DRAFT

Miami Civic Center Circulator Study

Submitted to:

City of Miami and The Miami Partnership

Submitted by:

THE CORRADINO GROUP, INC.

February 2006

Executive Summary

In 2004, the City of Miami and the Miami Partnership initiated a series of studies known collectively as the Civic Center Implementation Plan. The impetus for these studies came from an Economic Development Master Plan prepared for The Miami Partnership. The Civic Center Implementation Plan encompasses studies of a transit circulator, way-finding, gateways, and streetscape design. This executive summary and report present the results of Phase I of the Civic Center Circulator Study, which began in the fall of 2005.

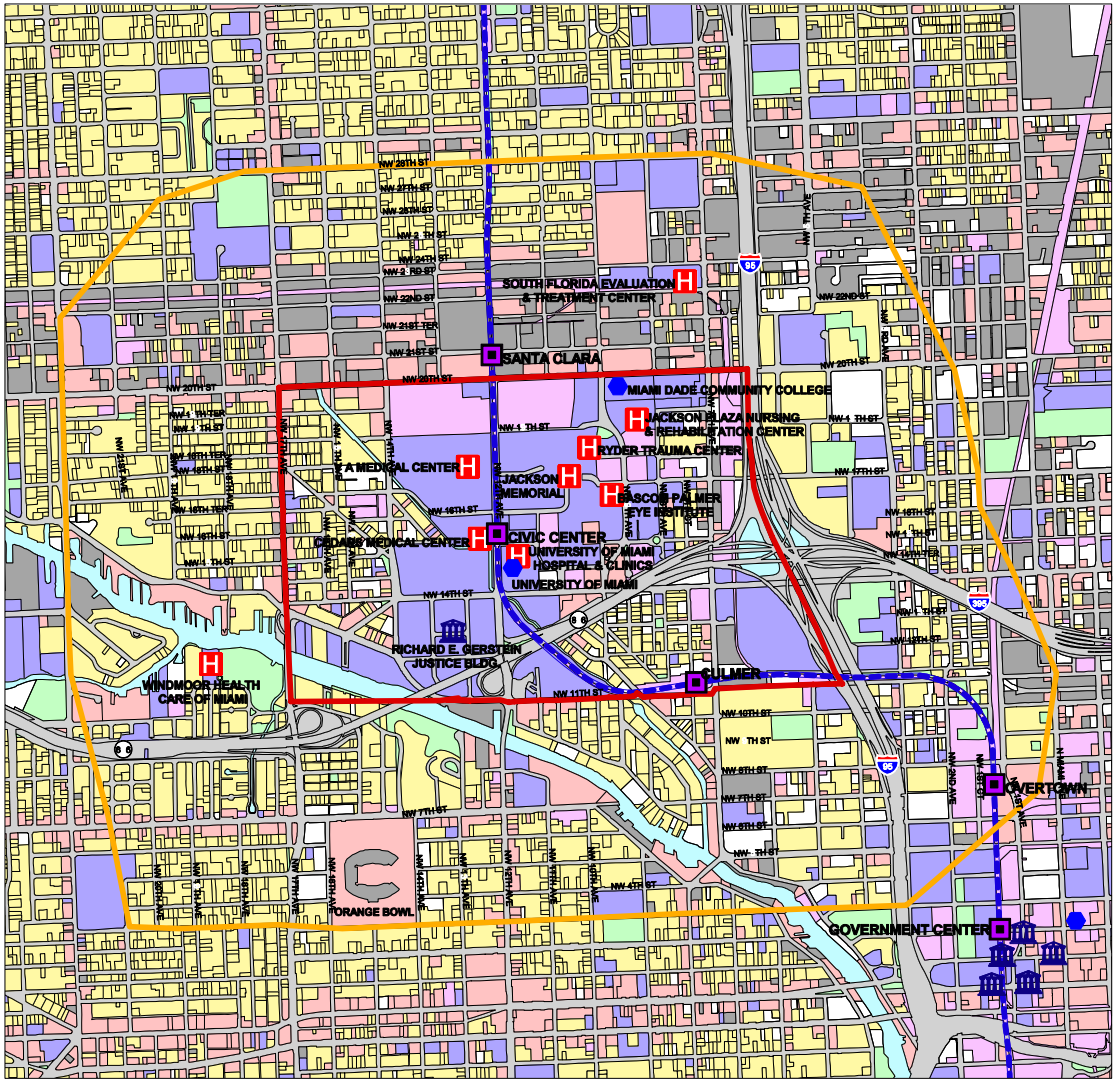
The planning process included workshops with representatives of stakeholders in the Civic Center study area, shown in Figure S-1, a survey of people in the study area, and meetings with agencies and organizations. As a result of this work, it was determined that development of a circulator service was necessary and would be used. A consensus alternative was identified. An aerial view of this alternative is presented in Figure S-2. The two-way loop is perceived as a bus or rubber-tired trolley vehicle operating on public right-of-way. The "tram" would be similar to those found in Disney World and Key West and operate principally on service drives and pedestrian pathways. Figure S-3 shows vehicle types that may be considered.

There are many concurrent activities that were considered during the planning for the circulator. Major developments include more than 1.3 million square feet of new construction within the next five years by the University of Miami. In addition, a proposed 1.4-million-square-foot Bio-science Center on property obtained in a cooperative land swap involving the University, the state, the City of Miami, and Camillus House could provide more than 5,000 new jobs. In addition, the City of Miami has been planning a streetcar to operate in downtown. Current plans call for it to extend its routing to the Civic Center for a maintenance facility and to provide linkage between the Civic Center and downtown. Finally, as part of the People's Transportation Plan (PTP), Miami-Dade Transit is engaged in a significant expansion and realignment of bus services. As part of a Comprehensive Bus Operations Analysis performed in 2004, there was a recommendation for a Civic Center circulator that would evolve from the existing Route 12. Funds have been identified and placed in the County's Transit Development Program (TDP) for this circulator.

On December 17, 2006, representatives of The Corradino Group conducted a survey of people within the Civic Center area to assess the feasibility and demand for a circulator service. Approximately 425 surveys were collected. They were collected by intercept interviews conducted at locations throughout the area. The key findings include:

- …about 24 percent of the respondents were going to the courts, while almost 36 percent were going to hospital facilities.
- More than 76 percent of the respondents thought the Civic Center needed some type of shuttle service.

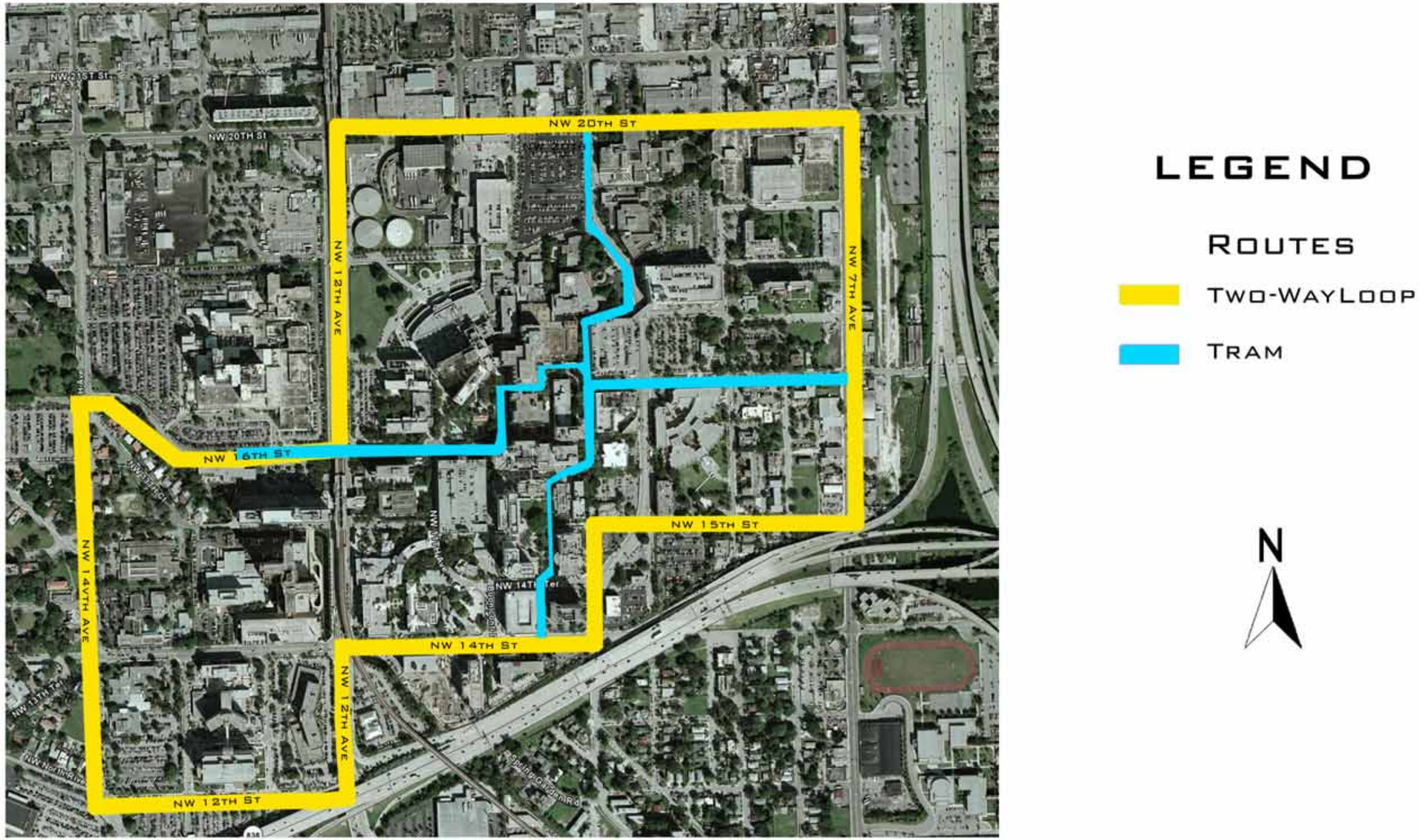
Figure S-1
Study Area



Source: The Corradino Group, Inc.

CORRADINO

Figure S-2
Consensus Alternative
Miami Civic Center Circulator Study



Source: The Corradino Group, Inc.

Figure S-3
Examples of Circulator Types

Source: The Corradino Group, Inc.

- In response to a question of whether people would ride a circulator, about 68 percent said they would.
- …41 percent reported that they would use the service for trips to and from parking.
- Approximately 43 percent believed the circulator should operate during normal business hours.
- About 50 percent of the respondents thought the service should operate at seven minutes or less frequency.

In summary, it seems clear that based on the survey results, respondents think a circulator is needed and a majority would use the service. While like any survey, this survey has limitations, it is the consultant's opinion that the results accurately reflect a consensus of opinion of people in the area. Workshop participants and other discussions held for this project affirm this.

A key element of the planning process was the participation of Civic Center stakeholders in two workshops facilitated by the consultant team. The workshops were sponsored by the City of Miami and the Miami Partnership and held on September 14, 2005, and November 17, 2005.

Representatives of major institutional employers, commercial and neighborhood associations, and government organizations were invited to participate in the workshops.

The goals of the workshops were to: a) establish the need for a circulator and the type of service that would satisfy that need; and, b) determine the optimal routing for the circulator. As a result of the work conducted in the first workshop, it was clear that the need for the circulator revolved around parking and alleviating traffic congestion where possible. Developing a supporting infrastructure to facilitate the attractiveness and use of Metrorail was of primary importance. Finally, providing local connectivity among buildings and uses in the campus and improving way-finding and the ability of people and visitors to get around were seen as key.

At the second workshop, two alternatives were presented to the participants. These alternatives included representative route and operational configurations that addressed the needs identified in the first workshop. Both alternatives featured two distinct operational elements: 1) a more traditional bus-type circulator operating on public right-of-way; and, 2) a tram similar to those found in Disneyworld and Key West that carries trailers on which people would ride. The trams would operate primarily on service drives and pedestrian pathways.

The consensus alternative was a combination of the traditional circulator loop with two tram options, one operating north-south and the other east-west. Tables S-1 through S-3 show information on the vehicles required, capital costs, and operational costs of each alternative operating at varying headways. These costs can be shifted up or down by making changes in service span (i.e., don't operate the same service all day long), frequency, or days operated.

Capital Costs (assumed to operate at ten-minute headways on weekdays; reducing the headway to five minutes or greater could increase the vehicle costs by 100%)

Traditional Trolley Circulators -	$1,200,000
Trams -	$48,000
Physical Improvements/Sidewalk Pavement Enhancements -	$200,000
Contingency -	$144,800
TOTAL CAPITAL -	$1,592,800

Operating Costs (Assumes 10-minute headways on weekdays and 10-minute or greater headways on weekends)

Two-way loop -	$1,051,200
Trams -	$613,200
TOTAL ANNUAL OPERATING -	$1,664,400

Table S-1
Civic Center Circulator Alternatives
Vehicles Required

Alternative/Route	Round Trip		Vehicles Required Headway		
	Length (miles)[1]	Length (minutes)[2]	5 Minutes	10 Minutes	15 Minutes
Alternative 1					
Two-way Loop[3]	2.9	19	8	4	4
Tram	1.2	16	4	2	2
Alternative 2					
Connector A	1.8	12	3	2	1
Connector B	2.4	16	4	2	2
Connector C	3.0	20	4	2	2
Consensus Alternative					
Two-way Loop[3]	2.9	19	8	4	4
Tram - north/south	1.2	16	4	2	2
Tram - east/west	1.3	17	4	2	2

[1]Calculated from the GIS.
[2]Assumed an average speed of 10 mph for the Loop and Connector routes. An average speed of 5 mph is assumed for the Tram. An additional 10 percent has been added on for breaks and turn-around time.
[3]Vehicle and daily hours have been doubled to reflect a two-way route
Source: The Corradino Group, Inc.

Table S-2
Capital Cost

Alternative/Route	Vehicles Required Headway			Cost (8 Pass. Trams only) Headway			Cost (Trams w/15 pass Trailer) Headway		
	5 Minutes	10 Minutes	15 Minutes	5 Minutes	10 Minutes	15 Minutes	5 Minutes	10 Minutes	15 Minutes
Alternative 1									
Two-way Loop[3]	8	4	4	$2,400,000	$1,200,000	$1,200,000	$2,400,000	$1,200,000	$1,200,000
Tram	4	2	2	$48,000	$24,000	$24,000	$96,000	$48,000	$48,000
Alternative 2									
Connector A	3	2	1	$900,000	$600,000	$300,000	$900,000	$600,000	$300,000
Connector B	4	2	2	$1,200,000	$600,000	$600,000	$1,200,000	$600,000	$600,000
Connector C	4	2	2	$1,200,000	$600,000	$600,000	$1,200,000	$600,000	$600,000
Consensus Alternative									
Two-way Loop3	8	4	4	$2,400,000	$1,200,000	$1,200,000	$2,400,000	$1,200,000	$1,200,000
Tram - north/south	4	2	2	$48,000	$24,000	$24,000	$96,000	$48,000	$48,000
Tram - east/west	4	2	2	$48,000	$24,000	$24,000	$96,000	$48,000	$48,000

Assumptions:
1. Two-way Loop and Connectors are operated with low-floor trolleys at $300,000 per vehicle.
2. The trams are eight-passenger "limousine" golf carts at $12,000 per vehicle.
3. The trailers accommodate 15 passengers at $12,000 per trailer.
Source: The Corradino Group, Inc.

Table S-3
Civic Center Circulator Alternatives
Annual Operating Cost

Alternative/Route	Weekdays Headway 5 Minutes	Weekdays Headway 10 Minutes	Weekdays Headway 15 Minutes	Weekdays & Weekends Headway 5 Minutes	Weekdays & Weekends Headway 10 Minutes	Weekdays & Weekends Headway 15 Minutes
Alternative 1						
Two-way Loop	$1,497,600	$ 748,800	$ 748,800	$2,102,400	$1,051,200	$1,051,200
Tram	$ 436,800	$ 218,400	$ 218,400	$ 436,800	$ 218,400	$ 218,400
Alternative 2						
Connector A	$ 561,600	$ 374,400	$ 187,200	$ 788,400	$ 525,600	$ 262,800
Connector B	$ 748,800	$ 374,400	$ 374,400	$1,051,200	$ 525,600	$ 525,600
Connector C	$ 748,800	$ 374,400	$ 374,400	$1,051,200	$ 525,600	$ 525,600
Consensus Alternative						
Two-way Loop	$1,497,600	$ 748,800	$ 748,800	$2,102,400	$1,051,200	$1,051,200
Tram - north/south	$ 436,800	$ 218,400	$ 218,400	$ 613,200	$ 306,600	$ 306,600
Tram - east/west	$ 436,800	$ 218,400	$ 218,400	$ 613,200	$ 306,600	$ 306,600

Assumptions:
1. Operating cost per hour per vehicle is $60 for all routes with the exception of the tram which is assumed to have an hourly operating cost of $35.
2. Routes are operated 12 hours daily.
Source: The Corradino Group, Inc.

The input from the stakeholders and the results of the survey indicate a consensus that a circulator service in the Civic Center area is needed and would be used. Therefore, it is recommended that the City and the Miami Partnership continue to pursue implementation. A second phase of this planning effort is required to "fine tune" the plan, determine physical issues that may affect the tram service, and resolve other considerations. From the standpoint of funding, discussions held with Miami-Dade Transit (MDT) and the Florida Department of Transportation (FDOT) have all indicated that funding could be obtained through several sources including, but not limited to, traditional transit funding through Miami-Dade County, FDOT's Service Development Program, and other local and private participation elements. It is believed that through these funding sources, and support of the private sector components of the Civic Center area, a viable transit circulator can be established that enhances the transportation opportunities in the Civic Center, contributes to alleviation of parking and traffic concerns, and supports use of Metrorail and other non-single occupancy vehicles as primary transportation options for employees, residents of, and visitors to, the Civic Center.

This report represents Phase I in the circulator study process. The next phase of the circulator planning process will be focused upon refining the proposed routes and services, resolving operational issues, and identifying a financial plan. That work is anticipated to begin in spring 2006.

CORRADINO

Table of Contents

CORRADINO

List of Figures

CORRADINO

List of Tables

1. Introduction

The Miami Civic Center area includes hospitals, public facilities, and educational facilities with smaller numbers of commercial and residential activities. More than 26,000 people work at the various employers in the area. Counting visitors, patients, and people using the courts complex, it is estimated that 100,000 people a day travel to and through the Civic Center area.

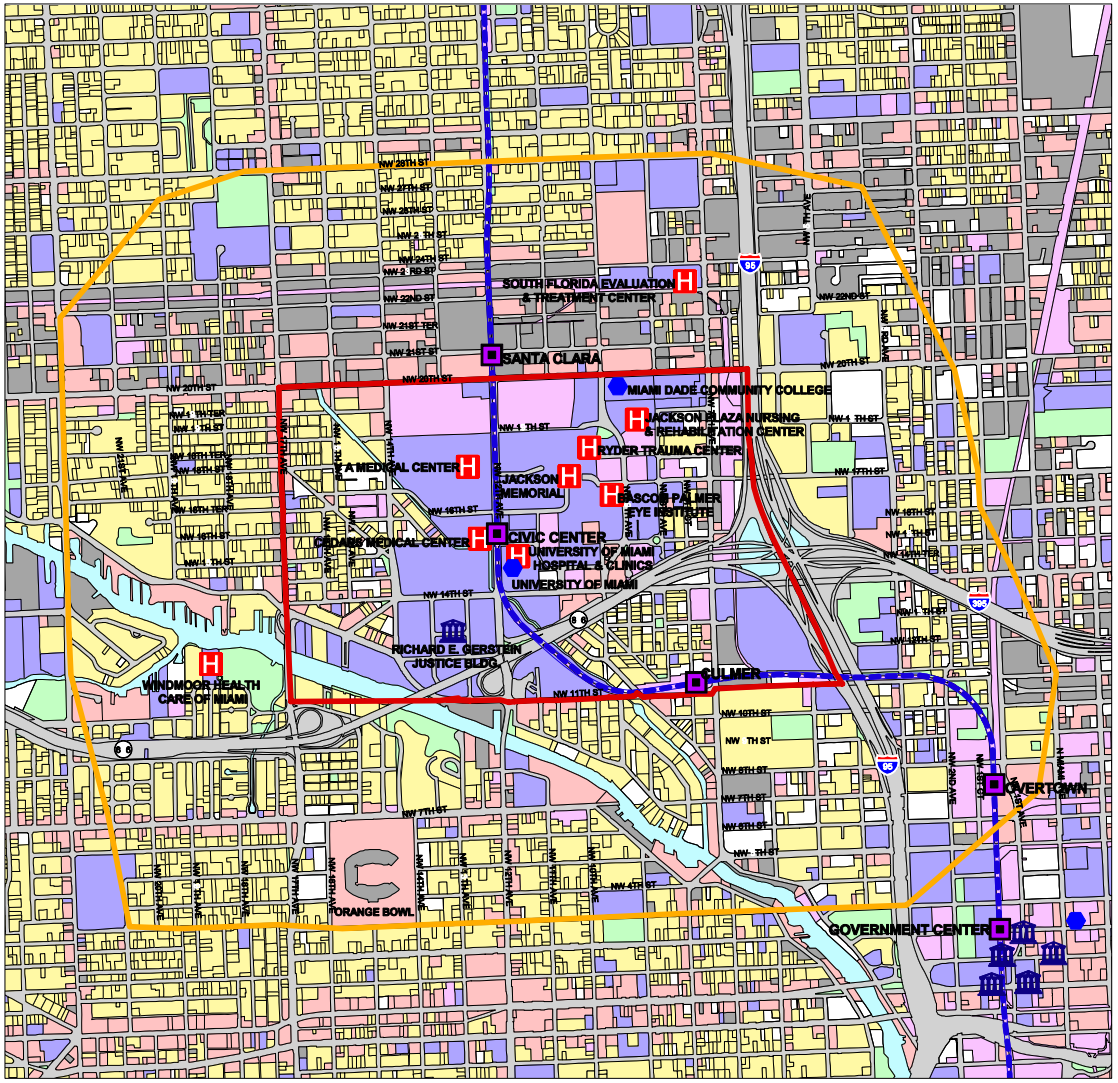
The Civic Center area is located just south and west of downtown Miami and is bordered roughly by I-95 on the east, SR 836 on the south, and NW 20th Street on the north, and NW 17th Avenue on the west. The overall impact area for this study is shown in Figure 1-1. However, the primary area of focus is the core area including the Veterans Administration (VA) Hospital, Jackson Memorial Hospital, the Federal and County Courthouses, Miami-Dade Community College, and the Lindsay Hopkins Technical Institute. Public transportation is provided by the Miami-Dade Transit (MDT) bus and Metrorail, with the Civic Center station being the focal point of most trips coming to the area.

As part of an economic development plan prepared by the Miami Partnership, the planning and implementation of a circulator system to serve the Civic Center area was seen as an important component. This study, which is jointly sponsored by the City of Miami and the Miami Partnership, is intended to determine the feasibility of a Civic Center circulator, the type of operation that would best meet the needs of the area, and a plan for implementation, if determined feasible.

There are many concurrent activities that impact the planning for the circulator. Major developments include more than 1.3 million square feet of new construction within the next five years by the University of Miami. In addition, a proposed 1.4-million-square-foot Bio-science Center on property obtained in a cooperative land swap involving the University, the state, the City of Miami, and Camillus House could provide more than 5,000 new jobs. In addition, the City of Miami has been planning a streetcar to operate in downtown. Current plans call for it to extend its routing to the Civic Center for a maintenance facility and to provide linkage between the Civic Center and downtown. Finally, as part of the People's Transportation Plan (PTP), Miami-Dade Transit is engaged in a significant expansion and realignment of bus services. As part of a Comprehensive Bus Operations Analysis performed in 2004, there was a recommendation for a Civic Center circulator that would evolve from the existing Route 12. Funds have been identified and placed in the County's Transit Development Program (TDP) for this circulator.

This report is the product of a two-phase planning effort. This first phase was conducted to establish the need for and feasibility of a circulator. The report has been prepared in cooperation with Miami Partnership representatives and stakeholders Task Force. The Task Force convened in workshop environments to identify needs, discuss alternatives, and achieve consensus on a recommended action. The study was initiated in September 2005. Final presentation of the circulator study results to The Miami Partnership is anticipated in early 2006.

Figure 1-1
Study Area



Source: The Corradino Group, Inc.

2. Data Collection/Needs Assessment

This section presents an array of information collected during the study process. All data presented in the following graphics represent the best available information during the data collection period, roughly October – November 2005. Information collected was presented to and reviewed by workshop participants convened for the study and edited and modified to reflect their comments.

2.1 Pictorial Profile of Study Area

As part of the study effort, the consultant compiled a photographic profile of the various subareas that make up the general Civic Center study area as defined in Figure 1-1. A selection of these photographs along with commentary about their relevance to the planning effort is found in Appendix A.

2.2 Previous Studies

A number of studies and projects have been conducted over the past two decades looking at Civic Center transportation issues. These include the existence of a Transportation Management Association (TMA) in the early 1990s that implemented and operated a circulator that was eventually stopped for a variety of reasons. To understand work that had been done previously affecting this study, appropriate organizations in Miami-Dade County/Southeast Florida were contacted. Table 2-1 presents the studies that have been identified.

The general consensus of the workshop participants, after discussion of these findings and other historical knowledge was presented, was that the discussion of, and need for, a transit circulator to get people around the Civic Center area was nothing new. In the early 1990s, the existing Transportation Management Association (TMA) implemented a circulator that operated for about six months. But that was more than a decade ago. And, the reasons that were in force then have only magnified – traffic congestion, parking issues, the sheer volume of people coming to and working in the area, future development, cost of gasoline, new residential development, etc. Therefore, consideration of a circulator option that can effectively move people around the area with a concurrent reduction in dependence on cars is warranted. In addition, now more than ever in the era of the PTP, every effort must be made to give employees, visitors, and residents of the area the capability to go places by means of other than auto. In many environments trying to promote the use of transit, a key problem becomes “the last mile” or “last quarter mile.” The Civic Center circulator is seen as an opportunity to address that issue and provide ancillary benefits. For example, the circulator would provide new visitors to the area a safe, convenient, reliable way to navigate through the often confusing pedestrian and vehicular access routes.

Table 2-1
Previous Relevant Studies

Organization	Studies or Projects
South Florida Regional Transportation Authority	No plans or previous studies.
Miami-Dade County Metropolitan Planning Organization (MPO)	There are several projects listed in the Transportation Improvement Program. These are the replacement of a moveable span bridge over the Miami River at NW 12th Ave (2005); replacement of a moveable span bridge at NW 5th St. (2008); pavement reconstruction from U.S. 1 to NW 11th St. on I-95 (2006); and, enhanced HOV lane enforcement along I95 (2005).
Florida Department of Transportation	No plans or previous studies.
Miami-Dade Public Works Department	No plans or previous studies.
Miami-Dade Transit	Over the years, MDT has conducted local and regional studies that have some relevance to the Civic Center. The most relevant is the Comprehensive Bus Operations Analysis (CBOA) conducted by the Center for Urban Transportation Research (CUTR) in 2004. A recommendation in the CBOA was to realign the Route 12 (essentially eliminating deviations in the Civic Center). At the same time, a new civic center circulator would be developed. Funding for this was placed in the MDT's 2010 Transit Development Plan (TDP)
Miami-Dade Department of Planning and Zoning	Design Study Pamphlets for Civic Center and Santa Clara Stations (1985)
Miami-Dade Department of Environmental Resource Management	No plans or previous studies.
Civic Center Transportation Management Organization	No longer in existence. Three reports exist. These are the Civic Center Bicycle and Pedestrian Study (1994); Civic Center TMO Commuter Characteristics Study (1997); and, Civic Center TMO Pedestrian Amenities and Safety Study (1994).
City of Miami Capital Improvement Program (CIP)	The City's CIP program includes the City of Miami Streetcar Project, which is envisioned to be a modern electric streetcar system to connect retail, residential, educational, and entertainment centers.
South Florida Commuter Services	Currently Commuter Services is working with several Civic Center area groups. These include Jackson Memorial Hospital with five vanpools, the VA Hospital with 28 vanpools, and recent information gathering and presentations at the Miami-Dade Health Department, Miami Dade College Medical Campus, and the Public Defenders Office. In addition, a recent presentation was conducted for the Miami Partnership with approximately 15 Civic Center stakeholders present.

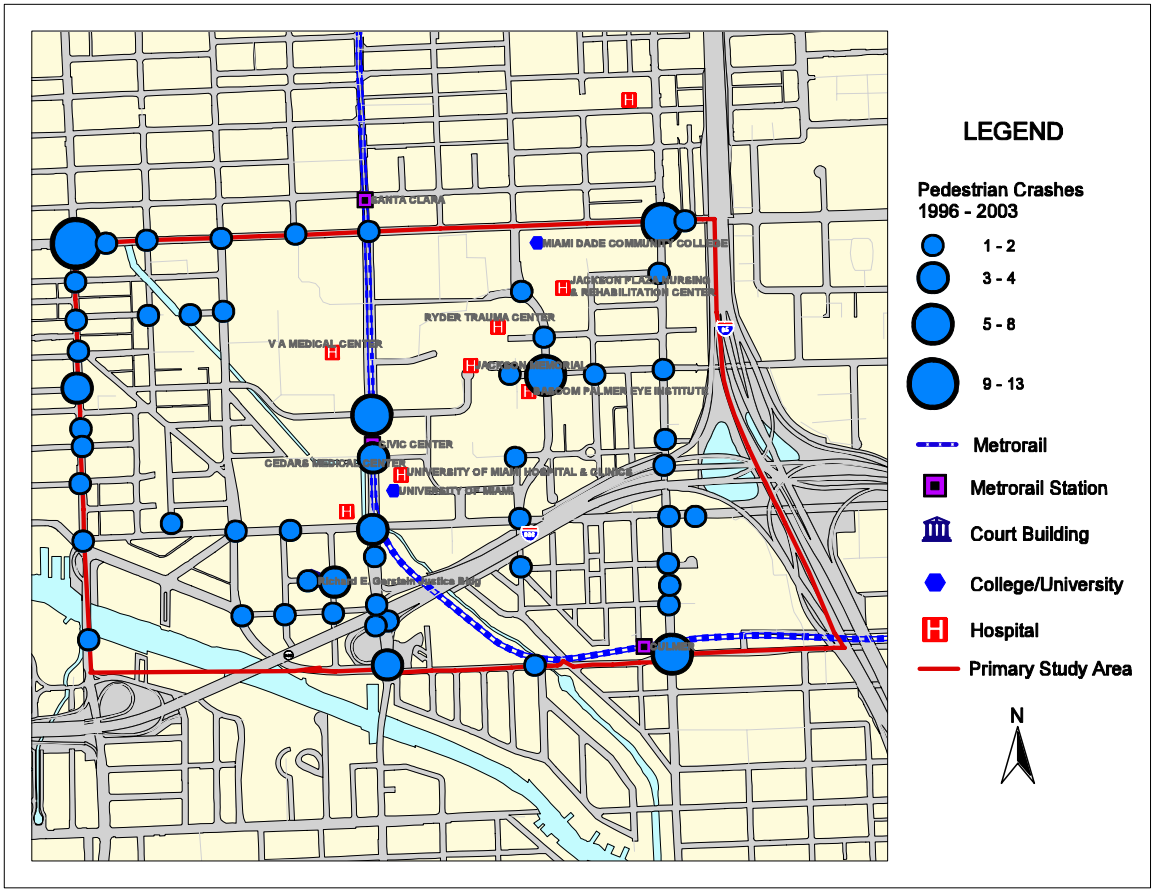
Source: The Corradino Group, Inc.

2.3 Historical Pedestrian and Bicycle Crashes

Figures 2-1 and 2-2 present information on pedestrian and bicycle crashes[1] that occurred over a three year period in the Civic Center area. As can be seen, the crashes are fairly well distributed over the entire area with some concentrations at locations such as 7th Avenue and 20th Street. 20th Street and 27th Avenue are of most relevance to this study, new 16th Street and 12th Avenue are in the heart of the study area. The data show that in the vicinity of the core of the study area, there were about 20 pedestrian crashes in the seven-year period. In the total study area shown in Figure 2-1, there were 109 pedestrian crashes inventoried.

A circulator service would likely reduce the number of pedestrian crashes, as it would reduce the amount of pedestrian activities and would likely be used as opposed to walking in key areas such as the crossing of 12th Avenue from the VA Hospital to Jackson Memorial.

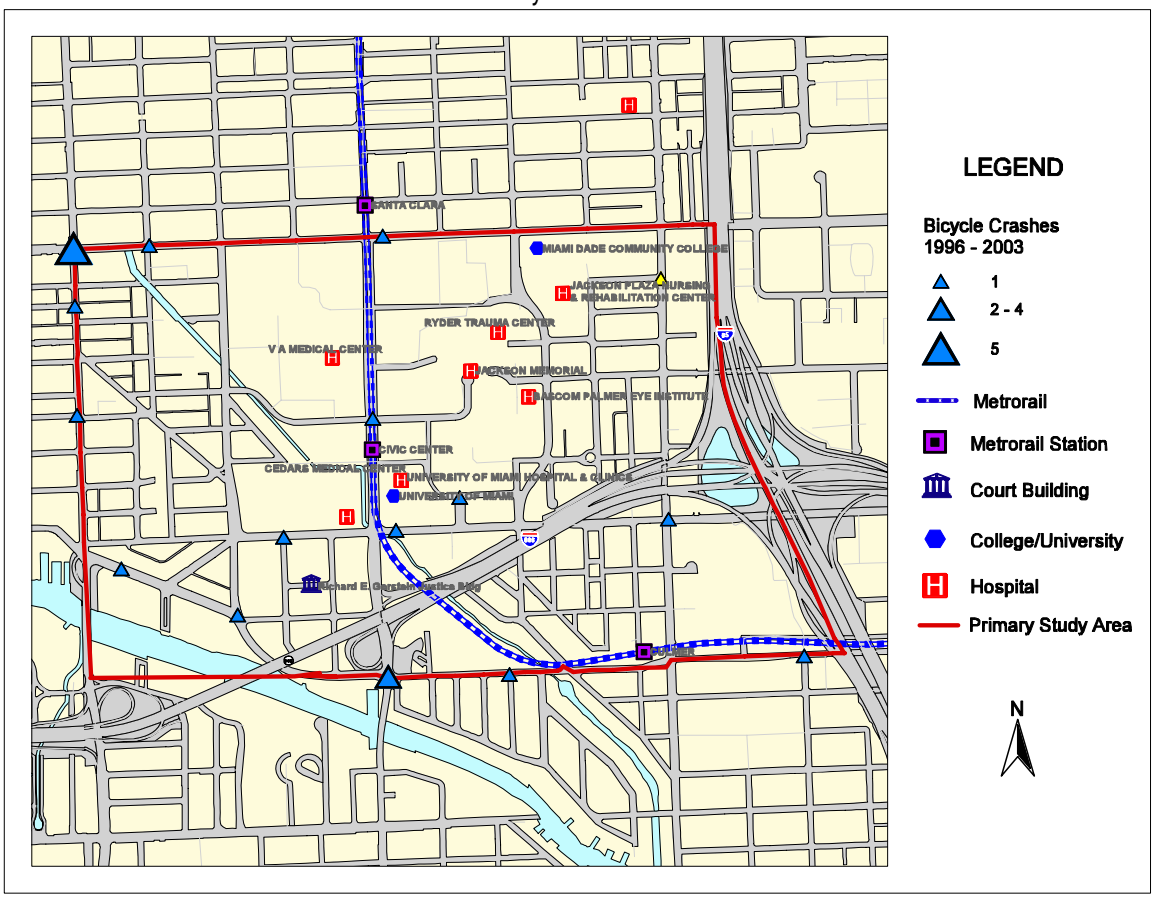
Figure 2-1
Pedestrian Crashes



Source: The Corradino Group, Inc.

[1] This information is based on data provided by the Miami-Dade MPO's Bicycle-Pedestrian Coordinator. Crashes are between pedestrians and autos and bicycles and autos, unless noted.

Figure 2-2
Bicycle Crashes



Source: The Corradino Group, Inc.

2.4 Development Standards

As part of the planning process, it is important to understand applicable development standards and restrictions to the study area and periphery. The Civic Center Circulator study area encompasses three existing Metrorail stations: Culmer, Civic Center, and Santa Clara. The Miami-Dade Community Development Master Plan includes Objective 7, which requires all new development and redevelopment in existing and planned transit corridors to promote pedestrianism and transit use.

Policy 7A states that through its various planning, regulatory and development activities, Miami-Dade County shall encourage the development of a wide variety of residential and non-residential land uses and activities in nodes around rapid transit stations to produce short trips, minimize transfers, attract transit riders, and promote travel patterns on the transit line that are balanced directionally and temporally to promote transit operational and financial efficiencies. Land uses that may be approved around transit stations shall include housing, shopping and offices in

moderate to high densities, complemented by compatible entertainment, cultural uses and human services in varying mixtures. Rapid transit station sites should be developed as "urban centers."

Policy 7B states that it is the policy of the County that both the County and its municipalities shall accommodate new development and redevelopment around rapid transit stations that is well designed, conducive to both pedestrian and transit use and architecturally attractive. In recognition that many transit riders begin and end their trips as pedestrians, pedestrian accommodations shall include, as appropriate, continuous sidewalks, to the transit station, small blocks, closely intersecting streets, buildings oriented to the street or to pedestrian paths, parking lots predominantly to the rear and sides of buildings, primary building entrances as close to the street and transit stop as the to the parking lot, shade trees, awnings and other weather protection for the pedestrian.

Policy 7C states that on all streets served by transit and on all streets designated as potential service areas:

i) New non-residential buildings and substantial alterations to existing non-residential buildings, and residential buildings where practical, shall provide at least one full-time building entrance that is recognizable and accessible from the street.

ii) New residential and non-residential developments, subdivisions and replats shall provide for buildings that front the transit street, or provide pedestrian connections that intersect the transit street in close proximity to the transit stop.

Policy 7D states that the redevelopment of property within one-half mile of existing or planned transit stations and bus routes shall not cause an increase in walking distances from nearby areas and shall wherever practical reduce walking distances in a comfortable attractive manner for pedestrians.

Policy 7E states that land uses that are not conducive to public transit ridership, such as car dealerships, or oriented food franchises, and uses that require transporting large objects should not be permitted to locate or expand within one-quarter mile of rail rapid transit stations.

Finally, policy 7F establishes that residential development around rail rapid transit stations should have a density of at least 15 dwelling units per acre (du/ac) within one-quarter mile walking distance and 20 du/ac or higher within 700 feet of the station, and at least 10 du/ac between one-quarter and one-half mile walking distance of the station. Business and office development intensities around rail stations should produce at least 75 employees per acre within one-quarter mile walking distance of the station. Where existing and planned urban services are inadequate to accommodate this development, all County municipal and other service providers should revise their plans and capital programs at the next opportunity to accommodate these densities.

A circulator in the Civic Center area clearly would support the intent and objective of these standards. In addition, the circulator may support increased residential density by enhancing the urban character of the area and make the immediate area more attractive as a place to live, particularly for people who work at the Civic Center.

2.5 Growth Master Plans

The information in the following tables reviews growth planned for the Civic Center area. There are two major economic engines. One is the City of Miami, which has the authority to approve projects such as those presented in Table 2-2. The other, the University of Miami, planned development is shown in Figure 2-3.

As can be seen, nearly 6,000 residential units, 400,000 square feet of office, and 90,000 square feet of commercial development are projected to occur in the area within the next several years. This development will mean increases in demand for commercial goods and services and will also result in higher levels of traffic congestion. Transportation options will be important to ensuring the adequacy of the existing and future transportation network and the quality of life enjoyed by residents, employees, patients, and visitors in the area.

2.5.1 University of Miami Projects

The University of Miami has a number of projects being constructed. The most prominent is the development of the Miami Bio Science Center on 7th Avenue just south of 20th Street and just west of I-95. The Bio Science Center is anticipated to be constructed by 2010.

Phase I:

Clinical Research Institute, Wellness Center and Garage – Under Construction
Total Budget: $75 M + $15M = $90 M
SF: 336 K SF
Parking: 1,423 spaces
Wellness Center: 60 K SF ($15M)
Project Completion: 5/06
Architect: Perkins + Will

Interdisciplinary Wetlab Research Center – Design Phase
Total Budget: $78.4M
SF: 182 K SF
Design Phase Completion:
Project Completion: 8/07
Architect: Karlsberger

Medical Practice Building – Pre Design
Total Budget: $322M
SF: 664 K SF
Beds: 140
Pre - Design Phase Completion: 2/06
Project Completion: 12/09
Architect: Perkins + Will

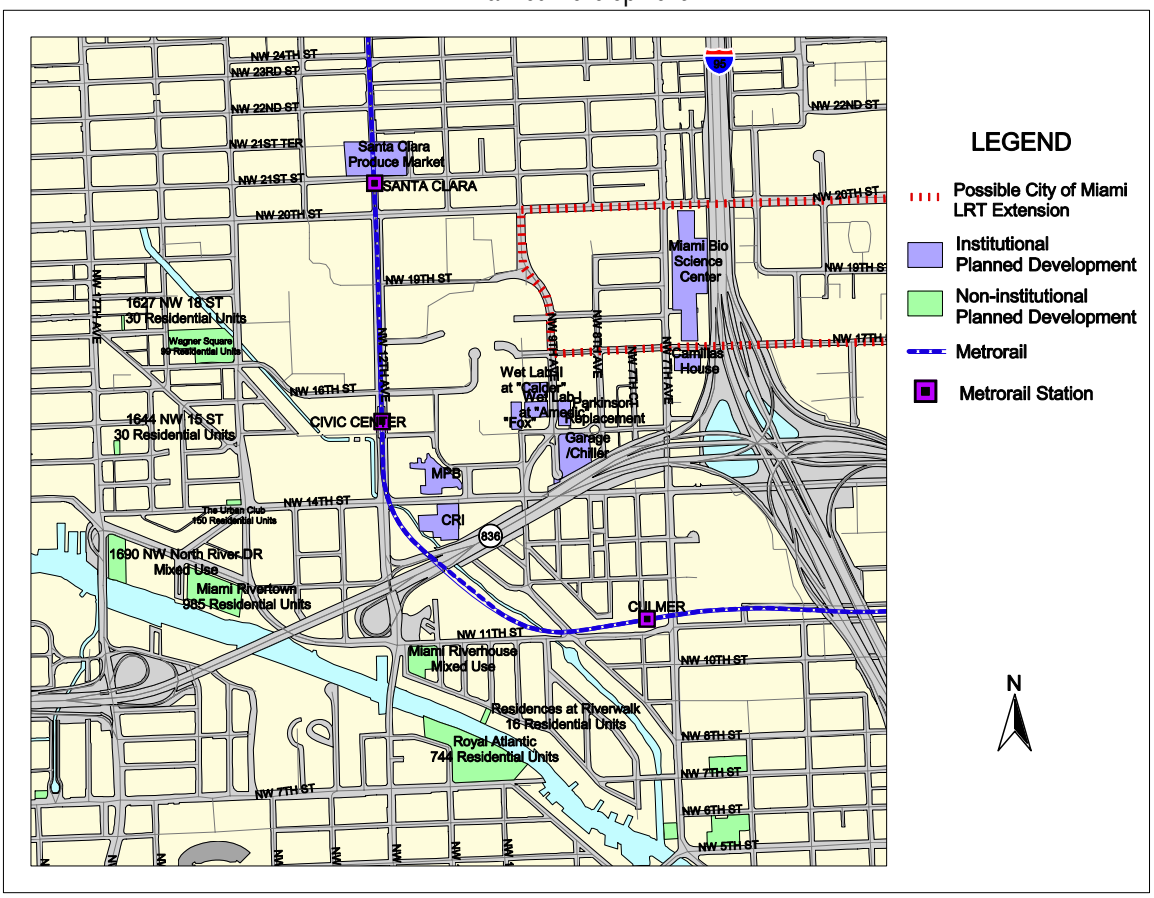
Medical Staff Parking Garage and Chiller Plant
Total Budget: $24.1M
Spaces: 1,500
Project Completion: 3/07
Architect: Newcomb & Boyd

Table 2-2
Civic Center Circulator Study
Planned Development

Key	Development	Use	Current Status
1	1627 NW 18th Street	30 Residential Units (RU)	Approved 2003 Under Construction
2	1644 NW 15th Street	30 Residential Units	Approved 2004 Under Construction
3	1690 NW North River Dr.	172 Residential Units 12,705 sf Office (O) 900 sf Commercial(C)	Application - 2005
4	The 1800 Club 1800 NW 7 Street	45 Residential Units	Preliminary
5	Avenue One 1950 NW 1st Avenue	369 Residential Units 8,853 sf Commercial	Preliminary
6	Hurricane Cove 1818 NW North River Dr.	1,073 Residential Units 5,000 sf Commercial	Approved 2004
7	Miami Riverhouse 1170 NW 11th Street	199 Residential Units 7,000 sf Commercial	Preliminary
8	Miami Rivertown 1400 NW North River Dr.	985 Residential Units	Approved 2005
9	Oleander Park 1970 NW 7th Street	30 Residential Units	Preliminary
10	Residences at Riverwalk 1060 NW North River Dr.	16 Residential Units	Approved 2005
11	Rio Lofts 528 NW 7th Avenue	32 Residential Units	Preliminary
12	River Oaks 1951 NW South River Drive	199 Residential Units	Application 2005
13	Royal Atlantic 1001 NW 7th Street	744 Residential Units	Approved 2004
14	Sawyers Walk 249 NW 6th Street	1,258 Residential Units 38,472 sf Office 61,472 sf Commercial	Preliminary
15	Spring Garden 1033 Spring Garden	87 Residential Units 12,154 sf office	Preliminary
16	Terrazas River Park Village 1861 NW South River Dr.	320 Residential Units 4,182 sf Commercial	Approved 2004
17	The Urban Club 1408 NW 14 Avenue	150 Residential Units	Preliminary
18	Tuscan Place 600 NW 6th St.	374 Residential Units	Under Construction
19	University of Miami Clinical Research 1130 NW 14th Street	336,000 sf Office 1,410 Parking Spaces	Under Construction
20	Urban River 601 NW 7th Street	577 Residential Units	Approved 2005
21	Wagner Square 1700 NW 14th Avenue	99 Residential Units	Application submitted 2005
	TOTALS	5,716 RU/399,331sf O/87,407sf C	

Source: The Corradino Group, Inc.

Figure 2-3
Planned Development



Source: The Corradino Group, Inc., with information from the University of Miami and the City of Miami.

2.6 GIS Base

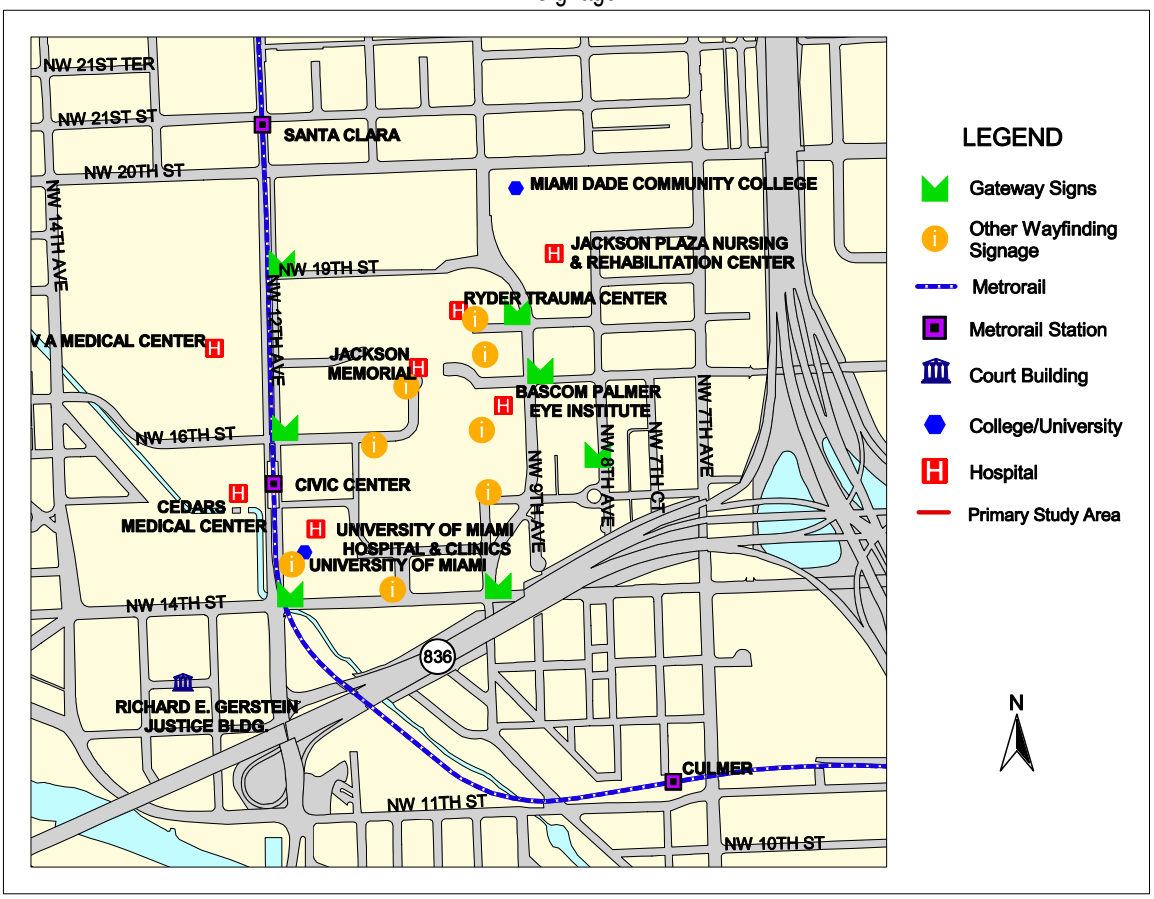
This section presents information that has been collected for the Circulator Study that will be used during this study and in future planning efforts for the Civic Center. There is a brief discussion of each category.

2.6.1 Civic Center Way-finding Signs

There are three levels of signs around the Civic Center Area (Figure 2-4).

- Primary Gateway Vehicular Signing
- Secondary Vehicular Directional Signs
- "You Are Here" Pedestrian Signs

Figure 2-4
Signage



Source: The Corradino Group, Inc.

The first level of signing is the large two-sided directional signing that is intended to direct vehicular traffic to distinct locations. These are typical large signs seen by motorists entering the area at interstate exit ramps and other locations. The following is a list of information found on these signs:

- University of Miami
- Jackson Medical Center
- Cedars Medical Center
- Miami Dade Community College
- Veterans Administration Medical Center
- Parking Patients/Visitors
- Emergency Trauma Center
- Sylvester Center
- Bascom Palmer
- Diagnostic Treatment Center
- Holtz Children's Hospital
- Main Entrance

There are a number of way-finding issues that are presented by these signs.

- All of these signs include numbers after Jackson Medical Center. It is unclear what the numbers represent.
- These signs do not include other major uses in the Civic Center area such as the Courts, Cedars, Miami-Dade College, Lindsey Hopkins, or the VA.
- The parking information does not help you find a garage close to the facility.

The second level of signs are short rectangular signs - generally no more than four feet off the ground (see Figure 2-4). These signs supplement the large gateway signs and are located at decision points. They generally show two of the following pieces of information:

- University of Miami
- Jackson Medical Center
- Sylvester Cancer Center
- U of M Hospitals and Clinics
- Diagnostic Treatment Center
- Main Entrance

There are a number of way-finding issues that are presented by these signs:

- These signs have too little information on them to be useful to the visitor in need of direction.
- Signs appear at the location where the turn must be made providing very little decision time.
- Signs are too low to the ground to be easily used by drivers for way-finding.
- Specific building signs are often better read from the expressway than at street level.

The third level of signs are for pedestrians. They are maps of the campus and would generally be termed as "you are here" maps. They are mostly located at entrances to the campus area especially near parking garages. The maps are well laid out and are easy for anyone experienced with keyed maps to read.

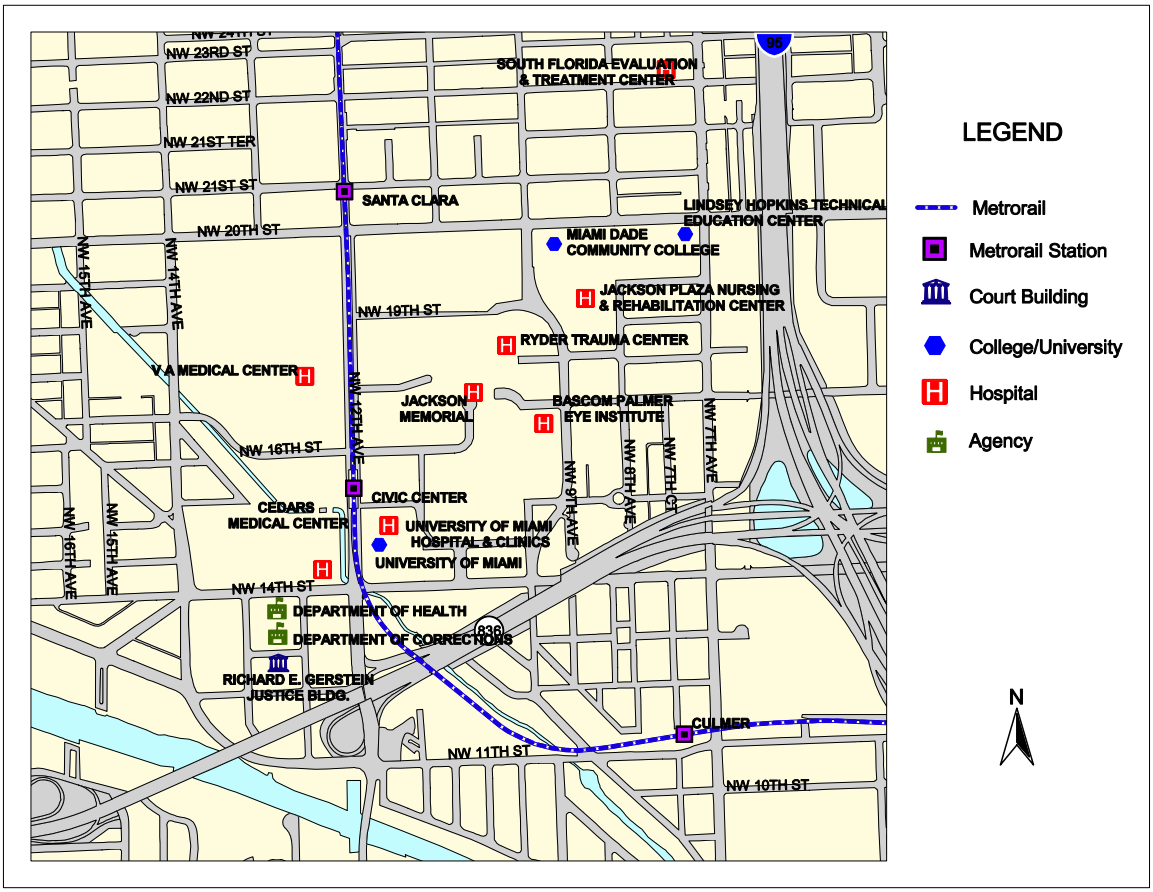
These signs have been exposed to sunlight and the elements and are in need of maintenance or replacement. Some are hard to read due to environmental discoloration.

One of the following efforts as part of the City's master planning effort for the Civic Center is a way-finding study, which will address many of the issues identified above.

2.6.2 Stakeholder Locations

Figure 2-5 shows stakeholder locations in the study area. Stakeholders are defined as entities with major employment and visitor activity and include the hospitals, courts, social service agencies, and educational institutions. Most are located in the area bounded by NW 14th Avenue on the west, NW 20th Street on the north, NW 7th Street on the east, SR 836 on the southeast, and NW 14th Avenue on the south. The notable exceptions are the Richard E. Gerstein Justice Building and federal courts complex, which are south of NW 14th Street.

Figure 2-5
Stakeholders



Source: The Corradino Group, Inc.

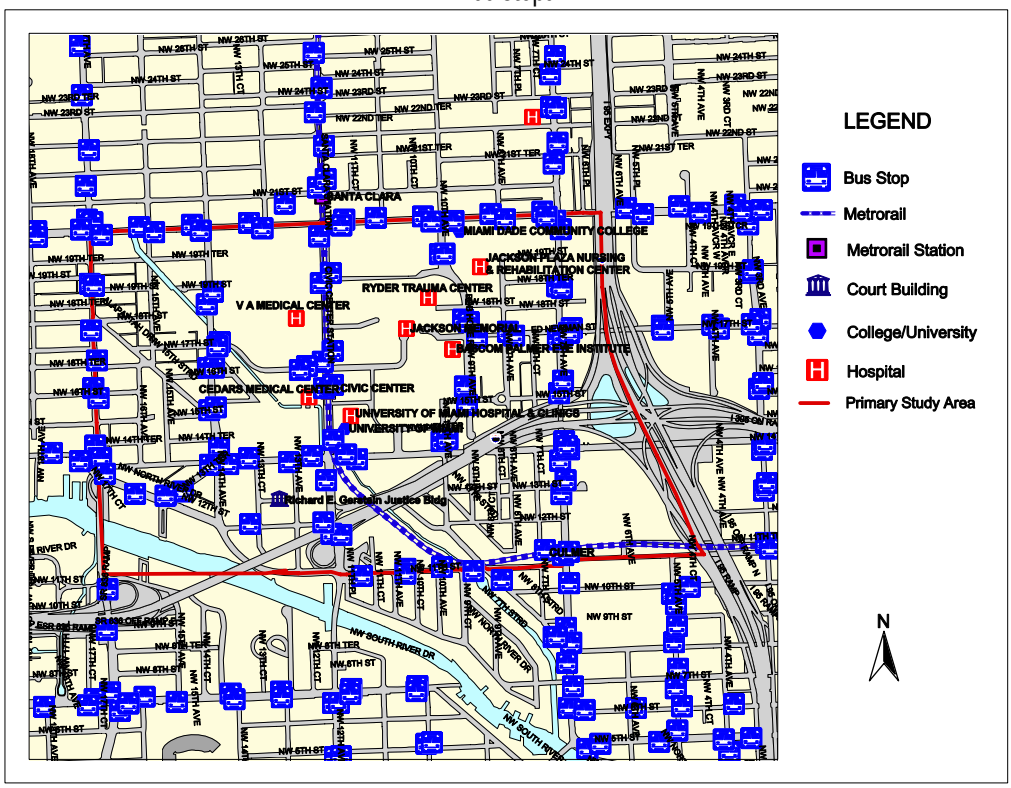
The location of the various stakeholders is important in the consideration of the circulator. As will be discussed later, there are several major pedestrian flows, VA to Jackson Memorial, the MDT bus stops near VA to the Courts, and several others that have significant pedestrian traffic patterns that may be served by transit.

2.6.3 Bus Stop Locations

As can be seen in Figure 2-6, there are bus stops throughout the study area. Most are "sign on post" stops with no bench or shelter. These indicate the relative coverage of transit, but most routes using these stops circulate at a variety of frequencies[2] and are not generally perceived as conducive to people making the short trips. The typical ridership at these bus stops is shown in Figure 2-7.

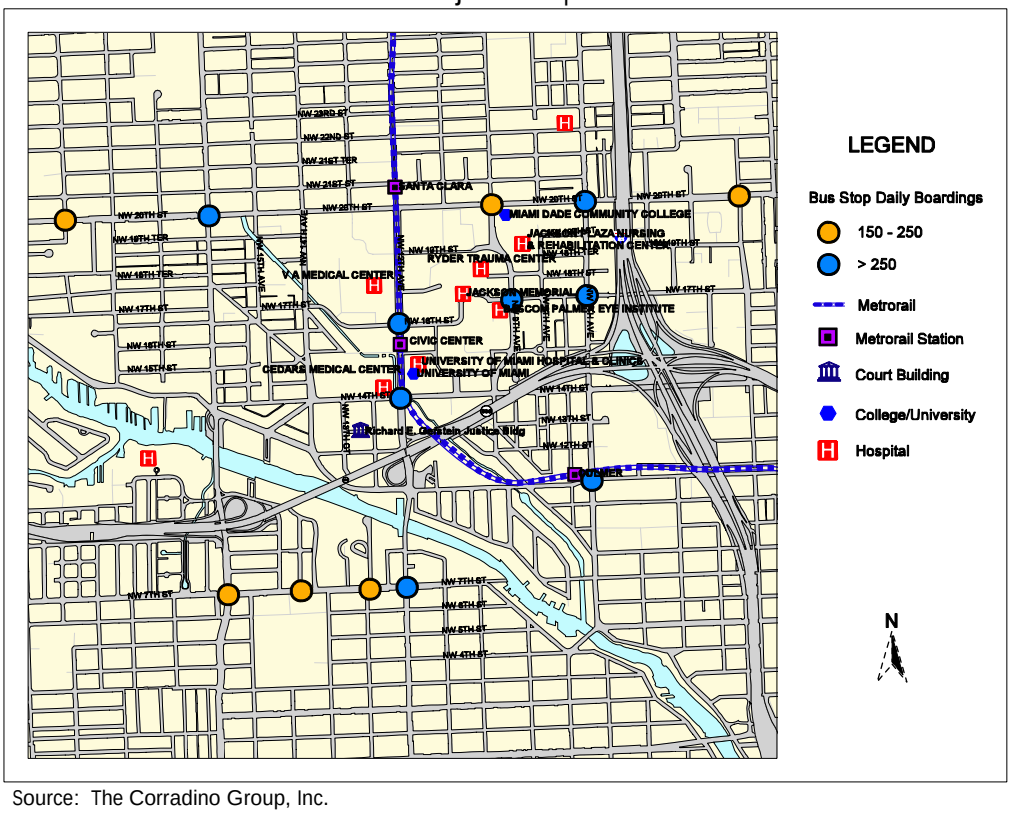
[2] Frequency indicates the amount of time people have to wait between buses at a particular stop. Transit circulators typically operate at ten minute or less frequencies.

Figure 2-6
Bus Stops



Source: The Corradino Group, Inc.

Figure 2-7
Major Bus Stops

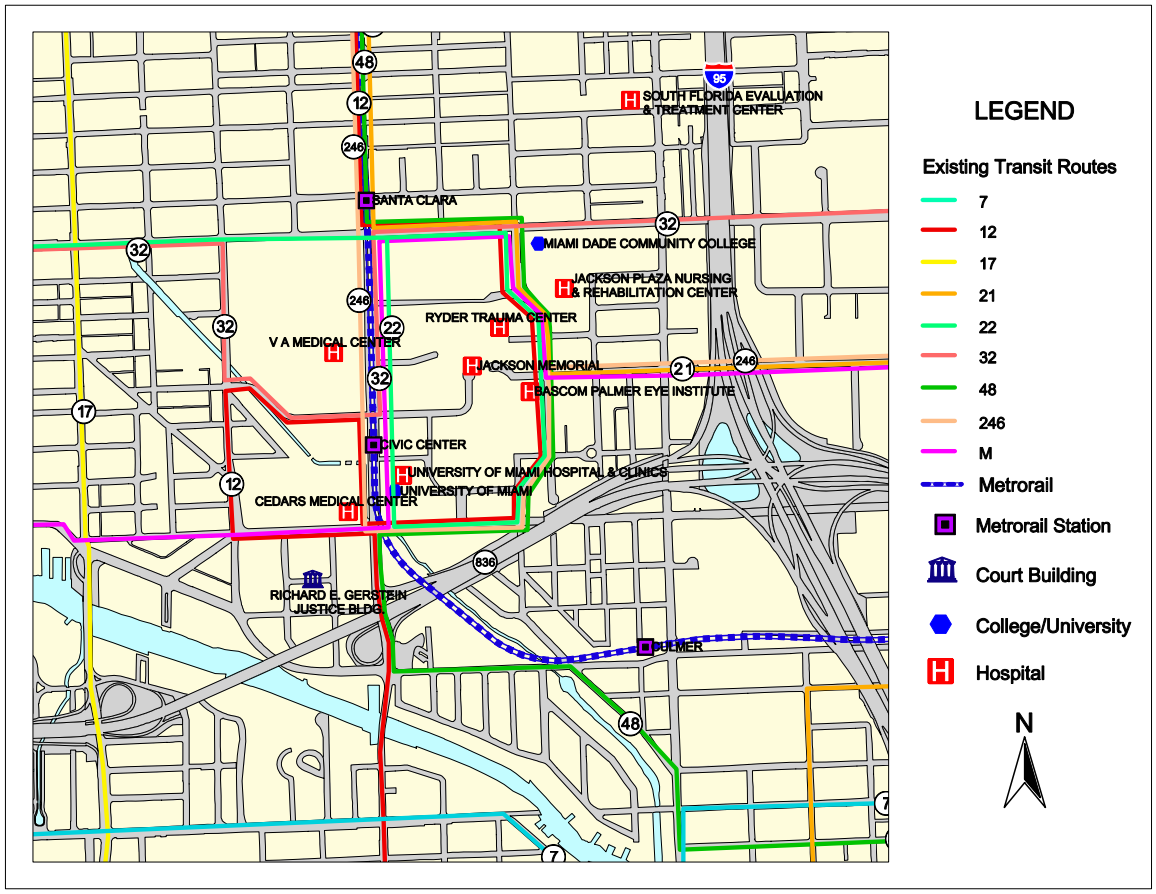


Source: The Corradino Group, Inc.

2.6.4 Transit Routes

Figure 2-8 shows transit routes in the area. The routes, and information concerning their ridership, frequency, etc. are presented in Table 2-3. As noted earlier, the MDT has plans to change the alignment of Route 12 and create a transit circulator in the area.

Figure 2-8
Transit Routes



Source: The Corradino Group, Inc.

2.6.5 Metro Ridership

There are three metro rail stations that serve the study area. These are Santa Clara, Civic Center, and Culmer. Table 2-4 shows these respective typical daily and weekend ridership. As can been seen, the Civic Center station has the greatest ridership. Figure 2-9 presents the relative locations and overage weekday ridership at each station.

Table 2-3
Civic Center Circulator Study
Bus Operations on Local Streets

Street	Routes Operating	Combined Headways Peak Hour/Peak Direction	No. Buses Both Directions	Total Capacity Both Directions
NW 7th Avenue	77	Every 10 minutes	12	600 pass/hr
Bob Hope Road	12, 21, 22, 48, M	Every 6 minutes	20	1000 pass/hr
NW 12th Avenue	12, 21, 246 (north of 20 St) 22, 32, 95, M, 246 (16 St-20 St) 12, 22, M, 246 (14 St – 16 St) 12, 48 (south of 14 St)	Every 15 minutes Every 5 minutes Every 10 minutes Every 15 minutes	8 18 12 8	400 pass/hr 900 pass/hr 600 pass/hr 400 pass/hr
NW 14th Avenue	12, 95 32	Every 7.5 minutes Every 15 minutes	10 8	500 pass/hr 400 pass/hr
NW 17th Avenue	17	Every 15 minutes	8	400 pass/hr
NW 22nd Avenue	22	Every 30 minutes	4	200 pass/hr
NW 20th Street	22,32 (22 Ave-14 Ave) 12, 21, 32, 48, M (12 Ave- Bob Hope) 32 (rest of 20 St.)	Every 10 minutes Every 5 minutes Every 15 minutes	12 24 8	600 pass/hr 1,200 pass/hr 400 pass/hr
NW 17th Street	21, M, 246 (East of Bob Hope)	Every 15 minutes	8	400 pass/hr
NW 16th Street	12, 32, 95 (west of 12 Ave)	Every 5 minutes	14	700 pass/hr
NW 14th Street	M (West of 14 Ave) 12, 95, M (14 Ave- 12 Ave) 12, 21, 22, 48, 95, M (west of 12 Ave)	Every 30 minutes Every 6 minutes Every 4 minutes	4 14 26	200 pass/hr 700 pass/hr 1,300 pass/hr
NW 7th Street	7	Every 15 minutes	8	400 pass/hr

Miami-Dade Transit Bus Operations

Route #	Peak Headways	Route	Days of Operation	Hours of Operation	Buses Per Peak Period/Peak Direction	Capacity Peak Period/Peak Direction
7	15 minutes	Sweetwater - Overtown	Sun - Sat	5:30 am -10 pm	4	200 pass/hr
12	30 minutes	Northside – Coconut Grove	Sun-Sat	24 hours	2	100 pass/hr
17	15 minutes	Norwood - Vizcaya	Sun - Sat	4:45 am – 11 pm	4	200 pass/hr
21	30 minute	Opa-Locka – Gov't Center	Sun - Sat	5 am – 10 pm	2	100 pass/hr
22	30 minutes	N. Miami Beach – Coconut Grove	Sun - Sat	4:30 am – 10:30 pm	2	100 pass/hr
32	15 minutes	Carol City - Omni	Sun - Sat	5 am – 11:30 pm	4	200 pass/hr
48	30 minutes	Santa Clara – Miami Beach	Mon - Fri	5:30 am – 7:30 pm	2	100 pass/hr
77	10 minutes	NW 199 St – Gov't Center	Sun - Sat	24 hours	6	300 pass/hr
95	Variable	Golden Glades – Gov't Center	Mon - Fri	6 am -8 am 3:30 pm – 6 pm	6 4	300 pass/hr 200 pass/hr
M	30 minutes	Santa Clara - Mt. Sinai	Sun- Sat	6 am – 10 pm	2	100 pass/hr
246	No peak service	N. Miami Beach - Allapattah	Sun - Sat	11 pm – 5 am	-	-

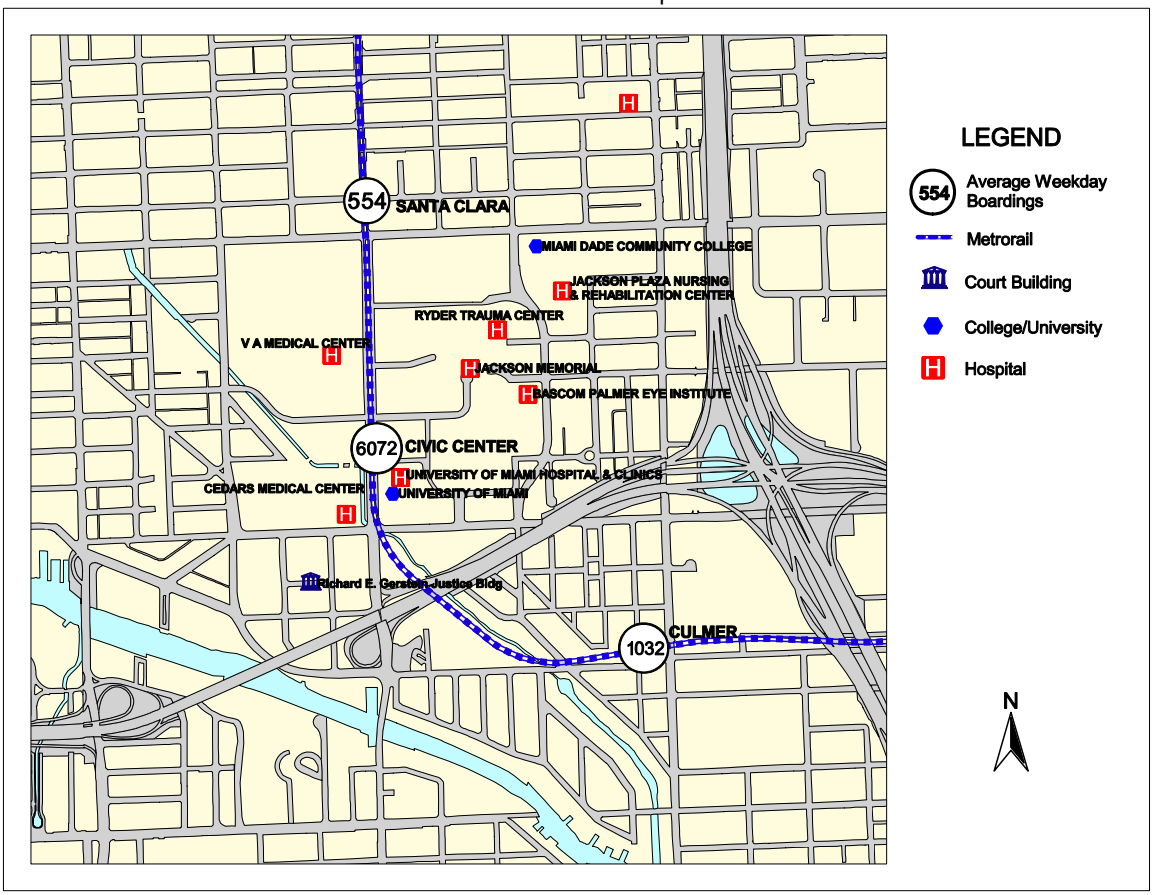
Source: The Corradino Group, Inc.

Table 2-4
Metrorail Ridership

	Station		
	Santa Clara	Civic Center	Culmer
February 2005			
Avg. Weekday	554	6,072	1,032
Saturday	313	1,009	570
Sunday	170	864	390
August 2005			
Avg. Weekday	513	5,281	910
Saturday	294	911	480
Sunday	183	692	421

Source: The Corradino Group, Inc.

Figure 2-9
Metrorail Ridership

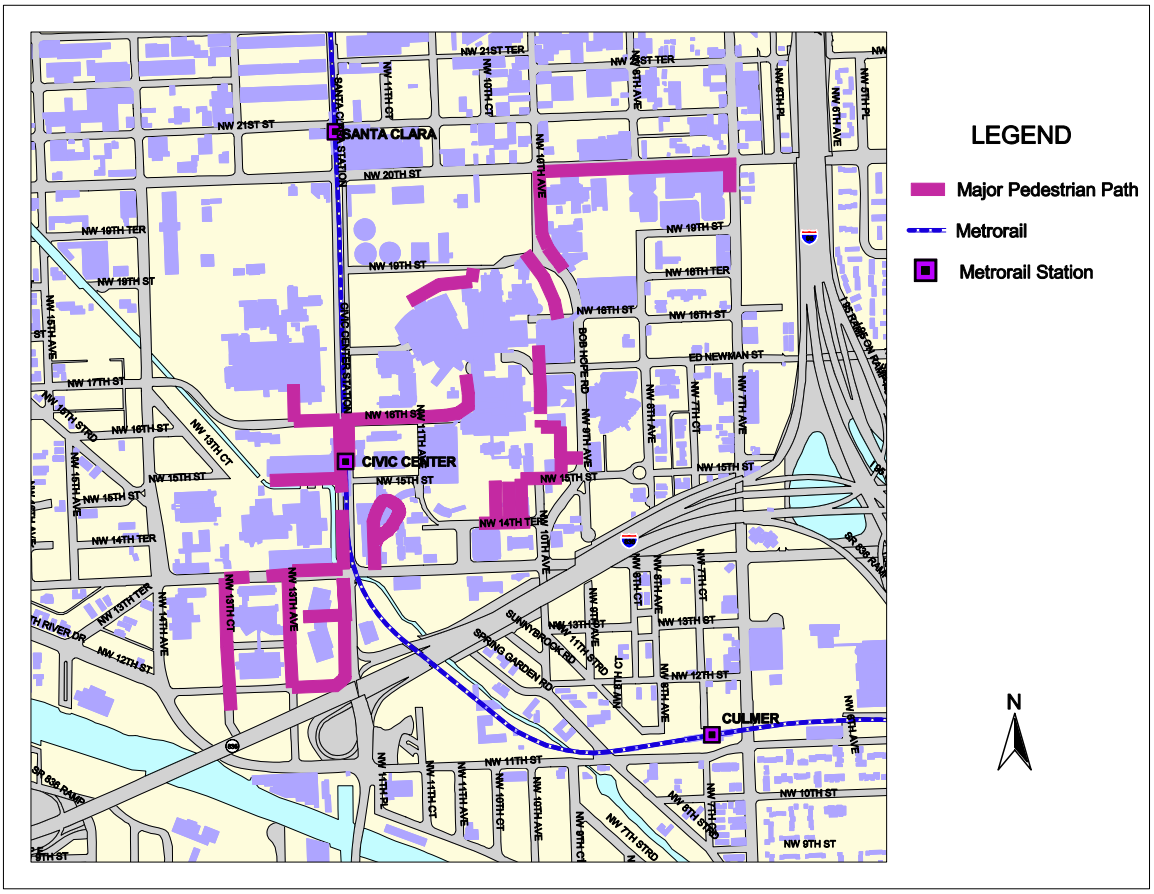


Source: The Corradino Group, Inc.

2.7 Vehicular/Pedestrian Access & Circulation

Figure 2-10 presents the major pedestrian pathways in the study area. Key movements include from the Veterans Administration (VA) Hospital to Jackson Memorial and from the Miami-Dade Transit (MDT) bus stops in front of the VA Hospital to the Courts complex. There are also several distinct areas of pedestrian movement inside the primary study area on sidewalks and between buildings.

Figure 2-10
Pedestrian Paths

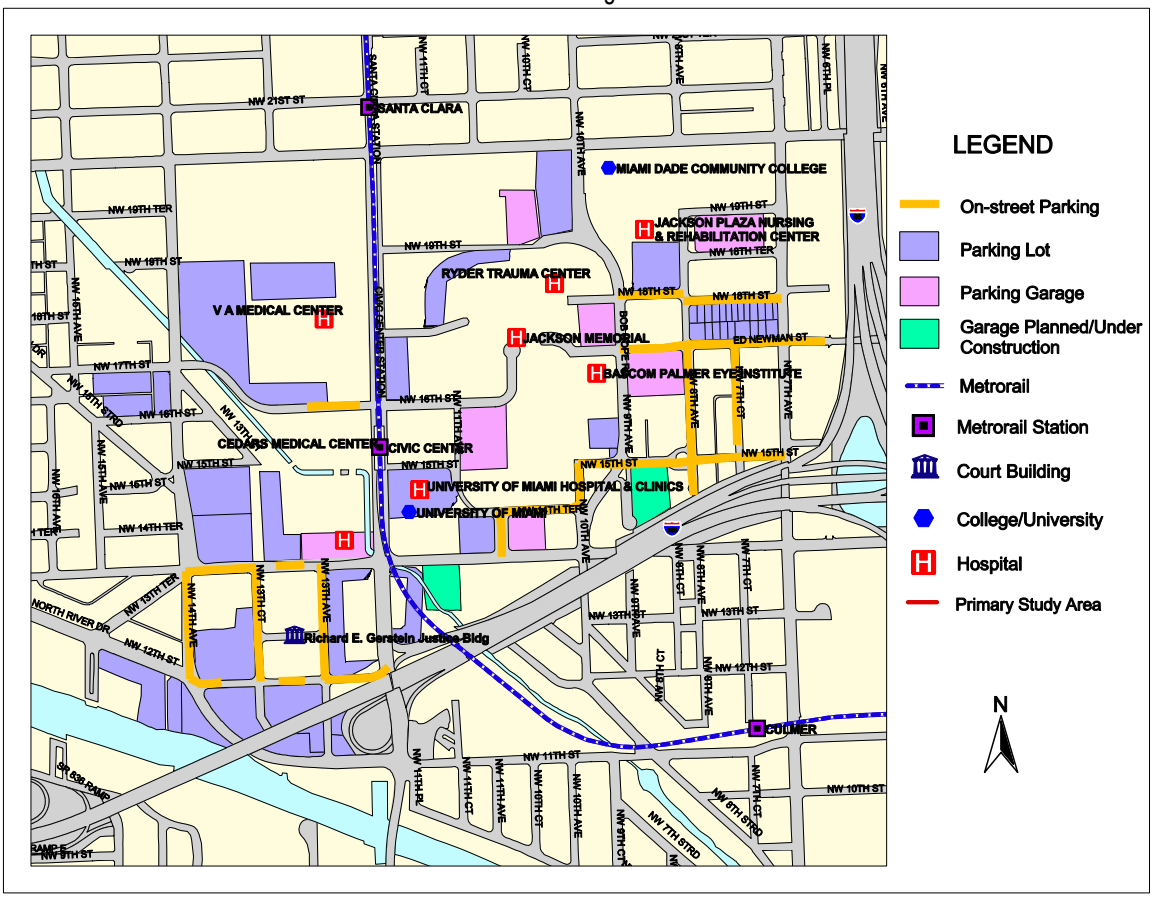


Source: The Corradino Group, Inc.

2.8 Existing and Planned Parking

Figure 2-11 presents the parking in the study area. As can be seen, much of the study area is covered by surface parking. There are also several major parking garages in the area and more are being built. Table 2-5 presents information on the number of spaces. Discussions with parking professionals indicate that parking continues to be a problem.

Figure 2-11
Parking



Source: The Corradino Group, Inc.

Table 2-5
Civic Center Parking Supply

Lot	Spaces
Kristi House Surface Lot	7
North Garage	720
University of Miami Garage	2,000
Jackson Memorial Garage	2,000
Lindsey Hopkins Garage	900
Dominion Towers (Private)	888
On-street Parking	265
Lot 18 12th Street/13th Avenue	671
Graham Building Surface Lot	318
Lot 25	241
Civic Center Jury Lot	176
Mahi Shrine Lot	385
One Bob Hope Road Surface Lot	100
Veterans Medical Center Surface Lot	592 Employee; 870 Public
Lot 26 (12th Street at 14th Avenue)	349
University of Miami (UC)	1,400

Source: The Corradino Group, Inc., with information provided by various entities.

Detail on parking is presented below.

11th Circuit Court

- 2,000 employees work 8 a.m. to 5 p.m. park in lots 18, 26, 27. Has 390 spaces in Lot 26 and 400 at Mahi Shrine.
- 11,000 visitors per day park in Lot 18 and at Mahi Shrine. Has 490 public spaces in Lot 18.
- 400 jurors per day.
- Employee parking in Lot 26 is $73 per month.
- Public parking cost is:
  hr = $3.50
  1-2 hr = $6.00
  2-3 hr = $7.50
  3-4 hrs = 9.00
  Max = $10.00

ER Graham Building

- 831 employees on staggered shifts from 7:30 a.m. to 5 p.m. park in Lot 25 (155 spaces), 26, ER Graham Lot (200 spaces), Mahi parking lot and Civic Center Plaza.
- 350 to 450 visitors per day. Park at ER Graham Lot 300-400 spaces.
- Civic Park Plaza (50 spaces) Civic Center Jury Lot, Mahi Shrine.

Lindsey Hopkins

- 966 employees; 366 employee spaces.
- 100 visitors per day; 250 student spaces.
- Have 900-space garage, which is underutilized.

Florida Dept of Health

- 300 employees DTV; 170 parking spaces total.
- 400 visitors per day.

Miami- Dade Corrections and Rehabilitation Department

- 781 employees on multiple shifts around the clock; 30 parking spaces on jail property.
- Six handicapped spaces on 13th Street.
- 25 spaces at WDC lot @ 7th Street/14th Avenue.
- 100 visitors; no spaces.

Women's Detention Center

- 140 employees on three shifts around the clock. 41 spaces on jail property; 25 spaces on WDC lot.
- 40 visitors per day; 12 dedicated parking spaces on jail property.

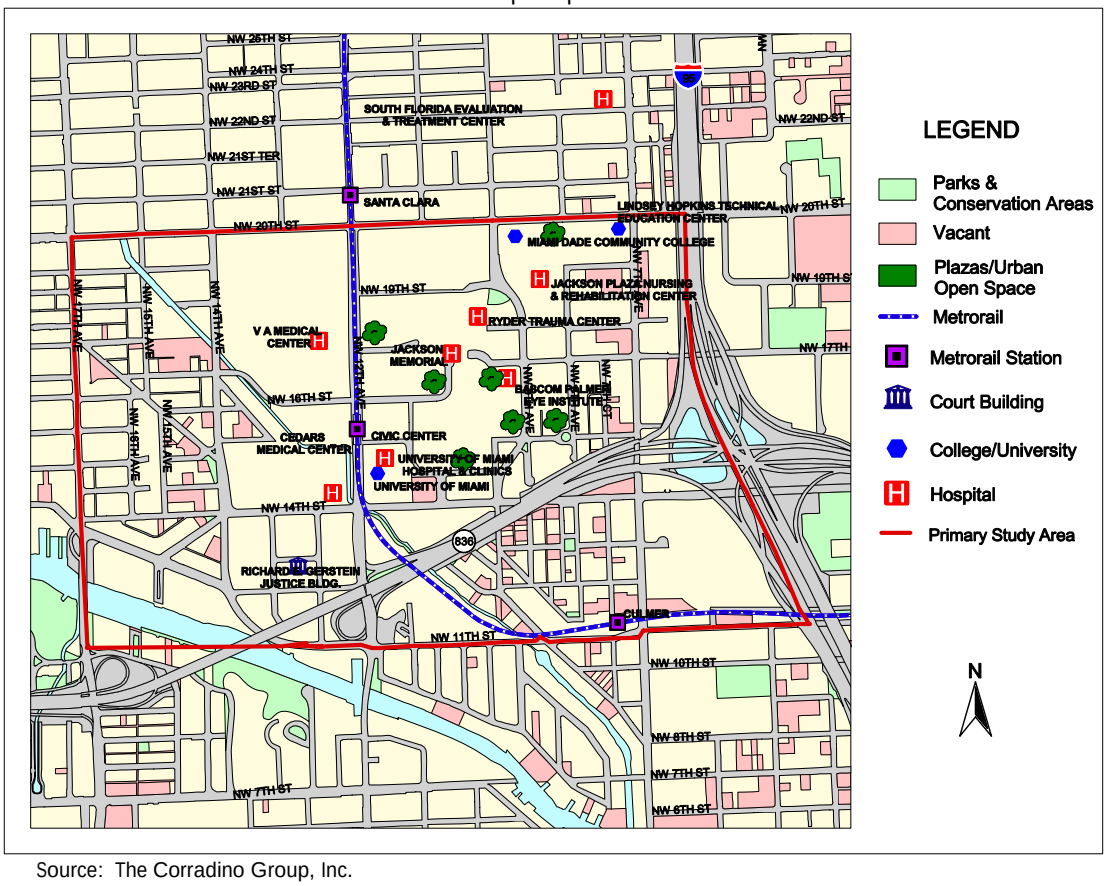
VA Medical Center

- 2,435 employees on three shifts around the clock; 592 employee spaces.
- 300 students.
- 300 visitors.
- 400 outpatients.
- 870 public spaces.

2.9 Open Space

Figure 2-12 shows open space in the study area. As shown, there is very little open or undeveloped space, particularly in the core area of analysis.

Figure 2-12
Open Space

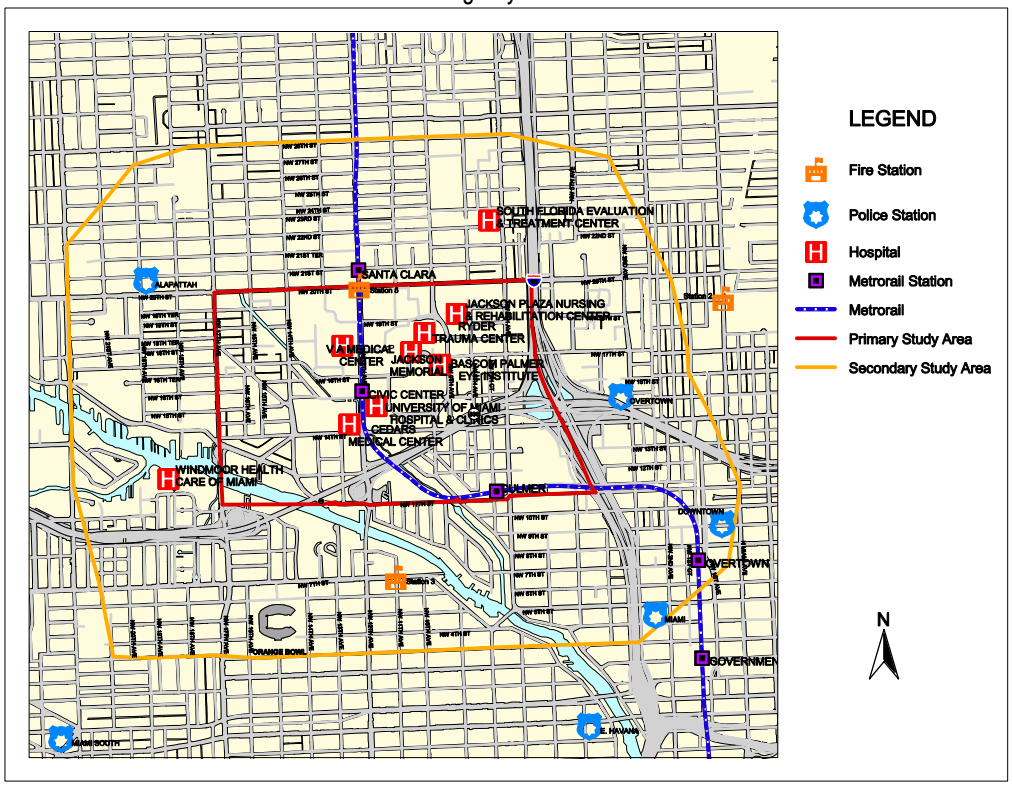


Source: The Corradino Group, Inc.

2.10 Emergency Services Routing

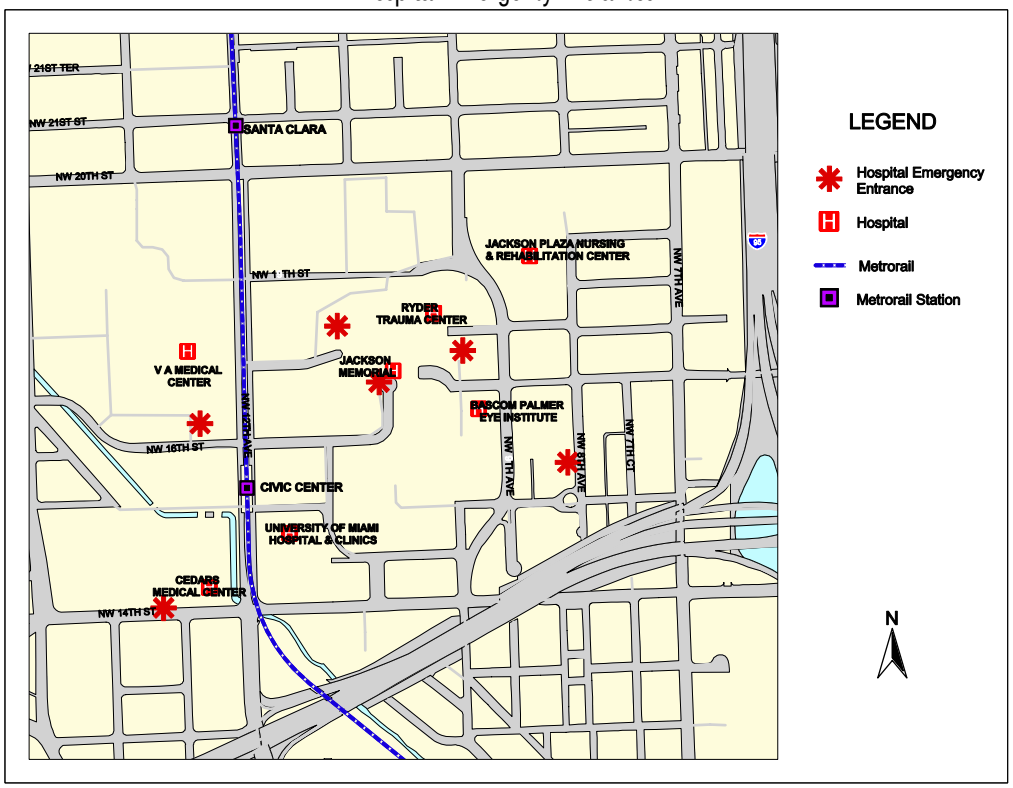
Figures 2-13 and 2-14 show existing emergency services locations and routing. These would be considered in the final design of the circulator routes.

Figure 2-13
Emergency Services



Source: The Corradino Group, Inc.

Figure 2-14
Hospital Emergency Entrances



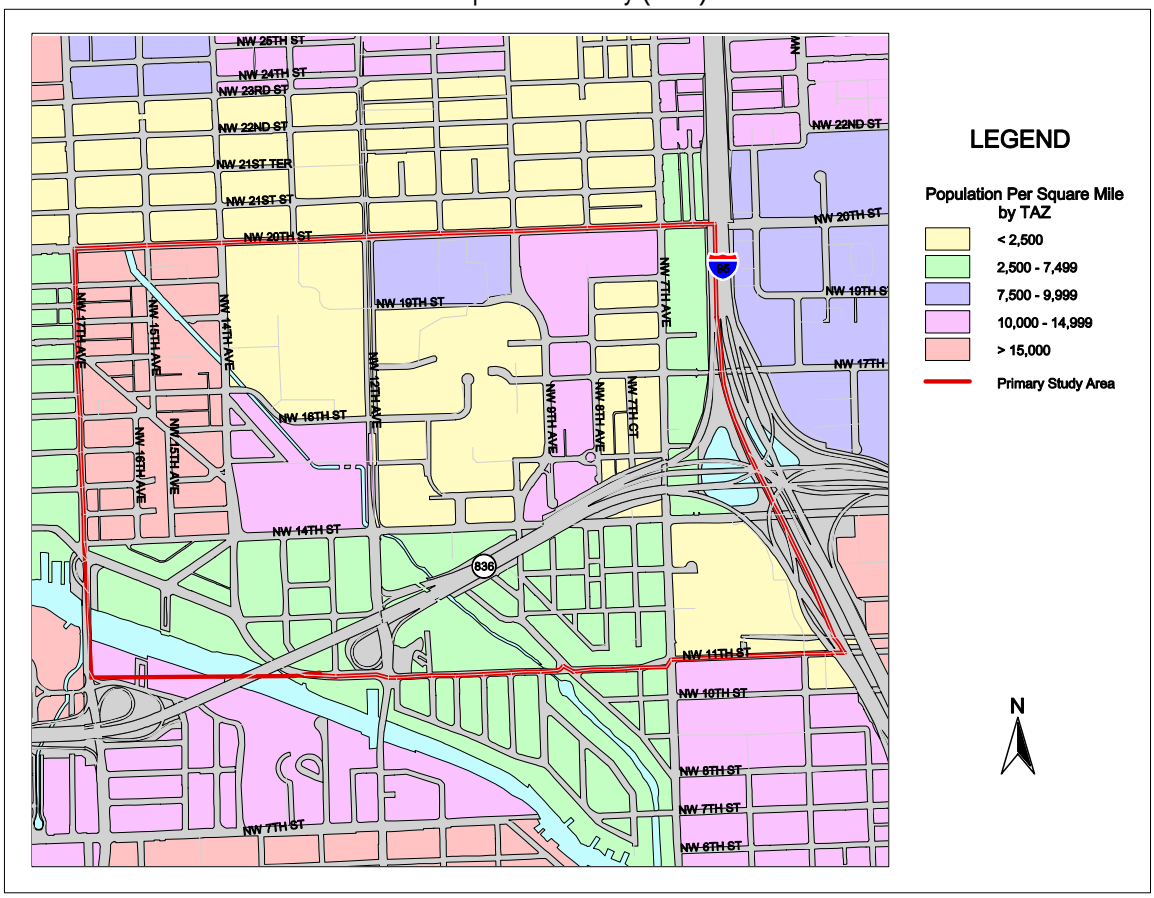
Source: The Corradino Group, Inc.

3. Study Area Demographics

3.1 Existing Demographics

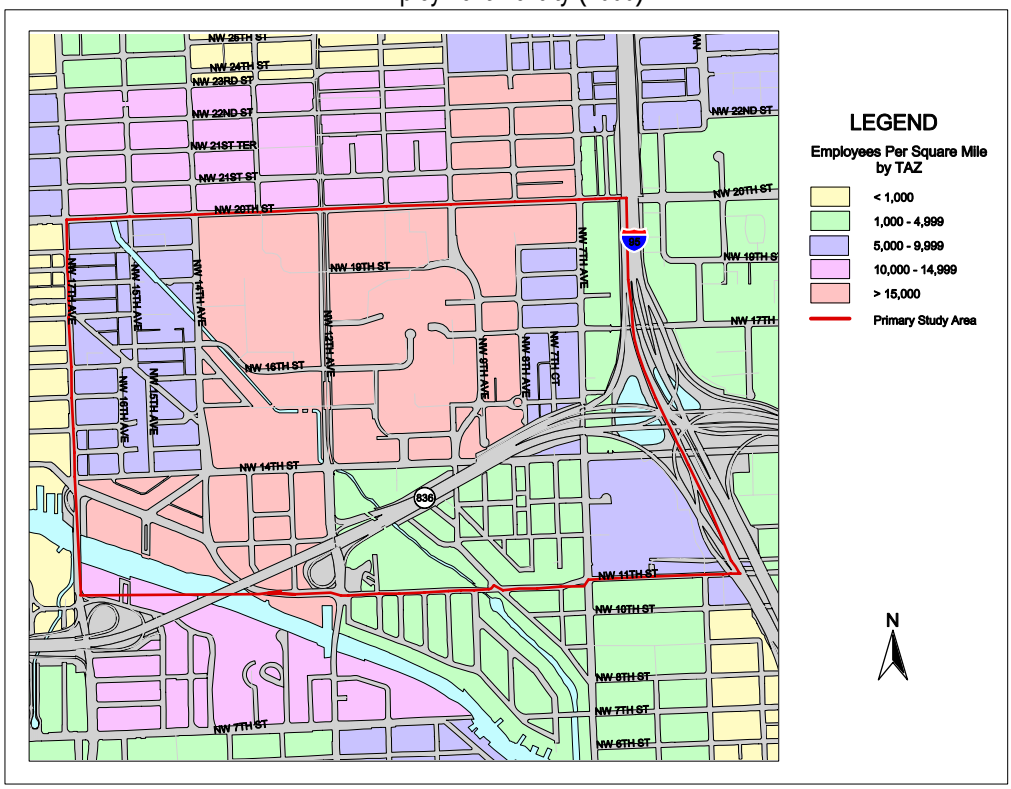
Figures 3-1 and 3-2 show population and employment information for the traffic analysis zones (TAZ) in and around the Civic Center area. TAZ data are used by Miami-Dade County for transportation planning purposes. The distribution of TAZs in the study area is shown in Figure 3-3. The core of the study area has very few residential units and is almost entirely made up of institutional establishments. North of the central study area, there is a large industrial/warehousing area with very low population and employment density. However, this area houses the produce market and experiences heavy truck traffic during operational hours. There has been discussion by various parties of a future major farmers market retail/restaurant development in the area. The remainder of the area outside of the central study area is residential.

Figure 3-1
Population Density (2000)



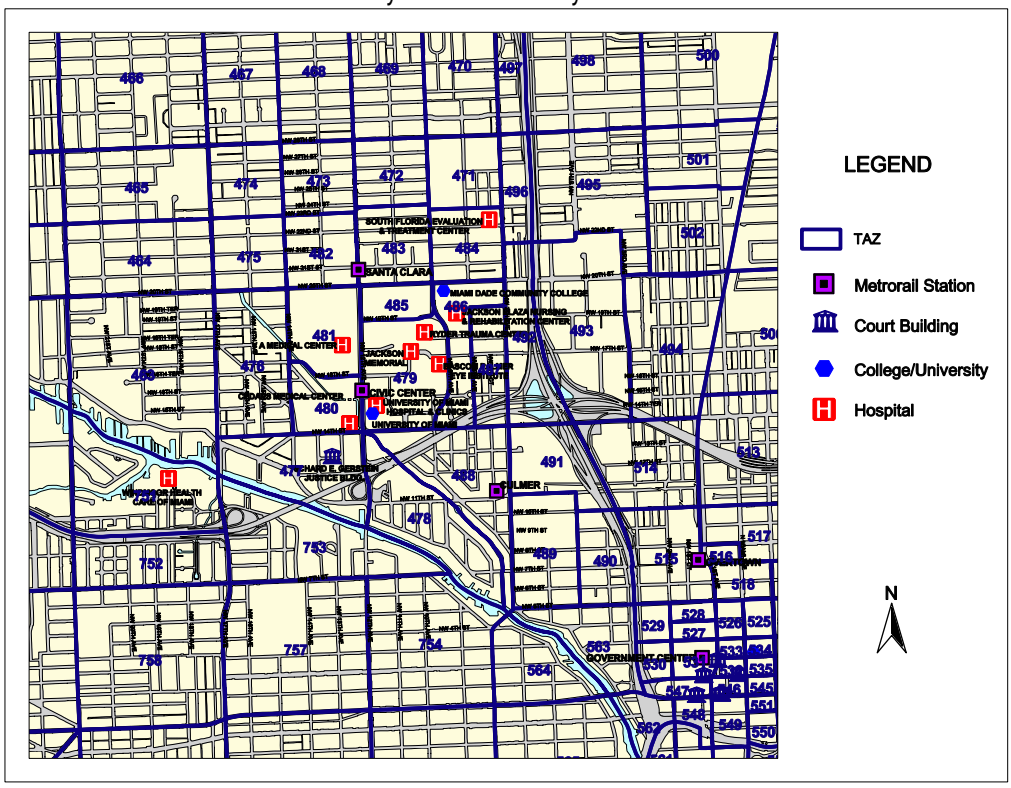
Source: The Corradino Group, Inc.

Figure 3-2
Employment Density (2000)



Source: The Corradino Group, Inc.

Figure 3-3
Study Area Traffic Analysis Zones



Source: The Corradino Group, Inc.

The central core of the study area has an employment density of nearly 39,000 employees per square mile. The 80-acre super block bounded by NW 19th Street, Bob Hope Rd., NW 14th Street, and NW 12th Avenue has an employment density of 214 employees per acre.

Table 3-1 shows the number of households and the population within the central study area and the secondary study area. The table also provides the data for the years 2000, 2015 and 2030. This information was developed from Traffic Analysis Zone (TAZ) data. Figure 3-3 depicts the representative TAZs.

Table 3-2 presents the current breakdown in the type of employment in the study area.

The central core area generates a large number of trips of the 52,500 employees in the total study area. Fifteen of the employers represent 26,400 employees. The medical-related facilities represent 21,800 employees, plus they generate 25,000 daily visitors. The educational facilities within the study area represent 10,000 students and 1,650 employees. The judicial services employ 2,680 employees and generate more than 4,000 visitors per day. The social services component of the Civic Center area employs 240 persons. Table 3-3 shows the employment figures for the major traffic generators in the Civic Center.

Estimates of the overall number of people traveling to the core study area on a daily basis are near 100,000.

3.2 Local Traffic

Within the study area there is a well-developed network of roads.

- The Dolphin Expressway (SR 836) is an eight-lane east/west principal arterial that crosses the study area. It carries 123,000 vehicles per day in the vicinity of the study area.
- NW 12th Avenue (SR 933) is a four-lane divided minor arterial running north/south through the center of the study area. It is the spine of the Civic Center and carries 22,000 vehicles per day.
- NW 7th Avenue (SR 7/US 441) is a five-lane undivided north/south minor arterial that runs along the eastern edge of the study area. It carries 21,000 vehicles per day.
- NW 20th Street is a four-lane east-west minor arterial passing along the northern boundary of the study area. It carries over 27,000 vehicles per day.
- NW 14th Street is a four-lane undivided county collector passing along the southern edge of the study area and connects to the east to Biscayne Boulevard.
- NW 10th Avenue (Bob Hope Road) within the study area is a two-lane undivided north-south collector.
- NW 14th Avenue is a four-lane undivided north-south county collector passing along the western boundary of the study area.

Table 3-1
Household and Population Information

	2000		2015		2030	
TAZ	Households	Persons	Households	Persons	Households	Persons
Central Study Area						
476	1,155	3,150	1,467	4,039	1,779	4,927
477	187	502	258	699	328	895
479	0	0	0	0	0	0
480	294	710	398	968	502	1,225
481	1	2	1	2	1	2
485	118	279	134	318	150	357
486	0	0	0	0	0	0
487	274	702	306	789	338	876
488	448	768	505	1,185	561	1,601
491	0	0	0	0	0	0
492	96	217	175	263	253	572
Subtotal	2,573	6,330	3,243	8,393	3,912	10,455
Secondary Study Area						
460	806	2,377	900	2,682	994	2,986
461	73	198	101	276	128	353
462	619	1,772	701	1,026	782	2,279
471	14	41	20	58	25	74
472	260	760	329	973	398	1,186
473	313	703	363	1,059	413	1,214
474	199	570	254	735	308	899
475	1	2	1	2	1	2
478	301	408	398	851	494	1,294
482	1	2	1	2	1	2
483	7	17	7	17	7	17
484	27	64	35	83	42	102
489	317	1,032	716	2,370	1,115	3,707
490	308	823	524	1,414	739	2,005
493	500	1,602	850	2765	1,199	3,928
498	801	2,365	1,087	3,247	1,373	4,128
514	661	1,867	699	1,993	737	2,118
749	973	2,639	1,021	2,791	1,068	2,943
750	878	2,583	906	2,691	934	2,799
753	1,041	2,394	1,061	2,451	1,081	2,507
754	1,871	5,333	2,340	6,741	2,809	8,149
757	1,832	5,203	1,974	5,659	2,116	6,115
Subtotal	11,803	32,955	14,284	40,881	16,764	48,807
Total	14,376	39,285	17,526	49,274	20,676	59,262

Source: The Corradino Group, Inc.

Table 3-2
Employment Information

	Industrial	Commercial	Service	Total
Central Study Area	309	788	38,579	39,579
Secondary Study Area	1,207	4,260	7,422	12,929
Total	1,516	5,048	45,904	52,508

Source: The Corradino Group, Inc.

Table 3-3
Major Employers

Generator	Employees
Jackson Memorial Hospital	11,116
Veterans Medical Center	2,483
11th Judicial Circuit Court	2,000
Cedars Medical Center	1,646
State Attorney	1,149
Department of Corrections	996
Lindsey Hopkin Technical Education	966
ER Graham Building	831
Miami-Dade College, Medical Campus	653
University of Miami School of Medicine	625
Department of Health	609
Public Defender	404
Booker T Washington Senior High	374
Children's Home Society	215
Women's Detention Center	140

Source: The Corradino Group, Inc.

There is a mixture of traffic within the study area. Local residential traffic represents one segment of the trips. According to the 2000 census data people living within the study area leave their homes to go to work according to the following schedule:

12:00 am to 4:59 am	106
5:00 am to 5:29 am	180
5:30 am to 5:59 am	188
6:00 am to 6:29 am	896
6:30 am to 6:59 am	563
7:00 am to 7:29 am	824
7:30 am to 7:59 am	654
8:00 am to 8:29 am	616
8:30 am to 8:59 am	139
9:00 am to 9:59 am	316
10:00 am to 10:59 am	113

11:00 am to 11:59 am	45
12:00 pm to 3:59 pm	452
4:00 pm to 11:59 pm	365

As can be seen, there is a strong morning peak period leaving the neighborhood between 6 and 8:30 a.m. The peak hour for work trips leaving the neighborhood is 6 and 7 a.m. with 27 percent of the total leaving during this one hour.

Twenty-four-hour traffic counts from Miami-Dade County show a very clear directional split with the Civic Center area. Southbound trips on the north-south arterial show a strong southbound AM peak from 7:30 to 9 a.m. The PM traffic shows the inverse with a very strong northbound peak flow occurring from 3:30 to 5:15 p.m. Except for those strong peaks, traffic is evenly distributed in both directions from 7 a.m. to 7 p.m. Traffic is dramatically less during the other 12 hours.

The east-west traffic has longer peak periods. Eastbound traffic peaks between 6:30 and 9 a.m., while westbound traffic peaks between 3 and 5:30 p.m. Eastbound traffic remains at near peak levels until 5 p.m., then drops off rapidly. Westbound traffic has a much sharper peak with the majority of the traffic occurring between 7 a.m. and 7 p.m.

A zip code distribution of employees reveals the following spatial distribution:

- 886 employees live within one mile of the Civic Center core;
- 5,257 employees live within five miles of the Civic Center core;
- 10,846 employees live within 10 miles of Civic Center core;
- 17,917 live within 20 miles of the core; and,
- The remainder of the employees live farther from the core.

This shows that the majority of the employment trips into the Civic Center do not originate within the study area. The majority of the trips are work trips coming into Civic Center to support the 54,000 jobs. All of the hospitals and the detention facilities function around the clock on three shifts that start at 7 a.m., 3 p.m. and 11 p.m. The shift change at 7 a.m. overlaps with the peak hour for the home to work trips for people exiting the neighborhood around the Civic Center giving the area its largest period of traffic congestion.

Although the zip code study reveals that the majority of employees in the Civic Center are fairly evenly distributed throughout the region, there are areas of concentration. Traffic enters the Civic Center from several different directions. The largest percentages of employees live in the zip codes between I-95 and NW 27th Avenue north of the Civic Center to the county line. These employees have direct access to the Civic Center via north-south Metrobus routes and Metrorail. The second concentration of employees is along the Kendall Corridor and Pinecrest.

The largest volumes of traffic entering Civic Center, 14,000 vehicles per day, comes from westbound SR 836 to northbound NW 12th Avenue. The largest exiting movement, 12,000 vehicles per day, is southbound on NW 17th Avenue to westbound SR 836. I-95 and SR 836 share an off-ramp to westbound 14th Street, which carries 8,700 trips per day. Both NW 7th Avenue and NW 12th Avenue carry a substantial number of trips into and out of the Civic Center with NW 7th Avenue carrying about 30,500 vehicles per day and NW 12th Avenue carrying about 22,500 vehicles per

day. NW 17th Avenue is only two lanes through the Civic Center area and carries a smaller percentage of trips destined for the Civic Center. Overall, the trips through the Civic Center are fairly evenly distributed.

3.3 Pedestrian Areas

The entire Civic Center is well supplied with sidewalks and pedestrian areas connecting most of the buildings, parking facilities and transit stops. As noted earlier, there are several overlapping schedules within the Civic Center that determine the flow throughout the time of day. A pedestrian study conducted by the Civic Center TMO provided actual pedestrian volumes for the peak hour at each of the major pedestrian locations. Table 3-4 presents the top pedestrian locations, the peak hour for the location in the order of pedestrian activity.

Table 3-4
Pedestrian Activity

Rank	Location	Peak Period
1	NW 12th Ave @ NW 16th St	3 p.m. to 5 p.m.
2	NW 12th St. @ NW 13th Ct.	Noon to 2 p.m.
3	NW 12th Ave @ NW 15th St.	6:30 a.m. to 8:30 a.m.
4	NW 12th Ave @ NW 14th St.	3 to 5 p.m.
5	Bob Hope Rd. @ NW 17th St.	Noon to 1 p.m.
6	NW 12th St @ Court House Main Ent.	Noon to 1 p.m.
7	NW 12th St @ NW 13th Ave.	Noon to 2 p.m.
8	NW 20th St. @ NW 7th Ave.	8 to 9 a.m.
9	NW 14th St @ NW 13th Ave.	3 to 5 p.m.
10	NW 14th St @ NW 13th Ct.	3 to 5 p.m.

Source: The Corradino Group, Inc.

4. Civic Center Survey

On December 17, 2006, representatives of The Corradino Group conducted a survey of people within the Civic Center area to assess the feasibility and demand for a circulator service. Approximately 425 surveys were collected. They were collected by intercept interviews conducted at locations throughout the area. The following discussion highlights the results of the survey. Key findings are presented in boldface type.

- As shown in Table 4-1, **about 24 percent of the respondents were going to the courts, while almost 36 percent were going to hospital facilities.** About 15 percent were going to educational activities and 24 percent reported "other." This breakdown is relatively consistent with the make-up of the Civic Center area (i.e., predominantly hospital-related uses followed by the courts and then the educational component).
- **More than 76 percent of the respondents thought the Civic Center needed some type of shuttle service.** Based on the experience of the interviewers, it seemed that people interviewed outside the core hospital complex east of 12th Avenue were even more inclined to think some type of circulator was needed. Of those who didn't think it was needed, people reported that the walks were too short to warrant spending more money. Others, anecdotally, related that they thought it was important to maintain the only form of exercise many people get – walking from building to building.
- **In response to a question of whether people would ride a circulator, about 68 percent said they would.** When looking at the second and third question together, it appears that fewer respondents would ride a circulator than thought the area needed one. This discrepancy does not seem unusual given the mix of people responding to the survey.
- In response to a question of what types of trips would be made on the circulator, **41 percent reported that they would use the service for trips to and from parking**, 38 percent for trips between buildings, 23 percent for trips to and from the local transit service, and about 16 percent to lunch and back.
- When considering the times at which they would need a shuttle/circulator service, about 40 percent of respondents thought it should be operated in the morning and evening only. **Approximately 43 percent believed the circulator should operate during normal business hours** (assumed to mean from 8 a.m. to 6 p.m.) and 15 percent thought it should be operated on a 24-hour basis.
- The final question had to do with frequency of the service. **About 50 percent of the respondents thought the service should operate at seven minutes or less frequency** (combining the first two categories) and 35 percent thought it should operate on seven to ten minute headways. About 14 percent of the respondents thought the service should operate at headways of greater than 10 minutes.

Table 4-1
Civic Center Survey Results

What is your destination?

Response	Number	Percent
Courts	102	24.0
Hospitals	152	35.8
Education	66	15.5
Other	105	24.7
Total	425	100.0

Does the Civic Center Area need a shuttle/circulator system?

Response	Number	Percent
Yes	326	76.5
No	100	23.5
Total	426	100.0

Would you ride a circulator?

Response	Number	Percent
Yes	287	68.3
No	133	31.7
Total	420	100.0

What trips would you make on a shuttle/circulator?

Response	Number	Percent*
Parking	177	41.5
Lunch	71	16.6
Between Buildings	163	38.2
To/From Transit	99	23.2
To/From Home	39	9.1

*Percent of 427 completed questionnaires.

At what time would you need to ride a shuttle/circulator?

Response	Number	Percent
Morning/Evening Only	130	39.6
During Normal Business Hours	143	43.6
Lunch Time Only	7	2.1
24 Hours	48	14.6
Total	328	100.0

How frequent should a shuttle run?

Response	Number	Percent
Every 5 Minutes	129	39.1
5 to 7 Minutes	36	10.9
7 to 10 Minutes	116	35.2
10 to 15 Minutes	49	14.8
Total	330	100.0

Source: The Corradino Group, Inc.

Table 4-2 presents several cross-tabulations (comparison of the results of one question with the results of another question) of the survey questions. Examining the first cross tabulation, it is clear that most people using the courts complex that were interviewed cite the need for a circulator service. This is consistent with the fact that many using the courts get there using transit and/or have to park a good distance from the facility. In the second cross-tabulation, it would appear that by a factor of more than three-to-one, people using the courts system would ride the service while the percentage was less for those using the hospital facilities. In the third cross-tabulation, it is clear that of those who think a circulator is needed most would ride it. The final cross-tabulation assesses the types of trip activities and, as can be seen, the categories of "parking" and "between buildings" get the most response.

In summary, it seems clear that based on the survey results, respondents think a circulator is needed and a majority would use the service. While like any survey, this survey has limitations, it is the consultant's opinion that the results accurately reflect a consensus of opinion of people in the area. Workshop participants and other discussions held for this project affirm this.

Table 4-2
Civic Center Survey Cross-tabulations

Destination by need for a shuttle/circulator system

	Does the Civic Center Area need a shuttle/circulator system?		
Destination	Yes	No	Total
Courts	90	12	102
Hospitals	117	35	152
Education	42	23	65
Other	75	30	105
Total	324	100	424

Destination by would you ride a shuttle/circulator

	Would you ride a circulator?		
Destination	Yes	No	Total
Courts	82	20	102
Hospitals	104	46	150
Education	39	26	65
Other	61	40	101
Total	286	132	418

Need for a circulator/shuttle by would you ride a circulator/shuttle

	Would you ride a Circulator?		
Circulator/Shuttle Needed?	Yes	No	Total
Yes	268	56	324
No	19	76	95
Total	287	132	419

Destination by trips you would make on a circulator/shuttle

	What trips would you make on a shuttle/circulator?				
Destination	Parking	Lunch	Between Buildings	To/From Transit	To/From Home
Courts	83	41	44	23	16
Hospitals	47	14	67	33	12
Education	14	3	11	21	4
Other	33	13	41	21	7
Total	177	71	163	98	39

Source: The Corradino Group, Inc.

5. Civic Center Alternatives and Recommendations

5.1 Stakeholder Workshops and Consensus Alternative

A key element of the planning process was the participation of Civic Center stakeholders in two workshops facilitated by the consultant team. The workshops were sponsored by the City of Miami and the Miami Partnership and held on September 14, 2005, and November 17, 2005.

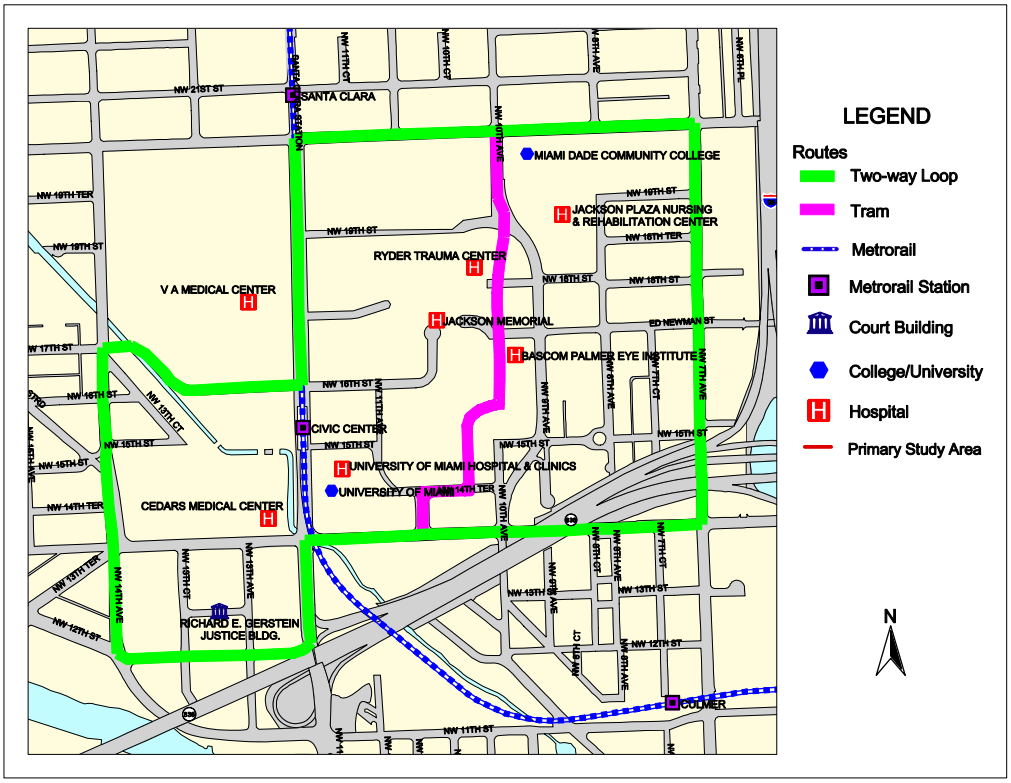
Representatives of major institutional employers, commercial and neighborhood associations, and government organizations were invited to participate in the workshops.

The goals of the workshops were to: a) establish the need for a circulator and the type of service that would satisfy that need; and, b) determine the optimal routing for the circulator. As a result of the work conducted in the first workshop, it was clear that the need for the circulator revolved around parking and alleviating traffic congestion where possible. Developing a supporting infrastructure to facilitate the attractiveness and use of Metrorail was of primary importance. Finally, providing local connectivity among buildings and uses in the campus and improving way-finding and the ability of people and visitors to get around were seen as key.

At the second workshop, Alternatives 1 and 2 (shown in Figures 5-1 and 5-2) were presented to the stakeholders. These alternatives included representative route and operational configurations that addressed the needs identified in the first workshop. Both alternatives featured two distinct operational elements: 1) a more traditional bus-type circulator operating on public right-of-way; and, 2) a tram similar to trams found in Disneyworld and Key West that carried trailers on which people would ride. The trams would operate primarily on service drives and pedestrian pathways. Figure 5-3 presents examples of these.

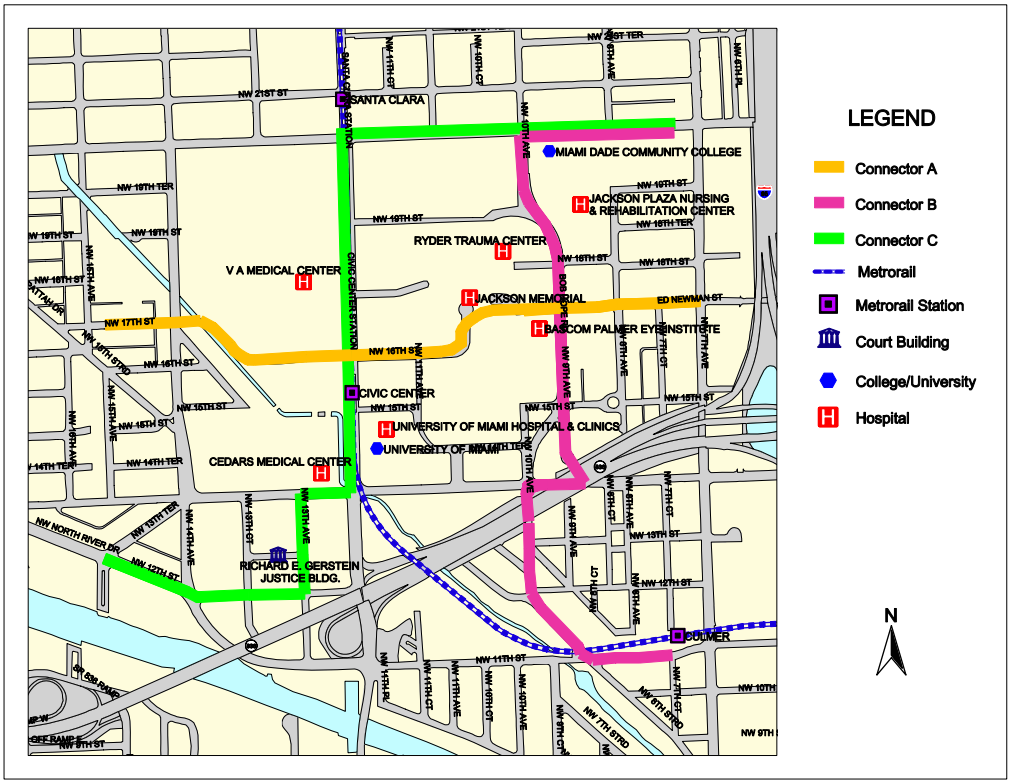
The stakeholder's group consensus alternative (Figure 5-4) was a combination of the traditional circulator loop shown under Alternative 1 with two tram options, one operating north-south and the other east-west. Tables 5-1 through 5-3 show information on the vehicles required, capital costs, and operational costs of each alternative operating at varying headways. These costs can be shifted up or down by making changes in service span (i.e., don't operate the same service all day long), frequency, or days operated.

Figure 5-1
Alternative 1



Source: The Corradino Group, Inc.

Figure 5-2
Alternative 2



Source: The Corradino Group, Inc.

Figure 5-3
Examples of Circulator Types

Source: The Corradino Group, Inc.

Table 5-1
Civic Center Circulator Alternatives
Vehicles Required

Alternative/Route	Round Trip		Vehicles Required Headway		
	Length (miles)[1]	Length (minutes)[2]	5 Minutes	10 Minutes	15 Minutes
Alternative 1					
Two-way Loop[3]	2.9	19	8	4	4
Tram	1.2	16	4	2	2
Alternative 2					
Connector A	1.8	12	3	2	1
Connector B	2.4	16	4	2	2
Connector C	3.0	20	4	2	2
Consensus Alternative					
Two-way Loop[3]	2.9	19	8	4	4
Tram - north/south	1.2	16	4	2	2
Tram - east/west	1.3	17	4	2	2

[1]Calculated from the GIS.
[2]Assumed an average speed of 10 mph for the Loop and Connector routes. An average speed of 5 mph is assumed for the Tram. An additional 10 percent has been added on for breaks and turn-around time.
[3]Vehicle and daily hours have been doubled to reflect a two-way route
Source: The Corradino Group, Inc.

Table 5-2
Capital Cost

Alternative/Route	Vehicles Required			Cost (8 Pass. Trams only)			Cost (Trams w/15 pass Trailer)		
	Headway			Headway			Headway		
	5 Minutes	10 Minutes	15 Minutes	5 Minutes	10 Minutes	15 Minutes	5 Minutes	10 Minutes	15 Minutes
Alternative 1									
Two-way Loop[3]	8	4	4	$2,400,000	$1,200,000	$1,200,000	$2,400,000	$1,200,000	$1,200,000
Tram	4	2	2	$48,000	$24,000	$24,000	$96,000	$48,000	$48,000
Alternative 2									
Connector A	3	2	1	$900,000	$600,000	$300,000	$900,000	$600,000	$300,000
Connector B	4	2	2	$1,200,000	$600,000	$600,000	$1,200,000	$600,000	$600,000
Connector C	4	2	2	$1,200,000	$600,000	$600,000	$1,200,000	$600,000	$600,000
Consensus Alternative									
Two-way Loop3	8	4	4	$2,400,000	$1,200,000	$1,200,000	$2,400,000	$1,200,000	$1,200,000
Tram - north/south	4	2	2	$48,000	$24,000	$24,000	$96,000	$48,000	$48,000
Tram - east/west	4	2	2	$48,000	$24,000	$24,000	$96,000	$48,000	$48,000

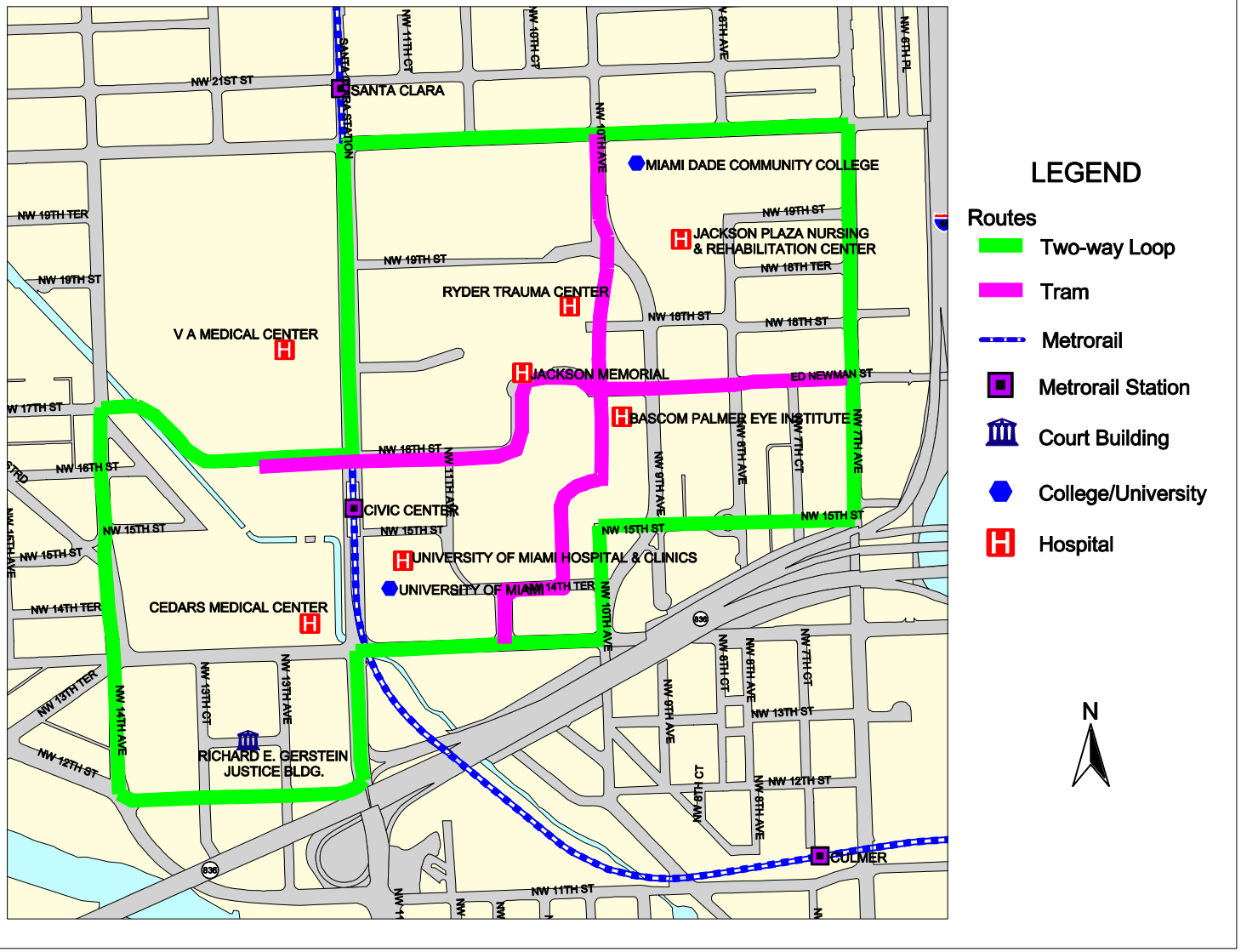
Assumptions:
1. Two-way Loop and Connectors are operated with low-floor trolleys at $300,000 per vehicle.
2. The trams are eight-passenger "limousine" golf carts at $12,000 per vehicle.
3. The trailers accommodate 15 passengers at $12,000 per trailer.
Source: The Corradino Group, Inc.

Table 5-3
Civic Center Circulator Alternatives
Annual Operating Cost

Alternative/Route	Weekdays			Weekdays & Weekends		
	Headway			Headway		
	5 Minutes	10 Minutes	15 Minutes	5 Minutes	10 Minutes	15 Minutes
Alternative 1						
Two-way Loop	$1,497,600	$ 748,800	$ 748,800	$2,102,400	$1,051,200	$1,051,200
Tram	$ 436,800	$ 218,400	$ 218,400	$ 436,800	$ 218,400	$ 218,400
Alternative 2						
Connector A	$ 561,600	$ 374,400	$ 187,200	$ 788,400	$ 525,600	$ 262,800
Connector B	$ 748,800	$ 374,400	$ 374,400	$1,051,200	$ 525,600	$ 525,600
Connector C	$ 748,800	$ 374,400	$ 374,400	$1,051,200	$ 525,600	$ 525,600
Consensus Alternative						
Two-way Loop	$1,497,600	$ 748,800	$ 748,800	$2,102,400	$1,051,200	$1,051,200
Tram - north/south	$ 436,800	$ 218,400	$ 218,400	$ 613,200	$ 306,600	$ 306,600
Tram - east/west	$ 436,800	$ 218,400	$ 218,400	$ 613,200	$ 306,600	$ 306,600

Assumptions:
1. Operating cost per hour per vehicle is $60 for all routes with the exception of the tram which is assumed to have an hourly operating cost of $35.
2. Routes are operated 12 hours daily.
Source: The Corradino Group, Inc.

Figure 5-4
Consensus Alternative



Source: The Corradino Group, Inc.

5.1.1 Consensus Alternative Estimated Costs

Capital Costs (assumed to operate at 10-minute headways on weekdays; reducing the headway to five minutes or greater increases the vehicle costs by 100%)

Traditional Trolley Circulators -	$1,200,000
Trams -	$48,000
Physical Improvements/Sidewalk Pavement Enhancements -	$200,000
Contingency -	$144,800
TOTAL CAPITAL -	$1,592,800

Operating Costs (Assumes 10-minute headways on weekdays and 10-minute or greater headways on weekends)

Two-way loop -	$1,051,200
Trams -	$613,200
TOTAL ANNUAL OPERATING -	$1,664,400

5.2 Feasibility and Implementation

The input from the stakeholders and the results of the survey (as presented in Chapter 4) indicate a consensus that a circulator service in the Civic Center area is needed and would be used. Therefore, it is recommended that the City and the Miami Partnership continue to pursue implementation. A second phase of this planning effort is required to "fine tune" the plan, determine physical issues that may affect the tram service, and resolve other considerations. From the standpoint of funding, discussions held with Miami-Dade Transit (MDT) and the Florida Department of Transportation (FDOT) have all indicated that funding could be obtained through several sources including, but not limited to, traditional transit funding through Miami-Dade County, FDOT's Service Development Program, and other local public and private elements. It is believed that through these funding sources, and support of the private sector components of the Civic Center area, a viable transit circulator can be established that enhances the transportation opportunities in the Civic Center, contributes to alleviation of parking and traffic concerns, and supports use of Metrorail and other non-single occupancy vehicles as primary transportation options for employees, residents of, and visitors to, the Civic Center.

This report represents Phase I in the circulator study process. The next phase will be focused upon refining the proposed routes and services, resolving operational issues, and identifying a financial plan. That work is anticipated to begin in spring 2006.

Appendix A

Pictorial Profile of Study Area

Miami-Dade Transit's Metrorail dominates the north-south axis of Civic Center along 12th Avenue. About 6,000 people per day get on and off at the Civic Center Station each day.

Miami-Dade Transit operates a number of bus routes to and through the Civic Center Area. Many of these meet at stops on 16th Street in front of the VA Hospital.

Typical way-finding signs on the Civic Center Campus.

Commercial strip along 20th Street.

Crossing 12th Street under Metrorail for pedestrians can be hazardous. The intersection of 12th Avenue and 16th Street had one of the highest concentrations of auto/pedestrian crashes in the study area.

Cedars Medical Center – One of the major employers in the Civic Center area.

The Miami River borders the study area's predominant residential enclave in the area known as Spring Garden.

There is a substantial amount of private residential development, such as the 36 condominiums referenced in the sign above, going into the Civic Center area. As more people who work in the area choose to live there, there will be benefits to traffic issues.

There are some small residential and small office enclaves on the fringe of the Civic Center.

Parking, in the form of garages and surface lots, continues to be perceived as a major "issue" in the Civic Center.

Any circulator option will have to have consideration given to ADA/paratransit service.

A typical "trolley" circulator could be used in the area.

Trains operating on sidewalks and service drives pulled by cars not unlike this one operating in Civic Center are seen as a distinct complement to traditional circulator bus service.

Aerial view of Civic Center area.