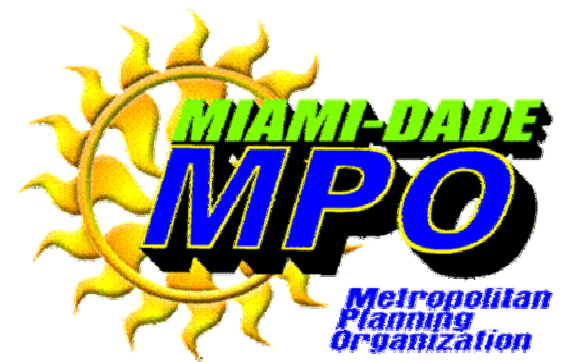


Miami Springs Transit System Services and Opportunities Study Final Report

Prepared for:
City of Miami Springs, Florida

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1. Introduction

With the advent of the Peoples Transportation Plan (PTP), municipalities in Miami-Dade County have been charged by citizens of the county to improve local transportation service and options. The advent of the half-penny transportation-dedicated local County sales tax in Miami-Dade in 2003 was predicated on three primary conditions. The first was working to achieve the Peoples Transportation Plan, a specific list of specific projects to be included as part of the tax package. The second stipulation was that there would be independent ‘non-political’ and ‘non-governmental’ oversight of the Plan, provided by the Citizens Independent Transportation Trust (CITT), the “citizen watchdog group.” The third primary requirement was that there would be a distribution, “off the top,” of funds to municipalities for their local application for transportation improvements within their own communities. Twenty percent of the total revenues generated are to be distributed to local municipalities by formula, and for each incorporated area receiving such funds, a minimum of 20 percent is to be spent on public transit improvements.

Localities, both large and small, are now engaged in strategic planning for new or expanded transit programs that are beginning in 2004. The City of Miami Springs is one such municipality engaged in such a transit strategic planning process. This report was prepared to provide a factual basis for decision-makers seeking to improve the quality of life in the City of Miami Springs via improved local transit.

This report begins with an examination of various background information and public policy reports that have a bearing on public transit planning in Miami Springs. The information analyzed includes various regional maps, population studies and growth management policy; the current Comprehensive Plan for the City of Miami Springs; the latest demographic profiles of the 2000 Census; transit propensity factors; the current transit service provided by regional Miami-Dade Transit; and the spatial location of local traffic generators within the City of Miami Springs.

Next, this report summarizes the key background findings and the preferred initial public transit policies of city management. These factors are then built into a recommended transit circulator system route. The operating characteristics of this route and its configuration are described in sufficient detail to prepare cost estimates for the proposed transit circulator system.

The report concludes with a chapter focusing on implementation. The costs associated with local operation of the proposed transit system are estimated. An alternative cost estimate for providing the service via intergovernmental agreement is also presented. Potential funding sources for the circulator system are identified including fare box considerations. Transit marketing issues are then discussed.

2. Existing Conditions

2.1 Regional Context

The City of Miami Springs is located in Southeast Florida, in central Miami-Dade County (Figure 2.1). Incorporated in 1926, the City of Miami Springs has developed an urban form and density characteristic of relatively low to moderate density inner city suburban enclaves exhibiting many characteristics of small towns, including a municipal town center, and a more heavily developed commercial or industrial corridor. Today, the City of Miami Springs is part of the Miami-Dade County metropolitan area. It is linked to the region by its economy and transportation systems.

In 1980 the City of Miami Springs had a resident population of 12,350. Population growth began to moderate during the 1980s when it experienced a 7.4 percent growth. Population growth then slowed to a 3.3 percent growth during the 1990s. Table 2.1 summarizes the population growth of the City of Miami Springs and Miami Dade County for the period 1980-2000.

2.2 The Current Comprehensive Plan

The City of Miami Springs Comprehensive Plan, adopted at the end of 1998, identifies several local development issues and policies that should have a bearing on the layout and operation of a bus circulator service.

The Comprehensive Plan describes the City of Miami Springs as possessing a residential character of moderate density, with single-family residences the primary land use in the City.¹ The Plan reports a population density of 4,834 persons per square mile in 1990. This density increased only slightly by the year 2000, measuring 4,996 persons per square mile.

The Comprehensive Plan notes that a significant “edge” of Miami Springs along its southern perimeter is the major commercial corridor of Northwest 36th Street.² This street also serves as the demarcation between the City of Miami Springs and the Miami International Airport. Northwest 36th Street is also important because it is the primary major facility linking the City to the rest of the metropolitan area through its connections to the interstate system, other surface arterial streets, and mass transit routes connecting Miami Springs to local, urban area-wide, and regional transit services – Metrobus, Metrorail, Metromover, and the Southeast Florida Rapid Transit Authority/Tri-Rail.

¹ *City of Miami Springs, Florida, Comprehensive Plan*, December 1998, page 2.

² *Ibid.* page 3.

Figure 2.1
North Miami-Dade County
Districts and Municipalities

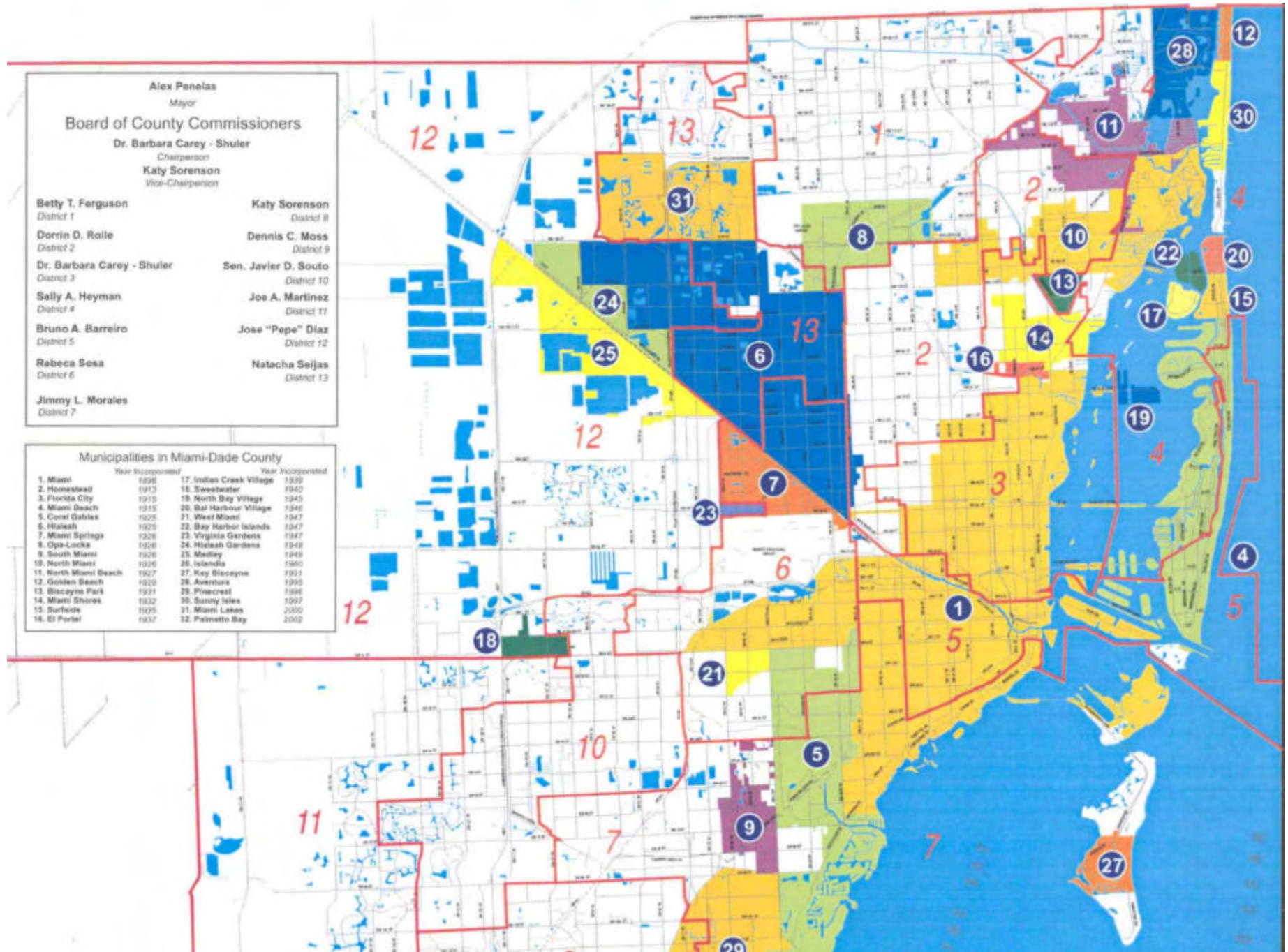


Table 2.1
Population
Miami-Dade County by Municipality
1980, 1990, and 2000

Municipality	1980	1990	2000	Change 1990 to 2000	
				Number	Percent
Aventura*	0	14,914	25,267	10,353	69.4%
Bal Harbour	2,973	3,045	3,305	260	8.5%
Bay Harbor Island	4,869	4,703	5,146	443	9.4%
Biscayne Park	3,088	3,068	3,269	201	6.6%
Coral Gables	43,241	40,091	42,249	2,158	5.4%
El Portal	2,055	2,457	2,505	48	2.0%
Florida City	6,174	5,806	7,843	2,037	35.1%
Golden Beach	612	774	919	145	18.7%
Hialeah	145,254	188,004	226,419	38,415	20.4%
Miami Springs Gardens	2,700	7,713	19,297	11,584	150.2%
Homestead	20,668	26,866	31,909	5,043	18.8%
Indian Creek Village	103	44	33	-11	-25.0%
Islandia	12	13	6	-7	-53.8%
Key Biscayne*	0	8,854	10,507	1,653	18.7
Medley	537	663	1,098	435	65.6%
Miami	346,681	358,548	362,470	3,922	1.1%
Miami Beach	96,298	92,639	87,933	-4,706	-5.1%
Miami Lakes*	0	9,016	22,676	13,660	151.5%
Miami Shores	9,244	10,084	10,380	296	2.9%
Miami Springs	12,350	13,268	13,712	444	3.3%
North Bay Village	4,920	5,383	6,733	1,350	25.1%
North Miami	42,566	49,998	59,880	9,882	19.8%
North Miami Beach	36,553	35,359	40,786	5,427	15.3%
Opa-Locka	14,460	15,283	14,951	-332	-2.2%
Pinecrest*	0	18,820	19,055	235	1.2%
South Miami	10,895	10,404	10,741	337	3.2%
Sunny Isles Beach*	0	11,772	15,315	3,543	30.1%
Surfside	3,763	4,108	4,909	801	19.5%
Sweetwater	8,251	13,909	14,226	317	2.3%
Virginia Gardens	2,098	2,212	2,348	136	6.1%
West Miami	6,076	5,727	5,863	136	2.4%
Unincorporated Miami-Dade	799,068	973,549	1,181,612	208,063	21.4%
County Total	1,625,509	1,937,094	2,253,362	316,268	16.3%

Source: US Bureau of the Census, Census of Population, 2000, File PL94-171, Miami-Dade County Department of Planning and Zoning

*Note: Five cities incorporated after the 1990 census:

Key Biscayne in June, 1991

Aventura in November 1995

Pinecrest in March, 1996

Sunny Isles Beach in June 1997

Miami Lakes in December 2000

The 1990 census population for these is provided.

Another significant feature is the Miami River Canal that forms the northeast edge of the City.³ The Canal separates the City of Miami Springs from its northern neighbor, the City of Hialeah. It is along this edge and, specifically, along North and South Royal Poinciana Boulevard that most of the City's higher density, multi-family residential apartments are located. The projected, future land use configuration of the City of Miami Springs is depicted in Figure 2.2.

The City of Miami Springs is landlocked and is, as currently zoned, almost virtually built out. The City of Miami Springs is currently considering annexing territory to the south and to the west. The Comprehensive Plan notes the Florida Administrative Code's Rule 9J-5, which affects decisions to annex to accommodate population growth.⁴ The annexation target to the south is non-residential. The immediate annexation target to the west is also non-residential, but just beyond are parcels that could accommodate additional population that, in turn, would require future bus circulator service.

Finally, the Comprehensive Plan suggests that the City of Miami Springs employ intergovernmental cooperation and agreements in providing its citizens with necessary municipal services.⁵ Intergovernmental agreements and pacts are often excellent means for smaller municipalities to provide municipal services that they might otherwise not afford at all, to provide a higher level of service that could otherwise not be available, or to provide existing levels of municipal services more cost efficiently.

2.3 Future Growth

The rapid growth experienced in southeast Florida since World War II has now, decades later, resulted in policies to control growth. In the 1990s, Miami-Dade County enacted land use policies to limit urban development to specific boundaries for the years 2005 and 2015. These boundaries are depicted in Figure 2.3. However, it should be noted that Miami-Dade County growth is geographically limited by the Atlantic Ocean and the Everglades. Thus, infill opportunities in the municipalities will be increasingly important to accommodate future growth.

The imposition of the urban development boundary is significant to transit planning for at least these two reasons:

- The City is located within the urban development boundary. This means that all future urban growth, due to development or redevelopment activities, will occur within or near designated urban places like the City of Miami Springs. As development and redevelopment activities are being directed to within the urban development boundary, the public policies of urban places therein should be promulgated to encourage and support more efficient urban form and densities. Transit policy is one means to influence and support such an outcome in a more sustainable manner.

³ Ibid.

⁴ Ibid. page 7.

⁵ Ibid. page 99.

Figure 2.2

CITY of MIAMI SPRINGS FUTURE LAND USE MAP **Land Use Categories**

adopted on first reading by the Miami Springs City
 Commission for transmission to
 the Florida Department of Community Affairs
 June 23, 1997

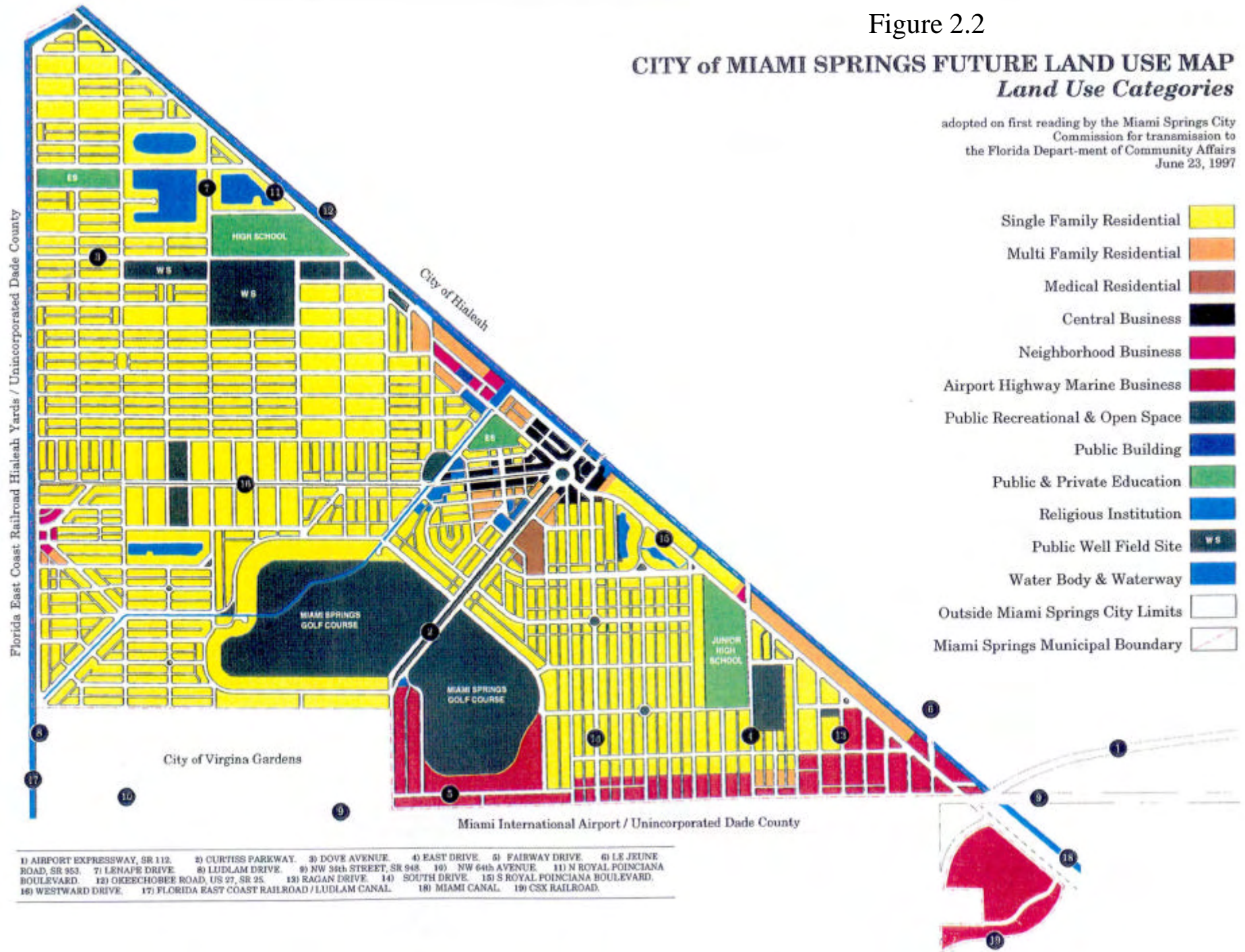
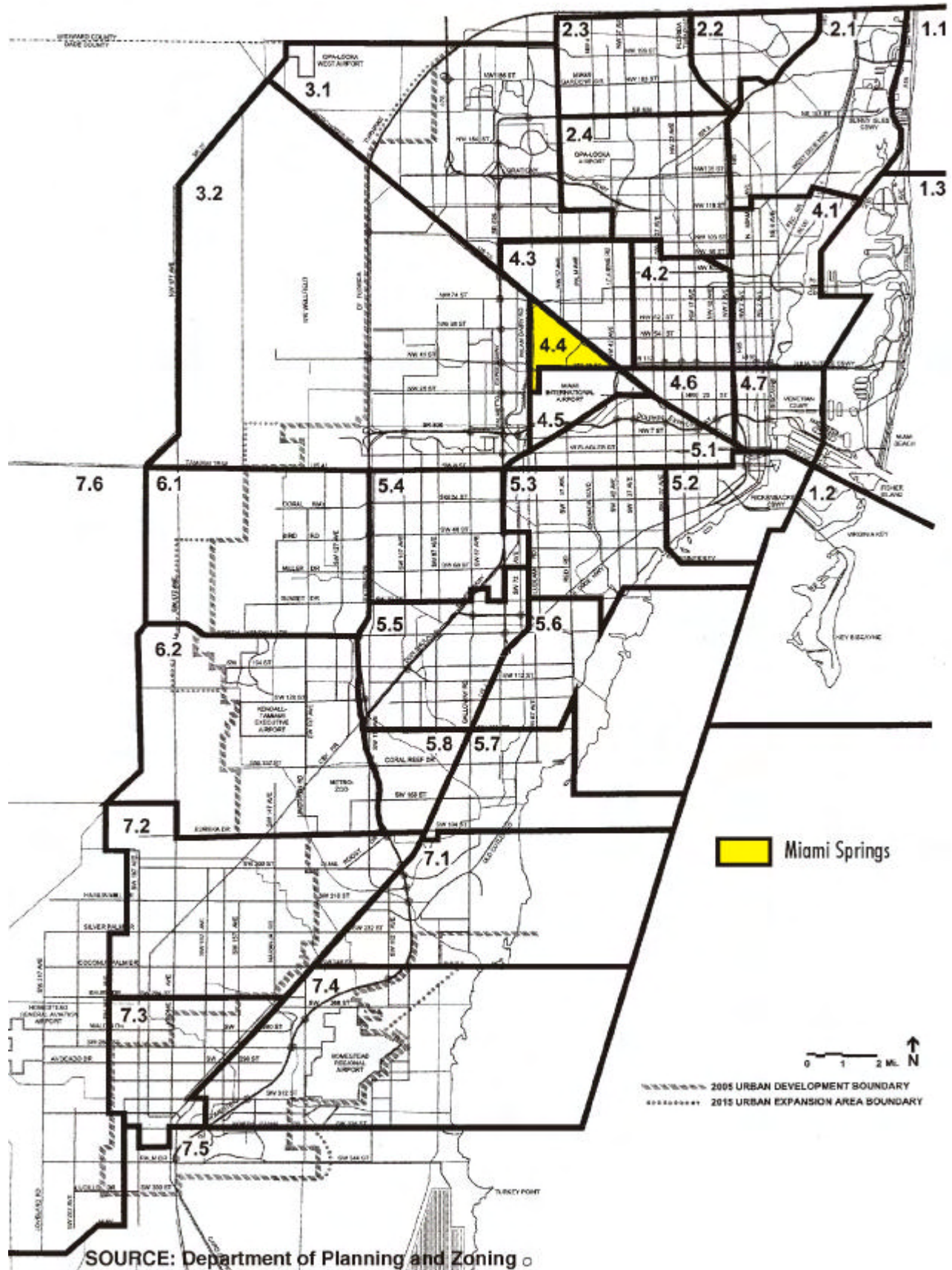


Figure 2.3
Miami-Dade County
Minor Statistical Areas



- As regional growth rates and land consumption decrease, quality of life issues take on greater importance in built up areas like the City of Miami Springs. Ultimately improved mobility for more people, congestion mitigation for all travelers, and cleaner air are quality of life issues that can be advanced through the use of public transit.
- The Miami-Dade County Department of Planning and Zoning Research Division develops population projection areas that can be examined for transit planning purposes. As depicted in Figure 2.2, the vast majority of the City of Miami Springs is located within minor statistical area 4.4. The City of Virginia Gardens is also located within 4.4. A very minor portion of the City is located in 4.5, the minor statistical area which comprises the Miami International Airport.

In tandem, Figure 2.3 and Table 2.2 present population projections for the minor statistical areas that compose the City of Miami Springs and the entirety of Miami-Dade County.

A review of Table 2.2 reveals several observations:

- Minor statistical area 4.4, which comprises most of the City of Miami Springs, is essentially already built out. No material increase in population is expected to occur until after the year 2010 when some redevelopment projects and activities may increase residential density and population. By the year 2020, the population of Miami Springs could increase by up to 2,000 persons due to redevelopment. The planned and zoned residential capacity of this minor statistical area can only accommodate about 18,500 people.
- The City of Miami Springs has relatively little room for growth (it is bounded by the City of Hialeah to the northeast and Miami International Airport to the south). Minor statistical area 4.5 is devoted to the Miami International Airport, where there is no predicted population growth.
- The best opportunity for Miami Springs to grow is annexing portions of minor statistical area 3.2. Growth from adjacent minor statistical area 3.2, which lies to the west, would require annexation. Much of the landmass in minor statistical area 3.2 adjacent to the City of Miami Springs is already built out. Annexation could create some immediate additional population. But future population growth would be limited.

For transit planning purposes, it will be assumed that the population of the City of Miami Springs will remain stable through 2010 and increase by only 2,000 persons by 2020. Any future annexation on the part of the City of Miami Springs should be evaluated for transit service at a later time when the exact parameters of the annexation are known.

Table 2.2
Population Projections by Minor Statistical Area, 1980 to 2020
Miami-Dade County by Minor Statistical Area

Area	1970	1980	1990	2000	2005	2010	2015	2020	Capacity
1.1	3,331	13,176	12,546	16,278	17,916	19,057	19,193	19,193	19,193
1.2	4,619	6,337	8,854	10,513	10,952	11,297	11,459	11,459	11,459
1.3	102,511	113,274	110,126	108,526	108,877	109,371	109,267	114,637	122,515
2.1	91,894	120,342	129,542	160,589	168,866	176,430	184,068	184,421	184,421
2.2	26,955	31,939	41,795	48,988	52,184	55,217	58,219	59,028	59,028
2.3	45,129	71,265	77,397	82,976	86,028	89,372	92,936	100,101	102,346
2.4	62,444	68,808	75,900	78,931	81,238	83,766	86,531	92,554	94,095
3.1	40,209	75,236	131,084	201,811	227,207	248,996	262,921	262,921	262,921
3.2	10,375	38,231	82,657	122,540	142,653	161,311	177,750	177,750	177,750
4.1	75,249	89,738	91,146	90,008	89,811	89,571	90,700	95,511	104,473
4.2	107,302	91,996	83,779	78,515	79,616	82,183	88,957	98,006	114,082
4.3	74,263	91,095	106,641	115,905	115,975	117,058	122,823	131,219	142,103
4.4	15,803	14,686	15,480	16,060	16,405	16,786	17,221	18,290	18,528
4.5	428	224	105	122	106	122	123	128	133
4.6	34,186	38,134	45,093	47,631	50,005	52,715	55,649	61,349	67,992
4.7	49,872	38,785	36,432	35,945	38,951	41,266	45,091	50,070	51,331
5.1	96,988	109,142	117,989	122,903	125,930	129,154	132,692	140,793	139,481
5.2	46,596	49,532	53,742	55,896	57,637	59,664	62,116	67,937	78,192
5.3	116,149	119,419	118,198	120,126	120,694	121,373	123,042	130,733	146,506
5.4	70,617	89,805	97,439	102,262	104,601	106,932	109,481	111,466	111,466
5.5	30,922	59,704	74,262	80,111	83,786	87,430	91,127	93,746	93,746
5.6	30,524	30,115	30,072	32,431	32,853	34,082	36,413	39,299	40,558
5.7	12,806	21,544	22,727	25,346	26,546	27,885	29,303	31,991	33,804
5.8	21,812	33,297	33,358	35,040	35,761	36,614	37,811	41,241	49,228
6.1	9,675	50,500	110,762	156,640	182,038	206,167	229,023	230,271	230,271
6.2	3,390	21,520	67,648	125,812	148,828	167,471	175,402	175,402	175,402
7.1	22,994	29,843	33,467	41,575	46,350	52,204	58,844	71,740	105,811
7.2	14,719	28,394	36,214	39,327	42,555	46,465	51,091	60,668	87,705
7.3	21,176	28,728	31,173	32,367	33,452	34,765	36,954	43,458	69,841
7.4	21,796	42,048	46,921	48,364	49,577	55,349	68,355	88,789	170,636
7.5	1,621	5,744	10,425	14,635	18,768	24,330	30,570	43,794	77,668
7.6	1,336	3,180	4,283	5,189	5,939	6,881	7,981	10,220	16,958
Total	1,267,691	1,625,781	1,937,257	2,253,362	2,402,105	2,551,284	2,703,113	2,858,185	3,159,573

Source: Miami-Dade County Dept. of Planning and Zoning, Planning Research, 2001.

Note: Using November 2001 adjusted estimate of capacity outside the Urban Development Boundary.

The projections for 2005 and 2015 were filed as a Plan amendment in the October 2001 amendment cycle.

2.4 Current Demographic Characteristics

Several general demographic and socio-economic characteristics are noteworthy regarding the population of the City of Miami Springs. These traits influence current transit planning and service delivery issues as well as affecting those issues in the future.

Table 2.3 depicts the racial composition of the population of the City of Miami Springs. For comparison, similar population characteristics for Miami-Dade County are depicted in this and succeeding tables.

Table 2.3
Population by Race

	Miami Springs		Miami-Dade County	
	Number	Percent	Number	Percent
White	12,452	90.8	1,570,558	69.7
Black or African American	280	2.0	457,214	20.3
American Indian and Alaska Native	30	0.2	4,365	0.2
Asian	163	1.2	31,753	1.4
Native Hawaiian and Other Pacific Islander	5	0.0	799	0.0
Other	782	5.7	188,673	8.4
Total	13,712	100.0	2,253,362	100.0
Hispanic or Latino (of any race)	8,173	59.6	1,291,737	57.3

Source: U.S. Census Bureau

Table 2.3 indicates that the population of the City of Miami Springs is very homogeneous. Almost 91 percent of the population is white and only two percent is Black or African American. Almost 60 percent of the population considers itself to be Hispanic or Latino, which is slightly higher than Miami-Dade County as a whole.

Table 2.4 on the following page, depicts various ethnic characteristics of the city of Miami Springs. Relative to Miami-Dade County, the city of Miami Springs has more native born residents and less aliens. Latin America is the predominant region of birth for foreign-born residents. Like Miami-Dade County, the city of Miami Springs has many bilingual residents with Spanish as the predominant second language.

Table 2.4
Ethnic Characteristics

	Miami Springs		Miami-Dade County	
	Number	Percent	Number	Percent
Nativity and Place of Birth				
Total population	13,677	100.0	2,253,362	100.0
Native	7,713	56.4	1,105,597	49.1
Born in United States	7,269	53.1	1,036,463	46.0
State of residence	4,398	32.2	666,190	29.6
Different state	2,871	21.0	370,273	16.4
Born outside United States	444	3.2	69,134	3.1
Foreign born	5,964	43.6	1,147,765	50.9
Entered 1990 to March 2000	1,881	13.8	416,059	18.5
Naturalized citizen	3,319	24.3	535,080	23.7
Not a citizen	2,645	19.3	612,685	27.2
Region of Birth of Foreign Born				
Total (excluding born at sea)	5,964	100.0	1,147,756	100.0
Europe	176	3.0	44,067	3.8
Asia	194	3.3	28,638	2.5
Africa	17	0.3	4,851	0.4
Oceania	0	0.0	373	0.0
Latin America	5,558	93.2	1,064,436	92.7
Northern America	19	0.3	5,391	0.5
Language Spoken at Home				
Population 5 years and over	12,945	100.0	2,108,512	100.0
English only	4,479	34.6	676,347	32.1
Language other than English	8,466	65.4	1,432,165	67.9
Speak English less than "very well"	3,513	27.1	731,814	34.7
Spanish	7,981	61.7	1,248,616	59.2
Speak English less than "very well"	3,367	26.0	658,721	31.2
Other Indo-European languages	303	2.3	155,369	7.4
Speak English less than "very well"	73	0.6	62,059	2.9
Asian and Pacific Island languages	89	0.7	16,395	0.8
Speak English less than "very well"	39	0.3	7,789	0.4

Source: U.S. Census Bureau

The population of the City of Miami Springs appears somewhat older than that of Miami-Dade County. Table 2.5, below, indicates that in 2000 the median age of Miami Springs is was 38.9 years compared to 35.6 years in Miami-Dade County. The proportion of older residents is somewhat greater in Miami Springs than in Miami-Dade County where 15.5 percent and 13.3 percent, respectively, of persons are 65 years and older. Miami Springs's older population is still less than that of the State of Florida, 17.6 percent, which is considered a retirement haven.

Table 2.5
Population by Age

	Miami Springs		Miami-Dade County	
	Number	Percent	Number	Percent
Under 5 years	741	5.4	145,752	6.5
5 to 9 years	918	6.7	157,871	7.0
10 to 14 years	930	6.8	160,754	7.1
15 to 19 years	872	6.4	154,989	6.9
20 to 24 years	654	4.8	144,721	6.4
25 to 34 years	1,759	12.8	337,433	15.0
35 to 44 years	2,524	18.4	361,966	16.1
45 to 54 years	1,980	14.4	282,766	12.5
55 to 59 years	663	4.8	109,141	4.8
60 to 64 years	543	4.0	97,417	4.3
65 to 74 years	1,058	7.7	162,257	7.2
75 to 84 years	757	5.5	99,827	4.4
85 years and over	313	2.3	38,468	1.7
Total	13,712	100.0	2,253,362	99.9
Median age (years)	38.9		35.6	

Source: U.S. Census Bureau

Miami Springs's income characteristics and poverty rates reflect comparative affluence when compared with Miami-Dade County as a whole. The median household income in the year 2000 was \$50,000 in the City of Miami Springs, which is 39 percent higher than that for Miami-Dade County (Table 2.6). Overall, the Miami-Dade County median household income for the same time was \$35,966.

Table 2.6
Household Income

	Miami Springs		Miami-Dade County	
	Number	Percent	Number	Percent
Households	5,030	100.0	777,378	100.0
Less than \$10,000	351	7.0	107,901	13.9
\$10,000 to \$14,999	242	4.8	58,409	7.5
\$15,000 to \$24,999	681	13.5	111,649	14.4
\$25,000 to \$34,999	441	8.8	100,833	13.0
\$35,000 to \$49,999	800	15.9	121,780	15.7
\$50,000 to \$74,999	1,131	22.5	129,533	16.7
\$75,000 to \$99,999	685	13.6	63,132	8.1
\$100,000 to \$149,999	383	7.6	48,253	6.2
\$150,000 to \$199,999	180	3.6	15,222	2.0
\$200,000 or more	136	2.7	20,666	2.7
Median household income (dollars)	50,000		35,966	

Source: U.S. Census Bureau

Poverty indices are also significantly lower in Miami Springs than in Miami-Dade County. As per Table 2.7, below, families living below the poverty level in Miami Springs amounted to only 6.9 percent versus 14.5 percent in Miami-Dade County. Poverty stricken households amounted to 18.6 percent in Miami Springs and 9.7 percent in Miami-Dade County.

Table 2.7
Poverty Status

	Miami Springs		Miami-Dade County	
	Number	Percent	Number	Percent
Families living Below Poverty Level	238	6.9	80,108	14.5
Individuals living Below Poverty Level	1,330	9.7	396,995	18.0

Source: U.S. Census Bureau

Table 2.8 depicts the labor force characteristics in Miami Springs and Miami-Dade County. The labor force of Miami Springs is proportionally larger and unemployment lower than the County as a whole.

Table 2.8
Employment Status
(Persons 16 years and over)

	Miami Springs		Miami-Dade County	
	Number	Percent	Number	Percent
Total:	10,840	100.0	1,758,374	100.0
Civilian labor force	6,830	63.0	1,009,456	57.4
Employed	6,475	63.0	921,208	52.4
Unemployed	355	5.20	88,248	8.7
Armed Forces			1,509	0.1
Not in labor force	4,010	37.0	747,409	42.5

Source: U.S. Census Bureau

Tables 2.9 and 2.10 indicate the employment by occupation and employment by industry of employed persons in the City of Miami Springs and Miami-Dade County. These tables reflect that the Miami Springs workforce is more involved in management and professional occupations than the workforce in Miami-Dade County, but is fairly reflective of Miami-Dade County from an industry standpoint.

Table 2.9
Employment by Occupation
(Civilian employed population 16 years and over)

	Miami Springs		Miami-Dade County	
	Number	Percent	Number	Percent
Total:	6,475	100.0	921,208	100.0
Management, professional, and related occupations	2,248	34.7	277,979	30.2
Service occupations	717	11.1	155,842	16.9
Sales and office occupations	2,145	33.1	285,279	31.0
Farming, fishing, and forestry occupations	6	0.1	5,427	0.6
Construction, extraction, and maintenance occupations	679	10.5	87,382	9.5
Production, transportation, and material moving occupations	680	10.5	109,299	11.9

Source: U.S. Census Bureau

Table 2.10
Employment by Industry
(Employed population 16 years and over)

	Miami Springs		Miami-Dade County	
	Number	Percent	Number	Percent
Agriculture, forestry, fishing and hunting, and mining	25	0.4	6,635	0.7
Construction	446	6.9	63,135	6.9
Manufacturing	501	7.7	65,041	7.1
Wholesale trade	435	6.7	55,398	6.0
Retail trade	649	10.0	113,333	12.3
Transportation and warehousing, and utilities	800	12.4	69,072	7.5
Information	172	2.7	28,890	3.1
Finance, insurance, real estate, and rental and leasing	438	6.8	73,893	8.0
Professional, scientific, management, administrative, and waste management services	694	10.7	106,641	11.6
Educational, health and social services	1,117	17.3	165,357	18.0
Arts, entertainment, recreation, accommodation and food services	519	8.0	84,129	9.1
Other services (except public administration)	317	4.9	51,737	5.6
Public administration	362	5.6	37,947	4.1

Source: U.S. Census Bureau

Table 2.11 depicts housing tenure in Miami Springs and Miami-Dade County. Given the relative affluence of Miami Springs compared to Miami-Dade County, it is not surprising to observe a substantially higher home ownership rate in the City than the County.

Table 2.11
Housing Tenure
(Occupied housing units)

	Miami Springs		Miami-Dade County	
	Number	Percent	Number	Percent
Owner-occupied housing units	3,271	64.3	449,325	57.8
Renter-occupied housing units	1,819	35.7	327,449	42.2
Total	5,090	100.0	776,774	100.0

Source: U.S. Census Bureau

Table 2.12 identifies the travel means for the work commute. Only 1.9 percent persons use public transit for this purpose. This is significantly less than transit use in Miami-Dade County, which stands at 5.2 percent. The means of preference for the work commute in Miami Springs is the private vehicle (alone or carpool) at 92.2 percent.

Table 2.12
Work Commute
(Persons 16 years and over)

	Miami Springs		Miami-Dade County	
	Number	Percent	Number	Percent
Total:	6,342	100.0	899,323	100.0
Car, truck, or van -- drove alone	5,112	80.6	663,902	73.8
Car, truck, or van -- carpooled	736	11.6	131,302	14.6
Public transportation (including taxi)	122	1.9	47,087	5.2
Walked	78	1.2	19,367	2.2
Other means	52	0.8	13,516	1.5
Worked at home	242	3.8	24,149	2.7
Mean travel time to work (minutes)	23		30	

Source: U.S. Census Bureau

In spite of the preference of private vehicles for work commute mobility, there is still a significant number of persons in Miami Springs without access to a vehicle. As per Table 2.13, below, there were 311 housing units that had no vehicle available. The percentage (6.1) was significantly less in Miami-Dade County (14.3 percent).

Table 2.13
Vehicles Available by Housing Unit

	Miami Springs		Miami-Dade County	
	Number	Percent	Number	Percent
Total:	5,093	100.0	776,774	100.0
No vehicle available	311	6.1	111,323	14.3
1 vehicle	2,014	39.5	301,500	38.8
2 vehicles	1,924	37.8	263,256	33.9
3 vehicles	694	13.6	73,233	9.4
4 vehicles	113	2.2	20,610	2.7
5 or more vehicles	37	0.7	6,852	0.9

Source: U.S. Census Bureau

Access to vehicles is only half of the mobility problems for some individuals. For the disabled the private vehicle may not be an option for physical and cognitive as well as financial reasons. As per Table 2.14, the city of Miami Springs has a resident population with a lesser incidence of disabilities than does Miami-Dade County.

Table 2.14
Disability and Employment Status
(Population 5 years and over)

	Miami Springs		Miami-Dade County	
	Number	Percent	Number	Percent
Total:	12,647	100.0	2,077,706	100.0
5 to 15 years:	2,105	16.6	349,790	16.8
With a disability	35	0.3	17,521	0.8
No disability	2,070	16.4	332,269	16.0
16 to 64 years:	8,751	69.2	1,436,751	69.2
With a disability:	1,493	11.8	324,062	15.6
Employed	895	7.1	170,228	8.2
Not employed	598	4.7	153,834	7.4
No disability:	7,258	57.4	1,112,689	53.6
Employed	5,198	41.1	709,347	34.1
Not employed	2,060	16.3	403,342	19.4
65 and over:	1,791	14.2	291,165	14.0
With a disability	579	4.6	132,409	6.4
No disability	1,212	9.6	158,756	7.6

Source: U.S. Census Bureau

Finally, the 2000 Census reveals information regarding the workday commute. As per Table 2.15, below, the workday commute in Miami Springs is heaviest between 6:30 to 9:00 AM. The workday commute in Miami-Dade County is heaviest from 7:00 to 9:00 AM. The duration of a workday commute for Miami Springs residents averages about 22.6 minutes. The same commute averages about 30.1 minutes throughout Miami-Dade County.

Table 2.15
Time Leaving Home to go to Work
(Workers 16 years and over)

	Miami Springs		Miami-Dade County	
	Number	Percent	Number	Percent
Total:	6,342	100.0	899,323	100.0
Did not work at home:	6,100	96.2	875,174	97.3
12:00 a.m. to 4:59 a.m.	113	1.8	23,078	2.6
5:00 a.m. to 5:29 a.m.	141	2.2	20,377	2.3
5:30 a.m. to 5:59 a.m.	99	1.6	26,301	2.9
6:00 a.m. to 6:29 a.m.	338	5.3	73,828	8.2
6:30 a.m. to 6:59 a.m.	695	11.0	85,142	9.5
7:00 a.m. to 7:29 a.m.	755	11.9	135,810	15.1
7:30 a.m. to 7:59 a.m.	912	14.4	118,740	13.2
8:00 a.m. to 8:29 a.m.	1,043	16.4	121,865	13.6
8:30 a.m. to 8:59 a.m.	470	7.4	57,395	6.4
9:00 a.m. to 9:59 a.m.	573	9.0	68,497	7.6
10:00 a.m. to 10:59 a.m.	186	2.9	27,324	3.0
11:00 a.m. to 11:59 a.m.	82	1.3	10,859	1.2
12:00 p.m. to 3:59 p.m.	367	5.8	54,664	6.1
4:00 p.m. to 11:59 p.m.	326	5.1	51,294	5.7
Worked at home	242	3.8	24,149	2.7

Source: U.S. Census Bureau

2.5 Transit Service Routing Analysis

When considering the establishment of local transit service in any given locality, it is generally useful to understand the spatial arrangement of certain demographic characteristics that typically influence transit use. Transit service should be located where it serves the greatest overall need level. Service provision and routing must also be balanced against available funding, and placed where it meets the greatest need while still able to be supported.

There are several demographic characteristics that influence transit use, the most fundamental being population density. In addition, important influencing factors include concentrations of elderly persons, persons living at or below the local poverty level, and homes without access to a private vehicle. For any given locality, these characteristics can be disaggregated into smaller geographic areas, categorized by how many occur in each subarea, and then mapped to depict the areas more likely to use transit.

In Miami Springs, the relative occurrence of the characteristics mentioned above is relatively even because of the small size of the community. Thus, recommendations for the route layout of the Miami Springs transit service will be based upon the location of MDT facilities and services and location of traffic generators.

It is important to note, however, that the current density of Miami Springs— 4,996 persons per square mile— falls well above a basic planning threshold for fixed route service. The Transportation Research Board recommends that areas with population densities of greater than 4,000 persons per square mile need

fixed route bus coverage with accessibility within $\frac{1}{4}$ mile of all persons.⁶ To the extent feasible, it is recommended that this standard be observed when charting the route of the proposed circulator system.

2.6 MDT Current Level of Service

The City of Miami Springs receives urban area transit through Miami-Dade Transit (MDT), in the form of regular fixed-route bus service and a shuttle service that connects the city with MDT's rail service. Figure 2.5, on the following page, depicts the current routes of the bus and shuttle services.

A Route 7 terminus is the Miami Springs Circle/Hook Square. Route 7 proceeds in a southeastward direction, terminating at the Miami-Dade Community College (MDCC) Downtown Campus. Weekday service at Hooks Square begins at 5:16 AM and about every 40 minutes thereafter. The last eastbound bus departs at 6:35 PM. This service is also available on Saturdays and Sundays, with buses departing about every hour.

Route 36 and 36a provides Miami Springs residents access to points as far east as the Omni Mall. Route 36a runs westward to the Kroger Office Park. During weekdays bus services begins at about 5:15 AM. Buses in either direction are as frequent as every 10-20 minutes. This service runs to about 9:00-9:30 PM. The service is available on Saturdays and Sundays from about 6:00 AM until 8:30 PM, with pick-ups varying anywhere from 15-45 minutes.

Finally, the Koger/Tri-Rail Shuttle service provides access to the Hialeah Tri-Rail Station five times daily, three times in the morning and three times in the late afternoon. The shuttles western terminus is the Koger Office Park. The Koger/Tri-Rail Shuttle does not operate on weekends.

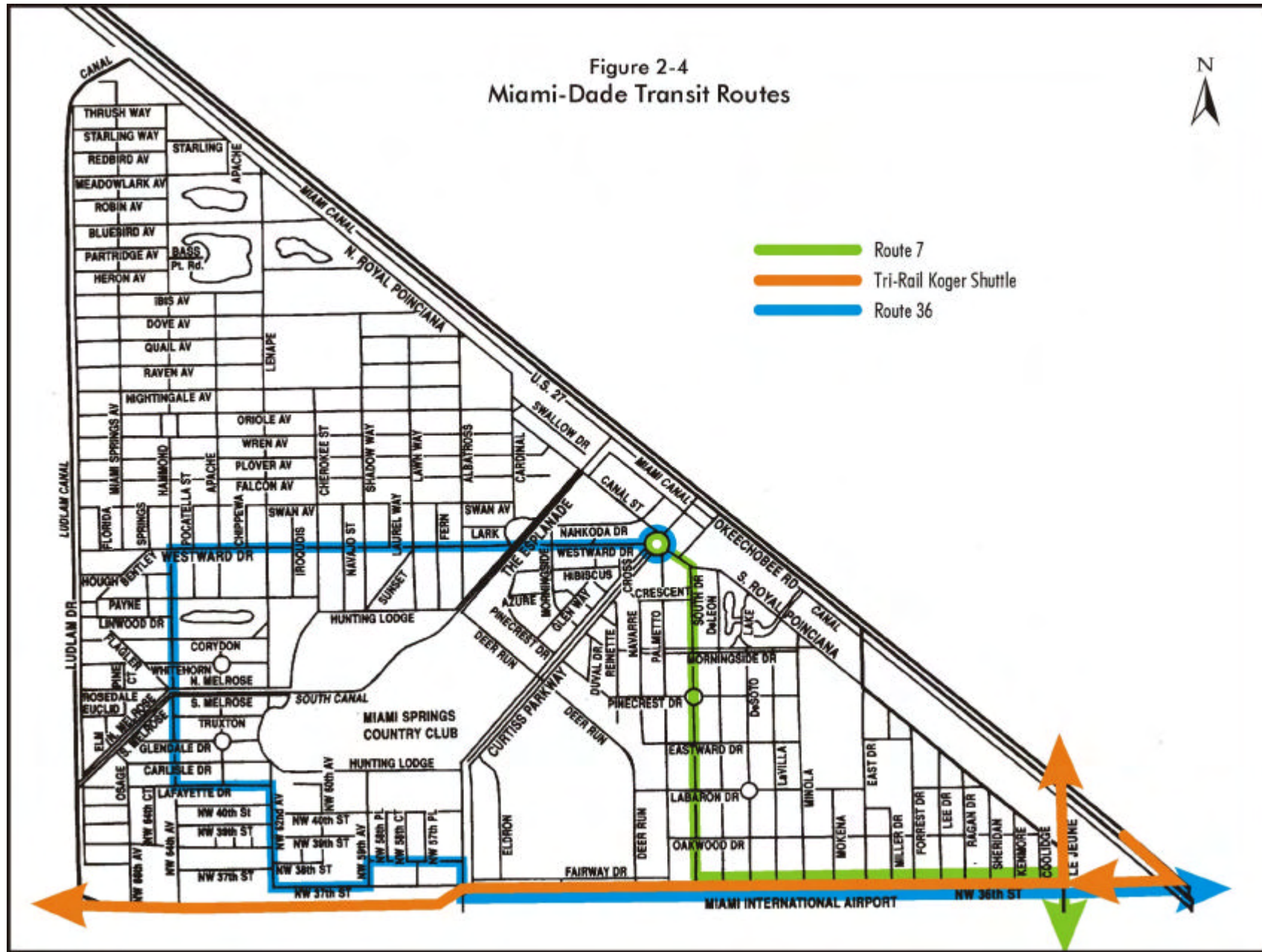
2.7 Traffic Generators

Traffic generators are generally defined as land uses, developments, facilities, activity centers, institutions, features or other attributes of a region, community, or neighborhood that generate trips leaving the area or attract trips to the area. The Miami International Airport south of Miami Springs is an excellent example of a regional traffic generator. A community generator might be a city's government center. Likewise, a neighborhood park is often considered a traffic generator at the lower end of the place spectrum.

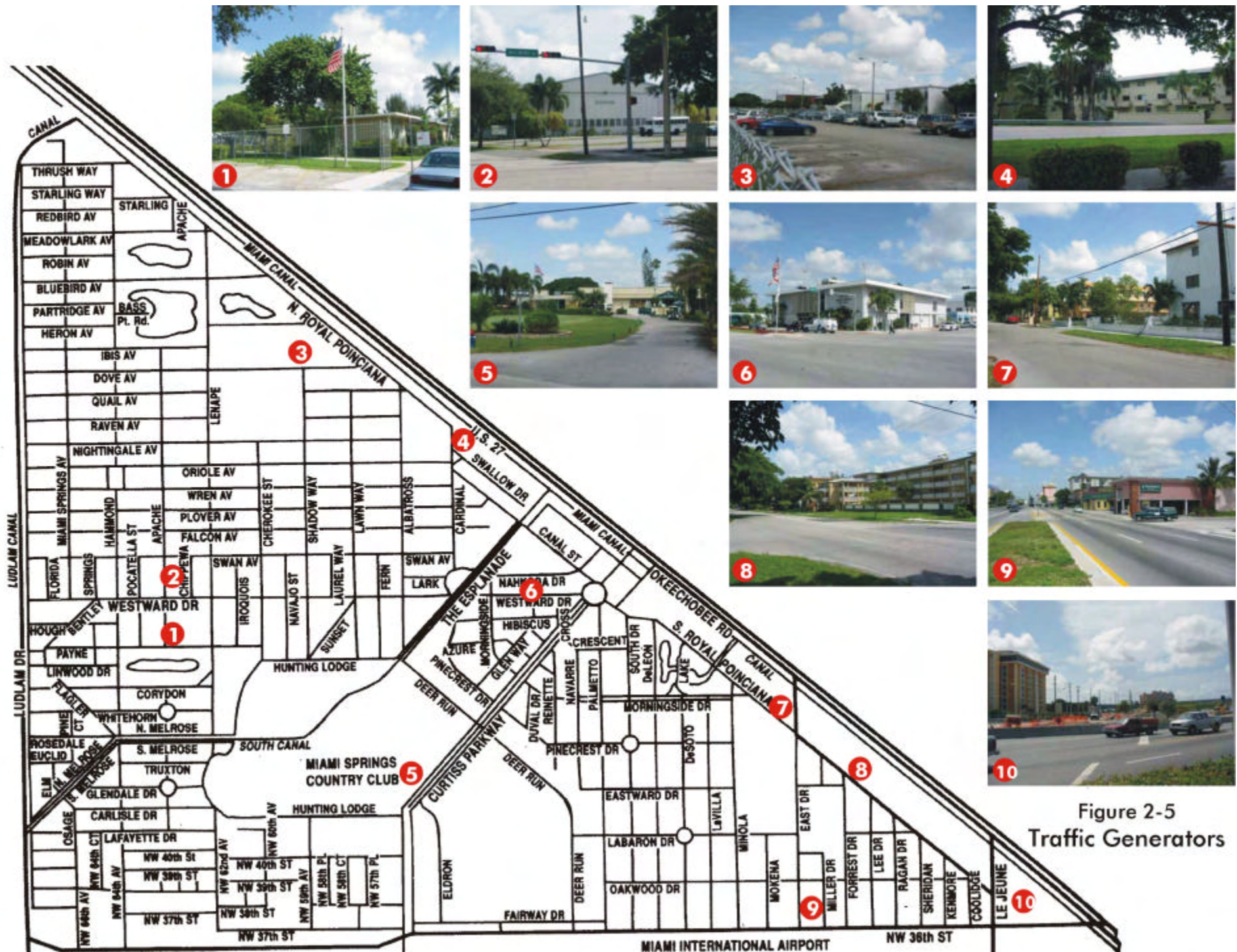
Figure 2.5 and its accompanying photographs depict many of the community and neighborhood traffic generators of the City of Miami Springs. These include the Miami Springs Golf Course and the Academy of Travel and Tourism on the campus of Miami Springs High School. Also, Figure 2.4 identified the current Transit routes of Miami Dade Transit. Only a few of the community's traffic generators are served by these transit routes. To the extent feasible, the route of the circulator system should link these traffic generators together.

⁶ Suggested Bus Service Planning Guidelines, Transportation Policy Handbook, Institute of Traffic Engineers, 1992 (adapted from Bus Route and Schedule Planning Guidelines, NCHRP Synthesis 69, Transportation Research Board, National Research Council, Washington, D.C., 1980.).

Figure 2-4
Miami-Dade Transit Routes



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2.8 Summary of Key Background Conditions and Findings

The previous section identified several existing conditions of the City of Miami Springs that should have a bearing on the establishment of a transit circulator system. The key background conditions and findings are summarized as follows:

- The Comprehensive Plan calls for the City to maintain its current development character, that being to remain primarily a moderately dense residential community.
- The City of Miami Springs is linked to the greater Miami-Dade metropolitan area through a variety of transportation facilities and services, including existing urban and regional transit systems.
- The City of Miami Springs has utilized intergovernmental agreements to provide its citizens with cost effective municipal services.
- While the resident population of the City is not particularly transit dependent, about 7percent of the occupied dwelling units do not have access to a private vehicle.
- The City of Miami Springs possesses a population density that justifies providing a fixed-route transit system with boarding access within ¼ mile of most residents.
- The City of Miami Springs contains several traffic generators that are not now linked, either by each other or by walk access to the majority of Miami Springs residents.

3. Recommended Circulator System

3.1 Preliminary Policy Consultation

On Thursday, July 10, 2003, the Consultant met with the City Manager and other key City Staff to review background considerations and to discuss plausible transit circulator route alignments. Level of service—in terms of headway and days and hours of operation—and potential vehicle types were also discussed. The following transit service characteristics were considered:

- A fixed-route system connecting key traffic generators with as much of the City's residential population as possible is preferred. The routes would be linear with minimal loop configurations.
- The system would operate primarily on Weekdays from 6:00 AM until 8:00 PM. Weekend service would be limited to Saturdays from 9:00 AM to 5:00 PM. There would be no Sunday or holiday service.
- Initial system headway would be in the hour with a future goal of service every 30 minutes.
- The vehicles to be utilized would be small and maneuverable as passenger loads are at least initially expected to be limited, and the vehicles would circulate in part on residential streets.
- The vehicles to be utilized should possess an appealing character and design. To the extent feasible alternate fuel vehicles should be investigated in order to emulate public policy regarding pollution mitigation and fuel efficiency.

3.2 Recommended Circulator Route

Figure 3.1 depicts the recommended route for the City of Miami Springs Circulator System, the selection of which reflects applicable key background findings. This proposed route structure has been developed to: (1) link key generators in the City of Miami Springs; (2) give residents the opportunity for better mobility both within and outside the city; and, (3) maximize efficiencies associated with linkages to Miami-Dade Transit, SFRTA/Tri-Rail, Miami-Dade Transit, and the new City of Hialeah Transit Service. During detailed service planning for the route, linkups and transfers with these other systems could be identified to maximize the utility of the systems.

3.3 Circulator System Operating Characteristics

The total length of the recommended circulator route is approximately 6.5 miles. A round trip is approximately 13 miles.

Planned headways, estimated average travel time, and the level of manpower and rolling stock committed to the system are interrelated variables in any transit operation. Variation in any of these variables affects the others. Ultimately, they all contribute to the bottom-line cost of the service and the fares to be charged.

Average travel speed refers to the relative speed that a vehicle travels along a given route including time not moving when the operator is picking up and dropping off passengers. Average travel speeds of transit systems range from 10 to 20 miles an hour in urban areas depending upon passenger volumes and operating conditions, the most significant of which is the presence of traffic congestion.

In general, the streets in Miami Springs do not appear to experience significant traffic congestion. The obvious exception to this condition would be construction projects or other temporary events. The perimeter street network is a different matter, however. N.W. 36 Street is quite often congested, especially during peak periods. It often negatively affects traffic on S. Royal Poinciana Boulevard and Le Juene.

Given the perimeter traffic congestion along N.W. 36th Street, it will initially be assumed that travel speeds will average 12-15 miles per hour. If average travel speed is at least 13 miles per hour and the one-way length of the circulator route is also 13 miles, then one bus can pass by each stop in one hour; this then would be service with a one-hour headway.

Given that the round trip length of the recommended circulator route is 13 miles, one vehicle can make a round trip in one hour if it averages an operating speed of 13 miles per hour. Thus, if the planned headway for the circulator route is 60 minutes, then one bus will be required to operate the proposed circulator route.

4. Implementation Strategy

4.1 Vehicle Fleet Requirements

For initial cost estimates, a circulator service operating on 60-minute headways 12 hours per day on weekdays and eight hours a day on Saturday is considered. As the service evolves, more frequent headways (i.e., 30 minutes) would be desirable. Depending on how the city elects to have the service operated (either “in-house” or through interlocal agreement), it is likely that vehicle fleet accommodations must include a spare vehicle. A vehicle fleet of two vehicles is therefore initially proposed.

4.2 Personnel Requirements

Table 4.1 describes the personal requirements for a circulator system that essentially operates six days a week, Monday through Saturday. Weekday service would begin in time for the prime workday commute and the typical return trip. Saturday service is further limited to the typical commercial business hours in the City of Miami Springs.

Table 4.1
Miami Springs Circulator
Personnel Requirements

Personnel Category	Hours per Week	FTE
Bus Drivers		
Weekdays	70	
Saturdays	9	
Subtotal Bus Drivers	79	1.98
Administrative Assistant	40	1.00
Fleet Mechanic	10	0.25

Based upon the number of hours of operation and the size of the fleet in service on any given day, approximately 79 person-hours would be required for this level of Monday through Saturday service, which equates to two full-time equivalents.⁷

In addition to personnel to operate fleet vehicles, the proposed circulator system would require administrative support in the amount of one full-time equivalent and partial fleet mechanic and executive support. Capital funds may be required to purchase the vehicles or the City could lease vehicles.

⁷ This estimate of man-hours includes time for two 15-minute breaks and one 30-minute break for each eight-hour work shift.

4.3 Option A – Preliminary Cost Estimate: City of Miami Springs

Option A represents a scenario where the service is operated by the City of Miami Springs. Cost information was based on 2003 dollars, with City wage rate information provided to the consultant by the City. As for the other services, it is assumed that the service would provide 60 minute headways 12 hours per day on weekdays and eight hours per day on Saturdays. The costs for the initial physical implementation of the system (signs, system maps, meetings to coordinate with implementation with MDT and Hialeah Transit) should not exceed \$10,000. Initially, the service would not develop shelters. Contracts for companies to provide bus benches would be let to place benches on routes. The biggest cost outside of the drivers will be for a person to manage the system. Maintenance under this option would be provided through the city's fleet maintenance department.

Table 4.2
Miami Springs Circulator
“In-house” Annual Operating Costs

Personnel	Rate*	Units per Year	Annual Cost
Bus Drivers	\$8.00 per hour	4,108 hours	\$42,723
Administrative Assistant	\$22,417 per year	1 FTE	29,142
Fleet Mechanic	\$37,615 per year	.25 FTE	12,225
Subtotal Personnel			84,090
Equipment			
Bus Leases***		2 buses	28,800
Fuel	\$1.75 per gallon	10,343 gallons**	9,050
First Year Admin Expense****			10,000
Total			\$131,940

*Plus 30% Fringe Benefits

**Assumes 51,714 miles per year

***Lease on 13- to 14-passenger bus of \$1,200/month (60 months) with lift and two wheelchair ties downs. Actual price and/or availability will depend on vendor selected.

****Includes marketing, training for drivers, drug and alcohol training and contingency.

4.4 Option B – Operation by City of Hialeah

If the City of Miami Springs contracts with Hialeah Transit Service (HTS) to provide the service, the estimated annual operating cost would be \$168,000. Estimated first-year capital costs (which would include bus stop signs, special bus painting, and initial marketing activities such as design, printing, and distribution of schedules, would be \$10,000 for a total cost of \$178,000.

This operating cost estimate assumes the following parameters:

- One bus operating at approximately one-hour headways on a 13-mile route (refer to Figure 3.1).
- Operations from 6 a.m. to 6 p.m. Monday through Friday and 9 a.m. to 5 p.m. on Saturday.
- The cost assumes one hour (and approximately 12 miles daily) of deadhead time (that is time and miles spent driving from the HTS garage to Miami Springs).
- That the HTS provides all administrative, vehicular, maintenance and fuel, and operational resources, including labor, required to operate the service.

For implementation, and interlocal agreement would need to be executed between the City of Hialeah and the City of Miami Springs. This interlocal agreement would be included in an amended interlocal agreement between the City of Hialeah and Miami-Dade County.

4.5 Option C – Operation by a Private Operator

If the City of Miami Springs puts the circulator service out to bid, it is anticipated that the cost would be comparable to the cost of the City of Hialeah. The Hialeah cost is based on operations and equipment provided by a private contract which was competitively bid. As with Hialeah operations, administration and implementation expenses would be about \$10,000 for a total first year cost of \$178,000.

4.6 Option D – Operation by Miami-Dade Transit

It would cost approximately \$250,000 for the service to be operated by Miami-Dade Transit. This cost is based on information provided by MDT, and it is an estimate. As with the other options, the City would need to have some marketing, administrative, and implementation funds identified (which would cost \$10,000) for a total first-year cost of \$260,000.

4.7 Funding Sources

The primary funding source for this local transport service would be Peoples Transportation Tax (PTP) funds. The City of Miami Springs can annually anticipate receiving approximately \$460,000 (in 2003 dollars). Of this, a minimum of 20 percent (or \$92,000) must be spent on transit service (or capital improvements that directly support mass transit like the building of bus shelters) while the remainder can go for a variety of transportation enhancement projects. The financial requirements for a Miami Springs circulator will fall somewhere between the minimum required and the amount received on an annual basis. There are other funding sources available, including fares. The City has the option to charge fares. If a minimum of five riders per hour were to use the service, approximately \$25,000 would be raised (assuming 4,108 hours and a fare of \$1.25 – the fare for MDT). Funds could be available through programs such as the Florida Department of Transportation Service Development Program, but these funds eventually sunset and Miami Springs would need to operate the service on its own.

4.8 Next Steps

This study focused on identifying an appropriate transit circulator route for Miami Springs and examining operating options as well as capital and operating costs. After examining operations by the City, the private sector, or another municipality (in this case Hialeah which operates the Hialeah Transit System, or MDT, the preferred option for the City to follow initially was having the service provided by HTS. However, at the time this study was completed, HTS was finalizing agreements to provide service to Hialeah Gardens and was concerned that trying also to serve Miami Springs may extend its operations beyond its capacity. Nevertheless, contracting with a private provider such as First Transit (which provides the drivers and buses for HTS) is the recommended option in the near term for establishing the City's circulator service. In a presentation to the City Council, the Council elected to consider this option as well as using the PTP funds for transportation enhancements in the community.