SUMMARY

Two alternative functional arrangements of governmental agencies have been considered for the proposed Governmental Center in downtown Miami. Alternative one would accommodate approximately 3,800 employees, 3,900 visitors, and 60 service vehicles daily by 1990. Facility needs for alternative one include:

- Off-street parking spaces for 1,900 employee vehicles, 500 visitor vehicles and 550 publicly owned vehicles.
- Eight truck loading docks.
- Transit stops to accommodate 700 passengers generated by the Governmental Center during peak periods plus users generated by other parts of downtown.
- Curb side taxi loading zones.

Alternative two would accommodate approximately 4,250 employees, 4,250 visitors and 60 service vehicles daily by 1990. Facility needs for alternative two include:

- Off-street parking spaces for 2,100 employee vehicles, 500 visitor vehicles and 650 publicly owned vehicles.
- Eight truck loading docks.
- Transit stops to accommodate 700 passengers generated by the Governmental Center during peak periods plus users generated by other parts of downtown.
- Curb side taxi loading zones.

Employee, visitor and service characteristics were obtained, evaluated and used to forecast facility needs. Some of the significant factors determined were as follows:

- Employee auto driver trips will decrease from 67 percent of all employee trips in 1970 to 50 percent in 1990.
- Employee transit usage will increase from 10 percent of all employee trips in 1970 to 25 percent in 1990.

- Sixty-five percent of the employees will arrive or depart in the peak hour.
- Employee population will increase 47 percent in 20 years.
- Visitor-employee ratio will be approximately one to one.
- Twenty percent of daily visitor total will be at the Governmental Center during their peak hour between 9:00 a. m. - 11:00 a. m.
- Visitor auto driver trips will decrease from 72 percent of all visitor trips in 1970 to 62 percent in 1990.
- Visitor transit usage will increase from 10 percent of all visitor trips in 1970 to 15 percent in 1990.
- Visitor walk trips will increase from 10 percent of all visitor trips in 1970 to 15 percent in 1990.
- Ten percent of the daily visitors will arrive and 15 percent will depart during the evening traffic peak hour.
- Daily truck trip generation will be on the basis of one trip per 70 employees.
- Ten percent of the daily truck trips will have to be accommodated at loading dock facilities within a peak period.
- Average duration of a truck stay is 30 minutes; 70 percent of all trucks will stay less than this average.
- Nine percent of the daily truck trips will occur during the evening traffic peak hour.

The street and highway system providing access to and circulation within the Governmental Center consists of the proposed Interama Expressway and the important pairs of downtown streets serving I-95 and other parts of Miami. All present city streets with the possible exception of 4th and 5th should be maintained in use to serve the many downtown traffic demands.

INTRODUCTION

This is the first of two reports prepared by Alan M. Voorhees and Associates, Transportation and Planning Consultants, McLean, Virginia, a member of the consultant collaborative charged with the preparation of planning documents leading to architectural competition for a downtown Miami, Florida Governmental Center. This first report documents on-site traffic requirements of the proposed Governmental Center. The report will also present some of the data accumulated as the basis for discussion and recommendations for AMV's second report which will describe the traffic impact of the Governmental Center upon the infrastructure of the downtown street and transit systems.

The work effort reported herein consists of the determination of employee, visitor and service characteristics to be translated into site facility design requirements and the development of traffic generation data of a Governmental Center for further analysis. The report provides in table and graphic format a documentation of the employee, visitor and service characteristics that lead to parking, loading and vehicle and pedestrian circulation requirements for the years 1970, 1980, 1985 and 1990.

While the report does set forth some data that will be used in projecting the traffic impact of the Governmental Center on the existing street, freeway and transit system, it presents neither a detailed evaluation nor recommendations concerning the impact of the Governmental Center upon present and proposed transportation systems. This particular element is the object of study currently under way which will be reported on in the second report by the transportation consultant.

EMPLOYEE CHARACTERISTICS

A major transportation planning effort has just been completed with the presentation of the last of seven technical reports by Mel Conner and Associates which represent the study findings and recommendations of the Miami Urban Area Transportation Study. This substantial effort began with an origin and destination study of travel habits and patterns during the winter of 1964. Based on the existing patterns and forecasted land use, travel patterns for 1985 have been developed to determine street, highway and transit needs for those future years. The information of these studies, existing and forecast travel patterns, represents one of the significant input data sources of the Governmental Center study reported herein.

Other data sources were of staffs and the staff work of the various local planning and traffic agencies within the City of Miami and Dade County.

To increase his knowledge of travel patterns of employees and visitors anticipated to exist at the proposed downtown Governmental Center complex, the consultant conducted a week-long survey of persons leaving five governmental buildings.

Travel Mode

A summary of several basic employee characteristics is shown in Table 1 which is divided into two main data sources, mode of travel and car occupancy. The 1964 MUATS O-D survey data has been shown on the basis of CBD and non CBD trips which have been further divided into work and non-work trips and a special analysis of government employees at three locations within the Miami area. Also shown are the

results of the 1969 AMV study at five government buildings. The significant factors described within this table are the limited use of transit by governmental employees regardless of location, not exceeding 12 percent, and the car occupancy ratios of barely more than one person per car. Data summarized in Table 1 reveals strong auto orientation.

Residential Distribution

The residential distribution of governmental employees within or expected within downtown is shown in Table 2. Sectors developed for ease of analysis and related to transportation corridors connecting residential areas to the proposed Governmental Center, represent an aggregation of MUATS study districts as shown within Figure 1 and Table 2. The results of studies of downtown government employees, based on the 1964 MUATS O-D data, and work to home trip distribution of MUATS traffic study zones 05 and 14[1/] for 1985 are shown within Table 2. During the consultant's 1969 study, the home addresses of employees interviewed were summarized by zip code and were then adjusted to accord the best fit with the MUATS and sectors defined herein.

It should not be expected that the survey based on zip code boundaries would agree exactly with the transportation study traffic zones. However, except for the case of Sectors VII and VIII, relatively close concurrence among the three residential patterns of governmental employees was observed.

The data shown in Table 2 which will be used in the distribution of traffic to and from the Governmental Center in the analysis of the impact of

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[1/] Location of County Court House and Federal Office Building.

TABLE 1

SUMMARY OF EMPLOYEE TRAVEL CHARACTERISTICS

	1964 MUATS O-D SURVEY							1969 AMV SURVEY				
	CBD		Non CBD		Gov't. Employees							
Mode of Travel	Work Trips	Non Work Trips	Work Trips	Non Work Trips	CBD	Civic Center	Dinner Key	County Justice Bldg.	State Office Bldg.	Federal Office Bldg.	County Court House	City Hall
Auto Driver	56.4%	39.6%	75.1%	56.3%	62.2%	87.8%	81.8%	78.6%	90%	95.6%	77.0%	66.6%
Auto Passenger	19.3%	22.5%	16.4%	38.2%	25.4%	12.2%	16.4%	10.7%	10%	4.4%	12.5%	33.4%
Bus	24.3%	37.9%	8.5%	5.5%	12.4%	-	1.8%	10.7%	-	-	10.5%	-
Taxi												
Car Occupancy					1.16	1.07	1.17	1.14	1.30			
Home to Work				1.09								
Home to all purposes				1.58								

TABLE 2

RESIDENTIAL DISTRIBUTION OF GOVERNMENT EMPLOYEES

Sector	MUATS Districts	1964 MUATS O-D [1]	1969 AMV Survey Zip Code	1985 MUATS Projections [2]
I	1	.2 %	- %	1.6 %
II	47	.3	-	1.8
III	5, 8, 48, 49	9.1	11.1	12.9
IV	10, 11, 12, 13, 50	9.0	17.6	20.6
V	2, 30, 31	21.4	25.5	21.5
IV	3, 4, 6, 7, 27, 28, 29	22.0	6.8	11.4
VI	9, 14-21	20.2	8.6	11.0
VIII	22-26, 32-34	6.7	16.2	8.0
IX	35-46	11.1	14.2	11.2

[1] Residential distribution of government employees working downtown.

[2] Distribution pattern of work trips generated by zones 05 and 14.

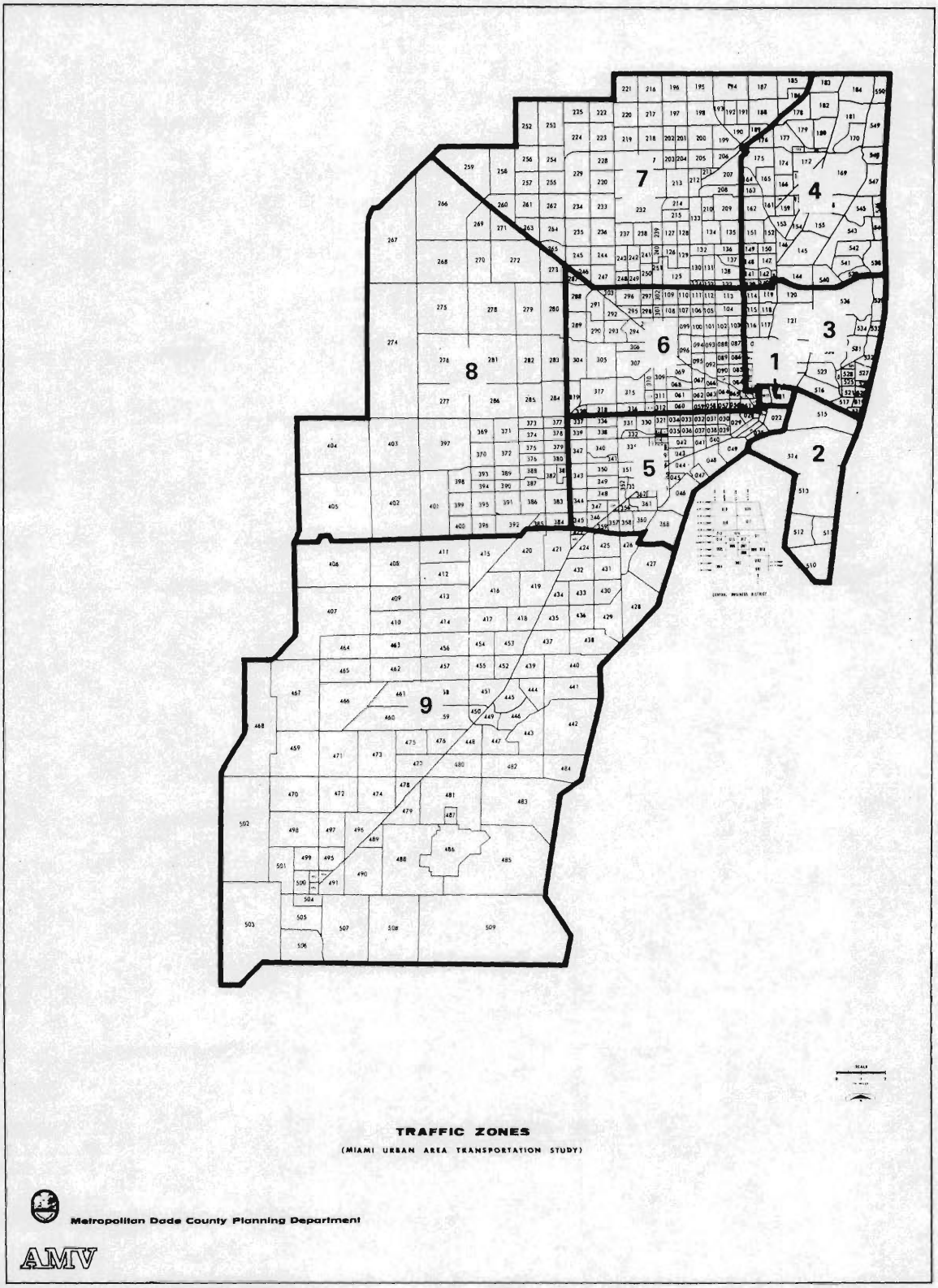

FIGURE 1: TRAFFIC SECTORS

the center upon the transportation network will be described in more detail in the second report by the transportation consultant. The 1985 MUATS distribution pattern will be used in that analysis.

Arrival Time

The data shown in Table 3, Employee Arrival Time, indicates the concentration of employees relative to the start time of work. This information was obtained from special studies of government workers (1964 O-D interviews) employed within the four traffic study zones shown in the table. Zones 05 and 14 contain the County Court House and Federal Office Building in downtown Miami. Zone 47 is Dinner Key and contains City offices. Zone 91 represents the portion of the Civic Center containing the State Office Building, the County Justice Building, the Dade County Jail and Police facilities.

It can be noted from the table that 65 percent of the arrivals to Zone 91, 70 percent to Zones 05 and 14, and 87 percent to Zone 47 occur during a peak hour. Up to one-third of the total demand occurs in a 12 minute period at Dinner Key.

This data will also be used in the study of peak hour traffic generated by the proposed Governmental Center downtown and will be reported in the consultant's impact evaluation.

MUATS Forecast

Table 4 summarizes employment by categories developed for the Miami Urban Area Transportation Study for several downtown traffic study zones in the vicinity of the proposed Governmental Center site.

TABLE 3

EMPLOYEE ARRIVAL TIME

Arrival By 12 Minute Periods
1964 O-D Survey

	MUATS ZONE					
	05 & 14 Number Arriving	% Total	47 Number Arriving	% Total	91 Number Arriving	% Total
Prior to 7:00	24	1.6%	24	4.4%	43	2.5%
7:00 - 7:12	21	1.4%	0	0%	106	6.1%
7:12 - 7:24	107	7.5%	22	4.1%	84	4.8%
7:24 - 7:36	94	6.5%	66	12.1%	322	18.6%
7:36 - 7:48	217	15.2%	86	15.7%	202	11.6%
7:48 - 8:00	132	9.2%	117	22.5%	193	11.1%
8:00 - 8:12	316	22.0%	183	33.0%	294	17.0%
8:12 - 8:24	224	15.6%	0	0%	116	6.7%
8:24 - 8:36	115	8.0%	0	0%	158	9.1%
8:36 - 8:48	100	7.0%	0	0%	21	1.2%
8:48 - 9:00	22	1.5%	0	0%	22	1.2%
After 9:00	64	4.5%	45	8.2%	176	10.1%
	1,436		543		1,737	

Zones 05 and 14 - County Court House and Federal Office Building
Zone 47 - City Hall - Dinner Key
Zone 91 - Civic Center - State and County Offices

TABLE 4

MUATS
EMPLOYMENT COMPARISON BY ZONE

Area	MUATS Zones	1964 Ind.	1964 Comm.	1964 Other	1964 Total	1985 Ind.	1985 Comm.	1985 Other	1985 Total
CBD	05	-	415	796	1,211	-	1,000	600	1,600
	14	160	978	1,266	2,404	-	1,100	1,300	2,400
	15	-	285	39	324	200	300	400	900
	18	-	471	2,515	2,986	200	600	2,700	3,500
	52	290	304	530	1,124	200	400	500	1,100
	53	72	762	619	1,453	200	1,000	1,000	2,200
Civic Center	91	99	567	3,151	3,817	200	800	5,200	6,200
Dinner Key	47	34	591	984	1,609	100	900	1,500	2,500

Government employees are listed within the "Other" columns in Table 4. It can be seen that MUATS was not forecasting significant employment increases within this portion of the central business district. By contrast, substantial governmental employee increases were anticipated at Civic Center and Dinner Key. It is expected that many of these employee increases anticipated in the outlying governmental center units will be placed in the downtown Governmental Center. In the analysis leading to the consultant's second report, the traffic generated by the Government Center will be added to that already forecast by the MUATS study since MUATS traffic forecasts do not reflect the increment of traffic that would be represented by such a center downtown.

Primarily this report is concerned with those zones as shown in Figure 2, which are expected to encompass the immediate area of the proposed Governmental Center. Table 5 summarizes the person trip productions and attractions by purpose found as a result of the 1964 O-D study for these selected MUATS traffic study zones. As expected, trips are being attracted to these employment zones; however, since these zones have little residential or similar activities within them, few trips are produced or initiated within these zones. It is interesting to note the limited number of taxi and truck trips to the governmental buildings located in Zones 5, 14, 47 and 91.

From use of the forecast equations developed by MUATS, listed in Table 5, it can be seen that the truck and taxi trips actually occurring at the present governmental center buildings are not adequately depicted. Since the equations would overforecast truck and taxi trips, these regression equations will not be used to forecast truck and taxi trips anticipated at the proposed governmental center unit. The employee and visitor trips generated by the Governmental Center will be developed from other sources also, rather than use the regional transportation study regression equations.

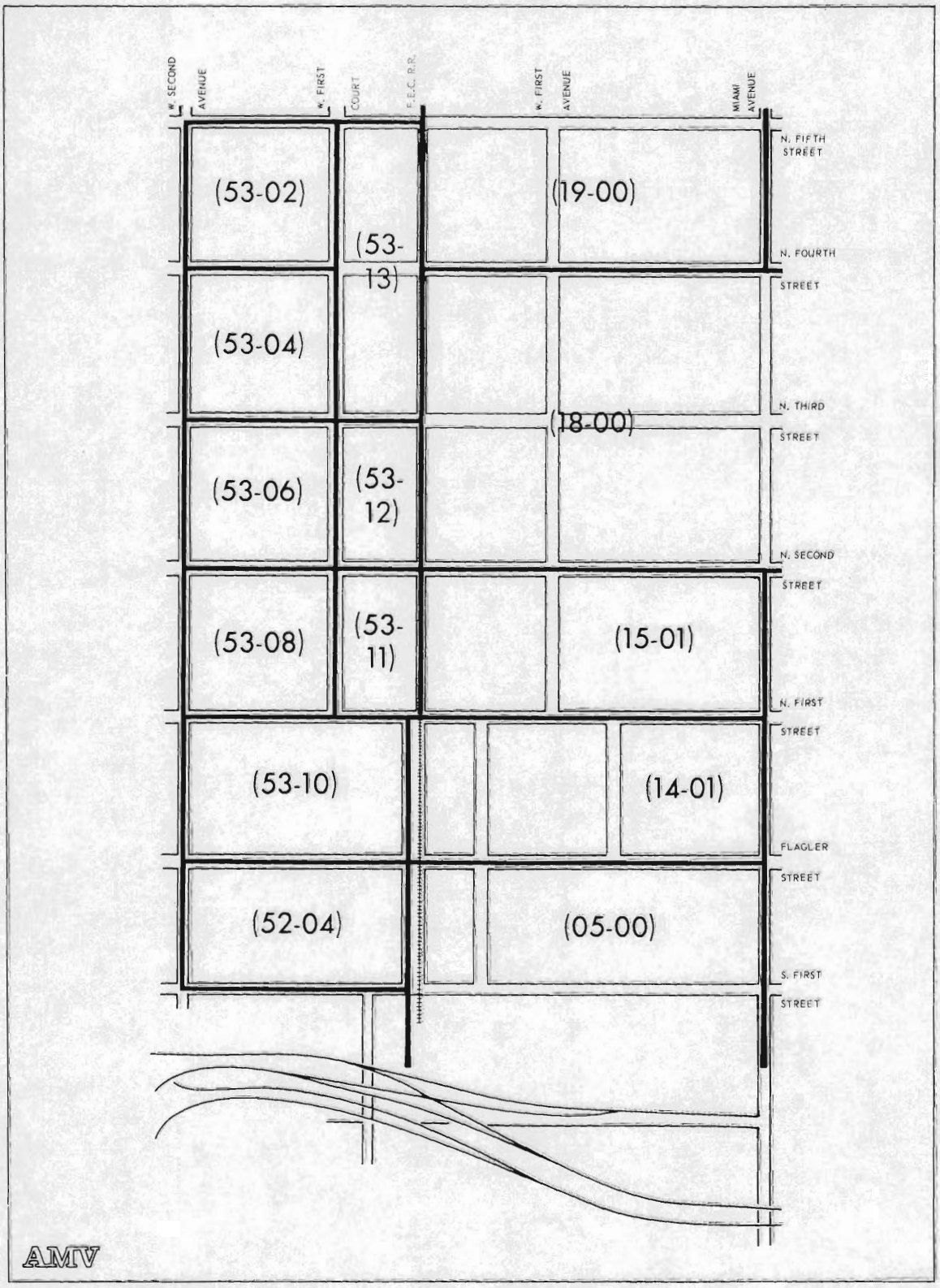

FIGURE 2: DOWNTOWN TRAFFIC STUDY ZONES

TABLE 5

MUATS TRIP PRODUCTIONS AND ATTRACTIONS
1964 O-D Survey

Area	MUATS Zone	Person Trip Productions					Person Trip Attractions				
		Work	Shop	NHB	Truck	Taxi	Work	Shop	NHB	Truck	Taxi
CBD	05	-	-	485	110	35	1,665	543	812	123	35
	14	-	-	1,607	137	-	3,241	367	2,513	123	-
	15	-	-	89	96	12	417	344	156	96	12
	18	82	108	1,072	370	46	4,311	274	2,160	370	35
	52	48	108	597	438	35	1,121	-	485	425	35
	53	253	215	742	343	12	1,428	653	814	343	12
Civic Center	91	159	210	2,078	233	12	4,995	-	3,655	233	12
Dinner Key	47	129	29	1,375	164	-	2,255	67	1,475	164	-

Regression equations for trip forecasting

To Work: + 1.15657 (Total Employment)

Truck Trips: 93.4 + 0.11745 (Autos) + 0.16255 (Total Employment)

Taxi Trips: 0.02823 (Total Employment) + 0.04067 (Hotel-Motel Units)

Parking Habits

Some 1964 parking habits of government employees at three governmental locations are summarized in Table 6. Free parking exists at Dinner Key for 100 percent of the employees whereas approximately 60 percent of the downtown employees pay for off-street parking. The relative significance of these existing parking patterns must be considered in the development of an employee parking package in the proposed downtown Governmental Center.

Linkages Among Buildings

The consultant conducted a survey of people leaving five governmental buildings during the week of April 6th, 1969. The primary purpose of the survey was to obtain visitor characteristics of those conducting business within the governmental buildings and to investigate visitor or employee linkages among the governmental locations within Miami. The basic survey statistics of the study are shown in Table 7. Total pedestrian traffic into and out of the buildings surveyed was counted during the hours shown, and a sample of people leaving each building was interviewed to determine some of their travel characteristics. Shown in the table is the number of people interviewed at each location as well as whether or not they were an employee or visitor to the particular building where they were interviewed. By relating the various visitor/employee ratios of those interviewed to the total in and out counts, insight into the number of visitors that might be expected at the proposed Governmental Center was obtained. This will be discussed in more detail in the next section, "Visitor Characteristics".

TABLE 6

EMPLOYEE PARKING HABITS
MUATS 1964

Location	MUATS Zone	Street		Lot		Garage		Residential Property	Not Parked
		Free	Meter	Free	Fee	Free	Fee		
CBD	05 14	6.6%	8.7%	16.2%	57.9%	6.2%	2.2%	0.0%	2.2%
Civic Center	91	2.9%	7.8%	80.2%	4.8%	0	0	2.1%	2.2%
Dinner Key	47	0	0	100 %	0	0	0	0	0

TABLE 7

VISITOR CHARACTERISTICS

Location	Hours of Count	Total In	Total Out	Number Interviewed	Number Employees	Number Visitors
County Justice Building	7:00 a.m. - 12:00 12:45 p.m. - 5:30 p.m.	5056	5345	168	84	84
State Office Building	9:30 a.m. - 11:30 a.m. 12:30 p.m. - 3:30 p.m.	1213	1270	70	10	60
County Court House	7:00 a.m. - 5:30 p.m.	4362	3559	91	49	42
Federal Office Building	7:00 a.m. - 11:30 a.m. 12:30 p.m. - 5:00 p.m.	2452	1653	60	23	37
City Hall	7:00 a.m. - 5:45 p.m.	869	760	41	3	38
TOTAL NUMBER INTERVIEWED				430	169	261

Source: AMV Survey 1969

Each person interviewed was asked from where he had come prior to conducting his business at the particular building in which he was interviewed and to where was he going. Table 8 summarizes the results of these interviews showing where the employee had come from prior to his stop at the building where he was being interviewed and where he was going upon the completion of the interview. While there are indications that employees are moving between governmental agencies and are on other business trips, the small sample of "employee to other business purpose" linkages did not lend itself to a detailed evaluation.

TABLE 8

EMPLOYEE TRIP LINKAGES

Location	From			To		
	Home	Other Gov't. Agency	Other	Home	Other Gov't. Agency	Other
County Justice Building	78.5%	-	21.5%	55.7%	16.7%	27.6%
State Office Building	90.0%	-	10.0%	50.0%	20.0%	30.0%
County Court House	100%	-	-	82.2%	-	17.8%
Federal Office Building	100%	-	-	91.3%	8.7%	-
City Hall	100%	-	-	100%	-	-

Sources: AMV Survey 1969

VISITOR CHARACTERISTICS

Since the interview study of the transportation consultant was conducted primarily to determine visitor characteristics, persons leaving governmental buildings were interviewed during the hours after 9:00 A. M. to the end of the study period. Not only were certain traffic characteristics of visitors desired, but also an indication of the visitor-employee ratio was necessary to forecast visitor attractions to the proposed Governmental Center. The significant findings of the visitor study are shown in Tables 9, 10 and 11. Evaluation of the study data indicated that a one to one visitor-employee ratio should be anticipated at the proposed Governmental Center.

Travel Mode and Trip Linkages

Table 9 shows the travel mode of the visitors to various buildings, an indication of from where the visitor came prior to the visit at the governmental building and to where the particular individual was subsequently going. While a rather inconsistent travel mode pattern was found among those interviewed, the survey disclosed a large dependence upon auto. Increased bus use and walk-in travel should be expected in a downtown Governmental Center location. Review of the trip linkages indicates that many visitors were combining their trip to the governmental building with purposes to other locations. While few linkages between governmental buildings were disclosed, a significant combining of trips for several purposes was found. This fact should be considered in the design of the Governmental Center unit, particularly in its downtown location. Desirable pedestrian linkages between the governmental units and the other downtown activities would enhance these known combinations of trip purposes of these visitors.

TABLE 9

VISITOR CHARACTERISTICS

Location	Travel Mode					Trip Linkages					
						From			To		
	Auto Driver	Auto Passenger	Bus	Taxi	Walk	Home	Other Government Agency	Other	Home	Other Government Agency	Other
County Justice Building	85.6%	2.4%	3.6%	-	8.4%	64.0%	7.0%	29.0%	45.7%	7.3%	47.0%
State Office Building	53.4%	10.0%	31.6%	1.7%	3.3%	78.3%	6.7%	15.0%	63.4%	5.0%	31.6%
County Court House	71.4%	4.8%	-	-	23.8%	23.8%	0	76.2%	14.3%	0.0%	85.7%
Federal Office Building	83.8%	2.7%	10.8%	2.7%	-	71.2%	0.8%	28.0%	51.4%	2.7%	45.9%
City Hall	93.2%	6.8%	-	-	-	35.2%	2.5%	62.3%	37.8%	2.7%	59.5%

Source: AMV Survey 1969

Arrival, Departure and Duration

Time parameters of the various visitor trips are listed in Tables 10 and 11. Shown are visitor arrival times at governmental buildings, departure time and duration of stay. The maximum concentration of visitors, 20 percent of the daily total, is found within these governmental buildings during each hour between 9:00 and 11:00 in the morning. Accordingly, it is during this time that the maximum amount of parking for visitors must be available. While duration of most visits is less than one hour, the lengthy period found at City Hall at the time of the study was a result of the public hearing that was being conducted. Such public hearings should be anticipated in the design and consideration of parking facilities at the proposed Governmental Center.

Trip Purpose

Visitor trip purpose and the number of the agencies visited are shown in Table 12. Most of those interviewed were non-governmental employees in the building for a specific reason related to the governmental agencies housed within the building. Some visitors were government employees having business in the building where they were interviewed. The other category was comprised of those people who were in the building to use the telephone, the cafeteria or similar visits. For the most part, visitor trips required stopping at only one agency.

Visitor-Employee Ratio

One purpose of the interview survey conducted by the consultant was to obtain the proportion of visitors to employees generated by a governmental building. This information will also be used to forecast the

TABLE 10

VISITOR ARRIVAL AND DEPARTURE CHARACTERISTICS

Time of Day	% Arrival	% Departing	Accumulation % Total
8:00	10	-	10
9:00	20	10	20
10:00	15	15	20
11:00	5	10	15
12:00	5	5	15
1:00	10	10	15
2:00	15	15	15
3:00	10	15	10
4:00	10	15	5
5:00	-	5	0

Source: AMV Survey 1969

TABLE 11

VISITOR DURATION CHARACTERISTICS

Duration of Visit	County Justice Building	State Office Building	County Court House	Federal Office Building	City Hall
0-15 minutes	35%	21%	21%	26%	26%
16-30 minutes	8	19	33	17	3
31-45 minutes	7	12	17	23	6
40- 1 hour	10	14	7	3	9
1- 1 1/2 hour	13	19	5	11	12
1 1/2 - 2 hours	8	2	5	8	3
2-2 1/2 hours	5	4	5	0	3
2 1/2 - 3 hours	5	0	0	3	9
3- 4 hours	4	4	0	9	20
over 4 hours	5	5	7	0	9

Source: AMV Survey 1969

TABLE 12

VISITOR TRIPS AND TRIP PURPOSE

Location	Trip Purpose (%)			Number of Agencies Visited			
	Client	Govt. Employees on Business	Other	1	2	3	4 or More
County Justice Building	76	16	8	70	16	5	9
State Office Building	87	6.5	6.5	85	13	0	2
County Court House	74	2	24	79	14	5	2
Federal Office Building	95	2.5	2.5	92	5	3	0
City Hall	78	0	22	76	14	5	5

Source: AMV Survey 1969

amount of visitors expected at the Governmental Center, their periods of maximum concentration, their duration of stay and the number of visitors that must be accommodated within the peak traffic hours. Accordingly, parking, loading and street facilities can be developed with their needs in mind.

By considering the ratio of visitor to employee interviews, adjustments for the hours when interviews were not made and an adjustment during the evening peak period when a large percent of the employees would exit, a visitor-employee ratio of one visitor to one employee was developed. To develop further background for a visitor-employee ratio, MUATS data for those zones having government facilities was reviewed by comparing work trip purpose to the sum of other trip purpose categories which could be considered as visitor trip purpose. It was found that traffic study Zone 91, the Civic Center, developed a ratio of 1.09 non-work trips to one work trip. Traffic study Zone 05 had .75 non-work trips to every work trip, and traffic study Zone 14 had 1.25 non-work trips to every work trip. Zone 05 and 14 are central business district zones encompassing the Federal Office Building and County Court House plus other downtown activities.

From information developed in other areas, visitor-employee ratios as follows have been found:

- A comprehensive study which the consultant completed in Lower Manhattan in New York resulted in visitor-employee ratios of one to one at several of the major downtown office buildings.
- The New York Port Authority has forecast a visitor-employee ratio of 1.25 to one for their World Trade Center which will undoubtedly attract a higher percent of tourist traffic than would be expected at the Governmental Center.

- Another study the consultant had undertaken in the southwest Washington, D. C. area, a new Federal employment concentration, resulted in visitor-employee ratios of . 65 to one.

Thus, on the basis of these data, it is judged that a visitor-employee ratio of one to one can be used to forecast visitor attractions of the downtown Governmental Center in Miami.

PARKING REQUIREMENTS

The parking needs generated by a downtown Governmental Center are dictated by the total of the employee demands for long time parking, visitor demands for short time parking, and storage for publicly owned vehicles assigned to the appropriate governmental agencies, and a motor pool operation. Supply of parking spaces for these various demands can be met in several ways: using existing spaces within downtown, constructing new spaces as part of the Governmental Center site development, providing spaces off the Governmental Center site or any combination of these alternatives.

The basic demand for parking space can be developed by five year intervals through 1990 based upon the forecast number of employees, the employee travel characteristics such as mode split and car occupancy, the projected number of visitors, and their travel characteristics such as mode split, car occupancy and peak accumulation at the Government Center. Tables summarize these statistics, developed in detail in the earlier sections of this report, and show the resultant parking requirements for the downtown Government Center based on two alternative functional arrangements of governmental agencies discussed in the following sections. No attempt will be made to recommend one alternative because that represents a policy decision for local officials.

Employee Parking

The number of employees forecast for each five year increment were based on projections developed by Cresap, McCormick and Paget, Inc., in their report entitled Analysis of Governmental Organization and Operation. This report presented several alternative functional arrangements of governmental agencies in the downtown. These alternatives were

reviewed with regard to on-site requirements, and based upon this review and decisions among the local government policy makers, two alternatives were selected for consideration:

1. Location of the municipal police and court facilities and approximately one-half of the state offices away from the downtown Governmental Center unit. Table 13 summarizes the parking requirements for this alternative.
2. Location of the municipal police and court facilities away from the downtown governmental unit, but inclusion of all state offices within the downtown unit. Table 14 summarizes the parking requirements for this alternative.

It is noted that the arrangement that would move City police and court functions into a downtown Governmental Center and recommended by Cresap, McCormick and Paget was not selected for consideration.

Employment at the Governmental Center would be expected to rise approximately 47 percent during the 20 year forecast period with either alternative. Using the visitor-employee ratio of one to one, the number of visitors has also been forecast.

The percent of employees anticipated to arrive by transit at the Governmental Center is expected to increase throughout the 20 year period from the 10 percent observed at the downtown government office buildings today to 25 percent by 1985. The growth is expected because of improved transit and increasing pressures of parking and street capacity. The anticipated 25 percent arriving by transit at the close of the forecast period is equal to the amount of work trips that are arriving downtown by transit today and is the relative percent that MUATS forecast for the same period. The percent of employees who arrive by other modes or who might be absent from work either because of illness or out of town travel is similar to that presently found: moreover, this percent is expected to rise toward the end of the study period to reflect the potential of increased downtown housing, which would permit an increase in walk

TABLE 13

DEMAND FOR PARKING SPACE - DOWNTOWN GOVERNMENT CENTER
ALTERNATIVE 1

	1970	1975	1980	1985	1990
Number of Employees	2,598	2,955	3,210	3,557	3,817
% Transit	10	12	17	25	25
% Other Mode, Absent, etc.	8	8	8	10	10
% Auto Passenger	15	15	15	15	15
% Auto Driver	67	65	60	50	50
Number of Spaces Required	1,740	1,920	1,926	1,778	1,908
Number of Visitors	2,600	3,000	3,300	3,600	3,900
% In Peak Period	20	20	20	20	20
% Transit	10	12	12	15	15
% Other Mode	15	15	15	18	20
% Auto Passenger	3	3	3	3	3
% Auto Driver	72	70	70	64	62
Number of Spaces Required	374	420	462	461	484
Number of Spaces for Government Owned Cars	375	400	460	500	550
Total Space Demand	2,489	2,740	2,848	2,739	2,942
Recommended On-Site Provision	2,500	2,700	2,900	2,900	2,900

TABLE 14

DEMAND FOR PARKING SPACE - DOWNTOWN GOVERNMENTAL CENTER
ALTERNATIVE 2

	1970	1975	1980	1985	1990
Number of Employees	2,893	3,293	3,670	3,970	4,259
% Transit	10	12	17	25	25
% Other Mode, Absent, etc.	8	8	8	10	10
% Auto Passenger	15	15	15	15	15
% Auto Driver	67	65	60	50	50
Number of Spaces Required	1,938	2,140	2,202	1,985	2,130
Number of Visitors	2,900	3,300	3,650	3,950	4,250
% In Peak Period	20	20	20	20	20
% Transit	10	12	12	15	15
% Other Mode	15	15	15	18	20
% Auto Passenger	3	3	3	3	3
% Auto Driver	72	70	70	64	62
Number of Spaces Required	418	462	511	506	527
Number of Spaces Required for Government owned Cars	425	450	500	565	650
Total Space Demand	2,781	3,052	3,213	3,056	3,407
Recommended On-Site Provision	2,800	3,100	3,200	3,200	3,400

trips to the Governmental Center. Applying these factors, it can be seen that approximately 1,900 or 2,100 spaces respectively for alternative one or two would be required to accommodate the employee demands initially as well as at the close of the period. Should the assumptions of transit and other travel mode be conservative, additional parking above what is forecast at this time could be provided with the later stages of office construction in keeping with the employee growth.

Visitor Parking

In like manner, once the number of visitors anticipated during the day had been obtained, the number of parking spaces that they would need at their peak period of accumulation was computed. From the studies it was determined that 20 percent of the visitors would be at the Governmental Center during the period of approximately 10:00 to 11:00 a. m. Therefore, only a slight increase in transit usage is forecast for the visitors since the auto is still a practical means of transportation during the mid parts of the day. Based on the assumptions developed, the number of visitor spaces ranges from approximately 400 to 500 spaces for either alternative. Should the assumptions be conservative, additional parking can be provided in the later development stages.

Government Vehicles

Data was obtained on the number of publicly owned vehicles that might require housing at the downtown Governmental Center. Dade County provided the consultant with a list of the publicly owned vehicles assigned to the various county departments and agencies. This list was then compared with the recommended list of agencies that would be housed in a downtown Governmental Center, and it was found that approximately 380 county owned vehicles would be transferred downtown with the consolidation

of government agencies. Lacking specific data at this writing, it was assumed that the city owned vehicles and the state owned vehicles which would be moved to the downtown Government Center would total 50 percent of the county vehicles with alternative one and 70 percent with alternative two.

Space-saving opportunities are presented in the operation and storage of publicly owned vehicles at joint development facilities that should be considered in the downtown Governmental Center. With a parking requirement for public vehicles conceivably amounting to almost one-sixth of the total parking requirement on this downtown site, it is recommended that consideration be given to the joint use of parking space and/or other factors to reduce this demand for space and cost of garage construction. Parking public vehicles in a dense, bumper to bumper, two to four deep configuration, as is done in several large governmental complexes, results in a space requirement reduction of 20-40 percent.

An inter-agency motor pool would offer administrative efficiencies as well as a reduction in parking space requirements, perhaps of the magnitude of one-fourth to one-third. The fewer vehicles required under pool operation can also be stored in a more compact fashion, and thus, space requirements can be reduced even further. It may also be desirable to provide parking space at some location away from the governmental site itself for many of the public vehicles. Since many of the public vehicles would be away from the site during much of the time employee vehicles are parked on the site and since these same public vehicles are housed overnight and on weekends when employee vehicles no longer require space, there is the potential for joint use of these parking spaces. It should be recognized, however, that incoming employees arrive prior to the departure of public agency vehicles and that the public agency vehicles return to home base prior to the close of work.

For purposes of this report, it is recommended that the requirement for provision of parking space for public agency vehicles be reduced about one-third from the respective demand totals of 570 and 650 for the two alternative arrangements. It is assumed that some of the efficiencies resulting from operation of either a motor pool or in bulk storage of public cars will justify such a reduction. Again if such policy decisions are not in agreement with this assumption, additional parking can be provided in the stage construction process that is being considered for the Governmental Center unit complex between now and 1990.

Evaluation of Parking Supply

Three alternatives are available for the supplying of these spaces:

1. The entire amount on-site as a part of the Governmental Center complex.
2. Use of existing spaces on available and adjacent areas.
3. Provision of part of the spaces on-site as part of the Governmental Center complex and construction of additional space for those demands generated by the governmental site.

As will be discussed in the second report, since parking location and facility size has an influence upon the traffic impact of the Governmental Center, these traffic considerations should be analyzed in any evaluation of alternative locations.

A special study of existing and forecast parking supply-demand and usage of parking spaces in downtown Miami was undertaken to determine whether some of the Governmental Center needs could be absorbed by adjacent parking facilities. Table 15 summarizes parking statistics that were developed from the MUATS parking study which are keyed to the traffic zone system of the MUATS study previously shown in Figure 2.

TABLE 15

MUATS PARKING STUDY STATISTICS

MUATS Zone	Location	# On Street	# Off Street	Total	Turnover Rate	% Occ.	Ave. Duration (Hrs.)	1964 Surplus (Deficiency) Space Hour	1985 Surplus (Deficiency) Space Hour
04-00	Miami-S 2nd FEC-River	40	187	227	2.06	69	4.05	644	450
05-00	Miami-Flagler FEC- S 2nd	63	492	555	3.23	59	2.19	185	(8164)
14-01	Miami-N 1st FEC-Flagler	72	114	186	4.99	59	1.41	1501	1502
15-01	Miami-N 2nd FEC-N 1st	14	346	360	2.66	52	2.33	3500	3339
18-00	E 1st-N 5th FEC-N 2nd	192	1,237	1,429	1.74	62	4.26	4577	717
52-04	FEC-Flagler W 2nd - S 1st	34	243	277	2.90	66	2.72	2073	2093
52-06	FEC - S 1st W 2nd - S 2nd	33	234	267	1.31	49	4.48	2203	3748
52-08	FEC-S 2nd W 2nd - S 3rd	38	86	124	1.58	73	5.52	719	732
53-10	FEC- N 1st W 2nd - Flagler	38	207	245	1.75	58	3.97	1602	1488
53-11	FEC - N 2nd W 1st Ct. -N 1st	15	154	169	0.82	65	9.55	1660	1655

TABLE 15 - continued

MUATS Zone	Location	# On Street	# Off Street	Total	Turnover Rate	% Occ.	Ave. Duration (Hrs.)	1964 Surplus (Deficiency) Space Hour	1985 Surplus (Deficiency) Space Hour
53-12	FEC- N 3rd W 1st Ct. -N 2nd	15	9	24	5.00	46	1.10	322	407
53-13	FEC -N 4th W 1st Ct. -N 3rd	47	12	59	2.41	48	2.41	317	279
53-08	W 1st Ct. -N 2nd W 2nd - N 1st	22	297	319	1.66	70	5.09	2787	2724
53-06	W 1st Ct. -N 3rd W 2nd- N 2nd	39	92	131	2.47	53	2.55	1009	972
53-04	W 1st Ct. -N 4th W 2nd - N 3rd	38	170	208	1.07	49	5.52	1912	1885
53-02	W 1st Ct. -N 5th W 2nd- N 4th	26	83	109	2.34	44	2.28	992	977

Table 15 indicates the parking supply within these downtown study zones. Several changes have occurred since the development of that data including a change in parking lot operation on the facilities along the FEC Railroad tracks and construction of the municipal garage as well as a private garage on South First Street which has increased the parking supply. Construction of the downtown distributor has also affected the parking supply.

The turnover rate, percent occupancy and the average duration within the traffic study blocks indicates how existing facilities are being used - short time versus long time parking. Low turnover rates and high average duration indicate long time employee type parking.

The 1964 surplus of parking space hours and the 1985 surplus and deficiencies by study zone suggest that parking space is available within the influence area of the Governmental Center. The definition of surplus or deficiency is based upon the demand for parking space generated by the land uses of the particular traffic zone when compared to the provision of parking space within that zone. Parking deficiencies occurring in one zone usually are compensated for by the parking space surplus of adjacent zones. Figure 3 shows the zones in which 1985 demand for parking exceeds the supply. The deficiency will be overcome by use of the surplus in adjacent blocks. It can be seen that the area around the Governmental Center site is used for long term parking and offers a surplus of spaces for users in other downtown locations.

Figure 4 and Table 16 have been prepared to demonstrate some of the inventory of present parking data. Statistics shown in the table are keyed by facility number to the location map. A view of the statistics, particularly in light of the MUATS transportation study generate several comments. For example a look at the facility's rate structure suggests

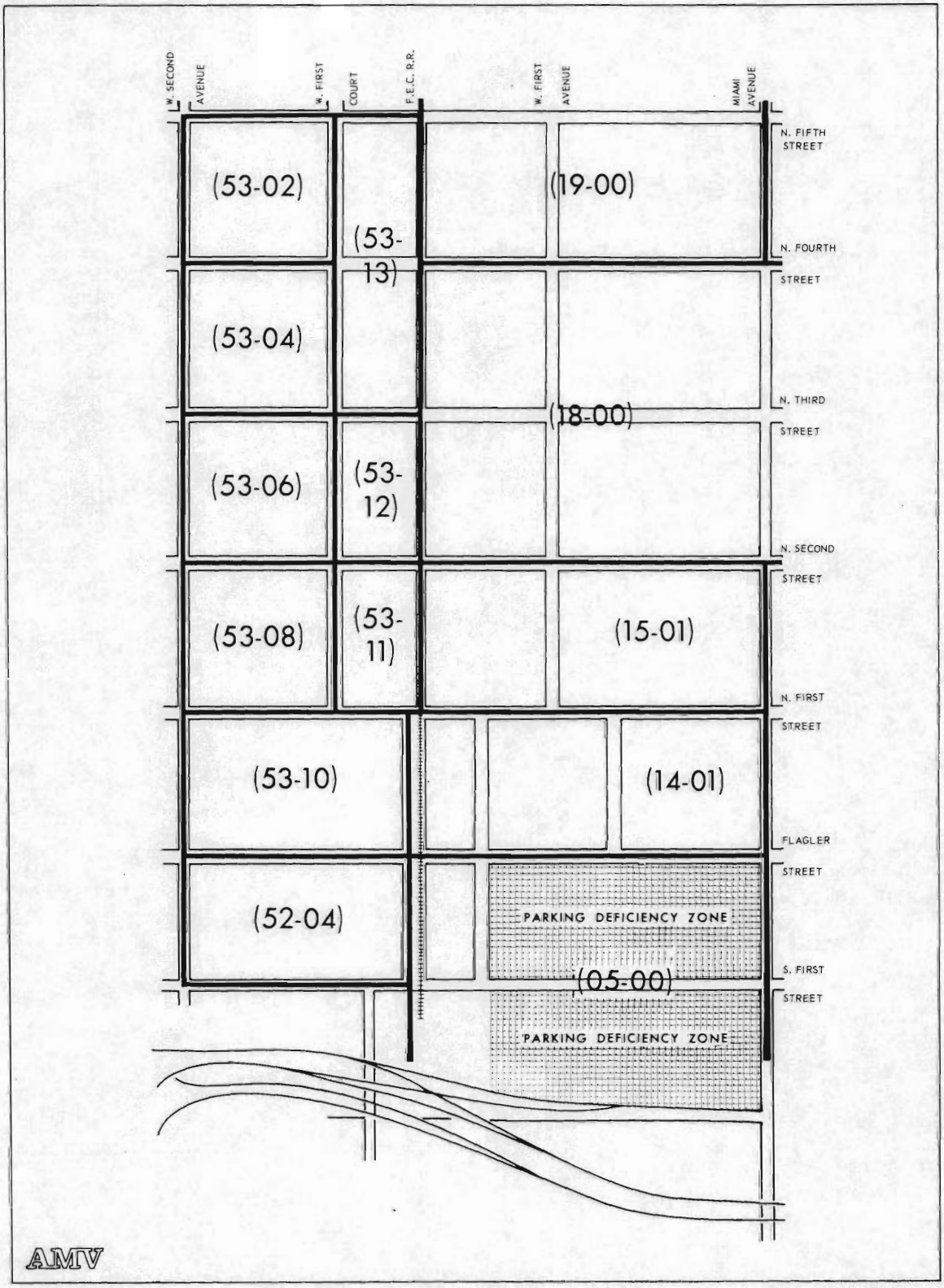

FIGURE 3: ZONES OF PARKING DEFICIENCY

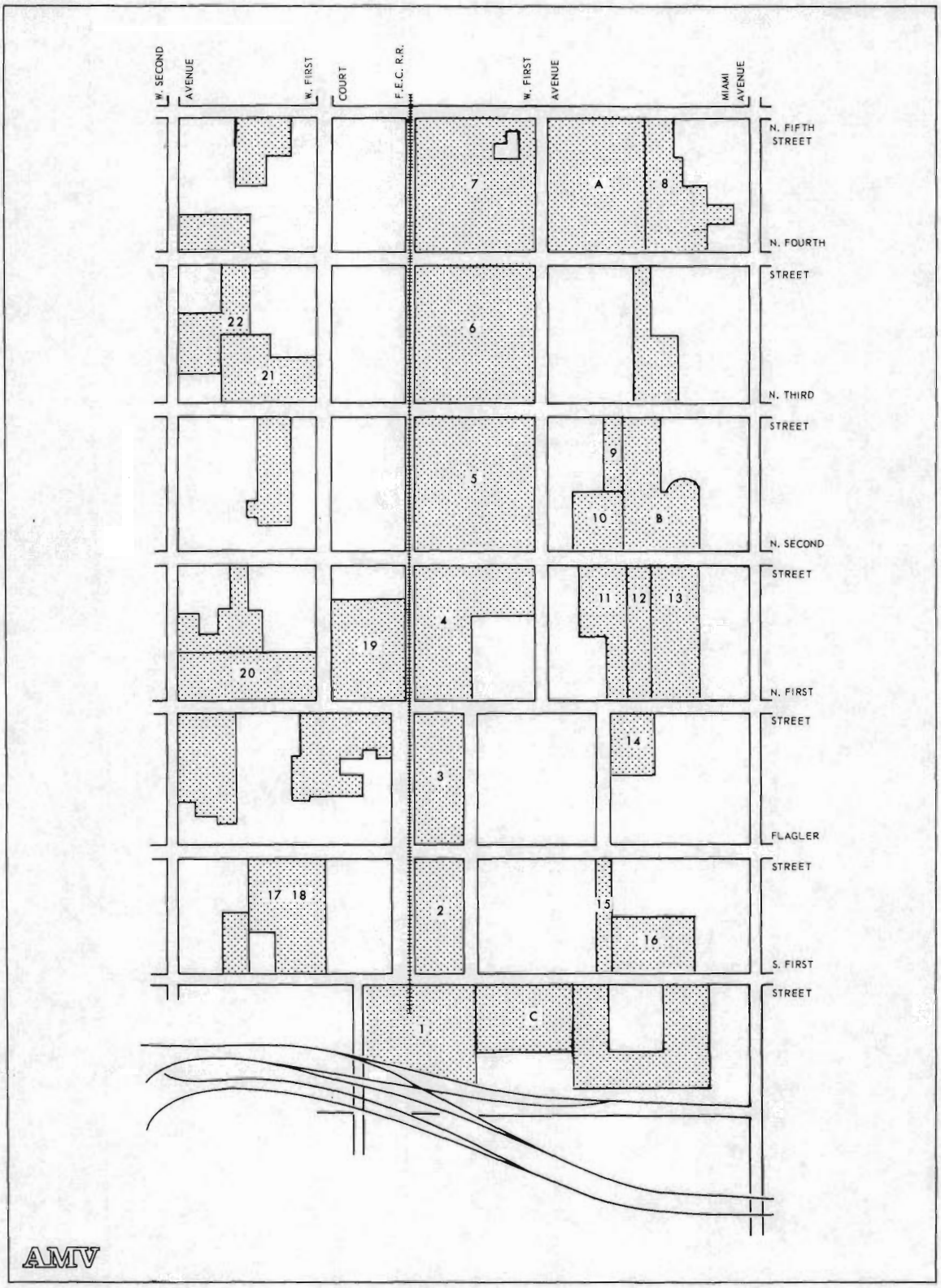

FIGURE 4: PRESENT PARKING SUPPLY AVAILABLE TO THE PUBLIC

TABLE 16

EXISTING FACILITY STATISTICS

Facility #	Capacity	Rates
1	60	.75/day
2	75	.40/hour (.35 each add. hr. - $1.50/day)
3	65	.40/hour (.35 each add. hr. - $1.25/day)
4	130	.40/hour (.35 each add. hr. - $ .75/day)
5	216	.40/hour (.35 each add. hr. - $ .65/day)
6	200	.40/hour (.35 each add. hr. - $ .55/day)
7	175	.40/hour (.35 each add. hr. - $ .55/day)
8	78	.25/hour (.50/day)
9	28	.25/hour (.10 each add. half hour)
10	110	.70 all day
11	68	.25/half hour
12	45	.20/half hour
13	91	.25/half hour($1.75 all day)
14	60	.25/half hour
15	64	.40/half hour (.25 each add. half hour - $1.80/day)
16	260	.20/half hour
17	112	.25/hour (.70/day)
18	88	.25/hour (.15 each add. hr. - $ .65/day)
19	140	.35/hour (.75/day)
20	98	.30/hour (.65/day)
21	50	.40/day
22	30	private parking - state welfare CPA
23	115	.40/hour (.35 each add. hr. - $1.05/day)
A	221	Metered lot .05¢/hour
B	455	.30/hour (.20 each add. hr. - $1.50/day - $20/mo.)
C	427	.30/hour (.20 each add. hr. - $1.50/day - $20/mo.)

Source: AMV Inventory

how the facility is being used by short time versus long time parkers. A high hourly rate with a low daily rate or a low daily rate only suggests long time employee parking. A high daily rate discourages long time parkers thereby making the lot available for the short time user.

It becomes apparent that parking spaces generally east of West First Avenue are being used by downtown short term demands. Except for the spaces immediately around the County Court House and Federal Building, where short time demands are being met, most spaces in the vicinity of the Government Center site are being used by long term employee parkers. The impact of these two public facilities can be seen by noticing the decending rate structure as distance away from the facilities increases.

Several known changes will impact the present parking supply and demand. The Governmental Center is expected to usurp space presently in parking. About 850 spaces are accommodated on facilities within the Governmental Center site between South First Street and North Fourth Street. The municipal parking authority plans to add approximately 1,000 parking spaces under I-95 and the Downtown Distributor. For purposes of this report it has been assumed that approximately 650 of those spaces will be used by long time parkers primarily under I-95. It is quite possible that the 350 spaces under the distributor will be used by both parkers seeking short and long term space.

Of course the spaces that are added by the Governmental Center unit represent another source of new supply.

Recommendation

Using these background facts and insights, a rationale for the parking recommendation that all the spaces generated by the Governmental Center

be handled on the site has been developed. The supply of spaces eliminated by construction of the Governmental Center can be effectively offset by the new supply of spaces being provided by the Municipal Parking Authority under the freeways, thereby maintaining the present parking supply status quo. Since the changes in parking supply subsequent to the MUATS inventory data were justified on the basis of known parking demands, it should not be assumed that Governmental Center demands can be met by those new facilities. The MUATS forecast indicates a slight increase in parking demand in this area of downtown Miami. Hence, it is assumed that this increase will be accommodated within present parking facilities. Parking spaces east of West First Avenue may be under increasing demand to serve short time uses and thus tend to force the present long term users to use the parking facilities in and around the Governmental Center site. These facilities are presently well used and every indication is that they will continue to be used to an even greater extent as time progresses. As the Governmental Center complex becomes a reality, some of the parking uses of land may change under the pressure for added building structures.

Therefore, it is concluded that the parking demands of the Governmental Center should be provided upon the governmental site or by appropriate agencies on lands adjacent to the Governmental Center. While it may not be expected that all governmental employees and visitors will choose to park in the sites provided, it is presumed that should they park elsewhere, their spaces would thus be available for other motorists seeking parking within downtown.

SERVICE VEHICLE REQUIREMENTS

The specific requirements for service vehicles such as trucks and taxis are dependent upon the eventual design of the Governmental Center. While a central truck service facility may be desirable under one design concept, separate and smaller loading areas may be more appropriate under other conditions. The information provided here may serve as a guideline to determining overall needs of the Governmental Center. Actual and specialized needs will be dependent upon the final design.

Truck needs can be determined by calculating anticipated daily truck generation, determining the peak period loading requirements, comparing this demand with various zoning recommendations and adjusting elements to fit the specialized demands of the Governmental Center agencies served.

Based on the present taxi generation of governmental units, it has been determined that the taxi needs of the Governmental Center are minimal and can be met at the curb faces or in suitably designed curb-site bays along those streets defining and passing through the Governmental Center.

Truck Generation

Truck trips generated by governmental activities within Miami represent only 1.2 percent of the total daily truck activity. Fifty percent of the trucks generated by government facilities have two axles, and dual tires, 43 percent are classified as panels and pick-ups and the remaining 7 percent as two axle single tire trucks.

Because of the manner in which the present Miami government buildings provides for trucks, it was difficult and hardly feasible for the consultant

to conduct a meaningful survey of present truck demands of the governmental units likely to be moved downtown. The consultant did undertake research in Washington, D. C. at Federal Office Buildings having a similar number of employees and building size as anticipated for downtown Miami. The results of this study and similar works elsewhere offer an indication of expected demands for truck service at the downtown Governmental Center. Four federal office buildings having central and easily observed truck loading facilities and an office employment ranging from 2, 400 to 8, 000 were studied. Remarkably similar results were found among the four buildings. The average generation rate was one truck trip per 70 employees. The range of truck demand of the four buildings on this basis was one per 65 employees to one per 73 employees. On the basis of net square feet of office space, one truck trip per 11, 500 square feet was found as an average value. The range was from one truck per 11, 000 square feet to one truck per 12, 200 square feet. It is judged that either of these indices offers a reasonable forecast of daily truck demand at Governmental Centers.

From work the consultant had done in Lower Manhattan, a daily truck generation of eight trucks per 100, 000 square feet of office space per day was developed. This compares favorably with the average value of 8. 6 trucks per 100, 000 square feet found in Washington, D. C. at the four government office buildings.

Daily truck generation for the downtown Government Center, computed by these standards, would be approximately 60 trucks for either alternative. It can be noted however, that MUATS truck generation (Table 5) to traffic study zones containing government buildings, exceeded this amount by substantial margins.

From studies of State Government Centers it has been found that truck generation of government facilities does range rather widely - 2.7 to 12.6 truck trips per 100 person trips.

The duration of time which trucks spent at the loading docks at the four federal office buildings in Washington, D.C. averaged 19 minutes, ranging from a low average of 9 minutes at the smaller office building to a high average of 22 minutes per truck. Over 95 percent of the daily truck trips to all four government office buildings parked less than one hour with over 75 percent parking less than one-half hour. This duration data is similar to that found by the New York Port Authority in a study of the Rockefeller Center truck dock facility. The delivery time there averages 29 minutes, but 72 percent of all deliveries were made in less than this average time. Ninety percent of all deliveries were made in less than one hour.

It was found in the study of the federal office buildings that approximately 10 percent of the daily truck demand existed in the peak one-half hour period, and up to 20 percent of the daily demand existed during the peak one hour period. Fifteen percent of the daily truck traffic at the Rockefeller Center was found at the peak delivery period.

Loading Berths

As one indication of the need for truck docks, the following list of number of berths per square foot of office space as developed by the Regional Plan Association of New York with modifications by Nathan Cherniack of the New York Port Authority are as follows:

- One berth for office space under 150,000 square feet.
- Two berths for 150,000 to 400,000 square feet.

- Three berths for 400,000 to 670,000 square feet
- Four berths for 670,000 to 970,000 square feet and
- Five berths for 970,000 to 1,300,000 square feet of office space.

Application of these factors to the employee forecasts and generalized square footage estimates for the proposed Governmental Center alternatives results in the overall requirement of four berths for either alternative should the center be treated as one complex with central loading facilities. However, if one truck daily per 70 employees and 10 percent of the daily truck demand at the time of peak accumulation are assumed, as discussed in the previous section, six berths would be required if no significant delays were to be experienced.

Recommendation

On the basis of the information presented herein, it is recommended that eight truck loading berths be provided for the downtown Governmental Center. This number presumes a complex that would favor a central truck dock area. The number of berths is greater than necessary to meet demand computed on basis of factors for typical office and federal office buildings but is less than that required to serve total truck generation of Miami Government buildings today. It is presumed that efficiencies will result from the central location of government downtown and that some truck deliveries will be made from curb side stops rather than through the off-street facilities. Again, it must be pointed out that the actual design of off-street loading facilities is a function of the overall design of the proposed governmental units and that only general guidelines are presented here.

PEDESTRIAN NEEDS

While the interviews of the consultant at the various governmental office buildings in Miami did not reveal significant linkages among the present government office buildings throughout the community, it seems reasonable that the concept of combining uses functionally has merit and will be considered in the downtown Governmental Center complex. Therefore, pedestrian linkages among governmental agencies on-site are not considered as demanding special design comment herein. It is presumed that some pedestrian way treatment will exist above the street level to accommodate these various movements.

The other pedestrian linkages of significance are those between parking facilities and office building destinations, connection of transit stops to the Governmental Center complex and the pedestrian movements between the Governmental Center complex and other downtown Miami uses.

As will be discussed in more detail in the second report of the transportation consultant, the transit facility proposed for the FEC corridor can be considered a rather flexible element within the Governmental Center complex. One station stop can be accommodated within the proposed Governmental Center, which should be located not only near the greatest office building concentration but also related to the concentration of other downtown generators. For example, up to 700 persons per hour will be seeking mass transit vehicles from the Governmental Center in 1990. A most desirable location is a location in conjunction with the proposed Flagler Street Mall.

Since the proposed Governmental Center site is relatively large, the walking distances from parking facilities and office buildings should be

considered in the location of the various parking facilities. Visitors to the Governmental Center should not be required to walk more than 500 feet. A more desirable walking distance for these short term parkers would be in the order of 200 to 300 feet. The long term employee parking can be placed at a greater distance away from the ultimate office destination. Twelve hundred feet represents a feasible maximum walking distance for work trip purposes. A graph, Figure 5, showing desirable walking patterns for various trip purposes has been included as a guide in the design and location of parking facilities at the proposed governmental center.

Pedestrian linkages between the Governmental Center and other downtown uses will be along and dependent upon the existing sidewalk pattern. Special efforts should be made to connect the Flagler Street Mall and transit-way to the Governmental Center as the focus of pedestrian activity within downtown Miami.

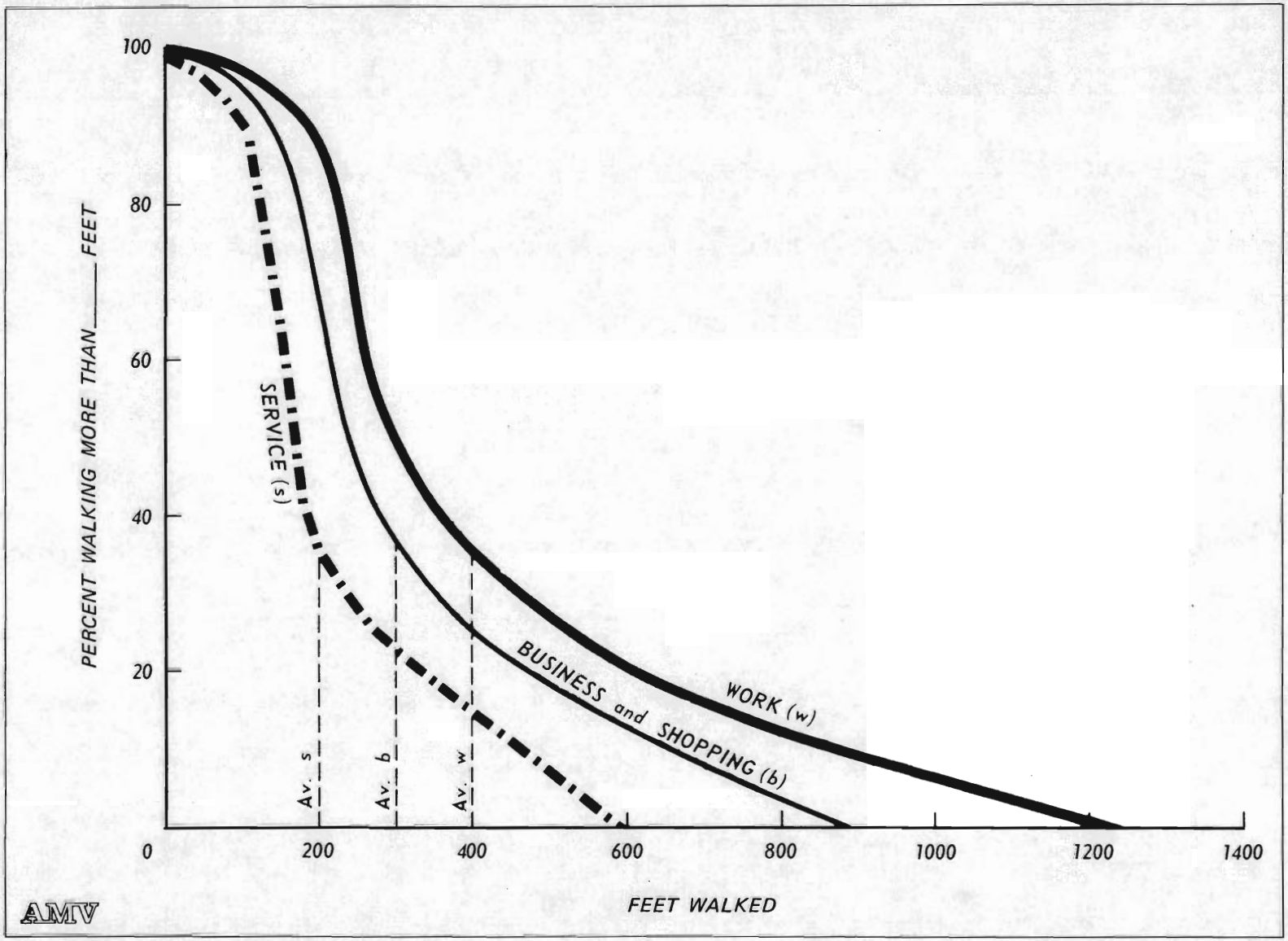

FIGURE 5: ADULT WALKING TRIPS

ACCESS AND CIRCULATION NETWORK SERVING SITE

Several operational changes as well as construction modifications that will influence the Governmental Center are proposed for downtown Miami. The significant construction improvements are the Flagler Street transit-way and the eventual provision of a bus way and expressway in the FEC corridor which traverses the Governmental Center site. The operational changes anticipated by the Dade County Department of Traffic and Transportation include:

- Development of Sixth and Seventh Streets as a one-way couplet north of the central business district will replace the present Fifth and Sixth Street couplet.
- Completion of the Flagler Street transit-way will make North First Street and South First Street the important one-way pair serving the south side of the central business district as well as the Governmental Center.
- Miami Avenue and East First Avenue will be linked as a one-way couplet through the center of the central business district.
- A proposed Miami Avenue arterial starting well north of the Central Business District on Miami Avenue but working diagonally westward to connect the frontage roads paralleling I-95 west of the central business district, Third Street and Third Court is being considered to offer a bypass for significant volumes of traffic moving between the areas west and north of the central business district.

Continued use of the Second and Third Street one-way pair to serve traffic between downtown destinations and I-95 must be anticipated. While use of Fourth and Fifth Streets for this basis offers certain traffic advantages, the potential does exist that these routes can be closed through the Governmental Center site. Additional consideration and analysis of this existing and proposed street network will be presented in the second report. Statistics supplied by the Dade County Department of Traffic are summarized in Table 17 showing street widths, right-of-way widths and current traffic volumes existing within the vicinity of the proposed Governmental Center site.

TABLE 17

EXISTING STREET AND TRAFFIC CONDITION

Street	Between	Street Width	Right-of-Way	ADT
NW 5th Street	Miami Ave. -NW 3rd Ave.		70'	9,800
NW 4th Street	Miami Ave. -NW 1st Ave.		55'	2,500
NW 3rd Street	NW 1st Ave. -NW 3rd Ave.		55'	6,500
	Miami Ave. -NW 1st Ave.		55'	7,500
NW 2nd Street	Miami Ave. -NW 3rd Ave.		55'	7,000
NW 1st Street	Miami Ave. -NW 3rd Ave.	34'	60'	11,000
Flagler Street	Miami Ave. - NW 2nd Ave.	46'	80'	12,000
SW 1st Street	Miami Ave. -NW 2nd Ave.	48'	70'	10,000
N. Miami Avenue	Flagler Street - 5th Street	32'	60'	10,000
NW 1st Avenue	NW 1st Street - 5th Street		55'	3,000
NW 2nd Avenue	Flagler St. - 6th Street	34'	65'	8,000
NW 3rd Avenue	NW 2nd St. -NW 8th Street	50'	-	8,700

Source: Dade County Department of Traffic and Transportation