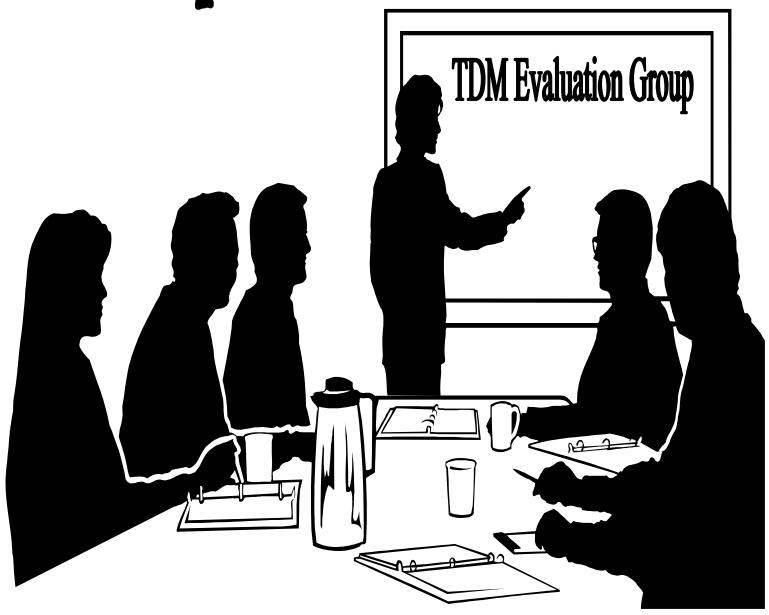
HANDOUTS

from previous meeting



November 20, 2007

METROPOLITAN WASHINGTON COUNCIL OF GOVERNMENTS

A legacy of regional cooperation, a commitment to a vibrant future

MEMORANDUM

TO: TDM Evaluation Group

FROM: Nicholas Ramfos
Director, Alternative Commute Programs

Daivamani Sivasailam
Principal Transportation Engineer

SUBJECT: Employer Outreach TERM Model Recommendation

DATE: November 20, 2007

Earlier this year, COG/TPB staff worked with the regional TDM Evaluation project team to review EPA's COMMUTER and the Center for Urban Transportation Research's Worksite Trip Reduction Models for the Evaluation of the regional Employer Outreach TERM.

An analysis was performed on the two models to examine the travel/transportation impacts of each model, using Vehicle Trip Rate as the measure of travel change, and to compare the modeled changes to actual change as measured by employee surveys, for over 400 employers in Washington State. Because the Employer Outreach TERM focuses on a targeted group of employers (private, typically larger employers located in transit rich areas, with higher levels of TDM program services), the analysis examined both the overall Vehicle Trip Reduction (VTR) change for the employer set and the VTR change for various subsets of employers (e.g., grouped by starting transit mode share).

Overall findings were documented and several approaches were recommended to staff. The most important issues are as follow:

- The analysis showed that the predictive performances of the two models are quite different. For instance, the WTRM's predictions of VTR change are closer to the actual changes measured by survey data than are the COMMUTER model's predictions. But the WTRM tends to slightly under-predict VTR change while COMMUTER model over-predicts change. In this way, WTRM is a more conservative assessment of the impacts, but does not capture all the impacts that actually occur. However, the COMMUTER model clearly overestimates impacts. The analysis also showed that the relative results (e.g, WTRM too low and COMMUTER too high) are not consistent across all worksite and program situations. In the

majority of these sub-group cases, WTR predictions are closer to the actual results; in a few cases, COMMUTER does a better predictive job, such as for programs that have been in place longer periods of time and for some business types.

The results of this analysis suggest four possible approaches:

1. Continue to use COMMUTER Model Alone – The COMMUTER appears to overestimate the VTR and therefore, very likely overstates trip reduction. To minimize the over-prediction, COG/TPB staff could reexamine the model's default values for coefficients and apply an adjustment factor to the coefficients to reduce the impact.
2. Replace COMMUTER Model with WTRM – WTRM was proven to be more accurate in evaluating changes in VTR from year to year. However, WTRM slightly under-predicts impacts in most situations, thus this approach likely would undercount the impacts of the Employer Outreach program. An adjustment factor could be applied to bring the impacts more in line with the surveyed results.
3. Re-calibrate the COMMUTER Model based on actual results – Apply an overall discount factor based on comparison of WTRM and COMMUTER, particularly for worksite situations (e.g., high starting transit share) that the COMMUTER Model overestimates.
4. Apply average VTR reduction values estimated by the two models – Estimate VTR reduction using both models, average the results and apply these average factors. Additional adjustments could be made for the stratifications by time span between the beginning and the end year, the participation level, the primary business of the employer (Office/Non-Office), the number of employees, and the start year transit mode share as contained in Table 6.

It is important the Employer Outreach assessment count all benefits that can reasonably be associated with the program. But it is equally important that the assessment not overstate the benefits. After reading through and examining the description of each model and the analysis presented, COG/TPB staff recommends re-calibrating the COMMUTER model and would not consider using the WTRM model at this time. Although the COMMUTER model falls short with respect to absolute performance, it is based on a pivot-point technique which is very transparent, logical, and explainable. In contrast, the WTRM model is built as an artificial neural network and is much more difficult to explain to the public and anyone challenging the program results. COG/TPB staff also questions how well such a tool can distinguish between short-and long-term responses to various measures. For all of the WTRM's theoretical complexity, it only predicts changes in the vehicle trip rate (VTR). The COMMUTER model addresses changes in mode and VMT.

Thus, based on the results of this model comparison analysis, COG/TPB staff recommends Approach 3 above (Re-calibrate the COMMUTER model based on actual results).

LDA CONSULTING

Commuter Connections
Vanpool Driver Survey
Method and Questionnaire – 11-20-07

Overview and Objectives

- Survey drivers of all registered vanpools operating in Washington metro area
- Update to survey conducted in 2002
- Objectives
  - Define vanpool operation patterns
  - Examine characteristics of van ownership and use
  - Identify van assistance received by drivers

Survey Methodology Summary

Replicate method used in 2002 with additional internet options

- Include vanpool drivers registered in vanpool databases (VPSI, RADCO, PRTC, Commuter Connections)
- Solicitation process
  - Prepare survey solicitation packets (questionnaire, intro letter, survey reply options)
  - Mail survey packets directly to drivers
  - Also use email alert if email address is available in database
  - For RADCO, solicit drivers through vanpool operators (names of drivers not available)
- Drivers offered four methods to complete survey – fax back, mail back, telephone, online
- Conduct telephone follow-up for non-respondents

Survey Schedule

Survey Preparation

• Prepare draft survey method	November 20
• Prepare draft questionnaire	November 20
• Review / revise questionnaire	December 21
• Program, test, and finalize questionnaire	January 8
• Prepare mail-out packets	January 15

Survey Administration

• Send survey packets to drivers	January 18
• Send follow-up survey packets to non-respondents	January 30
• Begin telephone follow-up with non-respondents	February 7
• Complete follow-up	February 21

Survey Analysis

• Clean / process / analyze data	March 13
• Prepare draft report	April 4

Vanpool Survey Questionnaire

METROPOLITAN WASHINGTON COUNCIL OF GOVERNMENTS

Vanpool Survey
January-February 2007

Tracking label

Van Ownership and Operation

1. How long has this vanpool been in operation? _____ years **OR** _____ months

2. How long have you been the vanpool driver? _____ years **OR** _____ months

3. Who owns the van? (Check one)

   ☐ Myself or a family member ☐ Leasing agency ☐ Employer
   ☐ Private party outside my family ☐ Other _____

4. Please provide the following information about your van (if known).

   a) Van make/model _____ c) Model year _____

   b) Passenger capacity (including driver) if every seat is filled _____

5. Please provide the following information about your van insurance (if known).

   a) Type of insurance: ☐ Personal ☐ Commercial ☐ Don't know

   b) Who pays for insurance: ☐ Myself/driver ☐ Van owner ☐ Other _____

   c) Annual insurance cost: $ _____ per year ☐ Don't know

Vanpool Use

6. How many people, <u>including the driver</u>, usually ride in the vanpool? _____

7. How many people, <u>including the driver</u>, rode in the vanpool last Wednesday? _____

   If no one rode in the vanpool last Wednesday, please explain why not _____

8. From what area does your vanpool originate (i.e., where is your van parked overnight)? Please specify town, city, or community. _____

9. How many stops does your van make in the morning to pick up passengers?

   ☐ One stop (central meeting place) ☐ 2 stops ☐ 3 stops ☐ 4 or more stops

10. Where does the van <u>pick up</u> riders in the morning? Please specify the locations for the first and last morning pick-ups. Note street address, nearest cross streets, or park & ride location. Also indicate the town or city.

    a) <u>First</u> pick-up location: _____

    b) <u>Last</u> pick-up location: _____

    c) Is the last pick up location <u>inside</u> or <u>outside</u> the Capital Beltway? ☐ inside ☐ outside

11. Where does the van <u>drop-off</u> riders in the morning? Please specify the locations for the first drop-off and where the van is parked during the day. Note street address or nearest cross streets. Also indicate the town or city.

    a) <u>First</u> drop-off location: _____

    c) Is the first drop0off location <u>inside</u> or <u>outside</u> the Capital Beltway? ☐ inside ☐ outside

    b) Where van is <u>parked</u> during the day: _____

12. At what times do the following morning vanpool activities occur? (usual/scheduled clock time)
    a) Driver leaves home at: _____ a.m.
    b) Van leaves last pick-up stop at: _____ a.m.
    c) Van arrives at first drop-off stop at: _____ a.m.
    d) Van is parked for work at: _____ a.m.

13. What is the approximate distance of your vanpool trip to work?
    a) Miles from driver's house to worksite/parking location: _____ miles
    b) Miles from last morning pick-up to first drop-off location: _____ miles

14. What major roadways does the van take for the trip to work? _____

15. Does the vanpool use an HOV lane for any portion of the trip to work?
    ❑ No ❑ Yes, use HOV lane (specify all HOV route(s)) _____

Vanpool Assistance and Services

16. In forming your vanpool, did you receive assistance from your employer or from an organization that helps with vanpool formation, organization, or ridership?
    ❑ No ❑ Yes, from employer ❑ Yes, from organization (specify) _____

17. Do you receive any of the following services/benefits at work, because you vanpool? (Check all that apply)
    ❑ No vanpool services or benefits
    ❑ Reserved van parking
    ❑ Van parking close to the building
    ❑ Discounted or free van parking
    ❑ Payment or subsidy for other vanpool costs
    ❑ Flexible work hours (arrival and departure times)
    ❑ Other _____

18. What is the monthly parking fee for your van at work? (Please check only one)
    ❑ No charge, parking is free for all employees
    ❑ No charge, parking is free for vanpools
    ❑ $1 – $49 per month
    ❑ $50 – $99 per month
    ❑ $100 – $149 per month
    ❑ $150 – $199 per month
    ❑ $200 or more per month

Other Issues

19. Following is a list of issues that might be of concern to vanpool drivers. Using a scale of 1 to 5, with "1" being "no concern" and "5" being "great concern," please rate your level of concern about each issue.
    ___ Insurance cost too high
    ___ Cost of parking too high
    ___ HOV lane hours too short
    ___ Congestion in HOV lane
    ___ Finding new riders
    ___ Risk of van rollover accidents
    ___ Finding back-up drivers
    ___ Vehicle height restrictions in parking garages
    ___ Availability of P&R lots/ pick-up locations
    ___ Center aisle configuration unavailable from manufacturer
    ___ Availability of priority parking at work
    ___ Availability of convenient drop-off locations
    ___ Availability of van maintenance locations
    ___ Other _____

Thank you for your cooperation. Please fax this questionnaire to us, toll-free, at (xxx) xxx-xxxx. Or, if you prefer, you may provide your responses online at the following website: www._____ or to an interviewer over the phone by calling the following toll-free number: (xxx) xxx-xxxx. Your answers will be confidential.