TELECENTER UTILIZATION AND TELEWORKER TRAVEL BEHAVIOR SURVEYS

Prepared for:

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INTRODUCTION

This brief report describes the methodologies and results of data collection undertaken for the Commuter Connections program of the Metropolitan Washington Council of Governments (COG) at telecenters administered by the General Services Administration (GSA). These data were collected to assess the average utilization of telecenters and the travel behavior of commuters who work at telecenters. Both of these data collection efforts also were conducted in 2001. And the utilization inventory was updated in 2002 and 2003.

The results of the surveys will be used, as part of a larger evaluation of Transportation Emission Reduction Measures (TERMs) administered by COG, to estimate the travel and air quality impacts of the telecenters. This analysis will be conducted in the spring of 2005.

TELECENTER UTILIZATION

Methodology

All GSA telecenter managers were asked to collect information on the total number of reservations made for use of the telecenter and on the number of employees who actually came to work at the telecenters. This information was collected for a four-week period (20 business days, Monday through Friday) from March 22 through April 15, 2004. Thirteen of fifteen GSA telecenters compiled the information. Participating telecenters included NetTech, Hagerstown, Bowie, Calvert, Waldorf, Manassas, Stafford, Fairfax, Herndon, Sterling, Fredericksburg, Woodbridge and Laurel Lakes. The survey results are shown below. The tables include data from 2001-2003.

Results

Based on information received from the 13 telecenters, a total of 317 seats were available for teleworking on a daily basis. Center capacity ranges from 16 to 37 seats per telecenter. For the 20 days covered by the survey, a total of 6,340 seats were available for teleworking.

Percent Seats Reserved – The percentage of available seats reserved varied from center to center, ranging from a high of 78% of the center's capacity to a low of 17% of capacity. As shown in Table 1, in 2004, an average of 50% of the seats at the telecenters were reserved ahead of time. This was essentially the same as the reservation rate in 2001 and 2002.

Table 1: Reservations of Seats

Year	# of Days Surveyed	Total Seats Available *	Total Reservations	Reservations / Available Seats
2004	**20**	**6.340**	**3,160**	**50%**
2002	21	6,720	3,558	53%
2001	22	6,952	3,526	51%

*This indicates the number of seats available over the total survey period. For example, in 2004, 317 seats were available each day, for a total of 6,340 seats available for the 20 days of reporting by the centers.

Fulfillment of Reservations – As Table 2 indicates, about 74% of the telecommuters who made reservations actually came to work at the telecenters. The level of attendance ranged from a high of 97% reservations to a low of 51% of reservations. This appears to have increased slightly since 2001. In 2001, about two-thirds of reserved seats were used and in 2004, three-quarters of reservations were used.

Table 2: Users by Reservation

Year	# of Days Surveyed	Total Reservations	Total Uses	Users/ Reservations
2004	**20**	**3,160**	**2,335**	**74%**
2002	21	3,558	2,468	69%
2001	22	3,526	2,340	66%

Telecenter Utilization – Table 3 presents the utilization rate of the centers. The overall utilization rate, measured by the number of seats used during the survey period as a proportion of the seats available, was 37%. Utilization levels by center ranged from 56% to 16%. This rate was approximately the same as was achieved in 2001 and 2002.

Table 3: Utilization Rate

Year	# of Days Surveyed	Total Seats Available	Total Uses	Users/ Available Seats
2004	**20**	**6.340**	**2,335**	**37%**
2002	21	6,720	2,468	37%
2001	22	6,952	2,340	34%

TELEWORKER TRAVEL BEHAVIOR

Methodology

The second objective of this research was to assess the impact of telecenter use on travel behavior of teleworkers. To identify the travel patterns of teleworkers, the telecenter managers distributed surveys to teleworkers who used the centers during the four-week survey period. The survey collected data on telecenter workers travel patterns for a one-week period. Of the 15 telecenters surveyed, 13 returned surveys from a total of 126 individual teleworkers. The following sections present the results of the surveys. This survey was also conducted in 2001 and those results are presented for comparison.

Results

Work Locations – The survey first asked telecommuters where they worked each of the days during the survey period. As the last column in Table 4 indicates, teleworkers worked at the centers for about 32% of their workweek, or 1.6 days per week. Tuesdays and Fridays were the most popular days for working at the telecenters. Respondents worked at a main office about half (58%) of the week.

Table 4: Location of Work by Day of Week

	Mon		Tues		Wed		Thurs		Fri		WEEK	
Location	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**
Main office	87	70%	67	54%	82	65%	86	69%	38	30%	**360**	**58%**
Home	2	2%	3	3%	8	6%	2	2%	3	2%	**18**	**3%**
Telecenter	**24**	**19%**	**48**	**38%**	**30**	**24%**	**33**	**26%**	**64**	**51%**	**199**	**32%**
Satellite office	1	1%	1	1%	1	1%	0	0%	0	0%	**3**	**<1%**
Executive suite	0	0%	0	0%	0	0%	0	0%	0	0%	**0**	**0%**
Other	0	0%	4	3%	4	3%	1	1%	0	0%	**9**	**1%**
Regular day off	8	7%	1	1%	0	0%	1	1%	11	9%	**21**	**3%**
Vac./holiday	2	2%	1	1%	2	2%	2	2%	9	7%	**16**	**3%**

* Column percentages might not equal 100%, due to rounding

Tenure at the Telecenter **–** Respondents also were asked how long they had worked at the telecenter. As shown below, in 2004, the average teleworker had worked at the center for 30 months. Individual teleworkers' tenures at the telecenter ranged from 2 to 122 months. The average tenure was longer in 2004 than the 22-month average as reported in the 2001 telecenter user survey.

Table 5: Tenure

	Months at the telecenter	
	Average	**Median**
2004	**30 months**	**24 months**
2001	22 months	19 months

Average Trip Distance – Table 6, on the next page, shows average trip distances from the teleworker's home to the telecenter and from home to the main worksite on non-telecommute days. On average, teleworkers traveled just over 9 miles to the telecenter and nearly 47 miles on non-telework days. Thus, they save about 37 miles, each way, on days they work at the telecenter. This travel distance saving was slightly higher than the 34 mile saving calculated in 2001, but the sample sizes are relatively small for both surveys (126 in 2004 and 167 in 2001), so the difference is not statistically significant.

Table 6: Average Trip Distance

	Average One-way Miles to Telecenter	Average One-way Miles to Main Worksite	Mileage Saving
2004			
Average	**9.4 miles**	**46.8 miles**	**(37.4 miles)**
Median	7 miles	40 miles	(33 miles)
2001			
Average	8.9 miles	42.8 miles	(33.9 miles)
Median	10 miles	33 miles	(25 miles)

Mode of Travel on Telework Days – Next, teleworkers were asked about their mode of travel on telework and non-telework days. Table 7 provides results for the days teleworkers traveled to the telecenter. The overwhelming majority (94%) drove alone in 2004, three percent carpooled, two percent rode a train, and two percent biked or walked to the center. The predominance of drive alone in 2004 was consistent with the 93% drive alone rate found in the 2001 survey.

Table 7: Mode of Travel to Telecenter

	Mon		Tues		Wed		Thurs		Fri		WEEK	
Mode	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**
Drove alone	23	96%	45	96%	33	94%	31	94%	59	92%	**191**	**94%**
Carpool	0	0%	2	4%	1	3%	0	0%	2	3%	**5**	**3%**
Vanpool	0	0%	0	0%	0	0%	0	0%	0	0%	**0**	**0%**
Bus	0	0%	0	0%	0	0%	0	0%	0	0%	**0**	**0%**
Train/rail	0	0%	0	0%	1	3%	1	3%	2	3%	**4**	**2%**
Bike/walk	1	4%	0	0%	0	0%	1	3%	1	2%	**3**	**2%**

* Column percentages might not equal 100%, due to rounding

Mode of Travel on Non-Telework Days – Teleworkers also were asked if they had changed the way they travel to the main worksite on non-telework days, since they started using the telecenter. These results are shown in Table 8, along with any differences in mode use. The last column of the table shows the mode use differences calculated from the 2001 survey data. The 2004 data show slight mode changes from "prior to TC" to "with TC," with driving alone increasing slightly, from 38% to 42%. A similar result was found in 2001, but neither result was statistically significant.

Table 8: Mode of Travel to Main Office

Mode	Prior to TC*	With TC	Difference (2004)	Difference (2001)
Drove alone	38%	42%	**+4%**	+3%
Carpool	25%	20%	**-5%**	-2%
Vanpool	11%	13%	**+1%**	-3%
Bus	7%	6%	**-1%**	+2%
Train/rail	19%	20%	**+1%**	+2%
Bike/walk	0%	0%	**0%**	0%

*Table includes only days that commuters traveled to the main worksite

Impact on Vehicle Trips

Finally, Table 9 shows the overall mode split for the teleworkers mode during the survey week, including both telework and non-telework days. Overall teleworkers increased the total number of days they drove alone during the week and decreased the number of days they used all alternative modes. The new drive alone trips primarily occurred on telework days.

Table 9: Mode of Travel – Overall Change on Telecenter and Non-Telecenter Days

Mode	Prior to TC*	With TC	Difference (2004)	Difference (2001)
Drove alone	38%	60%	**+22%**	+13%
Carpool	25%	15%	**-10%**	-7%
Vanpool	11%	8%	**-3%**	-6%
Bus	7%	4%	**-3%**	-1%
Train/rail	19%	13%	**-6%**	-6%
Bike/walk	0%	<1%	**0%**	0%

*Table counts only days that commuters traveled to a location outside their home for work

Weekly Vehicle Trips – As can be seen in Table 10, teleworkers increased the total number of vehicle trips they made during the week when they used the telecenters by a net total of 80 trips per week. This finding parallels the results of the 2001 survey and studies of other telecenter users nationwide. This could be because availability of transit and alternative transportation to telecenters is often limited. In many cases, commuters who typically use an alternative mode of transportation to their main worksite have no choice but to drive alone to telecenters.

Table 10: Vehicle Trips

	Drove Alone	Carpool*	Vanpool **	Total Vehicle Trips
2004				
Prior to TC	229.2	74.5	5.7	309.3
With TC	344.0	41.5	3.8	389.3
Net change	+114.8	-33.0	-1.8	+ 80.0
2001				
Net change	+100.0	-36.6	4.5	+ 60.2

* Carpool trips count as one-half a vehicle trip (i.e., 149 carpool person trips reported for Prior-to-TC period.
** Vanpool trips count as one-twelfth of a vehicle trip (i.e., 68 vanpool person trips reported for with-TC period.

Impact on VMT

Even with increased weekly vehicle trips, telecenter users decreased their total weekly VMT due to the shorter distance to the telecenter, 9.4 miles to the telecenter compared to 46.8 miles to the main worksite.

Table 11 presents the net impacts of telecenter use on vehicle trips and VMT. Use of the telecenter resulted in a weekly VMT reduction of 7,972 miles, or 1,594 miles per day (7,972 miles divided by five days). The daily VMT reduction per telecenter user in 2004 was 12.6 miles. This compares closely to 13.9 miles reduction in VMT per telecenter user in 2001.

This average VMT reduction per teleworker can be used to estimate the total VMT reduction for all telecenter users, by multiplying the per teleworker VMT reduction by the total number of seats used per day at all centers. The average number of seats used is 125, calculated by multiplying the 37% utilization rate by the total seat count of 339 (317 from centers that participated in data collection and an additional 22 seats for two centers that did not participate). Multiplying 125 seats used per day by 12.6 VMT reduced per telecenter user yields an estimate of 1,575 VMT reduced per day.

Table 11: Impact on VMT

	Prior to TC (weekly)		With TC (weekly)*	
	Vehicle Trips	**VMT (one-way)**	**Vehicle Trips**	**VMT (one-way)**
Main worksite	309	14,465	185	8,662
Telecenter	0	0	193	1,816
Daily VMT	309	14,465	378	10,478

* "With-TC" includes only trips to main worksite or to telecenter. Trips to other locations (satellite work site, etc.) were not included because information on travel distance to these locations was not available.

Weekly one-way VMT reduction (14,465 – 10,478)		3,986
Weekly round-trip VMT reduction (3,986 x 2)		7,972
Daily round-trip VMT reduction (7,972 / 5)		1,594
Telecenter users participating in the survey		127
Average daily VMT reduction per telecenter user (1,594 / 127)	**2004**	**12.6 miles**
	2001	13.9 miles
Average daily VMT reductions for all GSA telecenters	**2004**	**1,575**