MIAMI DOWNTOWN TRANSPORTATION MASTER PLAN

EXECUTIVE SUMMARY

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INTRODUCTION

The City of Miami has an excellent opportunity to pursue an aggressive urban development program for the downtown area – a program that establishes a 24-hour urban environment with entertainment components and a strong residential base, while supporting commerce and business. But making urban development projects successful presents challenges to the transportation system. The ability to redevelop in Downtown Miami depends on how effectively people and goods can travel within the area and adjacent neighborhoods and how Downtown Miami can be connected to other regional centers of commerce.

The Need and the Opportunity. Downtown Miami's current traffic congestion problems are caused by its development successes. Therefore, before the City of Miami and the private development sector could pursue a high-density development program which would bring even greater traffic congestion, community and city leaders determined that a multi-faceted transportation master plan would be needed to guide the downtown area's future transportation improvements.

Downtown Miami's current traffic congestion problems are caused by its development successes.

Downtown Miami is the economic epicenter of global commerce and business for the state of Florida and Miami-Dade County, with over 110,000 employees within its boundaries. It has become the gateway to Latin America for the United States and is a critical component for the continued pursuit of international markets and business opportunities for this country, this state, and the City of Miami. The continued growth and development of Downtown Miami is, therefore, vital to the expansion of Florida's international trade and commerce. Further, this urban center is not just a gateway, but also a major destination for thousands of domestic and international visitors.

Growth and development of Downtown Miami are increasingly constrained by its transportation system – a system at a critical juncture for efficiently bringing people, goods, and services to the marketplace. If Downtown Miami is to become the global center of commerce envisioned by its community and city leaders, then it is crucial that proper investment in the transportation infrastructure be planned for the long-term, as well as the short-term. Without such investment, traffic congestion will worsen and cause businesses to relocate to other parts of the region, the state, or the country.

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Across the country over the past half-century, people have largely abandoned urban centers for suburban living because of benefits such as good schools and affordable houses with backyards. This migration has been enabled, of course, by reliance on the automobile. Fortunately, Downtown Miami has seen a recent resurgence of residential development both north and south of the Miami River, but the commuting from the suburbs naturally brings major traffic congestion.

This resurgence of residential development in Downtown Miami can be attributed partly to people's desire to live close to their work, escaping traffic congestion during the peak commuting periods. For residential development to not only continue but increase, people must find in downtown the amenities common in suburban areas: good schools, entertainment centers, cultural activities, restaurants, and grocery/drug stores.

Further, successful, vibrant downtowns with strong residential components demand reliable, safe, non-auto means of transportation. Yet streets in downtown centers have historically been designed for the automobile. To contribute to new live-work environments in Downtown Miami, streets must accommodate the pedestrian better and public transit must move citizens far more effectively.

Transportation and development are inextricably linked to one another. Planning and investment in the downtown transportation infrastructure can spur office, retail, and residential redevelopment. But redevelopment cannot occur at the visionary levels contemplated by community and city leaders without major improvements to the transportation system in Downtown Miami. The City of Miami estimated that 15,000 to 34,000 additional dwelling units in the downtown area over the next 20 years could generate between $15M and $34M in additional annual taxes for the city. Thus, improving the transportation system of Downtown Miami amounts to good investment of public monies because of a multiplier effect: job creation, residential development in the urban center, and increased tax base.

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The Miami Downtown Transportation Master Plan. The Miami Downtown Transportation Master Plan (MDTMP) is being developed to set a framework for transportation system improvements in the downtown area through 2020. The goal of the MDTMP is "to create a unique, progressive, and vibrant Downtown Miami through a balanced transportation system, preservation of neighborhoods, protection of the environment, and improvement of the community's quality of life."

The MDTMP is a result of intensive analyses of the downtown transportation system at different levels of development projected for 2020, using a state-of-the-art micro-simulation transportation model called Paramics. The study area for the MDTMP extends from I-95 east to Biscayne Bay and from I-195 south to SE 26 Road. The most "visionary" scenario of development contemplated includes approximately 48,000 more employees and 34,000 more dwelling units in

the primary study area by 2020, increases of 30,000 more employees and 19,000 more dwelling units over conservative projections for that year. To reach the levels of development envisioned by community and city leaders, more emphasis is placed on transit use (Metrorail, Metromover, shuttles, etc.) and improving the pedestrian environment. As reflected in the recommended transportation improvements for the MDTMP, employees, residents, and visitors to Downtown Miami will need to significantly reduce their reliance on automobiles. The MDTMP also addresses traditional traffic congestion issues like the bottlenecks caused by the opening of the Brickell Bridge during weekdays.

More emphasis is placed on transit use.

Input from community leaders, stakeholders, residents, and employees of the downtown area regarding their transportation needs was supplied early and often throughout the process. The resulting MDTMP focuses on multiple modes of transportation to help resolve mobility issues for Downtown Miami and better connect neighborhoods to this area. Further, the MDTMP recommends transportation system improvements needed to turn the vision of a Downtown Miami – a unique, progressive, and vibrant place in which to work and live – into reality.

BACKGROUND

Master Plans from Other Cities. Extensive research was undertaken to develop the MDTMP. This research capitalized on the experiences of other cities that have developed transportation master plans, investigated which micro-simulation model could best analyze the transportation problems of Downtown Miami, and determined the transportation desires and needs of the area's stakeholders, residents, and employees.

The starting point for the review included examining the experiences of some 30 cities that had gone through some type of downtown master plan process. From this list it was determined that six cities had documented a downtown master plan with an extensive transportation component or a transportation master plan: Denver, CO; Dallas, TX; Tampa, FL and Jacksonville, FL; Charlotte, NC; and Madison, WI. The six studies were obtained and reviewed to extract: the goals, objectives, and policies and the overall vision of each plan; the methods and tools used for technical analyses; and the types of solutions developed to address the area-specific transportation problems. Additionally, more than 25 transportation, planning, and roadway reports previously prepared for the downtown area were reviewed and summarized to help develop the MDTMP.

The Micro-Simulation Model: Paramics. Other cities analyzed their transportation system using a wide range of techniques. The MDTMP, however, chose to combine long-range travel

forecasting with the precision and sophistication of downtown-specific micro-level traffic simulation.

In essence, the amount of daily travel to/from Downtown Miami expected in the year 2020 was determined using the Miami-Dade County Florida Standard Urban Transportation Modeling Structure (FSUTMS). However, this regional model lacks the level of detail needed for a full understanding of specific travel patterns within the Downtown Miami area. Therefore, a micro-simulation model was required to replicate traffic conditions down to the individual vehicle level on each roadway in the study area. Further, this micro-simulation model incorporates a transit component to model Metrorail and Metromover and had to simulate unique traffic characteristics in Downtown Miami like the traffic congestion caused by the opening of the Brickell Bridge. The micro-simulation model software Paramics, with its superior graphics and ability to model large networks, was selected after an intense international search. In fact, the Downtown Miami Paramics micro-simulation network is one of the largest in the world, with over 360 intersections and seven modes of travel.

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PUBLIC PARTICIPATION

Understanding the transportation needs of the stakeholders, residents, and employees of Downtown Miami was essential for developing the MDTMP. An extensive public involvement plan was developed that included large-scale public meetings, small group presentations, and various committees that helped to shape different components of the MDTMP.

The Downtown Task Force (DTF), with over 40 members from the transportation and business community including elected officials from the City of Miami and Miami-Dade County, acted as the steering committee for the MDTMP and provided feedback on specialized topics throughout the process. From the members of the DTF, specialized committees were developed, including the Technical Committee, the Land Use Committee, and the Evaluation Criteria Committee.

The public in general participated with input at three public forums coordinated by the Florida Department of Transportation. Moreover, the public forums were supplemented with approximately 10 small-group presentations hosted by organizations like the Downtown Miami Partnership and the Brickell Homeowners Association. Together, over 20 meetings helped to shape every aspect of the MDTMP, from setting the vision statement to determining the recommended transportation improvements.

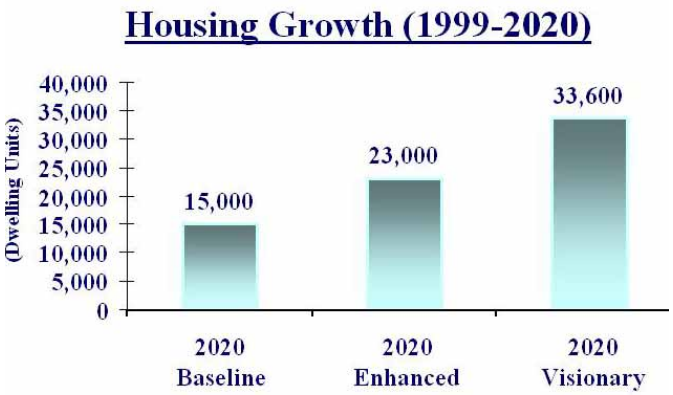
DEVELOPMENT SCENARIOS

The starting points for determining future transportation needs were the myriad of transportation problems (1) identified by the analysis of the existing transportation system and (2) recognized

by the area stakeholders. However, future transportation improvements were also defined based on three future development scenarios carefully varied for the Downtown Miami area. These future development scenarios – 2020 Baseline, 2020 Enhanced, and 2020 Visionary – have increasing levels of development, and therefore increasing levels of travel demand. Increased development further burdens the transportation system and requires different types of improvements.

Each of the 2020 development scenarios (developed by the DTFs Land Use Committee and the City of Miami) is described in detail below:

- **2020 Baseline**, the most conservative of the development scenarios, is based on the officially adopted countywide population forecasts. Compared to 1999, this scenario increases employment by 18,000 employees and residential uses by 15,000 dwelling units in the core of the study area by 2020.
- **2020 Enhanced**, a more aggressive growth forecast, is based on the development trends seen in the Downtown Miami area in the last five to ten years. Compared to 1999, this scenario increases employment by 30,000 employees and residential uses by 23,000 dwelling units in the core of the study area by 2020.
- **2020 Visionary**, the most optimistic and aggressive development scenario, is based on the successful growth trends seen in the Downtown Miami area in the past three to five years. Compared to 1999, this scenario increases employment by 48,000 employees and residential uses by 34,000 dwelling units in the core of the study area by 2020.



34,000 additional dwelling units can generate $34M in additional annual taxes for the city.

TRANPORTATION SYSTEM NEEDS

The Paramics model quickly indicated that even the most conservative growth scenario, the 2020 Baseline, would require significant improvements to the highway system and/or a significant shift to transit as a means to accessing Downtown Miami. Fortunately a fixed guideway system is already in place for Downtown Miami. Metrorail, Miami-Dade County's underutilized mass transit system, runs right through this area. Further, Metrorail's supporting people-mover system, Metromover, can assist with intracity travel far more than it does now.

Roadways versus Pedestrian-Friendly Environment. Improvements to the roadway system in the study area are challenging. Widening roads in downtown areas is very disruptive to businesses, very expensive due to limited rights-of-way, and generally unfeasible because buildings abut the existing rights-of-way. Further, both widening streets and improving vehicular mobility and speeds conflict with creating a pedestrian-friendly environment for

Downtown Miami. Residents, transit riders, and workers in Downtown Miami need a safe, pedestrian-oriented environment to travel the relatively short distances between downtown destinations. The public constantly voiced this need throughout the MDTMP process.

Residents, employees, and transit riders in Downtown Miami need a safe, pedestrian-oriented environment.

Multimodal Improvements. Consequently, the main focus on future transportation system improvements shifted from the roadway network to improvements in transit, the pedestrian environment, and other modes of transportation. Ways to affect travel demand like telecommuting, staggered work hours, and more residents in Downtown Miami were also discussed. Critically needed are extensive improvements to the transit system to absorb a large portion of the increased 2020 travel demand. These types of improvements could include shorter headways and more capacity for Metrorail and Metromover, more shuttle systems like the Brickell shuttle, Metromover lines extended into other areas, and free-fare zones. Also needed are enhancements for other modes of transportation like bicycles, pedestrians, and water-borne transportation. The MDTMP also addresses vehicular needs like the traffic congestion caused by the Brickell Bridge openings, the confusion of the one-way street system, and the need to create more appropriate vehicle entryways than the current I-95 Distributor Ramps.

DEVELOPMENT AND EVALUATION OF TRANSPORTATION SYSTEM IMPROVEMENTS

Three-Tiered Process. The specific transportation system improvements to be evaluated consisted of three tiers. Tier 1 included improvements based on suggestions made or problems identified by the public. For example, a public comment that "the streets are confusing and I always get lost" supported converting one-way streets to two-way streets. Tier 2 incorporated improvements proposed in previous studies for Downtown Miami like the removal of the I-95 Distributor Ramps and the creation of a grand boulevard entrance for the downtown area. Tier 3 included a series of improvements determined by the Technical Advisory Committee like ITS to warn motorists of Brickell Bridge openings. In all, over 40 improvement strategies, covering many modes of transportation and many specific projects, were developed for each subarea of Downtown Miami.

The transportation improvements were input along with the travel demand from various future development scenarios (2020 Baseline, 2020 Enhanced, and 2020 Visionary) into the Paramics model to test their level of effectiveness. The Technical Evaluation Committee considered the results from the traffic simulation and other measures of impact.

Each transportation system improvement was evaluated against the study goals and objectives and its expected benefits. The Evaluation Criteria Committee determined weighted scores for each transportation system improvement based on six goals, which included transportation, social, economic, environmental, growth and development, and transportation investment benefits.

RECOMMENDATIONS AND IMPLEMENTATION

Evaluated according to the goals and objectives of the MDTMP, the transportation system improvements were ranked as recommendations. Several recommendations were repeated throughout the entire study area, like improving transit service (frequency, reliability, and state-of-the-art, user-information systems), developing a network of pedestrian-oriented corridors, and converting one-way streets to two-way. Other recommendations, like removing a portion of I-395, were more sub-area specific. The recommendations were further stratified by sub-area.

Examples. Some specific improvements include:

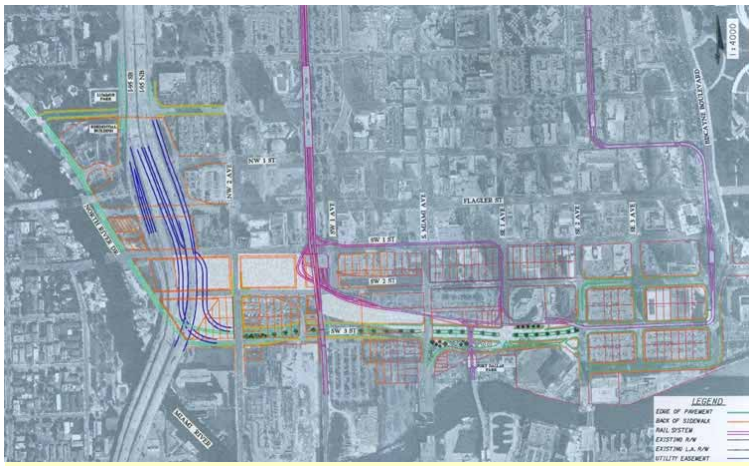
- creating a Metromover loop in the Brickell Financial District
- implementing a water taxi between Brickell Key and the mainland
- constructing a tunnel under the Miami River at SW 1 Avenue
- extending Metromover to the Wynwood area
- extending the M-Path for bicycles
- modifying North 14 Street from I-95 to Biscayne Boulevard
- completing Baywalk from Pace Park to Bayside.

See Exhibits 1 through 6, shown at the end of the document, for complete graphic and tabular displays of the recommended transportation system improvements by subarea.

Schedule. The MDTMPs Technical Evaluation Committee estimated an implementation schedule for each improvement: Phase 1 – through 2010, Phase 2 – 2011 through 2015, and Phase 3 – 2016 through 2020. The schedule recognizes that more detailed studies, conceptual and final designs, and construction timeframes must be accommodated. See Exhibits 1 through 6, shown at the end of this document, for the expected implementation phase for each improvement.

The Half-Cent Transit Sales Tax. The philosophy of the Downtown Task Force was that this MDTMP should focus on visionary solutions to its transportation system. Securing the funding for the transportation improvements would follow with political and community leadership. In November 2002, the voters in Miami-Dade County overwhelmingly passed the People's Transportation Plan. This plan levies a half-cent transit sales surtax to provide (1) more and higher quality transit and (2) funding to municipalities for roadway and transportation projects.

Twenty percent of the sales surtax proceeds will be distributed to municipalities based on their population. Each municipality shall apply 20% of its share of the proceeds towards transit improvements, with the balance to be used for other transportation/roadway projects. It is estimated that the City of Miami, being the largest municipality in Miami-Dade County, will receive annual surtax proceeds of over $10M. This new, dedicated funding source will enable implementation of many of the MDTMPs recommendations by the year 2020.



The Half-Cent Transit Sales Tax will enable the implementation of projects like the removal of the I-95 Distributor Ramps

CONCLUSIONS

The MDTMP involved hundreds of individuals collaborating on a vision of a future transportation system that supports continued growth and development of Downtown Miami's business community, fostering a pedestrian-friendly environment that attracts people to live in the downtown area, while promoting multimodal mixes of projects to create a world-class transportation system. The transportation system improvements developed for the MDTMP set the framework for turning that vision into reality. The cornerstone of the MDTMP is a series of transit improvements, supplemented by roadway congestion treatments and the creation of a pedestrian-oriented environment for the Downtown Miami area. Moreover, improvements to facilities for other modes of travel like bicycles, mopeds, and water-borne transportation, are introduced in the MDTMP to achieve a truly multimodal transportation system.

Additional technical documentation is available through the Miami-Dade Metropolitan Planning Organization at (305) 375-4507 or the City of Miami at (305) 416-1400.

Exhibit 1- Brickell Area Improvements

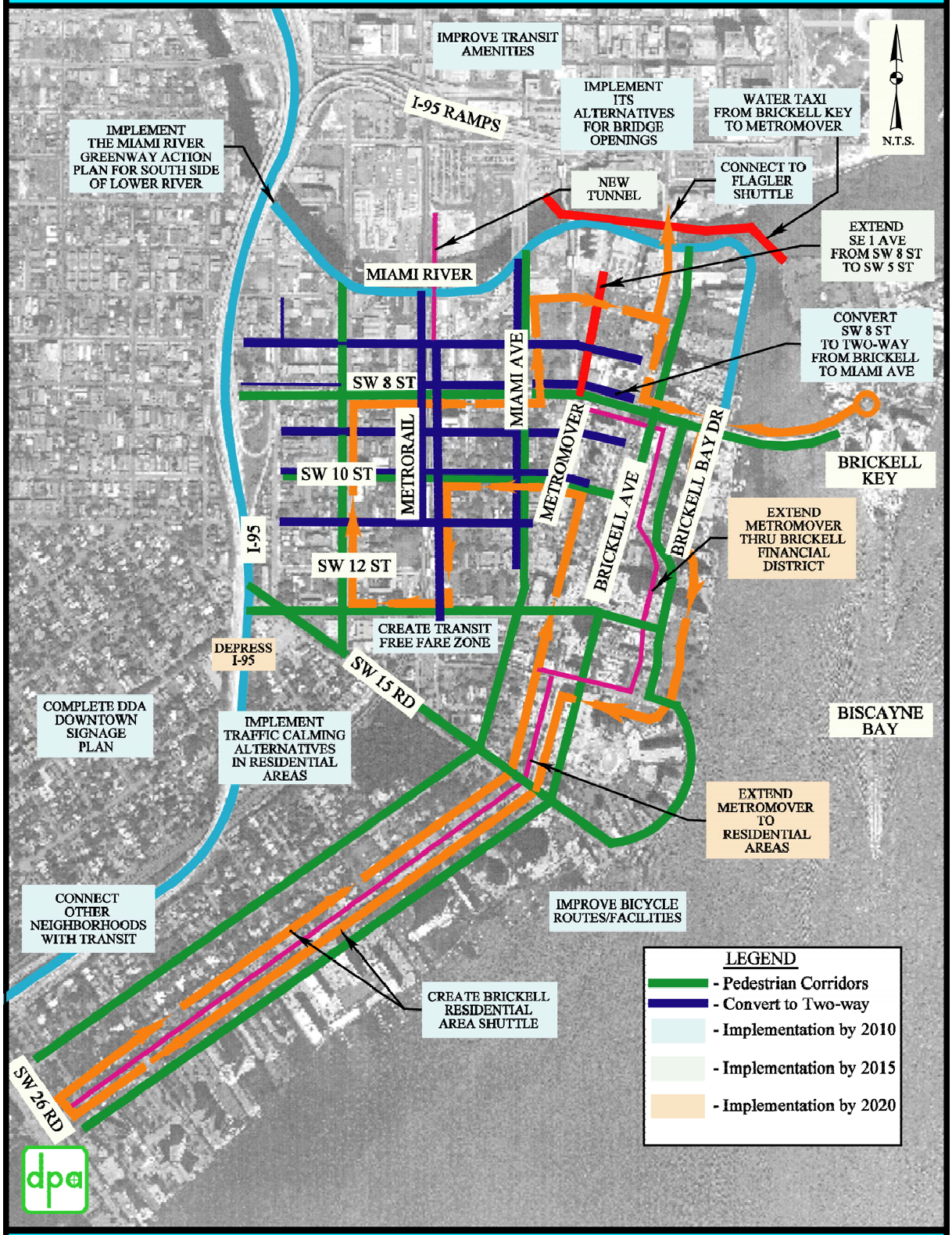


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Exhibit 2- Brickell Area Improvements

Recommended Improvement	Phase
Create a Transit Free-Fare Zone	1
Implement Intelligent Transportation Systems (ITS) alternatives to help with bridge openings	1
Improve transit amenities	1
Connect Brickell to other neighborhoods with transit	1
Develop pedestrian corridors	1
Implement Miami River Greenway Action Plan for the south side of the Miami River	1
Convert one-way streets to two-way streets	1
Connect Brickell Shuttle to Flagler Shuttle	1
Construct a new tunnel under the Miami River at SW 1 Avenue	2
Extend SE 1 Avenue from SE 8 Street to SE 5 Street	2
Complete Downtown DDA Downtown signage plan	1
Loop Metromover through the Brickell Financial District	3
Improve bicycle routes/facilities	1
Provide shuttle system for the Brickell residential areas	1
Implement traffic calming alternatives through Brickell residential areas	1
Extend the Metromover to SE 26 Road	3
Provide a water taxi from Brickell Key to the Riverwalk Metromover station	1
Depress I-95 and create a Grand Boulevard	3

Note: Phase 1: Implementation by 2010, Phase 2: Implementation by 2015, Phase 3: Implementation by 2020

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Exhibit 3- CBD Area Improvements

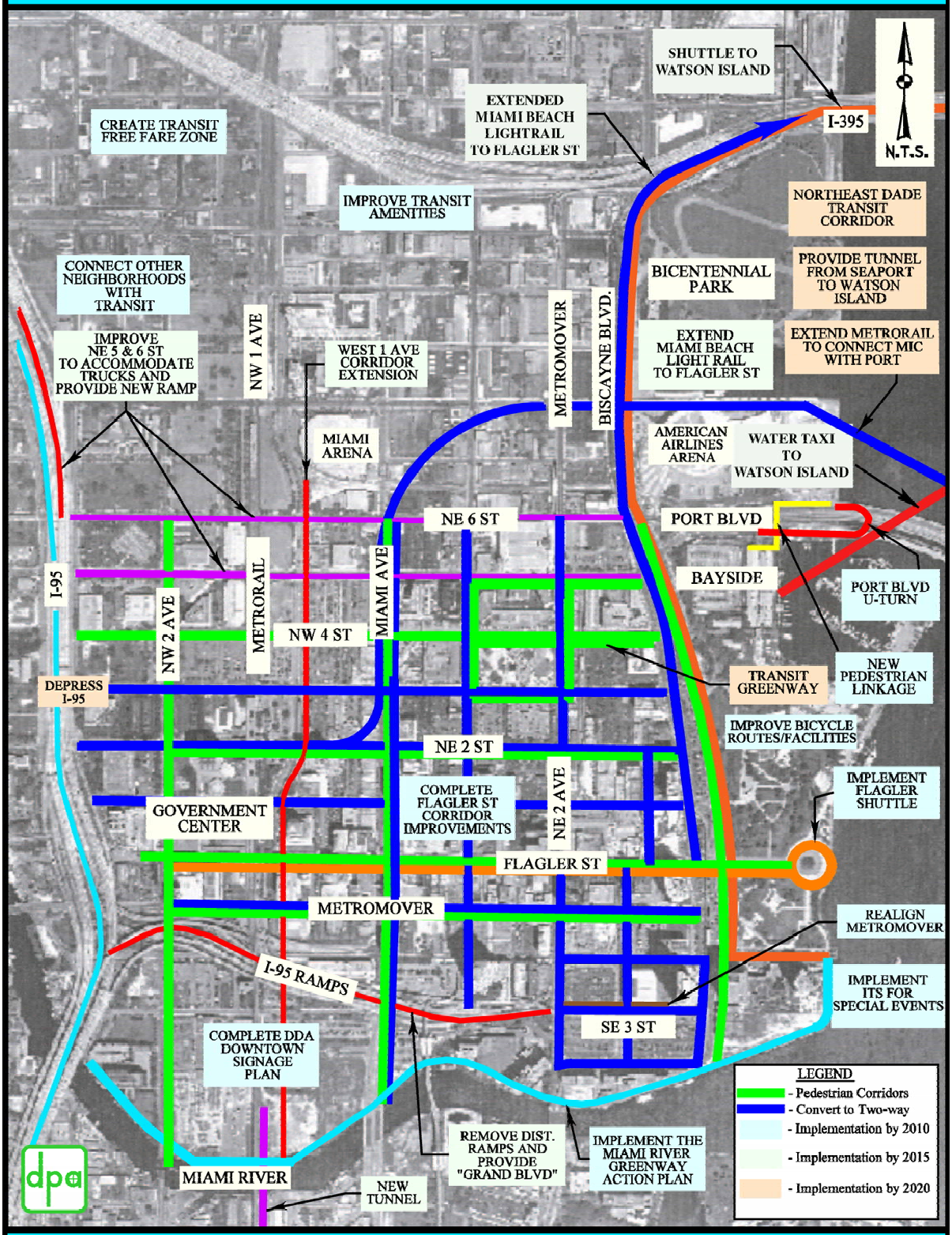

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Exhibit 4- CBD Area Improvements

Recommended Improvement	Phase
Create a Transit Free-Fare Zone	1
Provide pedestrian connections from Bayside to AA Arena	1
Extend Miami Beach light rail (Baylink) into downtown	2
Convert one-way streets to two-way streets	1
Improve transit amenities	1
Connect CBD to other neighborhoods with transit	1
Complete the Flagler Street Corridor improvements	1
Develop pedestrian corridors	1
Implement Miami River Greenway Action Plan for the north side of the Miami River	1
Re-align Metromover and add new station at DuPont Plaza area	1
Implement Intelligent Transportation System (ITS) for special events	1
Complete Biscayne Boulevard improvements	1
Construct a new tunnel under the Miami River at SW 1 Avenue	2
Complete DDA Downtown signage plan	1
Extend W 1 Avenue Corridor (Arena Boulevard)	2
Improve bicycle routes/facilities	1
Extend fixed guideway to AA Arena and Seaport	3
Remove Distributor Ramps and provide a Grand Boulevard on S 3 St	2
Implement Flagler Shuttle	1
Provide Port Boulevard U-turn	1
Implement shuttle system from Watson Island	1
Provide a Transit Greenway	3
Provide a I-95 NB on-ramp at NW 6 St to provide access to WB SR 836 & Improve N 5 & 6 Streets for truck traffic	2
Provide Commuter Rail to Broward County	3
Provide a water taxi from Watson Island	1
Depress I-95 and create a Grand Boulevard	3

Note: Phase 1: Implementation by 2010, Phase 2: Implementation by 2015, Phase 3: Implementation by 2020

Miami Downtown Transportation Master Plan

Exhibit 5-Omni/Overtown/Park West Area Improvements

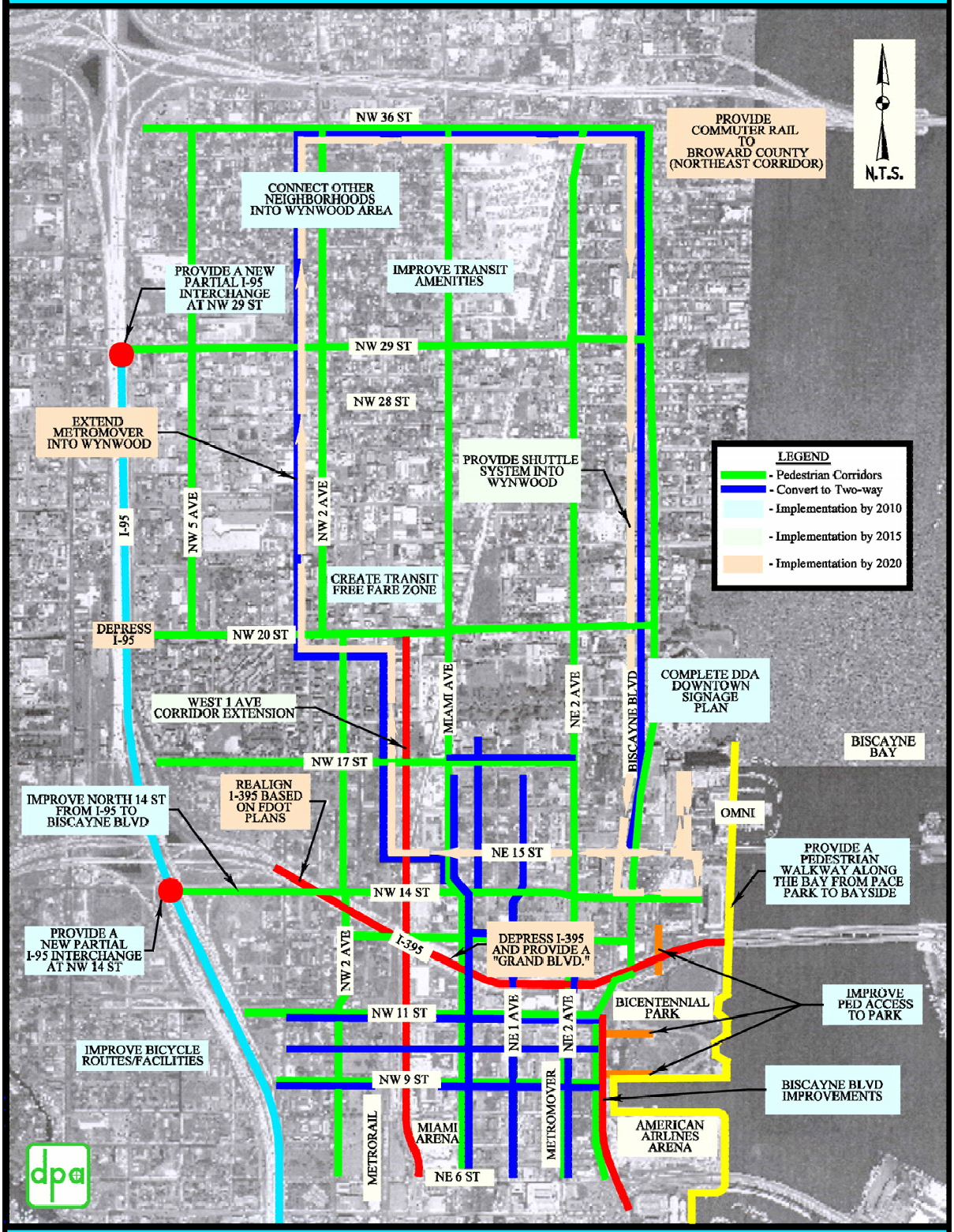

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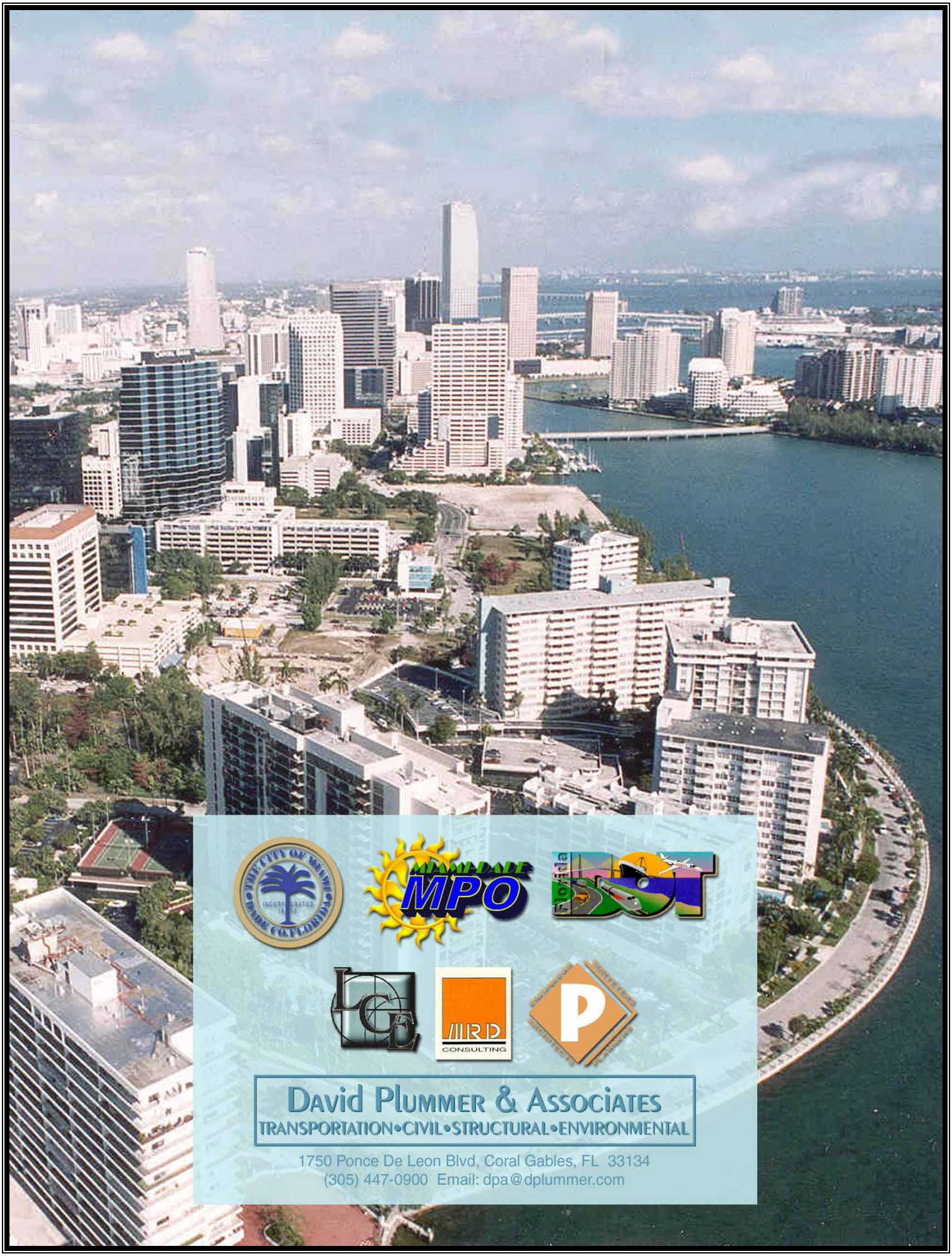
Exhibit 6- Omni/Overtown/Park West Area Improvements

Recommended Improvement	Phase
Create a Transit Free-Fare Zone	1
Extend Miami Beach light rail (Baylink)	2
Connect O/OT/PW with other neighborhoods with transit	1
Develop pedestrian corridors	1
Convert one-way streets to two-way streets	1
Implement Intelligent Transportation System (ITS) for special events	1
Provide a pedestrian walkway along the Bay from Pace Park to Bayside	1
Complete Biscayne Boulevard improvements	1
Improve pedestrian connections to Bicentennial Park	1
Provide tunnel from Seaport to Watson Island	3
Extend W 1 Avenue Corridor Extension	2
Implement DDA Downtown signage plan	1
Improve bicycle routes/ facilities	1
Provide a shuttle system into Wynwood	1
Depress I-395 to provide Grand Boulevard	3
Extend Metromover into Wynwood	3
Improve N 14 St from I-95 to Biscayne Blvd	1
Provide Commuter Rail to Broward County	3
Provide a new partial I-95 Interchange at NW 29 St	1
Provide a new I-95/NW 14 St Interchange	2
Depress I-95 and create a Grand Boulevard	3

Note: Phase 1: Implementation by 2010, Phase 2: Implementation by 2015, Phase 3: Implementation by 2020

Miami Downtown Transportation Master Plan



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