



TRAQ Technical Overview

Transportation Air Quality Center

Transportation Control Measures: Commute Alternative Incentives



EPA's main strategy for addressing the contributions of motor vehicles to our air quality problems has been to cut the tailpipe emissions for every mile a vehicle travels. Air quality can also be improved by changing the way motor vehicles are used—reducing total vehicle miles traveled at the critical times and places, and reducing the use of highly polluting operating modes. These alternative approaches, usually termed Transportation Control Measures (TCMs), have an important role as both mandatory and optional elements of state plans for attaining the air quality goals specified in the Clean Air Act. TCMs encompass a wide variety of goals and methods, from incentives for increasing vehicle occupancy to shifts in the timing of commuting trips. This document is one of a series that provides overviews of individual TCM types, discussing their advantages, disadvantages, and the issues involved in their implementation.

Commute Alternative Incentives

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Commute alternative incentives are subsidies and other incentives to encourage commuters to use alternatives to driving alone to work. Alternatives to single occupant vehicle (SOV) commutes serve to reduce vehicle miles of travel (VMT) and congestion (and congestion-related emissions). This transportation control measure (TCM) is implemented as part of both employer-based transportation management programs and state and local rideshare programs.

Employers play a critical role in many of the most effective TCMs because of their influence over employee travel behavior, work schedule, parking, compensation, and benefit policies and practices. Strategies often developed or promoted by employers include the following:

- ➔ Improved commute alternatives (such as carpooling, vanpooling, and increased use of transit)
- ➔ Facility improvements to encourage the use of these alternatives
- ➔ On-site support services to ensure a smoothly operating program

Although these opportunities exist to provide commute alternatives to the SOV, incentives are often necessary to overcome the cost or convenience advantages of SOVs and to equalize the economic competition between the SOV and other transportation modes. Incentives are especially needed to promote commute alternatives in suburban areas, where employment destinations are widely scattered and parking on-site is generally provided free by the employer, both of which favor SOV use. These incentives can include direct subsidies for transit use or ridesharing, parking pricing systems that favor HOVs, and guaranteed ride home programs. The most effective employer programs frequently promote a variety of commute alternatives, while at the same time offering incentives to increase the use of these alternatives.

State, regional, and local rideshare incentives have been developed to encourage commuters to use alternatives to driving alone to work and to encourage employers to provide in-house programs that promote ridesharing among employees. There are three main types of area-wide rideshare incentives or programs:

- ➔ **Area-wide commute management organizations**, or “third-party” ride-sharing agencies, provide carpool and vanpool matching services, shared-ride taxis, and other commute trip elimination strategies.
- ➔ **Transportation management associations or organizations (TMAs/TMOs)** are generally business partnerships that provide similar services directly to members

or provide a channel for organized private sector involvement into public sector planning.

- ➔ **State and local tax incentives and subsidy programs** facilitate new vanpools, transit ridership, or carpooling by offering tax incentives for participating in a ridesharing program and by providing regulatory exemptions for vehicles participating in shared-ride arrangements. The Congestion Mitigation and Air Quality Improvement Program, for example, provides federal funding to states which in turn subsidize transit improvements, ridesharing services, and pedestrian and bicycle programs. [1]

Employer-based transportation management programs and state and local rideshare incentives principally serve home-to-work trips in urban areas with populations of 50,000 or more. Because this type of trip accounts for only 25 to 33 percent of all trips made in most urban areas, the impact of commute management on area-wide VMT is limited. However, the commuter market represents the best potential for grouping riders, removing vehicle trips, and reducing VMT. Additionally, many harmful pollutants are generated in the morning hours from stationary sources, so that mitigating the effects of mobile sources in the same period is advantageous. Reducing commuter trips not only reduces emissions associated with VMT, but also those associated with “cold starts,” when commuters set out in the morning and “hot soaks,” when vehicles are parked at work and continue to produce evaporative emissions even after the engines are turned off.

1. Background

Employer-based transportation management programs have been used primarily by large employers, i.e., those having more than 100 employees at a single worksite. A number of well-known employer programs have been in existence for a relatively long time. One of the earliest programs was initiated by

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Reader’s Digest. A move from Manhattan to Westchester County, NY in the 1920s prompted the publisher to form and subsidize a private bus system to transport relocated workers. The energy crises of the mid- and late-1970s also prompted a significant number of new programs as public efforts to promote ridesharing began to focus on employers. In the 1980s, trip reduction ordinances (TROs) were adopted in many localities to combat growth, traffic congestion, and air quality problems, resulting in new employer programs because TROs typically require employers

to implement programs or developers to work with tenants to implement programs. The Clean Air Act Amendments of 1990 required the implementation of employer-based trip reduction programs in severe and extreme ozone non-attainment areas.

Commute management organizations were largely an outgrowth of the energy crises of 1973-1974 and 1979. Many ridesharing agencies serving metropolitan areas were formed after the 1973-1974 oil embargo.

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The growth of rideshare programs was assisted by changes in state motor vehicle laws and regulations (e.g., high occupancy vehicle lanes). [2] These changes were often needed to remove barriers to employer commute subsidies and the use of vehicles for shared commuting arrangements. Finally, the concept of linking employers and other interested parties together in an employment center association for managing commute transportation prompted the formation of TMAs.

2. Costs and Benefits

In addition to improving air quality primarily by reduced automobile trips and VMT, employer-based transportation management programs can provide benefits such as savings in the following:

- ➔ Vehicle expenses
- ➔ Road construction, operation, and maintenance costs
- ➔ Expenditures on public services devoted to vehicle traffic
- ➔ Resource consumption

Some employers have found that incentives and subsidies may improve employee morale and productivity, reduce employee stress and related health problems, and improve employee recruitment and retention by enhancing the employer's image.

These benefits may be partially offset, however, by other changes in driving behavior. Commuters who shift from driving to transit, for example, may make additional off-peak automobile trips for errands they previously performed while driving home from work. Additional short trips may be made by family members with access to a vehicle left at home. If one worker in a household is sharing a ride with someone else, the other family commuter may have to make more circuitous trips before and after work for child care, shopping, and other errands.

Employer-based transportation management programs have the potential to be highly cost-effective. Employers incur initial costs to design the program and to develop eligibility requirements for their employees. Monitoring and accounting costs are incurred periodically.

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Significant variation in costs has been observed based on the size of the employer, the nature and complexity of programs offered, and the amount of the subsidy, if any, offered. [4]

- ➔ **General travel allowance programs**, for example, have required considerable planning and promotional efforts during the pre-implementation phase, but the ongoing administrative costs have been relatively small. General allowances can be used by employees for any transportation mode or for non-transportation purposes. There are low monitoring costs, and accounting costs are negligible, because the allowance is given out to all employees as a bonus. The only significant cost to the employer is the cost of the allowance itself. This cost can be at least partially offset, as the reduction in the number of employees needing parking can generate savings in maintenance, monthly parking lease costs, and savings in future capital requirements.
- ➔ **Targeted and specific allowance programs**, such as transit and vanpool allowances, may require on-going administrative effort for accounting and to monitor eligibility requirements as the employee base changes.
- ➔ **Flexible use of allowances for services provided by many different operators** describe the most complex programs and may cost even more because of greater administrative, monitoring, and accounting needs.

The costs and benefits of state and local rideshare incentive programs are more difficult to measure. The primary area of uncertainty regarding these programs is the difficulty in determining causality between area-wide promotional efforts and VMT and emission impacts. Area-wide commuter management organizations, TMAs, and state and local tax incentives and subsidies are largely supportive of in-house employer programs. There appears to be no evaluation that has estimated the impact of these programs above and beyond that attributable to the employer programs. Clearly, these efforts improve the effectiveness of employer-based ridesharing programs, produce results among unaffiliated commuters, and serve to maintain existing levels of shared ride modes. It is a difficult task to separate out the impacts of these programs above and beyond those reported for employers or to speculate on the increase in VMT or emissions if these programs did not exist.

It is difficult to separate out the impacts of any one trip reduction measure, and the techniques are not strictly additive due to the complementary nature of many strategies. Care must be taken not to double-count the effectiveness of area-wide rideshare incentives with the benefits of employer-based transportation management programs. In addition, the roles and responsibilities of various public, non-profit, and for-profit organizations involved in promoting ride-sharing and other travel alternatives within a region need to be carefully delineated so that the various efforts are not perceived as either duplicative or conflicting by employers and individuals.

3. Implementation

Employer-based transportation management programs and TMAs are implemented by private entities and therefore do not require a substantial investment in government resources (although public seed funding may be an important catalyst to TMA

development). Commute management organizations and state and local rideshare incentives, however, do require some public investment.

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The amount of time required to implement an incentive program is relative to the complexity of the measures offered. Employer-based transportation management programs can be implemented almost immediately. TMA development activities can be very time consuming, however, often requiring one to two years before the TMA can be fully operational.

Employer-based transportation management programs can consist of both voluntary and mandatory measures; generally a “package” of various complementary measures produces the greatest impacts. For an individual employer, trip reduction effects can be seen immediately. To effectively reduce area-wide commute trips, however, the cooperation of the majority of employers within the target area must be obtained. One employer’s effective program can be negated by a neighboring firm with no program if the localized impacts of the successful program are subsumed by additional through traffic and the ability of neighboring employees to access their site more easily.

One potential concern is the long-term sustainability of the program’s impacts. If management support, financial commitment, employee turn-over, or other factors wane, the program’s effectiveness can diminish. Programs that include financial incentives are more likely to have sustainable results. Three examples of types of financial incentives and their goals are summarized below.

- ➔ **Tax incentives**, in the form of investment tax credits or accelerated depreciation, can prompt employers and developers to provide facilities and equipment conducive to ridesharing.
- ➔ **Subsidy programs** can be important “pump primers” to enlist employer involvement and share in the initial risk of trying something new for employees. Such programs are based on the hope that the employers will see the benefits of continuing the subsidies on their own to satisfy employee demands or comply with regional or local mandates. Also, some subsidy programs can target commuters directly, when employer involvement is unlikely or impractical. For example, vanpool subsidies tied to corridor reconstruction projects can aid in the formation of vanpools among commuters using the affected facilities, regardless of where they are employed.
- ➔ **Legislative enablement or reform** can eliminate or minimize barriers to widespread implementation of employer-based trip reduction programs. Although employer-based transportation management programs can be either voluntary or mandatory, a legal requirement mandating employer or developer involvement is a powerful determinant of program effectiveness. Mandatory participation is key to assuring widespread participation by enough employers to have an area-wide impact. State enablement of certain types of organizations, such as special assessment districts, can reinforce partnership efforts, such as TMAs. For example, tax, safety, and liability laws can be clarified to prevent them from acting as barriers to forming vanpools.

Historically, one of the greatest state/local incentive/subsidy issues concerns the taxation of commute benefits. Employer-provided free parking has not been considered taxable income

for the employee, whereas most subsidies for commute alternatives were. However, provisions in the Taxpayer Relief Act of 1997 and the Transportation Equity Act for the 21st Century have changed this interpretation. The law now allows employers to provide commute benefits with pre-tax dollars. The cost of these benefits is not taxed as income. Tax exemption for commute benefits is allowed up to the following limits for 1998:

- \$170 per month for parking at or near the work site
- \$65 per month for public transit passes or vanpool services for work commute transportation

Limits for 1999 are:

- \$175 per month of parking at or near the work site
- \$100 per month for public transit passes or vanpool services for work commute transportation

Limits are adjusted annually for inflation thereafter.

Employer size and location, however, do not seem to determine program effectiveness. Although one can readily understand that programs in downtown settings would be effective, given the range of commute alternatives available, many successful programs, contrary to what one might expect, have been located in large suburban activity centers. This result may be due to the fact that less ridesharing occurs naturally in these areas, leaving the program more opportunities to shift commuters' mode of transportation.

4. Equity Issues

At the level of the individual employer, equity questions exist in the distribution of subsidies and incentives. Employees using different transportation modes and new employees may not be treated equally. General travel allowance programs are considered to be the most equitable option.

5. Summary of Recent Examples

Employer-based transportation management programs have been in effect in many locations nationally. These programs are most often associated with parking pricing measures and TROs (which mandate that employers or developers work to implement transportation management programs). One example of a successful employer-based transportation management program is William M. Mercer, Inc., located in downtown Seattle, which subsidizes

100 percent of all bus and ferry passes for employees, in addition to other TCMs. As a result, the firm has achieved a modal split with 33 percent SOVs, well below the area average of 43 percent SOVs.

CH₂M Hill, located in suburban Bellevue, Washington, has also achieved a low rate of SOV commute travel (52 percent versus 81 percent for the region), primarily by offering a \$40 per month travel allowance as well as bus pass and carpool subsidies. Neither of these examples examined the emissions impacts of their programs.

Among the states, California has the most comprehensive set of tax incentives in place to benefit employers and employees who participate or establish rideshare programs and arrangements.

State and local rideshare incentives are not common. Among the states, California has the most comprehensive set of tax incentives in place to benefit employers and employees who participate or establish rideshare programs. These “State Rideshare Tax Incentives” were enacted in 1988 and 1989. Employees receive a personal exemption of rideshare costs from gross income for vanpooling, buspooling, and mass transit use, and a tax credit for non-employer-sponsored vanpool expenses. Employers receive a deduction for the following allowable expenses:

- Vanpool subsidies
- Transit pass subsidies
- Preferential parking
- Facility improvements
- Company bus or van provision
- Transportation allowances

They also receive an accelerated schedule of depreciation for facility improvements, a tax credit for purchasing vans, a tax credit for leasing vans, and limitations on provision of free parking as a tax-free incentive.

In addition, several state and regional rideshare subsidy programs are in place in southern California. The state offers a vanpool subsidy program for employers, TMAs, and individual groups of commuters to help underwrite the purchase of leasing costs of new vanpools. The City of Los Angeles offers a subsidy of \$5 per month per employee for firms with less than 100 employees. For firms with over 100 employees, the city requires employers who offer free or subsidized parking to employees, to contribute \$15 toward the monthly cost of a transit pass. The air quality effects of these incentives have not been measured.

6. Sources

[1] *Opportunities to Improve Air Quality through Transportation Pricing Programs*, United States Environmental Protection Agency, Office of Air and Radiation (September 1997).

[2] *Moving People in Florida: Transit, TDM, and Congestion*, University of South Florida, Center of Urban Transportation Research (November 1995).

[3] *Commuting Alternatives in the United States: Recent Trends and a Look to the Future*, United States Department of Transportation (December 1994).

7. On-Line Resources

The Environmental Protection Agency's (EPA) Office of Mobile Sources has established the TCM Program Information Directory to provide commuters, the transportation industry, state and local governments, and the public with information about TCM programs that are now operating across the country. This document and additional information on other TCMs and TCM programs implemented nationwide can be found at:

<http://www.epa.gov/omswww/transp/traqtcms.htm>

The EPA's Market Incentives Resource Center (MIRC) Directory of Air Quality Economic Incentive Programs is an on-line resource which features a compilation of market incentive program (e.g., transportation pricing, vehicle buy-back, trading programs, etc.) summaries from around the United States. The MIRC Directory is posted as a link from the Office of Mobile Sources' home page at:

<http://www.epa.gov/OMSWWW/transp/traqmkti.htm>