APPENDIX I

References from WMATA 2005 Transit Ridership Report and ITE Manual

Land Use: 610
Hospital

Description

A hospital is any institution where medical or surgical care and overnight accommodations are provided to non-ambulatory and ambulatory patients. However, the term "hospital" does not refer to medical clinics (facilities that provide diagnoses and outpatient care only) or nursing homes (facilities devoted to the care of persons unable to care for themselves), which are covered elsewhere in this report. Clinic (Land Use 630) is a related use.

Additional Data

Peak hours of the generator—

The weekday a.m. peak hour varied between 8:00 a.m. and 10:00 a.m. The weekday p.m. peak hour varied between 1:00 p.m. and 5:00 p.m.

The sites were surveyed from the 1960s to the 1990s throughout the United States.

Source Numbers

2, 6, 14, 28, 88, 98, 110, 112, 186, 241, 253, 262, 423, 429, 533, 573

Land Use: 501
Military Base

Description

A military base is a complex that serves one division of the armed forces of the United States. It typically contains offices and training, housing, dining and recreational facilities.

Additional Data

The independent variable, vehicles, used in this land use refers to the number of vehicles authorized to enter the facility.

Most of the sites were surveyed at air force bases from the 1970s to the 1990s at installations throughout the United States.

Source Numbers

18, 285, 406

Land Use: 760
Research and Development Center

Description

Research and development centers are facilities or groups of facilities devoted almost exclusively to research and development activities. The range of specific types of businesses contained in this land use varies significantly. Research and development centers may contain offices and light fabrication areas. General office building (Land Use 710), corporate headquarters building (Land Use 714), single tenant office building (Land Use 715), office park (Land Use 750) and business park (Land Use 770) are related uses.

Additional Data

Truck trips accounted for 1.84 percent of the weekday traffic at the research and development centers surveyed (range of 0.4 percent to 4.0 percent).

The average vehicle occupancy for the 13 studies where information was submitted was approximately 1.19 persons per automobile. The vehicle occupancy rates ranged from 1.10 to 1.33 persons per automobile.

The sites were surveyed from the 1960s to the 1990s throughout the United States.

Trip Characteristics

The trip generation for the a.m. and p.m. peak hours of the generator typically coincided with the peak hours of the adjacent street traffic; therefore, only one a.m. peak hour and one p.m. peak hour, which represent both the peak hour of the generator and the peak hour of the adjacent street traffic, are shown for research and development centers.

Source Numbers

9, 105, 213, 218, 253, 332, 384, 423

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Ridership Survey
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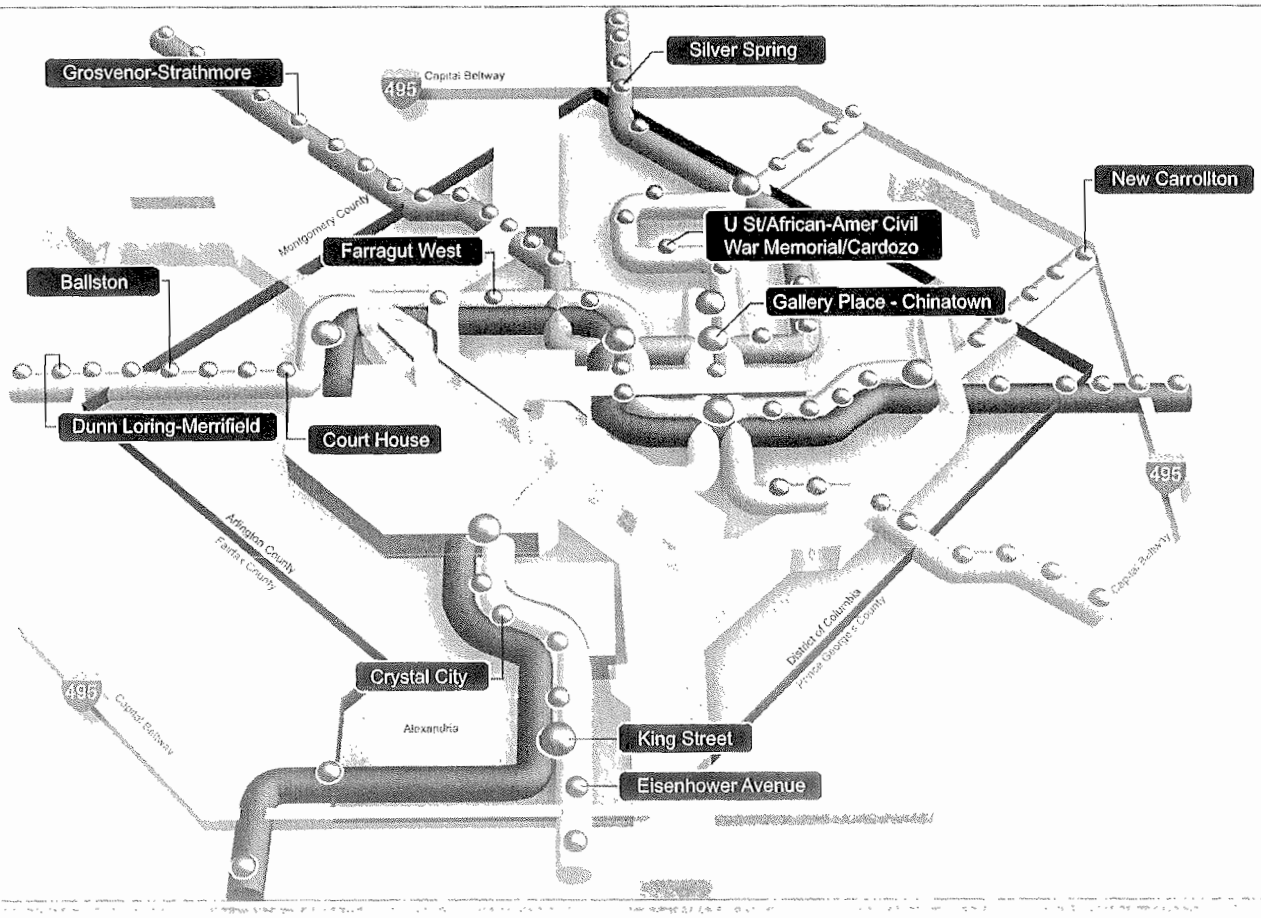

Washington Metropolitan Area Transit Authority

Table S-3
Office Commute and Residential Mode Share
by Concentric Location Typology

Mode Share	CBD	Inside the Beltway	Outside the Beltway
Office Site Commute			
Metrorail	63%	21%	8%
Metrobus & Other Transit	12%	9%	3%
Auto	21%	66%	89%
Walk & Other	5%	6%	0%
Residential Sites			
Metrorail	50%	43%	31%
Metrobus & Other Transit	6%	6%	1%
Auto	18%	39%	62%
Walk & Other	26%	14%	6%

Table S-4
Comparison of Transit Share Results from 2005 & 1989 Surveys

Land Use Type	Transit[1] Share Range		Transit Share Average		
	2005 Survey	1989 Survey	2005 Survey	1989 Survey	% Change
Office: Commute	8% - 76%	8% - 50%	34% (17 locations)	17.6% (10 locations)	93%
Residential	17%[2] - 67%	30% - 74%	45% (18 locations)	46.2% (10 locations)	-3%[3]
Retail	19% - 57%	34% - 56%	37% (5 locations)	44.2% (8 locations)	-16%
Hotel	12% - 51%	11% - 38%	31% (5 locations)	25.2% (10 locations)	23%
Entertainment	13% - 44%	N/A	32% (4 locations)	N/A	N/A

Notes: [1] Transit mode share includes Metrorail, Metrobus and Other Transit.
[2] The 17% figure is from a site converting its apartments to condominiums, and is an outlier. The next lowest end of the range is 32%.
[3] This figure may be skewed due to the low figure reported from the site converting its apartments to condominiums.

S.3.2 Land Use Specifics

For each land use type, survey results were tabulated to display frequencies and regression analyses were performed to test the strength of relationships between transit ridership and certain independent variables. A summary of the frequency results follows:

Office (17 sites; 15 percent response rate)

- 25 percent of all workplace survey respondents use Metrorail to commute to work.
- 44 percent of District residents responding to the workplace survey used Metrorail to commute to work. This figure exceeds the auto mode share for District residents, which was 41 percent. District residents accounted for only 14 percent of all survey responses, but accounted for more than 25 percent of all Metrorail commute trips.

said, there also is sufficient reason for additional, more targeted research to be conducted in certain areas to delve more deeply into the reasons for certain modal splits.

S.3.1 General Observations

1. 2005 survey results confirmed previous findings that the walking distance between a site and the Metrorail station affects transit ridership (see Table S-2). In general, the closer a site is to the station, the greater likelihood those traveling to/from or within a site choose Metrorail as their travel mode. Based on the survey results, this relationship was stronger for residential sites than for office sites.

Table S-2
Regression Equation Summary for Office Commute and Residential Trips by Distance from Station

Distance (Mile)	Metrorail Mode share		All Transit[1] Mode Share		Auto Mode Share	
	Office Commute	Residential	Office Commute	Residential	Office Commute	Residential
0	35%	54%	46%	55%	48%	29%
1/4	23%	43%	30%	45%	66%	41%
1/2	10%	31%	13%	36%	83%	54%

Notes: [1] Includes Metrorail, Metrobus, commuter rail and other transit options.

2. In urban fringe or outlying locations, residential uses may be more reliable in boosting Metrorail ridership than office uses (see Table S-3). Based on the results of the survey, outlying office sites tended to produce trips connected with areas outside the core, which typically are not well served by transit.

3. At the overall site level, survey results showed that high-density, mixed-use environments with good transit access generated higher shares of transit and walk trips—especially midday trips from and visitor trips to office sites, than those areas dominated by a single use.

4. Metrorail continues to remain competitive with the automobile in markets where it provides good access and service and has increased its mode share in the core since 1989. In each surveyed land use category, those trips recorded to or from the District, the jurisdiction with the greatest number of rail stations and a comprehensive bus network, showed the highest rates of Metrorail and transit use.

5. Overall, when compared to the results of the 1989 Survey, the 2005 results suggest that land uses surrounding Metrorail stations are supporting higher transit use than in 1989 (see Table S-4). For office sites, the overall average transit share among the sites was about 93 percent greater than the overall average transit share among the 1989 sites. For residential sites, transit shares appeared to have changed little.