EVALUATING THE DEVELOPMENT POTENTIAL FOR INTERMODAL TRANSPORTATION CENTERS USING THE MIAMI INTERMODAL CENTER (MIC)

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in Partial Fulfillment of the Requirements for the Degree of
Master of Science in Real Estate

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ABSTRACT

Our thesis is an evaluation of development potential, with the appropriate private-public participation and financing, for infrastructure projects, specifically intermodal centers. We are using the Miami Intermodal Center, and related projects, the East-West Corridor, and the expansion of the Miami International Airport, as the study model. The project involves private development investment opportunities to build infrastructure and commercial space. More importantly is the potential for related commercial development in the vicinity of all the infrastructure components, in the adjacent underutilized neighborhood. This is where we plan to add value to the already volumous research on the project.

The scope includes, evaluate current deal structure, recommend changes to the existing project, and propose a development strategy.

Thesis Supervisor: Gary Hack
Title: Professor of Urban Design

ACKNOWLEDGMENT

The five or so pounds of this document is a testimonial to the idea that a brash, loud, commercial real estate broker from Colorado, and a quiet, over achieving, public servant, designer from Florida, can work together as a team to produce a document that we are both proud of, and able to learn from. We have spent the last 60 days together as a team in a rush to the finish. The numbness is still fresh in our minds that we are truly...finished. Fortunately, the team approach has given us the opportunity to start what will be a long friendship.

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INTRODUCTION

Our central question is to determine the development issues and potential for intermodal transportation centers. We address this question through a detailed analysis of the proposed Miami Intermodal Center (MIC). The MIC will be used as the prototype in determining the following:

- Potential uses.
- Methods for development.
- Possible builders and development scenarios.
- Sources of Funding.
- Economic, environmental, and physical affects on region.
- Forms of ownership and management.

Located adjacent to the main terminal of the Miami International Airport (MIA), the MIC truly has the potential of being an intermodal center by providing a single point of origination and convergence of all modes of transportation to a city and region. The MIC would have the capability of transporting the international passenger through a seamless gateway into the local transportation network. The Miami project is at the intersection of MIA with expressways, private tollroads, rail freight lines, bus lines, urban heavy rail transit, regional commuter rails, intercity rail, and high speed rail, which would all be connected to the largest international gateway into the United States and the largest cruise ship port in the World. The MIC will be located alongside a major expansion, already underway, of the Airport terminal. Given the trend towards incorporating large commercial components with airports and intermodal centers, there are proposals for retail, entertainment, gaming, etc., to be included. This project is in the beginning stages of analysis, with several pieces of the timeline already approved. A study of this prototype facility, with all of its components, will provide the opportunity to examine how a mega-center, such as the MIC, can be developed in order to handle various dynamic and diverse tasks.

This topic is important to Miami and South Florida, but also to other rapidly growing American Cities that are being constrained by infrastructure deficiencies. Miami is a Twentieth Century City, an invention of transportation, (planes, trains and automobiles) and technology (air conditioning), making life possible on a 20 mile wide sliver of coastline. Miami is cornered in,

the Everglades to the west, the Ocean to the east and Cuba to the south. Miami however, is blessed with luck, with favorable weather to take advantage of its strategic geographic location.

Currently, the two major areas of real estate growth in the United States, are the service sector, including entertainment and tourism, and trade, including transportation. Miami excels in these sectors, to the point that virtually all job growth in the metropolitan area, of over two million, is related to trade and tourism, with the bulk of those numbers being concentrated at Miami International Airport and at the Port of Miami. Miami is essentially the Hong Kong of Latin America, being the distribution, financial and recreational center for the region. The problem is that Miami has reached the sustainable limit of an autocentric city, and is being forced to increase densities wherever possible to keep the City competitive. Keeping Miami competitive involves facilitating growth at its two job generators, the Airport and the Seaport, both of which are tremendously constrained for land. At the same time Miami continues to grow rapidly in terms of population and trade, both requiring greater infrastructure capacity. This is a difficult and expensive proposition for a City to incorporate Transit and higher densities of land once the suburban land model is in place. The necessity is there to ensure that the Airport and the Seaport work with the Metro government along with the Florida Department of Transportation in planning a series of transportation connections and improvements to converge at the Airport which will handle the increased pressures of the 21st century.

I. INTERMODAL CENTERS

Intermodal centers are being touted as the solution for urban transportation bottlenecks in the movement of freight and passengers around the world. Essentially the intermodal center is a rediscovery of what historically and naturally occurred in cities due to basic land economic rules; development centers around transportation hubs which in turn cluster together providing maximum efficiency. Historically, the growth of cities in the United States had focused around ports and rail stations. In the 1900s development patterns centered around the automobile which opened up new areas for urban development, but caused tremendous inefficiencies and wasteful land development. The interest in intermodal facilities today is two fold; first they increase the use of transit by making connection between modes easier and second, they offer opportunities to develop adjacent to various forms of transportation which have increased property values. There is however, varying rates of success to this type of development given the overwhelming tendency to continue urban sprawl patterns and the preference of private transportation modes.

Intermodalism

An intermodal center is the structure or place where the seamless transfer of passengers takes place. In general terms an intermodal center could encompass anything from a bus stop with a bike rack to a project the scale of the MIC. The purpose is to provide a unified response to urban transportation problems, through combining resources of various travel modes. Intermodalism has been most successful in the movement of freight. The containerization of global freight movements allows goods to be shipped by sea, rail and truck in a single container unit.

As our national economy becomes more fully integrated and as America increasingly becomes part of a larger global economy, transportation will only become more important to our standard of living. Logistical innovations such as intermodalism and flexible 'just-in-time' delivery systems have been essential to maintaining our productivity advantage worldwide against other countries that compete on the basis of lower wages.[1]

Federal ISTEA and American Examples

The multimodal transportation system development goals are to develop an integrated transportation system emphasizing the interconnectivity of the transportation network within and between metropolitan areas in conformance with government transportation plans and policies.

The Intermodal Surface Transportation Efficiency Act (ISTEA), passed in 1991, has been influential in changing the mindset of transportation projects in the United States. ISTEA's purpose was to develop a national transportation network through better coordination between systems and through new partnering of transportation modes. The four national challenges for ISTEA are, as stated by Secretary of Transpiration, Frederico Pena; Safety, Travel Growth, Environment, and Demographic Changes. He continued with the list of ISTEA building blocks;[2]

- Promote Intermodalism
- Improve planning and public transportation
- Empower state and local officials
- Strengthen partnerships
- Promote innovative financing and better infrastructure investment and management
- Encourage new technologies

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[1] Pena Defends Continued Federal Role in Transportation." The Urban Transportation Monitor, May 10, 1996.

[2] Ibid..

ISTEA is an important component in this project and in the future of intermodalism in the United States, for it is this program which has brought together varying entities, which rarely communicate, to the planning and development table.

In the United States there has been little if anything which even closely resembles an intermodal center of proportion and size of that discussed for Miami. Transportation has been split into public-private forms and in different modes which have rarely come together. An example is the lack of many transit connections at airports in the United States, until recent projects in Atlanta and Chicago. In many cities the transit systems come up short of the terminal as in Boston at Logan International Airport. In some recent systems it seems as if the airport is avoided on purpose. This is the case in Miami and Los Angeles. The Metrorail in Miami misses the MIA by 1.5 miles. The subway in Los Angeles, with it's new green line coming on line, will miss the LAX terminal by 1 mile.

In the United States most examples of intermodal centers are taking historic transit centers and restoring historic service or adding new services. Examples are South Station in Boston, adding intercity bus service, or Union Station in Los Angeles, adding subway and commuter rail.

International Examples

The Europeans have probably been the most successful at developing an entirely integrated transportation network and using it to further development. The current impetus of several countries is the formation and construction of a High Speed Rail network throughout the continent. The intent of the network is to fully create seamless travel from one City to another by varying forms of transportation.

Throughout Europe there are examples of Intermodalism encouraging development. There are three forms which characterize these projects. First the High Speed Rail (HSR) service brought to an existing rail station and using the underutilized rail yards for development. This is being done in Barcelona, where an entire urban neighborhood will be placed on a rail corridor. The second form of intermodalism is taking transit, regional rail, and HSR to an airport. This is happening at Amsterdam's Schiphol Airport where the privatized airport has been aggressive in developing commercial areas within the airport and adjacent to the terminal. So successful is the Schiphol group, retail sales average $35 per passenger at Schiphol, that they have won the bid for

constructing and managing a $1.1 billion international terminal at JFK in New York.[3] The last model is adding a new use to a transit station, a use that relies movements of large numbers of people. An example of this is the Stockholm World Trade Center which was built at the main rail station in the City. Three examples are presented to understand what can happen at the MIC and MIA, with the intermodal proposals of metro, regional rail and high speed rail service.

Train a Grande Vitesse (TGV) The French national railway, SCNF, has developed the TGV as a High Speed Rail service which it has overlaid on top of its existing rail network. With trains approaching 300 km an hour (200 mph), the TGV has been a resounding success. The TGV, and the other HSR networks, are being credited with the revival of rail travel in Europe. The systems are essentially tying together large metro areas, their airports, and a few smaller metro areas. The greatest effect has been felt on short haul flights, which are being decimated by HSR service, such as Paris to London, Brussels, or Lyon, where passenger counts are down over 40%. The existing rail network and urban metro systems are used to funnel passengers to HSR. Since HSR needs distance to travel at high speeds to be effective, few stations are desired. When there is a station it naturally builds upon the intermodalism of the local network and creates new development potential. Throughout Europe, large scale developments are occurring on rail yards adjacent to stations which are adding HSR service.

Paris, Charles de Gaulle Airport Roissy The new terminal at Roissy has TGV service that enters the terminal, offering service directly to Paris and northern France and beyond. The imagery is very strong of sleek trains pulling up within sight of the Concorde.

Paris, La Defense The largest project in Europe on a rail yard, the commercial complex continues to grow. The latest addition being TGV service and the new METEOR transit line which will slice through the heart of Paris. With the existing SCNF inter-city rail, commuter rail, Metro subways and buses already in place, the intermodal nature of La Defense is expanding. There will be over 300,000 exchanges of transportation modes at La Defense alone.

Lille, EuraLille The EuraLille complex in the northern French city of Lille is a great example of development dependent on intermodal infrastructure. The site is a rail yard at the edge of the Lille's three important center's, the civic, commercial, and historic cores of the City. It is also the confluence of three important new High Speed Rail lines. One TGV train traveling north and east to Brussels and on to Amsterdam, Bonn and Frankfurt, the other TGV train traveling south to Paris, and the third a TGV-Eurostar traveling northwest to London through the

[3] "Group picked to pilot new international terminal betting on crowded skies over JFK airport. Crain's. May 20, 1996.

Channel Tunnel. Through this investment the City of Lille has gone from being a medium sized industrial city that was often by-passed to being one of the most centrally connected and convenient centers of Europe. The project included sizable commercial development. To take advantage of being within two hours some of the major financial and governmental capitals of Europe, and the seat of the European Union Government, the project has a large conference, convention, and trade programming. The transit that service the site are buses, tramways, metro, regional rail, SCNF national rail, TGV, as well as parking facilities. Included in EuraLille are a shopping mall, hotels, office towers, a school, a park, World Trade Center, social institutions and foundation headquarters and the Lille-grand-Palais, with a congress, amphitheater, exhibition space and meeting halls.[4]

Essentially what is being proposed by the authors for the MIC, MIA and the Triangle is a combination of all three models. In Europe this is an easier proposition because of basic differences in transportation and development between Europe and the United States. The basic difference is in government policy, even though Europe is dealing with 15 European Union members plus neighboring countries as opposed to just one here in the United States. The difference is that in Europe each country plays a strong role in developing a national transportation network, whether road, rail or air. The United States has only been successful in developing a unified highway network. The main difference is in the control of land development, ownership and planning. Europe maintains strong policies towards land development with most decisions carried out at federal levels and implementation done by regional planning agencies. In the United States the proliferation of thousands of municipalities and other government bodies makes cohesive transportation planning impossible. The US Interstate System could never have been built without a strong federal mandate, the same may hold true for other forms of transit.

The Japanese have also been very successful at developing with transportation systems but they have lost the edge to Europe in developing new technology. The momentum has shifted to other parts of Asia, namely Korea, Taiwan, Hong Kong and Singapore. Throughout Asia, booming economies, such as Thailand and Malaysia, are strapped for increased capacity in their urban and regional transportation networks, and for the capital to pay for the projects to keep up with the economic growth. The interesting lesson to learn from Asia is that of private development of infrastructure and using the accompanying commercial development to help subsidize a transportation system both financially and in ridership.

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[4] "EuraLille. Lille, 1991-1995," El T.G.V. ..., Como Excusa, Geometria, First Semester, 1995.

II. MIAMI INTERMODAL CENTER (MIC)

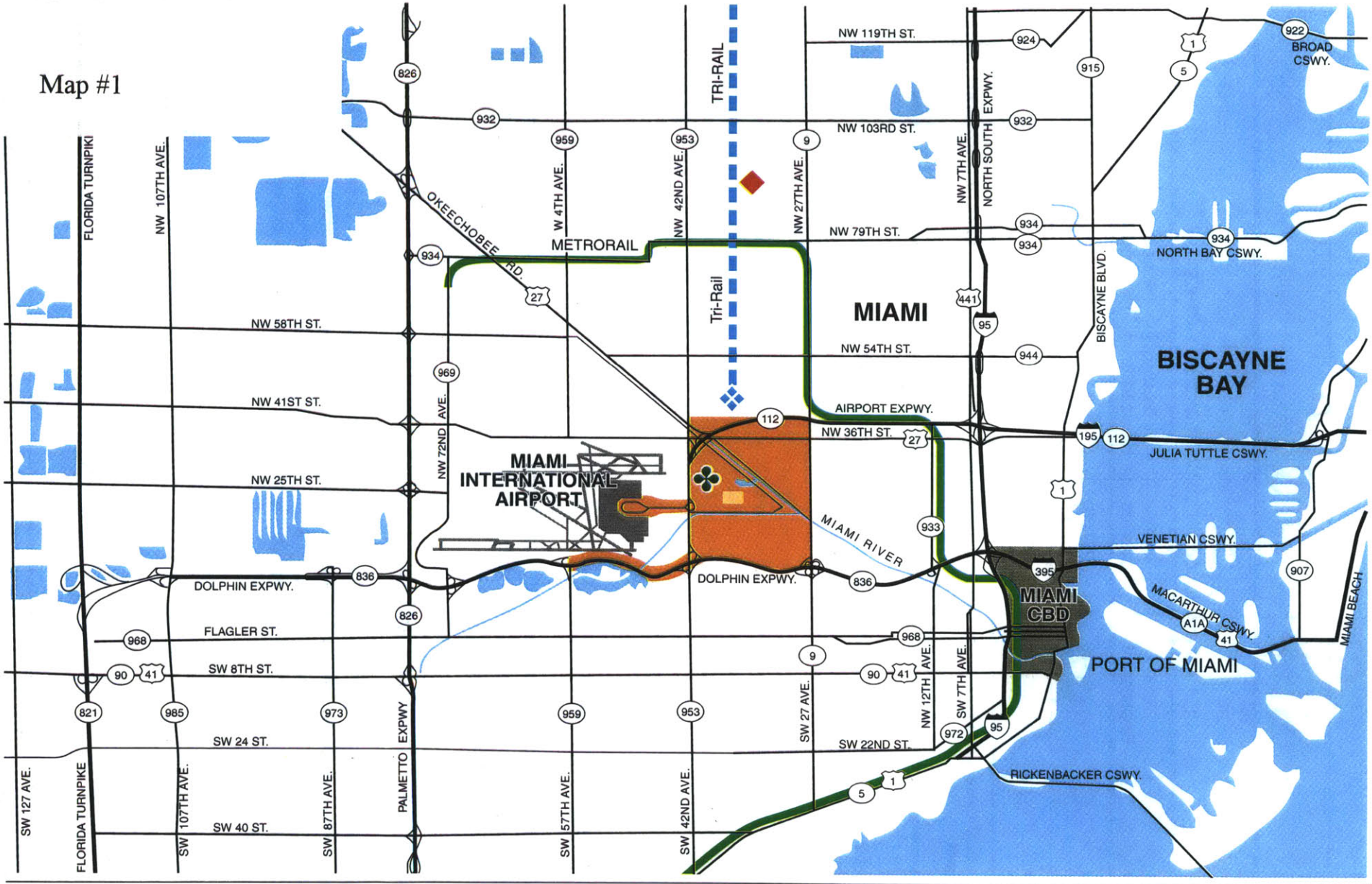
The Miami Intermodal Center (MIC) is by far the most ambitious intermodal center ever proposed in the United States, if not the World. It is the shear size and reliance on multiple transportation modes and multiple funding sources, that make the project in its current state a risky endeavor. This section will provide an overall history and evaluation of the MIC project alternatives in terms of meeting the goals and objectives of the overall MIC project. The goals of the MIC project as identified in the Statement Major Investment Study/Draft Environmental Impact (MIS/DEIS). The MIC is located on the eastern edge of the Miami International Airport, four miles west of Miami's Central Business District. **(See Map #1, Page 14)**

History

The chronological history of the proposed project began in the early 1980s when the Dade County Aviation Department (DCAD) developed strategies for relieving congestion at the Miami International Airport (MIA) passenger terminal area. Early attempts at resolving the issues related to congestion centered around construction of a new additional airport to relieve MIA. Initial construction of runway facilities in the Everglades and planning for the South Florida Air Carrier Reliever Airport were halted for environmental reasons. In 1989, Metro-Dade accepted the Miami International Airport Area Transportation Study which recommended implementing a multimodal transportation access facility linking Metrorail, Tri-Rail, future High Speed Rail (HSR) and Metrobus. This recommendation was incorporated in the Metro-Dade Transportation Plan and Improvement Priorities Long Range Element, the MPOs adopted plan for Dade County. In the early 1990s, the State of Florida implemented multimodal policies to encourage the use of transportation modes other than the single-occupant vehicle. The policies specifically limited the number of lanes on state highways, thus limiting highway expansion in urban areas. The passage of the Intermodal Surface Transportation Efficiency Act (lSTEA) of 1991, spurred local planners and decision makers to undertake planning efforts to link Tri-Rail and Metrorail with MIA and to improve roadway access at MIA.

In Summer 1993, six federal agencies, FHWA, FTA, FRA, FAA, MARAD, and USOG, signed a Memorandum of Understanding (MOU) with FDOT to coordinate and document each agency's respective role and responsibilities in implementing actions related to the MIC. The MOU was developed to ensure full compliance with National Environmental Policy Act (NEPA) regulations (particularly the Metropolitan Planning Rule 28, CFR 450, October 28, 1993) and

Map #1



Map Not to Scale

LEGEND

- Alternative Miami Intermodal Center Sites
- General Study Area
- Miami Central Business District
- Metrorail
- Tri-Rail
- Existing Amtrak Terminus
- Existing Tri-Rail Terminus
- Existing Greyhound Bus Depot

PROJECT LOCATION

Miami Intermodal Center

Source: ICF Kaiser, May 1995

related federal and state laws and policies. As the lead agency, FHWA is responsible for coordinating the federal agencies review of the studies that supported the MIS/DEIS.

The MIC project alternatives provide enhanced transportation system connectivity. The MIC would link the region's future bus and rail networks under one roof at a multimodal transfer center and provide a direct link between MIA and the Seaport. In addition, the SR 836/SR 112 Interconnector would combine the region's existing and planned High Occupancy Vehicle (HOV) lanes into a cohesive system. The Interconnector would also provide an alternate north south route for traffic along Le Jeune Road, separate airport-bound traffic from through traffic, and distribute airport-bound traffic to the MIC and the MIA passenger terminal area, thus relieving congestion on MIA landside terminal roadways, Le Jeune Road, NW 21st Street/Central Boulevard and Perimeter Road.

The MIC project is in conformance with Federal ISTEA guidelines and because of the potential to reduce regional ozone levels the goals of the Federal Clean Air Act Amendments of 1990 and the State Implementation Plan (SIP). The MIC project is also consistent with the goals of the Metro-Dade Congestion Management Plan, the land use policies described In the Dade County Comprehensive Development Master Plan (1988) and the Regional Plan for South Florida (1990). Additionally, the MIC project alternative is incorporated into the Metro-Dade Transportation Plan and Improvement Priorities Long Range Element (1991) and the Miami International Airport Master Plan Update (1994). FDOT has also identified the MIC project alternative in its most recent Work Program. The goal of improved mobility is to provide an efficient mass transit system for Dade County that offers an alternative to the use of private automobile and enhances the travel opportunities for the communities dependent on public transportation.

For the MIC project alternative, local, regional, and intercity bus and rail systems would converge at the MIC, providing efficient intermodal transfers and direct links to the MIA passenger terminal area and other MIA area employment activity centers. The convergence of the public transportation network at the MIC would dramatically increase travel opportunities and access to MIA via transit. Increased service frequencies and efficient intermodal connections would add to the appeal of using transit instead of the private automobile.

The Iron Triangle, The Site

The MIC is proposed to take place in an area referred to as the "Iron Triangle." Located adjacent to MIA, to the east across Le Jeune Road, the entire Triangle encompasses 400 acres of

land in unincorporated Dade County. **(See Map #2, Page 17)** The Triangle is named for its shape forming a right triangle with Le Jeune Road (N.W. 42nd Street) on the west, the Tamiami Canal on the south, and the Miami River on the northeast diagonal. The northern portion of the triangle sites directly underneath the flight path of the northern most east-west runway at MIA. The southern half of the triangle sits squarely between the existing east-west runway flight paths. A third east-west runway will be added increasing the noise and lowering the height limit on the northern most tip of the site.

Currently the area is a hodge podge of airport and marine related industries and services. The western half of the triangle, west of Douglas Road (N.W. 37th Avenue), is comprised of properties that are airport service oriented. Hotels, motels, rental car agencies, and an assortment of airport support industries are scattered in haphazard fashion. The eastern half of the triangle is even more chaotic and is comprised of marine service industries, ship yards, a yacht manufacturer, and junk yards. In this labyrinth of ship hulls, winding streets, and junk yard dogs are where some of the rental car agencies are located. This is a foreign tourists first impression of the United States, no wonder some have been permanently lost.

One of the main problems with the Triangle is that it is severely cut off from the airport and the rest of the metropolitan area. There are only two main entrances to the area and two minor entrances along the river utilized only by the shipping industry and Santaria priests. The Miami River is a favorite of Caribbean "folk" religion.

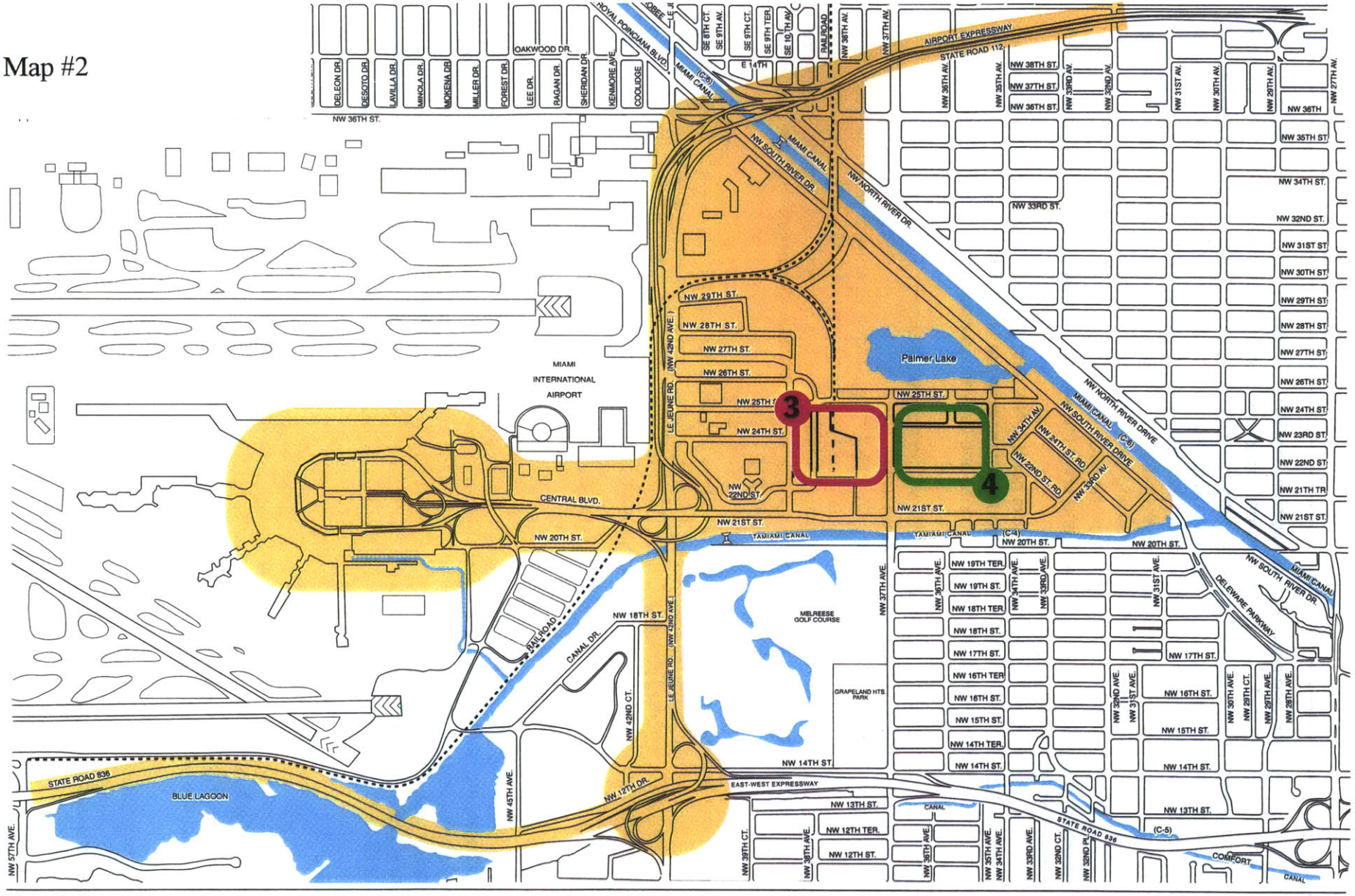
Immediately south of the Triangle, across the Tamiami Canal, is the Melreese Golf Course, a public course in the City of Miami. The Miami City Commission in February approved a 30 year agreement that would transfer management of the Melreese Golf Course from the City of Miami to private hands. Investors are to pay Miami $275,000 a year for the right to manage the course and in return will have the right to set fees, as long as they are comparable with those at other courses. The City, which has subsidized the course at a cost of about $200,000 a year, will foot a $3.9 million bill for renovations.[5] There are opportunities to include the new golf course managers in the MIC development to include the course as an amenity.

The Hub

The MIC is comprised primarily of a large structure, referred to as the Hub. It is where the majority of activity, transfer of passengers, ticketing, check-in, etc. would take place. Included would be platforms for all forms of rail transit, landside functions for MIA, parking for

[5] "Grove Civic Club can challenge Melreese pact." Miami Today. June 6, 1996.

Map #2



Not to Scale

LEGEND

- Recommended Site for MIC Core
- Study Area

MIC SITES 3 AND 4

Miami Intermodal Center

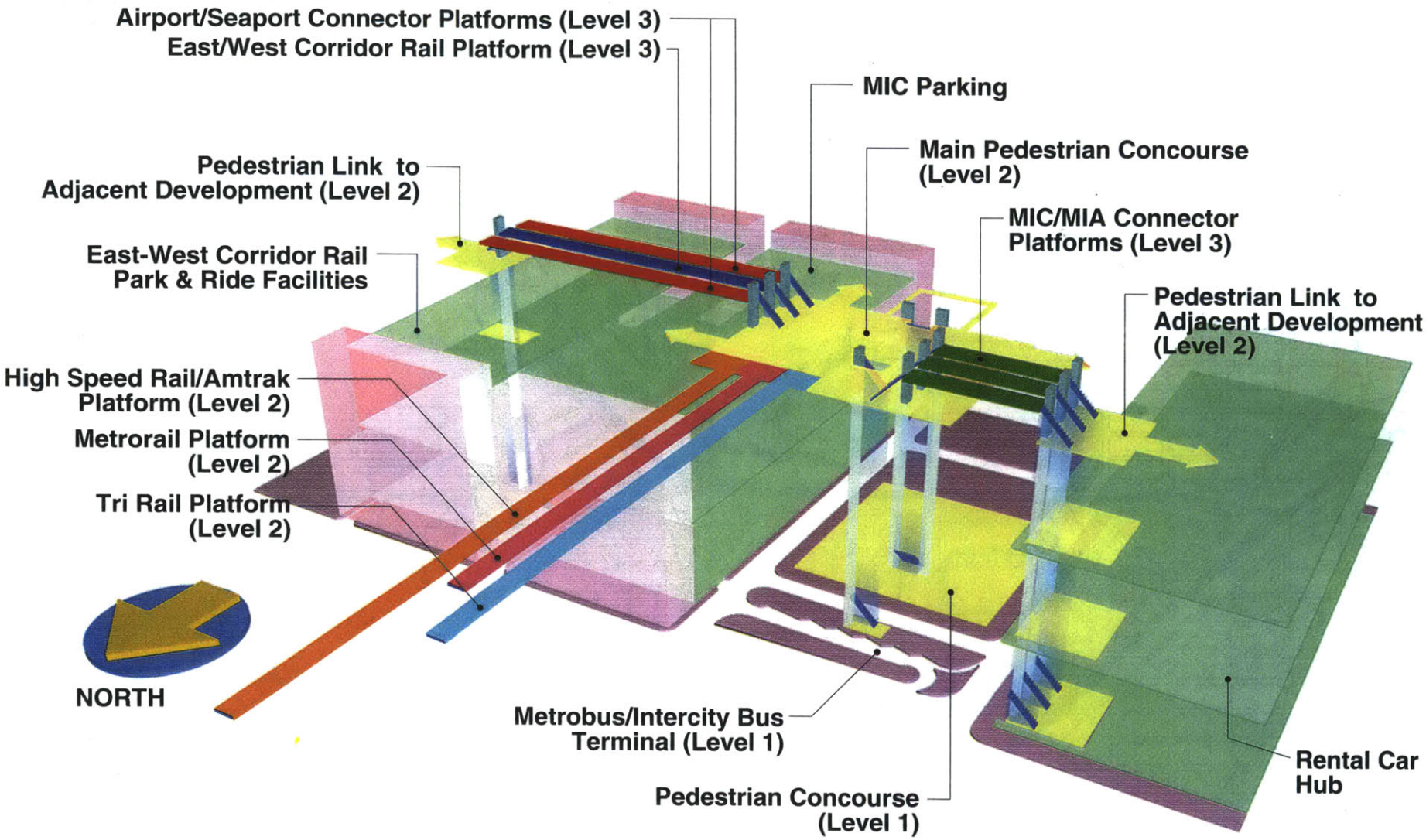
ICF KAISER
Bermello, Ajamil & Partners, Inc.

Source: ICF Kaiser, June 1995

the MIC and MIA, as well as space for cruise ship companies. There are also provision for commercial components such as retail to take place at the Hub. The Hub would be connected to MIA by a people mover train, the MIC/MIA Connector, and a service tunnel, built for the transfer of baggage between the MIC and MIA. Facilities for rental cars and a station for High Speed Rail (HSR) would be constructed adjacent to the main Hub. Once in full operation, in twenty years time, the MIC Hub would allow a passenger flying into MIA to transfer, including their bags, to another form of transportation all at one location. An example of a transfer could be as follows: an international traveler fly's into MIA transfers to the MIC, hops on the FOX to Disney World for a week, comes back to the MIC enroute to the Seaport where he takes a Disney cruise for a week, back through the MIC for some large ticket item shopping before catching the return flight home. **(See Plan #1, Page 19)** The MIC would be comprised of the following amount of space, as noted in Table 1 below:

MIC HUB ALLOCATION OF SPACE[6]	
Space Use	Square Feet
Common Areas	250,000
MIA Landside	550,000
Rental Car Hub	100,000
MIC-MIA Station	20,000
East-West Rail	20,000
Airport-Seaport Rail	45,000
Metrorail	10,000
FOX High Speed Rail	20,000
Amtrak	5,000
Tri-Rail	38,000
Inter-City Bus	10,000
Metrobus	10,000
Total	1,078,000

[6] Miami Intermodal Center, Major Investment Study/Draft Environmental Impact Statement. Summary. Florida Department of Transportation U.S. Department of Transportation, Federal Highway Administration. December 18, 1995.



Not to Scale

EXPLODED SCHEMATIC PERSPECTIVE VIEW OF MIAMI INTERMODAL CENTER - SITE 3

Source: ICF Kaiser, June 1995

Missing from Table 1 are any commercial or joint development spaces. These spaces will be discussed in our Recommended Development Plan. The amount of parking that is planned for the MIC is noted in Table 2 below:

MIC PARKING[7]	
Parking Facility	Parking Spaces
MIC Hub	2,800
MIA	3,300
Rental Car Hub	10,000
Total	15,580

Table 2 does not include spaces for adjoining commercial or joint development projects that may occur with the MIC. An important fact to note is that there are no demand forecast for passenger use at the MIC. There exist projections for MIA, cruise ship passengers, Metrorail, High Speed Rail, etc. There are no projections for the number of people who will be using the MIC.

"Initially nine sites for the hub were studied," said Allen Parker, a project manager with ICF Kaiser Engineering & Construction Group. Environmental impacts and joint development opportunities of the nine prospective sites were weighed in choosing the final recommended sites. The preferred site for the MIC is Site 3, generally defined by NW 25th Street, NW 37th Avenue, NW 22nd Street and NW 39th Avenue. This site has been recommended as the preferred location for the MIC Core primarily because of the trackwork advantages in accommodating the heavy rail modes that would access the site from the north. Locating the heavy rail modes away from existing residential areas and providing improved MIC facility access from Le Jeune Road and the Airport is another advantage. Site 3 also allows for lower estimated right-of-way costs and improved interface between public transit modes. The existing rail right-of-way would lead directly into the area of MIC Site 3, thereby minimizing the complexity of the trackwork required for the heavy rail modes.

MIC Site 3 also offers the advantage of a more approximate location to the MIA passenger terminal area. Because of its proximity, the guideway for the MIC/MIA Connector, and the service tunnel, from MIC Site 3, would be shorter in length, than for other alternative

[7] Ibid.

sites, thereby reducing MIC/MIA Connector construction costs. Additionally, MIC Site 3 would offer potential savings in land acquisition costs and a greater opportunity for joint development east of the site. Another advantage to Site 3 is that part of the site is already under control of the Tri-rail commuter rail authority. This is important in that the land is already in the hands of one the transportation systems planned for the MIC and is about to start construction on its temporary station.

In the MIS/DEIS report, the analysis for site selection stated that a flaw with Site 3 was that it was limited from, "future westerly expansion of the MIC Core and the development of rental car facilities may be constrained by the Ramada Hotel building."[8] In actuality, the opposite holds true, this is a perfect opportunity for the MIC. The inclusion of a hotel property in the project from the beginning and a closer connection to MIA outweigh any site constraints. The Ramada Hotel is currently for sale and this demands action by DCAD into acquiring the property and including it in project. It is, after all, at the entrance of the airport and the most visible location in the Triangle.

The final design for the MIC will be influenced by the type and extent of MIA facilities identified for location at the MIC. This influence may be minimal, or as in the case of substantial relocation of landside facilities east of Le Jeune Road, may greatly impact the planning and design of the MIC and related facilities. The MIA Strategic Planning Study team is expected to present preliminary recommendations in 1996. It is important that DCAD be involved in the project and made to understand that the MIC is becoming more of an extension of the Airport than just a big train station.

Current Status and Prospects for Future Completion

On March 7, 1996 the actions by the project's Policy and Technical committees were unanimously approved by the Metropolitan Planning Organization (MPO) Governing Board. There has been an attempt to gauge the Miami airport market to see what accompanying commercial uses can be put in the MIC. The economic reports state what everyone knows about MIA and the real estate market in the surrounding area, it's growing and it is slated to remain that way. What is missing is a concerted effort to organize the MIC into a development generator and place maker to ensure its success. If the MIC is poorly designed and/or devoid of other

[8] Miami Intermodal Center, Project Status Report: Locally Preferred Alternative. Florida Department of Transportation U.S. Department of Transportation, Federal Highway Administration. Prepared by ICF Kaiser Engineers, Inc. April, 1996.

attractions, it will be underutilized and considered a failure. If the surrounding area around the MIC is poorly planned and designed there will never be interest from local businesses and/or consumers to locate or come there on purpose to help support the area. Retail must be maximized effectively both inside and around the MIC to take advantage of the heavy spending captive international tourists or the MIC will not be nearly the financial success it needs to be. There has yet to be a strategic plan for the area around the MIC, the rest of the Iron Triangle, to ensure that the MIC becomes a well utilized, financial success. The authors of this thesis will suggest possible solutions to the many issues surrounding the MIC later in this document.

In the phasing plan, construction would occur simultaneously on the MIC Core facilities, rental car facilities, MIC/MIA Connector, SR 836/SR 112 Interconnector and the MIC area roadways. However, the MIC Core would be completed in two phases, reflecting the two-step expansion of the MIA landside facilities at the MIC. A 17-year project build-out is assumed for the construction program. The build-out is based upon realizing current projections, a patronage demand, and completing construction according to the most cost-efficient schedule. Since project elements such as the MIA terminal expansion and long term parking are demand-driven and largely privately-funded through fees and rents, failure to realize traffic projections would result in simply deferring these components, rather than development of additional underutilized facilities. The land acquisition necessary to complete the entire undertaking would be accomplished at the outset in order to permit more phases to be implemented without extraordinary speculation premiums being placed on the land.

There are still many obstacles to developing the MIC. A considerable amount a land acquisition must be undertaken for the build alternatives and is assumed to be implemented by FDOT in conjunction with Dade County. Due to the uncertainties associated with development of future transportation modes expected to utilize the MIC, there may be a time lag before the land required must be purchased and construction is initiated. In such instances, interim land uses, such as surface parking, may be assumed in order to generate revenues or defer expenditures for structured parking. The net revenues from interim use activities would be retained to offset operating costs, or to fund capital investment associated with the build options. However, the financial analysis does not incorporate surface parking revenues or the potential to defer garage construction.

"The Intermodal Center will present an opportunity for increasing passengers, but it will also present some challenges," Mr. Dellapa said. "If you are late for a flight right now you can run to the curb, and still get your baggage on the plane. For passengers who check in at the

Intermodal Center we need to look at how we get their baggage from the center to the plane if they are late for a flight."[9] As of today the next crucial component will be the approval of the High Speed Rail by the FOX group as they present their financial plan to State officials in Tallahassee. Final approval of the FOX proposal will do one important thing, it will create an immediate impetus for the MIC to get started.

The least of the MICs worries are technical, the true challenges are financial and the demand and development program for this site. The best thing that could have happened to the MIC and the East-West Corridor for that matter was the splitting of the two into distinctive projects. It is the authors view that the MIC can occur without the East-West Corridor and not the other way around. Thinking of the two as separate projects does several things. First it gives a greater chance of something happening. As one large project, with a $3 billion price tag, nothing was going to happen. As a separate project the MIC is now workable. Most importantly, it is seen as an asset by the MIA. The MIC now has the potential of being part of MIA, transforming the terminal into one giant transportation center, whereas before it seemed as a separate entity that happened to be real close to the Airport. Once the MIC is in place then there would be a justification for the East-West corridor. As one large complete project the MIC/East-West Corridor ran the risk of becoming another Metrorail extension with little connection to the City. Too much infrastructure dumped in one place and there being no place there. It was said by about Oakland "There is no there, there." The MIC as part of the East-West Corridor would be just a stand alone station, left to fend for itself, with the thinking that the Airport and the Metrorail would eventually create the places around. The opposite should happen in today's environment. Create the mechanism to make a place, the design guidelines, the development package to make the MIC a necessary component to the neighborhood, the Airport and the region. The MIC will happen and then the East-West Corridor will follow.

III. FEDERAL, STATE AND LOCAL AGENCIES

The lead agency behind the MIC is the Florida Department of Transportation (FDOT), Division VI, based in Miami. There are also seven main government agencies at the State and Federal level involved in the MIC. FDOT is working in cooperation with the Federal Highway Administration (FHWA) as the lead federal agency, and with the Federal Transit Administration (FTA), Federal Railway Administration (FRA), Federal Aviation Administration (FAA),

[9] "Recommendation near on firm for airport study." Miami Today. March 23, 1995.

Maritime Administration (MARAD), and the United States Coast Guard (USCG). Even though this is a FDOT project with direction from the United States Department of Transportation (USDOT), there are local agencies which will come into play as the project matures. **(See Chart #1, Page 25)**

Metro-Dade Government

Miami has a metropolitan form of government that covers the entire Dade County area. Founded in 1957, the Metro government was seen as a way to guide a young and rapidly growing metropolitan area and give a unified vision for the future. Thirteen Metro Commissioners represent not only unincorporated County residents but also City residents, making the Metro government large and powerful. Metro runs all services in unincorporated areas, which contain over half the population of Dade County, and for many of the smaller towns. Most importantly Metro has control over the Airport and the Seaport, the largest generators of revenues and jobs in the region and holding the keys to continued economic vibrance for the area.

Beginning with the election in November, 1996, the Metro government system of 13 commissioners who currently wield substantial power, will change to a strong mayoral system of government. This is being done to facilitate greater accountability of governing of Metro-Miami and for there to be an overall voice for Metro, instead of the district based representation of the current Commission.

Metro's goal for the MIC is to provide a state of the art station for new transportation modes. The intention, of the new transportation links and the MIC, are to keep Miami moving and competitive. Metro is under pressure to keep the area moving, create jobs, raise standards of living and improve Miami's image, all without raising taxes. The MIC is one of those projects that fits everybody's criteria of problem solver. While the MIC would do more to make Miami move efficiently, foster job growth, and improve tourism safety, it is not the end all solution to Miami's problems. Many problems in Miami have to be solved before the MIC can occur. Attitudes toward transit, land development patterns, and Miami politics all have to change to achieve a successful project. Metro's first task is to keep its number one income and job generator, MIA, on a smooth growth pattern.

There are visionaries in Miami who want the MIC to fulfill visions of what Miami image has become. There isn't enough money for Miami to be in the same league as the vision that is being created. Miami has to be careful that it doesn't build white elephant monuments to a

Chart # 1

MIC FACILITY AND SURROUNDING DEVELOPMENT ENTITY INVOLVEMENT

ENTITY INVOLVED	GOALS/RESPONSIBILITIES
Florida Department of Transportation (FDOT)	Lead agency, Spearheading the entire East/West Corridor and providing State funds.
US Department of Transportation, (USDOT, FHWA)	Lead federal agencies, provides ISTEA funds.
Metro Planning Office (MPO)	Chief coordinator in Dade County, provides gas tax monies, responsible for overall metro planning of future transit projects.
Metro Planning	Planning agency, responsible for land use changes and guidelines.
Metro Transit	Operators of metrorail, possibility of two lies coming into MIC.
Tri-rail	Commuter rail, already constructing on site of future MIC facility.
FOX	High speed rail, needs own station in MIC, will provide own financing.
Port of Miami	Will provide passenger charge, wants direct service between MIA/MIC and Seaport.
Dade County Aviation Department (DCAD/MIA)	Airport deeds expansion, will place landside functions in MIC, offices and support, possibility of having airline and baggage check in space at MIC.
Dade County Expressway Authority (DCEA)	New agency, created to contro all expressways in county and infrastructure for MIC, will provide toll money for MIC development and operations.
Rental Car Agencies	Seven main agencies which would provide surcharge on rentals to support own hub facility adjacent and connecting to the MIC.

vision of itself or to its visionaries. All projects involved with the MIC should be based on sound planning, realistic demands, and full community participation.

Metro-Dade Metropolitan Planning Organization

The Metropolitan Planning Organization (MPO) is the Metro-Dade agency responsible for coordinating future transportation plans. The MPO is the author of the Transportation Improvement Plan, and is responsible for setting transportation policy in Dade County. The latest 5 year plan, of more than $3 billion, will provide half, $1.5 billion, to MIA for expansion projects.[10]

Until recently, Dade transportation planners had focused mainly on building new roads to accommodate increasing traffic. But the new Metro transportation plan emphasizes public transit over expressways. The 2015 Metro-Dade Transportation Plan uses most of its $3 billion proposed, non-airport portion, budget on buses, carpool lanes and rail instead of expressways.

Metro-Dade Planning

The Planning Department is the Metro-Dade agency responsible for planning, land use, design guidelines for Metro. Metro Planning has not been involved in policy formation with the MIC. The have been asked to review and comment on development strategy and land use for the area. Planning could be brought in early on to perform studies and make recommendations as to the appropriate land use changes for the Triangle.

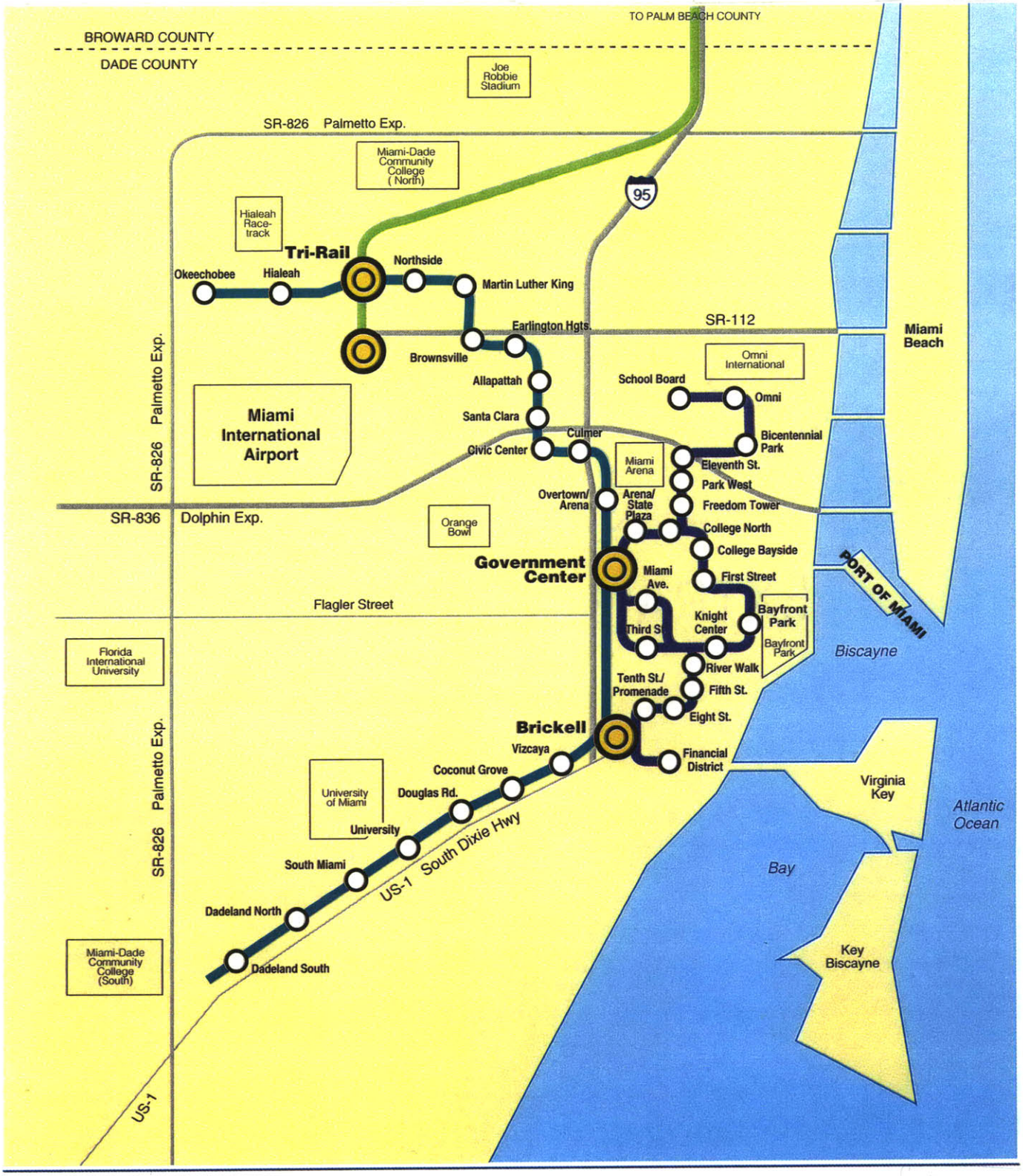
Metro Planning is interested in the MIC for several reasons first of which is the possibility of achieving long term goals of building more transit facilities in Miami. Planning is also under pressure and is often the agency blamed for unplanned suburban sprawl. Explosive growth in the far suburbs, with inadequate roads, schools and services lagging, are the reason for the wave of municipality incorporation's to hit Metro recently. Planning is being blamed for a commission that will not reign in growth that is sustainable with infrastructure and schools in place or with development that is unplanned and crowded.

Metro-Dade Transit

Metro-Dade Transit runs Metro bus, Metromover, Metrorail and Special Transit Services. Metrorail is, a one line, 21 mile system. **(See Map #3, Page 27)**

[10] "Airport to get close to half of funds in 5-year transportation program," Miami Today, May 30, 1996.

Map #3



LEGEND

- Metrorail System
- Tri-Rail System
- Metromover System
- Transfer Station
- Station

PUBLIC TRANSPORTATION FACILITIES

Figure not to Scale

Rev.5 - 7/1/95

The Metro transit system has the following average ridership, as noted in Table 3 below:

METRO TRANSIT RIDERSHIP IN MIAMI 1995[11]	
Transit Mode	Daily Ridership
Metrobus	202,700
Metromover	13,500
Metrorail	47,600
Total System ridership	263,800

Projections for the year 2020 place transit ridership in Miami at over 371, 000 daily passengers. In addition to the East-West corridor, associated with the MIC project, Metro-Dade Transit has the following projects under construction, in design, or in the planning stages:

South Dade Busway; An 8.4 mile dedicated busway running parallel to US 1 from the end of the Metrorail line, at Dadeland South Station, south to Cutler Ridge. This is currently under construction with an opening date in the Fall of 1996. The busway is designed as a precursor to a future extension of the Metrorail southward eventually to Homestead.

The Palmetto extension; 1.1 mile, of the existing Metrorail line to the new Okeechobee Station, currently in design with construction to begin in 1998.

New Metrorail lines planned; In addition to the East-West Corridor, they include the North Dade Corridor, the West Kendall Corridor, the Northeast Dade Corridor. **(See Map # 4, Page 29)**

The North Dade Corridor; This is furthest in the planning process as an extension of the existing N.W. 27th Street Metrorail corridor. There is the possibility of constructing a 1.5 mile spur from the existing Earlington Heights Metrorail Station to the MIC site, thus bring transit to the airport without the expense of the entire East-West Corridor.

Metro-Dade Aviation Department

Metro-Dade Aviation Department, referred to as Dade County Aviation Department (DCAD), is a separate agency within the County which runs MIA. In addition to MIA, DCAD runs three other general aviation airports, two additional satellite airports, and is the official caretaker of the Homestead Air Reserve Base (the former Homestead Air Force Base damaged in Hurricane Andrew) as it transitions from a military base to a joint civil and military complex.

[11] Quarterly Performance Report, First Quarter, FY 95-96. Metro-Dade Transit Agency.

Map # 4

M E T R O - D A D E
T R A N S I T

MIAMI, FLORIDA

Regional South Florida Transit Authority

There have been preliminary discussions between Metro-Dade and Broward County on the premise of creating a regional transportation authority. The concept is to combine administration, marketing and services for a unified regional effort to market South Florida in the global marketplace. An example would be the Port Authority of New York and New Jersey. The scope of such an agency is yet to be determined but could include airports, expressways, mass transit, ports and rail. Broward County has been less than receptive to the idea, making a near term solution unlikely.

Dade County Expressway Authority

The Dade County Expressway Authority (DCEA) was created to unify the operation and maintenance of all toll facilities in the County. The plan is for DCEA to eventually oversee all roads, bridges and highways in Dade County that charge tolls. Once the roads are under the authority's control, tolls will flow directly to it. The authority will be able to acquire, construct, improve, maintain, operate, own and lease toll facilities. DCEA will be discussed further as possible ownership entities are analyzed.

Florida Department Of Transportation

The Florida Department of Transportation (FDOT) is the lead agency in the East-West Corridor and the MIC projects. FDOT has a new vision of itself as a transportation provider not just of highways, but of all forms of transportation. This is one of the outcomes of the Federal ISTEA program which has brought new possibilities to agencies such as FDOT. For FDOT, this project allows the agency to expand the scope of its work and access a greater number of large and complex projects, in a world of diminishing public works funds. For the time being, it is desirable that FDOT is the lead agency, thus keeping the MIC and the East-West Corridor from becoming a victim of Miami politics. At some point in the future FDOT will have to relinquish control of the project, especially the development portions of the MIC and adjoining properties.

Federal Agencies

The US Department of Transportation, including the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA), are the lead federal agencies for the MIC project. The coordination between what had been competing agencies, FHWA and FTA, for the same federal subsidies is indicative of the changed attitude in Washington. Highway and

transit projects are being planned together, not only as a result of ISTEA, but also the new attitudes regarding transportation, growth and the environment in Washington. Part of this new found camaraderie is that budget constraints at the federal level are making transportation projects difficult to finance. Working together and expanding the scope of a project, by including public transit for example, makes for easier funding through the ISTEA program. The reality has also hit Washington that further department consolidations may occur, FHWA combined with FTA for example, and that a working relationship should be instigated in preparation for any possibility.

IV. MIAMI INTERNATIONAL AIRPORT

Miami, being the site of the first scheduled international flight from the United States to Havana, and the first scheduled seaplane service, from Coconut Grove, has a long history in aviation. At one point, three major airlines, Eastern, National and Pan American, all called Miami home.

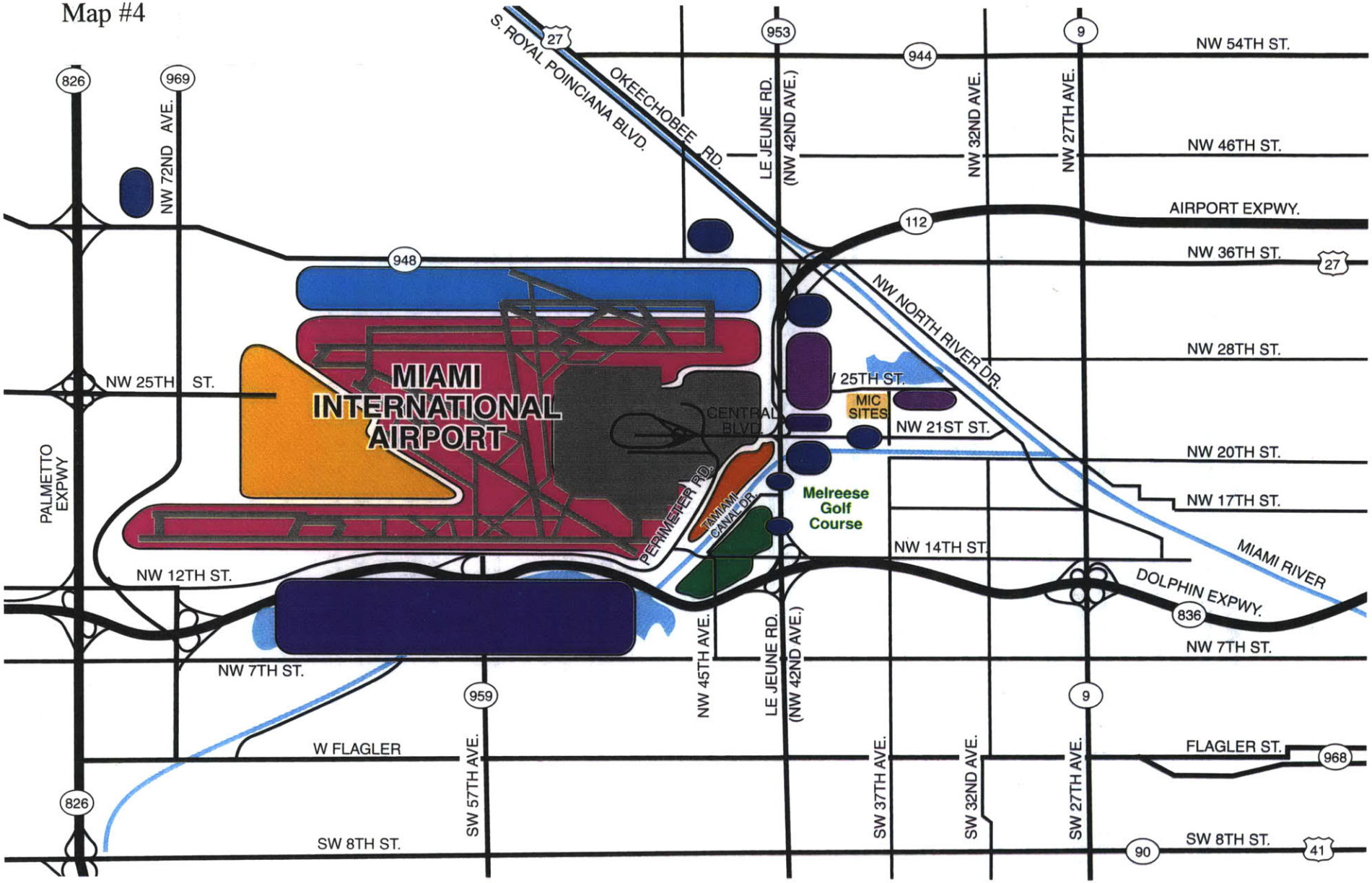
Today, Miami International Airport (MIA) is the sixth largest airport in the United States, ninth largest in the world, and number one in international cargo in the United States and a close number two in international passengers. To many small countries in the Caribbean, MIA is their sole lifeline, handling virtually all cargo and passenger transport. Even for larger markets, MIA is dominant, handling 83% of all cargo between the United States and South America. This is due to the fact that MIA is served by more airlines than any other in the hemisphere, with 70 combination passenger/cargo airlines that also transport freight in their cargo holds, 28 all-cargo carriers and 23 charter all-cargo carriers. **(See Map #4, Page 32)**

Current Condition

For years, Miami has feasted on its historic dominance over traffic between the United States and Latin America. That dominance became even more pronounced in the 1990s when Latin America's economies surged at the same time as American Airlines focused its massive resources on building a Latin American hub in Miami. Today, MIA has 70% of all service to South America, and 56% of all service to Central America. It is also South Florida's most important source of employment, with 30,000 workers on-site and 176,000 in related jobs.

About 33.3 million passengers traveled to Miami in 1995, approximately 10% more than in 1994. Passenger numbers are expected to continue to rise - with an estimated 35.5 million

Map #4



Not to Scale

LEGEND

- North Side
- Airfield
- West Side Cargo Area
- Terminal
- Fuel Tank Farm
- Employee Parking
- Employment Centers
- Hotels
- Off-Site Car Rentals

Miami Intermodal Center

MIAMI INTERNATIONAL AIRPORT AND VICINITY FUNCTIONAL AREAS

Source: ICF Kaiser, August 1994

passengers traveling through Miami this year. Nearly half of the travelers will be international. "The trends in passenger and cargo traffic are clearly continuing to exceed our projections," said Dade Aviation Director Gary Dellapa. "Growth has been phenomenal."[12] Passenger counts for MIA are noted in Table 4 below:

MIAMI INTERNATIONAL AIRPORT PASSENGERS[13]	
Year	Passengers
1980	20,506,760
1985	19,853,352
1990	25,837,445
1995	33,300,000
2000	40,250,000
2010	55,240,000
2015	62,640,000

Total air freight for 1996, is estimated at 1,830,000 tons - 9% more than last year. Of the total, 1,530,000 tons will be international freight.

As trade and tourism expands in the north-south direction, more points of entry will compete with MIA for the Latin trade, Houston, Atlanta, Los Angeles, and Orlando for example. There are fears that MIA will lose its dominance as Kennedy International lost its control of the European market. Most experts don't expect a similar meltdown in Miami, largely because many Latin Americans actually want to come to Miami, while many Miamian's travel to Latin America. Aviation consultant Bob Booth, who specializes in Latin America, said demand in the region is growing so fast that traffic will grow in both Miami and in competing cities. "No one is going to pull out of Miami - it's too important," he said. "The growth continues to be staggering: You can expect the total market to more than double from 16 million passengers in 1990 to 36 million in 2000. "What this means is that in spite of Miami International's $3.5 billion expansion program, the airport simply will not be able to handle all the demand," said Booth.[14]

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[12] "Airport's international cargo on upward flight." Miami Today. January 18, 1996.

[13] East-West Multimodal Corridor Study. Staff Recommendation Report. Florida Department of Transportation, U.S. Department of Transportation, Federal Highway Administration. Submitted by Parsons Brickerhoff Quade & Douglas, Inc. January 5, 1996.

[14] "Plane Envy: Other Airports want what Miami's has: the most routes, by far, to Latin America. Once again they're trying to take MIA's business. They can't do it - or can they?" Miami Herald, Business Monday. May 6, 1996.

Challenges and Growth

"The airport has no capacity problems for the next 25 years," said Dellapa. "We can grow indefinitely. Miami airport will begin to do what the large international airports already do. We will join the IATA slot coordination committee; we will work with the airlines on peak-hour pricing, load factors, and flow into the customs immigration facilities."

To accommodate this growth MIA has been on a building binge which naturally has raised the costs associated with operating out of Miami. The concern at other airlines related to Miami in the future is the ability to do business at the airport in a profitable way, and of not being shut out from doing so. It is important that Miami keeps that in perspective as it continues its growth in the next five to 10 years.

The airport is continuing with a $3.5 billion expansion, which has been revised to $4 billion, - almost $700 million in construction is ongoing now. Approximately $400 million will be spent this year on designs for future projects. "The expansion will allow the airport to handle 60 million passengers and 4 million tons of cargo," said DCAD Director Gary Dellapa. Once the program is complete the airport will have about 130 gates. "The difficulty here has always been as you build you have to operate an airport that is growing," he added.[15] Essentially the $4 billion expansion, for the next ten year period, is building a new airport on top of the existing.

The biggest development at MIA centers around American Airlines and the construction of a new $1 billion terminal for their use as a hub. Named the "Super A," this new terminal does live up to its name. Essentially it is the equivalent of building a whole new airport. The impact on the Airport and the community will be profound as American creates a mega hub for travel throughout the hemisphere. There are concerns raised by the other airlines because of money paid through their landing being used to pay for a new terminal for the competition who already happens to control 53% of the traffic at a key global airport. "Certainly, American is our number one carrier in terms of size and passenger load," Mr. Dellapa said. "Their growth is good for the airline and the community. It is also good for the airport. What happens to the rest of the airport hinges on what affects most of the other space in the terminal and how we utilize it."[16]

Retail Expansion

The retail plan for the airport was developed by Chicago based Unison Consulting and calls for doubling retail from 200,000 to 400,000 square feet, adding more brand-name retailers.

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[15] "Airport expands as it keeps pace with use." Miami Today. January 18, 1996.
[16] "Recommendation near on firm for airport study." Miami Today. March 23, 1995.

In recent years, leading edge airports such as Atlanta's Hartsfield, London's Heathrow and Pittsburgh International have moved toward corporate-owned, brand-name stores and restaurants, many of the same found in urban or suburban shopping malls.

Airport Strategic Plan

A long-term, strategic plan for the airport is being developed by Ricondo & Associates. The consultant is looking at the airport's options once the current capital program is finished. Originally, it was thought that the current capital program would get the airport through 2025. Mr. Dellapa thinks it will outgrow itself sooner than that. "The Ricondo plan will recommend how other general aviation facilities might be used when Miami International reaches capacity - and how the load should be divided."[17]

The following information is from the *Strategic Airport Terminal Planning Study* for MIA, by Ricondo & Associates, gives an overview of the condition at MIA, with data for existing conditions (1994), for planned improvements (2010), and the conceptual plan (2020) as noted in Table 5 below:

PLANIMETRIC DATA STRATEGIC AIRPORT TERMINAL PLANNING STUDY MIA 1996[18]			
Demand Data	Existing 1994	Master Plan 2010	Projected 2020
Passengers	30,835,734	55,240,000	70,150,000
International Passengers	13,574,294	28,650,000	37,814,000
Peak Hour Operations	113	142	142
Jet Gates	109	159	185
International Gates	49	89	88
Terminal Square Feet	3,512,142	6,258,600	8,768,750
Terminal Curbfront-Grade	1,530	2,195	2,698
Public Parking	6,328	8,500	14,030
Employee Parking	4,875	8,400	11,399

[17] "Airport expands as it keeps pace with use." Miami Today. January 18, 1996.

[18] Miami International Airport, Strategic Airport Terminal Planning Study, Project Status Briefing. Prepared by Ricondo & Associates, Inc., April, 1996.

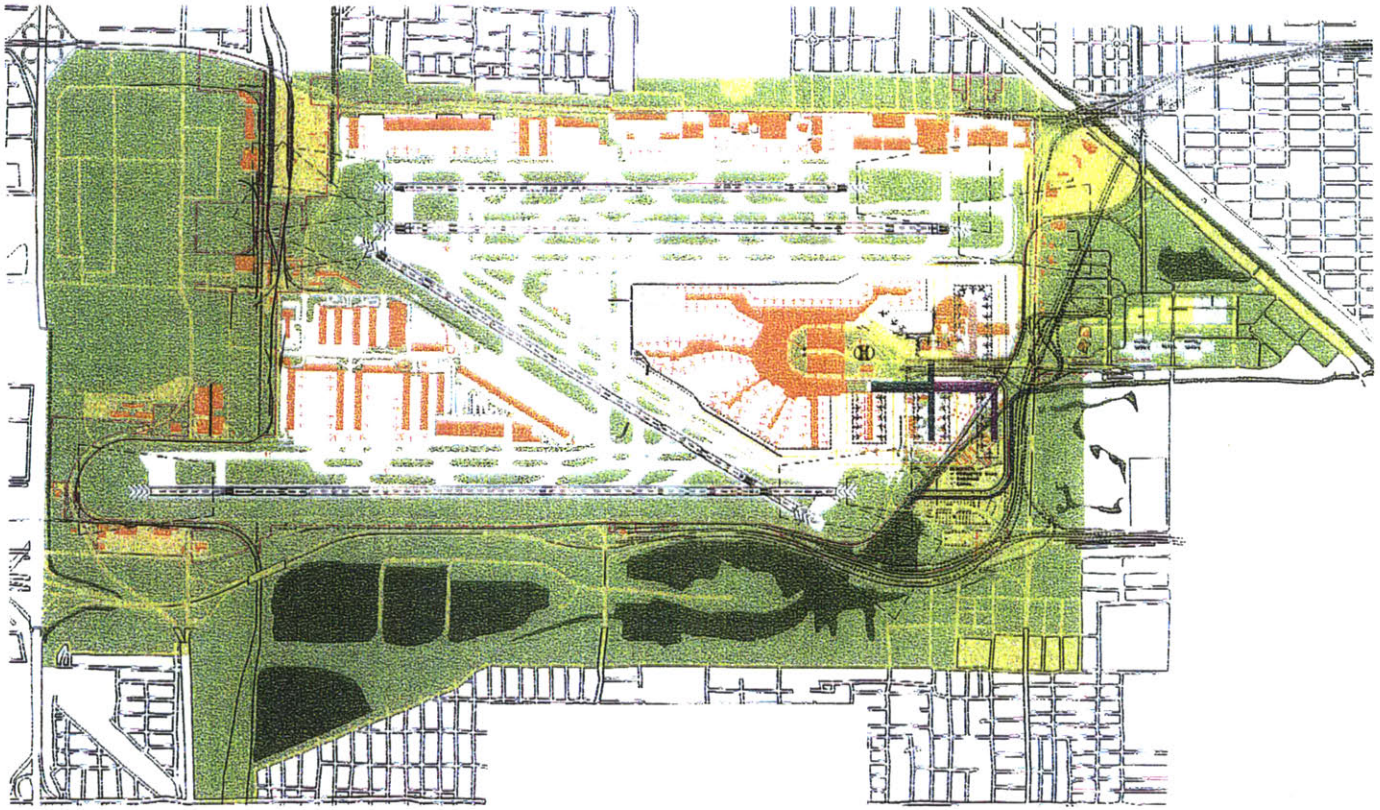
The key statistic, in Table 5, which limits expansion at MIA, more so than land or number of gates, is the peak hour operation number, which will max out at 142 landings and takeoffs per hour once the fourth runway is built.

The MIA Strategic Airport Master Plan is the plan which will take MIA beyond its current approved expansions. There are nine different Concepts which are being examined. Concept 1 provides for the lowest passenger counts, is the least expansive, and most attainable goal to achieve. Concept 1 is basically taking the current plan for the Airport for the year 2010, which is Concept 1A including the Super A terminal, and adding 15 more jet gates on the southeast corner of the terminal, this would be Concept 1B. **(See Plan #2, Page 37)** This would require removing most of the employee parking and placing it in the Triangle area adjacent to the MIC. The other eight Concepts have several items in common, they all increase the number of gates substantial and the number of passengers by a process of extending the terminal westward. To accomplish many of the schemes go to great lengths moving the diagonal runway and rebuilding the entire terminal with new satellite terminals connected by mile and half long underground transit systems. The most far fetched scheme is Concept 7 which achieves a total of 193 jet gates. **(See Plan #3, Page 38)** To reach this remarkable size the diagonal runway is moved and made into a fourth parallel runway, MIA would then have two sets of runways which are an all too close 1000 feet apart. The terminal would be strung along for a length of two miles. To achieve this behemoth, MIA would have to acquire all of the land west of the Airport towards SR 826 and move all of the existing, newly constructed cargo facilities in the center of the Airport. The area in question is currently built out with industrial warehouse space and a sizable office park including major offices for John Alden Life Insurance Company. A summary of the concepts under consideration at MIA are noted in Table 6 below:

SUMMARY OF CONCEPTS UNDER CONSIDERATION[19]			
Concept	Estimated Cost	Land Acquired	Jet Gates
1	$2,100,000,000	0	157
7	$5,400,000,000	775	193
8	$4,200,000,000	775	178
9	$3,200,000,000	388	172

[19] Ibid.

Plan #2



Concept 1
Implementation

Phase	Total Number of Gates
1A-Phase 1	127
1A-Phase 2	142
1B-Phase 1	150
1B-Phase 2	157

Base Source : Dade Aviation Consultants, July 1995
Source : Ricondo & Associates, Inc.
Prepared By : Ricondo & Associates, Inc. April 5, 1996

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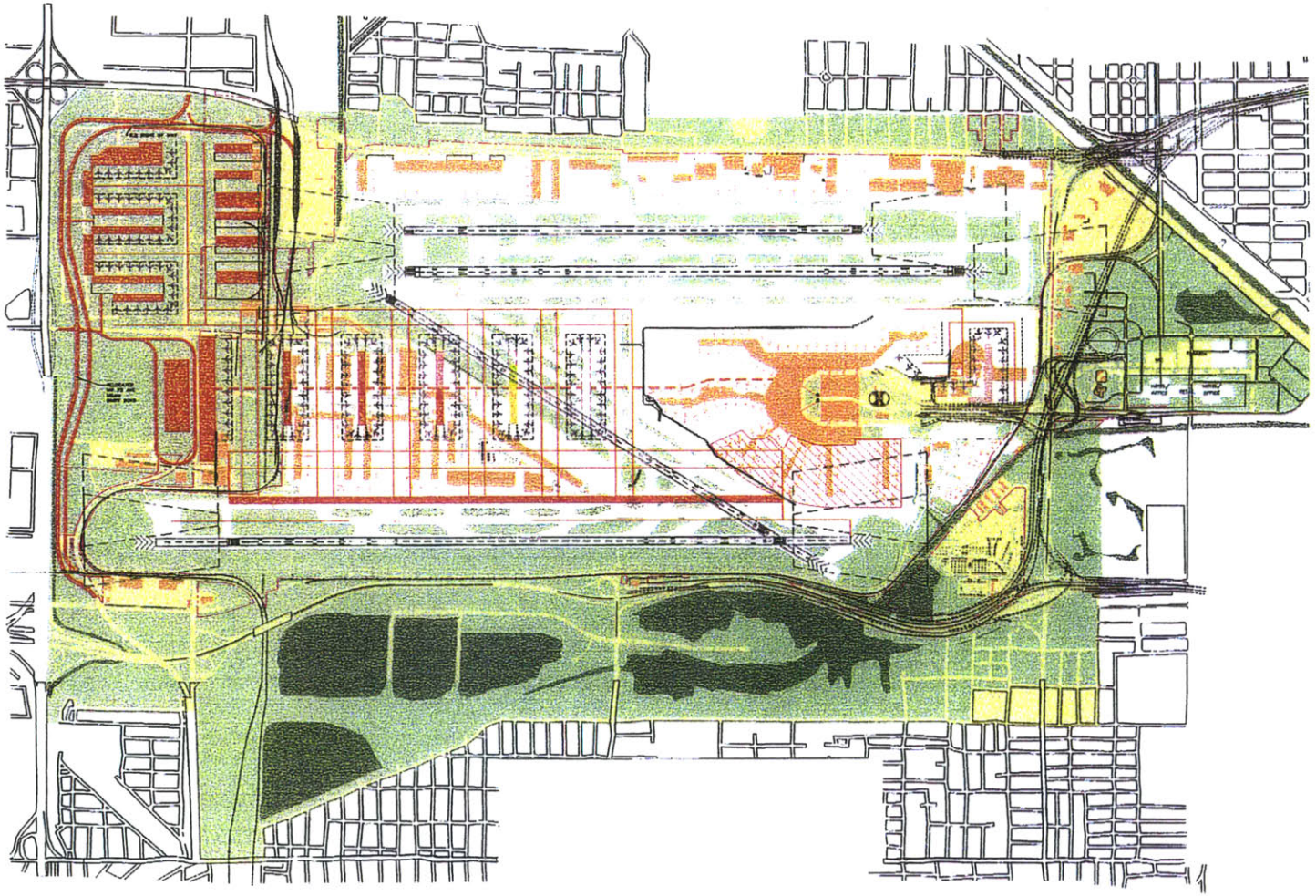
north

Plan #3



Concept 7
Implementation

Phase	Total Number of Gates
1A-Phase 1	127
1A-Phase 2	142
7A	168
7B	177
7C	189
7D	193

Base Source : Dade Aviation Consultants, July 1995
Source : Ricondo & Associates, Inc.
Prepared By : Ricondo & Associates, Inc. April 5, 1996

NOT TO SCALE
IV-65.dwg

north

All costs are exclusive of the Current Improvement Plan (CIP), which is already underway and takes the Airport to 121 jet gates.

Only Concept 1 can be accomplished without major land acquisition to the west and at costs that are reasonable given passenger projections. To achieve the other scenarios would require MIA to become the equivalent of O'Hare or Hartsfield within the next 15 years at a tremendous cost. At a certain point the additional benefits of extra gates is outweighed by the exorbitant cost to squeeze them into a tight site. The difference between Concept 1 and Concept 7 is $3.3 billion, for an extra 36 gates. At that cost, the point is reached when the alternative of building a second airport should be investigated. Denver International Airport was constructed at over $4 billion and encompasses over 34,000 acres. Efficient, large hubs, with state of the art operations are requiring more land than MIAs 3200 acres can provide. This makes the MIC even more important for continued operations at MIA. The Airport has reached a point in which further expansion can only occur if certain functions are pushed off the immediate terminal area. Even to accommodate the minimal expansions of Concept 1B, which have a capacity of 60 million passengers per year, will mean that hundreds of thousands of square feet of airport space and thousands of parking spaces will have to be placed at the MIC.

Given the cost of expanding MIA pass the Concept 1B stage, DCAD should begin preparing for the eventuality of a second large airport to service the region. Broward and Palm Beach County's cannot build a new regional airport. Neither County has the land, political power or the need given the condition of their present airports. Also neither of their airports has the capacity to compete with MIA in service since both Ft. Lauderdale and Palm Beach International Airports are in the middle of urban areas with even smaller land areas than MIA. This leaves Dade County with the task of building a new airport. There are only two sites for it, the far northwest corner of the urban area of the County on the Turnpike and the Broward County line, the second site being the former Homestead Air Force Base. The northwest site covers a vast empty tract of land that has highway access and is between the population centers, albeit far west, of Miami and Ft. Lauderdale. The problems are that it is comprised of wetlands and borders more sensitive wetlands which are part of the Everglades ecosystem, there is no rail service, and the area is fast being engulfed by suburban housing development from Miami and Ft. Lauderdale. Homestead, while on the dead-end of the South Florida metro area, 25 miles south of Miami, offers the advantage that it is already a working airport, is comprised of a large land area with adjacent land nearby that is easy to assemble, there is highway, rail and possible Metrorail access. There is also the added benefit of having deep water port access on site and

little nearby residential activity. The big plus is that Homestead is already under control of DCAD and the Metro. DCAD should push for the eventual two airport system, utilizing MIA for more destination and origination international flights and costlier domestic service. The Homestead Airport would assume more of a hub status for changing flights, low cost domestic service, and the majority of freight and maintenance operations utilizing the large amount of inexpensive land in Homestead, the rail and possible port facilities at Homestead. The purpose of the MIC would be to allow MIA to continue to expand and reach the 60 million passenger mark. But also the MIC could then serve as the transfer point from MIA and Miami, with train service to Homestead, using the example of the Gatwick Express trains from London's Victoria Station to London's Gatwick Airport.

MIA at the MIC

The MIC conceptual program currently includes a total of 167,640 sq m (550,000 sq ft) of MIA landside terminal functions, along with 3,000 long term and 300 employee parking spaces to be located at the MIC by 2020. DCAD is currently conducting a long-term strategic airport planning study intended to identify options for future terminal expansion. Some of these options may include additional MIA terminal functions located at the MIC prior to 2020.

Study options range from having the MIC provide a supporting role, contain a limited quantity of airport landside functions (as currently planned), to locating all or most airport landside functions at the MIC and leave the existing terminal area west of Le Jeune Road with airside functions only. It is likely that at the completion of the strategic study, the ultimate relationship between MIA and the MIC will fall somewhere in between these options.

V. THE PORT OF MIAMI

Located 5 miles to the east of the MIC and MIA, the Port of Miami has a say in the outcome of the MIC. It is felt that the MIC will facilitate easy transfer of cruise passengers from the Airport to the Seaport by use of a dedicated non-stop service called the Airport-Seaport Connector. As the Port expands, the thought is to organize transfers of passengers to the Port by rail and relieve the single roadway into the Port of all the cruise ship buses which would allow cargo traffic to proceed more smoothly. It is also being proposed that the High Speed Rail also enter the Port after a stop at the MIC.

Cruise Port

The Port of Miami is the largest cruise port in the World. Its largest competitor is Port Everglades, 27 miles to the north. The Port of Miami is acutely aware of maintaining a critical link to MIA. Port Everglades is only one mile from Ft. Lauderdale International Airport whereas the Port of Miami is 5 miles away from MIA. The ease of getting passengers from plane to ship is critical since they are in Miami for the connection, with many passengers not even setting foot in Miami. The pressure to expand the Port's capacity and provide access is heightened due to the fact that 5 of the 6 largest cruise ship companies in the World are based in Miami.

"In South Florida, both Port of Miami and Port Everglades in Broward County - ranked the No. 1 and No. 2 among the busiest cruise ports in the world - will maintain their solid positions," said Mr. Rankow, President of the South Florida chapter of the American Society of Travel Agents. "I think both have the prospect of continued good growth to maintain their solid position in 1996," he said. "That's good not only for the cruise industry but for the travel industry as a whole because these passengers also fill up airplanes and hotel rooms. The effect to the local economy could only be good."[20]

In 1996, passengers taking cruises from the Port of Miami could increase by 7%-8%, according to Port of Miami Director Carmen Lunetta. About 3.3 million passenger transactions will take place at Miami's seaport this year and will account for about a $7 billion impact on South Florida's economy. Passenger counts for the Port of Miami are noted in Table 7 below:

PORT OF MIAMI PASSENGERS[21]	
Year	Passengers
1980	1,546,230
1985	2,326,685
1990	2,734,816
1995	3,116,718
2000	5,567,000
2010	8,067,000
2015	9,067,000

[20] "Voyages may not be smooth for lines in cruise competition." Miami Today. January 18, 1996.
[21] East-West Multimodal Corridor Study. Staff Recommendation Report. Florida Department of Transportation, U.S. Department of Transportation, Federal Highway Administration. Submitted by Parsons Brickerhoff Quade & Douglas, Inc. January 5, 1996.

As evident in the Table 7 before, the Port of Miami has experienced tremendous growth in the past and is projecting even greater growth in the future. The Port is counting on continued growth in the cruise ship industry, especially when travel to Cuba opens up to American travelers. To accomplish this growth the Port must do two things; expand cruise ship berths, and provide ease of transfer between the Airport and the Seaport.

Maritime Park

The Port of Miami is on Lummus Island, an artificial island created in 1960 from a string of spoil islands, which were created when Government Cut was dredged to create a port. The Port has little room to expand except onto the mainland and that is Downtown Miami. The Port is planning to expand into Bicentennial Park in Miami, site of the original Port of Miami, and currently a fenced off underutilized field.

Projects such as the expansion into Maritime Park and the Airport-Seaport Connector are needed in anticipation of tremendous expansion by the cruise ship industry in Miami. In the next few years numerous ships of ever larger size are expected to start service out of Miami. An example of the scale is the 101,000 ton, 3,400 passenger Carnival Destiny which is set to debut November 10, setting sail from Miami. The ship, nearly three football fields in length, cost $400 million to construct. In addition, Disney's two new giant cruise ships are slated to come on line in the next year. Miami is in an excellent position to gain their port business.

Cargo Port and the Port of Miami River

The main issue with the cargo port, relating to the MIC, is that cruise ship passengers will begin to compete with cargo transport at the Port as passenger counts increase. The development of the MIC is crucial to the success of the port and maximization of limited space.

It is a seldom addressed that the Miami River is a thriving and successful cargo port. From the mouth of the Miami River, between Downtown and Brickell, the River winds northwest for five miles to the Airport and the Triangle. Small, shallow draft ocean going vessels use the Miami River as far inland as the Triangle. This is an important issue since areas near the MIC are working waterfronts that are feeling pressure as plans to redevelop the area around the MIC are circulated. While not the most attractive waterfronts the ship yards and docks are vital to the Port of Miami as the main Port on Lummus Island crowds out the small ships to make room for the large container vessels. The Miami River is important to many of the poorer outposts in the Caribbean Basin, such as Belize, Haiti and Nicaragua, for the majority of their trade.

VI. INFRASTRUCTURE COMPONENTS

In addition to complementing the Airport and the Seaport, there are a wide variety of infrastructure components which are planned, or thought of as compatible, for the MIC. There are seven different rail lines that are proposed for the MIC. They are, Metrorail East-West Corridor, Metrorail Earlington Heights Spur/North Corridor, Airport-Seaport Connector, MIC/MIA Connector, High Speed Rail, Tri-rail, and Amtrak. Other transportation components at the MIC are Metrobus, intercity bus companies, rental cars agencies, and taxis. It is also planned to be serviced by the SR 112/SR 836 Interconnector. Lest it be forgotten, there is also a private group that wants to build a private toll-road to the Airport.**(See Plan #4, Page 44)**

Metrorail East-West Corridor

The East-West Corridor has been one of the long term expansions planned for Metrorail. The initial plan was to go down Flagler Street from Government Center Downtown westward with a spur to the Airport. The latest scheme, devised by FDOT, was to formulate a complete transportation corridor. **(See Map #5, Page 45)** The plan is to increase SR 836 to 10 lanes, including a High Occupancy Vehicle (HOV) lane. Along with the roadway improvements the East-West Metrorail line was thrown in. Strange bedfellows, but after a decade of trying to get a second rail line built in Miami, it takes the state highway agency to implement the project.

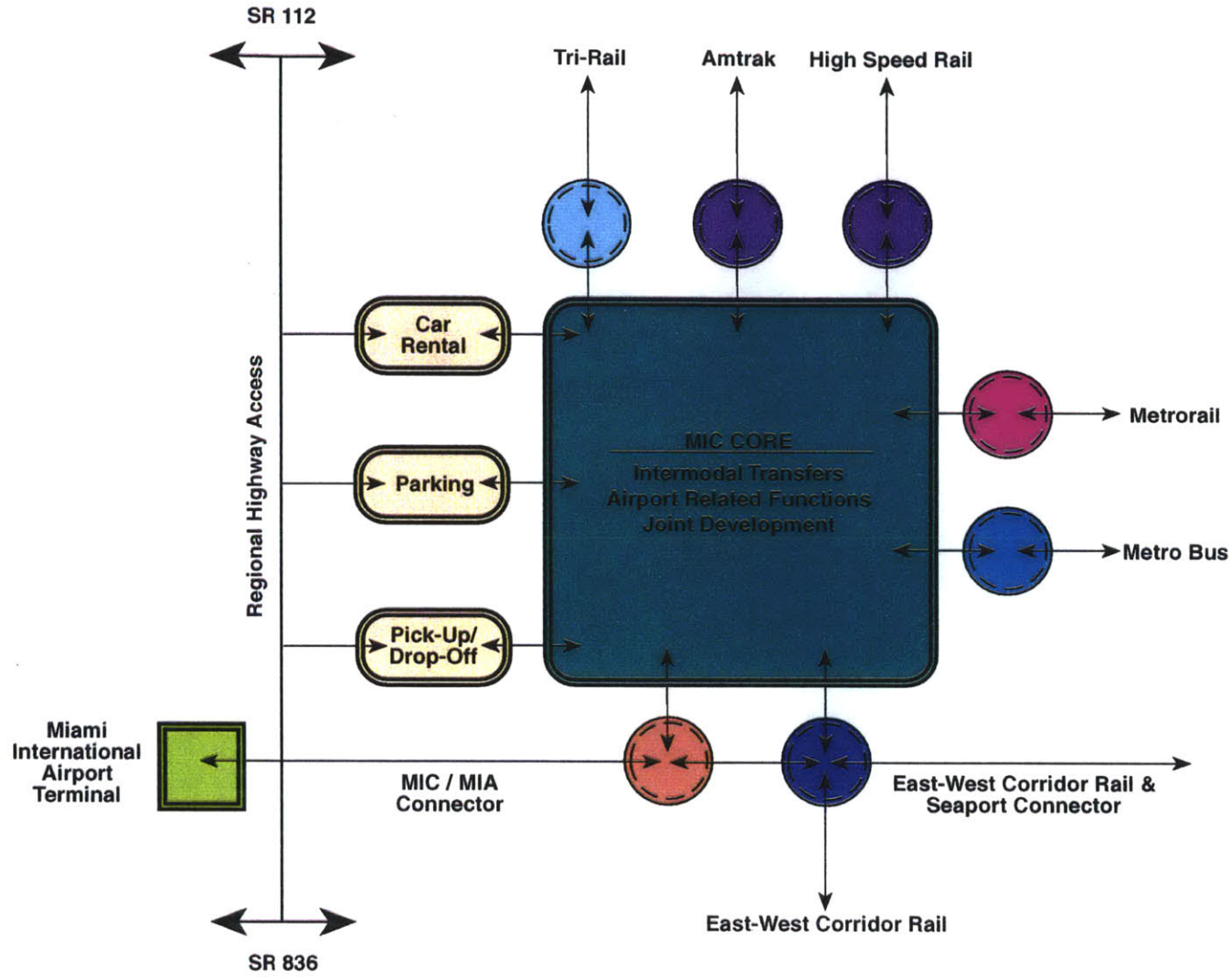
The Metrorail line is planned to start at Florida International University (FIU) and then proceed along east along the 836 to the Airport. At MIA it would connect with other rail transit before heading to Downtown Miami. The plan was to then continue on to Miami Beach as a light rail system that could run in the streets of the Art Deco Historic District in South Beach.

The current status has the project in phases, reflecting problems involving financing and community pressures. The portion of the corridor from FIU to the Airport is now a second phase for a future date. The Miami Beach leg of the project has been taken off the agenda completely because of difficulties in accommodating the line in the narrow streets of South Beach. The first leg of the project has also run into problems, with community groups in Miami's Overtown neighborhood protesting another transportation project coming through their neighborhood.

Metrorail Earlington Heights Spur/North Corridor

The existing Metrorail line comes within two miles of MIA, with Earlington Heights being the nearest station. Metro-Dade Transit is planning an extension of Metrorail northward to

Plan #4

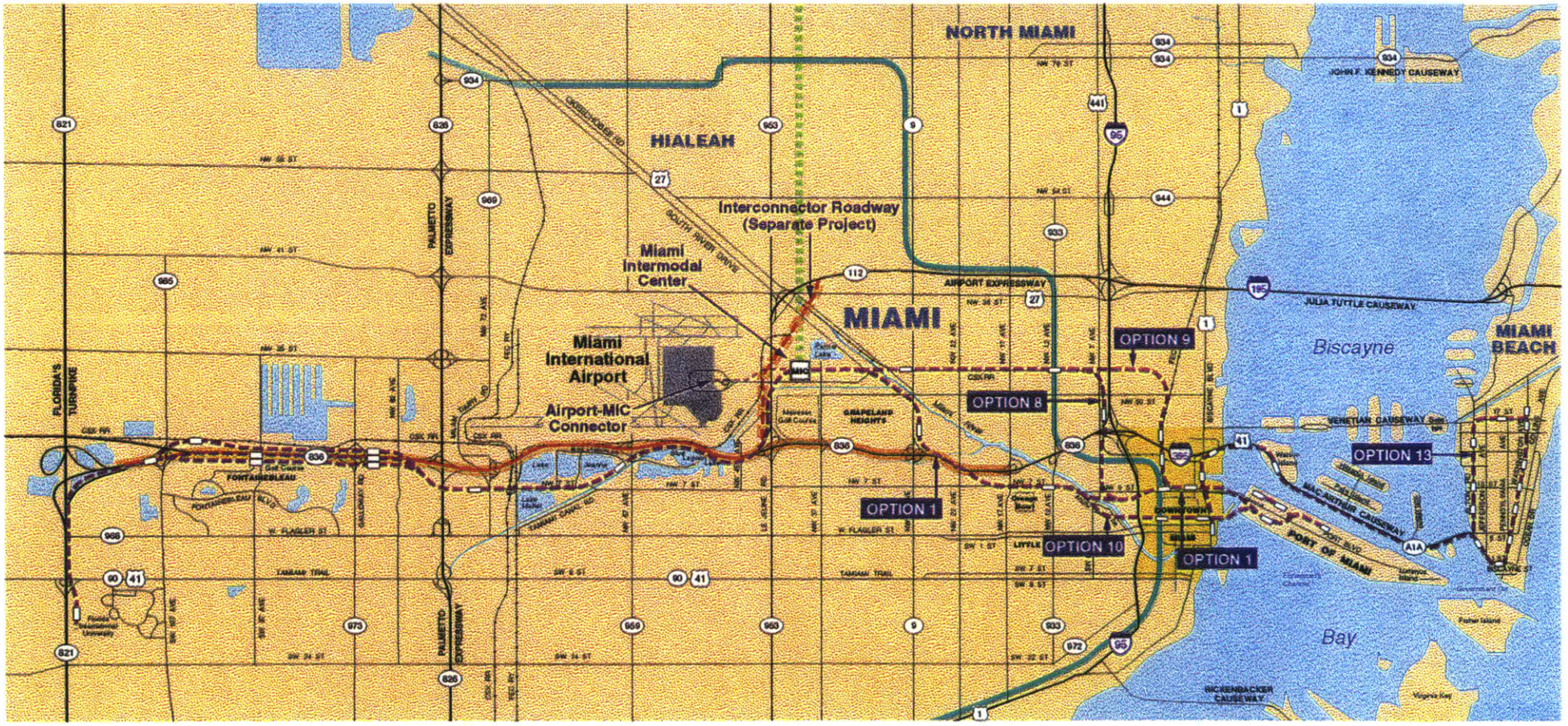


CONCEPT DIAGRAM

Source: ICF Kaiser, January 1995

Map #5

East - West Multimodal Corridor Study



LEGEND

- Miami Central Business District
- Metrorail
- Tri-Rail
- Miami Metromover
- Highway Improvements
- HOV Lanes
- Transit Alignment Options and Stations

} Alternative 6C Options

SR 836 MULTIMODAL ALTERNATIVE
ALL OPTIONS

SCALE 0 .8 1.6km
0 .5 1mile

Joe Robbie Stadium and the Broward County line. There is the possibility of doing a short spur line as part of the North Corridor line from the Earlington Heights to the MIC. This would bring in passengers from North Dade and Broward and could tie in easily to Downtown and the rest of the system. This is a positive development because it offers the possibility of bringing Metrorail to the MIC in a much faster time frame and at a lower cost than building an entire new line from scratch. **(See Map #6, Page 47)**

Airport-Seaport Connector

The Airport-Seaport Connector is meant to use the same guideway as the East-West Metrorail with separate platforms. The idea is to offer non-stop service from MIA through the MIC to the Seaport without cruise ship passengers having to set foot in Miami. There are still major conceptual issues to be worked out with this scheme concerning whether the service is from MIA, MIA with a stop at the MIC, or from the MIC itself. There is also the question of the expense for a separate system and platforms for what essentially is a four day a week crunch.

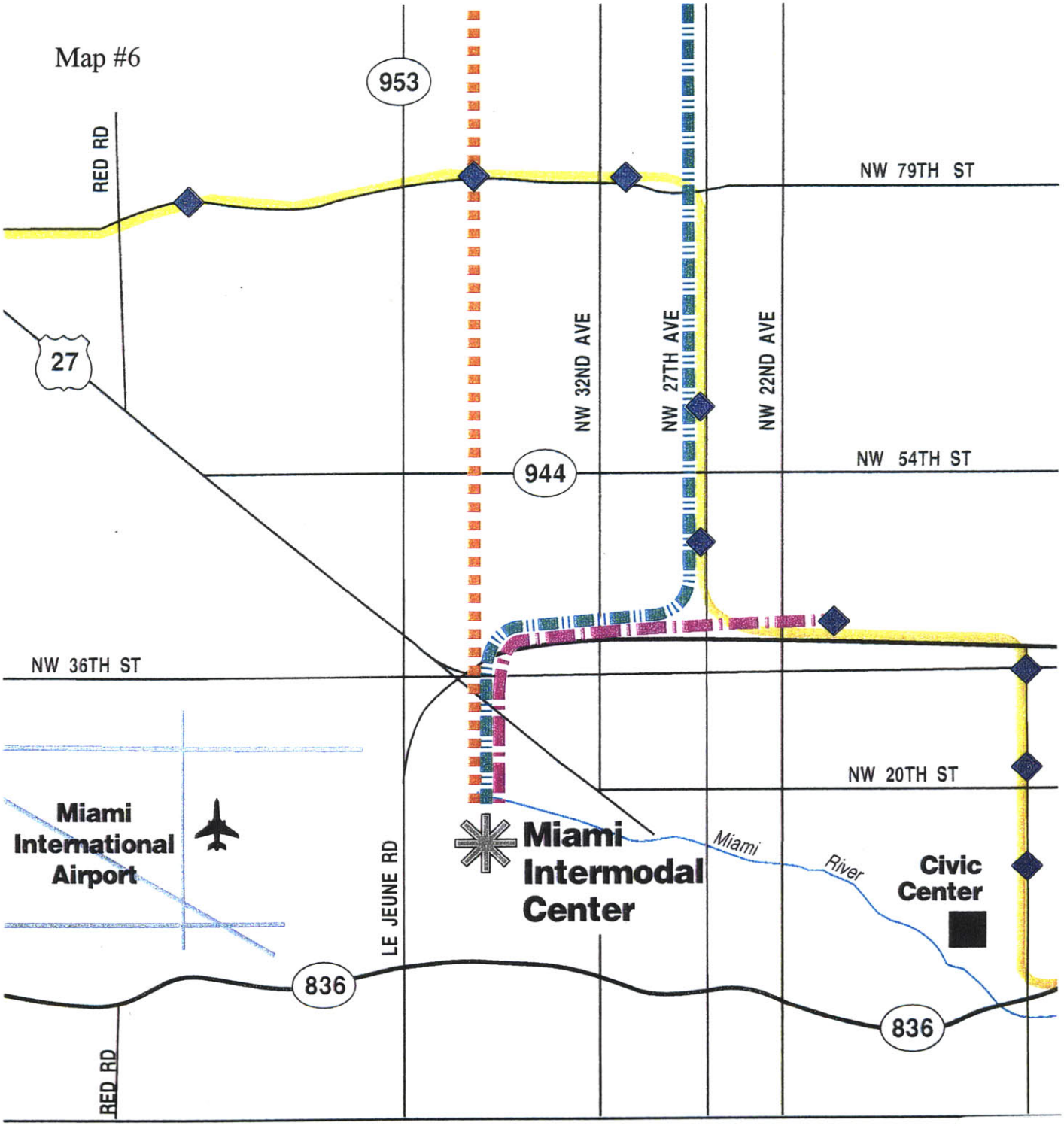
MIC-MIA Connector

To make the MIC work it has to work efficiently and seamlessly with MIA. To achieve this, passengers have to be able to transfer with ease from plane to the MIC without inconvenience or even change in atmosphere. The MIC-MIA Connector is the transit system which will transport between the Airport terminal and the MIC. The MIS/DEIS analysis ran three alternatives, one below grade, one at grade and the third above grade. With the current MIA access, the only solution is the above grade system. The capital cost for an elevated alignment and station would be nearly half the cost of the below grade option. An elevated station at MIA would offer direct access to the MIA passenger terminal Skywalk system. The direct pedestrian access would enhance the safety and comfort of MIC/MIA Connector patrons traveling between the station and the MIA terminal. An elevated structure would also have minimal impact the road system and would free the ground for circulation, the at grade system would destroy ground transit. Guideway structural supports could be positioned so that access to the parking garage complex from Central Boulevard could be maintained.

High Speed Rail

High speed rail policy initiatives in Western Europe and Asia have revitalized passenger railroads as both a competitive mode of transportation and as a manufacturing sector able to

Map #6



Brownsville Station Metrorail Connection

South Florida Rail Corridor Metrorail Connection

Earlington Heights Shuttle Connection

Metrorail

Existing Metrorail Stations

ACCESS TO THE MIAMI INTERMODAL CENTER

0 - 1.6 kms

0 - 1 mile

Parsons Brinckerhoff Quade & Douglas, Inc.
Bermello, Ajamil & Partners, Inc.
KPMG Peat Marwick
The Gothard Group
B. Mumford & Company

METRO-DADE TRANSIT

NORTH CORRIDOR ALTERNATIVES ANALYSIS

produce industrial jobs and exports of equipment expertise. It has been stated that strong policy networks were essential in formulating and implementing the policies that led to European successes with the TGV in France, and the Inter City Express (ICE) and Transrapid maglev in Germany.[22] "It is clear that the United States does not have the institutional and financial mechanisms to evaluate HSR alternatives within the context of a national transportation system...there is no mechanism for introducing a new mode based on their savings achieved by reducing the need for future capacity expansion in other modes...nor is there an institution with the responsibility for making critical assessments of these intermodals tradeoffs."[23] This is indicative of the government subsidy preference toward automobile travel. The artificially low cost of fuel, the low taxes given the environmental costs, the lack of congestion policy and the political fear to force any bearing of costs or responsibility on the public, hinders the United States move toward HSR. Political fear dictates policy that should better regulate the costs incurred by wasteful practices.

Florida Overland eXpress (FOX)

In 1991, FDOT began a process to accept proposals from the private sector in an effort to implement high speed rail (HSR) from Tampa to Orlando to Miami. The process was designed to develop a partnership between government and the private business community.

In 1995, FDOT formally issued a Request for Proposals (RFP) to solicit technically feasible and financially sound plans from private entities to bring the vision of HSR to fruition in Florida. The State has set a limit of $70 million a year to the HSR franchise. From the outset the State will own the entire system except for the rail cars, which will be purchased and owned by private investors. At the end of the 40 year franchise period, the State of Florida will own a debt-free and revenue producing system that will be worth several billion dollars.

FDOT awarded the franchise for HSR in February, 1996 to a group named Florida Overland eXpress (FOX). Orlando-based Fox is a consortium of four companies: Fluor Daniel, Odebrecht Contractors of Florida, Bombardier, GEC Alsthom, and SCNF, the French National Railway. Construction costs, including stations, are estimated at about $4.8 billion. The 320 mile system will utilize Train Grande Vitesse (TGV) technology trains to achieve speeds of 220 mph and make the Miami to Orlando trip in 1 hour, 25 minutes.[24]

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[22] "Building the Political Infrastructure for High Speed Rail in North America." Transportation Quarterly. Winter 1996.

[23] National Research Council, 1991: v, 3.

[24] "Florida Selects High Speed Rail Franchisee." The Urban Transportation Monitor, March 15, 1996.

The plan is to build a HSR to help alleviate road congestion and shuttle tourists quickly between the States tourists attractions and the largest metropolitan areas and their airports. Tourist attractions such as Walt Disney World (WDW) are very interested in the HSR project because it allows them to tap into the international tourist at the source, MIA and transport them to the theme park in an hour and a half. That is faster then if one were to fly to Orlando and then drive to WDW and it keeps the tourists from renting automobiles helping to keep them on the WDW property. The Disney Company is also currently building two huge new cruise ships in Italy and needs a place to park them. Disney would like to have their own train to take them directly to the Port. The competition is between Tampa and Miami, both on the proposed HSR system. Miami has the edge because it is closer to the tropics and the islands and of course to Cuba. To emphasize how real the HSR plan is, Disney has the route marked out on its maps of the WDW property in Orlando.

Although FDOT considered the FOX proposal the best, it is also the most controversial of five proposals received because of environmental issues. The proposed route would be located along the edge of the Everglades, far from the coastal cities further exasperating urban sprawl. The FOX team would bring HSR to MIA and the MIC from the west, following the SR 836 alignment to a location in the vicinity of Le Jeune Road. Given the engineering constraints of the proposed HSR alignment, such as the Critical Area Approach-Departure Surface for MIA Runway 12/30, the proposed East-West Corridor rail, and the proposed SR 836/SR 112 Interconnector and Le Jeune Road interchange, considerable coordination with the HSR design team will be required throughout the planning process.

It is difficult to say how this proposal will be approved by the public, or the airline industry. It was stated by DCAD staff that the HSR was directly in competition with the airlines. There are two schools of thought on this matter. First, the European example where HSR cuts heavily into air traffic was the development of the Chunnel. When the Channel Tunnel (Chunnel) opened between Folkstone and Calais, there was a 40% drop in air traffic between London and Paris. This hurt small regional airlines, which are few and state run in Europe. The large global airlines do not care because they would prefer to use their planes and expensive gates for long-haul international flights. The airports and government feel the same way, reduce the short-haul flights add more long-haul flights which bring in tourist and business. The reduction of shuttle flight service has the overall affect of slowing pressure on airports to expand. In Germany, Lufthansa runs it's own trains from different Cities to airport, becoming a transportation provider, not just an airline. This was done in a time of State ownership of both

the airline and the railroad. The second, and opposite view point, comes from the United States. When Texas proposed a HSR system in the early 90's, the proposal ran into heavy opposition, and a lawsuit, from Southwest Airline, the low cost leader between major Texas Cities, which saw HSR as government supported competition. Texas dropped the HSR program in August 1994. There is a positive sign in the Florida HSR proposal, Delta Airlines, which uses Orlando International Airport (a planned FOX station) as one of its hubs, has joined in partnership with the Fox consortium.[25]

Tri-Rail

Tri-rail is the Tri County Commuter rail system that is funded by Dade, Broward and Palm Beach Counties. The system runs for a length 67 miles from the Miami Airport station to Downtown West Palm Beach. Over 11,000 passengers per day ride Tri-rail on 14 trains in each direction. The main reason ridership is not higher is because Tri-rail runs on the single track South Florida rail corridor causing delays in the system and longer than normal travel times. The 67 mile trip is scheduled for a duration of over 1 hour and 30 minutes. What is encouraging about Tri-rail is that it runs on the South Florida rail corridor along the I-95, which runs through the old population centers of Cities along the coast. Also, what is unique about Tri-rail, is that it serves all three passenger airports in South Florida, Miami International, Ft. Lauderdale International and Palm Beach International. Improvements to the system and the construction of a second line to speed up service are underway. Hopefully that will be enough to quiet calls for subsidy cuts to Tri-rail. Another project underway is the extension of the system 1.5 miles south from its current Miami Airport station to a new station at the entrance of MIA on N.W. 21st, the site of the proposed MIC.[26] This is the beginning of the MIC.

Amtrak

Amtrak currently has its station north of N.W. 79th Street along the South Florida rail corridor. Service is minimal with only two trains departing north from Amtrak's southernmost terminus. Since Amtrak utilizes the same tracks as Tri-rail, it too can be brought down to the future site of the MIC, and use the new Tri-rail station in the interim. Plans are underway to do this as a phase 2 to the new Tri-rail station.

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[25] "Delta Airlines Announces Rapid Rail Partnership." Urban Transport News. November 8, 1995.
[26] Miami Airport Station Master Plan. Tri-County Commuter Rail Authority. Prepared by Bermello, Ajamil & Partners, Inc. January 23, 1995.

SR 836/SR 112 Interconnector

Since the East-West Corridor project also has a highway component, there is a plan to connect two parallel expressways with an "Interconnector." The SR 112 (Airport Expressway) and SR 836 (Dolphin Expressway and East-West Expressway) are the only east-west limited access highways in the County. Both start in Miami Beach, cross Biscayne Bay over scenic Causeways and then flank to approaches to the Airport on the north and south. The SR 112 ends as an expressway when it reaches Le Jeune Road, at MIA, and becomes N.W. 36th Street. The plan is to continue SR 112 southward to SR 836 following roughly the path of Le Jeune Road. There would be a huge interchange at Central Boulevard (N.W. 21st Street) the entrance to MIA and the main access point to the MIC and the entire Triangle area. There are four major problems with the SR 836/SR 112 Interconnector portion of the project, they are:

1. An elevated highway, and a huge interchange, cuts off the MIC from MIA. This makes expansion of some landside operations to the MIC from the main terminal difficult. It makes the concept of the MIC and the Triangle as part of an expanded MIA a tougher sell.
2. An elevated Expressway cannot follow Le Jeune Road because of height restrictions under the flight path of the north runway. A lower elevation of the SR 836/SR 112 Interconnector would conflict with the operation of the CSX railroad west of Le Jeune Road and may preclude relocation of the track underneath the Interconnector. Currently the CSX line has one use, the transport of shell rock from a quarry in West Dade. Each day six trains cross Le Jeune Road halting all surface traffic. The trains could be diverted to the FEC tracks which circle to Airport to the west. Either CSX could gain access to the FEC tracks or a parallel track could be built. Either alternative would be less expensive, for if the track cannot be moved than an elevated highway is the only alternative. To solve the height problem, the Interconnector has to cut across the northern piece of the Triangle. In the MIS/DEIS analysis three alternatives were looked at. "The evaluation of these three options shows the option chosen was most compatible with MIA approach surfaces, and would present no impacts to properties relative to FHWA regulations and criteria."[27] Using highway regulations as the criteria is not the appropriate way to develop an area. The problem is that large amounts of land that could be used for MIC related development are taken of the market. Also the highly visible intersection of Le Jeune Road and N.W. 36th Street would be cut off from the rest of the Triangle.

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[27] Miami Intermodal Center, Major Investment Study/Draft Environmental Impact Statement. Summary. Florida Department of Transportation U.S. Department of Transportation, Federal Highway Administration. December 18, 1995.

3. Taking SR 112 traffic and then placing it on SR 836, an even more congested highway. The original intent of the entire East-West Corridor program was to alleviate congestion on SR 836. Adding traffic from another expressway is hardly the solution.

4. The amount in the overall budget that the Interconnector would consume. The largest component of the project build package is the SR 836/SR 112 Interconnector, representing about one-third of the total project cost. In comparison the MIC Core and its associated road system represent about one fourth of the MIC capital investment. To spend money on a roadway that goes nowhere and connects one crowded highway to another crowded highway, is the wrong way to build an intermodal center.

Private Toll Road

Currently a dead project, there had until recently been a proposal for a private toll road, called the Sunpike. It was to follow along the South Florida rail corridor (Amtrak and Tri-rail) northward from MIA and the MIC to the Golden Glades interchange, meeting with the Florida Turnpike, I-95, US 441, and SR 826. The Sunpike was met with heavy opposition from neighborhood groups in Opa Locka, where the highway would have split the town in two.

VII. COMMERCIAL COMPONENTS

More than the "Grand Central Station" for Miami, as originally envisioned, the MIC has taken on a variety of commercial components and has the ability of spinning off more development to adjacent parcels.

Airport Landside Functions

Numerous Airport landside functions can be placed at the MIC. The MIC offers MIA the option of relieving pressure at the main terminal. If the MIC-MIA Connector is planned well, the MIC could be used as an alternate terminal site. A majority of the MIC project components will be funded from revenue sources available to MIA. The MIA-related elements include:

- The MIC/MIA Connector,
- 51,100 sq m (550,000 sq ft) of terminal expansions,
- 3,000 long-term perking spaces and
- Service and baggage tunnel.

At this time, MIA has an authorized capital program of approximately $1.3 billion that is anticipated to be completed by 2005. An additional $2.3 billion of construction projects are under consideration.

Rental Car Facilities

The rental car situation at MIA is problematic at best. There is currently a two tier system in terms of company service. There are seven large companies, Alamo, Avis, Budget, Hertz, National, Thrifty and Value, which are permitted to circle to lower level arrivals driveway at MIA to pick up passengers. The rental company minibuses and vans comprise 30% of the traffic at the MIA terminal. Many times the minibuses circle empty, serving only as billboards for the companies. The smaller agencies are too numerous to count and are on their own. They cannot access the airport in company vehicles. Of the seven large companies, six are already located in the Triangle, only National is located outside the Triangle. The rental car agencies are strewn throughout the entire Triangle area. Surface parking lots at the entrance of a huge airport makes for a terrible waste of the real estate asset as well as an eyesore and convenient way to lose tourists, literally.

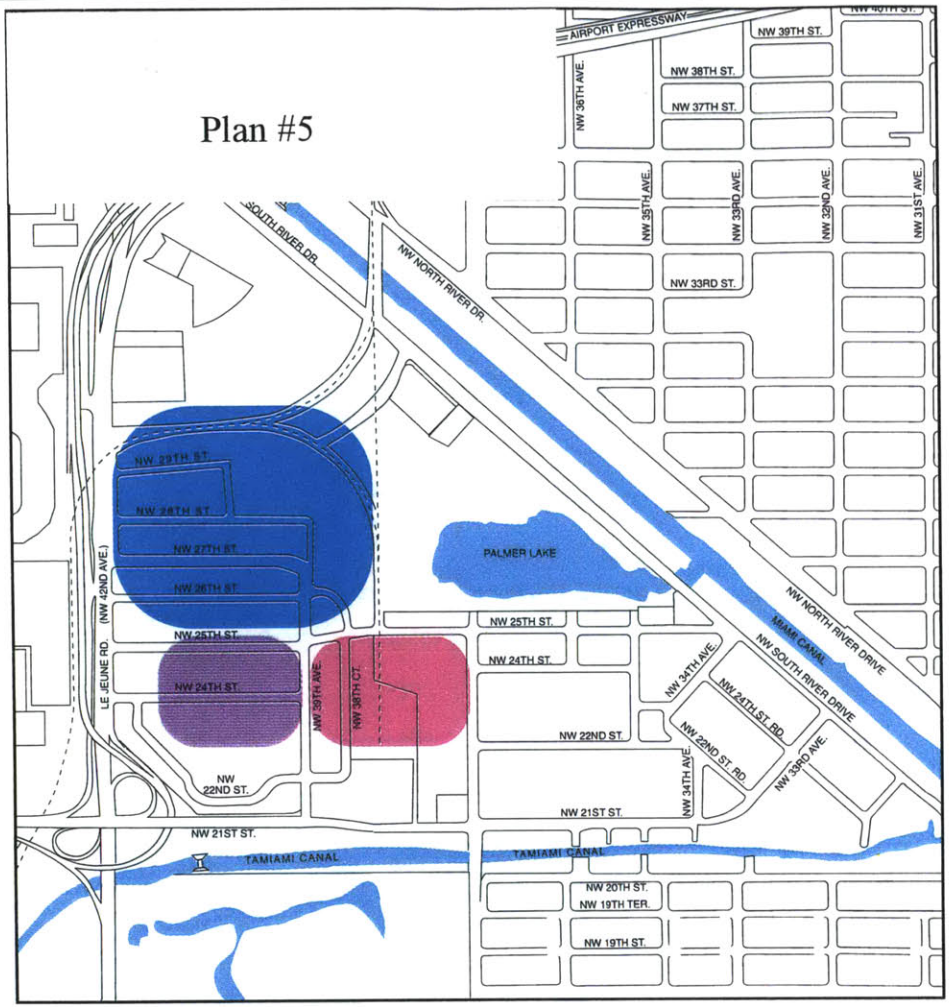
There are two scenarios for consolidating rental car agencies. **(See Plan #5, Page 54)**

- A centralized, integrated, rental car structure, or hub concept; and
- A rental car "park" solution, where rental car companies provide and organize facilities according to individual company policy.

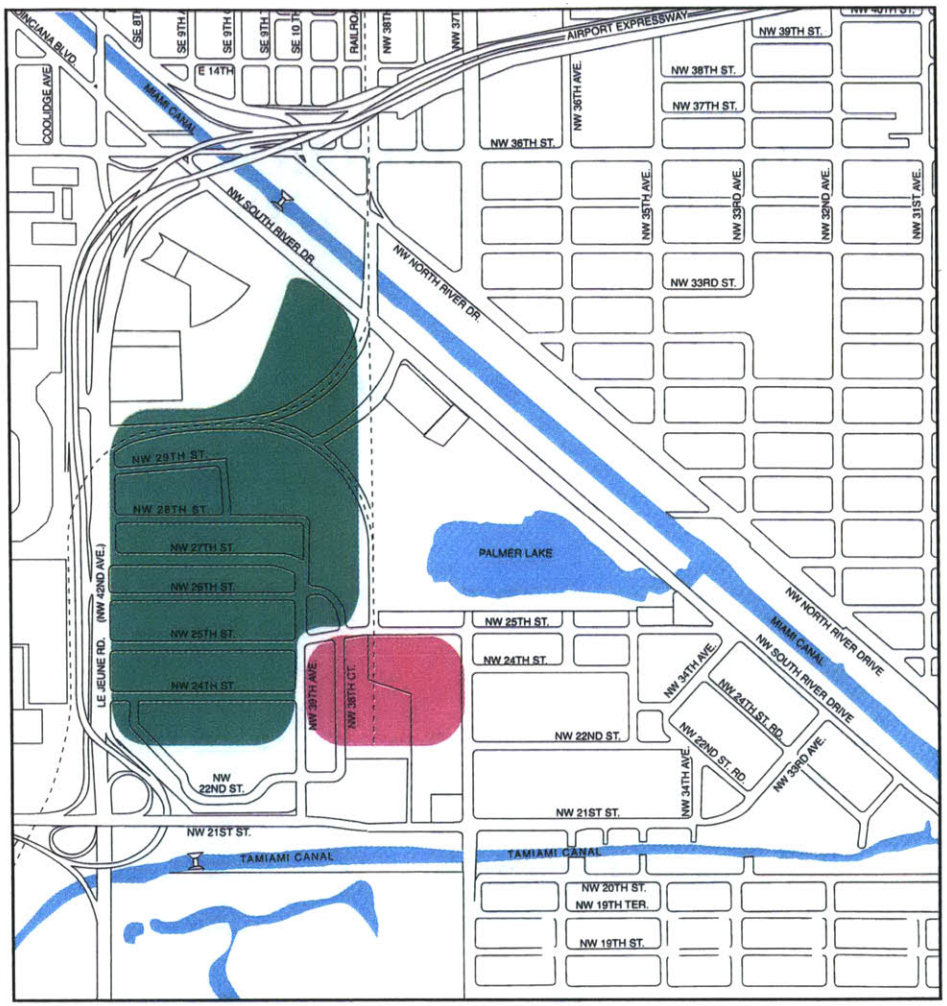
The preferred solution would be the hub concept in which the agencies are located under one roof and cars are stored in one central location. The plan calls for a parking structure housing 10,000 cars adjacent to a rental car terminal which would be connected directly to the MIA terminal via the MIC-MIA Connector. Projections place daily rental car volume at MIA at 7,000 by the year 2020.

There is a possibility of getting the rental facility started today by having a unified shuttle service provide the only access to MIA for the seven large agencies. The shuttle could be a unified effort bringing Tri-rail, Metrobus, Amtrak and intercity bus passengers, as well as the rental customers, to the interim Tri-rail station, the pre-MIC. Such a shuttle service would force the agencies to work together from the start of the MIC planning process instead of their normal adversarial relationship.

Plan #5



Hub Concept



Park Concept

Not to Scale

LEGEND

- MIC Site
- Potential Fleet Storage
- Integrated Customer Service Structure
- Park Area

CONCEPTUAL CONFIGURATION OF RENTAL CAR FACILITIES

Miami Intermodal Center

Source: ICF Kaiser, May 1995

Hotel

In the Triangle area, near the entrance to MIA, there are only three quality hotels. The Crown Sterling Suites at Le Jeune Road and N.W. 36th Street, the Ramada Inn at Le Jeune Road and N.W. 21st Street and the Sheraton Hotel at N.W. 39th Avenue and N.W 21st Street. The majority of the high end business traveler hotels are to the south in the Blue Lagoon area. Mid price hotels are located to the west of MIA along SR 826. A point to remember is that because of MIA's central location, 2 miles from Coral Gables, 5 miles from Downtown Miami and Brickell, it losses some typical airport hotel customers because of the convenience. But there is still a strong market for hotels at MIA, especially high end hotels near the main entrance.

The Ramada and the Sheraton are of importance because they flank two sides of the proposed MIC site. The Ramada is important because it sites on the best development site, sandwiched between the MIC and MIA and at the Central Boulevard entrance to MIA at Le Jeune Road. The property is currently for sale and it is essential for success of the MIC and for MIA expansion that this parcel be acquired. The Sheraton offers an example of hotel development potential for the area. Situated on the southside of N.W. 21st Street on the banks of the Tamiami Canal the Sheraton commands a spectacular view over the newly renovated Melreese Golf Course. The entire stretch along the Tamiami Canal offers the same potential of a waterfront location overlooking a golf course and being adjacent to the Airport terminal. A strong relationship should be fostered between the Melreese Course and MIA, the MIC and the hotels could offer a round of golf during long international flight layovers. There are many potential sites for hotels once the area is organized.

Office

In the Triangle area today there is no office space. The nearest sizable market is the Blue Lagoon area. Most of the Blue Lagoon area is under the control of the Waterford Office Park which is solely owned by the New York Teachers Pension Fund. The Waterford has been very successful in marketing itself as a headquarters location for Airport related companies, multinationals and even firms that have no specific need to be at the Airport. Examples are Iberia Airlines of Spain, their Latin American service center and headquarters; Komatsu, the Japanese construction equipment manufacturers Latin American headquarters; and Celebrity Cruise Lines, their corporate headquarters. As the Waterford developed grade A office space, areas west of the Airport have continued booming in the industrial warehouse market with great success for several office-industrial parks.

The area around the MIC is ideal for airport related functions such as offices for DCAD. The MIC should take advantage of providing office space to other airport related services. Recent entries into the Miami market include the resurrection of Pan American Airlines and Air Jamaica moving their marketing and sales headquarters to Miami from Jamaica. These are the type of organizations that would seek a location adjacent to the Airport. The areas in the Triangle to the east are well suited for regional offices of multinationals and freight forwarders. The area north of the MIC along Palmer Lake is also well suited to multinational space with the possible dramatic waterfront location. If the MIC is a success and is able to attract all of the planned infrastructure projects, then the Triangle will overcome its isolated condition.

Retail

One of the original suggestions for the MIC was to build a megamall, entertainment complex on the scale of Sawgrass Mills or the Mall of America in Bloomington, MN. One problem is that developers are normally looking at the demographics of a region that would support a mall. A conventional suburban mall would probably not make it since there are three large suburban malls within a seven mile radius including the largest in Florida. What probably will work is either a smaller center the size of what is being proposed or the mega scale development entertainment complex that would be a regional attraction as well as a draw for tourists.

Several management company executives and developers call the region "under-retailed" and say all but a handful of the expansion projects should meet with unbridled success. "Dade County is probably the only market in the state of Florida that I can't see as being over retailed in terms of space in the next five years," said Mark Milgram of the Florida Shopping Center Group.[28] Regardless of growth, the area has pent-up demand that retailers and developers are trying to meet said Jeff Brandon, managing director of Trammell Crow Southeast Inc. In Miami tourists generate about 40% of the area's retail sales.

With limited space for new buildings available, Mr. Milgram said, "Dade developers soon will come to rely upon creative new ways to squeeze the retailers into what little space there is." That is being seen with the first joint venture between a private developer and Metrorail at the Dadeland North Station in Kendall. Currently under construction, the new center will be built on what is an existing surface parking lot for the Metrorail. The site, attached to the station lies between the station and the Dadeland Mall. The Dadeland Mall area is a retail powerhouse

[28] "'Under-retailed' Dade scrambles to catch up with growing demand." Miami Today. July 27, 1995.

and the joint development is occurring less for the connection to Metrorail than for the fact that it was the last developable parcel on US 1 and next to the Mall. What's interesting is that this is being developed as a vertical box center. This is indicative of soaring suburban land values and choice inner City parcels to develop on that retailers are having to resort to two story supermarkets and finally seeking Metrorail joint venture projects.

Industrial

The industrial market is probably the tightest market around the Airport. In today's market industrial and warehouse uses would probably be appropriate given the current state of the Triangle area. This would not be the case if the MIC is developed with all of the planned transit improvements. A heavy investment in transit requires the maximization of properties adjacent to the station to guarantee heavy usage. This requires high daytime populations and an active pedestrian and streetlife. Industrial properties especially warehouses have low numbers of workers and visitors as compared to office and hotel space.

There is a place for industrial properties in the triangle area in places furthest from the MIC, along the Miami River waterfront and underneath the north runway flight path. There is a great demand for industrial space and the least desirable sites in the Triangle can accommodate industrial uses. Because Miami is in the position of continuing international trade there will continue to be a strong demand for high cube distribution warehouse space that has over 24 foot clear span with bay depths consistent with conveyor and product moving machinery. The buildings must be built to facilitate differing sized tenant with dock-high and drive-in capabilities.

On the eastern side of the airport where the main entrance to the airport lies and where the proposed MIC is situated is currently in a different state compared with the thriving western edge of the airport. The area under consideration, the Triangle, which encompasses everything from Le Jeune Road eastern edge of MIA and is approximately 400 Acres. This area is a vast contrast to the market along SR 826 on the western edge of the airport. It is a blighted area in need of substantial revitalization. The area can be considered similar to industrial areas surrounding many large cities.

The reason these areas tend to end up occupied by owners and tenants with small industrialized and manufacturing companies is not necessarily because they desire these locations, but because others and other types of industry do not. According to Denise DiPasquale and William C. Wheaton in their book *Urban Economics and Real Estate Markets,*

"sites located right on major highways or near airports may be undesirable for many uses other than industrial and manufacturing because of noise or other aesthetic considerations."

The noise from the airport meets FAA guidelines but is relatively loud and consistent. In the near future with MIA proposing a fourth east-west runway the noise level will increase. In addition to the noise the flight pattern currently being considered will cut across the northern tip of the proposed MIC sight restricting the height limit of any buildings in that area. The noise issue and other inconveniences will be obstacles in the redevelopment of this area.

The location of the Miami River was what originally landed the small craft manufacturers and small cargo transporters in this area between Le Jeune Road and the river. Both have had successful businesses along the waterway but the area has fallen into disrepair; the water is filthy and the area looks like a water side dump filled with rusting scrap metal and old fiberglass boats. With new federal environmental regulations and new technologies in storage and production methods, some of the existing businesses would be excellent additions to the redeveloped area.

Convention Center and World Trade Center

In earlier proposals for the MIC there had been talk of incorporating a convention center or a world trade center (WTC). A convention center belongs Downtown but in Miami's case the WTC belongs at the Airport. This is an issue that should be revisited and there should be a study done on the feasibility of placing a WTC at the MIC site. Currently, the WTC is proposed for a Biscayne Boulevard site Downtown adjacent to the Freedom Tower at the entrance to the Port. As much as Downtown Miami needs an economic boost that comes with a WTC, it is not the appropriate structure to place in a Downtown streetscape. Miami is proposing several other mammoth indoor oriented structures that happen to have some of the most scenic waterfront views. A WTC should be located where the action is and that is at the airport. Biscayne Boulevard is Miami's front door and the waterfront should be tourist and entertainment oriented with high density residential. The WTC should happen in a place where it can spread out, incorporate offices, hotels, and be adjacent to the Airport. The best site would be north of the MIC adjacent to Palmer Lake.

The current WTC proposal is stalled. "The problem with the world trade center is going to be funding," said Metro Commissioner Maurice Ferre, one of the backers of the project. "We need money to put into it."[29] Perfect time to lobby for the project.

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[29] "Public dollars the key to new trade complex." Miami Today. January 18, 1996.

VIII. THE MIAMI ECONOMY, AN OVERVIEW

Founded as a winter resort at the terminus of a railroad, Miami has become the hub for the north-south movement of the hemisphere. **(See Map #7, Page 60)** Always a transient place, Miami has embraced trade, transportation, and tourism as the core of its existence. As Miami celebrates it's 100th anniversary as a City, the continued success of all three sectors depends on the efficient transfer of goods and people through the City, especially at MIA and the Seaport.

The Hong Kong of the America's

Miami is no stranger to the superlative and has no self conscience when it comes to civic boosterism. Miami has been referred to everything from "the Hong Kong of the America's," to an overrated sand bar. There are problems with each extreme view. The chamber of commerce view of Miami catering to the international jetset, as the capitol of the hemisphere, ignores the serious problems of living and conducting business in Miami. The other image of Southern backwater turned third world, ignores the dynamics Miami has in the hemisphere. The true Miami lies somewhere in between.

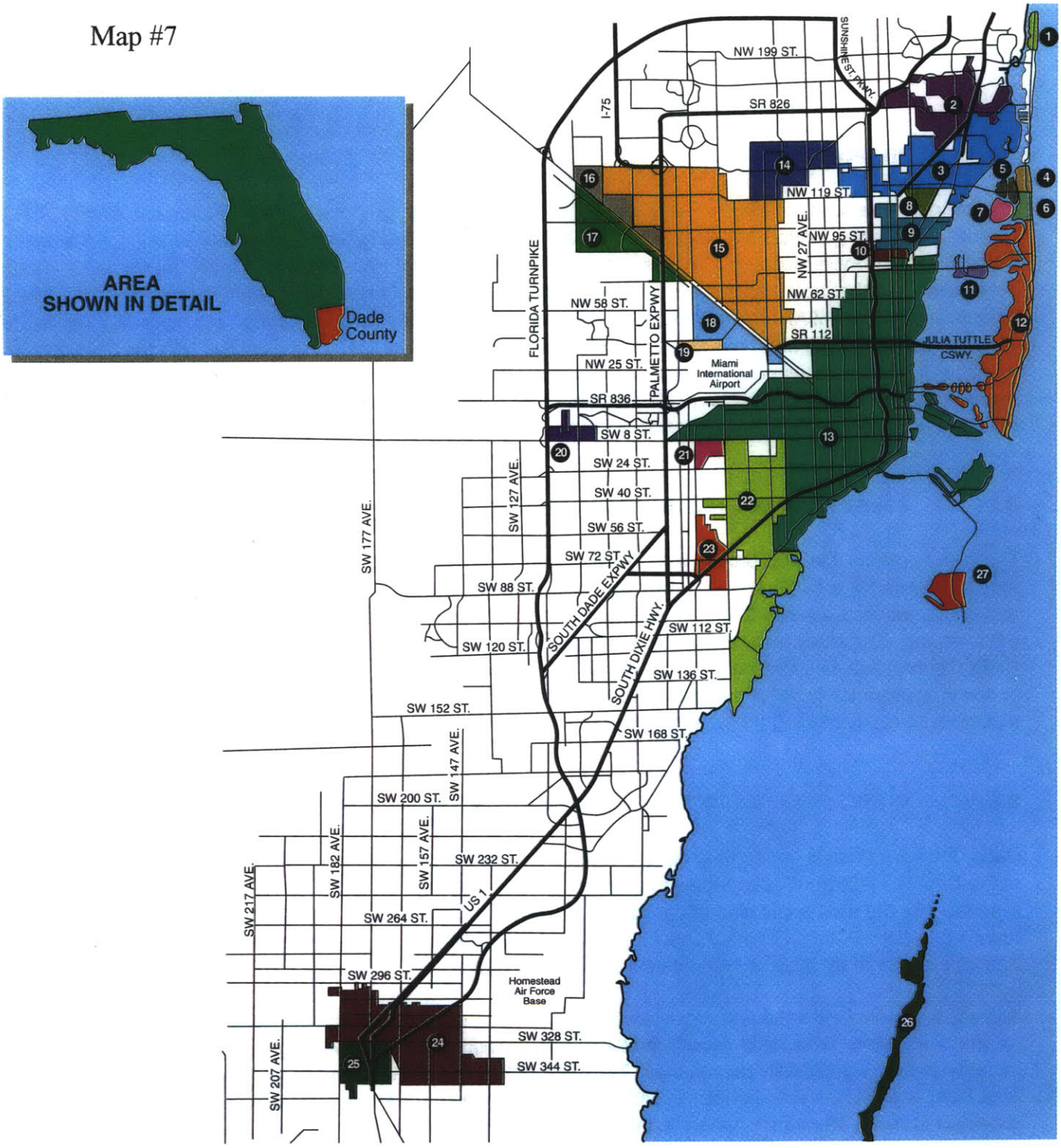
Trends in tourism, trade, travel and technology show Miami growing up as an international city that knows no bounds. Major US corporations use the city as a launching pad into Latin American markets. Some of the world's largest multinational firms call Miami home to their US headquarters. Tourist from all points, especially South America and Europe, invest their time and money here in homes, businesses and shopping excursions. Businesses who deal with international visitors hire employees who speak several languages, aiming to make their customers' stay easier. Miami has become almost a "neutral place," said international business attorney Burton Landy.[30] Miami's importance as a global city is evident in that it has the third largest consular corps in the nation, following Los Angeles and New York.

Miami, Gateway to the America's

Transfers of commodities, currency and people, have become the lifeblood of Miami. Entire countries, especially in the Caribbean, depend on the majority of trade and commerce flowing smoothly through Miami. The city has everything going for it as the "gateway to the Americas," said Stanley-Latin America President Frank Coppel. "It's ideal for maintaining operations in that geographic region," said Mike Trevino, spokesman for Texaco-Latin

[30] "International vision brings global opportunities to Miami." Miami Today. August 17, 1995.

Map #7



Not to Scale

LEGEND

1. Golden Beach
2. North Miami Beach
3. North Miami
4. Bal Harbour
5. Bay Harbor Islands
6. Surfside
7. Indian Creek Village
8. Biscayne Park
9. Miami Shores
10. El Portal
11. North Bay Village
12. Miami Beach
13. Miami
14. Opa-Locka
15. Hialeah
16. Hialeah Gardens
17. Medley
18. Miami Springs
19. Virginia Gardens
20. Sweetwater
21. West Miami
22. Coral Gables
23. South Miami
24. Homestead
25. Florida City
26. Islandia
27. Key Biscayne

MUNICIPALITIES IN DADE COUNTY

Miami Intermodal Center

Source: Metro-Dade County Planning Dept.

America.[31] In the 1970s and '80s, Metro-Dade Commissioner Maurice Ferre said, "many people tried to mold Miami as an alternative to Atlanta as the capital of the Southeastern US. They were totally mistaken," he said. "The real future of Miami is in Latin America."[32]

The community's future as an international city also depends on continued growth in trade with not only the Caribbean and Latin America, but also Europe, Asia and Africa as well. Trade will not only be between the United States and Latin America, but between third parties. The real growth is in trade between Japan and Brazil, ecotourism between France and Costa Rica, business trips between Canada and South Africa. Miami is poised to become the hub for global transfer of trade, tourism and capital. This is contingent on an efficient Airport and the support transportation infrastructure to allow smooth transfers through Miami.

The South Florida Economy

Once the winter resort of the wealthy and then the retirement haven for "Snowbirds," Miami and all of South Florida's economy has matured into a well diversified one, including service industries, trade, biotechnology and the tourism. Stretching from the Keys to Jupiter, metropolitan South Florida has over 4.5 million residents in the tri-county area, Dade (Miami), Broward (Ft. Lauderdale) and Palm Beach (West Palm Beach) counties. South Florida's economy is well suited to future trends in economic and job growth because of the emphasis on entertainment, service, tourism and trade related industries.

Transportation

Since it's founding transportation has played a crucial role in the development of Miami. Mr. Flagler, a Florida railroad baron, was encouraged, by a gift of land from Julia Tuttle who had bought 344 acres of downtown Miami in 1891, to continue his railroad south from Palm Beach to Miami. The railroad arrived on the banks of the Miami River on April 13, 1896. The City of Miami was incorporated on July 28, 1896.

Today transportation plays a vital role in the economy that is ever dependent on external forces for driving growth. Transportation needs have been historically met by private or localized solutions. Most transportation capacity is handled by single purpose providers or users such as airlines or private automobile. There is little coordination between the three county area

[31] "Corporations drawn by area's infrastructure, not manufacturing base." Miami Today. August 17, 1995.
[32] "Leaders promote the internalization of Miami." Miami Today. June 13, 1996.

in formulating regional solutions to transportation problems. The first such attempt is the Tri-rail commuter rail authority, and that is under tremendous funding pressure.

Tourism

Tourism is the historic reason for there being a Miami. It is still a major part of the South Florida Economy. The big difference today being instead of just northern "Snowbirds" coming down for the winter, Miami now receives half of its tourists from abroad and spaced throughout the year. The latest tourism numbers and economic impact for 1995, provided by the Greater Miami and the Beaches Visitors Bureau, is given in Table 8 below:

TOURIST AND EXPENDITURES IN MIAMI 1995[33]				
	Visitors	Percentage	Increase	Spending
Domestic	5,114,000	54.4%	9%	$4,600,000,000
Foreign	4,286,000	45.6%	5%	$4,700,000,000
Total	9,400,000	100%	7%	$9,300,000,000

The greatest impact has been the influx of South Americans who come to Miami to conduct business, shop and maintain second homes. The number of South American visitors to Miami continues to rise, with first quarter 1996 up 5.4% from 1995, or 392,000 overnight visitors, states the Greater Miami Convention & Visitors Bureau. "From an economic standpoint South American visitors have a very beneficial impact on our community," said William Anderson, of the bureau. "In order to get the whole story, you have to look at not only the number of visitors but how much they are generating for our community economically."[34] While South American visitors rose 2.4% in 1995, their spending increased substantially more - 21%. In 1995, 1.95 million South Americans - 800,000 more than from Europe - visited Greater Miami and spent more than $2.3 billion. That was up from the 1.93 million visitors who spent $1.7 billion in 1994. "In 1995, their average stays increased to nine nights and average daily expenditures to $138, totaling about $1,200 per person, per visit - a 30% increase in spending," he said. "In 1995, they not only spent more per day, but they also stayed an extra day, which adds up," Mr. Anderson said. "The South Americans spend more money than any other region

[33] Miami Business Profile, 1995-1996. The Beacon Council. 1995.
[34] "More South Americans coming here and spending more money." Miami Today. June 6, 1996.

while they are here." "Much of that is spent at Kendall's Dadeland Mall," said Rob Stuart, of Compass Retail Corp., which manages the mall. "In 1992-1993 for example, about 70% of visiting South Americans hit a department store in Dadeland Mall," said Mr. Stuart.[35] Dadeland Mall is located nine miles from the MIA terminal, is the largest mall in Florida, at 1,419,000 sq. ft., and has the highest sales of any shopping center in the US, in the range of $700 per sq. ft.[36]

Trade

MIA is the number one airport in international cargo in the United States, recently surpassing JFK. MIAs strength lies in its strength in the Latin American market, where it is the dominant player. There are over 400 freight forwarders in Miami that are located for the most part in the airport area.[37] The Port of Miami is the number one port for trade with Latin America. The Port is as constrained in available land for expansion as is the Airport. Together, the Airport and the Port are the largest provider of jobs, economic growth, and revenues in Dade County. It is necessary to maintain efficient connections with these two facilities to compensate for tremendous growth at constrained locations and allow for continued expansion.

Miami Real Estate

Within the South Florida regional market, the Miami metropolitan area, comprised of Dade County, had a population of 2,083,555 in 1995. Miami has the advantage of geography, demographics, language and culture which allows it to be a commercial center for the Caribbean and the Americas. This has a profound affect on commercial activity, for example; making retail sales much higher than household incomes would suggest.

Miami's commercial real estate business has boomed, especially near the airport, as companies seek locations central to North and South America to conduct their trade. "We have not only the international trade but we also have good population growth, which is the ultimate underpinning to the commercial real estate market," said Eric Person, senior director, Cushman & Wakefield Real Estate Services. "The future bodes well for West Dade in particular, and for the balance of the county as well."[38]

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[35] Ibid.

[36] Miami Intermodal Center, Joint Development, Market Analysis/Development Program, Prepared for: Florida Deaptment of Transportation, District Six, Prepared by: ICF Kaiser Engineers, Inc., and Economic Research Associates, Inc., February 3, 1995.

[37] "Miami International Airport. 1995 Directory." Metro-Dade Aviation Department. 1995.

[38] "International vision brings global opportunities to Miami." Miami Today. August 17, 1995.

The Airport Market

More than just an airport market, the area around the airport has developed into an important meeting place where business partnerships are developed and major contracts are closed. This has led to an increasing number of multinational companies to locate their regional offices or company headquarters in the airport market. There is little need for an equipment company whose clients are South America to locate in downtown Miami or on Brickell Avenue. Such firms locate near the airport where the other exporters and importers are. The Miami Airport market has the unique distinction of being at the center of the metropolitan area, not a fringe location such as Kennedy, O'Hare or LAX. This places MIA and the surrounding commercial areas closer to residential areas for attracting labor and customers. The demand for commercial space in West Dade is expected to grow as Miami International Airport continues to expand and improve its cargo facilities. The expected growth could raise land prices around the airport and force companies to other locations due to a limited amount of developable land.

Office

The office market surrounding the airport has become the strongest overall in the Miami market. The market may not command the rents of Brickell Avenue or Coral Gables, but it commands close enough when compared to land values. The Airport market's strength has been in its strong absorption rate, low vacancy rates, and rising values and rents. The most recent market statistics for the Airport office market are listed in Table 9 below:

MIAMI OFFICE MARKET STATISTICS 1993[39]				
Submarket	Sq. Ft.	Vacancy	Absorption	Rent
Airport-West	5,411,100	6.3%	176,000	$15.92
Downtown	6,825,900	21.7%	(63,500)	$19.61
Brickell	4,693,300	26.7%	281,300	$20.88
Coral Gables	3,475,700	10.8%	65,100	$16.82
Dadeland	2,142,900	8.8%	52,700	$15.48
Dade County	27,768,900	16.0%	557,800	$17.62

[39] Miami Intermodal Center, Joint Development, Market Analysis/Development Program, Prepared for: Florida Deaptment of Transportation, District Six, Prepared by: ICF Kaiser Engineers, Inc., and Economic Research Associates, Inc., February 3, 1995.

The office market statistics for 1993 show a vacancy rate of 16% which translates into 4,443,024 sq. ft. of vacant space in the Miami market. If the 1993 absorption rate remained steady, and no new product came on line, there would roughly be an 8 year supply. But during 1993 there was 382,000 sq. ft. of office space under construction. This almost covers any dent that absorption makes into the supply of office space. This can be seen in the latest data on the market. CB Commercial reported an office vacancy rate of 16.03% in Miami for the first quarter 1996.[40] Absorption had improved to 750,000 sq. ft. per year, but construction was also up, keeping vacancy rates and rents fairly stable. The only bright spot is the Airport market where the market has remained tight.

According to Legg Mason Real Estate Services, a Miami commercial real estate firm, overall office occupancy rose to 84.5 %, slightly off from other rates, in the third-quarter of 1995. the majority of the absorption took place in the Airport West submarket. As of February 1996, there is currently 880,000 square feet of office space now under construction in Dade County, the bulk of which is occurring in the western subdivisions on the west side of MIA. "This new construction activity has caused a temporary leveling of median office rents," says J. Jeffery Robertson. "However, demand appears to be more than sufficient to continue the trend of positive net absorption and escalating rental rates for several years."[41]

Industrial

The majority of industrial parks, constructed in the past twenty years, in Dade County have built in the vicinity of airports, specifically MIA and to lesser extent the general aviation airports such as Opa Locka. As a location for industrial/warehouse space MIA has an advantage due to existing railroad and highway networks, and proximity to labor due to its central location in the metropolitan area. The airport market provides easy access to the Port of Miami and of course MIA. Industrial space in typical markets tends to congregate around airports because land values are lower due to the proximity of airport noise. Land values are lower because residential households do not value the land because of noise while industrial uses are indifferent to noise but are price sensitive. In Miami there are a few differences due to the accessibility to international markets which has made the airport a very desirable market and is beginning to squeeze out the typical industrial user as sites become scarce.

There is a difference between sides of the Airport market. The Airport West market is dominated by larger planned industrial parks, while the Airport East market is currently in a

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[40] "First quarter rates show steady Dade office market," Miami Today, May 2, 1996.
[41] "Miami." Real Estate Forum. February, 1996

haphazard state reflected in the areas rents. The most recent market statistics for the Airport industrial market are listed in Table 10 below:

MIAMI INDUSTRIAL MARKET STATISTICS 1993[42]			
Submarket	Sq. Ft.	Vacancy	Rent
Airport West	37,272,500	4.0%	$5.60
Central Dade*	18,795,700	7.7%	$3.00
Dade County	141,902,600	5.0%	$3.95

*Central Dade includes areas east and north of the Triangle area and the MIC site, and is comparable to current conditions in the area.

Despite 1 million industrial square feet that came on line in the airport area last year, Airport West consisting of approximately 40 million square feet, is one of the healthiest in Dade County. International trade, especially with Latin America is stimulating the demand for Miami's industrial market. The Airport-West Dade area is the home of many large freight forwarding, shipping and air cargo companies.

MIA is currently embarking on a building spree of industrial space, with over 2,000,000 sq. ft. planned. Peter Reaveley, assistant director for international air services for Dade's Aviation Department said, "the space added by the airport should generate demand for twice as much space off the airport - or about 4 million - 5 million square feet."[43]

Hotel

The Airport market also has a strong hotel and restaurant industry. "The Miami International Airport market is exceptionally good because it's remained consistently strong throughout the years," said Patrick D'Sa, director of International Hospitality Advisors. "Between airline crews, the commercial market, distressed travelers and the leisure market from Latin America and the Caribbean, there really is a diversity of opportunities."[44]

Most of the hotel properties are located south of the airport, along the 836, or west of the airport, along the 826. Few quality or high end hotels for business or pleasure travelers are located at or near the entrance to the Airport, which is the MIC site. The most recent market statistics for the Airport hotel market, that is broken down between the MIC area and the Airport

[42] Ibid.
[43] "Warehouse, office demand linked to growth of airport" Miami Today. June 20, 1996.
[44] "West Dade hotels enjoying brisk market from air travelers" Miami Today. June 20, 1996.

South market, are listed in Table 11 below:

THE MIAMI AIRPORT HOTEL MARKET 1994[45]			
Submarket	Rooms	Occupancy	Room Rate
Mic-Triangle	1,521	82%	$66.73
Airport South	2,461	77%	$83.23
Airport Market	3,982	79%	$76.93

From this data it can be confirmed that hotel properties in the Airport South have lower occupancy rates but command almost a 25% higher room rate. This is because the properties in the Airport South market tend to be larger, newer, with more facilities, and better setting. The MIC-Triangle area, in it's current state, can only offer proximity to the MIA terminal.

The latest date is even more encouraging showing that the hotel market has strengthened. The data, comparing first quarter 1995 to first quarter 1996, is for the entire Airport market and is not broken down as the date in Table 11. The hotel occupancy rates are noted in Table 12 below:

HOTEL OCCUPANCY RATES 1ST QUARTER 1995 - 1ST QUARTER 1996[46]						
	Occupancy %			Average Room Rate		
	1995	1996	% Change	1995	1996	% Change
Miami Airport	85.0%	85.4%	.5	$77.13	$81.67	6.3%

Market surveys indicate that there is an immediate need for 1,101 new hotel rooms in the Airport market. Based on the strength of the current market, this does not take into account the projected increase of tourism or passengers at MIA, which translates into further gains.[47]

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[45] Miami Intermodal Center, Joint Development, Market Analysis/Development Program, Prepared for: Florida Deaptment of Transportation, District Six, Prepared by: ICF Kaiser Engineers, Inc., and Economic Research Associates, Inc., February 3, 1995.

[46] "Hotel occupancy in Dade rises in most recent hospitality survey," Miami Today, May 30, 1996.

[47] Miami Intermodal Center, Joint Development, Market Analysis/Development Program, Prepared for: Florida Deaptment of Transportation, District Six, Prepared by: ICF Kaiser Engineers, Inc., and Economic Research Associates, Inc., February 3, 1995.

The Airport market is missing two other components, housing and retail. Housing is kept away from the Airport due to the noise associated with the flight paths. Middle class and blue collar residential neighborhoods are located south of the airport, in Miami, and north of the airport in Miami Springs and Hialeah. There is the possibility of industrial/loft buildings, which could work as live/work spaces, in the Triangle area.

Retail

There are few major retail outlets adjacent to the airport. Retail is concentrated along SR 826, which is the beltway around Miami. The only sizable inner City retail is concentrated in Coral Gables' Miracle Mile, Coconut Grove, and in the Downtown-Bayside-Omni area, all miles from the Airport. All of these areas are specialty retail areas and do not offer the variety or draw of a Dadeland Mall or Sawgrass Mills, large retail malls exceeding 1,000,000 square feet and ever expanding. Dadeland Mall is a tremendous draw, currently adding a second floor with an additional 800,000 sq ft. Sawgrass Mills, located 30 miles from MIA, in Sunrise in the western suburbs of Ft. Lauderdale, Broward County, is the largest outlet mall in the United States and is the second biggest tourist attraction in Florida, after Walt Disney World.

Mixed-Use Development

There are two large mixed-use projects that immediately serve the Airport market and serve as a comparable to development around the MIC in the Triangle. The first is the Beacon Center located immediately west of SR 836 and MIA, and north of SR 826, and encompasses 205 acres. The Beacon Center would be directly served by a station, at NW 87th Avenue, of the proposed East-West Corridor Metrorail line. The Beacon Center is primarily a business park with the majority of structures being warehouses. The remaining existing usage is supportive office and retail. Beacon Center is attractively designed using innovative architecture and extensive landscaping to create a campus park environment. The center is currently at approximately 40% developed. As the center matures and as property values in the area have risen, the center is beginning to change its mix with more retail and office properties in the future. Beacon is a development of Codina Bush Development Corp., and is financed by the Pennsylvania State Employee Retirement System.[48]

Waterford at Blue Lagoon is the other important mixed-use development in the Airport market. Waterford is located on the southside of SR 836 and MIA, on two peninsulas of land emitting from both sides of NW 57th Avenue (Red Road). The project is highly visible from SR 836 due to its separation from the expressway by the Blue Lagoon. The Blue Lagoon is

[48] Ibid.

essentially the Tamiami Canal, which connects the Everglades to the Miami River and the Ocean beyond, was formed by dredging to provide landfill for the Airport and other areas. The project offers a mix of office and hotel that is extremely successful. There are three hotel properties, two of which rate very highly in Miami for there extensive grounds, recreation and amenities, the Miami Airport Hilton and the Hotel Sofitel. The office component has been very successful in attracting regional Latin American headquarters such as Komatsu, Kodak, Iberia Airlines, Sony, and headquarters for Celebrity Cruise Lines. Because of this success, the Waterford, which is half built-out, is also changing its mix as is the Beacon Center. Previously the majority of office space was three and four story B and C quality of space. At build-out, Waterford plans to reverse that by building seven story A quality office space capable of filling more corporate demand. The developers of Waterford, who are having trouble keeping up with demand are the Teachers Insurance & Annuity Association and is financed and owned by the New York State Teachers Pension Fund.[49]

Dick Neve, senior vice president of the Hogan Group - which builds, leases and manages the Waterford at Blue Lagoon Corporate Park said, "there is a direct link between the airport's expansion and business growth in West Dade." "As they provide more facilities at the airport, they will have internal and external growth from companies coming here," he said. "The demand for office space in West Dade remains strong," Mr. Neve said. "The overall occupancy for the park is 93%." Mr. Neve said there is room to build 2 million square feet of office space at the park. "New buildings in the park will be larger - between 220,000 and 260,000 square feet - because the market is so strong."

IX. MIAMI TRANSPORTATION ISSUES AND PROBLEM

Miami has the fourth worst traffic congestion in the United States. The Texas Transportation Institute has produced estimates of the levels of congestion in urban areas. The congestion and related estimates are documented in a report *"Trends in Urban Roadway Congestion - 1982 to 1992."* The level of congestion of an urban area was estimated through a Roadway Congestion Index (RCI), that combines the daily vehicle-miles of travel per lane-mile (DVMT) for freeways and principal arteries in a ratio comparing the existing DVMT to calculated values identified with congested conditions. An RCI value of 1.0 or greater indicates that congested conditions exist areawide. Using the report of traffic congestion, the Miami

[49] Ibid.

PMSA rates, in 1992, as being congested, following Los Angeles, San Francisco and Washington, DC, as noted below in Table 13 below.

ROADWAY CONGESTION INDEX[50]	
Metro Area	RCI
Los Angeles	1.54
Washington DC	1.36
San Francisco	1.33
Miami	1.30

The report also offered the following information on Miami roadway congestion, as noted below in Table 14 below:

MIAMI ROADWAY CONGESTION[51]	
Average % Annual VMT Growth	4.90%
Average % Annual Capacity Growth, Freeways	.50%
Average % Annual Capacity Growth, Arterials	.60%
Percent Change in Congestion	24%
Annual Cost Due to Congestion (millions)	980

The table above shows that highway capacity in Miami has not kept up with the increase in VMT, which translates into tremendous increases in congestion in Miami.

What compounds the problem is that Miami has developed entirely as an automobile centered community. Miami has a unique problem, very little room to grow. Urban sprawl is reaching its limit of available land. The resulting dependence on the automobile makes existing entities, such as the Airport, less efficient as increased demand causes incredible delays. Success at the Airport is creating a situation which may hamper further gains. This leaves little room for maneuvering for the Airport since the major route to MIA is also the only east-west expressway

[50] "Estimates of Urban Roadway Congestion-1992, Statistics." The Urban Transportation Monitor, January 19, 1996.

[51] "Transportation and Related Statistics in Major Metropolitan Areas." The Urban Transportation Monitor, April 12, 1996.

in the center of the metropolitan area. It also is the major route west to some of the fastest growing suburbs of Miami, meaning worsening conditions.

Background, History and Statistics

The Miami Metropolitan Statistical Area, which includes Broward County, had a population of 3.2 million in 1990. As a response to congestion, Miami started a heavy rail transit system, opening the first line in 1984. This was a half hearted response in that there remains only one line in the system. The clear emphasis in the Miami metropolitan area is a preference for the automobile. The percentage of commuter trips by all transit modes was 4.3%. The true gauge of how poorly utilized transit is in South Florida is when compared to comparable metropolitan areas of size, density and transit ridership. The central city, City of Miami, is actually one of the more densely populated cities in the United States, with a density of 10,100 residents per square mile. That is higher then the central city density of Washington DC, at 9,900 residents per square mile, with a percentage of commuter trips by transit at 13.7%. Washington is an older City with an extensive transit network but Atlanta is a newer City with a smaller network. In Atlanta the percentage of commuter trips by transit is 4.7%, comparable to Miami. But the central city density of Atlanta is 3,000 residents per square mile, less than a third of Miami. Atlanta is achieving roughly the same transit usage in an urban environment which is more spread out than Miami. The worst comparison is with Houston, another new sprawl oriented City. Houston's central city density is 3,000 residents per square mile. Houston is able to achieve a percentage of commuter trips by transit of 3.8%. Houston has no rail transit, they are able to achieve transit usage close to Miami with only a bus network.

Current Status

In Miami the transportation problems are so great and the needs so tremendous, that there is no shortage of proposed solutions to the problem. There are currently six plans for different new or expanded Metro lines in Miami. There are two problems with this expansion of transit in Miami, funding and ridership. Given the current climate in Washington towards transit and the local finances of Metro, hardly one, let alone six, Metrorail projects can claim to have a reasonable chance for completion. Which brings up the second problem of ridership. Granted, with an expanded system, transit ridership would rise with more locations served, but Miami does not have a successful track record for encouraging transit use. The Metro would be better served by strengthening its bus system, limiting suburban sprawl and encouraging transit friendly

development before expending billions on Metrorail. But as politicians talk of transit projects, sustainable zoning and curbing runaway growth, the same politicians voted to repeal a $.02 gas tax, hardly the right message to send to Tallahassee, Washington or potential private investors to the resolve of the community for sustainable development.

A major flaw in all transit planning in South Florida is the complete lack of commercial development tied into transportation facilities. The biggest culprit is the Metrorail system which was laid with little regard to the economic viability of the surrounding area to support such a system or for any development to occur alongside. Metrorail is still primarily a system which is meant for suburbanites to drive up to, park and go to Downtown Miami. This is regardless of the economic makeup of the neighborhood. This is evident in the two legs of the system, one proceeds northwest through some of the poorest regions in the metro area. The other leg proceeds to the southwest along some of the wealthiest neighborhoods. In either case Metrorail has created little or no commercial or residential development that is beneficial to the area or to the Transit system itself. The northwest neighborhoods have actually less commercial space, being decimated by Miami's multiple riots, while the southwest neighborhoods have continued to develop retail due to the demographics and economic strength of the area.

The problem is that from the onset, and even today, is Metro Transit has had no policy towards encouraging development alongside its stations. Joint development of a station property only occurs after a private developer contacts the agency and initiates the dialogue. Part of the problem is that the staff does not exist to solicit such projects, more importantly it is that making transit work has not been a priority in Miami. Projects such as Metrorail were well intended, it is that they were developed at a time of easy money from Washington for transit projects. In today's environment, better planning, coordination between agencies and forms of transportation, and the involvement of private development are essential to make projects work. Intermodal centers, developed correctly, can accomplish this task.

Transportation Plan, Long Range Element

Metro-Dade has a transportation plan and a long range plan for transportation. Performed by the Metro-Dade Metropolitan Planning Organization (MPO) each segment has a specific function. The transportation plan has an outlook of five years. The long range plan has a time frame of twenty years and goes out to the year 2015. The long range plan, known as the Transportation Improvement Plan (TIP), has listed all proposed projects for Metro.

X. VALUE ADDED TRANSIT

The following section offers research on transit's effect on land value. The Triangle area will experience tremendous property value increases when the MIC and the transit components are constructed. The main beneficiaries of rapid transit investment are the landowners near stations. The public sector has not sufficiently utilized the increases in land values to help offset the costs of developing the rapid transit system.

Transit's Effects on Property Prices and Rents

Transit's effect on property prices can be seen in Miami, where property values near rail stations increased by as much as 160% between 1980 and 1993. Portland, Oregon has seen over $1 billion in development attributed to its light rail system.[52] The total increase in land value due to the introduction of rapid transit service has proven to be significant. The increase in land values has often been reported to be more than 100% of the total construction cost of the rapid transit system investment.

Economics Research Associates (ERA), authored a report on the effects of transit on property values titled; *Transit Case Studies for the City of Hillsboro LRT Station Area Study, Prepared for Leland Consulting Group and City of Hillsboro, January 25, 1995.* The study was prepared for the new MAX light rail transit line from Portland to the suburban community of Hillsboro, Oregon.

Three main methods of analysis are used to assess the impact of proximity to rapid transit stations on commercial property values. The following describes the three methods used in the ERA study:

Pre-Service/Post-Service Comparisons. This method evaluates the change in property values from before transit station construction to after the start of transit service at the study site. The results of this method indicate the impact of rapid transit system implementation on property values. However, the difficulty associated with this method involves controlling for other factors such as inflation and increasing property values in the general region.

Comparison of Properties Located Near and Far Away From Stations. This method evaluates the difference in values of similar properties located within and outside the station impact area at a specified date. Although this method avoids the problems associated with general or regional

[52] "New Light Rail Lines," Urban Transit News, July 17, 1996.

changes occurring over time, its difficulty lies in the scarcity of properties with identical characteristics other than distance from the rapid transit station.

Multiple regression Analyses. This method evaluates the effect of several variables on property values. Similar to the comparison method, this method also measures the impact of station distance on property values. However, this method more successfully isolates the single effect of station distance on property values. The difficulties associated with this method include an insufficient sample size, sampling error, and other problems of a statistical nature.[53]

The ERA Report uses various other studies performed on the effect of transit on commercial property values.

The Effect of the Washington Metro on Urban Property Values: Final Report, describes a series of econometric models of real estate values estimated for parcels in Washington, D.C. over the period of Metro's development. Regression analyses and estimates of price elasticity's were employed to determine the impact of proximity to a Metro station on property values. The results of the statistical analyses for commercial properties are as follows:

- The coefficient on the variable for distance to the nearest Metro station was negative and significant, indicating that commercial properties farther away from Metro stations sold for lower prices. Furthermore, the large coefficient of this variable indicated that proximity to stations had a very strong effect in determining property values.
- The estimate of elasticity of price with respect to distance to nearest station was greatest among all the other price elasticity's. This indicates that, moreover, the effect of distance to Metro station on commercial property prices declines rapidly with increasing distance.

This report provides a comprehensive evaluation of the relationship between a commercial property's proximity to transit stations and its value. The findings confirm the positive effect of a commercial property's distance to a Metro station on its sale price, but also indicates that this effect is strong in comparison to the effects of other factors which also influence property values. The findings also show that the effect of a commercial property's distance to a Metro station on its value weakens as the distance increases, indicating that commercial properties located nearest to Metro stations receive the greatest proximity benefits.[54]

Transit Joint Development in the United States: A Review and Evaluation of Recent Experiences and an Assessment of Future Potential. Included in this report is a chapter, titled "Real Estate

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[53] Transit Case Studies for the City of Hillsboro LRT Station Area Study, Pg. 14, Economics Research Associates, Prepared for Leland Consulting Group and City of Hillsboro, January 25, 1995.
[54] Ibid.

Impacts of Urban Rail Transit Investments and Joint Development Initiatives," is a study of the effects of transit service on commercial real estate market performance indicators such as office rents, office absorption rates, and vacancy rates. This report evaluates rents of offices located near the Washington D.C. Metro and MARTA stations against the rents of offices located further away from stations over a 12-year period (1978 to 1989). This 12-year period is important because it includes the years before, during, and after the opening of stations in the areas studied. The report indicates that rents of offices located near stations in Ballston in Washington D.C. and in Lenox Square and Arts Center in Atlanta were, on average, higher than the rents of comparable offices further away from stations. Ballston area offices experienced an average annual rent premium of more than $3 per square foot over comparable non-station area offices. Lenox Square area offices, were on average, approximately $3.50 higher per sq. ft. than rents of offices in comparable non-station area offices. According to this study, the benefits of proximity to rapid transit stations on station-area office rents was long-term - extending from before to after station opening.[55]

Development Centered Around Transportation

The example discussed in this section is a large urban mixed-use development, that is built around a transit station, has good highway access, and is a half mile from a major airport. While not an intermodal center, Pentagon City gives an idea of high density, mixed-use development in the context of a large American metropolitan area.

Pentagon City - Arlington, Virginia

Pentagon City is situated directly across the Potomac River from downtown Washington, DC, near the Pentagon and Washington National Airport. The site, located on the Washington Metro, consists of approximately 116 acres. The area has been zoned and rezoned for several uses to facilitate a mixed use community. Prior to construction the site was zoned for a total of 1.25 million gross square feet of office space; 2,000 hotel rooms; 860,000 gross square feet of retail; 5,900 residential units; 300 subsidized residential units for the elderly and a 300 bed nursing home.

"The major component of the project is a mixed-use complex that includes the 860,000 sq ft Fashion Center at Pentagon City - a specialty shopping mall anchored by Nordstrom and Macy's - a 362 room Ritz-Carlton Hotel, the 299 unit Parc Vista rental apartment building, the Washington Tower, a 172,000 sq ft office building entirely leased by MCI, and a 1.35 million sq

[55] Ibid.

ft parking garage." The Fashion Center offers direct access to the Metro rapid transit system, and the other components in the project. "The Fashion Center has a captive audience in the office building and hotel and vica versa is offered as an amenity to those working and staying in the surrounding area.[56]

The Land was developed incrementally so as not to overburden the owners financially and to keep pace with the trends in the economy. The Pentagon City site originally was zoned for low densities, like industrial and commercial uses. The owners of the site, the Cafritz-Tompkins Group, lobbied and eventually received the rezoning of the land to permit higher density mixed-use development. The 300 bed nursing home, a 600 unit elderly housing project, and the 300 residential units were all completed in 1976. "In 1977, Rose Associates, Inc., successfully negotiated with Cafritz-Tompkins for the option to develop the remaining 99 acres. The owner would maintain a percentage interest in each development." "Rose then brought in retail expert Melvin Simon & Associates to act as its joint-venture partner in the development of the mixed-use complex, consisting of The Fashion Center, the Ritz-Carlton Hotel, and Washington Tower. Rose then formed another joint venture with Sumitomo Corporation of America for the development of the first residential tower, the Park Vista."

"Specific planning objectives defined by the county, the planning team, and consultants, included: compatibility with surrounding areas; a mix of uses to ensure 24-hour vitality in the new community; graduation of densities to conform to neighborhood patterns and transportation access; varied building heights; and balanced and efficient pedestrian circulation and transportation systems, including parks and green spaces."

Similar to the MIC site and the Palmer Lake area, approximately 13 acres of the 116 acres were deeded by Cafritz-Tompkins directly to Arlington County, to be developed as a public park. Counter to the MIC project, vary little public funding was used for this development. "The developers selected different architects for the various development components." RTKL coordinated the various design efforts to maintain overall integrity of design.

"The development of Pentagon City entailed the coordination of many different entities involved with the project, including architects, general contractors, tenants, owners, and development partners. Mixed use adds value, with each component enhancing the value of the others. A large scale, mixed-use project demands a long-term commitment.

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[56] "Pentagon City, Arlington, Virginia," Project Reference Guide, Urban Land Institue, 1st Quarter, 1990.

STRATEGY FOR DEVELOPMENT

The purpose of the following sections is to explain and evaluate the current issues surrounding the MIC and related development proposal including, economic forecasts, financial plans, and the development and management structure. Each item and issue concerning development of the MIC will be analyzed with suggestions for improvement offered. It is also the intention of authors to make recommendations where it is seen that value can be added. This thesis will conclude with a strategy for development for the MIC and the Triangle described in a timeline analysis. Included will be an analysis of intermodalism elsewhere and its effect on urban real estate values.

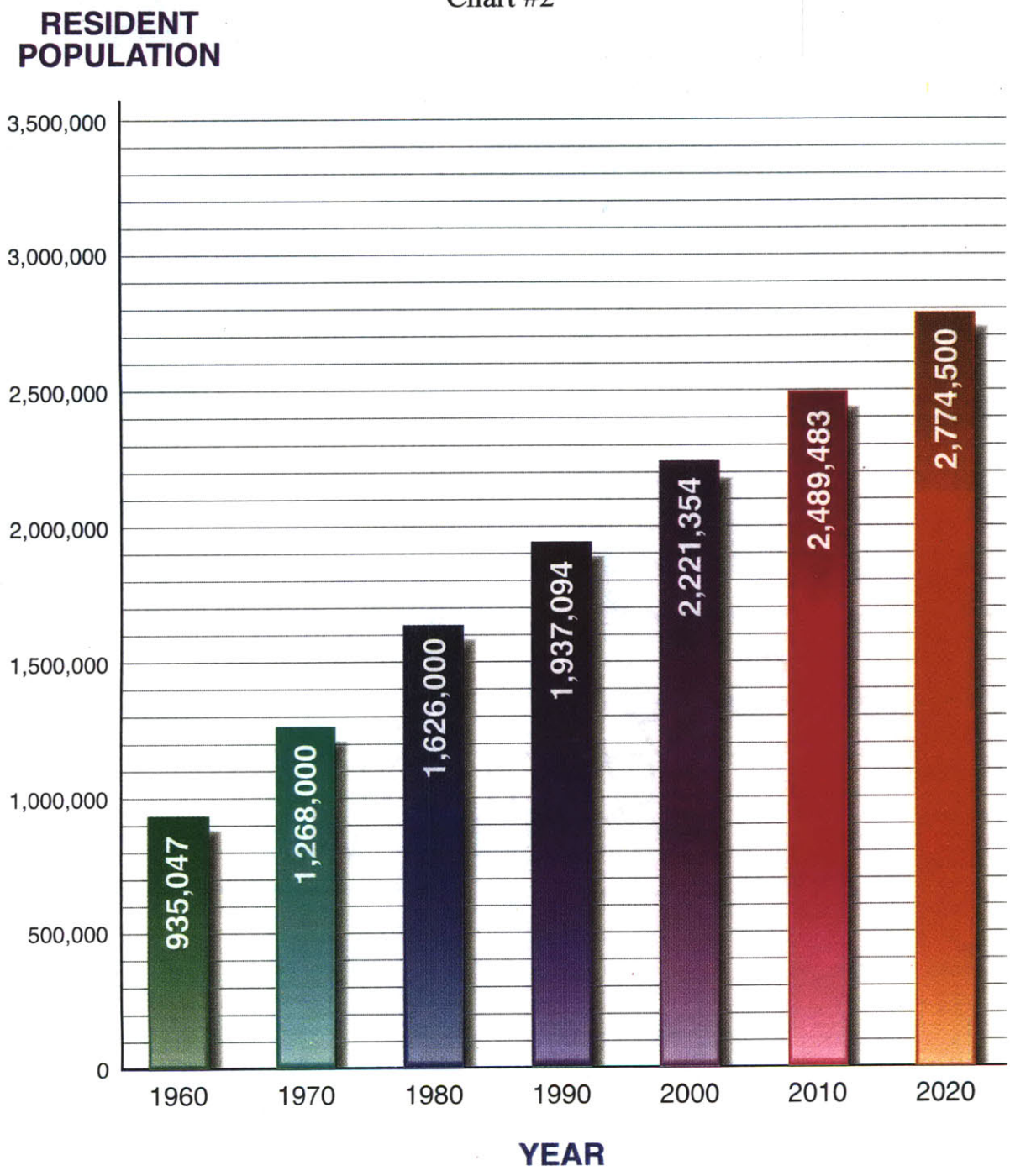
XI. ECONOMIC FEASIBILITY

The success of the MIC depends on not only usage from passengers from the Airport and Seaport but also usage from residents of Miami. MIA passengers will only use the MIC if it has enough Airport related functions to get them there (parking, rental cars etc.) and if the MIC-MIA connection is effortless. To get MIA passengers to use the MIC to points beyond in Metro Miami will require a system that goes to where the tourists and residents alike want to go. To get other Dade County residents to use the MIC and auxiliary development, the project must be an employment center and provide amenities that stimulate interest as a destination point. The success of the MIC is not only founded in its sound design, but in the economic growth patterns and statistics of the area including; population, employment, transportation, and commercial real estate.

Population Growth Estimates

Dade County continues to grow, at slower rates then previous decades, but the numbers are still high. **(See Chart #2, Page 78)** Growth is continuing to be concentrated in further suburban areas. A positive aspect to Miami is that growth flows steadily outward and not in checkerboard patterns. Suburban growth in Miami is reminiscent of suburban Los Angeles or Orange County, where densities are high due to high land values. These areas are not dense enough to support heavy transit though, bus service is the appropriate mode. Inner City neighborhoods are stable in terms of population, there are no vast areas of urban waste as in Detroit. But there is a serious problem of divestment in the neighborhoods. Populations in the

Chart #2



POPULATION GROWTH PROJECTIONS IN DADE COUNTY, FLORIDA

Miami Intermodal Center

Source: U.S. Bureau of the Census, Census of the Population, 1980 & 1990. Florida Department of Health & Rehabilitation Services, office of Vital Statistics, Annual Reports. Metro-Dade Planning Department, Research Division, 1994. Note: birth & death rates are based on 1,000 mid-year population.

coastal regions are fairly stable even with the rash of luxury high rise condominium construction. These areas such as Brickell in Miami, Collins Avenue in Miami Beach, or Aventura, have building, not population, densities approaching Manhattan. Many of the units are held by international owners thus small sources for transit passengers. There is little change if any in the population of the immediate Airport area. The hope for the MIC is to create enough of a critical mass to serve as a destination, other than just the Airport, for Miami residents and ease of connection from the Airport to attractions throughout the County.

Using US Census data for the Miami area and Metro-Dade County Planning projections for the County, the expected population growth when conducted in 1990 and through the year 2010, is as follows in Table 15 below:

MIAMI METRO POPULATION PROJECTION IN 1990[57]	
1980	1,625,781
1990	1,937,094
1993	1,943,442
1995	1,986,190
2000	2,221,354
2010	2,489,483
2020	2,774,250

There are differences of opinion coming from the same source, in the updated Metro-Dade County Planning projections for the County, conducted in 1990. These updated numbers are noted in Table 16 below:

MIAMI METRO POPULATION PROJECTION IN 1994[58]	
2000	2,291,446
2010	2,774,603
2020	3,280,712

[57] East-West Multimodal Corridor Study. Staff Recommendation Report. Florida Department of Transportation, U.S. Department of Transportation, Federal Highway Administration. Submitted by Parsons Brickerhoff Quade & Douglas, Inc. January 5, 1996.

[58] Miami Intermodal Center, Project Status Report: Locally Preferred Alternative. Florida Department of Transportation U.S. Department of Transportation, Federal Highway Administration. Prepared by ICF Kaiser Engineers, Inc. April, 1996.

The differences are significant, over half a million by the year 2020. The changes reflect recent immigration trends to Miami and the September 1994 immigration agreement between the United States and Cuba. Realistically, the actual will probably fall between the two and we will use the more conservative estimates in Table 15.

In order to find population growth estimates more reflective to the area of focus, Minor Statistical Areas (MSAs), which are groups of census tracts, within a five mile radius of MIA and the MIC were used to exact the population base for the Airport and West Dade market. This includes MSAs; 3.2, 4.4, 4.5, 4.6, 4.7, 5.1, 5.2, 5.3, and 5.4. **(See Map #8, Page 81)** The population for the Airport market is noted in Table 17 below:

AIRPORT MARKET POPULATION[59] MSAs; 3.2 - 5.4		
Year	Population	% Of County
1993	881,462	45.4%
2000	923,176	41.6%
2010	982,027	39.4%

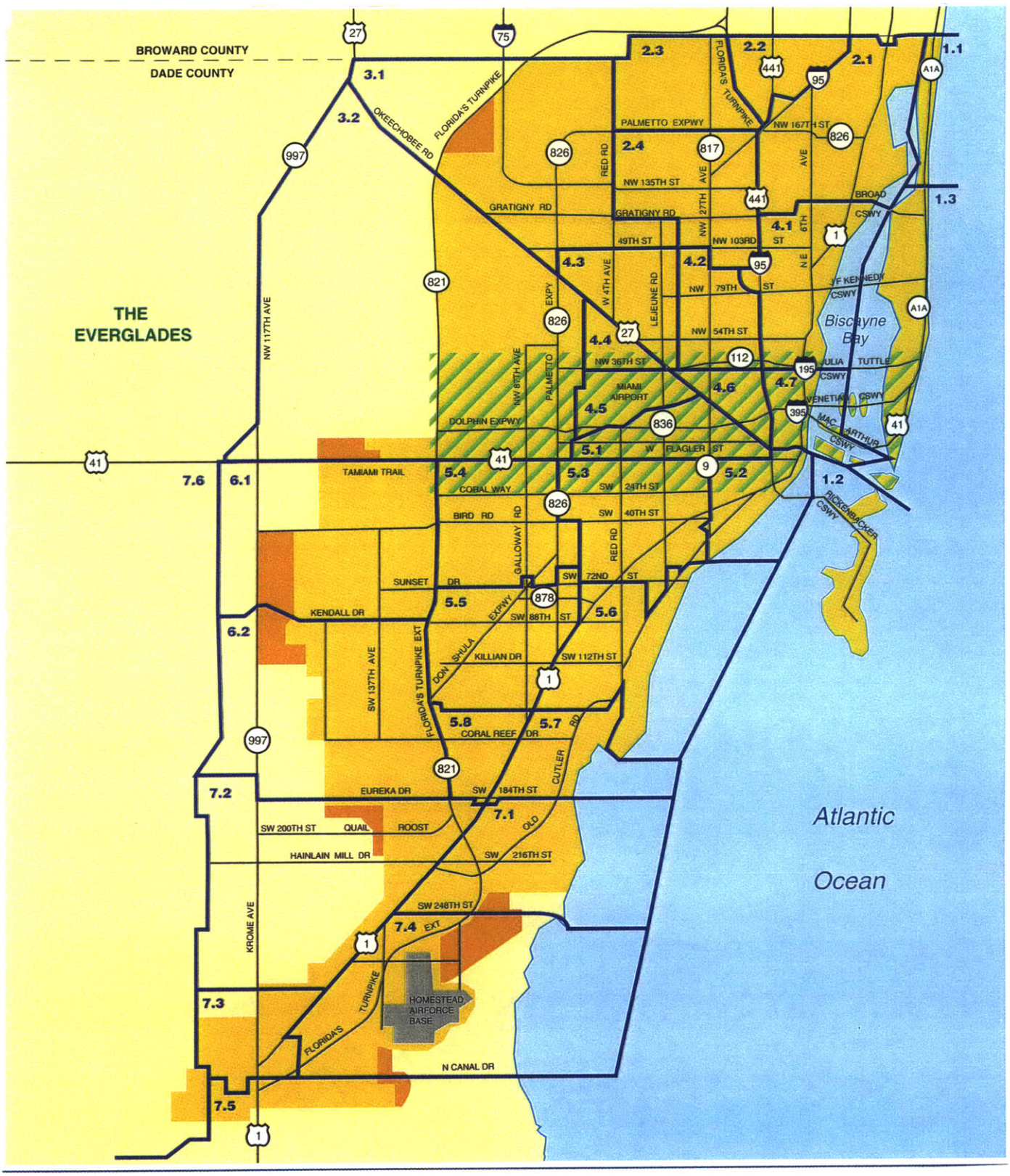
The growth rate from 1993 to 2010 reflects an estimated 10 percent increase area population, within a 5 mile radius of MIA.

The areas north, east and south of the Airport are already established and will continue to experience little growth. The market west of the Airport is where virtually all the growth within the 5 mile radius will occur. Population estimates and projections for the areas west of SR 826 and MIA, MSA 3.2 and 6.1 are as follows, and are substantially more impressive with 46% growth from 1993 to 2010, as noted in Table 18 below:

WEST DADE POPULATION[60]				
	Airport/ West Dade MSAs 3.2	Far-West Dade MSA 6.1	Total West Dade	% of County
1993	94,150	120,190	214,340	11.0%
2000	133,231	172,885	306,116	13.8%
2010	175,089	223,615	398,704	16.2%

[59] Ibid.
[60] Ibid.

Map #8



LEGEND

- Minor Statistical Area Boundary
- Urban Development Boundary
- 2010 Urban Expansion Area as Amended April 23, 1991
- Study Corridor

MINOR STATISTICAL AREAS

SCALE 0 1.6 3.2 km / 0 1 2 miles

Source: Metro-Dade Co. Planning Dept.

Rev.5 - 7/1/95

This is the area where the East-West Corridor will go through after it stops at the MIC and MIA. It is also interesting to look at population projections for the adjacent MSA, which lies to the southwest of the MIA area, FIU, and the terminus of the East-West line. These two areas, in Table 18, will comprise the bulk of growth in Dade County and the majority of transit riders on the East-West Metrorail line. Given current traffic patterns, growth projections and household creations, the majority of new consumers and workers, using the MIC area development would come from this western growth area.

Another aspect to population demands on the MIC is the seasonal and visitor population in Dade County. This is noted in Table 19 below:

AVERAGE DAILY OVERNIGHT VISITORS IN METRO-MIAMI[61]		
Year	Average	December
1990	129,394	219,655
2000	148,000	237,000
2010	178,367	252,165

Table 19 shows that on any given day there is a sizable number of visitors, on top of the resident population, equals an extra 7% increase. During December, the peak month, the situation worsens, with a visitor population that equals 11% of the resident population.

Dade County Employment Growth Estimates

Dade County's employment base is expected to increase as its economic base diversifies. Employment data for Dade County and the entire East-West Corridor area, from the Airport to the Seaport are noted in Table 20 below:

EMPLOYMENT IN METRO-MIAMI[62]			
Year	East-West Corridor Airport to Seaport	Dade County	Share of County Employment
1990	374,713	881,400	42.5%
2000	391,095	945,833	41.3%
2010	432,727	1,106,245	39.1%
2020	479,289	1,227,333	39.1%

[61] Ibid.
[62] Ibid.

The percentage of employment in Dade County which is in the East-West Corridor Study area will lower slightly. This is due to the concentration of established employment centers, such as Downtown and the Hospital districts, which are growing slowly. It is estimated that in 1993, the Airport alone was responsible for 177,000 jobs in Dade County.[63]

Transportation Demand Forecast

One reason behind the need for the East-West Corridor improvements is the state of traffic congestion in Miami, especially on SR 836. As the major east-west route in the county, SR 836 is already at levels beyond acceptable capacity or Level of Service (LOS). FDOT has an LOS rating system with A being the least congested and F being the most. An LOS rating of E is considered to be capacity. In 1993, SR 836 was at level F for the majority of the its length, from NW 37th Avenue to NW 87th Avenue.[64] Level F signifies that the highway is virtually at a crawl for the majority of the day. This is the same highway which must accommodate all the future growth in the western suburbs, a doubling of traffic at MIA, and triple the traffic at the Port.

The estimates for the East-West Corridor if built in entirely would be 56,700 daily passengers by the year 2020. The same report estimates that the MIC would be served by 7,460 daily passengers on the East-West Metrorail line.[65] These passenger counts are hardly enough to get some $3 billion in infrastructure under way. The change in traffic volume in the year 2020, with a Metrorail system in place, would be a reduction of 4% in comparison if nothing was built. The reduction in number of total daily trips would also be minimal with 19,400 fewer trips when compared to the No-Build Scenario. The impact on the roadways would be minimal in terms of Vehicle Miles Traveled (VMTs) but the impact would be significant in terms of savings of Vehicle Hours Traveled (VHTs). This is illustrated in Table 21 below:

EAST-WEST CORRIDOR 2020 HIGHWAY ASSIGNMENT RESULTS[66]			
	No Build Scenario	Express Bus with SR 836 HOV Lanes	East-Metrorail with SR 836 HOV Lanes
Vehicle Miles Traveled	59,030,000	58,564,000	5,8505,000
Vehicle Hours Traveled	3,139,100	2,835,200	2,823,200

[63] Ibid.
[64] Ibid.
[65] Ibid.
[66] Ibid.

What is important from the data in this table that there is little difference in the savings between the Metrorail alternative and the express bus only alternative. Metrorail would carry more passengers and faster, but the added capital costs of over a billion dollar does not justify the expense. In its present scenario the East-West Metrorail line does not justify itself.

If MIA uses the realistic Concept 1A and 1B expansion, and achieves 60 million passengers by 2020, and maintains a 65% rate of destination/origination Airport, then the daily passenger count leaving the terminal would be around 106,000. Since there are so few well planned airport-transit connections in the United States, the transit forecast is a difficult. In some U.S. airports, with well planned transit connection, are hub airports such as Atlanta and O'Hare, and therefore usage is low when compared to total passengers. Other airports, which tend to be more destination oriented, have poor connections, such as Boston and Los Angeles. Others have planned connections, San Francisco and JFK, or no connection at all, La Guardia. The concept of the MIC is totally new to America. The only comparables are the transit centers in European and Japanese airports where transit use to the airport accounts for 20% to 40% of trips to the airport. Only National in Washington D.C. approaches this with 17% utilizing rail to the station.

Dade County Real Estate Forecasts

There are few thorough forecasts which deal with the amount of commercial real estate space which will be needed for the short term period, let alone until the year 2020. The best report was performed by Economic Research Associates in 1995, titled *Miami Intermodal Center, Joint Development Market Analysis/Development Program.* This report, in conjunction with current market data, and population and employment data, presented in previous sections, provide the closest approximations as to the commercial space potential in the MIC vicinity.

XII. DEVELOPMENT SCENARIOS

The following section describes several different forms of ownership which may be utilized for the MIC facility and surrounding areas. They are suggestions which could be used singularly for an entire development or in tandem with others to form the most successful project. The authors will recommend a hybrid form of authority later in this document which will be a quasi public/private partnership.

Government Involvement

The rational for government involvement is that they can set the legal framework and build the consensus of getting a large project started that provides public benefits. The greatest argument for government involvement is the current state of the Triangle today. Consisting of 400 acres, and maybe as many property owners, the area has limited overall value. Property owners are utilizing their properties in a way that maximizes their individual value, not necessarily the value of the area as a whole. If your neighbor decides to put a junk yard next to your property then your property value is diminished. True maximized value for everyone can only be gained if all the properties are assembled and placed under strict development controls. The government must be an integral part of this undertaking. Not so much the physical acquiring all the land, but in the overlaying of special conditions, districts, land use regulations, and vision of purpose. To that end we suggest forming an entity which we will call the Triangle Development Corporation (TDC). The TDC will have control over all planning and zoning issues so as to maintain the highest value and consistency of product for the entire 400 acres.

Private Sector Involvement

The private sector has an increasingly important role in the provision of infrastructure and public services. In many cases the country that has pushed for market forces has been slow in applying these lessons at home. There are many instances in which private organizations can run the everyday operations more efficiently. This brings up the question should government be running a golf course, or can the operation be given to a private concern in a concession arrangement. There are many more examples, such as the Melreese Golf Course, that can still provide a public amenity yet run efficiently at a profit, even for the government. Infrastructure is not a God given right. It should pay for itself or should not be done. The private sector should be involved in the MIC project from the beginning, to develop, operate and maintain. Private interest in the project is a better gauge to the success of a project then the public sector alone.

Associated Development

Real estate has been seen by the State of Florida as one of the many components of accomplishing the financing for high speed rail. This concept dates back to the turn of the century when blocks of land were granted to railroad builders such as Henry Flagler and the Florida East Coast Railroad. The value of that real estate enabled them to expand and remain significant financial enterprises. The State of Florida no longer has vast tracts of land to grant

and so its legislature created a means for real estate to participate in the process by providing for "Associated Developments and Joint Developments" in partnership with local governments in the Florida High Speed Rail Transportation Act, F.S. 341.365. The Act permits the Franchisee to utilize unique real estate joint development opportunities as one of the mechanisms to help finance the implementation of the high speed rail system.[67]

It is the intention and in fact the obligation of this Real Estate Program to harmonize with the transportation plan and together create a synergism from which both elements can benefit. Real Estate provides the Franchisee with a revenue stream it would be unable to achieve if the rail line was built in isolation. In addition, real estate can provide the Franchisee's equity investors with an attractive return over time. Equity and real estate revenues should be able to contribute early in the project. Further, Real Estate Related Revenues can be a part of the credit enhancement upon which lenders will rely to provide financing for the rail infrastructure.

Rail stations, joint development, and associated developments are all real estate developments defined in the Act. Flexibility to work with public partners to produce a well-conceived real estate development program is crucial in the selection of the Franchisee. These developments should not just be station platforms but include mixed use structures such as hotels and commercial space. For major mixed use developments which are anticipated to be built as rail station joint development projects, major increases in value are anticipated at the site selection stage and upon completion of each phase of the development project. An example of a first stage of value addition would be the relocation of the Tri-Rail Miami Airport Station to the new Miami Intermodal Center about 1.5 miles south of its current location.

This type of example exists for many of the rail transportation systems around the world. For some, development has had an even greater role. Examples where significant development at station sites have occurred on an even grander scale include Union Station in Washington, DC, Via Rail Canada's system in Toronto, Main Rail Station in Stockholm, Sweden and many others. These are samples of the kinds of projects that eventually could be built at the MIC. As ridership increases, so too will the need for surrounding real estate uses.

Joint Development

Independent research confirms the presence of a strong real estate market in the vicinity of MIA which is independent of MIC-related transportation improvements. Upgrading access to

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[67] Florida's High Speed Transportation System, Application for Franchise: Executive Summary. Florida Department of Transportation. A Proposal by: Rail Florida. October 31, 1995.

the Triangle area and master planning future development sites through land assembly are the principal preconditions for successful development, and both are mentioned in the MIC program.

Studies of already developed rail transit systems have shown that construction of terminals can be an effective catalyst for attracting new private investment in surrounding areas, if the stations are planned and located with this objective in mind. In particular, a study of land use trends around transit stations in Atlanta and Washington, DC revealed that during the 1980s transit investments, especially those accompanied by coordinated real estate developments, created measurable increases in land values and rents in areas close to some stations. Of particular interest, office rents were higher for modern buildings adjacent to rail transit than for comparable structures associated with freeways elsewhere in the urban area. The study of development around transit stations in Atlanta and Washington are indicative of the relative magnitude of economic impacts that could occur as a result of this proposed transit investment. During the first ten years after opening of the MARTA station in the Lenox area of Atlanta, 3 million square feet of office space and two super-regional shopping centers have been completed. The area contains almost ten percent of the office space in greater Atlanta. Combined analysis of the Atlanta and Washington areas showed that joint development projects (transit stations and associated mixed use real estate developments) resulted in a rental premium of 15 percent above the regional average for comparable space. This study also compared office rents close to transit stations with those in nearby competitive markets served only by freeways. Over a 10 year period the offices near transit stations averaged $3.00 per square foot more in the Washington area and $2.00 more in Atlanta. Overall, office projects adjacent to Metrorail stations in the Washington, DC area commanded premiums of up to ten percent more than similar buildings several blocks away. Therefore, to help induce additional development investments in proximity to the new terminal facilities, it will be necessary for the MIC development team to make decisions regarding location and design of terminal facilities within the context of local real estate market conditions as well as a jurisdiction's growth management policies and objectives. In addition to satisfying community planning standards, the potential for stimulating associated investment around the MIC will be affected by critical factors such as strong market demands, existing commercial development, and availability of sites for new projects. Physical and legal conditions must be able to support the induced new development if it is to take place. Studies of many mass transit impacts, especially those of the Bay Area Rapid Transit System (BART) in San Francisco, have led to some important generalizations about conditions and relationships commonly found when examining transit-land use interactions. Rapid transit improvements have

been important inducements to downtown development near transit stations, but only when supported by critical market, physical and legal conditions. Similarly, major transit station improvements have played a key role in intensification of land use in station areas outside of downtown areas only when appropriate market, physical and legal conditions are present. Careful coordination between government and the private sector is very important because local land use policies are instrumental in facilitating land use changes around transit stations. Supportive zoning programs and other land use policies must be aggressively pursued by local government in order to capitalize on the new investment and potential demands created by it. There exist opportunities for inducing development investment through the MICs planning. The MIC must create a need to fill established market demands to help create a viable joint development program that reinforces transit demands by increasing the density of activity.[68]

Build-Operate-Transfer

A viable strategy for the MIC may be an approach known as Build-Operate-Transfer (BOT). Used in developing countries, BOTs are increasingly implemented to stimulate private sector investment in infrastructure.

The BOT structure is a method of turning over to the private sector, for a limited period, the development and initial operation of what would otherwise be a public sector project. A BOT is based on a complicated legal agreement, known as a concession, between the host government (or a government agency) and a special purpose company established by the project sponsors. A concession agreement typically lasts between 15 to 30 years, and transfers specific responsibilities regarding infrastructure provisions from the host government to the private sector. The private sector agrees, under the terms of the concession, to design, finance, and construct needed infrastructure in exchange for an exclusive contract to provide services over a fixed time period sufficient to amortize the capital investment costs and to generate a reasonable return. At the end of the concession period, the physical assets and operating responsibilities are transferred to the public sector.

Infrastructure, by its very nature, is very costly, requiring large amounts of initial capital. Given the nature of infrastructure investments, the BOT credit structure is different than a typical public turnkey project. Infrastructure assets have high fixed costs, long economic lives and are also considered very specialized with few, alternative uses. The infrastructure components of the MIC hub is an example of such a situation, a specific investment tied to a specific set of

[68] Ibid.

variables. Since the host government does not give any explicit guarantees or contribute sovereign debt, a BOT is typically financed on a limited or non-recourse basis. In this case, the debt financing is based on the economic value of the project and to a lesser degree on the credit support of the sponsor or the value of the physical assets. The underlying collateral for a typical project financing is a mortgage on the project's physical assets and an assignment of the rights to the project's cash flow. In the event of default, the lender has no recourse to either the borrower or the host government. The remainder of the Triangle site is different since it will be comprised of commercial components which can change use and are not entirely dependent on the MIC. [69]

Privatization

Privatization of MIC Facilities Development - The MIC Core, and potentially other improvements, could be leased from a private developer, potentially in conjunction with the joint development program. As a tenant within a larger development that encompassed commercial uses, the MIC implementing entity would pay annual rents to a "master developer." The lease payments would permit the developer to secure long-term financing, while permitting construction outlays to be deferred and amortized over an extended time period (20 - 50 years for example). A master developer would provide project management expertise during the construction process, as well as subsequent building operations and maintenance services.

Sustainable Development

Sustainable development is a type of development loosely defined as; "a pattern of real estate development that addresses a number of environmental issues including: protection of significant habitats, endangered species, historic and cultural resources; efficient use of energy, water and land; integration of work, habitation and agriculture; and accessibility to a range of incomes."[70] The authors of this thesis would also like to include the ease of transportation use in this definition as it applies to the MIC.

Sustainable development has in its limited history been considered more expensive than regular modes of development. It is the opinion of the authors that sustainable development today, is attainable at costs similar to those of regular real estate development scenarios and should be an integral part of the development which takes place at the MIC and surrounding 400

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[69] Tom, Jonathon, Evaluating Foreign Build-Operate-Transfer (BOT) Projects Using the Adjusted Net Present Value (ANPV) Method: Thailand's Second Stage Expressway (SES), February 1996.
[70] Browning, William, Green Development: Determining the Cost of Environmentally ResponsiveDevelopment, July 1991, pp. 11-12.

acres. An example of sustainable development at the MIC will be the rejuvenation of the Palmer Lake area and the preservation of the Manatee habitat in an area surrounded by parks, hotels, and office buildings.

XIII. SOURCES OF FUNDING

The sources of funding utilized for a project of this immense scope should come from both public and private entities. The following is a fraction of the entities which should be involved in the funding and financing of the MIC project and surrounding developable area. The list includes private and public sources funding different parts of the project over its development life cycle, approximately 20 years. **(See Chart #3, Page 91)**

Expressway Authority

The Dade County Expressway Authority was just formally given it's charter in early 1996. The Authority has yet to assume control of management of the expressways, its purpose. It is still premature to suppose that they can play a part in the management of the MIC until they are up and running. There is hope that the Authority can assume the role of development authority for the MIC.

It is assumed that beginning in 1998, the MIC will receive $6 million (inflated dollars) per year from the Dade County Expressway Authority. That payment is expected to escalate at 2% per year and continue through 2025. According to the Metro-Dade Road Pricing Plan, a conservative scenario would yield about $5 billion in net revenues between 1997 and 2030. The conservative scenario does not assume congestion pricing. The Expressway Authority payment stream in the MIC cash flows represents approximately 4.3% of the total net revenues assumed to be generated by the Authority under the conservative scenario. This payment stream from the Expressway Authority is about 10% of the total revenues anticipated in the MIC capital program.

It has been suggested that the MIC development and associated development in the Triangle area fall under the auspices of an authority such as the Dade County Expressway Authority. In some regards it is a good idea since setting up a new body through the State legislative process takes time, it took the Expressway Authority ten years to receive its charter. While the possibility should be investigated further, it is premature to suppose that an agency which has just started, and has yet to collect a quarter in tolls, can take on the task of the MIC, and the East-West Corridor.

Chart # 3

Expected and Potential Revenue Sources for the MIC Facility and Surrounding Development

Revenue Source	Revenue Contribution (Over 30 years, Inflation at 3.5%)
Existing State and Federal Sources	
MPO and FDOT	$870,000,000
Local Sources	
Dade County Expressway Authority	$220,000,000
Cruise Ship Transfer Fees	$198,000,000
Taxi and Commercial Vehicle Access Fee	$81,000,000
Joint Development including Land Payments	$10,000,000
MIC Core Retail Concessions	$26,000,000
TIF District	$51,000,000
State Sources	
FDOT Bond Program	$100,000,000
Economic Development	$5,000,000
Environmental Programs	$3,000,000
Federal Sources	
FTA Section 3 - MIC Bus and Rail	$78,000,000
FTA Section 3 - TriRail Extension	$2,000,000
Self Financing	
MIA Funding	$600,000,000
Rental Car Facility	$170,000,000
Total	**$2,414,000,000**

External Funding

Project elements such as airline terminals, the MIC/MIA Connector, a long-term parking garage and rental car facilities, are funded with either lump-sum payments made to the MIC implementing entity by the parties responsible for future amortization, or commitments of future revenue streams which could be capitalized by the MIC implementing agency. About 30 percent of the MIC capital costs will be externally funded.

The finance strategy identifies many potential revenue streams for the MIC project, the majority a which are realized through annual revenue flows. Capitalization and cash flow management strategies are then identified to assist in matching the revenue streams anticipated with construction outlays. It is also possible for the MIC implementing entity to act as a "master developer" who funds the entire project and then amortizes its constituent elements from future rent streams paid through long-term leases, or to privatize the "master developer" function.

MPO/FDOT

The underlying sources a revenue for the MPO and FDOT cash flows are federal highway apportionment's, state and local gasoline taxes, license fees, aviation fuel taxes, tourism-related fees on rental car transactions and local impact fees. From 2000 - 2025, the financial plan assumes that FDOT and the Dade County MPO will make a long term commitment, subject to the availability a funds, of annual funding for the MIC capital program. The composition of these funds is left undefined and is assumed to represent a blend of local, state and federal revenues which might be available for transit, highway, bus, airport or seaport programming from both FDOT and MPO designated sources. Reflecting the transferability features of ISTEA, the capability of MIC improvements to potentially offset the need for other highway or airport-related improvements, and the intermodal character of the project, it is assumed that the composition of the annual payment may vary from year to year depending upon revenues available and other project commitments. Many of the federal and state programs included in the FDOT and TIF revenue pool are likely to change, or be consolidated over such an extended forecast period. However, it is anticipated that new funding arrangements will take their place. Together, the projected annual set-asides would represent about 35 percent of the revenues anticipated for the MIC sample cases over the 1996 - 2025 period.

Local Revenue Sources: It is assumed that, aside from the funding commitments described previously, other sources of state and local transportation revenue are almost fully absorbed by the maintenance needs of the existing infrastructure and other projects in the

development pipeline. About 25 percent of MIC revenues are anticipated to be derived from the four incremental sources of local revenue in the Long Range Transportation Plan Update.

Debt Financing

The purpose of the debt financing strategy is to construct the MIC while still enabling the many other important capital investment priorities of the region to advance. The MIC is such a large undertaking that any effort to fund the entire project on a pay-as-you-go basis would severely constrain the MPO from assigning resources to other new capital programs during the peak construction years.

Revenue Bonds: The MIC implementing agency will be deriving annual income from parking revenues, cruise ship transfer fees, taxi and commercial vehicle fees, and joint development proceeds that could be capitalized in the form of revenue bonds. With regard to TIF proceeds, Dade County tends to make a general budget pledge in lieu of pledging allocated tax revenues. This approach reduces borrowing costs through the commitment of a higher credit source. However, from the Dade County perspective, the TIF revenues are seen as amortizing the debt obligations.

Equity Contribution

The investment of private capital in the MIC may come from several sources and be intended for different objectives. It is anticipated the a hotel and/or office building will be included with the development of the MIC facility. If that is to be the case, private money will be provided by the developer for the opportunity to be located at the MIC.

There are many other different scenarios which could utilize private funds. For instance, a master private developer could fund the entire project and then rent it to the MIC implementing agency or private capital could be used to fund the infrastructure. For simplicity, the authors assume that private capital will be utilized in some capacity and address the issue further in their development recommendations.

User Participation

The following are fees that will be imposed on users of the MIC, for funding of the MIC.

Cruise Participation: Previous discussions indicate that cruise ship operators include a fee a approximately $14 - $16 per passenger for transfers between the piers and MIA In view of the potential for MIC-related highway, arterial road, parking, rail and airport terminal

improvements to facilitate the transfer process, the financial projections include a transfer fee of $2.00 per departing Port of Miami cruise ship passenger beginning in 2003.

Taxi and Commercial Vehicle Access Fees: The large investment in improvements for the SR 836/SR 112 Interconnector, arterial street and MIA land-side facilities will benefit commercial vehicles by reducing delays due to congestion. An additional fee would be assessed on commercial vehicles because of reduced travel times afforded by MIC access Improvements.

MIA presently levies a $1.00 fee on taxi cab pick-ups and a sliding fee permit arrangement (depending on vehicle seating capacity) on pre-arranged transportation (including cruise ship transfer buses), crew transfer vehicles, delivery and expedite service trucks (United Parcel Service, Federal Express, etc.). About 3% of anticipated MIC revenue streams would be derived from taxi and commercial vehicle access fees.

Right-of-Way Acquisition and Bridge Construction Trust Fund: This program is one of the primary sources of funding to implement the land acquisition program for all build options associated with the MIC and will permit the land purchases to be completed quickly in order to minimize speculation premiums.

XIV. FINANCIAL ANALYSIS

Overview

The MIC is comprised of numerous independent elements, a number of which are self financed, either from rents or the proceeds from financing undertaken by "tenant modes". The MIC is a unique transportation investment project in several respects:[71]

- The MIC facility requires design consideration and land acquisition to accommodate future modes, such as Metrorail and High Speed Rail (HSR). Preservation of rights-of-way in order to optimize future modal linkages is one of the primary intermediate objectives of the MIC. In recognition of this "host" role, the financial projections assume that the construction costs, excluding land acquisition, of externally funded transportation investments are paid by others;
- The MIC is linked to the SR 836/East-West Muitimodal Corridor Rail Study, yet is functionally independent and will be financed separately. In most cases, the MIC capital

[71] Miami Intermodal Center, Major Investment Study/Draft Environmental Impact Statement. Summary. Florida Department of Transportation U.S. Department of Transportation, Federal Highway Administration. December 18, 1995.

plan provides a rough interface for connecting modes. The development costs for the transportation modes will be borne by the transportation tenants themselves;

- The annual revenue and expenditure requirements are analyzed through 2025. A 30-year analysis period is applied due to the extended character of the build-out period and the need for long-term financing arrangements to support project outlays. The high level of transportation investment anticipated in all modes over the next 20 years in Dade County makes a pay-as-you-go strategy for major investment projects infeasable. In addition to reviewing capital cash flows, this financial analysis incorporates the future operating costs and revenues associated with the MIC and a risk assessment.
- Project capital costs should include land acquisition, construction, a design and administration factor of 25 percent, and a contingency factor of 15 percent. Costs are inflated at a rate of 3.5 percent per year and revenues are all presented in year-of-expenditure (inflated) dollars.
- A majority of the MIC project components will be funded from MIA revenue sources available to MIA. The MIA related elements include: the MIC/MIA Connector, a total of 550,000 square feet of terminal expansions, 3,000 long term parking spaces, and a service tunnel The financial capacity of MIA to fund the airport-related elements of the MIC is a function of the extent to which current passenger growth projections are realized, as well as forthcoming decisions establishing priority among future airport investment projects.
- Over 30 percent of the MIC project investment is externally-funded. Land acquisition and relocation is a major expense category. It has been estimated that about 15 percent of the total capital budget must be allocated to land acquisition.
- Due to the uncertainties associated with development of future transportation modes expected to utilize the MIC, there may be a time lag before the land required must be purchased and construction is initiated. In such instances., interim land uses, such as surface parking, may be assumed in order to generate revenues or defer expenditures for structured parking. These possible revenues are not incorporated in this analysis.

Capital Costs

In most cases, the MIC capital plan provides a rough interface for connecting modes. The cost of constructing and operating the necessary guideways, rolling stock, systems and station elements is not included in the MIC costs and is to be borne by the tenant mode.

Exceptions are the MIC/MIA Connector, which is included in the MIC capital and operating costs but will be funded by MIA, Tri-Rail, which will be relocated from its new station on the MIC site, and MDTA's bus bays on the lower level of the MIC. The East-West Corridor rail link, HSR, Amtrak and other Metrorail connections will all be funded outside of the MIC program. Major elements, such as the rental car, public parking and landside MIA terminal facilities, will be developed incrementally, as driven by capacity expansion requirements, and will be amortized by rents from private parties.

All analysis to this point have run several different scenarios in determining the best case. The authors of this thesis have taken numerical information generated for the MIS/DEIS proposal and tailored it somewhat to what we recommend as the scenario for development. It includes components from several different build packages. **(See Chart #4, Page 97)** The total capital outlay for the project is estimated at just over $1.1 Billion in 1996 dollars. In order to determine the true capital cost we amortized the $1.1 Billion over 17 years at 3.5% to account for inflation. That number is approximately $1.98 billion. The percentages in the table allocated to development change over the years as a reflection of the amount of development costs attributable to a particular year. Those detailed numbers, are based upon realizing current projections of patronage demand and completing construction according to the most cost-efficient schedule, and are available through the MIS/DEIS proposal and used as the basis for this analysis' development costs.

Projected Revenues

The projections in this analysis assume that the costs for the MIC/MIA Connector, MIA's landside terminal and parking, and the service/baggage tunnel are funded through MIA revenue sources. The rental car facility construction is expected to be funded by the rental car agencies involved and the rental fees paid by the participating companies. Both MIA and the rental car agencies are expected to make lump sum payments to the MIC implementing entity as project elements move into construction. Incoming funds to the MIC from MIA and the rental car agencies can be expressed a lump sum or a stream of revenues which can be capitalized by the MIC for other sources of financing.

Approximately $2.4 -$2.6 billion (inflated at 3.5%) in revenues is forecast for the MIC project build scenario from 1996 through 2025. **(See Chart #5, Page 98)** In addition to the MIA and car rental facilities, other annual revenue flows can be generated from private entities and other government sources as follows:

Chart # 4

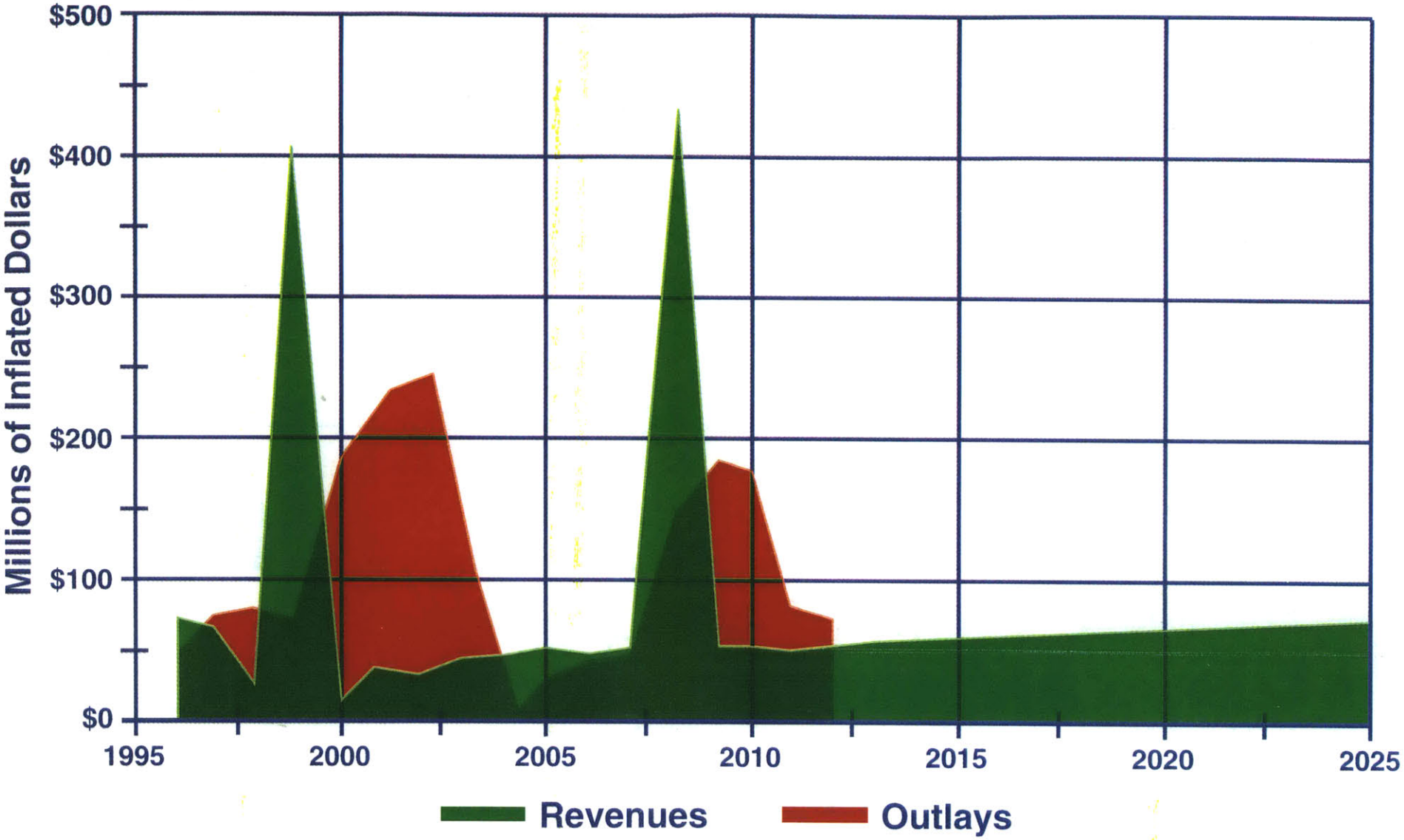
Capital Costs

Assumptions

Numeric Figures: 1996 Dollars
Increase over 1995 dollars: 3.50%
Removal of Railroad is expected to save: $ 150,000,000

	Construction Costs	Design & Administration	Contingency 0.15	Land Acquisition	MIC/MIA Vehicles	TOTAL
MIC Facilities Including Arterial Roads & Elevated Rail	$ 128,039,850	$ 32,012,550	$ 19,878,187	$ 76,227,750	$ -	$ 256,158,337
SR 836/SR 112 Interconnector Based on Removal of Surface Railroad	$ 254,092,500	$ 63,517,950	$ 39,447,861	$ 61,810,200	$ -	$ 268,868,511
MIC/MIA Connector (Includes MIC Station) Elevated at MIA	$ 110,776,050	$ 27,696,600	$ 17,197,982	$ 9,832,500	$ 14,490,000	$ 179,993,132
Temporary Storage Facility	$ 7,721,100	$ 1,935,450	$ 1,198,701	$ -	$ -	$ 10,855,251
MIA Landside Expansion 500,000 sqft of building + 3000 Parking	$ 91,390,500	$ 22,852,800	$ 14,188,375	$ 13,517,100	$ -	$ 141,948,775
MIC/MIA Baggage Rail Costs are the same as a tunnel, but tunnel is not recommended	$ 62,100,000	$ 15,525,000	$ 9,641,025	$ -	$ -	$ 87,266,025
Rental Car Facilities Hub Concept	$ 98,118,000	$ 24,529,500	$ 15,232,820	$ 17,967,600	$ -	$ 155,847,920
Total Capital Costs	**$ 752,238,000**	**$ 188,069,850**	**$ 116,784,950**	**$ 179,355,150**	**$ 14,490,000**	**$ 1,100,937,950**
Amortized over 17 year buildout						**$ 1,975,826,421**

Chart #5



CAPITAL CASH FLOWS

- Current analysis suggest that approximately 3% of project revenues can be generated from discretionary federal sources including; the Federal Transit Administration's (FTA) Section 3 funds which can be allocated to those projects improving metro transit, AMTRAK, and the Federal Railroad Administration (FRA).
- Dade County Expressway Authority
- Cruise Ship Transfer Fees
- Taxi and Commercial Vehicle Access Fees
- FDOT R-O-W Bond Program
- Economic and Environmental Programs
- Private Inter-City Bus Carriers

MIC Facility Development Related Revenues

The following sections are based on the existing MIC Hub proposal.

One of the aims of the MIC project is to maximize the ingress/egress to the study area by reconfiguration of the road system. This, in turn, will result in the reconfiguration of land parcels. In many instances, industrial uses currently occupy sites within the study area that have much higher potential which, under current market conditions. A developed master plan will determine those uses which maximize the value of the land. In addition to development opportunities, it is anticipated that rental income can be generated within the MIC Core itself from retail concessions, advertising, and other promotional activities. In total, about 3% of the MICs future revenues are anticipated to be derived from interior real estate-related activities.

Retail Concession Revenue & Signage: The public concourses at the MIC offer opportunities for retail concessions and signage fees from advertising. The revenue forecast assumes that 1,400 sq m (15,000 sq ft) of retail activity is incorporated into the MIC Core and yields net rents of $430.00 per sq m ($40 per sq ft). Signage and other promotional income is projected at 50 percent of retail concession rents or $20 per sq ft annually. Revenues are inflated at 2% per year.

Joint Development: By maximizing access to the Triangle area and MIA, redevelopment opportunities will be created. Tapping this potential to offset public capital investment in transportation facilities is being examined as part of the MIC planning and environmental process. While the timing and magnitude of potential revenue flows are subject to uncertainty arising from real estate market variables which are beyond the scope of the transportation improvements, investigation of the market potential for redevelopment within the MIC

"Triangle" area has been undertaken. The MIS/DEIS assumes that 130,000 sq m (1.4 million sq ft) of joint development will be integrated with the MIC core. An additional 557,400 million sq m (6 million sq ft) of "associated development" could occur independently of the MIC and is not included within the MIS/DEIS scope.[72]

Based upon the findings of the market research, the joint development program will be realized in two phases. The first phase assumes that 23,250 sq m (250,000 sq ft) of office development and a 750-room hotel, are built in conjunction with the MIC Core, and come on line in 2003. A second phase consisting a another 23,200 sq m (250,000 sq ft) of office, 11,600 sq m (125,000 sq ft) of meeting facilities and 2,300 sq m (25,000 sq ft) of retail would open in 2007.[73]

The funding scenario assumes that the developer make an up front payment equivalent to $81.00 sq m ($7.50 per sq ft) for the Phase I program. The payments would be realized when the buildings begin construction. A payment for the remaining 37,100 sq m (400,000 sq ft) of development is assumed to occur four years later at $91.50 per sq m ($8.50 per sq ft), reflecting inflation and market escalation. Any joint development-related parking is assumed to be privately constructed and operated.

Although it is premature to establish the optimum transaction structure, the funding scenario does not assume cash flows from future land lease payments or participation in out-year profit streams. The up front payment could represent a pre-paid lease that permits the public sector to retain title to the land and leaves open the potential for participation in future development revenues. The concept of an up front payment is intended to insulate the public sector from the risks associated with future financial performance of the real estate development projects, as well as to provide an immediate pay-back of land acquisition outlays. About $11 million is anticipated between 2001 and 2005 from this revenue source.

Real Estate Development Related Revenue

In addition to the examples of revenue streams available to the MIC described above, this proposal contemplates combining private sector real estate development with governmentally-derived sources of revenues. These revenues, referred to here as, Real Estate Related Revenues are government derived, yet based on real estate development forecasts and activity and paid by the real estate community. The Real Estate Related Revenues are comprised of three basic elements: special assessments, impact fees and tax increment revenues.

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[72] Ibid.
[73] Ibid.

It is contemplated that a neighborhood wide "district" may be created for the cooperative use of these revenues through interlocal agreements or as regional transportation authorities. The willingness of governing authorities to impose such fees would presumably be based in part on the perceived benefits to each such community.

Assessment revenues are provided for by various provisions of Florida Statutes. For present purposes, the provisions relating to Community Development Districts are perhaps the most applicable. For preliminary analysis of this revenue source, we relied on prior analysis where "ridership rings" were defined by travel times from the MIC. This method would correlate the benefits derived by the properties to the assessment rates collected. This estimate assumed millage rates of .5% and .25% for both the 5 & 10 minute rings, respectively, with a 3.5% growth rate.

Impact fees are non-tax fees charged and collected by local governments or governmental authorities to help fund the capital cost of infrastructure needs brought about by the demands of growth. These one time fees would be paid by developers benefiting directly from the construction of the MIC. The authority to collect such fees is found in local ordinances and in Florida case law.

Tax increment revenues are derived from the increase in taxable assessed values within a prescribed area after a base assessment year has been established. The increment results from private development activities which are partially induced by the improvements financed by the increment revenues and from other economic developments in the prescribed district. All or part of the "increment" thus defined would flow into a special trust fund for a period of time to help pay for improvements within the affected area or district. The payments therefore do not represent an additional tax or fee for the private developer. Although current legislation limits the use of such districts to "blighted areas," the applicable definition appears broad enough to include transportation facilities. Tax increment financing has been used for transportation projects throughout the United States.

Tax Increment Finance District (TIF): The MIC land acquisition funding scenario assumes that Dade County establishes a TIF district within the study area. The revenue scenario assumes that $21.50 per building sq m ($2.00 per building sq ft) is directed to the TIF program for office and retail uses and $16.00 per building sq m ($1.50 per building sq ft) of hotel and meeting space. The tax rates are held constant over the entire analysis period. The TIF revenue stream anticipates an absorption rate of 1% for the MIC joint development scenarios.[74]

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[74] Ibid.

While all of these sources have the potential to provide these levels of funding, the Special Assessment Revenues were the most viable and feasible for this project.

Capitalization and Cash Flow Management Opportunities

Potential mechanisms to match cash flows and MIC construction are part of the capitalization strategy. Since the funds advanced using the strategies will have to be repaid over the forecast horizon, no net contribution from these mechanisms is incorporated into the sources a revenue projection. As the program advances, a more detailed analysis of sources and uses of funds will be needed to scale borrowing requirements over the planning horizon, match specific leveraging mechanisms and income streams, and consider coverage ratios, interest rates and reserve requirements in greater detail.

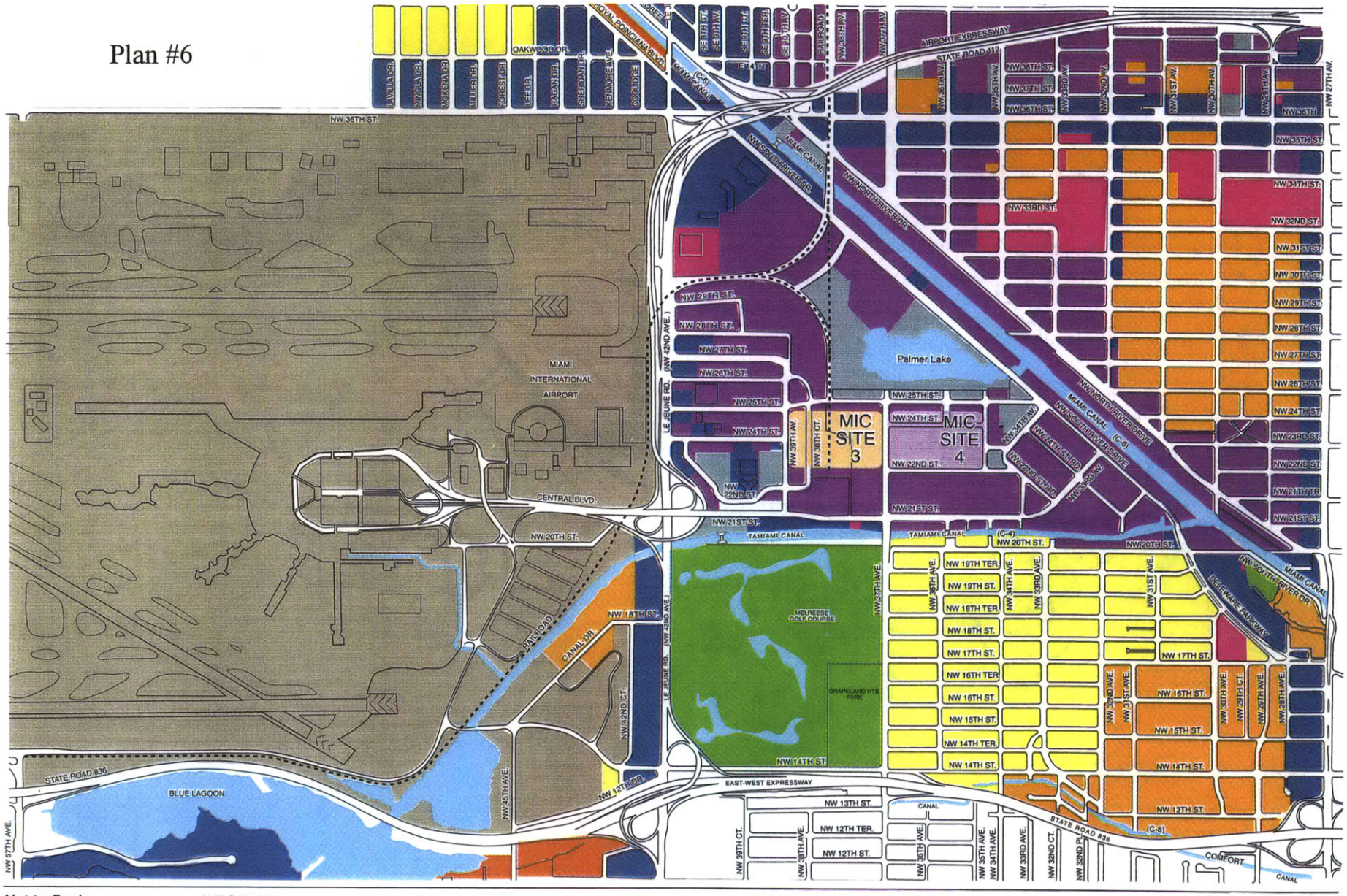
Projected Internal Rate of Return (IRR)

In the analysis that have come before this document there has been some effort to estimate an internal rate of return for the MIC. Those estimates fall somewhere between 7 and 12%. The financial analysis was developed in the early stages of this project and only barely analyses the myriad of financial possibilities and opportunities as well as risks for the MIC. It also excludes any possible auxiliary development income as an addition to the project as a whole. The authors of this thesis have, due to the lack of time, resigned their efforts to the development process as a whole, understanding that the financial underpinnings of the MIC project can and will be ever changing. In addition, we have set up a quasi public ownership entity, which will be explained later, whose main focus will be that of creating a successful MIC meshing successfully with the surrounding area. The ownership will not be so much in the money making business as in the economic development business.

XV. LAND PLANNING

There is a dual purpose to this topic. First, to maximize usage of the transit investments taking place at the MIC and in Miami, and second, to take advantage of the congregation of transit at the MIC in order to create urban commercial real estate value. The universal theme between these two goals is to maximize the value of one investment through the maximization of utility of the other. The current land use plan for the area around the proposed MIC is illustrated in Plan #6. **(See Plan #6, Page 103)**

Plan #6



Not to Scale

LEGEND

- Vacant
- Low Density Residential - up to 6DU/AC
- Low-Medium Residential - up to 13 DU/AC
- Medium Density Residential - up to 25 DU/AC
- Parks & Recreation
- Business & Office
- Industrial & Office
- Transportation Terminals
- Public

EXISTING LAND USE

Miami Intermodal Center

Source: Bermello Ajamil & Partners, Inc. December 1993

Comprehensive Development Master Plan

The Comprehensive Development Master Plan (CDMP) is the official long-range and comprehensive guide for the orderly growth and development of Metropolitan Dade County. It is adopted to direct and achieve coordinated and harmonious development and land use in a manner which will permit the planning for adequate community facilities and protect the environment.

The CDMP Elements include, as noted in Table 22 below:

METRO-DADE CDMP ELEMENTS	
1. Land Use	7. Housing
2. Traffic Circulation	8. Water, Sewer and Solid Waste
3. Mass Transit	9. Recreation and Open Space
4. Ports and Aviation	10. Intergovernmental Coordination
5. Conservation, Drainage, and Aquifers	11. Capital Improvements
6. Coastal Management	

The reason for inclusion of the CDMP in this document is to show that Metro has all the right components, on the books, for encouraging intelligent, profitable, and sustainable development. If the MIC and surrounding areas are developed according to Metro policy, the area will be a success. The problem is that the right components are not utilized or enforced. It is the goal of this project to present alternatives using existing elements from the CDMP.

Land Use Guidelines and Controls

The Land Use Element identifies locations in Dade County where various land uses and intensities of use will be permitted to occur in the future. It reflects existing urban service capacities and constraints, it also establishes locations where future service improvements will have to follow. It both reflects, and seeks to promote, activity in the private land market. Recent development trends are carefully considered, however, the Land Use Element endeavors to assert County influence on locations and intensity of future development activity.

The Goals of the Land Use Element of the CDMP are stated to; "Provide the best possible distribution of Land Use, by type and density, to meet physical, social, cultural and economic needs of the present and future resident and tourist population in a manner that will

maintain or improve the quality of the natural and manmade environment and amenities, and ensure the timely and efficient provision of services."[75]

Objective 3 from the Land Use Element of the CDMP states; "The location and configuration of Dade County's urban growth from 1989 through the year 2010 shall emphasize concentration around centers of activity, renewal and rehabilitation of blighted areas, and contiguous urban expansion when warranted, rather than sprawl."

Traditional Neighborhood Developments

Traditional Neighborhood Developments (TNDs) is a special land use category which incorporates a broad mixture of uses under specific design standards. The purpose of the TND is to enable the creation of new communities that offer social and architectural quality, characteristic of a coherently planned community. The concept is patterned earlier developments and provides a design clarity through a hierarchy of streets, a focus towards pedestrian activity, low scale community support activities, and the use of civic buildings and public spaces, as the focal point of the neighborhood. Originally thought of as residential community that would incorporate commercial and public uses in traditional town making principles, the TND could be overlaid in the Triangle as a guideline for making a strong commercial/industrial community.

Activity Centers

Diversified activity centers are encouraged to become main hubs for future urban development intensification in Dade County, around which a more compact and efficient urban structure will evolve. These activity centers are intended to be high-intensity design-unified areas which will contain a concentration of different urban functions integrated both horizontally and vertically. Such centers would be characterized by physical cohesiveness and an intensive use of land. Metropolitan accessibility is an essential requirement for proper implementation of this concept. Mass transit service should be provided directly to the centers.

Urban Development Boundary

A strength in the CDMP is and in controlling urban sprawl is the imaginary yet real line that encircles metropolitan Miami. Urban development, of any kind is restricted beyond the boundary line.

Urban Infill Area

The Urban Infill Area is a variation of the Urban Development Boundary, a reversal almost. The purpose is to define an area which is basically the urban areas and older suburban

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[75] Comprehensive Development Master Plan for Metro-Dade County. Metro-Dade County Planning Department. April, 1994.

areas of the metropolitan areas of Dade County. The area is roughly east of, and including NW/SW 77 Avenue and SR 826, and includes all of MIA, the MIC site and the Triangle. Development is encouraged to occur inside the Urban Infill Area by giving favorable land use and zoning regulations and eliminating development fees tied to infrastructure.

Metro has enough regulation to encourage to occur in the right places and in a desired form. From limiting expansion, tying development to serviceable levels of infrastructure, development fees for new infrastructure, and earmarking infill areas, Metro can set the parameters for a successful MIC and Triangle development area.

Land Use and Transit Planning

The relationship between a mass transportation facility and surrounding land uses is complex and bi-directional. By providing enhanced access to surrounding areas, the transit facility may induce or shape development in its vicinity. Conversely, the type of land uses, their relationship to the transit facility, and pedestrian orientation of surrounding areas affect the extent that people choose transit. This section presents preliminary observations regarding the potential influence of the MIC on surrounding development and on the presence or potential for development which supports transit use over the automobile or reduces travel.

A Station Area Aesthetics, Design and Development (SAADM)) process has been established as part of the East-West Multimodal Corridor Study. This effort, which will continue throughout the implementation of the selected improvements, is directed at identifying and facilitating opportunities which enhance development along the transit line and encourage development patterns which complement the transit improvements. Previous local planning and zoning in the East-West corridor has not been specifically directed at transit supportive development. The importance of such an effort has recently been acknowledged and is reflected in the establishment of an SAADM Committee with broad government and community representation and support.

A number of factors bear on the extent to which an area is transit supportive or transit friendly. Land uses which generate a high number of person trips are more transit friendly than land uses which generate few person trips or require high percentages of truck or car trips. Transit supportive uses include offices, high density retail, entertainment, hotels, and uses with high employment densities (employees per hectare/acre). The extent to which retail is transit friendly depends in part on the nature of the goods and services provided and the likelihood that customers will use transit for shopping trips or shop during a trip made for another purpose.

There is evidence that a fixed guideway station located in or immediately adjacent to a regional shopping center can result in a high rate of customers that use transit. Offices concentrate a large number of employees in a relatively small area and often involve many visitors or service people who will use transit if it is attractive and convenient. Good design contributes to the development of station areas which are pleasant. efficient, and encourage travel by transit and reduce travel by automobile. Both ends of a transit trip will involve some degree of walking. Moreover, the outer (non-home) end of a transit trip must almost always be completed by walking to the destination. Therefore, the attractiveness of the area to the pedestrian is a key factor in transit supportive development. The pedestrian-orientation of an area includes things as obvious as sidewalks, signage, and lighting, but also includes more subtle aspects such as land uses which attract pedestrian activity to streets and walkways and design which integrates the public rather than isolates them.

Local or express bus services have not shown potential to attract development in the United States. Express buses may support existing concentrations at a major destination such as the Central Business District, but do not attract development to outlying locations. With proper conditions, rail transit can attract significant transit supportive development and support the CBD as the key regional center as evidenced in Atlanta, Washington, Toronto, Portland, and the San Francisco Bay area. The potential to attract transit supportive development to a station area depends on a number of factors including the utility of the transit line (i.e. where it can take you and how quickly), citywide economic conditions, local (neighborhood) economic conditions, aesthetic conditions in the area, existing land use characteristics, road access and visibility, and socioeconomic conditions in surrounding neighborhoods.

The transit component of the alternatives share a common alignment and station sites from FIU to the MIC, and in Miami Beach. A number of station sites in West Dade, particularly at the Palmetto Expressway, the Blue Lagoon area at NW 57th Avenue, and the MIC area, display some of the greatest potential for transit supportive development, but are shared by all alignment options. Likewise, Miami Beach already displays pedestrian and transit oriented characteristics and is continuing to develop a high density mixed use pattern, particularly in South Pointe, but is also common to all of the transit options.

Design Guidelines

From the beginning there should be a specific set of design guidelines that create standards for the entire project. These guidelines should encompass not only aesthetics and

quality but also the tone of the structure and the feeling of place. The intent is to match the development methods of the private sector. The design guidelines work similar to how a private developer controls the aesthetics of a subdivision or the manner in which a shopping mall manager controls the mix of tenants.

Sustainable Communities

The concept behind sustainable communities is to encourage mixed use of structures and areas to create viable self contained communities. Through higher densities and encouraging pedestrian environment, mass transit can be successful. The addition of mass transit to an area can have the effect of reducing auto dependency and allowing for more development then otherwise would happen. It seems as ironic but there are times when higher densities encourage protection of the environment and create the possibility for mixed uses in a community.

Environmental

The Triangle area is surrounded by water on two of its three sides. This water happens to be a working port and borders many polluting industrial properties. Throughout the Triangle there are parking lots, service and repair yards, manufacturers etc. Then there is the Airport and the accompanying noise, auto emission, and jet fuel problems. The area has the possibility of providing real contamination and clean-up problems.

One solution is already in negotiation. Trust for Public Land (TPL), FDOT and Dade County, are exploring the potential to tap innovative financing techniques to accelerate land acquisition. The use of options to gain control over properties at an agreed price prior to formal acquisition and the issuance of Certificates of Participation (COPS) to spread land costs over an extended time frame are being evaluated in conjunction with programs offered by the TPL.

The TPL is interested in the Palmer Lake area specifically. The lake is home to many manatee, an endangered and protected species in Florida. The TPL is involved in offering loans for development if there is an agreement to restore and preserve Palmer Lake and maintain a degree of open parkland around the Lake. More joint clean-up efforts could take place in order to maintain the Miami River and the Tamiami Canal.

MIA is counting on the MIC to solve a serious problem with auto emissions that the air quality at MIA the worst in Miami. By removing some of the auto traffic to the MIC, reducing trips to MIA through transit, and removing the rental car vans and other busses, will greatly reduce the choking condition at the terminal drives.

XVI. RISK FACTORS

An analysis of the risks been undertaken to determine the strength of the MIC financing strategy, to identify feasibility factors, assess the likelihood that anticipated revenue streams will be realized, and to facilitate the evaluation of potential project build alternatives. The risk analysis identifies the major sources of uncertainty affecting the MIC financial strategy and the mitigation measures required. An internal rate of return (IRR) model has been applied to assist in assessing the adequacy and capitalization potential of the revenue streams identified. The risk evaluation also considers the stability and reliability of the funding sources, the reasonableness of the assumptions incorporated into the revenue forecasts, the capacity to operate and maintain existing services and facilities if the MIC is built, and the adequacy of contingencies at the current stage of project development. The major risk factors to be considered are as follows:

Miami Politics

A major force in the success of the MIC is the political climate in Miami and South Florida. Miami is politically diverse in that sides are often drawn on ethnic, racial, and nationality basis. Since virtually everyone is from someplace else, with close to a third of the residents being foreign born, unity and consensus building takes extra effort. A major problem is that the Metro form of government allows for regional planning and visions, there is still no clear leadership. Metro is governed by a 13 member commission. This allows for territorial battles to develop. This and the fact that the City of Miami is small in size and population and power and therefore has a weak mayoral system, leaves a leadership void at the top in Miami. Hopefully this will change this fall with the institution of a strong Metro Mayor who can steer through projects. Until that time, it is appropriate that the MIC remain under the auspices of the FDOT and have Tallahassee continue to call the shots.

Funding Sources

Care must be taken throughout the development process to ensure that all funding sources remain dedicated to the project. There is the possibility that due to the length of the development timeframe, funding sources may get distracted or distraught with the MIC's progress. Because of the size of this project and the 25 year development horizon different funding sources will be utilized at different times throughout the development process and must be readily available when required in order to avoid expensive construction delays.

Several of the funding sources for the MIC project are anticipated to be from taxing other local area revenue producers. If their future revenues fall short of their projections, revenues for and funding from these entities may be in jeopardy.

Government Support

Commitment from elected officials is of the utmost importance. There needs to be strong, visionary leadership at Government Center to carry out this mammoth project. Given that this is an election year, there will not be any clear direction from Metro as to the status of the project or funding. An example of the politics playing at Government Center, on June 20, 1996, the Metro Commission voted 7 to 6 to roll back $.02 of the County gas tax. The roll back is for a six month period, conveniently ending after the election, when it will be revisited and most likely voted back in. As long as Metro plays games with revenues in order to fool voters, instead of educating the voter of the benefits of the gas tax, there is little stability with government sources of revenue. It's difficult to sell transit projects to Washington on the basis of your communities commitment to transit and sustainable development when the commission votes away a $.02 gas tax. Hardly a convincing argument. The same can be said for Tallahassee and Washington. There is too much volatility in resources from government sources, especially when the political climate is opposed to such projects. Given the situation, it is another argument for reasonable expectations and sound economic decisions based on commercial projections for the area, not ridership projections alone.

Public Support

The MIC and East-West Corridor project have done an excellent job of informing the general public, holding multiple open forums and presentations to the public and government. FDOT has even opened a public information office in the Waterford office park. Care must be taken to include the public and the surrounding affected communities in the planning process, especially a project that will affect such a large area. When the public is involved in the planning process they tend to be more trusting of change. An uninformed public and their concerns, whether applicable or not, can kill any deal instantly.

Land Acquisition

The greatest risk in the MIC development program involves the extraordinary amount of land acquisition required. The land must be taken at an early stage of project development in

order to preserve options planned for future modal connections and avoid excessive speculation premiums. Unlike other project elements which are largely independent and can withstand delay without causing significant penalties, land acquisition must go forward quickly and continue through to completion in order to minimize the effect of speculation on prices.

Risk mitigation measures include: cash purchases of land with FDOT right-of-way acquisition bond proceeds, the use of options to lock-in pre-speculation prices, the potential for ultimate re-sale of land to other governmental units for related public purposes, and the flexibility to introduce revenue-producing interim uses. It is also important to note that the MIC financial plans assume no "take-out" of land costs by MIC tenant modes. The MIC is assumed to contribute the cost of land to the various project elements as an integral part of its "host" role in facilitating interchange between numerous transportation systems.

Financial Risk Analysis

The MIC is a large, complex undertaking; however, its risk profile appears to be lower than other transportation projects of similar magnitude. The greatest uncertainties involve initial land acquisition, the financial capacity of MIA to fund construction and operation of the MIC/MIA Connector, and to a more limited degree, the capability of the MIC implementing entity to assemble the many pieces of the financing package assumed. About 35 percent of MIC revenue is derived directly from the private sector through payments by airlines, rental car agencies, concessions at the MIC and MIA, and joint development. Highway tolls and other user fees Imposed on cruise ship passengers, taxis and commercial vehicles yield an additional 20 percent of MIC revenues,

Demand Forecasts

Demand forecasts are a product of past information and speculative outlook. The MIC project is primarily a transit project and is relying on several different industries forecasts about their respective futures, especially their growth potential. All the financial projections for this project are based on growth numbers, especially for the airport, that far exceed current conditions. A realistic analysis must be conducted to determine the downside if any of the growth projections happen to be shy of their anticipate mark.

One unknown variable is whether the MIC will live up to its forecasts and handle the excess passengers who otherwise would be clogging the roadways. Earlier in this document we listed the demand forecast for the East-West Metrorail and Metro passenger counts at the MIC.

High Speed Rail is also a big question. Its never been tried in America, and is being considered in a place without much of rail use, in its recent past. HSR may be successful given that it going after the tourist trade and they may be more familiar with the mode of transport.

MIC Facility

The MIC also contains several areas of concern. The main problem is will the South Florida commuter utilize all the new forms of transportation. Every form of public transit ever built in South Florida has fallen short of ridership projections. The problems are threefold. First, none of the projects are ever completed, Metrorail built only one line, and there are never multiple choices of destinations or modes of transit. Rarely has intermodalism been achieved. Second, once at a station, there's nothing there. Metrorail and Tri-rail have both been built in complete isolation of there environment. One needs a car waiting at either end of the trip. Lastly, South Florida is definitely a car culture. South Florida is behind most areas, including than Los Angeles, in innovative planing solutions to the automobile. A combination of the pattern of development, the transient population that used to ride transit up north, and the heat and humidity, make transit a tough sell. The image problem and lifestyle makes transit use a tough sell given the sparseness of the system. It is yet to be seen if all of the proposed transportation improvement were put in place, with the projected traffic increases, there may then be enough critical mass and destinations to support the MIC.

Transportation Volatility

The MIC and Airport expansions in general are risky investments when they are tied to one specific carrier. American Airlines now carriers 53% of all traffic at MIA. With its new home, the "Super A," Miami is placing a big bet on American Airlines. In a span of twelve years Miami lost the hub status and headquarters for three airlines, National, Eastern and Pan American. The problem is not what happens if American scales back operations or goes under. Neither is a real concern because someone else will immediately pick up the slack, just as American did when Eastern closed. There is also little concern about American's health or its strategy, they are to be commended for creating one of the most efficient and profitable hubs in the World. The problem is, the combination of building such an expansive, $1 billion, terminal for American and their being so dominant in the market. MIA may begin to be seen as an expensive place in which to operate that discourages competition. Other airlines do not want to have increased landing fees designated to pay for Americans new hub.

XVII. SCHEDULING

The current East-West Corridor plan has been divided into two different projects, the MIC and the East-West Corridor transit and highway improvement projects, to be built over a 20 year time frame. Even though the MIC has been split off from the East-West Corridor, it's success is still heavily dependent on the ultimate connection with multiple forms of capital intensive infrastructure. The strategy seems to be, build the infrastructure to the MIC and they will come, but what if they don't. The appropriate plan would be to create a need for the MIC and then for the expensive infrastructure. To accomplish this, the Triangle area first needs to be packaged as a unified and attractive development package and then the beginnings of the MIC can take place with inexpensive and flexible forms of transportation coming into the site.

Land Acquisition

The land acquisition process should begin immediately in order to avoid any speculative land pricing. If the TDC is developed successfully and design guidelines are implemented and zoning enforced, then it is not necessary to purchase all the land. For example, the Crown Suites Hotel off of Le Jeune Road should be left to its current ownership. They will be required to meet the design guidelines and pay the increased TIF, but the new infrastructure and activity should greatly increase their property value.

Project Phasing

Due to the nature of a project of this size, a phasing plan should be completed in accordance with demand figures for the development cycle to 2020. It will take approximately 17 years to complete the build-out of the entire MIC project including, the MIC Hub, Rental Car Hub, MIC-MIA connector, out-parcel development, and MIA landside expansion.

Incremental Development

The current MIC plan is to be built in two phases, but there are many things that can be done today to ensure that the MIC site is developed as a transportation hub. This process has already begun with the arrival of Tri-rail to the MIC Site.

A major flaw in the current transportation network is the lack of bus service to the Airport. A step which can be taken immediately is to create a network of express buses to serve the Airport from popular destinations such as the Miracle Mile in Coral Gables, Downtown, or

South Beach. The next step would be to build dedicated busways or High Occupancy Vehicle (HOV) lanes along routes such as SR 836. This is a proposal in the East-West Corridor improvements for SR 836. Miami has a dedicated busway under construction along US 1 from the Dadeland South Metro station to Cutler Ridge in South Dade. Before billions of dollars are spent on heavy rail projects and another billion dollars on a station where currently there are only parking lots and boat yards, an interim solution should begin.

An example for Miami is Curitiba, Brazil, capital of the state of Parana. Since 1950 the City has grown from 200,000 to over 2 million in the 1990's. This roughly matches Miami which grew from 500,000 to over 2 million, and both Cities are roughly on the same latitude, on different sides of the equator. The City has found a way to avoid gridlock and air pollution without saddling itself with a white-elephant subway system. Luckily for the City, its mayor of 25 years, Jaime Lerner, was an architect and a city planner with a vision for making rapid urban development bearable. He was keen to encourage a modern high-density city that would give its inhabitants easy access to employment and amenities, avoiding the long distances of America's low-density urban sprawl. Curitiba has developed a system of five major dedicated bus corridors that fan out of the City. Along these bus corridors land use changes and zoning have been implemented to increase density along the bus corridors. The bus corridors are designed in such a manner that they could easily be transformed into light rail lines, grades are acceptable for rail etc., once bus service could no longer handle capacity. By doing this, Curitiba has a bus system which carries passengers at rail capacity and transit ridership that is high for a City its size. Instead of spending $60 to $70 million per kilometer to build a subway system, the bus network cost only $200,000 a kilometer to build.[76] This incremental solution is exactly the intention of the South Dade Busway which eventually will be a Metrorail line, once demand is met.

Commercial development can also be done in an incremental method. There is no need to make the big kill all at once, the goal is to create a sound, profitable, urban commercial neighborhood. Development should occur only when proper infrastructure is in place and the market can support it. Properties, which are waterfront or adjacent to the MIC, are potentially valuable and should be reserved until the best use can support the site.

Interim Components

In keeping with the line of thought in the previous section on incremental development, this section will address some of the Interim Components that can occur on the MIC site until

[76] "Off the rails," Living with the Car, Survey, The Economist, June 22, 1996.

demand is fully realized. This is already occurring at the MIC in the form of the new Miami Airport Station for Tri-Rail. Having Tri-Rail on the site does two things, first it provides the first rail transit to the Airport which will hopefully help increase Tri-Rail ridership and remove some automobile trips to the Airport. The second and most important aspect is that this is the beginning of the MIC with rail transit, tying in to bus service and a shuttle to the terminal which will be the precursor to the MIC/MIA Connector.

XVIII. RECOMMENDED DEVELOPMENT PLAN

To ensure that develop occurs in a orderly manner and in a fashion which maximizes the infrastructure investments in Triangle, a thorough Development Plan will be needed for the MIC and the entire Triangle area. A mistake commonly made when dealing with large infrastructure and public projects is that not enough land surrounding the project is under control for proper development to occur in support of the investment. In the following sections we will present a Recommended Real Estate Development Plan for the MIC and the Triangle area.

As a first step in defining a Development Plan for the MIC, a comprehensive Market Research analysis would have to be performed. It is the purpose of our Development Plan to present the potential for joint development within and adjacent to the MIC.

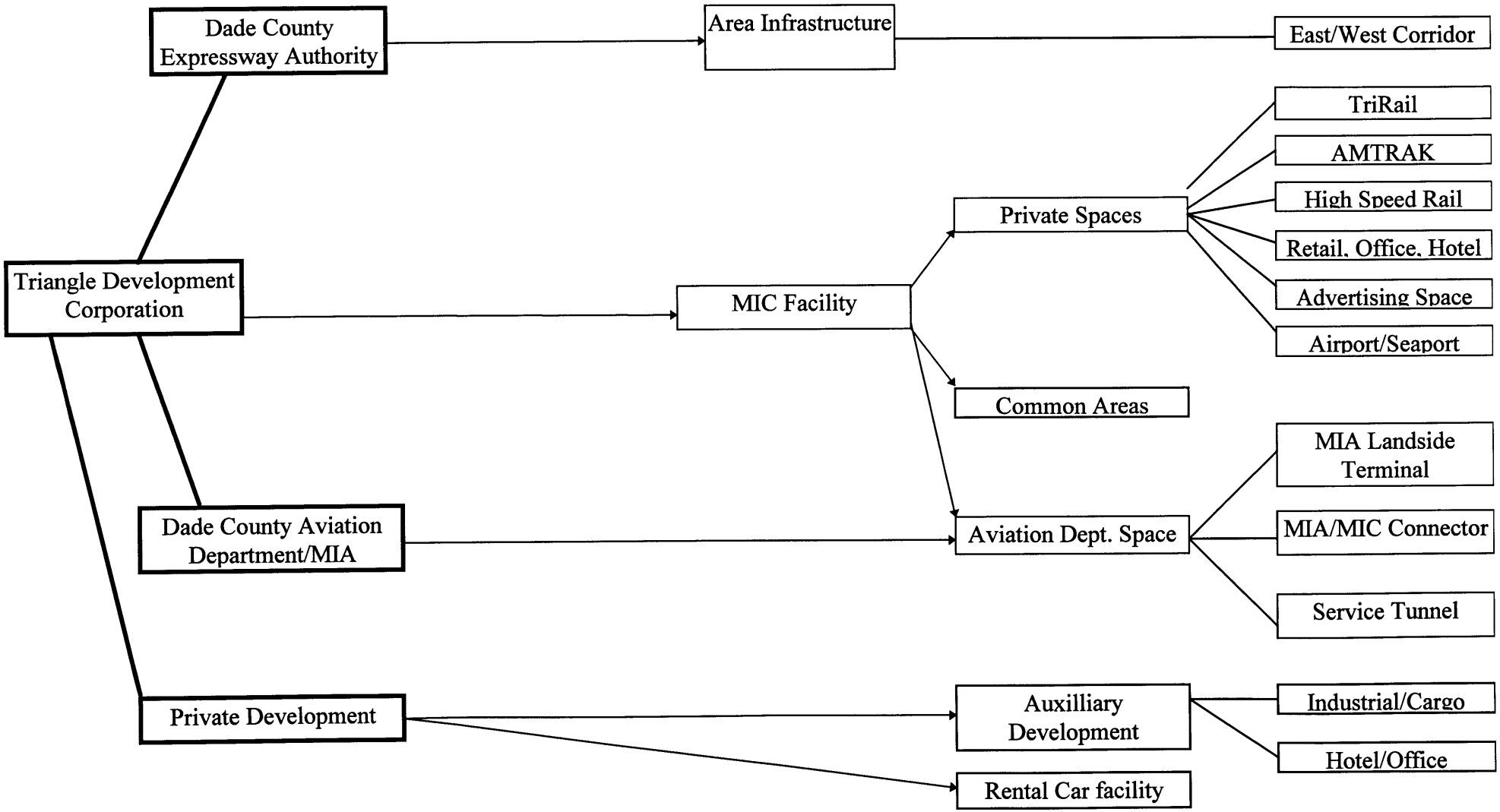
Creation of Economic Development Authority

In order for this project to become a reality it must have the backing of the current Dade County 13 Commissioner style government as well as the new Mayoral style government. First thing we recommend is the immediate creation of an economic development authority which will have control over all planning, zoning, and design configurations for the entire 400 acres. This project will never get off the ground if it does not have one entity overseeing the entire project. **(See Chart #6, Page 116)** We suggest the name; Triangle Development Corporation (TDC) be used for this economic development authority. The name includes the area and gives the impression of private involvement. The TDC must be capable of the following:

- Must have power to enter into contracts for services with public and private entities.
- Must be able to borrow on a tax-exempt basis and enter into long-term leases and purchase of services commitments.
- Ownership structure must conform to FAA requirements for the use of airport revenues to build intermodal facilities.

Chart # 6

MIC Facility & Surrounding Real Estate Structure



- The TDC should be a representative body including members of the DCAD, DCEA, the community, and private developers. This will allow all interests to be addressed in an attempt to avoid problems, which may hinder or delay development schedules.

Land Acquisition and Eminent Domain

The acquisition of all the land for the MIC project becomes more of a dilemma the longer the time frame and the more difficult the legal process of transferring title, and the more important the precise choice of site is to the efficient functioning of the project.

The processes behind the acquisition of the land necessary for the MIC project could experience some difficulties. The wider the time frame for acquisition, the more difficult the negotiation becomes, the more difficult the legal process of transferring title becomes, and the more important the precise choice of site and the amount of land necessary is to the efficient functioning of the project.

In order for the TDC to have a relatively smooth land acquisition process, the authors suggest the immediate formation of a Standby Eminent Domain Authority (SEDA). The formation of the SEDA will allow the TDC, through Dade County, to legally cause the sale of property to the TDC, necessary to the development of the MIC and auxiliary development. The SEDA will enable the TDC to purchase all the land necessary for development of the MIC without the any threats hampering the development process.

In all likelihood the use of the SEDA will not be necessary during the acquisition phases of the development process, it is merely a bargaining chip or an influence to property owners that if they do not sell to the TDC for fair market value, the SEDA will be utilized at high legal cost to the land owner, to force that the land be made available to the TDC. An example of a SEDA's effectiveness is the Cambridgeside Galleria in Cambridge, Massachusetts, owned by the New England Development Company. Cambridgeside is a large regional mall where the development included the acquisition of many individually owned parcels of land. In order for the New England Development Company to secure all the land needed, the city of Cambridge formed a SEDA to aid the acquisition process. It was never utilized but did help propel the land sale process by acting as a motivating factor to the land owners.

Programming and Planning

At first, we suggest that all programming and planning be accelerated so that there is a clear and unified theme and message sent out to the development community and the community

at large. An important task for the TDC is to formulate the appropriate land use for each parcel and amount of overall space to be developed. **(See Plan #7, Page 119)**

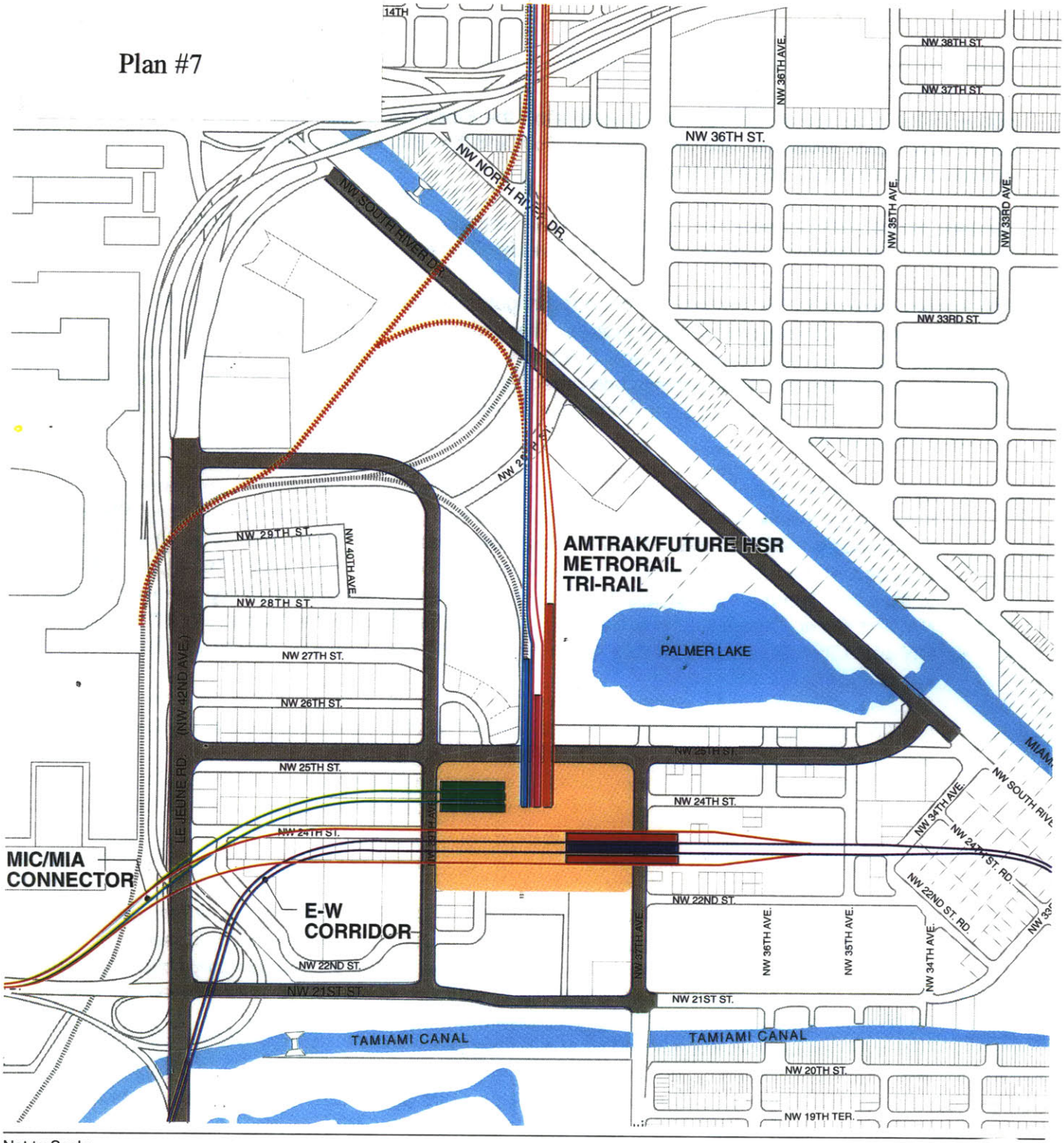
A market report geared specifically towards evaluating the Airport real estate market and the potential for development at the MIC is titled, *Miami Intermodal Center, Joint Development Market Analysis/Development Program,* authored by Economics Research Associates, February 3, 1995. This report utilizes data for the year 1993, an updated report with 1995 data is in the works. Even though the data is three years old, the report is very relevant because since 1993 commercial real estate has continued to improve in Miami. Therefore using the ERA estimates for space would tend to be on the conservative side. In our proposal for the TDC, we are being slightly more conservative, for certain building types. This is a theme that we have kept throughout the development proposal. To be a successful project, and thus community, a long term commitment to quality and well planned development is the best approach for the MIC and the Triangle. We are being conservative in the amount of office and industrial space, and moderate in the hotel proposal at the MIC and the Triangle. The bold projections are in the retail, entertainment and exhibition space, with a World Trade Center (WTC) proposed.

The ERA report states that the Airport market will have an annual demand for office space of 292,800 sq. ft. through the year 2005. The report then looked at available office parks in the region, planned and potential development. The findings were that by the year 2005, due to scarce available land, there would be a shortfall of 1,499,400 sq. ft. in the market that could be supplied by the MIC. Our proposal is only providing for 550,000 sq. ft. of office by the year 2005, with a total build out of 2,250,000 sq. ft. by the 2020 at the MIC and throughout the Triangle. It is easier to fall short of the projected market then to over build. Even with strong market projections, there are still high office vacancies in other parts of Miami that are keeping overall rental rates low.

The entire Triangle area could easily become a large industrial park, given the demand for space and that this is the last remaining vacant land adjacent to the Airport. Given the size of the Triangle area, if developed as an industrial park, it could accommodate around 5,000,000 sq. ft. of space with little difficulty, and fill all of it over the next 24 years. This is in an Airport market which had 37,272,500 sq. ft. of space and a 4% vacancy rate.[77] Even though this is the last available land around the Airport, it is too valuable for the very same reason, to be developed

[77] Miami Intermodal Center, Joint Development, Market Analysis/Development Program, Prepared for: Florida Deaptment of Transportation, District Six, Prepared by: ICF Kaiser Engineers, Inc., and Economic Research Associates, Inc., February 3, 1995.

Plan #7



Not to Scale

LEGEND

- East-West Corridor Rail
- MIC/MIA Connector
- Airport-Seaport Connector
- Tri-Rail
- Metrorail
- Amtrak/Future HSR
- Relocated CSXT Railroad
- Proposed Roadway Configuration
- MIC Site

MIC SITE 3 ROAD AND RAIL IMPROVEMENTS

Miami Intermodal Center

Source: ICF Kaiser, May 1995

for industrial. We are proposing, to the TDC, that approximately 60 acres in the Triangle remain for industrial use. This is in addition to 40 acres along the Miami River which should remain for marine related industries. Areas for industrial development are concentrated, along the Miami River, which will remain a working port, and in the northern half of the Triangle, underneath the MIA flight paths where property values are lower.

The ERA report states that there is an immediate shortage of 1,101 hotel rooms in the Airport market. This was using 1993 occupancy rates and nightly room rates. Since then, both occupancy rates and room rates have risen in the Airport market and no new hotels have been constructed. Projections state that by 2020 there will be a doubling of passengers at MIA, tourism will double, and cruise ship traffic will triple. The projection for the Airport market is for a doubling of units, from the current count of 3,982, by the year 2020.[78] Since the MIC and the Triangle contain all the land at the entrance to the Airport it is plausible to predict that the majority of investment will occur there. We are proposing that 3000 hotel rooms be constructed at the MIC, WTC, and throughout the Triangle by 2020. This is in line with projections and takes into account that the Airport area has competition due to its proximity to Downtown, Coral Gables, and the Beach. To maintain demand at the Airport we are proposing the development of an entertainment destination at Palmer Lake.

The current MIC plan only has 50,000 sq. ft. of retail proposed for the initial phases of the project. The final amount has not been proposed. The plan makes a minimal proposal for retail development for two reasons. First, the Airport is undergoing a major retail expansion program and it is yet to be determined how far that development will proceed. The planners for the MIC do not want to propose anything that will run contrary to Airport expansion plans, especially when the Airport is being brought to the negotiation table. The second reason is that retail is dependent on so many other factors, such as nearby residential and commercial areas, highway and transit access, all items the Triangle area lacks strong fundamentals in. What the Triangle does have is an outstanding location that is about to be opened up with improved highway access and an extensive network of rail transportation. The main factor in the Triangles favor is a large number of international tourists who come specifically to Miami to shop. That is why we are proposing that a much larger retail component be included in the MIC and in the Triangle. We feel that this proposal does not harm MIA's plans in any way because of the different nature of shopping which will be occurring. Retail development at MIA is occurring in the terminal areas, after passengers check-in, and is not accessible to the non-traveling public.

[78] Ibid.

Retail space at the MIC will be for residents, workers, commuters and tourists alike who are passing through the MIC or that come intentionally to the Triangle area. Retail can occur in four variations. First, at the MIC Hub, where we are proposing 100,000 sq. ft. of retail included in the complex. This retail will primarily be focused on commuters and Airport passengers. The average airport passenger does not want to shop until after they have checked-in, so their impact will be minimal. But by the year 2020, tens of thousands will be passing through the MIC, the MIA parking structures, the Rental Car Hub etc., enough to make a sizable retail audience. The second form of retail will be of a neighborhood or support retail that will enhance the office and industrial components. This will be in the range of 100,000 sq. ft. and will primarily service the approximately 10,000 employees in the office and industrial areas. The third retail model will be on more of a regional scale which will offer space to big-box category killer retailers. Almost all retail space in Miami is located on SR 826 serving the outlying suburbs. Retail space, for large box retailers is almost non-existent in urban areas of Miami, due to the lack of large land tracts. The power center will be approximately 200,000 sq. ft., with three large box retailers as the anchor tenants. The appropriate site is at the northern edge of the Triangle at the juncture of SR 112, NW 36th Street, Le Jeune Road, Okeechobee Road, and South Miami River Drive. Being the busiest intersection in the County, also comes the distinction of being one of the more dangerous intersections. Improved roadways can solve that and ensure direct access into the Triangle area and the power center. The last retail component will be a theme center based around Palmer Lake. Constructed to the northeast of the MIC, within the MIC pedestrian zone, the Palmer Lake Center will incorporate an exhibition complex, the World Trade Center (WTC), and a large convention center hotel of 750 rooms. The Center will have direct access to all forms of transport at the MIC, would have good highway connections, and would be a five minute ride to MIA for passengers on long layovers. The complex could be a mix resembling various South Florida retail centers. Bayside, an urban waterfront marketplace by the Rouse Company in Downtown Miami; Cocowalk, an urban retail and entertainment center in Coconut Grove; or Sawgrass Mills, the Worlds largest outlet mall that is on every tour bus itinerary in South Florida. The Center would encompass 600,000 sq. ft. and offer retail space as well as entertainment oriented uses. With the waterfront site, the WTC, and the proposed hotels in the area, the Center could become a major entertainment zone. Previous proposals for the MIC had suggested a mega-mall and a large casino on the site.

The most daring proposal, on our part, is to develop a World Trade Center (WTC) in the Triangle at Palmer Lake. The current proposal for the WTC is in Downtown Miami on Biscayne

Boulevard. The WTC, which is essentially a convention/exhibition center and trade showroom, is ill suited for a waterfront financial district site. The entire trade community, exporters-importers, manufacturers, etc., are located in the Airport/West Dade market. Even shipping lines, with major cargo operations at the Port of Miami, are based in the Airport market. The current proposal, which is strongly backed by political leaders at the Downtown site, calls for an 800,000 sq. ft. center. We are suggesting the same size center at the Palmer Lake Center, with the added benefit of the retail entertainment district and the 750 room hotel. The development potential for the MIC project is noted in Table 23 below:

DEVELOPMENT POTENTIAL THE MIAMI TRIANGLE TRIANGLE DEVELOPMENT CORPORATION				
	OFFICE	INDUSTRIAL	HOTEL	RETAIL ENTERTAIN
MIC HUB[1]	500,000	0	750	100,000
WTC-PALMER LAKE CENTER[2]	250,000	0	750	600,000
TRIANGLE OUT PARCELS	1,500,000	1,750,000	1500	300,000
TOTAL	2,250,000	1,750,000	3000	1,000,000

1. These figures do not include the 1,078,000 sq. ft. of space required by the MIC for transit areas, MIA landside operations, FOX station, and Rental Car Hub.
2. These figures do not include the 800,000 sq. ft. of exhibition space in the WTC.

The total amount of commercial space being developed, outside the MIC and WTC public spaces, is 8,000,000 sq. ft. Even at these levels, there will be available land for future development. One benefit to having transit is that higher-density development is encouraged for three reasons; first, land values rise near the station forcing higher densities. Second, higher densities are desirable to create critical mass near the MIC. Lastly, transit use translates into the need for fewer parking spaces per workers, freeing up more land for development.

Creation of Land Use and Design Guidelines

We recommend that the TDC be an integral part in the creation of the land use and design guidelines for the entire project. The land uses should be those that are most conducive to the area and those which enhance the use of the MIC and transit. Effort should be made to utilize sustainable development techniques used in other recent developments around the country. All

efforts should be made to clean up the area and create a development that maximizes open spaces, especially around the Palmer Lake Area. As mentioned earlier, effective environmental management may result in grants from the Federal Government.

Prior to finalizing a feasible joint development plan, a considerable amount of coordination will be necessary to develop a conceptual land use plan for the study area that optimizes the attainment of the other MIC objectives - accommodation of MIA landside functions, rental car facilities and improved vehicular access. Other important issues that must be addressed are joint development, economic feasibility and benefit, parking constraints, traffic congestion, and zoning limitations.

Land Use

The TDC needs to form a set of Land Use Designations and Development Guidelines that allow sensible development to occur at the appropriate place at the opportune time. For example, around the MIC there should be a special development zone which encourages transit use and pedestrian activity. Within this area, the MIC Hub Pedestrian Zone, only commercial uses that generate heavy amounts of pedestrian traffic should be located, preferably mixed-use projects that offer multiple reasons for usage at all times of the day and hopefully the night. The land use designations for the Triangle are noted in Table 24 below:

LAND USE DESIGNATION THE MIAMI TRIANGLE TRIANGLE DEVELOPMENT CORPORATION		
	ACRES	MAIN USES
TRANSPORTATION ACTIVITY-CENTER	80*	MIC Hub, MIA Landside Facility, Rental Car Hub; High Density: Office, Retail, Hotel
MIXED-USE	60*	High Density: Office, Retail, Hotel
COMMERCIAL	60	Medium Density: Office, Retail, Hotel
ENTERTAINMENT TOURISM	40*	World Trade Center, Exhibition Center; High Density: Retail, Entertainment Center, Hotel
INDUSTRIAL	60	Low Density: Industrial
MARINE	40	Low Density: Industrial, Marine Facility
RECREATION	60	Parks, Recreation Facility, Open Space Preserve

* Signifies areas within the MIC Hub Pedestrian Zone.

The acreage allotments in Table 24 are in gross area. Approximately 30% of overall land area is in roadway, right-of-way, easements and other public areas.

Design Guidelines

The TDC needs to develop a set of Design Guidelines that steer building design towards aesthetically pleasing and strong urbanistic solutions. For example, inside the MIC Pedestrian Zone, buildings would have to build up to the sidewalk and have habitable space at the ground floor, preferably retail. By creating the proper environment, transit use can be encouraged, thus reducing auto usage.

Height limits throughout the Triangle will be restrictive because of the approach to MIA runways. In many ways the flight paths serve as a land use generator, with certain noisy areas relegated to industrial use. **(See Plan #8, Page 125)** Most of development will be in an area between runway flightpaths, where height limits are not as restrictive. Having these limitations should be a beneficial factor, keeping buildings at a reasonable scale for the pedestrian. The Design Guidelines should be used as a pattern book to pull from when designing in the Triangle. In no way should it compromise the designer, only offer a set of rules to work within.

Development Phasing

Due to the excessive size of this project, we recommend that all development be phased according to use and economic demand. The timeline which flows loosely outlines the phasing of the development for the TDC. The items are grouped in five year increments, and not in any order of importance or priority. **(See Chart #7, Page 126)**

1996 - 2000

Triangle Development Corporation

The Triangle Development Corporation (TDC), should be formed immediately as the sole provider of direction, policy, and leadership in developing the MIC and the Triangle.

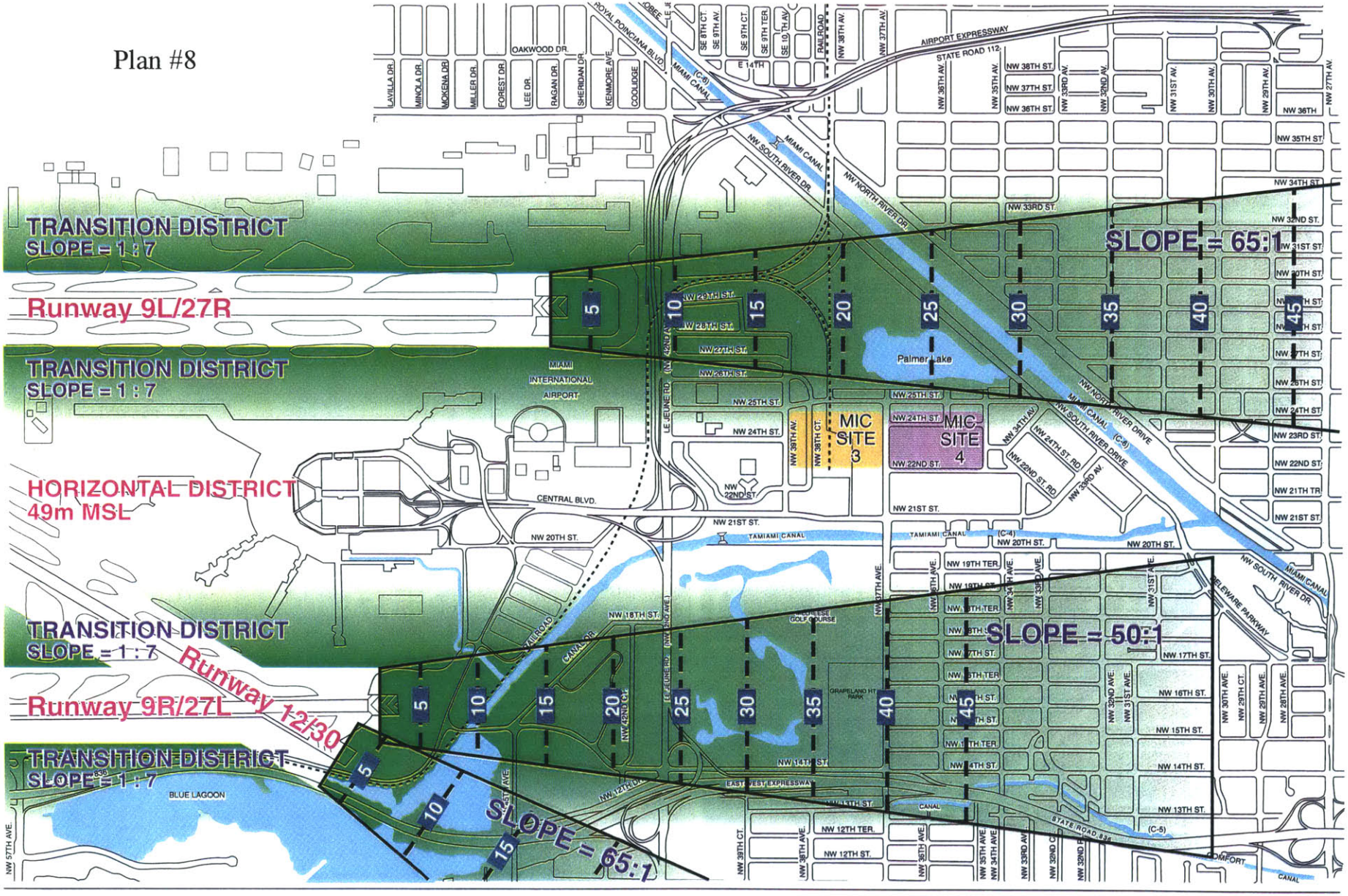
Lobby Government Center, Tallahassee and Washington

The lobbying has already begun in Government Center, Tallahassee, and Washington, and will continue during the entire life of the project and after completion.

Commitment from Metro-Dade

Metro needs to strengthen its vision for Miami. Development has to be encouraged within the Urban Infill Area, and transit corridors. Without Metro's direction, the MIC will not succeed.

Plan #8



Not to Scale

LEGEND

Instrument Approach District Height Restriction Surface

NOTES:

1. All Elevations in Meters Above Mean Sea Level (MSL).
2. Max Elevation for Horizontal District Shown is 49 m (160 ft) MSL.

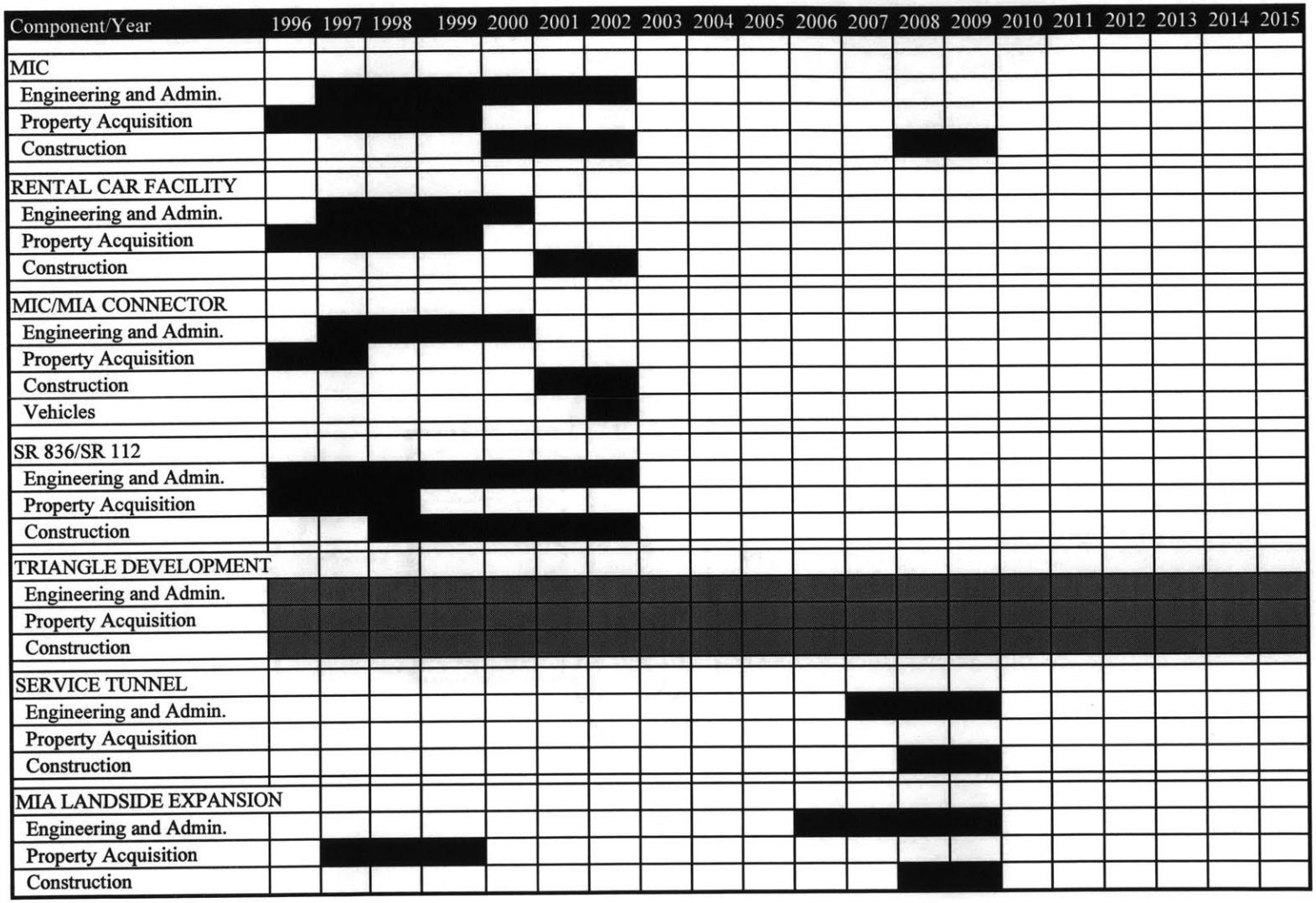
Figure 3-7

MIAMI INTERNATIONAL AIRPORT ZONING

Source: Dade County Zoning Code, 1993

Chart #7

Development Timeline



Specified Time Period Throughout

Tax Increment Financing District

A special Tax Increment Financing District (TIF), specifically for the Triangle should be formed. The entire 400 acre Triangle area should be overlaid with a special district which should last for the duration of the project. Properties near the MIC Hub should be in a higher bracket. Separate TIF districts should be formed for the East-West Corridor, and the Miami River Port areas.

Land Acquisition and Eminent Domain Process

The process of land acquisition and eminent domain has to begin immediately. Properties immediately adjacent to the MIC Site should be purchased first. There is no need for all 400 acres to be under the ownership control of the TDC. There are key properties that need to be purchased, either adjacent to the MIC, or at other locations to ensure that projects can occur. After the master plan has been approved, acquisition for roads, rail lines, etc. can commence.

Negotiations with Property Owners

To keep initial costs down, TDC will not be able to purchase all the necessary properties in the Triangle. TDC will have to include all property owners, negotiate the use of property and form agreements between owners. The purpose is to form alliances with property owners, involve them in the process, and work on timing development and uses for their property.

Develop Program Market Study for Triangle

The planning process for the MIC, the East-West Corridor, MIA, FOX and the Port are all well underway. The location were all these projects are to meet has not been studied effectively. A complete market analysis, development of program, proposal of appropriate size, schedule, budget, and financing package, should all be encompassed in the Development Program.

Build-Operate-Transfer

Develop Build-Operate-Transfer development strategy, seek alliances with major developers.

Investment and Financing Strategy

Develop investment strategy, seek alliances with investment fund sources, begin bond process.

Negotiations with Trust for Public Land

Negotiations with the Trust for Public Land should continue to proceed in acquiring financing for land acquisition surrounding Palmer Lake.

Bid Process for Development Master Plan of the Triangle

The bid process for Development Master Plan of the Triangle should occur once the scope of the project has been approved. Many components such as the MIC Hub, site work, and private development parcels are dependent on direction from the Development Master Plan on how to proceed.

Bid Process for Master Developer of the Triangle

It is desirable to have the Master Developer of the Triangle involved from early on in the planning and design process, the formative stages of the project. The Master Developer can offer insight to the process, especially since they can immediately respond to issues and determine costs and procedure. Therefore developers should be brought into the planning process right as the Development Master Plan goes out to bid. As the plan proceeds, and the developers are familiar with the project, then the bidding should occur for the Master Developer.

Bid Process for Master Plan of the MIC

The bid process for Master Plan of the MIC can occur simultaneously to the bid of the Development Master Plan for the Triangle. The two plans should be worked on in unison so as to allow for coordination between the MIC Hub and surrounding development. Even so, the two plans should be kept separate in terms of planning, design, developer, in recognition that these are very different projects, demanding unique solutions.

Bid Process for General Developer of the MIC

The bid process for a general developer of the MIC will be an important step. The General Developer of the MIC should be brought on board early in the MIC planning process to ensure that they can begin cost analysis and planning for biding out to the subs.

Develop Land Use Standards

The TDC needs to create a strong policy towards land development. Properties should be developed once the infrastructure is in place. Development should only occur when market conditions are optimal. Development needs to follow the Master Plan as to location, building type, and zoning regulations. Most importantly is the timing of development. Certain properties should be developed early in the process while some of the more desirable properties should be held off the market, until certain infrastructure components are constructed, to maximize value. Premature development may be of a density too low given future improvements to the Triangle.

Set Development Guidelines

As mentioned in the previous section, it is just as important to control the what, where and when, of development as it is to control aesthetics and design. The TDC should develop with the Master Developer a set of guidelines to steer projects through. The Master Plan, which should be continuously updated to reflect the market and the addition of new infrastructure,

Develop Design Guidelines for the Triangle

Part of the initial planning process should be to develop stringent design guidelines for the entire Triangle overlay district. As a development authority, with an overlay TIF district, the TDC is

essentially the local government for the Triangle area. To ensure that development is aesthetically pleasing, desirable, economically profitable, and makes planning sense, the design guidelines can set standards for the area.

Environmental Studies and Site Design

The environmental studies for a project of this size will be lengthy given the complexity of the current uses and the future developments. An important aspect of any project which has public involvement and waterfront properties is the inclusion of public open spaces and access to the water. Starting the overall site planning and design early will help latter on and will make a favorable impression with the public.

Begin Environmental Study and Clean-Up of Miami River, Palmer Lake and Tamiami Canal: Palmer Lake, on the northeast of the site will be cleaned and restored to preserve the endangered Manatee. The area around the lake can include walking trails, docks, and landscaped to create a sense of place for the area. There can be water taxi and shuttle service on the Miami River. Management of the area can either be under TDC or deeded to the County Parks and Recreation.

Design Phase of Roadway and Site Improvements

The design phase of roadway and site improvements, can begin once master plan is completed. Certain improvements can begin to be planned for today. A first step is to unify the area with a landscape, lighting and signage program.

Design MIC Phase 1

The design of the MIC phase 1 should occur once the MIA Strategic Plan has been accepted. More important than any of the planned transportation modes, the MIC is dependent on MIA to determine its size, purpose and functions.

Design MIC-MIA Connector and Service Tunnel

As design begins for the MIC, the design phase of MIC-MIA connector should coincide. The two need to be coordinated in order to ensure both are ready simultaneously. The preferred design for the MIC-MIA Connector is the elevated system which will follow Central Boulevard into the terminal area. The elevated Connector will tie into the skyway system and moving sidewalk at MIA and not interfere with ground transportation. The Service Tunnel, built after the MIC-MIA Connector, will have to be an enclosed system, for security reasons. The system could follow alongside the MIC-MIA Connector.

Coordination with Homestead and Opa Locka

Begin process of coordination with Homestead and Opa Locka for relocation of certain functions from MIA. Many activities such as air maintenance, which can be performed at any airport, and

all cargo airlines, can be moved off-site to the Homestead or Opa Locka airports. The County and DCAD also need to begin conceptual strategy for developing Homestead into a second airport for Miami, which should be opened for passenger service by 2015, just as MIA is planned to approach its capacity at 60 million.

Coordinate Marine and Port Operations

It may be possible to relocate certain marine related industries to other locations along the Miami River or to Homestead. Just as planning should begin for further development at the Homestead Airport, this is also the opportune time to begin planning for improved marine and port facilities in Homestead. Many Triangle based marine operations may be able to relocate to Homestead which would offer cheap land, direct access to the Ocean, as opposed to the Triangle and its 11 drawbridge journey to Biscayne Bay.

Negotiate with Rental Car Agencies

The Negotiation process with the seven rental car agencies will be time consuming, if only because they rarely deal with each other in a cooperative manner. The first step is to reach agreement on the concept of working together to reach a solution to the transfer problem between the MIA terminal and the agencies. Next, develop a shuttle service that can transfer passengers in a unified manner to the agencies and thus reduce congestion at the terminal.

Shuttle Bus Service to MIC Site

Named the MIC/MIA Shuttle, this is the predecessor to the MIC/MIA Connector, a singular system of small shuttle buses that will transfer passengers to the MIC Site for all Tri-Rail, Amtrak, Inter-City Bus, Metrobus and Express Bus, and the seven rental Car Agencies. None of these alone have enough passengers to satisfy a frequent shuttle service. When placed together, with the rental car passengers, then there will sufficient numbers to provide a virtual continuous loop between MIA and the MIC.

Feasibility Study on Express Bus System to MIA

Metro Transit should begin the process of forming an express bus system. An express bus system could provide an alternative to the Airport from popular destinations, such as Downtown Miami, Coral Gables, Coconut Grove, South Beach, Etc. It may be successful especially if an HOV/bus lane is built on SR 836. One topic is whether to use Metro Transit or an outside private provider to offer this service. The express buses would come to the MIC Site and be able to transfer passengers to Tri-Rail, Amtrak, etc. in addition to MIA. Also, Metrobus should be given priority to develop local bus routes to the MIC and MIA from neighboring inner city areas such as Little Havana, Liberty City, and Allapatah, to provide better access to jobs to all workers.

Design Phase for North Corridor and Earlington Heights Spur

Metro Transit should continue the design phase for the North Corridor and the Earlington Heights Spur, even at the expense of the Metrorail portion of the East-West Corridor. With limited funds, for transit projects, Metro has to make the tough choice of proceeding with one project or another. The strategy is to get Metrorail to the MIC Site and MIA, in the least time, the least cost, the least problems, the shortest distance and serving virtually the same areas and amount of passengers. The answer is to build a spur line from the Earlington Heights Station of the existing Metro system. Under the current East-West Corridor plan there is only enough money to build the first segment, from the MIC to Downtown Miami. By building a spur line from the Earlington Heights Station, Metro achieves to same goal, getting rail to the Airport. The destination would be the same, because trains could proceed from Earlington Heights to Downtown Miami using the existing track. The entire spur would be one and a half miles in length. Metro should also proceed with the design of the North Corridor, since it is easier to add to an existing line then to start from scratch for a new line.

Feasibility Study of World Trade Center at Palmer Lake

The Palmer Lake Site has the potential of being a destination point in Miami. There is enough interest to begin a study on the feasibility of a World Trade Center (WTC) which is adjacent to the MIC at Palmer Lake. An Airport site is the appropriate place for a WTC in Miami, near the offices, showrooms, and warehouses of the freight forwarders, trade companies, shippers and manufacturers. The waterfront Downtown site while appealing to an urban planner makes little sense since most functions are enclosed and the structure requires an enormous amount of land.

Feasibility Study of Mega Retail and Entertainment District

A study should be performed on the feasibility of a mega retail and entertainment district. The appropriate site for such a complex would be adjacent to the MIC at Palmer Lake. The ideal situation would be a retail and entertainment complex built in conjunction with a WTC. Retail and entertainment centers are the biggest tourist attractions in South Florida after the beach. The concept is a complex combining retail, entertainment, hotels, a WTC with exhibition space, on a waterfront site with ample transit, and the Airport across the street.

Road Work and Site Improvements

Once the design phase for the initial road work and site improvements and infrastructure, the package can go out to bid. It is important that major decisions be made early so that road work and infrastructure work can be performed without major changes in the future. This means work should be performed with the ability to easily accept future expansions. The emphasis should be

placed on the MIC site as Tri-Rail and then Amtrak begin operations. Road networks immediately surrounding the MIC site have to be ready to handle excess traffic. A major emphasis initially should be the Triangle Master Landscape Plan. The imagery is an urban version of Blue Lagoon. Advantage should be taken of all the waterfront properties, cleaning up and opening up to view.

Modified SR 112/SR 836 Interconnector

The immediate concern is Le Jeune Road or the so called SR 112/SR 836 Connector. Our proposal is opposed to the construction of an elevated SR 112/SR 836 Connector on the grounds that it creates a physical barrier between MIA and the MIC, it brings unwanted through traffic to the Airport entrance, it channels extra traffic onto the most congested highway in the County- SR 836, it devours valuable land in the Triangle and along Le Jeune Road that is better suited for development. We propose that a scaled down Interconnector be planned. The purpose should be to service traffic to MIA and the MIC efficiently, not add through traffic. A separate at grade roadway should be constructed from SR 836 to the MIA entrance at Central Boulevard, NW 21st Street. Le Jeune Road would remain as a major surface arterial. This is exactly the current condition of the ground transportation for the entrance from SR 112 in the north. This proposal allows for dedicated Airport access without the barriers, unwanted traffic, or the expense. For this to be a success the railroad line crossing Le Jeune Road needs to be removed. At this stage, the planning and impact studies should proceed.

Plan for Improved SR 112 and SR 836

Due to community protest the widening of SR 112 and the Interconnector seem doomed. This is not to deter other needed road work. Planning and impact studies should begin on extending SR 112 along the NW 36th Street corridor westward to the Florida Turnpike. Planning and studies already begun on the East-West Connector project for HOV and bus lanes should continue with priority placed on the project.

Plan Improved Major Arterial Access

Planning and design should begin for improved access on the major roadways into and throughout the Triangle area. Included are Douglas Road (NW 37th Avenue), South Miami River Drive, Central Boulevard (NW 21st Street) and Okeechobee Road.

Negotiate with Railroads

For the modified SR 112/SR 836 Interconnector to work the existing rail line crossing Le Jeune needs to be moved. Negotiations concerning rerouting trains around the west side of the Airport have already begun. This does not mean that freight rail service should be abandoned in the

Triangle. In fact rail service should continue and a effort should be made to maintain freight passage through the Triangle, continuing to the south side of MIA. This access should be maintained to service the industrial properties which can then connect with MIA, the Port, or the Miami River. Another reason is the possibility of extending Tri-rail southward to Homestead. The rail line could be maintained by following the proposed FOX and Metrorail corridor out of the MIC and then rejoining the freight line at Blue Lagoon.

Tri-rail and Amtrak Operational at MIC

The beginning of the MIC is underway with the arrival of Tri-rail. Tri-rail has a station planned, and designed on the MIC Site, which it currently owns. It is a formality to get Amtrak operational at the MIC site. Amtrak could join Tri-rail at the same facility. This an important point, regardless of Amtrak's low patronage. Intermodalism, to be successful, needs other modes of transport. Passengers will connect with the terminal via the MIC/MIA Shuttle.

Express Bus System and Inter-City Buses Operational at MIC

Express Bus System, and Greyhound and other Inter-city bus lines could also be operational at the MIC site without much effort. The bus lines will eventually have dedicated bus bays at the MIC. Another important point is to get the MIC operational even before the large formal structure is completed. Passengers will connect with the terminal via the MIC/MIA Shuttle.

Rental Car Agencies Shuttle

Once the MIC/MIA Shuttle is operational, it could easily be expanded to service the Rental Car Agencies through single service. This is an important step, while negotiations continue over the construction of a single hub for all the companies.

Phase 1 of Out Parcel Development

Once the market analysis is performed, the program has been determined, the Master Plan is completed, and a Master Developer brought on board, phase 1 of out-parcel development can be started. The design team, planners and the developers will determine which sites are to be placed on the market first. TDC needs to work with the property owners closely to ensure that organized development occurs. Phase 1 development can be best characterized as small, safe investments in the area based on present market demands that characterize the Airport market as underserved in all categories of commercial space.

Office Phase 1, Bid, Design, Build

The first office complex, really one building, can go out to bid once the Master Plan is completed and the market conditions remain strong. Through coordination of the Master Planner and Developer the site for early development should be easy to access from roadway, but not in a

valuable location such as on the water or in the MIC pedestrian zone. A small spec office building of 150,000 sq. ft. could be supported given absorption for the Airport market should be around 300,000 sq. ft. through the year 2005.

Industrial Phase 1, Bid, Design, Build

The first industrial complex can go out to bid once the Master Plan is completed and the market conditions remain strong. The industrial market is the strongest at the Airport. The concern for industrial space is the cost. From the view of TDC, industrial is needed but is a low revenue producer, for the planner, industrial is not a generator of foot traffic. The phase 1 industrial complex can be placed far from the MIC pedestrian zone and in areas of high aircraft noise. Phase 1 will comprise of two 125,000 sq. ft. buildings for a total of 250,000 sq. ft.

Hotel Phase 1, Bid, Design, Build

The first hotel parcel, can go out to bid once the Master Plan is completed and the market conditions remain strong. The current Airport market is short by over 1100 rooms, with the greatest shortfall at the MIA entrance. The first hotel parcel should be visible from the highway, but not necessarily on the water or in the MIC pedestrian zone. The hotel should be a 300 room mid-rise, making it comparable to hotels in the MIC area market at the MIA entrance.

Retail Phase 1, Bid, Design, Build

The first retail component, can go out to bid once the Master Plan is completed and the market conditions remain strong. The Airport area is severely under retailed, yet the Triangle area is not ready for a large retail component, at least not in phase 1. Given the number of workers currently in the area and the other proposed commercial components, there is the need for a small neighborhood center in the range of 25,000 sq. ft.

Design for Rental Car Hub

The beginning of work at the MIC Site, and the MIC-MIA Connector, and the fact that the rental car companies have been together since the onset of the MIC-MIA Shuttle, may prod them to finalize a design. The final design should be a central Rental Car "Terminal" for the seven large companies, totaling 100,000 sq. ft. The "Hub" parking structure should be limited to 7,000 parking spaces and the appropriate maintenance and service areas. The Hub should be located north of the MIC, not west of the MIC on the Ramada Hotel property, as proposed.

Completion of Phase 1 Roadwork and Site Improvements

Probably the most visibly important aspect to the TDC site program. Site improvements phase 1 should be completed as the first components of commercial development phase 1 are finishing. The goal of the initial site work is to provide a unified image of development, of community.

This will help in the long run, since image problems are a large concern in the Triangle area at present. Major infrastructure projects which service the MIC should get under way.

2000 - 2005

Roadwork and Site Improvements Phase 2

The next portion of the Site work program should concentrate on finishing support systems to handle phase 1 of the MIC, as construction proceeds. This is also the time the accomplish major infrastructure projects in areas away from the MIC. Throughout the Triangle area, work can proceed on finishing the primary roads, increasing water and sewage capacity, and strengthening the storm drain and flood protection for the entire Triangle.

Construction of MIC Phase 1, MIC-MIA Connector, Rental Car Hub

Construction should last for a period of two and a half years given the complexity of the project.

Opening of MIC Phase 1, MIC-MIA Connector, Rental Car Hub

Operations begin at phase 1 of MIC, including new Tri-rail, Amtrak, Intercity Bus, Metrobus facilities and Express bus services. The MIC-MIA Connector will also begin operations as will a limited, 50,000 sq. ft., of MIA landside operation at MIC. The Rental Car Hub will open with 100,000 sq. ft. and 7,000 parking spaces.

Construction of High Speed Rail to Orlando

FOX will begin construction of the High Speed Rail to Orlando at the beginning of this period, with a four year time schedule for construction.

Construction of Earlington Heights Spur

Construction of the Earlington Heights Spur will begin and should take two years for completion.

Construction of SR 836 HOV Lanes and Bus Lanes

The SR 836 HOV and bus lanes should extend the length of the highway, from the I-95 westward to the Florida Turnpike, a four year construction project for the entire 10 miles.

Construction of Modified SR 112/SR 836 Interconnector and Major Arterial Roadways

Construction of the modified SR 112/SR 836 Interconnector, two years to completion.

Completion of Phase 2 Roadwork and Site Improvements

Major roadway improvements into and through the Triangle completed as well as flood protection and other services operational throughout the site.

Phase 2 of Out Parcel Development, Bid, Design, Build; Office, Industrial, Hotel, and Retail

Phase 2 of out parcel development will include a 350,000 sq. ft. office complex, a 500,000 sq. ft. industrial complex, a 300 room hotel, and a 75,000 sq. ft. retail component.

2005 - 2010

Opening of Earlington Heights Spur Metrorail, FOX High Speed Rail Service to Orlando, and new SR 836 with HOV and Bus Lanes

With the opening of new transport systems to the MIC, higher density development can begin.

Opening of WTC Phase 1

Phase 1 of WTC at Palmer Lake, adjacent to the MIC to the northwest, will be comprised of 400,000 sq. ft. of exhibition space.

Phase 3 of Out Parcel Development, Bid, Design, Build; Office, Industrial, Hotel, and Retail

Phase 3 of out parcel development will include a 500,000 sq. ft. office complex, a 500,000 sq. ft. industrial complex, a 500 room hotel, and a 200,000 sq. ft. retail power center.

Completion of Phase 3 Roadwork and Site Improvements

Phase 3 of Roadwork and Site Improvements should have finished all the secondary areas of the Triangle. Work in preparation of MIC Phase 2 and the WTC should take place.

2010 - 2015

Opening of MIC Phase 2, Service Tunnel and Commercial Spaces

Phase 2 of the MIC will open with 500,000 sq. ft. of MIA landside space, 100,000 sq. ft. of retail, a 750 room hotel. The service tunnel will connect with the MIA terminal.

Opening of Rental Car Hub Phase 2

After a great initial success, the Rental Car Hub will expand, adding three companies using the Hub. To accommodate these new tenants, and growth by the original seven, an additional 3,000 parking spaces and 50,000 sq. ft. in the Hub terminal area will be needed.

Opening of High Speed Rail service to Tampa

FOX will add High Speed Rail service to Tampa in phase 2 of its development.

Opening of East-West Corridor Metrorail - East to Downtown and Airport-Seaport Connector

The East-West Corridor Metrorail will begin operation from the MIC to Downtown Miami. It is at this time, when MIA is projected to have reached 55,000,000 passengers per year, and the Port of Miami is projected to have reached over 8,000,000 passengers per year, that the East-West Corridor Metrorail can finally begin service. Since the Airport-Seaport Connector will utilize the same right of way it will be built together with the Metrorail system. It is our strong opinion that a separate system for the Airport-Seaport Connector should not be constructed, but that a system

is worked out in conjunction with Metrorail. Only if the FOX group decides to extend its High Speed Rail to Downtown Miami and the Port, would a separate system be justified.

Opening of North Corridor Metrorail

The North Corridor Metrorail will begin operation from the Northside Station to Joe Robbie Stadium at the Broward County line. Service should be comprised of two lines. One line will head to Downtown Miami, the second line will follow the Earlington Heights Spur to the MIC. This will give the MIC three different Metrorail services.

Opening of WTC Phase 2

The WTC phase 2 will incorporate 400,000 sq. ft. of more exhibition space. This will be built in conjunction with a large convention center hotel property.

Opening of WTC Hotel

With expansion of the WTC, there is sufficient demand for a 750 room hotel on Palmer Lake.

Opening of Retail and Entertainment Center at Palmer Lake

The 300,000 first phase of the retail and entertainment complex at the WTC will be centered around Palmer Lake.

Completion of Phase 4 Roadwork and Site Improvements

This phase is concentrating on completion of the WTC and the MIC.

Phase 4 of Out Parcel Development, Bid, Design, Build; Office, Industrial, Hotel, and Retail

Phase 4 of out parcel development will include a 500,000 sq. ft. office complex, a 500,000 sq. ft. industrial complex.

2015 - 2020

Opening of East-West Corridor Metrorail - West to FIU

The final piece of the East-West Corridor project, the Metrorail segment from the MIC westward to FIU will begin operations.

Opening of Homestead Airport to Commercial Passenger Traffic

After years of serving as a relief airport for MIA, Homestead Airport will begin operations as a full scheduled passenger airport.

Opening of Tri-Rail Service from MIC to Homestead

Tri-Rail service will be operational at the Homestead Airport on opening day. Tri-Rail will proceed from the MIC west along the FOX High Speed Rail Corridor and East-West Metrorail line, and then proceed south on existing rail lines.

Completion of Phase 5 Roadwork and Site Improvements

At this point the Site work will center on maintenance and rebuilding projects.

Completion of the MIC

Construction of 500,000 sq. ft. of office space, the final component at the MIC.

Completion of the WTC

Completion of the final 300,000 sq. ft. of retail and the 250,000 sq. ft. of office space.

Phase 5 of Out Parcel Development, Bid, Design, Build; Office, Industrial, Hotel, and Retail

Phase 5 of out parcel development will include a 400 room hotel.

Project Completion

With completion of this project there would still be opportunities in the future for development. Our proposal calls for 8,000,000 sq. ft. of commercial space to be constructed, which would be a realistic goal given a 24 year build-out schedule. If market conditions demanded industrial spaces could be reconstructed into higher value uses.

CONCLUSION AND RECOMMENDATIONS

The authors have presented their case for the MIC and related real estate development in the Triangle based upon the initial proposal developed by FDOT. It has been our attempt to present a plan for development that would ensure a successful project that has a chance of succeeding, given the realities involved.

Implementation Strategy

To summarize our Development Strategy, we suggest that a singular economic development authority, Triangle Development Corporation (TDC), be formed, in charge of the MIC and development of the entire Triangle. The TDC will be in charge of formulating planning and programming guidelines and land acquisition. The reason is to have a singular authority whose sole mission is development of the MIC and the adjacent Triangle parcels. This will avoid the politics and allegiances which other agencies have towards their own agenda. The MIC should be structured with a Build-Operate-Transfer framework. Having a singular development authority not only facilitates the construction of the MIC but also unifies the adjacent Triangle area. Without a strong overseer, development around the MIC would continue in a chaotic manner. To ensure that the MIC is supported by a lively, successful and profitable urban neighborhood, the area may have to be controlled with a suburban planned mentality. In essence the development authority plays the rule of government entity, imposing improvement taxing districts, design guidelines, land use regulations and steering growth to a productive interaction with the MIC and MIA. In the Triangle, development should occur in an orderly manner, once infrastructure is in place and market demands are strong. We also suggested that the MIC Site would be the appropriate site for a large retail-entertainment center and a World Trade Center.

As for the transportation components, Metro needs to take an incremental approach to infrastructure, by starting with simple solutions at the MIC, determining existing demand, and creating an intermodal atmosphere which further creates and maintains demand. An improved Metrobus network, with express service to MIA could happen immediately. Metrorail could be brought to the MIC Site, already forming with Tri-rail, by building a spur line from the Earlington Heights station, from the existing system.

Metro has to toughen its own current regulations which are on the books and encourage sustainable development which is not a drain on resources. Development has to be pushed back

inward, within the Urban Infill Area and along transit corridors. Without such emphasis, Miami will continue to sprawl, until it runs out of land at the Everglades, making projects such as the East-West Corridor unfeasible given the passenger projections and the cost involved.

The same is true for MIA, at a certain point the excess capacity is not justified by the cost. Instead of planning for expensive expansions of MIA, DCAD should stick to realistic expansions and become an active participant in the MIC project. By pushing for a unified Rental Car Hub and for a modified SR 112/SR 836 Interconnector, MIA can easily expand eastward forming a mega-terminal between MIA and the MIC.

The overall theme could be stated as; "The incremental development of infrastructure for sustainable communities, by a consortium of private and public entities, to maintain efficiency at an airport and a metropolitan area, with access to opportunities, within the constraints of a tight urban area and an even tighter public sector budget."

Application Elsewhere

The MIC is a unique project, not only because of the number of transport modes converging at a major airport, but also because of its urban setting. Few metropolitan area have an airport as centrally located, or that happens to have 400 developable acres alongside. Few airports or metropolitan areas have the dilemma of running out of land for further expansion. This makes the MIC important for the continued expansion needs of many private and public interests in the metropolitan area. A project of this size can not be pushed through by government agencies alone, there has to be "buy-in" from the private sector, MIA, and the public.

Intermodalism does have a future in the United States, but at a much smaller scale then at the MIC. There are few possible scenarios where seven rail lines will meet at a large airport and have all the other components. Intermodalism works only as well as it is connected, not only between infrastructure components but also connections to the surrounding area.

There are lessons though, to be learned from this project such as the need to have realistic goals and not build the mega project at the expense of all else. There are sustainable and incremental methods to development that serve the same benefit without incurring tremendous cost. The days of easy public funds are over and projects need to justify themselves to the public and to the marketplace. There has to be strong governmental support for implementing land use changes and encouraging transit usage. There is value to providing improved public access to jobs and opportunities in metropolitan areas. The final lesson is that intermodalism brings together not only various forms of transportation but also various entities, both public and private

that are normally working against each other. This was clearly evident during our visit to Miami and met with all the entities involved. Through programs, such as ISTEA, improved coordination has begun and should continue even if funding for the specific program is removed.

Conclusion

Born as a method for a highway department to access more funds, the MIC has evolved from originally being a stop along a public transit rail corridor, to being a separate entity, an intermodal center, that is an extension and means of survival for an airport terminal. The next step in the MICs maturing process is to create a community around the structure which accepts and utilizes the advantages of the investment occurring at this site. Without a clear vision and leadership in the community, the MIC will be an albatross surrounded by the continued haphazard state as it exists today. Miami and Dade County have the opportunity to provide an innovative solution to many of their problems and provide for continued economic growth, increasing community value in the center of the metropolitan area. While at the same, it has the chance to put its best forward at one of the larger gates to the Hemisphere.

The authors feel strongly that the MIC is a vital component to the future of Miami and Dade County. This is not to suggest that the MIC in its current form is the desirable pattern for development. The authors have made suggestions in this document as to methods of developing the Airport, the MIC, the Triangle area, and the East-West Corridor, without driving Metro into insolvency. It is with our parting statement that a project of this magnitude requires the fortitude and vision of private and public community leaders to carry the MIC through to completion in the most forward looking manner possible.

APPENDIX I

ACRONYMS

BOT	Build-Operate-Transfer
CDMP	Comprehensive Development Master Plan
CMSA	Consolidated Metropolitan Statistical Area
DCAD	Dade County Aviation Department
DCEA	Dade County Expressway Authority
FAA	Federal Aviation Authority
FEC	Florida East Coast Rail Road
FDOT	Florida Department of Transportation
FHWA	Federal Highway Administration
FOX	Florida Overland Express
FTA	Federal Transit Agency
HOV	High Occupancy Vehicle
HSR	High Speed Rail
ISTEA	Intermodal Surface Transportation Efficiency Act
LOS	Levels of Service
MDTA	Metro-Dade Transit Agency
MIA	Miami International Airport
MIC	Miami Intermodal Center
MIS/DEIS	Major Investment Study/Draft Environmental Impact Statement
MPO	Metropolitan Planning Organization
SR 112	State Road 112, N.W. 36th Street
SR 826	State Road 826, the Palmetto Expressway
SR 836	State Road 836, the Dolphin Expressway, the East-West Expressway
TGV	Train a Grande Vitesse
TIF	Tax Increment Financing
TIP	Transportation Improvement Program
TND	Traditional Neighborhood Development
TPL	Trust for Public Land
TRI-RAIL	Tri-County Commuter Rail Authority
WTC	World Trade Center

APPENDIX II

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APPENDIX III

INTERVIEWS

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APPENDIX IV

AERIAL PHOTOGRAPH

The following photograph, on Page 154 is an appropriate way to terminate this thesis. The photograph is of the central area of metropolitan Miami, including MIA, the MIC Site, the Triangle area, and the East-West Corridor. Roughly following from bottom to top, along the right-center of the photograph is SR 836, the East-West Corridor route. This view, west to east, begins at the bottom as SR 836 intersects SR 826; passes between MIA, on the left; Blue Lagoon, on the right. As SR 836 passes the MIA terminal, center; the Triangle and the MIC Site are just above, upper center of photograph. Further up on the photograph is the Civic Center-Hospital district; then Downtown Miami and the Port of Miami, upper right. The water is Biscayne Bay and the furthest buildings are South Beach and Miami Beach, with the Atlantic Ocean beyond. The photograph gives an excellent scale and reference, to places mentioned in this document. It also shows the extent of sprawl in the Metropolitan area, with this area well within the Urban Infill Area. Most of all it gives a sense of place, the huge airport at the center of the metropolitan area, the Port built on landfill, the gleaming towers along tropical shores, the endless American urban sprawl, and the ribbon of infrastructure connecting them all.