

Transit Ridership  
to Seattle CBD – 1985

PSCOG



# Transit Ridership to Seattle CBD – 1985

March 1988

**PSCOG**

**Puget Sound Council of Governments**

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216 First Avenue South • Seattle, WA 98104  
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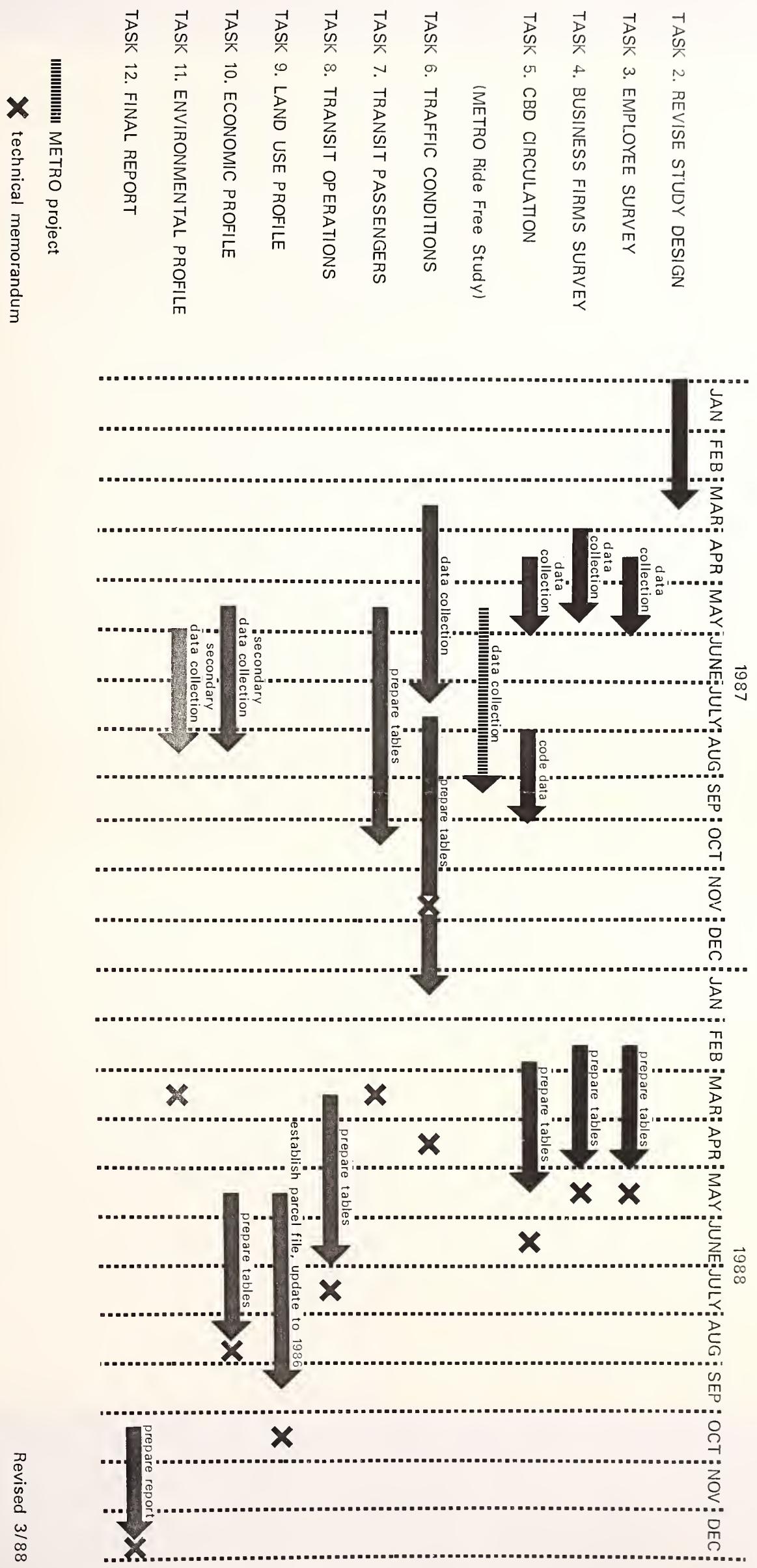
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P

## ABSTRACT

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PROJECT TITLE: DSTP Before and After

SUBJECT: Rider Characteristics from Metro Transit  
On-Board Survey 1985

DATE: March 1988

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## TRANSIT RIDERSHIP TO SEATTLE CBD - 1985

Puget Sound Council of Governments  
March, 1988

### EXECUTIVE SUMMARY

One major segment of travelers to the CBD is that of transit users who commute to and from work on the bus. Another segment is that of transit users who are shopping or have personal business in downtown Seattle. In 1985, Metro conducted an on-board transit survey of all in-bound riders.

The 1985 transit survey is a good base from which to present information on characteristics on transit riders to the downtown before construction.

The survey shows:

- Of all in-bound trips, over 40% were destined to the Seattle CBD.
- The average age for riders destined to the CBD was 38.9 years.
- The average income for CBD-destined riders was \$27,500.
- CBD-destined riders are most likely traveling to work. Thirty-one (31) percent board the bus between 6:30 and 7:30 a.m.
- Seventy-three (73) percent of the CBD-destined riders said they had a car available to make the trip they were taking by bus.

By 1990, Metro is expected to have acquired only enough dual-powered buses to enable operation at 40% of tunnel capacity. Therefore, the "after" portion of this study may be conducted before the tunnel is operating at full capacity.



## FOREWORD

The Puget Sound Council of Governments (PSCOG) is a voluntary organization of local governments in King, Kitsap, Pierce, and Snohomish counties, created to provide a forum for regional decision making. The primary goals of the PSCOG are to guide the growth and development of the region, and to seek solutions to problems which cross jurisdictional boundaries. PSCOG membership currently includes 44 cities and towns, three Indian tribes and four counties. The PSCOG's business is conducted by local elected officials representing the member agencies.

This report presents characteristics of Metro transit riders "before" construction of the tunnel began using responses from a 1985 on-board survey. Staff from Metro's Research and Market Strategy Division and Capital Planning and Development Division provided review and comments to this report.

When "after" conditions are ready to be studied, tables from this report will need to be redone given changes in routing of buses through the tunnel.



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## INTRODUCTION

This report will provide a starting point to those who will examine travel conditions and travel behavior into and through the Seattle CBD upon completion of the bus tunnel. One major segment of travelers to the CBD is that of transit users who commute to and from work on the bus. Another segment is that of transit users who are shopping or have personal business in the downtown. In 1985, Metro conducted an on-board transit survey of all in-bound riders. In 1987, the PSCOG conducted a sample survey of downtown employees on their travel behavior and will be discussed in another document.

The 1985 transit survey is a good base from which to present information on characteristics of transit riders to the downtown before construction began. The routes to be routed through the tunnel will be revised before the tunnel is completed. This report documents the survey data file used and the SAS code used to prepare these tables. This will make it easier to re-do the tables when the routes are finalized. We have not invested too much time in "cleaning up" these tables with the realization that they will need to be redone.

In 1990, Metro is expected to have acquired only enough dual-powered buses to enable operation of 40% of tunnel capacity. Therefore, the "after" portion of this study may be conducted before the tunnel is operating at full capacity.

In May 1985, Metro conducted a survey of "in-bound" riders on one Thursday, one Saturday, and one Sunday. This report discusses only the responses from the weekday (Thursday).

The survey included questions on origin and destination, trip purpose, fare payment, car availability, disability and use of the wheelchair lift. Since the survey was distributed only on in-bound trips, the form also asked about a return trip. Standard demographic questions on age, sex, household size, and income were also asked. (See Appendix A for copy of survey form.)

Of all in-bound trips, over 40% were destined to the Seattle CBD, and most of these trips were for work.

The CBD was defined as the area bounded by I-5 to the East, Royal Brougham to the south, Elliott Bay to the west, and Virginia Street to the north. (See Appendix D for the list of census tracks and blocks.)

This report has selected responses from those riders destined to the CBD to identify their trip and personal

characteristics. Responses from riders from those routes currently planned to be routed through the tunnel have been distinguished from those that are planned to remain on the surface. (See Appendix B for list of routes. This is a tentative list and is subject to revision and approval by the Metro Council.)

Routes currently scheduled for the tunnel include Burien, Renton, Federal Way, Kirkland, Redmond, Bellevue, Aurora Village, Kent and Auburn. University District routes, and those for Northgate, Viewridge and Lake City are also scheduled for the tunnel.

Riders on the tunnel routes accounted for 35% of the riders in the 1985 survey.

## CHARACTERISTICS OF RIDERS

### Age

Riders into the CBD, on average, are somewhat older than those not going into the CBD. The average age for those destined for the CBD is 38.9 years; for the others, the average is 31.0 years.

Fifty-three percent of the CBD-bound riders are between 25-44. An additional 16% are between 45 and 59. (See Figure 1 and Table 1.)

There is little difference in age for riders in tunnel routes compared to surface routes. "Tunnel" riders are somewhat more likely to be age 35-54 and "surface" riders more likely to be 65 and over. (See Figure 2.) This reflects the choice of routes for the tunnel --since buses traveling to Queen Anne and more central areas with more elderly populations will remain on the surface.

### Sex

Females comprise nearly 64% of CBD-destined riders, as opposed to 58% of non-CBD-destined riders. Females traditionally have made up a larger share of transit riders, and females have also made up a larger proportion of the CBD work force. "Tunnel" and "surface" populations have the same ratio of females to males. (See Figure 3 and Table 2.) riders.

### Income

CBD-destined riders have a higher average income than non-CBD destined riders. CBD-destined riders reported an average income of \$27,484, compared to \$21,427 for those not destined for the CBD.

Nearly 40% of the CBD-destined riders reported an annual household income of over \$30,000. Only 25.8% of non-CBD-destined riders reported this income level. Almost 50% of CBD-destined riders on tunnel routes reported household incomes of over \$30,000. (See Figure 4 and Table 3.)

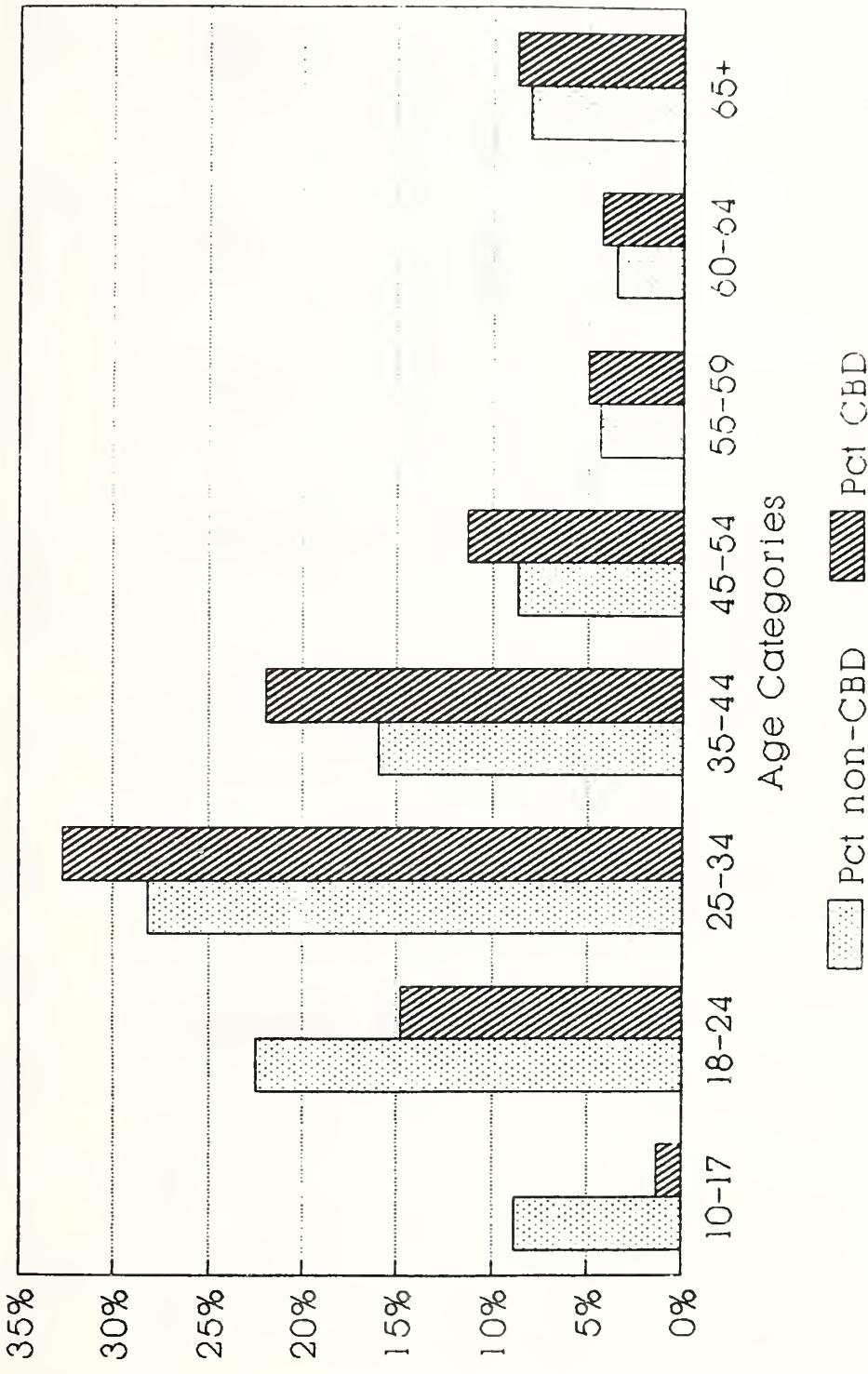
CBD-destined riders on "tunnel" routes are the most likely to have household income over \$50,000 (16.25%). Eleven percent of riders on "surface" routes reported a similar income. (See Figure 5.)

### Ethnicity

Eighty percent of Metro riders are white. Approximately 20% of all riders are black, Asian, Native American or Hispanic. (See Table 4 and Figure 6.) Nearly 88% of "tunnel" riders

(See Table 4 and Figure 6.) Nearly 88% of "tunnel" riders are white, compared to 80% of "surface" riders. This again is reflective of the demographic characteristics of the suburban communities currently selected to be routed through the tunnel.

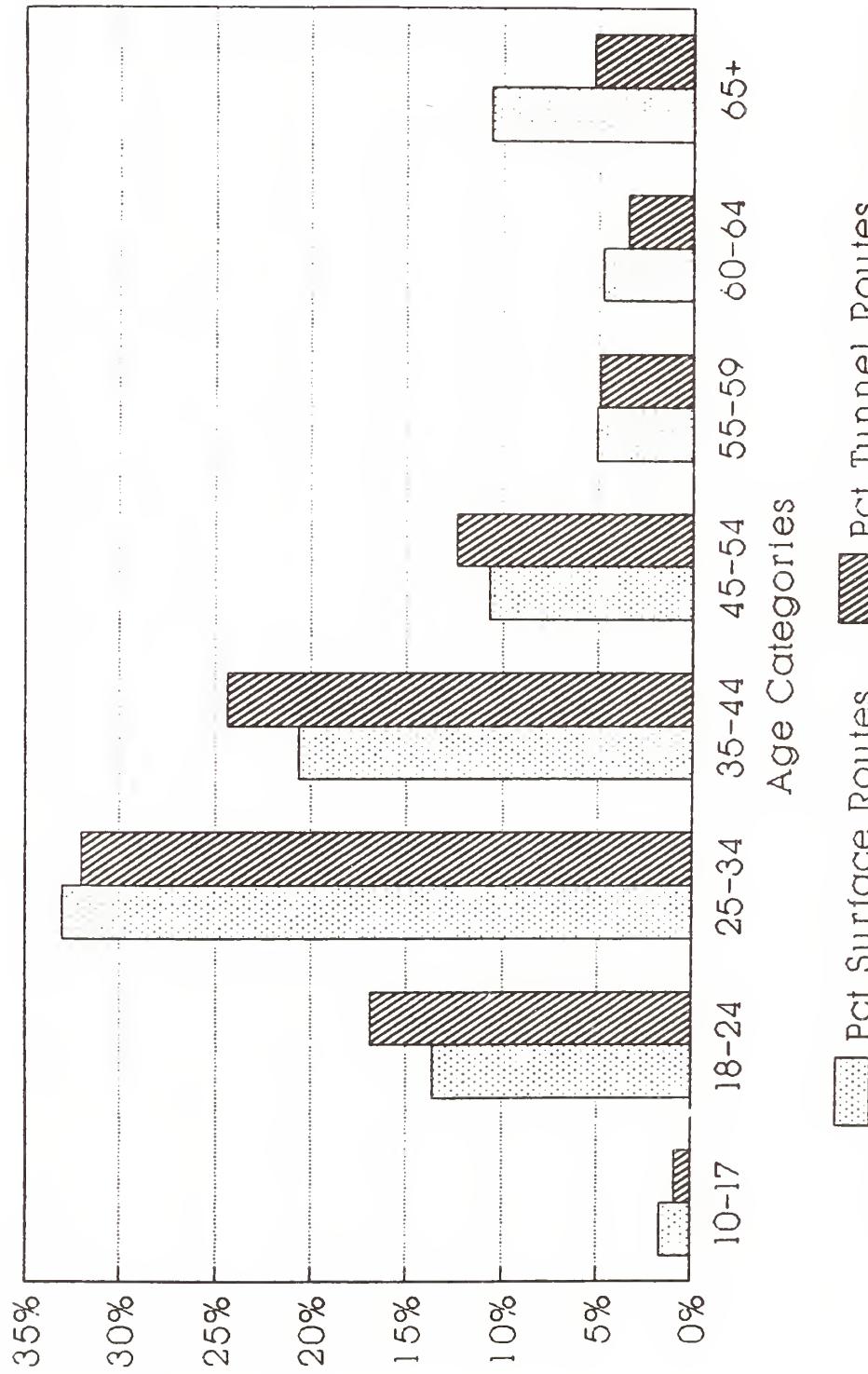
# Age Distribution 1985 Metro On-Board Transit Survey



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Figure 1

## Age Distribution CBD Destined



PSCOG /1988

Figure 2

TABLE 1

Age

METRO ON-BOARD SURVEY  
TABLES BY DESTINATION  
ALL ROUTES

## TABLE OF AGE BY DTRCTBLK

AGE DTRCTBLK

FREQUENCY |

PERCENT |

ROW PCT |

COL PCT |

AGE	DTRCTBLK		TOTAL
	NON-CBD DESTINED	CBD DESTINED	
10-17	3885.04	502.03	4387.07
	4.81	0.62	5.43
	88.56	11.44	
	8.79	1.37	
18-24	19935.25	15409.53	15344.8
	12.30	6.70	19.00
	64.75	35.25	
	22.49	14.79	
25-34	12423.5	11963.1	124386.6
	15.38	14.81	30.20
	50.94	49.06	
	28.12	32.71	
35-44	7051.17	8019.16	15070.3
	8.73	9.93	18.66
	46.79	53.21	
	15.96	21.92	
45-54	3830.54	4114.45	17944.99
	4.74	5.10	9.84
	48.21	51.79	
	8.67	11.25	
55-59	1928.43	1820.41	13748.84
	2.39	2.25	4.64
	51.44	48.56	
	4.37	4.98	
60-64	1565.86	1566.62	3132.48
	1.94	1.94	3.88
	49.99	50.01	
	3.54	4.28	
65+	3554.5	3181.17	6735.67
	4.40	3.94	8.34
	52.77	47.23	
	8.05	8.70	
TOTAL	44174.3	36576.5	80750.8
	54.70	45.30	100.00

FREQUENCY MISSING = 14961

## METRO ON-BOARD SURVEY

## TABLE OF AGE BY ROUTE

CBD DESTINED TRIPS

ROUTE

ROUTE	SURFACE	TUNNEL	TOTAL
	389	113.03	502.03
	1.06	0.31	1.37
	77.49	22.51	
	1.65	0.87	
3221.11	2181.26	15402.37	
	8.82	5.97	14.79
	59.62	40.38	
	13.65	16.87	
7804.17	4141.19	11945.4	
	21.37	11.34	32.70
	65.33	34.67	
	33.07	32.03	
4866.13	3145.84	18011.97	
	13.32	8.61	21.93
	60.74	39.26	
	20.62	24.33	
2509.92	1600.62	14110.54	
	6.87	4.38	11.25
	61.06	38.94	
	10.64	12.38	
1189.39	631.02	1820.41	
	3.26	1.73	4.98
	65.34	34.66	
	5.04	4.88	
1121.63	444.99	1566.62	
	3.07	1.22	4.29
	71.60	28.40	
	4.75	3.44	
2497.57	670.57	3168.14	
	6.84	1.84	8.67
	78.83	21.17	
	10.58	5.19	
23598.9	12928.5	36527.4	
	64.61	35.39	100.00

FREQUENCY MISSING = 439

Figure 3

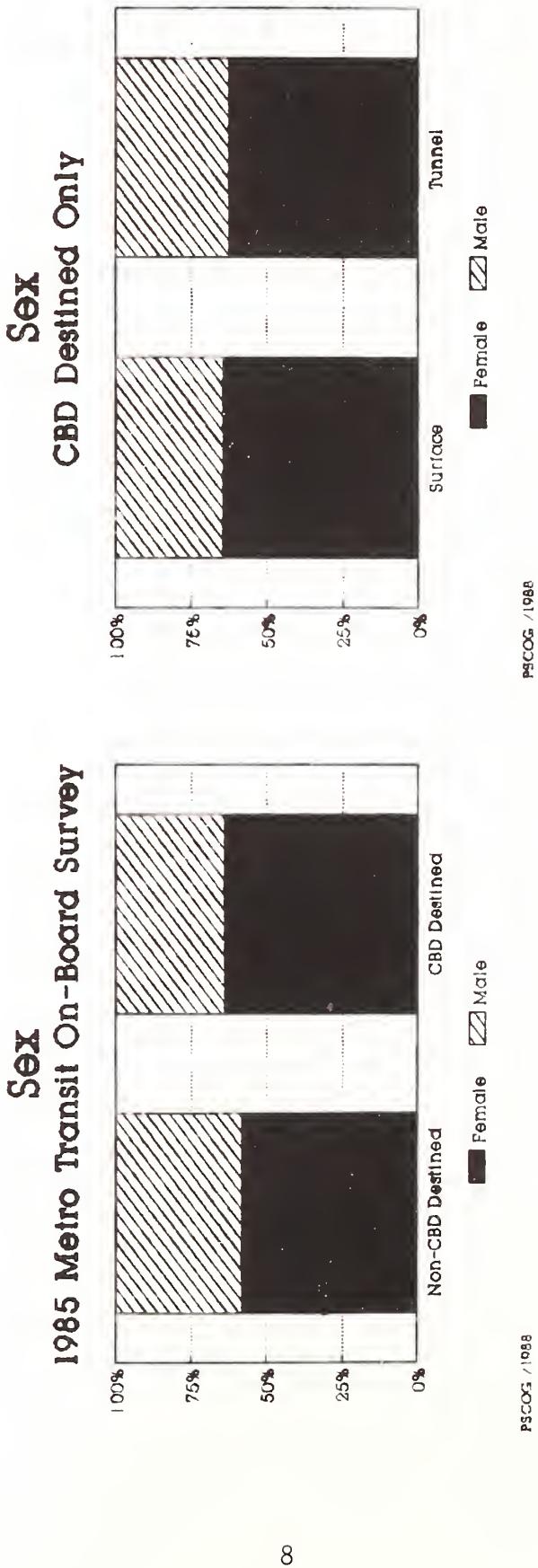


TABLE 2

## Sex

METRO ON-BOARD SURVEY  
TABLES BY DESTINATION  
ALL ROUTES

## TABLE OF SEX BY DTRCTBLK

SEX DTRCTBLK

	FREQUENCY	PERCENT	ROW PCT	COL PCT	NON-CBD	CBD DEST	DESTINED	INED	TOTAL
FEMALE	21550.7	32.20	52.96	58.29	19144	40694.7	28.60	47.04	60.81
MALE	15423.5	23.05	58.80	41.71	10807.2	126230.7	16.15	41.20	39.19
TOTAL	36974.2	55.25	55.25	55.25	29951.2	66925.4	44.75	44.75	100.00

FREQUENCY MISSING = 28787

## METRO ON-BOARD SURVEY

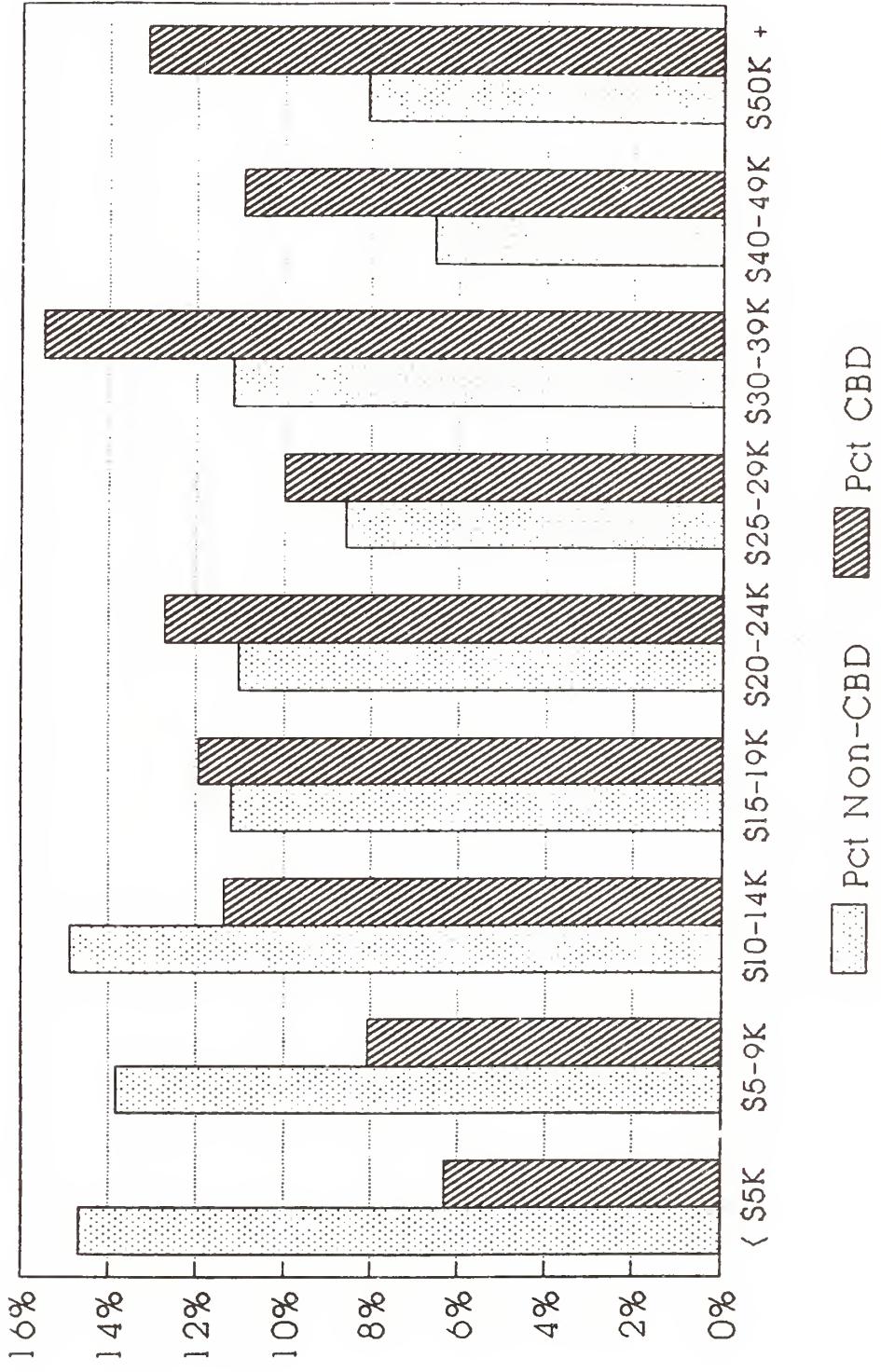
## TABLE OF SEX BY ROUTE

ROUTE

	CBD DESTINED TRIPS		TOTAL
	SURFACE	TUNNEL	
	12510.7	16602.79	19113.5
	41.82	22.07	63.90
	65.45	34.55	
	64.69	62.44	
	16827.64	3971.02	10798.7
	22.83	13.28	36.10
	63.23	36.77	
	35.31	37.56	
	19338.3	10573.8	29912.1
	64.65	35.35	100.00

FREQUENCY MISSING = 7054

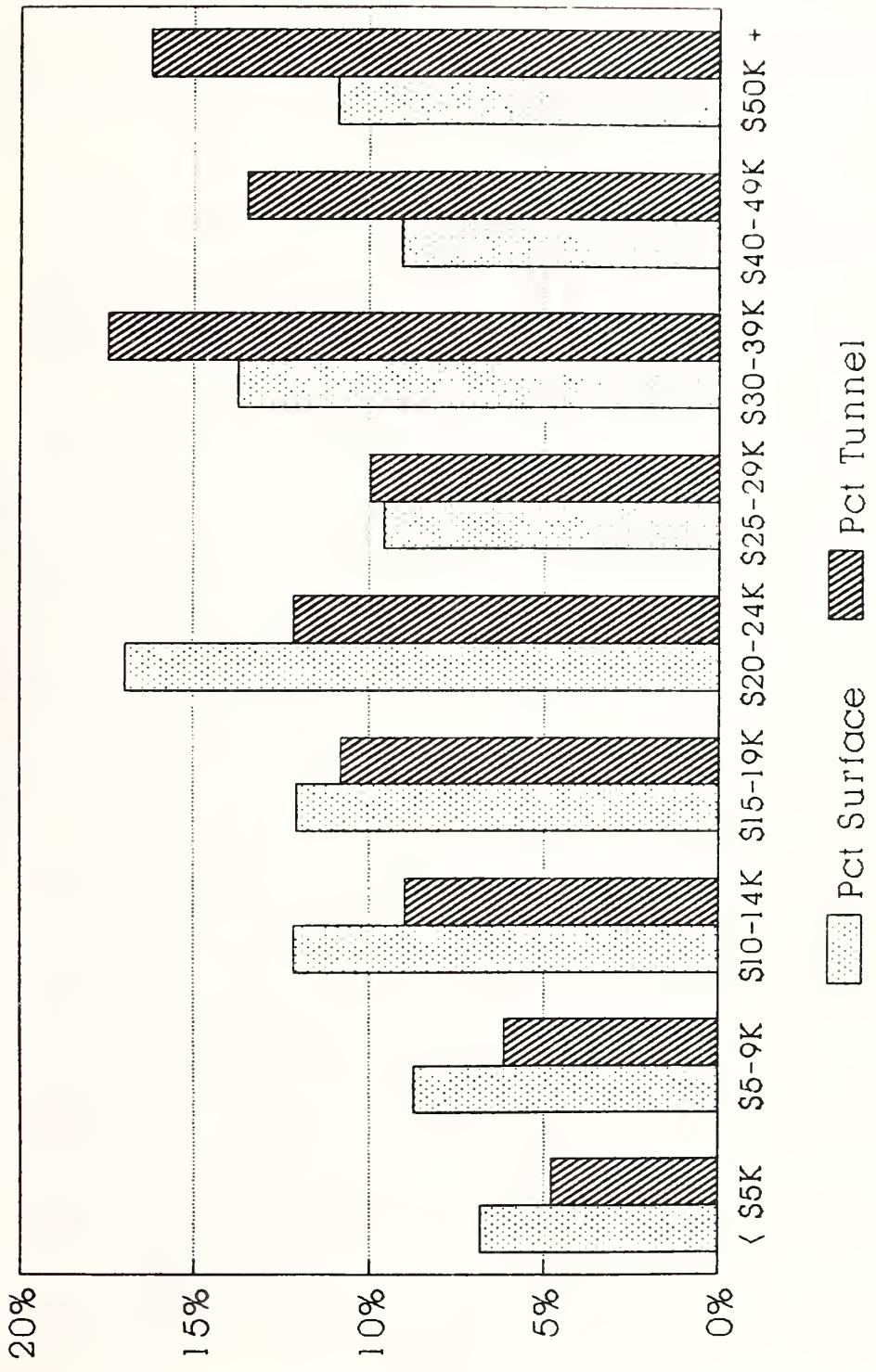
# Income 1985 Metro On-Board Transit Survey



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Figure 4

# Income CBD Destined Only



PSCOG /1988

Figure 5

TABLE 3

## Income

METRO ON-BOARD SURVEY  
TABLES BY DESTINATION  
ALL ROUTES

## TABLE OF INCOME BY DTRCTBLK

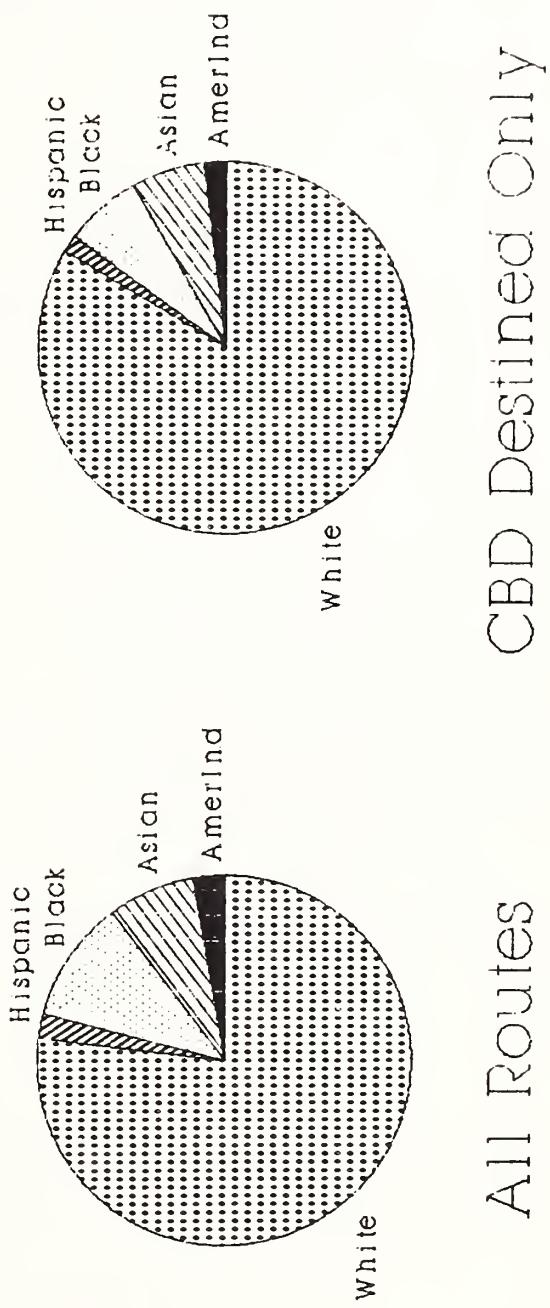
INCOME	DTRCTBLK		
FREQUENCY			
PERCENT			
ROW PCT			
COL PCT			
	NON-CBD	CBD DESTI	
	DESTINED	INED	TOTAL

				ROUTE		
				CBD DESTINED TRIPS		
				SURFACE	TUNNEL	TOTAL
< \$5000	5757	2119.17	7876.17	1539.59	578.01	2117.6
	7.91	2.91	10.82	4.59	1.72	6.31
	73.09	26.91		72.70	27.30	
	14.69	6.31		7.16	4.79	
\$5-9,999	15418.91	2709.75	8128.66	1964.12	742.03	2706.15
	7.45	3.72	11.17	5.85	2.21	8.07
	66.66	33.34		72.58	27.42	
	13.83	8.07		9.14	6.16	
\$10-14,999	15834.93	3821.73	9656.66	2733.95	1081.16	3815.11
	8.02	5.25	13.27	8.15	3.22	11.37
	60.42	39.58		71.66	28.34	
	14.89	11.38		12.72	8.97	
\$15-19,999	14392.04	4014.71	8406.75	2710.31	1301.8	4012.11
	6.04	5.52	11.55	8.08	3.88	11.96
	52.24	47.76		67.55	32.45	
	11.21	11.95		12.61	10.80	
\$20-24,999	14318.38	4279.04	8597.42	2811.08	1462.13	4273.21
	5.93	5.88	11.82	8.38	4.36	12.74
	50.23	49.77		65.78	34.22	
	11.02	12.74		13.08	12.13	
\$25-29,999	13358.72	3358.34	6717.06	2152.55	1199.13	3351.68
	4.62	4.62	9.23	6.42	3.57	9.99
	50.00	50.00		64.22	35.78	
	8.57	10.00		10.01	9.95	
\$30-39,999	14377.4	5209.12	9586.52	3095.33	2106.53	15201.86
	6.02	7.16	13.17	9.23	6.28	15.51
	45.66	54.34		59.50	40.50	
	11.17	15.51		14.40	17.47	
\$40-49,999	12559.06	3668.28	6227.34	2043.22	1625.06	3668.28
	3.52	5.04	8.56	6.09	4.84	10.93
	41.09	58.91		55.70	44.30	
	6.53	10.92		9.51	13.48	
\$50,000+	13162.24	4407.96	7570.2	2444.23	1959.05	14403.28
	4.35	6.06	10.40	7.29	5.84	13.12
	41.77	58.23		55.51	44.49	
	8.07	13.12		11.37	16.25	
TOTAL	39178.7	33588.1	72766.8	21494.4	12054.9	33549.3
	53.84	46.16	100.00	64.07	35.93	100.00

FREQUENCY MISSING = 22945

FREQUENCY MISSING = 3417

# Ethnicity 1985 Metro On-Board Survey



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Figure 6

TABLE 4

Ethnicity

METRO ON-BOARD SURVEY  
TABLES BY DESTINATION  
ALL ROUTES

## TABLE OF ETHNIC BY DTRCTBLK

## ETHNIC DTRCTBLK

FREQUENCY	PERCENT	ROW PCT	COL PCT	NON-CBD			CBD DESTIN			ROUTE	CBD DESTINED TRIPS		
				DESTINED	INED	TOTAL	SURFACE	TUNNEL	TOTAL		SURFACE	TUNNEL	TOTAL
AMER IND	1133.52	670.23	1803.75				482.65	183.18	665.83				
	1.43	0.85	2.28				1.35	0.51	1.86				
	62.84	37.16					72.49	27.51					
	2.63	1.87					2.09	1.44					
ASIAN/PAC IS	3233.6	2274.97	5508.57				1543.75	728.17	2271.92				
	4.09	2.88	6.97				4.31	2.03	6.34				
	58.70	41.30					67.95	32.05					
	7.50	6.34					6.68	5.72					
BLACK	4608.7	2376.19	6984.89				1957.74	416.22	2373.96				
	5.83	3.01	8.84				5.47	1.16	6.63				
	65.98	34.02					82.47	17.53					
	10.69	6.63					8.48	3.27					
MEXICAN/HISP	896.75	530.2	1426.95				372.19	156.68	528.87				
	1.14	0.67	1.81				1.04	0.44	1.48				
	62.84	37.16					70.37	29.63					
	2.08	1.48					1.61	1.23					
WHITE	33001.7	29834.4	62836				18616	11185.3	29801.3				
	41.78	37.77	79.55				51.97	31.23	83.20				
	52.52	47.48					62.47	37.53					
	76.52	83.19					80.61	87.89					
OTHER	253.81	168.93	422.74				112.45	56.48	168.93				
	0.32	0.21	0.54				0.31	0.16	0.47				
	60.04	39.96					66.57	33.43					
	0.59	0.47					0.49	0.44					
7	0	3.53	3.53				3.53	0	3.53				
	0.00	0.00	0.00				0.01	0.00	0.01				
	0.00	100.00					100.00	0.00					
	0.00	0.01					0.02	0.00					
8	0	4.74	4.74				4.74	0	4.74				
	0.00	0.01	0.01				0.01	0.00	0.01				
	0.00	100.00					100.00	0.00					
	0.00	0.01					0.02	0.00					
TOTAL	43128	35863.2	78991.2				23093.1	12726	35819.1				
	54.60	45.40	100.00				64.47	35.53	100.00				

FREQUENCY MISSING = 16721

FREQUENCY MISSING = 1147

## TRIP CHARACTERISTICS

### Trip Purpose

Most trips made to the CBD are for work. Seventy-five percent of all in-bound CBD-destined trips are for work (Tables 5 and 10, and Figure 8), and 80% of all home-based CBD-destined trips are for work (Table 11).

TABLE 5  
Trip Purpose (In-Bound)

	<u>CBD-Destined (%)</u>	<u>Surface</u>	<u>Tunnel</u>
Work	75.45	72.01	81.79
College	1.11	1.17	1.01
Shopping	8.53	10.64	4.66
Social/Recreation	4.87	5.32	4.05
Medical/Dental	1.81	2.21	1.07
Return Home	3.32	3.32	3.32
School (K-12)	0.39	0.48	0.23
Other	<u>4.51</u>	<u>4.85</u>	<u>3.85</u>
	100.00	100.00	100.00

While 8.5% of the CBD-destined trips are for shopping, a shopping trip to the downtown is more likely to be made on a route that will not go through the tunnel. Less than 5% of "tunnel" riders are on a shopping trip compared to 10.6% of "surface" riders. (See Figure 9.)

Trip diaries of downtown employees were collected in May 1987 and trips made during the workday will be presented in another document.

### Car Availability

For the Metro transit system as a whole, more riders (56.5%) report that they did not have a car available to make the trip they were making by bus. However, for those riders destined to the CBD, only 37.4% reported that they did not have a car available. (See Tables 12 and 13, and Figure 10.)

Again, reflecting household income, riders on "tunnel" routes are extremely likely to have a car available (71%) to make this trip. (See Figure 10.)

### Access to Bus

The most common means of getting to the bus is to walk. Riders destined to the CBD are more likely to have driven to

the bus than those not going to the CBD. 21% of the CBD-destined riders said they drove, compared to only 7% of non-CBD destined riders. "Tunnel" riders are even more likely to have driven, with 33% reporting such, and only 60% saying they had walked. (See Table 14.)

#### Distance Walked to Bus

There was very little difference between those riders who were destined to the CBD and those who were not in the number of blocks they walk to the bus. There was no difference in distance walked to the bus between riders who are using "tunnel" routes vs. "surface" routes. For all populations who walk, 5% walk less than one block, 36% walk one block and another 25% walk two blocks. (See Table 15.)

Riders who are not destined to the CBD were somewhat more likely to walk 6 to 10 blocks to the bus, reflective of the fact that a greater proportion of these riders are "captive" riders.

#### Distance Drive to Bus

Not only were "tunnel" riders more likely to drive to the bus, but those who drove, drove further. The average distance driven to the bus was 4.8 miles for the "tunnel" riders compared to 3.9 miles for "surface" riders destined to the CBD. (See Figure 11).

#### Time of Boarding (In-bound)

The peak period for boarding on an in-bound trip is between 6:30 and 7:30 am. This is even more significant for CBD-destined trips, with 31% beginning in this time period. An additional 21.8% of CBD-destined trips begin between 7:30 and 8:30 am. The in-bound commute period between 5:30 am and 9:30 am accounts for 69% of the CBD-destined trips and for 45.6% of the non-CBD trips. (See Table 6.)

TABLE 6  
Time of Boarding (In-Bound)  
Number of Passengers

Boarding Times	CBD Only					
	CBD-Destined	Surface	Tunnel			
<5:30 a.m.	422	1.1%	262	1.1%	161	1.2%
5:30- 6:30	3,212	8.7	1,683	7.1	1,527	11.8
6:30- 7:30	11,476	31.2	6,863	28.8	4,607	35.5
7:30- 8:30	8,046	21.9	5,167	21.7	2,865	22.1
8:30- 9:30	2,828	7.7	2,000	8.4	821	6.3
9:30-10:30	1,917	5.2	1,425	6.0	492	3.8
10:30-11:30	1,641	4.4	1,207	5.1	431	3.3
11:30-12:30	1,575	4.3	1,068	4.5	507	3.9
12:30- 1:30	1,364	3.7	1,027	4.3	330	2.5
1:30- 2:30	1,001	2.7	732	3.1	269	2.1
2:30- 3:30	1,078	2.9	814	3.4	264	2.0
3:30- 4:30	768	2.1	556	2.3	212	1.6
4:30- 5:30	566	1.5	404	1.7	158	1.2
5:30- 6:30	292	0.8	167	0.7	125	1.0
6:30 + p.m.	619	1.7	407	1.7	211	1.6
<b>TOTAL</b>	<b>36,805</b>	<b>100%</b>	<b>23,782</b>	<b>100%</b>	<b>12,980</b>	<b>100%</b>

"Tunnel" riders begin their day earlier, with almost 12% beginning their trip between 5:30 and 6:30; only 7.1% of "surface" riders begin their trip this early. (See Figures 12 and 13).

#### Time of Boarding by Trip Purpose

Work trips dominate the in-bound trips destined to CBD. When only work trips are examined, the peak between 6:30 - 7:30 a.m. becomes even more pronounced with 40.3% and an additional 26.9% between 7:30 and 8:30 a.m. (See Figure 14 and Table 16.)

Trips to the CBD for purposes other than work, are more distributed through the day, with a peak between 9:30 - 10:30 a.m.

Figure 15 shows the boarding times for trips destined to places other than the CBD. As in the CBD, work trips peak between 6:30 - 7:30 a.m., and non-work trips are spread throughout the day.

### Number of Days Ride the Bus

Over 50% of all riders who filled out the survey said they rode the bus ten times or more in the last week. 65.5% of the CBD-destined riders said they rode the bus eight times or more. 60.7% of the non-CBD destined riders said they rode eight times or more. "Tunnel" riders are somewhat more likely to say they use the bus eight or more times than "surface" riders (70.8% vs. 62.7%). (See Table 17 and Figures 16 and 17.) On the weekends, captive riders were much more likely to use the bus. (See Table 18.)

### Trip Origin (by FAZ) to Seattle CBD

In 1985, Metro service and ridership was predominantly in areas close to downtown Seattle. Trips originating in Ballard, the U-District, Queen Anne, Capitol Hill, Garfield and Columbia/ Rainier Valley comprise 40% of the trips destined to the CBD.

Using the currently defined list of routes for the tunnel, riders from the University District will comprise the largest proportion of riders through the tunnel. Following that, riders originating from Northgate comprise the next largest group. (See Tables 7, 8 and 9, and Figures 18, 19, and 20.)

TABLE 7

#### CBD-Destined Trips by FAZ of Origin

	FAZ	Number	Percent
Garfield	6111	3323	9.01
Queen Anne	6122	2414	6.55
Ballard	6310	2286	6.20
Univ. District	6212	2004	5.44
Capitol Hill	6112	1642	4.45
Columbia/Rainier	5910	1600	4.34
Northgate	6221	1593	4.32
West Seattle	5720	1542	4.18
Beacon Hill	5920	1398	3.79
View Ridge	6222	1096	2.97
Fauntleroy	5710	1080	2.93
Magnolia	6121	973	2.64
Green Lake	6211	927	2.52
Richmond Highlands	6410	852	2.31
Lake City	6223	764	2.07
Broadview	6320	759	2.06

TABLE 8

Surface Routed Trips to CBD by FAZ of Origin

	FAZ	Number	Percent
Garfield	6111	3313	13.91
Queen Anne	6122	2409	10.12
Ballard	6310	2245	9.43
West Seattle	5720	1539	6.46
Columbia/Rainier	5910	1431	6.01
Beacon Hill	5920	1393	5.85
Capitol Hill	6112	1243	5.22
Fauntleroy	5710	1064	4.47
Magnolia	6121	968	4.07
Green Lake	6211	729	3.06
Northgate	6221	651	2.73
Seahurst/White Center	3810	554	2.33

TABLE 9

Tunnel Routed Trips to CBD by FAZ of Origin

	FAZ	Number	Percent
Univ. District	6212	1721	13.23
Northgate	6221	940	7.23
View Ridge	6222	860	6.61
Lake City	6223	694	5.33
Richmond Highlands	6410	604	4.64
North City	6420	518	3.98
Cen Federal Way	3020	402	3.09
Capitol Hill	6112	398	3.06
Juanita	5510	331	2.55
Overlake/Redmond	5410	328	2.52
Kirkland	5300	327	2.51
Eastgate	4500	307	2.36
Kenmore	5530	294	2.26
Broadview	6320	292	2.24
E. Bellevue	5020	269	2.07

## SUMMARY

Overall, transit ridership on Metro has decreased in the last few years, even before the disruption caused by tunnel construction. Total Revenue Passengers (see Figure 7) have declined from 65,668,000 in 1984 to 60,961,000 in 1987.

Continued growth of employment in the Seattle CBD is forecasted and is thus placing increasing demands on the existing transportation network. The bus tunnel, by significantly reducing the number of buses on surface streets and by adding bus lane capacity via the tunnel, should relieve some of the pressure on the downtown network. Policies on parking provision, carpooling, and transit incentives, as well as completion of the bus tunnel will influence the flow of traffic through Seattle's downtown.

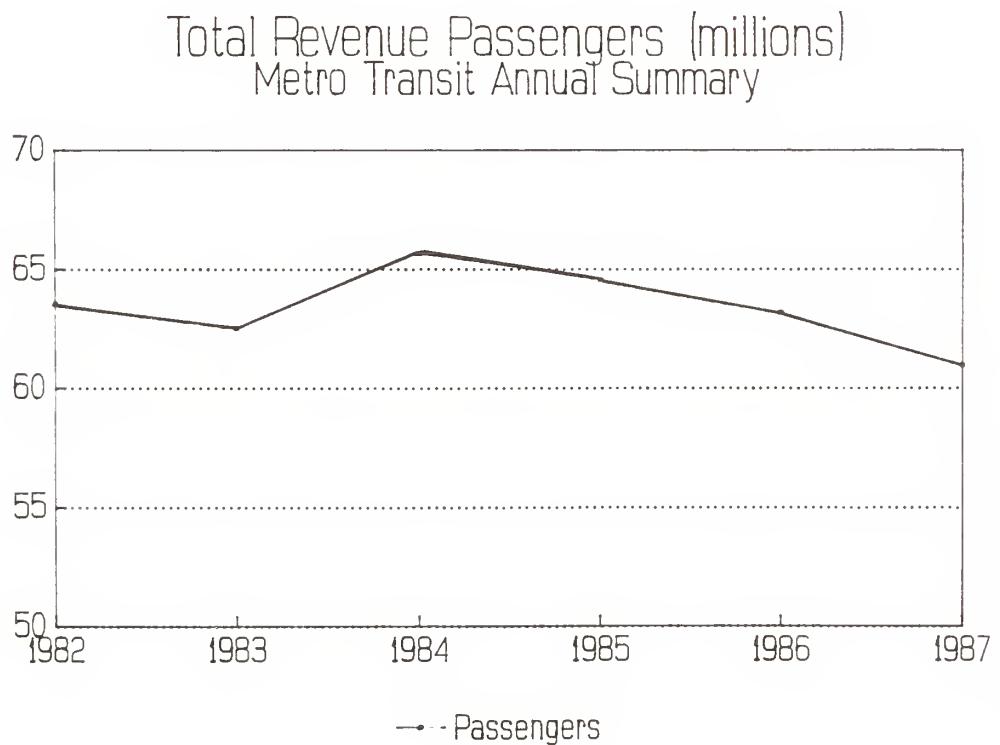
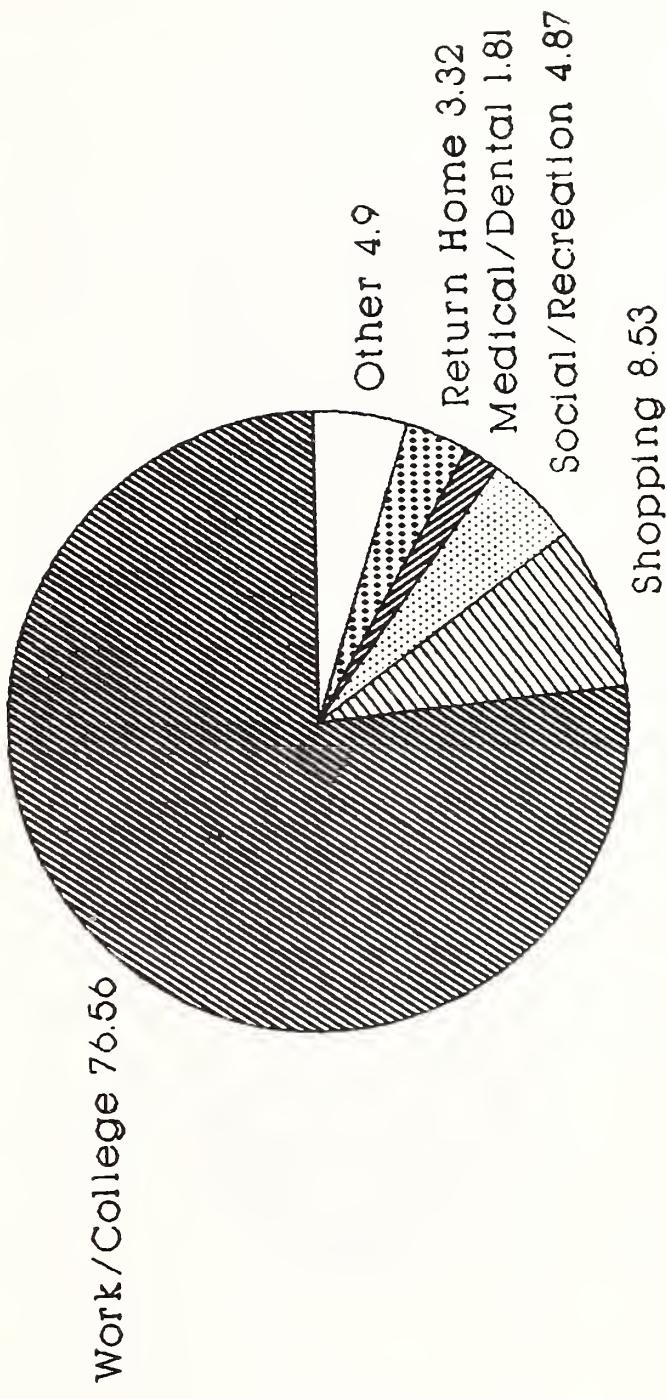


Figure 7

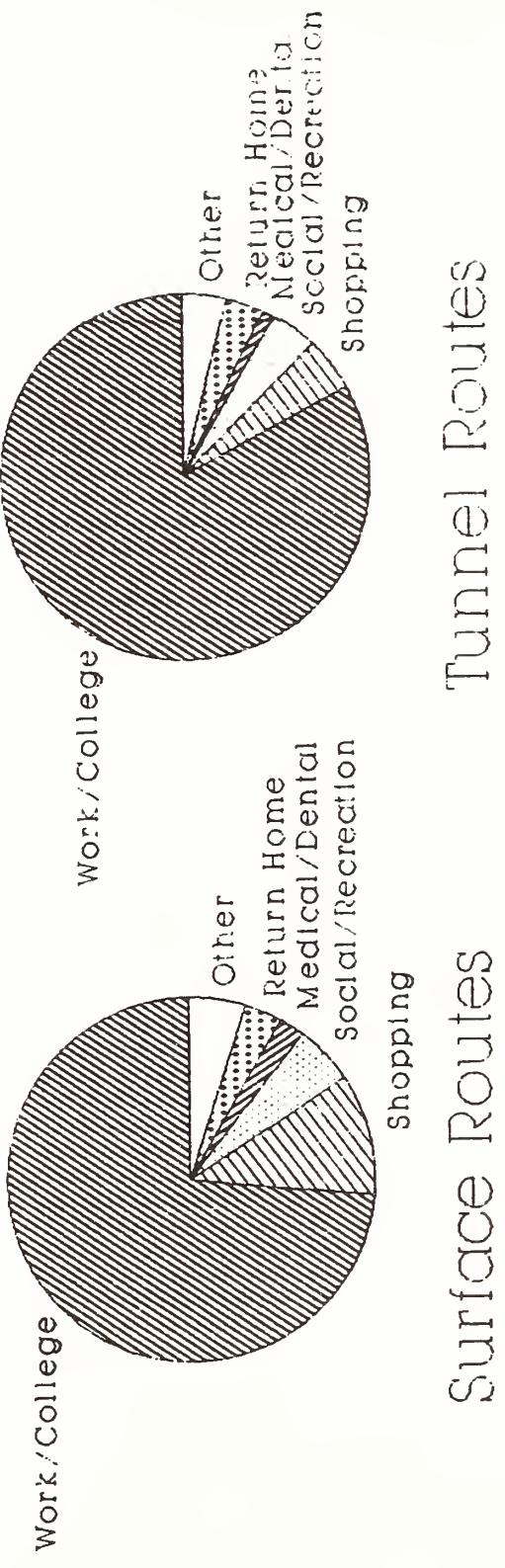
**Trip Purpose - CBD Destined  
1985 Metro Transit On-Board Survey**



PSCOG / 1988

Figure 8

# Trip Purpose CBD Destined only



PSCOG / 1988

Figure 9

Table 10

Trip Purpose

METRO ON-BOARD SURVEY  
TABLES BY DESTINATION  
ALL ROUTES

METRO ON-BOARD SURVEY

TABLE OF DPURP BY ROUTE

TABLE OF DPURP BY DTRCTBLK

DPURP DTRCTBLK

FREQUENCY

PERCENT

ROW PCT

COL PCT

	NON-CBD	CBD DEST	TOTAL	ROUTE		
				SURFACE	TUNNEL	TOTAL
0	0	1.28	1.28	0	1.28	1.28
	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	100.00		0.00	100.00	
	0.00	0.00		0.00	0.01	
HOME	11015.6	1219.14	12234.7	788.09	431.05	1219.14
	13.53	1.50	15.03	2.15	1.18	3.32
	90.04	9.96		64.64	35.36	
	24.67	3.32		3.32	3.32	
WORK	18404.8	27716.5	46121.3	17079.6	10604.4	27683.9
	22.61	34.05	56.66	46.56	28.91	75.47
	39.91	60.09		61.69	38.31	
	41.21	75.45		72.01	81.79	
SHOPPING	2601.26	3134.18	5735.44	12523.31	604.41	3127.72
	3.20	3.85	7.05	6.88	1.65	8.53
	45.35	54.65		80.68	19.32	
	5.82	8.53		10.64	4.66	
COLLEGE	4895.2	408.86	5304.06	278.09	130.77	408.86
	6.01	0.50	6.52	0.76	0.36	1.11
	92.29	7.71		68.02	31.98	
	10.96	1.11		1.17	1.01	
SCHOOL (K-12)	1890.71	143.78	2034.49	113.44	30.34	143.78
	2.32	0.18	2.50	0.31	0.08	0.39
	92.93	7.07		78.90	21.10	
	4.23	0.39		0.48	0.23	
MED/DENT	1488.99	666.12	2155.11	525.11	139.01	664.12
	1.83	0.82	2.65	1.43	0.38	1.81
	69.09	30.91		79.07	20.93	
	3.33	1.81		2.21	1.07	
SOCIAL/REC	12792.57	1787.89	14580.46	1261.18	525.34	1786.52
	3.43	2.20	5.63	3.44	1.43	4.87
	60.97	39.03		70.59	29.41	
	6.25	4.87		5.32	4.05	
OTHER	1571.32	1655.56	3226.88	1149.34	499.56	1648.9
	1.93	2.03	3.96	3.13	1.36	4.49
	48.69	51.31		69.70	30.30	
	3.52	4.51		4.85	3.85	
TOTAL	44660.4	36733.3	81393.7	23718.1	12966.1	36684.3
	54.87	45.13	100.00	64.65	35.35	100.00

FREQUENCY MISSING = 14319

FREQUENCY MISSING = 282

Table 11

Trip Purpose - Home-based trips

METRO ON-BOARD SURVEY  
TABLES BY DESTINATION  
ALL ROUTES  
HOME BASED TRIPS

METRO ON-BOARD SURVEY

HOME BASED TRIPS

TABLE OF DPURP BY ROUTE

## TABLE OF DPURP BY DTRCTBLK

DPURP	DTRCTBLK			ROUTE		
FREQUENCY	NON-CBD DESTINED	CBD DESTINED	TOTAL	SURFACE	TUNNEL	TOTAL
0	0	1.28	1.28	0	1.28	1.28
	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	100.00		0.00	100.00	
	0.00	0.00		0.00	0.01	
HOME	769.84	219.53	989.37	148.82	70.71	219.53
	1.22	0.35	1.56	0.45	0.22	0.67
	77.81	22.19		67.79	32.21	
	2.52	0.67		0.70	0.61	
WORK	17130	26389.1	43519.1	16267	10094	26361
	27.04	41.65	68.69	49.69	30.84	80.53
	39.36	60.64		61.71	38.29	
	56.02	80.51		76.99	86.97	
SHOPPING	2023.07	2524.92	4547.99	2034.45	487.34	2521.79
	3.19	3.99	7.18	6.21	1.49	7.70
	44.48	55.52		80.67	19.33	
	6.62	7.70		9.63	4.20	
COLLEGE	4474.44	361.33	4835.77	247.58	113.75	361.33
	7.06	0.57	7.63	0.76	0.35	1.10
	92.53	7.47		68.52	31.48	
	14.63	1.10		1.17	0.98	
SCHOOL (K-12)	1755.18	125.5	1880.68	97.82	27.68	125.5
	2.77	0.20	2.97	0.30	0.08	0.38
	93.33	6.67		77.94	22.06	
	5.74	0.38		0.46	0.24	
MED/DENT	1214.24	559.15	1773.39	452.08	105.07	557.15
	1.92	0.88	2.80	1.38	0.32	1.70
	68.47	31.53		81.14	18.86	
	3.97	1.71		2.14	0.91	
SOCIAL/REC	2015.83	1335.36	3351.19	985.29	348.7	1333.99
	3.18	2.11	5.29	3.01	1.07	4.08
	60.15	39.85		73.86	26.14	
	6.59	4.07		4.66	3.00	
OTHER	1196.11	1260.02	2456.13	895.48	357.88	1253.36
	1.89	1.99	3.88	2.74	1.09	3.83
	48.70	51.30		71.45	28.55	
	3.91	3.84		4.24	3.08	
TOTAL	30578.7	32776.2	63354.9	21128.6	11606.4	32735
	48.27	51.73	100.00	64.54	35.46	100.00

FREQUENCY MISSING = 8556

FREQUENCY MISSING = 213

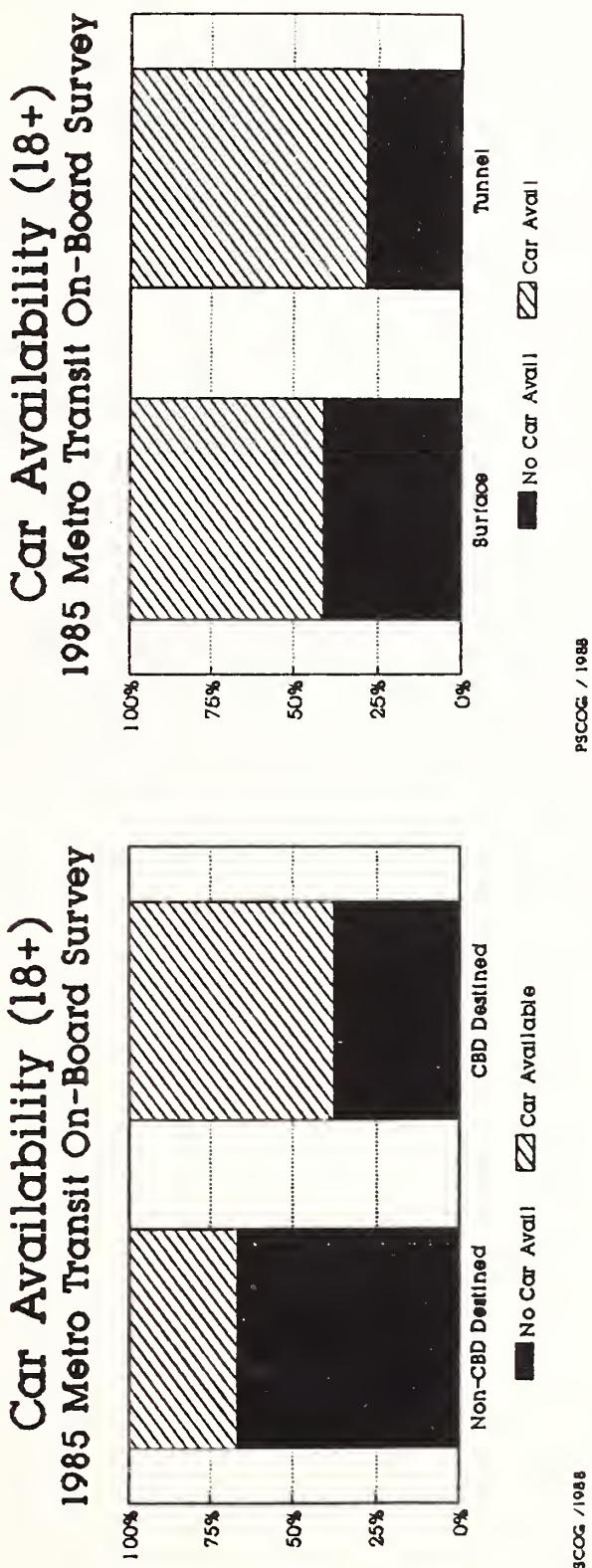


Figure 10

Table 12

Car Availability

METRO ON-BOARD SURVEY  
TABLES BY DESTINATION  
ALL ROUTES

## TABLE OF CAR BY DTRCTBLK

CAR DTRCTBLK

NO	FREQUENCY		TOTAL
	NON-CBD	CBD DEST	
COL PCT	DESTINED	INED	
30363.9	13742.6	44106.4	
37.29	16.88	54.16	
68.84	31.16		
67.97	37.39		
14308.7	23016.2	37325	
17.57	28.26	45.83	
38.34	61.66		
32.03	62.61		
TOTAL	44672.6	36758.8	81434.1
	54.86	45.14	100.00

FREQUENCY MISSING = 14278

METRO ON-BOARD SURVEY

## TABLE OF CAR BY ROUTE

ROUTE

ROUTE	CBD DESTINED TRIPS		
	SURFACE	TUNNEL	TOTAL
13718.5	9957.85	3760.66	
37.37	27.12	10.24	
	72.59	27.41	
	41.96	28.97	
22992.7	13773.9	9218.8	
62.63	37.52	25.11	
	59.91	40.09	
	58.04	71.03	
36711.2	23731.8	12979.5	
100.00	64.64	35.36	

FREQUENCY MISSING = 255

Table 13

Car Availability = Age 18+

METRO ON-BOARD SURVEY  
 TABLES BY DESTINATION  
 ALL ROUTES  
 AGE 18+

## TABLE OF CAR BY DTRCTBLK

CAR DTRCTBLK

	FREQUENCY			ROUTE					
	PERCENT	ROW PCT	COL PCT	NON-CBD	CBD DEST	TOTAL	SURFACE	TUNNEL	TOTAL
				DESTINED	INED		SURFACE	TUNNEL	TOTAL
NO	26947.1	13304.9	40252	19624.54	3656.29	13280.8			
	34.96	17.26	52.22	26.58	10.10	36.68			
	66.95	33.05		72.47	27.53				
	66.00	36.69		41.23	28.42				
YES	13880.8	22953.9	36834.6	13719.2	9211.14	22930.4			
	18.01	29.78	47.78	37.89	25.44	63.32			
	37.68	62.32		59.83	40.17				
	34.00	63.31		58.77	71.58				
TOTAL	40827.9	36258.8	77086.6	23343.8	12867.4	36211.2			
	52.96	47.04	100.00	64.47	35.53	100.00			

FREQUENCY MISSING = 12401

FREQUENCY MISSING = 253

Table 14

Access Mode to Bus

METRO ON-BOARD SURVEY  
TABLES BY DESTINATION  
ALL ROUTES

## TABLE OF ACCMODE BY DTRCTBLK

ACCMODE	DTRCTBLK			ROUTE		
FREQUENCY	NON-CBD	CBD DESTI	TOTAL	SURFACE	TUNNEL	TOTAL
PERCENT	DESTINED	INED				
ROW PCT						
COL PCT						
WALKED	37066.3	27142.8	64209.1	19325.8	17791.14	27116.9
	45.34	33.20	78.55	52.43	21.14	73.57
	57.73	42.27		71.27	28.73	
	82.66	73.54		81.03	59.89	
DROVE	3148.71	7739.05	10887.8	3388.91	4336.81	7725.72
	3.85	9.47	13.32	9.19	11.77	20.96
	28.92	71.08		43.87	56.13	
	7.02	20.97		14.21	33.34	
PASSENGER	1658.68	1258.38	2917.06	632.69	620.58	1253.27
	2.03	1.54	3.57	1.72	1.68	3.40
	56.86	43.14		50.48	49.52	
	3.70	3.41		2.65	4.77	
TRANSFER	2440.65	517.71	2958.36	328.19	185.95	514.14
	2.99	0.63	3.62	0.89	0.50	1.39
	82.50	17.50		63.83	36.17	
	5.44	1.40		1.38	1.43	
FERRY	189.73	135.67	325.4	128.87	6.8	135.67
	0.23	0.17	0.40	0.35	0.02	0.37
	58.31	41.69		94.99	5.01	
	0.42	0.37		0.54	0.05	
BICYCLE	45.85	16.17	62.02	4.42	11.75	16.17
	0.06	0.02	0.08	0.01	0.03	0.04
	73.93	26.07		27.33	72.67	
	0.10	0.04		0.02	0.09	
OTHER	97.9	22.45	120.35	12.18	10.27	22.45
	0.12	0.03	0.15	0.03	0.03	0.06
	81..35	18.65		54.25	45.75	
	0.22	0.06		0.05	0.08	
TRANSFER-CT	100.18	40.66	140.84	27.83	12.83	40.66
	0.12	0.05	0.17	0.08	0.03	0.11
	71.13	28.87		68.45	31.55	
	0.22	0.11		0.12	0.10	
TRANSFER-PIERCE	84.74	35.66	120.4	1.13	33.4	34.53
	0.10	0.04	0.15	0.00	0.09	0.09
	70.38	29.62		3.27	96.73	
	0.19	0.10		0.00	0.26	
TOTAL	44839.4	36908.6	81747.9	23850	13009.5	36859.6
	54.85	45.15	100.00	64.71	35.29	100.00

FREQUENCY MISSING = 13964

FREQUENCY MISSING = 107

Table 15

Distance Walked to Bus

METRO ON-BOARD SURVEY  
TABLES BY DESTINATION  
ALL ROUTES

## TABLE OF ACCDISTW BY DTRCTBLK

## ACCDISTW DTRCTBLK

	FREQUENCY			ROUTE					
	PERCENT	ROW PCT	COL PCT		NON-CBD	CBD DESTI.	DESTINED	INED	TOTAL
0	1392.19	1009.24	2401.43						
	2.87	2.08	4.95						
	57.97	42.03							
	5.02	4.86							
1	9861.68	7732.64	17594.3						
	20.33	15.94	36.27						
	56.05	43.95							
	35.58	37.20							
2	6345.95	5189.93	11535.9						
	13.08	10.70	23.78						
	55.01	44.99							
	22.89	24.97							
3	3749.16	2954.34	6703.5						
	7.73	6.09	13.82						
	55.93	44.07							
	13.53	14.21							
4	2234.87	1617.52	3852.39						
	4.61	3.33	7.94						
	58.01	41.99							
	8.06	7.78							
5	1460.29	915.03	2375.32						
	3.01	1.89	4.90						
	61.48	38.52							
	5.27	4.40							
6-10	2186.15	1140.12	3326.27						
	4.51	2.35	6.86						
	65.72	34.28							
	7.89	5.48							
11-20	404.56	193.18	597.74						
	0.83	0.40	1.23						
	67.68	32.32							
	1.46	0.93							
20+	85.2	35.34	120.54						
	0.18	0.07	0.25						
	70.68	29.32							
	0.31	0.17							
TOTAL	27720	20787.3	48507.4						
	57.15	42.85	100.00						

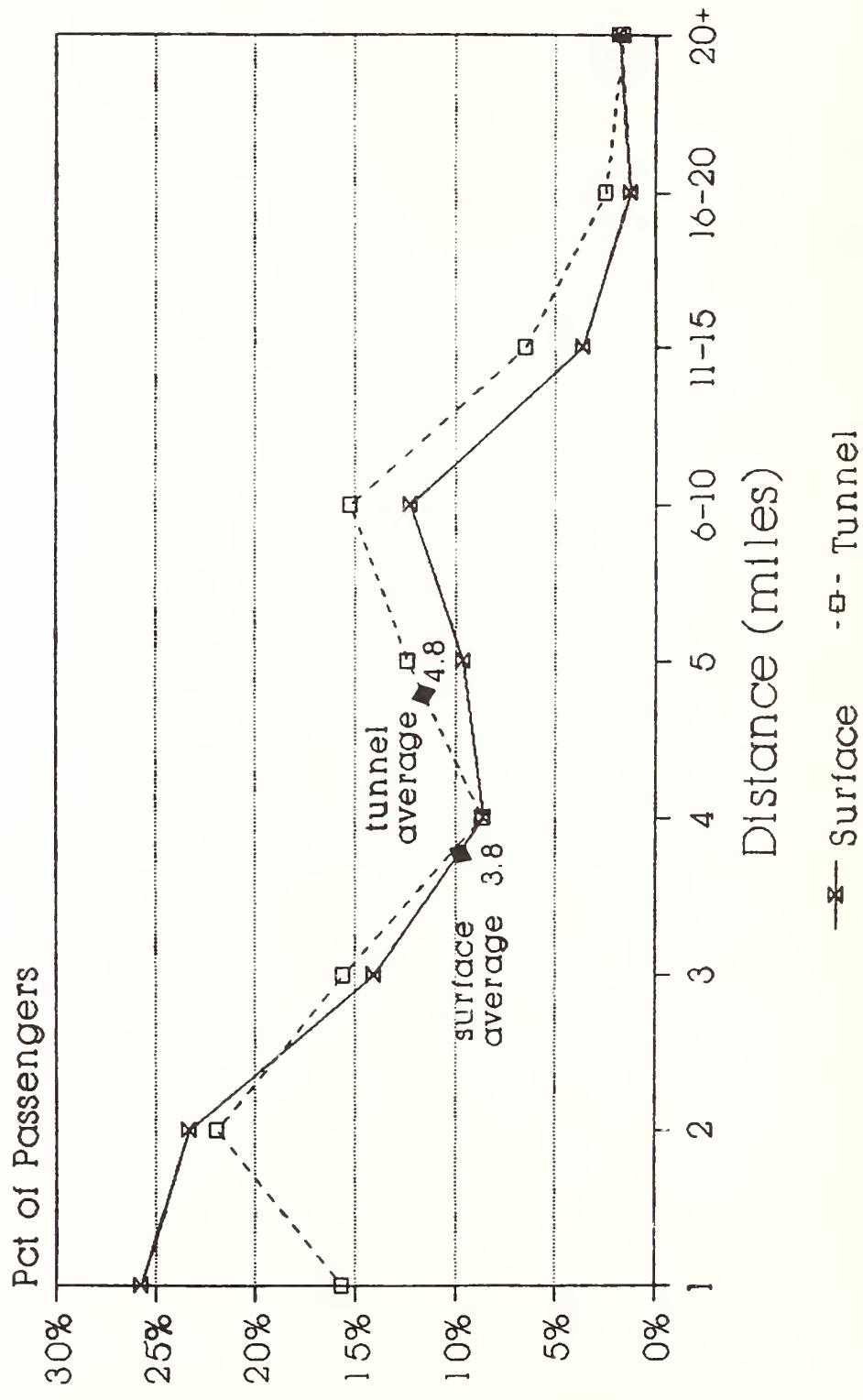
FREQUENCY MISSING = 47205

METRO ON-BOARD SURVEY  
TABLE OF ACCDISTW BY ROUTE

	ROUTE		
	SURFACE	TUNNEL	TOTAL
	746.69	262.55	1009.24
	3.60	1.26	4.86
	73.99	26.01	
	5.13	4.23	
	5599.13	2123.65	7722.78
	26.97	10.23	37.19
	72.50	27.50	
	38.47	34.21	
	3674.25	1511.1	5185.35
	17.70	7.28	24.97
	70.86	29.14	
	25.24	24.34	
	2049.36	902.33	2951.69
	9.87	4.35	14.22
	69.43	30.57	
	14.08	14.53	
	1101.39	511.13	1612.52
	5.30	2.46	7.77
	68.30	31.70	
	7.57	8.23	
	579.76	334	913.76
	2.79	1.61	4.40
	63.45	36.55	
	3.98	5.38	
	667.39	472.73	1140.12
	3.21	2.28	5.49
	58.54	41.46	
	4.59	7.61	
	114.91	78.27	193.18
	0.55	0.38	0.93
	59.48	40.52	
	0.79	1.26	
	22.87	12.47	35.34
	0.11	0.06	0.17
	64.71	35.29	
	0.16	0.20	
	14555.7	6208.23	20764
	70.10	29.90	100.00

FREQUENCY MISSING = 16203

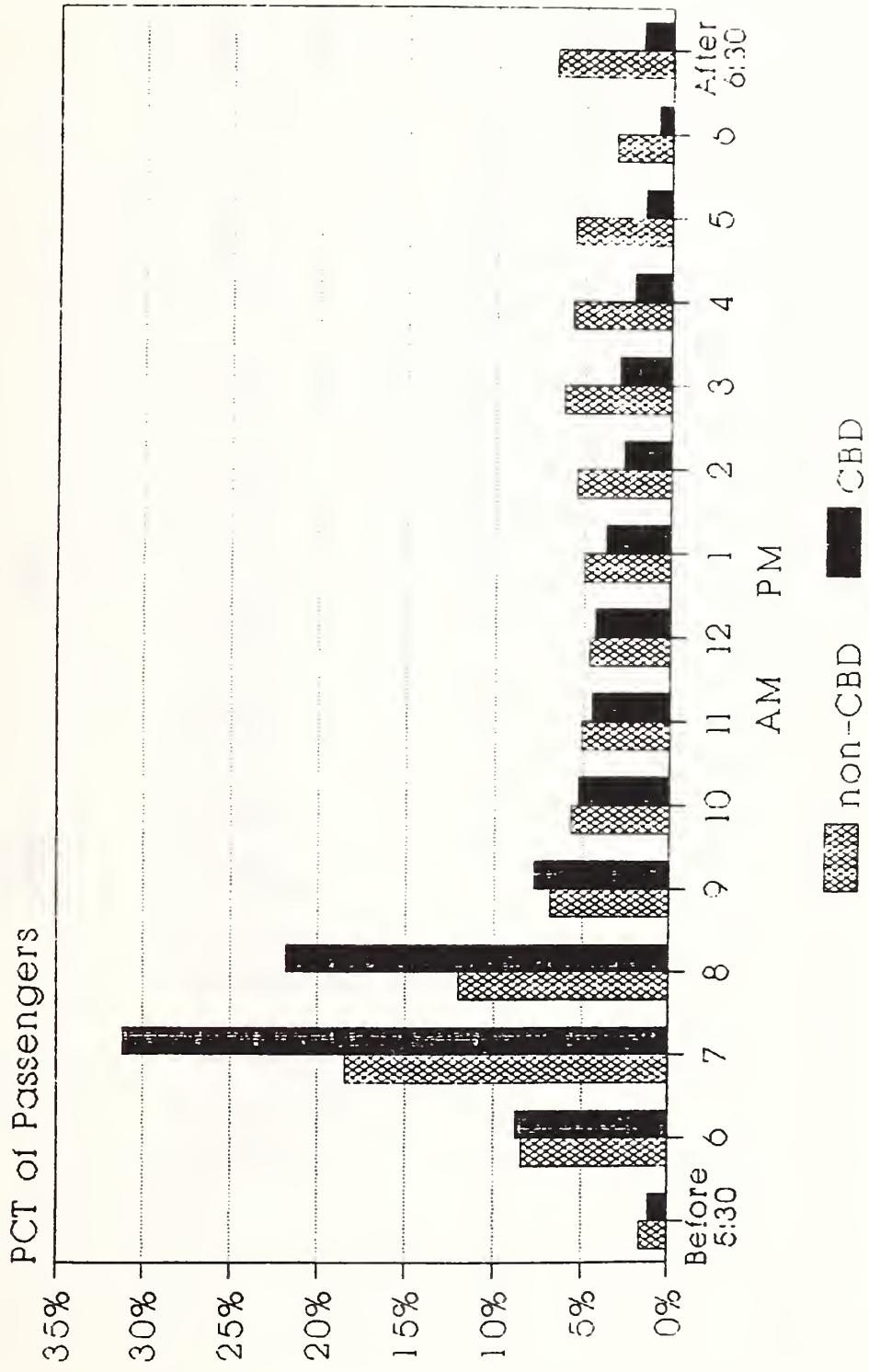
## Distance Driven To Board Bus To CBD By Route and No. of Passengers



PSCOG/1988

Figure 11

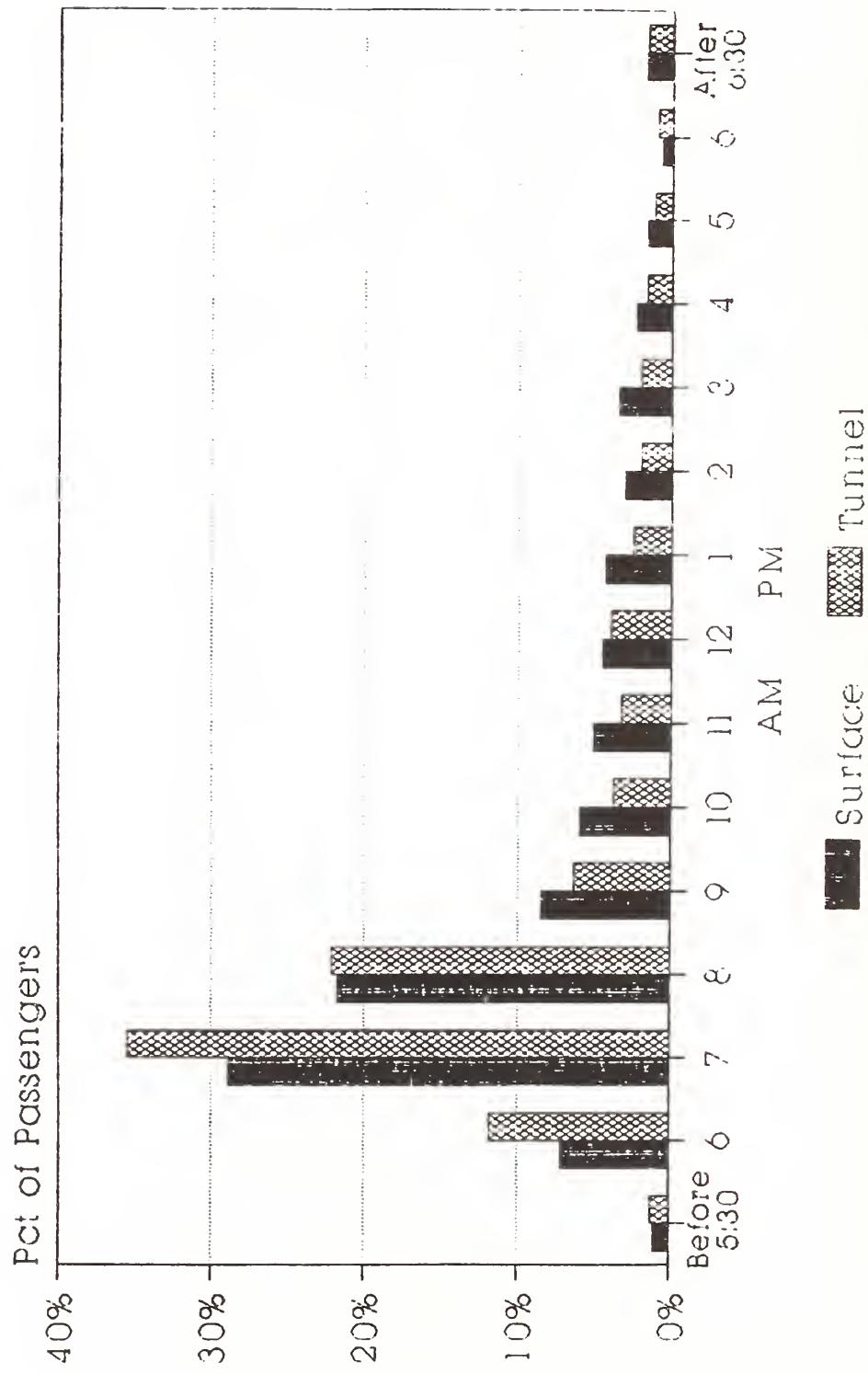
## Time of Boarding Bus By Destination



PSCOG/1988

Figure 12

## Time of Boarding Bus By Route for CBD-Destined Passengers



PSCOG, 1988

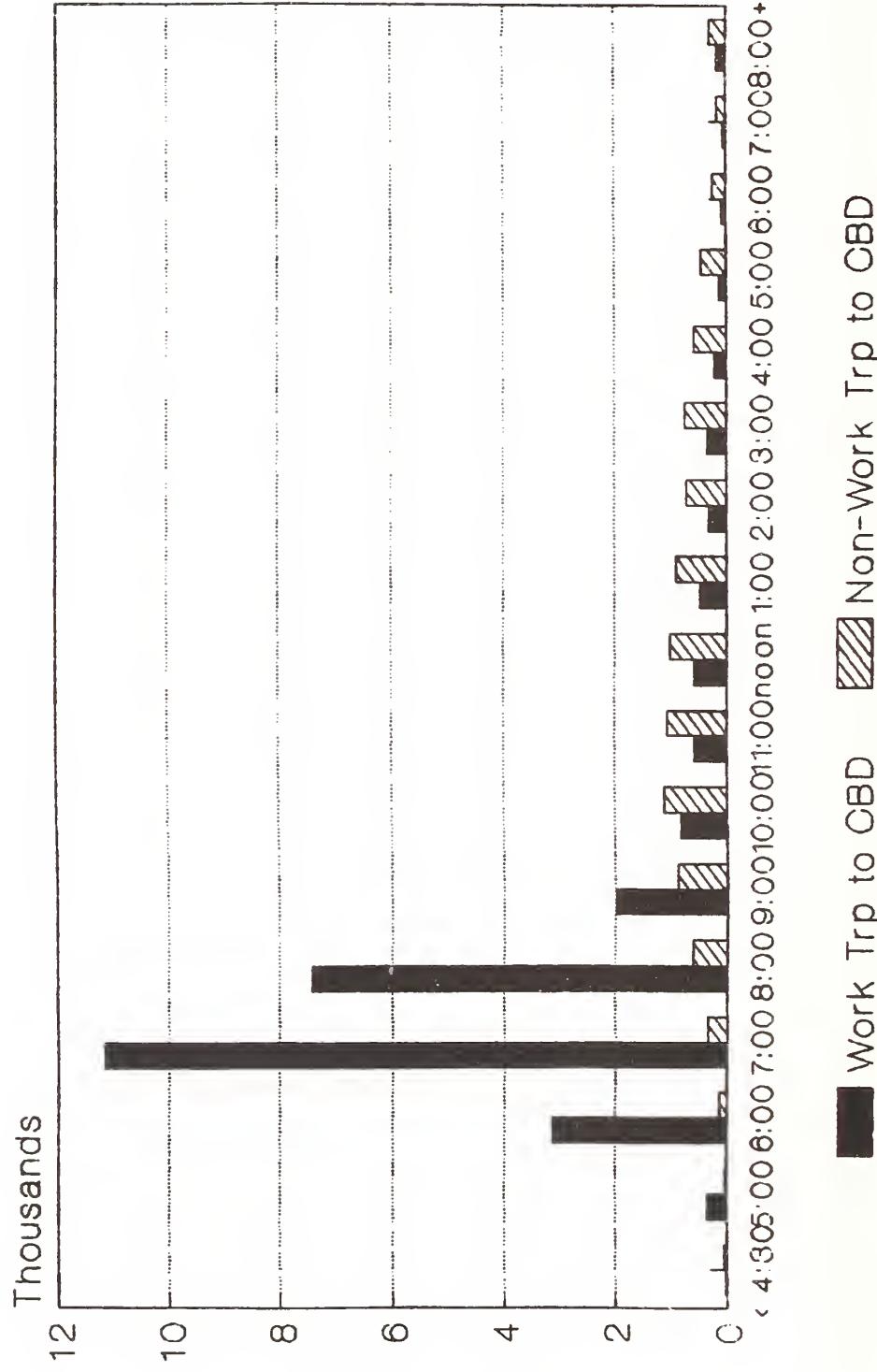
Figure 13

Table 16

Time of Boarding by Trip Purpose  
 (Number of Passengers)

	CBD Destined Work	CBD Destined Non-Work	Non-CBD Destined Work	Non-CBD Destined Non-Work
$\leq 4:30$ a.m.	19.8	45.4	86.98	307.56
4:31 - 5:30	333.0	24.0	570.36	114.36
5:31 - 6:30	3094.5	117.5	3952.65	608.37
6:31 - 7:30	11149.5	326.3	6954.64	2804.37
7:31 - 8:30	7438.6	607.8	3647.36	2683.87
8:31 - 9:30	1965.7	862.1	1493.99	2380.38
9:31 - 10:30	819.1	1097.4	972.85	2448.65
10:31 - 11:30	579.5	1061.7	664.69	2282.31
11:31 - 12:30	577.1	998.2	579.73	2433.54
12:31 - 1:30	471.0	893.2	651.56	2387.94
1:31 - 2:30	302.4	698.8	813.72	2547.55
2:31 - 3:30	332.5	745.8	569.40	3503.46
3:31 - 4:30	194.9	572.8	412.26	3233.54
4:31 - 5:30	125.2	440.5	264.55	3035.81
5:31 - 6:30	59.6	232.4	99.07	1763.42
6:31 - 7:30	29.9	140.9	63.64	1122.88
7:31 + p.m.	153.7	294.7	351.49	2438.36

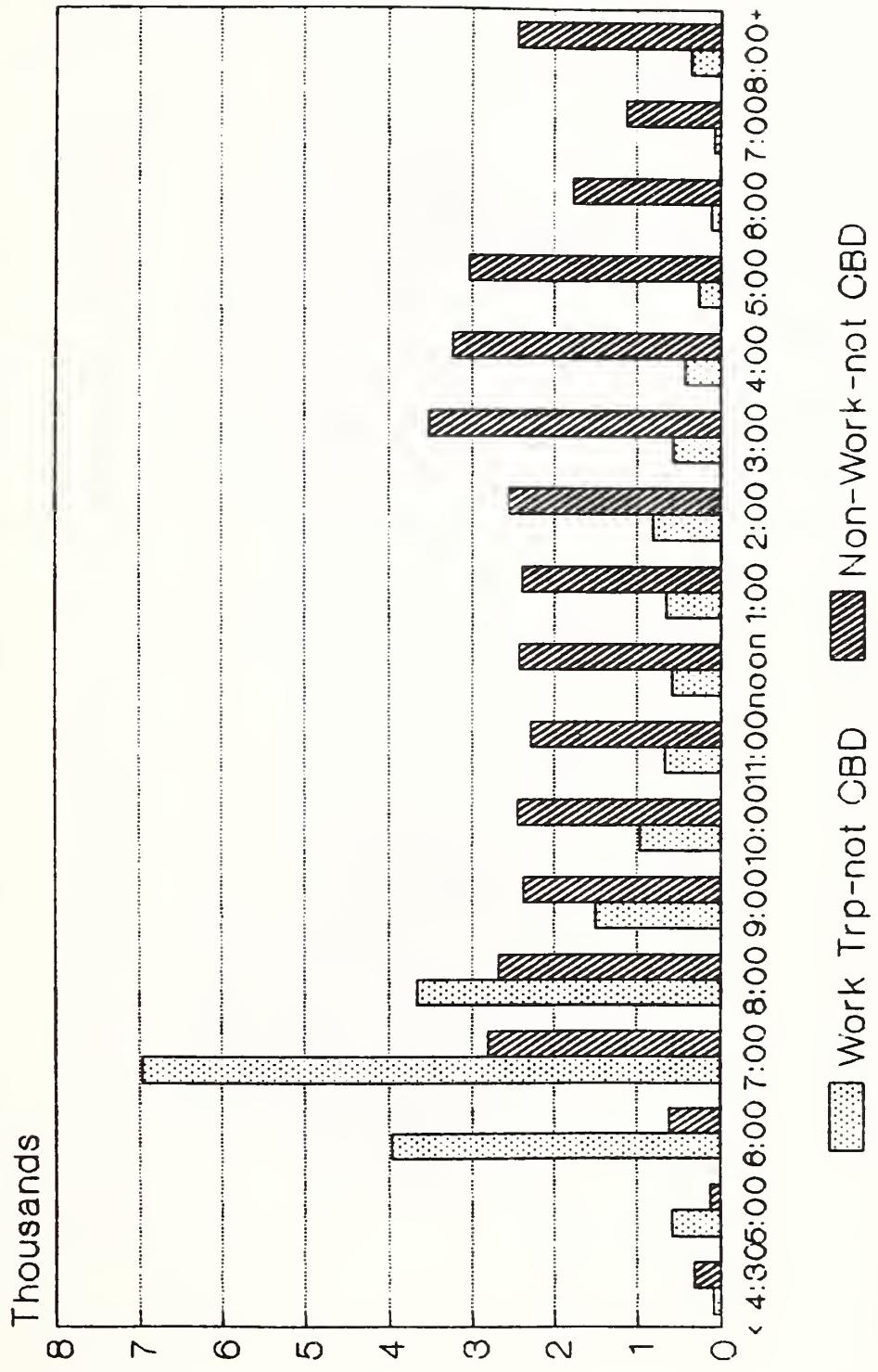
## Trip Purpose and Time of Boarding CBD-Destined



FSCCG / 1988

Figure 14

## Trip Purpose and Time of Boarding Non-CBD Destined

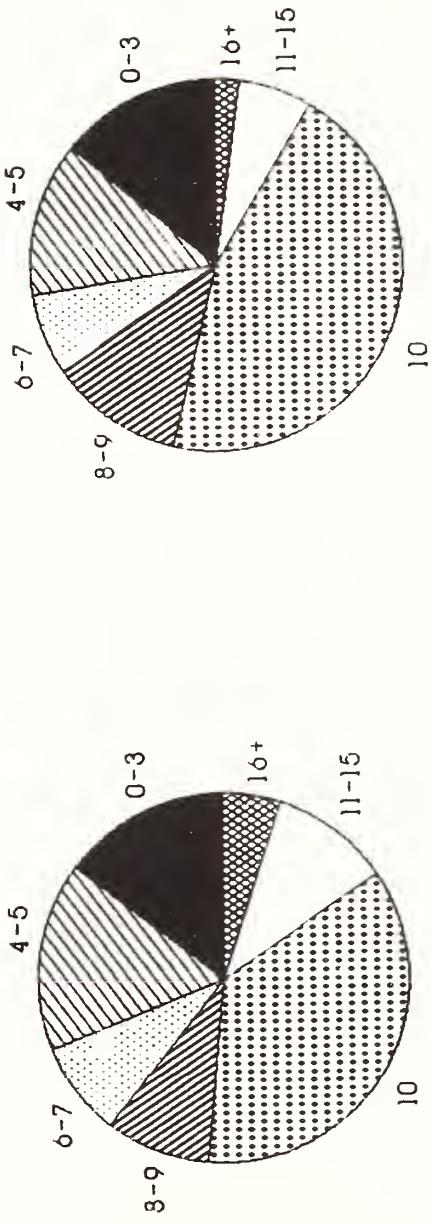


FSCCOG / 1988

Figure 15

# Number of Weekday Trips (One-Way)

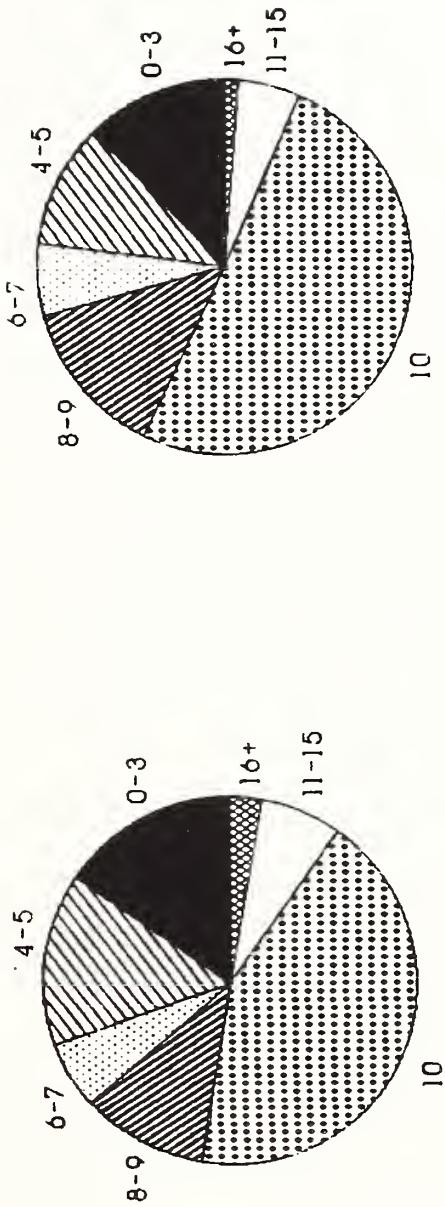
## 1985 Metro Transit On-Board Survey



CBD Destined  
Non-CBD Destined

# Number of Weekday Trips (One-Way)

## 1985 Metro Transit On-Board Survey



Tunnel Routes  
Surface Routes

Figure 17

METRO ON-BOARD SURVEY  
TABLES BY DESTINATION  
ALL ROUTES

METRO ON-BOARD SURVEY

TABLE OF WKDAYS BY DTRCTBLK

TABLE OF WKDAYS BY ROUTE

Table 17

WKDAYS DTRCTBLK

ROUTE

FREQUENCY	PERCENT	ROW PCT	COL PCT	NON-CBD	CBD DESTI	DESTINED	INED	TOTAL	SURFACE	TUNNEL	TOTAL	Number of Trips
0	1871.28	1990.61	3861.89	1249.12	740.16	1989.28						
	2.42	2.57	4.99	3.55	2.10	5.66						
	48.46	51.54		62.79	37.21							
	4.43	5.65		5.51	5.93							
1	916.13	651.85	1567.98	492.45	159.4	651.85						
	1.18	0.84	2.02	1.40	0.45	1.85						
	58.43	41.57		75.55	24.45							
	2.17	1.85		2.17	1.28							
2	2001.16	1468.85	3470.01	1035.81	426.47	1462.28						
	2.58	1.90	4.48	2.94	1.21	4.16						
	57.67	42.33		70.84	29.16							
	4.74	4.17		4.57	3.41							
3	1346.18	828.11	2174.29	625.24	200.02	825.26						
	1.74	1.07	2.81	1.78	0.57	2.35						
	61.91	38.09		75.76	24.24							
	3.19	2.35		2.76	1.60							
4	2765.23	1839.13	4604.36	1246.04	588.44	1834.48						
	3.57	2.37	5.95	3.54	1.67	5.22						
	60.06	39.94		67.92	32.08							
	6.55	5.22		5.49	4.71							
5	4151.58	2868.51	7020.09	2109.68	752.86	2862.54						
	5.36	3.70	9.06	6.00	2.14	8.14						
	59.14	40.86		73.70	26.30							
	9.83	8.14		9.30	6.03							
6	2654.26	1978.86	4633.12	1354.56	621.83	1976.39						
	3.43	2.56	5.98	3.85	1.77	5.62						
	57.29	42.71		68.54	31.46							
	6.29	5.62		5.97	4.98							
7	906.14	517.6	1423.74	357.63	159.97	517.6						
	1.17	0.67	1.84	1.02	0.45	1.47						
	63.65	36.35		69.09	30.91							
	2.15	1.47		1.58	1.28							
8	3343.23	3603.02	6946.25	2094.44	1505.58	3600.02						
	4.32	4.65	8.97	5.95	4.28	10.23						
	48.13	51.87		58.18	41.82							
	7.92	10.23		9.23	12.05							
9	536.99	535.15	1072.14	339.37	194.45	533.82						
	0.69	0.69	1.38	0.96	0.55	1.52						
	50.09	49.91		63.57	36.43							
	1.27	1.52		1.50	1.56							
10	15142.6	15909.2	31051.8	19570.76	16322.08	15892.8						
	19.55	20.54	40.10	27.21	17.97	45.18						
	48.77	51.23		60.22	39.78							
	35.87	45.17		42.19	50.61							
11-15	14405.73	2245.43	6651.16	1574	669.43	2243.43						
	5.69	2.90	8.59	4.47	1.90	6.38						
	66.24	33.76		70.16	29.84							
	10.44	6.37		6.94	5.36							
16+	2178.54	786.35	2964.89	635.4	150.95	786.35						
	2.81	1.02	3.83	1.81	0.43	2.24						
	73.48	26.52		80.80	19.20							
	5.16	2.23		2.80	1.21							
TOTAL	42219.1	35222.7	77441.8	22684.5	12491.6	35176.1						
	54.52	45.48	100.00	64.49	35.51	100.00						

FREQUENCY MISSING = 18270

FREQUENCY MISSING = 1790

Table 18

Number of Trips Taken on Weekends

METRO ON-BOARD SURVEY  
TABLES BY DESTINATION  
ALL ROUTES

## TABLE OF WKENDS BY DTRCTBLK

## WKENDS DTRCTBLK

## FREQUENCY

## PERCENT

## ROW PCT

## COL PCT

## NON-CBD | CBD DESTI|

## DESTINED | INED |

## TOTAL

## METRO ON-BOARD SURVEY

## TABLE OF WKENDS BY ROUTE

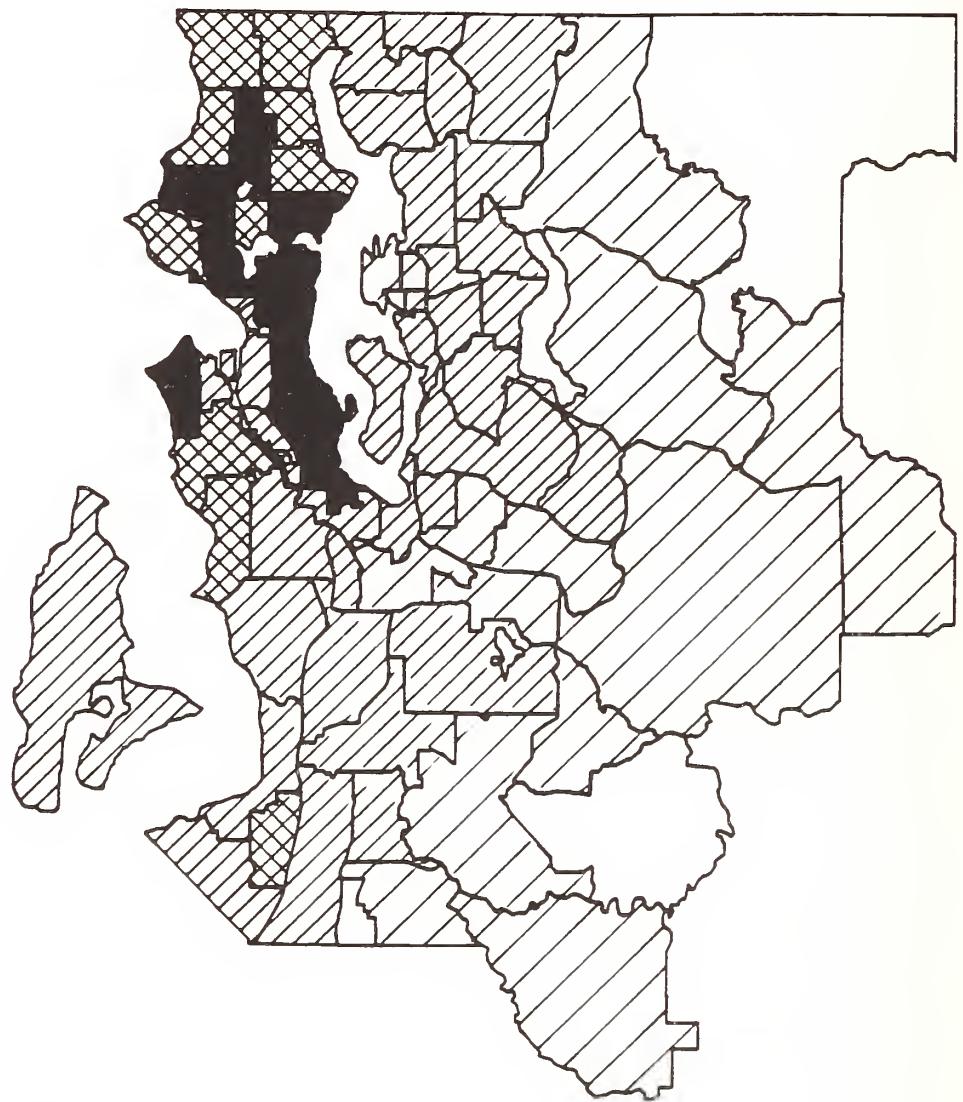
## ROUTE

## CBD DESTINED TRIPS

				SURFACE	TUNNEL	TOTAL
0	9631.55	10505.1	20136.7	6283.79	4209.21	10493
	20.95	22.85	43.80	33.68	22.56	56.24
	47.83	52.17		59.89	40.11	
	35.28	56.25		50.93	66.61	
1	2694.13	1328.18	4022.31	986.94	341.24	1328.18
	5.86	2.89	8.75	5.29	1.83	7.12
	66.98	33.02	-	74.31	25.69	
	9.87	7.11		8.00	5.40	
2	6766.41	3629.93	10396.3	2597.09	1028.24	3625.33
	14.72	7.90	22.61	13.92	5.51	19.43
	65.08	34.92		71.64	28.36	
	24.79	19.44		21.05	16.27	
3	1056.85	385.41	1442.26	282.59	101.51	384.1
	2.30	0.84	3.14	1.51	0.54	2.06
	73.28	26.72		73.57	26.43	
	3.87	2.06		2.29	1.61	
4	4265.6	1746	6011.6	1341.66	404.34	1746
	9.28	3.80	13.08	7.19	2.17	9.36
	70.96	29.04		76.84	23.16	
	15.63	9.35		10.87	6.40	
5	715.08	232.56	947.64	187.34	45.22	232.56
	1.56	0.51	2.06	1.00	0.24	1.25
	75.46	24.54		80.56	19.44	
	2.62	1.25		1.52	0.72	
6	1083.99	437.39	1521.38	347.86	89.53	437.39
	2.36	0.95	3.31	1.86	0.48	2.34
	71.25	28.75		79.53	20.47	
	3.97	2.34		2.82	1.42	
7+	1085.74	411.79	1497.53	311.96	99.83	411.79
	2.36	0.90	3.26	1.67	0.54	2.21
	72.50	27.50		75.76	24.24	
	3.98	2.20		2.53	1.58	
TOTAL	27299.3	18676.4	45975.7	12339.2	6319.12	18658.3
	59.38	40.62	100.00	66.13	33.87	100.00

FREQUENCY MISSING = 49736

FREQUENCY MISSING = 18308



Transit Trips

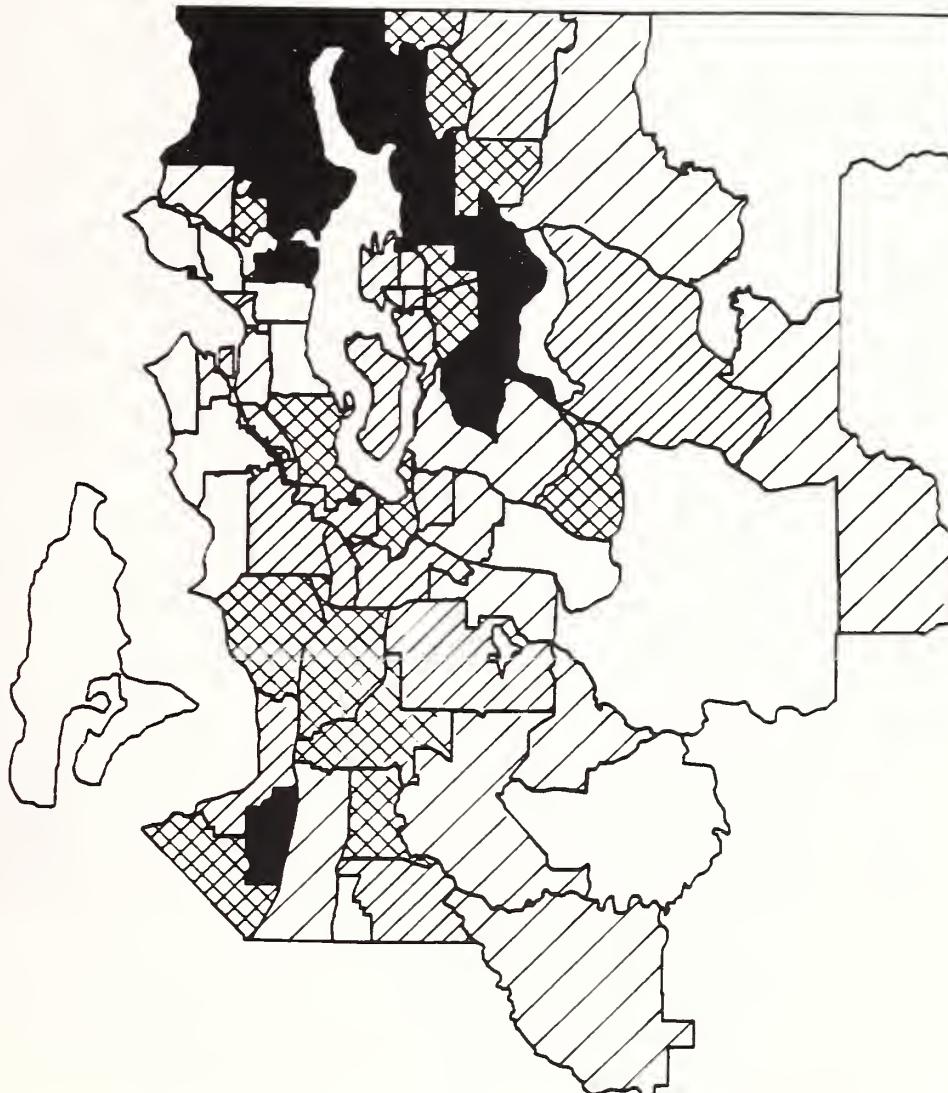


- 1200 to 3323
- 500 to 1199
- 100 to 499
- 19 to 99
- 0 to 19

PSCOG

Trips Destined to Seattle CBD  
Total Trip Origin by FAZ  
1985 Metro Transit On-Board Survey

Figure 18



Transit Trips

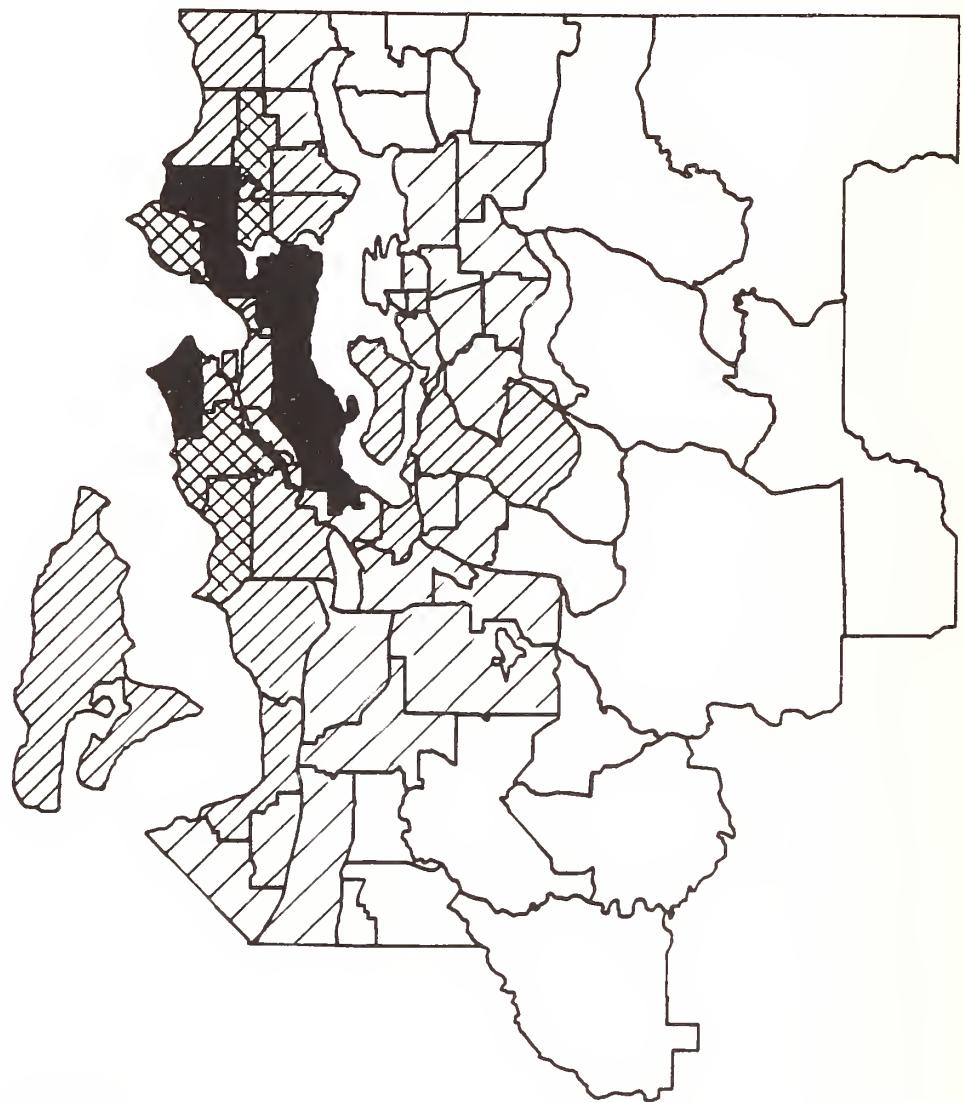


- 250 to 1721
- 125 to 249
- 50 to 124
- 20 to 49
- 0 to 19

PSCOG

Trips Destined to Seattle CBD  
Trip Origin by FAZ: Tunnel Routes  
1985 Metro Transit On-Board Survey

Figure 19



Transit Trips



- 1200 to 3323
- 500 to 1199
- 100 to 499
- 20 to 99
- 1 to 19

PSCOG

Trips Destined to Seattle CBD  
Trip Origin by FAZ: Surface Routes  
1985 Metro Transit On-Board Survey

Figure 20

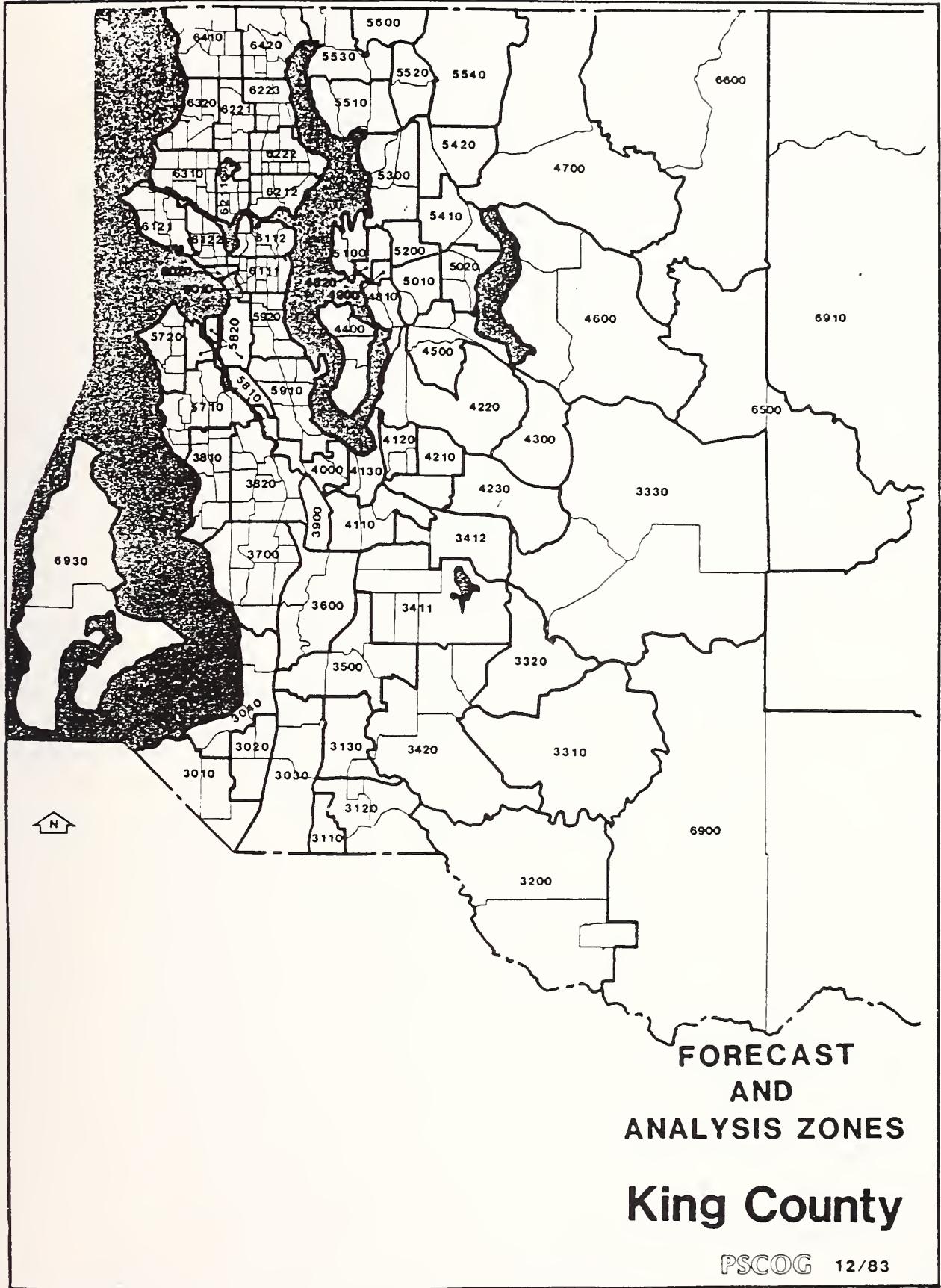
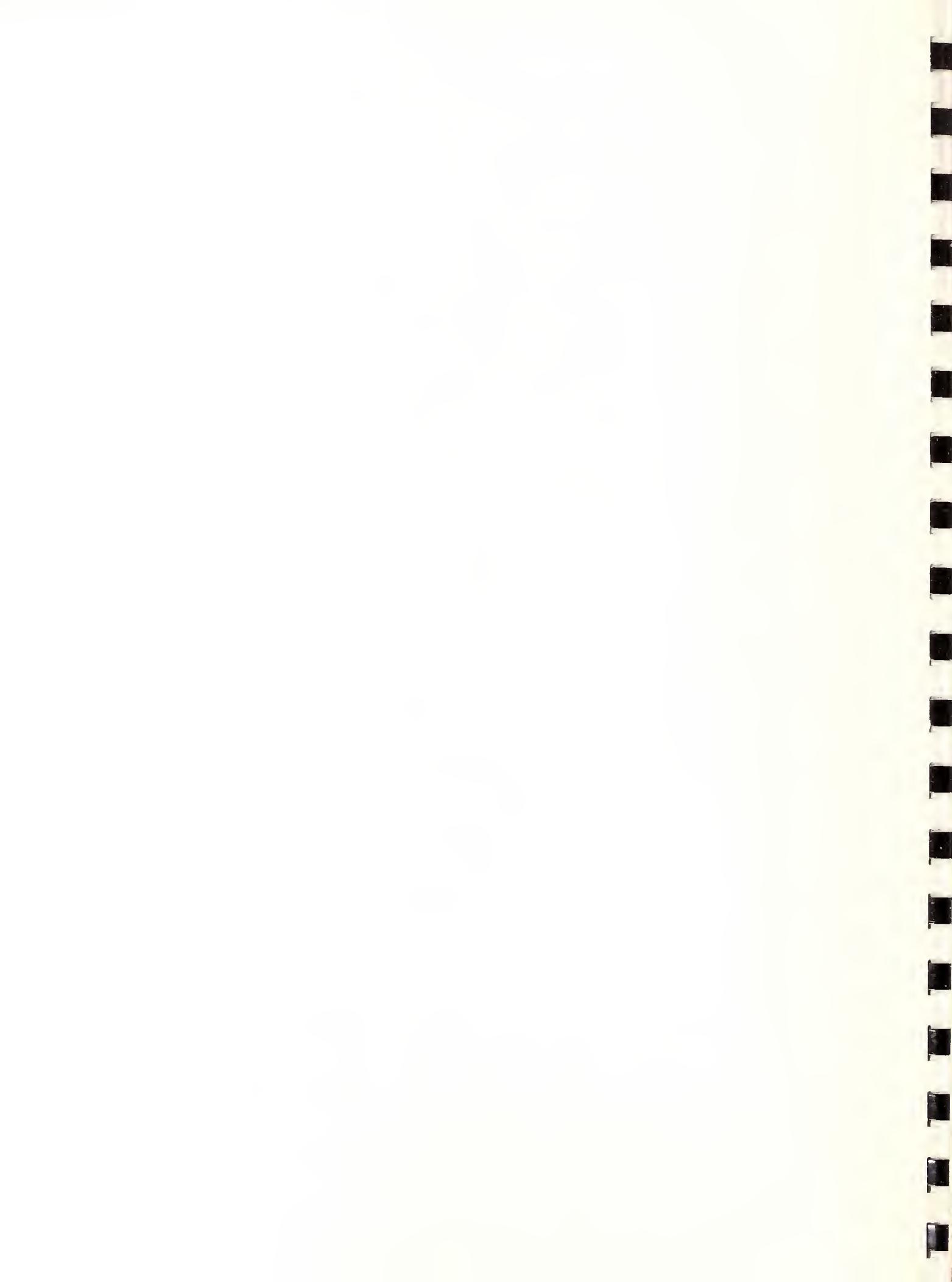


Figure 21



## Appendices





# APPENDIX A

## Transit Rider Survey

No 206575

1. Dear Metro Rider The purpose of this survey is to help improve your transit service. Please assist us by answering all the questions about the trip you are now making. A separate survey should be completed for each person ten years of age or older. All information will be kept confidential. Return all completed surveys to any Metro driver or deposit in any mailbox — postage free. Thank You

Ronald J. Tober, Transit Director

2. Have you already completed a survey today describing this bus trip (as part of an earlier transfer or a round trip today)?

- Yes, STOP HERE after checking box and return this survey to your driver. Thank you.  
 No, (Please continue).

3. On which route did you receive this survey? -

Route # \_\_\_\_\_  
(Specify)

4. What time did you get on this bus?

1  a.m.  
\_\_\_\_ : \_\_\_\_ 2  p.m. (Incl. Noon)  
(Enter time to nearest minute and check a.m. or p.m.)

5. Where were you coming from when you started this trip? (Check one)

- 1  Home/Residence 5  School (K thru 12)  
2  Work 6  Medical/Dental  
3  Shopping 7  Social/Recreation  
4  College/Trade School 8  Other \_\_\_\_\_  
(Specify)

6. What is the address (or intersection) of the place you started from?

(Street Address (e.g. 123 N.E. 2nd St.), or name of Building or nearest intersection)  
in \_\_\_\_\_  
(City, Town or Zip)

7. How did you get to this bus? (Check one and fill in the blanks)

- 1  Walked (or wheelchair) \_\_\_\_\_ block(s)  
(Specify #)  
2  Drove car \_\_\_\_\_ miles and parked at  
(Specify #)  
3  Rode as passenger in car for \_\_\_\_\_ miles.  
(Specify #)  
4  Transferred from Bus Route # \_\_\_\_\_  
(Specify)  
5  Ferry 6  Bicycle 7  Other \_\_\_\_\_  
(Specify)

8. After getting off this bus, how will you get to where you are going? (Check one and fill in the blanks)

- 1  Walking (or wheelchair) \_\_\_\_\_ block(s)  
(Specify #)  
2  Transferring Buses to Route # \_\_\_\_\_ (then to Route # \_\_\_\_\_ )  
(Specify Routes or Routes)  
3  Driving car for \_\_\_\_\_ miles.  
(Specify #)  
4  Passenger in car for \_\_\_\_\_ miles.  
(Specify #)  
5  Ferry 6  Bicycle 7  Other \_\_\_\_\_  
(Specify)

9. Where are you going? (Check one)

- 1  Home/Residence 5  School (K thru 12)  
2  Work 6  Medical/Dental  
3  Shopping 7  Social/Recreation  
4  College/Trade School 8  Other \_\_\_\_\_  
(Specify)

10. What is the address (or intersection) of the place you are going?

(Street address (e.g. 123 N.E. 2nd St.), or name of Building or nearest intersection)  
in \_\_\_\_\_  
(City, Town or Zip)

11. How did you pay your fare on this bus?

Cash and/or Tickets (Check amount and type)

- 1  \$ .55 2  \$ .85 Indicate if... 1  Cash  
2  \$ .65 3  \$ 1.00 2  Tickets  
3  Both

### Elderly/Disabled Fares

- 11  Permit + \$ .20  
12  Reduced Fare Pass (\$3 Monthly)  
13  Reduced Fare Pass (\$24/\$36 Annual)

### Monthly (or Annual) Pass

- 21  1-Zone Peak Pass  
22  2-Zone Peak Pass  
23  1-Zone Off Peak Pass  
24  2-Zone Off Peak Pass  
25  Sea-First Employee  
26  Snohomish Pass (Red Stripe)

Indicate if a...  
1  Monthly Pass  
2  Annual Pass

If cash was used with a pass, specify amount: \$ \_\_\_\_\_

### Other Fare Payments

- 31  Transfer (One Hour Pass)  
32  Seattle School Student Pass  
33  Weekend All-day Pass  
34  Letter Carrier  
35  Seattle Police Pass  
36  Seattle Firefighter Pass  
37  King County Police Pass  
38  Metro Employee Pass  
39  Other Fares/Pass \_\_\_\_\_  
(Specify)

12. Did you have a car available that you could have used for this trip? 1  No 2  Yes

13. Is this trip part of a round trip by bus today?

(Check yes or no and complete items in areas provided)

- 1  Yes → A. Record the route number of your trip in the opposite direction:

Route # \_\_\_\_\_ (then to Route # \_\_\_\_\_ )

- B. Estimate the starting time of your bus trip in the opposite direction:

1  a.m.  
\_\_\_\_ : \_\_\_\_ 2  p.m. (Incl. Noon)  
(Record time and check a.m. or p.m.)

- C. Are you using a One Hour Pass (transfer) as your return fare?

1  No 2  Yes

- 2  No → How will you (or did you) complete the other part of the round trip? (Check One)

- 1  Walk  
2  Car, drove alone  
3  Car, with \_\_\_\_\_ other person(s).  
4  Other (Specify) \_\_\_\_\_  
5  Not part of a roundtrip today.

PLEASE COMPLETE THE REVERSE SIDE

**14.** Are there any children under age 10 riding with you on this trip?

- 1  No  
2  Yes, specify the number in each age group below. (If traveling in a group, only one person should answer.)

A. 0-4 years \_\_\_\_\_ (Specify #)

B. 5-9 years \_\_\_\_\_ (Specify #)

**15.** Do you have a disability which makes it difficult for you to use the bus?

1  No

What type of disability?

1  Difficulty walking/climbing  
2  Confined to wheelchair  
3  Speech  
4  Sight  
5  Hearing  
6  Other \_\_\_\_\_  
(Please specify)

**16.** Did you use the wheelchair lift on this trip? 1  No 2  Yes

**17.** Last week (Monday-Sunday), how often did you make the trip to where you are now going by each of the following methods of travel? (Specify # of trips in this direction only)

1 By Bus \_\_\_\_\_ times last week

2 By Driving alone \_\_\_\_\_ times last week

3 By Carpool \_\_\_\_\_ times last week, with \_\_\_\_\_ other person(s).  
(Specify #)

4 By Walking \_\_\_\_\_ times last week

5 By Bicycle \_\_\_\_\_ times last week

6 By Other \_\_\_\_\_ times last week

**18.** Last week (Monday-Sunday), how many total one way trips did you make on Metro buses for any reason? (Count roundtrips as 2 trips; do not count Ride Free trips or a transfer as another trip.)

A. On Weekdays (Mon.-Fri.) \_\_\_\_\_ trips last week

B. On Weekends (Sat.-Sun.) \_\_\_\_\_ trips last week

**19.** Are you: (Check one) 1  Female 2  Male

**20.** What age group are you in? (Check one)

- 1  10-17 4  35-44 7  60-64  
2  18-24 5  45-54 8  65 and over  
3  25-34 6  55-59

**21.** How many people live in your household? (Check one)

- 1  1 2  2 3  3 4  4 5  5 6  6 or more

**22.** What is your ethnic background? (Check one)

- 1  American Indian 4  Mexican/Hispanic  
2  Asian/Pacific Islander 5  White  
3  Black 6  Other \_\_\_\_\_  
(Specify)

**23.** What was the total income for your household last year?  
(Check one)

- 1  Less than \$5,000 6  \$25,000-29,999  
2  \$5,000-9,999 7  \$30,000-39,999  
3  \$10,000-14,999 8  \$40,000-49,999  
4  \$15,000-19,999 9  \$50,000 and over  
5  \$20,000-24,999

Comments & Suggestions:

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Please return this survey to any Metro bus driver or deposit in any mailbox — Postage Free — Thank you.

(If mailing, please fold here and seal card closed)



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IF MAILED  
IN THE  
UNITED STATES

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Metro  
Transit Development Division  
821 Second Avenue, M.S. 52  
Seattle, Washington 98104

## APPENDIX B

### Baseline Tunnel Route List

(Year 2000, 145/Hour/Direction)

31 Beacon Hill  
41 Northgate  
70-75 University District  
107 Renton  
110 Renton  
111 Renton Highlands  
130 Burien  
132 Burien  
136,137 Burien  
142 Renton  
145,148 Renton  
150-163 Kent, Auburn  
174-196 Federal Way, I-5S  
210-235 Bellevue, I-90  
250-268 Kirkland, Redmond, SR-520  
301-305 Shoreline  
306-311 Northshore, SR-522  
317 Aurora Village  
355 Shoreline Community College  
377 Horizon View

## **APPENDIX C**

### **PSCOG Tape Specifications - PSG432**

#### **SAS Program and PROC contents**

PSG432 contains two versions of the survey file.

File 1 is a flat file named METRO ONBOARD and can be read into a  
a SAS dataset using the program SURVEY SAS on tape PSG442.

File 2 is the SAS dataset METRO.SURVEY as created from SURVEY SAS.

Each file has 53,350 records and the weighting factor should be  
used for all tables to bring totals to in-bound system totals.

CONTENTS PROCEDURE  
CONTENTS OF SAS MEMBER METRO.SURVEY

CREATED BY CMS USERID LINDY ON CPUID FF-4331-014723 AT 16:39 FRIDAY, AUGUST 14, 1987 BY SAS RELEASE 5.16  
 INFILE(FILE METRO ONBOARD C1 ) FILE= METRO SURVEY BLKSIZE=8095 LRECL=261 GENERATED BY DATA  
 NUMBER OF OBSERVATIONS: 53350 NUMBER OF VARIABLES: 57  
 MEMTYPE: DATA

----ALPHABETIC LIST OF VARIABLES AND ATTRIBUTES-----

#	VARIABLE	TYPE	LENGTH	POSITION	FORMAT	INFORMAT	LABEL
9	ACCDISTA	NUM	5	40			
10	ACCDISTP	NUM	5	45			
8	ACCDISTW	NUM	5	35			
7	ACCMODE	NUM	5	30			
11	ACCRTIE	NUM	5	50			
24	ADDFARE	NUM	5	111			
53	AGE	CHAR	1	252			
3	AMPM	NUM	5	14			
23	ANNUAL	NUM	5	106			
46	BIKEFREQ	NUM	5	221			
42	BUSFREQ	NUM	5	201			
26	CAR	NUM	5	121			
43	CARFREQ	NUM	5	206			
22	CASH	NUM	5	101			
35	CHILD	NUM	5	166			
36	CHILD04	NUM	5	171			
37	CHILD58	NUM	5	176			
20	DBLOCK	NUM	5	91			
38	DISABIL	NUM	5	181			
39	DISTYPE	NUM	5	186			
18	DPURP	CHAR	1	85			
19	DTRACT	NUM	5	86			
16	EGRDISTA	NUM	5	75			
17	EGRDISTP	NUM	5	80			
13	EGRDISTW	NUM	5	60			
12	EGRMODE	NUM	5	55			
14	EGRRTIE1	NUM	5	65			
15	EGRRTIE2	NUM	5	70			
55	ETHNIC	CHAR	1	254			
57	FACTOR	NUM	5	256			
21	FARE	NUM	5	96			
54	HHSIZE	CHAR	1	253			
56	INCOME	CHAR	1	255			
41	MODE1	NUM	5	196			
48	MODE2	NUM	5	231			
49	MODE3	NUM	5	236			
6	OBLOCK	NUM	5	25			
4	OPURP	CHAR	1	19			
25	OTHER	NUM	5	116			
47	OTHRFREQ	NUM	5	226			
5	OTRACT	NUM	5	20			
44	POOLFREQ	NUM	5	211			
27	RET	NUM	5	126			
31	RETAMPM	NUM	5	146			
33	RETMODE	NUM	5	156			
34	RETOCC	NUM	5	161			

#	VARIABLE	TYPE	LENGTH	POSITION	FORMAT	INFORMAT	LABEL
28	RETRTE1	NUM	5	131			
29	RETRTE2	NUM	5	136			
30	RETTIME	NUM	5	141			
32	RETXFER	NUM	5	151			
1	ROUTE	NUM	5	151			
52	SEX	CHAR	1	251			
2	TIME	NUM	5	9			
45	WALKFREQ	NUM	5	216			
40	WCHAIR	NUM	5	191			
50	WKDAYS	NUM	5	241			
51	WKENDS	NUM	5	246			
 ----LIST OF VARIABLES AND ATTRIBUTES BY POSITION----							
#	VARIABLE	TYPE	LENGTH	POSITION	FORMAT	INFORMAT	LABEL
1	ROUTE	NUM	5	4			
2	TIME	NUM	5	9			
3	AMPM	NUM	5	14			
4	OPURP	CHAR	1	19			
5	OTRACT	NUM	5	20			
6	OBLOCK	NUM	5	25			
7	ACCMODE	NUM	5	30			
8	ACCDISTW	NUM	5	35			
9	ACCDISTA	NUM	5	40			
10	ACCDISTP	NUM	5	45			
11	ACCRTE	NUM	5	50			
12	EGRMODE	NUM	5	55			
13	EGRDISTW	NUM	5	60			
14	EGRRTET1	NUM	5	65			
15	EGRRTET2	NUM	5	70			
16	EGRDISTA	NUM	5	75			
17	EGRDISTP	NUM	5	80			
18	DPURP	CHAR	1	85			
19	DTTRACT	NUM	5	86			
20	DBLOCK	NUM	5	91			
21	FARE	NUM	5	96			
22	CASH	NUM	5	101			
23	ANNUAL	NUM	5	106			
24	ADDFARE	NUM	5	111			
25	OTHER	NUM	5	116			
26	CAR	NUM	5	121			
27	RET	NUM	5	126			
28	RETRTE1	NUM	5	131			
29	RETRTE2	NUM	5	136			
30	RETTIME	NUM	5	141			
31	RETAMP	NUM	5	146			
32	RETXFER	NUM	5	151			
33	RETMODE	NUM	5	156			
34	RETOCC	NUM	5	161			
35	CHILD	NUM	5	166			
36	CHILD04	NUM	5	171			
37	CHILD58	NUM	5	176			
38	DISABIL	NUM	5	181			
39	DISTYPE	NUM	5	186			
40	WCHAIR	NUM	5	191			
41	MODE1	NUM	5	196			
42	BUSFREQ	NUM	5	201			

#	VARIABLE	TYPE	LENGTH	POSITION	FORMAT	INFORMAT	LABEL
43	CARFREQ	NUM	5	206			
44	POOLFREQ	NUM	5	211			
45	WALKFREQ	NUM	5	216			
46	BIKEFREQ	NUM	5	221			
47	OTHRFREQ	NUM	5	226			
48	MODE2	NUM	5	231			
49	MODE3	NUM	5	236			
50	WKDAYS	NUM	5	241			
51	WKENDS	NUM	5	246			
52	SEX	CHAR	1	251			
53	AGE	CHAR	1	252			
54	HHSIZE	CHAR	1	253			
55	ETHNIC	CHAR	1	254			
56	INCOME	CHAR	1	255			
57	FACTOR	NUM	5	256			

----- SOURCE RECORDS -----

```

DATA METRO_SURVEY ;
INFILE READIT ;
LENGTH DEFAULT = 5 ;
INPUT
/* @ 1 SERIAL 6. */ /
@ 25 ACCMODE 1. @ ;
IF ACCMODE = 1 THEN INPUT @ 26 ACCDISTW 3. @ ;
IF ACCMODE = 2 THEN INPUT @ 26 ACCDISTA 3. @ ;
IF ACCMODE = 3 THEN INPUT @ 26 ACCDISTP 3. @ ;
IF ACCMODE = 4 THEN INPUT @ 26 ACCRTE 3. @ ;
INPUT
@ 29 EGRMODE 1. @ ;
IF EGRMODE = 1 THEN INPUT @ 30 EGRCISTW 3. @ ;
IF EGRMODE = 2 THEN INPUT @ 30 EGRCISTA 3. @ ;
IF EGRMODE = 3 THEN INPUT @ 30 EGRCISTP 3. @ ;
IF EGRMODE = 4 THEN INPUT @ 30 EGRCRTE 3. @ ;
INPUT
@ 38 DPURP $1.
@ 40 DTRACT 4.
@ 44 DBLOCK 3. ;
@ 48 FARE 2. @ ;
IF FARE < 20 THEN INPUT @ 50 CASH 1. @ ;
IF FARE > 20 THEN INPUT @ 50 ANNUAL 1. @ ;
IF FARE < 30 THEN INPUT @ 51 ADDFARE 3. @ ;
IF FARE > 30 THEN INPUT @ 51 OTHER 3. @ ;
INPUT
@ 54 CAR 1.

```

```
      @ 55 RET 1. @;
      IF RET = 1 THEN INPUT @ 56 RETRTE1 3. @ 59 RETRTE2 3.
                                         @ 62 RETTIME 4. @ 66 RETAMPM 1.
                                         @ 67 RETXFER 1. @ ; RETOCO 3. @ ;
      IF RET = 2 THEN INPUT @ 56 RETMODE 3. @ 59 RETOCO 3. @ ;

      INPUT @ 68 CHILD 1.
             @ 69 CHILD04 2. /* NUM OF CHILDREN LESS THAN 4 */
             @ 71 CHILD58 2. /* NUM OF CHILDREN AGE 5 - 8 */;

      @ 73 DISABIL 1.
      @ 74 DISTYPE 1.
      @ 75 WCHAIR 1. @;

      INPUT @ 76 MODE1 1. @;
      IF MODE1 = 1 THEN INPUT @ 77 BUSFREQ 2. @;
      IF MODE1 = 2 THEN INPUT @ 77 CARFREQ 2. @;
      IF MODE1 = 3 THEN INPUT @ 77 POOLFREQ 2. @;
      IF MODE1 = 4 THEN INPUT @ 77 WALKFREQ 2. @;
      IF MODE1 = 5 THEN INPUT @ 77 BIKEFREQ 2. @;
      IF MODE1 = 6 THEN INPUT @ 77 OTHRFREQ 2. @;

      INPUT @ 79 MODE2 1. @;
      IF MODE2 = 1 THEN INPUT @ 80 BUSFREQ 2. @;
      IF MODE2 = 2 THEN INPUT @ 80 CARFREQ 2. @;
      IF MODE2 = 3 THEN INPUT @ 80 POOLFREQ 2. @;
      IF MODE2 = 4 THEN INPUT @ 80 WALKFREQ 2. @;
      IF MODE2 = 5 THEN INPUT @ 80 BIKEFREQ 2. @;
      IF MODE2 = 6 THEN INPUT @ 80 OTHRFREQ 2. @;

      INPUT @ 82 MODE3 1. @;
      IF MODE3 = 1 THEN INPUT @ 83 BUSFREQ 2. @;
      IF MODE3 = 2 THEN INPUT @ 83 CARFREQ 2. @;
      IF MODE3 = 3 THEN INPUT @ 83 POOLFREQ 2. @;
      IF MODE3 = 4 THEN INPUT @ 83 WALKFREQ 2. @;
      IF MODE3 = 5 THEN INPUT @ 83 BIKEFREQ 2. @;
      IF MODE3 = 6 THEN INPUT @ 83 OTHRFREQ 2. @;

      INPUT @ 85 WKDAYS 2.
             @ 87 WKENDS 2.
             @ 89 SEX $1.
             @ 90 AGE $1.
             @ 91 HHSIZE $1.
             @ 92 ETHNIC $1.
             @ 93 INCOME $1.
             @ 95 FACTOR 5.2 ;
```

A	D	O	N	F	T	B	D	D	A	D	O
A	C	C	C	R	R	P	R	L	F	C	N
A	C	C	D	C	M	O	A	O	A	A	H
A	C	D	D	R	O	T	C	C	S	R	C
A	C	D	I	T	T	E	R	T	A	A	R
A	C	D	S	S	T	E	E	R	R	R	E
A	C	D	S	T	T	P	K	E	H	L	T
A	C	D	T	K	E	W	A	P	T	K	E
R	O	T	M	O	O	S	T	T	R	R	P
R	O	T	M	P	C	D	T	T	O	A	T
O	T	M	P	T	C	R	E	E	S	A	R
B	S	T	E	M	R	O	R	R	R	A	T
69	41	805	1	1	120	310	2	5	1	1	2
70	74	550	1	1	420	1	4	.	2	2	1
71	74	551	1	1	430	401	1	1	2	2	1
72	74	735	1	1	230	901	1	1	4	2	1
73	74	745	1	1	400	1	4	.	1	2	1
74	74	713	1	1	420	512	3	.	3	2	1
75	74	742	1	1	420	1	1	.	1	3	2
76	74	745	1	1	430	1	1	.	2	3	2
77	74	757	1	1	610	104	2	.	1	3	2
78	74	800	1	1	610	406	1	.	1	2	2
79	74	1030	1	1	410	108	1	.	4	532	409
80	74	1041	1	1	430	108	1	.	1	7	720
81	74	1100	1	1	660	306	1	.	3	3	810
82	255	604	1	1	2270	1	6	.	1	2	820
83	226	755	1	1	2320	1	2	.	2	252	2382
84	226	830	1	1	2430	226	4	.	923	1	502
85	305	614	1	2	2100	214	4	.	2	72	810
86	305	623	1	1	120	312	1	.	1	991	109
87	305	630	1	1	190	303	1	.	2	43	21
										2	760
										1	309
										1	21

P	W	B	O								
R	R	R	R	C	C	D	B	C	O	A	T
E	E	E	E	H	H	I	I	W	U	A	O
T	T	T	T	S	S	M	M	S	K	K	M
R	R	T	X	M	T	H	L	S	R	R	F
0	T	E	M	F	O	I	D	R	R	R	O
B	S	1	E	P	E	C	L	E	E	D	E
69	41		423	2	1	1	1	1	1	1	1
70	74	.	555	2	1	1	1	1	1	1	1
71	110	70	412	2	1	1	1	1	1	1	1
72	74	.	330	2	1	1	1	1	1	1	1
73	74	.	500	2	1	1	1	1	1	1	1
74	74	.	510	2	1	1	1	1	1	1	1
75	.	.	3	1	1	1	1	1	1	1	1
76	.	.	1	1	1	1	1	1	1	1	1
77	71	.	500	2	1	1	1	1	1	1	1
78	74	.	420	2	1	1	1	1	1	1	1
79	74	.	330	2	1	1	1	1	1	1	1
80	.	.	425	2	1	1	1	1	1	1	1
81	73	.	500	2	1	1	1	1	1	1	1
82	.	.	422	2	1	1	1	1	1	1	1
83	226	252	.	420	2	1	1	1	1	1	1
84	.	.	500	2	1	1	1	1	1	1	1
85	72	305	.	914	2	1	1	1	1	1	1
86	991	305	.	422	2	1	1	1	1	1	1
87	10	305	.	340	2	1	1	1	1	1	1

```

/* METROFMT      PROC FORMAT STATEMENTS FOR METRO ON-BOARD SURVEY */
/* E MURAKAMI 4/86                                     */
/* L JOHNSON 8/87 UPDATE FOR USE ON DSTP BEFORE AND AFTER STUDY */

/* NOTE: NORMALLY SPLIT CENSUS TRACTS ARE ASSIGNED          */
/* IN TOTAL TO FAZ'S AS FOLLOWS: 72, 73 = 6020             */
/*                                82      = 6010             */
/*                                83, 85 = 6111             */

PROC FORMAT ;
  VALUE $OD    1 = 'HOME'
            2 = 'WORK'
            3 = 'SHOPPING'
            4 = 'COLLEGE'
            5 = 'SCHOOL (K-12)'
            6 = 'MED/DENT'
            7 = 'SOCIAL/REC'
            8 = 'OTHER' ;
  VALUE MODETO 1 = 'WALKED'
            2 = 'DROVE'
            3 = 'PASSENGER'
            4 = 'TRANSFER'
            5 = 'FERRY'
            6 = 'BICYCLE'
            7 = 'OTHER'
            8 = 'TRANSFER-CT'
            9 = 'TRANSFER-PIERCE';
  VALUE MODEFR 1 = 'WALK'
            2 = 'TRANSFER'
            3 = 'DRIVE'
            4 = 'PASSENGER'
            5 = 'FERRY'
            6 = 'BICYCLE'
            7 = 'OTHER' ;
  VALUE CAR    1 = 'NO'
            2 = 'YES' ;
  VALUE $SEX   1 = 'FEMALE'
            2 = 'MALE' ;
  VALUE $AGEGP 1 = '10-17'
            2 = '18-24'
            3 = '25-34'
            4 = '35-44'
            5 = '45-54'
            6 = '55-59'
            7 = '60-64'
            8 = '65+' ;
  VALUE $ETHNIC 1 = 'AMER IND'
            2 = 'ASIAN/PAC IS'
            3 = 'BLACK'
            4 = 'MEXICAN/HISP'
            5 = 'WHITE'
            6 = 'OTHER' ;
  VALUE $INCOME 0-1 = '< $5000'
            2 = '$5-9,999'
            3 = '$10-14,999'

```

```
4 = '$15-19,999'  
5 = '$20-24,999'  
6 = '$25-29,999'  
7 = '$30-39,999'  
8 = '$40-49,999'  
9 = '$50,000+' ;
```

## VALUE FACTORF

```
1.00-1.00 = '1.00'  
>1.00-1.25 = '1.01 - 1.25'  
>1.25-1.50 = '1.26 - 1.50'  
>1.50-1.75 = '1.51 - 1.75'  
>1.75-2.00 = '1.76 - 2.00'  
>2.00-2.50 = '2.01 - 2.50'  
>2.50-3.00 = '2.51 - 3.00'  
>3.00-4.00 = '3.01 - 4.00'  
>4.00-5.00 = '4.01 - 5.00'  
>5.00-6.00 = '5.01 - 6.00'  
>6.00-7.00 = '6.01 - 7.00'  
>7.00-15.00 = '7.01 - 15.00' ;
```

## VALUE TUNNELR

```
41, 70-75, 107, 110, 145, 150, 152, 158-163, 174-178, 210-213,  
226-229, 250, 251, 253-260, 267, 301-311, 355, 377 = 'TUNNEL'
```

```
1-40, 42-69, 76-106, 108, 109, 111-144, 146-149, 151, 153-157,  
164-173, 179-209, 214-225, 230-249, 252, 261-266, 268-300,  
312-354, 356-376, 378-999 = 'SURFACE'
```

```
OTHER = 'OTHER' ;
```

```
/* MISSING = ' ' ; */
```

## VALUE AMPM

```
1 = 'AM'  
2 = 'PM' ;
```

## VALUE DESTF

```
0720215-0720219,  
0730207-0730208,  
0730211-0730213,  
0730215-0730217,  
0730221-0730226,  
0730302-0730307,  
0730309,  
0730311,  
0800203-0800205,  
0810101-0810107,  
0810109-0810120,  
0810201-0810222,  
0810301-0810302,  
0810304-0810307,  
0810309,  
0810311-0810316,  
0810318,  
0810320,  
0810322,  
0810401-0810405,
```

0810411-0810414,  
0810416,  
0810418-0810420,  
0810422-0810423,  
0810426,  
0810428,  
0820101-0820108,  
0820201-0820207,  
0820306-0820309,  
0820401-0820402,  
0820409-0820410,  
0830101,  
0830104-0830106,  
0850308,  
0850313,  
0850401-0850405,  
0910203-0910206,  
0910301-0910306,  
0910401-0910407,  
0910409-0910410,  
0920101-0920109,  
0920201,  
0920203,  
0920205-0920209,  
0920211,  
0920301-0920308,  
0920312,  
0930103-0930111,  
0930819-0930823,  
0930825-0930826,  
0930828,  
0930832,  
0930853-0930854 = 'CBD DESTINED'  
0000000-0720214,  
0720220-0730206,  
0730209-0730210,  
0730214,  
0730218-0730220,  
0730227-0730301,  
0730308,  
0730310,  
0730312-0800202,  
0800206-0810100,  
0810108,  
0810121-0810200,  
0810223-0810300,  
0810303,  
0810308,  
0810310,  
0810317,  
0810319,  
0810321,  
0810323-0810400,  
0810406-0810410,  
0810415,

0810417,  
0810421,  
0810424-0810425,  
0810427,  
0810429-0820100,  
0820109-0820200,  
0820208-0820305,  
0820310-0820400,  
0820403-0820408,  
0820411-0830100,  
0830102-0830103,  
0830107-0850307,  
0850309-0850312,  
0850314-0850400,  
0850406-0910202,  
0910207-0910300,  
0910307-0910400,  
0910408,  
0910411-0920100,  
0920110-0920200,  
0920202,  
0920204,  
0920210,  
0920212-0920300,  
0920309-0920311,  
0920313-0930102,  
0930112-0930818,  
0930824,  
0930827,  
0930829-0930831,  
0930833-0930852,  
0930855-9999999 = 'NON-CBD DESTINED' ;  
**VALUE ACCDISTF**      0 = '0'  
                        1 = '1'  
                        2 = '2'  
                        3 = '3'  
                        4 = '4'  
                        5 = '5'  
                        6-10 = '6-10'  
                        11-20 = '11-20'  
                        21-HIGH = '20+' ;  
**VALUE EG RDISTF**     0 = '0'  
                        1 = '1'  
                        2 = '2'  
                        3 = '3'  
                        4 = '4'  
                        5 = '5'  
                        6-10 = '6-10'  
                        11-20 = '11-20'  
                        21-HIGH = '20+' ;  
**VALUE WEEKDAYF**     0 = '0'  
                        1 = '1'  
                        2 = '2'  
                        3 = '3'  
                        4 = '4'

```

      5 = '5'
      6 = '6'
      7 = '7'
      8 = '8'
      9 = '9'
     10 = '10'
    11-15 = '11-15'
  16-HIGH = '16+' ;
VALUE WEEKENDF      0 = '0'
                    1 = '1'
                    2 = '2'
                    3 = '3'
                    4 = '4'
                    5 = '5'
                    6 = '6'
    7 - HIGH = '7+' ;
VALUE TIMEQ
  0100 - 0430 = ' 1:00 AM - 4:30 AM'
  0431 - 0530 = ' 4:31 AM - 5:30 AM'
  0531 - 0630 = ' 5:31 AM - 6:30 AM'
  0631 - 0730 = ' 6:31 AM - 7:30 AM'
  0731 - 0830 = ' 7:31 AM - 8:30 AM'
  0831 - 0930 = ' 8:31 AM - 9:30 AM'
  0931 - 1030 = ' 9:31 AM - 10:30 AM'
  1031 - 1130 = '10:31 AM - 11:30 AM'
  1131 - 1230 = '11:31 AM - 12:30 PM'
  1231 - 1330 = '12:31 PM - 1:30 PM'
  1331 - 1430 = ' 1:31 PM - 2:30 PM'
  1431 - 1530 = ' 2:31 PM - 3:30 PM'
  1531 - 1630 = ' 3:31 PM - 4:30 PM'
  1631 - 1730 = ' 4:31 PM - 5:30 PM'
  1731 - 1830 = ' 5:31 PM - 6:30 PM'
  1831 - 1930 = ' 6:31 PM - 7:30 PM'
  1931 - 2459 = ' 7:31 PM - 12:59 AM' ;
VALUE TIMEPK 0000-0559, 0900-2459 = 'NON-PEAK HOUR'
                    0600-0859      = 'INBOUND PEAK HOUR' ;

VALUE FAZF
/* KING COUNTY */
  3031, 3032, 3034      = '3010'
  3002, 3022, 3033      = '3020'
  2982, 2990, 3040      = '3030'
  2900, 3001, 3010, 3021 = '3040'
  3090                   = '3110'
  3070, 3080, 3100, 3110 = '3120'
  3050, 3060              = '3130'
  3122, 3130, 3140      = '3200'
  3160                   = '3310'
  3201                   = '3320'
  3202, 3203, 3212      = '3330'
  2931, 2932, 2941, 2942, 3180 = '3411'
  2582, 3192              = '3412'
  2960, 3121, 3171, 3172 = '3420'
  2922, 2950, 2970, 2981 = '3500'
  2830, 2910, 2921      = '3600'

```

2841, 2842, 2843, 2850, 2860, 2870, 2881, 2882, 2890	= '3700'
2650, 2660, 2670, 2680, 2750, 2760, 2780, 2790	= '3810'
2640, 2690, 2700, 2710, 2720, 2730, 2740,	
2800, 2810, 2820	= '3820'
2620	= '3900'
2601, 2610, 2630	= '4000'
2570, 2581, 2590	= '4110'
2520, 2540, 2550	= '4120'
2530, 2602	= '4130'
2510, 2560	= '4210'
2470, 2500	= '4220'
3191	= '4230'
3211	= '4300'
2430, 2440, 2450, 2460	= '4400'
2341, 2342, 2480, 2490	= '4500'
3221, 3222, 3235	= '4600'
3232, 3234	= '4700'
2381, 2390	= '4810'
2400	= '4820'
2382	= '4900'
2350, 2360	= '5010'
2300, 2310, 2320, 2330	= '5020'
2410, 2420	= '5100'
2370	= '5200'
2240, 2250, 2261, 2270	= '5300'
2280, 2290	= '5410'
2262, 3233	= '5420'
2202, 2220, 2230	= '5510'
2191, 2192	= '5520'
2160, 2170, 2201, 2210	= '5530'
3231	= '5540'
2180	= '5600'
1070, 1080, 1120, 1130, 1140, 1150, 1160, 1200, 1210	= '5710'
0960, 0970, 0980, 1050, 1060	= '5720'
1090	= '5810'
0930, 0990	= '5820'
1020, 1030, 1040, 1100, 1110, 1170, 1180, 1190	= '5910'
0890, 0900, 0940, 0950, 1000, 1010	= '5920'
0810, 0820, 0910, 0920	= '6010'
0800, 0720, 0730	= '6020'
0740, 0750, 0760, 0770, 0780, 0790,	
0830, 0840, 0850, 0860, 0870, 0880	= '6111'
0610, 0620, 0630, 0640, 0650, 0660	= '6112'
0550, 0560, 0570, 0581, 0582	= '6121'
0590, 0600, 0670, 0680, 0690, 0700, 0710	= '6122'
0450, 0460, 0500, 0510, 0520, 0540	= '6211'
0410, 0420, 0430, 0440, 0531, 0532	= '6212'
0030, 0060, 0120, 0130, 0180, 0190, 0270, 0360	= '6221'
0200, 0210, 0220, 0230, 0240, 0250, 0260, 0370,	
0380, 0390, 0400	= '6222'
0010, 0020, 0070, 0080, 0090, 0100, 0110	= '6223'
0280, 0290, 0300, 0310, 0320, 0330, 0340, 0350,	
0470, 0480, 0490	= '6310'
0040, 0050, 0140, 0150, 0160, 0170	= '6320'
2010, 2020, 2030, 2060, 2070, 2080, 2090, 2100	= '6410'

2040, 2050, 2110, 2120, 2130, 2140, 2150	= '6420'
3260, 3270	= '6500'
3240, 3250	= '6600'
3150, 3310	= '6900'
3280, 3290, 3300	= '6910'
2771, 2772	= '6930'
/* KITSAP COUNTY */	
9220, 9230, 9240, 9250	= '9002'
9260, 9270, 9280	= '9003'
9210, 9290	= '9004'
9200	= '9005'
9130	= '9006'
9120, 914	= '9007'
9110	= '9009'
9050	= '9011'
9010, 9020, 9060	= '9012'
8010	= '9900'
8080, 8090	= '9901'
8050, 8060, 8070, 8100, 8110, 8120, 8130, 8140	= '9902'
8020, 8030, 8040	= '9904'
9030	= '9908'
9040	= '9909'
9090	= '9913'
9070, 9080, 9100	= '9914'
9150, 9160, 9190	= '9915'
9170, 9180	= '9916'
/* PIERCE COUNTY */	
7200	= '110'
7214	= '120'
7192, 7212, 7213	= '130'
7181, 7182, 7191	= '200'
7151, 7152	= '310'
7160, 7170	= '320'
7141, 7142	= '400'
7311	= '500'
7131, 7132	= '600'
7020, 7040	= '700'
7031, 7032	= '800'
7060, 7330	= '900'
7100, 7110	= '1000'
7122, 7342	= '1110'
7121, 7341	= '1120'
7050	= '1130'
7071, 7072	= '1200'
6310, 6320, 6340, 6350	= '1310'
6180, 6190, 6240, 6250	= '1320'
6200, 6210, 6220, 6230, 6330	= '1330'
6270, 6280	= '1410'
6260, 6290, 6300	= '1420'
7231, 7233, 7234	= '1500'
6030, 6091, 6092, 6100, 7350	= '1600'
6110, 6120, 6130, 6170	= '1710'
6040, 6050, 6060, 6070, 6080	= '1720'
6140, 6162	= '1810'
6150, 6161	= '1820'

6020, 6029	= '1900'
7090	= '2000'
6010, 7080	= '2100'
7241, 7242	= '2210'
7250, 7259	= '2220'
7010	= '2910'
7300, 7312, 7320	= '2920'
7280, 7290	= '2930'
7260, 7270	= '2940'

## /\* SNOHOMISH COUNTY \*/

5050, 5060, 5070, 5080, 5090	= '7010'
5020, 5030, 5041, 5042	= '7020'
5100, 5110, 5120, 5130	= '7100'
5140, 5150, 5160, 5170	= '7200'
5191, 5192	= '7310'
5193	= '7320'
4170, 5200	= '7330'
4161, 4162	= '7340'
5194	= '7410'
5212	= '7420'
5213	= '7430'
5180	= '7510'
4200, 5010	= '7520'
4182, 4190	= '7530'
5211	= '7600'
5240	= '7700'
5250	= '7800'
5260	= '7900'
4130	= '8000'
4181	= '8110'
4090, 4100, 4110, 4120, 4140, 4150	= '8120'
4050, 4060, 4070, 4080	= '8210'
4010, 4020, 4030, 4040	= '8220'
5282, 5291, 5292	= '8310'
5281	= '8320'
5270	= '8400'
5351	= '8500'
5221	= '8600'
5222, 5230	= '8900'
5380	= '8910'
5340, 5352, 5360, 5370	= '8920'
5300, 5310, 5320, 5330	= '8930'

OTHER = 'OTHER' ;

VALUE DRIVETO

1	= '1 MI'
2	= '2 MI'
3	= '3 MI'
4	= '4 MI'
5	= '5 MI'
6-10	= '6-10 MI'
11-15	= '11-15 MI'
16-20	= '16-20 MI'
21-HIGH	= '20+ MI' ;

## \*\*\*CATALOG OF FILES ON CMS TAPE PSG442 \*\*\*

\*BLOCKS SHOWN ARE ESTIMATED DISK REQUIREMENT @ 1024 BYTES PER BLOCK.

FILE		RECFM	LRECL	RECORDS	BLOCKS*	LAST UPDATE
+	++++	++++	++++	++++++	++++++	+++++++
CARFMT	SAS	A1	F	80	141	12 11/05/87 15:04
SURVEY	SAS	A1	F	80	86	8 11/05/87 15:03
RN-C18	SAS	A1	F	80	12	4 11/05/87 15:03
RN-CW18	SAS	A1	F	80	14	4 11/05/87 15:03
RN-CWN-H	SAS	A1	F	80	14	4 11/05/87 15:03
RN-CW	SAS	A1	F	80	29	4 11/05/87 15:03
RN-CWH	SAS	A1	F	80	14	4 11/05/87 15:03
RN-CN-H	SAS	A1	F	80	12	4 11/05/87 15:03
RN-CH	SAS	A1	F	80	12	4 11/05/87 15:03
RC18	SAS	A1	F	80	11	4 11/05/87 15:03
RN-C	SAS	A1	F	80	26	4 11/05/87 15:03
RCW18	SAS	A1	F	80	13	4 11/05/87 15:03
RCWN-H	SAS	A1	F	80	13	4 11/05/87 15:03
RCWH	SAS	A1	F	80	13	4 11/05/87 15:03
RCW	SAS	A1	F	80	28	4 11/05/87 15:03
RCWFAZ	SAS	A1	F	80	22	4 11/05/87 15:03
RCN-H	SAS	A1	F	80	11	4 11/05/87 15:03
RCH	SAS	A1	F	80	11	4 11/05/87 15:03
RCFAZDST	SAS	A1	F	80	30	4 11/05/87 15:03
PURPFMT	SAS	A1	F	80	126	12 11/05/87 15:03
RCBD	SAS	A1	F	80	25	4 11/05/87 15:03
PN-CT	SAS	A1	F	80	31	4 11/05/87 15:03
PN-CT18	SAS	A1	F	80	16	4 11/05/87 15:04
PN-CS18	SAS	A1	F	80	16	4 11/05/87 15:04
PN-CS	SAS	A1	F	80	31	4 11/05/87 15:04
PCT18	SAS	A1	F	80	15	4 11/05/87 15:04
PCS18	SAS	A1	F	80	15	4 11/05/87 15:04
PCT	SAS	A1	F	80	30	4 11/05/87 15:04
PCS	SAS	A1	F	80	30	4 11/05/87 15:04
DT	SAS	A1	F	80	32	4 11/05/87 15:04
DS	SAS	A1	F	80	32	4 11/05/87 15:04
DESTCBD	SAS	A1	F	80	208	20 11/05/87 15:04
DAFAZ	SAS	A1	F	80	20	4 11/05/87 15:04
METROFMT	SAS	A1	F	80	438	36 11/05/87 15:04
DT18	SAS	A1	F	80	17	4 11/05/87 15:04
DTN-H	SAS	A1	F	80	17	4 11/05/87 15:04
DTH	SAS	A1	F	80	17	4 11/05/87 15:04
DSN-H	SAS	A1	F	80	17	4 11/05/87 15:04
DS18	SAS	A1	F	80	17	4 11/05/87 15:04
DSH	SAS	A1	F	80	17	4 11/05/87 15:04
DESTNONC	SAS	A1	F	80	208	20 11/05/87 15:04
DA18	SAS	A1	F	80	14	4 11/05/87 15:04
DA2	SAS	A1	F	80	25	4 11/05/87 15:04
DA1	SAS	A1	F	80	16	4 11/05/87 15:04
DAN-H	SAS	A1	F	80	14	4 11/05/87 15:04
DAH	SAS	A1	F	80	14	4 11/05/87 15:04

==&gt; END OF FILESET

1 &lt;=

## APPENDIX D

### Census Tracts and Blocks in CBD

FILE: BLKFMT SAS A1 PUGET SOUND COUNCIL OF GOVERNMENTS COMPUTER CENTER

```
/* CHANGE LINDY'S PROGRAM INTO A PROC FORMAT */
/* (DESTCBD) */
/*      DTRCTBLK = 1000*DTRACT+DBLOCK ; */
PROC FORMAT ;
  VALUE CBDLOC
7200215, 7200216, 7200217, 7200218, 7200219,
7300207, 7300208, 7300211, 7300212, 7300213,
7300215, 7300216, 7300217, 7300221, 7300222,
7300223, 7300224, 7300225, 7300226, 7300302,
7300303, 7300304, 7300305, 7300306, 7300307,
7300309, 7300311,
8000203, 8000204, 8000205,
8100101, 8100102, 8100103, 8100104, 8100105,
8100106, 8100107, 8100109, 8100110, 8100111,
8100112, 8100113, 8100114, 8100115, 8100116,
8100117, 8100118, 8100119, 8100120, 8100201,
8100202, 8100203, 8100204, 8100205, 8100206,
8100207, 8100208, 8100209, 8100210, 8100211,
8100212, 8100213, 8100214, 8100215, 8100216,
8100217, 8100218, 8100219, 8100220, 8100221,
8100222, 8100301, 8100302, 8100304, 8100305,
8100306, 8100307, 8100308, 8100309,
8100311, 8100312, 8100313, 8100314, 8100315,
8100316, 8100318, 8100320, 8100321, 8100322,
8100401, 8100402, 8100403, 8100404, 8100405,
8100409, 8100410, 8100411, 8100412, 8100413,
8100414, 8100416, 8100418, 8100419, 8100420,
8100422, 8100423, 8100426, 8100428, 8100429,
8200101,
8200102, 8200103, 8200104, 8200105, 8200106,
8200107, 8200108, 8200201, 8200202, 8200203,
8200204, 8200205, 8200206, 8200207, 8200306,
8200307, 8200308, 8200309, 8200401, 8200402,
8200409, 8200410,
8300101, 8300104, 8300105, 8300106,
8500308, 8500313, 8500401, 8500402, 8500403,
8500404, 8500405,
9100203, 9100204, 9100205, 9100206, 9100301,
9100302, 9100303, 9100304, 9100305, 9100306,
9100401, 9100402, 9100403, 9100404, 9100405,
9100406, 9100407, 9100409, 9100410,
9200101, 9200102, 9200103, 9200104, 9200105,
9200106, 9200107, 9200108, 9200109, 9200201,
9200203, 9200205, 9200206, 9200207, 9200208,
9200209, 9200211, 9200301, 9200302, 9200303,
9200304, 9200305, 9200306, 9200307, 9200308,
9200312,
9300103, 9300104, 9300105, 9300106, 9300107,
9300108, 9300109, 9300110, 9300111, 9300819,
9300820, 9300821, 9300822, 9300823, 9300825,
9300826, 9300828, 9300832, 9300853, 9300854 = '1' /* CBD */
OTHER = '0' ; /* NON-CBD */
```



# Member Jurisdiction Designees to PSCOG

## KING SUBREGION

**Algona**  
Councilmember Sue Langley

**Auburn**  
Mayor Bob Roegner

**Bellevue**  
Mayor Nan Campbell  
Councilmember Jean Carpenter

**Bothell**  
Councilmember Walt Wojcik

**Clyde Hill**  
Councilmember Roger Shaeffer

**Des Moines**  
Mayor Pat DeBlasio

**Duvall**  
Councilmember Mark Smith

**Issaquah**  
Councilmember Darlene McHenry

**Kent**  
Councilmember Christi Houser

**King County**  
County Executive Tim Hill  
Councilmember Gary Grant  
Councilmember Bruce Laing  
Councilmember Lois North  
Councilmember Bill Reams

**Kirkland**  
Mayor Doris Cooper

**Lake Forest Park**  
Mayor Dick Rainforth

**Mercer Island**  
Councilmember Cleve Anschell

**Muckleshoot Indian Tribe**  
Executive Director Leo LaClair

**Normandy Park**  
Councilmember Norm Strange

**North Bend**  
Mayor Fritz Ribary

**Redmond**  
Mayor Doreen Marchione  
Councilmember Margaret Doman

**Renton**  
Councilmember Kathy Keolker Wheeler

**Seattle**  
Mayor Charles Royer  
Councilmember Dolores Sibonga  
Councilmember Jim Street  
Councilmember Jeanette Williams

**Snoqualmie**  
Darwin Sukut

**Tukwila**  
Councilmember Mabel Harris

## KITSAP SUBREGION

**Bremerton**  
Mayor Gene Lobe  
Councilmember Spencer Horning  
Councilmember Hank Waibel

**Kitsap County**  
Commissioner Ray Aardal  
Commissioner John Horsley  
Commissioner Bill Mahan

**Port Orchard**  
Mayor Jay Weatherill

**Poulsbo**  
Mayor Richard Mitchusson

**Squamish Tribe**  
John Bagley

**Winslow**  
Mayor Alice Tawresey

## PIERCE SUBREGION

**Bonney Lake**  
Councilmember Robert Hawkins

**Buckley**  
Mayor Eugene Robertson

**DuPont**  
Mayor Mark Jackson

**Fife**  
Mayor Art Conduff

**Fircrest**  
Mayor Larry Cavanaugh  
Councilmember Rose Marie Raudebaugh

**Gig Harbor**  
Councilmember Jim Ryan

**Milton**  
Councilmember Leonard Sanderson

**Pierce County**  
County Executive Joe Stortini  
Councilmember Barbara Skinner  
Councilmember Paul Cyr

**Puyallup**  
Mayor Ron Crowe

**Stellacoom**  
Councilmember Pete Pedone

**Sumner**  
Councilmember Richard Lawson

**Tacoma**  
Councilmember Ruth McElliott  
Councilmember Karen Vialle

## SNOHOMISH SUBREGION

**Arlington**  
Mayor John C. Larson

**Brier**  
Councilmember Mimi Opdyke

**Edmonds**  
Councilmember Roger Hertrich

**Everett**  
Councilmember Ed Morrow  
Councilmember Connie Niva

**Lake Stevens**  
Mayor Richard Toyer

**Lynnwood**  
Mayor M.J. Hrdlicka

**Marysville**  
Mayor Rita Matheny

**Mill Creek**  
Councilmember Linda Blumenstein

**Monroe**  
Mayor Gordon Tjerne

**Mountlake Terrace**  
Mayor Lois Anderson

**Mukilteo**  
Mayor Emory Cole

**Snohomish**  
Councilmember Ann Averill

**Snohomish County**  
County Executive Willis Tucker  
Councilmember Bill Brubaker  
Councilmember Brian Corcoran

**Stanwood**  
Councilmember Cliff Danielson

**The Tulalip Tribes**  
Chair, Stanley Jones, Sr.

**Woodway**  
Mayor Jeannette Wood

DOT LIBRARY



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