CORRADINO

DRAFT FINAL REPORT

Hialeah Transit System Express Bus Route and Enhanced Service

Submitted to:

Hialeah Transit System

Submitted by:

The Corradino Group, Inc.

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1. Introduction

The City of Hialeah Transit System (HTS) operates two fixed routes (Figure 1-1) providing mobility throughout Hialeah and Hialeah Gardens. It provides links to Tri-Rail and Miami-Dade Transit bus and rail services, provides nearly 700,000 passenger trips per year, operates nine buses in service (with two spares), and has operated since October 2002. One of the earliest circulators in Miami-Dade County, HTS has provided over 2.250,000 trips throughout the community. The City has committed significant local funds to the circulator, which was started prior to the People's Transportation Plan and is a continuing example of the success of local and regional transit programs.

This study, which is being funded by the Miami-Dade Metropolitan Planning Organization (MPO), is intended to explore specific enhancements to the HTS service. These include express service routes and any adjustments to the existing route network to accommodate the new service. The study is organized into several tasks, as follows:

- Task 1: Existing Conditions
- Task 2: Evaluate Express Service Alternatives
- Task 3: Implementation Strategy
- Task 4: Public Involvement
- Task 5: System Overview
- Task 6: Final Report

The study is anticipated to take four months and be completed early in 2008. This report documents existing conditions and the alternatives to be evaluated. Two public involvement activities are anticipated as part of the study. One is a random survey of Hialeah residents concerning potential express service alternatives. The second is a public workshop that will be held and to which will be invited the general public as well as representatives of public and non-profit agencies and businesses.

2. Existing Conditions

2.1 Transit

The Hialeah Transit System (HTS) began operations in 2002 with five routes. In July 2004, following a study sponsored by the Miami-Dade Metropolitan Planning Organization (MPO), the route system was reconfigured into two routes – the Flamingo and Marlin. At the same time, service into Hialeah Gardens was added. The current route system (refer to Figure 1-1) has 11.5 miles of service on the Flamingo route and 14 miles of service on the Marlin route. HTS's fleet is currently comprised of 11 buses (10 2002 Bluebirds and 1 2006 Bluebird low floor). Figure 2-1 shows the current route confirmation for HTS. The system operates from 6:00 a.m. to 7:30 p.m. on weekdays and provides service on Saturdays between 9:00 a.m. and 3:30 p.m. and on Sundays between 11:00 a.m. and 2:00 p.m. Table 2-1 shows ridership in a typical month (May, 2007) and historical ridership trends of HTS. The fiscal year 2008 operations budget for HTS is $1,922,000.

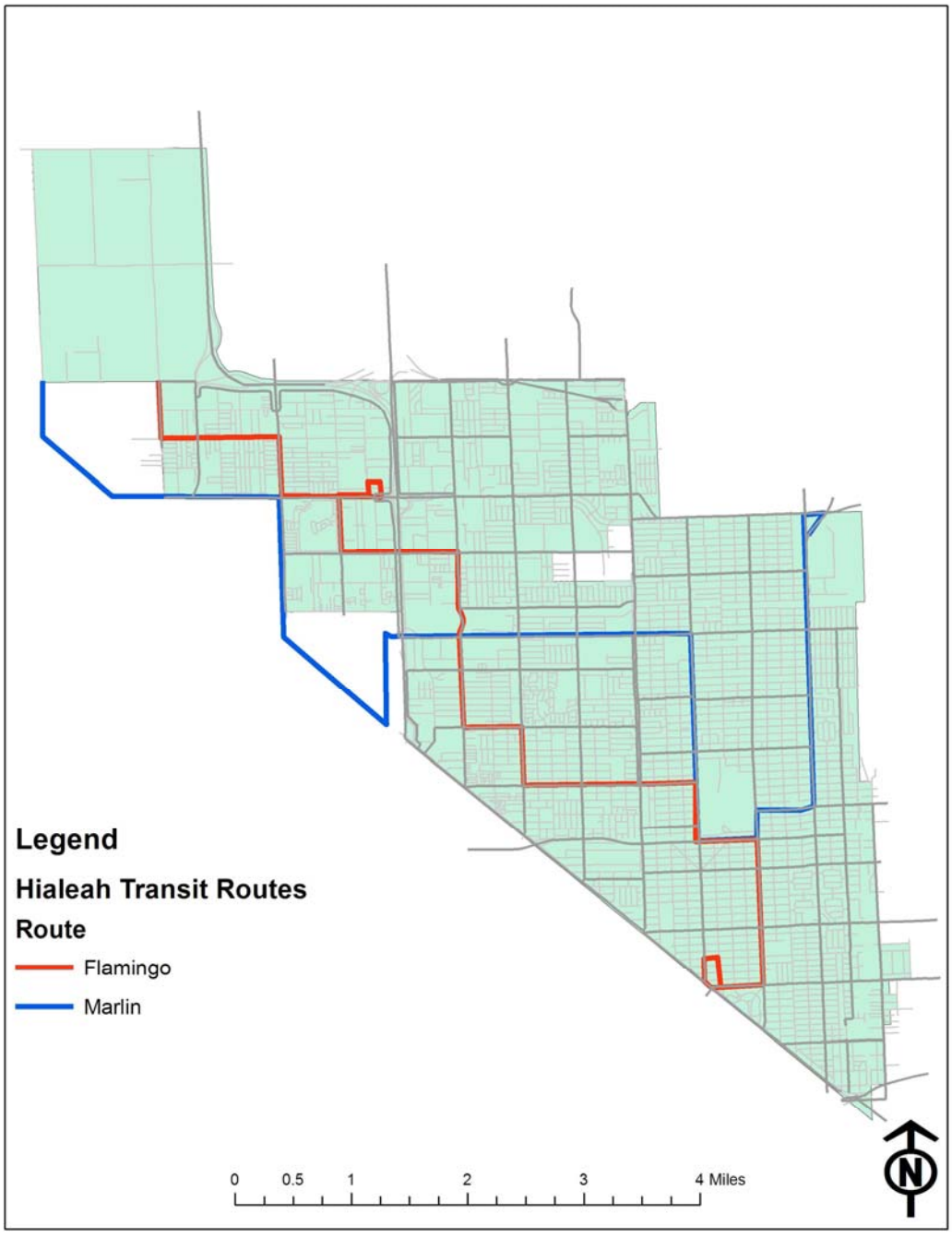
Table 2-1
HTS Ridership – At a Glance

Hialeah Transit System Routes (May 2007)		
Route	Average Weekday Ridership	Route Productivity (Bdgs/Hr)[a]
Flamingo	1,367	18.2
Marlin	786	13.1
Historical Ridership – Hialeah Transit System		
Year	Passengers	Percent Change
2004	485,698	NA
2005	630,805	29.9
2006	667,209	5.8
2007[b]	506,694	NA

[a] Assumes operations from 6 am – 9 pm and four vehicles on Marlin and five on Flamingo.
[b] 2007 data only includes through October 2007.
Source: Hialeah Transit System

As can be seen, HTS's route productivity for both routes averages approximately 16 riders per hour. This is very good for a transit circulator and indicates that HTS is functioning as a full blown transit system.

Figure 2-1
Hialeah Transit Routes



2.2 Miami-Dade Transit

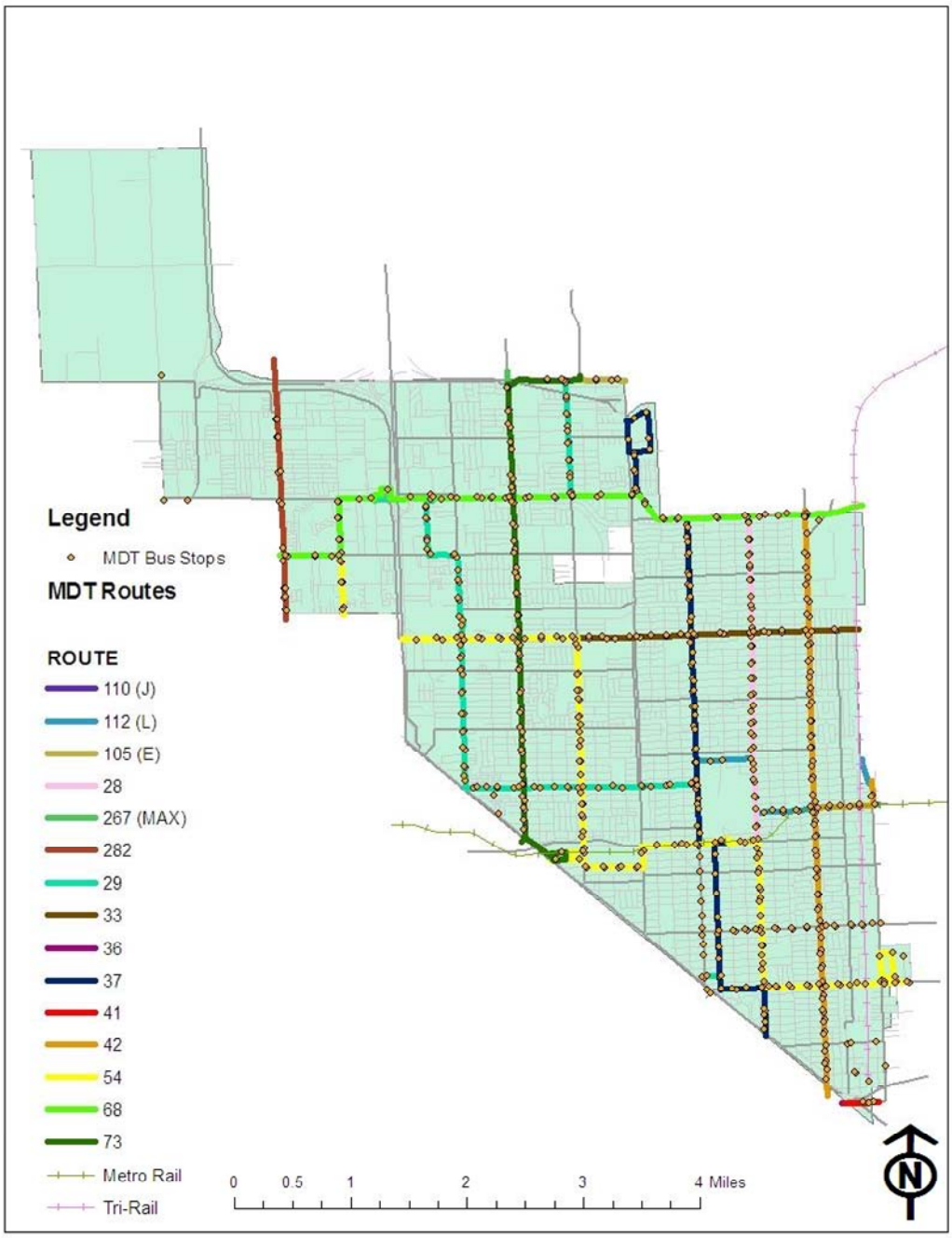
For comparison, information for Miami-Dade Transit routes is presented in Table 2-2. MDT's coverage in Hialeah is complemented by the HTS service. Figure 2-2 presents MDT's service coverage.

Table 2-2
Miami-Dade Transit Bus Routes in or Adjacent to Hialeah

Miami-Dade Transit Routes Operating in Hialeah		
Route	Average Weekday Ridership	Route Productivity (Bdgs/Hr)
29	1,131	22.4
37	4,052	30.6
54	3,906	26.8
73	2,762	21.7
267 Max	492	14.0
L	10,323	36.6
33	2,118	27.8
68	337	10.6
28	1,452	27.0
42	1,411	13.9
Miami-Dade Transit Routes Operating on Edge of Hialeah		
Route	Average Weekday Ridership	Route Productivity (Bdgs/Hr)
36	3,310	35.0
41	1,225	18.7
J	4,850	29.0
282	516	12.2
E	1,896	18.6

Source: Miami-Dade County Transit Ridership Technical Report, May 2007

Figure 2-2
Miami-Dade Transit Routes



2.3 Demographics

Several general demographic and socio-economic characteristics are note-worthy regarding the population of the City of Hialeah. Moreover, these traits could influence transit planning and service delivery issues in the future.

Table 2-3 depicts the racial composition of the population of the City of Hialeah. For comparison, similar population characteristics for Miami-Dade County are depicted in this and succeeding tables.

Table 2-3
Population by Race

	Hialeah		Miami-Dade County	
	Number	Percent	Number	Percent
White	199,276	88.0	1,570,558	69.7
Black or African American	5,453	2.4	457,214	20.3
American Indian and Alaska Native	304	0.1	4,365	0.2
Asian	906	0.4	31,753	1.4
Native Hawaiian and Other Pacific Islander	53	0.0	799	0.0
Other	20,427	9.1	188,673	8.4
Total	226,419	100.0	2,253,362	100.0
Hispanic or Latino (of any race)	204,543	90.3	1,291,737	57.3

Source: U.S. Census Bureau

Table 2-3 indicates that the population of the City of Hialeah is very homogeneous. 88 percent of the population is white, only 2.4 percent is Black or African American, although a sizable group is considered "other". 90 percent of the population considers itself to be Hispanic or Latino, which exceeds Miami-Dade County's Hispanic/Latino population of 57.3 percent. This transition to an almost entirely Hispanic community has been the most significant factor in Hialeah's development and has direct implications for transit. HTS prepares all system communication information in English and Spanish. In addition, drivers and dispatchers must be conversant in Spanish.

Other census indicators reinforce the Hispanic/Latino roots of the City of Hialeah population. As shown in Table 2-4, only 27.9 percent of Hialeah residents are native born in the United States. Foreign-born residents comprise 72.1 percent of the population and, of the foreign born, 98.8 percent identify Latin America as their birth region. All of these racial and ethic characteristics exceed similar characteristics of Miami-Dade County.

Table 2-4
Ethnic Characteristics

	Hialeah		Miami-Dade County	
	Number	Percent	Number	Percent
Nativity and Place of Birth				
Total population	226,411	100.0	2,253,362	100.0
Native	63,155	27.9	1,105,597	49.1
Born in United States	57,548	25.4	1,036,463	46.0
State of residence	43,972	19.4	666,190	29.6
Different state	13,576	6.0	370,273	16.4
Born outside United States	5,607	2.5	69,134	3.1
Foreign born	163,256	72.1	1,147,765	50.9
Entered 1990 to March 2000	64,325	28.4	416,059	18.5
Naturalized citizen	70,331	31.1	535,080	23.7
Not a citizen	92,925	41.0	612,685	27.2
Region of Birth of Foreign Born				
Total (excluding born at sea)	163,256	100.0	1,147,756	100.0
Europe	1,136	0.7	44,067	3.8
Asia	681	0.4	28,638	2.5
Africa	28	0.0	4,851	0.4
Oceania	23	0.0	373	0.0
Latin America	161,313	98.8	1,064,436	92.7
Northern America	75	0.0	5,391	0.5
Language Spoken at Home				
Population 5 years and over	213,195	100.0	2,108,512	100.0
English only	15,691	7.4	676,347	32.1
Language other than English	197,504	92.6	1,432,165	67.9
Speak English less than "very well"	126,358	59.3	731,814	34.7
Spanish	195,884	91.9	1,248,616	59.2
Speak English less than "very well"	125,691	59.0	658,721	31.2
Other Indo-European languages	1,112	0.5	155,369	7.4
Speak English less than "very well"	370	0.2	62,059	2.9
Asian and Pacific Island languages	330	0.2	16,395	0.8
Speak English less than "very well"	223	0.1	7,789	0.4

Source: U.S. Census Bureau

The population of the City of Hialeah is somewhat older than that of Miami-Dade County. Table 2-5, indicates that in 2000 the median age of Hialeah is was 37.7 years compared to 35.6 years in Miami-Dade County. The proportion of older residents is also greater in Hialeah than in Miami-Dade County where 16.6 percent and 13.3 percent, respectively, of persons are 65 years and older. Hialeah's older population proportion more closely resembles that of a State, Florida, which is considered a retirement haven (17.6 percent).

Table 2-5
Population by Age

	Hialeah		Miami-Dade County	
	Number	Percent	Number	Percent
Under 5 years	13,118	5.8	145,752	6.5
5 to 9 years	14,406	6.4	157,871	7.0
10 to 14 years	15,391	6.8	160,754	7.1
15 to 19 years	14,328	6.3	154,989	6.9
20 to 24 years	13,251	5.9	144,721	6.4
25 to 34 years	32,182	14.2	337,433	15.0
35 to 44 years	34,302	15.1	361,966	16.1
45 to 54 years	27,094	12.0	282,766	12.5
55 to 59 years	12,180	5.4	109,141	4.8
60 to 64 years	12,488	5.5	97,417	4.3
65 to 74 years	21,595	9.5	162,257	7.2
75 to 84 years	11,851	5.2	99,827	4.4
85 years and over	4,233	1.9	38,468	1.7
Total	226,419	100.0	2,253,362	99.9
Median age (years)	37.7		35.6	

Source: U.S. Census Bureau

Hialeah's income characteristics and poverty rates reflect a comparative disparity with Miami-Dade County. As per Table 2-6, the median household income in the year 2000 was $29,492 in the City of Hialeah. The Miami-Dade County median household income for the same time was $35,966 or approximately 21 percent higher.

Table 2-6
Household Income

	Hialeah		Miami-Dade County	
	Number	Percent	Number	Percent
Households	70,664	100.0	777,378	100.0
Less than $10,000	10,605	15.0	107,901	13.9
$10,000 to $14,999	6,840	9.7	58,409	7.5
$15,000 to $24,999	12,730	18.0	111,649	14.4
$25,000 to $34,999	10,857	15.4	100,833	13.0
$35,000 to $49,999	12,141	17.2	121,780	15.7
$50,000 to $74,999	10,635	15.1	129,533	16.7
$75,000 to $99,999	3,964	5.6	63,132	8.1
$100,000 to $149,999	2,098	3.0	48,253	6.2
$150,000 to $199,999	311	0.4	15,222	2.0
$200,000 or more	483	0.7	20,666	2.7
Median household income (dollars)	29,492		35,966	

Source: U.S. Census Bureau

In spite of this median household income disparity, poverty indices are only slightly higher in Hialeah than in Miami-Dade County in general. As shown in Table 2-7, families living below the poverty level in Hialeah amounted to 16 percent versus 14.5 percent in Miami-Dade County.

Table 2-7
Poverty Status

	Hialeah		Miami-Dade County	
	Number	Percent	Number	Percent
Families living Below Poverty Level	9,216	16.0	80,108	14.5
Individuals living Below Poverty Level	41,537	18.6	396,995	18.0

Source: U.S. Census Bureau

Tables 2-8 and 2-9 indicate the employment by occupation and employment by industry of employed persons in the City of Hialeah and Miami-Dade County. These tables reinforce the notion that Hialeah is a predominantly blue-collar community.

Table 2-8
Employment by Occupation
(Civilian employed population 16 years and over)

	Hialeah		Miami-Dade County	
	Number	Percent	Number	Percent
Total:	82,251	100.0	921,208	100.0
Management, professional, and related occupations	13,589	16.5	277,979	30.2
Service occupations	11,681	14.2	155,842	16.9
Sales and office occupations	25,290	30.7	285,279	31.0
Farming, fishing, and forestry occupations	221	0.3	5,427	0.6
Construction, extraction, and maintenance occupations	11,731	14.3	87,382	9.5
Production, transportation, and material moving occupations	19,739	24.0	109,299	11.9

Source: U.S. Census Bureau

Table 2-9
Employment by Industry
(Employed population 16 years and over)

	Hialeah		Miami-Dade County	
	Number	Percent	Number	Percent
Agriculture, forestry, fishing and hunting, and mining	250	0.3	6,635	0.7
Construction	7,605	9.2	63,135	6.9
Manufacturing	14,282	17.4	65,041	7.1
Wholesale trade	6,210	7.6	55,398	6.0
Retail trade	10,936	13.3	113,333	12.3
Transportation and warehousing, and utilities	7,234	8.8	69,072	7.5
Information	1,703	2.1	28,890	3.1
Finance, insurance, real estate, and rental and leasing	4,730	5.8	73,893	8.0
Professional, scientific, management, administrative, and waste management services	6,585	8.0	106,641	11.6
Educational, health and social services	10,461	12.7	165,357	18.0
Arts, entertainment, recreation, accommodation and food services	5,392	6.6	84,129	9.1
Other services (except public administration)	4,969	6.0	51,737	5.6
Public administration	1,894	2.3	37,947	4.1

Source: U.S. Census Bureau

Nearly 40 percent of working persons are engaged in construction, extraction, maintenance occupations, production, transportation and material moving occupations compared to only 21 percent in Miami-Dade County. This correlates with 42 percent of the working population that is involved in the construction, manufacturing, wholesale, transportation, warehousing and utilities industries. Only 27 percent of Miami-Dade County workers are involved in similar industries.

Communities with lower-income persons often have lower homeownership rates. In the year 2000, the homeownership rate in the State of Florida stood at 70.1 percent, which handily exceeds an often-cited national objective of 65 percent. As shown in Table 2-10, the City of Hialeah has a homeownership rate of just 50.7 percent.

Table 2-10
Housing Tenure
(Occupied housing units)

	Hialeah		Miami-Dade County	
	Number	Percent	Number	Percent
Owner-occupied housing units	35,846	50.7	449,325	57.8
Renter-occupied housing units	34,858	49.3	327,449	42.2
Total	70,704	100.0	776,774	100.0

Source: U.S. Census Bureau

Table 2-11, indicates that the proportion of residents that are part of the civilian labor force is lower in Hialeah than in Miami-Dade County. This may be attributed to the older population of Hialeah, wherein persons 65 and older are less likely to be actively employed.

Table 2-11
Employment Status
(Persons 16 years and over)

	Hialeah		Miami-Dade County	
	Number	Percent	Number	Percent
Total:	180,274	100.0	1,758,374	100.0
Civilian labor force	91,510	50.8	1,009,456	57.4
Employed	82,251	45.6	921,208	52.4
Unemployed	9,259	5.1	88,248	5.0
Armed Forces	26	0.0	1,509	0.1
Not in labor force	88,738	49.2	747,409	42.5

Source: U.S. Census Bureau

Typically, a community with higher levels of lower-income population is more reliant on public transit. Census 2000 data indicate otherwise for Hialeah. Table 2-12, identifies the travel means for the work commute. Only 2.9 percent persons use public transit for this purpose. This is less than half of public transit use for the work commute in Miami-Dade County, which stands at 5.2 percent. The means of preference for the work commute in Hialeah is the private vehicle (alone or carpool) at 93 percent.

Table 2-12
Work Commute
(Persons 16 years and over)

	Hialeah		Miami-Dade County	
	Number	Percent	Number	Percent
Total:	79,947	100.0	899,323	100.0
Car, truck, or van – drove alone	61,258	76.6	663,902	73.8
Car, truck, or van – carpooled	13,148	16.4	131,302	14.6
Public transportation (including taxi)	2,301	2.9	47,087	5.2
Walked	1,246	1.6	19,367	2.2
Other means	1,076	1.3	13,516	1.5
Worked at home	918	1.1	24,149	2.7
Mean travel time to work (minutes)	27		30	

Source: U.S. Census Bureau

In spite of the preference of private vehicles for work commute mobility, there are many persons without access to a vehicle. As per Table 2.13, there were 13.5 percent or 9,567 housing units that had no vehicle available in Hialeah. This percentage was slightly higher in Miami-Dade County (14.3 percent).

Table 2-13
Vehicles Available by Housing Unit

	Hialeah		Miami-Dade County	
	Number	Percent	Number	Percent
Total:	70,763	100.0	776,774	100.0
No vehicle available	9,567	13.5	111,323	14.3
1 vehicle	26,320	37.2	301,500	38.8
2 vehicles	23,456	33.1	263,256	33.9
3 vehicles	7,971	11.3	73,233	9.4
4 vehicles	2,523	3.6	20,610	2.7
5 or more vehicles	926	1.3	6,852	0.9

Source: U.S. Census Bureau

Access to vehicles is only half of the mobility problems to some individuals. For the disabled the private vehicle may not be an option for physical and cognitive as well as financial reasons. The City of Hialeah has a resident population with a slightly greater incidence of disabilities than does Miami-Dade County, as per Table 2-14.

Table 2-14
Disability and Employment Status
(Population 5 years and over)

	Hialeah		Miami-Dade County	
	Number	Percent	Number	Percent
Total:	210,808	100.0	2,077,706	100.0
5 to 15 years:	32,897	15.6	349,790	16.8
With a disability	1,335	0.6	17,521	0.8
No disability	31,562	15.0	332,269	16.0
16 to 64 years:	141,917	67.3	1,436,751	69.2
With a disability:	36,024	17.1	324,062	15.6
Employed	16,309	7.7	170,228	8.2
Not employed	19,715	9.4	153,834	7.4
No disability:	105,893	50.2	1,112,689	53.6
Employed	61,689	29.3	709,347	34.1
Not employed	44,204	21.0	403,342	19.4
65 and over:	35,994	17.1	291,165	14.0
With a disability	16,976	8.1	132,409	6.4
No disability	19,018	9.0	158,756	7.6

Source: U.S. Census Bureau

Finally, the 2000 Census reveals important information regarding the workday commute. As per Table 2-15, the workday commute in Hialeah is heaviest between 6:00 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 Hialeah residents averages about 27 minutes. The same commute averages about 30 minutes throughout Miami-Dade County.

Table 2-15
Time Leaving Home to go to Work
(Workers 16 years and over)

	Hialeah		Miami-Dade County	
	Number	Percent	Number	Percent
Total:	79,947	100.0	899,323	100.0
Did not work at home:	79,029	98.9	875,174	97.3
12:00 a.m. to 4:59 a.m.	2,499	3.1	23,078	2.6
5:00 a.m. to 5:29 a.m.	2,212	2.8	20,377	2.3
5:30 a.m. to 5:59 a.m.	2,992	3.7	26,301	2.9
6:00 a.m. to 6:29 a.m.	8,884	11.1	73,828	8.2
6:30 a.m. to 6:59 a.m.	9,856	12.3	85,142	9.5
7:00 a.m. to 7:29 a.m.	13,886	17.4	135,810	15.1
7:30 a.m. to 7:59 a.m.	10,235	12.8	118,740	13.2
8:00 a.m. to 8:29 a.m.	9,648	12.1	121,865	13.6
8:30 a.m. to 8:59 a.m.	3,632	4.5	57,395	6.4
9:00 a.m. to 9:59 a.m.	3,882	4.9	68,497	7.6
10:00 a.m. to 10:59 a.m.	1,739	2.2	27,324	3.0
11:00 a.m. to 11:59 a.m.	657	0.8	10,859	1.2
12:00 p.m. to 3:59 p.m.	4,981	6.2	54,664	6.1
4:00 p.m. to 11:59 p.m.	3,926	4.9	51,294	5.7
Worked at home	918	1.1	24,149	2.7

Source: U.S. Census Bureau

2.4 Annexation Area

In 2005, the City annexed more than 1,800 acres of land northwest of the City from Miami-Dade County, with one-third being designated for residential development and two-thirds designated for commercial and industrial use.

3. Survey Results

On Tuesday, December 4 and Thursday December 6, HTS drivers collected boarding and alighting data by segment on the Flamingo and Marlin routes. The consultant took this data and aggregated it to create a typical weekday ridership profile. Figures 3-1 through 3-4 show the ridership activity at a general level that occurs for each route.

The total boardings on the aggregated weekday was:

- Flamingo North – 593
- Flamingo South – 598
- Marlin West – 462
- Marlin East – 424

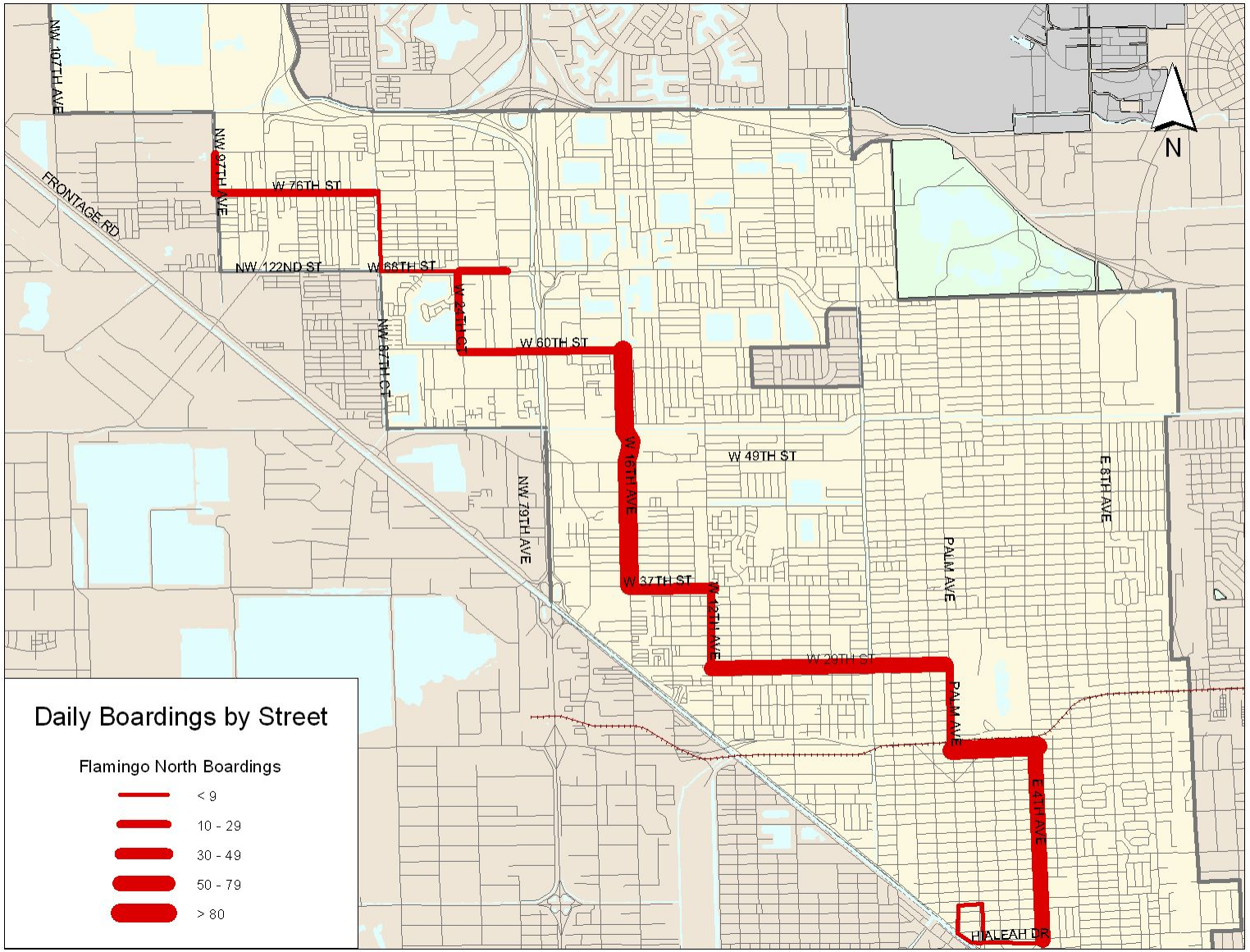
Figures 3-5 through 3-8 summarize the ons and offs for a typical weekday on the routes. As can be seen, the Hialeah Metrorail station at 21st Street is the single biggest generator of activity on both routes. Prominent generators on the Flamingo are the E. 4th Avenue segment, the W. 16th Avenue segment, and the Palmetto Hospital "jog." On the Marlin, activity focus points are Le Jeune Road, Palm Avenue, W. 49th St./NW 103rd Street, and Walmart.

The boarding and alighting information was also tabulated by time of day. Review of this data (appendix) illustrates that for the most part ridership activity in the middle of the day is lightest on the outer portions of each route. Table 3-1 examines this information in more detail.

As can be seen in Table 3-1, ridership appears to be strongest in the morning through the middle of the afternoon and tails off at the end of the day.

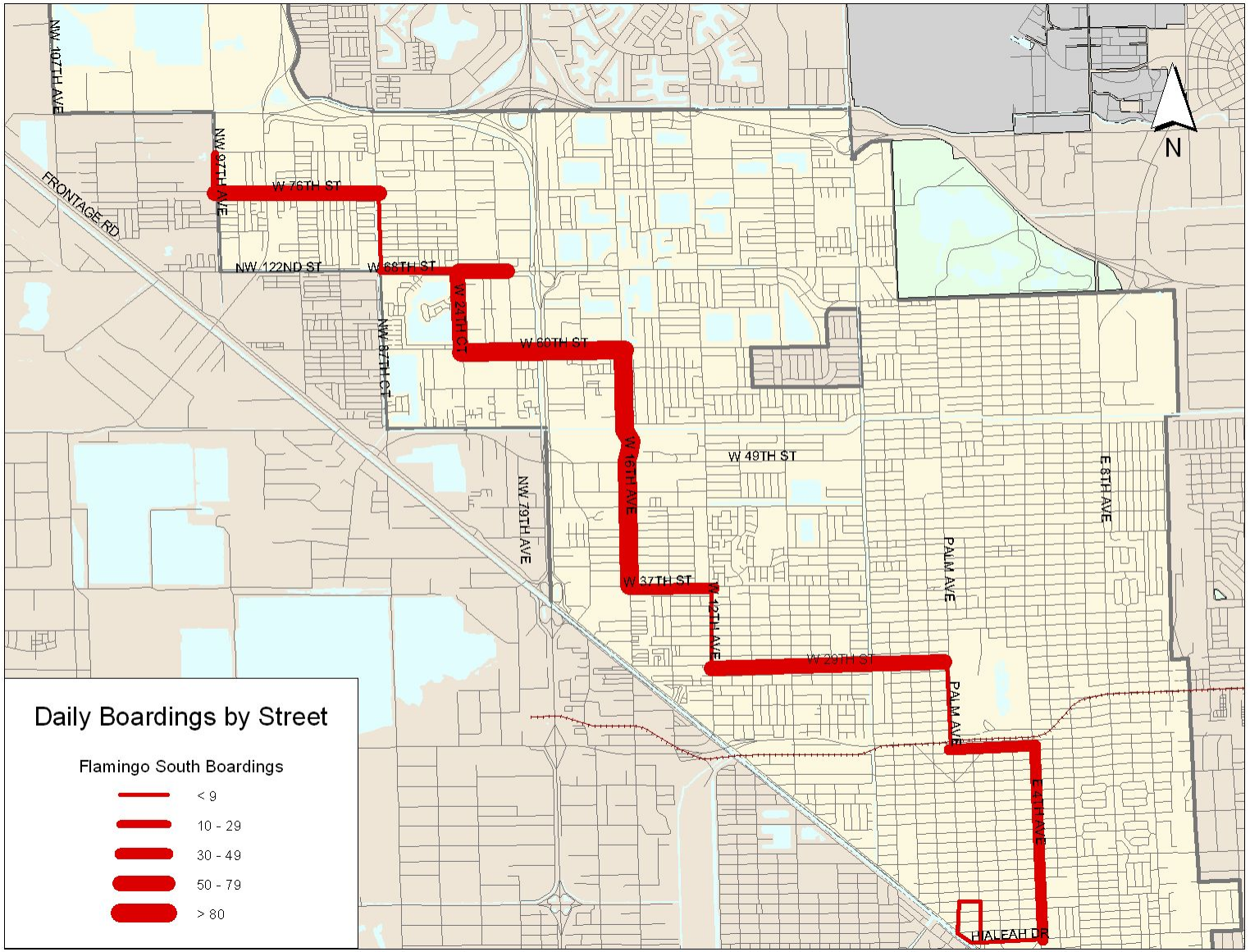
Based on the survey, it appears that boarding and alighting activity is fairly consistent along each route, i.e., there are few segments with less than nine riders per day and these are either connections such as W. 28th Avenue and the city hall loop on the Flamingo or NW South River Drive on the Marlin. As noted in Chapter 2, the HTS service overall carries approximately 16 passengers per hour, which is very strong for a circulator service. Given that and the overall balanced productivity of the service, there does not seem to be a need for a major overhaul of the routes from an efficiency standpoint. As structured, the routes appear to be serving the areas of Hialeah with the least Miami-Dade Transit Metrobus service, are well used, and operate with a relatively low rate of complaints. There are requests for additional service, but that is in areas where service has been tested and didn't work well such as the industrial corridor on E. 10th Avenue. In the next section, several service enhancement scenarios will be tested that will build on the data developed during the survey.

Figure 3-1
Boardings by Street
Flamingo North



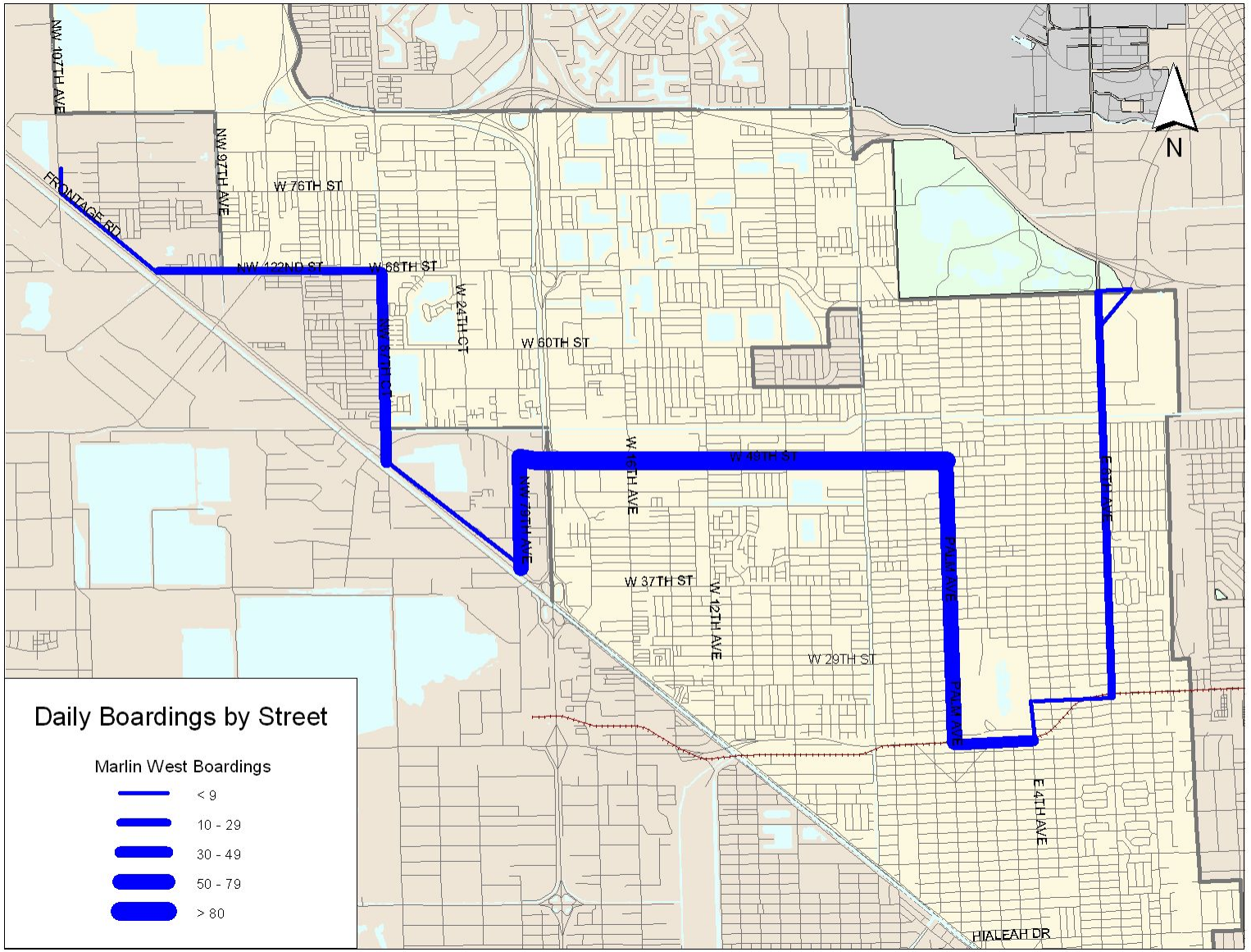
Source: The Corradino Group, Inc.

Figure 3-2
Boardings by Street
Flamingo South



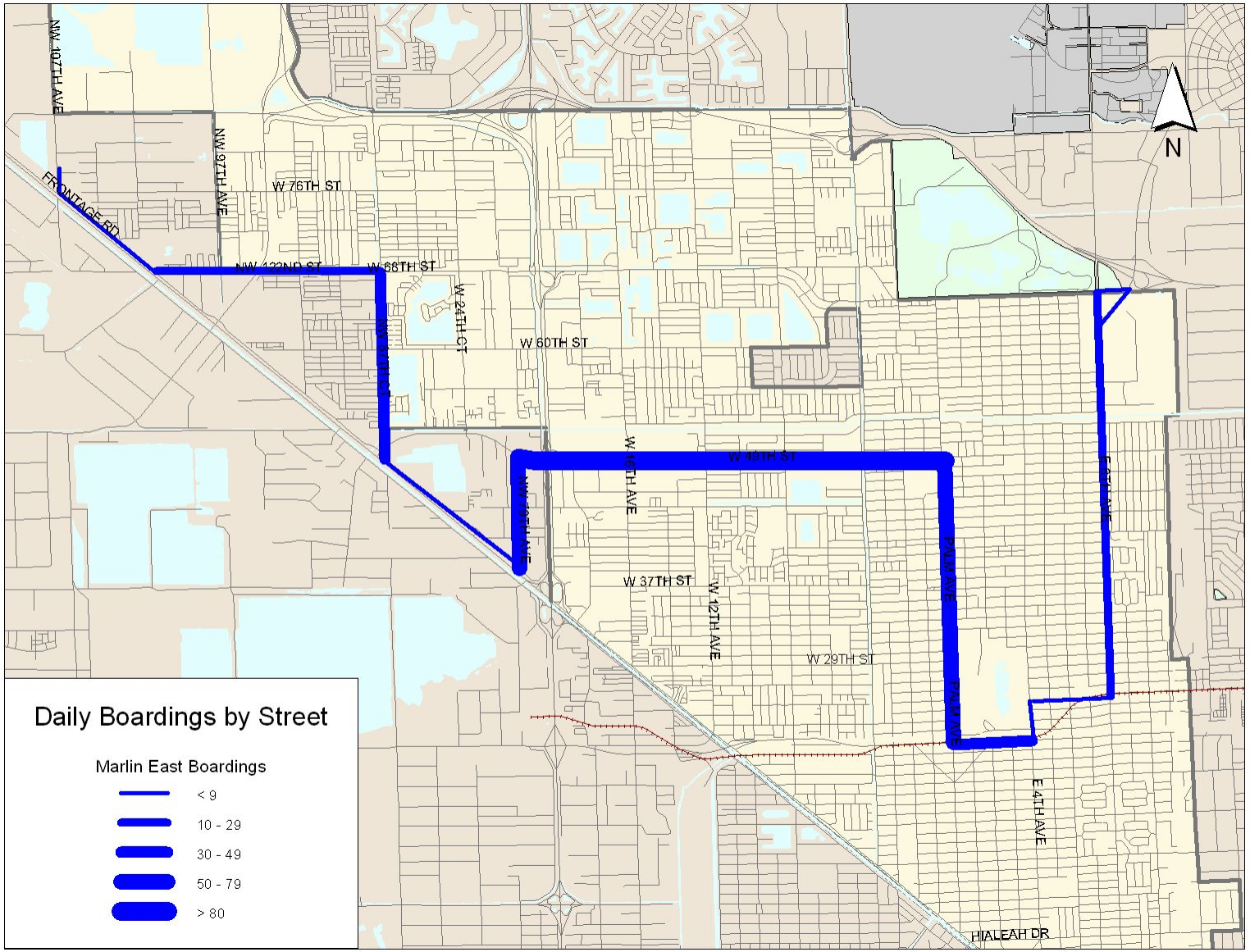
Source: The Corradino Group, Inc.

Figure 3-3
Boardings by Street
Marlin West



Source: The Corradino Group, Inc.

Figure 3-4
Boardings by Street
Marlin East



Source: The Corradino Group, Inc.

Figure 3-5
Boarding Alighting Survey Summary
Flamingo North

Flamingo North - Average Weekday Total

	Stop	On	Off
18	City Hall Loop	2	
19	Hialeah Drive	6	2
20	E. 4th Ave	61	14
21	W. 21st St - METRO	208	26
22	Palm Ave	16	11
23	W. 29th St	53	47
24	W. 12th Ave	15	24
25	W. 37th St	16	23
26	Target/Hospital Jog	20	36
27	W. 16th Ave	99	84
28	W. 60th Ave	25	63
29	W. 24th Ave	12	21
30	Palmetto Hospital Jog	28	64
31	W. 68th St	2	8
32	W. 28th Ave	3	26
33	W. 76th St	17	54
34	W. 36th Ave	10	12
Total		**593**	**515**

Source: The Corradino Group, Inc.

Figure 3-6
Boarding Alighting Survey Summary
Flamingo South

Flamingo South - Average Weekday Total

	Stop	On	Off
1	W. 36th Ave	29	
2	W. 76th St	62	4
3	W. 28th Ave	8	3
4	W. 68th St	27	13
5	Palmetto Hosp Jog	56	34
6	W. 24th Ave	52	9
7	W. 60th Ave	92	36
8	W. 16th Ave.	88	73
9	Target/Hospital Jog	22	23
10	W. 37th St	21	19
11	W. 12th Ave	4	13
12	W. 29th St	54	54
13	Palm Ave	3	10
14	W. 21st St - METRO	42	197
15	W. 4th Ave	31	42
16	Hialeah Drive	3	19
17	City Hall Loop	4	20
Total		**598**	**569**

Source: The Corradino Group, Inc.

Figure 3-7
Boarding Alighting Survey Summary
Marlin West

Marlin West - Average Weekday Total

	Stop	On	Off
47	E. 65th St Loop	7	
48	LeJeune Road	57	8
49	E. 25th St	17	0
50	E. 4th Ave	7	0
51	W. 21st St - METRO	+02	35
52	Palm Ave	81	65
53	W. 49th St/NW 103rd St	+02	+02
54	Walmart	13	89
55	Frontage Road	5	8
56	NW 87th Ave	4	27
57	W. 68th St/NW 122nd St	9	25
58	Frontage Road	3	15
Total		**462**	**448**

Source: The Corradino Group, Inc.

Figure 3-8
Boarding Alighting Survey Summary
Marlin East

Marlin East - Average Weekday Total

	Stop	On	Off
35	Frontage Road	8	
36	NW 122nd St/W. 68th St	26	3
37	NW 87th Ave	30	9
38	Frontage Road	2	0
39	Walmart	77	12
40	NW 103rd St/W. 49th St	+02	+02
41	Palm Ave	62	82
42	W. 21st St - METRO	34	+02
43	E. 4th Ave	4	8
44	E. 25th St	0	16
45	LeJeune Road	16	55
46	E. 65th St Loop	0	7
Total		**424**	**415**

Source: The Corradino Group, Inc.

Table 3-1
Time of Day Boardings Summary

Route	6 am to 9 am	9 am to 3 pm	3 pm to close (7:30 pm)
Flamingo North	172	321	100
Flamingo South	175	328	97
Marlin West	142	252	68
Marlin East	114	234	76

Source: The Corradino Group, Inc.

4. Service Options

The Hialeah Transit System (HTS) currently has a grant award through the County Grant Incentive Program (CGIP) with funds provided by the Florida Department of Transportation and a 50 percent match from the City. This will be used to increase the bus fleet and add service and begin to replace vehicles in their existing fleet. Currently, HTS has a fleet of 11 vehicles. Ten of the buses are 2002 Bluebirds (which are currently leased and which the City will own in 2009). They have an average of 250,000 to 300,000 miles per bus. HTS owns an Ultra Low Floor Bluebird bus purchased this year.

Based on input from City staff and a workshop held with representatives of the City, Miami-Dade Transit, and the Miami-Dade Metropolitan Planning Organization, the following options were defined:

- Option A: Interlining[1] the existing routes to achieve "clock-face" headways[2] to bring the headways on the routes to thirty minutes;
- Option B: Adding vehicles to the existing routes to achieve the 30-minute headways or better;
- Option C: Extending service to the proposed annexation area northwest of the City;
- Option D: Operating an express service from northwest part of the city to the Palmetto Metrorail station;
- Option E: "Short-turning"[3] on the Marlin and Flamingo in high ridership areas; and,
- Option F: Extending service to the Miami Intermodal Center (MIC).

The following discussion assesses each option and their viability given the context of the current system and resources.

4.1 Option A: Interlining

This option would involve interlining buses between the Marlin and the Flamingo routes. Examination of the routes indicates that there would be relatively little efficiencies gained from interlining due to the relatively balanced nature of the existing routes.

[1] Interlining refers to the practice of having vehicles operating one leg of a bus route and then after passing through a common transfer point operating on another leg. Sometimes, this practice can achieve efficiencies and "save a bus," thus resulting in operational savings or more frequent headways when implemented.

[2] Headways are the interval of time between transit vehicles on a transit route. "Clock face" headways indicate that the transit vehicle will pass by the stop or station at regular intervals, i.e., 15 minutes, 30 minutes, etc.

[3] "Short-turning refers to the practice of having certain buses operating on a route not completing the whole route, thus reducing headways on part of a route while either maintaining regular headways on other parts of the route if additional vehicles are added or having less frequent service on those section of the route outside the short-turn.

4.2 Option B: Adding Vehicles

Adding one vehicle to each route would allow HTS to reduce its headways on the Marlin and Flamingo and would also allow flexibility to serve new generators, such as the new senior living complex at Okeechobee Road and possibly the annexation area.

4.3 Option C: Extending Service to the Annexation Area

This option calls for extending service to the annexation area (Figure 4-1). Because of the short distance, one bus could be allowed for the extension to be provided by both routes. An interline or alternating of route trips would be scheduled so that both routes could serve the area. If a bus were added to each route, the objective of Option B (30-minute clock-face headways) could also be achieved.

4.4 Option D: Operating an Express Service from the Northwest Part of the City (Annexation Area) to the Palmetto Metrorail Station

This option (Figure 4-2) calls for development of an express route that would operate during peak hours on week days connecting the northern part of the city and the annexation to a direct route to the Metrorail station.

4.5 Option E: Short-turning on the Marlin and Flamingo

This option calls for short-turning selected trips on the Marlin and Flamingo routes (Figures 4-3a and 4-3b) to increase service frequencies in the areas with the strongest ridership. This increased frequency should increase ridership. If the option is made without adding buses, there would subsequently be lower ridership on the ends of the routes. This option is seen as a mid-day service.

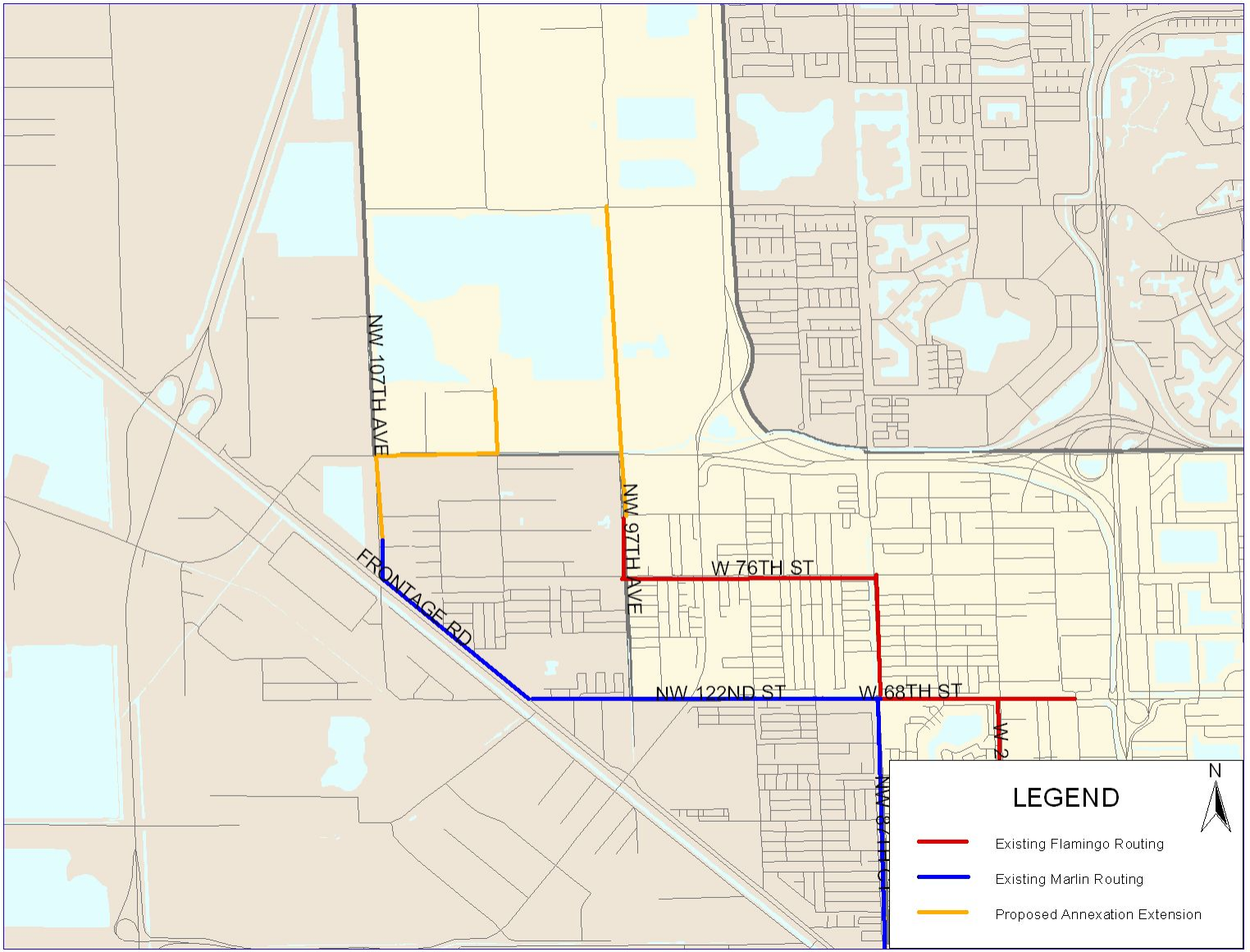
4.6 Option F: Extending Service to the Miami Intermodal Center

In this option, service is extended to the Miami Intermodal Center (MIC). This service would be provided by one bus operating on the Flamingo Route. Figure 4-4 illustrates this service.

4.7 Costs

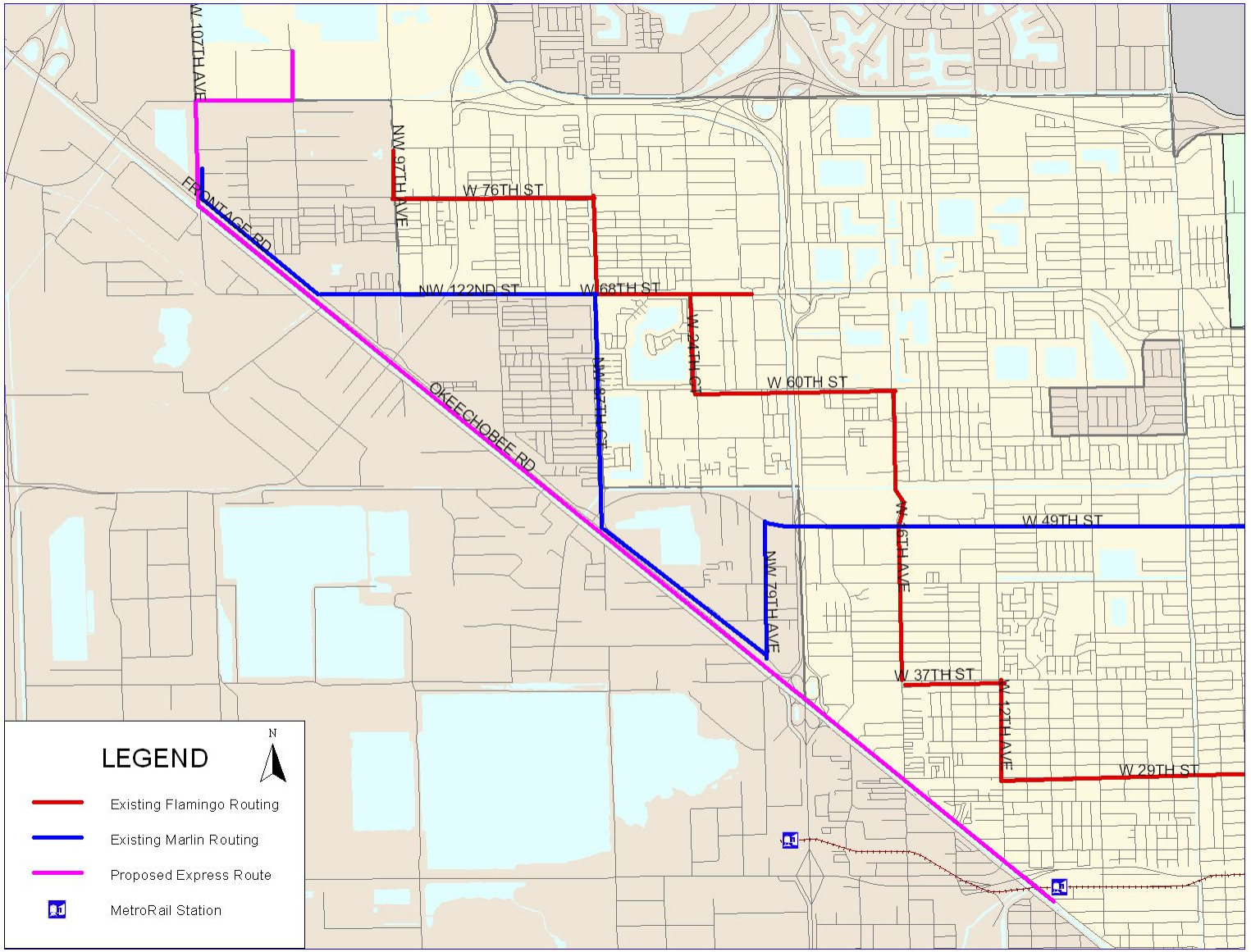
As an initial evaluation exercise, a cost analysis was done for each option. Tables 4-1 through 4-6 illustrate the various costs. Some options, such as Options A (Interlining) and E (Short turns) have no costs due to their nature. In addition, options could be combined to achieve similar goals. The merits and ability of each option to enhance the HTS transit service are discussed next.

Figure 4-1
Option C: Extension into Annexation Area



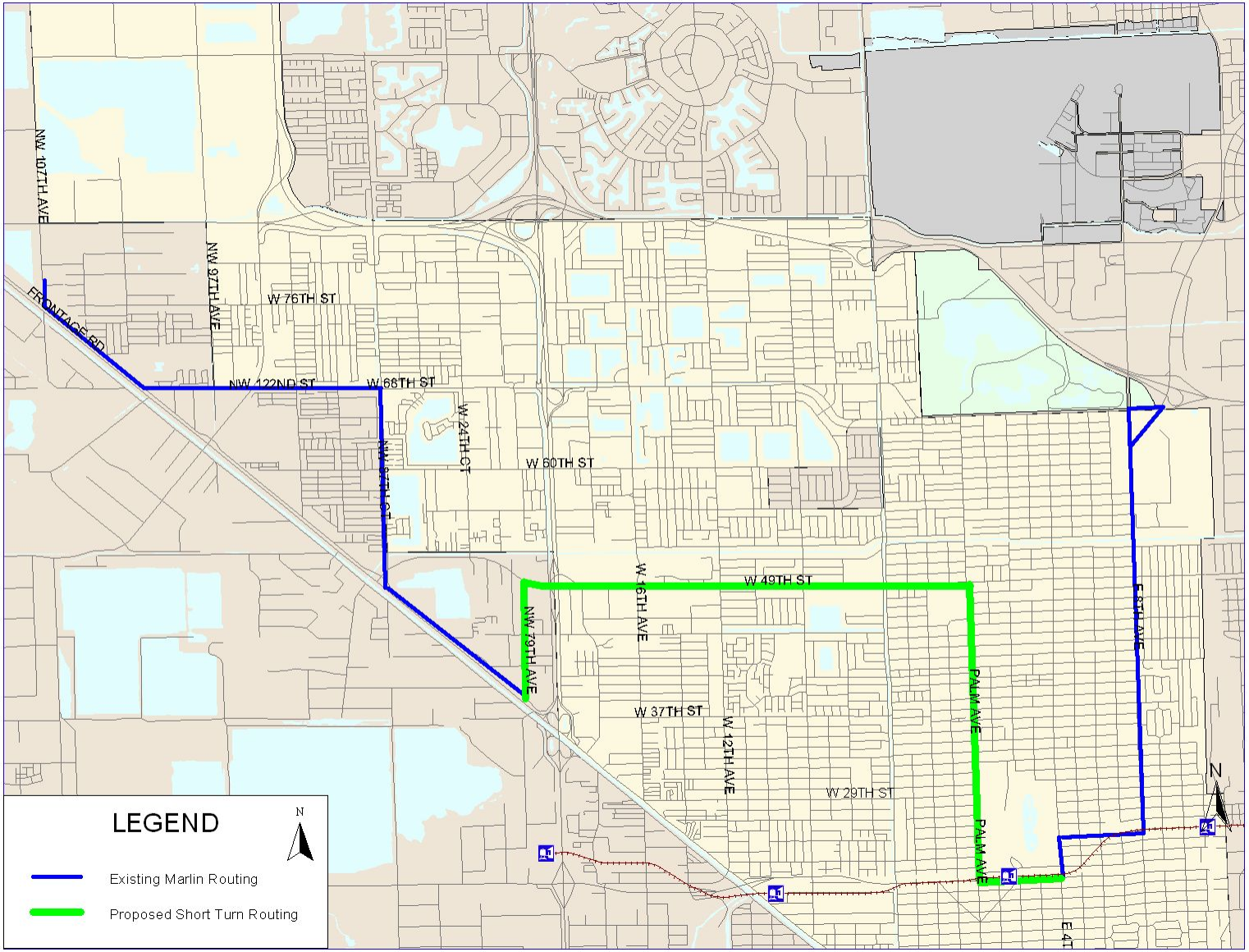
Source: The Corradino Group, Inc.

Figure 4-2
Option D: Express Service to Palmetto Metrorail Station



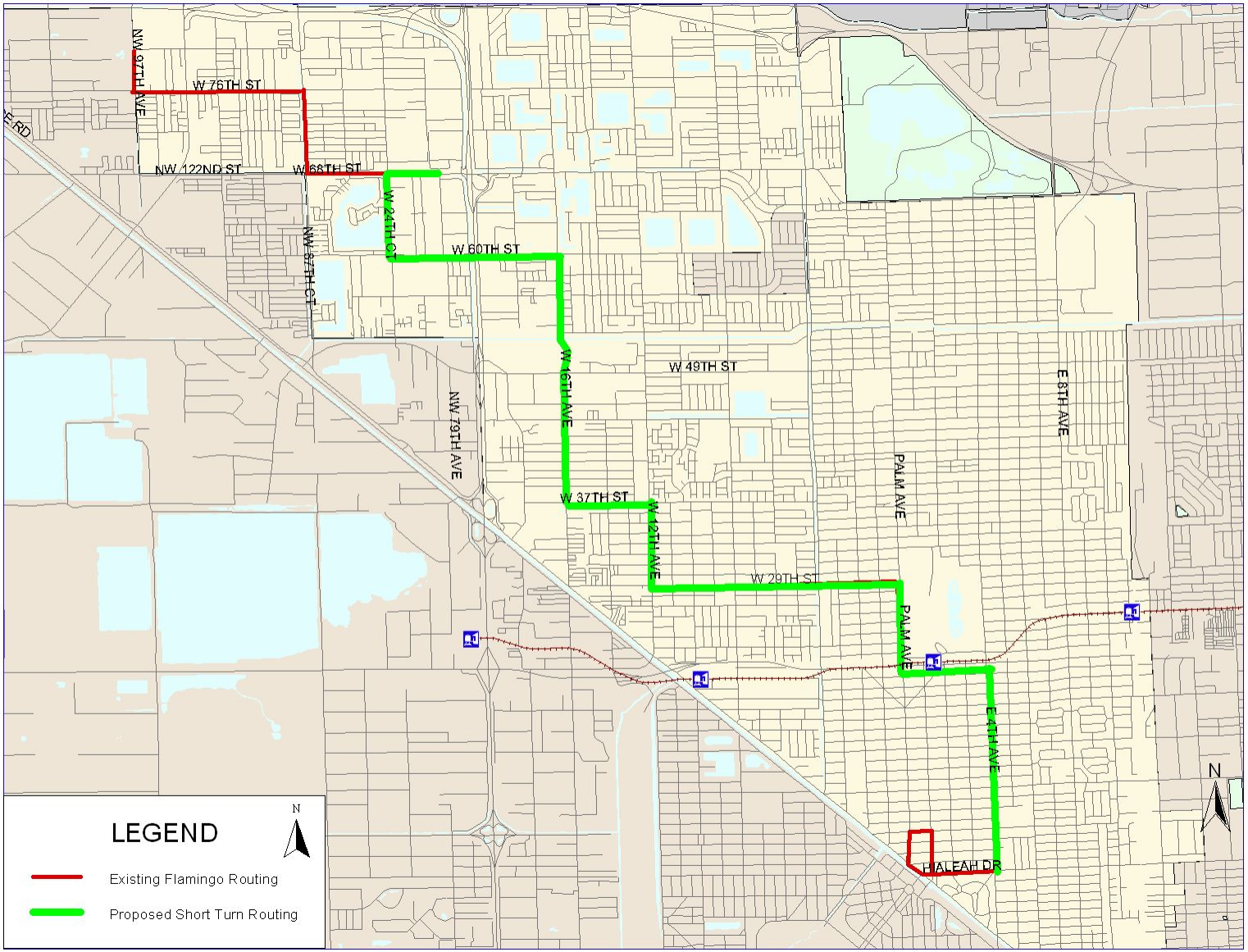
Source: The Corradino Group, Inc.

Figure 4-3a
Option E: Short Turn Operations on Marlin



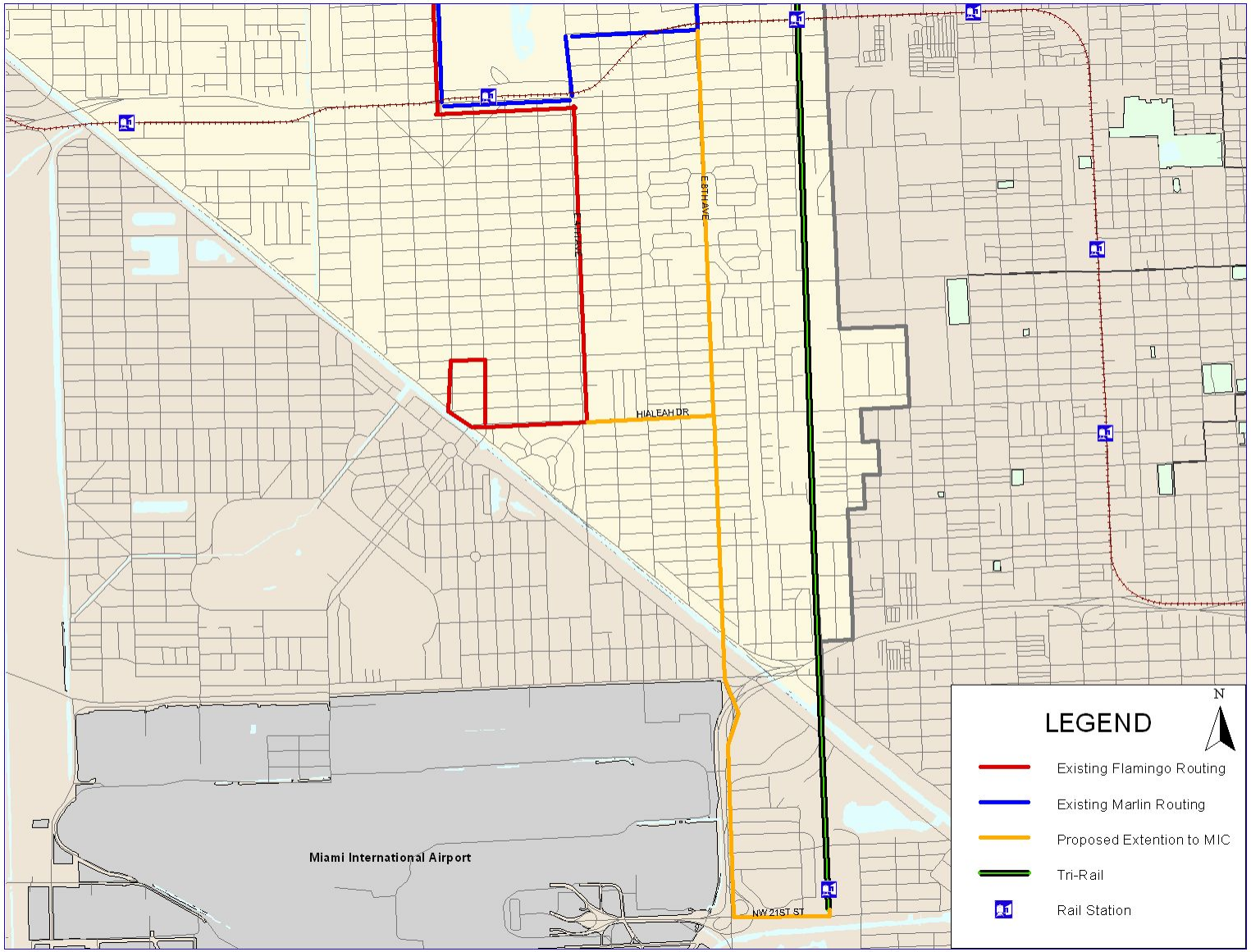
Source: The Corradino Group, Inc.

Figure 4-3b
Option E: Short Turn Operations on Flamingo



Source: The Corradino Group, Inc.

Figure 4-4
Option F: Extension to the Miami Intermodal Center



Source: The Corradino Group, Inc.

Table 4-1
Cost Analysis
Option A: Interlining

	Interlining the two existing routes in an effort to reduce layover times at the ends of the routes, improving route frequency.			
	Weekday	Saturday	Sunday	Total
Additional Annual Hours of Service:	--	--	--	--
Annual Cost:	--	--	--	--

Assumptions: Would require no additional vehicles or hours of service.

Source: The Corradino Group, Inc.

Table 4-2
Cost Analysis
Option B: Additional Vehicles on Existing Routes

	Adding an additional vehicle to the existing routes to achieve 30 minute headways or better.			
	Weekday	Saturday	Sunday	Total
Additional Annual Hours of Service:	7,020	676	312	8,008
Annual Cost:	$240,154	$23,126	$10,674	$273,954

Assumptions: Two additional vehicles would be operated daily during the current operating hours.

Source: The Corradino Group, Inc.

Table 4-3
Cost Analysis
Option C: Service to the Annexation Area

	Extending service on the two existing routes to the annexation area daily.			
	Weekday	Saturday	Sunday	Total
Additional Annual Hours of Service:	3,510	338	156	4,004
Annual Cost:	$120,077	$11,563	$5,337	$136,977

Assumptions: The equivalent of one additional vehicle per day would be required to service the extension of the existing routes into the annexation area.

Source: The Corradino Group, Inc.

Table 4-4
Cost Analysis
Option D: Express Route

	Operating an express route (one bus) from the annexation area to the MetroRail station during three morning peak hours and three afternoon peak hours, Monday through Friday.			
	Weekday	Saturday	Sunday	Total
Additional Annual Hours of Service:	1,560	--	--	1,560
Annual Cost:	$53,368	--	--	$53,368

Assumptions: Would require 6 additional hours of service on weekdays.

Source: The Corradino Group, Inc.

Table 4-5a
Cost Analysis
Option E: Marlin Route Short Turns

	Adding service to the middle (higher ridership sections) of the existing routes, while reducing service on the outlying portions (lower ridership sections) of the route.			
	Weekday	Saturday	Sunday	Total
Additional Annual Hours of Service:	--	--	--	--
Annual Cost:	--	--	--	--

Assumptions: No additional vehicles would be required. Service would be reallocated within the route to achieve improved headways on portions of the route.

Source: The Corradino Group, Inc.

Table 4-5b
Cost Analysis
Option E: Flamingo Route Short Turns

	Adding service to the middle (higher ridership sections) of the existing routes, while reducing service on the outlying portions (lower ridership sections) of the route.			
	Weekday	Saturday	Sunday	Total
Additional Annual Hours of Service:	--	--	--	--
Annual Cost:	--	--	--	--

Assumptions: No additional vehicles would be required. Service would be reallocated within the route to achieve improved headways on portions of the route.

Source: The Corradino Group, Inc.

Table 4-6
Cost Analysis
Option F: Service to the Miami Intermodal Center

	Extending service on the two existing routes daily to the Miami Intermodal Center.			
	Weekday	Saturday	Sunday	Total
Additional Annual Hours of Service:	3,510	338	156	4,004
Annual Cost:	$120,077	$11,563	$5,337	$136,977

Assumptions: The equivalent of one additional vehicle per day would be required to extend the existing routes to serve the Miami Intermodal Center.

Source: The Corradino Group, Inc.

4.8 Analysis of Options

The six options identified for service enhancement on the HTS system were examined in the following categories:

- Headway improvements
- New ridership
- Schedule reliability
- Meets new service requests
- Cost

Table 4-7 presents an assessment of each of the options based on the criteria listed above. This assessment is based on review of the system operations and continuing opportunities for development. Based on this information, the following options appear to be candidates for consideration by HTS:

- Option B – Adding Vehicles
- Option C – Extending Service to the Annexation Area
- Option D – Express Service to the Palmetto Metrorail Station
- Option E1 – Short-turn on the Marlin
- Option F – Extension of Service to the Miami Intermodal Center

The options not recommended for further consideration and the reason why they are not included are as follows:

- Option A – Because of the design of the routes and the location of their primary transfer point, efficiencies in interlining are not evident.
- Option E2 – The Flamingo is a very productive route most of its length. The relatively small amount of route that would not be short-turned reduces any real benefits.

Table 4-7
Evaluation of Service Options

Option	Headways	Ridership	Schedule	New Service	Cost
A. Route Interlining	The design of the routes does not support interlining.	No impact	No impact	No impact	There would be no cost with interlining.
B. Adding Vehicles (HTS anticipates getting two vehicles per year for five years).	Adding vehicles would allow for increased headways or service extensions. Beyond the extension to the annexation area and the MIC, service to the northeast area of the City may be considered.	Ridership on the existing routes should increase as headways improve because of the added vehicles.[a] Previous service in the northeast part of the city was not productive.	Additional vehicle would allow reliable "clock-face" headways, i.e., every thirty minutes.	Additional vehicles would allow for new service including to the annexation area and the new senior housing complex on Okeechobee Road.	$273,954 (Annual operating cost for adding two vehicles operating during current operating hours. Maintenance and fuel would be approximately $76,000 for both vehicles).
C. Extending Service to Annexation Area	Adding one bus to the Marlin route would give the system an equal number of buses and allow both routes to serve the annexation area. If no buses are added, headways would be lengthened.	Ridership will grow as the annexation area develops.	No impact.	This option would represent a new service alternative.	$136,977 (Annual operating cost for adding one vehicle. Maintenance and fuel cost would be $38,000).
D. Express Service to Palmetto Metrorail Station	This option is an express route to the Palmetto Metrorail station from the annexation area (initially possibly from the current terminus of the Flamingo). It may help headways on the Marlin and Flamingo.	The Metrorail station is the single biggest generator in the system. Service along Okeechobee to the Palmetto Station would be fast and possibly attract choice riders.	It may help schedule adherence on the Marlin and Flamingo particularly in the peak hours if it absorbs some of the morning passengers.	This would be a new type of service for HTS and would be a good test for similar types of service.	$53,368 (Annual operating cost for operating one vehicle six hours per day. Maintenance and fuel cost would be $13,000).

Table 4-7 (continued)
Evaluation of Service Options

Option	Headways	Ridership	Schedule	New Service	Cost
E1. Short Turn on the Marlin	This option would reduce in half the frequencies on the core section of the Marlin that produces the most ridership.	Ridership should increase in the short-turn areas.	This option would increase schedule reliability in the short-turn area but may have the reverse affect on the outlying areas of the route.	Not applicable.	There is no cost to this option.
E2. Short Turn on the Flamingo	Because the Flamingo is productive for much of the route, the amount of route proposed for short-turn is most of the route and there would not be much reduction in headways.	Because of the relatively low reduction in headways there would not be significant increases in ridership.	This option could increase schedule reliability in the short-turn areas.	Not applicable.	There is no cost to this option.
F. Extension to the Miami Intermodal Center	The extension as proposed is based on the Flamingo route. There could be negative impacts on headways because of heavy traffic congestion in the airport area.	Without a test, it is difficult to tell how much use this service would get. It primarily would be a service to transport workers to the airport area.	The extension as proposed is based on the Flamingo route. There could be negative impacts on the schedules because of heavy traffic congestion in the airport area.	This would be a new service.	$136,977 (Annual operating cost for adding one vehicle. Maintenance and fuel cost would be $38,000).

[a] According to the Transportation Cooperative Research Board (TCRP) Report 95: Traveler Response to Transportation System Changes, Chapter 9 – Transit Scheduling and Frequency, the elasticity (percent increase or decrease in ridership caused by a system change) is approximately -0.46, meaning for each 1.0% increase in service (measured by transit vehicle mileage or operating hours) average ridership can be expected to increase by 0.46%.

Source: The Corradino Group, Inc.

The express service to the Palmetto Metrorail Station and the extension of service to the MIC would initially be operated as a pilot program to determine actual interest. The details of this and the timing of implementation of the possible options are discussed in the next chapter.

In addition, Option C should not be restricted to extensions to the annexation area. Other areas (northeast Hialeah), the new senior center on Okeechobee, etc. may request service in the future. So, Option C during implementation would be the logical place within which these requests could be accommodated.

5. Next Steps

The Hialeah Transit System operates a well used bus service that provides essential transportation to many Hialeah residents. The system's ridership of 16 passengers per hour on average is one of the strongest of municipal transit systems in Miami-Dade County. Based on the analysis provided in Chapter 4 and the fact that the system will be acquiring ten new buses over the next five years, the following five-year implementation plan is recommended.

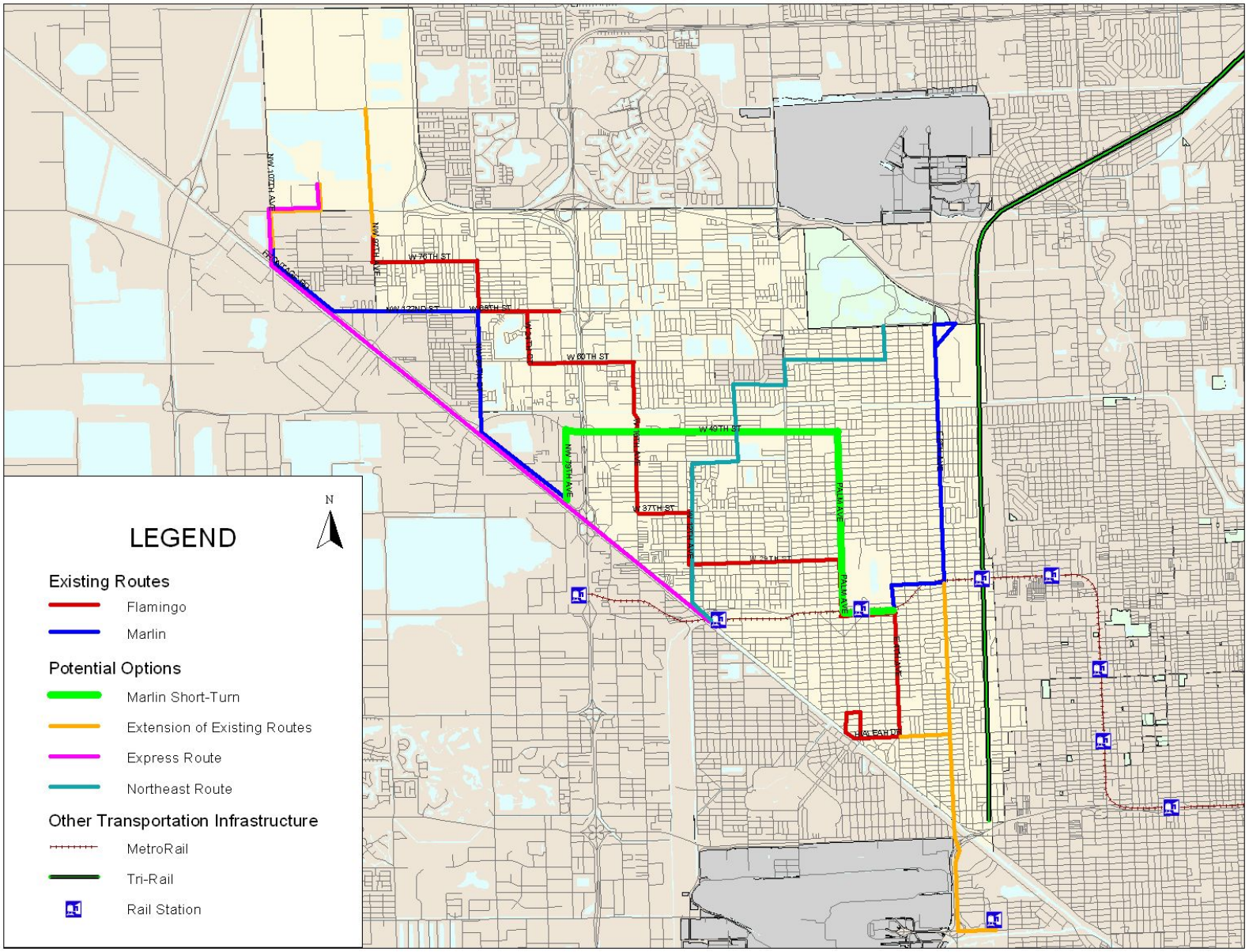
The plan presented in Table 5-1 provides the City a schedule for adding new services to the system, a replacement program for the bus fleet, and the flexibility to serve new areas and developments as they occur. The cumulative additional annual cost (operations and maintenance) of these proposals is $766,000. That would bring the HTS operating budget to nearly $2.7 million. Figure 5-1 presents the various improvements as recommended in this plan.

Table 5-1
Summary of Additional Operating Costs

Year	Option	Additional Operating Cost	Comment
2009	B. Add two vehicles C. Service extensions E1. Short-turn on the Marlin	$350,000	This option would allow for service frequencies to be improved and allow for the extension of one or both routes into the annexation area. There should be flexibility for other small extensions such as to the new senior living complex on Okeechobee Road. With the added service, conduct a pilot program of short-turns on the Marlin.
2010	B. Add two vehicles D. Express service to the Palmetto Metrorail Station	$241,000 (assumes one vehicle in full service and the other only operating weekdays in the peak).	This option calls for one bus to operate an express service to the MIC. A pilot program to extend service to northeast Hialeah should be considered using the other vehicle.
2011	B. Add two vehicles (one replacement) F. Extension to the Miami Intermodal Center (MIC)	$175,000	The extension to the MIC would not require the allocation of a "complete" bus so there could also be frequency improvements on the Flamingo supported by this vehicle.
2012	B. Add two vehicles (both replacement)	--	No service would be added; the new vehicles would replace existing vehicles that would be removed from service.
2013	B. Add two vehicles (both replacement)	--	No service would be added; the new vehicles would replace existing vehicles that would be removed from service.

Source: The Corradino Group, Inc.

Figure 5-1
Service Enhancement Options



Source: The Corradino Group, Inc.

Appendix

Boarding/Alighting Survey
Time of Day Summary

Flamingo North

6 AM to 9 AM

	Stop	On	Off
18	City Hall Loop	0	
19	Hialeah Drive	0	0
20	E. 4th Ave	18	3
21	W. 21st St - METRO	59	9
22	Palm Ave	6	3
23	W. 29th St	15	11
24	W. 12th Ave	7	8
25	W. 37th St	0	10
26	Target/Hospital Jog	5	14
27	W. 16th Ave	30	13
28	W. 60th Ave	4	6
29	W. 24th Ave	1	2
30	Palmetto Hospital Jog	8	29
31	W. 68th St	1	2
32	W. 28th Ave	0	6
33	W. 76th St	12	24
34	W. 36th Ave	6	6
Total		**172**	**146**

Flamingo North

9 AM to 3 PM

	Stop	On	Off
18	City Hall Loop	2	
19	Hialeah Drive	6	2
20	E. 4th Ave	34	10
21	W. 21st St - METRO	91	14
22	Palm Ave	10	8
23	W. 29th St	32	21
24	W. 12th Ave	6	13
25	W. 37th St	15	11
26	Target/Hospital Jog	15	20
27	W. 16th Ave	55	51
28	W. 60th Ave	14	40
29	W. 24th Ave	11	13
30	Palmetto Hospital Jog	18	34
31	W. 68th St	1	6
32	W. 28th Ave	2	13
33	W. 76th St	5	22
34	W. 36th Ave	4	2
Total		**321**	**280**

Flamingo North

3 PM to Close

	Stop	On	Off
18	City Hall Loop	0	
19	Hialeah Drive	0	
20	E. 4th Ave	9	1
21	W. 21st St - METRO	58	3
22	Palm Ave	0	
23	W. 29th St	6	15
24	W. 12th Ave	2	3
25	W. 37th St	1	2
26	Target/Hospital Jog	0	2
27	W. 16th Ave	14	20
28	W. 60th Ave	7	17
29	W. 24th Ave	0	6
30	Palmetto Hospital Jog	2	1
31	W. 68th St	0	
32	W. 28th Ave	1	7
33	W. 76th St	0	8
34	W. 36th Ave	0	4
Total		**100**	**89**

Flamingo North

	On	Off
Grand Total	593	515

Flamingo South

6 AM to 9 AM

	Stop	On	Off
1	W. 36th Ave	12	
2	W. 76th St	20	3
3	W. 28th Ave	3	1
4	W. 68th St	4	3
5	Palmetto Hosp Jog	7	10
6	W. 24th Ave	24	1
7	W. 60th Ave	37	3
8	W. 16th Ave.	22	21
9	Target/Hospital Jog	2	12
10	W. 37th St	2	5
11	W. 12th Ave	1	3
12	W. 29th St	13	14
13	Palm Ave	1	7
14	W. 21st St - METRO	9	66
15	W. 4th Ave	14	11
16	Hialeah Drive	2	7
17	City Hall Loop	2	2
Total		**175**	**169**

Flamingo South

9 AM to 3 PM

	Stop	On	Off
1	W. 36th Ave	17	
2	W. 76th St	33	1
3	W. 28th Ave	1	2
4	W. 68th St	19	10
5	Palmetto Hosp Jog	38	20
6	W. 24th Ave	23	6
7	W. 60th Ave	47	21
8	W. 16th Ave.	47	40
9	Target/Hospital Jog	18	11
10	W. 37th St	16	12
11	W. 12th Ave	3	8
12	W. 29th St	28	31
13	Palm Ave	2	3
14	W. 21st St - METRO	19	+02
15	W. 4th Ave	14	22
16	Hialeah Drive	1	8
17	City Hall Loop	2	15
Total		**328**	**311**

Flamingo South

3 PM to Close

	Stop	On	Off
1	W. 36th Ave	0	
2	W. 76th St	9	
3	W. 28th Ave	4	0
4	W. 68th St	4	
5	Palmetto Hosp Jog	11	4
6	W. 24th Ave	5	2
7	W. 60th Ave	8	12
8	W. 16th Ave.	21	12
9	Target/Hospital Jog	2	
10	W. 37th St	3	2
11	W. 12th Ave	0	2
12	W. 29th St	13	9
13	Palm Ave	0	0
14	W. 21st St - METRO	14	32
15	W. 4th Ave	3	9
16	Hialeah Drive	0	4
17	City Hall Loop	0	2
Total		**97**	**90**

Flamingo South

	On	Off
Grand Total	600	570

Marlin West

6 AM to 9 AM

	Stop	On	Off
47	E. 65th St Loop	2	
48	LeJeune Road	16	1
49	E. 25th St	4	0
50	E. 4th Ave	2	0
51	W. 21st St - METRO	29	12
52	Palm Ave	41	21
53	W. 49th St/NW 103rd St	38	51
54	Walmart	2	35
55	Frontage Road	1	3
56	NW 87th Ave	2	6
57	W. 68th St/NW 122nd St	3	7
58	Frontage Road	2	2
Total		**142**	**138**

Marlin West

9 AM to 3 PM

	Stop	On	Off
47	E. 65th St Loop	2	
48	LeJeune Road	34	6
49	E. 25th St	11	0
50	E. 4th Ave	4	0
51	W. 21st St - METRO	56	19
52	Palm Ave	32	30
53	W. 49th St/NW 103rd St	92	+02
54	Walmart	10	49
55	Frontage Road	3	5
56	NW 87th Ave	2	15
57	W. 68th St/NW 122nd St	5	11
58	Frontage Road	1	5
Total		**252**	**245**

Marlin West

3 PM to Close

	Stop	On	Off
47	E. 65th St Loop	3	
48	LeJeune Road	7	1
49	E. 25th St	2	0
50	E. 4th Ave	1	0
51	W. 21st St - METRO	26	4
52	Palm Ave	8	14
53	W. 49th St/NW 103rd St	18	20
54	Walmart	1	5
55	Frontage Road	1	0
56	NW 87th Ave	0	6
57	W. 68th St/NW 122nd St	1	7
58	Frontage Road	0	8
Total		**68**	**65**

Marlin West

	On	Off
Grand Total	462	448

Marlin East

6 AM to 9 AM

	Stop	On	Off
35	Frontage Road	4	
36	NW 122nd St/W. 68th St	16	0
37	NW 87th Ave	13	4
38	Frontage Road	0	0
39	Walmart	6	5
40	NW 103rd St/W. 49th St	30	22
41	Palm Ave	31	17
42	W. 21st St - METRO	8	36
43	E. 4th Ave	2	3
44	E. 25th St	0	5
45	LeJeune Road	4	17
46	E. 65th St Loop	0	1
Total		**114**	**110**

Marlin East

9 AM to 3 PM

	Stop	On	Off
35	Frontage Road	3	
36	NW 122nd St/W. 68th St	9	1
37	NW 87th Ave	15	5
38	Frontage Road	2	0
39	Walmart	52	7
40	NW 103rd St/W. 49th St	99	64
41	Palm Ave	27	49
42	W. 21st St - METRO	14	64
43	E. 4th Ave	2	5
44	E. 25th St	0	8
45	LeJeune Road	11	27
46	E. 65th St Loop	0	1
Total		**234**	**231**

Marlin East

3 PM to Close

	Stop	On	Off
35	Frontage Road	1	
36	NW 122nd St/W. 68th St	1	2
37	NW 87th Ave	2	0
38	Frontage Road	0	0
39	Walmart	19	0
40	NW 103rd St/W. 49th St	36	15
41	Palm Ave	4	16
42	W. 21st St - METRO	12	22
43	E. 4th Ave	0	0
44	E. 25th St	0	3
45	LeJeune Road	1	11
46	E. 65th St Loop	0	5
Total		**76**	**74**

Marlin East

	On	Off
Grand Total	424	415