ITEM # 3

FY05 COMMUTER CONNECTIONS WORK PROGRAM

APPENDIX

DETAILED HISTORICAL DESCRIPTIONS OF PROGRAM ELEMENT

Draft

February 17, 2004

This is a companion document to the FY05 Commuter Connections Work Program.

The Details and Descriptions of Commuter Connections Operations Center and regional Transportation Emission Reduction Measures (TERMs) — formerly TCM's — are presented as they were developed and approved and are included for documentation and historical purposes. Information is provided for evidence of the historical development of the TERMs and does not constitute a current commitment on the part of the MPO membership. For current implementation status and information, see the FY05 Commuter Connections Work Program document.

FY05 COMMUTER CONNECTIONS WORK PROGRAM
APPENDIX

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FY03 - 08 REGIONAL TIP FUNDING SCHEDULE FOR COMMUTER CONNECTIONS PROGRAM AND ADOPTED TERM COMPONENTS[1]

	PROGRAM COMPONENT	FY 02	FY 03	FY 04	FY 05	FY 06	FY 07	FY08	Program Total FY 03-08	Funding Shares DC/MD/VA
1	Employer Outreach	947,550	947,550	947,550	947,550	947,550	947,550	947,550	5,685,300	10/45/45
2	Guaranteed Ride Home	1,678,500	1,678,500	1,678,500	1,678,500	1,678,500	1,678,500	1,678,500	10,071,000	10/45/45
3	Commuter Operations Center[2]	480,000	496,000	511,800	528,100	544,400	560,732	577,032	3,218,064	33/33/33
4	Telecommute Project	480,000	780,000	780,000	480,000	480,000	480,000	480,000	3,480,000	9/12/79
5	Integrated Ridesharing	177,000	177,000	177,000	177,000	177,000	177,000	177,000	1,062,000	35/0/65
6	Employer Outreach/Bicycling	15,000	15,000	15,000	15,000	15,000	15,000	15,000	90,000	20/40/40
7	Mass Marketing	1,275,000	1,020,000	815,000	600,000	500,000	400,000	400,000	3,735,000	10/45/45
	TOTAL	**5,053,050**	**5,114,050**	**4,924,850**	**4,426,150**	**4,342,450**	**4,258,782**	**4,275,082**	**27,769,364**	

COMMUTER CONNECTIONS BUDGET ALLOCATIONS & EXPENDITURES

	FY97	FY98	FY99	FY00	FY01	FY02	FY03
Funds Committed	$3,007,648	$3,415,960	$3,814,850	$3,624,561	4,286,667	3,811,528	4,513,054
Funds Expended	$1,856,412	$2,483,686	$3,128,272	$3,209,632	3,762,289	3,733,759	3,772,859

[1] Annual TIP funding corresponds to the federal government's fiscal year beginning October 1. Budget amounts shown would be programmed for COG's fiscal year beginning the following July 1. For example, funding of the $480,000 shown for the Telecommute Project for the FY02 annual element of the TIP corresponds to the federal fiscal year 2002 beginning October 1, 2002, and would be programmed for COG fiscal year 2003 beginning July 1, 2002.

[2] Does not include annual membership/client fees.

1. EMPLOYER OUTREACH/GUARANTEED RIDE HOME

Background

TERM-47 (Integrated Rideshare Measures) was adopted as a transportation control measure in the FY 95-00 Transportation Improvement Program (TIP) by the Transportation Planning Board (TPB) of the National Capital Region. As one component of this measure, the Virginia Department of Transportation and the District of Columbia contributed $50,000 each from STP funding to develop a regional employer outreach plan of a magnitude that would accomplish significant air quality improvements. At that time, the COG Ride Finders Network sub-committee of the TPB Technical Committee formed the working task group responsible for proposing an implementation plan, in cooperation with the Traffic Mitigation Subcommittee. Once developed and approved, this implementation plan was submitted to the Technical Committee and the Transportation Planning Board of the National Capital Region for final approval and funding.

Local agencies and organizations, both public and private, throughout the region were actively engaged in selling TDM programs. While these individual efforts were met with varying degrees of success, what was lacking is, in some places, sufficient resources and coordination of individual efforts or an overall comprehensive network to leverage the impact of meeting air quality conformity for the region. This problem was exacerbated by the fact that multiple agencies could have been vying for the same target/employer. Resources were not shared and efforts were duplicated.

This section describes an implementation plan which is based on harnessing the strengths of the individual TDM agencies and transportation agencies throughout the region. In developing this plan, three alternative implementation plans were considered:

- consolidated program complete with proper levels of manpower and marketing support
- increase staff and marketing support provided to each locality, and
- hybrid of first 2 plans - more direct local support in addition to a new centralized coordination program.

The goal of these options is singular in focus: to increase and make more effective employer-based transportation outreach, effectively improving the quality of the air in the region. All program options are based on voluntary participation except in localities where participation is mandatory.

In addition, this plan presents the expected impact on air quality that can be expected at several levels of investment.

Assessment of Market Opportunity and Market Research

Two different analytical models were used to develop the opportunity market and expected rates of market penetration.

1. SMC model: based on 1994 - 1995 Metro DC consumer and marketing research
2. COMSIS model: based on national TDM marketing research

The following are brief highlights of each model:

1. <u>SMC Model</u>

The model developed by SMC and one of its research subcontractors, the Marketing Source Inc. (MSI), examined research conducted in Northern Virginia to determine probable levels of market penetration. TDM programs included as part of the research included compressed work week, telecommuting from home and telecommute centers, rideshare matching, reduced fare transit checks, flexible working hours, and guaranteed ride home.

The opportunity market is defined as the expected pool of employers who will participate in the ECO program and the projected number of SOV employees who would participate. The process used to determine this pool involved three steps:

1. Determine the employer participation
2. Determine the level of single occupancy vehicle (SOV) commuter participation
3. Determine the ultimate reduction in VMTs

The process for determining market demand involved analyzing private companies with 100 or more employees at one site, determining the number of employers interested in ECO programs, and then predicting those employees that are currently SOV mode who would switch to non-SOV mode. This analysis was based on regional averages of SOV and non-SOV travel gleaned from previous research and COG data for the metropolitan area.

The SMC model results in a 7% penetration level of employer participation. Since the SMC model is predominantly based on 1994-95 research studies of consumers and businesses who received very little marketing effort, it should be assumed that this model reflects potential market penetration with minimum resources.

2. COMSIS Model

The computer model developed by COMSIS is based on primary research on national TDM experience. TDM programs included as part of the research were compressed work schedules, telecommuting from home and telecommute centers, rideshare matching, reduced fare transit checks, flexible working hours, and proximity to HOV facilities. Both mandatory and voluntary markets are included.

The penetration rate (the expected percentage of employers of 100 or more employees who will participate in the voluntary TDM programs) predicted by the COMSIS model is 35%. The model was developed with Federal Highway Administration funding and is used extensively for clean air implementation planning.

The COMSIS model is also based on evaluation of projects at employment sites where significant marketing efforts occurred. Therefore, it should be assumed that this model reflects an optimistic estimate of participation by employers.

The following chart depicts the range of projected participation presented by both models:

Level of Marketing	**Employer Penetration Rate**	**Model**
Level 1	7%	SMC
Level 2	15%	Interpolated
Level 3	25%	Interpolated
Level 4	35%	COMSIS

The two methodologies result in different projections of employer penetration due to the underlying variables in each model. The SMC model does not account for public sector employers nor does it assume any significant marketing support. In addition, it is based on predominantly suburban research data. The COMSIS model, on the other hand, takes into account both public and private-sector employers, as well as significant marketing support. The COMSIS model uses both urban and suburban experience.

Based on these underlying assumptions, the alternative models serve as realistic low-end and high-end projections of likely employer penetration: 7%-to-35% over the six year planning horizon. For planning purposes, the following assumptions are made for these two extremes:

Low End (7%): Six Years
No new marketing support
Minimum additional sales and service staff

High End (35%): Six years
Aggressive marketing
Additional sales and service staff

Three alternative strategies were considered for implementing this program of increased employer outreach:

1. Utilize current system of rideshare agencies to sell and implement TDM programs to employers

2. Utilize contracted sales force to provide qualified employer prospects to current rideshare agencies for them to implement TDM programs

3. Hybrid program utilizing contracted sales force in localities where warranted and utilizing current system in localities which choose not to contract out their sales force

Initially, strategy three which utilizes a hybrid approach holds the most promise given the current structure of existing TDM programs in the Washington region. Under this strategy option, the contracted sales force would sell the concept of TDM to the employers, ending with the onsite TDM employee survey process. The existing rideshare infrastructure would then be responsible for program planning implementation. In localities that want to retain outreach responsibility, the hybrid option would afford that freedom. If some localities wanted to contract the services of the sales force on an ongoing or ad hoc basis they could do so. This system also allows for a relatively easy transition into a centralized approach.

Ultimately, a centralized dedicated sales force for the entire region, would provide the greatest amount of leverage, and over time produce the greatest results. However, a transition to this system should not be contemplated until operational concerns are worked out through the hybrid system.

Proposed Employer Outreach Program

1. Central Administrative Agency:

- Oversee the centralized sales force and facilitate the relationship between this organization and other TDM programs/services (e.g., telecommuting, TMA*****s, and the Ride Finders Network).

- Work with TMAs and business groups (e.g., local Chambers of Commerce, Board of Trade, etc.) to study and propose incentive opportunities to stimulate corporate TDM involvement. Specific long-term opportunities include:

  - Financial incentives: new local tax credits to offset employer*****s TDM program implementation costs.

  - Local zoning incentives (e.g., parking lot size ordinances) to encourage employer involvement.

- Work with states and rideshare agencies to develop uniform, market-wide employee (commuter) incentive programs.

- Work with the Environmental Protection Agency (EPA) to develop a voluntary involvement reporting process that is not burdensome on the employer while providing adequate information to gauge program success - reduction in VOCs, carbon monoxide, and ^{Nox} emissions.

- Prepare annual report on regional impact of the voluntary TDM program.

- Promote via public relations, the benefits and successes of the voluntary TDM program.

- Conduct, at no charge to the employer, initial on-site TDM Survey.

  - To conduct initial research on the firm to ensure the proper questions are included on the survey.
  - Facilitate survey implementation
  - Tabulate data
  - Conduct density plotting and analysis
  - Prepare analysis

2. Roles and Responsibilities

The potential roles and responsibilities of various agencies and programs in implementing a hybrid program of employer outreach would be as follows:

The Role of the Centralized Sales Force

- Coordinate the overall prospect solicitation and initial sales visitation.
- Follow-up all direct response leads generated by the marketing program components:
  - Metro DC CEO/Business events
  - Referrals from business organizations, TMAs, etc.
  - Advertising
  - Direct Mail
- Sell pro-business benefits of voluntary involvement. Turn over all highly qualified leads to the Ride Finder*s Network agencies located in that jurisdiction.
  - Highly qualified lead: senior level corporate management representative of Washington area company who has requested the development of a free TDM plan recommendation.
  - Closing the sale: when the corporate representative agrees to participate in a free TDM employee survey and plan recommendation.
- Coordinate the assignment/coordination of a local TDM Technical Team to follow-up the active qualified leads within three days of "closing the sale". Technical team members may include local Ride Finders Network member, local TMA representative, Metrochek representative, and area TDM consultant if local RFN member is over-committed. The initial sales representative who made the first point of conduct will be responsible for the "account prospect" up until the initial survey has begun.

The Role of the Local Rideshare Agencies:

- Work with TDM Technical Team to prepare comprehensive TDM plan for employer. Present plan to senior management.
- Facilitate on-site implementation of management approved TDM program recommendations
  - Training Employee Transportation Coordinators (ETCs).
  - Organize and host TDM-related workshops/fairs for employees using an environmental/pro-business theme.
  - Provide posters, flyers and premium giveaways to aid ETCs in-house promotional efforts.
  - Facilitate on-site corporate management program recognition events (e.g., memo*s, e-mail, luncheon, etc.) to showcase top management*s involvement.
- Facilitate the corporate reporting process of employee participation, average vehicle occupancy gains, etc. Conduct, at no cost to the employer, follow-up annual surveys
- Conduct ongoing ETC training programs.

The Role of Telecommuting Staff

- To serve as an active member of the technical support team. Based on the findings of TDM survey, prepare telecommuting recommendations.
- Follow-up and service telecommuting component of the TDM recommendations as approved by the prospect.
- Promote the understanding and acceptance of telecommuting in the business community.
- Organize and facilitate follow-up cross-sell opportunities to corporate prospects who have signed-up and realized benefits from TDM programs other than telecommuting.

The Role of WMATA Metrochek Sales Force

- To serve as an active member of the technical support team. Based on the findings of TDM survey, prepare transit check recommendations.
- Follow-up and service transit check component of the TDM recommendations as approved by the prospect.
- Promote the understanding and acceptance of Metrochek/transit passes.
- Organize and facilitate follow-up cross-sell opportunities to corporate prospects who have signed-up and realized benefits from TDM programs.

Role of TMA*s

- To serve as an active member of the technical support team.
  - Assist with initial on-site survey work.
  - Help formulate plan recommendations.
  - Assist with plan implementation.
- To promote the understanding and acceptance of the TDM Network throughout the business community.
- To continue providing transportation related services to their constituents and membership in their territory.

Timing Requirements

Initial success in a well-coordinated regional TDM program should be gauged in small increments; beginning with establishing and training the network and expanding employer contacts. Long-term success should be measured in emission reductions and in traffic congestion mitigation benefits.

The sheer size of this undertaking will require careful coordination between the agencies and the building of a new network. To this end, it must be understood that the long-term program design and action plan is predicated on the success of the initial years - the successful implementation of the region-wide infrastructure to service the entire business community.

It is also recognized that during the initial institutional set up phase, ongoing solicitation and cultivation of large corporate prospects will continue by respective network members. A successful long-term plan will incorporate a transition from the multi-organizational sales approach to a hybrid network system and potentially to a centralized sales system.

The final implementation plan must be sensitive to lessons learned from this phased roll-out. To this end, the funding/investment as outlined in the budget presents an escalating plan predicated on organizational expenditures first, followed by stepped-up marketing expenditures as the TDM infrastructure matures to handle the expected rise in demand of its services (e.g. survey work, plan development, on-site assistance, ETC training, etc.)

Marketing Requirements

A dramatic increase in voluntary participation in TDM programs will require a number of actions: both employers and employees must realize benefits; commuters must change deep-seated work habits; and employers must change the way they currently perceive the value of their employees* work product -- rather than quantity of man hours, employers must look at the actual quality of employee output.

To be successful, TDM marketing must take a behavioral approach in selling employer-based transportation programs. To this end, the marketing program must follow the classic marketing model as depicted below. And, the marketing program must reinforce benefits of employer/employee participation at every step in the model.

Awareness Generate broad-based awareness and understanding of what TDM programs are and the benefits of participation

Interest Build familiarity among all prospects to increase their interest in learning how TDM programs can work for their company.

Desire Deliver qualified prospects who are in a position to bring TDM programs into their companies and encourage participation.

Action Qualified prospect becomes "a customer" and requests initial on-site employer survey.

To accomplish the necessary steps in this marketing model, the following communications components should be implemented:

Sales training
Collateral and sales materials
Public and media relations
Speakers bureau
Business to Business advertising campaign
Consumer advertising campaign

Given the projected range of market penetration, marketing components listed above can be packaged into several levels of investment. The greater the investment, the greater the possibility of achieving a higher penetration level. To understand the challenge, the following chart depicts the effort required in terms of number of prospects needed for each penetration level and the required closing rate.

Currently only 25% of the employer market is interested, according to Gallup research. With aggressive marketing, the market could be developed, and demand could actually be cultivated, increasing the total to as high as 50%.

Total market of 100+ employers	Prospects required as % of total market	Number of Employers	Closing ratio	Six year penetration rate	Total new accounts	Marketing level of support
3580	25%	895	28%	7%	251	Level 1
3580	33%	1181	45%	15%	537	Level 2
3580	42%	1504	60%	25%	895	Level 3
3580	50%	1790	70%	35%	1253	Level 4

In order to generate these numbers of prospects, overall market demand must be developed. In addition, aggressive marketing components must be implemented to tap this growing demand.

The following different levels of marketing efforts are presented.

Level 1 - 7% Penetration

No additional resources

Level 2 - 15% Penetration

- Collateral and Sales Materials
- Public Relations & Events
- Minimal direct mail

Year 1 - $400,000
Year 2 - $250,000
Year 3 - $250,000
Year 4 - $200,000
Year 5 - $100,000
Year 6 - $100,000
Total: $1.3 million

Level 3 - 25% Penetration

- Base Level
- Business to Business Advertising Campaign
- Aggressive Direct Marketing Program

Year 1 - $500,000
Year 2 - $1,250,000
Year 3 - $1,450,000
Year 4 - $1,300,000
Year 5 - $1,300,000
Year 6 - $1,300,000
Total: $7,100,000

Level 4 - 35% Penetration

- Level 2
- Consumer Advertising (years 4-6)
- On-site consumer TDM fairs and events

Year 1 - $500,000
Year 2 - $1,250,000
Year 3 - $1,450,000
Year 4 - $4,300,000
Year 5 - $4,300,000
Year 6 - $4,300,000
Total: $16,100,000

Staffing Requirements

Staffing requirements presented in this section are based on the different levels of marketing penetration discussed above based on the following assumptions:

- There are 3,580 public and private employers in the DC Metro region
- The average sales effort takes 5 sales calls at an average of 4 - 20 hours
- The average implementation effort takes one week - 40 hours
- The average salesperson can sell to 100 employers in one year if dedicated 100% to this effort
- The average implementation person can implement 50 programs in one year if dedicated 100% to this effort

Staffing Requirements

Mktg Levels	# of Prospects	# of New Accounts	Salesforce Manhours - Prospects	Service/ Manhours - Implemen-tation	Total Manhours	Sales	Additional Service	Staff Total
1	895	251	17900	10040	27940	8	4	12
2	1181	537	23620	21480	45100	11.8	10.7	23
3	1504	895	30080	35800	65880	15	18	33
4	1790	1253	35800	50120	85920	17.9	25/06	43

The total staff level required under each level represents the maximum staffing needs. Staffing requirements grow over the first three years as TERM 47-A is implemented and peaks at year four.

This staffing plan is predicated on the following assumptions:

1. The existing TDM representatives now engaging in sales activities will be available for more concentrated servicing efforts in years one and two, therefore reducing the need to accelerate staffing up in the "servicing" area in the first two years

2. The sales force will start off with a minimum level of sales professionals in order to ensure close coordination with the service teams and due to the lower number of leads as the marketing support programs will just be launched.

3. The higher level of penetration (results) require a greater investment in the early years as the goal is more ambitious.

The total six year staffing plan and corresponding costs are depicted below:

Level 1

Year	Sales staff	Service staff	Total	Total Cost
1	6	0	6	$480,000
2	6	0	6	$480,000
3	6	2	8	$640,000
4	8	2	10	$800,000
5	8	4	12	$960,000
6	8	4	12	$960,000
			Total	**$4,320,000**

Level 2

Year	Sales staff	Service staff	Total	Total Cost
1	6	0	6	$480,000
2	6	3	9	$720,000
3	8	9	17	$1,360,000
4	12	11	23	$1,840,000
5	12	11	23	$1,840,000
6	12	11	23	$1,840,000
			Total:	**$8,080,000**

Level 3

Year	Sales staff	Service staff	Total	Total Cost
1	6	2	8	$640,000
2	10	6	16	$1,280,000
3	12	12	24	$1,920,000
4	15	18	33	$2,640,000
5	15	18	33	$2,640,000
6	15	18	33	$2,640,000
			Total:	**$11,760,000**

Level 4

Year	Sales staff	Service staff	Total	Total Cost
1	8	5	13	$1,040,000
2	12	10	22	$1,760,000
3	16	15	31	$2,480,000
4	18	25	43	$3,440,000
5	18	25	43	$3,440,000
6	18	25	43	$3,440,000
			Total:	**$15,600,000**

The cost for the four levels is based on multiplying the number of total staff required per year by the average salary and overhead figure of $80,000. This figure includes salary, overhead, plus a commission incentive plan and benefits. Office, supplies, travel and computer are included in the overhead factor.

Cost Benefit Analysis

The chart below depicts the total costs associated with each level for sales and marketing support.

Level	Marketing Cost	Staff Cost	Total
1		$4,320,000	$4,320,000
2	$1,300,000	$8,080,000	$9,380,000
3	$7,100,000	$11,760,000	$18,860,000
4	$16,100,000	$15,600,000	$31,700,000

It is estimated that full penetration rate for each level will be achieved by year 4. The remaining two year sales and servicing effort will focus on retainage and new accounts due to business and cyclical turnover. The chart below depicts the reduction in tons per day of NOX and the cost per ton reduction for each of the marketing levels which would be achieved by year 4.

Mktg. Level	NO_x Reduction (tons)	Cost per Ton
1	0.22	$ 13,100
2	0.52	$ 12,000
3	0.87	$ 14,500
4	1.21	$ 17,500

The Future: A More Comprehensive Approach

The employer outreach approach described above is based on the concept of leverage - by tying the existing sales force together and augmenting that effort with marketing support. The same idea of "leverage" can also be applied to all of the individual TERMs that the TPB is currently contemplating.

Separately, TERMs such as telecommuting, a regional guaranteed ride home program, and vanpool incentives will have a significant impact in improving air quality. They are all practical, in terms of implementation, and, most importantly, results-oriented. However, they represent significant redundancy in their executions. Each requires separate administration and marketing, and targets two different audiences -- consumers and employers.

A more comprehensive approach is to bundle all of the disparate TERMs together under one marketing umbrella. The employer outreach program described above provides the ideal mechanism to package all of the TERMs.

The employer outreach program calls for an aggressive direct sales effort targeting the area*s public and private sector employers. The selling proposition for voluntary employer involvement will be based on three major themes:

1. Bottom-line employer benefits: lower parking costs, improved productivity, improved retention and recruitment efforts, higher morale, etc.
2. Congestion mitigation: help the business locality and metropolitan area sustain and relieve traffic congestion.
3. Economic development: help preserve and enhance the area*s economic development viability by improving the accessibility of work-sites and mobility of the work force.

This selling proposition will culminate with the "offer" - what the TDM salesforce will immediately do for the employer - provide free assistance to help implement TDM programs. Unfortunately, there will still be a great deal required of the employer in terms of time and implementation costs. (The nationwide yearly average cost for trained employee transportation coordinator on the corporate payroll is $65,000; transit benefits could cost up to $65 per month per employee.) The more the employer outreach program can make it easier and less costly for the employer, the greater the chance of success in lining up employer participation. Here is where the other TERMs currently under consideration could augment the employer outreach selling proposition.

If the employer outreach program could include the products offered in other TERMs (e.g. Guaranteed Ride Home, Telecommuting, Metrochek) as free incentives for corporate involvement, it would leverage the success of not only the individual TERMs but also the employer outreach program. For example, a number of free Guaranteed Ride Home annual memberships and Metrochek cards could be offered as a matching incentive for employers who signed up for voluntary participation in the TDM program. In turn, the employers would recognize significant value and provide the amount of attention required to sell the program to their employees. For the regional Guaranteed Ride Home TERM - a level of 30,000 participants is projected as a likely penetration among commuters. Presented as part of the employer outreach program, this participation rate would be guaranteed.

Adopted Employer Outreach Program

Based on Siddal Matus and Coughter's market research, it was estimated that at the level 1 marketing effort that 7% of employers with 100 or more employees can be convinced to offer a menu of trip reduction programs to their employees. Initially, this menu of services was described as *core* and *non-core* programs.

Core programs: Transit benefit (Metrochek); Telework; ETC and ridesharing; parking pricing and preferential parking; GRH; customized transit; and employer vanpools. These programs traditionally are associated with higher levels of effort and in turn may provide higher resulting emissions benefits.

Non-core programs: Alternative work schedules (staggered work hours, compressed work week, flextime, etc.); bicycle racks and shower facilities; bicycle and walk benefit program; Ozone Action Day participation, information display, and commuter surveys. These programs traditionally are associated with lower levels of effort and in turn may provide lower resulting emissions benefits.

This menu of TDM programs is now described as Bronze, Silver, Gold, or Platinum employer participation levels.

Increasing voluntary employer support for and involvement in commute alternatives is the task that drives the TERM. At the outset, participating jurisdictions were asked to provide detailed baseline information on their respective programs, participating employers, and the scope and employee participation levels of existing employers. Similarly, participating jurisdictions were asked to provide COG with detailed information about the nature and scope of all new employer based TDM initiatives. The comparison of the baseline data and post implementation information form the basis of the TERM evaluation completed in June 1999. The 1999 TERM Analysis demonstrated the level of effectiveness of Employer Outreach efforts. The report shows that outreach efforts were successful in encouraging employers, new and existing, to adopt new TDM activities. With employers counted, the number of employer participants exceeded the goal by almost two and a half times. The results, however, reveal less encouraging patterns. Even though the number of employer participants exceeded the goal by such a significant amount, these employers committed to

lower level TDM strategies, which have less impact on transportation (vehicle trip and vehicle miles traveled) and emission (Nox and VOC) reduction. The Employer Outreach TERM fell slightly short of its 1999 transportation and emission impact goals. The TERM was evaluated again in 2002, and results were used to update the regional TERM tracking sheet.

A summary of the 1999 TERM Analysis Report follows:

The number of employers participating in Employer Outreach substantially exceeded the goal, but trip reduction was lower than the goal due to the modest level of employer programs implemented. The trip reduction goal assumed that employers would implement Gold (Level 3) programs and offer a transit or rideshare subsidy of $1 per day. But less than half (45%) of the 202 employers offered a program of this level or higher. The remaining 55% implemented Silver (Level 2) programs, which produce on average only 1% reduction in trips; these sites accounted for 72% of the total employees covered by Employer Outreach TDM programs.

Based on FY99 evaluation results and data submitted by the participating local jurisdictions, adjustments were made to the overall implementation approach of the Employer Outreach TERM for COG's FY01 and beyond. The purpose of the adjustment will be to meet or exceed the stated $_{NOX}$ reduction and SOV mode switch goals not achieved. Improvements to the evaluation methodology will include: the identification of the full range of TDM programs offered by employers implementing Metrochek services, an improvement in the reporting accuracy from Employer Outreach sales representatives, and a thorough review on the methodology used to estimate employees' response to employer-provided TDM programs.

The employer outreach program is expected to be successful due to the marketing and sales effort of the proposed work force.

Specific additional assumptions associated with the level 1 program were:

- Rideshare support for carpool, vanpool, such as in-house matching as well as the regional program. The level of effort will be minimal. Transit schedule information and transit subsidy of $22/month in the form of Metrochek or other media.
- Compressed work week such as 4/40 and the 4/5/80 program will be offered and also telecommuting/telework programs.

The above assumptions were used in the TDM model to estimate VT and VMT reductions and post processed for emission reduction. No trip reduction or emission benefits were given for telecommuting as it is already assumed to be implemented.

One major enhancement to the evaluation methodology of this TERM is planned. In the last evaluation, the researchers felt that the region did not capture the full amount of credit that it should have for the 213 Metrochek companies counted. National research suggests that companies providing transit subsidies also provide other transportation benefits. In FY02 staff worked with the researchers and WMATA staff to better capture the true effort of the companies providing Metrochek as reported by WMATA. As mentioned, much progress has been made in improving the completeness of information on TDM programs contained in the ACT! database. Staff will continue to carefully review monthly progress reports, synchronization, and produce quarterly statements to ensure the accuracy of database entries. Staff will also assist in coordination for the annual Bike to Work day in conjunction with the Employer Outreach for Bicycling program and staff.

Fiscal Year 2002 TERM Analysis Synopsis

At the end of FY02, COG conducted an analysis of the Employer Outreach TERM to determine the effects of the program on NO_x, VT and VMT levels. The goal of 251 employers at a Level 3 or higher was met and surpassed by more than sixty. The program exceeded expectations coupled with the strength of WMATA's Metrochek clients. Employers who signed on during the period of July 1999 to June 2002, contributed a heavier impact on the region. With the goal having been met, the challenge is to now couple outreach to new employers along with maintenance of current companies who offer significant alternative commuting benefits.

Employer Outreach for Bicycling (M-70b)

This Transportation Emission Reduction Measure provides information to businesses about encouraging their employees to bike to work. Information to be provided to the employer would include: a list of maps and other resources; bike-on-transit and bike-to-transit information; descriptions of bicycle parking types and rack vendors; information on installing showers and lockers for

employees; the name of a person or organization that would teach classes on bicycle commuting; contact people for questions on a range of subjects. The information would be integrated into ongoing M-47c and Commuter Connection activities.

The measurement of the air quality impact of this measure uses the modeling assumptions of measure M-47c, "Employer Outreach."

- M-47c analysis assumed that 7% of the employers contacted would participate in the program. This analysis assumes that half of those employers (3.5%) would promote biking as part of their voluntary program. This analysis assumes that 2% of the employees at those firms would participate.
- The measure would be in use 250 days/year.
- Each participant would make 2 trips per day.
- The average trip length would be 4 miles.
- Staff time would be need to develop materials and to present materials to participating employers. (No additional sales staff time would be needed as the bicycling information would be included in regular sales visits.)

Costs:

Staff time to compile commuter info. (80 hours)	=	(40/hour = $80,000/yr)	=	$3,200
Service time (80 hours /year)	=	(40/hour = $80,000/yr)	=	$3,200
Materials			=	$5,000

SUMMARY OF IMPACTS

VT Reduced	=	125	**First Year Cost**	=	$11,400
VMT Reduced	=	500	**Total TIP Cost**	=	$68,400
NOX Reduced (tons/day)	=	0.001	**Average Annual Cost**	=	$11,400
			Cost Effectiveness	=	$5,800

Guaranteed Ride Home Program

The Guaranteed Ride Home (GRH) Program was part of the M-47 TERM analysis. The GRH program provides up to four free rides home in cases of unexpected emergency or unscheduled overtime, to workers who use transit, carpool, vanpool, bicycle or walk to work. The GRH program takes the fear out of being “stranded at work” for commuters who do not drive to work and have to get home unexpectedly. Thus, the GRH program encourages workers to commute via transit or in a carpool or vanpool, or by bicycling or waking.

As part of the development of the GRH program, the task group developed initial program guidelines, and research and analysis were conducted to estimate program cost and emission reductions.

Initial Program Guidelines *(Note: These initial program guidelines were not implemented, please see the Guaranteed Ride Home program element section in the Work Program document for the most current guidelines. See the adopted GRH program guidelines section below for originally adopted guidelines.)*

- The program is to be operated by a central agency.
- The program will not make a cash profit.
- The program will be available to all commuters in the region.
- Commuters can join the program directly or through their employer.
- The number of rides/year is (7) seven. Four (4) unused rides can be carried over in to the next year.

- A co-payment of $3.00 is required for rides, as well as the annual payment.

Initial Analysis

- 800 telephone surveys were conducted with commuters living from Fredericksburg to Baltimore.
- 11% of SOV commuters said they would definitely switch modes if GRH was available to them. This was reduced by half to 5.5% in the analysis, to account for stated preference bias.
- Potential participants were further reduced according to price sensitivity for different levels of annual payment (25% reduction for a $25 co-payment and 12.5% for a $10 co-payment).
- Potential participants were reduced by 50% if they had no prior rideshare experience.
- GRH is effective for those who do not have access to mid-day transit service. Therefore, all internal trips in D.C., and Alexandria, and Arlington County were removed from the base. 50% of internal trips in the other jurisdictions were also removed from the base.
- The cost analysis assumed participants will use the program two times a year and each ride will cost $30. In addition there will be capital, administrative and marketing costs for the organization involved in administering the program).
- Focus groups in northern Virginia were consulted to refine service specifications, and give an estimate of which GRH alternatives would be most effective in converting drive-alone commuters to alternative modes.
- The program will take eight years (1996-2003) to reach full potential.
- VT, VMT and emission reductions were calculated by COG/TPB staff.

Adopted GRH program guidelines (adopted by the TPB)

- Program is operated by MWCOG's Commuter Connections program.
- Registered commuters can use the GRH program four (4) times per year.
- Unused rides do not carry over.
- Commuters may use the program one time without registering. After the "one-time exception" the commuter must register to use the program.
- Commuters and employers are not be required to pay a co-payment.
- Commuters must work in the Washington metropolitan area as defined by the Metropolitan Statistical Area for Washington, DC.
- GRH users do not have to pay for taxi rides.
- GRH rides are provided by taxi, rental car, and transit, or a combination of not more than two of these modes.
- COG will contracts with taxi and rental car companies.

The Commuter Connections Guaranteed Ride Home program began on January 13, 1997. The Virginia I-66 and Virginia Railway Express Guaranteed Ride Home programs were discontinued on January 31, 1997 and May 10, 1997, respectively. The participants from these programs were incorporated into the Commuter Connections GRH program.

As a result, nine quarterly Placement Surveys were conducted during the past five years. A sampling of GRH applicants for each of the quarters were surveyed to determine mode shift and other characteristics of GRH applicants. Although, these survey results show that the GRH program is having less of an impact on SOVers shifting to an alternative commute mode than previously estimated, it should be noted that the pre-implementation analysis determined that it would take eight years for the GRH program to reach full potential. Also, the pre-implementation analysis assumed that nearly all placements would have shifted from drive alone to an alternative mode. However, the Placement Rate Surveys have shown than many shifts are from commuters who are already using an alternative mode and increase the frequency of that mode or shift to another alternative mode. Furthermore, the GRH guidelines stipulate that a commuter must already be in an alternative commute mode prior to using the GRH program, and must register before using the program. Although a one-time exception is allowed, participating commuters must register to use the program again. These guideline restrictions have impacted the assessment of mode shift and VMT reductions.

Daily Program Operations

COG has issued contracts to develop and maintain the GRH management software. This software is used to register GRH applicants, arrange GRH trips, track invoice payments and produce registration, usage and other reports. COG has also issued contracts with taxi companies, a rental car company and a paratransit provider to provide GRH transportation services. GRH

trip arrangements are made through COG's operations contractor. Additional contracts for marketing and promotion are also administered by COG.

Commuters seeking to register for the GRH program can complete a GRH application on the Commuter Connections web site, or call Commuter Connections to be sent an application in the mail. COG staff registers all GRH applicants in the GRH management system. Registered commuters are sent an ID card along with participation guidelines. Commuters call Commuter Connections at 1-800-745- RIDE to request a GRH trip. When a trip is arranged, the commuter is only responsible for paying the gratuity to the taxi driver, taxes, fuel charges and purchased insurance for a rental car. If the commuter uses transit during their GRH trip, COG mails the commuter a voucher to be completed and returned for reimbursement of the transit cost.

GRH registration is valid for one year. Registrants who's registration is near expiration are called for re-registration. COG maintains the GRH database. The re-registrants are sent new ID cards and participation guidelines. COG processes all invoices from GRH transportation providers, and makes all payments to providers.

During the Fall and Spring, COG conducts marketing and promotion of the GRH program. These activities have consisted of radio and television advertisements, mobile billboards, promotional CD-ROMs, interior and exterior bus advertisements, and through promotional information mailed directly to residents (approximately 100,000 to 150,000 households) and employers (approximately 4,000 to 5,000). Additionally, COG promotes the GRH program through communication with the media. There have been numerous news articles and feature stories on the GRH program. Reporters for area and local newspapers, radio and television stations have interviewed COG staff on many occasions for feature stories. Media reports and news articles have been one of the best sources of inquiry regarding the GRH program. COG also promotes the GRH program at employment sites.

Additionally, the promotion of the GRH program has been a major component of the Commuter Connections Fall and Spring regional marketing campaigns. Typically, these campaigns consist of a direct mail promotion of the GRH program to more than 100,000 residents and 45,000 employers, GRH radio advertisements, and beginning in FY99, a GRH television advertisement.

Other promotion of the GRH program includes on-site promotions at employment sites. In FY00, a direct mail campaign to new residents and a CD-ROM for employers promoting GRH and alternative commute modes were introduced.

COG also surveys users of the GRH program to gauge their level of satisfaction with the GRH service. Surveying of GRH registrants are also conducted as part of COG program evaluation that includes emission reduction calculations.

The GRH component, as analyzed**,** will take eight years to achieve full benefits. If the startup date was 1996, the measure will reach its full potential by year 2003. If the measure was allowed to build up over eight years with a startup date of 1997 by the year 2000 and 2001, the emissions benefit will be an eighth smaller compared to the 1996 startup resulting in a shortfall in the reductions requirement for 2000 and 2001. However, by spending the FY 1996 funding over the years 1997, 1998, and 1999 in marketing and attracting additional members we can achieve the emission reduction targets of 0.51 tons/day and 0.63 tons/day of NO_X by 2000 and 2001 respectively.

The GRH Ad-Hoc Group meets once a year to review participation guidelines and to recommend changes to the Commuter Connections Subcommittee.

Financial Details of GRH Program (as proposed with $10 co-payment)

1997		Number of Participants	Uses per Year	Cost per Use	Est. Benefit Cost	Admin. Costs	Capital Costs	Marketing Costs	Total Costs	Cost per Participant	Income From Fee	Projected Profit
$10	Plan	10785	2	$27	$582,390	$211,385	$100,200	$283,333	$1,177,308	$109	$107,850	($1,069,458)

1998		Number of Participants	Uses per Year	Cost per Use	Est. Benefit Cost	Admin. Costs	Capital Costs	Marketing Costs	Total Costs	Cost per Participant	Income From Fee	Projected Profit
$10	Plan	15406	2	$27	$831,924	$229,600	$18,500	$258,333	$1,338,357	$87	$154,060	($1,184,297)

1999		Number of Participants	Uses per Year	Cost per Use	Est. Benefit Cost	Admin. Costs	Capital Costs	Marketing Costs	Total Costs	Cost per Participant	Income From Fee	Projected Profit
$10	Plan	20028	2	$27	$1,081,512	$261,112	$22,000	$208,333	$1,572,957	$79	$200,280	($1,372,677)

2000		Number of Participants	Uses per Year	Cost per Use	Est. Benefit Cost	Admin. Costs	Capital Costs	Marketing Costs	Total Costs	Cost per Participant	Income From Fee	Projected Profit
$10	Plan	23110	2	$27	$1,247,940	$215,880	$22,000	$125,000	$1,610,820	$70	$231,100	($1,379,720)

2001		Number of Participants	Uses per Year	Cost per Use	Est. Benefit Cost	Admin. Costs	Capital Costs	Marketing Costs	Total Costs	Cost per Participant	Income From Fee	Projected Profit
$10	Plan	27732	2	$27	$1,497,528	$215,880	$22,000	$125,000	$1,860,408	$67	$277,320	($1,583,088)

HIGHLIGHTS OF THE COMMUTER CONNECTIONS GUARANTEED RIDE HOME PROGRAM

July 19, 1995	GRH TCM adopted by TPB in the FY96-01 TIP
July 19, 1996	Issued RFQ for GRH transportation services
August 7, 1996	Issued RFP for GRH operations
August 29, 1996	Issued RFP for GRH software development
September 23, 1996	Issued RFP for GRH marketing materials development
October 1996	GRH introductory/registration letter mailed to Commuter Connections database
October 1996 - ongoing	Registration of commuters for GRH
November 1996	Signed contract with GRH marketing vendor, operations vendor, software development vendor
December 1996	Finalized GRH participation guidelines
January 1997	GRH software development and testing completed. Software installed at COG and at Diamond Transportation Services (GRH operations vendor)
January 1 - 12, 1997	Signed contracts with seven taxi companies, one rental car company, and a paratransit company to provide GRH transportation services
January 13, 1997	GRH program launched at news conference at COG. Subsequent news features appeared in regional and local newspapers and on local network and cable television news programs
January 31, 1997	The I-66 Guaranteed Ride Home program ends. The staffs from COG and Fairfax County worked together to register the I-66 participants in the Commuter Connections GRH program.
February 1997	Signed contract with taxi company to serve Prince William County
April 1997	VRE issues seat-drops announcing the ending of their Special Delivery guaranteed ride home service. Commuter Connections GRH applications are part of the seat drop to encourage VRE riders to register
May 10, 1997	VRE ends their Special Deliver guaranteed ride home service. Through seat-drop notices and supplying GRH applications on VRE trains more than 500 VRE riders registered for the Commuter Connections GRH program when VRE's Special Delivery service ended.
December 15, 1998	Commuter Connections Subcommittee approves lowering, from 3 to 2, the number of days per week a commuter must use an alternative commute mode

PROPOSED REGIONAL FUNDING PLAN

TERM	FY YEAR						FY 96-01 TOTAL
	1996	1997	1998	1999	2000	2001	
M-47C: Employer Outreach	-	$629,500	$875,700	$898,950	$922,900	$947,550	$4,274,600
M-47C: GRH		$1,013,000	$1,213,000	$1,403,000	$1,380,000	$1,580,000	$6,589,000
M-47C Total		$1,642,500	$2,088,700	$2,301,950	$2,302,900	$2,527,550	**$10,863,600**

District of Columbia Funding Plan

TERM	FY YEAR						FY 96-01 TOTAL
	1996	1997	1998	1999	2000	2001	
M-47C: Employer Outreach	-	$63,000	$87,600	$89,900	$92,200	$94,700	$427,400
M-47C: GRH	-	$101,300	$121,300	$140,300	$138,000	$158,000	$658,900
M-47C Total	-	$164,300	$208,900	$230,200	$230,200	$252,700	**$1,086,300**

Proposed Virginia Funding Plan

TERM	FY YEAR						FY 96-01 TOTAL
	1996	1997	1998	1999	2000	2001	
M-47C: Employer Outreach	-	$283,300	$394,100	$404,500	$415,300	$426,400	$1,923,600
M-47C: GRH	-	$455,850	$545,850	$631,350	$621,000	$711,000	$2,965,050
M-47C Total		$739,150	$939,950	$1,035,850	$1,036,300	$1,137,400	**$4,888,650**

Proposed Maryland Funding Plan

TERM	FY YEAR						FY 96-01 TOTAL
	1996	1997	1998	1999	2000	2001	
M-47C: Employer Outreach	-	$283,300	$394,100	$404,500	$415,300	$426,400	$1,923,600
M-47C: GRH	-	$455,850	$545,850	$631,350	$621,000	$711,000	$2,965,050
M-47C Total		$739,150	$939,950	$1,035,850	$1,036,300	$1,137,400	**$4,888,650**

2. COMMUTER OPERATIONS CENTER

Since 1974, COG's Commuter Operations Center has provided commuter information services and has worked to promote the use of commuter transportation alternatives to driving alone, in support of improved air quality, energy conservation, and congestion management. The Commuter Operations Center provides services to an expanding network of local, state and federal government ridesharing programs, Transportation Management Associations, and residents, employers, and employees of the greater Washington metropolitan region.

COMMUTER OPERATIONS CENTER SERVICES

1) Client Technical Assistance and Commuter Information Services

Principal tasks connected to the provision of ridematching services include:

a. Provision and maintenance of on-line computerized matching services to client member programs.

- This task is a primary function and requires continuous attention by staff. COG staff maintains the computer software, hardware and central database. In addition, COG staff provides continuous technical and administrative support to member program staff via telephone and regular site visits. Furthermore, COG staff continues to provide promotional support, on request, to member programs.

b. Enhancement and on-going maintenance of the ridematching software and computer hardware.

- With the completion of the ridesharing software upgrade in FY96 COG staff began adding regional transit information to the software, for developing ridesharing/transit information kiosks for use at selected member sites, and for maintaining and updating a regional Commuter Connections Internet web site. This work was funded by grants under an Integrated Rideshare Transportation Emission Reduction Measure. This was completed in FY99.

c. Extensive matching software training of member program staff.

- COG provides software training and technical assistance to system users.

d. Maintenance of a central/regional phone number and member help line.

- COG maintains the 1-800-745-RIDE regional commute information number system and the help line for members that have questions or problems with their ridematching software.

e. Provision of ridematching and commuter information services to members of the general commuting public who cannot be assigned to a local or state program.

- COG staff enters application information in the database and mails match letter information to commuters who reside in the District of Columbia and areas not covered by member organizations.

f. Printing and mailing of applicant ridematch and service renewal letters.

- COG staff prints and mails match letters and service renewal letters on behalf of member organizations.

g. Preparation of bi-weekly and monthly summary statistical reports.

- COG staff provides this service to all members. Reports include information on the number of commuters in the regional database in total and by member program areas, monthly renewal listing and the number of telephone calls and applications received.

h. Provision of special-request reports on applicants in the database.

- COG staff provides this service upon request.

i. Maintenance of system documentation.

- COG staff monitors the system documentation of the current software.

j. Revision and distribution of Greater Washington Metropolitan Region Transportation Demand Management Resource Directory.

- Commuter Operations Center staff revises and distributes the Resource Directory to members twice per fiscal year.

k. Production and distribution of quarterly regional and Federal ETC newsletter.

- In FY97, a quarterly regional and Federal ETC newsletter insert was created. COG develops the quarterly newsletter and works with the General Services Administration to produce the quarterly ETC newsletter insert. The regional TDM newsletter is distributed to approximately 5,000 employers in the region. The newsletter with the ETC insert is distributed to 155 federal employer transportation coordinators.

2) Policy Development

COG participates in the development of regional policies pertaining to transportation demand management. Staff focuses on HOV lane development, land use policy, parking management policies, telecommuting guidelines, and ridesharing tax incentives. This will also include monitoring Commuter Operations Center activities.

3) Program Evaluation

In the past, the Operations Center has conducted a user survey every two years to assess the effectiveness of its services. In FY95, at the request of member programs, the resources to support a survey were redirected toward the design of an improved method of measuring and evaluating program performance and user satisfaction. This design effort was completed in FY97, and a placement rate study was implemented. The first regional TDM Household Survey and two placement rate studies were completed in FY99. Future surveys are conducted on a schedule described in the Work Program.

4) Outreach and Promotion

The Operations Center increases public awareness and utilization of the ridematching services, using regional multi-media. A strategic regional marketing plan was developed in FY 97 and is updated every year. The regional strategic marketing plan and associated implementation strategies are coordinated through the Regional TDM Marketing Group. A public recognition program was instituted to recognize participating employers in FY98, and continues annually.

5) Committees and Other Groups

The COG Commuter Operations Center is a cooperative, multi-agency effort. Center activities require significant coordination by COG/TPB, and oversight by Center members and other interested parties. Much of this coordination and oversight is achieved through a subcommittee and other interest or work groups for which the Center staff acts as secretariat. The subcommittee and interest or work groups include:

a. The Commuter Connections Subcommittee of the TPB Technical Committee provides oversight for all components of the Commuter Connections Program.

b. Regional TDM Marketing Group, a sub-group of the Commuter Connections Subcommittee, coordinates marketing and promotional activities from area transit and rideshare agencies.

c. Commuter Connections Operations Subcommittee, a subcommittee of the Commuter Connections Subcommittee, is comprised of member programs that use the Commuter Connections ridematching software.

d. Transportation Management Association Advisory Group, a sub-group of the Commuter Connections Subcommittee, discusses activities of the area's TMAs.

e. TDM Evaluation Work Group, a sub-group of the Commuter Connections Subcommittee, develops evaluation guidelines.

f. High Tech Ad-HOC Group, a sub-group of the Commuter Connections Subcommittee, discusses regional TDM program technology issues and programs.

As of the start of FY02, there were twenty-six local rideshare software users. In FY01, COG at the request of Arlington County, COG staff took over the processing of Arlington County's ridematching applications. At the start of FY02, at the request of MTA, COG staff took over the processing of MTA's ridematching applications. COG staff also processes applications for client members at their request. COG receives numerous requests for temporary application processing from members that are "short-staffed" due to staff illness, vacation or turnover.

As a result of the September 11, 2001 attacks, COG convened a Commuter Connections Contingency Management Task Force in FY02. The purpose of the task force is to develop a written disaster recovery plan so that transportation information is accessible and databases are recovered in the event of a natural disaster, fire, terrorist attack or other emergency situation. The Task Force continued to meet in FY03 to develop an emergency action plan.

In FY02, the Commuter Connections Continency Management Task Force began preparing a Contingency Management Plan for Commuter Connections in the event an un expected disaster or emergency occurred and program services for commuters were disrupted.

During FY01, in an effort to reduce the amount of time spent by the staffs of COG and local clients performing basic data entry, COG hired a contractor to design a system that will automate application processing. This is the first step in providing ridematching through the Commuter Connections web site. The beta version of the automated system was completed and in FY02 COG performed a significant amount of testing of the new system. COG staff worked closely with the contractor to ensure the system worked properly. The automated application processing system reduces the amount of time spent on data entry and shortened the amount of time a customer waits for his/her requested matchletter. However, because there is no longer a need to forward the applications to a local client, COG staff must review and edit all applications prior to processing. This has caused an increase staff time for COG staff.

An automated application processing system was developed by a contractor to reduce the amount of time spent on basic data entry by the staffs of local client members. This system was tested and implemented in FY03. The automated application processing system reduces the amount of time spent on data entry and shortened the amount of time a customer waits for his/her

requested matchletter. However, because there is no longer a need to forward the applications to a local client, COG staff must review and edit all applications prior to processing. This has caused an increase staff time for COG staff.

In FY03 COG made improvements to the presentation of telework center locations, park-and-ride locations, bicycle commute, and transit bus and station stop information in the Commuter Connections web site, www.commuterconnections.org. COG also regularly collects this data from the appropriate transit and rideshare agencies and updates this data on the Commuter Connections web site. COG has begun developing a mapping system to the Commuter Connections web site that provides visitors to the web site access to on-line interactive maps of commute information directly from their computers, seven days a week, twenty-four hours a day.

The impacts of the Commuter Operations Center were measured using data from the Commuter Connections applicant surveys and data from the 1993 Ridefinders survey, the last survey conducted before Commuter Connections and the Commuter Operations Center were formed. The 1993 survey indicated a 30% alternative mode placement rate, while the 1997, 1998 and 1999 surveys showed an average 43% placement rate. The TDM Evaluation work group has met several times to review current survey and evaluation practices and make recommendations for improving the evaluation process.

COG hired an independent contractor selected by a committee of representatives from COG staff and the Operations Center program funding agencies to develop evaluation methodology and evaluation instruments. Representatives from the funding agencies and several local county representatives formed a TDM Evaluation Group that worked with COG staff to review, provide input, and approve the evaluation criteria and survey instruments developed by the contractor. The TDM Evaluation Work Group has meets regularly to review current survey and evaluation practices and make recommendations for improving the evaluation process.

The new placement rate study was introduced and implemented during COG's FY97. As of mid-FY03, nine Placement Rate surveys have been conducted for all four quarters. The Placement Rate Survey samples 700 applicants in the Commuter Connections ridematching database that requested commute information during the survey quarter.

Result are shown below for the eight survey quarters.

Impacts	**Estimated Impacts**
Applicants	60,781
Daily vehicle trips reduced	1,970
Daily VMT reduced	66,056
Daily tons NOx reduced	0.079T
Daily tons VOC reduced	0.034T

In FY01, the TDM Evaluation Group worked with the evaluation contractor to develop the region's first State of the Commute survey. The State of the Commuter survey is a more comprehensive survey of commuters in the entire region, not just those in the regional ridematching database. The sample size of the State of the Commuter survey is much larger than the Placement Rate survey, allowing COG to provide statistical analysis at the state and county level. Results of the State of the Commute survey will be available sometime in FY03. Much of the data collected will be used in a TERM Analysis report consisting of the evaluation of the effectiveness of all of the Commuter Connections TERMS and was completed in FY03.

3. INTEGRATED RIDESHARING MEASURES

TERM M-47 was adopted by the TPB in September 1994 as a component of the FY95-00 Transportation Improvement Program and CLRP.

Measure M-47 (Integrated Ridesharing Measures) includes three related measures aimed at enhancing regional ridesharing capabilities:

1. Upgrade and maintain the ridematching software of the MWCOG Commuter Operations Center (formerly Ride Finders Network) to include integrated transit information, park and ride, and telework center location information, and to provide full-service commuter information through kiosks and other outlets where feasible. This task was completed in FY99. COG will continue to maintain integrated transit information in FY00.

2. Implement kiosks in the District of Columbia, and Virginia. This was completed in FY98 and COG will continue to maintain the kiosks.

3. Develop an employer outreach awareness plan for the region. This was completed in FY96.

CALCULATIONS OF TRAVEL IMPACTS FOR M-47 MEASURES BY 1999

	Vehicle Trips	Vehicle Miles of Travel
Upgrade Commuter Connections Computer Services	2,450 reduced trips	60,350 reduced miles
Develop Regional Kiosks	3,040 reduced trips	74,875 reduced miles

Calculations of these travel impacts assume coordinated implementation of the full measure at a number of major employment sites around the region by 1999. During the first year of implementation, the measure will be further specified through the Commuter Connections operating agencies. Funding for M-47 measures will come through existing state programs.

IMPLEMENTATION PLAN

1. Upgrade Commuter Operations Center Services

The Commuter Operations Center upgraded its regional ridematch software system in FY97 to provide new capabilities for its client users. One very desirable enhancement with great importance to commuters would be the provision of available transit options. This was not funded in the FY96 upgrade. The Washington Metropolitan Area Transit Authority (WMATA) has supplied COG with both their ARTS geographic and transit databases, but is not able to provide the software to run the databases.

Coast-to-coast inquiries turned up several options for the development and/or acquisition of appropriate software. A portion of the $350,000 which had been proposed for this measure was used for the development, or acquisition of appropriate software to run the full transit information component of the Commuter Operations Center regional ridematch database system. Information on telework centers, park-n-ride lots, and bicycling was added to the Commuter Connections software system in FY98. Transit data was integrated in FY99 by converting WMATA's ARTS database in the Commuter Connections GIS-based system. Ongoing maintenance of telework center, park and ride lots, and transit data will be accomplished by COG.

2. Develop A System Of Regional Ridematch Information Kiosks

"Bank-style" commuter information kiosks are important tools which work to extend the reach and effectiveness of conventional employer outreach programs. They are currently being tested by several programs across the country, the most ambitious of which is Computer Transportation Services in Los Angeles. Their *Transaction Network* of four touch-screen information kiosks have shown some results.
The Commuters Operations Center developed and implemented a pilot kiosk project in conjunction with the Virginia Department of Rail and Public Transportation and Arlington County. Two traveler information kiosks were implemented in the Jefferson Davis and Ballston-Rosslyn corridors in Arlington County in FY98.

This measure calls for the development of regional ridematch information kiosks at sites where they will effectively extend the capabilities of employer outreach programs. Sites were selected with a priority for locations with high concentrations of employment or dense pedestrian traffic (malls, office parks, supermarkets). A monitoring matrix will be utilized to evaluate kiosk program effectiveness with a reprogramming mechanism built-in should their use prove to be ineffective.

The measure as analyzed assumes three kiosks in D.C. and six kiosks in Virginia will be in place by calendar year 1999. These kiosks were implemented in FY98 and Commuter Connections was also asked to assume responsibility for two demo kiosks in Arlington County in FY99.

Promotion of the kiosks began in February 1998 with a media advisory and postcard invitations for the official unveiling ceremonies. Additional promotional postcards were mailed to more than 50,000 residents in areas surrounding the kiosk locations. “Kiosk Ambassadors” who assisted and encouraged customers to use the kiosks were stationed at kiosks following the unveiling ceremonies. A second promotional postcard was mailed to more than 70,000 residents in November 1998.

During FY99, InfoExpress kiosks were upgraded with new hardware and software. Hardware upgrades were made to make the system faster and more reliable. The layout of the software was changed along with adding many new features, i.e., the Commuter Connections button on the main page was enlarged making it 15% larger than non-commuter buttons. New idle time screens and “cross-marketing” Commuter Connections buttons in the non-commute sections were also developed to promote commuting options. Users are now advised of the estimated time to fill out a Commuter Connections application form and given an option to connect directly with the Commuter Operations Center (during normal business hours) through an attached phone. These features also helped in enhancing the capability of the system in retrieving information, also making it more attractive and user friendly.

3. Develop New And Enhanced Existing Employer Outreach Programs

In FY96, employer outreach program planning was funded through this measure.

Employer outreach programs including TMAs, ridesharing and other commuter service organizations utilize transportation demand management (TDM) and marketing strategies to bring the public and private sectors together at employment sites to promote the use of efficient transportation alternatives for the commute to work. As reflected in this control measure, there are a number of employer outreach program strategies that can be utilized to effect positive change in VTs and VMT reductions.

One way is the development of new programs in jurisdictions where their placement could facilitate maximum effectiveness and awareness. It is intended that new employer outreach programs developed in Maryland should be planned, implemented and monitored through existing employer outreach programs in the specific counties in which the new programs are established.

A second way is the enhancement of existing programs with a priority on providing the resources for additional staffing needs and sophisticated marketing and service delivery materials. Irrespective of the organization's structure, whether it is a newly developed program or enhancement of an existing program, funding will come through existing state programs.

Illustrative Funding Plan for M-47 (Integrated Ridesharing Program)

I) Regional Funding Plan

M-47 Item #	Element of the Program	Fiscal Year						Total Element Funding
		1995	1996	1997	1998	1999	2000	
1	Upgrade Com. Oper. Ctr.	$100,000	$150,000	$100,000	-	-	-	$350,000
1	Kiosks (capital)	-	$100,000	$150,000	$200,000	-	-	$450,000
1	Kiosks (O & M)	-	-	$16,000	$40,000	$72,000	$72,000	$200,000
1	Kiosk Marketing			$40,000	$100,000	$140,000	$80,000	$360,000
2	Employer Outreach Prog.	$100,000						$100,000
Total Annual Funding		$200,000	$250,000	$306,000	$340,000	$212,000	$152,000	$1,460,000

Assumptions:

- The upgrading of the Commuter Operations Center will be funded during FY 95 - 97.
- The Kiosks will require one year to implement from the planning stage and will require funding for operation & maintenance in the subsequent years. The funding plan shown above assumes two Kiosks will be funded in FY-96, three Kiosks will be funded in FY-97, and four Kiosks will be funded in FY-98 in Virginia and District of Columbia. In the subsequent years funding ($8,000/year/kiosk) will be required for operating and maintaining the nine Kiosks. It is also assumed that marketing of the Kiosks will require $20,000/year/kiosk for two years. The regional kiosk project will be coordinated with all other kiosk systems already in operation or planned.

Illustrative Funding Plan for M-47 (Integrated Ridesharing Program)

II) District of Columbia Illustrative Funding Plan

M-47 Item #	Element of the Program	Fiscal Year						Total
		1995	1996	1997	1998	1999	2000	
1	Upgrade Com. Oper. Ctr.	$33,335	$50,000	$33,335	-	-	-	$116,670
1	Kiosks (capital)	-	$50,000	$50,000	$50,000	-	-	$150,000
1	Kiosks (O & M)	-	-	$8,000	$16,000	$24,000	$24,000	$72,000
1	Kiosk Marketing			$20,000	$40,000	$40,000	$20,000	$120,000
2	Employer Outreach Prog.	$50,000						$50,000
Total Annual Funding		$83,335	$100,000	$111,335	$106,000	$64,000	$44,000	$508,670

Assumptions:

- The upgrading of the Commuter Operations Center will be funded during FY 95 - 97.
- The Kiosks will require one year to implement from the planning stage and will require funding for operation & maintenance in the subsequent years. The funding plan shown above assumes one Kiosk will be funded in FY-96, one in FY-97, and one in FY-98. In the subsequent years funding ($8,000/year/kiosk) will be required for operating and maintaining the three Kiosks. It is also assumed that marketing of the Kiosks will require $20,000/year/kiosk for two years.

Illustrative Funding Plan for M-47 (Integrated Ridesharing Program)

III) Virginia Illustrative Funding Plan

M-47 Item #	Element of the Program	Fiscal Year						Total
		1995	1996	1997	1998	1999	2000	
1	Upgrade Com. Oper. Ctr.	$66,665	$100,000	$66,665	-	-	-	$233,330
1	Kiosks (capital)	-	$50,000	$100,000	$150,000	-	-	$300,000
1	Kiosks (O & M)	-	-	$8,000	$24,000	$48,000	$48,000	$128,000
1	Kiosk Marketing			$20,000	$60,000	$100,000	$60,000	$240,000
2	Employer Outreach Prog.	$50,000						$50,000
Total Annual Funding		$116,665	$150,000	$194,665	$234,000	$148,000	$108,000	$951,330

Assumptions:

- The upgrading of the Commuter Operations Center will be funded during FY 95 - 97.
- The Kiosks will require one year to implement from the planning stage and will require funding for operation & maintenance in the subsequent years. The funding plan shown above assumes one Kiosk will be funded in FY-96, two Kiosks will be funded in FY-97, and three Kiosks will be funded in FY-98. In the subsequent years funding ($8,000/year/kiosk) will be required for operating and maintaining of the six Kiosks. It is also assumed that marketing of the Kiosks will require $20,000/year/kiosk for two years.

4. METROPOLITAN WASHINGTON REGIONAL TELEWORK MEASURE

IMPLEMENTATION PLAN

I. Project Goal and Objective

(A) Goal

To improve the Metropolitan Washington business environment, reduce commuter highway travel, improve air quality and conserve energy through developing and promoting the use of telecommunications as a substitute for travel to work.

(B) Objectives

(1) Create a regional telework resource center to coordinate public and private telecommuting initiatives, and increase the use of telecommuting from home to work.
(2) Establish five (or more) new telework centers of varying sizes to accommodate 500 people in DC and 2,000 in Virginia.
(3) By 1999, increase the telecommuting from the home by 17,200 persons a day; and telecommuting from telework centers by 4,400 persons per day.

II. Workscope

The TERM will increase telecommuting from the home, and use of telework centers through the following actions.

(A) Create a Washington Region Telework Resource Center. The center will perform the following functions:

(1) Develop a program to educate employers and employees on the benefits of telecommuting and telework.

(2) Actively encourage both public and private sector employers to establish telecommuting programs for their employees, and provide planning and technical assistance to help them successfully implement telecommuting programs and telework centers around the region.

(3) Coordinate local, state and federal telecommuting and telework initiatives within the region.

(4) Exchange information with other telecommuting programs around the nation and world to ensure that the most effective new concepts and approaches are fully known and utilized in the Washington region.

(5) Determine additional measures needed to promote telecommuting and area telework centers, including legislative changes and financial incentives.

(6) Help establish a non-profit telework corporation to establish and operate the telework centers identified in B below.

(7) Evaluate project results.

(B) Plan and implement five new telework centers in the region by 1999, and add private sector participation to the four centers currently being implemented by the federal government. The five new centers will each be capable of

accommodating 500 employees. Only the planning of the centers would be funded through the TIP; rental fees and any necessary hardware would be charged to center users. The four centers currently being implemented through federal grants are in Southern Maryland, Hagerstown, Fredericksburg and Winchester. The five new centers will include one located in the District of Columbia and 4 in Virginia.

The Greater Washington Telework Resource center will plan, design and manage the implementation of the five new telework centers. The initial setup cost between $ 1.0 million and $ 1.5 million (for centers accommodating between 200- 500 employees daily) and the cost will be borne by the users. Based upon prior experience, to be solvent, the centers may need to be multi-functional, offering such for-profit services as faxing, express mail, teleconferences and printing. Centers could utilize empty spaces in existing office buildings. The project needs to develop siting criteria to assist in finding optimal locations, especially those that take advantage of mixed-use sites to reduce vehicle travel.

III. Details of Analysis

TERM M-92 which was adopted by the TPB in September 1994 as part of the FY 95-00 TIP and CLRP has two components. The first component involves setting up a telecommuting resource center in the region which will market telecommuting among the regions employers. The second component will set up telecommuting centers in Virginia and the District of Columbia.

Implementation of this TERM results in emission reduction from two sources, employees telecommuting from home and working at telecommuting centers.

NOTE: Subsequent to the development of this measure by COG/TPB, the U.S. Congress approved appropriations of $13.1 million between 1992 and 1998 for establishing and operating telework centers in the Washington Metropolitan region. As of December 2000, there are a total of 17 telework centers in the region (one private sector site, 15 federally funded sites, and one state-funded site). The total number of workstations at these locations is approximately 400. Based on an average utilization rate of 2 days per week, the centers could accommodate approximately 1,100 teleworkers.

The Telework Resource Center's focus has shifted to helping market the centers as a network of facilities available for use by area employers through the formation of the Washington Metropolitan Telework Center (WMTC). Marketing assistance has included a 60-second radio advertisement, web site, and direct mail campaign.

VI. Operating Plan

The operating plan was drafted by COG/TPB staff with the oversight of a Telecommuting Work Group formed by the Traffic Mitigation Subcommittee of the TPB Technical Committee. Different operating scenarios were considered by the work group. A mixed public/private sector approach appears to be most beneficial. There are three key elements to the recommended plan.

(A) Hire project staff. The staff would be responsible for developing the program, administering the Washington Regional Telework Resource Center, hiring contractors, coordinating all elements of the Telework Project, and liaison with other regional telework efforts, notably the federal Flexiplace program, local government programs, and on-going private sector initiatives. Other duties include education, research, and employer outreach, where warranted. It is proposed that the staff and the Telework Resource Center be located with the regional Council of Governments (COG) and be affiliated with the COG Commuter Operations Center (formerly Ride Finders Program). Level of staffing is to be determined- one professional and one support staff appears reasonable. A substantial portion of the project budget is to be allocated for contract services.

A final responsibility of the Resource Center is to provide data and findings for evaluation, to ensure that the program is achieving expected travel and emissions reductions.

(B) Secure services of area TDM programs, including county ridesharing groups and Transportation Management Associations. Currently these programs are conducting, or are planning to conduct extensive employer outreach. This outreach has the purpose of convincing employers of the benefits of alternatives to SOV commuting for their

employees, and helping employers to set up commute alternative programs. Telecommuting may be a very attractive alternative to commuting by car for many employers and employees. TDM programs would locate those employers wishing to set up telecommuting programs, and notify the Telework Resource Center, which would schedule site visits and technical assistance, provided contractors hired for this purpose.

(C) Contractors will be hired by the Telework Resource Center for two specific purposes. The first purpose is to provide interested employers with telecommunications and human resource expertise for setting up "work at home" telecommuting programs. The second purpose is perform the work of establishing telework centers. It should be noted that TMAs and other established commuter assistance groups may be engaged as telework contractors.

A technical ad-hoc group for the Telework Project has been established. In addition, it is recommended that the Mid-Atlantic Telecommuting Advisory Committee serve COG/TPB in a volunteer advisory capacity to the project.

(D) Previous and Ongoing Work

In 1996, 1998, and 2001, regional Commuter Connections telephone household surveys were conducted, and data gathered from the surveys revealed regional trends in teleworking patterns. This information is used as part of periodic Transportation Emission Reductions Measure (TERM) Analysis Reports. In 1999, TRC impacts were evaluated by calculating the number of new telecommuters in the region and estimating the number of vehicle trips and VMT they did not make, as a result of telecommuting, and the tons of emissions that were reduced by the trips and VMT reductions. As such , the evaluation looked at the regional impact of all telecommuting.

In 2002, this methodology was changed to reflect the expectations that not all regional telecommuting could be attributed to the Telework Resource Center; some telecommuting would have occurred if the TRC were not in place. Thus, TRC impacts were calculated by identifying telecommuters and employers who said they had used TRC services. The reductions in vehicle trips. VMT , and emissions for telecommuting resulting from these identified contacts were then estimated as the contribution of the TRC to regional telecommuting.

Four TRC components were evaluated, including:
1. Current regional telecommuters who had direct contacts with the TRC (telecommute information, seminars, advertising provided by the TC) during the evaluation period.
2. New telecommuters whose employers received assistance from the TRC (brochure/information packets, seminar, other direct assistance) during the evaluation period.
3. Current telecommuters who used a Metropolitan Washington Telework Center (MWTC)
4. Current telecommuters whose employer participated in the TRC Pilot Program

Data for impacts of these components were obtained from several sources. The sources and the evaluation data collected from each are described briefly below:

TRC Assistance Survey (new telecommuters at worksite assisted by TRC)
1. Percentage of employers with telecommute programs before and after receiving TRC assistance
2. Percentage of teleworkers at assisted sites before and after receiving assistance

State of the Commute Survey (regional commuters)
1. Number of regional telecommuters and their frequency of telecommuting.
2. Telecommute locations-the mix between home-based and telecenter-based telecommuting.
3. Telecommuting from home

A major addition to the 2001 framework was the State of the Commute Survey. This random sample survey polled 7,200 employed persons in the 12-county Washington metropolitan region. The SOC survey documents trends in commuting behavior that are available to commuters in the region. This survey will be used to help estimate the impacts of some TERMS, such as the Telework Resource Center, which may have an impact on the population at large as well as on the commuters who may participate in the TERMS.

The survey results suggest that the use of formal telecommuting programs might be increasing. The State of the Commute Survey results show that 15 percent of the regional workforce is teleworking an average of 1.5 days per week, compared with 12 percent in 1998. This is an increase of 25 percent in the past three years. The new number represents 400,000 workers, of whom 88 percent are working from home. About a quarter of respondents (24.7%) who telecommuted did so a few times each month. About a quarter of respondents who telecommuted did so infrequently, either for special projects (15.3%) or for emergencies (9.6%). The remaining half of the respondents (50.1%) telecommuted at least one day per week.

The new data also indicated that the region is getting a bigger air pollution reduction from teleworking than was previously thought. Prior analysis estimated that the telework programs reduced Nitrogen Oxide (NO_x) by 1.128 tons per day, but the survey results show that 0.466 tons per day of additional reductions in NO_x can now be counted.

The State of the Commute Survey shows that the region has the potential to get many more employees to telework. Approximately 700,000 of the non-telecommuters have telework-appropriate job responsibilities. The survey indicates that 475,000, or 21 percent of all non-telecommuters, would like to telework at least one day per week.

The survey highlighted the latent potential for teleworking with federal agencies and large private sector firms. Twenty-six percent of federal employees who do not currently telework have telework-appropriate job responsibilities and would like to do it, while 28 percent employees from large private sector firms could and would telework if given the opportunity.

Finally, the survey will attempt to suggest how other commuter alternative programs and marketing efforts might be influencing commuting behavior in the region.

This portion of the measure as analyzed and adopted achieves most of its NO_x (88%) benefits from the telecommuting from home component and not from the telework center component. Due to the efforts of the resource center in promoting telecommuting, workers around the region will work from their home offices for two days in a week. There are 58,155 firms in the region (15,542 in D.C., 22,181 in MD., and 20,432 in VA.) with 1-49 employees and there are 2,811 firms in the region (964 in D.C., 817 in MD and 1030 in VA) with 50 or more employees to whom the program will be marketed. The above numbers are obtained from the 1990 Regional Employment Census (REC). Due to the marketing efforts of the regional telecommuting center 2% of the firms with 1-49 employees and 17% of firms with 50 or more employees will offer telecommuting as a fringe benefit to their employees. In firms offering the fringe benefit, 32% of employees will participate (based on a Telecommuting article by Dan Rathbone, ITE Journal, December 1992) for a maximum of two days a week. The COMSIS TDM model was used for the analysis with the above assumptions as inputs and the model estimates the following daily reduction:

Person Trips	=	31,000
Vehicle Trips	=	22,400
Vehicle miles of Travel	=	342,550
VOC reduction	=	0.27 tons/day
NO_x reduction	=	0.56 tons/day

Since there are 31,000 person trips reduced per day, it is estimated that 15,500 persons will have to participate per day for the measure to achieve its objective with regards to telecommuting from home.

The number of participants in the telecommuting program can be verified using the 1990 Regional Employment Census (REC). There are 336,694 employees working in firms with less than 50 employees and 512,471 employees working in firms with 50 or more employees. The above numbers exclude non-office workers such as manufacturing , service etc.

Number of participants in firms with less than 50 employees

= 336,694 x 2% x 32% x 2/5 = 900

Number of participants in firms with greater than 50 employees

= 512,471 x 17% x 32% x 2/5 = 11,200

Total estimated number of participants region wide = 12,100

The difference between the 12,100 participants from the 1990 REC and the 15,500 participants from the TDM model (which is based on 1999 trip tables) can be easily explained. The TDM model uses the 1999 trip table based on round 5.2 land use whereas the REC represents 1990 employment from a survey. The growth in employment between 1990 and 1999 should account for the 3,400 employee difference between the two methodologies.

Since COG's FY96, the MWTRC has initiated the following program activities:

- Conducted a telework orientation for Commuter Connections Subcommittee representatives.
- Developed and conducted 31 telework seminars for employers and 17 seminars for employees.
- Conducted a 21-month Telework Demonstration Project with eight area employers and produced a comprehensive report on the project.
- Sponsored the 1997 and 1998 ITAC conference and the 1999 Association for Commuter Transportation (ACT) conference.
- Prepared and presented papers on MWTRC activities at the 1997 and 1998 ITAC conferences; the 1997, 1998, 1999, and 2003 ACT conferences; the U.S. Department of Transportation's 1997 and 1998 International Workshop on Planning Regional Telecommuting Programs; and the 1999 Transportation Research Board Conference
- Co-sponsored Telework America Leadership Summit in December 1999 with ITAC, GSA, and AT&T.
- Co-sponsored the first annual Washington Area Conference on Telework in conjunction with Telework America Day in October 2000.
- Developed, sponsored, and conducted local Telework America events in 1997 and 1999.
- Conducted an analysis of the effectiveness of the Telework measure in September 1999 on meeting regional air quality goals.
- Developed, sponsored, and conducted a Washington Metropolitan Regional telework Symposium in 2002 and the Washington Area Conference on Telework in 2003.

Beginning in FY02, four TRC components were evaluated, including:

1. Current regional telecommuters who had direct contacts with the TRC (telecommute information, seminars, advertising provided by the TRC) during the evaluation period
2. New telecommuters whose employers received assistance from the TRC (brochure/information packet, seminar, other direct assistance) during the evaluation period
3. Current telecommuters who used a Metropolitan Washington Telework Center (MWTC)
4. Current telecommuters whose employer participated in the TRC Pilot Program

Data for impacts of these components were obtained from several sources. The sources and the evaluation data collected from each are described briefly below:

<u>TRC Assistance Survey</u> (new telecommuters at worksites assisted by TRC)

1. Percentage of employers with telecommute programs before and after receiving TRC assistance
2. Percentage of teleworkers at assisted sites before and after receiving assistance

State of the Commute Survey (regional commuters)

1. Number of regional telecommuters and their frequency of telecommuting
2. Telecommute locations-the mix between home-based and telecenter-based telecommuting
3. Average frequency of telecommuting, telecommuters' commute modes on non-telecommute days, and commute distance they traveled on non-telecommute days
4. Telecommuters travel patterns to telecenters
5. Sources of information telecommuters had used to learn about telecommuting

Telecenter Occupancy and Telecenter Teleworker Surveys (MWTC telecommuters)

1. Number of teleworkers at the centers on an average day
2. Average telecommute frequency of teleworkers (the number of days teleworked per week) at the telecenter and other locations
3. Teleworkers travel mode and travel distance to telecenter
4. Teleworkers travel mode and travel distance to main worksite (non-telecenter days)

TRC Telecommute Pilot Program (telecommuters at pilot program worksites)

Using results from these surveys and records, the number of telecommuters who had either direct or indirect (through their employers) contact with the TRC during the evaluation period were estimated and divided into "home-based," "MWTC-based" and "other telecenter-based" groups. The number of telecommuters were then multiplied by the average VTR factors, as identified by the appropriate survey data, to obtain the number of vehicle trips reduced by telecommuting.

For this TERM, VTR factors accounted for both the average telecommute frequency of the group as well as their commute modes on telecommute days (telecenter commuters) and non-telecommute days (all telecommuters). The VTR factor for home-based telecommuters was 0.49 daily trips reduced per telecommuter, reflecting the part-time (1.46 days per week average) telecommute frequency and theelimination of vehicle trips for telecommuters who drove alone, carpooled, or vanpooled on non-telecommute days. VTR factors were much smaller for telecenter-based telecommuters, because the majority of these telecommuters drove alone to the telecenter. Thus they did not reduce (and in some cases increased) the number of vehicle trips they made on an average day. However, the benefit of their telecommuting was in the reduction of VMT on telecenter days.

The VMT reduced by telecommuting was calculated for home-based telecommuters by multiplying the number of daily trips reduced by the average commute distance. In the case of telecenter telecommuters, the VMT reduced was calculated by multiplying the number of telecommuters on an average day by the reduction of VMT for a telecommute day (travel distance to main work location minus travel distance to telecenter).

Tons of emissions removed were calculated by multiplying vehicle trip and VMT reductions by 2002 emission factors developed for NO_x and for the region.

B. Telework Centers

COMSIS corporation analyzed the impact of Telework centers. They estimated the maximum potential for 12 centers in the region as 63,750 employees. The average number of teleworkers per center will be around 5,000 employees. A US DOT study on telecommuting predicts that telework centers will reach their full potential in the long term (2010 and beyond) and in the short term they will start off slowly. Since the critical year for the measure is 1999 a goal of about 500 teleworkers per center is a good target for the region. The measure as adopted calls for setting up 5 new telework centers in the region (4 in Virginia and 1 in the District of Columbia). The measure also assumed additional emission credits for the telework centers operational under federal initiative (two in Virginia). Pro-rating the results of the COMSIS study of the five new telework centers with a participation of 2,500 teleworkers per day will result in the following reductions.

VT reduction	=	800
VMT reduction	=	45,200
VOC reduction	=	0.03 tons/day
NOX reduction	=	0.07 tons/day

(See note under Section III - "Details of Analysis," page A-32.)

C. State of Maryland Telework Project

FY95 and FY96 funding for the Telework Resource Center was provided by the District of Columbia and the Commonwealth of Virginia. In FY97, the State of Maryland began contributing to the program as the result of transportation improvements associated with the Redskins Stadium in Prince George's County. On June 19, 1996, the Transportation Planning Board approved Resolution 39-96 to amend the Constrained Long-Range Transportation Plan for the National Capitol Region and the FY96-01 TIP. The Maryland Telework Project is based upon increasing the number of telecommuters working from home by 1,700 and the number working from centers by 1,940.

Telework Centers

Number of Centers = 4

	Year	VT	VMT	NOX	VOC	ANNUAL C0ST	COST EFFECTIVENESS	
							NOX	VOC
	2000	620	9,040	-0.0143	-0.0063	$125,000	$35,012	$79,525
	2020	620	9,040	-0.0118	-0.0054			

NOTE: Planning and Implementation costs will be spread over three years.
Total Planning and Implementation costs for the four center will equal $375,000

Telework through Employer Outreach

	Year	VT	VMT	NOX	VOC	ANNUAL COST	COST EFFECTIVENESS	
							NOX	VOC
	2000	2,500	38,751	-0.0610	-0.0264	$60,000	$3,936	$9,088
	2020	3,292	51,073	-0.0662	-0.0301			

Assumed effectiveness is 2/3 of the regional program.
(Source: Transportation Implications of Telecommuting, US DOT, pg 59, fig 12, & pg 61, table 7)

TOTAL EMISSION REDUCTION
(Telework Project)

YEAR	NO_X	VOC
	(Tons/Day)	
2000	-0.0753	-0.0327
2020	-0.0780	-0.0356

Source: Air Quality Conformity Assessment, Transportation Improvements Associated with Proposed Washington Redskins Football Stadium in Prince George's County, MDOT Amendments to FY96-2001 Transportation Improvement Program and Constrained Long Range Plan (June 19, 1996).

Proposed Funding Plan for M-92 (Telecommuting/Telework Centers)

I) Regional Funding Plan

M-92 Item #	Type of Program	Fiscal Year						Total
		1995	1996	1997	1998	1999	2000	
1	Telework Resources Center (functions 1-5)	$350,000	$350,000	$350,000	$350,000	$420,000	$420,000	$2,224,000
2	Planning & Implementation of telework centers (function 6)	-	$150,000	$150,000	$150,000	-	-	$450,000
Annual Funding		$350,000	$500,000	$500,000	$500,000	$420,000	$420,000	$2,690,000

Assumptions:

- The $ 350,000 funding during FY 95 through FY 98 is to staff the telework resource center which would actively work with employers in the region to implement both telecommuting and telework centers. The increase in FY 99-00 funding is to account for inflation.

- The $ 250,000 during FY 96-98 will be used for expert consultant support in planning and implementing the telework centers at various locations in Virginia and one in the District of Columbia.

Proposed Funding Plan for M-92 (Telecommuting/Telework Centers)

District of Columbia Funding Plan

M-92 Item #	Type of Program	Fiscal Year						Total
		1995	1996	1997	1998	1999	2000	
1	Telework Resources Center (functions 1-5)	$35,000	$35,000	$35,000	$35,000	$42,000	$42,000	$224,000
2	Planning & Implementation of telework centers (function 6)	-	$25,000	$25,000	$25,000	-	-	$75,000
Annual Funding		$35,000	$60,000	$60,000	$60,000	$42,000	$42,000	$299,000

Assumptions:

- The $ 35,000 funding during FY 95 through FY 98 is to staff the telework resource center which would actively work with employers in the District of Columbia to implement both telecommuting and telework centers. The increase in FY 99-00 funding is to account for inflation.

- The $ 25,000 during FY 96-98 will be used for expert consultant support in planning and implementing the telework centers at various locations throughout the District of Columbia.

Funding Plan for M-92 (Metro Washington Regional Telework TERM)

Virginia Funding Plan

Item #	Type of Program	Fiscal Year						Total
		1995	1996	1997	1998	1999	2000	
1	Telework Resources Center (functions 1 - 5)	$315,000	$315,000	$315,000	$315,000	$378,000	$378,000	$2,016,000
2	Planning & Implementation of telework centers (function 6)	-	$125,000	$125,000	$125,000	-	-	$375,000
Total Annual Funding (VA)		$315,000	$440,000	$440,000	$440,000	$378,000	$378,000	$2,391,000

Assumptions:

- The $ 315,000 per year funding during FY 95 through FY 98 is to staff the telework resource center and perform functions 1 through 5.
- The $ 125,000/per year during FY 96-98 will be used for expert consultant support in planning and implementing the telework centers at various locations throughout the state of Virginia.

Maryland Funding Plan

Item #	Type of Program	Fiscal Year						Total
		1995	1996	1997	1998	1999	2000	
1	Telework Resources Center	-	-	$60,000	$60,000	$60,000	$20,000	$200,000
2	Planning & Implementation of telework centers	-	-	$125,000	$125,000	$125,000	$40,000	$415,000
Total Annual Funding (MD)		-	-	$185,000	$185,000	$185,000	$60,000	$615,00

GLOSSARY OF ACRONYMS

ACT	-	Association for Commuter Transportation
CCWP	-	Commuter Connections Work Program
COG	-	Council of Governments
DDOT	-	District of Columbia Department of Transportation
DTP	-	Department of Transportation Planning
ECO	-	Employee Commute Options
GIS	-	Geographic Information System
GRH	-	Guaranteed Ride Home
HOV(s)	-	High Occupancy Vehicle(s)
ITAC	-	International Telework Association & Council
MATAC	-	Mid-Atlantic Telecommuting Advisory Council
MD MTA	-	Maryland Mass Transit Administration
MDOT	-	Maryland Department of Transportation
MWAQC	-	Metropolitan Washington Air Quality Committee
MWCOG	-	Metropolitan Washington Council of Governments
MWTRC	-	Metropolitan Telework Resource Center
NO_X	-	Nitrogen Oxides
OPA	-	Office of Public Affairs
PRTC	-	Potomac & Rappahannock Transportation Commission
TAHG	-	Telecommute Ad-Hoc Group
TCM	-	Transportation Control Measure
TDM	-	Transportation Demand Management
TERM	-	Transportation Emission Reduction Measure
TIP	-	Transportation Improvement Program
TMA	-	Transportation Management Association
TMO	-	Transportation Management Organization
TPB	-	Transportation Planning Board
VDOT	-	Virginia Department of Transportation
VDRPT	-	Virginia Department of Rail & Public Transportation
VMT	-	Vehicle Miles Traveled
VOC	-	Volatile Organic Compounds
VRE	-	Virginia Railway Express
VT	-	Vehicle Trips
WMATA	-	Washington Metropolitan Area Transit Authority
WMTC	-	Washington Metropolitan Telework Centers