4 x Step 6 = Step 7	120,274	120,274	
8	Estimate of employees that use mode and work for offering establishments	Step 7 x Step 2 = Step 8	1,684	1,924	
9	Estimate Corporate TRI per employee per year	See Figure X.x	\$510.00	\$75.73	
10	Estimate Employee TRI per year	See Figure X.x	\$0.00	\$534.75	
11	Total Estimate Corporate TRI	Step 9 x Step 8= Step 11	\$858,758.84	\$145,734.02	
12	Total Estimate Employee TRI	Step 10 x Step 8= Step 12	\$0.00	\$1,029,067.31	
13	Estimated TRI of offering benefit	Step 11 + Step 12	\$858,758.84	\$1,174,801.33	
					\$2,033,560.17
	MEDIUM AND LARGE ESTABLISHMENTS	Source or Equation	Employer Paid	Pre-tax	
1	Total number of establishments	Bureau of Labor Statistics (BLS)	1,269,529	1,269,529	
2	% of establishments offering subsidized commuting 6% total	NCS rate plus 1%	2.70%	3.30%	
3	Estimate of total number of establishments offering	Step 1 x Step 2 = Step 3	34,277	41,894	
4	Total number of employees	BLS	70,614,212	70,614,212	
5	Estimate of employees working for offering establishments	Step 4 x Step 2 = Step 5	1,906,584	2,330,269	
6	% of employees using mode	EPA Commuter Model	0.3%	0.3%	
7	Estimate of total number of employees that used mode	Step 4 x Step 6 = Step 7	211,843	211,843	
8	Estimate of employees that use mode and work for offering establishments	Step 7 x Step 2 = Step 8	5,720	6,991	
9	Estimate Corporate TRI per employee per year	See Figure X.x	\$510.00	\$75.73	
10	Estimate Employee TRI per year	See Figure X.x	\$0.00	\$534.75	
11	Total Estimate Corporate TRI	Step 9 x Step 8= Step 11	\$2,917,073.10	\$529,413.81	
12	Total Estimate Employee TRI	Step 10 x Step 8= Step 12	\$0.00	\$3,738,334.04	
13	Estimated TRI of offering benefit	Step 11 + Step 12 = Step 13	\$2,917,073.10	\$4,267,747.85	
					\$7,184,820.95
	PUBLIC SECTOR	Source or Equation		Pre-tax	
1	State and Local Govt employees	BLS		15,378,924	
2	Federal Govt employees	NCS		2,411,630	
3	Total Govt employees	Step 1 + Step 2 = Step 3		17,790,554	
4	% of employees that use mode	EPA Commuter Model		0.3%	
5	Estimate of total govt employees that use mode	Step 3 x Step 4 = Step 5		53,372	
6	Estimate of state and local govt employees that use mode	Step 1 x Step 4 = Step 6		46,137	
7	Estimate for state and local governments that offer benefit	NCS rate plus 1%		7%	
8	Estimate of employees that use mode and work for offering state and local govts	Step 6 x Step 7 = Step 8		3,230	
9	Estimate agency TRI per employee per year	See Figure X.x		\$114.75	
10	Estimate Employee TRI per year	See Figure X.x		\$534.75	
11	Total Estimate Government TRI	Step 8 x Step 9 = Step 11		\$370,593.62	
12	Total Estimate Employee TRI	Step 8 x Step 10 = Step 12		\$1,727,014.72	
13	Estimated TRI of offering benefit	Step 11 + Step 12 = Step 13		\$2,097,608.34	
					\$2,097,608.34
	Total Estimated TRI				\$11,315,989.46

Table D.31: Estimated Tax Revenue Impact (TRI) for parking with a \$147 estimate

	SMALL ESTABLISHMENTS	Source or Equation	Employer Paid	Pre-tax	TOTAL
1	Total number of establishments	Bureau of Labor Statistics (BLS)	5,026,928	5,026,928	
2	% of establishments offering subsidized commuting 2% total	National Compensation Survey (NCS)	0.90%	1.10%	
3	Estimate of total number of establishments offering	Step 1 x Step 2 = Step 3	45,242	55,296	
4	Total number of employees	BLS	40,091,449	40,091,449	
5	Estimate of employees working for offering establishments	Step 4 x Step 2 = Step 5	360,823	441,006	
6	% of employees using mode	2000 Census	3.8%	3.8%	
7	Estimate of total number of employees that used mode	Step 4 x Step 6 = Step 7	1,523,475	1,523,475	
8	Estimate of employees that use mode and work for offering establishments	Step 7 x Step 2 = Step 8	13,711	16,758	
9	Estimate Corporate TRI per employee per year	See Chapter 2 tables	\$599.76	\$89.06	
10	Estimate Employee TRI per year	See Chapter 2 tables	\$0.00	\$628.87	
11	Total Estimate Corporate TRI	Step 9 x Step 8= Step 11	\$8,223,474.63	\$1,492,487.58	
12	Total Estimate Employee TRI	Step 10 x Step 8= Step 12	\$0.00	\$10,538,745.38	
13	Estimated TRI of offering benefit	Step 11 + Step 12	\$8,223,474.63	\$12,031,232.96	
					\$20,254,707.59
	MEDIUM AND LARGE ESTABLISHMENTS	Source or Equation	Employer Paid	Pre-tax	
1	Total number of establishments	Bureau of Labor Statistics (BLS)	1,269,529	1,269,529	
2	% of establishments offering subsidized commuting 5% total	National Compensation Survey (NCS)	2.25%	2.75%	
3	Estimate of total number of establishments offering	Step 1 x Step 2 = Step 3	28,564	34,912	
4	Total number of employees	BLS	70,614,212	70,614,212	
5	Estimate of employees working for offering establishments	Step 4 x Step 2 = Step 5	1,588,820	1,941,891	
6	% of employees using mode	2000 Census	3.8%	3.8%	
7	Estimate of total number of employees that used mode	Step 4 x Step 6 = Step 7	2,683,340	2,683,340	
8	Estimate of employees that use mode and work for offering establishments	Step 7 x Step 2 = Step 8	60,375	73,792	
9	Estimate Corporate TRI per employee per year	See Chapter 2 tables	\$599.76	\$89.06	
10	Estimate Employee TRI per year	See Chapter 2 tables	\$0.00	\$628.87	
11	Total Estimate Corporate TRI	Step 9 x Step 8= Step 11	\$36,210,600.72	\$6,571,902.30	
12	Total Estimate Employee TRI	Step 10 x Step 8= Step 12	\$0.00	\$46,405,481.68	
13	Estimated TRI of offering benefit	Step 11 + Step 12 = Step 13	\$36,210,600.72	\$52,977,383.98	
					\$89,187,984.70
	PUBLIC SECTOR	Source or Equation		Pre-tax	
1	State and Local Govt employees	BLS		15,378,924	
2	Federal Govt employees	NCS		2,411,630	
3	Total Govt employees	Step 1 + Step 2 = Step 3		17,790,554	
4	% of employees that use mode	2000 Census		3.80%	
5	Estimate of total govt employees that use mode	Step 3 x Step 4 = Step 5		676,041	
6	Estimate of state and local govt employees that use mode	Step 1 x Step 4 = Step 6		584,399	
7	Estimate for state and local governments that offer benefit	NCS		6%	
8	Estimate of employees that use mode and work for offering state and local govts	Step 6 x Step 7 = Step 8		35,064	
9	Estimate agency TRI per employee per year	See Chapter 2 tables		\$134.95	
10	Estimate Employee TRI per year	See Chapter 2 tables		\$628.87	
11	Total Estimate Government TRI	Step 8 x Step 9 = Step 11		\$4,731,879.61	
12	Total Estimate Employee TRI	Step 8 x Step 10 = Step 12		\$22,050,664.17	
13	Estimated TRI of offering benefit	Step 11 + Step 12 = Step 13		\$26,782,543.78	
					\$26,782,543.78
	Total Estimated TRI				\$136,225,236.07