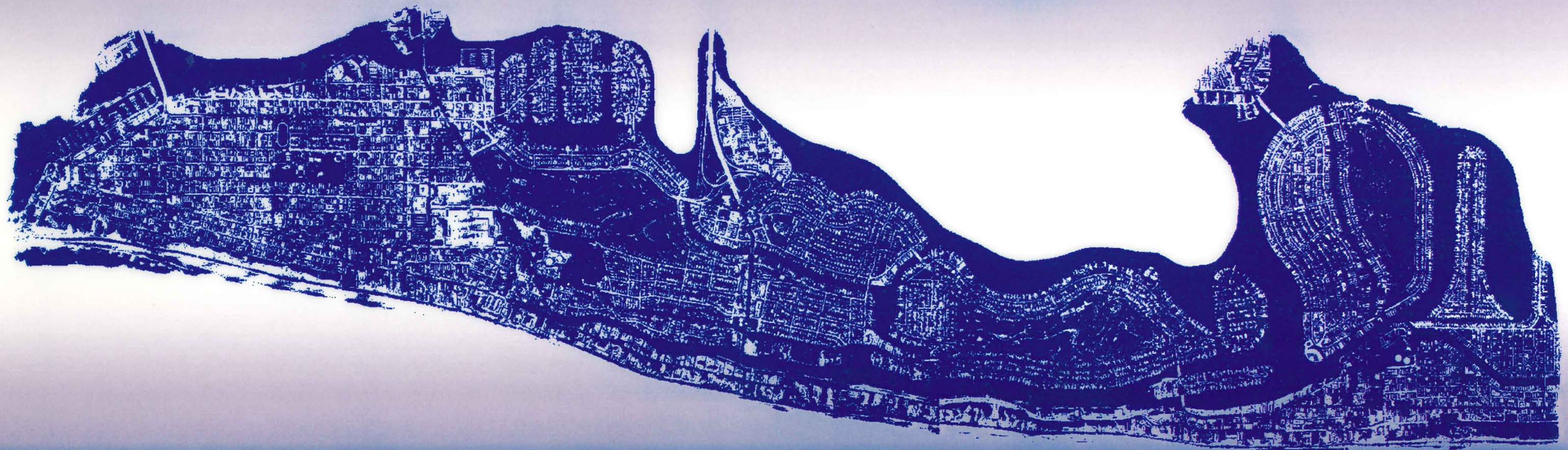




# MIAMI Intermodal



# BEACH Feasibility Study



CITY OF MIAMI BEACH



MIAMI-DADE COUNTY  
METROPOLITAN PLANNING ORGANIZATION

## TASK I - TECHNICAL MEMORANDUM

August 1, 2000





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# Miami Beach Intermodal Feasibility Study

## TASK 1 Introduction

As part of Miami Beaches on-going commitment to being on the leading edge of transportation for urban communities in the State of Florida, the City has asked The Corradino Group to perform an Intermodal Transit Center Feasibility Study for its Electric Shuttle. This Technical Memorandum represents the first in a two part report detailing the site feasibility analysis, economic development opportunities and conceptual design of such a facility.

The Electrowave is a wildly successful local transit service that operates on clean electric power. The city desires to extend its service to both Middle and North Beaches in the future. In this vein the city is looking to develop a permanent home and intermodal facility, to create economic development opportunities, provide incentive to ride transit and create an ease of transfer between various modes, as well as develop a facility that is fitting as a design centerpiece in one of the worlds most popular resorts.

Nine sites were analyzed as part of this study. These include:

- 5<sup>th</sup> Street and Michigan Avenue
- 5<sup>th</sup> Street and Alton Road
- West Avenue and Dade Boulevard
- Convention Center Lot
- City Hall Parking Lot
- Dade Boulevard and Pine Tree Avenue
- Indian Creek and Collins Avenue
- 83<sup>rd</sup> Street and Collins Avenue North
- 83<sup>rd</sup> Street and Collins Avenue South.

During the analysis two additional sites were added to the study due to their location and potential as opportunities for the site. These are:

- 17<sup>th</sup> Street and Washington Avenue
- City Hall Lot East

This project focused on analyzing these sites for their ability to house new facilities and function at optimal standards. It examined the merits of separate and joint facilities. The following is a graphic and textural description of the work performed to date.





Miami Beach  
Intermodal  
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TASK 1-A

Potential  
Intermodal Center  
Location Map





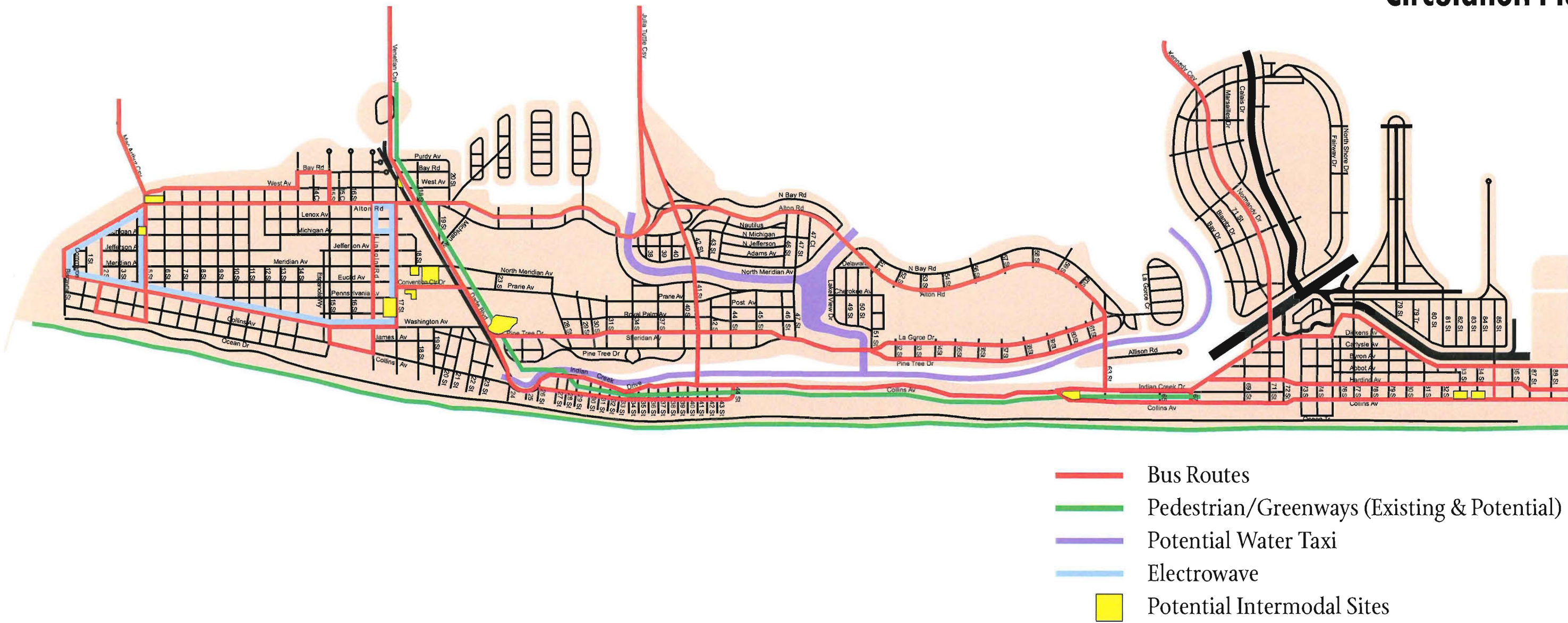


Miami Beach  
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TASK 1-C

**Miami Beach  
Circulation Plan**





## Miami Beach Intermodal Feasibility Study

### **TASK 1-D** **Evaluation of** **Multiple Site** **Advantages/** **Disadvantages**

In evaluating sites for intermodal and maintenance facilities several factors must be taken into account. These include efficiency, size, cost, and location. There are advantages and disadvantages associated with having these facilities on single or multiple sites.

#### **EFFICIENCY**

Efficiency of use would point to having all intermodal and maintenance facilities on one site. This would enable buses to begin and end their day at the same location and allow for minimal duplication of services. Buses would start each day by moving from the parking area to the intermodal section of the facility, picking up passengers and beginning their routes. As the route is complete the bus enters the intermodal facility and the passengers disembark. If it is time to change the vehicle batteries or perform routine maintenance the vehicle simply rounds a corner and heads to the maintenance area already on site. These simple procedures are then performed. If more intense maintenance is needed the same procedure is followed. At the end of the day the passengers are disembarked, and the bus has its batteries changed, is fueled with propane or other alternatives, is maintained, washed and parked for the next day.

Separate facilities would see the bus have its batteries changed at the intermodal facility, but would require more intense maintenance, washing and storage to occur off site. Battery storage would also be required on both sites. This is a duplication of some services. Buses would need to be taken off route often to refuel, and many drivers may start and end their days in differing locations. These issues are accentuated when the two facilities are more than a mile apart.

#### **SIZE**

The minimum space needed for an intermodal facility would be approximately 26,000 square

feet. This would hold parking, battery storage, and associated administrative uses. An intermodal facility associate with a parking garage would require about 81,000 square feet. This would accommodate four levels of parking for 1,000 vehicles plus space for retail and joint development activities. A bus maintenance facility would minimally require about 67,000 square feet. This would contain parking for buses and passenger vehicles, maintenance and battery areas. Total space of these separate facilities would be about 148,000 square feet.

Conversely a combined intermodal facility with parking and maintenance area would require between 80,000 and 100,000 square feet. This is nearly 50,000 square feet less than the separate facilities.

#### **COST**

Separate facilities may cost as much as \$23 million. Combined facilities may cost less by \$1.5 to several million. This again, would be due to the efficiency gained by not duplicating services and working on the same piece of land.

#### **LOCATION**

Location is of utmost importance in planning such facilities. An examination of the specific location is necessary. The closer within an area separate facilities can be located to one another the more practical separate facilities become. For electric vehicles this is of higher importance. Also of high importance is the elimination of any steep grades that these buses must cross. Due to the fact that these vehicles operate on battery power, the power source needs to be changed as often as three times per day. Several factors affect the life of the power cell. Traffic conditions, temperature and power requirements all play a role in depleting the batteries. Once the batteries die the wheels on the vehicle will not move. These vehicles cannot be towed, and must be picked up and

transported to the battery shop. This can become expensive and serves to severely congest traffic at certain times of the day. Buses also must go off route to move from the intermodal center to the maintenance yard. The minimization of these non-revenue miles is important. Certain services are provided at both locations to mitigate this. Location on the broader sense is also of prime importance. Densely packed urban areas such as Miami Beach generally have a higher property cost. There is usually less developable land and this land is offered at a premium. Conversely more rural locations do not have the economic pressures of the land associated with them. The urban location of Miami Beach dictates that property values are high and prime space is at a premium. An intermodal facility is a public space, generally designed as a gateway for the city or show piece in a community. Such location takes on a grand and glamorous look and feel. Maintenance facilities are inherently less glamorous. Activities in such locations are generally kept out of site. They prepare the vehicle for its public activity. In urban areas it is more appropriate to have such a use in less economically and historically important areas. These can be kept with similar uses, more resembling light industrial areas.

Noting the high property values in Miami Beach it is suggested that separate facilities be developed, if suitable locations are feasible.





# Miami Beach Intermodal Feasibility Study



## TASK 1-E Potential Rail Transit/ Other Mode Connections

### FUTURE LIGHT RAIL CONNECTIONS

Since the successful implementation of the San Diego Trolley in 1980, there has been a resurgence in the United States in interest in light rail transit (LRT). LRT systems have been successfully implemented in cities, such as Portland OR, Baltimore MD, Los Angeles CA, Pittsburgh PA, and Cleveland OH. Some of the LRT projects have been a part of larger transit system and others have been stand-alone lines that operate between several activity centers.

LRT is typified by one- to three-car trains running in the street right-of-way with an overhead power collection system. By contrast heavy rail systems such as Miami's Metrorail are higher capacity systems that require exclusive right-of-way due to the third rail power system. LRT systems are much lower in cost than the heavy rail transit system, and they operate at lower speeds in mixed traffic.

There have been several studies proposing light rail lines on Miami Beach. Previous studies include:

- ♦ In 1988 the *Miami Beach Light Rail Transit System Feasibility Study* was conducted to determine the feasibility of constructing a light rail transit (LRT) line connecting Downtown Miami to Miami Beach via the MacArthur Causeway. The proposed line was an 8.6-mile

link from the Bayside/Omni area to the Miami Beach Convention Center and then northward to 63<sup>rd</sup> Street.

- ♦ In 1993, *The Dade County Transit Corridor Transitional Analysis* examined a 9.3-mile LRT alternative for the Miami Beach Corridor. It extended at-grade from the Overtown Metrorail Station along the FEC rail line to Biscayne Boulevard, then crossing the MacArthur Causeway to 5<sup>th</sup> Street, turning northward on Washington Avenue, and ending at 71<sup>st</sup> Street. It considered the section between the Miami Beach Convention Center and 71<sup>st</sup> Street as a future project.
- ♦ The Florida Department of Transportation published the Draft Environmental Impact Study (DEIS) dated October 1995, for an east-west multimodal corridor from the Florida International University Main Campus, along SR 836, through the future Miami Intermodal Center to the Port of Miami. A separate LRT was proposed from Downtown Miami to Miami Beach. The LRT portion of the project extended from downtown Miami, across the MacArthur Causeway to Miami Beach, and then along Washington Boulevard to the Miami Beach Convention Center. The project

was to be built along the south side of the MacArthur Causeway, and the center median of Washington Avenue.

It is apparent that all of the previous studies foresaw LRT operating on along Washington Avenue to the Convention Center. Figure 1-3 shows how the proposed LRT relates to the various sites being examined for the intermodal transfer center. The sites at 5<sup>th</sup> and Alton, 5<sup>th</sup> and Michigan, City Hall, City Hall East, 17<sup>th</sup> and Washington, and Convention Center offer the best potential for a future rail connection.

### EXISTING TRANSIT LINES

Miami Dade Transit Agency operates an extensive network of bus routes on Miami Beach. Figure 1-4 illustrates the routes described in Table 1.

The Convention Center, 17<sup>th</sup> and Washington, City Hall East and City Hall sites offer the highest level of connection to existing MDTA transit routes. The site at Indian Creek/Collins offers the next highest connection followed closely behind by the two sites at 83<sup>rd</sup> and Collins. The 5<sup>th</sup> and Alton site has a large number of MDTA bus routes adjacent to it, but the current grade separation would make bus operations in and out of the site very inconvenient. The 5<sup>th</sup> and Michigan, Dade/West and the Public Works sites all connect to far fewer existing MDTA bus routes.

### ELECTROWAVE SHUTTLE

With minimal route deviation the Shuttle could currently connect to 7 of the proposed sites: Dade/West, the Convention Center, City Hall East, City Hall, 17<sup>th</sup> and Washington, 5<sup>th</sup> and Michigan, and 5<sup>th</sup> and Alton Road. The Indian Creek/Collins site and the 83<sup>rd</sup> and Collins site could become useful as an Intermodal Center in the future should the decision be made to extend service to the middle-beach area.

### WATER TAXI

The proposed Intermodal Sites at the Convention Center, Dade/West, Alton and 5<sup>th</sup>, 5<sup>th</sup> and

Michigan, and to a lesser extent the City Hall site would all provide connections to Water Taxis at either the Marina or along the Collins Canal (parallel to Dade Blvd.)

### PEDESTRIAN/GREENWAY CONNECTIONS

Miami Beach has several pedestrian locations that could be served by the proposed Intermodal Facilities. The Convention Center Site, 17<sup>th</sup> and Washington, and the two City Hall Lots could be connected along Meridian or Convention Center Drive to Lincoln Road. A interesting or dramatic greenway providing a shaded pedestrian connection between the Convention Center, City Hall, the Intermodal Transfer Center and Lincoln Road could increase the connectivity between these activity centers.

Similarly a greenway, or at least pedestrian amenities along 5<sup>th</sup> Street to Ocean Drive could make potential Intermodal Facilities on 5<sup>th</sup> Street more user friendly. Pedestrian improvements along 5<sup>th</sup> Street may also help in the revitalization of that important entrance into Miami Beach. If a major intercept lot were planned on the west end of 5<sup>th</sup> Street the pedestrian improvements on 5<sup>th</sup> would become even more critical.

**TABLE 1  
EXISTING BUS ROUTES**

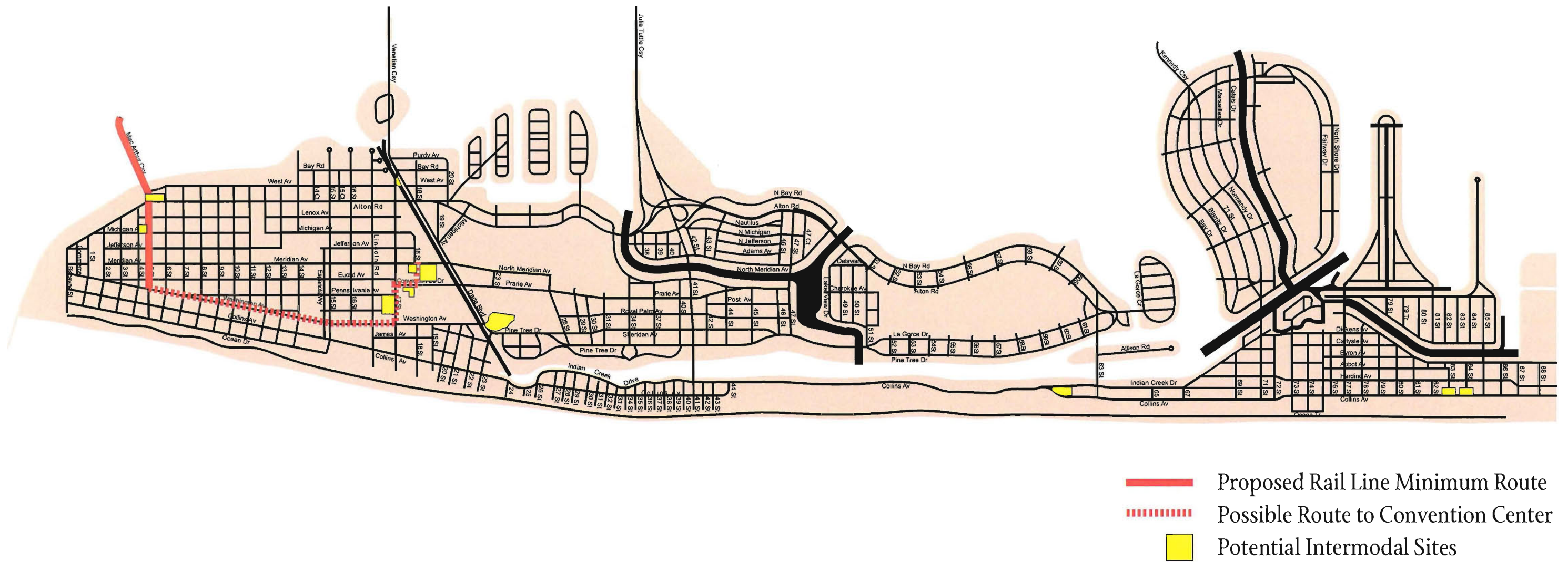
MDTA ROUTE	PEAK HOUR FREQUENCY	OFF PEAK FREQUENCY	ROUTING
A	20 minutes	20 minutes	Omni to Lincoln Rd via the Venetian Causeway
C	20 minutes	20 minutes	Downtown Miami along MacArthur Causeway to Washington Ave. then Collins to 41 <sup>st</sup> St. to Mt. Sinai.
F/M	30 minutes	30 minutes	River Dr. to Downtown Miami, MacArthur Causeway to Washington Ave. then Collins to 41 <sup>st</sup> St. to Mt. Sinai.
G	30 minutes	30 minutes	19 <sup>th</sup> St/ Meridian to Bal Harbor to W. Opolocka to NW 27 <sup>th</sup> Ave.
Flagler Max	12 minutes	---	Flagler to Downtown Miami, MacArthur Causeway to Washington Ave. to the Convention Center.
H	20 minutes	20 minutes	163 <sup>rd</sup> St. to Collins Ave. to Convention Center to Washington Ave. to S. Pointe
K	20 minutes	20 minutes	Omni Mall, MacArthur Causeway to Washington Ave. to Collins to Hallandale Beach Blvd.
L	10 minutes	12 minutes	Hialeah along 79 <sup>th</sup> St to Collins to the Convention Center to Lincoln Rd.
R	Hourly	Hourly	Lincoln Rd to Alton Rd. to MT Sinai to 96 <sup>th</sup> St and Bay Rd.
S	12 minutes	12 minutes	Downtown Miami, MacArthur Causeway to Alton to Lincoln to Collins to Aventura.
W	24 minutes	24 minutes	Alton Rd/West Ave. to South Pointe to Washington Ave. to 17 <sup>th</sup> St Circulator.



# Miami Beach Intermodal Feasibility Study



**FIGURE 1-3**  
**Proposed Rail**



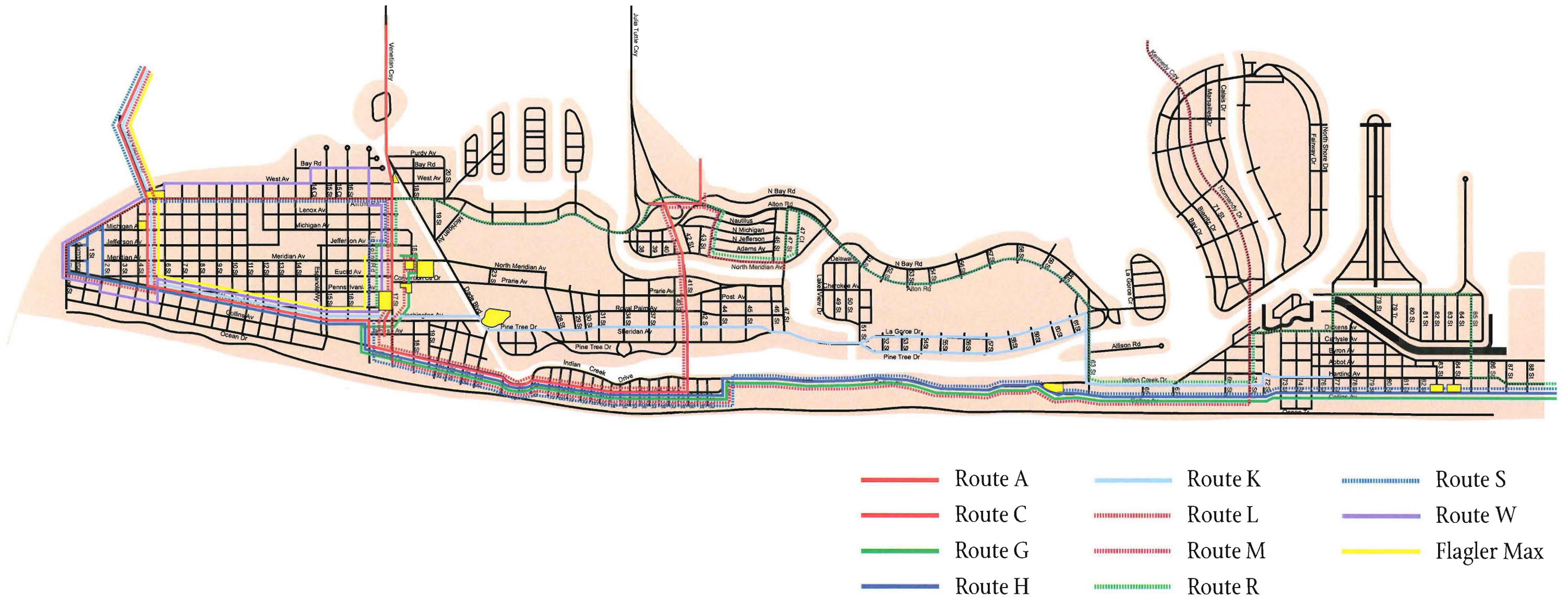




Miami Beach  
Intermodal  
Feasibility Study



**FIGURE 1-4**  
**Existing Bus Routes**







Miami Beach  
Intermodal  
Feasibility Study

**TASK 1-F**  
**Preliminary**  
**Cost Estimate**



**INTERMODAL FACILITY  
(STAND ALONE)**

Mobilization	\$ 100,000
Sitework	195,800
Concrete	479,800
Masonry	242,000
Roof	165,600
Waterproofing	83,189
Storefronts	300,000
Mechanical	169,800
Electrical	169,800
Finishes*	667,800
Add-ons	1,029,515
<b>TOTAL</b>	<b>\$3,603,304</b>
<b>*Does not include space for lease</b>	

**MIAMI BEACH ELECTROWAVE  
BUS MAINTENANCE AND STORAGE FACILITY  
COST ESTIMATE (\$2000)**

ITEM	SIZE	COST/UNIT	COST
Lift Building #1	5,000 sf	\$80/sf	\$400,000
Battery Building #2	5,000 sf	\$80/sf	\$400,000
Tires and Parts	600 sf	\$ 120/sf	\$72,000
Vault	30 sf	each	\$67,800
Office Space	3,500 sf	\$ 120/sf	\$420,000
Inspection Area	6,600 sf	\$ 120/sf	\$792,000
Wash Bay	1,500 sf	\$ 120/sf	\$180,000
High Bay	1,500 sf	120/sf	\$180,000
Wash Equipment		Each	\$60,000
Main Building #3			\$1,771,800
Fuel Dispensing	2,500 sf	\$45/sf	\$112,500
Fuel Equipment		Each	\$50,000
AGT Canopy	150 sf	\$45/sf	\$6,750
AGT Tank	2000 gal	each	\$5,400
UGT Tank	4000 gal	each	\$9,350
Car Parking	8,400 sf	\$ 15/sf	\$126,000
Bus parking	27,220 sf	\$20/sf	\$544,400
Landscaped Drainage Area	5,000 sf	\$6/sf	\$30,000
Exterior Work			\$884,400
<b>Subtotal</b>			<b>\$3,456,200</b>
Contingency		20%	\$691,240
Design, Const. And Mgmt.		40%	\$1,658,976
<b>Total</b>	<b>67,000 sf</b>		<b>\$5,806,416</b>

**PARKING GARAGE**

Mobilization	\$ 100,000
Sitework	233,580
Utilities	50,000
Concrete	5,665,111
Stairs	134,400
Metals	142,080
Carpentry	81,600
Waterproofing	272,363
Finishes	48,960
Signage	25,000
Equipment	50,000
Elevators	560,000
Mechanical Systems	652,800
Electrical	682,800
Add-ons	3,890,055
<b>TOTAL</b>	<b>\$13,615,194</b>

**INTERMODAL FACILITY  
(Constructed in Conjunction with Garage)**

Sitework	\$ 165,800
Concrete	165,600
Masonry	102,000
Roof	165,600
Waterproof	83,189
Storefronts	51,200
Mechanical	169,800
Finishes/Equipment*	600,000
Add-ons	604,075
<b>TOTAL</b>	<b>\$2,114,264</b>
<b>*Does not include space for lease</b>	

Preliminary cost estimates were broken in to four categories:

1. Maintenance and Storage Facility
2. Parking Garage
3. Parking Garage in conjunction with Intermodal Facility
4. Intermodal Facility, (stand alone)

The costs have been provided in 2000 dollars. These have been broken into building component size and cost per unit to arrive with the total cost.

A minimal individual maintenance and storage facility would cost approximately \$5.8 million.

A minimal parking facility with 800 to 1000 spaces would cost \$13.6 million.

A minimal intermodal facility in conjunction with the garage would cost \$2.1 million

A minimal stand-alone intermodal facility would cost \$3.6 million.

These costs are approximate and may vary at the time of actual construction and facilities programming. A breakdown of individual costs follows.





# Miami Beach Intermodal Feasibility Study

## TASK 1-G Potential Funding Scenario

Well over \$300 million exist in potential funds from a variety of agencies in a variety of programs. The city needs to strategically plan which programs it wishes to take advantage of and then compete for such funds. Currently the city is expert at capturing such funds through its ability to identify applicable programs and win grants.

### GRANT PROGRAMS

- ♦ **Section 5309 Program:** The primary federal funding program for new fixed guideway transit projects is the Section 5309 Program. This is the portion of FTA's Capital Program that helps pay for new heavy rail, light rail, commuter rail, busways, and BRT lines and extensions in metropolitan areas. In FY 1999, \$896 million was appropriated nationwide. This program is very competitive, with a long list of projects in the pipeline. To be eligible, alternatives analysis studies must be completed. Projects are rated by FTA on an annual basis during the fall, based on project information submitted by project sponsors in the late summer (for FY 2001 the submittals were due September 3, 1999). FTA's funding recommendations are submitted to Congress in February. Funding allocations are determined by Congressional earmarks. This intermodal project may not be considered by FTA due to the fact that it is not associated with a fixed rail effort.

Among other FTA evaluation criteria, projects must be supported by an acceptable degree of local financial commitment. Due to the demand for funds from this program, FTA looks favorably on projects that include a significant state and local overmatch. On average, those projects receiving Section 5309 New Starts funds are obtaining 50% of capital funds from this source (although this average reflects almost

full match for several large projects which have already been awarded.)

- ♦ **Section 5307 Program:** This is FTA's Urbanized Area Formula Program through which funds for capital replacement and expansion are distributed to transit operators and States. Section 5307 is the principal source of capital program funds for most bus systems, and is generally not a major source of New Starts funding. In FY 1999, \$137.6 million was apportioned to Florida and \$33 million went to Miami-Dade County.
- ♦ **Congestion Mitigation and Air Quality (CMAQ) Program:** Formula program administered by FHWA and FTA and allocated to metropolitan areas and states, whose primary purpose is to fund projects that reduce emissions in air quality non-attainment areas. Project sponsors (usually the MPO) must demonstrate that the project will lead to a reduction in air pollutant emissions. Priority is to be given to projects in a State Implementation Plan for air quality. Funds must generally be used for projects within the boundaries of a non-attainment or maintenance area. CMAQ may be used for operating assistance during the first three years of a new service. In FY 2000, \$16.2 million was apportioned to Miami-Dade County.
- ♦ **Surface Transportation Program (STP):** Formula program through which funds are allocated to States and metropolitan areas for highways, transit capital, and bus terminals and facilities. Miami-Dade County received \$ 37.2 million in FY 2000.
- ♦ **Interstate Maintenance:** FHWA formula program for resurfacing, restoring, rehabilitating, and reconstructing most

routes on the Interstate System. Up to 50% of a State's apportionment may be transferred to NHS, STP, CMAQ, and/or Bridge. Miami-Dade's 2000 apportionment was \$ 22.4 million.

- ♦ **Job Access and Reverse Commute Grants:** Requires regional job access and reverse commute transportation plans developed by a coordinated transportation/human services planning process. Grant award criteria include the percentage of the population that are welfare recipients, the need for additional services, coordination with State welfare agencies, and use of innovative approaches.

While ISTEA, and now TEA-21 created broad discretion in the ability of states and locales to "flex" funds from highway to transit uses under FHWA's STP program, the following smaller programs were specifically intended to promote community-based development linked to transit, bicycle, and pedestrian facilities on a selective basis. These sources could be used for specific elements of the project, where eligibility criteria are satisfied.

- ♦ **Livable Communities Initiative:** The FTA initiated the Livable Communities Initiative (LCI) to strengthen the link between transit and communities. Eligible activities include planning, property acquisition, utilities relocation or installation, walkways, and provision of transit-related open space, bus purchases, transit station enhancements, park-and-ride lots and transfer facilities incorporating community services such as day care, health care, and public safety, safety elements, and site design improvements for transit and pedestrian access. Limited demonstration funds will also be made available for some applications. FTA provided about \$50 million for 21 capital projects and an

additional \$2 million for local planning, technical assistance and best practices materials in FY 1999.

- ♦ **Transportation and Community System Preservation Pilot Program (TCSP)** The TCSP (TEA-21 Section 1221) is an FHWA program being jointly developed with the FTA, the Federal Railroad Administration (FRA), Volpe Center, and the EPA. It provides funding for planning grants, implementation grants, and research to investigate and address the relationship between transportation and community and system preservation. States, local governments, and MPOs are eligible for discretionary grants to plan and implement strategies that meet program objectives. Authorized funds for the TCSP program were \$20 million in FY 1999 and \$25 million per year for FY 2000 through 2003. Actual appropriations vary from year to year. In FY 99, about \$13 million in funding were made available to specific selected projects.

Continued on next page





## Miami Beach Intermodal Feasibility Study

### TASK 1-G Potential Funding Scenario

Continued from previous page

#### ♦ **Transportation Enhancements:**

Transportation Enhancements (TE) are transportation-related activities that are designed to strengthen the cultural, aesthetic, and environmental aspects of the Nation's intermodal transportation system. TEA-21 continues the TE Program, originally established in ISTEA. Ten percent of each State's total Surface Transportation Program (STP) funds are set aside for the TE program. The 10% set-aside is allocated to individual projects based on a competitive application procedure within each state. Applicants for funding may include MPOs, local agencies, or not-for-profit organizations. A unique "leveraging" feature of the TE Program is that Federal *non*-transportation funds can be used to complete the 20% statutory matching requirement.

The TE program provides funds to implement a variety of non-traditional undertakings, either as stand-alone projects or as part of a larger multimodal investment. Examples of the latter could include restoration of historic train stations, bicycle facilities for intermodal centers, visitor centers, and community-based transportation plans and projects.

With the exception of Section 5309 funding, which is a general source applied against the entire New Start project, most of the other federal sources would be used selectively and in relatively small amounts, often applied to individual project elements serving specific purposes such as highway improvements, grade crossing improvements, community development, access to jobs, safety, or air quality improvement. More detailed analysis of the project will be required to determine specific opportunities for the use of these

funding sources, after a preferred alternative is chosen.

#### **FEDERAL CREDIT ENHANCEMENT PROGRAMS**

#### ♦ **Transportation Infrastructure Financing and Innovation Act (TIFIA):**

USDOT provides loans, letters and lines of credit, and loan guarantees for surface transportation projects of National significance. Such loans and guarantees can be provided to public and private sponsors of highway, rail, transit, and intermodal projects. Project applications are evaluated and selected by DOT on a competitive basis. Total credit assistance available nationwide is authorized at \$1.8 billion in FY 2000 (\$90 million in subsidy).

Projects must generally cost at least \$100 million, and the amount of credit assistance to a project may not exceed 33% of eligible project costs, including capitalized interest. Financing must be repayable, in whole or in part, from tolls, user fees, and other dedicated sources (which may include general obligation pledges or corporate promissory pledges, but not a pledge of Federal funds). Applicants must provide a preliminary rating opinion letter from at least one nationally recognized bond rating agency.

#### ♦ **Transit Grant Anticipation Notes (GANs) Bonds:**

A GAN refers to any financing instrument (bond or lease-backed financing) for which principal and/or interest is repayable with future Federal transit funds. The debt is issued in anticipation of the receipt of FTA grant reimbursements in subsequent years. Transit GANs may be backed by FTA formula funds (Section 5307 funding), and more recently, several agencies have issued GANs supported by

discretionary funds (Section 5309) backed by Full Funding Grant Agreements. Because (unlike formula funds) discretionary funds are not assured in any given year, their credit risk tends to be higher than one backed by formula funding. A grantee can increase coverage requirements to achieve a good rating by borrowing less than the FFGA, or by securing the bonds with a secondary pledge from another source, such as trust fund revenues.

#### **STATE TRANSPORTATION FUNDS**

- ♦ The State Transportation Trust Fund is composed of funds collected by the state from various taxes collected on Fuel. These taxes include the Fuel Sales Tax, the State Comprehensive Enhanced Transportation System (SCETS) Tax, the Fuel Use Tax, and the Alternative Fuel Tax. These funds are used for projects funded by FDOT and are usually used to provide half the match for federal transportation dollars.

#### **LOCAL OPTION GAS TAX (LOGT)**

Counties are accorded the option of imposing 12 cents on each gallon of gasoline for local projects selected by local officials. Miami Dade County collects 10 cents of the allowed amount generating about \$8.5 million annually. One cent of LOGT goes to the County, but may be distributed to the municipalities. At least 25% of the remainder goes to the municipalities. In Miami-Dade County, about \$2 million annually is passed through to the cities for local projects.

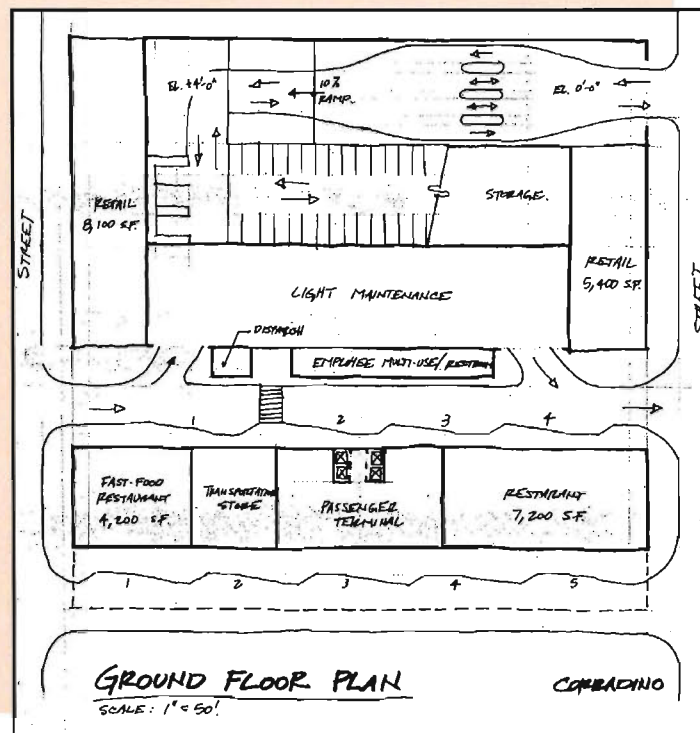




# Miami Beach Intermodal Feasibility Study

## TASK 1-H

# Minimum Square Footage of Facility Type



### MINIMAL INTERMODAL CENTER

The minimum space needed for an Intermodal transfer location would be approximately 130' x 200' - 26,000 square feet. The length of the space is dictated by providing bus bays for 2 MDTA full length coaches and 2 Electrowave buses. Thus the site would need approximately 200-foot frontage. The 200-foot length would provide adequate length for all other required functions. Other functions on the site include:

- ♦ Bowling alley parking for 10 buses over-night (2 rows of 5 buses each)
- ♦ Battery storage charging building,
- ♦ Auto parking for 20 cars (20 15' x 7.5' perpendicular spaces)
- ♦ 15 foot one way drive aisle
- ♦ 1 building including passenger lobby, store, storage space, public restrooms, single employee toilet, Dispatch, break room. (175' x 50')

The West Avenue/Dade Blvd. will not even accommodate the minimum project. All other sites will accommodate this Minimum Intermodal Center.

### INTERMODAL CENTER PLUS PARKING GARAGE

*split facility*

The minimum space necessary to accommodate a 1000 space parking garage over an Intermodal Center is 81,600 square feet. The garage has four parking levels above the ground floor level, which is reserved for the Intermodal Center, the entrance to the garage and a generous amount of store front retail. This site easily accommodates all of the required Electrowave Operations plus about 25,000 square feet of joint development opportunities.

The 5<sup>th</sup> and Alton, the Convention Center, City Hall East, 17<sup>th</sup> and Washington, the Public Works and the Indian Creek and Collins Sites can all accommodate the full Intermodal Site plus parking.

### BUS MAINTENANCE FACILITY

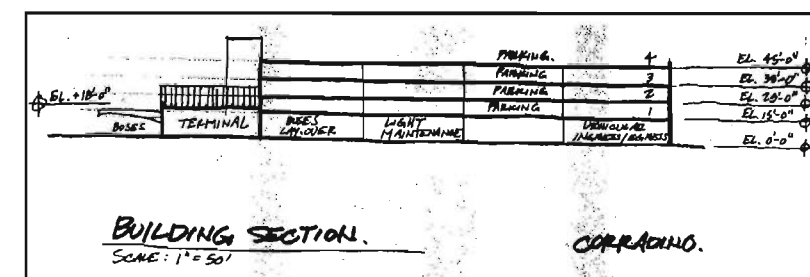
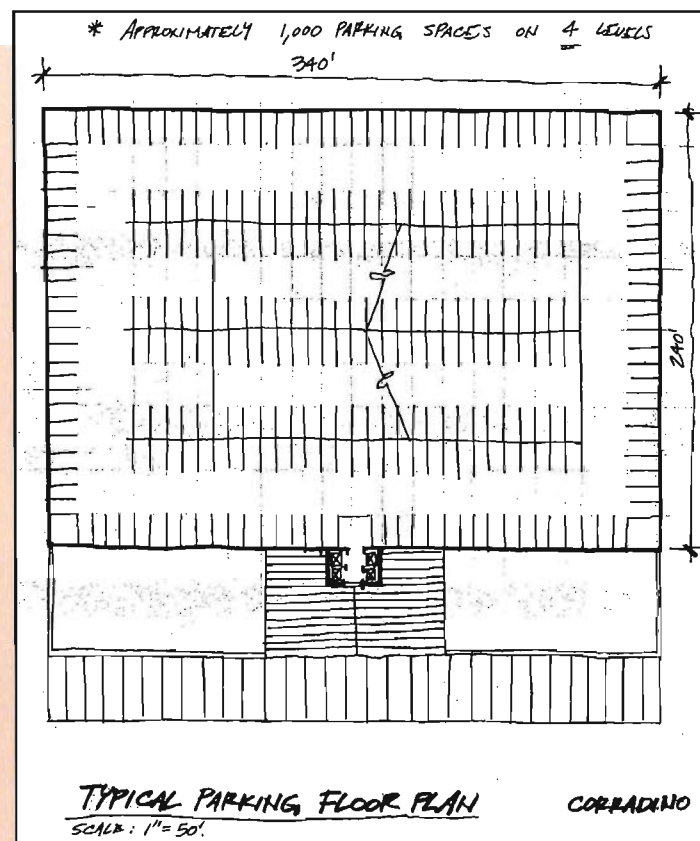
The maintenance facility for the Electrowave operations requires approximately 67,000 square feet to function efficiently. The site includes three separate buildings one of which is for battery storage and charging and a second is a stand alone structure housing the 30,000 lb lift. The main building includes secured parts room, vault, office space, record storage, restrooms, shower, lockers, inspection bays, and wash bay. External spaces include diesel storage and pumping, propane storage and pumping, parking for 60 automobiles, parking for 20 buses, battery cleaning area, circulation and drainage.

The sites at 5<sup>th</sup> and Alton, the Convention Center, City Hall East, 17<sup>th</sup> and Washington, Public Works and Indian Creek and Collins are the only sites that can accommodate the maintenance facility.

### COMBINED FACILITY

The entire Maintenance Facility, and Intermodal Center should be able to be combined in a site approximately 80,000 square feet. This would not take into account any parking, commercial space, or restaurant facilities. If parking were to be constructed over the Intermodal/maintenance facility, the site would need to be larger than the original parking footprint. A number of functions such as propane distribution would need to be outside the structure.

The 5<sup>th</sup> and Alton, Convention Center, City Hall East, 17<sup>th</sup> and Washington, Dade and Pine Tree, and Indian Creek and Collins sites could all accommodate a combined facility.







# Miami Beach Intermodal Feasibility Study

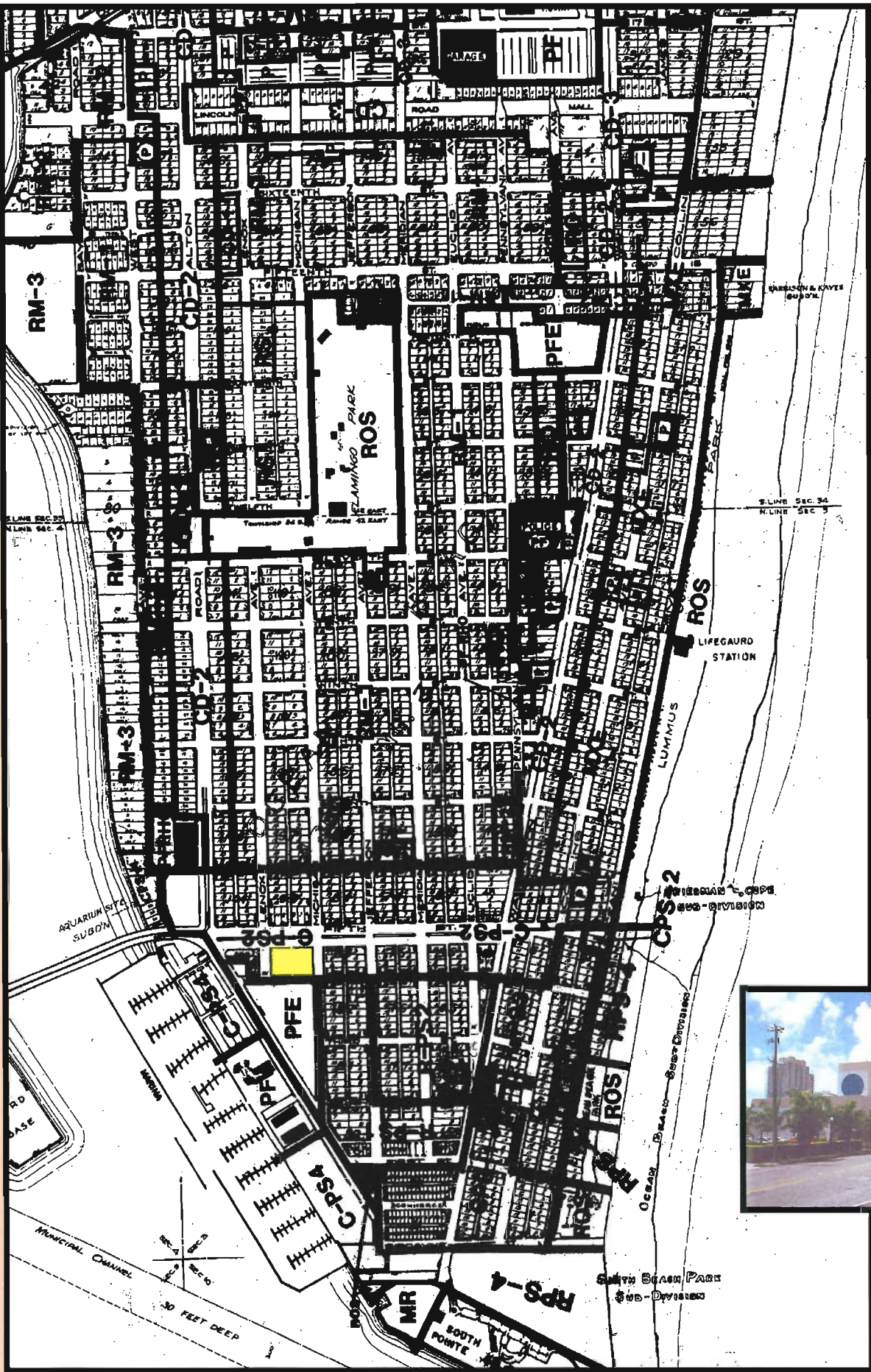
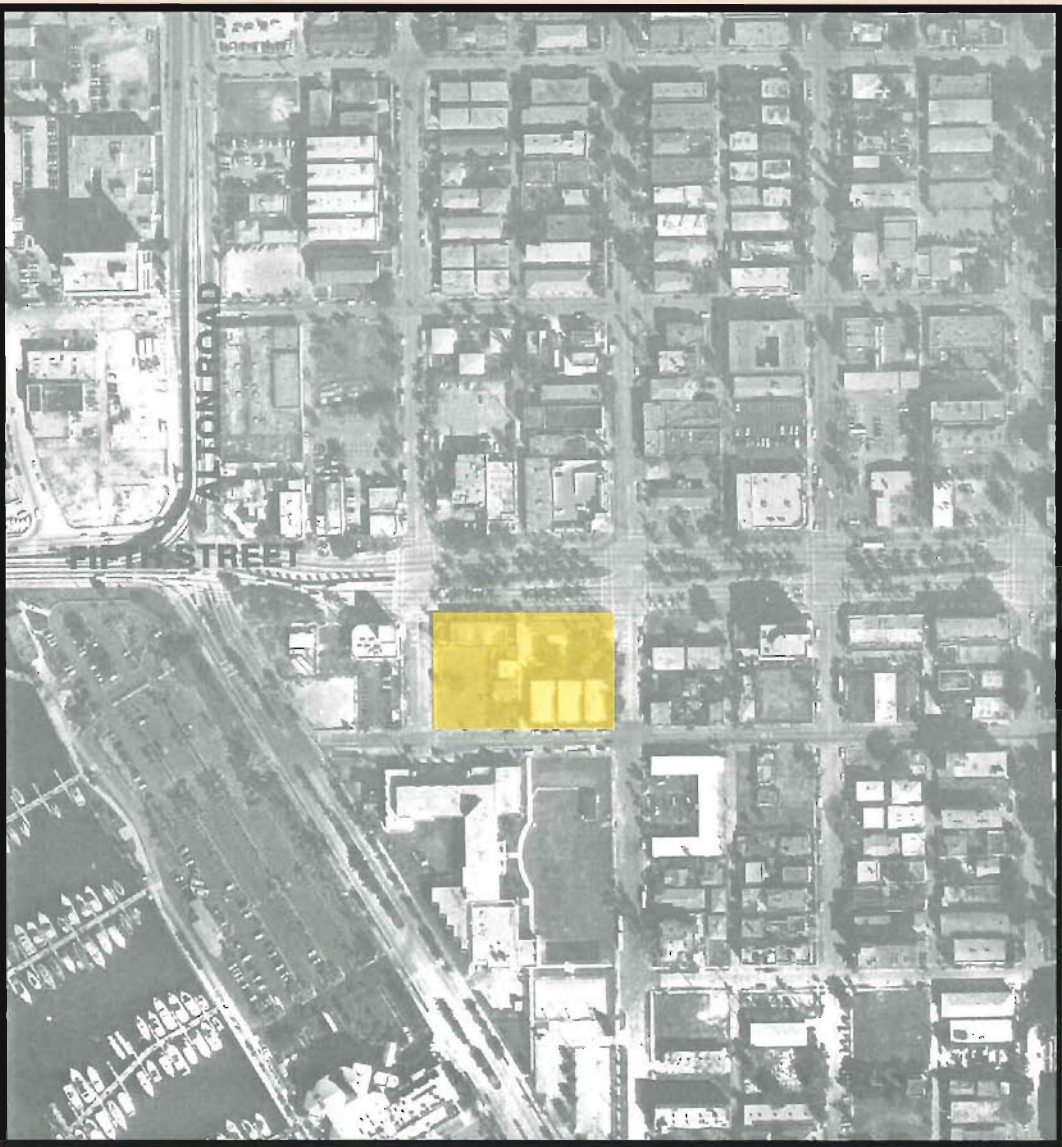
## TASK 1-B IMPACTS TO SURROUNDING AREA

### FIGURE 1-5 5th/Michigan

This 60,000 sf site is located in the CPS-2, commercial mixed use district. It is bounded to the south by the GU, municipal use district, to the south east by the RPS-1, residential medium-low density district and to the north by the RM-1, residential multiple family low intensity district. These densities are not generally intense enough to support transit. The commercial mixed use district, is an acceptable for such a facility, but it does **abut a school**. **Negative impacts** to the surrounding area would be moderate.

This site offers excellent connections to both bus and rail from Miami. The site would offer an excellent opportunity to serve as an intercept lot for traffic heading to South Beach and Ocean Drive, yet it has a number of drawbacks. At 60,000 sf it could accommodate private development, amenities associated with an Intermodal transfer center, a parking structure or maintenance facility. It is in private ownership so the cost of acquisition would be high. Approximately 4 residential units would be impacted and require relocation. It edges on a residential area and is immediately adjacent to a school.

*Under construction*







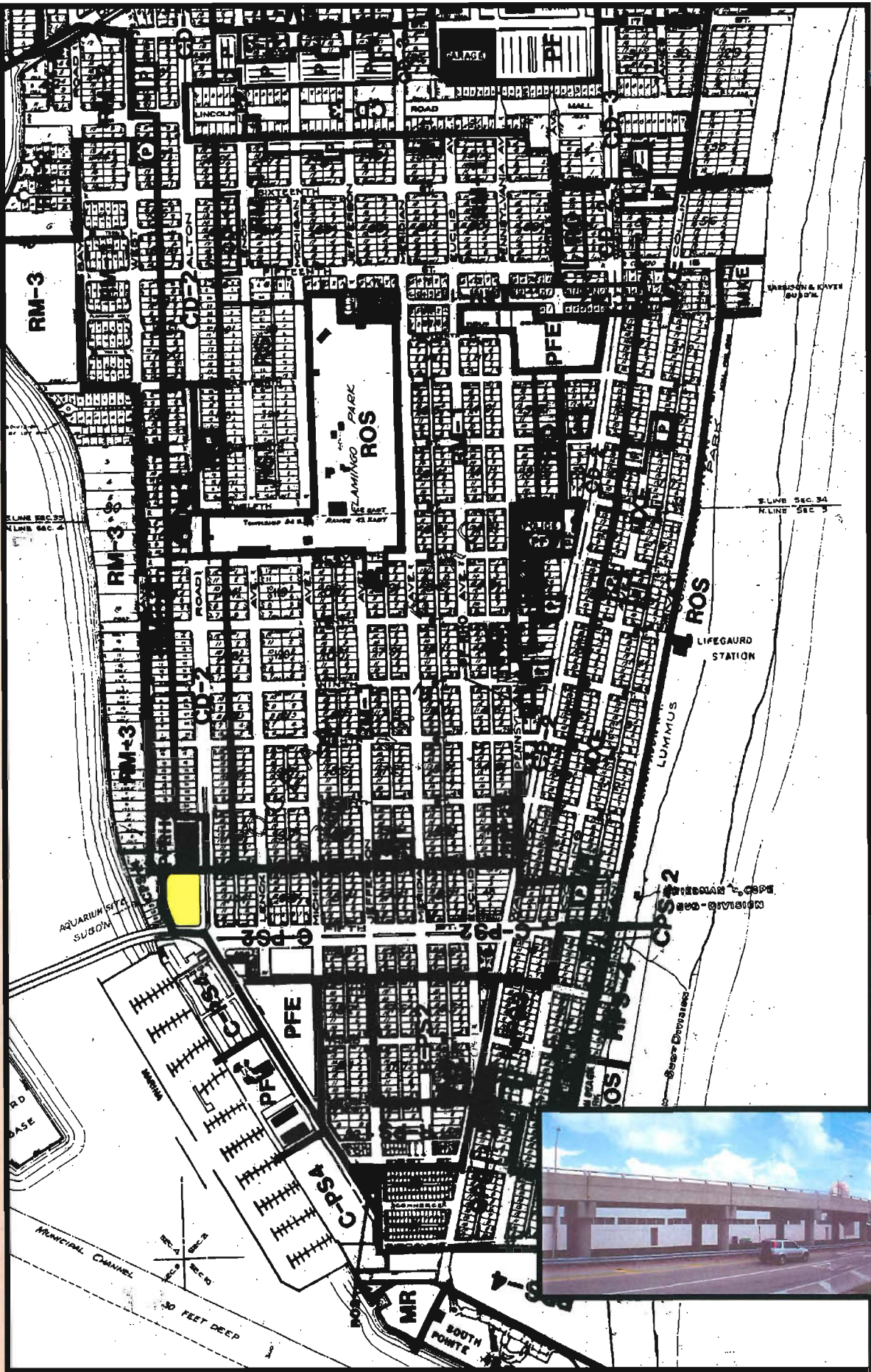
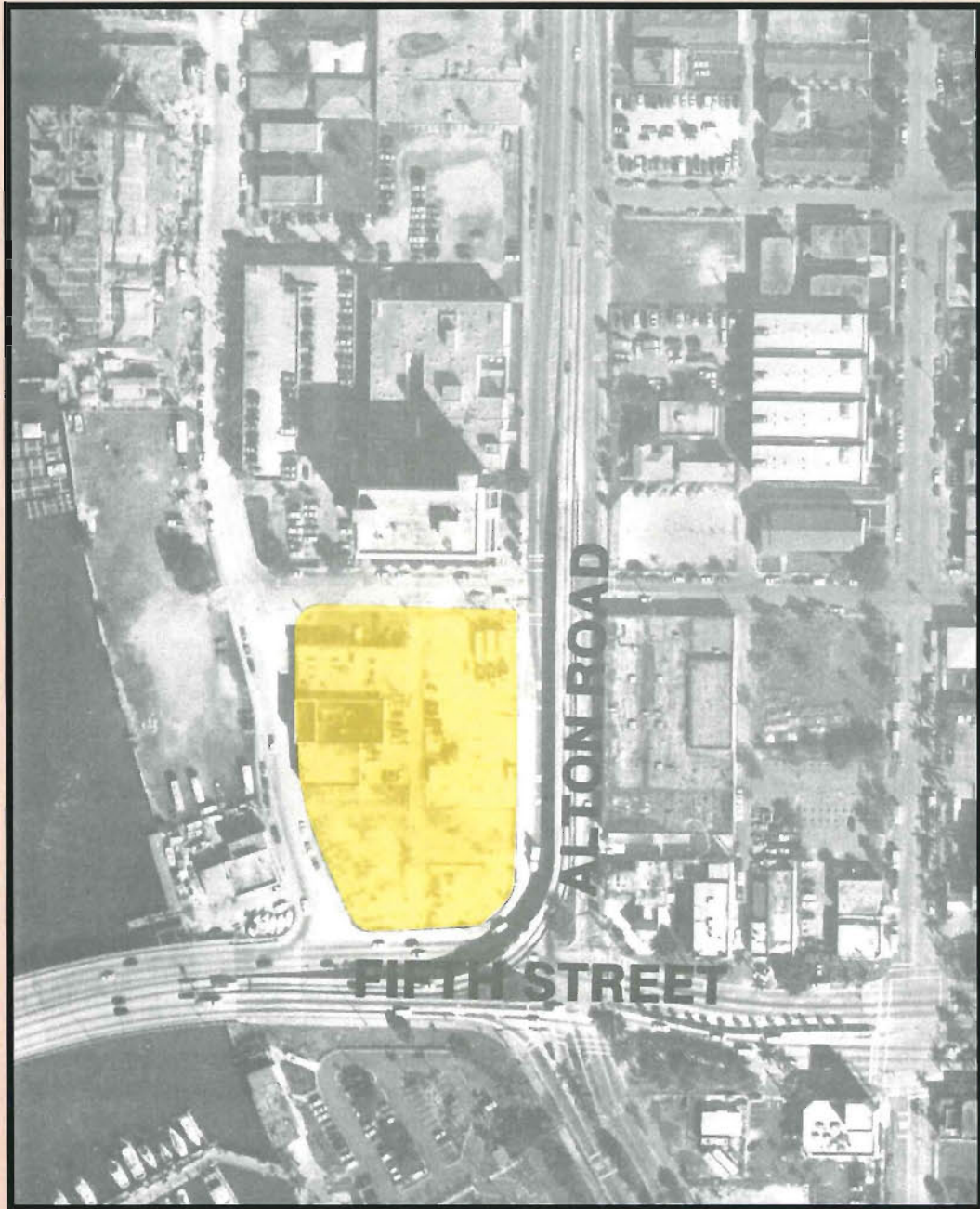
# Miami Beach Intermodal Feasibility Study

## TASK 1-B IMPACTS TO SURROUNDING AREA

### FIGURE 1-6 5th/Alton

This 87,500 sf site is located in the CPS-2, commercial mixed use district. It is bounded to the south by the CPS-4, commercial intensive phased bayside district, and to the north by the RHD, hospital district. To the west is the RM-3, multiple family high density district. These densities are not generally intense enough to support transit, except for the residential densities to the west, which is currently undeveloped. The commercial mixed use district, is an acceptable area for such a facility, but it does abut a hospital. Negative impacts to the surrounding area would be moderate, and environmental impacts to the bay would need to be mitigated.

This site is severely hampered by the grade separation of 5th Street and Alton Road. It would make connections with MDTA bus routes very difficult and be taxing on the electric vehicles. The site with 87,500 sf is large enough to accommodate any combination of projects. If access to the site were better it is an ideal location for an intercept parking lot with a transfer to the Electrowave. The site is in private ownership and would therefore be more expensive to acquire. The acquisition of the site would require the relocation of 4 commercial properties. The site is adjacent to several high rise residential units so again, any environmental impacts would need to be mitigated.





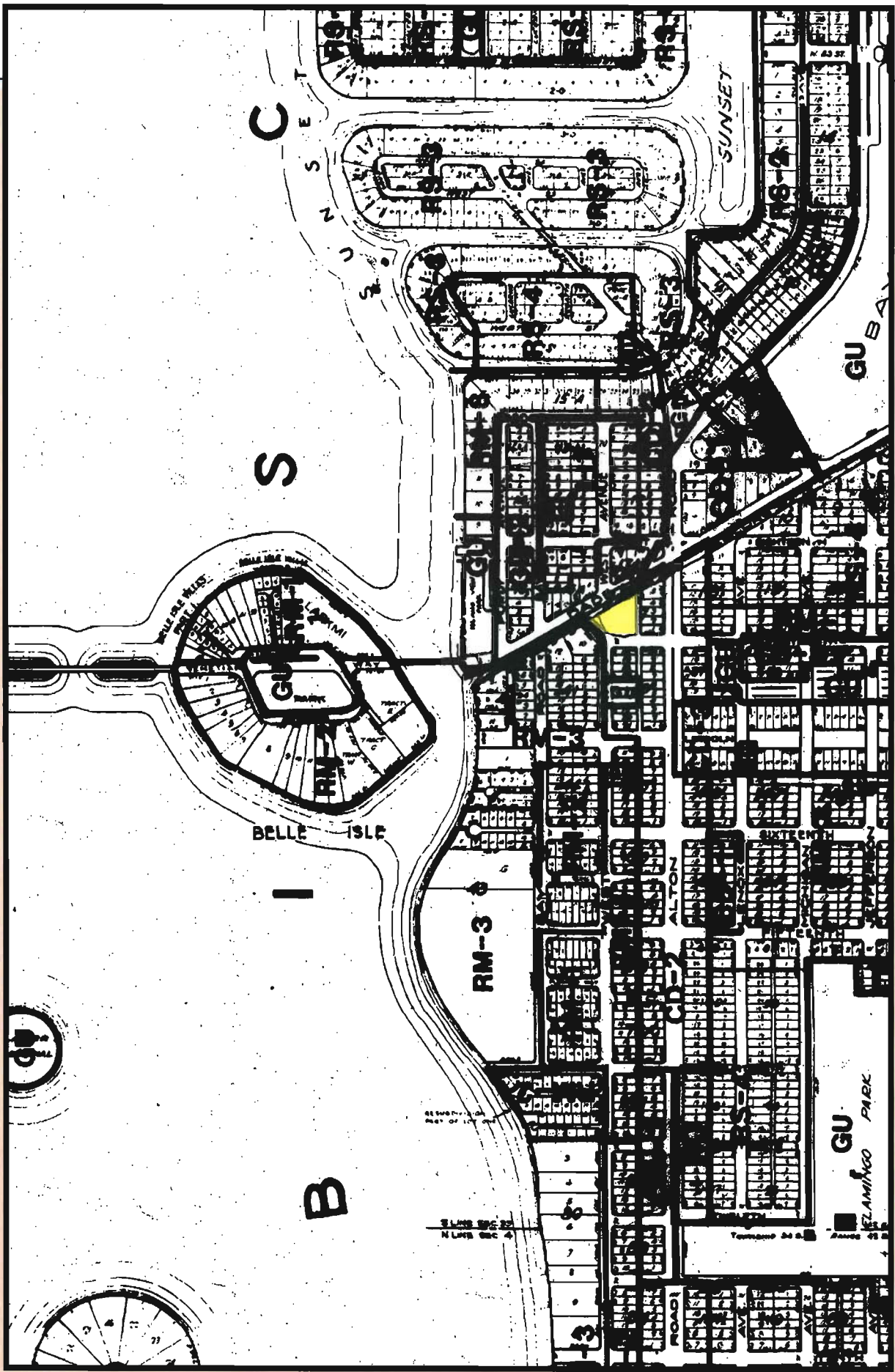


# Miami Beach Intermodal Feasibility Study

## TASK 1-B IMPACTS TO SURROUNDING AREA

### FIGURE 1-7 West/Dade

This 15,000 sf parcel is generally considered too small to house any of the slated activities. It is located in the CD-2, commercial medium density district. Impacts to the surrounding area would be moderated mainly due to the environmental impact to the waterway that abuts the site to the north.







# Miami Beach Intermodal Feasibility Study

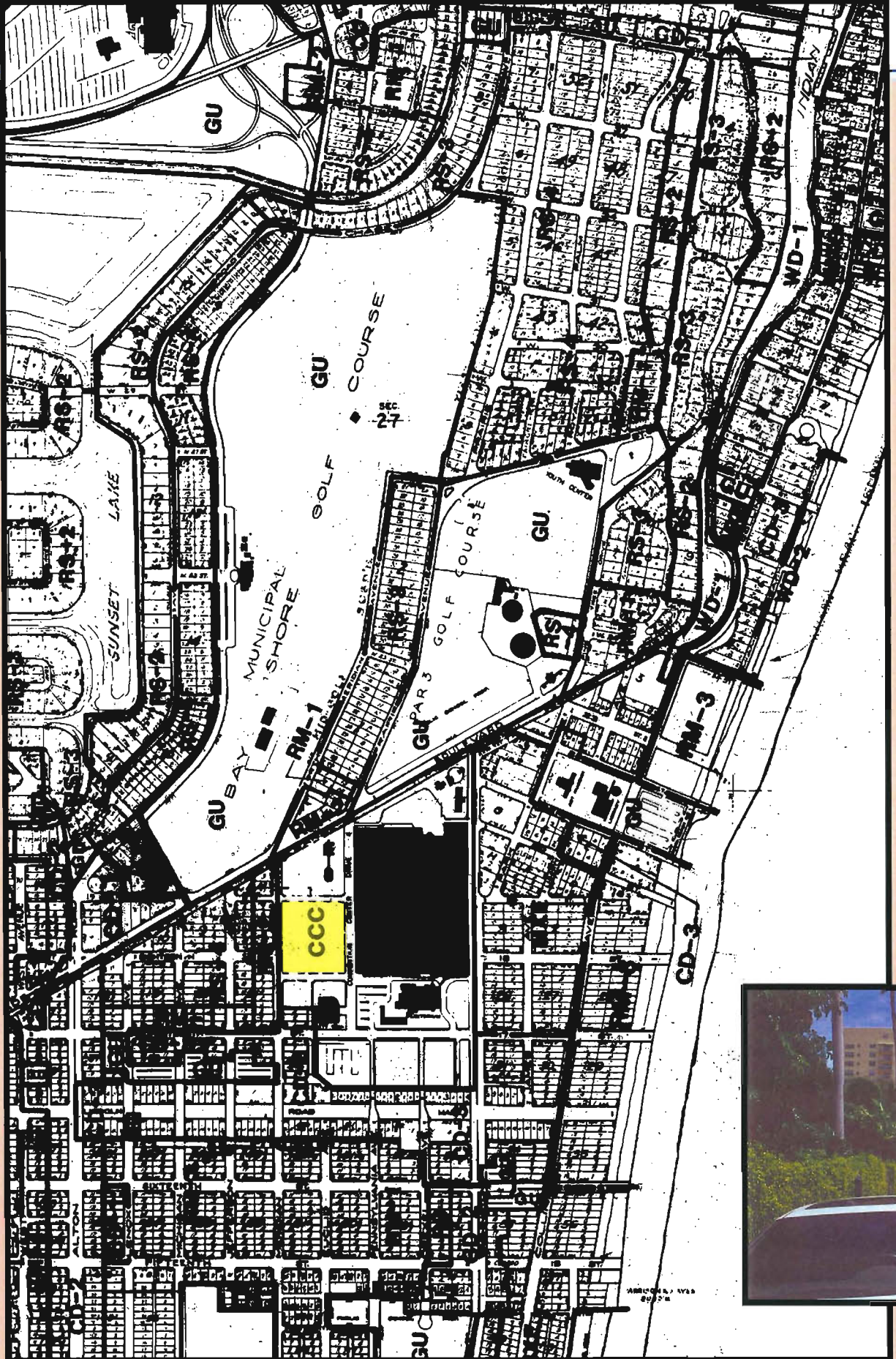
## TASK 1-B IMPACTS TO SURROUNDING AREA

### FIGURE 1-8 Convention Center

This 85,000 square foot site is in the CCC, convention center district. It is surrounded by an RM-2, multiple family medium density district to the west. Densities surrounding the area are conducive to transit, as well as are the commercial, governmental and cultural uses in and surrounding the area. Impacts to the surrounding area would be minimal or beneficial providing an influx of patrons to the area as well as providing visitors alternative access and mobility in and around the area.

This site is large enough to accommodate parking, joint-development, and the entire Electrowave intermodal and maintenance facilities. Due to issues with the Convention Center, available space shown for this analysis is 1/3 of the total sf for the lot. The location is ideal for transfers from MDTA bus routes.

Multiple rail studies have shown that for LRT to be effective on Miami Beach it needed to go all of the way to the Convention Center so a major station here would be an excellent long range option. There is a parking shortage in this area. The shuttle would provide the connection to Ocean Drive and South Beach. Some conflicts may arise with Convention Center events, more specifically those associated with the Boat Show.







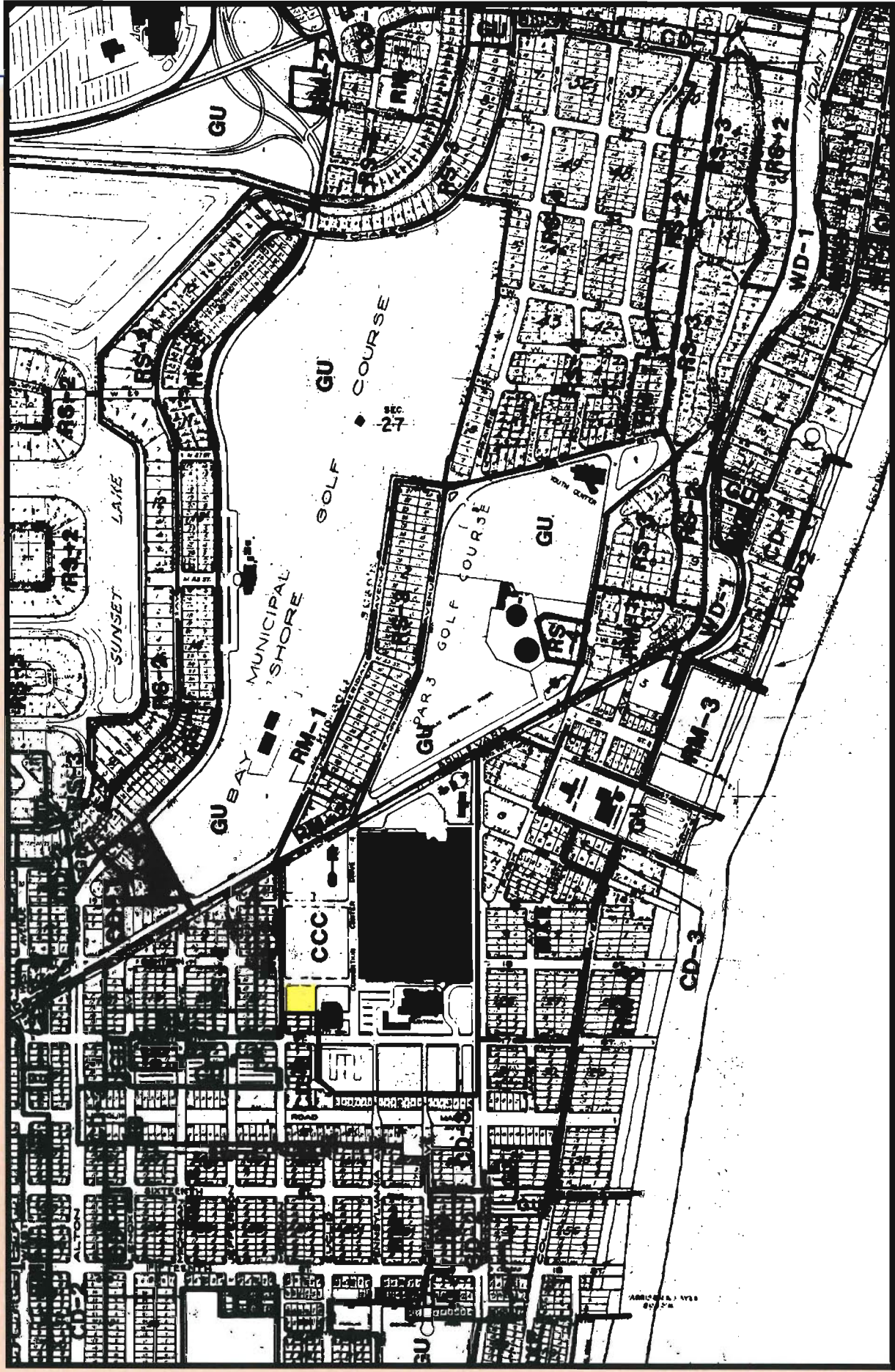
# Miami Beach Intermodal Feasibility Study

## TASK 1-B IMPACTS TO SURROUNDING AREA

### FIGURE 1-9 City Hall Lot

This 40,000 square foot site is in the CCC, convention center district. It is surrounded by an RM-2, multiple family medium density district to the west, and the CD-3, commercial high intensity district to the south. Densities surround the area are conducive to transit, as well as are the commercial, governmental and cultural uses in and surrounding the area. Impacts to the surrounding area would be minimal or beneficial providing an influx of patrons to the area as well as providing visitors alternative access and mobility in and around the area.

At 40,000 sf this site is not large enough to accommodate the maintenance facility or a parking garage. It is large enough to provide a good Intermodal transfer site with joint development or City Offices using air rights. The site is well situated for MDTA bus routes, the existing shuttle route, any proposed LRT line. It is well situated as a destination for Lincoln Road, theaters and the Convention Center.







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**TASK 1-B**  
**IMPACTS TO SURROUNDING AREA**

**FIGURE 1-10**  
**Dade/Pinetree**

This 192,000 sf site is zoned GU, municipal use. A golf course, a fire station, and a youth center immediately surround it. Residential single family abuts the site to the east. The current nature of the site is as a public works yard where a variety of municipal functions occur and vehicles are stored. Use of this site as a maintenance yard would be consistent with its current use and would cause minimal disturbance to the surrounding community.

This large site is **currently programmed** for many uses. Its location would be ideal for the maintenance facility, but would **not function well as an intermodal transfer facility**. The site is **removed from the MDTA route system** and there are no convenient destination locations in the vicinity. The site is **not likely to stimulate any joint development opportunities** or parking demand. Utilization of this site would have no negative impacts on the surrounding community.







# Miami Beach Intermodal Feasibility Study



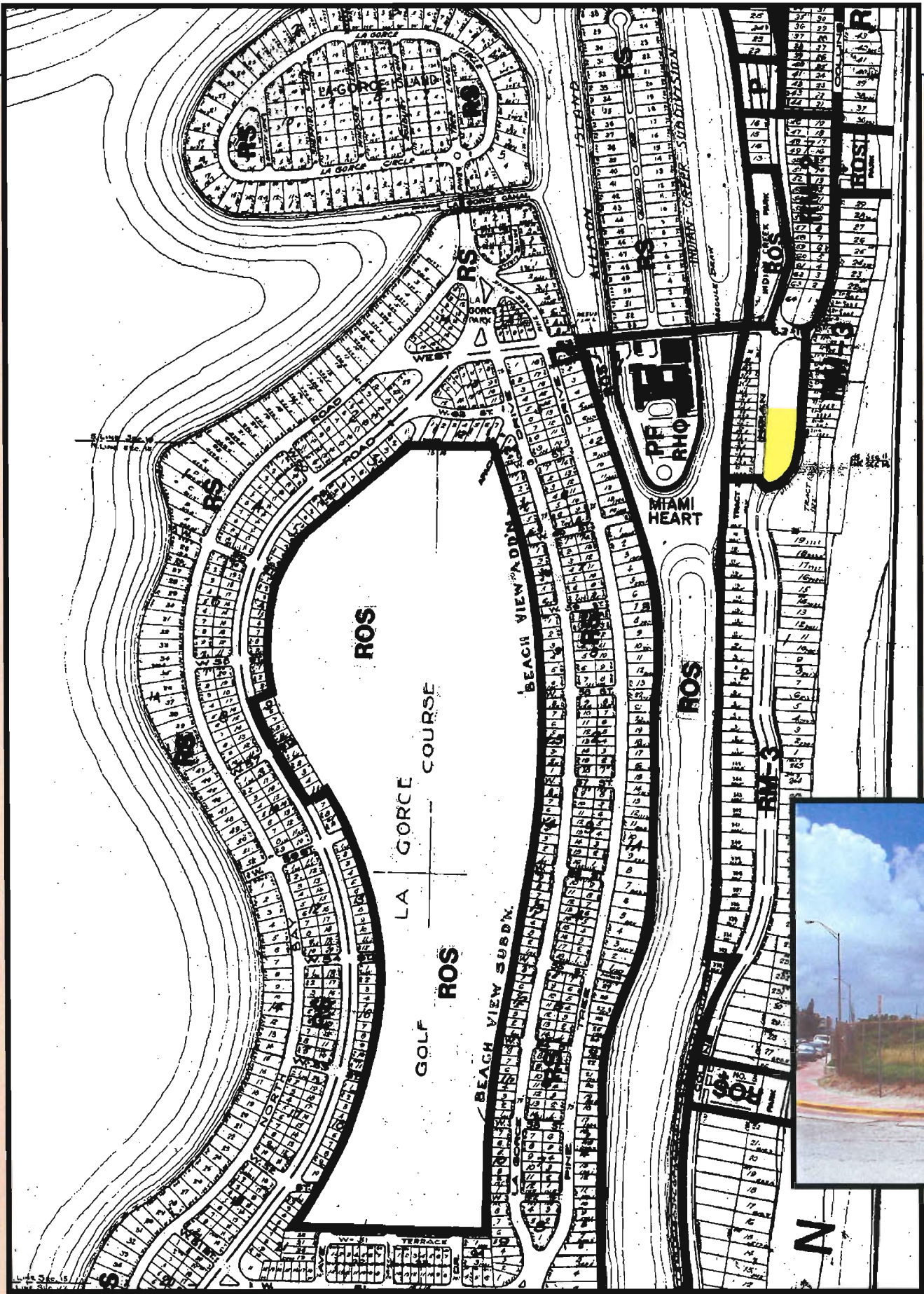
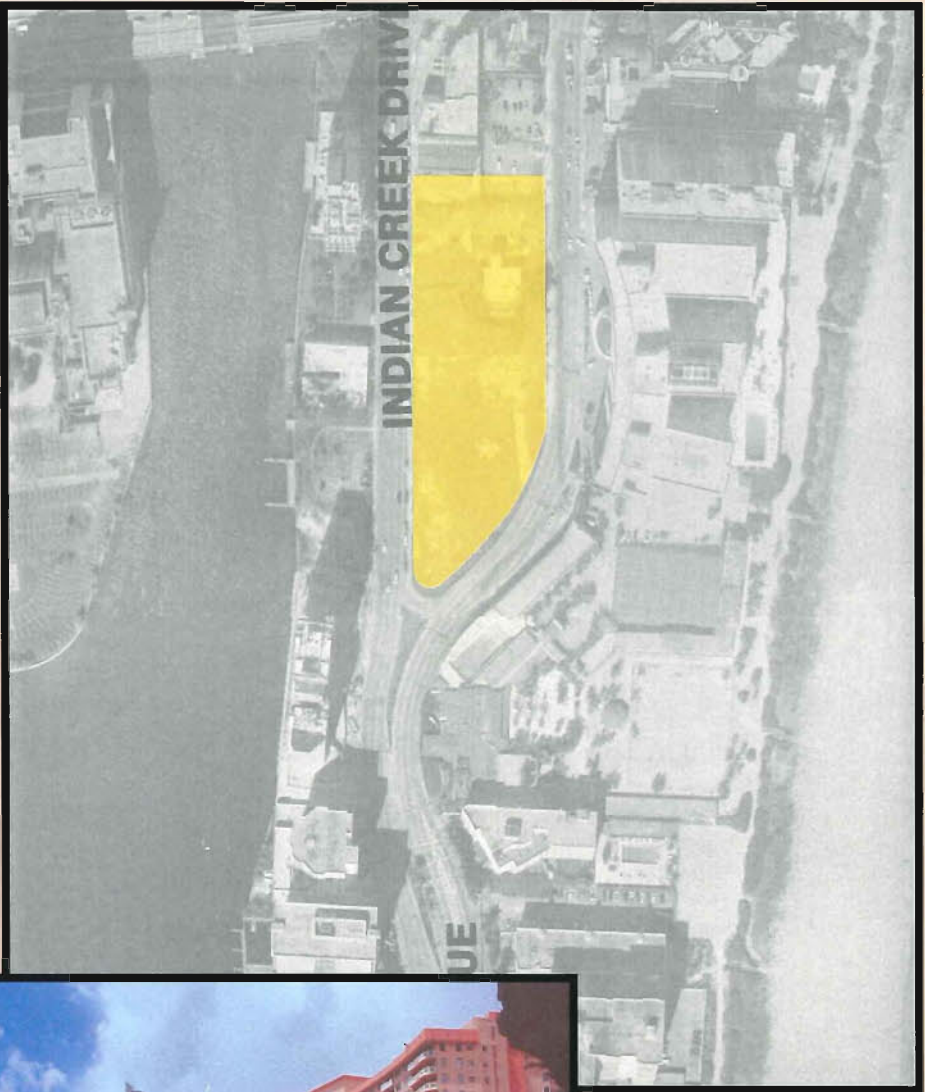
## TASK 1-B IMPACTS TO SURROUNDING AREA

### FIGURE 1-11 Indian Creek/Collins

Located just south of the 63rd Street flyover this vacant parcel contains about 100,000 sf of space for such facilities. It has been slated for development of multi family residential. It resides in the RM-2, residential, medium density district and is immediately adjacent to the RM-3, residential, high density district. The residential character of the area would be disturbed by the transit activities of these facilities.

This site offers some interesting challenges for utilization as a site for the Electrowave facilities. It offers the opportunity to extend the Electrowave operations through Mid-Beach. It is located in the middle of a very high density residential and would present an opportunity to capture a large amount of ridership. It could intersect a large number of MDTA routes, but it is unlikely that an LRT would

ever be constructed this far north, even though densities warrant transit. At 100,000 sf the site is large enough to accommodate all of the desired functions, but because of the lack of public destinations there is little apparent demand for a municipal parking in this area. The site is too far north to serve as a good central maintenance facility. Traffic circulation into and out of the site would be difficult.







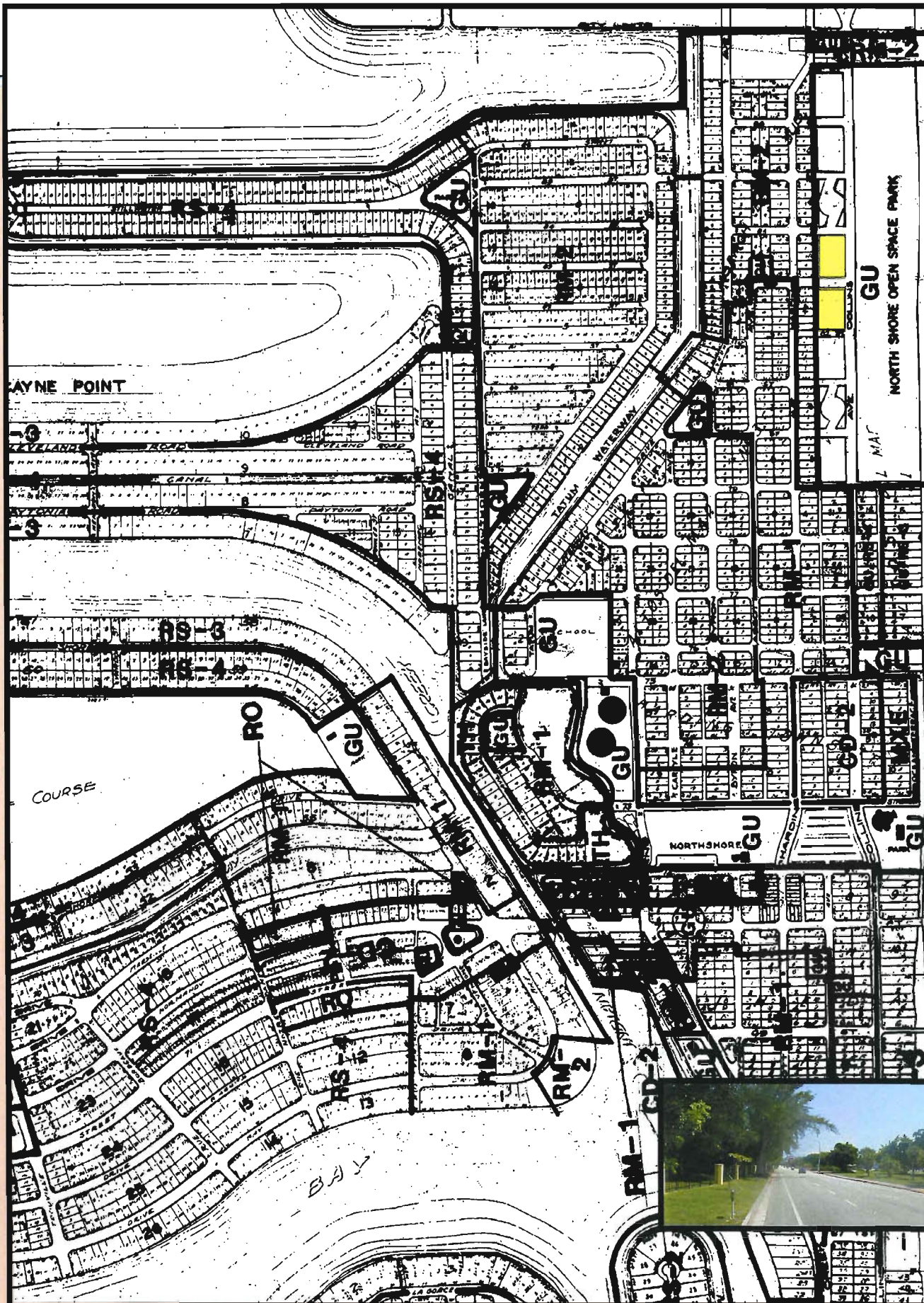
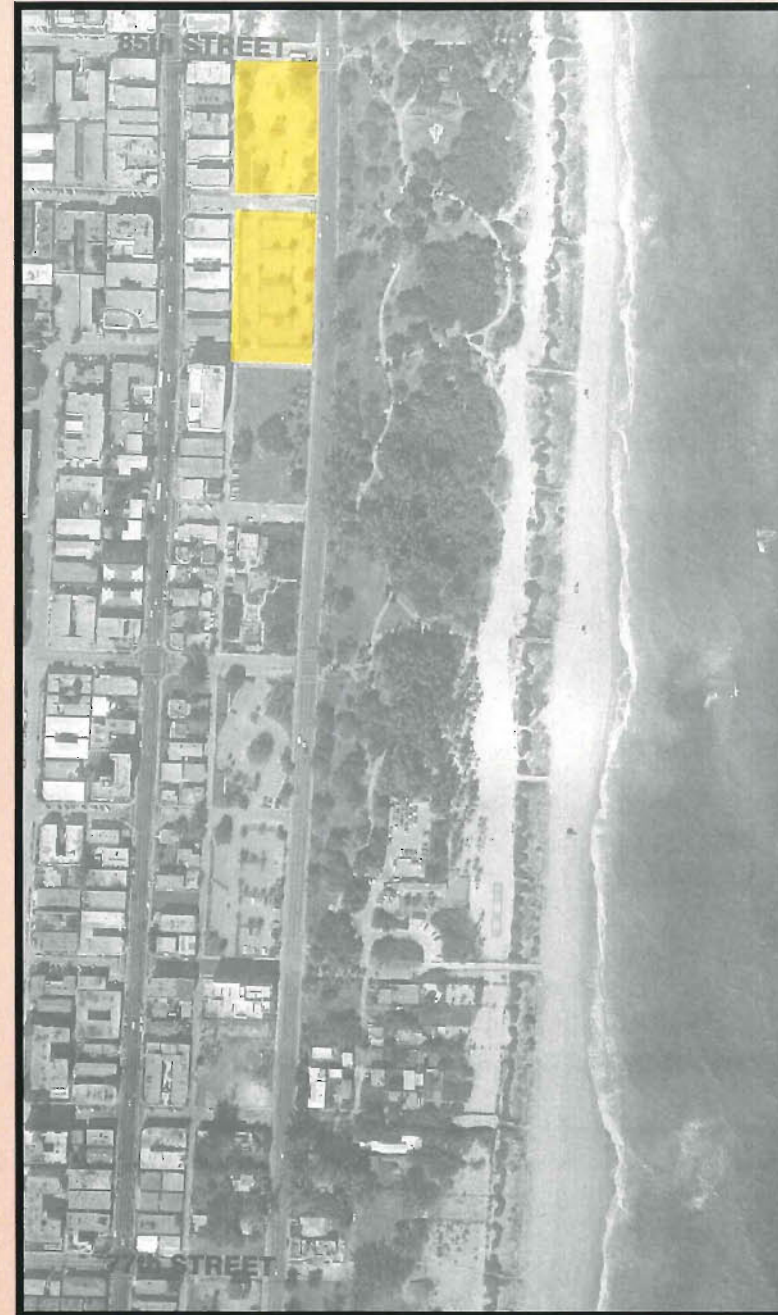
# Miami Beach Intermodal Feasibility Study

## TASK 1-B IMPACTS TO SURROUNDING AREA

### FIGURE 1-12 83rd/Collins North & South

These sites, containing approximately 84,000 sf of space combined are in the GU municipal use district. Immediately to the east is an ocean front parcel designated as a park. Immediately to the west is the RM-2, residential medium density district. This contains many low rise apartment complexes. The residential character of the area is dense enough to support transit but there are relatively few transit oriented destinations for patrons to use. The transit oriented nature of the facility would be of adverse impact to the surrounding area, but could be buffered effectively. It does not necessarily fit the character of the open space park.

The two sites at this location are fairly small. If taken individually they could each only accommodate the transfer facility, however if they were taken together they would provide a large enough parcel to develop an entire complex. The site is served by a lot of MDTA bus routes. It is in a **low density neighborhood**, north of the area that the City is trying to encourage redevelopment. The location is beyond the **northern extreme of shuttle bus operations**.







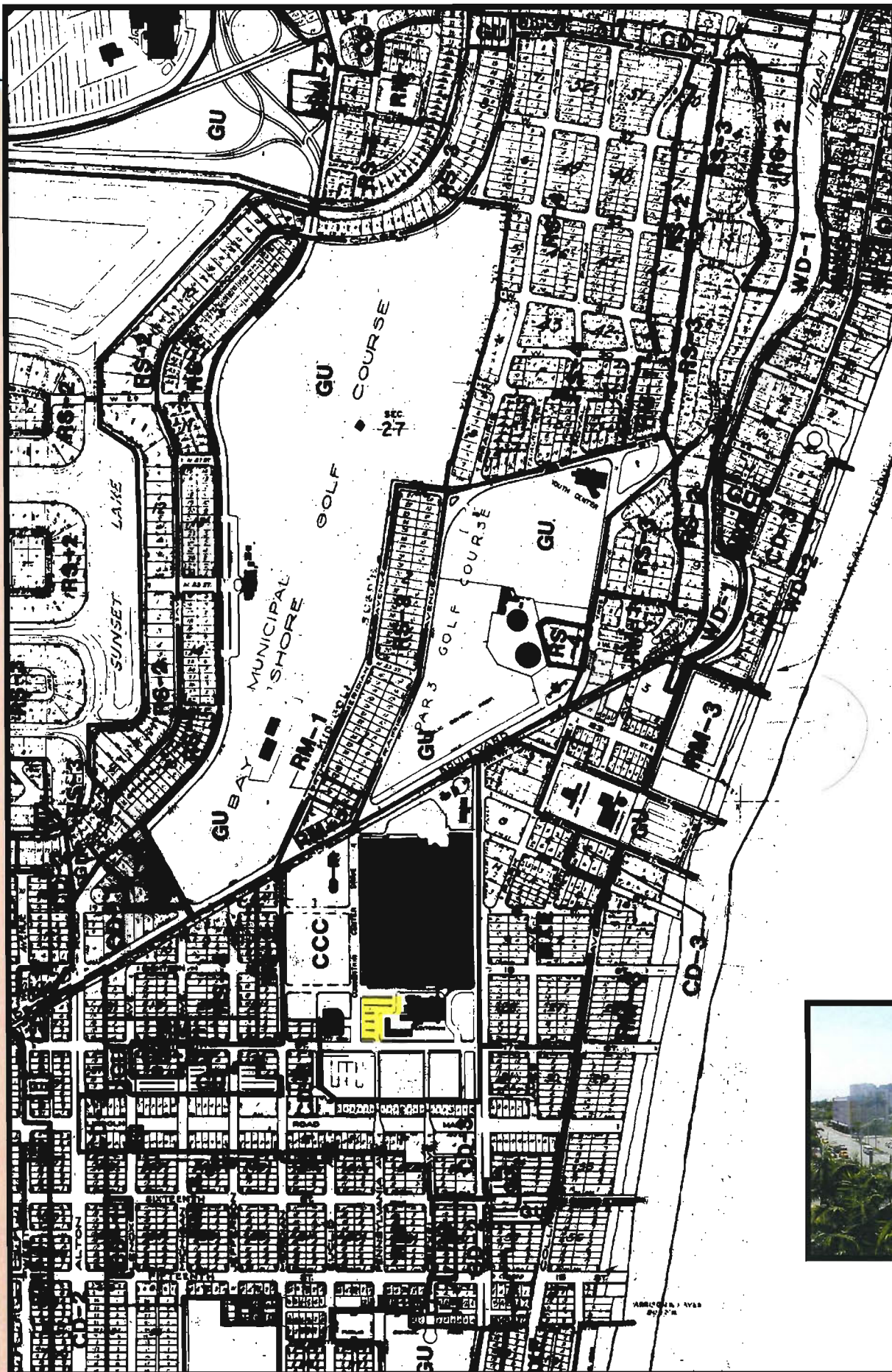
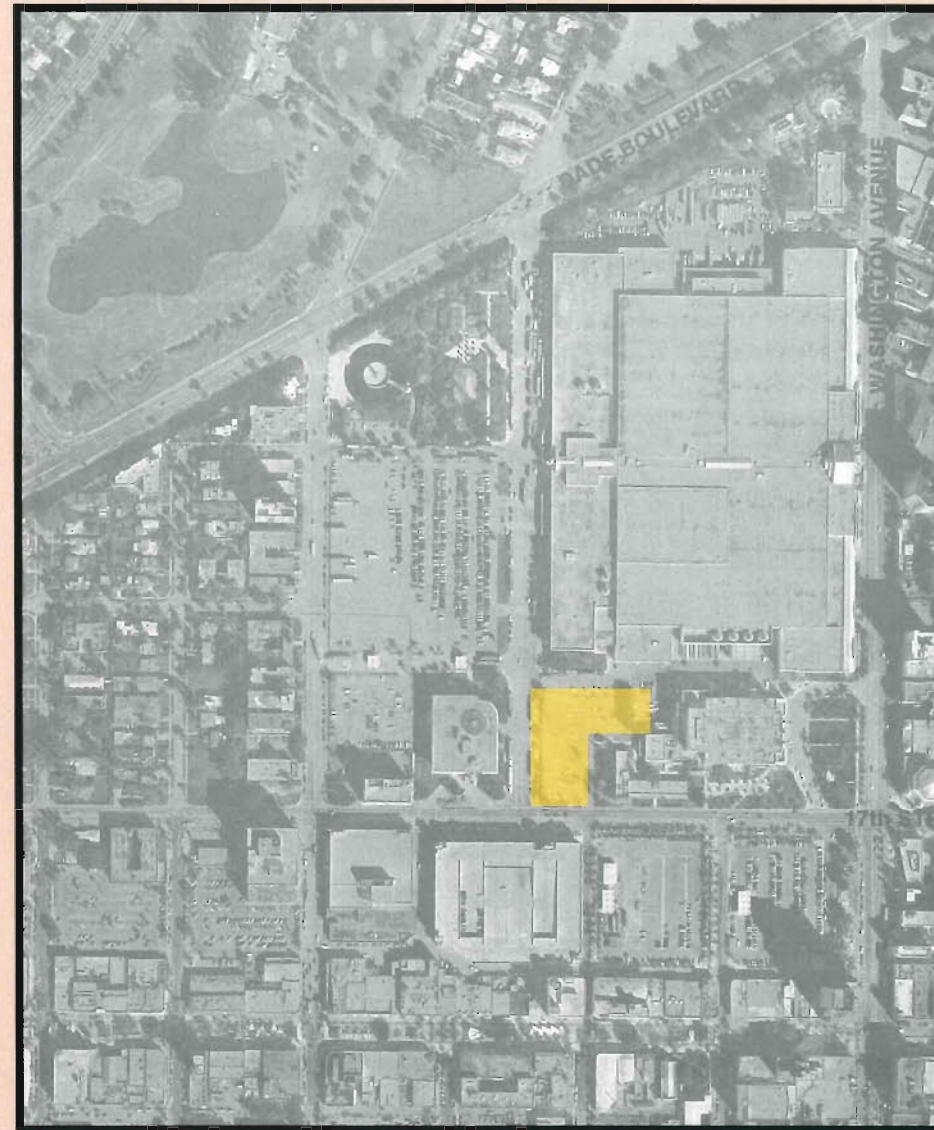
# Miami Beach Intermodal Feasibility Study

## TASK 1-B IMPACTS TO SURROUNDING AREA

### FIGURE 1-13 City Hall East

This 75,000 square foot site is in the heart of the CCC, convention center district. It is surrounded by an RM-2, multiple family medium density district to the west, and the CD-3, commercial high intensity district to the south. Densities surround the area are conducive to transit, as well as are the commercial, governmental and cultural uses in and surrounding the area. Impacts to the surrounding area would be minimal or beneficial providing an influx of patrons to the area as well as providing visitors alternative access and mobility in and around the area.

This site is large enough to accommodate the maintenance facility or a parking garage (using a slight modification to the typical layout). It is also large enough to provide a good Intermodal transfer site with joint development or City Offices. The site is well situated for MDTA bus routes, the existing shuttle route, any proposed LRT line. It is well situated as a destination for Lincoln Road, theaters and the Convention Center.







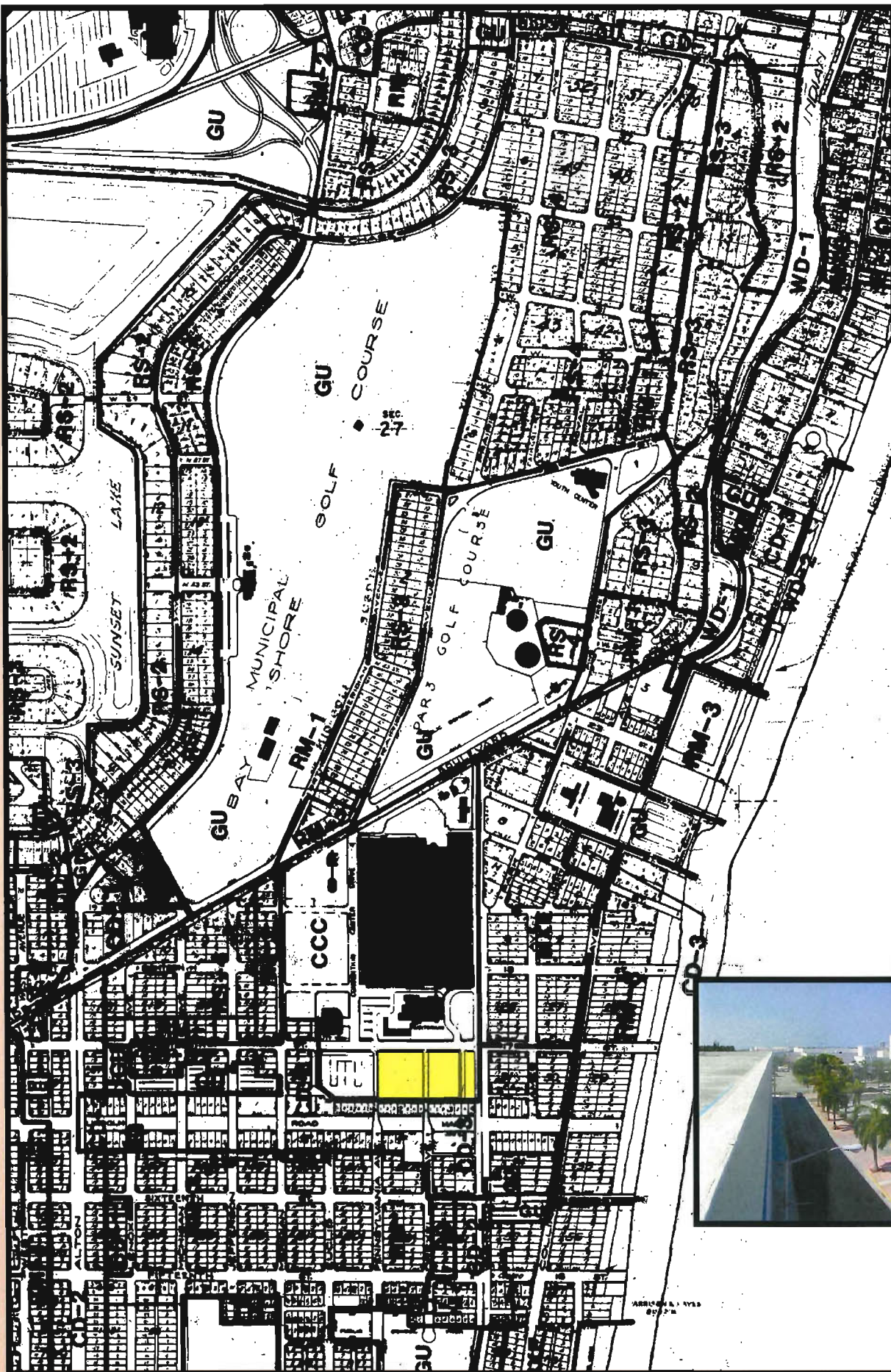
# Miami Beach Intermodal Feasibility Study

## TASK 1-B IMPACTS TO SURROUNDING AREA

### FIGURE 1-14 17th/Washington

This 280,000 square foot site is in the CCC, convention center district. It is surrounded by an RM-2, multiple family medium density district to the west, and the CD-3, commercial high intensity district to the south. The site abuts the Lincoln Road Mall to the south. Densities surround the area are conducive to transit, as well as are the commercial, governmental and cultural uses in and surrounding the area. Impacts to the surrounding area would be minimal or beneficial providing an influx of patrons to the area as well as providing visitors alternative access and mobility in and around the area.

This site is large enough to accommodate the maintenance facility, a parking garage and an Intermodal Center with joint development or City Offices using air rights. This combination of all uses is not recommended however. The site is well situated for MDTA bus routes, the existing shuttle route, and any proposed LRT line. It is well situated as a destination for Lincoln Road, theaters and the Convention Center. There would be minimal conflicts with peripheral uses associated with the Convention Center.







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TASK 1-I

Evaluation Matrix

Criteria	5th/ Michigan	5th/Alton	West Ave/ Dade Blvd.	Convention Center	City Hall Lot	City Hall East	17th/ Washington	Dade Blvd/ Pine Tree	Indian Creek/ Collins	83rd/Collins (1)	83rd/Collins (2)
Size	60,000 sf	87,500 sf	15,000 sf	85,000 sf	40,000 sf	75,000 sf	280,000 sf	192,500 sf	100,000 sf	42,000 sf	42,000 sf
Potential Rail Connection	●	●	○	◐	◐	◐	◐	○	○	○	○
Accommodate Intermodal Transfer	●	◐	○	●	●	●	●	○	◐	◐	◐
Accommodate Maintenance	○	●	○	●	○	◐	●	●	●	○	○
Accommodate Parking Structure	○	●	○	●	○	◐	●	●	●	○	○
Facilitate Joint Development	○	●	○	●	●	●	●	○	●	◐	◐
Serves Ocean Drive Hotels	◐	◐	◐	◐	◐	◐	◐	○	○	○	○
Serve Convention Center	○	○	◐	●	●	●	●	◐	○	○	○
Proximity to Shuttle Routes	●	●	◐	◐	●	●	●	◐	○	○	○
Serve MDTA Routes	◐	◐	◐	●	●	●	●	◐	●	●	●
Cost of Land Acquisition	◐	○	◐	●	●	●	●	●	○	◐	◐
Impacts on Residential Areas	○	◐	●	◐	◐	●	●	●	◐	◐	◐
Facilitate Serving Mid-Beach	○	○	◐	●	●	●	●	●	●	◐	◐
Serves High Density Development	○	●	◐	◐	◐	◐	◐	○	●	◐	◐
Existing Traffic Congestion	◐	○	◐	◐	◐	◐	◐	◐	○	◐	◐
Potential Negative Environmental Impacts	◐	◐	◐	●	●	●	●	○	◐	◐	◐





## Miami Beach Intermodal Feasibility Study

# Recommendations

The first task in this feasibility analysis is designed to present an analysis for each of the nine prospective sites; each evaluated based on a number of criteria including:

- ♦ Potential Rail Connection
- ♦ Minimum Size Requirements
- ♦ Accommodate Intermodal Transfer
- ♦ Accommodate Maintenance
- ♦ Accommodate Parking
- ♦ Facilitate Joint Development
- ♦ Service Historic District Hotels
- ♦ Serve Convention Center
- ♦ Proximity to Shuttle Routes
- ♦ Serve MDTA Routes
- ♦ Cost of Land Acquisition
- ♦ Impacts on Residential Areas
- ♦ Facilitate Service Middle-Beach
- ♦ Serves High Density Development

Each site has been analyzed as part of the Evaluation Matrix described above. A short list of appropriate sites has been developed. This list is topped by the sites that this analysis shows are most appropriate for the type of facilities desired. During the process of this Task it was found that the location of 17<sup>th</sup> and Washington and the City Hall east lots were worthy of consideration. These were added to the study.

### SEPARATE FACILITIES

It is recommended through this analysis that separate Intermodal and Maintenance facilities be developed due primarily to the differing goals of each. The Intermodal facility is generally to be a high profile, centrally located facility oriented to the public. This is to be a gateway and showpiece of the city representing Miami Beach's progressive attitude toward transportation and mobility as well as its commitment to the quality of life of its citizens and visitors. The Maintenance Facility is to serve a less glamorous function of providing maintenance, repairs and storage of vehicles. This area will not serve the public in an active way and therefore is not something that should act as a centerpiece.

### INTERMODAL FACILITY

This analysis shows that the most appropriate sites for the Intermodal Facility are as follows:

1. **Convention Center Lot**
2. 17<sup>th</sup> and Washington
3. 5<sup>th</sup> Street and Alton Road

The Convention Center lot is most appropriate for the intermodal center and parking garage due to its size and location. During the course of this study it was decided to analyze the site at 17<sup>th</sup> and Washington. This site may be equally well suited for such a facility. It has more space and may conflict less with Convention Center uses. Both sites could also accommodate all of the development associated with these facilities including retail and office.

### MAINTENANCE FACILITY

This analysis shows that the most appropriate sites for the Maintenance Facility are as follows:

1. **Dade Boulevard and Pine Tree Drive**
2. Convention Center Lot
3. 5<sup>th</sup> Street and Alton Road

The Dade and Pine Tree site is far and away the best site for this use because it is currently used for similar activities. It is owned by the city, it would minimally impact its neighbors, and it is in close proximity to the city center area where it is suggested the intermodal facility be located. It is not recommended that the maintenance facility occupy land that may be suited for a more public use.

### COMBINED FACILITIES

If combined facilities are desired it would be recommended that the following sites would be most feasible:

1. **17<sup>th</sup> and Washington**
2. Convention Center Lot

3. 5<sup>th</sup> Street and Alton Road
4. Dade Boulevard and Pine Tree Drive

It is recommended that separate facilities be chosen. The Intermodal Facility is most feasible at the Convention Center lot due to the fact that is centrally located, it is of adequate size, it accommodates intermodal transfer from self contained parking, existing MDTA and Electrowave transit routes, and potential future rail transit. It also has adequate connections with Middle Beach. It services the Convention Center area, city center offices and entertainment functions of Lincoln Road and Washington Avenue as well as a large portion of the areas hotel rooms. The land acquisition costs would be minimal due to the fact that the City currently owns the land. Residential impacts would be minimal. The same is also true for the 17<sup>th</sup> and Washington site. The sites within the City center area are attractive because they are City owned properties with in the Historic District. Some modification to existing zoning may need to take place to maximize joint venture opportunities that would be permitted in the GU District.

The current Public Works facility located at Dade Boulevard and Pine Tree Rd. would be best suited for the maintenance facility. It services similar function at the current time, it is large enough, and it is within the closest proximity to the Convention Center lot. It is already owned by the city and will cause no disruption to the surrounding area.

### NEXT STEPS

The final task of the intermodal feasibility project will be the performance of a market analysis and conceptual design.

The market analysis will focus on joint development opportunities for the top rated intermodal properties.

The conceptual design will begin to develop a preliminary site plan and additional uses.

This will be delivered to the City no later than September 26, 2000.



