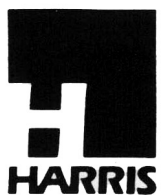




METRO-DADE COUNTY
METROPOLITAN PLANNING ORGANIZATION

AIRPORT AREA MULTIMODAL ACCESS STUDY

FINAL REPORT



Frederic R. Harris, Inc.

AIRPORT AREA MULTIMODAL ACCESS STUDY

FINAL REPORT

Prepared for:

**Metro-Dade Metropolitan Planning Organization
Florida Department of Transportation**

Prepared by:

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I. INTRODUCTION

BACKGROUND

Dade County is a rapidly-growing area of Southeast Florida. Extensive growth is occurring in the western area of Dade County and in the vicinity of the Miami International Airport. Dade County is served by numerous transportation modes including Metrorail, Tri-County Commuter Rail (Tri-Rail), and Metrobus as well as an extensive regional highway system. Long range planning is in progress for extending the future Statewide High-Speed Rail System to Dade County and tying the High Speed Rail System to other transit modes. Tri-Rail and AMTRAK both operate in the CSX rail corridor between NW 79th Street in Dade County and West Palm Beach. There are several common station stops where passengers may board either mode. These transportation modes provide mobility options to travelers within Dade County and Southeast Florida and also provide access to major employment centers and travel destinations.

A major deficiency of the existing transportation system is, however, that these high capacity transportation modes do not connect together efficiently. The ability of passengers to transfer between modes is seriously restricted by numerous changes of mode and inordinate delays. This greatly reduces the effectiveness of the transportation modes.

In addition, the key transportation modes do not directly serve the Miami International Airport (MIA), and associated facilities which are major employers and major travel destinations in South Florida. The existing Metrorail Station at Earlington Heights is 3.9 miles from the MIA terminal. The existing Tri-Rail Station is 2.3 miles away. Access from the Tri-Rail station to the MIA terminal is accomplished by shuttle buses. In addition to travelling on congested roadways, these shuttle bus vehicles add to the existing congestion on the MIA terminal roadways. There is no shuttle service from the Earlington Heights Metrorail station to the MIA terminal.

Two major policies have recently been enacted which greatly underscore the need for improved intermodal transportation. At the Federal level the Intermodal Surface Transportation Efficiency Act of 1991 has the stated goal "...to develop a National

Intermodal Transportation System (which)...shall consist of all forms of transportation in a unified, interconnected manner...".

At the State level the Florida Department of Transportation Intrastate Highway System Policies and Priorities (November, 1991) emphasizes providing physically separated, exclusive lanes for through traffic, public transit vehicles and other high occupancy vehicles on urban Interstate routes and limits expanding the number of general purpose traffic lanes.

Under these policies, intermodal transportation development will be a major aspect of plans and programs for correcting transportation system deficiencies and serving major activity and employment centers.

REVIEW OF PREVIOUS STUDIES

In 1989, the Metro-Dade Metropolitan Planning Organization (MPO) accepted the "Miami International Airport Area Transportation Study" which recommended implementing a multimodal transportation access facility linking Metrorail, Tri-County Commuter Rail (Tri-Rail), High Speed Rail and Metrobus. Such a facility could also provide a common location for rental car and hotel courtesy vans to pick up and drop off passengers and serve as a commercial vehicle ground transportation center. This would also substantially reduce vehicular demand on the congested airport roadway system.

This recommendation was incorporated into the Metro-Dade Transportation Plan and Improvement Priorities Long Range Element to the Year 2010 which is the adopted plan of the MPO for Dade County.

In January, 1990 the Tri-County Commuter Rail Authority (Tri-Rail) prepared a report entitled "Strategic Plan". This report indicated that the potential development opportunities were favorable for the Miami Airport station but that the existing station location at SE 10th Street in Hialeah (corresponds to NW 43rd Street in Miami) was an unfavorable condition. The Strategic Plan report recommendation was to "Extend Tri-Rail service to location that can better serve airport and adjacent employment center."

In March, 1988 the Florida High Speed Rail Corporation (FHSRC) prepared a report entitled "Rail Line Element" as part of its franchise application submitted to the Florida

High Speed Rail Transportation Commission (FHSRTC). This report proposed a base system of 13 High Speed Rail (HSR) stations extending from Miami International Airport (MLA) to Orlando and Tampa. In July, 1990 the FHSRC updated the "Rail Line Element" report for inclusion in its Sufficiency Response to the FHSRTC. The updated report proposed a base system of 10 stations. In this report the proposed MLA station remained as the southern terminus of the Statewide HSR system.

In December, 1990 the South Florida Regional Planning Council (SFRPC) proposed amendments to its "Regional Plan for South Florida". This report proposed adoption of the following regional policy:

"20.1.1 Encourage and support multimodal transportation system planning coordinated with land use planning to enhance a more compact, efficient development pattern."

This regional policy was supported in text by the following statements:

"Transit systems, particularly fixed rail, are more efficient if they serve and connect high density employment, residential and commercial activity centers."

"The rail lines should also interconnect into one another to increase convenience, accessibility, flexibility and ultimately ridership."

"..., in addition to enhancing mobility, another major function of the multimodal transportation system should be to facilitate achieving other desirable social goals to improve the overall quality of life. These desirable social goals may include, for example, clean air, energy conservation, and efficient use of land and infrastructural resources."

In July, 1991 the Dade County MPO adopted its "Transportation Improvement Program Fiscal Years 1992-1996". This major document, which specifies proposed transportation improvements to be implemented in Dade County over the coming five years, incorporated the Multimodal Access Facility study which is the subject of this report.

CURRENT STUDIES

In addition to the studies discussed above, there are several ongoing transportation studies which are relevant to the Multimodal Access Facility study:

- o Miami International Airport (MIA) is conducting an update to its long range Master Plan. Access to the airport for airport users, airport employees and airport-related services is an important component of the Master Plan study. A separate study is being conducted of a connecting link between the MIA passenger terminal and the Multimodal Access Facility.
- o Tri-County Commuter Rail Authority (Tri-Rail) has completed a strategic plan which identified a need to extend the existing Tri-Rail Miami International Airport (MIA) station, which is currently located north of SR 112, to a location within the Hertz Rental Car site located on NW 21st Street adjacent to MIA. The Florida Department of Transportation owns the rail right-of-way that extends through the Hertz site to NW 21st Street. Tri-Rail has been negotiating with Hertz to reach a mutually acceptable arrangement which would provide for a new Tri-Rail/MIA station while not adversely affecting the Hertz operation. These negotiations are ongoing and are expected to be concluded by summer 1992.
- o The Florida Department of Transportation is conducting a Project Development and Environmental (PD&E) study of upgrading SR 836 (the Dolphin Expressway) between Florida's Turnpike and I-95. SR 836 is a major access route to the Miami International Airport. This study will include both upgrading the existing highway facilities and also incorporating transit facilities.
- o The Florida Department of Transportation is also initiating a PD&E study of upgrading SR 112 (the Airport Expressway) between Florida's Turnpike and I-95. SR 112 is a major access route to the Miami International Airport.
- o The Dade County Metropolitan Planning Organization (MPO) is conducting a Transit Corridors Transitional Study of the potential for extending high-capacity, priority transit modes countywide. The study is considering six

alternative corridors plus two extensions of the Stage I Metrorail system. The Transitional Study also incorporates a rail transit connection between the MIA passenger terminal and the Port of Miami with ultimate extensions west to Florida International University and east to the Miami Beach Convention Center.

PURPOSE

The purpose of this study is to identify the benefits of improved intermodal connections and improved access to MIA and other major employment centers. This study develops the concept of the Multimodal Access Facility, analyzes and evaluates alternative site locations and formulates a feasible development plan.

MULTIMODAL STUDY AREA

Figure 1 shows the general project location. Figure 2 shows that the multimodal access study area includes:

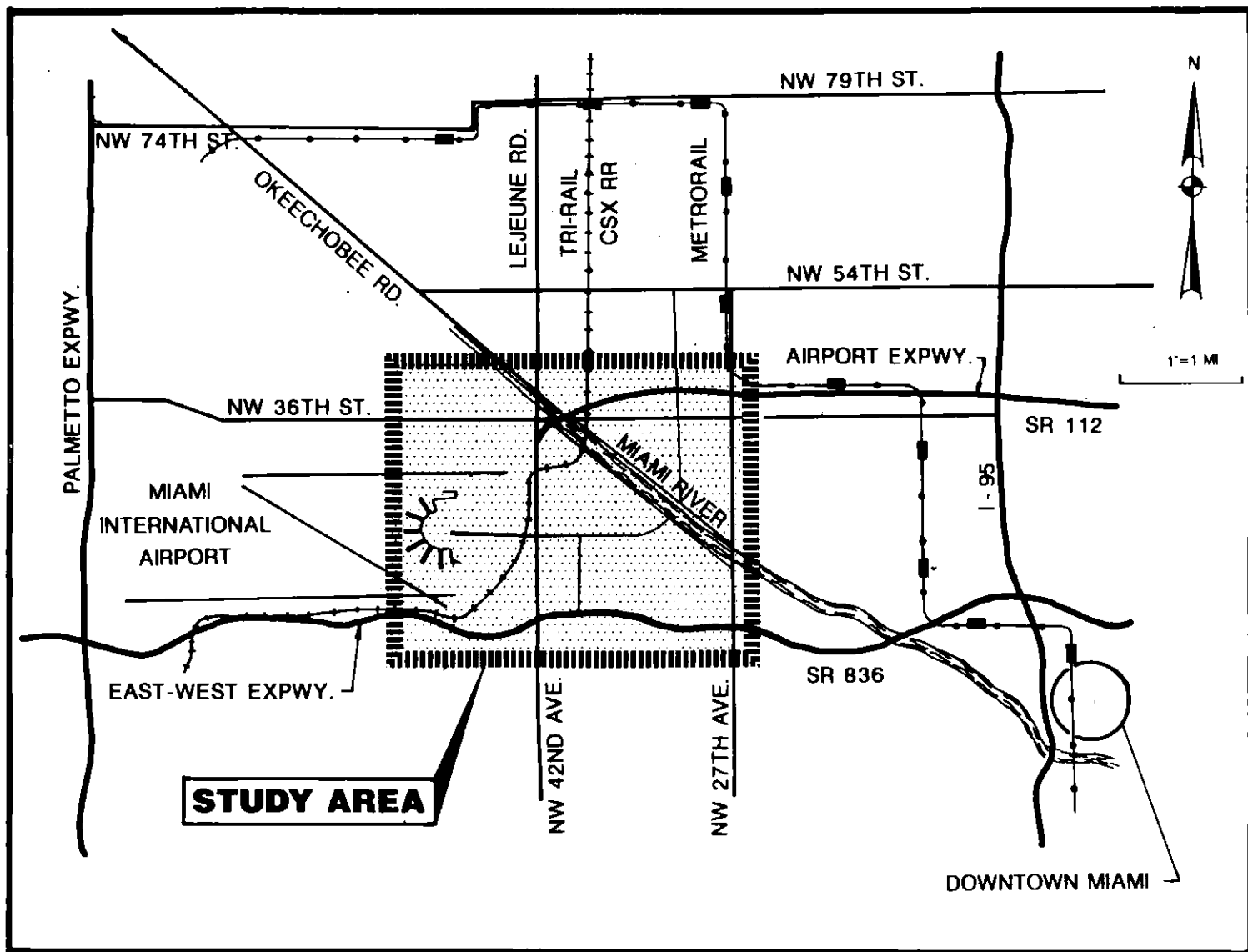
- o The Miami International Airport (MIA) terminal on the west
- o NW 27th Avenue on the east
- o SR-836 on the south
- o 10th Street in Hialeah (corresponds to NW 43rd Street in Miami) on the north

This study area encompasses approximately 4.5 square miles and includes parts of the cities of Miami, Hialeah, Miami Springs and unincorporated Dade County.

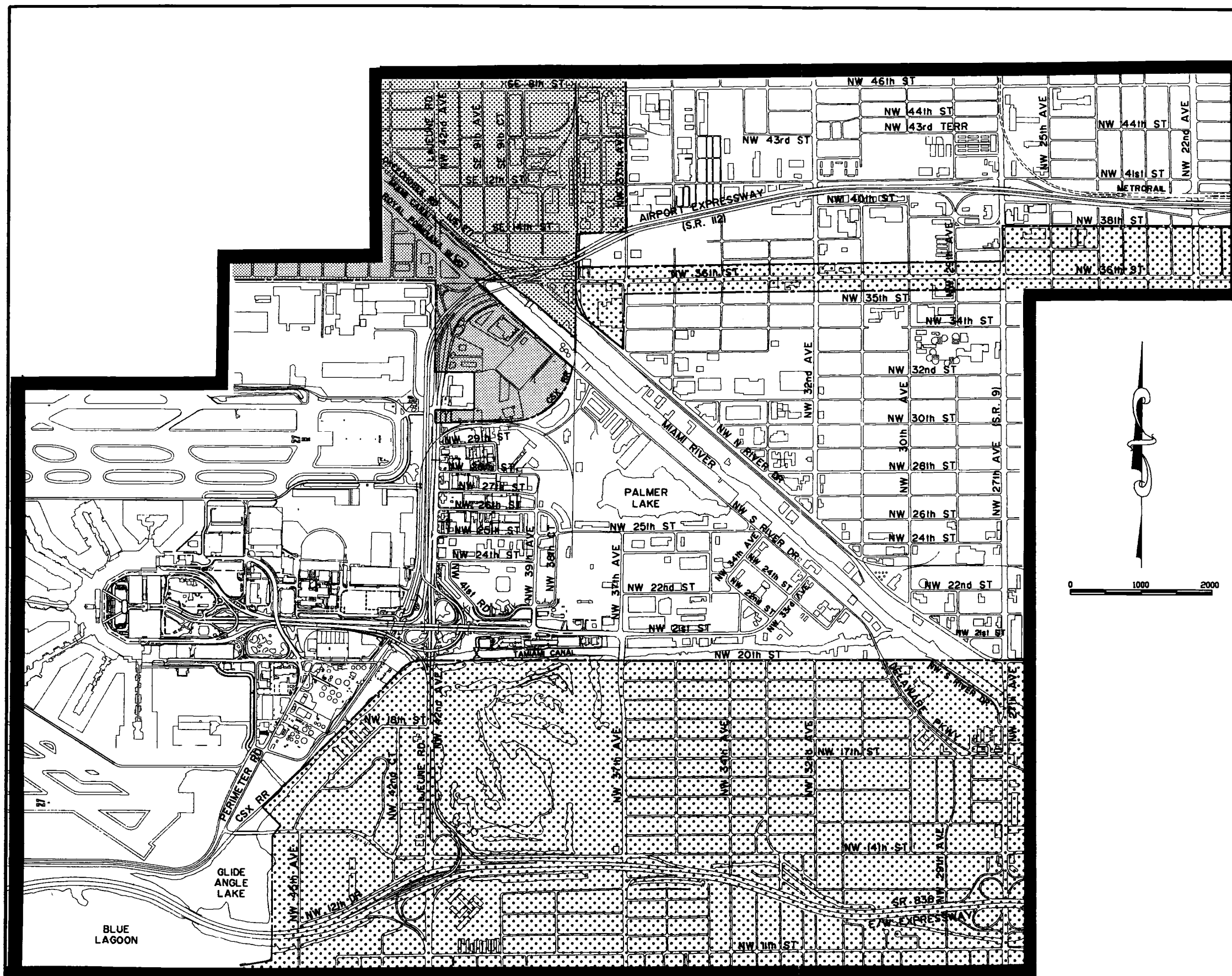
METHODOLOGY

The methodology employed in this study consisted of the following major tasks:







- o Collect and review previous work
- o Identify, assess and review access modes to be studied and make initial projections of potential utilization
- o Develop a set of alternative site proposals to be studied
- o Evaluate proposed alternatives using relevant criteria and recommend preferred alternatives
- o Develop feasible ground access development plan
- o Citizen involvement and public and official review
- o Prepare final project report



PROJECT LOCATION



LEGEND

-  STUDY AREA
-  MUNICIPAL BOUNDARY
-  CITY OF HIALEAH
-  CITY OF MIAMI SPRINGS
-  CITY OF MIAMI
-  UNINCORPORATED DADE COUNTY

**FIGURE 2
STUDY AREA**

AIRPORT AREA MULTIMODAL ACCESS STUDY

The initial assumptions of the study include:

- 1) The rail modes, including Metrorail, Tri-Rail and High Speed Rail, will be extended to a common station within the proposed Multimodal Facility. AMTRAK, at least initially, will continue to operate to and from the north out of the existing facility at NW 83rd Street. Although there are no known plans to do so, this study considered the possibility of a future extension of AMTRAK to the Multimodal Access Facility.
- 2) Future land uses are controlled by the Comprehensive Development Master Plans of Metro-Dade County and of the respective cities.
- 3) Future transportation improvement plans and priorities will be those incorporated in the adopted Year 2010 Plan of the Metro-Dade County MPO.
- 4) It is recognized that, during the course of the study, concepts may be considered which are not consistent with currently adopted plans and programs but which may be incorporated through on-going planning processes. These concepts will be incorporated into the study, as appropriate, and will be addressed as enhancements to the proposed airport area Multimodal Access Facility.

The technical studies conducted as part of the Airport Area Multimodal Access Study are reported in the following technical memoranda:

- o Number 1 - "Background/Previous Studies"
- o Number 2 - "Feasibility of Access Modes"
- o Number 3 - "Development and Evaluation of Alternative Site Proposals"

The Airport Area Multimodal Access Study is being coordinated and reviewed through the Dade County MPO process. The technical tasks have been directed by a Steering Committee composed of Metro-Dade and Florida Department of Transportation staff members. Coordination meetings have been held with:

- o Transportation Planning Technical Advisory Committee (TPTAC)
- o Citizens Transportation Advisory Committee (CTAC)
- o Transportation Planning Council (TPC)
- o Community Affairs Committee of the Board of County Commissioners
- o Transportation Committee of the Board of County Commissioners
- o Board of County Commissioners
- o Metropolitan Planning Organization (MPO)

Public meetings have also been conducted to inform the public and city officials and to incorporate their concerns and comments.

II. MULTIMODAL ACCESS CONCEPT

The purpose of this chapter is to develop the concept of a Multimodal Access Facility in terms of:

- o Benefits of the Multimodal Access Facility
- o Forecast Use of the Multimodal Access Facility
- o Justification of Travel Modes
- o Evaluation Criteria

BENEFITS OF THE MULTIMODAL FACILITY

Transportation Benefits

Studies to date have demonstrated that a Multimodal Access Facility, in concert with other transit and roadway improvements, is needed to serve areawide demands and relieve transportation deficiencies in the airport area of Dade County. The primary benefits of the proposed Multimodal Access Facility are:

- o Enhancing mobility in Dade County by facilitating the safe and efficient transfer of passengers between modes.
- o Encouraging the use of transit modes as alternatives to the private auto.
- o Emphasizing the importance of integrating transportation modes with major land uses, including Miami International Airport, surrounding airport-related land uses and non-airport related developments.
- o Relieving traffic congestion on the airport terminal roadway system.

This study considers the proposed Multimodal Access Facility to be a stand-alone, end-of-the-line station for the rail modes with auto and bus access connections which provide an areawide intermodal transfer facility. This facility will also incorporate a connecting link to the airport passenger terminal. A direct multimodal extension into the Airport passenger terminal is not feasible because of severe limitations imposed by geometry and the intense activities and uses within the terminal complex and by the need to maintain minimal walking distances for passengers carrying luggage.

Although not considered for purposes of justification, this study recognizes that there are potential enhancements which could both increase the use of the Multimodal Access Facility and also serve additional functions beyond intermodal transfers. These potential enhancements include:

- o Extending transit modes beyond the Multimodal Access Facility into south and southwest Dade County.
- o Integrating associated commercial, office, hotel and/or service facilities into the proposed Multimodal Access Facility, thus, creating an activity center that is fully integrated with the transportation system.
- o Providing a rail passenger facility connecting MIA to the Port of Miami.

The conceptual design does not depend on such potential enhancements for justification but, in addition, does not preclude their future incorporation into the proposed Multimodal Access Facility. Figure 3 shows a conceptual diagram of the facility.

Non-Transportation Benefits

In addition to the transportation benefits identified above, the proposed Multimodal Facility will provide additional benefits to South Florida including:

- o Construction Employment
- o Reduced Fuel Consumption
- o Reduced Pollutant Emissions

The potential for increased employment during construction was estimated based on the construction of the Metromover Omni Extension. This project is currently under construction and is of comparable magnitude to the proposed Multimodal Facility. The Metromover project was found to generate approximately 6.4 jobs per million dollars of construction. These included construction employees, architect/engineer employees, state and local government employees and material suppliers. Based on these observations, it is estimated that the Multimodal Facility would generate approximately 400 jobs during construction. Construction of a connecting link between the Multimodal Facility and the MIA passenger terminal would generate an additional 600 jobs. Extending Metrorail from Earlington Heights to the Multimodal Facility would result in an additional 1,200 construction jobs.

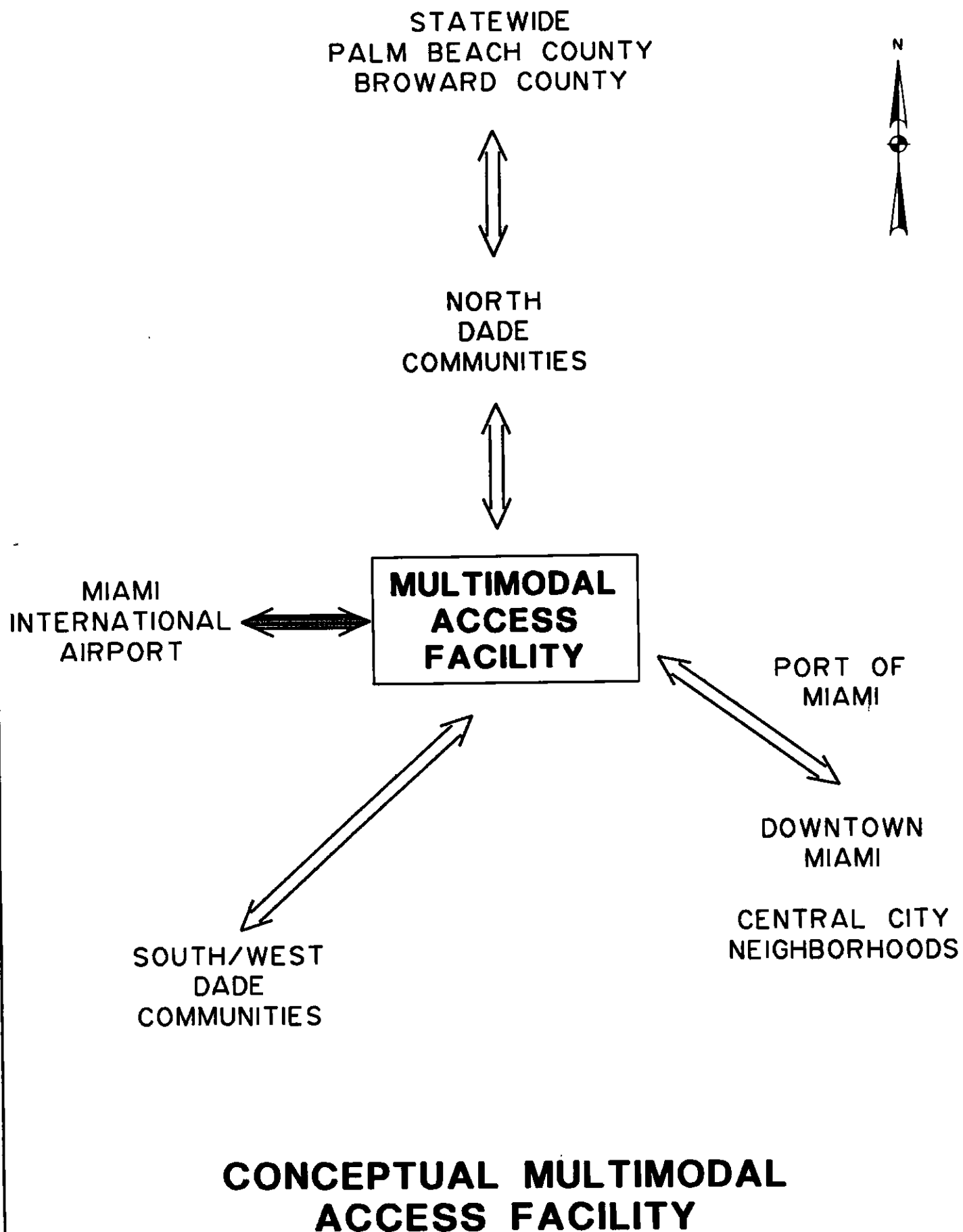


FIGURE 3

The Multimodal Facility also has the potential to reduce annual fuel consumption by serving traffic via the transit mode which would otherwise have accessed MIA by auto. Using the Year 2010 Transit Mode Passenger Forecast, as described in this report, it is estimated that the proposed Multimodal Facility would result in a savings of approximately 600,000 gallons of fuel per year compared to the scenario with no Multimodal Access Facility.

By shifting traffic accessing MIA from the auto mode to the transit mode the proposed Multimodal Facility also has the potential to reduce vehicular emissions. Using Year 2010 forecast reductions in MIA access traffic, the following annual reductions were estimated:

| | |
|--------------------------|-------------------|
| Carbon Monoxide (CO) | 530 tons per year |
| Oxides of Nitrogen (NOX) | 25 tons per year |
| Hydrocarbons (HC) | 50 tons per year |

FORECAST USE OF THE MULTIMODAL ACCESS FACILITY

Long range travel forecasts for the entire airport area were examined in the "Miami International Airport Transportation Study – Technical Memorandum 3 – Formulation and Assessment of Alternatives". This report identified approximately 1.3 million trips per day traversing the airport area in the year 2010 on all roadways and from all directions. Of these, 21 percent were actually destined to the airport. The remaining 79 percent were destined either to nearby airport-related land uses or to non-airport uses.

This study recognized that "...roadways in the MIA area are subject to high levels of traffic congestion that greatly restrict access to the MIA complex and mobility within the surrounding area....As travel demands increase, due to growth in air travel and the development of Dade County, the level of traffic service on area roadways will continue to deteriorate."

This study recommended both new roadway and transit facilities and also improvements to existing facilities. A key recommendation of the MIA Transportation Study was the implementation of:

"MIA Multimodal Transportation Center located east of the airport linking:

- 1) Metrorail
- 2) Tri-County Commuter Rail
- 3) High Speed Rail
- 4) Surface Bus"

The present study is the initial step toward implementing this recommended improvement.

The Year 2010 forecast use of the proposed Multimodal Access Facility was found to vary according to:

- o The location chosen
- o Access policies

Identification and evaluation of alternative locations are discussed in Chapters IV and V of this report. Two alternative access policies were considered:

- o Access Policy 1 assumes that all private and regulated (e.g., taxis, limousines, etc.) vehicles directly access the MIA passenger terminal. Rental cars and courtesy shuttles access the passenger terminal via the Multimodal Facility.
- o Access Policy 2 is similar to Access Policy 1 except that private autos are given the option of either accessing the MIA passenger terminal directly or parking at the Multimodal Facility.

Considering both the alternative locations and the alternative access policies, the Multimodal Access Facility was found to attract between 12,000 and 26,000 vehicle trips per day (Year 2010) which would otherwise use the MIA terminal roadways. The proposed MIA passenger terminal connector link will carry between 40,000 and 59,000 passengers per day. The overall increase in the transit mode to MIA will be between 34,000 and 54,000 passengers per day compared to the forecast without a Multimodal Access Facility.

JUSTIFICATION OF TRAVEL MODES

The potential of various highway and transit modes for improving travel in the multimodal access study area is analyzed in Technical Memorandum 2 entitled

"Feasibility of Access Modes". The purpose of this task was to analyze each mode under conditions that would tend to maximize its potential usage. Modes which exhibited the ability to generate significant potential usage under these conditions were considered for inclusion in the Multimodal Access Facility.

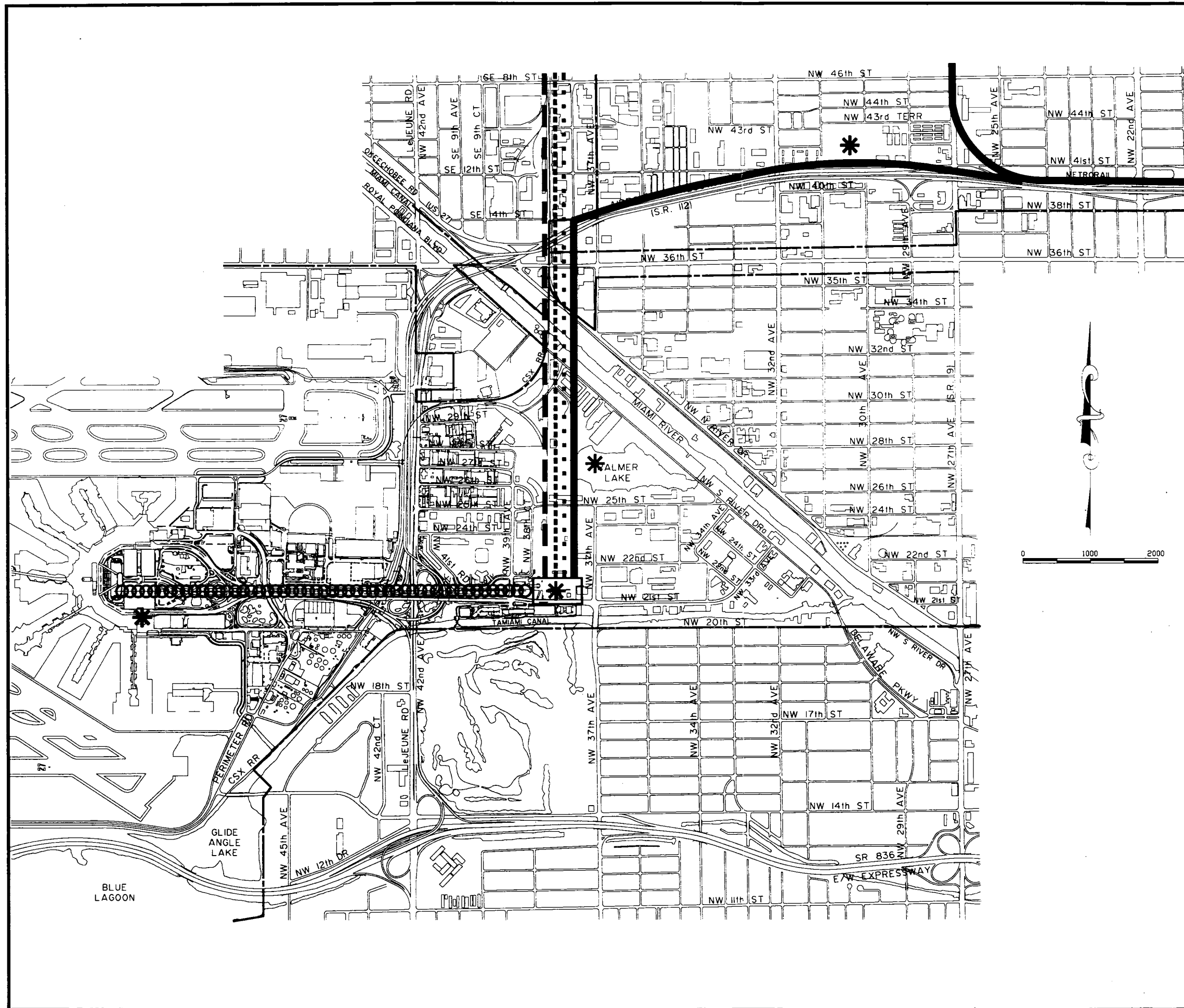
The Miami Urban Area Transportation Study (MUATS) urban travel models and data sets were used to forecast travel volume for this analysis. Two alternative network sets were created:

- o The Transit Enhanced Network consisted of the MUATS adopted Year 2010 Transit Plan together with the Year 2010 Existing Plus Committed (E+C) Highway Network. Figure 4 shows the conceptual future fixed guideway transit system. This network was used to assess the potential of transit access modes, including Tri-Rail, Metrorail and a connector link between the Multimodal Access Facility and the MIA passenger terminal. High Speed Rail and AMTRAK are more properly considered as statewide facilities and therefore, were not included in the Transit Enhanced Network for modeling purposes.
- o The Highway Enhanced Network consisted of the adopted MUATS Year 2010 Highway Plan together with the Year 2010 E+C Transit Network. This network set was used to evaluate improvements which would benefit highway access to the multimodal area. Figure 5 shows the planned roadway improvements in the study area.

Based on these analyses the Multimodal Study Steering Committee determined that the Multimodal Access Facility should serve the following public transit modes:

- o Metrorail
- o Tri-Rail
- o Metrobus Routes
- o Tri-Rail Feeder Bus Routes

Metrobus routes and Tri-Rail Feeder Bus routes which presently access the MIA passenger terminal should be rerouted to access only the Multimodal Access Facility. Publicly licensed vehicles including taxicabs and limousines should continue to access the MIA terminal roadways and curbside. Privately owned hotel, rental car and other courtesy vehicles should be served at the Multimodal Access Facility and should no



LEGEND

- TRI-RAIL
- METRORAIL
- HIGH SPEED RAIL
- ... AMTRAK
- ⊙⊙⊙⊙⊙ AGT LINK TO MIA TERMINAL
- MULTIMODAL ACCESS FACILITY

* NOTE:

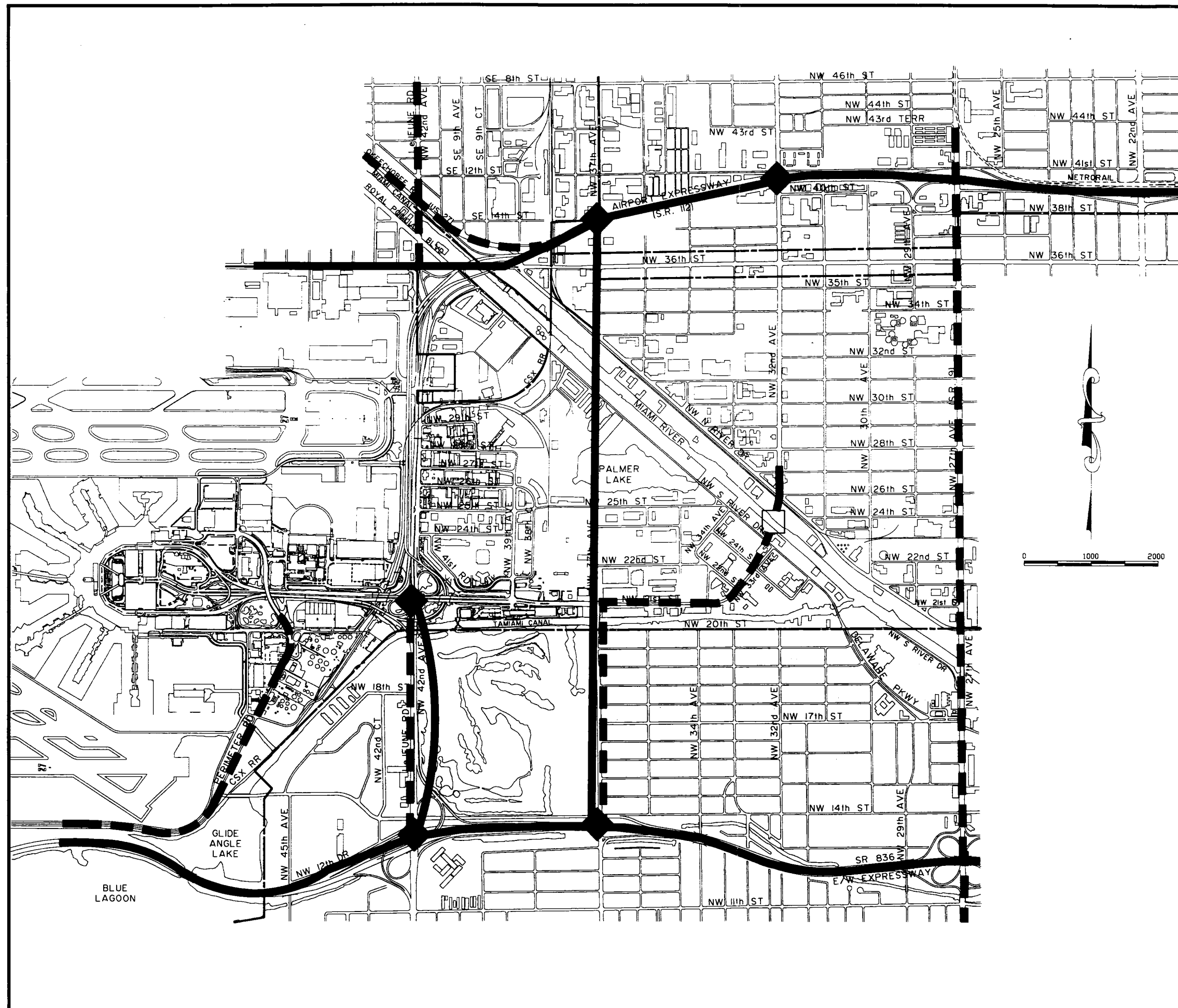
CONCEPTUAL FIXED GUIDEWAY CORRIDOR AND STATION LOCATIONS SHOWN IN THIS FIGURE ARE FOR GRAPHIC ILLUSTRATION PURPOSES ONLY. PRECISE ROUTE AND STATION LOCATION STUDIES HAVE NOT BEEN COMPLETED.

THIS GRAPHIC ILLUSTRATES CONCEPTUALLY THE INTEGRATION OF RAIL TRANSIT MODES INTO A MULTIMODAL ACCESS FACILITY.

FIGURE 4
CONCEPTUAL FUTURE FIXED GUIDEWAY PUBLIC TRANSPORTATION

AIRPORT AREA MULTIMODAL ACCESS STUDY





LEGEND

- EXPRESSWAY
- ARTERIAL
- INTERCHANGE
- MOVEABLE BRIDGE

SOURCE: METRO-DADE TRANSPORTATION PLAN AND IMPROVEMENT PRIORITIES LONG-RANGE ELEMENT TO THE YEAR 2010.

NOTE:

CONCEPTUAL ROADWAY CORRIDOR AND INTERCHANGE LOCATIONS SHOWN IN THIS FIGURE ARE FOR GRAPHIC ILLUSTRATION ONLY. PRECISE LOCATION STUDIES HAVE NOT BEEN COMPLETED.

THIS GRAPHIC ILLUSTRATES THE PLANNED ROADWAY IMPROVEMENTS WITHIN THE STUDY AREA AS ADOPTED BY THE DADE COUNTY METROPOLITAN PLANNING ORGANIZATION.

**FIGURE 5
PLANNED ROADWAY
IMPROVEMENTS**

AIRPORT AREA MULTIMODAL ACCESS STUDY



longer access the MIA terminal roadways and curbside directly. Priorities for auto access to the Multimodal Access Facility should include:

- o MIA employee parking
- o MIA users
- o Tri-Rail and Metrorail users

Several regional transportation alternatives were considered but were excluded from the highway and transit networks. These included:

- o Extension of the Tri-Rail system south of the Multimodal Facility.
- o Extension of the High Speed Rail system south of the Multimodal Facility.
- o Extension of the Metrorail system south of the Multimodal Facility with possible connections to an east-west Metrorail line.
- o A rail passenger facility connecting MIA to the Port of Miami.

Each of these rail transportation alternates could potentially be served by the Multimodal Access Facility, but they are not included within the adopted Long-Range Transportation Plan for Metro-Dade County. Therefore, the conceptual design does not depend upon these alternatives, but, in addition, does not preclude their future incorporation as enhancements to the Multimodal Access Facility.

EVALUATION CRITERIA

Evaluation criteria were developed to guide the formulation and evaluation of alternative design concepts and alternative sites for the proposed Multimodal Access Facility. The purpose of the criteria was:

- o To insure that the Multimodal Access Facility will provide the transportation access and intermodal transfer functions required to satisfy the requirements of the adopted Dade County MPO long range plan.
- o To enable the Multimodal Access Facility to enhance integration of the transportation system with major land uses.
- o To identify potential community and environmental impacts.

Table 1 summarizes evaluation criteria used in this study.

TABLE 1 – MULTIMODAL ACCESS FACILITY EVALUATION CRITERIA

TRANSPORTATION ACCESS

I. Proximity to Airport:

- a) Access to Multimodal Facility for airport-related commercial uses (hotels, car rentals, jitneys, etc.)
- b) Access to Multimodal Facility for airport users, visitors, etc.
- c) Distance from Multimodal Facility to MIA Passenger Terminal via airport link

II. Rail Mode Access:

- a) Complexity in extending Metrorail from Earlington Heights to Multimodal Facility
- b) Potential for available site for rail line extensions (Metrorail, Tri-Rail, HSR, Airport Link)
- c) Compatibility with traffic on NW 21st Street and LeJeune Road
- d) Flexibility to accommodate Metrorail access via east-west line
- e) Flexibility to accommodate future Tri-Rail and HSR extension to SW Dade County and/or downtown Miami

III. Highway Access:

- a) Access to regional expressway system via direct ramps
- b) Access to Multimodal Facility from existing local roadways
- c) Local access and circulation impacts
- d) Effects on traffic congestion on airport terminal roadways

IV. Bus Transit Access:

- a) Access to Multimodal Facility for existing Metrobus Routes
- b) Reduction of miles of service on Metrobus routes
- c) Positive effects on bus service along NW 36th Street

COMMUNITY/LAND USE/ENVIRONMENTAL

- a) Restrictions on Multimodal Facility from aircraft overflight areas
- b) Ability to resolve local governmental jurisdictional issues
- c) Conformance to Metro-Dade and applicable city land use plans
- d) Compatibility of Multimodal Facility with surrounding land uses
- e) Site acquisition impacts
- f) Relocation impacts
- g) Potential for joint development opportunities
- h) Impacts on Miami River
- i) Impacts on Tamiami Canal
- j) Impacts on community facilities and community redevelopment
- k) Impacts on known historical and archaeological resources
- l) Impacts on Multimodal Facility from contamination
- m) Impacts on Multimodal Facility from aviation noise

III. CONCEPTUAL FACILITY DEVELOPMENT

The purpose of this chapter is to develop the conceptual requirements of the proposed Multimodal Access Facility including the following:

- o Access alternatives
- o User requirements
- o Conceptual design criteria
- o Conceptual site plan

ACCESS ALTERNATIVES

The basic functions of the proposed Multimodal Access Facility include:

- o Intermodal transfer
- o Providing access to the MIA passenger terminal
- o Accommodating courtesy vehicles (for hotels, rental cars, etc.) so that this traffic may be removed from the congested passenger terminal roadway system.
- o Rail access
- o Bus and feeder bus access
- o Auto access
- o Bicycle and pedestrian access and intra-facility movements
- o Providing passenger services and amenities
- o Integration with FDOT Intelligent Corridor System

Intermodal Transfer

Intermodal transfer is among the most important functions of the proposed Multimodal Access Facility. Enhancing and facilitating intermodal transfer enables the Multimodal Facility to further the stated goals of:

- o Facilitating use of transit modes as alternatives to the private auto.
- o Integrating transportation modes with land use.

Figure 6 is a matrix which illustrates the importance of intermodal transfer. In a fully-operational Multimodal Access Facility, numerous primary intermodal movements will

Primary Movements Between Transportation Modes

| | High Speed Rail | Amtrak | Tri-Rail | Metrorail | Metrobus | Tri-Rail Feeder Bus | Courtesy Vehicle | Taxi/Limo | Rental Car | Private Auto | MIA Connector |
|---------------------|-----------------|--------|----------|-----------|----------|---------------------|------------------|-----------|------------|--------------|---------------|
| High Speed Rail | | | | | | | | | | | |
| Amtrak | | | | | | | | | | | |
| Tri-Rail | | | | | | | | | | | |
| Metrorail | | | | | | | | | | | |
| Metrobus | | | | | | | | | | | |
| Tri-Rail Feeder Bus | | | | | | | | | | | |
| Courtesy Vehicle | | | | | | | | | | | |
| Taxi/Limo | | | | | | | | | | | |
| Rental Car | | | | | | | | | | | |
| Private Auto | | | | | | | | | | | |
| MIA Connector | | | | | | | | | | | |

Legend

● = Primary Movements

FIGURE 6

be served together with others of lesser importance. This matrix has important consequences for:

- o The efficient arrangement of functional facilities such as platforms, entry and exit points, elevators, ticketing, parking, services, operational areas, etc.
- o The provision of guidance and information for users of the Multimodal Facility.
- o The provision of passenger services and amenities (e.g., waiting areas, food service, restrooms, public telephones, etc.).

Providing Access to MIA Terminal

The Multimodal Access Facility terminal concept is of a regional transportation facility that improves intermodal interfaces which presently are extremely inefficient and which greatly penalize potential transit users. Because of its proximity to the Miami International Airport, the proposed Multimodal Facility can also provide access to the MIA passenger terminal and to other important destinations within the MIA complex (e.g., employment centers, parking areas, hotels, etc.). The Multimodal Facility also has the potential to become a regional activity center incorporating offices, business services, hotel, etc.

Depending upon the location selected, the one-way distance between the Multimodal Facility and the MIA passenger terminal will be between one and three miles. The selection of a travel mode to transport people between these two centers will depend upon several factors including:

- o The number of people traveling between the Multimodal Facility and MIA during peak periods daily.
- o The desired frequency of operation.
- o The capacity of the terminal roadways, curbside and internal infrastructure (e.g., doors, elevators, escalators, lobbies, etc.).
- o The ability of alternative modes to serve "worst-case scenario" travelers (e.g., families with small children, elderly persons, schedule-sensitive airline travelers, etc.).
- o The ability to maintain service during system failure situations.

Alternative travel modes linking the Multimodal Access Facility to the MIA Passenger Terminal may range from shuttle buses to automated vehicles on aerial guideway.

Accommodating Courtesy Vehicles

Traffic studies have shown that the MIA terminal roadways and curbside will become increasingly crowded and ultimately will be unable to provide access to the terminal via all modes. It is proposed that the highest priority for direct access to the airport terminal roadways and curbside be afforded to private vehicles and publicly-licensed vehicles including taxicabs and limousines. Courtesy vehicles (e.g., for rental cars, hotels, etc.) are to be served at the Multimodal Facility only instead of directly at the MIA passenger terminal. Private vehicles may access either site.

Two conceptual alternatives are considered for integrating rental car operations in the Multimodal Access Facility:

- o In one alternative the rental car counters, ready lots, return aisles and prep facilities (e.g., safety check, fueling, clean-up, etc.) would be housed within the Multimodal Facility. Rental car customers would be shuttled to and from the MIA passenger terminal. The identities of the rental car companies would be preserved through dedicated space, logos, color schemes, signing, etc. In this conceptual alternative, non-customer activities such as maintenance, repair and overflow storage would be accomplished off-site at a nearby location.
- o In the other alternative rental car counters would be located in the Multimodal Facility. Rental car pickups and returns together with all prep, maintenance, repair and overflow storage would be located off-site. Rental car customers would be shuttled from the off-site location to the Multimodal Facility by courtesy vehicle. They would not be permitted to shuttle directly to the MIA passenger terminal from the off-site rental car facilities.

Other courtesy vehicles (e.g., hotel shuttles, crew shuttles, etc.) should access the Multimodal Facility and not the MIA curbside directly.

Rail Access

Rail modes considered for incorporation into the facility include Metrorail, Tri-Rail, High Speed Rail and AMTRAK. All four rail modes were conceptualized as having direct rail access to the terminal site and having platform and operational facilities within

the Multimodal Access Facility. As an alternative AMTRAK rail passenger service would continue to terminate at the NW 83rd Street AMTRAK station, which is located approximately 4.8 miles north of the multimodal study area. Connecting service to the Multimodal Access Facility would be provided via ground transportation (e.g., shuttle, bus, taxicab, jitney, etc.).

Metrobus Access

Several existing Metrobus routes provide direct access to the MIA passenger terminal including routes 7, 37, 42 and J. These Metrobus routes are illustrated in Figure 7. Entry into the MIA passenger terminal is a deviation from the line haul bus route and adds time to the schedule. Excessive deviations are generally to be avoided since they reduce the level of service available to the remainder of the route. In the Multimodal Facility concept, Metrobus service would no longer access the MIA passenger terminal but would, instead, be provided to the Multimodal Access Facility.

Feeder Bus Access

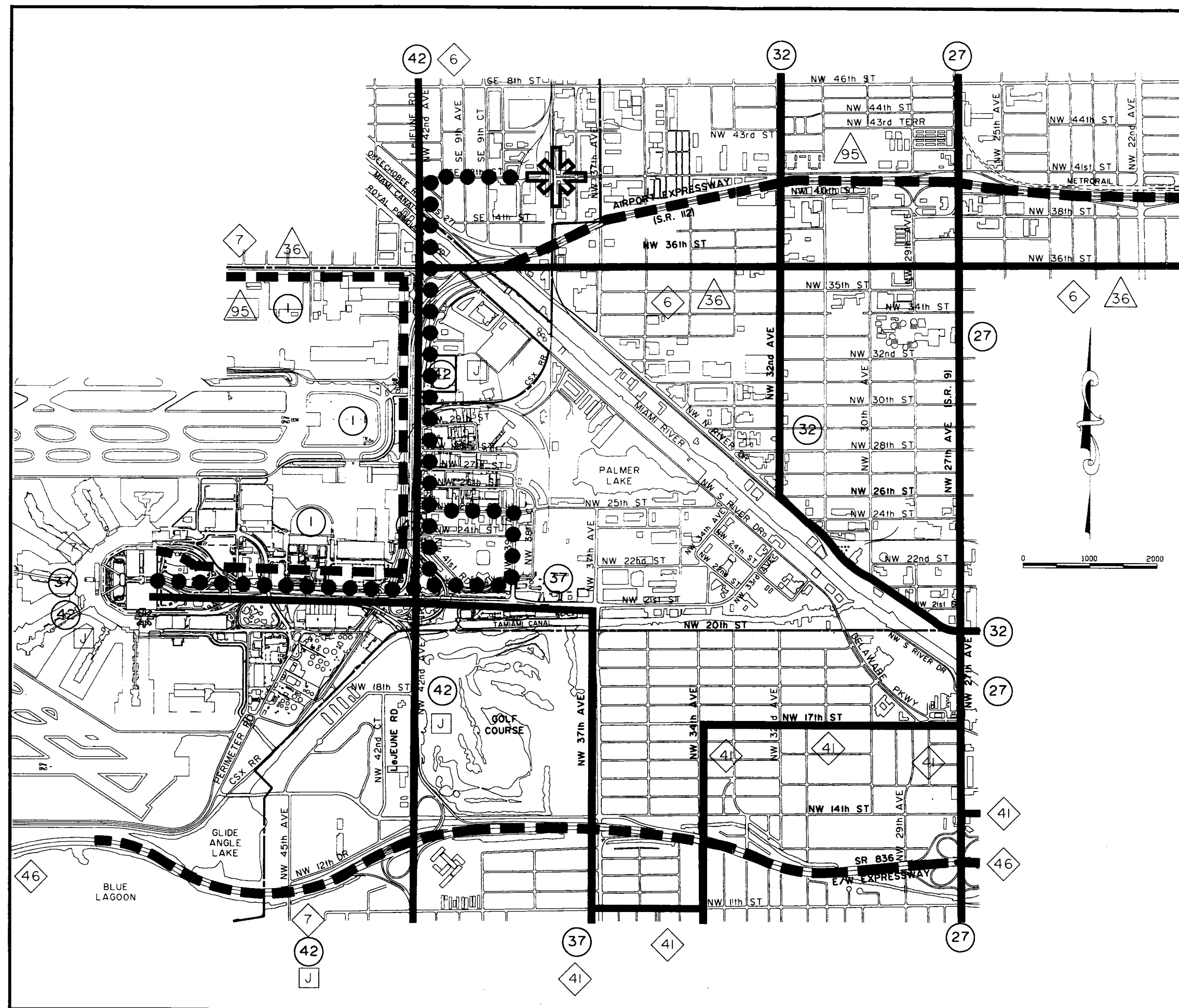
Existing feeder bus routes originate at the Tri-Rail station on SE 10th Street in Hialeah as shown in Figure 7. These routes connect Tri-Rail with the MIA passenger terminal and with office parks on NW 36th Street.

The conceptual design integrates MIA access with the Multimodal Access Facility. Therefore, a separate feeder bus route to MIA will no longer be required. Other feeder bus routes serving a variety of destinations (e.g., office, parks, residential areas, etc.) will be able to access the Multimodal Facility directly.

Auto Access

The conceptual design incorporates private auto access to both the Multimodal Access Facility and also the MIA passenger terminal. Auto access to the Multimodal Facility could potentially be provided for:

- o MIA employees
- o MIA users
- o Tri-Rail and Metrorail users



LEGEND

- METROBUS ROUTE
- PEAK HOUR SERVICE ONLY ROUTE
- TRI-RAIL FEEDER BUS ROUTE
- ROUTES SERVING DOWNTOWN MIAMI
- NORTH/SOUTH CROSSTOWN ROUTES
- EAST/WEST CROSSTOWN ROUTES
- MIAMI BEACH ROUTES
- TRI-RAIL STATION

SOURCE: METRO DADE TRANSIT AGENCY

THIS GRAPHIC SHOWS THE EXISTING METROBUS ROUTES SERVING THE STUDY AREA AND TRI-RAIL FEEDER BUS ROUTES. NUMBERS INSIDE THE SYMBOLS ARE METROBUS ROUTE NUMBERS.

**FIGURE 7
EXISTING METROBUS ROUTES**

AIRPORT AREA MULTIMODAL ACCESS STUDY



These functions will determine the sizing of parking facilities and pick-up/drop-off areas.

Bicycle and Pedestrian Access and Intra-Facility Movement

Bicycle access should be integrated into the Multimodal Access Facility. However, bicycle use of the proposed facility will be influenced by two external factors:

- o Transit mode operating policies regarding transporting bicycles on board.
- o Providing suitable bicycle routes connecting to the Multimodal Facility.

Wide curb lanes, bicycle racks, storage lockers and other amenities for cyclists may be incorporated.

Pedestrian circulation within the Multimodal Access Facility is a key aspect of the conceptual design. Sidewalks should be incorporated to provide for passenger drop-off points, etc., as well as for pedestrian safety. Where feasible, pedestrian access should be directed to defined walking paths for reasons of security and safety. Sidewalks, crosswalks, lighting, sheltered walkways and other amenities and safety features should be incorporated in pedestrian activity areas.

Passenger Services and Amenities

Passenger services and amenities are an important aspect of the Multimodal Access Facility in relation to:

- o Attracting potential users to transit modes
- o Facilitating passengers' trips, particularly where change-of-mode is involved
- o Enabling travelers to make multi-purpose trips instead of multiple single-purpose trips
- o Affording travelers the opportunity to make productive use of waiting time
- o Enhancing incorporation of associated development (e.g., offices, commercial, hotel, etc.) into the Multimodal Access Facility.

Table 2 is a list of potential services and amenities which could be incorporated into the Multimodal Access Facility. This is not an all-inclusive list but was used to estimate potential users space needs.

Integration with FDOT Intelligent Corridor System

The Multimodal Access Facility affords an excellent opportunity to integrate the entire MIA complex into the Florida Department of Transportation Intelligent Corridor System. An IVHS (Intelligent Vehicle Highway System) connection will provide Multimodal Facility users with real-time information as to the best travel modes for their journeys.

For example, users could access user-friendly computer terminals situated at informational kiosks providing real-time information on:

- o Ground Transportation Alternatives – estimated "door-to-door" travel time and travel cost for car rental, taxi, limo, bus or transit. Additional call-up menus could provide more detailed information on schedules and directions.
- o Hotel/Motel Accommodations – information could be provided on location of hotels/motels, hotel facilities, AAA rating, prices, availability and reservations via credit card.
- o Special Events – information could be provided regarding concerts, plays, sporting events, etc. plus information on prices, availability and ticket purchases via credit card.

Although the initial emphasis of the FDOT "Intelligent Corridor System" project will be within the I-95 corridor, it is envisioned that this system will expand to cover the regional multimodal transportation system encompassing MIA as well as the Dade, Broward and Palm Beach County areas. Integration of the Multimodal Transportation Center with the Intelligent Corridor System would link the MIA areas with the Tri-County region, affording two-way sharing of travel information to and from the airport.

USER REQUIREMENTS

Potential users of the Multimodal Facilities were contacted to determine their potential requirements for space and supporting facilities. Of particular interest were features of the proposed facility which could be shared or held commonly with other users. Where available, reports or plans of existing facilities were reviewed. Appendix A is the conceptual program of user requirements which resulted.

Table 2 – Multimodal Facility Services and Amenities

(Identified by Potential Users)

Passenger Services

Waiting Area with seats
Platform Areas
Ticket Sales
Route and Schedule Information by
mode (Multi-lingual)
Public Address System
Baggage Services
Rental Car Counters
Rental Car Ready Spaces
Rental Car Drop-Off Lanes
Taxicab/Limousine Dispatch

Potential Services and Concessions

Postal Service
Delivery/Courier Service
Walk-up Bank Teller
Package Express
Vending Machines (newspapers,
snacks, etc.)
News Stand
Snack Bar
Coffee Shop
Restaurant
Shops and Services
Display Areas
Copy Machine/Fax Machine
Pharmacy
Dry Cleaning
Licensed Day Care Facility
Retail Shops
Conference/Meeting Facility

Passenger Amenities

Pay Telephones
Restrooms
Lockers
Trash Receptacles
Bicycle Lockers
Parking
Pick-up/Drop-off area
Sheltered waiting areas
Sheltered, paved, walkways
Grade-separated walkways
Elevators/Escalators
Facilities accessible to the disabled
Secure, lighted pedestrian and parking
areas
Smoking/Non-smoking areas
Landscaping (interior and exterior)
Artworks (interior and exterior)

Transportation Operations *

Driver area
Offices
Supply and custodial rooms
Employee restrooms
Dispatch and control area
Security
Operational Areas (electrical power,
maintenance, etc.)

*Generally not accessible to the public

CONCEPTUAL DESIGN CRITERIA

The design concept of the proposed Multimodal Access Facility is that of a single facility which houses a set of functions, as described above. These functional facilities should be designed to be complementary rather than to compete among themselves.

Potential Travel Markets

The Multimodal Facility can potentially serve four travel markets:

- o Intermodal transfer – This includes people who come to the Multimodal Facility as the first leg of a longer journey as well as those who enter on one mode and transfer to another.
- o Access to the MIA passenger terminal – This includes people (either travelers, MIA employees, or other visitors) who come to the Multimodal Facility and use a connecting mode to travel to the MIA passenger terminal. Without the Multimodal Facility, these travelers would otherwise access the passenger terminal directly, thus contributing further to the congested operations on the terminal roadways and the curbside.
- o Trips originating from or destined to local land uses associated with the Multimodal Facility – These uses may include offices, hotels, restaurants, etc. New land use developments of this type are anticipated to occur as a result of the Multimodal Facility, but are not being considered as justification for the facility.
- o Through trips to Southwest Dade – These include people who come to the Multimodal Facility for the purpose of passing through en route to another destination. Their trip may or may not involve a change of mode. The concept of a Multimodal Facility does not preclude through trips of this type being made in the future. However, because the currently adopted Long Range Transportation Plan of the Metro-Dade MPO does not include rail extensions from the Multimodal Facility into Southwest Dade, these trips are not being used as justification for the facility.

Access to Multimodal Facility

The principal means of access to the proposed Multimodal Access Facility will be by:

- o Rail mode (Metrorail, Tri-Rail, High Speed Rail, AMTRAK).
- o Connector mode to and from MIA passenger terminal.
- o Auto mode (private car, taxi/limo/jitney, rental car, courtesy shuttle, etc.).
- o Bus mode (Metrobus routes, Tri-Rail Feeder bus).

The conceptual design assumes that the rail modes will be extended to the Multimodal Facility. The Metrorail connection is being analyzed for this study as extending to the existing Earlington Heights Station, a distance of approximately 2.0 miles. A Metrorail connection to/from the south via an east-west transit line is also an option. The Tri-Rail connection would be accomplished by extending service from the existing terminal at SE 10th Street in Hialeah, a distance of approximately 1.2 miles. The High Speed Rail System does not exist presently. This statewide system would connect South Florida with other urban areas of the state including Orlando, Tampa and others. The conceptual design assumes that High Speed Rail service will eventually be developed as far south as the Multimodal Facility. The concept also allows for extending AMTRAK at NW 83rd Street to the Multimodal Facility, a distance of approximately 4.8 miles.

Travel between the Multimodal Access Facility and the MIA passenger terminal will be accomplished by a connector link. Initially, during the early phases of development of the Multimodal Facility, this may be a shuttle bus service. During later phases, and depending on the Traffic Circulation Element of the MIA Master Plan Update, a higher type of service will likely be developed, such as an Automated Guideway Transit (AGT) system.

The conceptual plan is designed to be accessible to the regional arterial highway system including the improvements contained in the adopted Metro-Dade County MPO Year 2010 Plan. No additional major roadway corridors are proposed to support the Multimodal Access Facility. Access ramps will be needed together with improvements for local circulation.

Metrobus and Tri-Rail feeder bus routes will be able to access the Multimodal Facility. The existing Tri-Rail feeder bus route to the Koger Executive Center may be

incorporated into the Multimodal Facility. Feeder bus routes to other activity centers (e.g., office, parks, DRI developments, FIU Tamiami Campus, etc.) may be incorporated as demand warrants. The existing Tri-Rail feeder bus route between SE 10th Street and MIA will be discontinued when Tri-Rail is extended south to the Multimodal Facility.

The magnitude of projected travel volumes anticipated for the principal transit roadway facilities accessing the Multimodal Facility were identified in Technical Memorandum #2 entitled "Analysis of Feasibility of Access Modes".

Design Concept

A preliminary design concept was developed incorporating the aspects discussed above including:

- o Access functions
- o User requirements
- o Potential travel markets
- o Ground access

Figure 8 is a concept diagram for the Multimodal Access Facility showing both the internal functional activities and also external access linkages. The concept diagram shows the access modes (rail, highway and bus, MIA terminal connector) all focusing on a central area of common facilities, including boarding platforms, car rental, parking, pickup/dropoff, a potential development parcel and passenger services. The concept diagram is generic and not specific to a particular site.

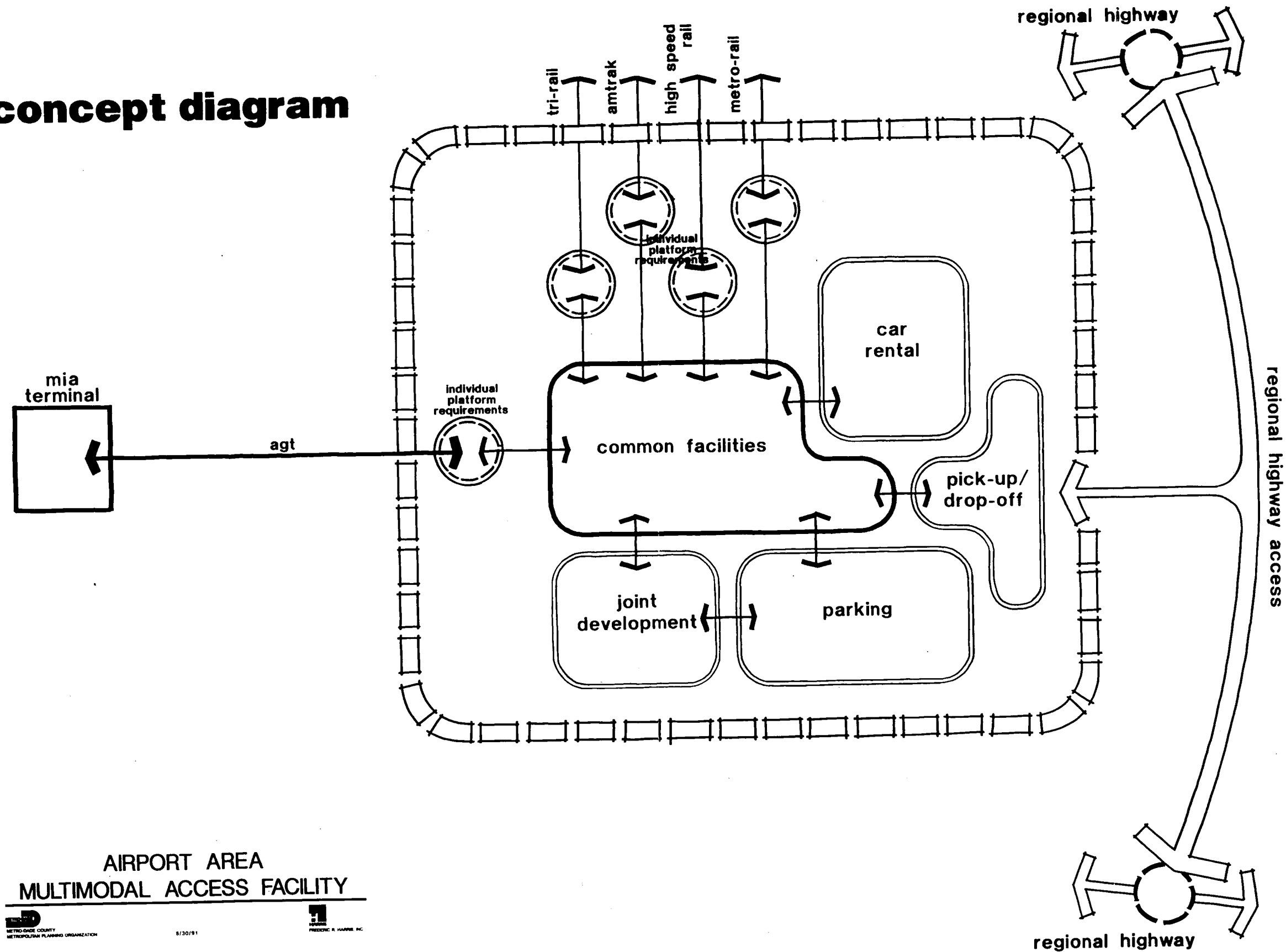
CONCEPTUAL SITE PLAN

The concept diagram in Figure 8 shows that the Multimodal Facility incorporates several functions which are centered on a common facility area.

The concept diagram was further developed into a conceptual site plan. A multilevel design was proposed to accomplish the following:

- o Vertical separation of rail access and ground level access and circulation
- o Separation of public accessible areas and transit operations area
- o Provide for public safety in crossing and circulating around rail platform areas
- o Provide external connections for rail, bus, highway and the MIA connector

concept diagram



AIRPORT AREA
MULTIMODAL ACCESS FACILITY

Figure 9A shows a plan view of the conceptual site plan. This plan is sized to accommodate the program of user requirements contained in Appendix A and includes the following:

- o Ultimate 1,000 foot platforms for the rail modes
- o Facilities for remote ticketing of airline passengers. (Facilities for baggage check-in have not been included in the conceptual site plan because of security considerations and logistics.)
- o A multi-level parking garage of which two levels are dedicated to rental car returns and rental car pickups and the balance to be used by airport users and employees¹
- o A bus access and circulation area
- o Passenger waiting areas, services and amenities
- o Rental car sales desks
- o Service and operations areas for the rail lines. These areas are generally not accessible to the public.
- o Allowance for a multi-story development parcel with a ground level footprint of approximately 60,000 gross square feet.

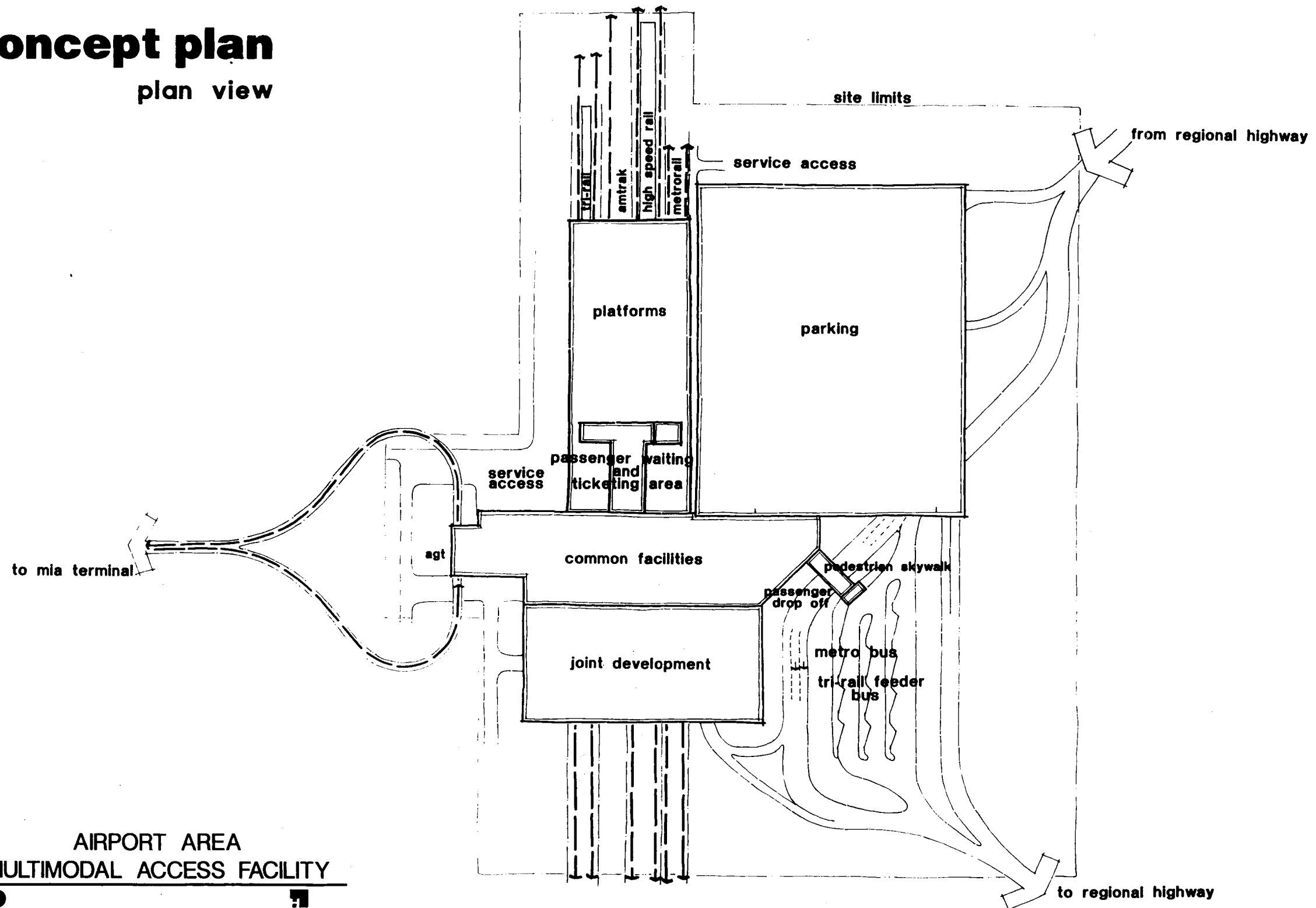
Figure 9B shows a ground-level plan of the proposed facility. This level consists of at-grade entries and platforms for Tri-Rail, High Speed Rail and AMTRAK. Consistent with the conceptual design criteria, the Tri-Rail and High Speed Rail tracks pass through the Multimodal Access Facility serving initially as run-off tracks and, in the future, as system extensions. The ground level plan also contains passenger drop-off, access to parking garages and sawtooth spaces for buses. Maintenance and operations areas for Tri-Rail and High Speed Rail are provided at ground level.

Figure 9C shows the first level (i.e., +1) of the proposed facility. Elevated Metrorail tracks enter the facility at this point and service the platform. Run-off track and operations/maintenance facilities are provided at this level. Parking for car rental returns, employees and the public are provided at this level. Access to the car rental return area is provided via elevated ramps. It is important that there be segregation

¹Some alternative site locations may provide opportunities to combine Multimodal Facility parking with airport employee parking needs (approximately 5,000-6,000 spaces). It may not be desirable to encourage public auto parking on the Multimodal Facility site.

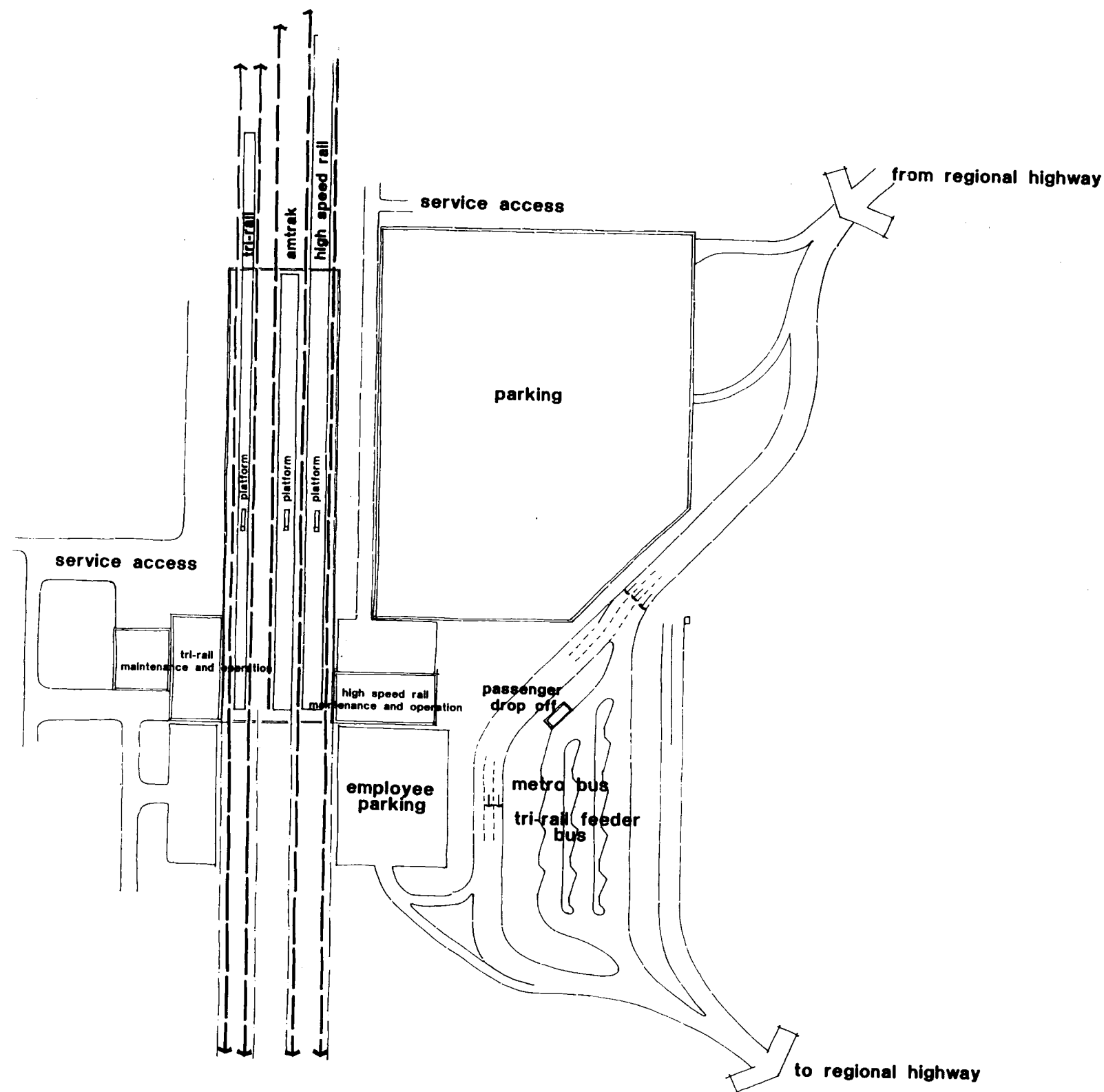
concept plan

plan view



AIRPORT AREA
MULTIMODAL ACCESS FACILITY

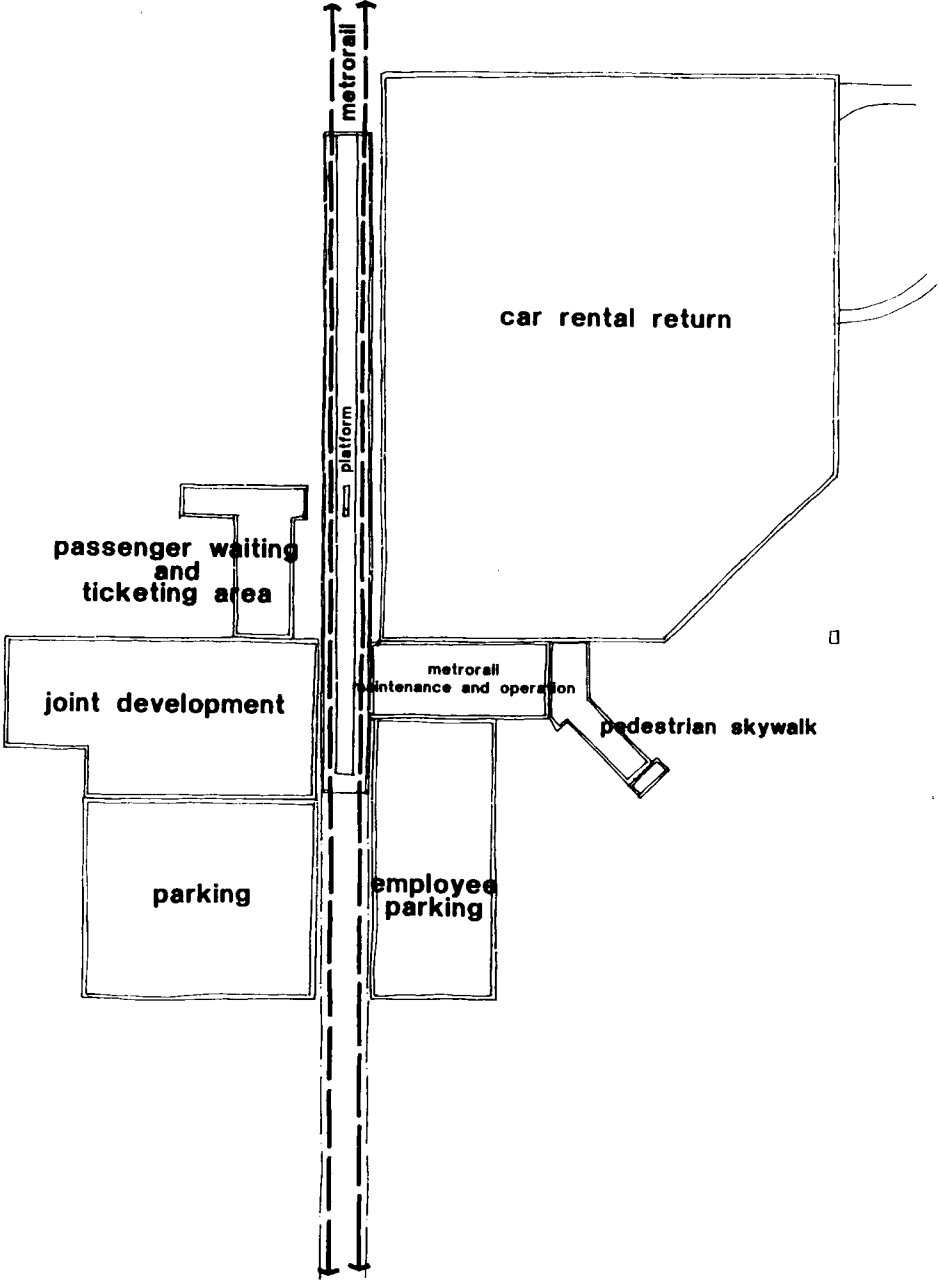
concept plan
ground level



AIRPORT AREA
MULTIMODAL ACCESS FACILITY

FIGURE 9B

concept plan
level 1



AIRPORT AREA
MULTIMODAL ACCESS FACILITY

FIGURE 9C

among the rental car companies both for security and efficiency and also for ease of passenger identification and direction. A passenger waiting and ticketing area is provided at this level together with a mezzanine to enable people to cross over the rail lines below.

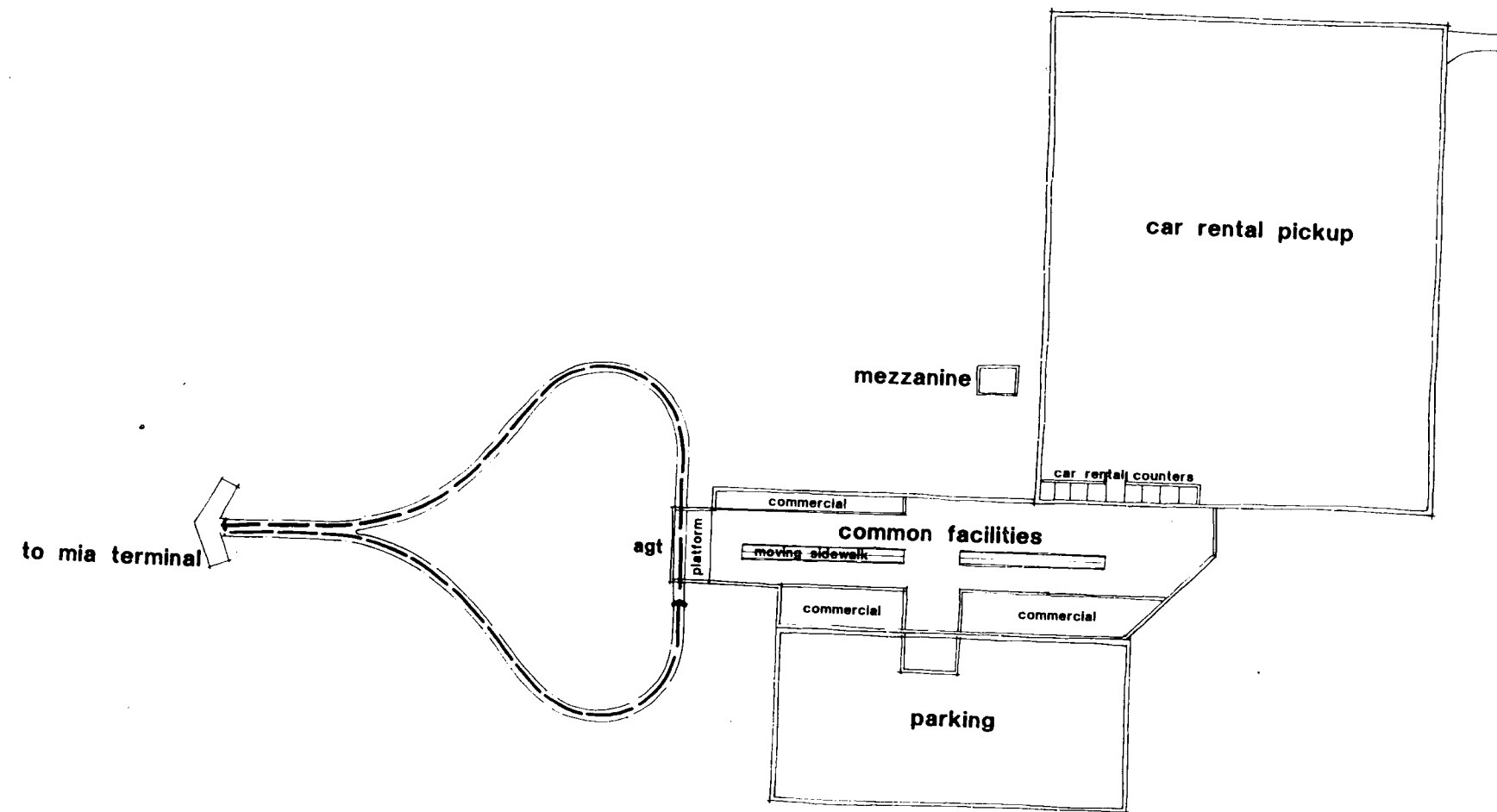
Figure 9D shows the second level (i.e., +2) of the concept plan. This level provides a central area of common facilities (e.g. waiting areas, information services, food service, etc.) with access to parking. The connector link to the MIA passenger terminal ties in to this level. Rental car sales desks and ready car lots are provided. These, too should be segregated among rental car companies.

Levels above level +2 may be incorporated to provide additional parking and additional development areas.

The conceptual site plan of the proposed multi-level Multimodal Access Facility covers approximately 33 acres. This site plan is generic and does not relate to a particular site. For certain alternative locations the site plan may require adaptations, such as grade separating rail lines to provide for unconstrained vehicular access and circulation and, space permitting, ground level rental car and employee parking.

concept plan

level 2



AIRPORT AREA MULTIMODAL ACCESS FACILITY

METRO-DADE COUNTY
METROPOLITAN PLANNING ORGANIZATION

8/30/91

FORNBERG
FREDERICK R. HARRIS, INC.

FIGURE 9D

IV. FORMULATION OF LOCATION ALTERNATIVES

The conceptual design of the Multimodal Access Facility as described in the previous chapter is generic in that it incorporates the desired functions and activities but does not relate to any particular location. The purpose of this chapter is to analyze the ability of alternative sites to accommodate the Multimodal Access Facility. This chapter includes the following tasks:

- o Identifying initial location areas
- o Preliminary screening of alternative locations
- o Developing alternative conceptual site plans

IDENTIFICATION OF INITIAL LOCATION AREAS

The study area was initially sub-divided to identify potential location areas for the Multimodal Access Facility. Ten areas were identified, their boundaries being the CSXT rail right-of-way, the Miami River and major roadways, as shown in Figure 10. The circled numbers in Figure 10 are for area identification only and do not pertain to specific sites.

PRELIMINARY SCREENING OF ALTERNATIVE LOCATIONS

The purpose of the preliminary screening was to identify conceptual location areas that appear to have greater potential than others and also to reduce the number of locations being analyzed to a more manageable number.

Table 3 reviews the advantages and disadvantages of each of the ten areas. Based on a review of Table 3, the project Steering Committee advanced zones 4, 5, 6, 8 and 9, as shown in Figure 11, for development of alternative conceptual site plans. The Steering Committee did not advance zones 1, 2, 3, 7 and 10 for the reasons enumerated in Table 3.

Table 3 - Preliminary Screening Analysis

Area 1

Advantages:

- o Incorporates Multimodal Facility into existing Earlington Heights Metrorail station
- o Does not require Metrorail extension to airport

Disadvantages:

- o Does not connect to Tri-Rail
- o Area has no relation to airport or to airport related uses (rental cars, hotel vans, etc.)
- o Area would not intercept airport traffic from west Dade
- o MIA connector link would have to be nearly four miles long and cross over SR 112

Area 2

Advantages:

- o Area is north of SR 112. Metrorail extension from Earlington Heights would not be required to cross over/under SR 112

Disadvantages:

- o Does not connect to Tri-Rail
- o Requires significant modifications to Earlington Heights station to accommodate short extension of Metrorail
- o Area has no relation to airport or to airport-related uses
- o Area would not intercept airport traffic from west Dade
- o MIA connector link would have to be three miles long and cross over SR 112

Area 3

Advantages:

- o Area is on existing Tri-Rail line
- o Area is north of SR 112. Metrorail extension from Earlington Heights would not be required to cross over/under SR 112

Disadvantages:

- o Does not have good roadway connections to airport-related users
- o Existing site of Tri-Rail airport station is too small to accommodate Multimodal Access Facility. Would require major expansion
- o MIA connector link would have to be more than two miles long and would have to cross over SR 112 at its highest point

Table 3 (continued)

Area 4

Advantages:

- o Convenient to airport and airport-related uses
- o Accessible to Tri-Rail tracks
- o MIA connector link would not be required to cross Miami River or SR 112

Disadvantages:

- o Requires Metrorail extension from Earlington Heights to cross over/under SR 112 and over Miami River

Area 5

Advantages:

- o Similar to Area 4

Disadvantages:

- o Similar to Area 4
- o May interfere with recent new developments

Area 6

Advantages:

- o Metrorail extension from Earlington Heights would not be required to cross Miami River
- o Site location east of Miami River may stimulate re-development of NW 36th Street area
- o Potential for developing Metrorail/Jai Alai Fronton station
- o Potential for use of existing MDTA property

Disadvantages:

- o Location is east of Miami River. All airport-related uses are west. Would require extensive river crossings to serve rental cars, hotels, etc.
- o Airport connector link would be required to cross over Miami River

Area 7

Advantages:

- o Convenient to airport and related uses
- o MIA connector link would not be required to cross Miami River

Disadvantages:

- o Entire area is a developed residential area

Table 3 (continued)

Area 8

Advantages:

- o Convenient to airport and related uses
- o MIA connector link would not be required to cross Miami River
- o Area is a single parcel
- o Area is in public ownership

Disadvantages:

- o Area is in recreation/open space use
- o Requires rail extensions south of NW 21st Street and Tamiami Canal

Area 9

Advantages:

- o Close proximity to airport
- o Close proximity to SR 836 corridor and roadway connections to West Dade
- o MIA connector link would not be required to cross LeJeune Road

Disadvantages:

- o Constrained by aircraft approach surface and FAA-required Runway Protection Zones
- o Requires Tri-Rail and Metrorail extensions to cross LeJeune Road

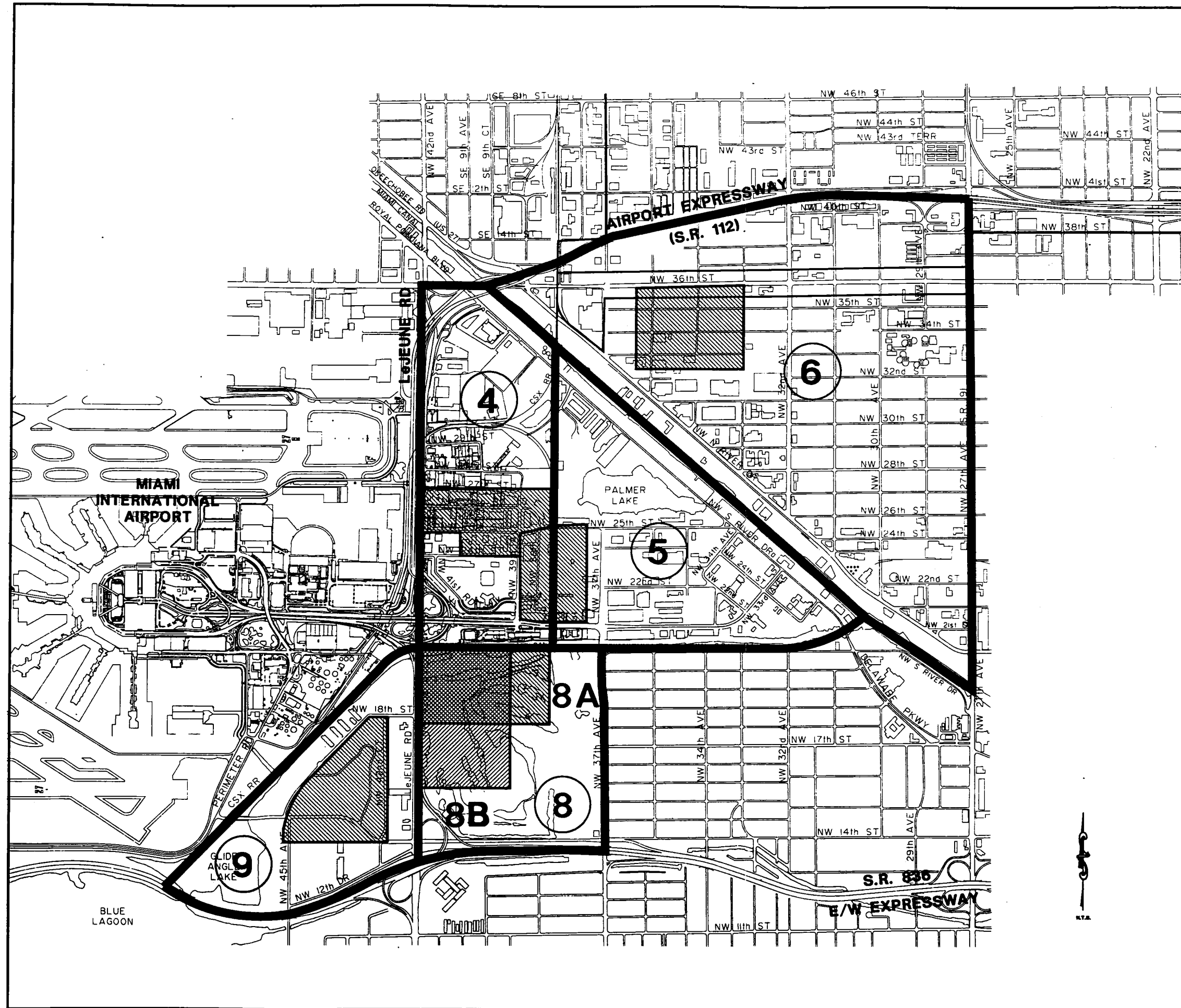
Area 10

Advantages:

- o Provides direct rail transit connections to airport
- o Does not require separate connector link

Disadvantages:

- o Would add traffic to already-congested airport roadways
- o Would add non-airport traffic (i.e., rail access) into passenger terminal
- o Would require substantial construction of additional facilities in physically constrained, heavily used passenger terminal area
- o Would require significant walking distances to parts of the passenger terminal



- LEGEND**
-  SITE LOCATION
 -  STUDY AREA

FIGURE 11
LOCATION OF ALTERNATIVE
CONCEPTUAL SITE PLANS

AIRPORT AREA
MULTIMODAL ACCESS
STUDY



ALTERNATIVE CONCEPTUAL SITE PLANS

Alternative conceptual site plans were prepared for each of zones 4, 5, 6, 8 and 9. The alternative study sites were configured in order to:

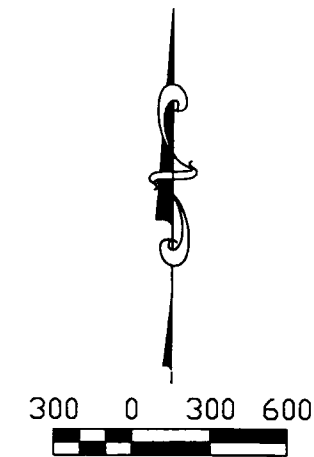
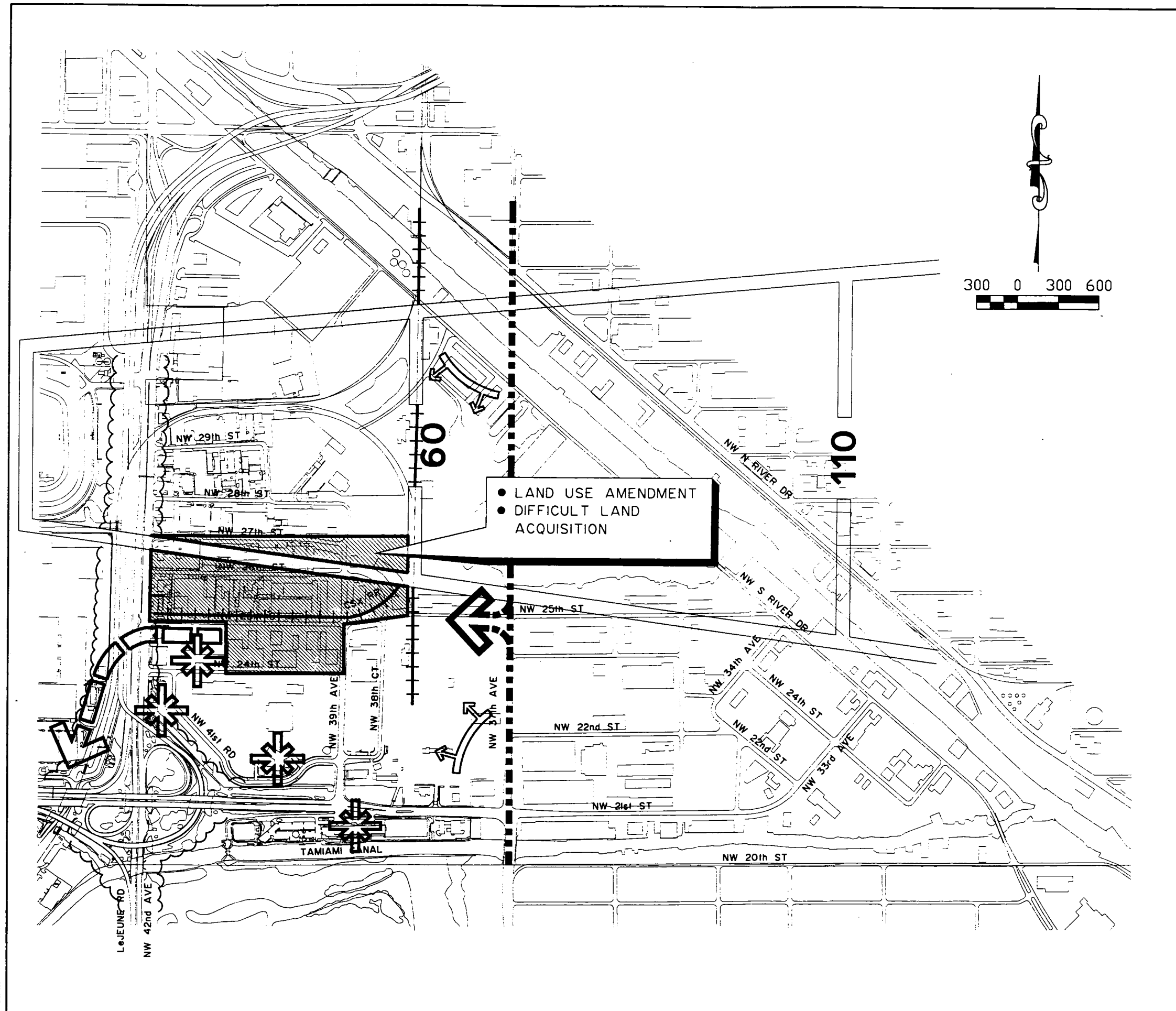
- o Accommodate all of the functions and activities contained within the proposed Multimodal Access Facility.
- o Provide transportation access to the facility via rail, bus, highway and MIA connector modes.
- o Minimize community, land use and environmental impacts.
- o Minimize potential right-of way acquisition and relocation impacts.
- o Accommodate employee parking (approximately 5,000–6,000 spaces)

The conceptual site plans shown in the figures which follow illustrate representative sites. They are intended to assist in analyzing and evaluating the alternative locations and do not identify specific properties for acquisition.










Alternative Conceptual Site Number 4

The conceptual location is shown in Figure 12. The conceptual site plan is shown in Figure 13. This site is located generally east of LeJeune Road and west of the CSX right-of-way. Site 4 is bounded by the 2300 block on the south and the 2600 block on the north. Existing land uses within Site 4 are primarily manufacturing, with commercial frontage along LeJeune Road and a motor inn on NW 24–25 Streets.

Because Site 4 is located west of the CSX tracks the site lends itself to a linear development scheme with the Tri-Rail platform at the extreme east end of the site and the MIA connector platform at the west end. This would make a long walk for airport users. Instead, the conceptual site plan shown in Figure 13 relocates the rail lines into the facility, thus, improving the flow of passengers. The Multimodal Access Facility would have roadway access from NW 25th Street and NW 39th Avenue. The elevated Metrorail link from Earlington Heights would have to cross over SR 112 and the Miami River to reach Site 4. A Metrorail link to/from the south is also an option.



LEGEND

-  SITE
-  EXISTING EXPRESSWAY
-  PROPOSED EXPRESSWAY
-  RAIL LINE
-  HIGHLY CONGESTED ROADWAYS
-  HOTEL
-  HIGHWAY EXPOSURE
-  MIA CONNECTOR
-  APPROACH/DEPARTURE DISTRICT WITH ALLOWABLE HEIGHTS IN FEET ABOVE MEAN SEA LEVEL

KEY MAP

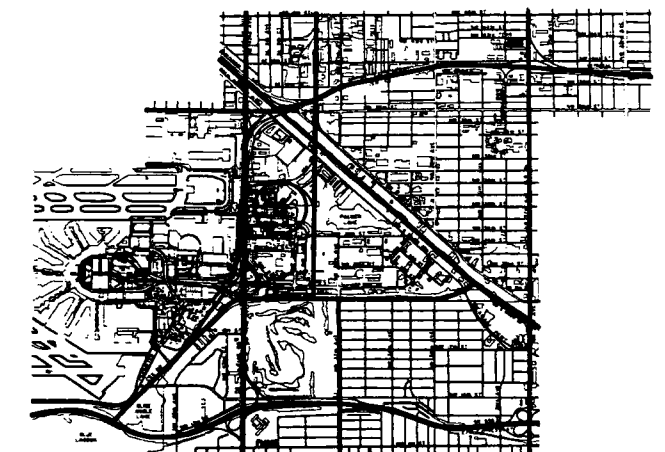


FIGURE 12
ALTERNATIVE CONCEPTUAL
SITE NUMBER 4

AIRPORT AREA MULTIMODAL ACCESS STUDY



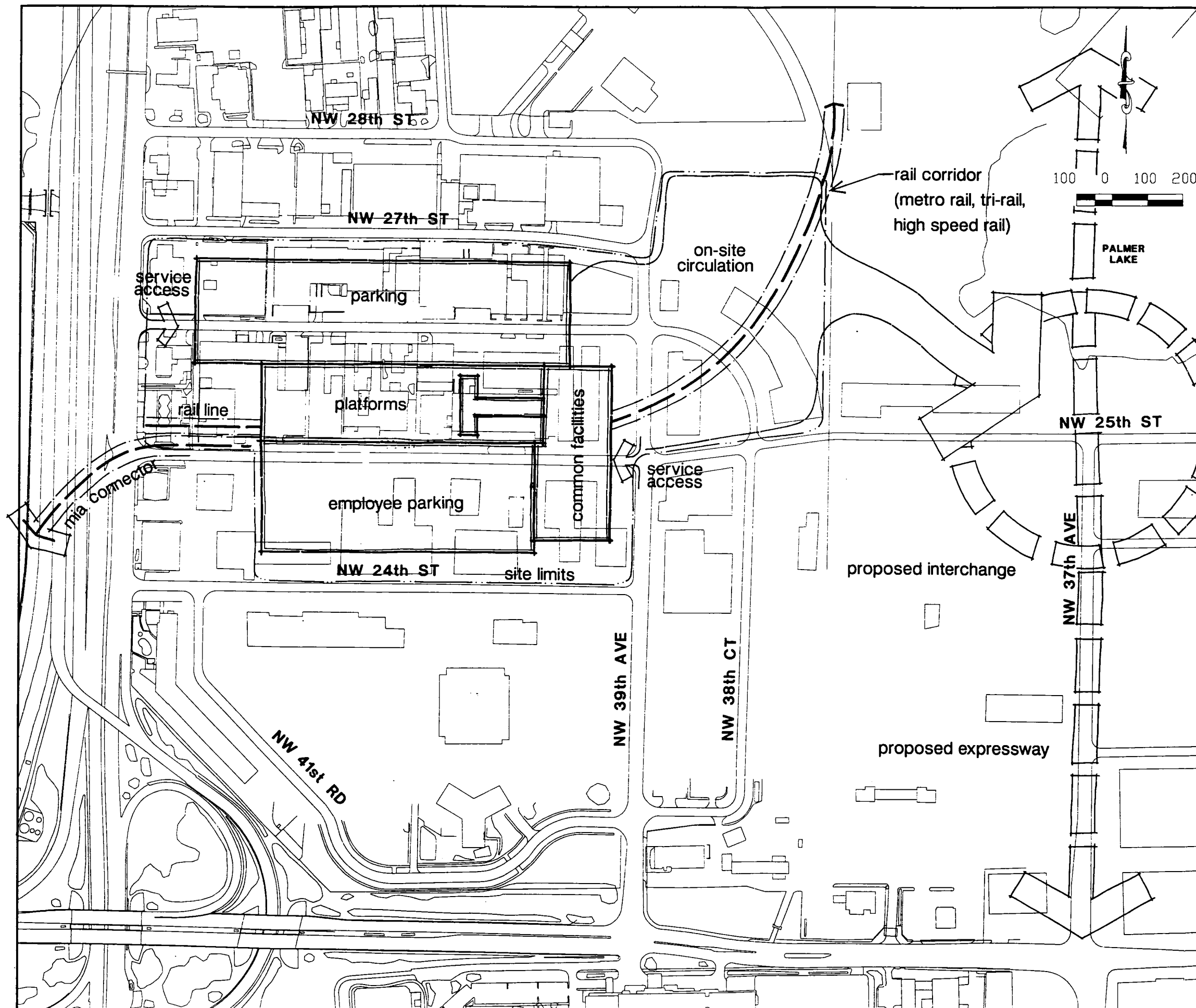


FIGURE 13
CONCEPT PLAN OF
MULTIMODAL ACCESS FACILITY
SITE NUMBER 4

AIRPORT AREA
MULTIMODAL ACCESS
STUDY



Alternative Conceptual Site Number 5

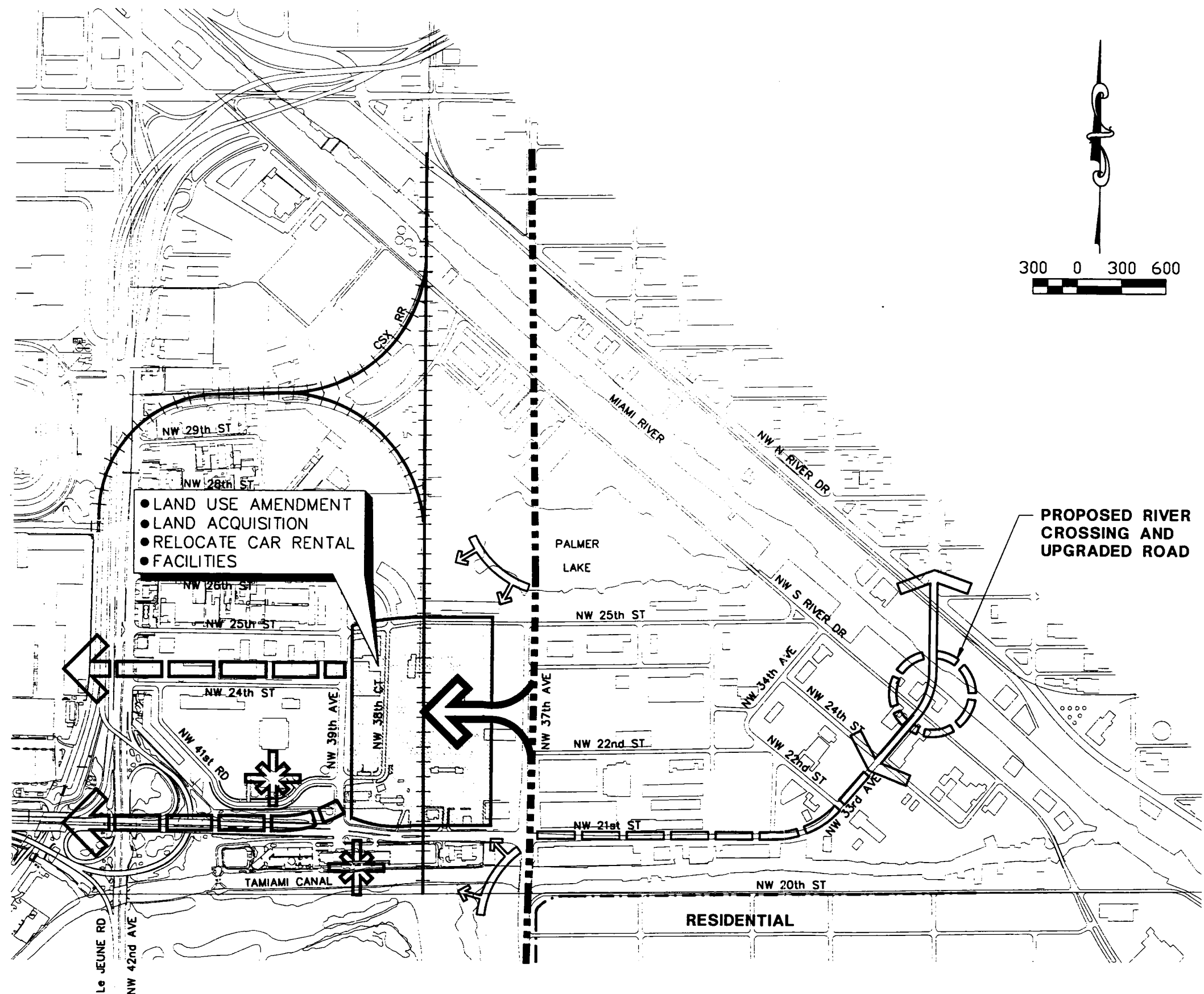
The conceptual location is shown in Figure 14. The conceptual site plan is shown in Figure 15. This site is located generally east of NW 39th Avenue and west of NW 37th Avenue. Site 5 is bounded by NW 21st Street on the south and by NW 25th Street on the north. Existing land uses within this site include two major rental car companies, a cement plant, manufacturing and a flight kitchen building.

The conceptual site plan of Site 5 straddles the existing CSX rail lines and has traffic access from NW 21st Street, NW 25th Street, NW 39th Avenue and the proposed regional expressway link in the NW 37th Avenue corridor. The elevated Metrorail link from Earlington Heights would have to cross over SR 112 and the Miami River to reach Site 5. A Metrorail connection to/from the south is also an option. The rail platforms are located within the existing CSX right-of-way north of NW 21st Street. A connector link to the MIA passenger terminal on aerial guideway could be accommodated in the NW 21st Street corridor.










Alternative Conceptual Site Number 6

The conceptual location is shown in Figure 16. Of the sites investigated, this is the only site located east of the Miami River. The conceptual site plan is shown in Figure 17. This site is located generally between the 3600 block on the west and NW 33rd Avenue on the east. Site 6 is bounded by NW 36th Street on the north and NW 32nd Street on the south. Existing land uses within this site include a mixture of industrial, business, residential and surface parking together with the existing Metro-Dade Transit Agency (MDTA) Central Bus Garage. Site 6 is within the target area of an environmental impact study for redevelopment of the Melrose area. This site is also within the limits of the NW 27th Avenue remedial drainage improvements district.

The conceptual site plan of Site 6 receives highway access primarily from NW 32nd Avenue and NW 36th Street as well as from NW 37th Avenue. Rail access is received from the existing branch line that runs along North New River Drive. The Metrorail extension from Earlington Heights would have to cross SR112 to reach Site 6. A Metrorail connection to/from the south is also an option. The connector link between Site 6 and the MIA passenger terminal would have to cross over the Miami River.



LEGEND

- | | |
|---|---|
|  | SITE |
|  | EXISTING EXPRESSWAY |
|  | PROPOSED EXPRESSWAY |
|  | RAIL LINE |
|  | HIGHLY CONGESTED ROADWAYS |
|  | HOTEL |
|  | HIGHWAY EXPOSURE |
|  | MIA CONNECTOR |
|  | APPROACH/DEPARTURE DISTRICT WITH ALLOWABLE HEIGHTS IN FEET ABOVE MEAN SEA LEVEL |

KEY MAP

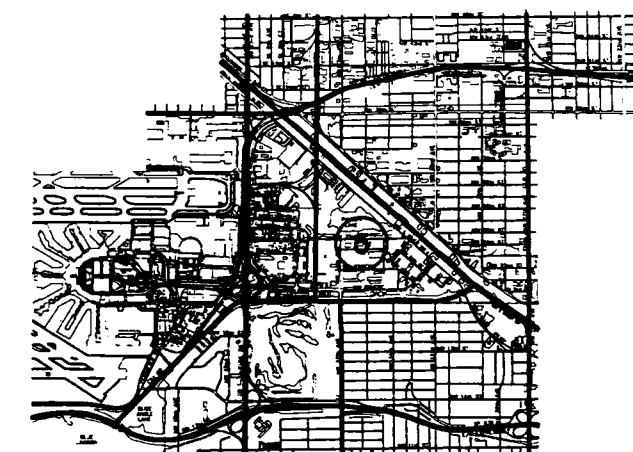


FIGURE 14
ALTERNATIVE CONCEPTUAL
SITE NUMBER 5

AIRPORT AREA MULTIMODAL ACCESS STUDY



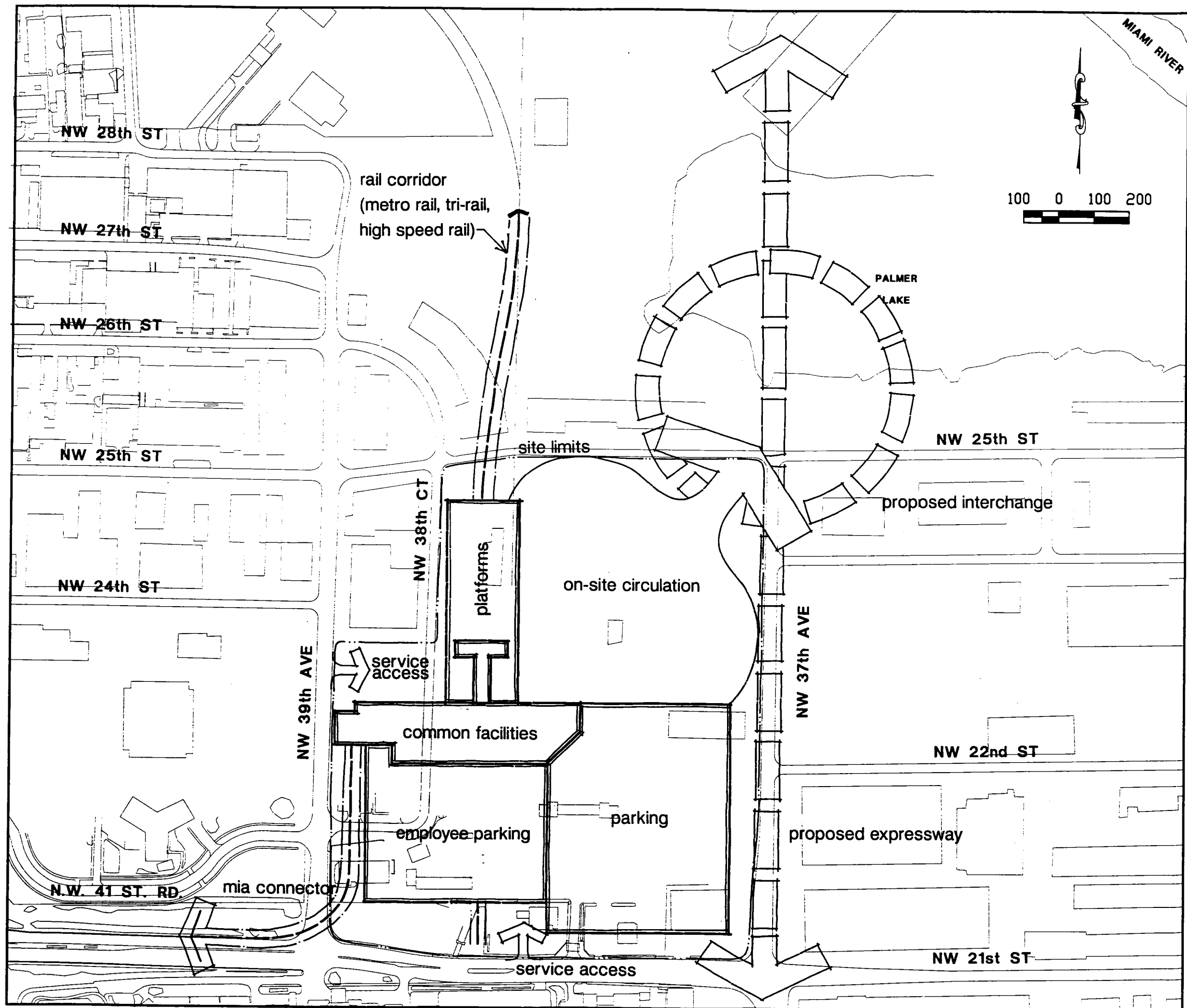
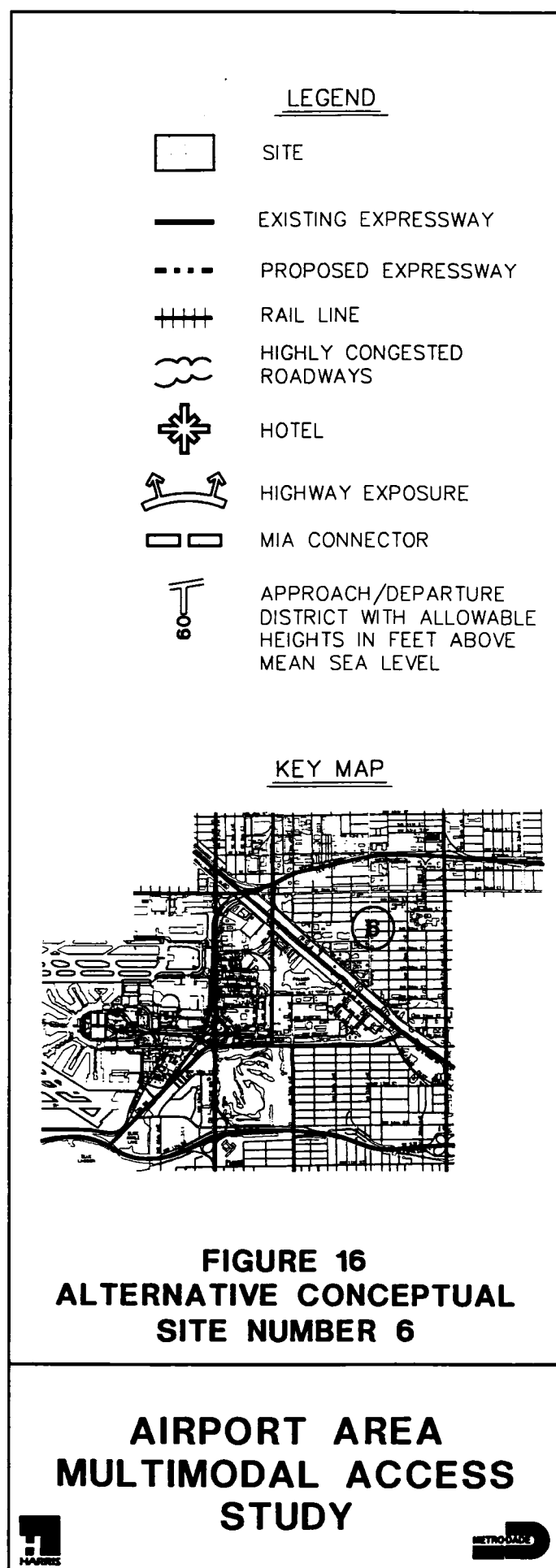
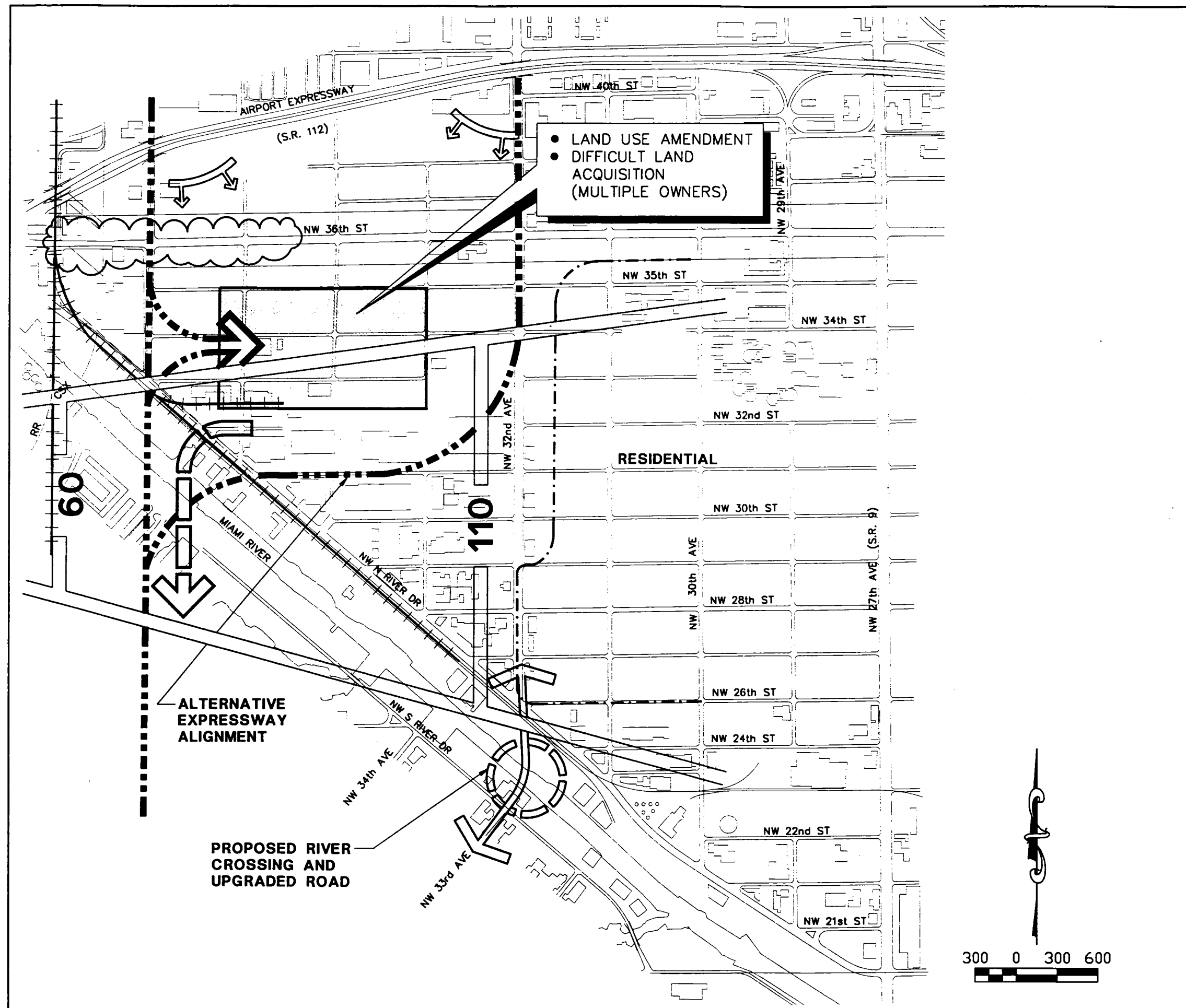


FIGURE 15
CONCEPT PLAN OF
MULTIMODAL ACCESS FACILITY
SITE NUMBER 5

AIRPORT AREA
MULTIMODAL ACCESS
STUDY





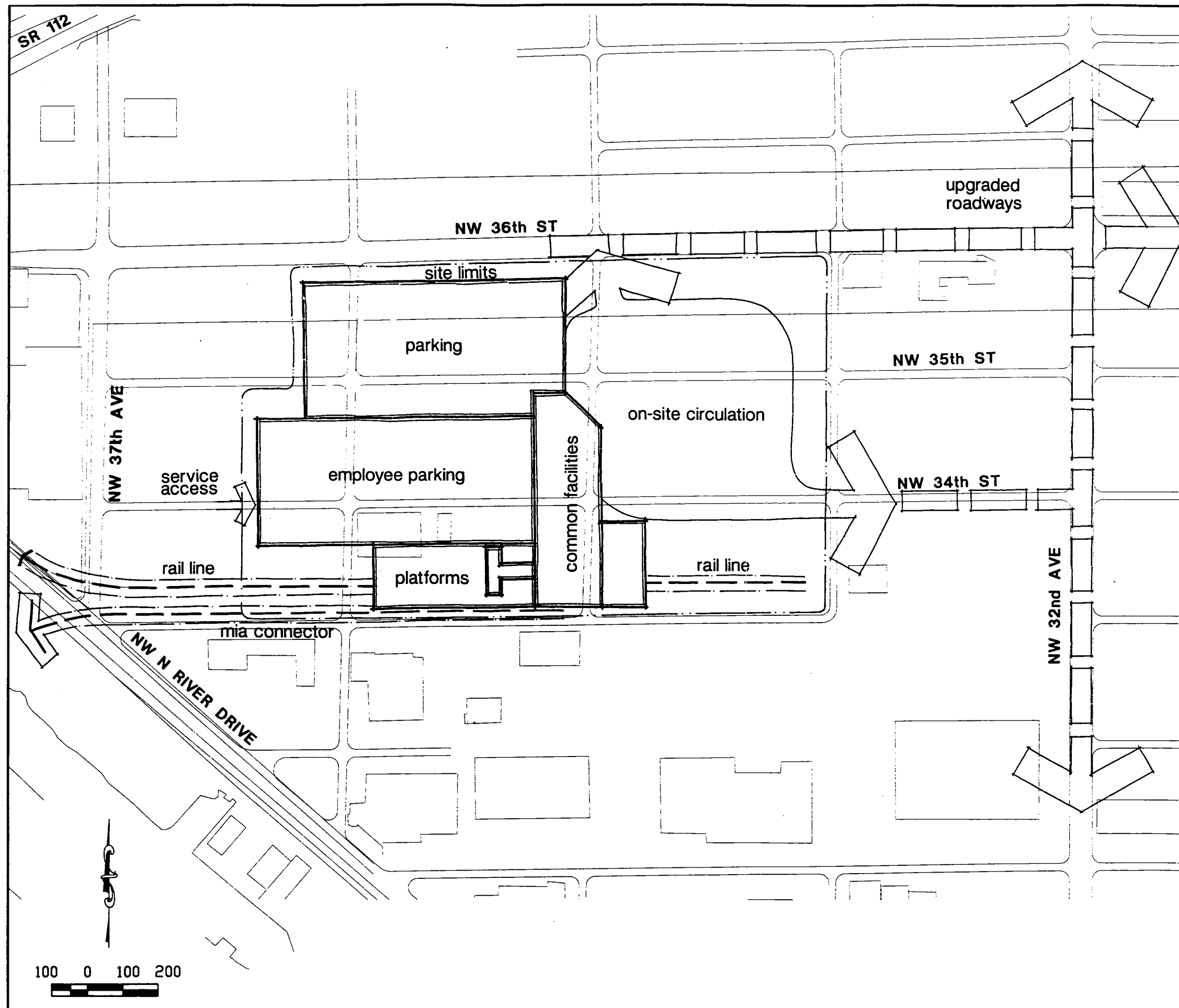


FIGURE 17
CONCEPT PLAN OF
MULTIMODAL ACCESS FACILITY
SITE NUMBER 6

AIRPORT AREA
MULTIMODAL ACCESS
STUDY



Alternative Conceptual Site 8A

Site 8 was studied from two different aspects. The conceptual location of Site 8A is shown in Figure 18. The conceptual site plan is shown in Figure 19. Site 8A is bounded generally by the Tamiami Canal on the north, NW 14th Street and SR836 on the south, NW 37th Avenue on the east and LeJeune Road (NW 42nd Avenue) on the west. Existing land uses include the City of Miami Mel Reese golf course and Grapeland Heights Park.

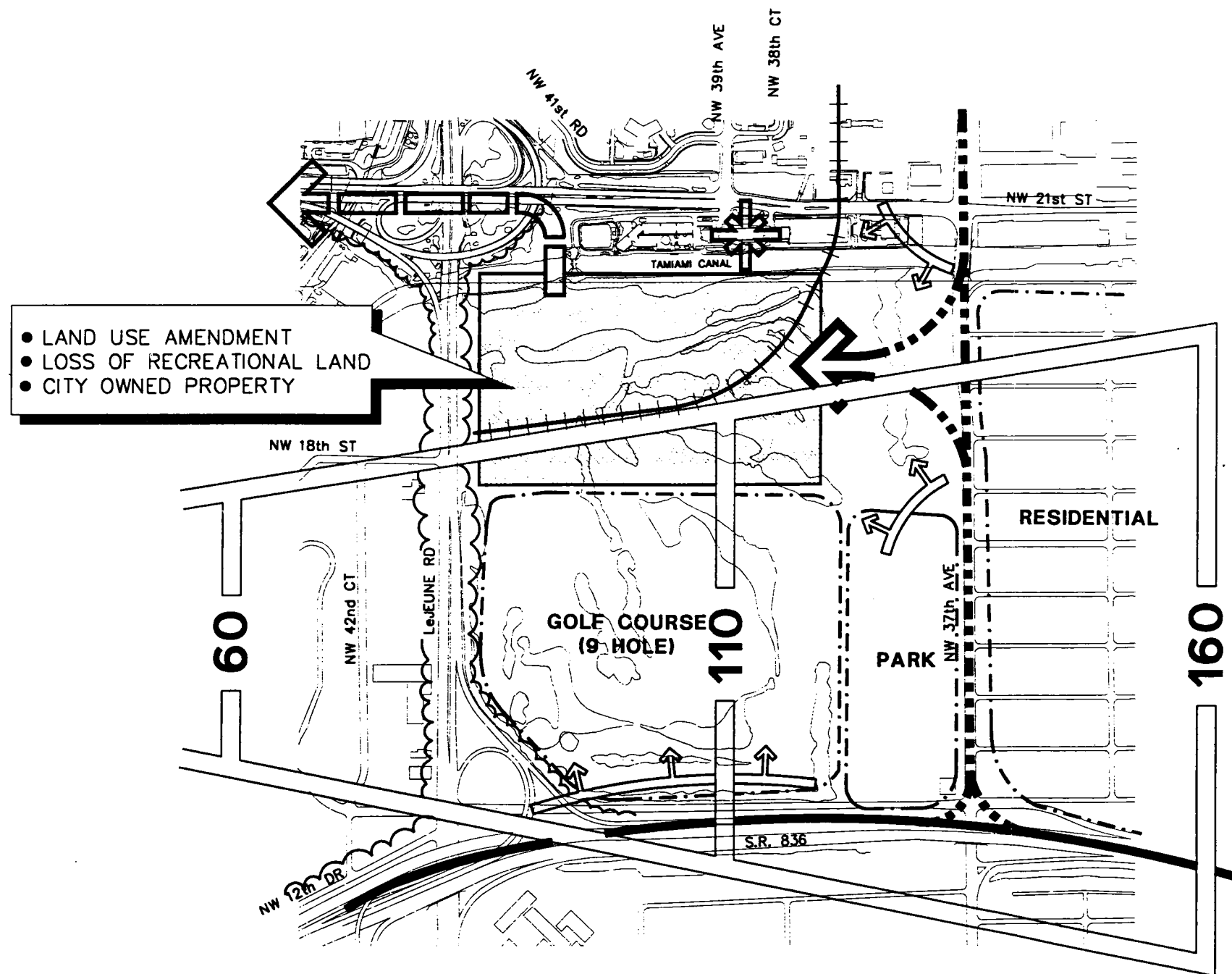
The conceptual site plan of Site 8A is oriented in an east-west direction. Highway access is received from a north-south regional expressway facility proposed to be constructed in the NW 37th Avenue corridor. Local circulation access would be provided from NW 21st Street and from NW 37th Avenue. Rail access would be received by extending the CSX rail lines south across NW 21st Street and the Tamiami Canal into the site. The elevated Metrorail link from Earlington Heights would have to cross over SR112 and the Miami River to reach Site 8A. The connector link between Site 8A and the MIA passenger terminal would also cross the Tamiami Canal and would follow the NW 21st Street corridor.

In this alternative the existing Grapeland Heights Park would be retained. The existing Mel Reese Golf Course would be reconstructed to a nine-hole facility across the southern portion of Site 8A.










Alternative Conceptual Site 8B

The conceptual location of Site 8B is shown in Figure 20. The conceptual site plan is shown in Figure 21. The overall boundaries of Site 8B are generally the same as Site 8A.

The conceptual site plan of Site 8B is oriented in a north-south direction. Highway access is received from the proposed north-south regional expressway corridor. Local circulation access would be received from NW 37th Avenue, NW 14th Street and NW 21st Street. Rail access, Metrorail access and the MIA connector link would be achieved in the same manner as Site 8A.



LEGEND

-  SITE
-  EXISTING EXPRESSWAY
-  PROPOSED EXPRESSWAY
-  RAIL LINE
-  HIGHLY CONGESTED ROADWAYS
-  HOTEL
-  HIGHWAY EXPOSURE
-  MIA CONNECTOR
-  APPROACH/DEPARTURE DISTRICT WITH ALLOWABLE HEIGHTS IN FEET ABOVE MEAN SEA LEVEL

KEY MAP



**FIGURE 18
ALTERNATIVE CONCEPTUAL
SITE NUMBER 8A**

**AIRPORT AREA
MULTIMODAL ACCESS
STUDY**



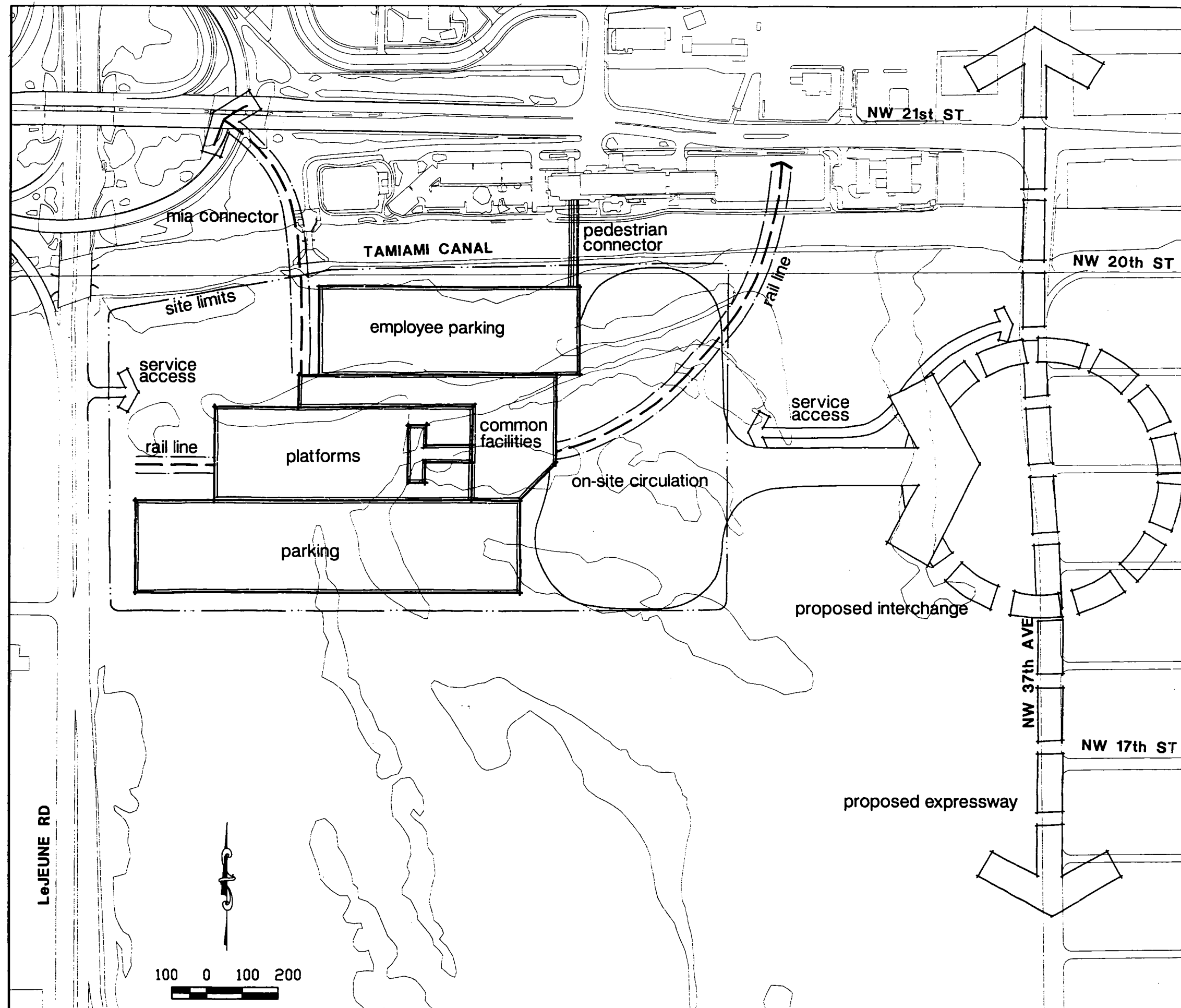
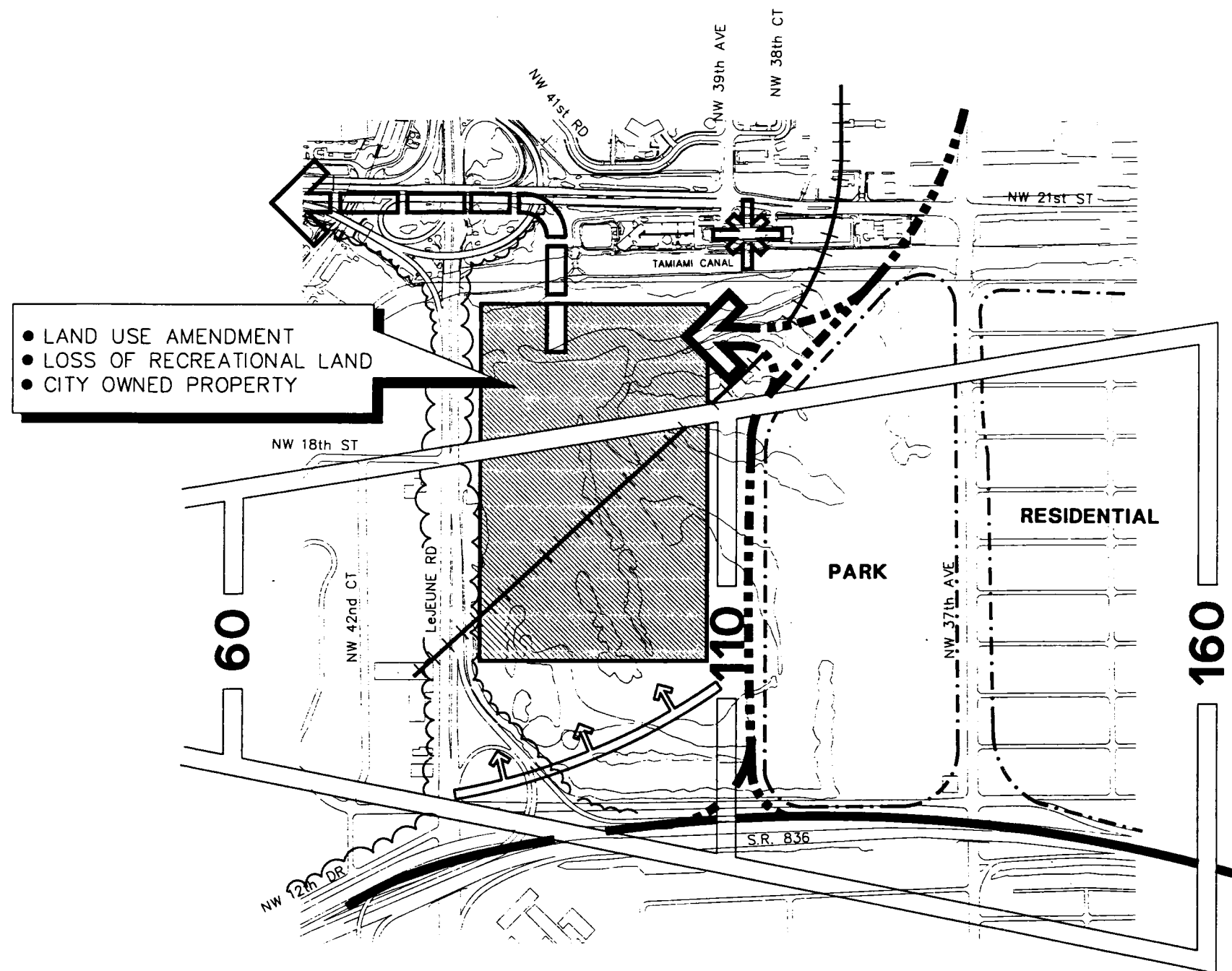


FIGURE 19
CONCEPT PLAN OF
MULTIMODAL ACCESS FACILITY
SITE NUMBER 8A

AIRPORT AREA
MULTIMODAL ACCESS
STUDY





- LAND USE AMENDMENT
- LOSS OF RECREATIONAL LAND
- CITY OWNED PROPERTY

LEGEND

- SITE
- EXISTING EXPRESSWAY
- PROPOSED EXPRESSWAY
- RAIL LINE
- HIGHLY CONGESTED ROADWAYS
- HOTEL
- HIGHWAY EXPOSURE
- MIA CONNECTOR
- APPROACH/DEPARTURE DISTRICT WITH ALLOWABLE HEIGHTS IN FEET ABOVE MEAN SEA LEVEL

KEY MAP

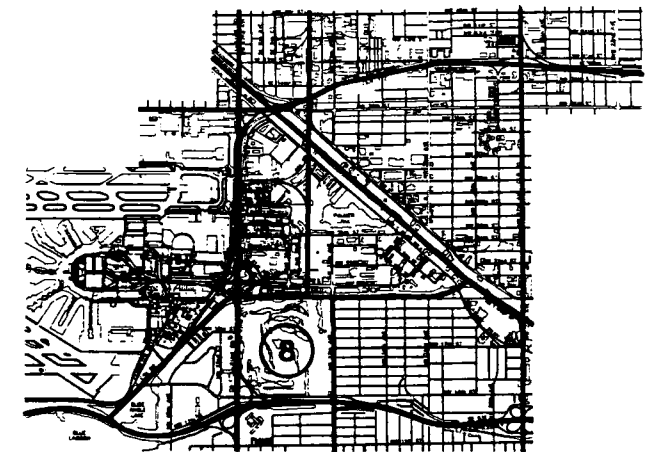


FIGURE 20
ALTERNATIVE CONCEPTUAL
SITE NUMBER 8B

AIRPORT AREA
MULTIMODAL ACCESS
STUDY



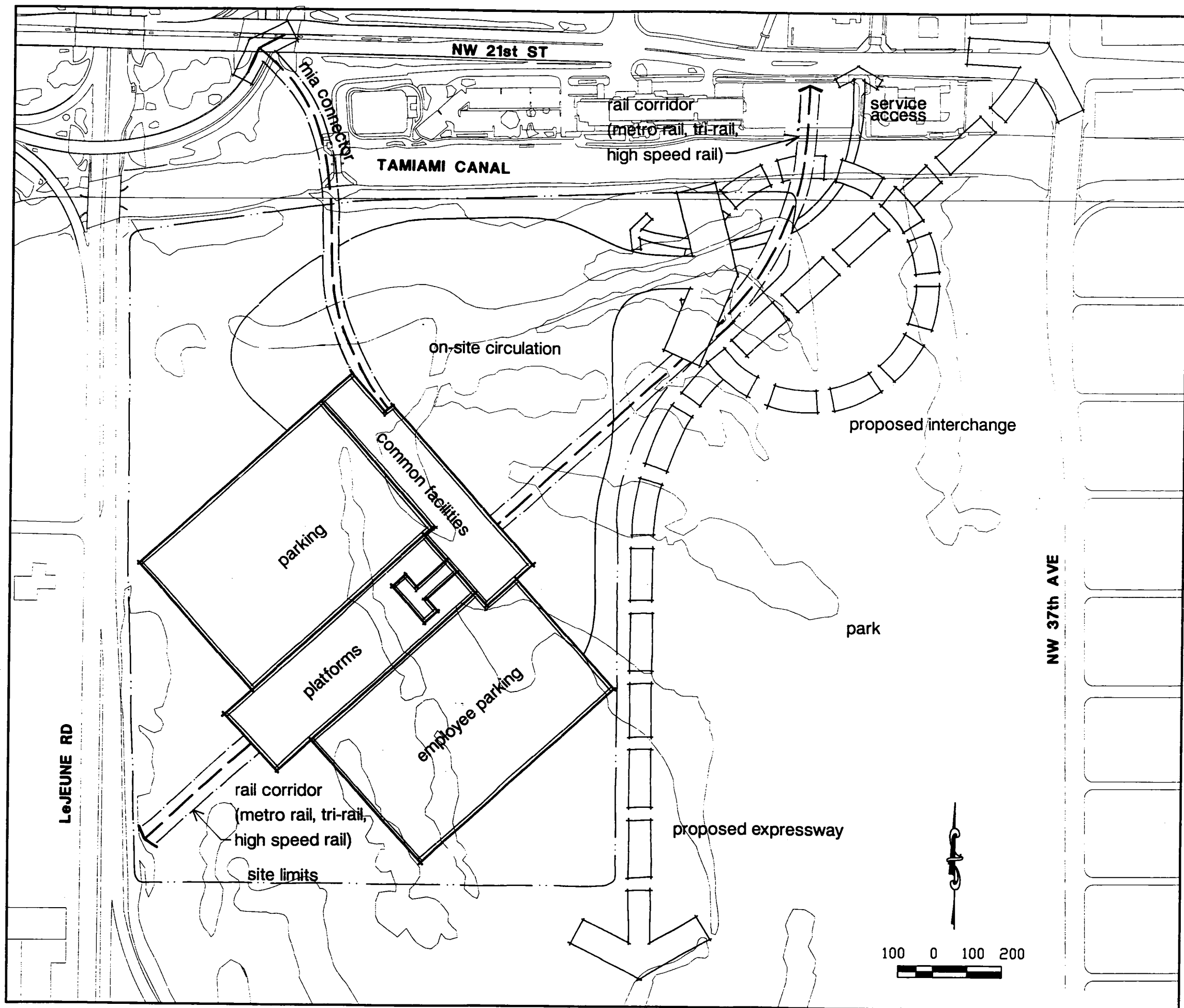


FIGURE 21
CONCEPT PLAN OF
MULTIMODAL ACCESS FACILITY
SITE NUMBER 8B

AIRPORT AREA
MULTIMODAL ACCESS
STUDY

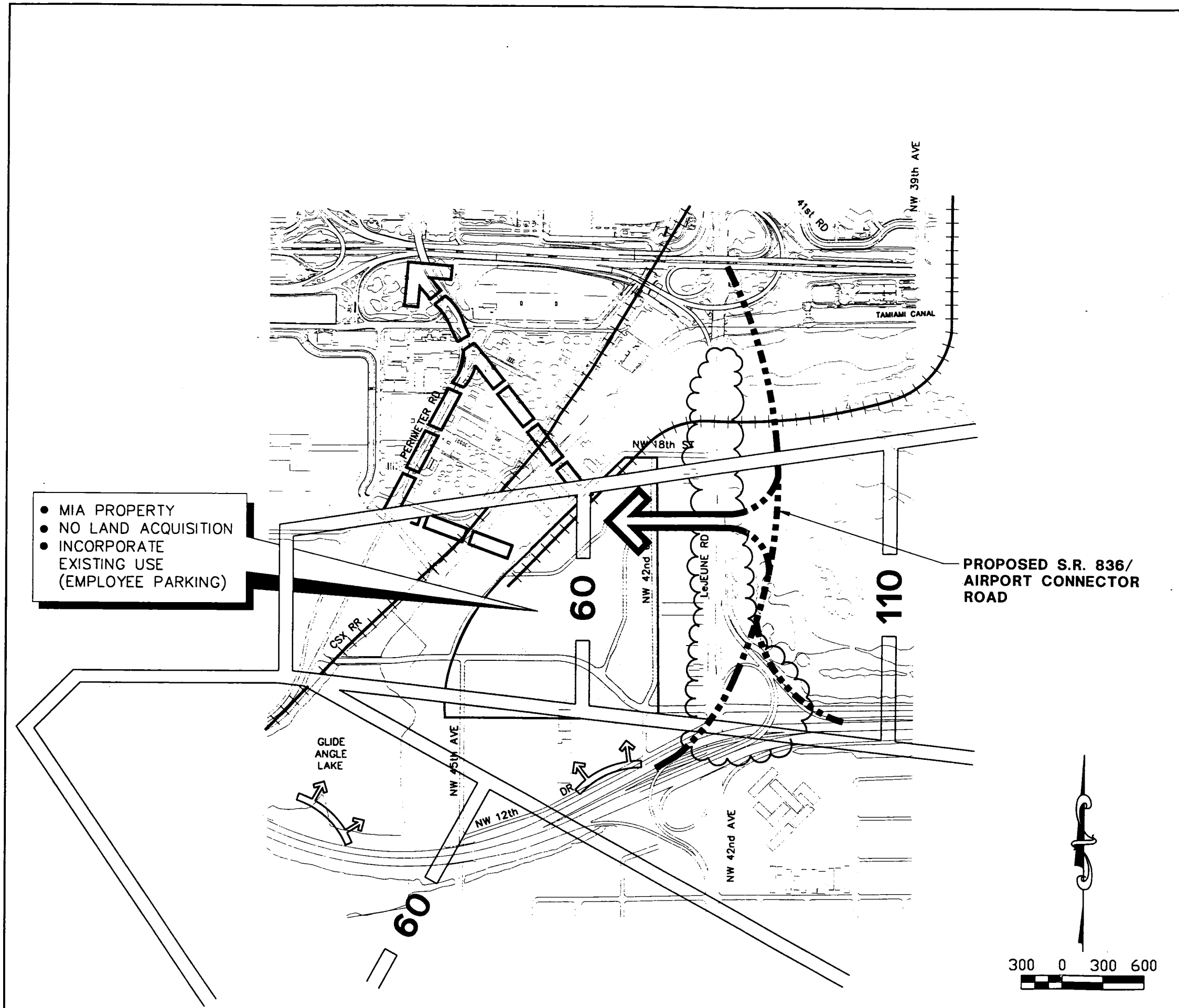


In this alternative the existing Mel Reese Golf Course would be closed and Grapeland Heights Park would be expanded and extensively upgraded. The western portion of the expanded park would contain 30–50 foot high landscaped berms to buffer the adjacent residential area from the Multimodal Access Facility, access roadways and the Airport.

Alternative Conceptual Site 9

The conceptual location is shown in Figure 22. Of the sites considered, this is the only site that is west of LeJeune Road. The conceptual site plan is shown in Figure 23. Site 9 is bounded generally by NW 18th Street on the north, the 1400 block on the south, Tamiami Canal Drive on the west and NW 42nd Court on the east. Existing land use on the site is primarily surface parking for MIA employees. The Multimodal Access Facility would have to replace this parking. Abutting uses include apartments along Tamiami Canal Drive and rental car lots, hotels and businesses along LeJeune Road.

The conceptual site plan of Site 9 receives traffic access from LeJeune Road and NW 14th Street. A direct connection to the regional expressway system, either to SR 836 or to the proposed north–south expressway, is also required. Rail access to Site 9 would be achieved by extending the CSX rail lines south across NW 21st Street, the Tamiami Canal and LeJeune Road. The elevated Metrorail link from Earlington Heights would have to cross over SR 112, the Miami River, NW 21st Street and LeJeune Road to reach Site 9. The connector link would cross over the Tamiami Canal and travel along Perimeter Road and Central Boulevard between the Multimodal Access Facility and the MIA passenger terminal.



LEGEND

- SITE
- EXISTING EXPRESSWAY
- PROPOSED EXPRESSWAY
- RAIL LINE
- HIGHLY CONGESTED ROADWAYS
- HOTEL
- HIGHWAY EXPOSURE
- MIA CONNECTOR
- APPROACH/DEPARTURE DISTRICT WITH ALLOWABLE HEIGHTS IN FEET ABOVE MEAN SEA LEVEL

KEY MAP

**FIGURE 22
ALTERNATIVE CONCEPTUAL
SITE NUMBER 9**

**AIRPORT AREA
MULTIMODAL ACCESS
STUDY**

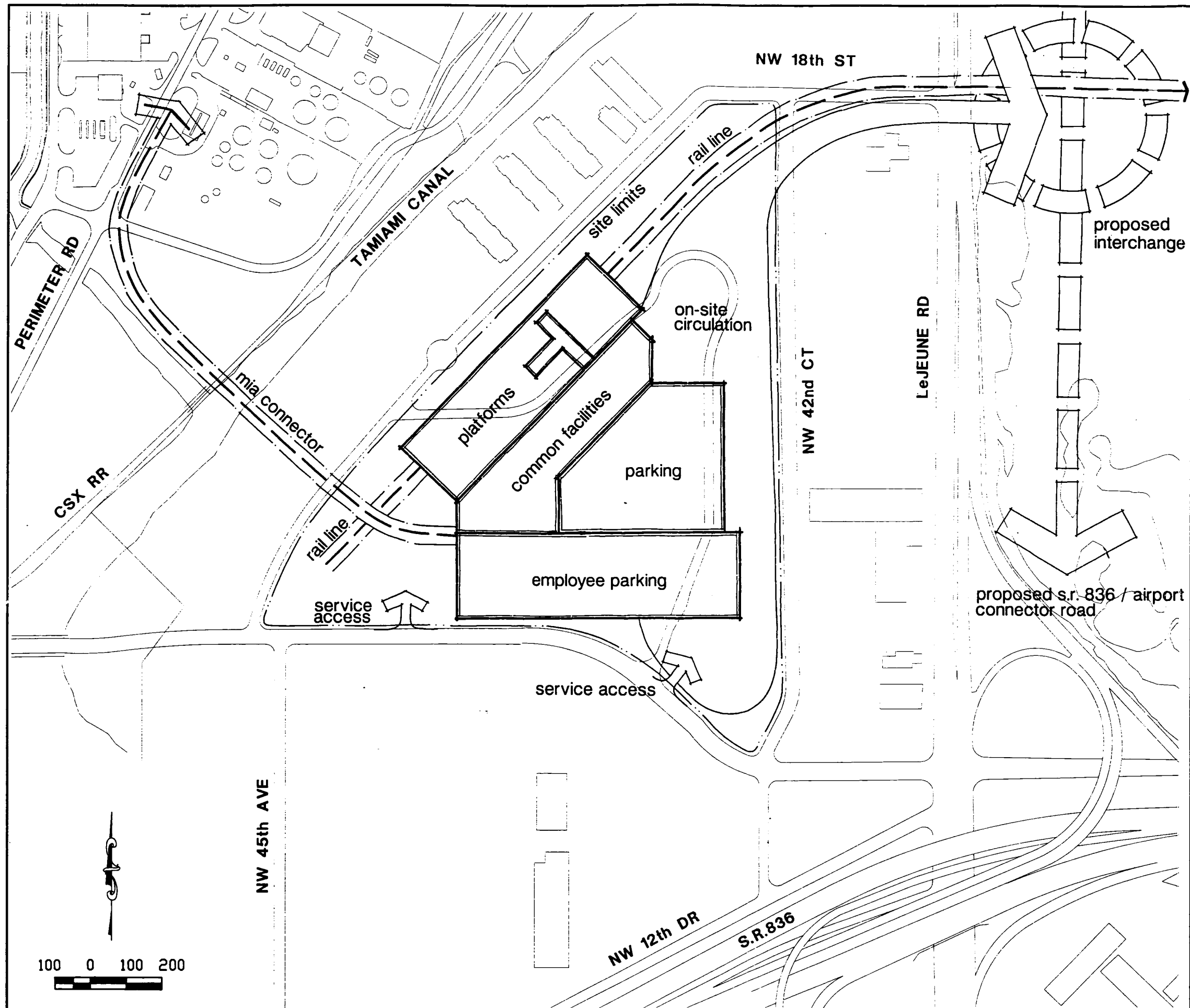


FIGURE 23
CONCEPT PLAN OF
MULTIMODAL ACCESS FACILITY
SITE NUMBER 9

AIRPORT AREA
MULTIMODAL ACCESS
STUDY



V. EVALUATION OF ALTERNATIVE SITES

The purpose of this chapter is to analyze and evaluate how well each of the alternative locations accommodates the functions and activities of the Multimodal Access Facility while satisfying the evaluation criteria developed in Chapter II and summarized in Table 1. Implementation requirements related to design issues, project cost and project phasing are also addressed.

ANALYSIS OF ALTERNATIVES

The alternative sites were analyzed using the year 2010 Miami Urban Area Urban Transportation Study (MUATS) models. This analysis is discussed in detail in Technical Memorandum 3 "Development and Evaluation of Alternative Site Proposals". Travel patterns associated with the sites were compared with a baseline alternative consisting of adopted plans with no Multimodal Facility.

The sites were analyzed with respect to the alternative access policies described in Chapter II:

- o Access Policy 1 assumes that all private and regulated (e.g., taxis, limousines, etc.) vehicles directly access the MIA passenger terminal. Rental cars and hotel courtesy shuttles access the passenger terminal via the Multimodal Facility.
- o Access Policy 2 is similar to Access Policy 1 except that private autos are given the option of either accessing the MIA passenger terminal directly or via the Multimodal Facility.

For modeling purposes, locations 4 and 5 were considered together as being representative of central locations. Locations 8A, 8B and 9 were considered together as being representative of southern locations. Location 6 was considered separately from the others as being representative of northern locations. The Baseline Condition consisting of the adopted MUATS Long Range Plan Network is shown for comparison purposes.

Traffic Impacts

Table 4 summarizes the Year 2010 traffic impacts of the proposed Multimodal Access Facility on key roadways considering both alternative locations and also alternative access policies. Table 4 shows that, even in the Year 2010 adopted plan, Central Boulevard operates well into Level of Service F. The Metro-Dade County Aviation Department plans to make the necessary improvements to Central Boulevard to maintain an acceptable Level of Service. All of the Access Policy 1 alternatives make a substantial reduction in the volume/capacity ratio. All of the Access Policy 2 alternatives make a greater reduction. This illustrates that the Multimodal Access Facility has the ability to relieve traffic volumes on the MIA terminal roadways.

The central alternatives (locations 4 and 5) increase traffic on LeJeune Road and decrease traffic on both the SR 836 – MIA direct connector and the SR 112– MIA direct connector. The central alternatives also increase traffic loadings on the planned SR 112 – SR 836 connector expressway. The northern alternative (location 6) increases traffic volumes on all of the links contained in Table 4 except for the SR 112 and SR 836 to MIA direct connectors. The southern alternative (locations 8A, 8B and 9) also increases traffic on LeJeune Road. The roadway links not contained in Table 4 generally operated at level of service D or better in all of the alternatives analyzed.

Daily Transit Ridership

Daily transit ridership was also considered for the various alternative sites. Table 5 summarizes the Year 2010 transit mode loadings considering both the alternative site locations and alternative access policies. The differences among the alternatives occur primarily in the local bus, Metrorail and MIA connector modes. The Tri-Rail trips are predominantly oriented to Broward and Palm Beach Counties and, therefore, are not sensitive to the alternative locations of the Multimodal Access Facility. The Year 2010 transit mode accessing the Multimodal Access Facility accounts for between 49,000 and 69,000 daily ridership. Without the Multimodal Access Facility and its connections to regional rail and bus transit systems, most of these trips would occur on the terminal roadways. The largest single component of transit mode ridership is the auto access ridership on the connector link to the MIA terminal. Auto access accounts for between 60 and 80 percent of the total transit access volume.

TABLE 4 - SUMMARY OF YEAR 2010 ROADWAY IMPACTS*

| ROADWAY SEGMENTS | ALTERNATIVE LOCATIONS | | | |
|---|-----------------------|-------------------------|-------------------------|-------------------------|
| | BASELINE | 4 & 5 | 6 | 8A, 8B & 9 |
| Central Blvd.** Policy 1 Policy 2 | 2.54 F --- --- | --- 2.18 F 1.88 F | --- 2.18 F 2.06 F | --- 2.18 F 1.94 F |
| LeJeune Rd - South of SR 836 Policy 1 Policy 2 | 1.23 F --- --- | --- 1.25 F 1.25 F | --- 1.31 F 1.30 F | --- 1.34 F 1.34 F |
| LeJeune Rd - South of Central Blvd. Policy 1 Policy 2 | 0.72 C --- --- | --- 0.84 C 0.82 C | --- 0.80 C 0.79 C | --- 1.07 F 1.05 F |
| NW 32nd Ave/NW 21st St. Bridge Policy 1 Policy 2 | 0.96 E --- --- | --- 0.96E 0.95E | --- 1.14F 1.14F | --- 0.97E 0.96E |
| NW 32nd Ave. South of NW 36th St. Policy 1 Policy 2 | 0.77 C --- --- | --- 0.77 C 0.76 C | --- 0.95 E 0.94 D | --- 0.78 C 0.77 C |
| NW 32nd Ave - North of SR 112 Policy 1 Policy 2 | 0.95 E --- --- | --- 0.95 E 0.96 E | --- 0.99 E 0.99 E | --- 0.93 D 0.93 D |
| SR 112 - MIA Connector Policy 1 Policy 2 | 0.99 E --- --- | --- 0.96 E 0.85 D | --- 0.88 D 0.84 C | --- 1.01 F 0.92 D |
| SR 836 - MIA Connector Policy 1 Policy 2 | 0.97 E --- --- | --- 0.90 D 0.88 D | --- 0.88 D 0.87 C | --- 0.97 E 0.95 E |
| NW 37th Ave. Corridor Xway - North of Multimodal Facility Policy 1 Policy 2 | 0.68 C --- --- | --- 0.71 C 0.78 C | --- 0.85 D 0.88 D | --- 0.61 C 0.66 C |
| NW 37th Ave Corridor Xway - South of Multimodal Facility Policy 1 Policy 2 | 0.68 C --- --- | --- 0.63 C 0.68 C | --- 0.71 C 0.73 C | --- 0.65 C 0.70 C |
| Multimodal Access Link Policy 1 Policy 2 | --- --- --- | --- 0.07 C 0.19 C | --- 0.05 C 0.10 C | --- 0.03 C 0.13 C |

Notes:

- o Baseline condition is the adopted Long Range Plan
- o 2.54 F = Volume/Capacity Ratio: Level of Service
- o Policy 1: Private auto travel accesses MIA directly via terminal roadways.
- o Policy 2: Private auto travel has option to access MIA either via terminal roadways or via Multimodal Facility
- o Level of Service V/C Limits:

| LOS | Freeway | Arterial |
|-----|---------|----------|
| ≤C | <0.77 | <0.88 |
| D | <0.93 | <0.95 |
| E | <1.00 | <1.00 |
| F | ≥1.00 | ≥1.00 |

* Links not included in this table operated at Level of Service "D" or better.

** Based on projected traffic on current roadways. The Metro-Dade Aviation Department plans to widen Central Blvd.

TABLE 5 - SUMMARY OF YEAR 2010 TRANSIT RIDERSHIP IMPACTS

| TRANSIT MODE | | RIDERS PER DAY | | |
|--|-------|-----------------------|---------|--------|
| | | ALTERNATIVE LOCATIONS | | |
| | | BASELINE | 4 AND 5 | 6 |
| Local Bus | | --- | --- | --- |
| Access Policy 1 | 6,500 | 5,200 | 7,500 | 4,700 |
| Access Policy 2 | | 5,200 | 7,500 | 4,700 |
| Metrorail | N/A | --- | --- | --- |
| Access Policy 1 | | 2,100 | 1,800 | 2,000 |
| Access Policy 2 | | 2,100 | 1,800 | 2,000 |
| Tri-Rail to/from MIA | N/A | --- | --- | --- |
| Access Policy 1 | | 900 | 900 | 900 |
| Access Policy 2 | | 900 | 900 | 900 |
| Tri-Rail to/from Other Dade County | N/A | --- | --- | --- |
| Access Policy 1 | | 1,100 | 1,100 | 1,100 |
| Access Policy 2 | | 1,100 | 1,100 | 1,100 |
| Subtotal Tri-Rail | N/A | --- | --- | --- |
| Access Policy 1 | | 2,000 | 2,000 | 2,000 |
| Access Policy 2 | | 2,000 | 2,000 | 2,000 |
| MIA Connector to/from Metrorail, Tri-Rail, Walk | N/A | --- | --- | --- |
| Access Policy 1 | | 6,600 | 7,900 | 6,400 |
| Access Policy 2 | | 6,600 | 7,900 | 6,400 |
| MIA Connector to/from Auto | N/A | --- | --- | --- |
| Access Policy 1 | | 33,400 | 33,400 | 33,400 |
| Access Policy 2 | | 52,800 | 41,600 | 49,200 |
| Subtotal MIA Connector | N/A | --- | --- | --- |
| Access Policy 1 | | 40,000 | 41,300 | 39,800 |
| Access Policy 2 | | 59,400 | 49,500 | 55,600 |
| Total Transit Mode | 6,500 | --- | --- | --- |
| Access Policy 1 | | 49,300 | 52,600 | 48,500 |
| Access Policy 2 | | 68,700 | 60,800 | 64,300 |
| Notes: | | | | |
| o Baseline condition is the adopted long range plan | | | | |
| o Policy 1: Private auto travel accesses MIA directly via terminal roadways. | | | | |
| o Policy 2: Private auto travel has option to access MIA either via terminal roadways or via Multimodal Facility | | | | |

SITE EVALUATION MATRIX

The evaluation of the alternative sites is summarized in Table 6. The factors evaluated in this matrix include transportation access, community, land use and environment. No weights were assigned to any of the factors. The site evaluation matrix demonstrates that each of the alternative locations has advantages as well as disadvantages. These will affect the selection of a preferred site.

IMPLEMENTATION ISSUES

Many of the potential issues and impacts identified in the site evaluation matrix may be resolved in the detailed planning/preliminary design phase of the Multimodal Access Facility. However, other issues are external constraints upon the Multimodal Access Facility which need to be addressed, including the following:

- o The MIA Master Plan Update including roadway improvements needs, the connector link to the Multimodal Access Facility and accommodations for employee parking.
- o The location and preliminary design of the Metrorail Extension from Earlington Heights and/or from a southern approach from a proposed east-west transit link.
- o The location and preliminary design of the proposed expressway connecting SR 836 and SR 112 including interchanges with these two expressways and a crossing of the Miami River.
- o Location and design of the proposed NW 32nd Avenue/NW 21st Street bridge crossing the Miami River.
- o Accommodating CSX freight trains which presently use the LeJeune Road/SR112-Airport connection ramps grade crossings. These existing crossings should be removed in order to improve safety and peak hour traffic flows on other roadways. Also accommodating CSX freight trains which presently travel to the east along the NW North New River Drive and NW 23rd Street rail lines.
- o Extending Tri-Rail service from the existing station at SE 10th Street in Hialeah to the Multimodal Access Facility.
- o Completing current studies of extending urban rail transit service from the south via an east-west line and integrating MIA to Port of Miami service.
- o Resolving the two alternative policies discussed earlier pertaining to access by private auto to the Multimodal Access Facility.

TABLE 6 MULTIMODAL SITE EVALUATION MATRIX

| Evaluation Criteria | Alternative Conceptual Site Number | | | | | |
|---|------------------------------------|---|---|----|----|---|
| | 4 | 5 | 6 | 8A | 8B | 9 |
| I. Proximity to Airport: | | | | | | |
| (a) Access to Multimodal Facility for airport-related commercial uses (hotels, car rentals, jitneys, etc) | ○ | ○ | ● | ○ | ○ | ● |
| (b) Access to Multimodal Facility for airport users, visitors, etc. | ○ | ○ | ● | ○ | ○ | ○ |
| (c) Distance from Multimodal facility to MIA terminal via airport link | ◐ | ◐ | ● | ◐ | ◐ | ◐ |
| II. Rail Mode Access: | | | | | | |
| (a) Complexity in extending Metrorail from Earlington Heights to Multimodal Facility | ◐ | ◐ | ○ | ◐ | ◐ | ● |
| (b) Potential for available R/W for rail line extensions (Metrorail, Tri-Rail, HSR, Airport Link) | ○ | ○ | ○ | ◐ | ◐ | ● |
| (c) Compatibility with traffic on NW 21st Street and on LeJeune Road | ○ | ○ | ○ | ◐ | ◐ | ● |
| (d) Flexibility to accommodate Metrorail access via east-west line | ◐ | ◐ | ● | ○ | ◐ | ○ |
| (e) Flexibility to accommodate future Tri-Rail and HSR extension to SW Dade County and/or downtown Miami | ● | ● | ● | ◐ | ◐ | ◐ |
| III. Highway Access: | | | | | | |
| (a) Access to regional expressway system via direct ramps | ○ | ○ | ● | ◐ | ◐ | ● |
| (b) Access to Multimodal Facility from existing local roadways | ○ | ○ | ● | ◐ | ◐ | ◐ |
| (c) Local access and circulation impacts | ◐ | ◐ | ○ | ● | ◐ | ● |
| (d) Effects on traffic congestion on airport terminal roadways | ◐ | ○ | ◐ | ○ | ○ | ○ |

Acceptability Scale

(Most Acceptable)



(Least Acceptable)



Table 6 (continued)

| Evaluation Criteria | Alternative Conceptual Site Number | | | | | |
|--|------------------------------------|---|---|----|----|---|
| | 4 | 5 | 6 | 8A | 8B | 9 |
| IV. <u>Bus Transit Access:</u> | | | | | | |
| (a) Access to Multimodal Facility for existing Metrobus routes | ○ | ○ | ● | ◐ | ◐ | ○ |
| (b) Reduction of miles of service on Metrobus routes | ○ | ○ | ◐ | ● | ○ | ○ |
| (c) Positive effects on bus service along NW 36th Street | ◐ | ◐ | ○ | ◐ | ◐ | ● |
| V. <u>Community/Land Use/Environmental</u> | | | | | | |
| (a) Restrictions on Multimodal Facility from aircraft overflight areas | ○ | ○ | ○ | ○ | ○ | ● |
| (b) Ability to resolve local governmental jurisdictional issues. | ○ | ○ | ◐ | ● | ● | ● |
| (c) Conformance to Metro-Dade and applicable city land use plans | ○ | ○ | ◐ | ◐ | ◐ | ◐ |
| (d) Compatibility of Multimodal Facility with surrounding land uses | ○ | ○ | ◐ | ● | ◐ | ◐ |
| (e) Site acquisition impacts | ● | ● | ● | ◐ | ◐ | ◐ |
| (f) Relocation impacts | ● | ● | ● | ◐ | ◐ | ◐ |
| (g) Potential for joint development opportunities | ○ | ○ | ◐ | ◐ | ● | ● |
| (h) Impacts on Miami River | ○ | ○ | ● | ○ | ○ | ○ |
| (i) Impacts on Tamiami Canal | ○ | ○ | ○ | ◐ | ◐ | ◐ |
| (j) Impacts on community facilities and community redevelopment | ○ | ○ | ◐ | ● | ◐ | ◐ |
| (k) Impacts on known historical and archaeological resources | ○ | ○ | ○ | ○ | ○ | ○ |
| (l) Impacts on Multimodal Facility from contamination | REQUIRES FURTHER STUDY | | | | | |
| (m) Impacts on Multimodal Facility from aviation noise | ● | ◐ | ◐ | ○ | ○ | ● |

Acceptability Scale

(Most Acceptable)



(Least Acceptable)



COST

The cost of implementing the Multimodal Access Facility includes:

- o Engineering (Design & CEI) costs
- o Right-of-way-acquisition costs
- o Construction costs of the Facility

Table 7 summarizes the estimated costs of the alternative site locations of the Multimodal Access Facility. The estimated cost of the Multimodal Access Facility varies between 72.2 million and 102.5 dollars depending on the site chosen. The differences among the alternatives are attributable primarily to the costs of site acquisition. Table 8 identifies the differences among the alternative sites related to the estimated costs of extending rail modes from their present terminus points to the Multimodal Access Facility. These include the Metrorail extension from Earlington Heights and the connector link from the MIA passenger terminal. Table 8 shows that the total cost of the Multimodal Access Facility varies between 355.3 million and 420.4 million dollars.

Table 7 – Estimated Costs – Multimodal Facility

| | Estimated Cost (Million) | | | | |
|---------------------------|---------------------------------|----------|----------|--------------|----------|
| | Alternative | | | | |
| | 4 | 5 | 6 | 8A,8B | 9 |
| Construction | \$59.8 | \$58.9 | \$57.6 | \$57.5 | \$60.4 |
| Engineering (@ 15%) | 9.0 | 8.8 | 8.6 | 8.6 | 9.1 |
| Site Acquisition | 33.7 | 28.8 | 20.1 | 6.1 | 9.9 |
| Total Multimodal Facility | \$102.5 | \$96.5 | \$86.3 | \$72.2 | \$79.4 |

Table 8 – Total Estimated Cost

| | Estimated Cost (Million) | | | | |
|---|--------------------------|---------|---------|---------|---------|
| | Alternative Site | | | | |
| | 4 | 5 | 6 | 8A,8B | 9 |
| Metrorail Extension from Earlington Heights | \$165.0 | \$181.0 | \$ 93.0 | \$213.0 | \$245.0 |
| MIA Connector Link* | 104.0 | 96.0 | 176.0 | 88.0 | 96.0 |
| Multimodal Facility** | 102.5 | 96.5 | 86.3 | 72.2 | 79.4 |
| Total | \$371.5 | \$373.5 | \$355.3 | \$373.2 | \$420.4 |

* Does not include MIA passenger terminal modifications

** From Table 7

PROJECT PHASING

The phasing of the Multimodal Access Facility project involves coordination of numerous on-going transportation projects including:

- o The MIA Master Plan Update
- o The Transit Corridors Transitional Study
- o SR 836 PD&E Study
- o SR 112 PD&E Study
- o Study of CSXT Rail Freight Movement Alternatives

Figure 24 shows a conceptual multi-project phasing schedule for the Multimodal Access Facility and the associated projects.

MULTI - PROJECT PHASING

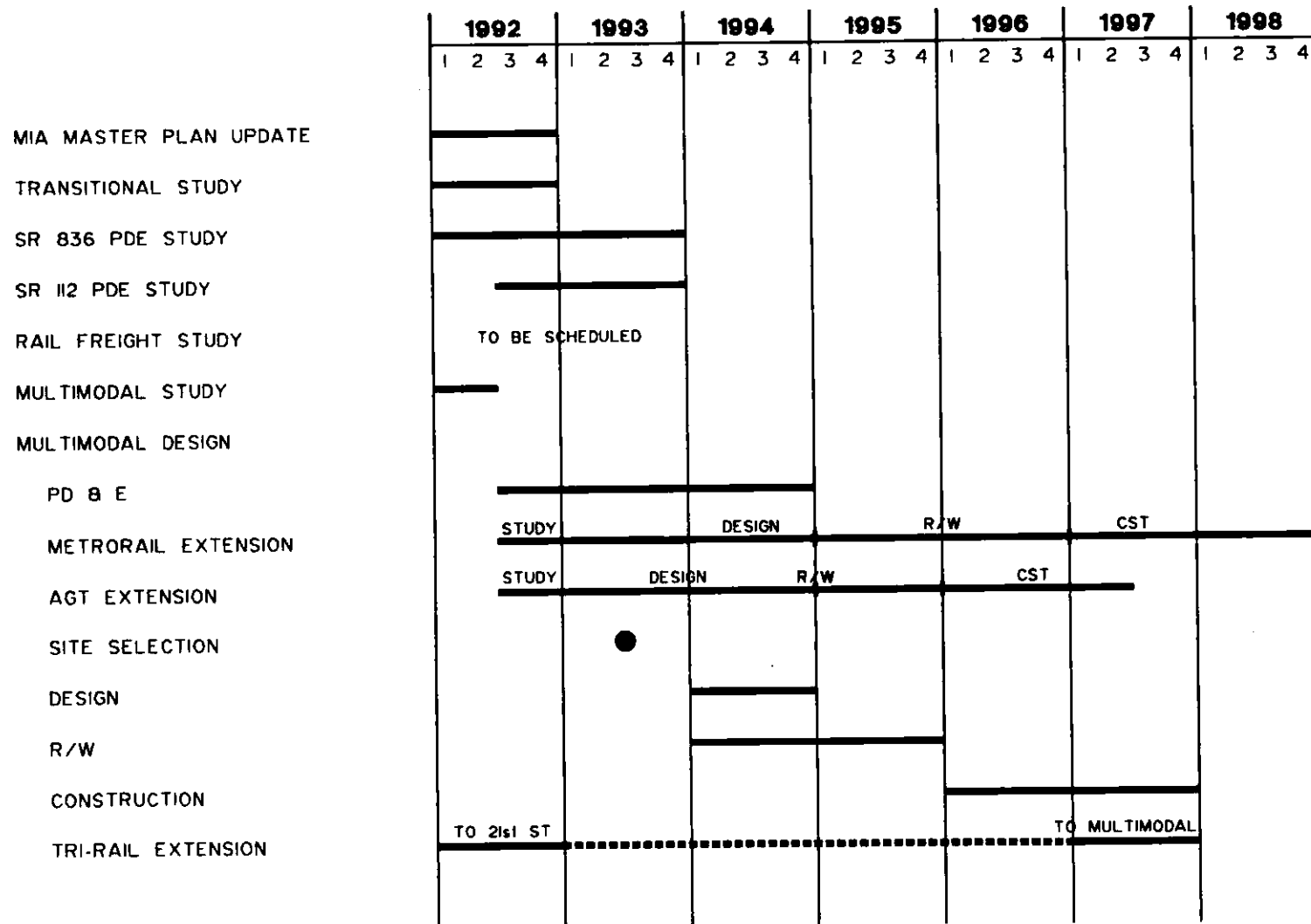


FIGURE 24

VI. RECOMMENDATIONS

This study has reaffirmed the need for the proposed Airport Area Multimodal Access Facility. This Facility is consistent with the adopted Long Range Plan of the Dade County Metropolitan Planning Organization. An intermodal approach to correcting transportation system deficiencies and serving major activity and employment centers is consistent with recent benchmark Federal and State policy actions – the Intermodal Surface Transportation Efficiency Act of 1991 and the Florida Department of Transportation Intrastate Highway System Policies and Priorities (November, 1991).

RECOMMENDED SITE CONFIGURATION

The recommended site configuration is a multi-level building housing transit platforms, passenger services and amenities, services, concessions, parking and operations areas. The facility should have direct access to rail modes including Tri-Rail, Metrorail, future High Speed Rail and AMTRAK. A link connecting the Multimodal Access Facility to the MIA Passenger Terminal should be incorporated.

The facility should have access via direct ramps to the regional expressway system including SR 836 and SR 112. The facility should also have access to local streets. Bus, auto, bicycle and pedestrian access should be provided. Local access and circulation for surrounding businesses and residences should be preserved.

Both the internal arrangement of activities and also external connections should be designed and located so as to facilitate safe, efficient and convenient transfer of passengers among modes.

RECOMMENDED LOCATIONS

Each of the alternative sites 4, 5, 6, 8A, 8B and 9 was evaluated for its potential ability to accommodate the proposed Multimodal Facility. Site 6 was not recommended because it is remote from existing airport related businesses and from the airport. Although Site 9 has some beneficial features, the airport runway protection zone would preclude developing both the Multimodal Access Facility structure and also parking structures of sufficient height. Therefore, site 9 was not recommended for further study. Sites 4 and 5 were recommended for further consideration. Site configuration 8B was

preferred over configuration 8A because of lesser impacts on adjacent residences and upon NW 37th Avenue and because of the opportunity to enhance Grapeland Heights Park.

Prior to selecting a location for initiating preliminary design and land acquisition for the proposed Multimodal Facility, the Dade County Metropolitan Planning Organization (MPO) directed that public meetings be held in the affected municipalities for the purpose of informing the public and local officials of the project and receiving their input. Accordingly, public meetings were held in the Cities of Miami, Miami Springs and Hialeah. The subject of these meetings was alternative locations 4, 5 and 8B. These meetings were in addition to those which had been conducted earlier by the Citizens Transportation Advisory Committee (CTAC). Based on the extensive public and local official input received at these meetings, the Dade County MPO removed alternative location 8B from further consideration. Therefore, based upon the studies conducted, alternatives evaluated and public input received for this project, sites 4 and 5 are recommended for advancement of the Project Development and Environmental (PD&E) phase. Because sites 4 and 5 are adjacent to each other, a composite of the two sites should be considered. This combination has the potential to minimize the acquisition and relocation impacts, particularly with regard to recent developments within the area of site 5.

RECOMMENDED ACTIONS

The following actions are recommended:

- o Coordinate the design and implementation of the Multimodal Access Facility with other on-going studies.
- o Initiate Project Development and Environmental (PD&E) studies on sites 4 and 5 as recommended above. The purpose of these studies is to provide additional detailed information on construction feasibility, detailed right-of-way requirements and environmental impacts.
- o Initiate a study of conceptual alternatives for coordinating CSXT rail freight traffic with passenger rail traffic to the Multimodal Access Study.

- o Feasibility studies of the extensions of rail facilities plus direct access highway ramps should be conducted concurrently with the PD&E studies. It is noted that the Tri-County Commuter Rail Authority is pursuing an extension of its service from the existing Tri-Rail station at SE 10th Street in Hialeah to a new station at NW 21st Street near MIA. This station should be designed as an interim facility, to be incorporated into the ultimate Multimodal Access Facility.
- o As these studies are completed a final site selection should be made and final design, right-of-way acquisition and construction accomplished.
- o A feasibility study should be made of integrating office, commercial, retail or other development into the Multimodal Access Facility. Important facets of this feasibility study should include:
 - Increasing ridership on the transit modes
 - Generating rents which may offset the costs of constructing and operating the Multimodal Access facility

APPENDIX A

CONCEPTUAL PROGRAM OF USER REQUIREMENTS

POTENTIAL USER REQUIREMENTS

HIGH-SPEED RAIL

Platform Area:

- o 14' minimum horizontal clearance between track centerlines
- o platform length 950'
- o concourse 34,000 sq. ft.
- o elevated passenger waiting area with restrooms
- o seating
- o passenger boarding area
- o vending
- o information kiosk

Fare Collection Area:

- o terminal building 20,000 sq. ft.
- o passenger ticketing 600 sq. ft.
- o information kiosk
- o baggage handling 4,000 sq. ft.
- o bag make-up 2,400 sq. ft.
- o seating
- o restrooms
- o telephones
- o retail, food service 4,800 sq. ft.
- o vending
- o package delivery
- o employee facilities

Landside Connection:

- o passenger access and egress facilities
- o parking garage 3 levels at 180,000 sq. ft.
- o curbside check-in 2,800 sq. ft.
- o feeder and distribution transportation systems

AMTRAK

Platform Area

- o 40' guideway (1 track)

TRI-RAIL

Platform Area:

- o 800' passenger platform with canopy area
- o 2 mainline tracks with a 25' center platform
- o coaches load from either side or both
- o train required 7-8 minutes in station
- o requires access to feeder bus system
- o benches with wind screens

Fare Collection Area:

- o 2 ticket windows/information center
- o display area for system maps
- o slot boxes
- o bill changers
- o ticket vending machines
- o telephones
- o fare collection machines

Transfer Area:

- o maps

Maintenance & Operations Area:

- o train crew facilities
- o offices with private restrooms
- o control center (optional)

Landside Connection:

- o 500 parking spaces
- o access to Tri-Rail feeder bus pick up/drop off area
- o benches

METRORAIL

Platform Area:

- o 616' passenger platform
- o 2 mainline tracks
- o storage track and crossover
- o clearance for cars in 13' from top of rail to obstruction
- o coaches can load and unload from both sides
- o benches with windcreens
- o access stairs (at ends of platform) to track

- o 47' 10" guideway (2 tracks, platform between)
- o 25' 1.5" wide platform

Fare Collection Area:

- o ticket windows (station attendants booth)
- o 7 fare collection machines
- o display area for system maps
- o 2 slot boxes
- o 2 bill changers
- o 2 ticket vending machines
- o 2 telephones

Transfer Area:

- o maps
- o 2 telephones

Maintenance & Operations Area:

| | <u>Sq. Ft.</u> |
|---|----------------|
| o electrical equipment room | 2907 |
| o mechanical equipment room | 1706 |
| o train control and control and communications room | 4480 |
| o train control battery room | 165 |
| o maintenance storage | 117 |
| o revenue | 103 |
| o trash room | 103 |
| o electrical room | 80 |
| o custodial | 58 |
| o toilet room | 69 |

Landside Connection Area:

- o access to Metro Bus pick up/drop off area
- o bicycle area with racks and lockers
- o benches

Traction Power substation:

1 building with guideway above located away from the station

contains:

| | <u>Sq. Ft.</u> |
|-----------------------------|----------------|
| o transformer yard | 1369 |
| o traction power substation | 2809 |
| o FPL room | 141 |
| o mechanical room | 180 |

| | |
|--------------|----|
| o meter room | 40 |
| o plenum | 75 |
| o corridor | 65 |

| | |
|----------------------|------|
| total square footage | 4679 |
|----------------------|------|

METRO BUS

- o pick up/drop off area
- o parking/loading spaces
- o passenger waiting area
- o telephones
- o bill changers
- o ticket vending machines
- o display area for system maps
- o access to Metro Rail

TRI-RAIL FEEDER BUS

- o pick up/drop off area
- o parking/loading spaces
- o passenger waiting area
- o telephones
- o bill changers
- o ticket vending machines
- o display area for system maps
- o access to Metro Rail

COURTESY VEHICLE

- o pick up/drop off area
- o passenger waiting area
- o information center

TAXI/LIMO

- o taxi stand/staging area
- o pick up/drop off area
- o information center
- o passenger staging area

RENTAL CAR

Customer Service

- o 8 – 10 car rental counters with space for 2 – 3 employees

Car Pick Up Area

Alternative 1

- o courtesy van area
- o remote car storage area

Alternative 2

- o 8 – 10 car pick up areas (within terminal)
- o 100 car spaces per operator
- o secured area
- o convenient access to car counters

Car Drop Off Area

Alternative 1

- o remote car storage area
- o courtesy van

Alternative 2

- o car drop off area (within terminal) for 8 – 10 operators
- o 100 car spaces per operator
- o secured area
- o express return processing

AGT

Platform area:

- o entrance level at grade
- o 80' long and 16' wide platform, covered but not enclosed
- o station length 192'
- o "free platform area and "paid" area separated by fare collection equipment and fixed physical dividers
- o 2 main areas of egress from the platform area
- o 1 stair at each end of platform
- o at least 1 elevator
- o at least 1 escalator
- o information graphics at both platform and street level
- o mechanical equipment room on ground floor
- o station agent not required

Fare Collection Area:

- o assumed no user fee

Main Terminal Connection

Alternative 1

- o connect to all terminals

Alternative 2

- o connect to skywalk system which accesses all terminals

OTHER TERMINAL USES

Restaurant

- o coffee shop
- o food court concept
- o snack stands

Retail

- o dry cleaners
- o drug store
- o newsstand
- o hair cutters
- o clothing

Other

- o office space
- o hotel
- o child care facilities