DOWNTOWN MIAMI

Intermodal Terminal

FEASIBILITY STUDY

DECEMBER 2013 - PREPARED BY:

JACOBS

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Introduction and Study Objectives

FUTURE MULTI-MODAL NEEDS

Jacobs was selected by the Miami-Dade Metropolitan Planning Organization (MPO) to prepare this study to consider a new 'downtown' location to serve Miami-Dade County's future multi-modal needs. A key measure of success for the MPO in moving this region of South Florida forward was to ensure this study clearly communicated the 'vision' for this type of development opportunity to partner agencies, and to the general public. Succinctly stated, the major objectives of the Downtown Miami Intermodal Terminal Feasibility Study, utilizing a multi-disciplinary team, working with the MPO and its partners, were to:

1) Establish the feasibility of developing an intermodal terminal facility in the Downtown Miami area, at the candidate sites initially identified, and conduct an evaluation to make a recommendation for the location of the preferred site; and,

2) Explore conceptual development scenarios for an integrated transit/pedestrian mall at the preferred site, including the use of visualization tools, the financial feasibility of the mixed-use facility, and ultimately resulting in development and construction recommendations, along with a 'next steps' action plan.

The overall intention of the project approach for the Intermodal Terminal Feasibility Study was to reflect the MPO's and the Stakeholders' strategic transportation vision for the greater community. Included in the study's planning process and framework were 'benchmark' criteria to facilitate an integrated intermodal facility that accommodates not only motorized vehicular travel, but pedestrians, bicycles and the possibility of incorporating other exciting, complimentary, supportive mixed-use facilities and spaces.

The study included three general phases, which were sub-divided into separate individual work phases to meet the general objectives outlined above, as well as the scope of work required by the MPO's issued Task Work Order. These were as follows:

I. Baseline Assessment and Inventory

This phase commenced with MPO and Study Advisory Committee (SAC) included clarification of the project scope, program, vision, goals and objectives. Then baseline data collection and analysis procedures were conducted to develop an understanding of the project planning parameters, previous planning studies as well as accomplishment of an exhaustive inventory of existing assets and conditions in the study area. This phase also included a literature research step to identify other national examples of best practices in the study, planning and development of intermodal terminals, as well as transit/pedestrian facilities similar in scope and/or size that could be implemented in Miami-Dade County.

AERIAL VIEW OF THE STUDY AREA THAT INCLUDES THE DOWNTOWN GOVERNMENT CENTER

FUTURE MULTI-MODAL NEEDS *(continued)*

II. Design Considerations

Utilizing the validated vision, goals and needs of the project as well as the detailed data gathered and analyzed in the first phase, the major effort for this second phase of work was geared towards a logical and fact-driven site selection process. The completion of this process focused on three very specific candidate sites, with a final priority ranking used to conduct simple 'site test fit' exercises for each. This phase also provided a conceptual design approach and preliminary development "program" for the intermodal facility, defining the building and site components needed to make it successful, and a strategy for integrating it into the existing urban context. A Preliminary economic and market analysis was included in this phase to ensure the approach and program were realistic based on current local and regional real estate demands.

III. Development Plan Options and Recommendations

An evaluation of the site development options was conducted in this final phase of work to evaluate, determine and validate the highest and best site for the intermodal facility. A variety of site development concepts was explored, evaluated and the preferred course of action was selected through a collaborative process. This preferred course of action was augmented and supported by component plans for potential pedestrian street closure options, traffic analysis and economic/financial implications. The final site development concept was then detailed and provided in a visual format easily understood by public and non-design stakeholders. This phase concluded the study with final recommendations and 'next step' action items which outlines general strategies to move the project towards future implementation.

METRORAIL AND METROMOVER VISIT THE DOWNTOWN GOVERNMENT CENTER

STUDY COORDINATION AND DELIVERABLES

In coordination with the MPO and the project Manager (PM) for this Task Work order, a Study Advisory Committee (SAC) was formed at commencement of the study to include representatives of the Miami-Dade Transit (MDT), the Florida Department of Transportation (FDOT), Miami-Dade Expressway Authority (MDX), Public Works Department, City of Miami and the Downtown Development Authority (DDA), among others. The SAC participated throughout the study by attending periodically scheduled meetings to discuss relevant issues regarding the development and progress review of the study. Feedback from the SAC was also solicited via e-mail and 'WebEx' format teleconference where specific comments or data was required.

The members of the SAC are listed on the chart on the following page for reference. Following the SAC directory, a summary list of the project study meetings and events is provided.

Recognizing that there were already significant and long-term input initiatives pertaining to this area of the City, Miami-Date Transit, regional transportation and multi-modal plans by the MPO, the Miami CRA, and MDT as well as others, it was our intention to absorb and build upon these in the SAC sessions, infusing the "lessons learned" and/or evolved out of those into this process and move forward in an informed and sensitive manner.

At the completion of the study, the final results were presented with recommendations of this study to the SAC and other MPO committees. The final outcome of this study's comprehensive team approach was to develop a final feasibility report that will be a unified and agency supported solution that meets the needs, goals, and objectives of the tansit users and downtown community, with the supporting 'roadmap' on how to move towards a future intermodal terminal implementation. The study 'deliverables' include twenty (25) copies of this Final Report, and a Power Point Presentation with the highlights of the study. Electronic copies of these items were also submitted in CD format to be posted in the MPO Website and for further reproduction and distribution. All of these materials are additionally available in PDF format for distribution and use to the general public in this universally available and readable file type.

Data Gathering and Analysis

This task involved the acquisition and review of relevant transportation related data that was utilized in the analysis phase of the project. Existing transit and highway data necessary to conduct the study was collected including the following items by category:

a. **Transit** - The data collected in this sub-task will served to determine the required capacity of the proposed facility for MDT buses, which included:
   - Number of routes servicing Downtown
   - Route alignment
   - Route length
   - Travel time
   - Headway
   - Service hours
   - Buses in service (peak and off-peak)
   - Passenger movement by route
   - Passengers' load during peak and off peak periods

b. **Roadway** - The data collected in this sub-task will serve to determine the impact of closing a segment of NW 1st Street and the traffic flow around the recommended facility. The following is a list of the data that was collected:
   - Traffic volume along the streets in the adjacent area to the proposed facility
   - Level of Service (LOS)
   - Street configuration and jurisdiction
   - Cross sections
   - Location of traffic signals and utilities

c. **Miscellaneous information** - This information assisted in developing the other elements of the proposed facility, and included:
   - Number of taxi companies
   - Number of taxis servicing Downtown Miami
   - Number of jitney routes
   - Number of jitney-vans in Downtown Miami
   - Bicycle and Pedestrian facilities located near Downtown Miami
   - Any other useful information to assist in the development of the study

TASK EXECUTION

The task began by coordinating with MDT regarding the existing transit routes servicing the downtown area. Specifically documented were the route alignment, lengths, and published travel times. Additionally documented were the headways (by time of day), the service hours and the number of buses in service during the peak and off-peak hours, and the average number of passengers served by time of day and day of week for each route within the study area. This transit data was summarized in the project's first technical SAC presentation with raw data included in the appendix of this report.

Roadway data was also obtained for the project study area. The City of Miami, Miami-Dade County, and the Florida Department of Transportation were contacted regarding the availability of traffic data on the subject roadways within the study area. At a minimum, daily (Annual Average Daily Traffic Volumes) and peak hour traffic volumes for the most recent available year were obtained for the roadway links and documented in tabular and graphical format. Additionally collected were intersection turning movement counts, historical traffic counts for the purposes of documenting growth (or decline) trends, heavy vehicle percentages, peak hour factors, and directional distributions. With that available information, it was possible to document the current roadway link and intersection Levels of Service (LOS). The roadway configuration (i.e. number and type of lanes, presence of sidewalks, etc.), jurisdiction and signal locations was documented and field verified. The presence and location of major utilities was obtained from databases maintained by the City and the County. This roadway related information was also summarized in the project's first technical SAC presentation with raw data included in the appendix of this report.

Other information such as taxi and jitney companies servicing the downtown area was obtained from Regulatory and Economic Resources Department (RER). Bicycle and pedestrian facility information (e.g. sidewalks, bicycle lanes, multi–use shared paths, lockers, etc.) was obtained from the City and the County and documented in graphical format. This information was also included in the project's first technical SAC presentation.

All of the data collected and documented in the above focus areas was utilized in the following site selection and programming tasks, and analyzed in coordination with the economic and market analysis sub-consultant, to determine the ultimate capacities necessary for a facility of this type.

Secondarily the impacts of the project on the surrounding site contextual development patterns, for both existing conditions and future impacts, were summarized at the completion of this task, to inform the feasibility analysis and conceptual approach processes that followed.

SHARED PATHWAYS AND INTERSECTION AT THE GOVERNMENT CENTER

Literature Research of Comparable Projects

The benchmarking of other similar intermodal facilities was an important step in the first phase of work on this study. By developing a point of reference in which to measure the Miami-Dade facility against, it was possible to establish standards that proved valuable in our evaluation of the conceptual development alternatives. This task commenced with a literature research step to identify other national examples of best practices in the study, planning and development of intermodal terminals, as well as transit/pedestrian facilities similar in scope and/or size that could be implemented in Miami-Dade County. Further, this benchmarking process helped identify opportunities and set achievable goals using real-world paradigms by showing where other intermodal programming approaches have been successfully studied and implemented.

As part of this task studies conducted in the past by Miami-Dade Transit (MDT) and the MPO, pertinent ordinances and regulations for taxis and jitneys, requirements for ADA, bicycle and pedestrian facilities, among other available information were all reviewed. These are referenced in the Study Appendix, but due to their size not included in full as part of this report. Through the completion of this task specific projects, concepts, strategies, state-of-the-art technologies and physical improvements that could integrate well with the existing transportation modes/systems in Miami-Dade County (Metrobus, Metrorail, Metromover, taxis and jitneys) were identified. Where these benchmark sites integrated bicycle and pedestrian improvements, parking garages for private cars and bicycles, commercial and office areas, and any other recreational alternative to attract more visitors, the analysis proceeded to evaluate how a similar strategy might work in Downtown Miami.

The detailed summary of the Literature Research conducted includes evaluations of the identified example intermodal projects and strategies. These were then used as the basis for programming in the subsequent Preliminary Programming stage, preparation of the Site Conceptual Development Alternatives, and the Final Recommendations.

THE METROMOVER GLIDES INTO THE GOVERNMENT CENTER STATION

Site Selection Process and Results

EVALUATION APPROACH

Based on the data gathered and benchmark literature reviewed in the fist phase of work, the Jacobs team commenced the Site Selection Process in coordination with the MD-MPO Project manager and in consultation with the SAC. The initial focus in this task was to confirm the study area boundary for candidate sites, and then conduct a logical and data driven evaluation to select at least three (3) potential sites for the location of the proposed intermodal terminal with the highest probability of success. A matrix style evaluation comparing the selected sites was then developed taking into consideration, at a minimum, the following general factors:

- Land availability (by current use and/or vacancy)
- Connectivity to transit hubs: MetroRail and MetroMover stations
- Accessibility to major employment centers
- Roadway and transit impacts
- Traffic circulation (all modes)
- Travel time improvements for transit routes
- Potential change in travel patterns
- Impacts in the land use (efficiency, adjacencies, etc.)
- Greatest potential for integration of transportation services

The intent of this evaluation approach was to identify for the sites specific locations where concerns and ranking factors contributed positively or negatively to the potential development success of the proposed facility. Field inspections were also conducted to observe each considered site and collect the necessary data (tangible or intangible) for further evaluation and analysis. The final result of this process was geared towards making a recommendation of the location(s) of the preferred site for the intermodal facility, including the justification for the selection and a list of pros and cons for each site.

PROCESS DESCRIPTION

Utilizing an industry-setting, innovative and unique approach for site selection, MPO & SAC customized site selection criteria were developed and organized to comprehensively address the physical, human and business environments which were then defined via quantifiable thresholds for 'scoring'.

This information was applied and incorporated into a detailed database using Geographic Information Systems (GIS) software. The criteria were then physically mapped to identify the ideal intermodal terminal location that is exclusive to the program and operational needs of this region and area of Miami-Dade County.

The detailed site selection approach that was used for this study may be further described as follows, and included seven distinct steps, with 5 - 7 covered in other sections of this report:

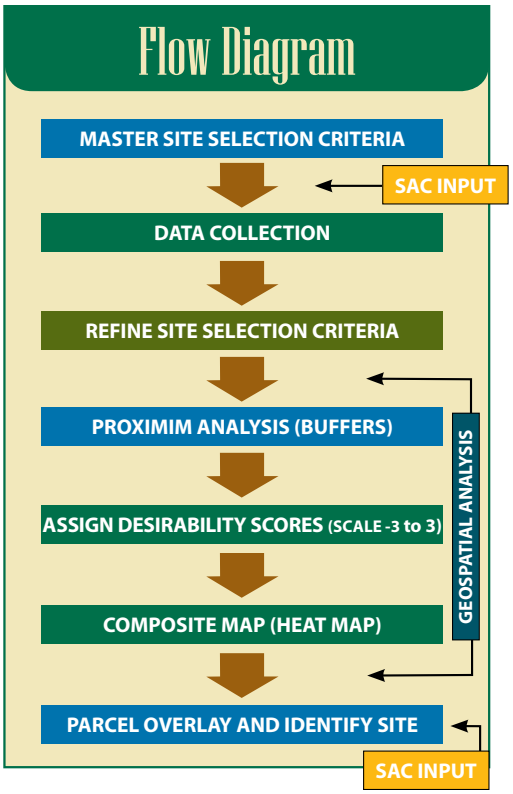
1. **Identified site selection criteria**
   - Property requirements including minimum size, minimum shape, area for future expansion
   - Location requirements including minimum distance or maximum distance from other operations, public services, roads and rail roads, or other development, etc.
   - Characteristics of land including maximum slopes, visual buffers, natural conditions that affect construction
   - All transportation and transit related movement
   - Environmental constraints
   - Security concerns
   - Utility and infrastructure requirements

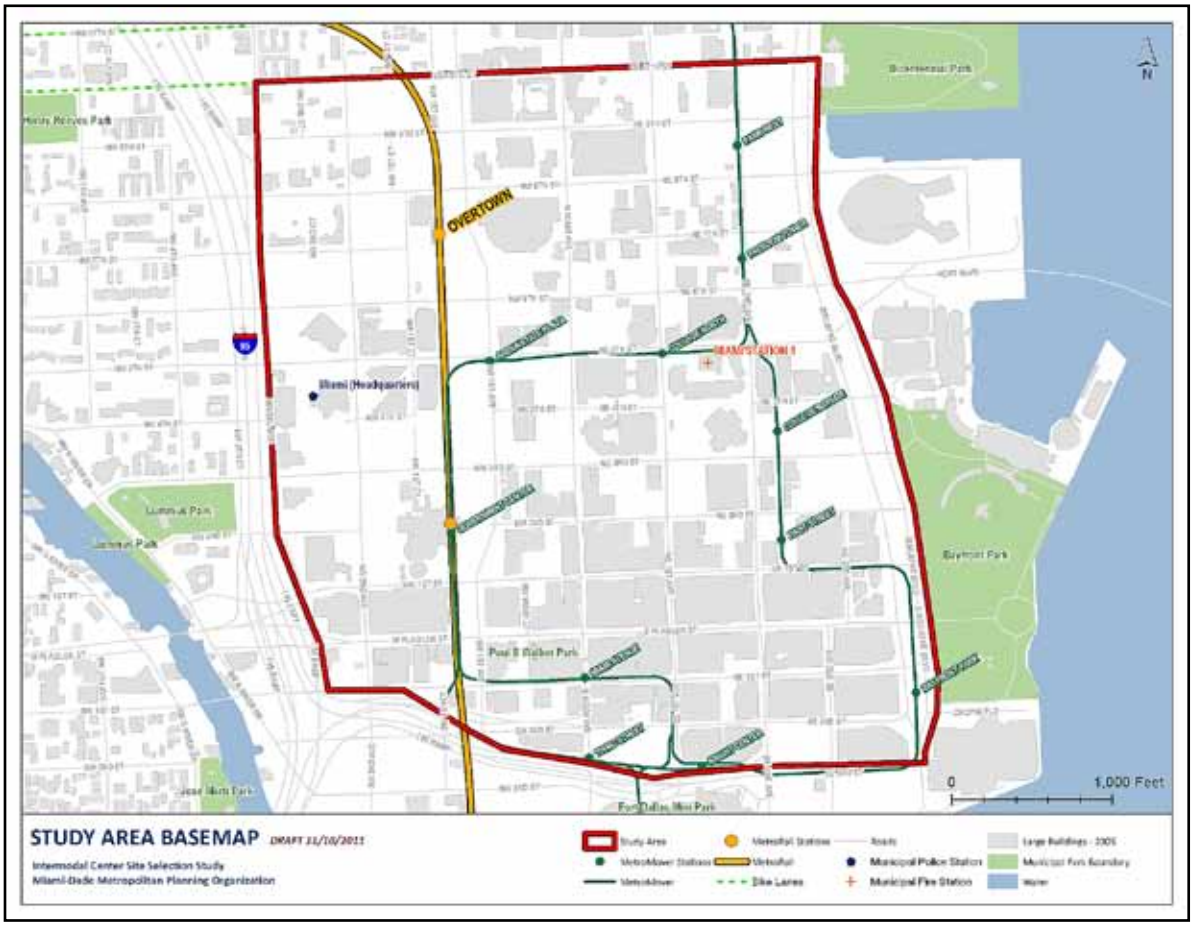
2. **Determined the Preferred Development Program**
   - Size, number, and types of buildings
   - Parking requirements
   - Security requirements including requirements for access security, standoffs and setbacks, etc.

PROCESS DESCRIPTION *(continued)*

3. **Applied criteria to candidate sites to narrow a 'short list' of candidate site in the study area boundary**
4. **Conducted site visits and site analysis on candidate sites to select the 3 best sites**
5. **Develop site concepts (test fits) on best sites to determine site's ability to accommodate program considering all program requirements**
6. **Determine suitability, pros and cons, summary of significant constraints**
7. **Evaluate best sites to determine final preferred site** (evaluation process to select final preferred site)

The following Flow Diagram succinctly illustrates the process, and the key interaction positions of the SAC while working towards the identificationof the best candidate sites:





SITE SELECTION METHODOLOGY

With the overall goal of the Site Selection Methodology focused on identifying the highest and best development site, there are guiding objectives that were referenced to ensure the selected site will minimize cost, schedule and risk:

- Maximize return on investment
- Minimize waste (during development and future operations)
- Shortened decision period
- Ensure the project can be executed related to site-work, infrastructure, construction logistics, and operations
- Maximize users and employees safety and security

This process was created to provide a logical, defensible decision-making system of criteria that could be agreed upon among multiple stakeholders. By utilizing holistic evaluation criteria prior to actual land evaluation it is possible to streamline the process from a practical position and thereby remove "emotional" decision-making. This results in a clearly identified optimal solution, and minimizes future stakeholder and public objections.

The Site Selection Criteria utilized in the process were considered in two general type categories; Mandatory, which could be considered as an 'elimination' factor, and Secondary, which may not be critical enough to act as an eliminator, but could be considered a 'flag' issue. The scale of analysis is then further investigated at 3 levels: 'High' level for the 'Areas of Consideration' (AOC) phase where the data is regionally readily available; a more defined 'Detailed' level which includes locally available data; and 'Site Test Fit' phase level where only specific site data is available, usually by survey. Both short and long range development considerations were also evaluated to understand the implications (for this study) of the existing, as well as planned short and long-term area-wide projects related to the transportation systems this facility will ultimately serve.

The following outline indicates the four major areas for site selection scoring criteria utilized in this study:

Site Location Requirements criteria were evaluated in the following categories:

- Surrounding Area Influences and Characteristics
- Surrounding Amenities
- Transportation
- Safety and Security

Demographics and Economic Development criteria were evaluated in the following categories:

- Residential
- Work Force
- Local Economic Development Initiatives

Site Specific Requirements were evaluated in the following categories:

- Land and Availability
- Geography / Characteristics
- Environmental Considerations
- Security
- Utility and Infrastructure Requirements
- Construction Logistics
- Operations and Maintenance

Business Environment characteristics were evaluated in the following categories:

- Regulations
- Public Support

Referring to the tables provided in the Appendix, the results of the criteria evaluation conducted in coordination with the SAC are detailed by category in the first 7-page table (Site Selection Criteria), and the selection criteria score assigned each is indicated in the second 2-page table (Desirability Scores).

SITE SELECTION RESULTING ANALYSIS

With the Site Selection Criteria and Site Desirability Scores confirmed and agreed upon through the SAC evaluation process, we were able to take the final step and complete the GIS based analysis of the property in the site study area limits. This is the final step in the selection process that confers a logical sequence to arrive at the best possible sites to consider. Referring to the sequence of maps shown on the following four (4) pages, you can see the resulting 'heat map' that identifies by red and orange hues the best scoring locations.

Then we utilize this map to overlay a 'vacant parcels' map to further identify the most logical candidate sites since their current use pose no limitations on redevelopment or impacts to the built environment. These sites may in-fact have active uses even if not encumbered by vertical facilities (parking lots for example), but their transition to a higher or more intense use as contemplated for the new intermodal terminal would generally reap higher economic value to

the area. Secondarily these sites may generally have a much lower cost of acquisition, and potentially a decreased chance of environmental hurdles to overcome for redevelopment as compared to older, higher density developed sites with long historically complex use profiles.

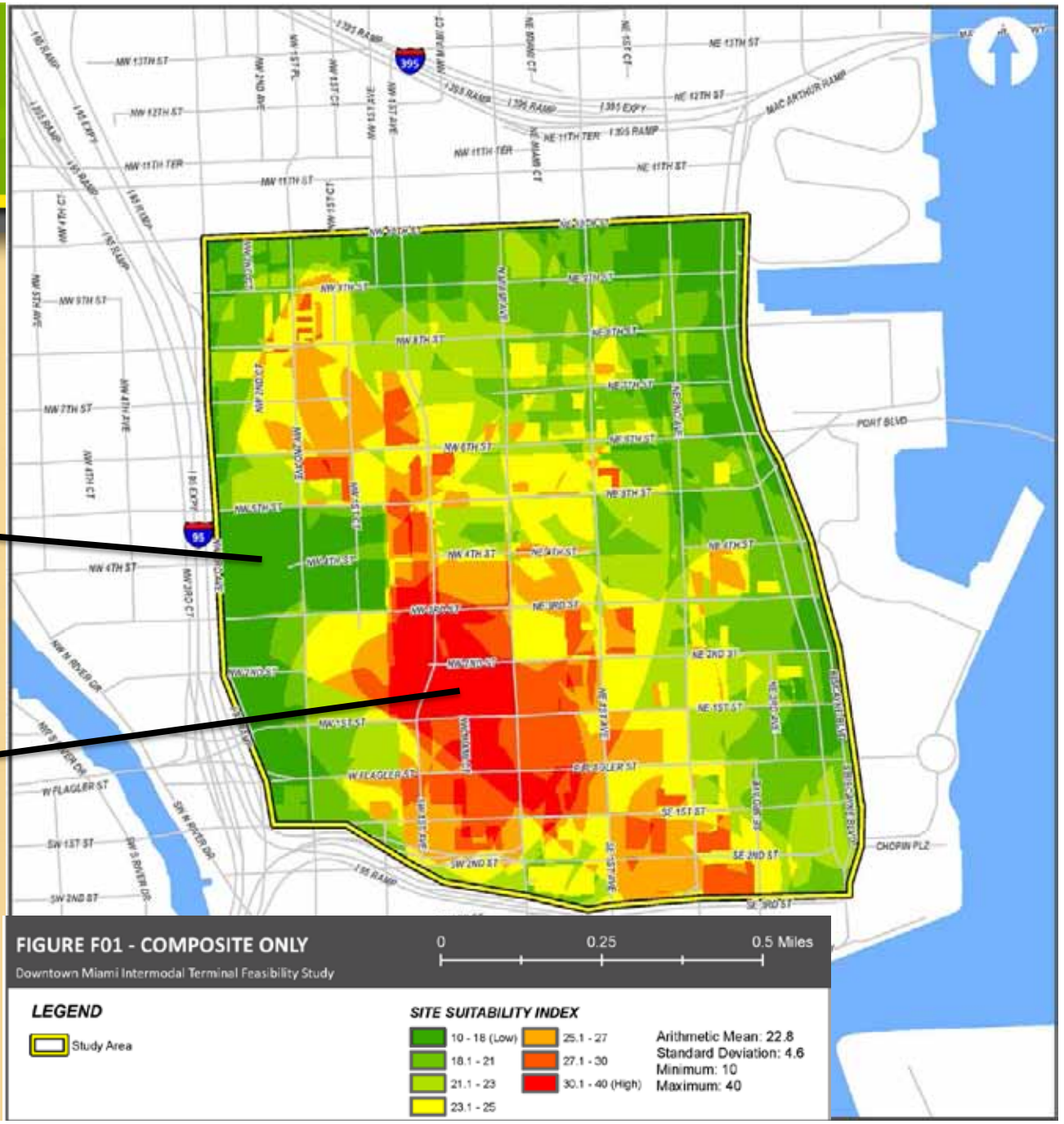
Once these GIS analysis layers are overlayed and weighted for scoring, the resulting 'Heat Map' compilation was generated. It depicts the property in the study area that focused the final site selection towards the best candidate sites. The last sequence identified the array of available parcels that were studied for site test fits, and ultimately focused onto the 3 final sites that Site Development Concept Alternatives were prepared for.

AOC

Composite:
Development
Suitability

Greens
Least
Desirable

Red + ***Oranges***
Most Desirable

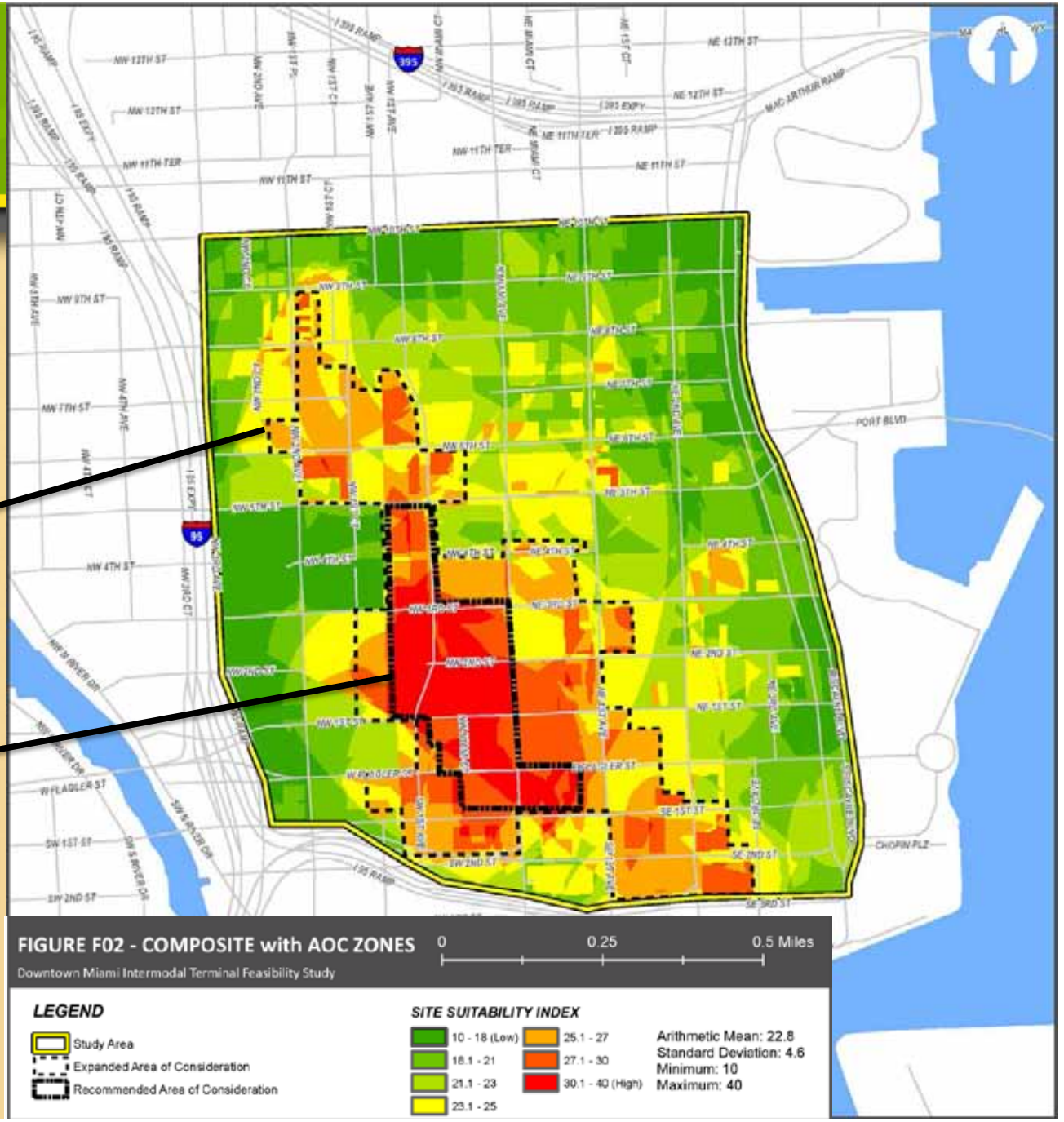


AOC

Expanded and Recommended Areas of Consideration

Expanded AOC

Recommended AOC



AOC

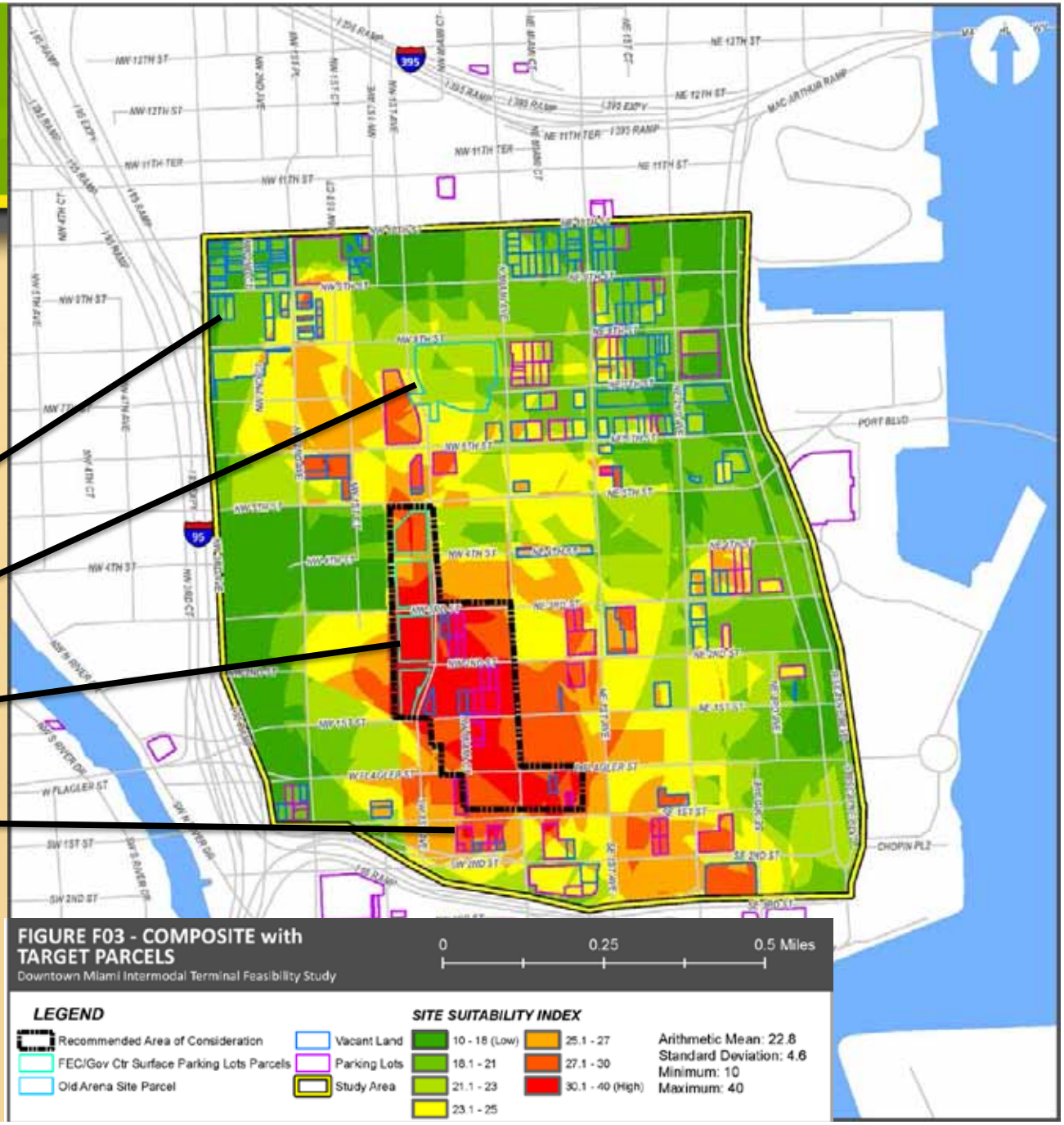
Vacant Lots and Parking Lots/Garages

Vacant Land

Old Arena Site

FEC Sites

Parking Lots

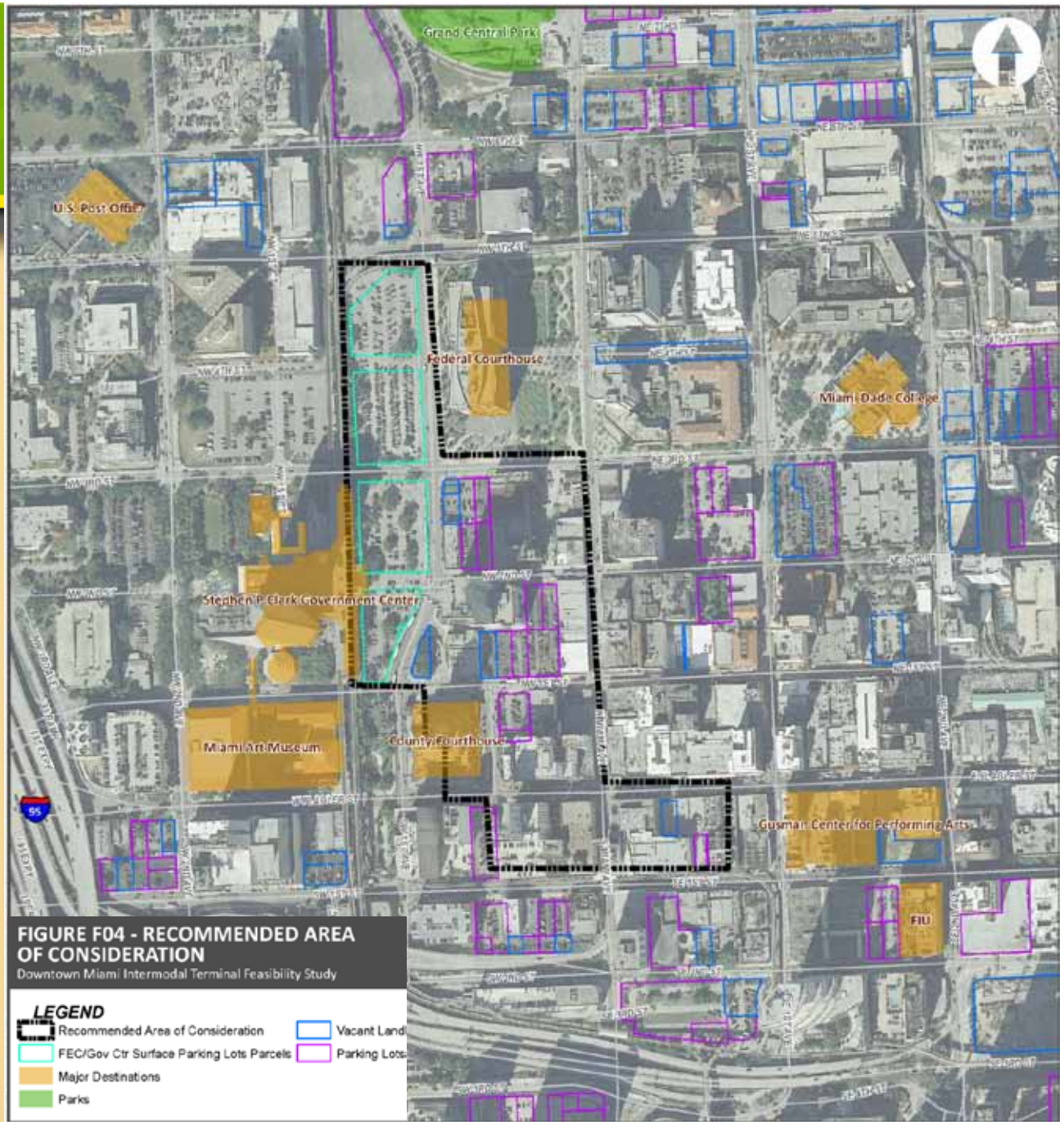


AOC

Recommended AOC Enlarged View

Recommendation to Finalize Site Selection:

1) ***FEC/Gov Ctr Parcels***
   - ***One Owner***
   - ***Greatest Contiguous Acreage***
   - ***Greatest Agency Support***
   - ***Greatest Programming Flexibility and Future Expansion Potential***
   - ***Close Proximity to Existing and Future Transit Lines***
   - ***Focus time + budget on programming and conceptual design***



Conceptual Approach and Programming

To proceed with the development of three (3) approaches for the construction of the intermodal facility, rather than focus on a single site, the study design team agreed to tackle options for the 3 preferred sites identified in the previous Site Selection phase. These approaches considered:

- All developments at ground level
- Construction of a multi-floor building
- Connectivity and integration with existing transportation services
- Incorporation of commercial and recreational activities within the terminal
- Provision of parking spaces to replace the existing parking spaces

TASK EXECUTION

In a climate of uncertainty and instability, any conceptual development study needs to be given comprehensive thought - particularly essential when considering a large-scale capital project, and the potential impact on the existing built private properties surrounding it. Often this type of investigation can generate a staggering amount of information when more than one alternative is explored, with 3 to be developed in this project study. For this approach to become useful, it must be carefully organized and prioritized to best suit the project goals and objectives. The ideal project program must be evident and clearly understood by every stakeholder.

The study design team in consultation with the ultimate users representatives, and other 'problem solving specialists', worked together with the SAC to define the goals, identify the special constraints, and establish the requirements of the project. An interactive analysis process was used to focus the effort so that all relevant information was considered and critical issues were addressed. The results were a consensus-based decision, based on a comprehensive analysis, which was formulated on a thorough determination of the minimum program requirements. To accomplish this strategic process the Conceptual Approach task was completed as an interactive analysis with the MPO and MDT guiding the outlined steps as follows:

Basis of Programming
(Operational Analysis and Space Planning)

The basis of programming and design established the feasible development program for a facility of this type, and was confirmed in coordination with the economic and market assessment work. An initial project development program provided for near-term development of a proposed 'Phase 1', to be followed by later full build-out for future needs associated with the serving transit systems growing ridership projections. Involvement of the key operational stakeholders leadership representatives was critical and included the following criteria:

- Articulation of the facility vision, goals and supporting pedestrian transit mall.
- Definition of space needs and functional requirements that the site must support.
- Development of space standards that are driven by existing people metrics and their functional needs.
- Calculation of optimum area requirements per function for each use.
- Illustration of the optimized relationship between each use.
- Development of non-site specific, prototypical facility solutions for both transit and private development uses, including optimal vertical development criteria & relationships.
- Design criteria packages for development of the conceptual architectural & site plans.

The original program for the new downtown terminals as provided by MDT on the next page:

Downtown Miami Intermodal Terminal Space Program		
Transportation	**Quantity**	**Comments**
Bus Bays	14 to 20	4 to 6 bus bays for articulated buses
Taxis	6 to 8	Existing 7 spaces near Government Center in three different locations
Jitneys	2 to 4	Total 78 vehicles being operated by six (6) Jitney Companies
Car Share	10	Based on workers/day time population (50,000 jobs in 2035)
Bike Share	25	Based on workers/day time population (50,000 jobs in 2035)
Car Parking	TBD	If located on an existing parking lot, will provide either the same number of parking spaces or make appropriate adjustments given alternatives
City of Miami Trolley	1	Could use one of the bays for MDT buses
Greyhound	1	
Charter Bus	TBD	Charter buses are not regulated by the County

Working with the SAC, and based on the economic and market analysis completed in the previous task, a Preliminary Space Program was developed, and some initial spatial concepts of what this program might require in terms of land area. This sequence of analysis is provided in the presentation tables below:

Preliminary Space Planning/Program			
1.0	**Customer Service Building**		**GSF**
1.1	Vestibule - Main		400
1.2	Ticketing Lobby		300
1.3	Waiting Area		900
1.4	Visitor's Center/Display Area		300
1.5	Driver/Crew Room		400
1.6	Community Conference Room		800
1.7	Storage Room		200
1.8	Public Restrooms		800
1.9	Telephone and Other Services		120
1.10	Mechanical Equipment Room		180
		Total	**4,400**
2.0	**Administration**		
2.1	Administration Office		200
2.2	Service Counter (TVM's and/or Window)		80
2.3	Open File/Work Area		120
2.4	Storage Room		80
2.5	Shared Workstation		120
		Total	**600**

Preliminary Space Planning/Program *(continued)*			
3.0	**Security**		**GSF**
3.1	Security Office		200
3.2	Service Counter		60
3.3	Equipment Storage Room		80
		Total	**340**
4.0	**Service - Support**		
4.1	Janitor/Supply Closet		160
4.2	Restroom - Drivers		240
		Total	**400**
	Subtotal all GSF		5,740
			18,500
			12,760
1.11	Lease Area - Retail		**6,380**
1.12	Lease Area - Food Services		**6,380**
	Total Enclosed Area		**18,500**
5.0	**Bus Bays**		**GSF**
5.1	2 - Off Street Days - 60' Articulated Bus 960'/bay		1,920
5.2	Layover Positions 60' Articulated Bus		1,440
5.3	12 - Off-Street Bays - 40' bus		21,600
5.4	4 - Layover Bays 40' Bus		1,920
5.5	Internal Bus Circulation Area		28,500
		Total	**55,380**
6.0	**Site**		
6.1	Stops/Boarding Areas		20,000
6.2	Outside Sitting/Landscape Areas		12,500
6.3	Pedestrian Access		8,000
6.4	Bike Parking and Access		2,850
6.5	Kiss and Ride		5,200
6.6	Taxi and Jitney Service Areas		5,200
6.7	Staff Parking - 8 spaces		2,080
		Total	**53,830**
	2.51 Acre	Total Site	**109,210**
	2.93 Acre	Total Required	**127,710**

The final facility program was refined through the SAC process, enlarging it somewhat to accommodate additional program elements that were considered integral to an intermodal terminal by the team. This formed the basis of the Site Development Concept Alternatives prepared in the following task, and led to the final selected Scheme, which was designed to meet these program requirements. The chart below captures that program.

Preliminary Space Program - New Downtown Intermodal Terminal		
Facilities		
1.0	**Customer Service Building**	**SF**
1.1	Vestibule - Main	400
1.2	Ticketing Lobby	300
1.3	Waiting Area	900
1.4	Lease Area - Retail	800
1.5	Lease Area - Food Services	1200
1.6	Vistor's Center/Display Area	300
1.7	Driver/Crew Room	400
1.8	Community Room	800
1.9	Storage Room	200
1.10	Public Rest Rooms	800
1.11	Telephones and Other Services	120
1.12	Mechanical Equipment Room	180
	Total	**6,400**
2.0	**Administration**	
2.1	Administartion Office	200
2.2	Service Counter	80
2.3	Open File/Work Area	120
2.4	Storage Room	80
2.5	Shared Workstation	120
	Total	**600**
3.0	**Security**	
3.1	Security Office	200
3.2	Service Counter	60
3.3	Equipment Storage Room	80
	Total	**340**
4.0	**Service - Support**	
4.1	Janitor/Supply Closet	160
4.2	Restroom - Drivers	240
	Total	**400**
	Total Enclosed Area	**7,740**

Intermodal Hubs

Characteristics that define them are as follows:

- Exhibits high forecast boardings and alightings within the future 2035 transit network;
- An area surrounded by higher density mixed use developments including downtown areas, transit oriented development pattern (TOD), see County Future Land Use Plan; and
- Provide connections for two or more high capacity (fixed guideway) transit lines.

Strategies for intermodal Hubs include:

- Enclosed shelters for travelers;
- Real-time passenger information systems;
- Unique architecture and signage;
- Surface or structured parking as appropriate;
- Integration with surrounding development;
- Pedestrian linkage improvements with a half-mile radius;
- Bicycle linkage improvements within a two-mile radius;
- Restrooms and community spaces as appropriate;
- Public art;
- Access priority to bike/pedestrian and transit patrons over other modes;
- Secure and weather protected waiting areas;
- Accommodations for potential bike share/car share programs;
- Pre-board ticketing options and Jitney/ Taxi bays.

Preliminary Space Program - New Downtown Intermodal Terminal *(continued)*		
Bus Operations		
5.0	**Bus Bays**	**SF**
5.1	2 - Off-Street Bays - 60' Articulated Bus 960'/bay	1,920
5.2	2 - Layover Positions 60' Articulated Bus	1,440
5.3	12 - Off-Street Bays - 40' Bus	21,600
5.4	4 - Layover Bays 40' Bus	1,920
	Total	**26,880**
6.0	**Site**	
6.1	Stops/Boarding Areas	10,752
6.2	Outside Sitting/Landscape Areas	8,064
6.3	Pedestrian Access	5,376
6.4	Bike Access	2,688
6.5	Kiss and Ride	5,200
6.6	Taxi Service	2,600
6.7	Staff Parking - 8 Spaces	2,080
6.8	Short-term Parking - 80 Spaces	20,800
6.9	Long-term Parking - 420 Spaces	109,200
	Total	**166,760**
	4.45 Acre Total Site	**193,640**
	4.62 Acre Total Required	**201,380**

Preliminary Economic and Market Analysis

KNOWLEDGE FOR IMPLEMENTATION

The objectives for this task item in the study focused on conducting an analysis to identify:

a. The feasibility of incorporating office, commercial and/or other transit supported uses in the proposed terminal, as well as the programmatic implications of such..

b. A Preliminary Market Analysis to determine the potential needs of the study area (demands) by use, and the longer term development opportunities that could evolve as the terminal facility would be implemented.

It was recognized that this portion of the study needed to capture a measure of "knowledge for implementation" so there was a confidence that the development feasibility analysis, as well as the subsequent financial feasibility was based on a realistic market background. In the effort to assist the consulting team and the MPO with economic, market and cost/benefit analyses utilized to assess the feasibility of the proposed intermodal facility, the additional skills of an economic and market specialist sub-consultant were utlized to complete a significant portion of this work. Their findings provided an additional innovation to the site selection process, and then the subsequent facility conceptual development / programming / analysis processes. The research utilized in this study area began with the transit data collected during the initial phase of work, and was augmented by local market background knowledge to identify potential for integrating mixed use development into an intermodal site, considering both primary and secondary demand factors. The analysis screened pertinent economic and demographic factors affecting the market area, and resulted in establishing the real, primary uses that could be successful if programmed into the intermodal facility and/or related site development. This level of 'market support' was analyzed in 3 key use areas by conducting a limited supply and demand analysis to draw conclusions as to appropriate size and phasing of the non-transit elements of the project. Specifically excluded was new residential development uses due to the limited land use and zoning allowances for the candidate sites in the 'area of consideration'.

- **Retail**
  (including Entertainment & Recreation uses)
  This demand was driven from three Primary Market Area (PMA) sources:

1. Local and regional residents, also known as PMA residents (which consider primary and seasonal households)
2. Downtown workers (PMA Office workers) and visitors (both for business and tourism)
3. Supporting commuters / transit riders who utilize the system(s) daily for destination and transfer trips

- **Office uses**
  Based on the pertinent economic and market factors affecting the primary office market area, the study focused on an 'overview' of both regional and local office market trends, including a comprehensive supply vs. demand analysis.

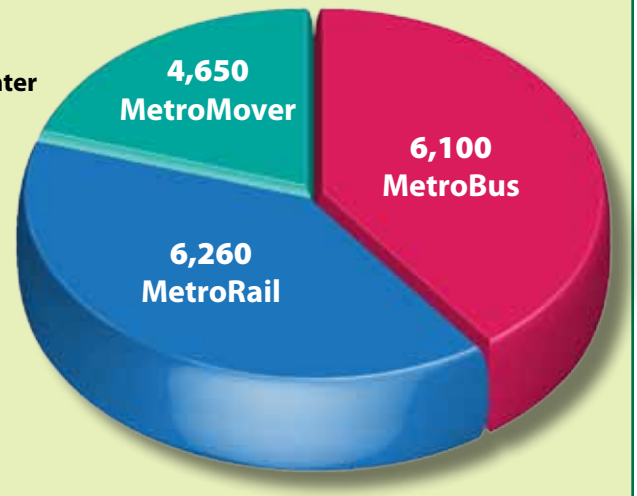
- **Mixed-Use opportunities**
  This was more focused on the more mid to longer term transit oriented uses that could be in demand as the intermodal center matures. This included 'hotel' demand, especially as it related to potential for a limited service business center product type, not currently served in the Downtown Miami sub-market. When considering the additional retail uses that could be supported by the transit ridership in a mixed-use venue, it would in-turn provide enhanced service opportunities for new residents that would be attracted to the intermodal center. The current City of Miami zoning in the study area does in fact permit high-rise units that could be included above, or in conjunction with the hotel units. These potential residential uses could share common amenities with the hotel tower, and 'round out' a fully integrated TOD program.

The following pages present the findings of this study section, and were used as the basis for programming in the subsequent Preliminary Programming, preparation of the Site Conceptual Development Alternatives, and the Final Recommendations.

Average Daily Ridership (By Mode-2011)

RIDERSHIP SUMMARY

- **Estimated transit use for Downtown Center**
  - 5 - minute walk
- **Total average daily ridership estimated at roughly <u>31,000</u>**
  - Estimated 45% "transfer" rate
- **Adjusted average daily rider/station visitor at <u>17,000</u>**



METROMOVER

METROBUS

METRORAIL

Retail Demand from Transit (By Mode-2011)

	Annual Purchases by Category	Percent Capture Station Site	Total Purchases by Category	Annual Sale Per SF	Potential Demand (SF)
Drinks/Dinner	$601	20%	$2,041,000	$375	5,400
Lunch/Breakfast	$1,155	5%	$981,000	$375	2,600
FoodStore	$1,109	20%	$3,769,000	$295	12,800
Pharmacy/ Convenience	$739	20%	$2,512,000	$450	5,600
Mall Type Merchandise	$2,587	15%	$6,596,000	$285	23,100
Total			$15,899,000		49,500

Source: Jacobs; Lambert Advisory; Urban Land Institute; ISCC

Note: Estimates herein are weighted average based upon preliminary analysis of rider expenditure by mode of transit and annual store sales.

Retail Demand from Primary Market Area (PMA) Resident

Estimated Per Capita Income (2012): $24,128

Estimated Population PMA (2012): 3,927

Estimated Total Personal Income: $94,749,898

Estimated Total Personal Income: 27.6%

	Annual Purchases by Category	Percent Capture Station Site	Total Purchases by Category	Annual Sale Per SF	Estimated Potential Demand (SF)
General Merchandise	$4,066,812	10%	$406,681	$275	1,500
Clothing/ Accessory	$3,814,259	10%	$381,426	$300	1,300
Food/Drink-ing Places	$4,031,392	20%	$806,278	$365	2,200
Pharmacy/ Health	$3,065,597	15%	$459,840	$425	1,100
Miscellaneous	$835,872	15%	$125,381	$285	400
Total			$2,179,606		6,500

Source: Jacobs; Lambert Advisory; Urban Land Institute; ISCC

Note: Estimates herein are weighted average based upon preliminary analysis of site capture and annual store sales.

Summary of Retail Demand (By Segment)

Demand Segment	Square Feet
Retail Demand from MetroBus Ridership	15,300
Retail Demand from MetroMover Ridership	13,600
Retail Demand from MetroRail Ridership	20,600
Sub-Total - Retail Demand from Ridership	***49,500***
Retail Demand from PMA Resident	6,500
Retail Demand from Proximate Workers	5,300
Estimated Total Retail Demand	**61,300**

* Estimates herein based upon Ridership for All Transit Modes totaling estimated average 31,000 ± /per day.
* Estimates herein subject to change based upon any future refinement of expenditure, retail sales, and site station capture data when available.

Preliminary Street Closure/Traffic Analysis

To evaluate the feasibility of implementing a pedestrian-transit mall in conjunction with the intermodal terminal facility, the data collected in the first phase of the study was used to evaluate the feasibility of closing NW 1st Street from NW 1st Avenue to NW 2nd Avenue. With the original intent to develop a pedestrian/transit mall along this segment, the evolving alternative conceptual options and schemes also considered other street segments for closure and/or transit only restrictions. In particular 2 additional segments of NW 1st Avenue were critical to the potential success of Schemes #2 and #3, so that a pedestrian safe and operationally 'clean' transit route could be considered. The opportunity to look at an expanded Transit Mall that would connect the County Government facilities to the close-by Federal Judicial facilities, and even ultimately the Overtown Transit Village (OTV) was a worthy exercise. As part of this task, the study proceeded with the following evaluations:

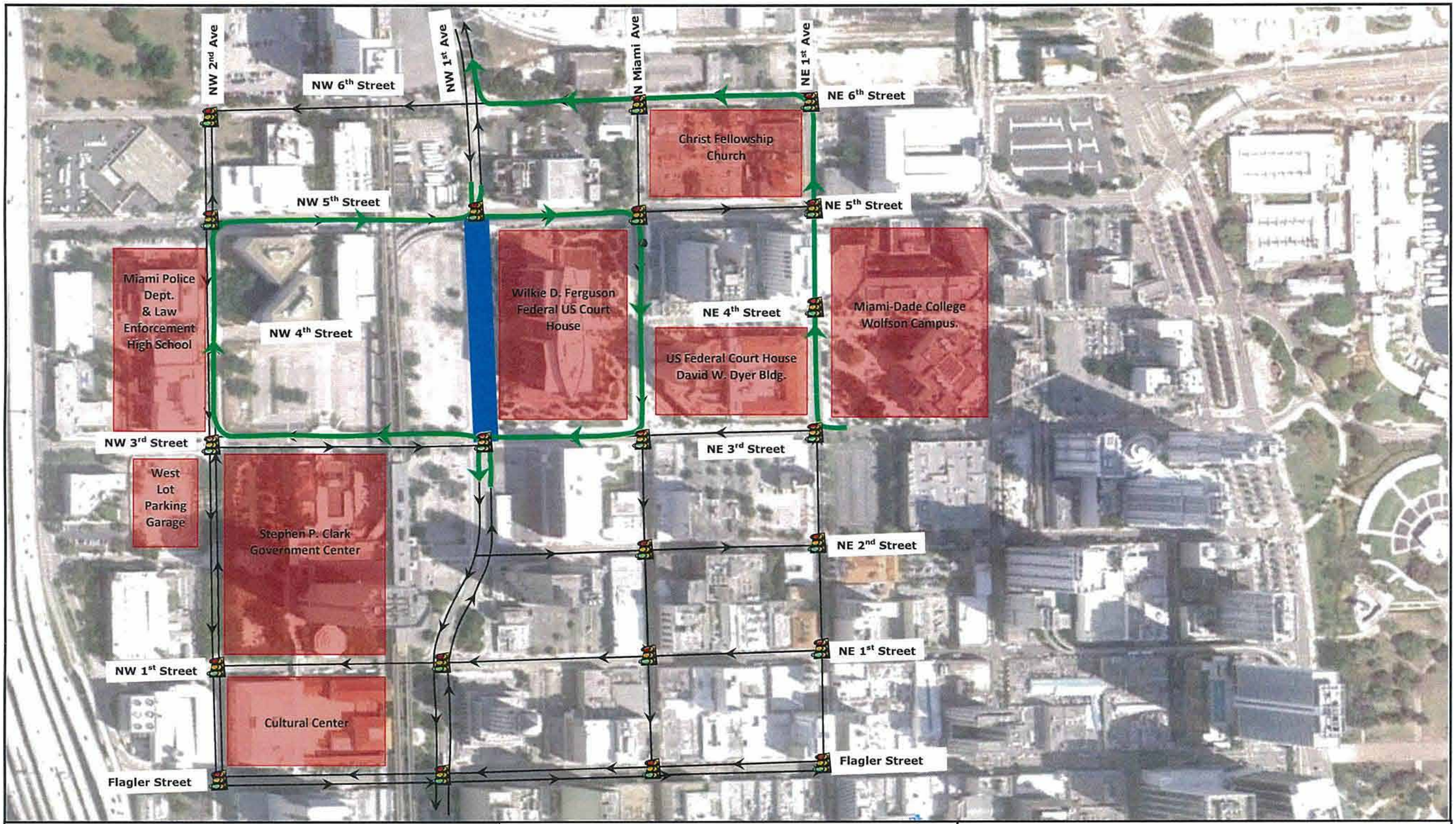
a. Conducted the necessary traffic analysis to determine the feasibility of implementing the 3 optional street closures
b. Analyzed traffic and transit impacts on the existing traffic circulation patterns
c. Integrated rational route adjustments for the impacts for the bicycle and pedestrian circulation patterns
d. Evaluated potential uses for the restricted area
e. Identified the pros and cons of the proposed optional street closures

TASK EXECUTION

To complete this extended work, a traffic engineering specialist was brought on-board to perform a limited Qualitative TIA (traffic impact analysis) for the alternative street segments. This was based on the preliminary development program, to gauge impacts, so this work should be updated once the final development scheme is concluded.

The full Qualitative TIA is included as an appendix item of this report (due to its' size). The following is a summary of their analysis approach and results:

- Extended multiple scenarios were studied, but 2 in particular are the most related to the current alternative Schemes (#2 and #3 reference links in their report)
- This approach compares 'apples to apples' for the links analyzed
- The roadway links & intersections were analyzed for;
  - Impacts of potential road closures
  - With transit and emergency vehicles to remain
- Virtually all links were below 1,000 VPH in peak hour volumes in 2011, which is an acceptable LOS by County standards
- The potential to exacerbate existing traffic conditions was lowest with NW 1st Street
- The number of bus routes affected was virtually the same for NW 1st Street and NW 1st Avenue (only 1 route difference by current programming/schedules)
- The potential to limit pedestrian circulation conflicts was also lowest with NW 1st Street by a wide margin
- Overall 'scores' result in the NW 1st Street closure as the best option by more than 50% in a qualitative analysis.



CH PEREZ & ASSOCIATES CONSULTING ENGINEERS, INC
CERTIFICATE OF AUTHORIZATION NO. EB-25976
9594 NW 41 STREET, SUITE 201
MIAMI, FLORIDA 33178
(305)592-1070 / FAX: (305)592-1078

Figure ES 1

TRAFFIC CIRCULATION SKETCH - SCENARIO 1
DOWNTOWN INTERMODAL TERMINAL

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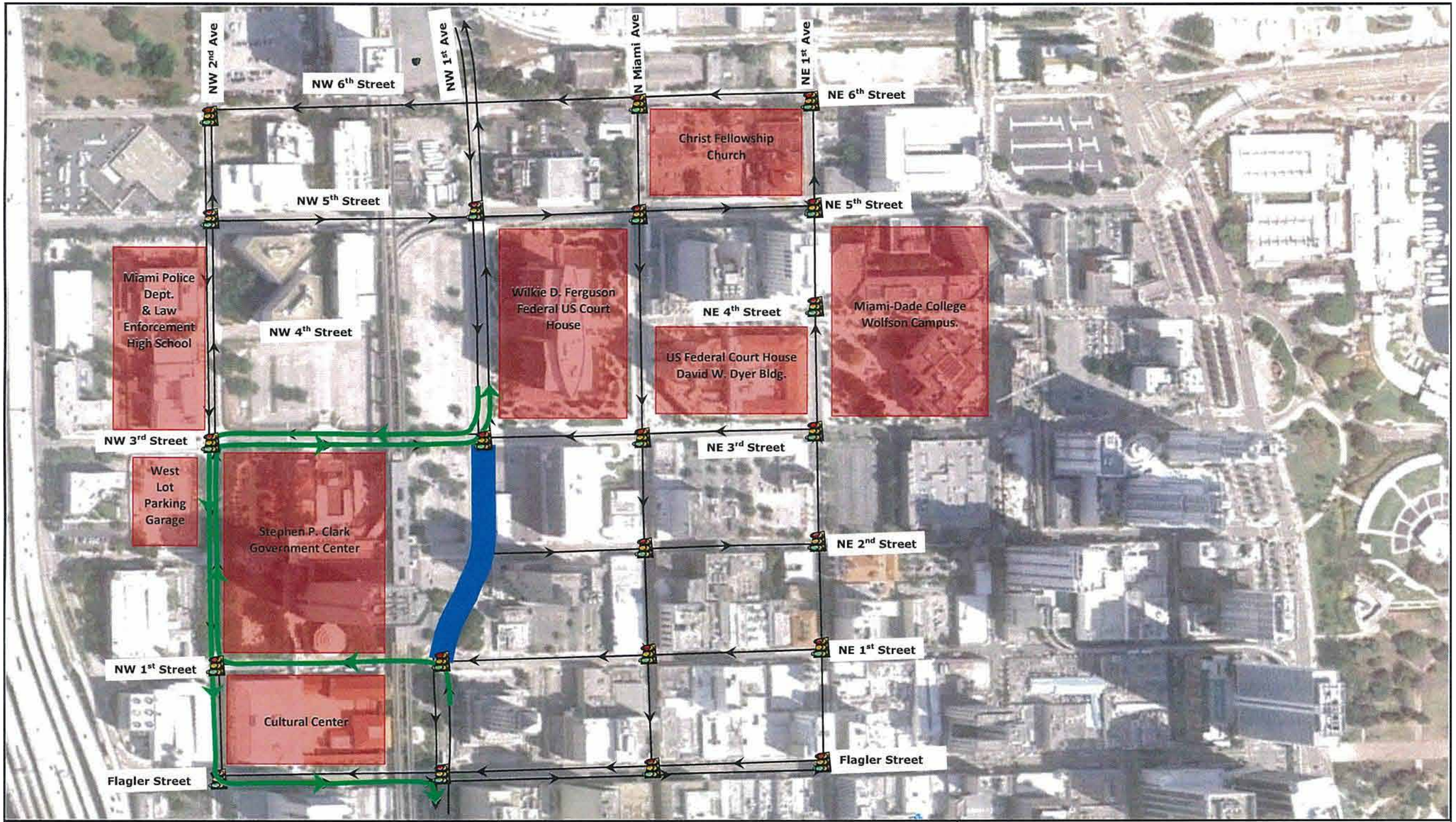

LEGEND

- Roadway Direction of Travel
- Special Land Uses
- Likely Diverted Traffic
- Road Closure
- Signalized Intersection

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CERTIFICATE OF AUTHORIZATION NO. EB-25976
9594 NW 41 STREET, SUITE 201
MIAMI, FLORIDA 33178
(305)592-1070 / FAX: (305)592-1078

Figure ES 2

TRAFFIC CIRCULATION SKETCH - SCENARIO 2
DOWNTOWN INTERMODAL TERMINAL

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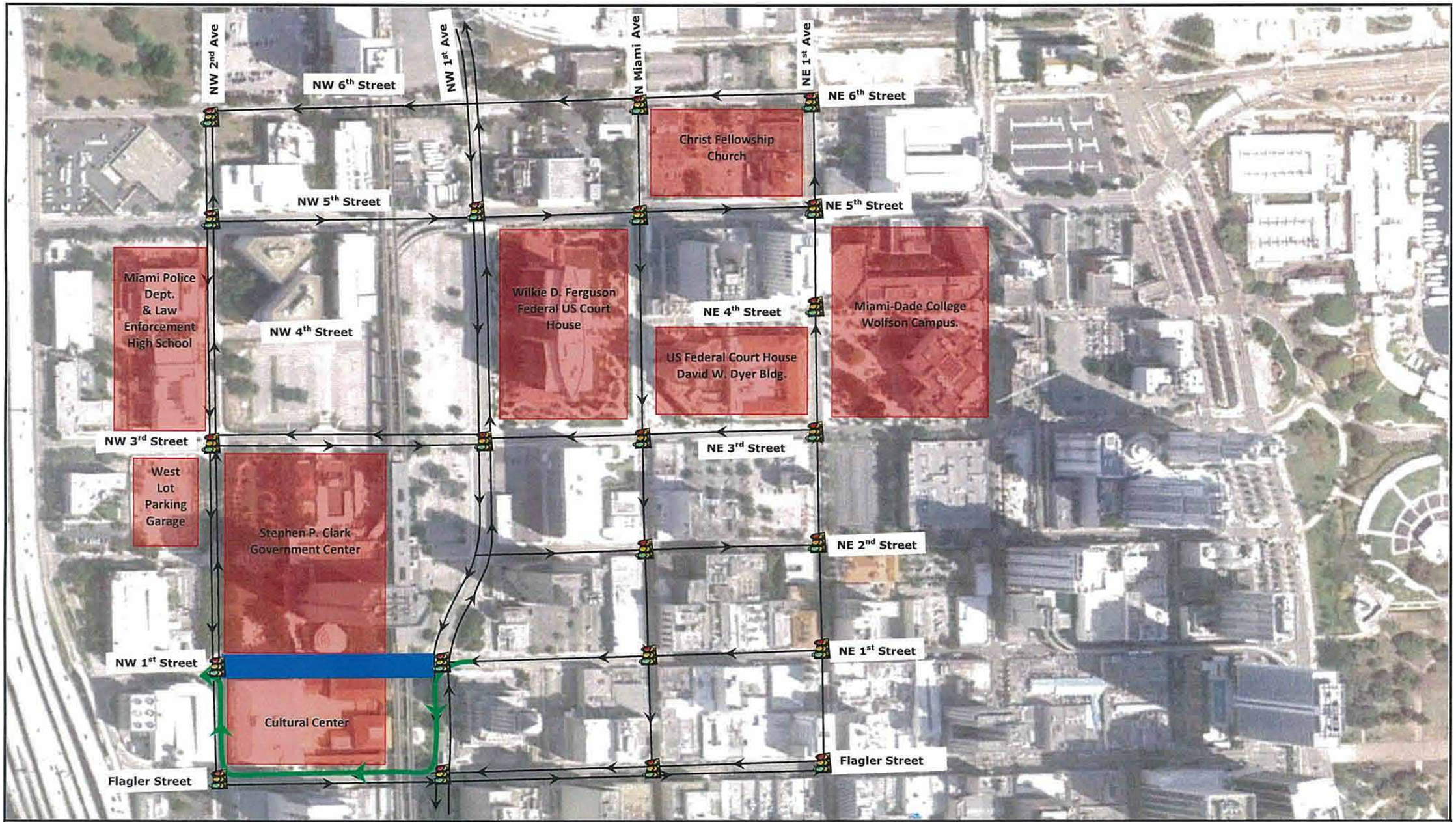

LEGEND

- Roadway Direction of Travel
- Special Land Uses
- Likely Diverted Traffic
- Road Closure
- Signalized Intersection

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9594 NW 41 STREET, SUITE 201
MIAMI, FLORIDA 33178
(305)592-1070 / FAX: (305)592-1078

Figure ES 3

TRAFFIC CIRCULATION SKETCH - SCENARIO 3
DOWNTOWN INTERMODAL TERMINAL

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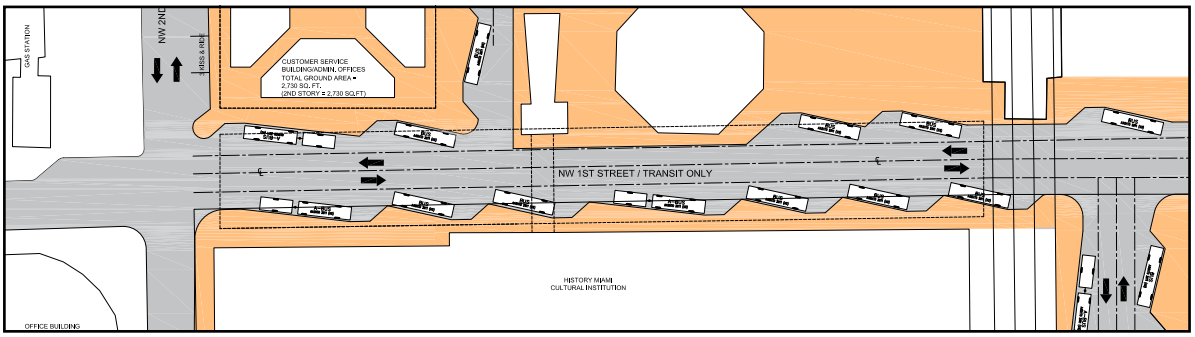
TASK EXECUTION *(continued)*

The feasibility of closing NW 1st Street from NW 1st Avenue to NW 2nd Avenue was also evaluated from a transportation and traffic circulation standpoint in a graphic context. The existing transportation network (roadways, transit routes, sidewalks, bicycle paths, etc.) will need to be analyzed from an operation standpoint to identify possible enhancement improvements to limit the impact of the proposed street closure in terms of altered traffic and transit patterns. These altered patterns and improvements can offer operational changes that result in better transit customer services by organizing the circulation patterns in a safer design. The resulting traffic / transit volumes could then accommodated without drastically affecting the resulting levels of service (for the transit uses). Specific areas of projected congestion and failing levels of service identified during more detailed studies, once the project master plan moves into a schematic design phase, should be considered and potential mitigation solutions that are 'structurally improvement' based could be developed to solve any new impacts not identified in this limited evaluation study.

Some of the proposed pedestrian/transit mall improvement options are depicted in the sketch sections below that were included in the alternate Conceptual Development Schemes for the NW 1st Street corridor:

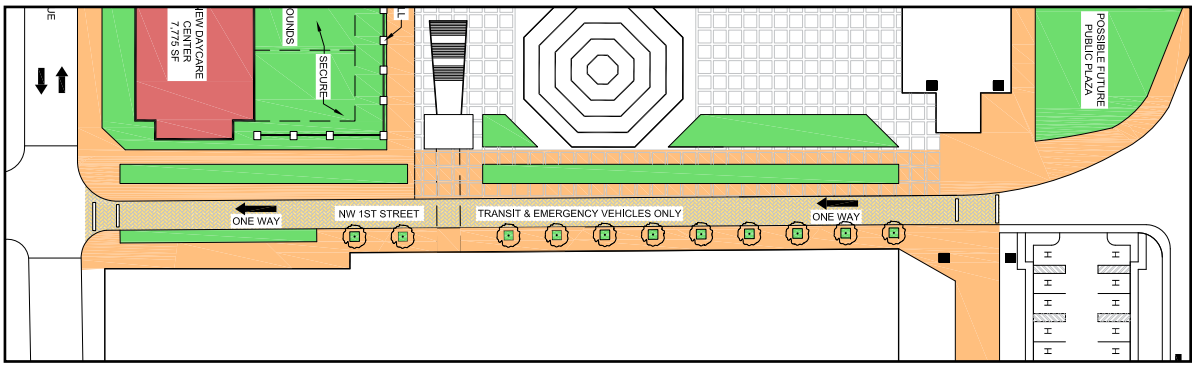
OPTION 1

As depicted in Scheme 1, with two-way transit circulation



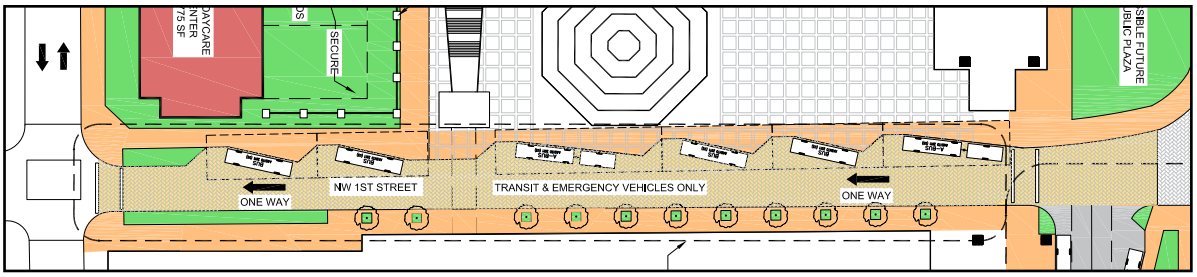
OPTION 2

As depicted in our 'pedestrian only' Scheme 6A



OPTION 3

As depicted in our Final Scheme



Based upon the conclusions of the vehicular and pedestrian analysis, it was recommended that the MPO explore further detailed concepts and potential uses for the pedestrian mall and restricted area. An important component of any successful pedestrian-oriented area is a careful and targeted market and demographic analysis to determine the volume, type and behaviors of the potential users to accurately identify potential uses. These additional analyses should be part of the comprehensive way to approach redevelopment zones in urban areas and ensure an energized, vibrant and activated pedestrian development.

The ultimate development of the pedestrian mall should take into consideration all forms of transportation as well as the need for circulation related to emergency, maintenance vehicles and other necessary movement.

Site Development Concept Alternatives

After completing the Site Selection process, and narrowing the candidate sites down to the 3 key 'best' parcel locations, all just east of the Government Center, the study proceeded with a series of planning studies to 'test fit' the development approach for each site. These Concept Alternatives were prepared to consider possible options for:

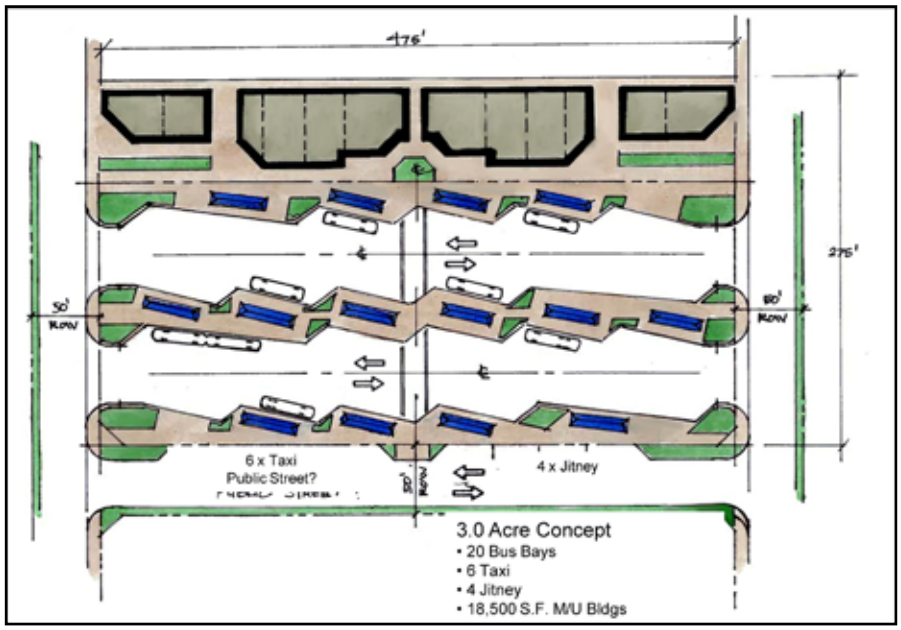
- MDT operations and facilities on the ground floor as well as the associated access and circulation needs of bike and pedestrian users
- Mixed-use, multi-floor logical development opportunities above the terminal operations that were supported by the Preliminary Economic & Market Analysis
- Connectivity of existing transportation/transit infrastructure
- Public and 'green' space integration
- Provisions for taxi, jitney and public parking support which may have been affected by the new terminal, or is anew demand because of it

The work in this phase of the study was conducted in 3 generalized steps as described below:

STEP 1: ARCHITECTURAL STUDIES

Utilizing the outcome of the Conceptual Approach and Programming as a 'Preliminary Basis for Design' a preliminary facility spatial program was developed and refined to allocate minimum building square footages, circulation, and relationship/adjacency criteria in alternative plans and conceptual illustrations format. After this spatial program was confirmed with the MPO as adequate, a simple facility 'massing' layout was prepared for use in site planning. This diagram was produced at scale, and included typical information to address orientation of the facilities, as well as the necessary access & circulation relationships to the site. This was reviewed and approved by MPO for use in the subsequent planning & facility design process.

Next a 'Preliminary Conceptual Design' alternatives were prepared for the facilities on the preferred alternative sites, in conjunction with the site planning effort described below. They were based on the approved Preliminary Basis for Design, and were refined to respond to the specific site conditions such as the probable building location, site circulation, environmental criteria and local zoning regulations. Once and after the selected site configuration alternative & final development program were confirmed through the evaluation process at the end of this task, a single set of conceptual design alternatives drawings were prepared to depict the generalized functional site structure, building form and character for purposes of providing final site development concepts for the final selected site.



STEP 2: SITE PLAN DEVELOPMENT

The site layouts developed during this phase also utilized Architectural 'massing' studies to explore the maximum build-out alternatives, establishing the appropriate use relationships, and connectivity patterns for efficient site function. The plans assumed alternative scenarios that included private property acquisitions as identified by the MPO for the facility placement, and the incorporation of publicly-available right-of-way for the development of the transit/pedestrian mall. After an understanding of site-specific existing conditions were achieved, a series of development options were created and applied to the preferred sites indicating placement of facilities and links to exterior transit functions (and other urban context uses) as needed. The development options looked at alternatives for the arrangement of facilities and functions.

Evaluation criteria were applied and a recommendation was made for the preferred option. Factors that were considered in the site planning process include vehicular and pedestrian access & circulation, parking, utility and infrastructure, site amenities work, security or other risks, and other relevant site issues.

STEP 3: EVALUATION AND DEVELOPMENT OF THE PREFERRED SITE

As the conceptual design alternatives of the proposed facility were developed, the minimum conceptual design factors that were included for evaluation purposes are listed as follows, but were not limited to:

a. Roadways

- Traffic impact to adjacent streets
- Roadway improvements necessary to alleviate traffic congestion created by the construction of this facility

b. Transit

- Transit service changes to accommodate MDT routes
- Parking for Bus
- Bus shelters
- Bus stops
- Drivers and MDT staff area
- Transit booths and/or kiosks (information and tickets)

c. The Intermodal 'Mixed-Use' Facility

- Type of facility
- Connectivity and accessibility to Metrorail and Metromover
- Parking garage
- Commercial and retail space
- Office space
- Common grounds/Public spaces
- Kiss and Ride, Taxi, Jitney, other loading areas

d. Amenities

- Passenger information
- Bathrooms
- Waiting areas
- Others

e. Non-Motorized

- Bicycle and pedestrian accessibility
- Bicycle racks and parking
- Bicycle lockers
- Sidewalks
- Pedestrian crossings

f. Miscellaneous

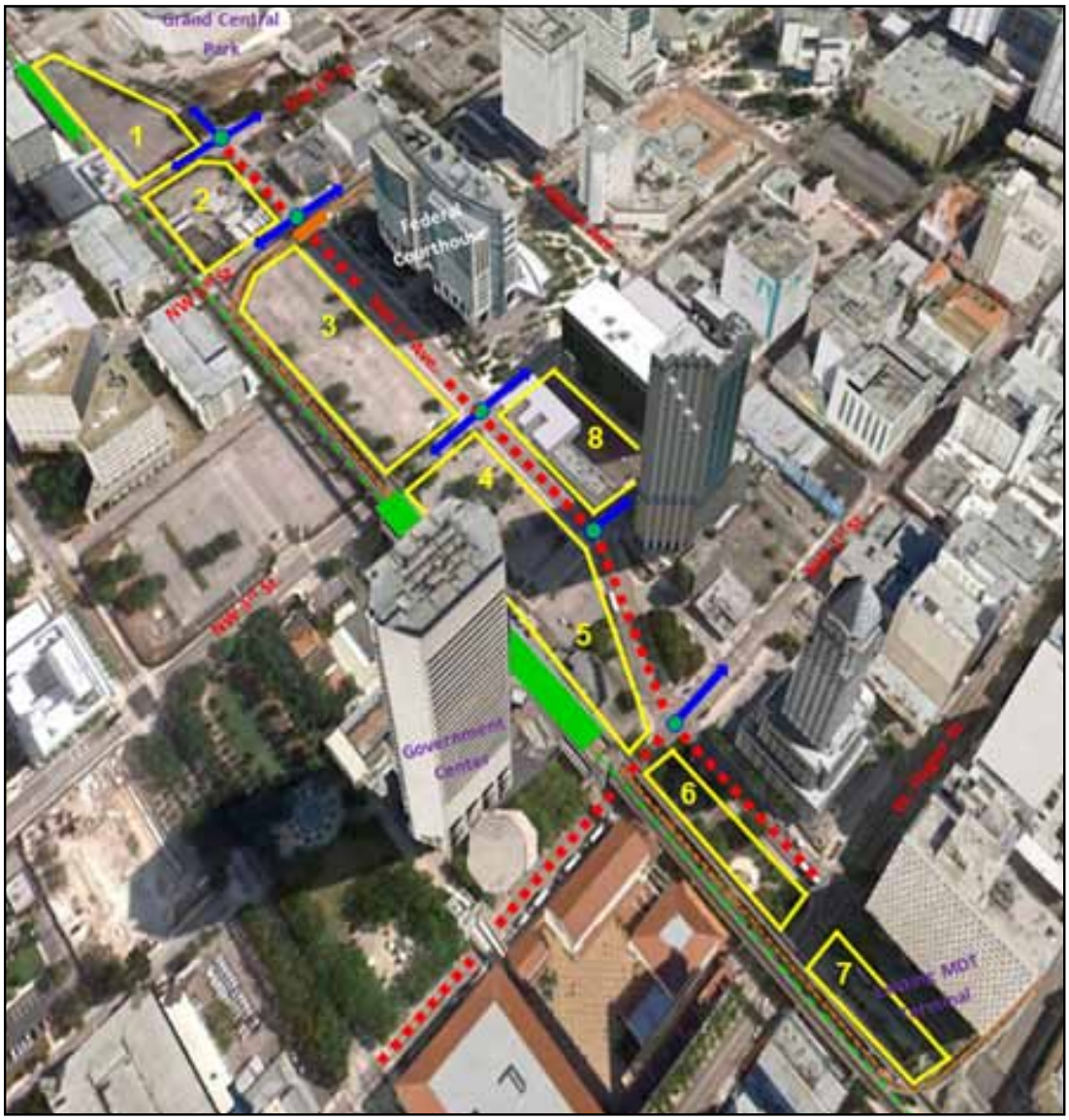
- Economic impact to the adjacent area
- Aesthetic design
- Landscaping
- ADA compliance
- Lighting
- Safety
- Security

TASK EXECUTION

After the preferred architectural facility concept and site configurations were finalized and selected through the work in this Task, a final site development package for each candidate site was developed, allowing for the evaluation of the multiple site criteria/features as outlined above. These final site development concepts and the feature options were presented to the MPO and SAC in a work session to receive feedback and modify the plans accordingly for its' ultimate feasibility evaluation. This phase included illustrative drawings and massing models depicting the ultimate built out of the Multi-modal Facility, the relationship to adjacent transportation and multi-modal nodes, circulation, infrastructure, parking elements, natural and context elements. The plans also addressed the parameters for a phased implementation, pertinent regulations, and strategies to develop the property balanced with projected operations.

Working corroboratively, this final site design and features options were 'benchmark' to the evaluation criteria that were created from the goals and objectives developed in the earlier phases of the project. The resulting plans and illustrations that follow summarize the final preferred facility and transit / pedestrian site plans for all 3 sites that are logical and defensible, upon which the MPO can realistically develop 'next step' strategies to get the project approved, funded and implemented. The product of this Task was utilized for the completion of the Final Site Development Concept task of this project, leading towards our final set of Recommendations, and the concurrent Action Plan.

To understand the potential development concepts for the 3 initial preferred sites, a summary of study's objective –'Vision' for the area will help frame the context of the Alternative Concept Schemes. The initial parcels that appeared to be the most likely candidate sites based on the results of the Site Selection task are depicted in the photographic image below. These sites were examined through close coordination with not only the SAC, but also the 'major players' of the SAC that will have direct 'stakeholder' and/or ownership/operations interest in the intermodal facility. These included MDT, SFRTA and their efforts on the South Florida East Coast Corridor (SFECC) project, and the FECI as related to the All Aboard Florida (AAF) terminal project.

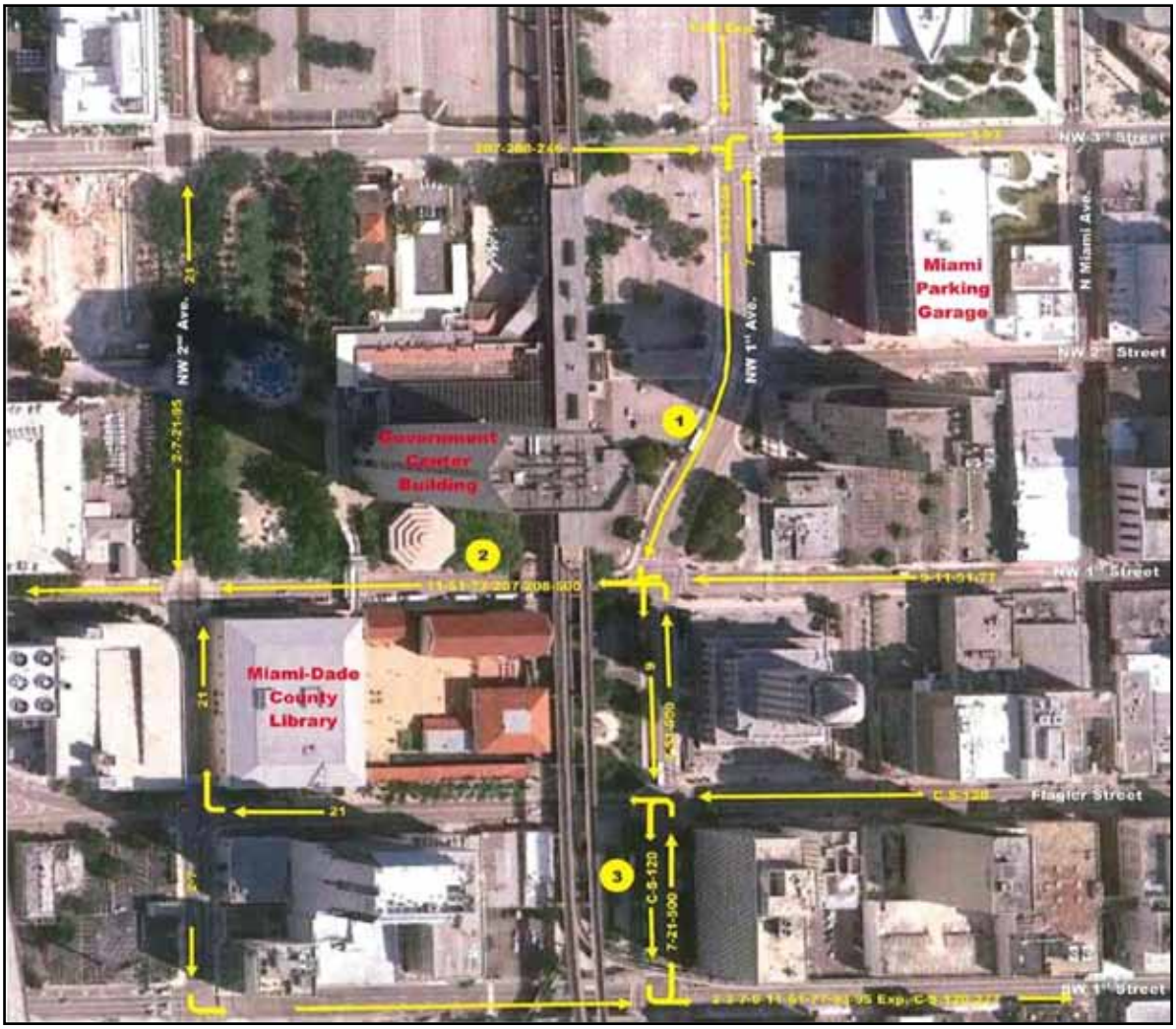


This illustrates the potential downtown parcels in the study area that were initially considered for the new intermodal terminal, and/or other visionary and regionally important transit oriented development (TOD) opportunities. They are identified as follows:

- Lots 1 & 2: A Regional Terminal location possibility with direct Metrorail/Metromover connections to MIA and the Port of Miami (POM).
- Lot 3: A potentail rail terminal site with direct connection possible to the Metromover, Federal Courthouse, and possible high-rise development above the terminal for residential and mixed-use retail & commercial uses.
- Lots 4, 5 & 8: Primary Intermodal Terminal location that could be dveeloped with TOD amenities and green areas to enhance an urban 'transit mall' for the 2-block region.
- Lots 6 & 7: Sites with high TOD potential for hotel or office space and service amenities for occupants and transit users.

This also illustrates the potential extent of Pedestrain/Linear Transit Mall opportunites along NW 1st Avenue, and the additional opportunity to covert NW 1st Street to an exclusive transit 'Boulevard' for cross access at the Governement Center/Miami Library & Historical Museum. The blue cross-street markers indicate remaining E-W vehicular routes with key Transit Mall nodes highlighted that hold potential for creative intersection treatments.

During the coordination efforts mentioned above, the task also captured the summary of existing transit services in the downtown study area. The following mapped image indicates the routes, termial and ridership information. This Diagram when taken in the context of potential transit users that could be served, clearly summarizes the objective that the primary study sites would meet; providing convenience to access all services under one terminal facility, with ample associated service amenities development opportunities.



- **Total Routes served** - 23 routes
- **Terminal locations served**
  - ✓ Miami Dade College (4)
  - ✓ Governemental Center (6)
  - ✓ Overtown Transit Village (3)
  - ✓ Downtown CBD (10)
- **Daily Ridership by mode**
  - ✓ **Metrobus** - 106,294 passengers daily
  - ✓ **Metrorail** - 13,976 passengers daily
  - ✓ **Metromover** - 10,036 passengers daily (by November 2012 statistics)

PREFERRED ALTERNATIVE SCHEME CONCEPTS

Alternative Scheme #1
The first alternative site explored was the existing private lot (FECI) on the west side of NW 1st Avenue directly in front of the Government Center (GC). It acts as a 'front door' to the GC due to the existing large surface parking facilities used by most of the visitors on a daily basis. It includes the old NW 2nd Street dead-end ROW parcel, and conceptually considered the potential realignment of the NW 1st Avenue 'dog leg' between 1st and 2nd Streets that could be accomplished if NW 1st Avenue was converted to a transit mall not open to private vehicles.

This concept affords some advantages unique to this location/site:

- Full development of the Intermodal Terminal with direct connection to the Metrorail and Metromover station platforms at the GC;
- Potential co-use with the future TriRail Coastal Link terminal;
- 22 bus stop locations, with expansion potential on NW 1st Avenue, and good separation of taxi/jitney and kiss & ride locations outside the terminal perimeter;
- The building program for MDT services and the needed/related commercial market uses can be accommodated on a multi-level platform directly above the terminal;
- Traffic rerouted off the closed section of NW 1st Avenue could be easily looped from 1st to 2nd Streets (and/or reversed) to limit disruption to downtown circulation by the single block transit closure; and,
- Would limit disructions to NW 1st and 3rd Streets as significant E-W connectors.

Through the SAC evaluation process, there were also discussions about a few potential disadvantages of this site. The key reasons why it possibly could not be recommended include:

- If the SFEEC Coastal Link terminal and the All Aboard Florida terminal would both be proposed as ground level designs, there could be little room left for the MDT bus facility;
- Conversely, if both of those terminals are proposed as 2nd level platform types at this location, it would limit the above grade other uses/services development potential and could pose significant structural design impacts on the ground level MDT terminal; and,
- The need to use additional curbside areas of NW 1st Avenue to accommodate MDT's expansion in the future would be very limited if NW 1st Avenue was not converted to a transit only pedestrian street in coordination with this scheme.

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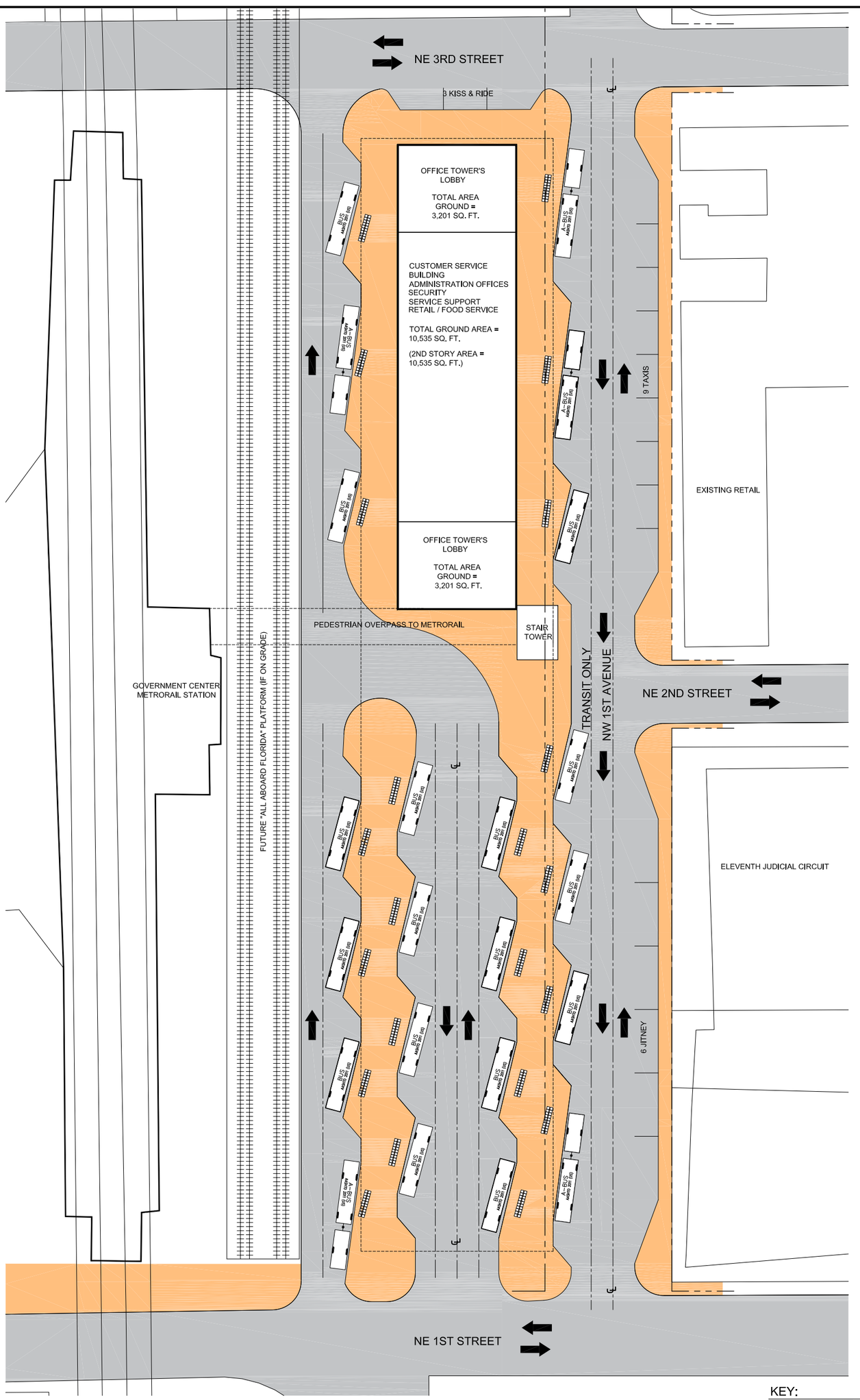


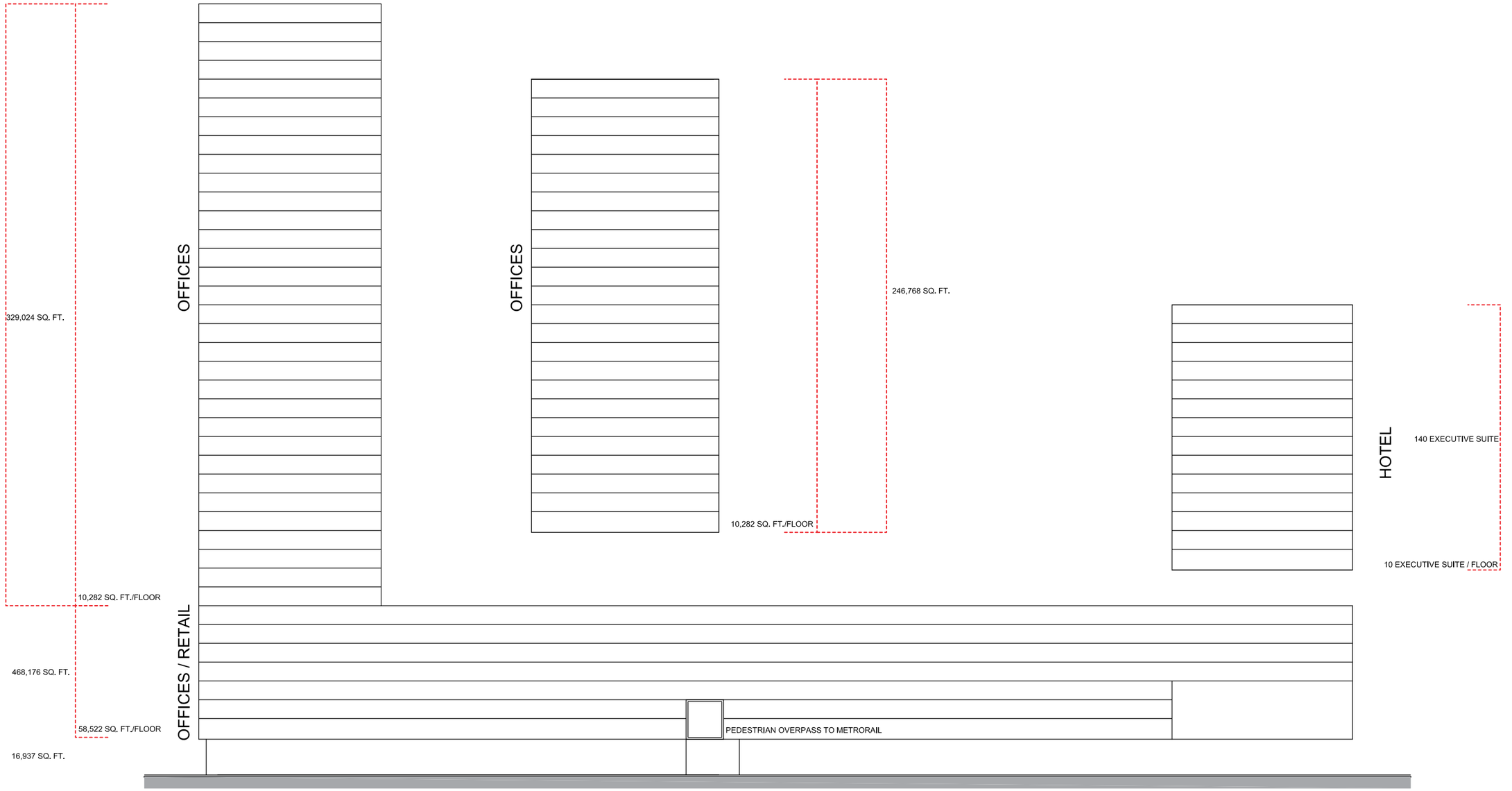
DOWNTOWN MIAMI INTERMODAL TERMINAL - SCHEME 1

01 SCALE: 1"=50'

JACOBS

10.29.2012

DOWNTOWN MIAMI INTERMODAL TERMINAL FEASIBILITY STUDY



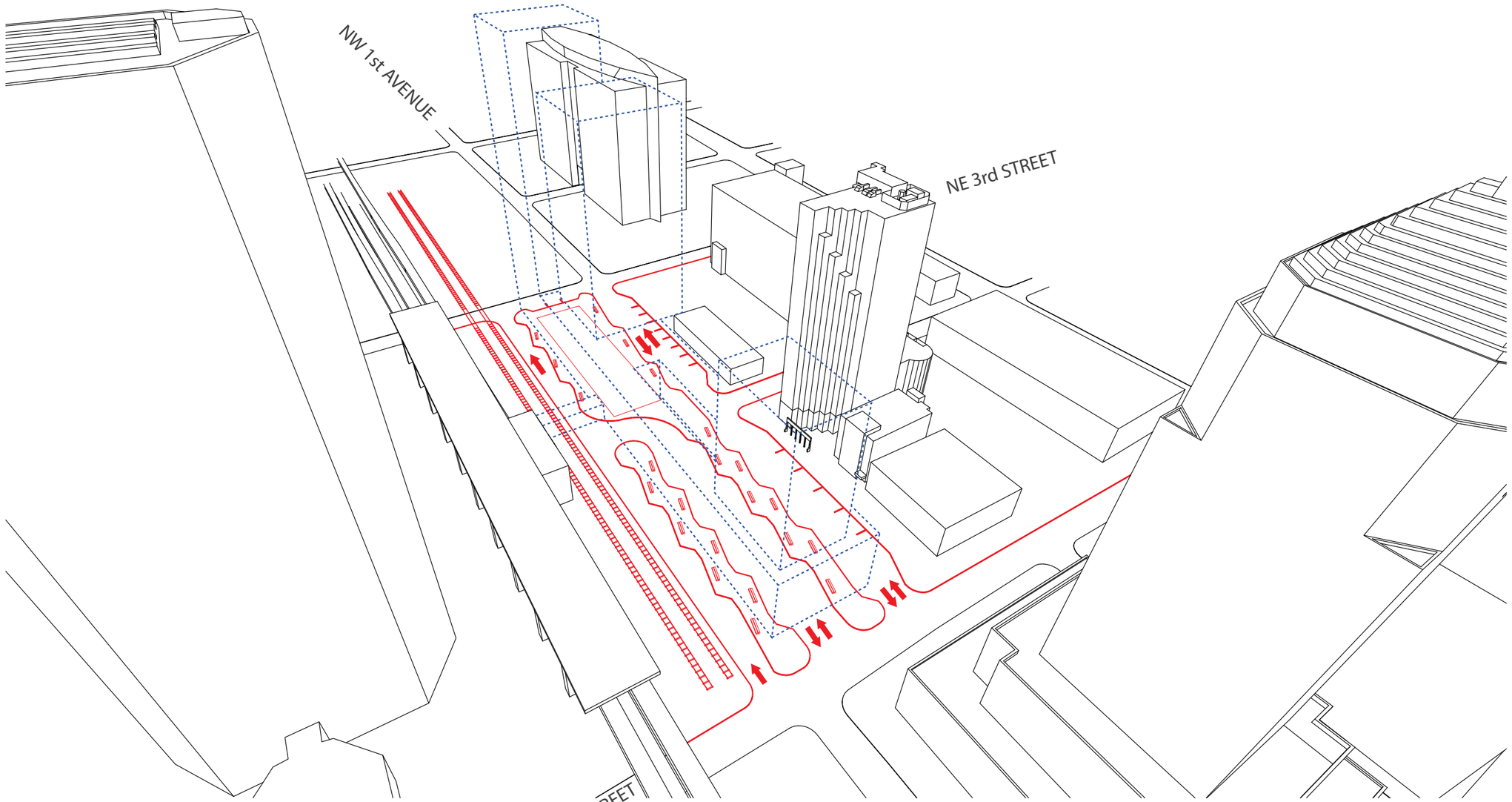
PRELIMINARY SPACE PROGRAM - SCHEME 1

01 SCALE: 1"=50'

JACOBS

2

12.19.12



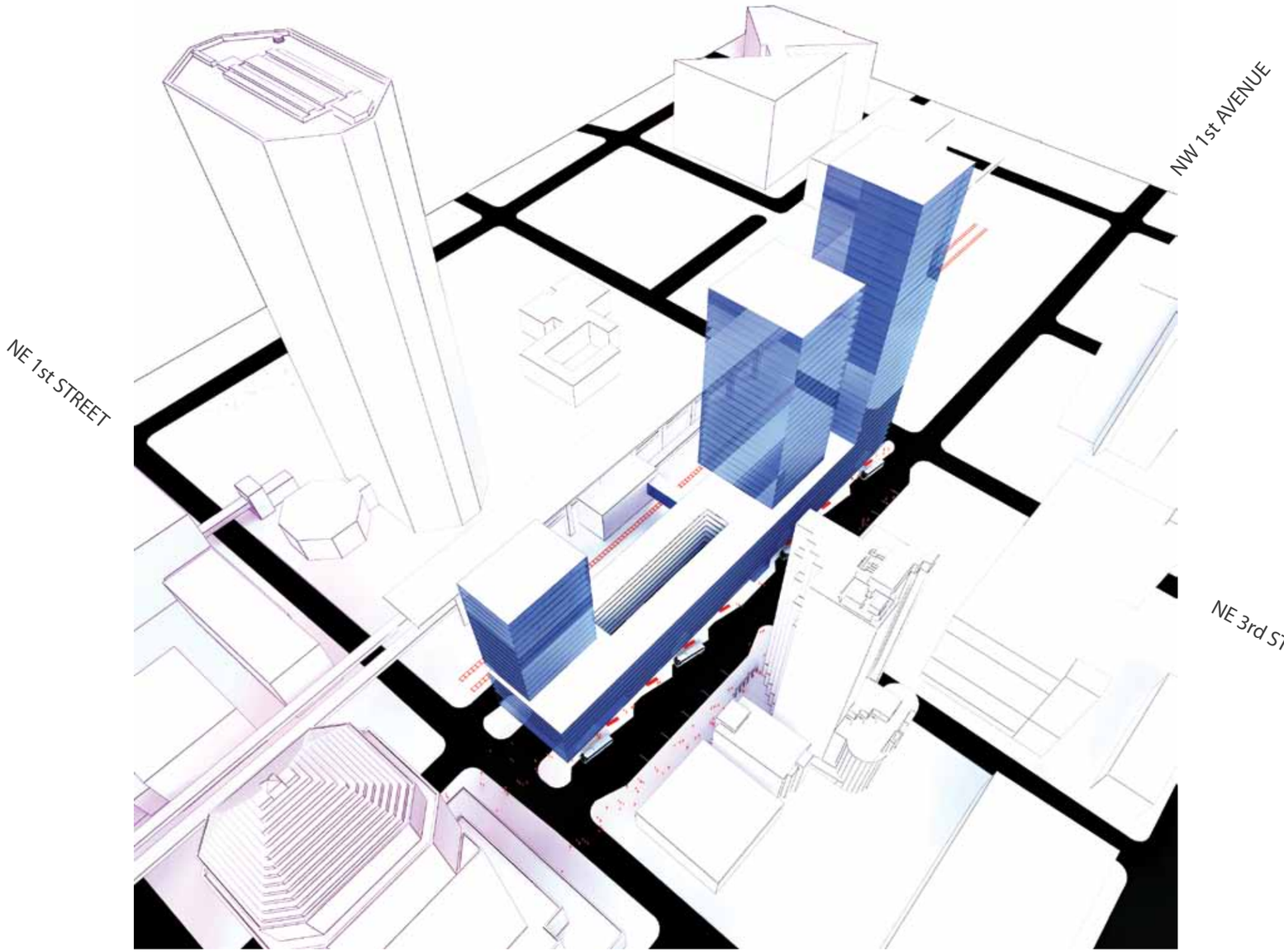
01 **3D DIAGRAM - SCHEME 1**

SCALE:N.T.S

JACOBS

3

12.19.12



3D DIAGRAMATIC AERIAL VIEW - SCHEME 1

4

12.19.12

Alternative Scheme #2

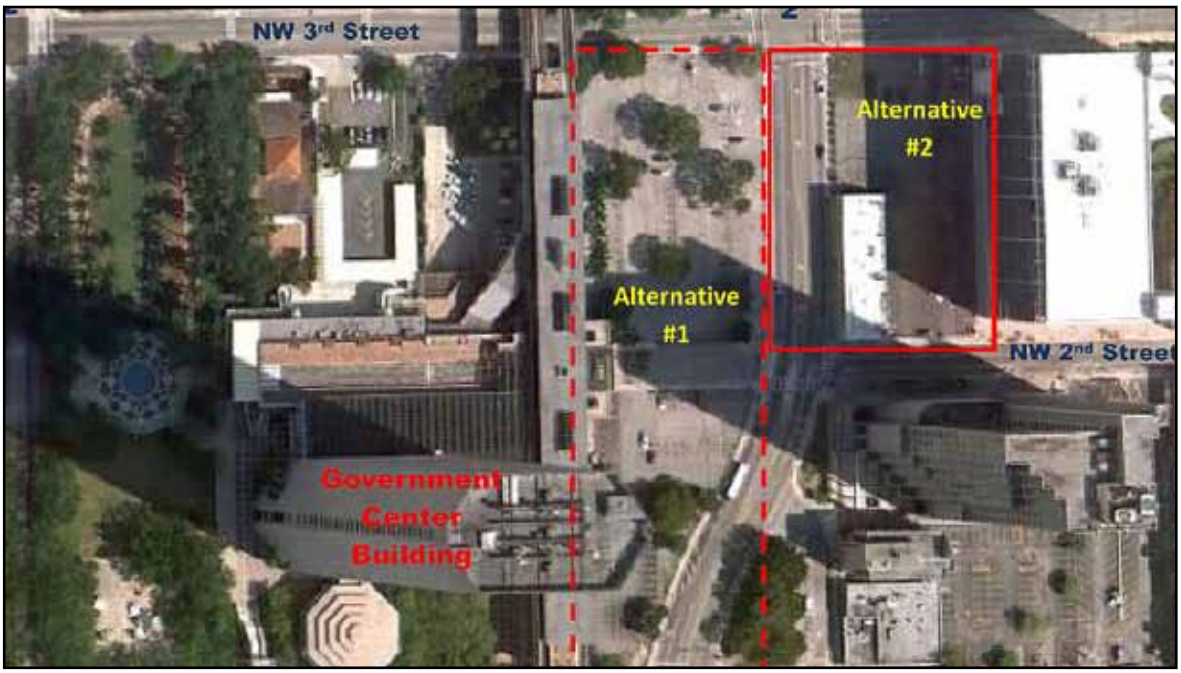
The next alternative site explored was the existing private lot (partially developed) on the east side of NW 1st Avenue and adjacent to the Miami Parking Authority Garage between 2nd and 3rd Streets.

This concept would establish 2 'transit only' strips on and adjacent to the east side of NW 1st Avenue between 2nd and 3rd Streets, moving all intermodal terminal facilities off the FECI property. Remaining bus stops along the west side of 1st Avenue south of 2nd Street (in the angled connector) could be utilized for the MDT Metromover rail shuttle parking area and/or regular bus layover positions. This concept affords some advantages unique to this location/site:

- Full development of the Intermodal Terminal close to the Miami Parking Authority garage for shared commuter use;
- The ability to develop an elevated terminal connection integrated into an above-street urban plaza space, directly to the AAF station, Metrorail, Metromover, and the Government Center itself;
- The Building program for MDT services and the needed/related commercial market uses can be accommodated on a multi-level platform adjacent to the parking garage; and,
- Traffic rerouted off the closed section of NW 1st Avenue could be easily looped from 1st to 2nd Streets (and/or reversed) to limit disruption to downtown circulation by the single block transit closure.

Through the SAC evaluation process, there were also discussions why this option was not the most preferred. The key reasons why it was not a recommended include:

- All Aboard Florida will have their signature building as part of their terminal, at their preferred location, directly across the street, so the impact of the bus bays fronting their building would limit commercial activity and detract from the enhanced pedestrian environment that such a terminal facility should present;
- With the AAF options being considered to move the elevated rail terminal further north to front the lot adjacent to the Federal building, no direct bus to rail connection will be possible; and,
- The need to use additional blocks of NW 1st Avenue to accommodate additional buses to meet MDT's expanding requirement for bus bays (perhaps as high as 30) could not be accommodated in a unified approach utilizing this concept.



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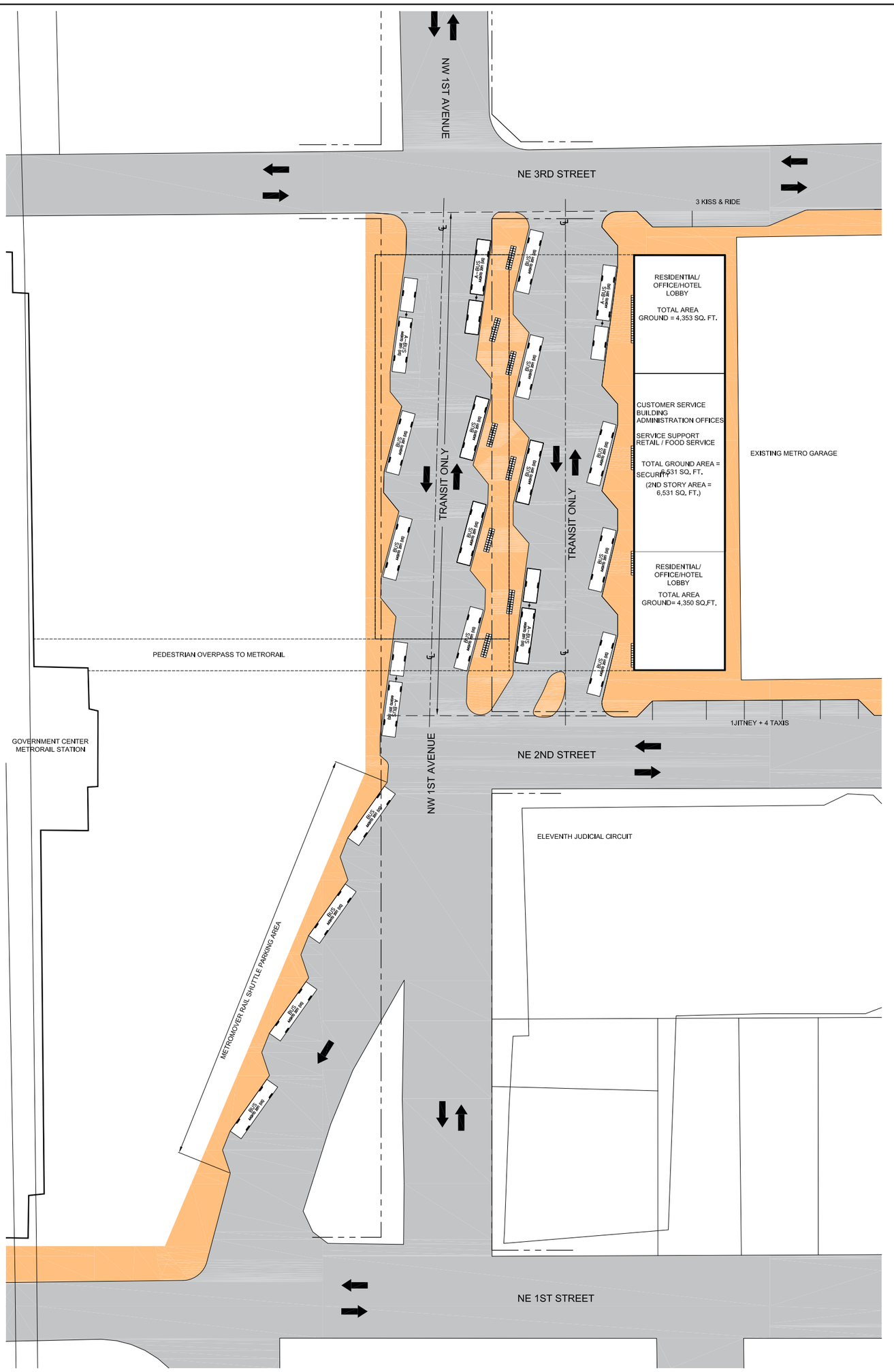


KEY:
PEDESTRIAN:
VEHICULAR:

VEHICULAR COUNT:

15	BUS
5	ARTICULATED BUS
4	TAXIS
1	JITNEY BUS
3	KISS & RIDE

JACOBS

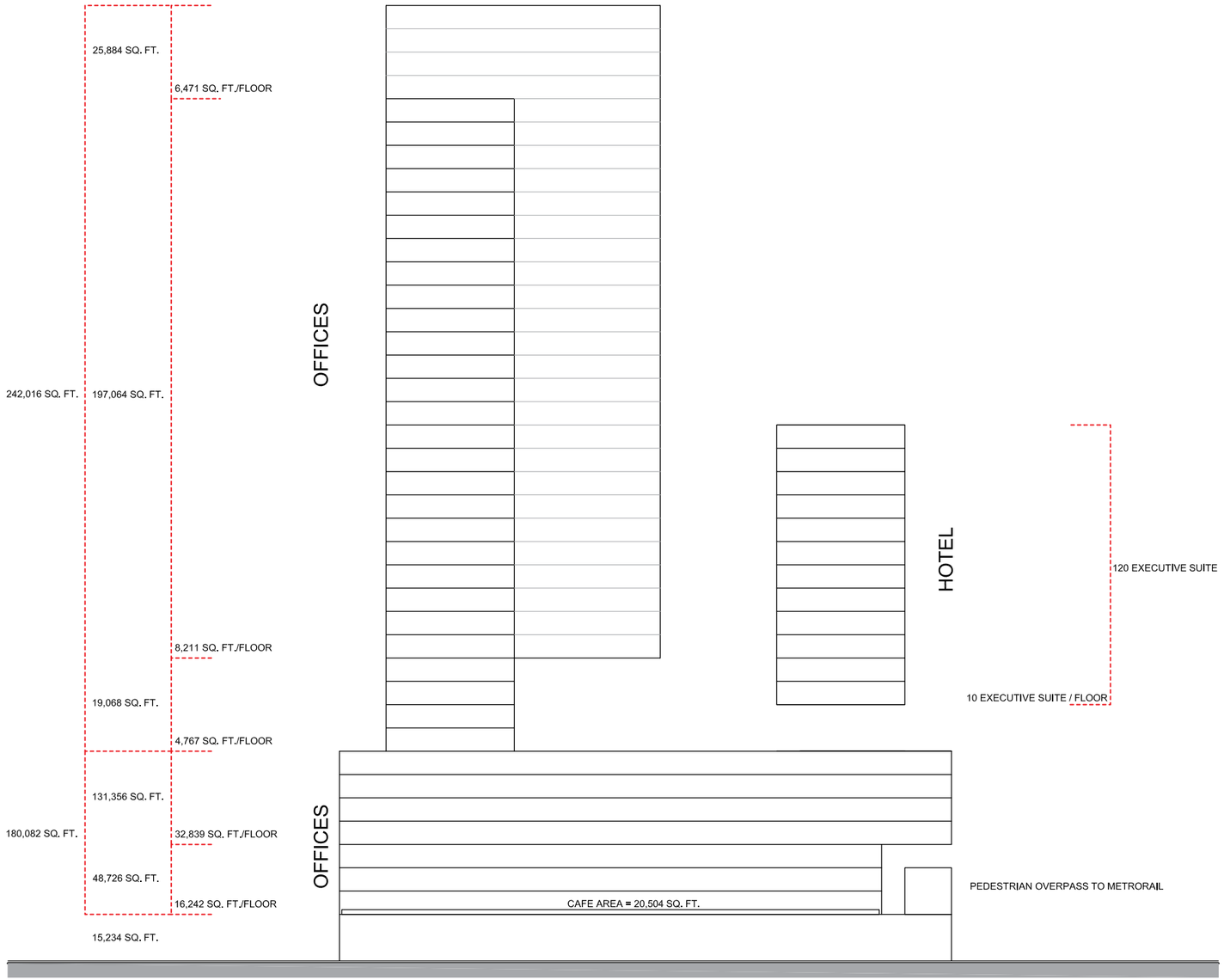
10.29.2012

01 DOWNTOWN MIAMI INTERMODAL TERMINAL - SCHEME 2

SCALE: 1"=50'

N

DOWNTOWN MIAMI INTERMODAL TERMINAL FEASIBILITY STUDY



01 PRELIMINARY SPACE PROGRAM - SCHEME 2

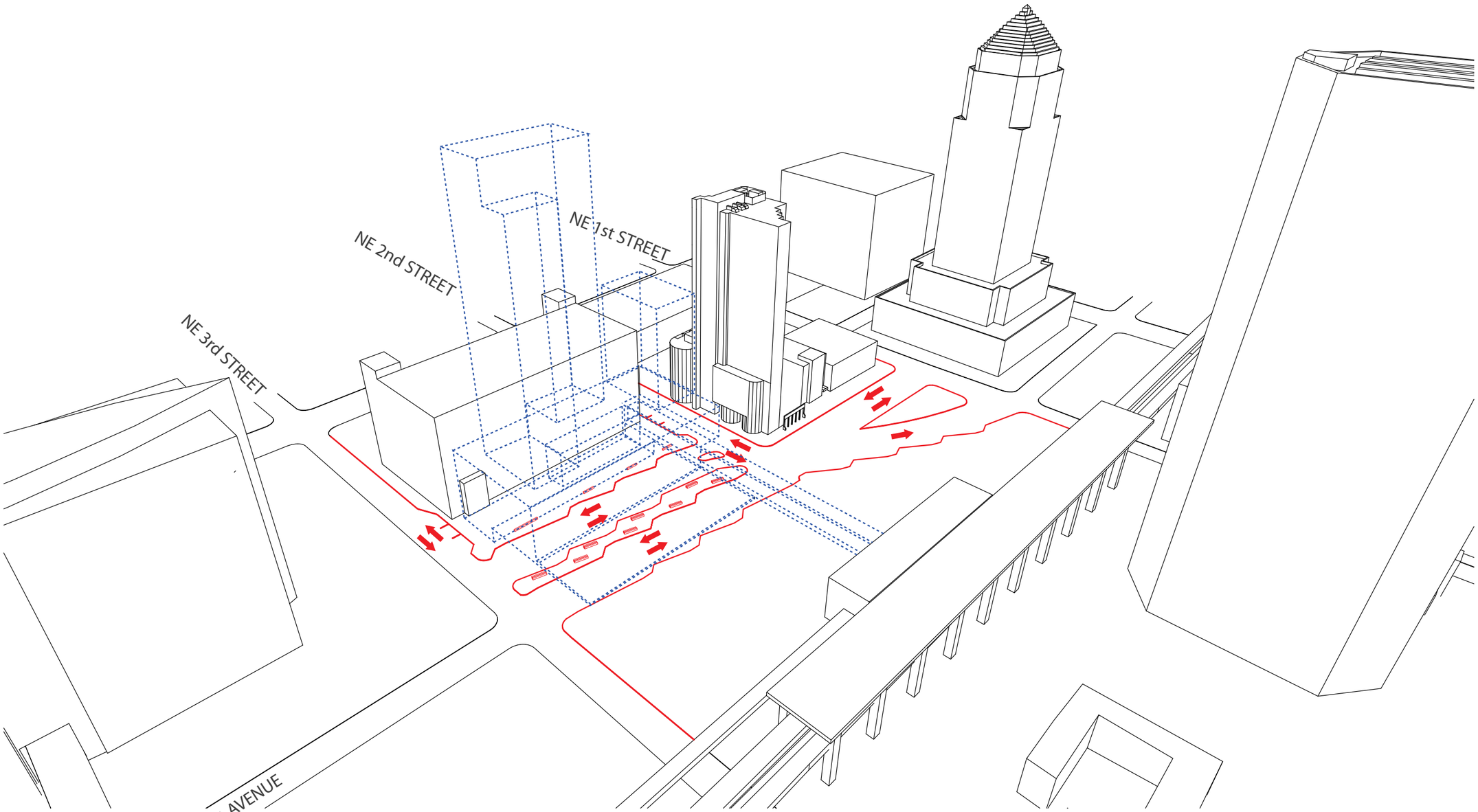
SCALE: 1"=50'

JACOBS

2

12.19.12

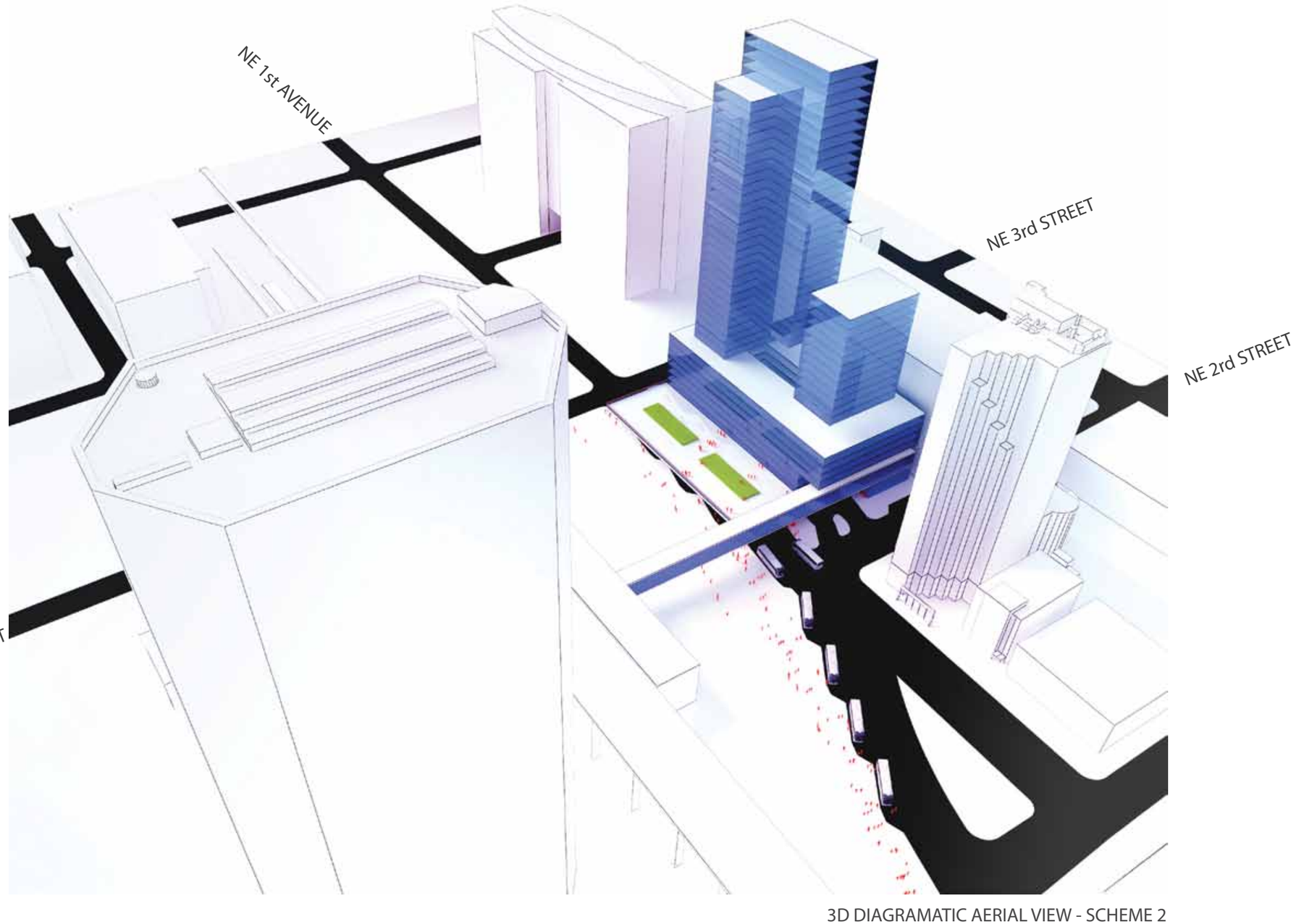
DOWNTOWN MIAMI INTERMODAL TERMINAL FEASIBILITY STUDY



01 3D DIAGRAM - SCHEME 2
SCALE: N.T.S

JACOBS

3
12.19.12



3D DIAGRAMATIC AERIAL VIEW - SCHEME 2

4

12.19.12

Alternative Scheme #3

Located on the South and West sides of the Government Center, this alternative uses NW 1st Street as the primary location for the terminal, with NW 1st converted to a two-way transit and emergency vehicle restricted use street. It would require the entire use of the South half of the 'Stephen P. Clark Center West Park, supplanting the southern sculpture court, but would maintain the central fountain plaza off NW 2nd Avenue. It also requires the conversion of the existing ADA lot east of the Miami Library and Historical Museum to a 2-way bus stop terminal, but maintaining the existing service access to the Museum. This scheme would provide;

- A total of 25 bus bays,
- Including 5 articulated bays,
- 8 taxi-jitney spots, and
- A 3 spot 'Kiss & Ride' drop-off zone.

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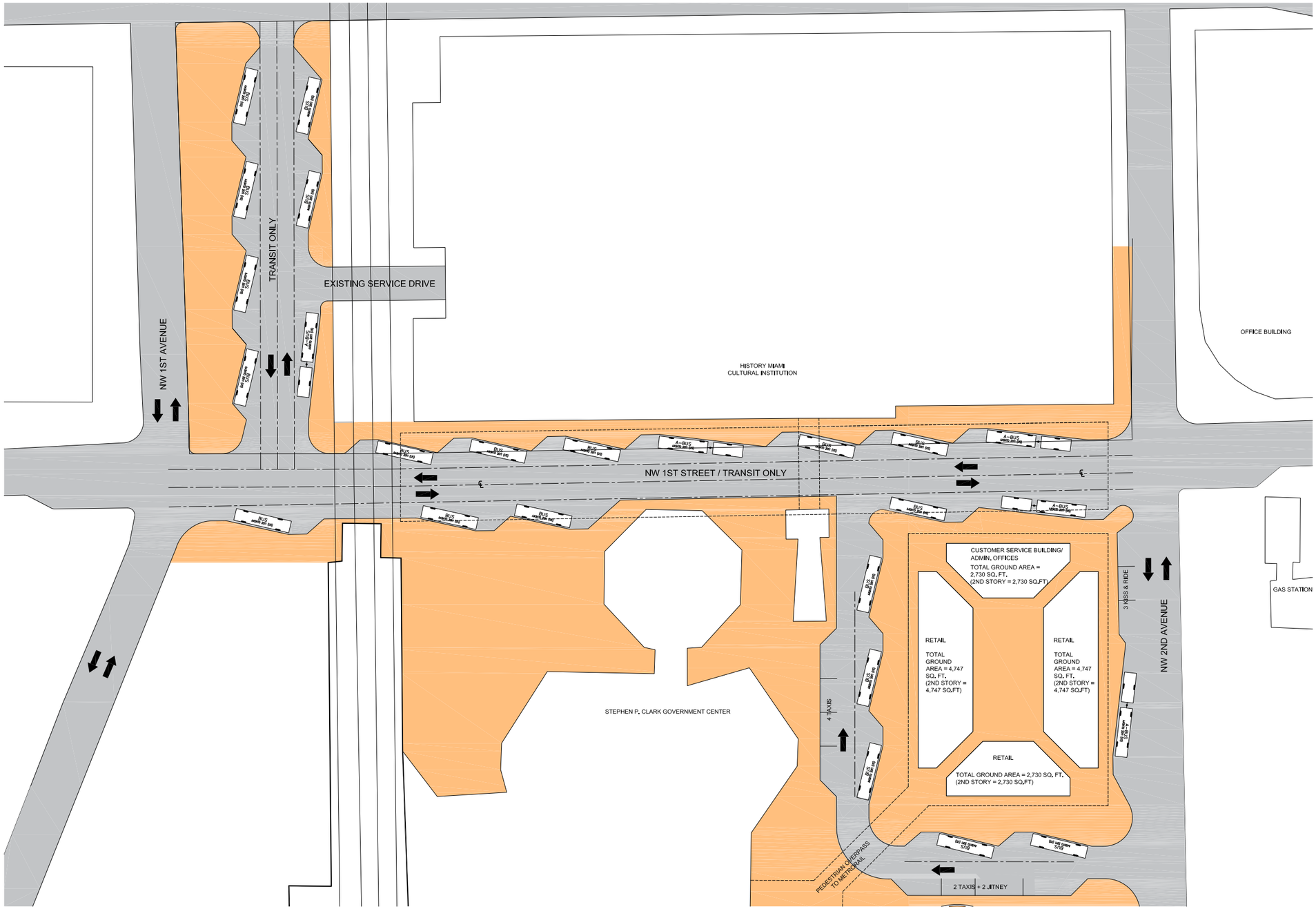


JACOBS

12.05.2012

01 SCALE: 1"=50'

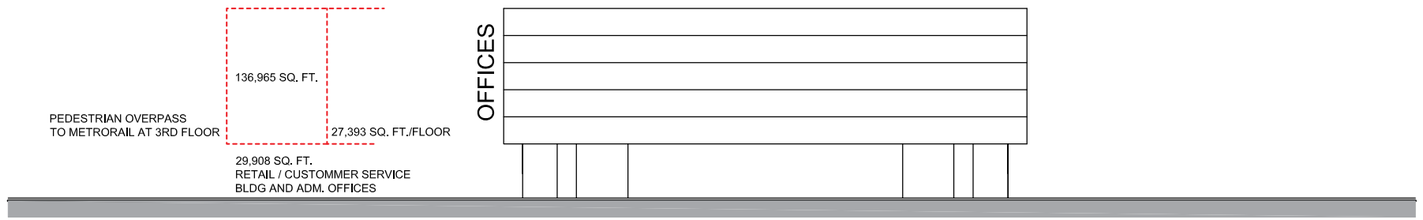
DOWNTOWN MIAMI INTERMODAL TERMINAL - SCHEME 3

N

VEHICULAR COUNT:

20	BUS
5	ARTICULATED BUS
6	TAXIS
2	JITNEY BUS
3	KISS & RIDE

KEY:
PEDESTRIAN:
VEHICULAR:



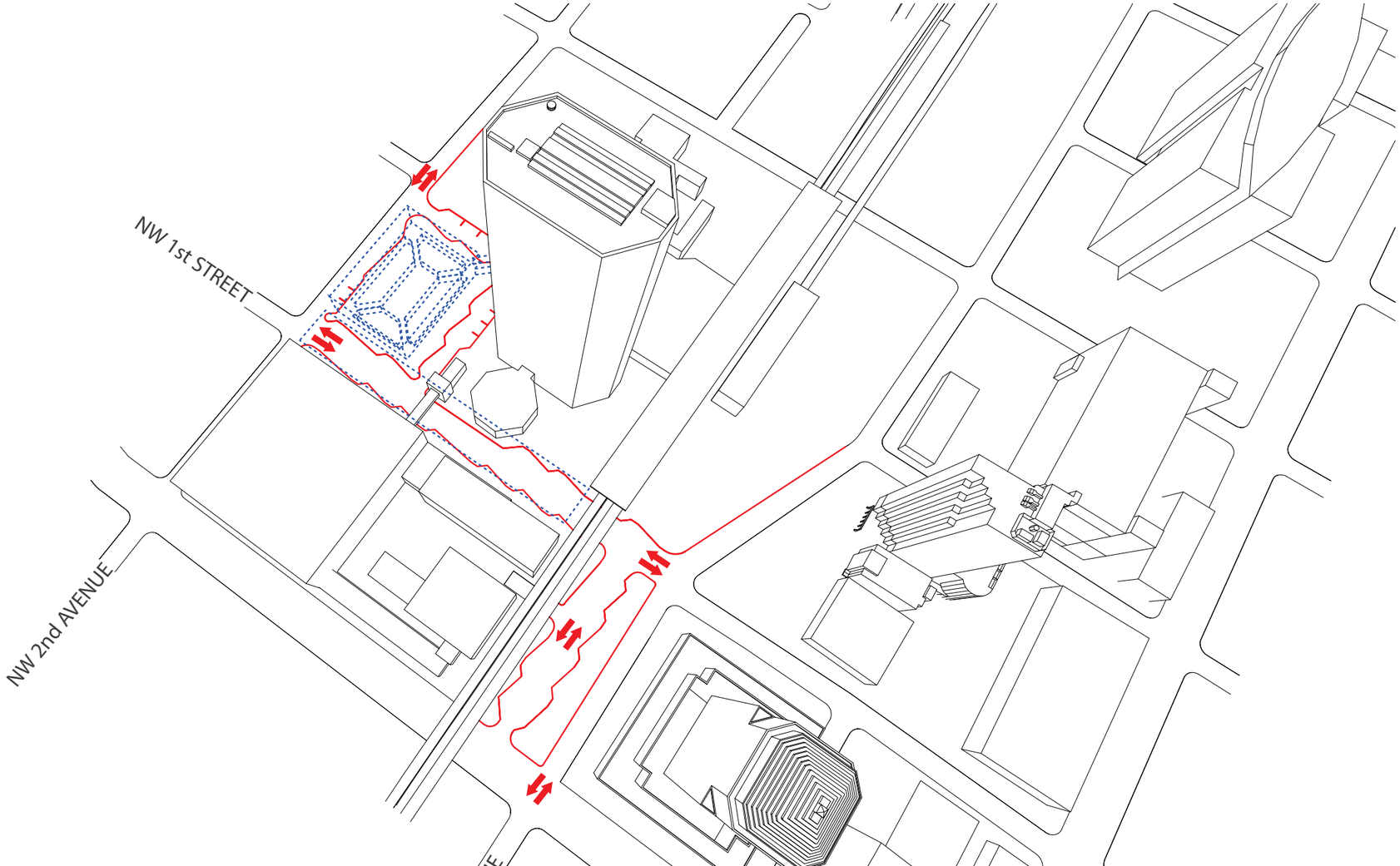
JACOBS

01 **PRELIMINARY SPACE PROGRAM - SCHEME 3**

SCALE: 1"=50'

2

12.19.12



3D DIAGRAM - SCHEME 3

01 SCALE:N.T.S

JACOBS

3

12.19.12

3D DIAGRAMATIC AERIAL VIEW - SCHEME 3

4
12.19.12

Alternative Scheme #3 *(continued)*

The site area at the SW of the Government center could also accommodate a small component of single or multi-story transit oriented service and retail space. The alternative illustrates this as organized around a new central pedestrian plaza, with the potential to create a second+ level pedestrian bridge cross-over directly to the west side entrance of the Government Center, for protected access to the Metro stations inside. The 'transit street' could also be designed to be covered with some contemporary approaches already developed in other national terminals that serve similar systems. Some of these ideas are depicted below.

As the SAC evaluated this alternative it became clear why it was not a recommended solution. The key hurdles to the success of this concept included;

- Not an appropriate use of the front of the Government Center,
- No a good organization and distribution for the bus bays (too spread out from a central transit services facility),
- 2-way bus routes that complicate pedestrian circulation and safety, and
- Commingling of MDT bus and taxi/jitney circulation, which is not desirable.

Alternative Scheme #4

Through further discussions and meetings with FECI on the All Aboard Florida terminal developments, a 4th Alternative lot location was propsed. This location, as depicted below is located on the lots west of MDT main offices at the Overtown Traffic Village (OTV).

In the diagram, the current daily ridership quantities are provided by the key numbers as follows:

1. OTV – 2,481 passengers on Metrobus, and 1,894 pasengers on Metrorail (not served by Metromover).
2. Government Center – 103,813 passengers combined on Metrorail, Metrobus & Metromover.

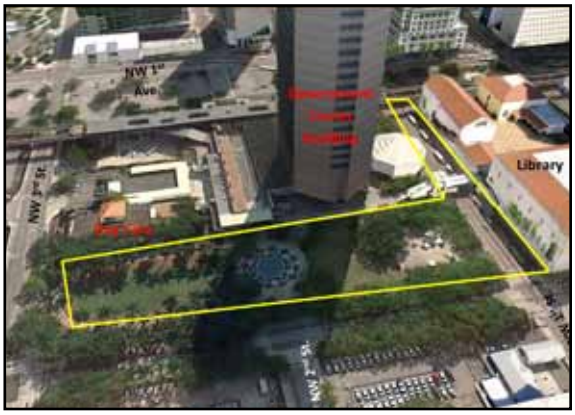
Through the SAC evaluation process, a decision was quickly achieved that this option was not viable, and was disregarded for further concept development. The key reasons why it was not a recommended included:

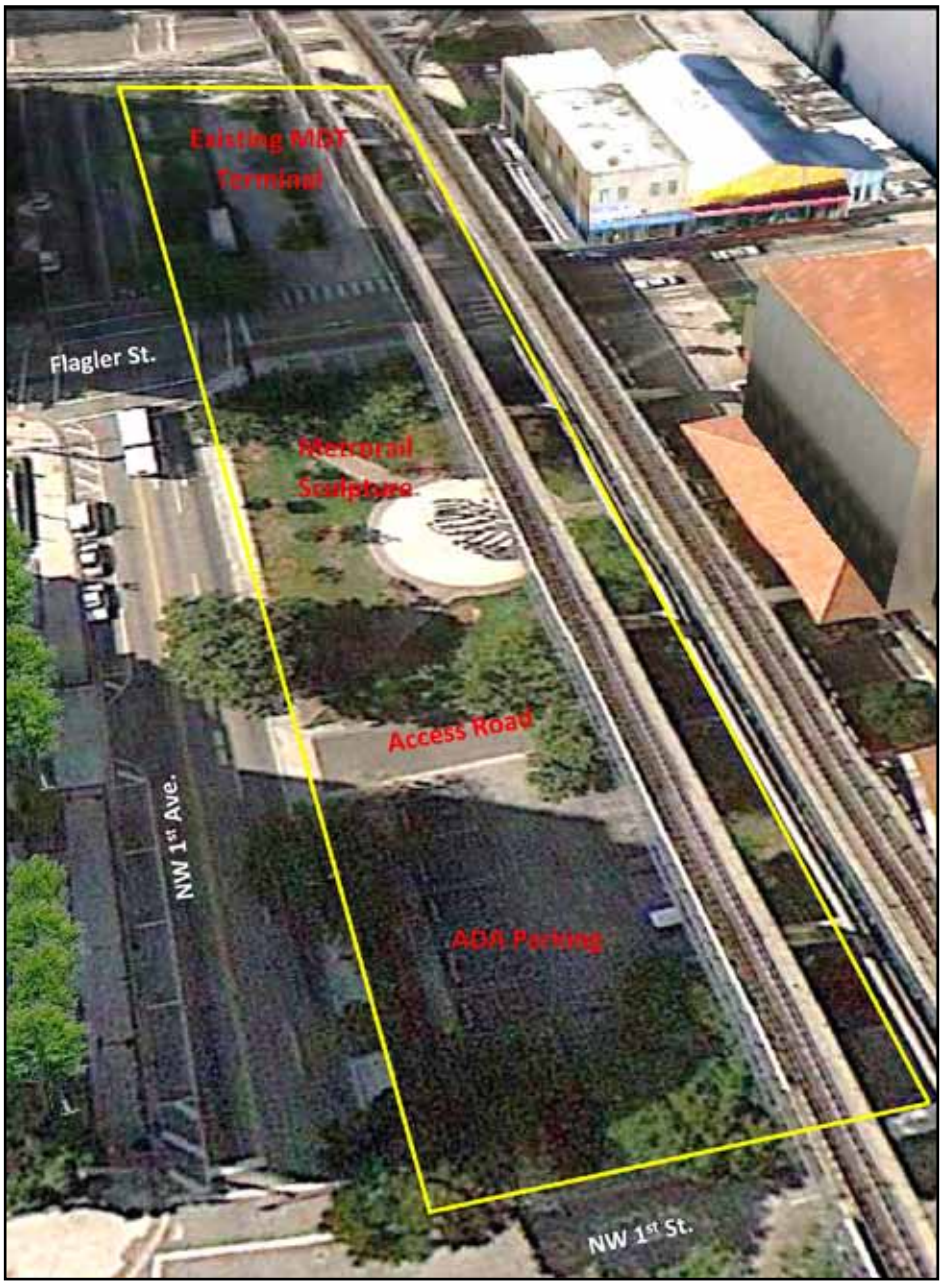
- Too far from the riders main destinations, with currently only 4.2% daily passenger traffic through OTV as compared to the Government center;
- Federal implications regarding Title VI issues; and
- Would require drastic changes in the service routes provided by MDT and ridership patterns that could have system-wide disruptive effects.

Alternative Scheme #5

Two other locations that were considered but not explored as full 'separate, stand-alone' concepts include those depicted on the following photographic illustrations:

- The use of the entire West of the Government Center West Park lot, in combination with the NW 1st Street as a converted transit street; and
- A unified reconfiguration and redevelopment of the lots east of the Metrorail tracks along the west side NW 1st Avenue all the way from SW 1st Street to NW 1st Street, including the existing MDT Flagler Terminal facility.





THE "ALL ABOARD FLORIDA" IMPACT - A CHANGE IN DIRECTION

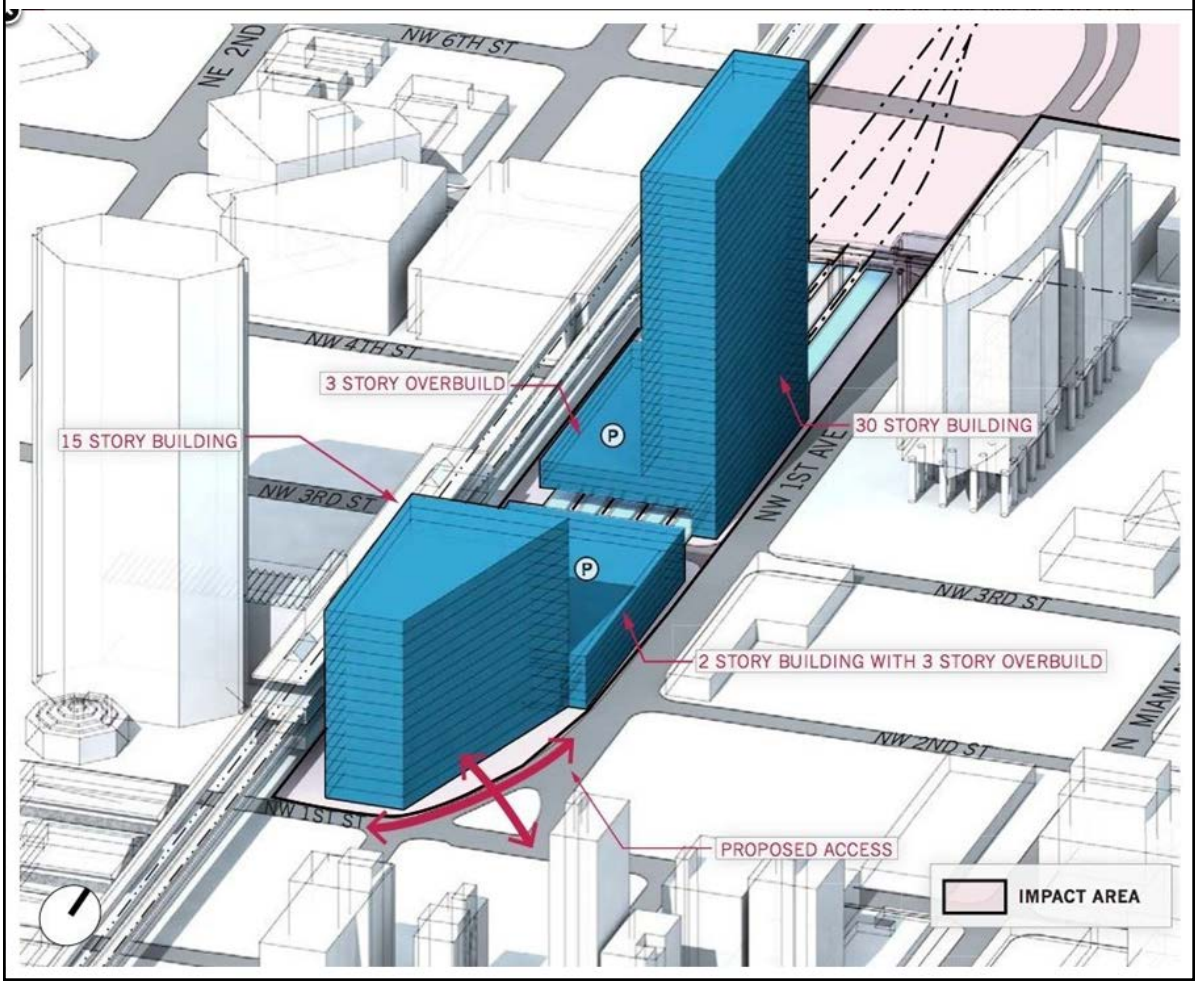
Alternative Scheme #6

After completing the development and evaluations of the 3 primary site development alternatives, as well as the 4th and 5th Alternative site locations for the new intermodal terminal options, the MPO was notified of the evolving potential of a new downtown Miami terminal for the Florida East Coast Railroad (FECI) 'All Aboard Florida' train (AAF). This was for a new 'higher' speed commuter rail service that would connect from Miami to Orlando, along the FECI east coat line, with service stops in Ft. Lauderdale and West Palm Beach as well. For reference purposes a sample of news articles published during the study period related to this project are included in the appendix. Although given limited access to the FECI process, it was clear from this point with the MPO's directives that a new terminal alternative would need to be developed, since 2 of the 3 preferred candidate sites and Concept Schemes were utilizing the FECI property, or would be significantly affected by their planned development concepts.

To help frame this impact, and clarify the SAC's understanding of the proposed AAF Miami Terminal, the following several diagrams are included in this study as provided by FECI. These illustrate the complete utilization of the parcels on the east side of the Governmental Center. This 3-D illustration shows the position and scale of the proposed terminal. It clearly identifies that the preferred study site and Concept Alternative Schemes #1 & #2 cannot be implemented.

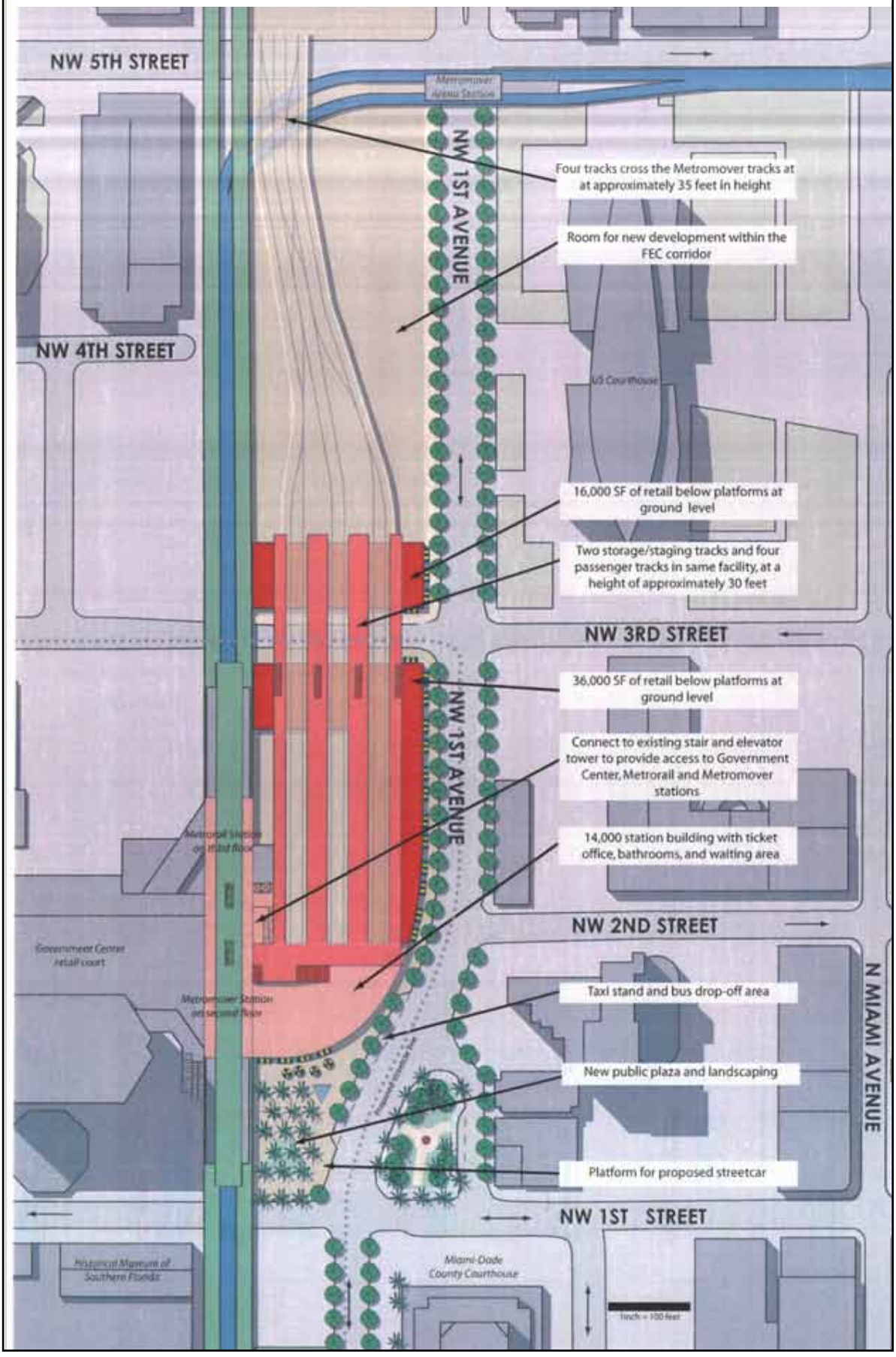
FECI - ALL ABOARD FLORIDA

GOVERNMENT CENTER TERMINAL STATION (elevated)



FECI - ALL ABOARD FLORIDA

GOVERNMENT CENTER TERMINAL STATION (elevated)



The plan view of the same AAF Terminal proposal also shows the significant impact on the preferred study site and Concept Alternative Scheme #2; even though the site itself is not utilized, the plan for Scheme #2 to use the NW 1st Avenue western frontage for 8 bus positions is no longer viable.

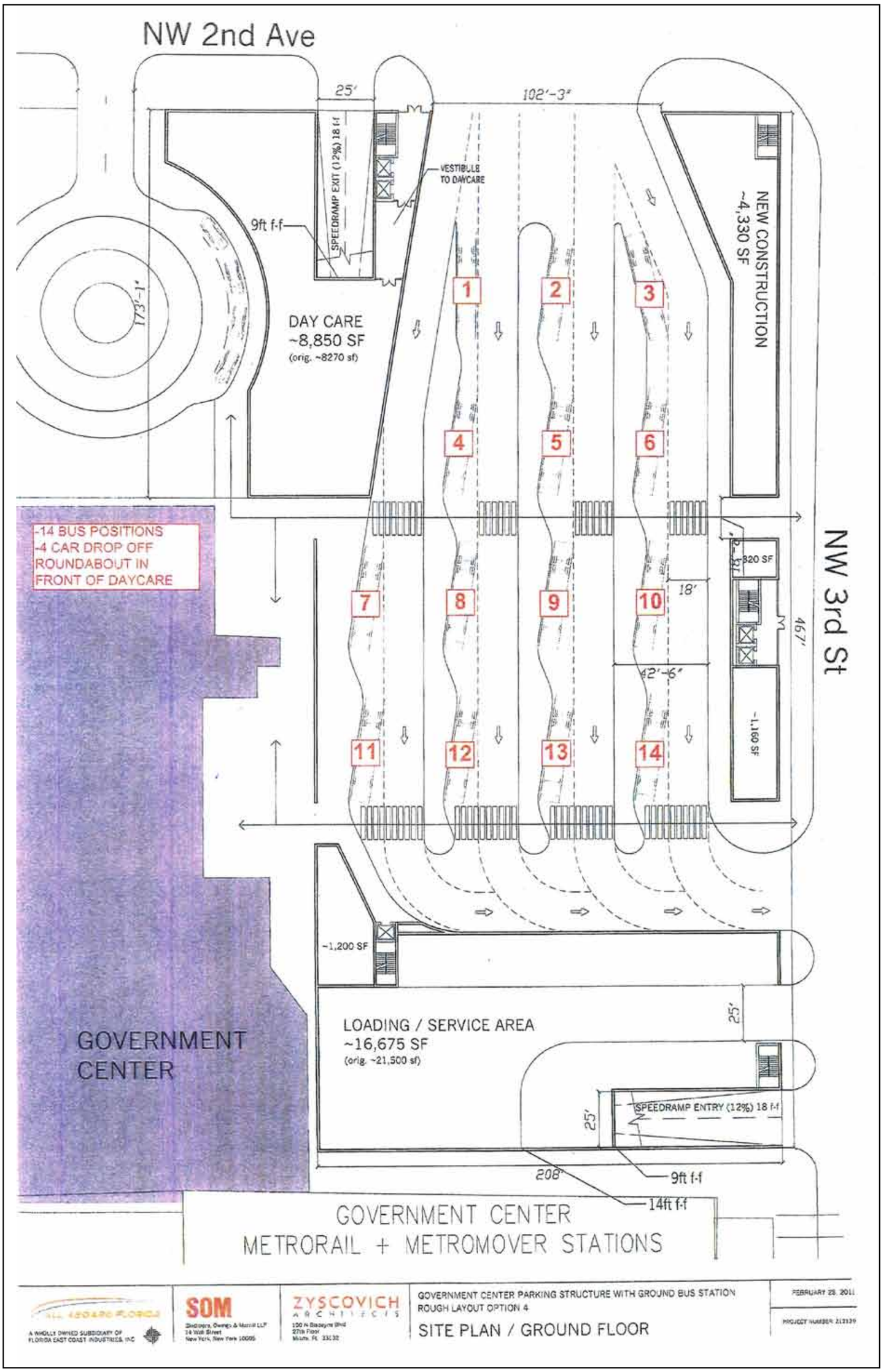
The remaining Scheme, #3, which utilized the redesign of NW 1st Street into a new Pedestrian-Transit Mall, was the only valid concept left at that point. And with that realization, the study proceeded to consider how the capacity of that alternative could be enhanced, since the existing bus positions on NW 1st Avenue would be lost to the FECI Terminal development. Working in the favor of this approach was the street closure analysis (for private vehicles) provided by C. H. Perez, summarizing that of all the street blocks studied, this selection had the lowest impact on the surrounding downtown Miami roadway network.

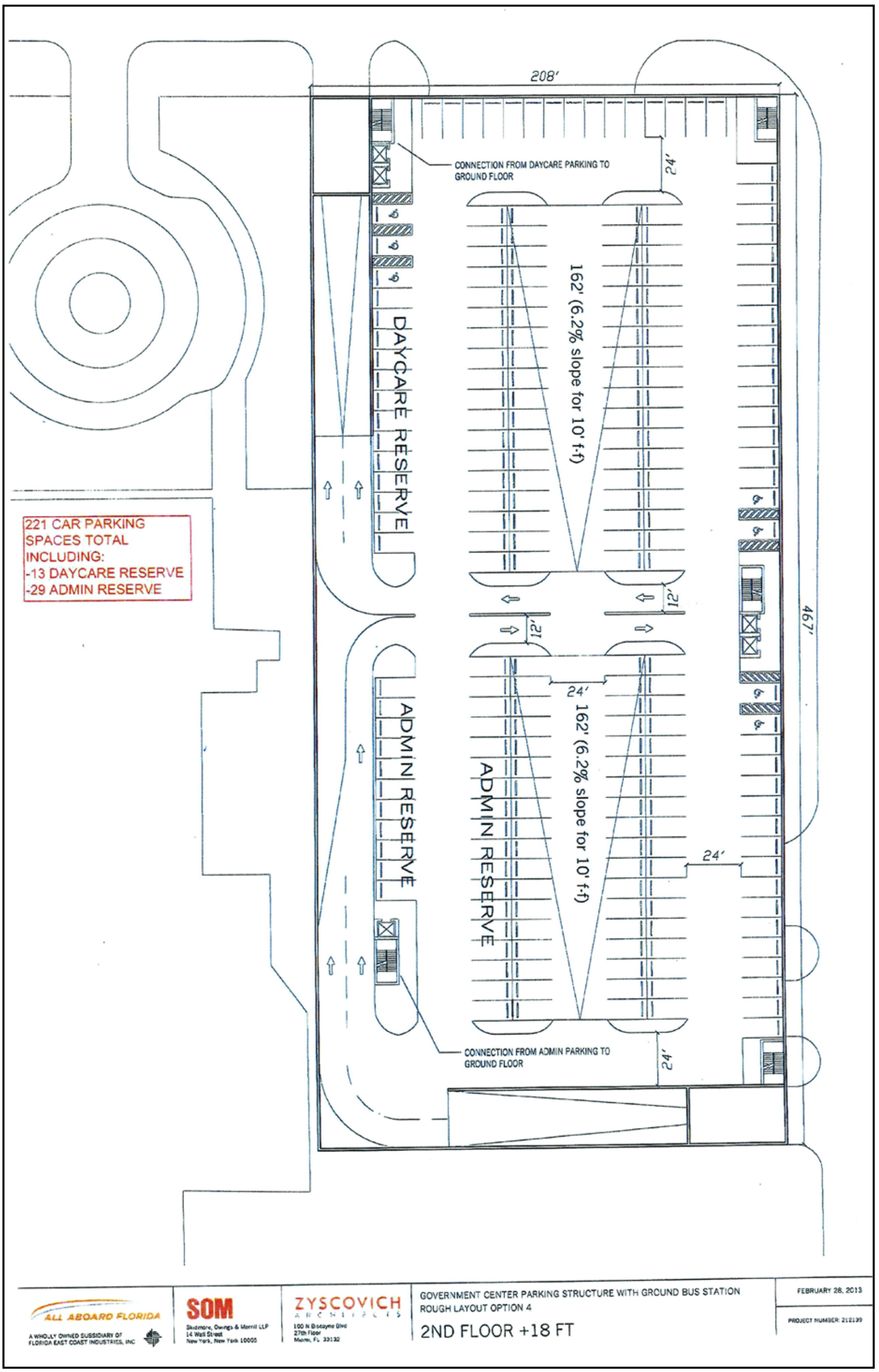
This revised alternate scheme also was the first to consider how it might be possible to utilize the existing County owned and operated 'ADA' surface parking lot to the east of the Miami-Dade Cultural Center. With the ADA spots easily relocated to the north side of the Government Center, and the potential relocation of the existing sculpture plaza to the Government Center Plaza open-space, it would be possible to add 7 more bus-stop positions. These could be easily linked by enhanced pedestrian routes to the NW 1st Street Terminal site. Next a potential secondary loop around the mixed-use transit oriented building block at the SW corner of the Government Center Terminal block was considered, which as illustrated provides 6 more bus-stop positions, and incorporates taxi and jitney stop locations off NW 2nd Avenue to alleviate congestion.

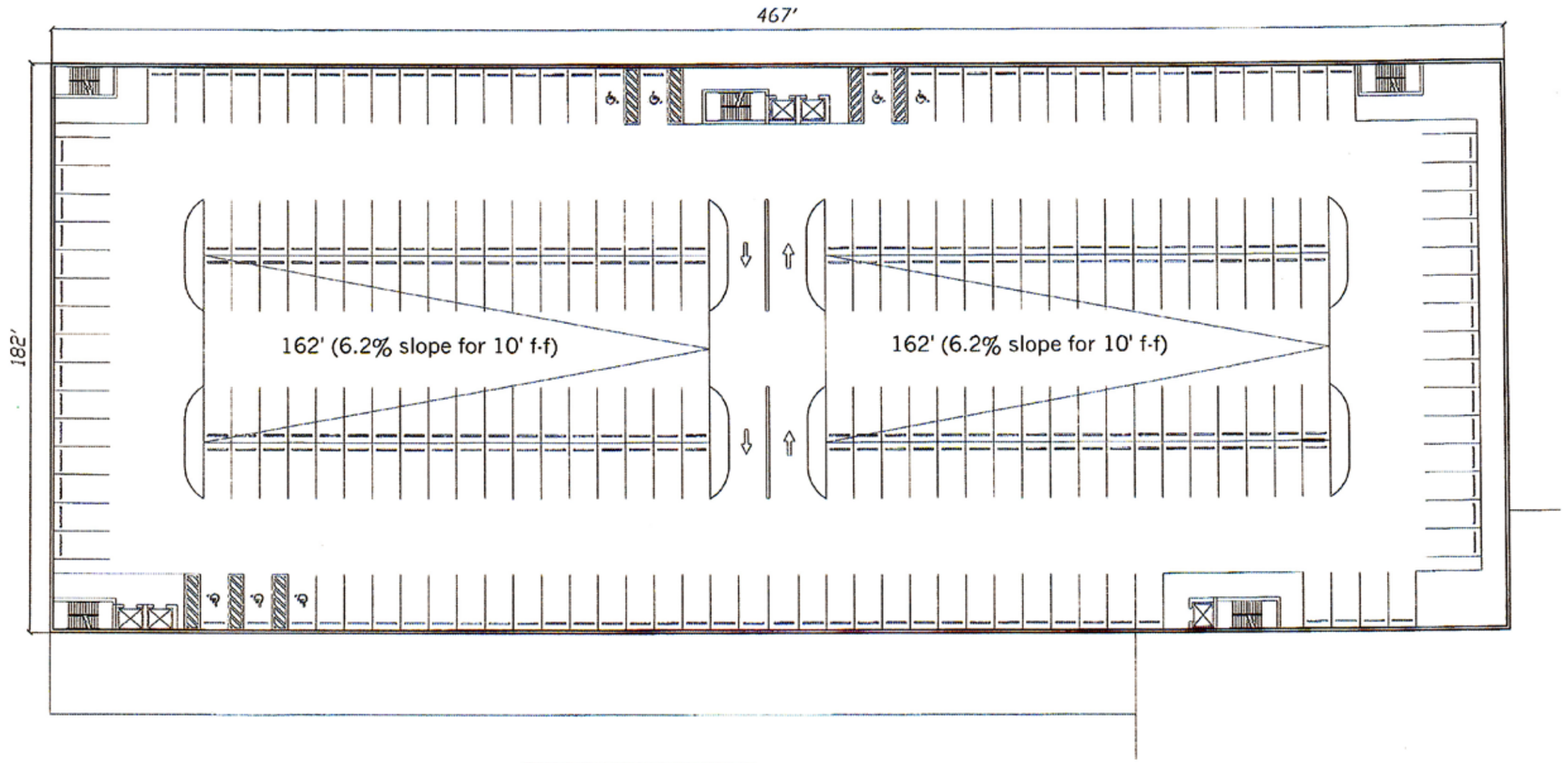
Based on the constraints and limitations of Alternative Scheme #3, a new site was identified in coordination with FECI. This new site is located on the SE corner of NW 2nd Avenue and NW 3rd Street, on the northern 1/3 of the West Park site. This is also over the existing Daycare center, and existing County Commissioners parking area. It was proposed as a ground-level bus terminal with a multi-level parking garage to be constructed above. The plans on the following 3 pages illustrate the AAF proposal as provided by FECI without modification.

While this location as submitted by FECI for the All Aboard parking garage above the new MDT terminal was initially considered as a viable option, the layout as submitted was insufficient in several objectives:

- This location provides for only 14 bus bays (MDT requested 27 bus bays);
- Only one-way entrance and exit paths for the busses, which limits route flexibility, and was also less efficient in the number of stop positions generated;
- The bus stop positions were all designed for standard (40') bus sizes, and MDT has a substantial and growing need to accommodate 60' articulated buses in the terminal;
- Daycare relocated adjacent/part of the terminal (too close for noise and pollution – children's safety could be affected)
- No provision for accommodation of bike facilities;
- Severe impact on the central Fountain Plaza to the south, impacted by the Daycare drop-off loop which all SAC members agreed was an important 'front door' public space that needed to be preserved to the greatest extent possible; and,
- Generally poor and/or undefined pedestrian circulation routes.


NW 2nd Ave
NW 3rd St
25'
102'-3"
SPEEDRAMP EXIT (12%) 18 f-f
VESTIBULE TO DAYCARE
9ft f-f
173'-1"
DAY CARE
~8,850 SF
(orig. ~8270 sf)
NEW CONSTRUCTION
~4,330 SF
1
2
3
4
5
6
7
8
9
10
11
12
13
14
-14 BUS POSITIONS
-4 CAR DROP OFF
ROUNDABOUT IN
FRONT OF DAYCARE
320 SF
18'
467'
42'-6"
~1,160 SF
~1,200 SF
52'
LOADING / SERVICE AREA
~16,675 SF
(orig. ~21,500 sf)
GOVERNMENT
CENTER
SPEEDRAMP ENTRY (12%) 18 f-f
25'
208'
9ft f-f
14ft f-f
GOVERNMENT CENTER
METRORAIL + METROMOVER STATIONS
A WHOLLY OWNED SUBSIDIARY OF FLORIDA EAST COAST INDUSTRIES, INC
SOM
Skidmore, Owings & Merrill LLP
14 Wall Street
New York, New York 10005
ZYSCOVICH ARCHITECTS
100 N Biscayne Blvd
27th Floor
Miami, FL 33132
GOVERNMENT CENTER PARKING STRUCTURE WITH GROUND BUS STATION
ROUGH LAYOUT OPTION 4
SITE PLAN / GROUND FLOOR
FEBRUARY 28, 2011
PROJECT NUMBER 212329


208'
CONNECTION FROM DAYCARE PARKING TO GROUND FLOOR
24'
DAYCARE RESERVE
162' (6.2% slope for 10' f-f)
21'
21'
467'
221 CAR PARKING SPACES TOTAL INCLUDING:
-13 DAYCARE RESERVE
-29 ADMIN RESERVE
24'
ADMIN RESERVE
162' (6.2% slope for 10' f-f)
ADMIN RESERVE
24'
CONNECTION FROM ADMIN PARKING TO GROUND FLOOR
24'
ALL ABOARD FLORIDA
A WHOLLY OWNED SUBSIDIARY OF FLORIDA EAST COAST INDUSTRIES, INC
SOM
Skidmore, Owings & Merrill LLP
14 Wall Street
New York, New York 10005
ZYSCOVICH ARCHITECTS
100 N Biscayne Blvd
27th Floor
Miami, FL 33132
GOVERNMENT CENTER PARKING STRUCTURE WITH GROUND BUS STATION
ROUGH LAYOUT OPTION 4
2ND FLOOR +18 FT
FEBRUARY 28, 2013
PROJECT NUMBER: 212139



244 CAR PARKING SPACES

GOVERNMENT CENTER PARKING STRUCTURE WITH GROUND BUS STATION
ROUGH LAYOUT OPTION 4

TYPICAL UPPER FLOORS +38 FT & ABOVE

FEBRUARY 28, 2013

PROJECT NUMBER: 21.1.39

ZYSCOVICH ARCHITECTS
100 N Biscayne Blvd
27th Floor
Miami, FL 33132

SOM
Skidmore, Owings & Merrill LLP
14 Wall Street
New York, New York 10005

ALL ABOARD FLORIDA
A WHOLLY OWNED SUBSIDIARY OF FLORIDA EAST COAST INDUSTRIES, INC

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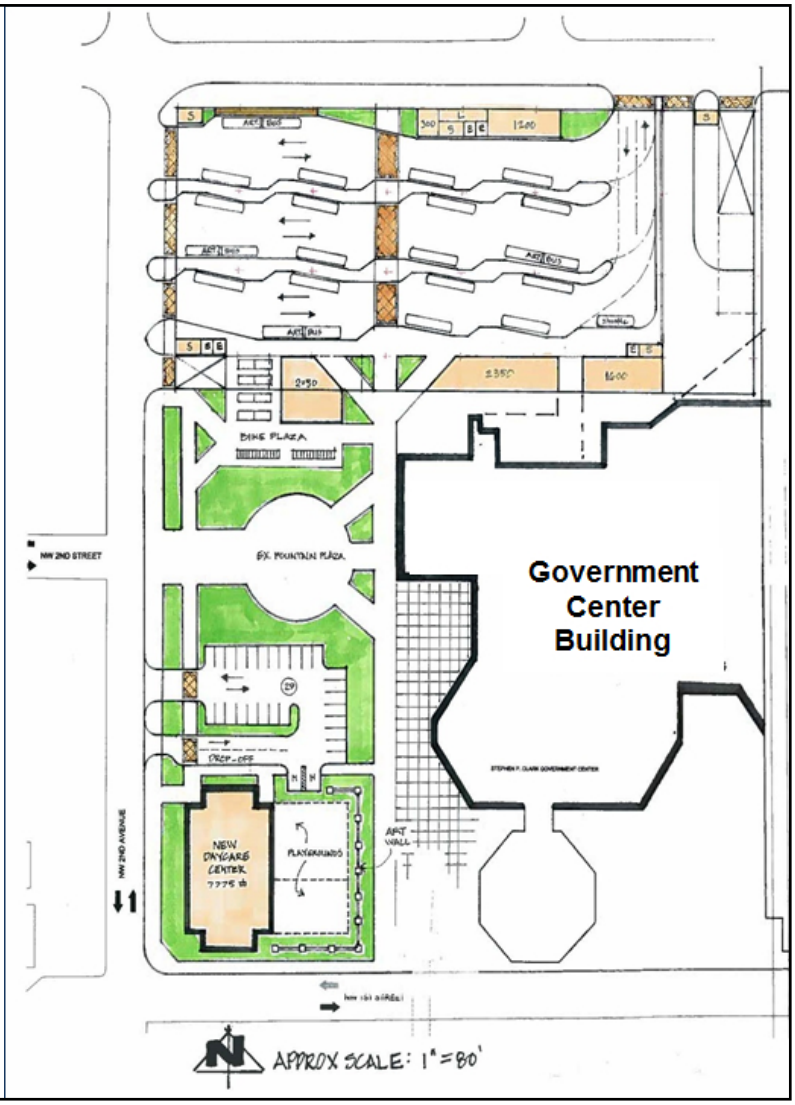
Alternative Scheme #7

For the initial concept development to address the new Terminal Garage scheme in line with the AAF proposal (improvement of Alternative #6), it was necessary to create a more efficient layout for the bus layout and circulation on the ground floor. This is depicted in the first of the following 3 diagrams.

- This scheme achieved 20 bus stop positions in a dual directional circulation pattern
- 4 of these positions were allocated for 60' articulated buses
- It was also organized around a central pedestrian spine-collector walkway that tied into the existing semi-covered walkway on the west side of the Government Center

The scheme was then further expanded to consider the potential layout for the entire portion of the open property west of the Government Center, and identify where the possible relocation of the Daycare Center could be accommodated. The second of the following 2 diagrams shows the context for this entire block, and utilized a 'multi-use' type building arrangement for the SW corner that could be programmed for the Daycare, other governmental and/or transit customer supporting retail uses. Additionally it preserved the 'front door' fountain plaza at 2nd Street, and allowed for the location of a new surface parking lot near the corner building that could accommodate Commissioner parking, provide parking for the Daycare center, and illustrated how the entire block could function safely and efficiently with ample pedestrian circulation separated from the perimeter vehicular circulation needs.

1. Provide additional bus bays for:
   - ✓ 16 standard buses
   - ✓ 4 articulated buses
   - ✓ 1 shuttle bus
2. Provide for:
   - ✓ 7,775 sf for Daycare
   - ✓ 7,500 sf for MDT office space
3. Separate Daycare from terminal
4. Improve pedestrian circulation
5. Provide Bike Plaza



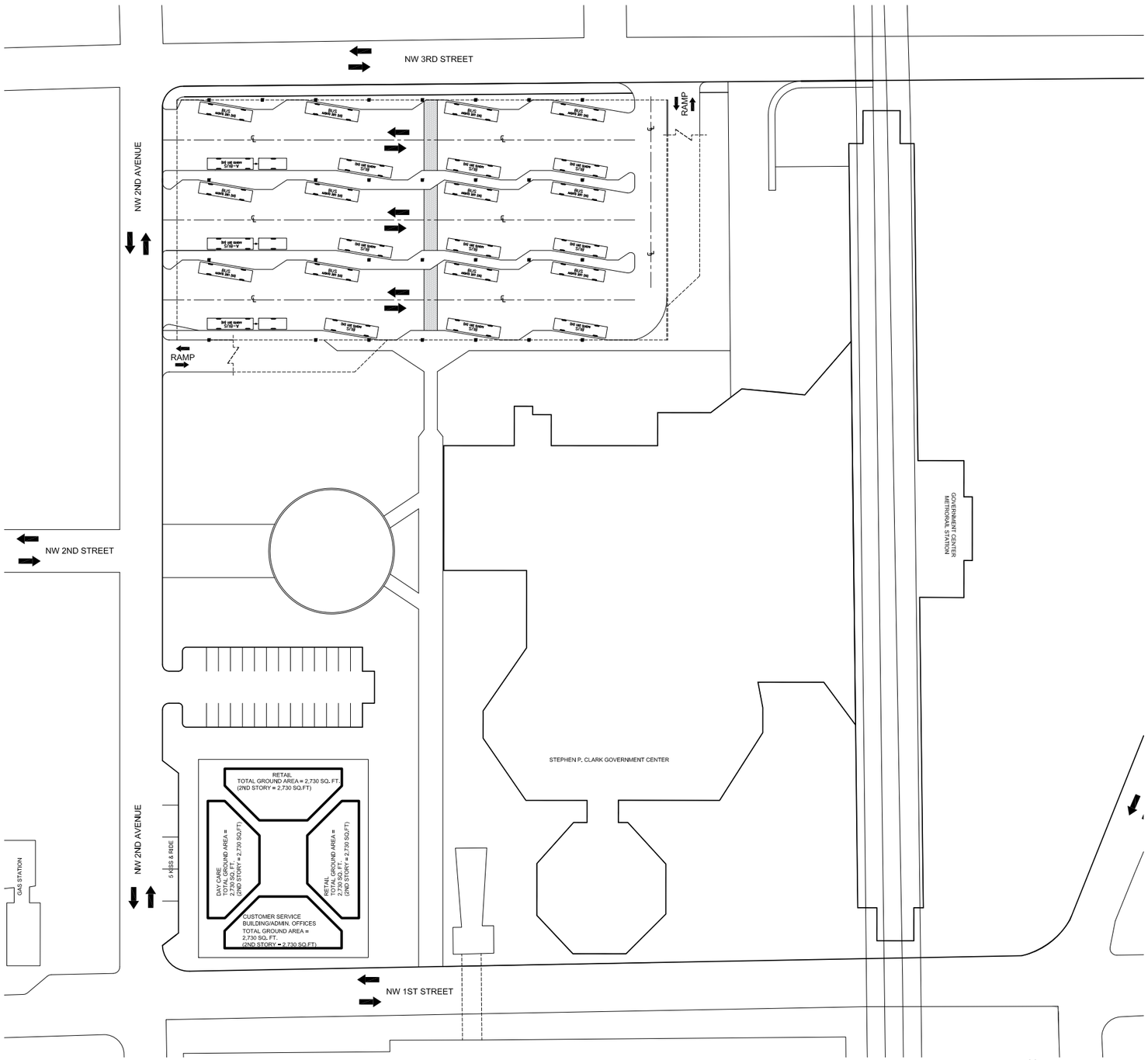
This scheme had a few drawbacks when vetted with the MPO and MDT, and these include:

- The multi-use (mixed uses) building does not really present a completely secure operational environment for the Daycare center; and no outdoor playground areas were possible for secure operation
- The bus circulation at the east end of the terminal garage was too tight;
- There was not sufficient room under the terminal garage structure to include the programmatically required MDT building service areas;
- No provisions for bike parking and/or services were included;
- The new surface parking lot was a 'dead-end' configuration which did not allow for 'drop-off' circulation at the Daycare center; and,
- MDT requested at least 2 more 60' articulated bus stop positions.

After further review and refinement in consultation with MDT to accomplish their final requests, and working towards a Final Concept Alternative, this Scheme #7 was developed to add 7 bus bays in front of the Government Center Building (NW 1st Street) for layover use, and the approach for a fully independent and separate Daycare Center was refined.

Other options were identified that could be explored during the Final Concept Alternative and include:

- Use (reconfiguration) of the existing MDT Flagler terminal;
- Use of lot east of the Miami Library & Historical Museum to expand capacity for future MDT needs;
- Potential use of both lots referred to above for the construction of a MDT Transit Oriented Development (TOD); project to support the service needs of the facility and surrounding area users.

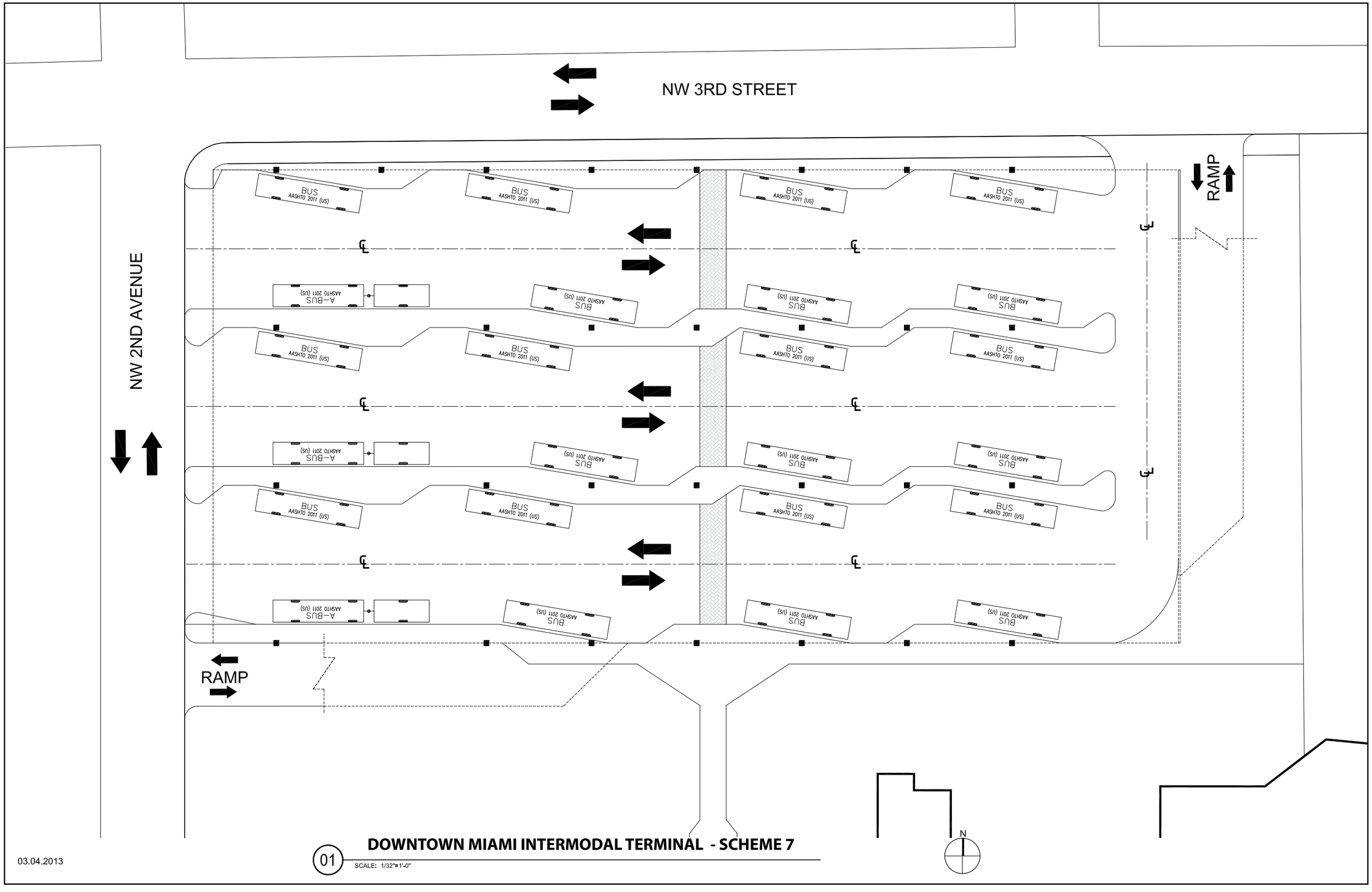


JACOBS

03.04.2013

01 **DOWNTOWN MIAMI INTERMODAL TERMINAL - SCHEME 7**

SCALE: 1"=80'



03.04.2013

01 **DOWNTOWN MIAMI INTERMODAL TERMINAL - SCHEME 7**

SCALE: 1/32"=1'-0"

Final Site Development Concept

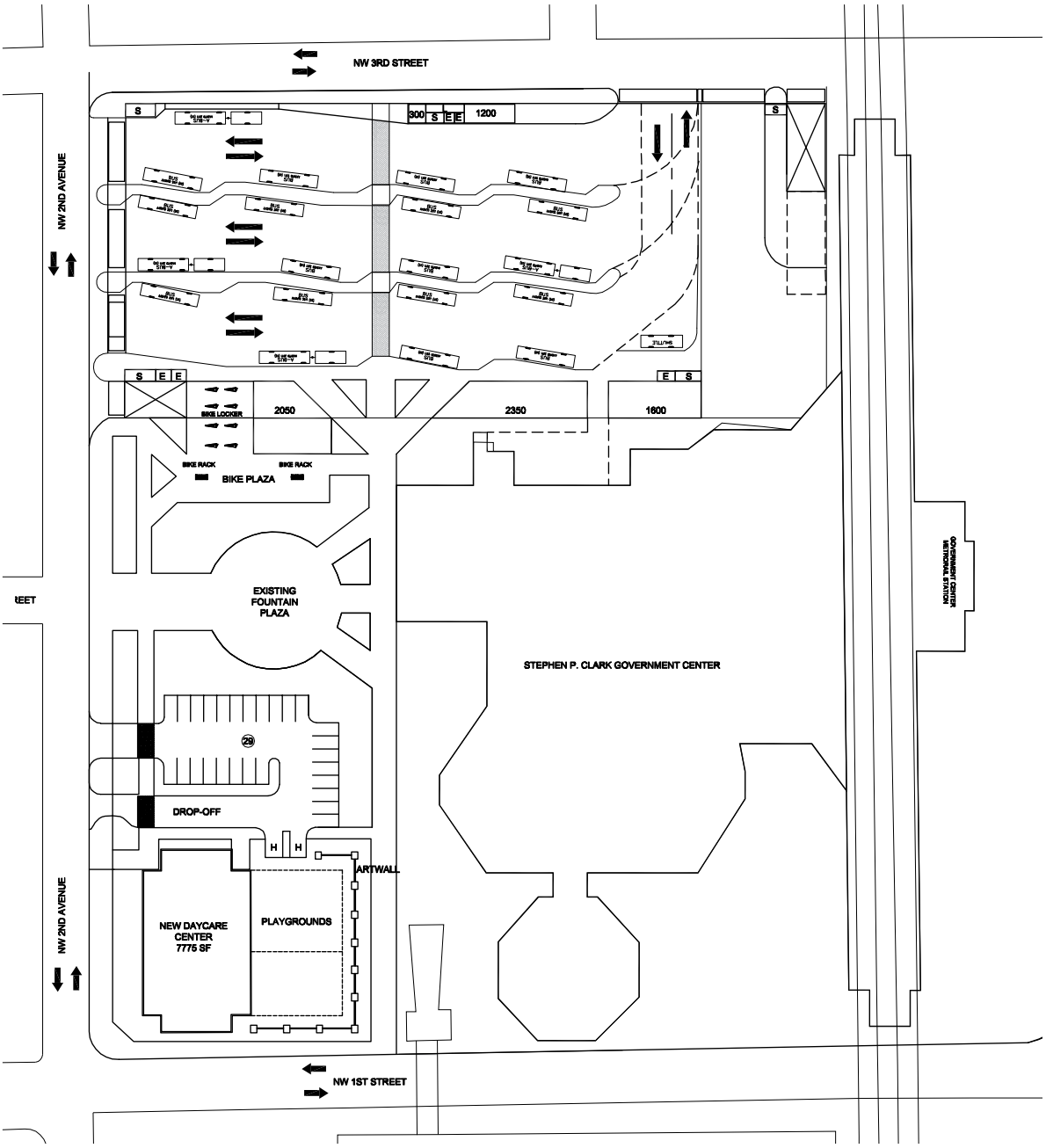
Following the process described in the Site Development Concept Alternatives section the study proceeded towards the development of a series of 'final' alternatives to address the issues that had resulted from the All Aboard Florida (AAF) proposals by FECI. This modified approach to completing the project was managed by the MPO allowing the Final Concept to evolve into a solution that best met the needs of MDT for its' short and long-term transit needs. Additionally this change in direction was made to facilitate the on-going negotiations between the County and FECI that would permit the 'Terminal Garage' option to be jointly developed, serving MDT's needs and the desired public parking facility FECI had proposed for their AAF Miami Station.

The depicted original FECI proposal for the Terminal Garage, which was the basic starting point of our development of Final Site Development Concept Scheme, unfortunately did not meet the MDT long-term bus stop and layover needs, but had other positive conceptual ideas incorporated into this scheme:

- Effectively illustrated how the public garage could be constructed above the MDT terminal while preserving the existing loading and service area to the Government Center
- Incorporation of some ground floor building areas to accommodate the MDT customer and service needs
- A design that would allow direct ground floor and upper level direct (bridge) access to the existing Metrorail/Metromover Government Center station

Following the critical evaluation of Scheme 7, it was evident that a good basis to develop schemes further was now defined, but that all of these issues needed to be addressed. So the process proceeded with several iterations of a new Scheme. This plan is provided on the following page, and was specifically detailed to resolve the short-comings of Scheme 7. To accommodate the changes, Scheme 8 incorporated the following design modifications:

- The circulation area allocation at the east end of the terminal garage was expanded
- The bus stop positions were reduced due to this shift to 20 positions, but now four (4) larger 60' articulated bus size positions were included (2 in each route approach direction)
- Building area modules under the terminal garage structure were allocated for the programmatically required MDT building service areas
- The Daycare center was redesigned and provided its' own assigned parcel; additionally the outdoor playground areas were accommodated and were able to be secured
- The new surface parking area was enlarged, and reconfigured to allow 'loop' circulation, including a designated 'drop-off' lane
- A new 'Bike Plaza' was incorporated, and adjacent building area was identified for potential use as a bike service facility for commuters that could provide showers, lockers, bike storage and vendor supported bike servicing; large outdoor bike racks were also facilitated by this design



JACOBS

07.12.2013

01 **DOWNTOWN MIAMI INTERMODAL TERMINAL - SCHEME 8**

SCALE: 1"=80'

N

LEGEND

16	STD BUS
4	ARTICULATED BUS
1	COMM. SHUTTLE
7775	S.F. DAYCARE
7500	S.F. METRO SVC
4	EXD. STAIRS & ELEVATORS

Throughout July, August and September (2013), work continued through several refinements of this Final Scheme, to address new and focused operational issues with the Concept. It was also decided in consultation with MDT, now proceeding with joint but independent FECI meetings, that perhaps a larger program for bus accommodations would be necessary than the original 20 position program. The design team agreed to extend some consideration of a larger 'transit block' context, and develop some alternatives that could accommodate perhaps 25-30 passenger positions.

With the larger context now including the existing MDT Flagler Terminal lot, and then examining an 'optional' block on the east side of the M-D Cultural Center, it was possible to develop concepts that approach the larger bus service capacity requested. It was also important to look at the very lengthy pedestrain circulation pattern that would be required to 'unify' this approach. This is where the reintegration of the NW 1st Street Pedestrian-Transit Mall proved to be of new value. Additionally MDT was looking to resolve 'layover' problems for their bus fleet operating in the general terminal area, needing a place for their 'resting' position of sometimes 10-15 minutes where they would not interfere with more intense and tightly scheduled passenger services. From this point the design team commenced with a conceptual refinement process of alternatives development and evaluations with MPO and MDT towards an acceptable Final Site Development Concept.

With this final 'refinement' task underway the last set of alternatives was prepared to present a set of 'options' that could be phased in sequence with the new Terminal Garage. This sequence of designs sought to not only increase operational capacity, but lay the groundwork for a full transit block linking the old MDT Flagler Terminal all the way through to the new FECI jointly developed Terminal Garage. Referring to the Scheme 8 sequence of plans presented on the following 3 pages, it is easy to identify the key design differences (options) illustrated in each.

Scheme 8 – This plan shows the full transit block with both 'optional' NW 1st Avenue transit blocks on the east.

- The Terminal Garage follows the same concept design as the previous Scheme, but provides greater detail of the building facilities possible under the Garage footprint, including the expanded Bike Plaza. 20 bus positions are still provided, but now 7 are able to accommodate a 60' articulated bus size.
- The Daycare Center portion is clearly detailed, and the idea of an 'Art Wall' has been incorporated to provide privacy and security for the playgrounds, but also afford a link to the Cultural Center, for community art installations, and serve as an entry icon at the base of the existing pedestrian access bridge across NW 1st Street.
  - The parking area associated with the Daycare would be redesigned to accommodate the relocated ADA spots from the existing Cultural Center East block.
- The reconfiguration on NW 1st Street for enhanced pedestrian use by widening of the walkways would be accomodated by a narrow 'Transit & Emergency vehicle Only' street cross-section; 6 optional layover or passenger service positions along it are included, with an indication of possible covering / shelter structure above. This street would also be resurfaced to a more decorative and pedestrian-scale appropriate paving treatment(s).
- The reconfigured Flagler Terminal Lot would incorporate the use of SW 1st Court into the bus block, and permit the entire passenger loading area to be covered. It includes 8 service positions, with 1 available for a 60' articulated bus.
  - Additionally approximately 1,100 square feet of new MDT service buildings could be accommodated to provide limited driver and passenger needs since it so remote from the new, main Terminal Garage.
  - This block would be linked for pedestrians with new enhanced crosswalks at Flagler and NW 1st Street, in the same alignment as the current 'under-metrorail' concourse.
- The new Cultural Center East optional lot would suppliant the existing County operated ADA lot, and the existing sculpture plaza to facilitate 6 new passenger loading positions, with 1 available for a 60' artculated bus. It would also need to maintain the existing service drive access to the Cultural Center, which is why the lot has a reduced yield as compared to the reconfigured Flagler lot.
  - The alignment of this block's bus circulation would link directly to the Flagler lot for continuous cross-block circulation needs.

- No new MDT service buildings would be accommodated on this lot, assuming this lot would work in unison with the reconfigured Flagler lot.
- This block would be linked for pedestrians as well with new enhanced crosswalks at Flagler and NW 1st Street, in the same alignment as the current 'under-metrorail' concourse.
- The area along NW 1st Avenue could accommodate 'Kiss & Ride' and/or taxi-jitney service positions.

Scheme 8A – This plan is essentially a modification of Scheme 8, but with the new Cultural Center East optional lot eliminated.

- The reconfigured Flagler Terminal Lot would also be modified, recovering the SW 1st Court for taxi and jitney use; this keeps the bus position yield at 8, with 2 able to accommodate a 60' articulated bus.
  - The new MDT service building would need to be reduced to a single facility at now only 600 square feet to provide limited driver and passenger needs.
- It would also be possible to sacrifice one of the southbound lanes on NW 1st Avenue to recover 3 more bus positions if the City and County can mitigate the traffic impacts with other circulation/intersection improvements.
- The reconfiguration on NW 1st Street for enhanced pedestrian use in this scheme eliminates all bus use, and only keeps the through-route open for 'Transit & Emergency vehicle Only'; This street would also be resurfaced to a more decorative and pedestrian-scale appropriate paving treatment(s), with enhanced green areas to be added along the street frontage of the Government Center.
- The parking at the Daycare would not need to accommodate the relocated ADA spots, so it would be recovered for standard vehicle use, still accommodating a 'drop-off' lane at the Daycare entrance.

Scheme 8B – This plan is a 'hybrid' of Scheme 8 and 8A.

- It keeps the Terminal Garage and the Daycare block the same as depicted in 8A.
- Then it recovers the design for the modified NW 1st Street Pedestrian -Transit Mall to coincide with Scheme 8, yielding 6 layover or alternate passenger positions.
- The new Cultural Center East optional lot is still included as in Scheme 6, but the reconfigured Flagler lot utilizes the layout from 8A
- Overall this Scheme yields the highest bus positions; 43 total (passenger and/or layover, including 13 able to accommodate a 60' articulated bus size.

MIAMI INTERMODAL TERMINAL

POSSIBLE FUTURE F.E.C.I.
ALL ABOARD FLORIDA TERMINAL

POSSIBLE FUTURE F.E.C.I.
'TOD' DEVELOPMENT

POSSIBLE FUTURE
PUBLIC PLAZA

GOVERNMENT CENTER
METRORAIL STATION

NW 1ST AVENUE

2 TAXIS

2 TAXIS

2 JITNEY

TRANSIT ONLY

RECONFIGURED MDT
TERMINAL LOT

TRANSIT ONLY

600
SQ.FT.

500
SQ.FT.

OPTIONAL/ALTERNATE
BUS STOP BLOCK

EXISTING
SERVICE DRIVE

ONE WAY

TRANSIT & EMERGENCY VEHICLES ONLY

RAMP

PARKING GARAGE
ABOVE

EXISTING
SERVICE DRIVE
TO REMAIN

STEPHEN P. CLARK GOVERNMENT CENTER

S

E

1600
SQ.FT.

1500
SQ.FT

L

E

S

2350
SQ.FT.

NW 3RD STREET

2050 SQ.FT

64 BIKE
LOCKERS

80 BIKE
RACKS

BIKE PLAZA

E

E

S

RAMP

EXISTING
FOUNTAIN
PLAZA

ARTWALL

SECURE

PLAYGROUNDS

H

DROP-OFF

NEW DAYCARE
CENTER
7,775 SF

ONE WAY

HISTORY MIAMI
CULTURAL INSTITUTION

W FLAGLER STREET

SW 1ST STREET

NW 2ND AVENUE

STEPHEN P. CLARK GOVERNMENT CENTER

NW 2ND AVENUE

NW 2ND AVENUE

JACOBS

08.22.2013

01

DOWNTOWN MIAMI INTERMODAL TERMINAL - SCHEME 8

SCALE: 1"=80'

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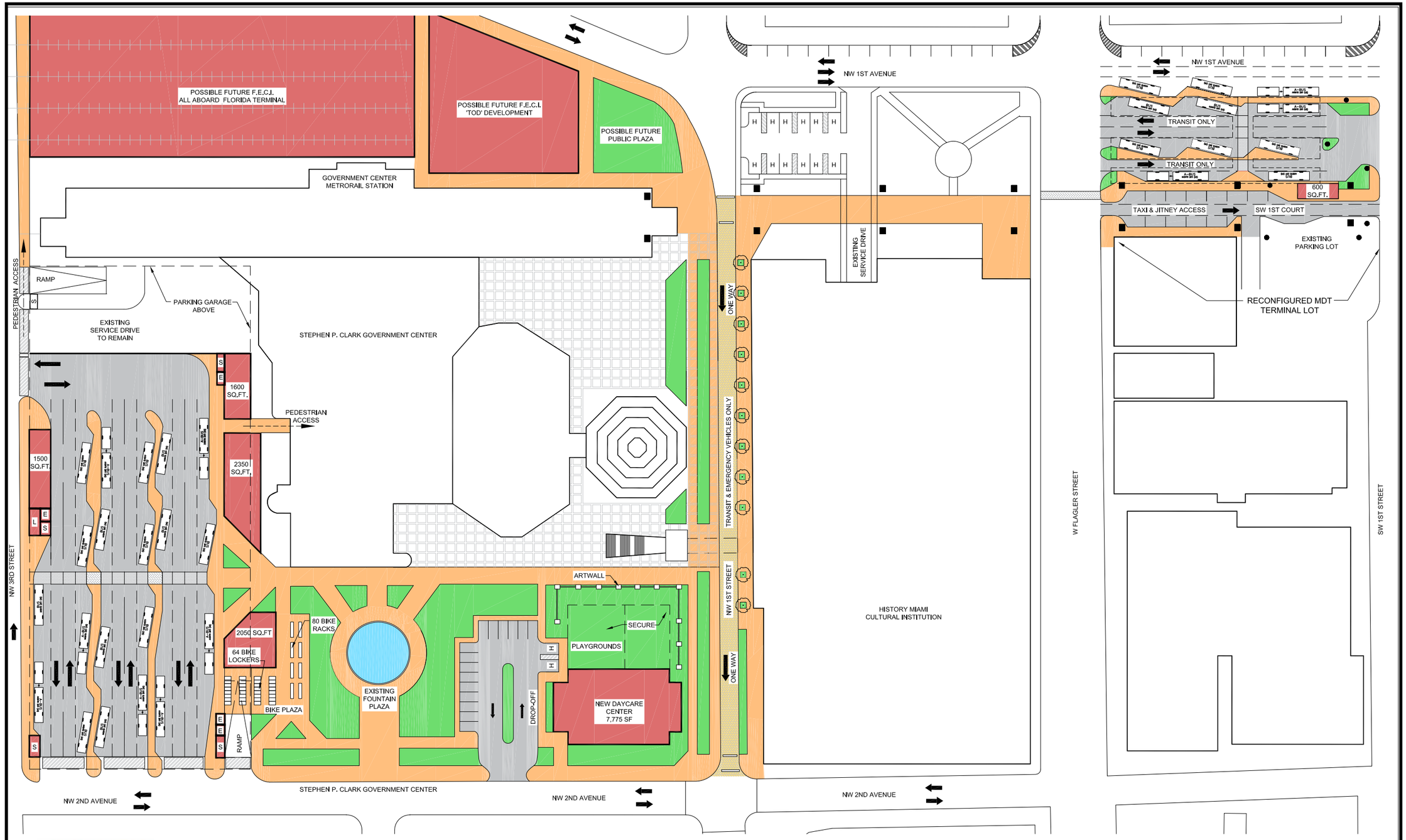

JACOBS

09.06.2013

01 **DOWNTOWN MIAMI INTERMODAL TERMINAL - SCHEME 8A**

SCALE: 1"=80'

MIAMI INTERMODAL TERMINAL

POSSIBLE FUTURE F.E.C.I. ALL ABOARD FLORIDA TERMINAL

POSSIBLE FUTURE F.E.C.I. 'TOD' DEVELOPMENT

POSSIBLE FUTURE PUBLIC PLAZA

GOVERNMENT CENTER METRORAIL STATION

NW 1ST AVENUE

2 TAXIS

2 TAXIS

2 JITNEY

TRANSIT ONLY

OPTIONAL / ALTERNATE BUS STOP BLOCK

EXISTING SERVICE DRIVE

NW 1ST AVENUE

TRANSIT ONLY

TRANSIT ONLY

600 SQ.FT.

TAXI & JITNEY ACCESS

SW 1ST COURT

EXISTING PARKING LOT

RECONFIGURED MDT TERMINAL LOT

PEDESTRIAN ACCESS

RAMP

PARKING GARAGE ABOVE

EXISTING SERVICE DRIVE TO REMAIN

STEPHEN P. CLARK GOVERNMENT CENTER

ONE WAY

TRANSIT & EMERGENCY VEHICLES ONLY

OPTIONAL / ALTERNATE BUS STOP BLOCK

S

E

1600 SQ.FT.

PEDESTRIAN ACCESS

1500 SQ.FT

2350 SQ.FT.

L

E

S

NW 3RD STREET

2050 SQ.FT

64 BIKE LOCKERS

80 BIKE RACKS

BIKE PLAZA

EXISTING FOUNTAIN PLAZA

ARTWALL

SECURE

PLAYGROUNDS

DROP-OFF

NEW DAYCARE CENTER 7,775 SF

NW 1ST STREET

ONE WAY

HISTORY MIAMI CULTURAL INSTITUTION

W FLAGLER STREET

SW 1ST STREET

E

E

S

RAMP

S

STEPHEN P. CLARK GOVERNMENT CENTER

NW 2ND AVENUE

NW 2ND AVENUE

NW 2ND AVENUE

JACOBS

09.06.2013

01

DOWNTOWN MIAMI INTERMODAL TERMINAL - SCHEME 8B

SCALE: 1"=80'

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Once the Final Site Development Concept was refined and approved by the MPO Project Manager, a primary visualization tool was used to show the proposed development in a 3-D environment. The following technique illustrated the conceptual development of the Intermodal facility based on real pictures of the existing conditions, to show the differences between the existing conditions and the proposed recommendation.

This design works together in a digital format for easy understanding of the project when viewed in context with the Final Schemes 8, 8A & 8B. The 'just above' street level view shows the final development of the garage and bus terminal building facades and streetscape with appropriate landscape and hardscape elements as described in the Final Concept outline.

This is a highly stylized image that was prepared to illustrate the potential of the new Terminal Garage and Daycare buildings in a contemporary setting that dignifies the public spaces on the Government Center block. It is possible to envision these facilities as complimentary to the surrounding architectural context of downtown Miami. For example, considering the almost completed Juvenile Justice Center that lies just north, across 3rd Street from the Terminal Garage site, one can see a clear precedent for a well articulated building 'skin' complimenting its' unique contemporary style. The garage must present an equal value to the civic realm.

The need for cross ventilation affords the perfect opportunity to explore a 'perforated' design that meets functional requirements and at the same time enhances its' surroundings by treating it as an anchor building. The skin could be lightweight, semi-metalic durable finish with a long life and extremely low maintenance requirements. Additionally it could even include planting accommodations to support a vertical green lining. The design should be instantly recognizable as a new downtown icon and enhance perceived value for the intermodal terminal well beyond the usual 'detractions' many associate with such facilities.

THE TERMINAL GARAGE SITE IS CLEARLY INCLUDED IN THE LOWER LEFT OF THIS RENDERING OF THE NEW JUVENILE JUSTICE CENTER

The new Daycare Center building in the foreground likewise is an opportunity to enhance the civic and public realm in its' design execution. The very nature of the use has an element of play we all naturally associate with. The initial idea of surrounding the playgrounds with an 'art wall' could be extended to the building façade itself. This idea could even be expanded to design a dynamic and even possibly an electronically or lighted changing exterior. The building itself could 'play' with the public space surrounding it. Additional opportunities for controlling natural lighting into the building without sacrificing privacy could be afforded by such a design approach. There are even roof / skylighting options that could also be explored to bring light into the building core

In summary, the final design approach strives to elevate the possibility that the ultimate architectural styles created, and the contractibility criteria for publicly funded projects do not have to be mutually exclusive objectives. And where a project such as this is benefitting from a new public-private partnership to carry it through to implementation, a single 'message' image like the final rendering presented in this report helps keep all parties open to unique solutions.

Proceeding towards the completion of this study and Final Report, final reviews meetings were conducted with the MPO and MDT to reconfirm the validity of the Final Site Development Concept, especially in light of the on-going FECI negotiations. In late September, the FINAL Scheme was completed and is included as the last page in this section. The result was a plan that took a small step back from the previous Scheme 6 versions. The characteristics and minor modifications include the following::

- It keeps the Terminal Garage and the Daycare block the same as depicted in 8A & 8B.
- It recovers the design for the modified NW 1st Street Pedestrian -Transit Mall to coincide with Scheme 6, yielding 7 layover or alternate passenger positions. And depicts the potential extent of covered shelters over the bus parking locations and pedestrian circulation areas directly behind each.
- With the target bus positions of 20 'service' spots and 7 'layover' spots met through the Terminal Garage and NW 1st Street Pedestrian -Transit Mall, the new Cultural Center East optional lot is no longer needed, nor the existing Flagler Terminal lot; these were removed from the plan, and restored to their current configurations.
- Through generalized communications with MDT, it is now possible to consider alternate development plans for some TOD options at the Flagler lot once the new Terminal garage is complete.

ILLUSTRATIVE RENDERING OF THE INTERMODAL TERMINAL AT THE DOWNTOWN GOVERNMENT CENTER

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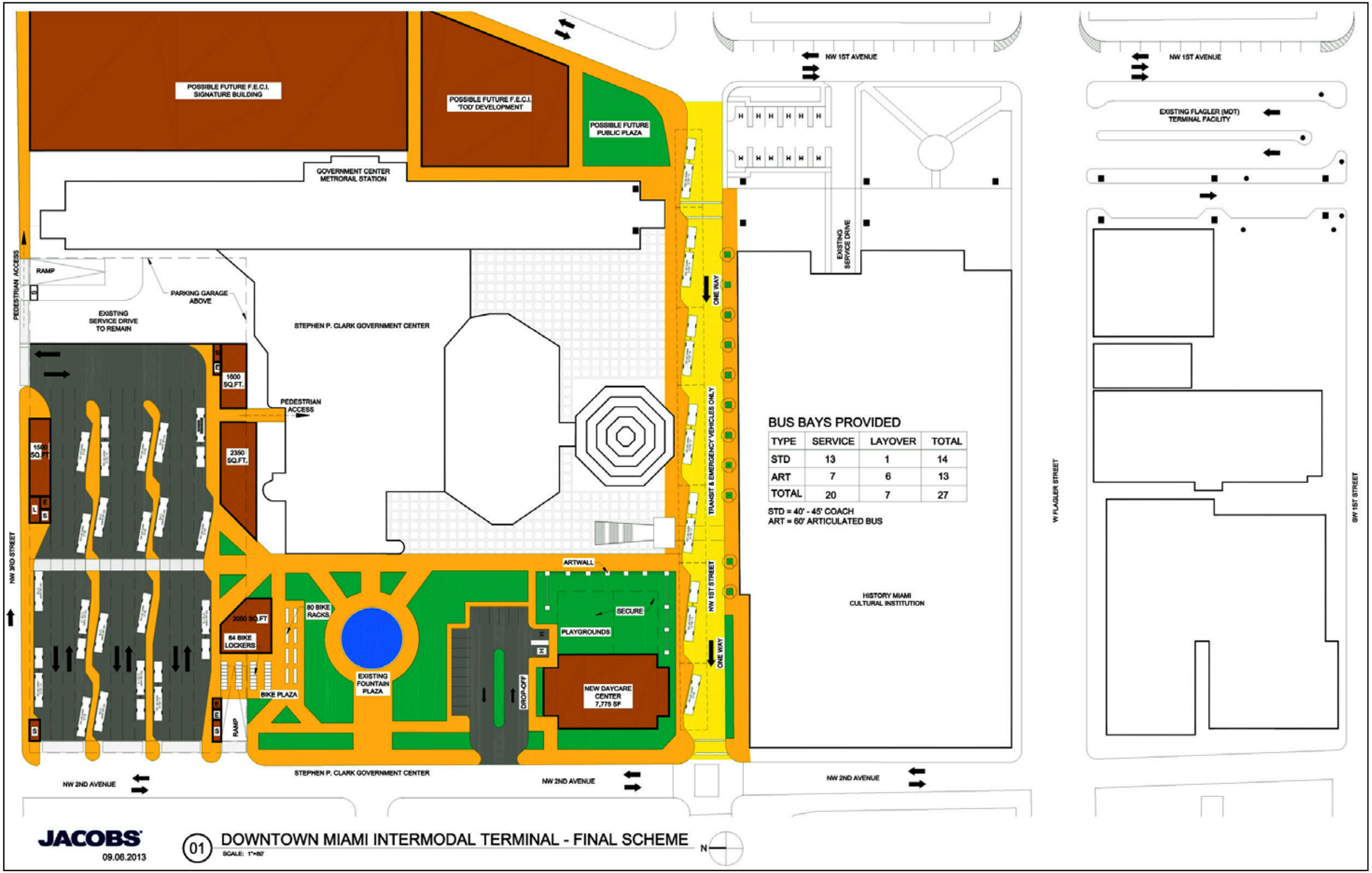
POSSIBLE FUTURE F.E.C.I. SIGNATURE BUILDING
POSSIBLE FUTURE F.E.C.I. 'TOD' DEVELOPMENT
POSSIBLE FUTURE PUBLIC PLAZA
GOVERNMENT CENTER METRORAIL STATION
NW 1ST AVENUE
EXISTING SERVICE DRIVE
ONE WAY
PEDESTRIAN ACCESS
RAMP
PARKING GARAGE ABOVE
EXISTING SERVICE DRIVE TO REMAIN
STEPHEN P. CLARK GOVERNMENT CENTER
1600 SQ.FT.
2350 SQ.FT.
1500 SQ.FT.
PEDESTRIAN ACCESS
TRANSIT & EMERGENCY VEHICLES ONLY
NW 3RD STREET
ARTWALL
SECURE
PLAYGROUNDS
HISTORY MIAMI CULTURAL INSTITUTION
NW 1ST STREET
2050 SQ.FT
64 BIKE LOCKERS
80 BIKE RACKS
BIKE PLAZA
EXISTING FOUNTAIN PLAZA
DROP-OFF
NEW DAYCARE CENTER 7,775 SF
RAMP
NW 2ND AVENUE
STEPHEN P. CLARK GOVERNMENT CENTER
NW 2ND AVENUE
NW 2ND AVENUE
EXISTING FLAGLER (MDT) TERMINAL FACILITY
NW 1ST AVENUE
W FLAGLER STREET
SW 1ST STREET
BUS BAYS PROVIDED
TYPE | SERVICE | LAYOVER | TOTAL
STD | 13 | 1 | 14
ART | 7 | 6 | 13
TOTAL | 20 | 7 | 27
STD = 40' - 45' COACH
ART = 60' ARTICULATED BUS
JACOBS
09.06.2013
01 DOWNTOWN MIAMI INTERMODAL TERMINAL - FINAL SCHEME
SCALE: 1"=50'
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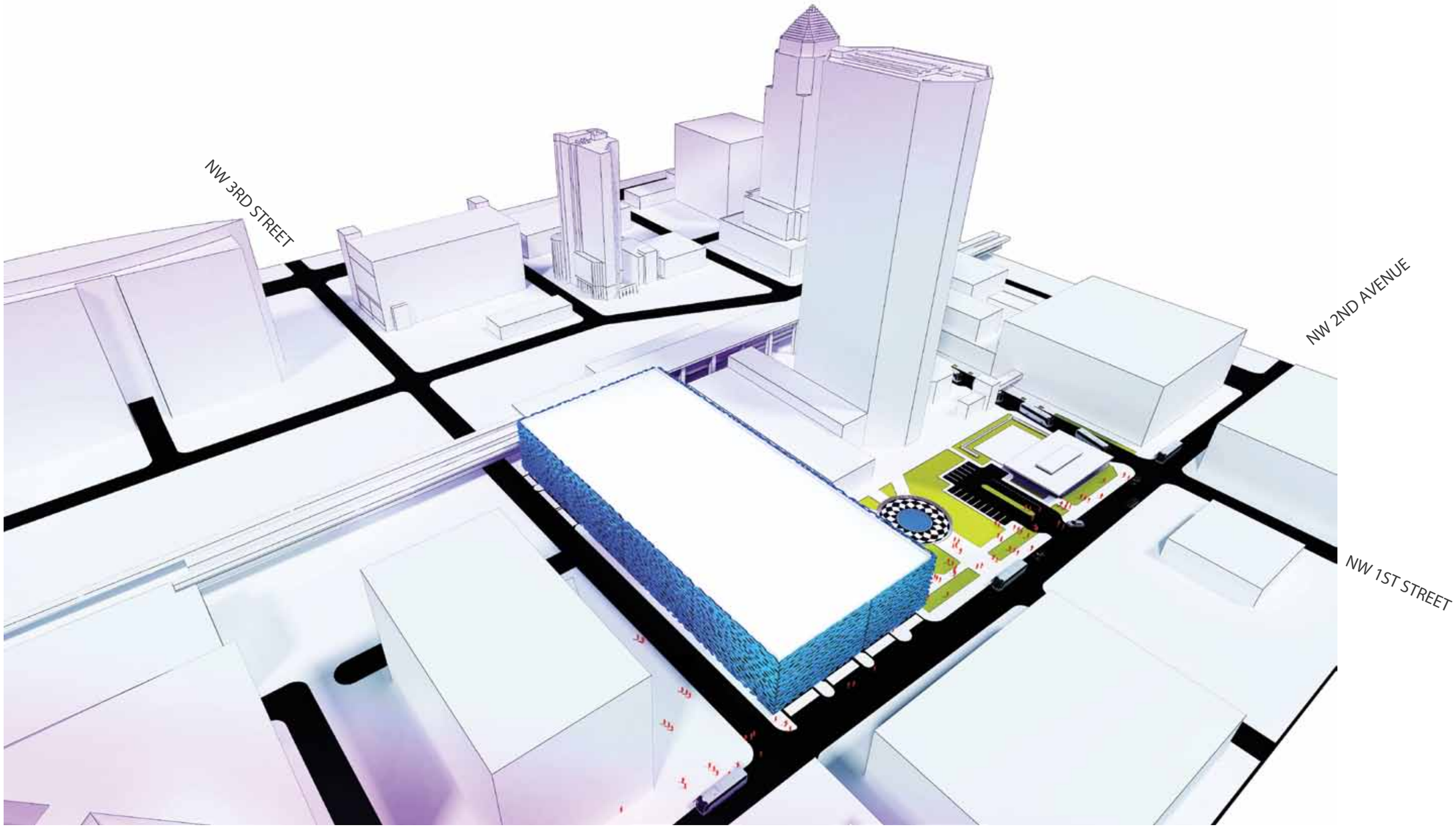
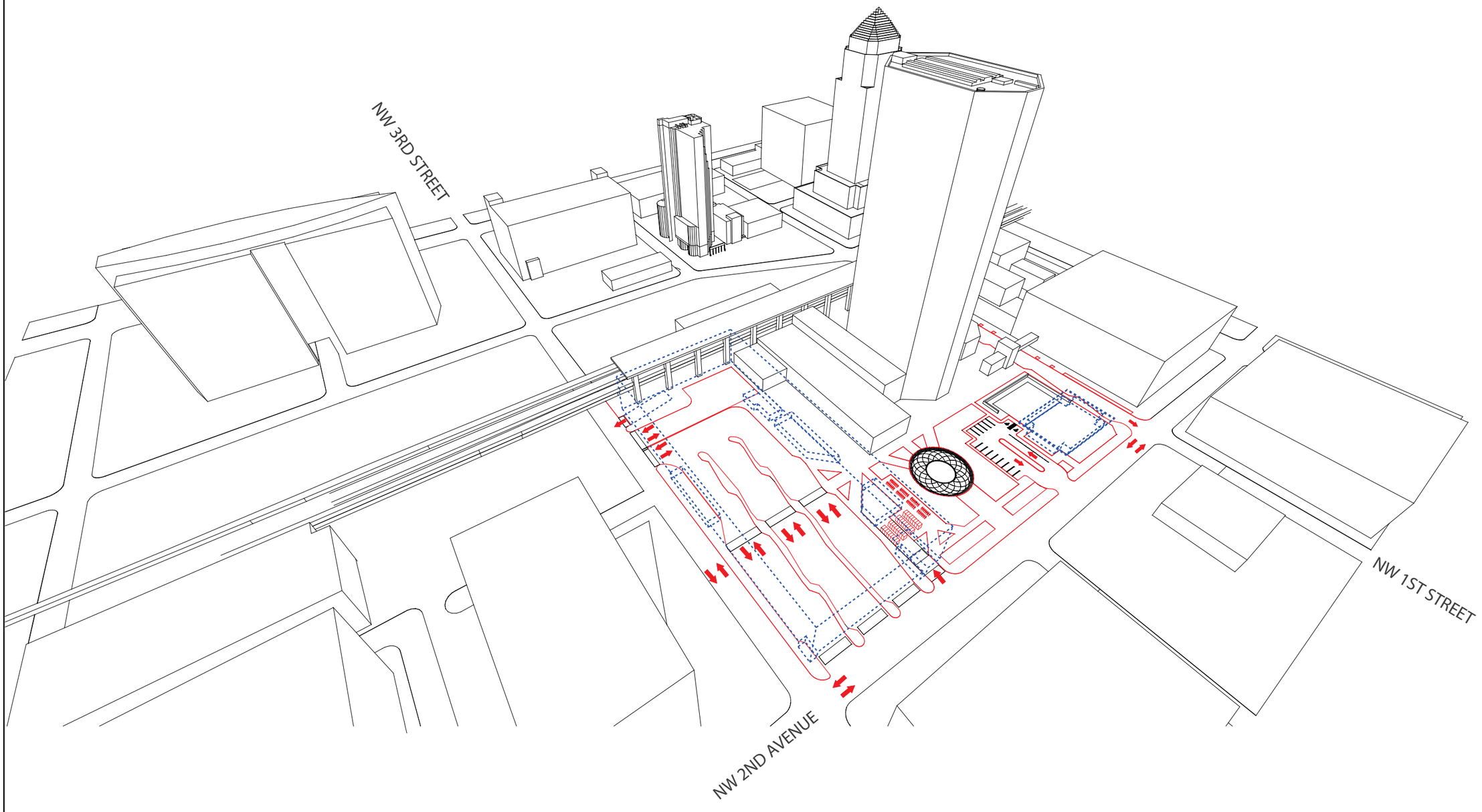


JACOBS

3D DIAGRAMMATIC AERIAL VIEW - FINAL SCHEME

DOWNTOWN MIAMI INTERMODAL TERMINAL



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3D DIAGRAM - FINAL SCHEME

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Recommendations and Action Plan

At the completion of this study the MPO and MDT sought to develop a set of recommendations and the steps needed for the construction of the proposed intermodal facility and the transit/ pedestrian mall along NW 1st Street based on the Final Concept Scheme.

Through the completion of the planning tasks completed in the study, the results present a clear recognition that the programming and planning process Miami-Dade MPO had engaged in was now critical to making the Intermodal Terminal Facility a success, bringing the MPO's vision to integrate all transportation services onto one unified site a reality. From this study's perspective, successful design initiatives, regardless of the application, must achieve a 'balance' between function and contextual aesthetics. Balance defines the success of a project because a project that is purely functional, yet aesthetically and/or lacking community and market support, actually loses value. The study utilized all necessary professional disciplines to guide the appropriate aspects of the project study, and incorporated this balanced approach into the final design.

Based on the preparation, study and evaluation of all the various "options, preferences and solutions" in the project, it is appropriate to complete the study by answering the ultimate question; "How do we get there?" The following Recommendations and Action Plan summarizes the requested action items envisioned at the study commencement, which have now been confirmed through the study as the best approach to proceed forward with to the project's implementation strategies. These are logically based on the final validated intermodal facility concept.

Following the collaborative process utilized during this study, this preferred course of action that has been arrived at should be supported by individual component implementation plans for each of the following categories. These are 'summary' or 'general' in context, and would be further detailed in typical preliminary and schematic design phases for the new facility once agreements with FECI have been finalized, and responsibility for individual action items can be assigned..

- Master program for all new facilities, site development components, as well as ancillary/ adjacent related site modifications and renovations
- Transit Modifications
- Traffic Impacts Mitigation
- Phasing as needed to be addressed in a Project Schedule
- Strategic management decisions (by agency/ party) to support individually the components of full project implementation.

MASTER PROGRAM

The Final Concept Scheme for the new intermodal terminal that was developed, evaluated and vetted with the MPO, MDT and the SAC, and provides for the following operational characteristics at the new MDT 'terminal garage' and the 'layover' bays designed into the new NW 1st Street Pedestrian-Transit Mall:

The building facilities included in this desired Scheme were aligned with the original Conceptual Approach and Program, and provide the following ground floor development opportunites to support the MDT operations. These are 'gross square foot' (GSF) measurements, and exclude the elevators and stairways (spaces) that are operationally necessary for the new terminal garage above:

BUS BAYS PROVIDED

TYPE	SERVICE	LAYOVER	TOTAL
STD	13	1	14
ART	7	6	13
TOTAL	20	7	27

STD = 40" - 45" COACH
ART = 60' ARTICULATED BUS

Miami-Dade MPO
Final Space Program - New Downtown Intermodal Center

Ground Floor Building Facilities

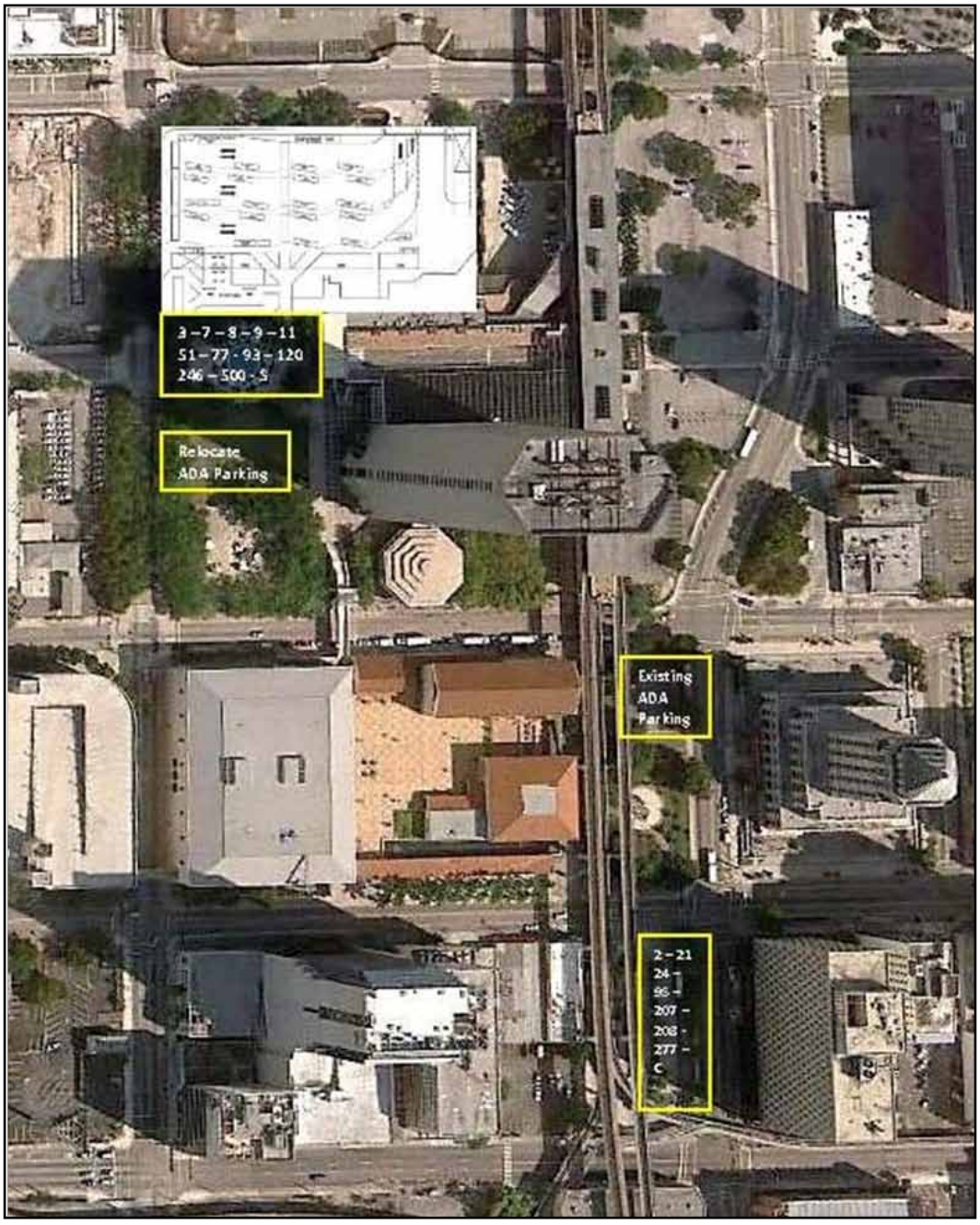
Government Center Side Modules	*Total*		***3950***
A. South - Small Building Module	*Total*		***1600***
B. South - Large Building Module	*Total*		***2350***
1.0	***Customer Service Building***		***SF***
1.1	Vestibule - Main		400
1.2	Ticketing Lobby		300
1.3	Waiting Area		900
1.4	Visitor's Center / Display Area		150
1.5	Driver / Crew Room		400
1.6	Community Room		500
1.7	Storage Room		200
1.8	Public Rest Rooms		800
1.9	Telephones & Other Services		120
1.10	Mechanical Equipment Room		180
		Total	***3950***
Bike Plaza Module	*Total*		***2050***
1.0	**Vendor Administration & Service**		
1.1	Administration Office		150
1.2	Service Counter		200
1.3	Open Work Area		350
1.4	Equipment/Supplies Storage Room		150
		Total	***850***
2.0	***Public Spaces***		
2.1	Restrooms, Lockers, Showers, Changing (M&F)		850
2.2	Flexible gathering/break space		350
		Total	***1200***

NW 3rd Street Side Module	*Total*		***1500***
1.0	**Administration**		
1.1	Administration Office		250
1.2	Service Counter		80
1.3	Open File / Work Area		120
1.4	Storage Room		150
1.5	Shared Workstation		160
		Total	***760***
2.0	***Security***		
2.1	Security Office		200
2.2	Service Counter		60
2.3	Equipment Storage Room		80
		Total	***340***
3.0	***Service - Support***		
3.1	Janitor / Supply Closet		160
3.2	Rest Room - Drivers		240
		Total	***400***
New Daycare Center	*Total*		***7775***
1.0	**Single Operator / 2 age groups**		
1.1	Administration & Instructor Offices		500
1.2	Visitor's Reception / Lobby Area		250
1.3	Infants / Early Development classrooms		2400
1.4	Toddlers / Pre-K classrooms		3600
1.5	Restrooms / Changing		375
1.6	Warming Kitchen / Food Svc. Prep		500
1.7	Equipment/Supplies Storage Room		150
		Total	***7775***
		Total Enclosed Building Areas	***15275***

TRANSIT MODIFICATIONS

This aerial diagram below illustrates the initial route accommodations that would be assigned to the new Terminal Garage. It also indicates the likely routes that would remain at the existing MDT Flagler Terminal until the future redevelopment plans for a TOD center at that location can be further investigated. Ultimately, MDT's desire for the relocation of all 'downtown' destination routes into the new Terminal Garage at the Government Center can be accommodated through schedule re-timing and flexible bus bay programming. The additional implementation of the layover facilities on NW 1st Street (as described in the following subsection) will further support this transition into a single facility, and allow for possible future expansion if necessary.

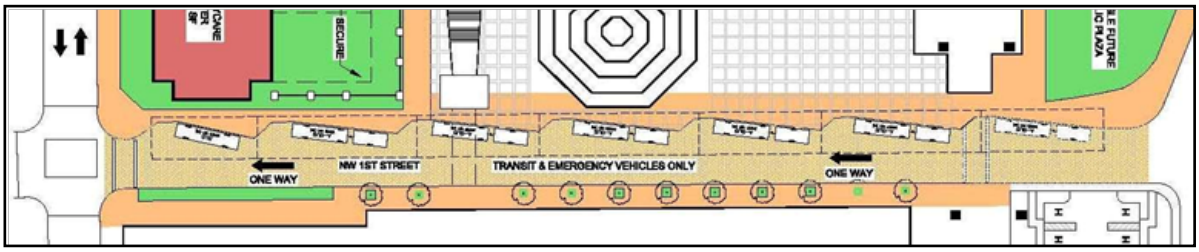
All of these Transit Modifications should be supported by an advanced system of electronic public information boards in the garage terminal and at strategic out-lying transit block locations. The design, engineering and implementation of this system will need to be programmed by MDT towards operational commencement with the opening of the new terminal garage.



TRAFFIC IMPACTS MITIGATION

With the planned transition of NW 1st Street into a New Pedestrian-Transit Mall, strategic steps and services are necessary to prepare for this operational change. This will include:

- Design and engineering of the necessary roadway modifications to re-purpose NW 1st Street from NW 1st Avenue to NW 2nd Avenue as a One-way, westbound only route for the exclusive use of Transit and Emergency vehicles.
- Detailed Study, Design and engineering of new Traffic control devices, and possible new signalization for vehicle access and control entering and exiting the limited use street, especially to prohibit access by private vehicles.
- Re-evaluation through a detailed traffic analysis of the potential vehicle impacts on West Flagler Street and NW 3rd Street, and/or other surrounding public ROW's due to partial street closing of NW 1st Street. Additionally impacts on pedestrian and bicycle circulation facilities by the street closures and the intermodal facility itself should be included in this detailed analysis.
- Design and engineering of the potential new flexible layover shelters; this will allow for temporary event passenger use, or long-term transition to these bays for permanent passenger use should future MDT system growth demand a quick adaptation.
- Design and engineering of pedestrian scale improvements in the new NW 1st Street Pedestrian-Transit Mall ROW.
- Redesign and engineering of the Government Center public plaza frontage along NW 1st Street to accommodate the new form of, and facilities related to the 'layover' bays, including the opportunities to integrate new green space, public 'comfort-safety-security' improvements, and most importantly new cross-walk provisions.



PHASING REQUIREMENTS

Key to the success of what really is a new 'intermodal transit block' surrounding the Government Center, will be early and continued coordination with FECI on their new 'All Aboard Florida' Miami Terminal development schedule. To envision the planning and development of the MDT facilities and the associated other improvements necessary in the transit block the following key timing thresholds are recommended:

- The First phase must focus on the design and engineering to plan for relocation of, and construction of the new Daycare Center
- The New surface parking area to serve the Daycare Center must be included in the first phase, but can serve as a construction staging area during the first phase
- The new terminal garage for MDT (and the ground floor building facilities) would be designed and engineered under an integrated plan for the FECI terminal service garage to be constructed above it
- Associated improvements necessary on NW 2nd Avenue and NW 3rd Street would also need to be designed and engineered under an integrated plan with FECI terminal service garage; while the timeframe for these improvements may be shorter than the garage itself, their schedule should be coordinated to reach a simultaneous completion, while not impending the construction access required for the garage
- The last phase would include the design and engineering of the necessary roadway modifications to re-purpose NW 1st Street from NW 1st Avenue to NW 2nd Avenue as a One-way, westbound only route for the exclusive use of Transit and Emergency vehicles, as described in the Traffic Impacts Mitigation section above.

STRATEGIC MANAGEMENT DECISIONS

To help identify the general responsibilities and decision points that must be considered by the involved agencies and parties for this new intermodal transit facility at the M-D Government Center, the following outline identifies some strategic steps that would be recommended to proceed. These are organized by general priority, but many are likely to be conducted simultaneously. The next phase of this project could in-fact evolve towards a Public-Private Partnership with FECI and would have its' own criteria for proceeding, which were not a study component of this project. That process could also result in 're-ordering' of the step priorities, with the focus on an accelerated timeline to facilitate a Design-Build proposal, allowing the project to proceed simultaneously with the development schedule that FECI has planned for their new All Aboard Florida Miami terminal.

- The First step must proceed with the completion of development and operational agreements with FECI, clarifying the planned development strategy for the project.
- From the cursory information provided through this study, it appears Miami-Dade County and FECI leadership are actively proceeding now simultaneously with the conclusion of this study.
- Initial proposals would seem to confirm the minimum criteria for development to be included in the future formalized agreement that was provided by the MDT representatives; this chart has been provided at the end of this sub-section for current reference.
- The existing Daycare Center service operator/ vendor must be included in early coordination efforts to insure the relocation program for that facility is well organized, and the proposed facility program is validated.
- MDC Facilities Management division should be included to plan for the management of, and lead the strategic planning of the necessary Government Center modifications necessary to support the new terminal, and the related site improvements such as the Daycare Center and the future Bike Service Center.
- MDT has obviously been completely integrated into this study, and the leadership negotiations currently underway with FECI, but their planning efforts will also need to focus on temporary route impacts that could occur during construction, as well as the future route realignments once the facilities are operational. Additionally short-term and long-term capitol budget impacts needs to be evaluated where there could be system expenditures for improvements that are not going to be included in the FECI agreement .
- MDC Traffic Management division should be coordinating on the future roadway modifications required for the terminal, as well as the temporary construction phase circulation accommodations that will be necessary.

- MDC Publis Works should be actively engaged to begin planning for the necessary utilities infrastructure modifications that may be necessary.
- Miami Parking Authority, the likely operator of the new terminal garage, needs to begin planning for its' future operational needs, as well as the construction phase access accommodations that could impact public parking operations and revenue.
- Coordination with the MD Cultural Affairs division maybe necessary to plan for construction phase impacts to the Museum and Public Library, and future transit impacts once the NW 1st Street Pedestrian-Transit Mall is implemented.
- The DDA should be engaged to coordinate the potential preparation of master plan for the 'Downtown Central Station Village'. This approach could help ensure that the surrounding land uses and roadway/transportation network support the new terminal.

DOWNTOWN MIAMI BUS TERMINAL

August 26, 2013 - Provided by MDT

BUS BAYS REQUIREMENTS

	SERVICE	LAYOVER	TOTAL
Bus Bays (40' Standard and 45' Coach)	12	1	13
Bus Bays (60' Articulated)	8	6	14
Total	20	7	27

- Require a total of 27 Bus Bays (13 that accommodate Commuter Coach Buses and 14 that accommodate Articulated Buses)
- Absolute minimum of 20 Bus Bays (12 coach bays and 8 articulated bays) must be accommodated in the terminal

CUSTOMER SERVICE

- Passenger Waiting Area with covered Seating/Benches
- Ticket Vending Machine/Kiosk Area
- Display for Real-Time Bus Tracking
- Video/Audio Displays
- Visitor Center/Display Area
- Self-Maintaining Public Restrooms
- Public Telephones
- Fully integrate the bus terminal with Government Center, Metrorail, Metromover, and all future transportation modes including the planned All Aboard Florida terminal, the All Aboard future Beach Corridor Station (Bay Link), consistent with the present MPO Beach Corridor Study results.

SECURITY

- Security Office
- Service Counter
- Equipment Storage Room
- Cameras for monitoring Bus Terminal

SERVICE SUPPORT

- Driver/Crew Room and Self-Maintaining Restroom
- Janitor/Supply Closet
- Bus Supervisor Booth
- Staff Parking - 8 spaces (can be accommodated within garage)

SITE

- Bicycle Parking
- Bicycle commuter station
- Unified Signage System
- Kiss-and-Ride Area
- Convert existing NW 1st Street bus drop-off area to accommodate 7 saw-tooth bays.
- Separate Taxi and Jitney Areas
- Landscaping
- Green areas need to be considered, including a 'green roof' for the transit terminal garage to comply with the County's GreenPrint policy
- Lighting
- Apply Crime Prevention through Environmental Design Principles

SUMMARY AND CLOSING

The Final Recommendations & Action Plan are the culmination of the significant work undertaken throughout the planned, and then extended/ alternate schedule that evolved under this Task Work Order project. This Final Report is intended to document the entire process; data collected and studied, feedback received, alternatives explored, evaluations completed, all ultimately leading to the completed and preferred Final site development scenario. This final section of the report was focused on presenting the results of the process, with final recommendations that clearly and succinctly define the path towards the ultimate development plan. The outline presented for the process going forward into the next stages of design and construction were intended for general consideration. While they may not include all the detailed strategies and steps that could and should be evaluated by the MPO and the other County agencies that will undertake the unified planning and development process to follow in partnership with FECI, the important 'comprehensive' steps have been provided to help guide the process utilizing this study as a benchmark planning guide.

Appendix

EXECUTIVE SUMMARY BY C.H. PEREZ AND ASSOCIATES

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DATA GATHERING AND ANALYSIS SUMMARY ..... Pg. 91

LITERATURE RESEARCH SUMMARY ..... Pg. 93

- St Louis Gateway Transportation Center ..... Pg. 95
- St Louis County Shaw Park Avenue Transit Center/Garage ..... Pg. 97
- Oklahoma City Transportation HUB/TOD Master Plan ..... Pg. 99
- Downtown Denton Transit Center and TOD ..... Pg. 101
- Metro Intermodal Terminal Assessment ..... Pg. 103
- Greenville Intermodal Transportation Center Feasibility Study ..... Pg. 120

SITE SELECTION CRITERIA TABLE ..... Pg. 163

SITE SELECTION CRITERIA "DESIRABILITY" SCORES ..... Pg. 170

SITE SELECTION ANALYSIS MAPS ..... Pg. 172

SAMPLE "ALL ABOARD FLORIDA" PUBLISHED ARTICLES:

- Miami Herald - All Aboard Florida seeks downtown Miami property for train hub ..... Pg. 195
- Orlando Sentinel - Orlando to Miami train needs just one more deal before it can roll ..... Pg. 197
- Orlando Sentinel - Orlando to Miami train could generate $145 million ..... Pg. 199
- SunSentinel - Fast rail on track ..... Pg. 200
- Miami Today - Rail economic stimulus on fast track to chug into downtown ..... Pg. 201
- South Florida Business Journal - FEC's review of rail station sites signals opportunities ..... Pg. 202

DOWNTOWN INTERMODAL QUALITATIVE TIA ..... Pg. 203

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STUDY ADVISORY COMMITTEE

#	Name	Dept.	E-Mail	Address	Phone #
1	Jesus Guerra - PM	MPO	jdgr@miamidade.gov	111 NW 1st Street, Suite 920 Miami, FL 33128	(305) 375-2069
2	Lilia Medina	City of Miami	limedina@miamigov.com	444 SW 2nd Avenue Miami, FL 33133	(305) 416-1080
3	Thomas Rodrigues	City of Miami	trodrigues@miamigov.com	3500 Pan American Drive Miami, FL 33133	(305) 416-1080
4	Sarah Ingle	DDA	ingle@miamidda.com	200 S Biscayne Boulevard, Suite 229 Miami, FL 33131	(305) 579-6675
5	Kevin Little	FEC	kevin.little@fecrwy.com	6875 NW 58th Street, Miami, FL 33166	(305) 970-8169
6	Ed Carson	FDOT	edward.carson@dot.state.fl.us	1000 NW 111th Ave, Room 6114 Miami, FL 33172	(305) 470-5255
7	Chris Dube	FDOT	christopher.dube@dot.state.fl.us	1000 NW 111th Avenue, Miami, FL 33172	(305) 470-5295
8	Nilia Cartaya	MDT	cartayn@miamidade.gov	701 NW 1st Court, Miami, FL 33136	(786) 469-5283
9	Monica Cejas	MDT	mcejas@miamidade.gov	701 NW 1st Court, Suite 1500 Miami, FL 33136	(786) 469-5290
10	Eva Kunath	MDT	evak@miamidade.gov	701 NW 1st Court, Suite 1500 Miami, FL 33136	(786) 469-5554
11	Isabel Padron	MDT	ipadron@miamidade.gov	701 NW 1st Court, Suite 1500 Miami, FL 33136	(786) 469-5260
12	Bob Pearsall	MDT	rpear@miamidade.gov	701 NW 1st Court, Suite 1200 Miami, FL 33136	(786) 469-5163
13	Alfred Lurigados	MDX	alurigados@mdxway.com	3790 NW 21st Street Miami, FL	(305) 637-3277
14	Rolando Jimenez	PW&WM	rjimen@miamidade.gov	111 NW 1st Street, Suite 1510 Miami, FL 33128	(305) 375-5681
15	Leo Oña	PW&WM	ljo@miamidade.gov	111 NW 1st Street, Suite 1510 Miami, FL 33128	(305) 375-1909
16	Napoleon Somoza	RER	nvs@miamidade.gov	111 NW 1st Street Miami, FL 33128	(305) 375-2835

PROJECT MEETINGS AND HISTORY OF EVENTS LISTS

DATE	EVENTS
October 2013	**Delivery of Final Report and Final SAC Presentation**
September 24, 2013	**Final Concept Scheme review with MPO and MDT Project Managers**
September 6, 2013	**Delivery of Final Development Concept**
August 2013	**Development of additional/optional site concepts for existing Flagler lot**
July 24, 2013	**Project PM Review Meeting -** Final input for extended "Transit Block" scheme to include existing Flagler lot redevelopment to increase capacity
May 30, 2013	**Project PM Review Meeting** – Discuss final concept strategy and TWO report completion plan
February 15, 2013	**Project PM Review Meetin**g – Follow up to SAC to discuss FEC/All Aboard Florida impacts & strategy discussion for project completion
January 9, 2013	**SAC Presentation** – Alternatives with FEC/All Aboard Florida impacts
October 18, 2012	**Project Review meeting** – With MDT and PM – Bus terminal needs and alternatives discussion
October 2, 2012	**Project PM Review Meeting** – Final Architectural Conceptual Approach Review & strategy discussion for project completion
August 23, 2012	**Project PM Review Meeting** - Architectural Conceptual Alternatives Review and strategy discussion for project progress work
August 17, 2012	**Project PM Review Meeting** - Architectural Conceptual Alternatives Review and strategy discussion for project progress work
July 11, 2012	**PTAC** – Project advisory/update
May 4, 2102	**ULI** – Project presentation / Envisioning South Florida's Future Mobility – Goods and People
April 18, 2012	**Project Update meeting and review** – With Flagler Development team for their planned All Aboard Florida downtown Miami station
April 5, 2012	**Project PM Review Meeting** - Project status review & prep for Flagler/All Aboard Florida coordination meeting
March 15, 2012	**Project PM Review Meeting** - Project status review & follow up strategy discussion for subsequent study tasks
March 7, 2012	**SAC Presentation** – Site Alternatives Analysis results
February 15, 2012	**Project PM Review Meeting** – Site Selection AOC Map Review
November 16, 2011	**SAC Presentation** – Study overview, purpose and approach; Study area boundary; SAC role and input needed; Site Selection methodology
November 9, 2011	**Project PM Review Meeting** – Project Status and pre-SAC strategy discussion
October 26, 2011	**Project PM Review Meeting** – Site selection criteria, plan of action for 1st SAC
August 11, 2011	NTP for TWO #19 (GPC IV-19) – Study commencement

BASE DATA COLLECTION SUMMARY
Through - 3.27.2012

X = Items mentioned in original data compilation list

CATEGORY	X	ITEM	DATE RECEIVED	DESCRIPTION	DATA SOURCE	FILE TYPE	HARD/ DIGITAL COPY	KNOWN REVISION OF DATA
Transit Related Data								
	X	Bus Omnibus Report 11-30-2011	2/20/2012	Ridership Data reports	MDT	.pdf	Digital	11/30/2011
		Golden Glades Multimodal Center Bus Bay Analysis	2/20/2012	Final Technical Memorandum	MDT	.pdf	Digital	11/21/2008
	X	MDT Work on DT Terminal - Site Plans Options 6.1 and 6.5	8/31/2011	Future site plans for existing Flagler terminal	MDT	.pdf		
	X	MDT Work on DT Terminal Options 6.1 and 6.5	8/31/2011	Future site plans for existing Flagler terminal	MDT	.pdf		
		Downtown Miami Station options	2/6/2012	SFECC Map	SFRTA	.pdf	Digital	9/16/2009
		1a FEC Report Gov Center terminal	3/27/2012	SFECC Report	SFRTA	.pdf	Digital	3/22/2012
		FEC Report Gov Center terminal	3/18/2012	SFECC Report	SFRTA	.pdf	Digital	3/8/2012
		SFECC T ech Steering Committee	3/18/2012	SFECC Report	SFRTA	.pdf	Digital	3/1/2012
	X	Jitney and Taxi Data report	12/20/201	Use data	Miami Dade County MPO	.docx	Digital	
	X	Excel Transportation - Jitney report	12/20/201	Use data	Miami Dade County MPO	.ppt	Digital	
	X	Miami-Dade County Jitney Routes	12/20/201	Map	Miami Dade County MPO	.pptx	Digital	
Traffic Related Data Inlc. Bike & Ped.								
	X	2035 LRTP CF Network Bi-Directional Volume Plot	12/19/2011	Traffic data	Miami Dade County Public Works	.pdf	Digital	
	X	2035 LRTP CF Network Bi-Directional Volume to Capacity Plot	12/19/2011	Traffic data	Miami Dade County Public Works	.pdf	Digital	
	X	2005 Bidirectional level of Service	12/19/2011	Traffic data	Miami Dade County Public Works	.pdf	Digital	
	X	2035 Cost Feasible Network Bi-Directional Volume to Capacity	12/19/2011	Traffic data	Miami Dade County Public Works	.pdf	Digital	
	X	Downtown Miami Parking Spaces	3/7/2012	FDOT Parking Study Data Reports	FDOT	.pdf	Digital	
		* TECH MEMO 1 FINAL after comments	12/19/2011	Interim Tech Memo	FDOT	.pdf	Digital	
		* Tech Memo 2 FINAL after meeting	12/19/2011	Interim Tech Memo	FDOT	.pdf	Digital	
		* Technical Memorandum 3 FINAL	12/19/2011	Interim Tech Memo	FDOT	.pdf	Digital	
		* T ech Memo 4 Final with Comments	12/19/2011	Interim Tech Memo	FDOT	.pdf	Digital	
		* Tech memo 5 final	12/19/2011	Interim Tech Memo	FDOT	.pdf	Digital	
		* Technical Memorandum 6	12/19/2011	Interim Tech Memo	FDOT	.pdf	Digital	
	X	2009 Flagler St Pedestrian Study	2/6/2012	Bike & Ped related reports	Miami Dade County MPO	.pdf	Digital	
		Market insights map	2/7/2012	Bike & Ped related reports	Miami Dade County MPO	.pdf	Digital	
		MCNP Appendix TR-1(08-08)	2/7/2012	Bike & Ped related reports	Miami Dade County MPO	.pdf	Digital	
	X	Miami Downtown Transportation Master Plan	2/7/2012	Bike & Ped related reports	Miami Dade County MPO	.pdf	Digital	
	X	MPO Bike-Ped Mobility Plan for Miami DDA	1/6/2012	Bike & Ped related reports	Miami Dade County MPO	.pdf	Digital	
		New Downtown Street Ownership - mxd	2/7/2012	Bike & Ped related reports	Miami Dade County MPO	.pdf	Digital	
	X	Miami Streetcar Corridor	2/7/2012	Bike & Ped related reports	Miami Dade County MPO	.pdf	Digital	
		Transportation Enhancements Strategies Report	2/7/2012	Bike & Ped related reports	Miami Dade County MPO	.pdf	Digital	
Economic Development								
		Empowerment Zone	10/26/2011	defines poverty areas, developed from census tracts	Miami Dade County GIS	.shp	Digital	11/4/2004
		Capital Improvements_Lines	10/26/2011		Miami Dade County GIS	.shp	Digital	
		Capital Improvements_Polys	10/26/2011		Miami Dade County GIS	.shp	Digital	
		Commercial Property	10/26/2011		Miami Dade County GIS	.shp	Digital	
		Developable Site	10/26/2011		Miami Dade County GIS	.shp	Digital	
		Empowerment Zone Poly	10/26/2011		Miami Dade County GIS	.shp	Digital	
		Empowerment Zone Tract	10/26/2011		Miami Dade County GIS	.shp	Digital	
		Enterprise Zone_2006.	10/26/2011	incentive zones	Miami Dade County GIS	.shp	Digital	2/23/2006
		Hotel Motel Inn	10/26/2011		Miami Dade County GIS	.shp	Digital	
		Urban Development Boundary	10/26/2011		Miami Dade County GIS	.shp	Digital	
		Urban Development Expansion	10/26/2011		Miami Dade County GIS	.shp	Digital	
		Urban Exapansion Area	10/26/2011		Miami Dade County GIS	.shp	Digital	
		Shoreline development boundary	10/26/2011	Development review boundary	Miami Dade County GIS	.shp	Digital	8/13/2009
		Brownfields	10/26/2011	Locations of Brownfields. Economic incentives are provided for expansion, redeevelopment or reuse	Miami Dade County GIS	.shp	Digital	1/23/2009
		Target Urban Area	10/26/2011	predominately low-income and dressed areas, which are part of the Mayors' Urban Revitalization task Force	Miami Dade County GIS	.shp	Digital	12/7/2007
		Community Develop District	10/26/2011	Special taxing districts or local units of special purpose government	Miami Dade County GIS	.shp	Digital	12/10/2007
		Community Redevelopment Area	10/26/2011		Miami Dade County GIS	.shp	Digital	4/5/2010
		Neighborhood stabilization program	10/26/2011	HUD program to provide emergency assistance to state and local government to acquire and redevelop foreclosed properties	Miami Dade County GIS	.shp	Digital	1/29/2010
		Neighborhood revitalization area	10/26/2011	CBDG federal funds are spent in these areas	Miami Dade County GIS	.shp	Digital	10/31/2008
	X	County Zoning	10/26/2011	Zoning	Miami Dade County GIS	.shp	Digital	
Environmental								
		Archeological zone	10/26/2011		Miami Dade County GIS	.shp	Digital	
		Canal	10/26/2011		Miami Dade County GIS	.shp	Digital	6/2/2011
		County Flood Criteria	10/26/2011	adopted by county commission in 1982	Miami Dade County GIS	.shp	Digital	11/1/2006
		County Operated Park	10/26/2011		Miami Dade County GIS	.shp	Digital	
		County Park Boundary	10/26/2011		Miami Dade County GIS	.shp	Digital	
		Golf Course	10/26/2011		Miami Dade County GIS	.shp	Digital	
		Historic District	10/26/2011		Miami Dade County GIS	.shp	Digital	
		Historic Site	10/26/2011		Miami Dade County GIS	.shp	Digital	
		Lake	10/26/2011		Miami Dade County GIS	.shp	Digital	10/29/2009
		Landmarks	10/26/2011		Miami Dade County GIS	.shp	Digital	
		Municipal Parks	10/26/2011		Miami Dade County GIS	.shp	Digital	
		Municipal Park Boundary	10/26/2011		Miami Dade County GIS	.shp	Digital	
		National State Park Preserve	10/26/2011		Miami Dade County GIS	.shp	Digital	
		Natural Forest Community	10/26/2011		Miami Dade County GIS	.shp	Digital	
		Shoreline	10/26/2011		Miami Dade County GIS	.shp	Digital	
		Stream	10/26/2011		Miami Dade County GIS	.shp	Digital	4/29/2010
		Water	10/26/2011		Miami Dade County GIS	.shp	Digital	
		Wetland AOC	10/26/2011		Miami Dade County GIS	.shp	Digital	
		FEMA flood zone 2009	10/26/2011	flood zone 2009	Miami Dade County GIS	.shp	Digital	4/30/2009
		FEMA Panel 1994	10/26/2011	panel to determine flood insurance rate map	Miami Dade County GIS	.shp	Digital	
		Retail Gas Stations	10/26/2011		Miami Dade County GIS	.shp	Digital	10/18/2010
		Contours	10/26/2011		Miami Dade County GIS	.shp	Digital	
		Flood Areas	10/28/2011	SFRPC, MDC, flood map	city of miami website	pdf	hard	
Hazards								
		Contaminated Site	10/26/2011	documented case of contamination in soil or groundwater. Could also be a facility that houses contaminated items	Miami Dade County GIS	.shp	Digital	8/18/2011
		Land Fill	10/26/2011	feneral area of current and historic; legal and illegal landfill sites	Miami Dade County GIS	.shp	Digital	10/9/2008
		Rock Mining Overlay zones boundary	10/26/2011		Miami Dade County GIS	.shp	Digital	
		Superfund site	10/26/2011	hazardous waste facility	Miami Dade County GIS	.shp	Digital	11/16/2006
		Wellfield Protection Area	10/26/2011		Miami Dade County GIS	.shp	Digital	
		City of Miami Brownfield Areas	10/28/2011	DERM brownfield areas	city of miami website	pdf	hard	

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CATEGORY	X	ITEM	DATE RECEIVED	DESCRIPTION	DATA SOURCE	FILE TYPE	HARD/ DIGITAL COPY	KNOWN REVISION OF DATA
Infrastructure								
		Cartostreets	10/26/2011	shows countywide streets	Miami Dade County GIS	.shp	Digital	10/22/2011
		Ease_Line	10/26/2011		Miami Dade County GIS	.shp	Digital	
		GeoActual Ranges	10/26/2011		Miami Dade County GIS	.shp	Digital	
		Geo address	10/26/2011		Miami Dade County GIS	.shp	Digital	
		Geo streets	10/26/2011		Miami Dade County GIS	.shp	Digital	
		GISsection	10/26/2011		Miami Dade County GIS	.shp	Digital	
		Lot_Line	10/26/2011		Miami Dade County GIS	.shp	Digital	
		Lot_Poly	10/26/2011		Miami Dade County GIS	.shp	Digital	
		Parcel_Line	10/26/2011		Miami Dade County GIS	.shp	Digital	
		Parcel_Poly	10/26/2011		Miami Dade County GIS	.shp	Digital	
		ROW_Poly	10/26/2011		Miami Dade County GIS	.shp	Digital	
	X	Rail	10/26/2011		Miami Dade County GIS	.shp	Digital	
	X	Bridge	10/26/2011		Miami Dade County GIS	.shp	Digital	
	X	Bus Routes	10/26/2011		Miami Dade County GIS	.shp	Digital	
	X	Bus Stops	10/26/2011		Miami Dade County GIS	.shp	Digital	
	X	High attendance boundary	10/26/2011		Miami Dade County GIS	.shp	Digital	
	X	highway	10/26/2011		Miami Dade County GIS	.shp	Digital	
	X	highway_anno	10/26/2011		Miami Dade County GIS	.shp	Digital	
		Hurricane Bus Stop	10/26/2011		Miami Dade County GIS	.shp	Digital	7/28/2010
		Hurricane Shelter	10/26/2011		Miami Dade County GIS	.shp	Digital	5/18/2011
	X	Major Roads	10/26/2011		Miami Dade County GIS	.shp	Digital	
	X	Major Roads_anno	10/26/2011		Miami Dade County GIS	.shp	Digital	
	X	Metro Mover	10/26/2011		Miami Dade County GIS	.shp	Digital	
	X	Mentro Mover stations	10/26/2011		Miami Dade County GIS	.shp	Digital	
	X	Metrorail	10/26/2011		Miami Dade County GIS	.shp	Digital	
	X	Metrorail stations	10/26/2011		Miami Dade County GIS	.shp	Digital	
	X	Primary Evacuation route	10/26/2011		Miami Dade County GIS	.shp	Digital	
	X	Road impact fee districts	10/26/2011		Miami Dade County GIS	.shp	Digital	
		Street Maintenance	10/26/2011		Miami Dade County GIS	.shp	Digital	
	X	Traffic Analysis Zones 2000	10/26/2011		Miami Dade County GIS	.shp	Digital	
		Tri Rail	10/26/2011		Miami Dade County GIS	.shp	Digital	
	X	WideCurbLane	10/26/2011	shows wide curb lanes	Miami Dade County GIS	.shp	Digital	6/7/2011
	X	Paved Path	10/26/2011	Identify existing bicycle ppaved paths	Miami Dade County GIS	.shp	Digital	6/7/2011
	X	Paved Shoulder	10/26/2011	shows paved shoulders	Miami Dade County GIS	.shp	Digital	6/7/2011
	X	Bike Lane	10/26/2011	Identify existing bike lanes	Miami Dade County GIS	.shp	Digital	6/7/2011
	X	Port_Poly	10/26/2011	Boundaries for Air and Sea ports	Miami Dade County GIS	.shp	Digital	3/1/2007
Municipal								
		Countywide Closest Fire Station Area	10/26/2011		Miami Dade County GIS	.shp	Digital	
		Township	10/26/2011		Miami Dade County GIS	.shp	Digital	
		USGSQUAD	10/26/2011		Miami Dade County GIS	.shp	Digital	
		Community Council	10/26/2011		Miami Dade County GIS	.shp	Digital	
		Community Council Sub Area	10/26/2011		Miami Dade County GIS	.shp	Digital	
		County Outline	10/26/2011		Miami Dade County GIS	.shp	Digital	
		Low/Moderate Block Group 2000	10/26/2011		Miami Dade County GIS	.shp	Digital	
		Municipal Coastal_poly	10/26/2011		Miami Dade County GIS	.shp	Digital	
		Municipal Coastal_line	10/26/2011		Miami Dade County GIS	.shp	Digital	
		Fire Distrct Station Territory	10/26/2011		Miami Dade County GIS	.shp	Digital	
		Firestation	10/26/2011		Miami Dade County GIS	.shp	Digital	
		Fire Station Response Service Area	10/26/2011		Miami Dade County GIS	.shp	Digital	
		Police station	10/26/2011		Miami Dade County GIS	.shp	Digital	
		Police District	10/26/2011		Miami Dade County GIS	.shp	Digital	
		Municipal police station	10/26/2011		Miami Dade County GIS	.shp	Digital	
		Miami Dade Lease Property	10/26/2011	county LEASED facilities(reference website for list of facilities)	Miami Dade County GIS	.shp	Digital	
		Miami Dade Own Property	10/26/2011	county OWNED facilities(reference website for list of facilities)	Miami Dade County GIS	.shp	Digital	
		City of Miami GIS commission districts	11/11/2011	Reference maps	City of Miami	.pdf	Digital	
	X	City of Miami GIS existing land use	11/11/2011	Reference maps	City of Miami	.pdf	Digital	
		City of Miami GIS flood plains	11/11/2011	Reference maps	City of Miami	.pdf	Digital	
	X	City of Miami GIS future land use	11/11/2011	Reference maps	City of Miami	.pdf	Digital	
	X	City of Miami GIS primary zoning	11/11/2011	Reference maps	City of Miami	.pdf	Digital	
		Downtown Miami Demographics Business Journal	11/23/2011	Reference maps	City of Miami	.pdf	Digital	
	X	LRTP2035 data maps 30year comparison draft	12/19/2011	Reference maps	City of Miami	.pdf	Digital	
	X	LRTP2035 data map 2005 draft	12/19/2011	Reference maps	City of Miami	.pdf	Digital	
	X	LRTP2035 data maps 2035 draft	12/19/2011	Reference maps	City of Miami	.pdf	Digital	
Utilities								
	X	Garbage pick up routes	10/26/2011		Miami Dade County GIS	.shp	Digital	
		sewer extension	10/26/2011		Miami Dade County GIS	.shp	Digital	
		water service area	10/26/2011	water or sewer utility service areas	Miami Dade County GIS	.shp	Digital	10/21/2011
		Dump site	10/26/2011	Solid waste management, 20 sites includes landfills, resource recovery, trash and recycling centers and transer stations	Miami Dade County GIS	.shp	Digital	10/14/2010
		Curbside recycling zones	10/27/2011	zone boundary	Miami Dade County GIS	.shp	Digital	11/20/2008
		solid waste pick route boundaries	10/28/2011	zone boundary	Miami Dade County GIS	.shp	Digital	7/27/2011
Planimetrics								
		Large Buildings	10/26/2011		Miami Dade County GIS	.shp	Digital	
		Small Buildings	10/26/2011		Miami Dade County GIS	.shp	Digital	
Amenities								
		Charter School	10/26/2011		Miami Dade County GIS	.shp	Digital	3/22/2011
		College and universities	10/26/2011		Miami Dade County GIS	.shp	Digital	7/18/2011
		DayCare	10/26/2011		Miami Dade County GIS	.shp	Digital	
		Headstart	10/26/2011		Miami Dade County GIS	.shp	Digital	
		Hospital	10/26/2011		Miami Dade County GIS	.shp	Digital	
		Library	10/26/2011		Miami Dade County GIS	.shp	Digital	
		Post Office	10/26/2011		Miami Dade County GIS	.shp	Digital	
		Private School	10/26/2011		Miami Dade County GIS	.shp	Digital	

LITERATURE RESEARCH REFERENCE PROJECTS STUDIES AND SUMMARY OF FINDINGS

Through 2-22-2012

CITY / PROJECT	STAUS	COMPAREABLE SIZE / PROGRAM	BUS TYPE	TRANSIT TYPE	SHARED USES	OBJECTIVES	SUCESSES	LESSONS
ST. LOUIS, MISSOURI								
St. Louis Gateway Transportation Center	Complete (2008)	20,000 sf facility / passenger service center with rail platform connections	County Bus (MetroBus) and Greyhound	Integrated Terminal:	Airport transfer (MetroLink) and Rental Car Center	Location for easy transfers	Not sure how they lived without it (after it was complete)	Complex site, had many access restrictions
		500 surface parking spaces	12 bus bays total	Light Rail (MetroLink)	Employer & Hotel Shuttles (private), and Ride Share Van accommodations	Need to integrate Amtrak & Greyhound - different but complimentary service routes	Allowed for 'run through' rail service rather than back-in	Adjacency to hotel was great synergy, also association with car rental center
		Pedestrian Plaza (service links)		Amtrak	Bike Racks & Street Furnishings		Relieved downtown traffic more than anticipated	Link to airport(s) being used much more than anticipated
				Future High Speed Rail (Commuter)	Taxi service spaces		Now is the largest bus transfer facility in the region	
St. Louis County - Shaw Park Avenue Transit Center / Garage	Complete (2003)	5,000 sf facility / passenger service center with rail platform connections via ped bridges	County Bus (Clayton County)	Light Rail (MetroLink)	1,200 space garage Police sub-station	Provide best transit interface possible	Improved pedestrian friendly urban environment with little $ investment	Programming of escalators is very difficult when considering maintenance allowances; must be enclosed.
			8 bus bays total		Multi-use garage serves commuters, local employment, and jurors for courthouse nearby	Improve time transfer uniformity	Security confidence increased with Police facility	
					Kiss & Ride		Consolidation relieved congestion in other downtown areas (not anticipated)	
OKLAHOMA CITY, OKLAHOMA								
Oklahoma City Transportation Hub / TOD Master Plan	Complete (2010)	Major Urban Hub site (very similar) - New Transit Center Gateway to the City	County & Regional Bus Systems	Integrated Terminal:	Integrated historic structure - Santa Fe station	Enhance image of public transportation	Linear / Complimentary urban plaza space promotes 'trhough design' concept	Signature design is needed to identify a true 'Gateway'
		50,000+ sf facility / passenger service center with at-grade and raised rail platforms	16 bus bays total	Commuter Street Car	New 'Transit Hall'	Catalyst for economic development	2 sided design - No 'back door' feel	Careful planning of private vehicle traffic and on-street light rail circulation to avoid conflicts/congestion
		Driver service and amenities		Amtrak		Promote Mobility		
		Future 'district garage'		Heavy Rail (Commercial)				
DENTON, TEXAS								
Downtown Denton Transit Center & TOD Master Plan	Complete (2010)	3,000 sf facility / passenger service center with rail platform	County Bus (DCTA)	Passenger Rail (Heavy)	Retail Concessions	TOD Dsitrict-wide master plan	Set-up pattern of in-fill dveelopment for existing arts and entertainment center	Allow for expansion of Transit Retail as ridership grows
		Public Landmark Plaza Space			Outdoor performance venue		On-going private sector development stimulus	
HOUSTON, TEXAS								
METRO Intermodal Terminal Assessment	Complete (2007)	Major Urban Hub site (very similar)	County Bus (METRO - Harris County)	Integrated Terminal:	Bike Storage Facilities & Street Furnishings	Connectivity, Proximity to RAC's	Improved access for all modes and urban traffic	Required mitigation of historic structures
		30,000+ sf facility / passenger service center with rail platform connections		Light Rail (MetroLRT)	Retail Concessions	Greatest Use of vacant and/or underutilized land	Used similar site selection process (7 locations screened)	Impacts to emergency vehicle response times needed to be addressed/mitigated
		Driver service and amenities		Guided Rapid Transit (GRT) North		Consistent LU patterns		
				Future GRT East & Southeast				
GREENVILLE, NORTH CAROLINA								
Intermodal Transportation Center Feasibility Study	Complete (2006)	Major Suburban Hub site	Municipal Bus (GREAT)	Future High Speed Rail (Commuter)	Taxi Service, Public Commuter Parking	Improve transit service quality	Need determination and feasibility of the transit center	Should consider other 'leased space' options, such as office and commuter convenience services
		5,000 - 10,000 sf facility / passenger service center	ECU - East Carolina Student Transit Authority	Built in future platforms space	Van & Shuttle accommodations	Allow for ease of mode transfer		
			County Bus (PATS - Pitt County)		Security and Management offices	Downtown Revitalization		
			Greyhound		Retail concessions, including a Bike Service Center	Improve access to medical and student districts		
			12 bus bays total		Car rental center	Grand Public Space		

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ST. LOUIS GATEWAY TRANSPORTATION CENTER

ST. LOUIS, MISSOURI

The Gateway Transportation Center is the City's state-of-the-art multimodal transportation hub providing a clean, safe, and friendly transportation center with 24-hour operations staff and security year-round.

CLIENT:
City of St. Louis

SERVICES:
Full Architectural / Engineering Services

SCOPE OF WORK:
New Transit Facility & Parking Structure

DESIGN FEES:
$600,000

CONSTRUCTION COST:
$7.4M

COMPLETION DATE:
2008

REFERENCE:

Tom Behan, Chief Engineer
Construction, City of St. Louis, MO
314.589.6608

The St. Louis Gateway Transportation Center is an intermodal hub for local residents and visitors to the city. It provides for inter-city trips involving rail (Amtrak and future high-speed rail to Chicago), bus (Greyhound), and air (airline ticketing and direct connections to Lambert-St. Louis International Airport via MetroLink light rail transit). The center also provides for intra-city trips on MetroLink, MetroBus (via transfer improvements at the civic center station), and by auto (car rental).

As the prime consultant, Jacobs provided project management and had overall responsibility for initial concept planning, environmental studies and documentation, and preliminary and final civil, site, and structural design through its project team of architects, engineers, and financial planning firms. In addition to the Center, the project involved the design of roadways, a highway bridge, cast-in-place and mechanically stabilized earth retaining walls, traffic signalization and synchronization, train platforms, railroad track and turnouts, and related train facilities.

ST. LOUIS COUNTY SHAW PARK AVENUE TRANSIT CENTER / GARAGE

CLAYTON, MISSOURI

The structure forms a gateway into Clayton and is a dynamic facility linking different modes of transportation.

CLIENT:
St. Louis County

SERVICES:
Full Architectural / Engineering Services

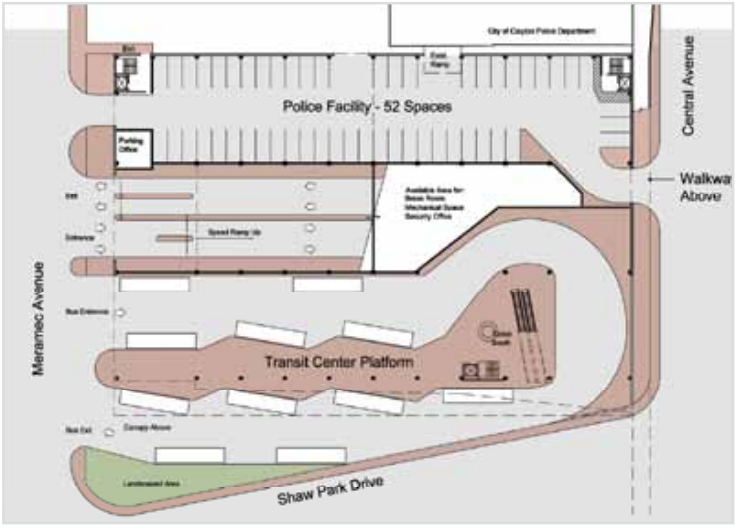
SCOPE OF WORK:
New Ground-Up Facility

DESIGN FEES:
$1.4M

CONSTRUCTION COST:
$15M

COMPLETION DATE:
2003

REFERENCE:
Jerry Wild, County Design Project Manager
St. Louis County
ph 314.651.2567



Jacobs provided A/E services for the 1,200-car parking facility and transit center. The garage is located above the transit center. The Clayton MetroBus Transfer Center has an efficient center island for right-hand passenger drop off and is connected to MetroLink via a pedestrian bridge and corridor. The facility is sited on the southern edge of Clayton's central business district and is highly visible from surrounding residential neighborhoods, adjacent commercial office buildings, and vehicular traffic on nearby main arteries. The aesthetic approach is one that is progressive, innovative, and "cutting edge" but responds using materials common to adjacent buildings. The structure forms a gateway into Clayton and is a dynamic facility linking different modes of transportation. Durability is provided by maintaining a minimum slope of 0.25 inch per foot, drains that are self-cleaning and clog-resistant, and enhanced concrete systems using silica fume. The structure is reinforced using epoxy coated reinforcing and fully encapsulated post tensioning. Security is provided by maximizing lighting, open site lines, glass-backed elevators and glass-enclosed stair towers, and emergency call stations at each egress point on each level.

OKLAHOMA CITY TRANSPORTATION HUB / TOD MASTER PLAN

OKLAHOMA CITY, OKLAHOMA

The vision is to create a plan for a new transportation center and gateway for Oklahoma City and the surrounding region that promotes mobility, enhances the image of public transportation, and creates a catalyst for economic development.

CLIENT:
The Association of Central Oklahoma Governments (ACOG)

SERVICES:
Planning, Architecture, and Funding Planning

SCOPE OF WORK:
Master Planning and Conceptual Design

DESIGN FEES:
$300,000

CONSTRUCTION COST:
$121M

COMPLETION DATE:
2010

REFERENCE:
Doug Rex, Director of Transportation
ACOG
ph 405.234.2264
drex@acogok.org

The Association of Central Oklahoma Governments (ACOG) is developing a vision, operations and finance plan for a new multimodal transit hub located in downtown Oklahoma City. The project includes site selection, ridership analysis, financial planning and concept design of the transit hub and related transit oriented development. Transit modes serving the project include a streetcar system commuter rail, Amtrak, and commuter rail. Jacobs developed an inclusive design process involving all transportation providers, elected officials, property owners and the public for input and consensus building on site selection criteria, site alternatives, economic development and the context and civic presence of the facility. The architectural concept integrates the existing historic Sante Fe Station with a new transit hall and signature station design creating a new gateway to Oklahoma City.

DOWNTOWN DENTON TRANSIT CENTER & TOD

DENTON, TEXAS

The development of this multimodal transit facility will have a significant impact on Denton residents for many years to come and will serve as a catalyst for redevelopment of the downtown area.

CLIENT:
City of Denton

SERVICES:
Planning, Architecture, and Engineering

SCOPE OF WORK:
Master Planning, Preliminary and Final Design

DESIGN FEES:
$360,000

CONSTRUCTION COST:
$1.8M

COMPLETION DATE:
2010

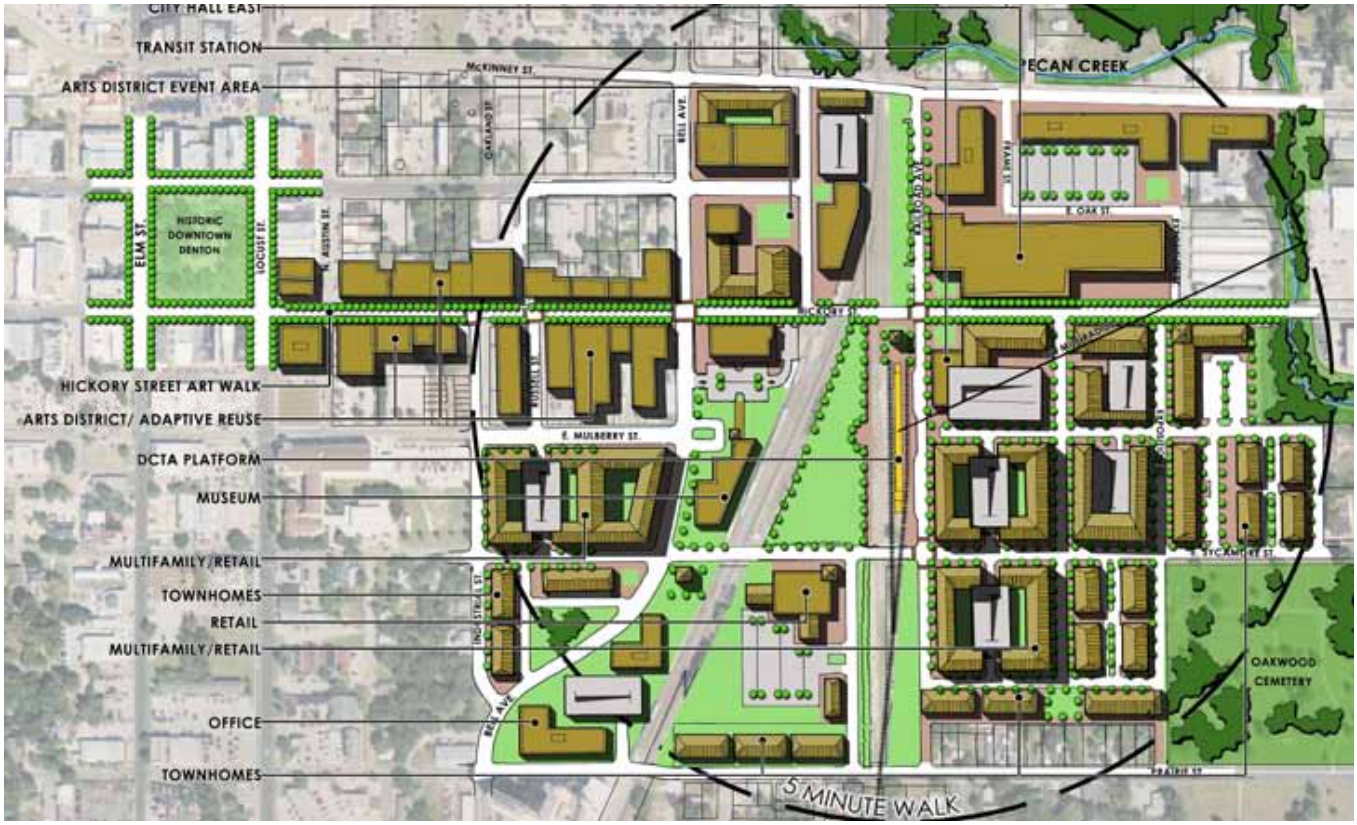
REFERENCE:
Herman Lawson, Facilities Director
ph 940.249.7755

Jacobs developed a transit oriented development (TOD) master plan and provided full design services for the intermodal transit center for downtown Denton. The center was designed in conjunction with the introduction of passenger rail service by Denton County Transportation Authority (DCTA). The TOD master plan took advantage of bus and rail passenger service, a developing arts district and publicly held land to create new infill development around the station area. The development plan included infill of art and entertainment venues, a streetscape plan for Hickory Avenue connecting the station to downtown Denton and mixed-use development on large privately held parcels.

A 45-foot clock tower and landscaped public plaza area are the main focal points for the transit center and are designed to serve as an outdoor performance venue for local musicians and artists, and to compliment the DCTA rail platform.

The transit center includes a bus drop off lane, parking, and a 3,000 square-foot enclosed passenger waiting area with transit related retail. The project was organized around a central plaza and gateway tower feature deriving its form the original Denton Depot that once occupied the site.

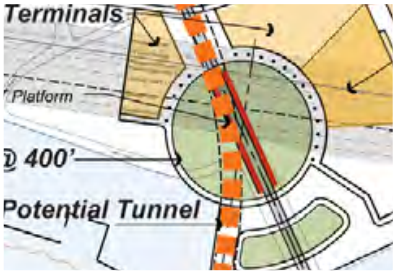

VIA UNT
DENTON
0605


CITY HALL EAST
TRANSIT STATION
ARTS DISTRICT EVENT AREA
HICKORY STREET ART WALK
ARTS DISTRICT/ ADAPTIVE REUSE
DCTA PLATFORM
MUSEUM
MULTIFAMILY/RETAIL
TOWNHOMES
RETAIL
MULTIFAMILY/RETAIL
OFFICE
TOWNHOMES
HISTORIC DOWNTOWN DENTON
ELM ST.
LOCUST ST.
N. AUSTIN ST.
MCKINNEY ST.
OAKLAND ST.
BELL AVE.
E. MULBERRY ST.
PECAN CREEK
E. OAK ST.
OAKWOOD CEMETERY
5 MINUTE WALK

Intermodal Terminal

Environmental Assessment

Final



Prepared for

U.S. Department of Transportation

Federal Transit Administration

The Metropolitan Transit Authority of Harris County

Prepared by

LOPEZGARCIA GROUP

1825 Market Center Boulevard, Suite 150

Dallas, TX 75207

December 2006

METRO Solutions

SECTION 4(f) DETERMINATION
and
FINDING OF NO SIGNIFICANT IMPACT

Intermodal Terminal Project

Houston, Texas

The implementation of the Intermodal Terminal project would require the razing of one engineering resource (Judge Alfred Hernandez Tunnel), eleven buildings that are contributing to an eligible historic district, and twelve street markers that are contributing to an eligible historic district as listed in **Table 4. Historic Resources Subject to Section 4(f) Impacts,** *Determination of Effects Report for the Intermodal Terminal Houston, Texas* which would constitute a direct use under 4(f) of the NRHP eligible structures or contributing structures.

The Federal Transit Administration has consulted with the State Historic Preservation Officer, the Advisory Council on Historic Preservation and the United States Department of the Interior. Based on this consultation and the "Section 4(f) Evaluation", prepared for this project, the Federal Transit Administration has determined that there is no feasible and prudent alternative to the uses of the land described above and that the proposed measures, as detailed in the Memorandum of Agreement (MOA), to minimize harm to the historic resources are hereby found to include all possible planning to minimize harm resulting from such use.

By: _____
Robert C. Patrick
Regional Administrator

Date: 1/10/07

Attachment

FINDING OF NO SIGNIFICANT IMPACT

Project: METRO Intermodal Terminal
Applicant: Metropolitan Transit Authority of Harris County
Project Location: Houston, Texas

Project Description

The Metropolitan Transit Authority of Harris County (METRO) is proposing to construct an Intermodal Terminal (IT) that will act as a major hub for METRO's service area, enabling residents, visitors and workers to easily transfer between the different modes of transit—buses, light rail, and guided rapid transit (GRT). The proposed project involves the development of a multi-modal, multi-use, multi-story transit facility adjacent to the Near Northside neighborhood of downtown Houston. It is centered at the junction of the Union Pacific Railroad (UPRR) and Main Street, approximately 1,600 feet north of IH 10. The general project area will be bounded by the UPRR line Right-of-Way (ROW), Keene Street, Harrington Street and Burnett Streets on the north; Hardy Road on the east; IH 10/US 90 on the south; and White Oak Bayou on the west.

The proposed facility will be designed to house passenger waiting and transfer facilities for the existing and projected volume of local buses that serve the immediate area. It will also provide access to Light Rail Transit (LRT) and Guided Rapid Transit (GRT) platforms; bicycle storage facilities; and passenger and driver amenities, including parking, public restrooms, retail and concessions. Improvements to several surrounding roads will be required to provide safe and convenient access for buses and the public.

An Environmental Assessment (EA), in coordination with the Federal Transit Administration (FTA), was prepared to evaluate the potential impacts and benefits of the facility to the social, physical and natural communities. The IT was evaluated as an independent facility. The implementation of other transit modes to serve this facility, such as the North Corridor LRT/GRT and potential future East End and Southeast Corridor GRT were considered in this analysis. The impacts of this connectivity were included in appropriate sections of this environmental assessment.

Alternatives Considered

In 2003, voters in the METRO service area approved METRO Solutions, which is a comprehensive transit plan that provides a range of technologies and services to address the varying mobility needs of specific corridors and the community at large through 2025. In support of METRO Solutions, in 2005 the Houston Downtown Management District initiated an inter-governmental agency study, referred to as the Houston Intermodal Center/Multimodal Terminal Feasibility Study.

Seven zones within the Houston metropolitan region were initially identified as candidates suitable for the IT. Evaluation criteria for the regional analysis included:

proximity to major activity centers, access to the freeway system, and the ability to accommodate future transportation projects. An area just north of downtown was selected as the preferred location for a full-capacity intermodal terminal. Within this zone, a Location Analysis was conducted to determine the preferred location of the facility based on three criteria: transportation and mobility, economic opportunity and investment, and site characteristics. An area just north of downtown was selected as the preferred location for a full-capacity intermodal terminal. As a result of the Location Analysis, the White Oak and Hardy Yards sub-areas were identified as best suited to meet the purpose and need of the proposed project. The EA evaluated a no-build alternative and a build alternative at this site based on conceptual plans designed by METRO.

Agency Coordination and Public Involvement

Three public meetings were conducted regarding this project. The general public and interested parties were made aware of and invited to participate in the meetings through a project website, newsletters, and newspaper advertisements.

The first meeting occurred on August 18, 2005, and was attended by 32 stakeholders and members of the community. Several displays including case study examples, study goals and objectives, site selection criteria, results of the regional location analysis, and possible sites within the preferred location were provided. Members of the study team were on hand to answer questions. A formal presentation illustrating examples of intermodal terminals, study scope of work, study goals and objectives, results of the regional location analysis, site safety design concepts, and a schedule of future public meetings was conducted.

The second meeting occurred on April 4, 2006. This meeting was attended by 83 citizens. The meeting was conducted in an open house format and consisted of boards and maps of the project area as well as the environmental assessment process. Attendees were encouraged to complete a comment form.

The third meeting was conducted on June 8, 2006 and was attended by 120 members of the community. A presentation of the conceptual design of the facility and the results of the EA were provided. The welcome and introductions were presented in English and Spanish. After the 20-minute presentation, questions were addressed at five stations, manned by project technical staff, with specialized information boards. A court reporter was on-hand to record public comment and comment cards were also available.

METRO also sought and received comments from various public agencies. Agency coordination letters are included in the EA as an appendix.

Determination and Findings

METRO prepared an Environment Assessment in compliance with the National Environmental Policy Act (NEPA), and in accordance with FTA regulations and guidelines, 23 CFR Part 771. The EA described the project's potential for significant impact.

After reviewing the EA and supporting documents, as well as public comments, FTA finds under 23 CFR 771.121 that the proposed project will have no significant impact on the environment. The record provides sufficient evidence and analysis for determining that an Environmental Impact Statement (EIS) is not required.

The EA analysis determined that there will be no significant adverse impacts to land use and economics, parkland, threatened and endangered species, air quality, or traffic and transportation. Therefore, these sections of the EA will not be discussed further in this document.

Property Acquisitions and Displacements

The construction of the proposed IT facility will require the displacement of four residents and eight businesses. In order to mitigate the impacts of these displacements, METRO will adhere to all federal guidelines regarding acquisition and relocation assistance including the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (42USC 4601). For all real property acquired, METRO will compensate the property owner for the fair market value of their property and for damages to any remaining parcel(s). Relocation benefits will be provided for all businesses and residents (owner occupants and tenants) that are displaced by acquisition.

Visual and Aesthetics

Potential impacts to the Near Northside Neighborhood and North Main Street were identified during the EA process. In order to mitigate these potential impacts, coordination with the Near Northside Neighborhood will occur during final design.

Soils and Geology

Construction activities will result in removal of vegetation, exposure of the soil, loss of topsoil productivity in areas not currently paved and short-term increased susceptibility to wind and water erosion. Best management practices will be utilized to minimize the impacts including but not limited to silt fencing, vegetative filter strips, straw bale dikes and diversion ditches.

Natural Communities

There will be some loss of vegetation in the White Oak Bayou, according to the EA analysis. METRO will commit to further assessment and planning for tree preservation and replacement in order to mitigate this vegetation loss.

Water Resources

Construction of the IT project could cause minor sediment run off into surface water. Also, minor increases in automobile related chemicals, modifications to the existing storm sewer system, and minor impacts in shallow ground water quality during construction could occur. METRO will comply with the Texas Pollutant Discharge Elimination System (TPDES) General Permit for Storm Water Discharges from Construction Activities. METRO will also develop and implement a Storm Water

Pollution Prevention Plan. Finally, temporary and permanent storm water BMPs will be utilized before, during, and following construction to avoid or minimize the addition of contaminants to storm water.

Noise and Vibration

No severe noise impacts will occur to adjacent properties. However, moderate impacts for residents on Burnett Street from increased vehicle traffic could occur. No projected vibration impacts were determined. In order to mitigate the noise impacts, possible mitigation techniques that METRO could implement include but are not limited to, noise barriers and sound insulation.

Hazardous Materials

Phase I Environmental Site Assessments (ESAs) of the project area concluded several properties within the project limits are potential sources of contamination. There are two locations of high concern and twenty-two areas of moderate concern in relation to hazardous materials. The areas directly impacted will be determined during final design and mitigation will be determined at each individual property at this time. METRO commits to conducting a Phase II ESA during final design, and, if necessary a Phase III ESA.

Cultural Resources

For projects receiving federal funding, partial funding, permitting, or licensing, the project is subject to regulations defined in Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended. Section 106 of the NHPA requires that the federal agency, or the agency acting on its behalf, take into account the undertaking's effects on historic properties. The responsibilities are outlined in *Protection of Historic Properties*, 36 CFR 800. Historic properties are defined as those buildings, structures, objects, sites and districts that are listed in, or eligible for listing in, the NRHP. The NRHP is an inventory of listed historic resources that is maintained by the Secretary of the Interior.

Historic resources located on land owned or controlled by the State of Texas, or one of its cities, counties, or other political subdivisions, are protected by the Antiquities Code of Texas. Under the Antiquities Code, any historic property located on publicly owned land may be determined eligible as a State Archaeological Landmark (SAL). Conditions for formal landmark designation are defined in Chapter 26 of the Texas Historical Commission's (THC) Rules of Practice and Procedure for the Antiquities Code of Texas.

Federal transportation projects must also consider a project's effects on a historic property, park, recreation area, or wildlife management area that is located within publicly owned land. These resources are known as Section 4(f) properties. Regulations for implementing the Section 4(f) process are defined in Section 4(f) of the Department of Transportation (DOT) Act of 1966 (23 CFR 771.135 Section 4(f)).

The THC concurred that 24 historic age properties will sustain adverse impacts as a result of the proposed project. No known archaeological resources are currently known to exist

within the project area. A Memorandum of Agreement (MOA) for historic age and any discovered archeological resources was executed by the Federal Transit Administration, METRO, and the Texas State Historic Preservation Officer on December 12, 2006. The MOA is included in Appendix E of the EA.

Section 4(f) Evaluation

As noted the implementation of the Intermodal Terminal project would impact several eligible historic resources as described in the Determination of Effects Report for the Intermodal Terminal in Houston, Texas. The report and FTA's finding are included in Appendix F of the EA.

Safety and Security

Additional transit and vehicle traffic in the area could result in additional safety concerns related to safety of pedestrian traffic and pedestrian/vehicle interfaces. Also, there may be impact to emergency vehicle response times. Coordination will occur with fire, police, and emergency services to minimize impact to response times. Crossing approaches will be signalized, and METRO will incorporate Crime Prevention Through Environmental Design (CPTED) practices during final design. All construction impacts will be limited in duration and temporary. Best management practices will be implemented and carried out to minimize short term impacts.

Environmental Justice

Title VI of the Civil Rights Act of 1964 and Federal Executive Order 12898 of 1994 "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," prohibit discriminatory practices and mandate the equal distribution of benefits and burdens in programs receiving federal funds. The project study area is comprised of portions of five census block groups (1000, 2101, 2102, 2103, and 5101with a total population of 4,441 persons, according to the 2000 Census. The majority of the study area population is reported to be 67.06 percent Hispanic origin with a 42.52 percent a racial minority. More than 26% of the study area population is considered to be below the poverty threshold.

The implementation of the IT would potentially produce adverse short-term construction impacts and long-term impacts on the minority populations in the Near Northside neighborhood, particularly those residents near Burnett Street. The most adverse impact that was identified in the EJ analysis will occur along Main Street where four residences and one business would be displaced north of the Judge Alfred Hernandez Tunnel. The adverse impacts identified would be mitigated using measures described in this EA. In view of this and the considerable project benefits and local support for implementing the IT, the adverse impacts will not be disproportionate to the positive benefits that the project will offer to low income, Hispanic, and minority populations within the study area. Public input related to the project's benefits and impacts has been solicited throughout the study attracting many low income, Hispanic and minority community members at a number of public meetings.

Permits

METRO will be required to obtain all necessary permits and approvals prior to the construction of the project.

NATIONAL ENVIRONMENTAL POLICY ACT FINDING

In accordance with 23 CFR Part 771, sections 119 and 121, the finding of the Federal Transit Administration is that there are no significant impacts on the environment associated with the development and operation of the proposed project and that any potential impacts shall be mitigated. This Finding of No Significant Impact is based on the Final EA for the Intermodal Terminal Houston, Texas (December 2006).

Robert C. Patrick,
Regional Administrator
Federal Transit Administration

1/10/07
Date

Environmental Assessment
for the
Intermodal Terminal
Houston, Texas

Prepared for

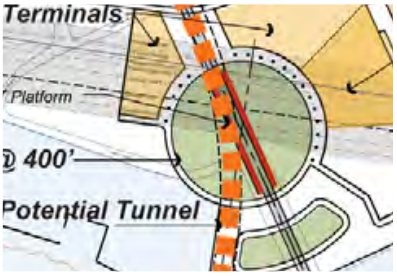
The Metropolitan Transit Authority of Harris County

Prepared by

LOPEZGARCIA GROUP
1825 Market Center Blvd., Suite 150
Dallas, Texas 75207

December 2006

Executive Summary



EXECUTIVE SUMMARY

The subject of this Environmental Assessment (EA) is the design and construction of an Intermodal Terminal (IT) project located north of downtown Houston. The National Environmental Policy Act (NEPA) of 1969 requires that federal agencies prepare an EA for any major federal action to determine if the project would have a significant impact on the environment. An EA was prepared by the Metropolitan Transit Authority of Harris County (METRO) under its responsibilities as the local lead agency to implement the IT. This EA documents all comments received during public meetings and reflects key decisions made by the METRO Board of Directors. This document has been submitted in coordination with the Federal Transit Administration (FTA), the lead federal agency.

The purpose of the EA is to inform the affected agencies and the public of potential environmental, social and economic impacts associated with the proposed IT and the No-Build Alternative. The No-Build Alternative represents the base condition for identifying impacts associated with the proposed project. The EA serves as the primary document to facilitate review of the proposed project by federal, state and local agencies and the general public. The EA documents the purpose and need for the project and describes the alternatives considered. It addresses in detail the anticipated transportation and environmental impacts of the project and identifies any appropriate mitigation measures that may be required to minimize such impacts.

A series of public meetings was conducted within the study area for interested parties including private citizens, community groups, the business community, elected officials and public agencies. The EA reflects the decisions made by the METRO Board of Directors and also includes responses to comments received during the public meetings. It is anticipated that the completion of the Final EA will result in a Finding of No Significant Impact (FONSI) by the FTA, permitting the project to be advanced to final design and construction.

This Executive Summary highlights the most noteworthy findings of the Final EA relative to the document's major headings:

- Purpose and Need,
- Alternatives Considered,
- Affected Environment, and
- Environmental Consequences.

PURPOSE AND NEED

METRO's multi-modal transit system is early in its ultimate development. The success of the Main Street Light Rail Transit (LRT) and extensive High Occupancy Vehicle system, demonstrates the region's commitment to supporting

further transportation enhancements. As this multi-modal system further develops, the IT would serve the following purposes:

- increase regional connectivity/transit effectiveness,
- offer an alternative to single-occupancy vehicle (SOV) travel, and
- improve access and increase economic development opportunities.

As the Houston region continues to expand, the impact on its associated infrastructure will be stretched. For transportation, surface streets will become further congested; travel time will be increased for drivers and transit riders; and air quality will further deteriorate. METRO Solutions is one component of the region's efforts to address these transportation issues. The specific transit investment of the proposed IT in the north downtown area would meet the following needs:

- Provide increased connections of major employment, entertainment, commercial and educational activity centers throughout the region;
- Improve air quality by reducing traffic congestion near the downtown area;
- Improve transit service through reduced travel time and increased reliability;
- Contribute to improvements in unacceptable regional air quality; and
- Improve regional mobility through effective and efficient transit.

ALTERNATIVES CONSIDERED

In 2005, the Houston Downtown Management District initiated an inter-governmental agency analysis of the transit needs in the METRO service area through the use of a feasibility study referred to as the Houston Intermodal Center/Multimodal Terminal Feasibility Study. This study was conducted in support of METRO Solutions, the region's comprehensive long range transit plan and was financed with contributions from METRO, the Texas Department of Transportation (TxDOT), the City of Houston, the Main Street Coalition and Midtown Management District. This effort was guided by a 32-member steering committee composed of neighborhood representatives, University of Houston – Downtown staff, City of Houston and Harris County officials and representatives from private transportation entities. This analysis sought to solicit input from stakeholders regarding how they might use the facility, determine the best location for the facility and build a cohesive group of IT stakeholders who would support funding applications for the facility.

A Regional Location Analysis was undertaken to identify areas within the Houston region that would be suitable to locate the proposed IT. The analysis was based on information developed from multiple transportation providers and the project's steering committee. Seven general areas were identified within the region as candidates for accommodating the proposed facility (**Figure 2-1**). The Regional Location Analysis identified a Zone A (North Downtown) as the highest ranking alternative site for the following reasons:

- connectivity to the greatest number of existing transportation infrastructure elements in the region,

- connectivity to the greatest number of proposed transportation infrastructure elements in the region,
- best overall proximity to major regional activity centers,
- greatest amount of vacant and/or underutilized land in close proximity to existing and proposed transportation infrastructure and
- most consistent land use patterns, which are compatible with the development of an IT.

The feasibility study further refined the possible locations within Zone A. To further evaluate seven sub-areas (**Figure 2-2**), an evaluation matrix for three primary goals (transportation and mobility, economic opportunity and investment and site characteristics), was developed and is provided below (**Table ES-1**).

As a result of the Location Analysis, the White Oak and Hardy Yards sub-areas were identified by the Feasibility Study as best suited to meet the purpose and need of the proposed project.

Table ES-1. Sub-Area Evaluation Matrix

Criteria		Site						
		White Oak	Hardy Yards	Wilson Property	IH 10/US 59	East Bayou	Bus Barn	Post Office
Transportation and Mobility								
1.1	Operation and Maintenance Cost	◓	●	●	◓	◓	●	◓
1.2	Intermodal Connectivity	●	●	●	◓	◓	◓	◓
1.3	Accessibility	●	●	◓	○	○	○	◓
1.4	Travel Time Savings	◓	◓	◓	◓	◓	◓	◓
Economic Opportunity and Investment								
2.1	Consistency with Land Use Patterns	●	●	◓	●	●	○	●
2.2	Proximity to Existing and Planned Development	○	◓	●	○	○	◓	●
2.3	Proximity to Developed and Re-developable Land	◓	●	●	●	●	●	○
2.4	Resident/Neighborhood Sentiment	◓	◓	◓	◓	◓	◓	◓
2.5	Business Community Sentiment	◓	●	◓	◓	◓	◓	◓
2.6	Environmental Impacts	◓	◓	◓	◓	○	◓	◓
Site Characteristics								
3.1	Positive Community Impact	●	●	◓	◓	◓	◓	◓
3.2	Avoid Business and Resident Relocations	●	●	○	○	●	○	○
3.3	Personal Security	●	●	○	○	○	○	●
3.4	Environmental Clearance/Remediation	Environmental review to be conducted following selection of preferred sites at METRO.						
3.5	Visibility	●	◓	●	●	●	●	●
3.6	Capital Cost	◓	●	○	◓	◓	●	○
3.7	Ease of Site Acquisition	◓	●	○	◓	●	●	●
3.8	Ability to Phase Construction	●	●	●	◓	●	●	●
Key: ● Very Good ◓ Good ○ Poor								

Source: Houston Intermodal Center/Multimodal Terminal Feasibility Study (2005).

AFFECTED ENVIRONMENT

Professionals qualified in their fields have identified the existing natural and built environmental conditions in the Study Area. This existing conditions information formed the basis of impact assessment investigations for each category. Impact assessment categories that were identified in the Study Area include:

- Land Use,
- Social and Economic Conditions,
- Visual and Aesthetic Resources,
- Parkland Resources,
- Soils and Geology,
- Ecosystems,
- Water Resources,
- Noise and Vibration Levels,
- Air Quality Conditions,
- Hazardous and Regulated Material Locations,
- Cultural Resources, and
- Traffic and Transportation Conditions.

Detailed information regarding the affected environment in the project Study Area is provided in Chapter 3 of the EA.

ENVIRONMENTAL IMPACTS

This EA identifies the potential environmental consequences of the No-Build and Build Alternatives. The majority of the proposed undertaking is located within ¼-mile of the junction of the Union Pacific Railroad (UPRR) and Main Street. Property acquisitions are required and associated land use impacts are identified. Chapter 4 of the EA details these and all other associated environmental consequences associated with the No-Build and Build Alternatives. No significant impacts are anticipated with the No-Build Alternative. **Table ES-2** summarizes the potential impacts of the selected alternative and related mitigation measures.

Table ES-2. Summary of Environmental Impacts

Subject Area	Impacts	Mitigation Approach
Land Use and Economics	No adverse impacts anticipated	N/A
Property Acquisitions and Displacements	4 displaced residents 8 displaced businesses	-Acquisition and relocation assistance following federal policies and procedures.
Visual and Aesthetics	-Potential Impacts in Near Northside Neighborhood -Potential Impacts to North Main Street	-Coordination with Near Northside Neighborhood during final design. -Configured facilities and massing in response to

		neighborhood context.
Parkland	No significant Impacts	N/A
Soils and Geology	-Project construction activities would include removal of vegetation, exposure of the soil, loss of topsoil productivity in areas not currently paved and short-term increased susceptibility to wind and water erosion.	-Best management practices (BMPs) would be utilized, such as silt fencing, vegetative filter strips, straw bale dikes and diversion ditches.
Natural Communities	-Loss of vegetation in the White Oak Bayou	-Commitment to further assessment and planning for tree preservation and replacement
Threatened and Endangered species	No significant Impacts	N/A
Water Resources	-Construction could cause minor sediment run off into surface water. -Minor increase in automobile related chemicals -Modifications to the existing storm sewer systems -Minor impacts in shallow groundwater quality during construction	-Compliance with the Texas Pollutant Discharge Elimination System (TPDES) General Permit for Storm Water Discharges from Construction Activities -Develop and implement a Storm Water Pollution Prevention Plan -Temporary and permanent storm water control measures (BMPs) would be utilized before, during and following construction to avoid or minimize the addition of contaminants to storm water
Noise and Vibration	-No severe noise impacts to adjacent properties. -Moderate impacts for residents on Burnett Street from increased vehicle traffic -No projected vibration impacts	-Possible mitigation measures such as noise barriers and sound insulation
Air Quality	-No adverse impacts	N/A
Hazardous Materials	-2 locations of high	-Areas impacted to be

	concern -22 locations of moderate concern	determined during final design -Mitigation needs dependent on impacts at each individual property
Cultural Resources	Adverse impacts to 24 properties expected	As stipulated in MOA between THC, FTA, and METRO
Traffic and Transportation	-No adverse impacts	N/A
Safety and Security	-Pedestrian/vehicle interface -Pedestrian safety	-Coordination with fire, police, emergency services -Crossing approaches to be signed -Incorporate Crime Prevention Through Environmental Design
Construction Impacts	-Temporary and limited duration impacts	-Institute BMP
Environmental Justice	-Potentially adverse impacts to Near Northside neighborhood	-Coordinate and mitigate with community

Greenville
Intermodal Transportation Center
Feasibility Study

Final Report


Prepared for the City of Greenville
by Martin/Alexiou/Bryson, PLLC

March 2006

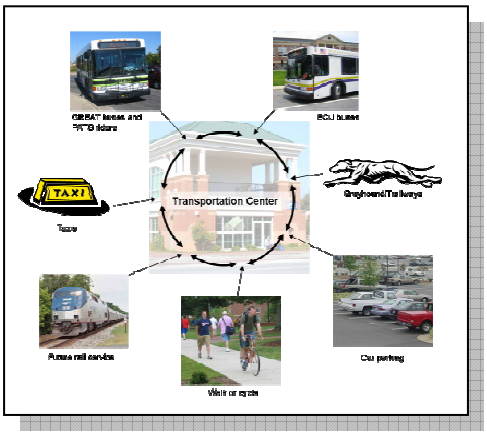
MARTIN
ALEXIOU
BRYSON

4000 WestChase Boulevard, Suite 530 / Raleigh, NC 27607 / **p:** 919.829.0328 **f:** 919.829.0329 / **w:** www.mabtrans.com

Greenville Intermodal Transportation Center Feasibility Study

Executive Summary

The Greenville Intermodal Transportation Center Feasibility Study was established to determine the needs for, and feasibility of, a transportation center in Greenville. This would be a central point for transportation within the city, offering easy access to services and making connections under one roof. The center could potentially serve buses, taxis, limousines, package express, private car parking, bicycles and pedestrians, as well as possible future rail service. Such a center was a recommendation from the 2003 Regional Transit Feasibility Study.



A review of existing transportation centers confirmed that Greenville's reasons for considering a center are in line with those of many other cities which have built them – particularly the desire to improve service quality for transit riders, to make it easier to transfer between services, and to contribute to downtown revitalization. These other centers have generally been successful, and specific lessons for Greenville are drawn out in the report.

Transportation operators were interviewed to establish whether they would be interested in using a center in Greenville, and their requirements for its specification. Citizens' and civic stakeholders' views and aspirations were also sought. There was strong support for a transportation center, particularly in view of the city's continuing growth, and there was a broad consensus that it should be in downtown or the tobacco district.

Guidelines were therefore drawn up for what services would use the center, and what facilities the center would contain. The study also took into account the possibility of passenger rail service returning to Greenville in the future. Ideally the station would be located at the transportation center, although this may not be possible.

Which Transportation Services Would Use the Center?

Greenville Area Transit (GREAT) would definitely use the center as its downtown hub for transfers. GREAT wants to give its riders a higher level of amenities – including a comfortable waiting area and restrooms – and to provide better facilities for drivers. The center would also become the base for GREAT's management.

Trailways (part of the Greyhound system) would definitely use the center as its Greenville depot, instead of the existing depot which is no longer attractive to riders. Trailways has been involved in transportation centers in other cities, and has found that they work well.

ECU Student Transit Authority (ECUSTA) would use the center, so that staff, students and visitors would be able to connect to campus from other services. It would be especially useful for people commuting to campus who are not served by ECUSTA, and for students using Trailways to travel between ECU and home.

Pitt Area Transit System (PATS), which provides transit in Pitt County, would be able to drop people at the center or collect them from there – for example, to connect with a GREAT or Trailways bus. This would not affect people who are going to other destinations as clients of human service agencies – their trips would still be direct. In the future, if enhanced Rural General Public (RGP) service is provided, the center could also become a hub for that service. Other van or shuttle services could also use the center (such as vans from other Counties, or a potential shuttle to the airport).

A taxi stand would also be provided, with space for one or more taxi company offices. Ideally a car rental firm would also be attracted to the center. Finally, if the chosen site is on a railroad, space would be reserved for it to become a station as well in future.

What Would the Center Contain?

The main building would include a waiting area for riders, with room to expand as demand grows; a ticket/information desk; a Trailways ticket/baggage desk, baggage room and office; restrooms; vending machines; a security office (which could be used by security staff or as a police substation); space for a taxi office, shuttle/limousine office and a car rental office; management offices for GREAT, and a break room and restroom for bus drivers.

The center would have two bays for Trailways buses and at least seven (ideally twelve) bays for GREAT and ECU buses. The extra bays would allow for future service expansion, and could be added later. There would also be parking spaces, and a drop-off zone, a taxi stand, and bike racks and lockers.

There would also be space in the building for other facilities aimed at riders. The amount would depend on the site layout, budget and likelihood of attracting tenants. For planning purposes, space has been assumed for a café, a news-stand, a 'bike station' (where people could leave their bikes to be serviced) and another useful shop, such as a florist or barber.

Ideally, there would be space to be leased out for other activities, such as offices or shops. Some existing transportation centers include a bank branch or a child-care center. Alternatively, there could be community facilities such as a meeting room. Again, this would depend on the location, site layout, budget and likelihood of attracting tenants, so this space has not been specified in detail at this stage. The goal is to have as much activity as possible in and around the center, to enhance security and the viability of any retail services.

There is a consensus among stakeholders that the center should be a high-quality public building. Architecturally, it should reflect the city's aspirations and design standards. The Sheppard Memorial Library Extension and the new City Hall are examples of this level of quality. Inside, it should be comfortable and attractive. Security and upkeep will also be important.

Overall, the functions listed above could require an ultimate building size of up to about 14,000 square feet, or 16,000 square feet if space is provided for future rail service. This includes allowances for ridership growth and for the other facilities aimed at riders, but these need not all be built initially. Any space to be leased out for other activities would be in addition to this (perhaps on a second level).

The entire site might need to be between two and five acres, depending on whether provision is made for rail and whether parking is satisfied on-site or in other parking facilities nearby. The precise layout of the center will depend on the size and shape of the chosen site, and on whether space is reserved for a future rail station.

How the Center's Feasibility was Assessed

The study evaluated the feasibility of a center for Greenville, based on four important questions:

- Would the center support the city and regional travel needs?
- Would the center be useful to stakeholders?
- Would the center have public support?
- Would the center be cost-effective?

Would the Center Support the City and Regional Travel Needs?

A Transportation Center located in or near downtown would fit in well with Greenville's travel needs, both now and in the future. The main reasons are:

- Downtown is the hub of not only the city, but the whole region, and there are plans to revitalize and strengthen the downtown area.
- Having the ECU campus nearby makes downtown particularly important.
- The center would improve connections with long-distance services.
- The center would improve access to ECU, which is a major destination for citizens and visitors.
- Many GREAT riders would pass through downtown anyway – for example, traveling from one side of the Tar River to another.
- The center would directly benefit the estimated 300 daily GREAT transfers downtown, plus other riders who may need to use the facilities before continuing their trip, and also 40 Trailways riders to/from Greenville each day.
- The center could be a springboard for other transit improvements.
- Finally, the center could improve the viability of any future passenger rail proposal.

However, the center would not solve all of the transportation needs:

- It would not directly serve the medical district, which is an important destination. As GREAT expands in the future, it is intended to provide suburban routes that run directly to/from the medical district without going through downtown. A future possibility is to have an express shuttle between the center and the Medical District.

- The center does not specifically address the need for more bus routes, running more often. However, it could provide greater impetus for these improvements.

Overall, the study concluded that the center does fit with people's travel needs, although it will be most effective as part of a wider package of improvements.

Would the Center be Useful to Stakeholders?

The transportation operators were positive about the center. GREAT and Trailways would definitely make it their downtown base. ECUSTA and PATS would also connect to the center, and taxi firms were interested in using the facility.

The other civic stakeholders were also generally positive. Representatives of Pitt County, the Public Transportation and Parking Commission, the Redevelopment Commission, Pitt County Memorial Hospital, and ECU staff and students all thought the center was a good idea. Their reasons included the benefits to riders, the potential boost to revitalization efforts, and the need to provide Greenville's community with better options for getting around. Many stakeholders felt that it was the sort of facility that a city like Greenville needed, particularly as it grows and needs to tackle congestion and mobility issues.

Some of the County's social service agencies said that their main problem was the limited public transportation available to the general public outside the City, and that the center would not directly address this issue. But other stakeholders suggested that the center would give impetus to improving county-wide service levels, and that when this happens the center will become a useful hub for the whole County as well as for the City. In addition, the center would facilitate transfers for people traveling to medical and other services.

Would the Center have Public Support?

Two public meetings were held as part of this study. At the first meeting, citizens were told about the study, were shown some examples of centers in other cities, and were asked for feedback on whether a center would be useful. The second, toward the end of the process, reported back to citizens and sought further feedback on the emerging concept.

Most citizens supported the idea of a transportation center. They felt it would help people get around Greenville, particularly as the city grows. Some citizens supported the center on condition that it did not divert funds from other improvements to transportation services. Very few people at the meetings were against the idea.

Would the Center be Cost-Effective and Fundable?

Many factors will affect the construction cost – whether the City needs to buy land, the cost of site clearance and clean-up, and the amount of space that is built for other functions as part of the center. These will not be known until a specific site is chosen and the design is finalized. The total cost is estimated to be between $6 million and $8 million, depending on these factors. This is broadly in line with similar centers elsewhere. The estimate includes the space for future transit growth and ancillary functions; these could be omitted to reduce the cost, but land should be reserved to add them later as necessary. The cost of any space to be leased out for other activities would be in addition to this.

There would also be an ongoing operational cost. This is mostly staffing – a building manager, ticket/information staff and security staff. There would also be maintenance and utility costs. Again, it depends on the final design, but it could be up to $450,000 per year. This is relatively expensive, but it reflects stakeholders' preference for a well-kept, well-staffed center.

Construction of a transportation center is typically funded 80% from Federal grants, 10% from State funds and 10% locally. The City has already been allocated enough Federal funds to cover design work, and there is a good likelihood of receiving Federal funds for construction as well. The State works to secure Federal funds and would be able to provide its own share. The local share could come from city reserves, from the bonds recently authorized by voters, or by contributing land or other resources instead of cash.

Each service provider could pay a share of the ongoing operational cost, although this would need to be negotiated. Leasing income (from a cafe or other facilities) could cover some of the costs, although experience suggests this should not be relied upon to make the financial case.

Transportation centers are not usually expected to be 'profitable' or even to break even. The benefits are mostly non-financial – to riders, government, citizens and other stakeholders – as listed in Table ES-2, on the next page. The study concluded that the benefits do justify the costs.

Conclusion: the Center is Feasible

The study concluded that a transportation center is indeed feasible for Greenville, and recommends that the City moves forward with the idea. Table ES-1 summarizes the reasons for building the center.

Table ES-1: Summary of Reasons to Build a Transportation Center

Why build a transportation center?
• GREAT, Trailways and ECUSTA would all use the center and all see benefits for their riders • Trailways needs a new depot anyway • Existing GREAT and Trailways riders need better transfer conditions and will benefit directly • Improves access to/from ECU • Improves trips to downtown for transit riders • Could improve access to/from the medical district, in conjunction with shuttle and Tenth Street Connector • Could provide more options for PATS riders, while potentially reducing PATS costs • Improves image and visibility of transit • Springboard for service enhancements as city and region grow • Potential options to locate alongside rail line • Potential to assist downtown revitalization • Represents forward-planning to meet the challenges of City growth • Consistent with City and County planning policies and objectives
Why not?
• Opportunity cost of site • Opportunity cost of money

Stakeholder	GREAT	Trailways	PATS	Hospital	ECU Community	Taxi operators	NCDOT Rail	Community and Government	Riders
Pros ✓	• Improved passenger service and amenities – especially as a comfortable transfer facility • Convenient Information / ticketing point for public • Much-needed amenities for drivers • Easy transfers between modes for riders • Operational synergies (e.g., shared ticket sales) • Opportunity to work more closely with ECU • Springboard for increasing service levels & ridership	• Improved passenger environment • Potential increase in ridership • Avoids major maintenance costs on existing building • Supports policy of downtown locations • Supports preference for leasing space in intermodal centers	• Good place to drop/collect riders downtown • Easy, safe transfers to/from other modes for riders • Potential for safe layover area • Potential for van-to-van/bus transfers, for efficiency • Safe transfers to/from GREAT for any future RGP service • Springboard for any future fixed-routes	• Improved service for patients and staff who use transit • Springboard for possible future Hospital-Downtown shuttle	• Improved student access to Trailways (for start and end of semester, weekend trips) • Improved access to campus for students on GREAT routes – particularly remote apartments • Potential synergies with ECU downtown facilities • Potential synergies with Main Campus – Medical School axis	• Improved visibility and image of taxis • Stand is convenient for visitors arriving • Office space if required • Stand serves as layover area	• Improves Trailways connection to Amtrak (even without rail at the center) • Springboard for future Greenville rail service (if location supports rail)	• Improved visibility and image of transit • Improved quality of service • Springboard for improving transit service levels • Springboard for managing city growth more sustainably • Assisting downtown revitalization • Potential for synergies with other developments • Improves case for rail service (if location supports rail)	• Directly benefits ~300 existing GREAT trips daily • Directly benefits ~40 Trailways riders daily • Improved links to long-distance travel • High-quality, safe place to wait/transfer • Information point • Convenience of kiosks while waiting or on arrival
Cons !	• Initial cost • Operating cost		• Potential share of operating costs	• Potential share of operating costs if shuttle is hospital-run	• Potential operating fee for bus slip(s) used by ECUSTA	• Cost of office space • Potential fee for using stand	• Location choice at this stage may restrict rail options (but options are limited anyway)	• Initial cost • Operating cost	
Comments and Caveats ✗	• Must accommodate growth in system and ridership • Center must be seen as part of overall step-change in service	• Operational cost will depend on negotiations, but will likely be similar to existing cost	• Some agency customers see severe RGP needs as critical issue • Potential depends on agencies' and PATS' future service strategy		• Increasing student use of GREAT also involves other issues	• Possible loss of business (due to easier transit) is balanced by improved visibility and image of taxis	• Needs care not to compromise city transit function to serve rail	• Downtown revitalization effects must be seen as part of wider efforts	• Some see improving service levels as a higher priority

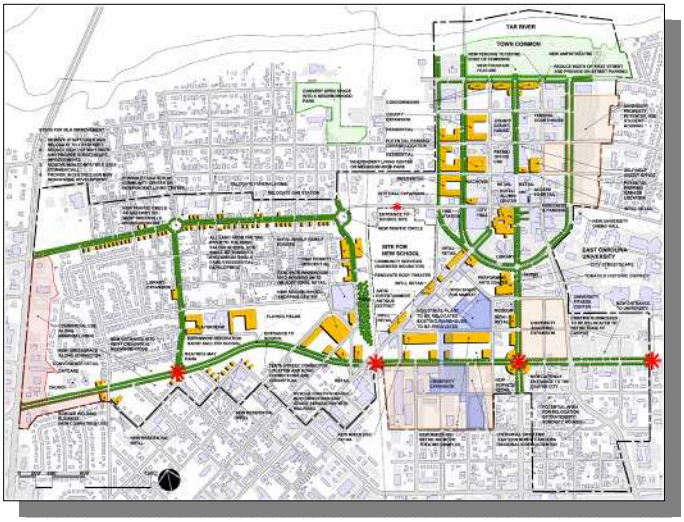
Table ES-2: Summary of Costs and Benefits for Stakeholders and the Community

Site Selection Criteria

Because the next step would be to select a site, the study also developed some criteria to be used in a future site selection study. These are listed in Table ES-3, on the next page.

It will probably not be possible to find a site that is ideal on each of the criteria. Stakeholders will need to decide which of the possible sites will be the best overall. In particular, the best site for bus riders (which will likely mean being as close as possible to downtown and ECU) may not be alongside a railroad line. Allowing for a future rail station on site is less important than finding the best site for existing bus services and riders. This is because the bus services are definite and will be the center's core role. Any future train service would probably only run once or twice a day. If necessary, a dedicated shuttle could run between the Center and the station to connect with train arrivals and departures.

The ideal site would be close to Downtown, ECU and the Tobacco District. It would also be good to have a site on a railroad line, to allow for future passenger trains, but this may conflict with the other requirements.



The ideal site would support the City's revitalization efforts, as seen in this diagram from the Center City - West Greenville Revitalization Plan.

Another issue is how much the center could do to help revitalize downtown and the tobacco district. The Center alone, on an isolated site, would not be a strong magnet for revitalization. Instead, the Center is seen as part of a range of projects that will collectively lead the revitalization efforts. The ideal site would therefore be close to existing and near-term centers of activity (for example, the proposed ECU alumni center), helping to gradually extend the areas of vitality. Other aspects include the potential for adaptive re-use of historic buildings and for streetscape improvements.

Table ES-3: Summary of Site Selection Criteria

Layout and site impacts • Big enough to accommodate the required functions, including an allowance for future expansion • Will have a safe, convenient site layout • Buses can get to the site easily • Acceptable impacts on traffic flow and safety in the surrounding streets (including for pedestrians and cyclists)
Impacts on transportation operators and users • Convenient for GREAT, Trailways and ECUSTA routes • Convenient for riders, taxi users, etc. • Convenient access on foot and by bicycle • Allows for future rail service (see text) • Assists travel to/from the Medical District • People will feel safe there • Improves the overall visibility and image of public transportation
Location and city planning • Close to downtown • Close to ECU main campus and future ECU expansion • Helps downtown / tobacco district revitalization efforts • Compatible with neighboring land uses • Maintains or improves the streetscape and urban design
Finance and implementation • Low purchase, clearance and remediation costs • Acceptable impact on environmental, community or historical resources • Potential for revenue from leased space, or for joint development • No 'roadblock' issues that would hold up the project

The study was carried out by transportation planners from Martin/Alexiou/Bryson, PLLC, on behalf of the City of Greenville and other local partners.

March, 2006

A1.5 Case Studies: Introduction

A literature review identified data on around 60 intermodal centers or transit centers in use or planned in the US. In addition, further potential comparator centers were identified from local knowledge and/or previous experience. From these options, a set of locations to review in detail was developed, aiming to cover locations that met one or more of the following criteria:

- they broadly shared Greenville's structural, demographic and transit characteristics;
- they potentially represented the best of contemporary practice; and
- they had information easily available and/or could reasonably be visited.

The locations selected were:

- Greensboro, NC;
- Rocky Mount, NC;
- Wilson, NC;
- Winston-Salem, NC;
- Athens, GA;
- Cary, NC;
- Binghamton, NY;
- Spartanburg, SC; and
- Greenville, SC.

Table A1.1 summarizes the characteristics of each location, the successes, and the lessons for Greenville. The following sections describe each case study in more detail. A number of city or transit authority staff were interviewed for this research.

Table A1.1: Summary of Case Studies

City		Greensboro NC	Rocky Mount NC	Winston-Salem, NC	Cary NC	Wilson NC	Athens GA	Greenville SC	Spartanburg SC	Binghamton NY
Center		The Depot	Transportation Center	Transportation Center	Amtrak Station	Transportation Center & Amtrak Station	Multi Modal Center	Central Transit Transfer Facility	SPARTA Passenger Center	Transit Center
Status		In use	In use	In use	In use	In use	Under construction	In use	In use	In design - Due open 2007
Comparable size city?		Larger	✓	Larger	Larger	✓	✓	✓	✓	✓
College town?		✓	-	✓	-	-	✓	✓	✓	✓
Staff interviewed?		✓	✓	-	-	-	✓	Email comments	✓	✓
Field visit?		✓	✓	✓	✓	✓	-	✓	✓	-
Modes	City Bus	✓	✓	✓	Starting soon	✓	✓	✓	✓	✓
	University bus	Starting soon, will use IMC †	-	-	-	-	Yes, will use IMC	-	-	Yes, may use IMC
	Regional bus	✓	-	✓	Yes - TTA	-	-	-	-	-
	Inter-city bus	✓	✓	✓	-	✓	?	✓	✓	✓
	Amtrak	✓	✓	No (bus link)	✓	✓	-	Separate site	Separate site	Rejected *
	Regional/ local rail	Planned	-	Planned	Planned	-	Planned	-	-	-
	Taxi office	-	-	-	-	✓	-	-	No - trying to attract one	N/K
Shared uses		Model railroad club	Various	Offices above	DMV office	No	No	Deck above	Police substation	N/K
Objectives	Improve bus transfers	✓	✓	N/K	N/K	N/K	-	N/K	✓	✓
	Connect with / improve inter-city bus service	✓	✓	N/K	N/K	N/K	-	N/K	✓	-
	Connect with rail	✓	✓	N/K	N/K	N/K	Yes - main reason for site decision	N/K	-	Rejected *
	Increase ridership	Expected, but not an objective	Expected, but not an objective	N/K	N/K	N/K	-	N/K	-	-
	Other	-	-	N/K	N/K	N/K	-	N/K	Provide taxi facilities	-
Successes		All objectives achieved	All objectives achieved. Especially in leading downtown regeneration	Attractive, feels safe	DMV provides busyness	Attractive Amtrak station	To be seen	N/K	• All objectives achieved, except no taxi office yet. • Passengers happy	To be seen
Lessons		• Plan for expansion • Historic structures are a mixed blessing	• Plan circulation carefully • Use tax credits if possible	Quality design and upkeep are needed	Can design for future expansion	Bus station now feels dated	To be seen	Avoid having a deck above	Plan for expansion	To be seen

** Binghamton considered a rail-connected site that could accommodate future rail service, but rejected it in favor of a site that was better-placed for other modes.*
† The university-funded services will be operated by the city transit authority as if part of their network
Successes and lessons are based on a combination of staff comments and the project team's field visits
N/K = Not known

A1.6 Greensboro

The City of Greensboro, North Carolina (population 224,000) has an extensive multi-modal center on the edge of downtown. Known as "The Depot", it uses a complex of several former railroad buildings including the landmark historic passenger station building. Figure A1.1 shows an aerial view of the site when it was under construction and some views of the center in 2005.

The site is surrounded by the railroad line, industrial buildings and a social services center. The bus facilities opened in 2003, with rail service returning to the historic depot in October 2005. Previously, Greensboro's station was a 1970s building in the suburban freight yard.

The center is owned and operated by Greensboro Transit Authority (GTA), with space leased to other operators. Construction was funded by the Federal Transit Agency, the North Carolina Department of Transportation (NCDOT) Rail Division and the City. The costs were heavily influenced by the renovation of the historic buildings.

The center serves the following modes:

- city buses – 18 bays in sawtooth layout, under an overall roof;
- PART regional buses;
- Trailways – four bays in diagonal layout; and
- Amtrak.
- A drop-off area and parking meters are provided nearest to the buildings, with extensive free parking at the edge of the site.

The city hopes to bring in a car rental office, seeing the train-plus-rental-car option as analogous to the plane-plus-rental-car option. There is no taxi office. The city has no separate university transit system, but the universities are paying for some new services from Fall 2006, to be operated by GTA but aimed at university needs. There is a long-term proposal for commuter rail service, which would use the Amtrak platforms.

The center effectively has three sets of facilities. One building houses a waiting room, restrooms and information kiosk for local buses. An adjoining building houses the Trailways waiting room, ticket and baggage counters, and restrooms. The historic depot building houses the rail facilities.

There are also security officers with their own office, a dispatch office and drivers' break room and restrooms. A model railroad club occupies one of the leasing units in the building used by Trailways.

Table A1.2 lists the center's objectives. City staff consider it to have been successful. They suggest that the historic depot complex makes for a welcoming and attractive environment, and this may be contributing to the increase in ridership. No neighborliness issues were reported.

Table A1.2: Objectives of The Depot, Greensboro

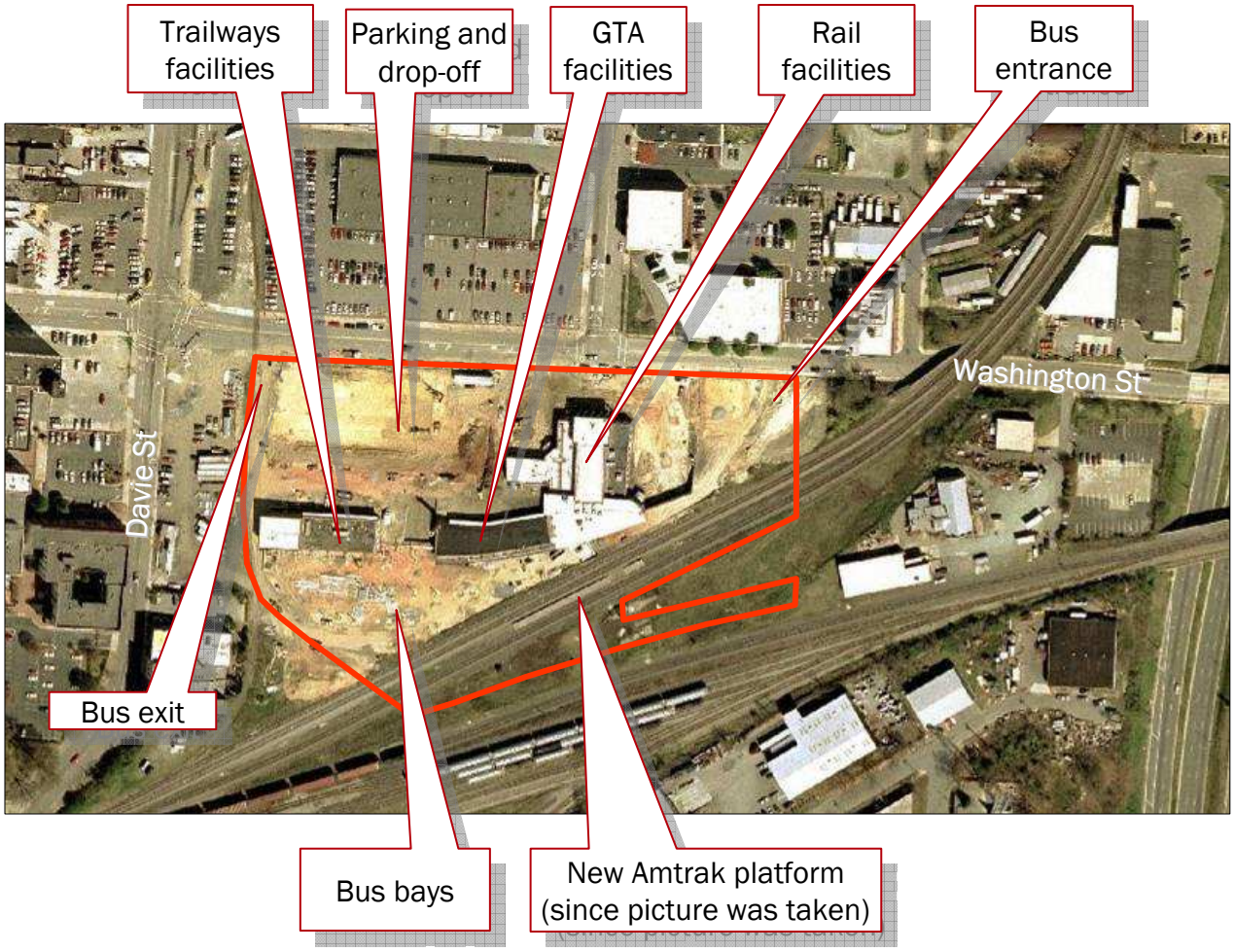
Objective	Was it achieved?
Improve the transfer experience. Previously transfers were made at downtown bus stops with no shelter.	Yes.
Integration between modes, particularly between the various bus systems.	Yes, they are now together in the same facility. People do seem to see the services as complementary. Riders can now depend on getting from one service to another.
Both of the above were expected to **increase ridership.**	Ridership has increased, as originally expected or maybe more so.

When asked about the lessons for Greenville, city staff suggested the following:

- Physical integration of services can be successful in increasing ridership.
- Historic structures are a mixed blessing – challenges, expenses, but potential to attract passengers.
- Take account of potential future demands. Consider future employment patterns, also what services may be added in future. The extra services will help ridership.
- Consider which services are definite from the start, and which might come in later. The design should allow for future expansion (to accommodate the later services) without disrupting the existing ones.
- Make the design fundable. Determine what the funders' requirements are. This includes *potential* funders, and what it would take to meet their requirements in order to get the money.

Site visits to the center have suggested another possible lesson for Greenville: the roof over the bus bays, although functional, is not particularly 'airy' and some of the bays have a relatively dark feel.

Figure A1.1: The Depot, Greensboro



(a) Aerial photograph at time of construction. Site boundary marked.

(b) Extensive parking at front of site. Downtown in background

(c) Car drop-off area alongside bus bays

The Depot, Greensboro (continued)

(d) Bus slips (Trailways in foreground, GTA in background)

(e) GTA slips – waiting area on other side of wall

(f) Trailways waiting room.

(g) Buses have a dedicated entrance (shown here) and exit

(h) Historic depot building

(i) Depot building during rehabilitation to serve as rail station

A1.7 Rocky Mount

The City of Rocky Mount, North Carolina (population 56,000) has, like Greensboro, a center on the edge of downtown, based on a historic railroad depot. Figure A1.2 gives an aerial view of the center and some views taken in 2005.

The city-owned 2-acre complex is on the edge of downtown, next to the YMCA, adjoining mixed commercial/residential inner areas.

The 25,000 sq ft historic passenger station had been empty since 1984. The City bought it in 1995, and it reopened in 2000, to accommodate Amtrak functions and additional leasing space. There are a variety of tenants including the visitors bureau, the Chamber of Commerce and a Senator's office.

A short walk from the rail station –at the far end of the platform – is the transit center, converted from a former railroad parcels building (REA) (rebuild completed in 1998.) This includes separate areas for local Tar River Transit (TRT) buses and Trailways buses. The site layout effectively separates pedestrian, car and bus circulation.

The total cost (of both the station and the transit center) was $9.445 million. Most of the funding was from Federal enhancement funds ($7.380 million). The local match from the City was used for property acquisition ($860,000) and driveway/street planning/construction ($575,000). Lease revenues fully cover the operational cost of the rail station.

The center serves the following modes:

- Tar River Transit – seven bays in sawtooth layout, for the four regular routes plus "shuttle' routes;
- Trailways – four bays, perpendicular to the building; and
- Amtrak – one platform serving four trains each way daily.
- There is a drop-off area and parking areas.

There are effectively two sets of facilities. The rail station has a waiting room, 24-hour ticket office, baggage counter restrooms, vending machines, and 'The Whistle Stop' newspaper stand / snack bar. The bus building has a waiting room, a Trailways ticket/baggage counter, restrooms, vending machines and the 'All aboard' restaurant. There is no TRT ticket office, but the TRT driver supervisor provides information and there is a token machine for TRT ride tokens. There is also a break-room and restrooms for drivers. TRT's office is located in the rail station.

Table A1.3 lists the center's objectives, as reported by City staff. The center appears to have has achieved the objectives. The following paragraphs amplify some of the issues.

Table A1.3: Objectives of the Rocky Mount Transportation Center

Objective	Was it achieved?
Improve quality of transfers between local buses. Transfers had been made on-street (corner of Tarboro Street & Main Street), with just two bus shelters which were inadequate protection from rain, heat or cold, and no restrooms. Drivers needed restrooms too – they were having to use restrooms in a local restaurant instead.	Yes.
Improve quality of service for Greyhound / Trailways passengers. See text for details.	Yes.
Improved connections between modes. This was an important objective for NCDOT in particular.	Yes.
Improved ridership, as a result of all the improvements above. This was not a specific objective, but the city was expecting ridership to increase.	Probably - other issues such as newer buses also need to be taken into account.
Leading downtown revitalization. The city saw the historic station renovation as an important sign that downtown was – or could be – on its way back up. It would be the first major renovation there in many years.	Yes, exceeding expectations. See text for details.

Trailways had operated since the 1950s from a leased building across the tracks from the railroad station (now the 'Old Bus Station Antique Store'). Against a tight financial background, Trailways had been unable to devote resources to the building and it was a poor environment for passengers. It also led to passengers walking across the railroad tracks. Hence one of the city's objectives had been to provide a better facility for Trailways riders. Trailways had welcomed the opportunity to move to the Center for the same rent as the old building. Although this arrangement costs the City and NCDOT in strict financial terms, no-one saw this as a problem or as 'subsidizing Greyhound'; instead it was seen as improving transportation.

The bus station is on split levels, with the Greyhound / Trailways counter at the upper level, a few steps above the Tar River Transit (TRT) waiting area. The City had initially been concerned about the mixing of the two groups of passengers. Most TRT passengers were women, and there was a potential issue about their perceived personal security. In the end, it was decided to address the issue by having a staff presence.

The original plan had been for the Greyhound / Trailways counter to also provide a public face for TRT, selling bus passes and providing TRT passenger information. The City would pay a small fee for this role. However, this plan fell through. Instead, the TRT driver supervisor is now expected to be 'out on the floor' as much as possible, answering public questions and generally supervising the facility. This works, although whenever s/he is called out to an incident on the road, there is no TRT staff presence.

Greyhound / Trailways depots are run under contract by franchisees. Franchisees get commission on ticket sales, but the margin is low and they find extra income by installing video games etc. in the waiting areas. City staff suggested that this can cause clutter, and that the presence of non-passengers, particularly teenagers, can be disquieting to passengers. (The start of the summer vacation is a major time for the teenage presence.) This has been a problem at Rocky Mount, although not a serious one.

The main neighborhood impact has been in leading downtown revitalization. The older population still saw Rocky Mount as a railroad town; many were the children of former railroad shop employees, and the station was the center of their economic life history. Its revitalization galvanized support for downtown regeneration. The City had underestimated its importance in people's perceptions. These perceptions were strengthened by the removal of the buildings which had previously hidden the station frontage from view. The Chamber of Commerce had moved out to the suburbs, but agreed to move into the station. This itself made a positive statement to the business community and wider downtown community.

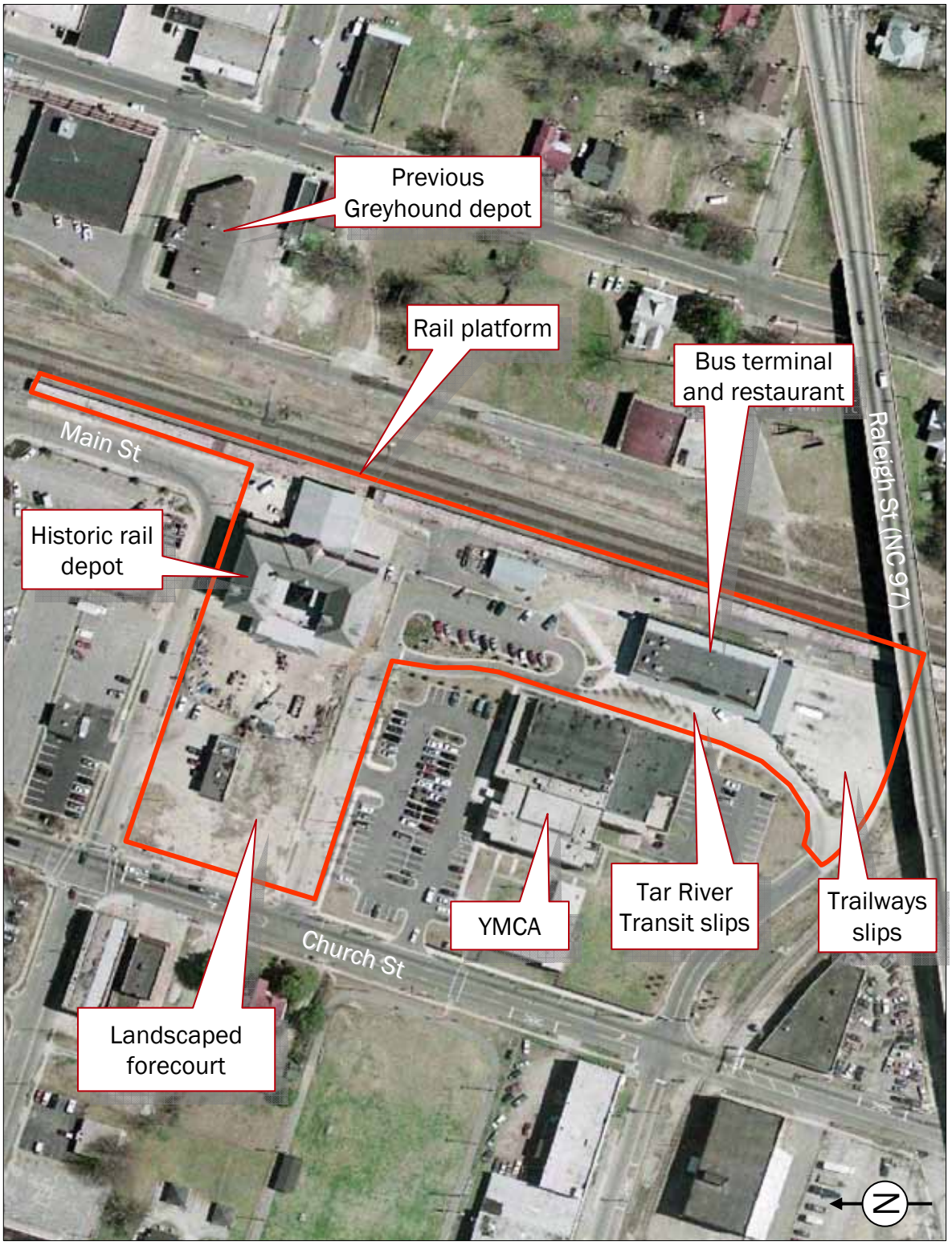
There has also been a benefit to the immediate area. For example a nearby house and old fire station were due to be demolished; now the house has been restored by the owner and the City is restoring the fire station.

Vehicular circulation and conflicts with pedestrians were pitfalls they had successfully avoided. The original plan had been to have the buses directly outside the railway station, and not use the REA building at all. They hired traffic engineers to check this out, and had been advised against, on the basis that large vehicles (i.e. buses, particularly Greyhound ones) were better kept away from cars and pedestrians to avoid conflicts. Although the City had been initially concerned at the extra costs which this implied (by having to use the REA building), it turned out to be very good advice.

When asked about the lessons for Greenville, city staff suggested the following:

- It is important to select an architect with strong transit center design skills.
- If a historic building is involved, ensure that tax credits are exploited to the full. (At the time, they were not fully aware of the opportunities.)
- Consider vehicular circulation and conflicts carefully.

Figure A1.2: Rocky Mount Station and Transit Center



(a) Aerial photograph (taken before landscaping was complete)

(b) Rail station frontage

(c) Rail platform. Bus terminal in background, right

(d) Station lobby

(e) Amtrak ticket office and waiting room

(f) Station tenants

(g) Rail station, seen from bus station

Rocky Mount Station and Transit Center (continued)

(h) Path between rail and bus stations

(i) Greyhound slips

(j) Tar River Transit slips

(k) Greyhound waiting area, with ticket counter on right

(l) Greyhound waiting area with restrooms in background and link to TRT area on left

(m) Tar River Transit waiting area, with restaurant in background

A1.8 Winston-Salem

The City of Winston-Salem, North Carolina (population 186,000) has a downtown transit center occupying half a block alongside a parking deck and other downtown uses. It is the hub of an extensive 24-route city bus system, with most routes going through the Center. Trailways also uses the Center.

The City currently has no passenger rail service. An Amtrak Thruways bus (operated by Trailways) connects to/from trains at High Point, although this bus is relegated to the rear of the center. The city's railroad geography would make it difficult to bring rail service to downtown. The historic Union Station, likely to be the station for any future inter-city service, is some distance from downtown. Potential commuter rail service would come closer to downtown, but this would still be a separate site from the transit center as long as the latter is focused on the heart of downtown.

The center serves the following modes:

- City buses and PART regional buses – 16 bays in sawtooth layout;
- Greyhound/Trailways; and
- Amtrak Thruways bus.
- Short-stay parking is provided at the back of the center and on-street. A bike rack is also provided. There is a parking deck across the street.

Figure A1.3 shows some views of the center in 2005. The building is along the southern edge of the site, with an overall roof spanning the bus bays. Buses enter directly from, and leave directly onto, the surrounding streets. This gives the center a very high visibility.

The first floor of the building includes a waiting area, restrooms, vending machines and phones. The large ticket office with two windows (and a manager's office) looks over the waiting area, providing excellent visibility and surveillance. The upper floors have offices. Interestingly, people seem to wait both in the waiting area and outdoors (on stone seating blocks alongside the bays). Security staff are an obvious presence on-site.

The center has a strong element of public art. The floor of the waiting area includes a terrazzo map of the city. Carved panels in the glass wall depict aspects of the city's transportation history. Outside, the pillars of the overall roof are attractively painted.

City staff were not interviewed for this study. However, field visits suggest that the center is an attractive model of design and upkeep. The open and airy layout, the strong staff presence and the glass wall between the waiting area and the bus bays all contribute to a welcoming and safe atmosphere. The busyness of the transit system reinforces that sense, by providing a relatively high level of activity. The location itself is ideal for downtown, which retains a strong commercial role, although there is no prospect of physical integration with any future rail service.

Figure A1.3: Winston-Salem Transportation Center

(a) Downtown location

(b) Buses enter and leave directly from street

(c) Passenger facilities alongside slips. Offices above.

(d) Short-term parking at rear. Connecting bus to High Point station comes in here.

(e) Departure indicator and public art

(f) Bike rack

(g) Bus slips, with waiting area behind glass wall. Public art on columns.

(h) Waiting area and ticket office. Glass wall toward bus slips.

(i) Waiting area and vending machines. Restrooms in background.

A1.9 Cary

The Town of Cary, North Carolina (population 110,000) is rapidly expanding, particularly housing many people who work in Research Triangle Park. The Town has a small rail station which is becoming more of a transit hub. It has a modern building, a block from the heart of the small downtown, near the town hall. The building and its surrounding parking are in the vee of two diverging rail lines. Figure A1.4 shows an aerial view and some ground-level views of the station.

Passenger rail returned to Cary in May 1995, when the North Carolina Department of Transportation (NCDOT) and Amtrak began the *Piedmont* service. Cary's historic station had been demolished in the 1970s. The state funded a 200-foot platform which served as Cary's station for over a year, accommodating the *Piedmont* and also the *Carolinian* service that began in 1996. Subsequently, the building was jointly constructed by the NCDOT, the Town of Cary and the Triangle Transit Authority (TTA) which operates the regional bus service. TTA buses call at the station, although it is only an intermediate stop. In later 2005, the Town started a fixed-route bus service, with two of the three routes calling at the station. Thus it is becoming the de facto transportation hub for Cary, with opportunities to transfer between trains, town buses and regional buses. However, Trailways no longer serves Cary.

The center therefore serves the following modes:

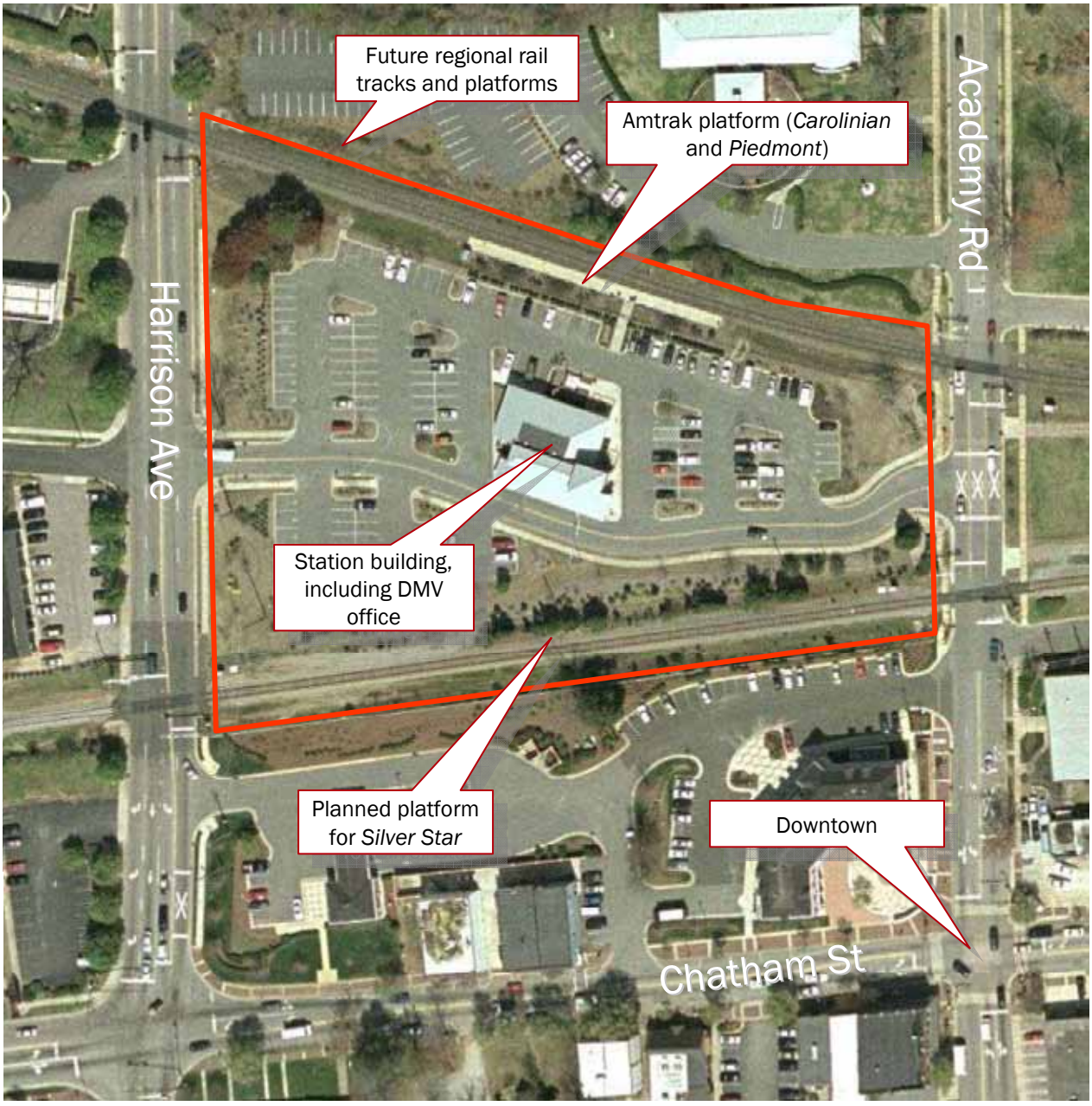
- local buses – two of the three routes;
- TTA regional buses; and
- Amtrak – four trains per day, with a planned new platform to serve another two trains per day that currently do not stop at Cary.
- Free parking is available.

The planned TTA regional rail service would create new tracks and platforms alongside the existing Amtrak platform.

Nevertheless, the center remains very small-scale, and is not an operational base or terminus. There is a waiting room, restrooms and a drinking fountain. There are no transportation staff, but there is a direct "hotline" phone link to Amtrak customer services. Additional space was provided to accommodate a future Amtrak ticket office; in the meantime, the space is leased out as a Driver's License office.

Town staff were not interviewed for this study. However, field visits suggest that it is an attractive facility with good potential to expand its operations if required in future. The presence of the Driver's License office is undoubtedly important. Although there are no transportation staff on-site, it is well-kept and there is a degree of activity, at least during office hours. Although the building is surrounded by parking and has little street presence, its exterior quality, with a clock tower and canopies, is relatively high.

Figure A1.4: Cary Station



(a) Aerial photo

Cary Station (Continued)

(b) Station building. TTA bus stop in foreground.

(c) Entrance to waiting room and DMV

(d) Main building. Waiting room under clock

(e) Waiting room. DMV office on right, restrooms in left background. Phone on wall connects to Amtrak Customer Services.

(f) Short platform

A1.10 Athens, Georgia

Like Greenville, the City of Athens, Georgia (which has a unified City/County government with a population of 100,000) has both City and University transit systems, with a University campus that touches downtown. Athens also has a proposed commuter rail service to Atlanta, which was a major influence on the site for the Multi-Modal Center (MMC) currently under construction.

The MMC is one of many projects that are being funded by a one-cent sales tax (Special Purpose Local Option Sales Tax - SPLOST) in the County. The SPLOST has been approved and continued by voters in a series of referenda, each covering a five-year package, most recently in November 2004.

Figure A1.5 shows a series of plans and artist's impressions. The building is in the center of the site, with a series of pull-in bus bays extending from one side under an overall roof. There is space for another series of bays on the other side in future. The first floor will have a waiting area, ticket window, restrooms and a drivers' room. The second floor will have transit agency offices. The upper levels of the building connect to a pedestrian bridge over the railroad tracks, to a parking deck and onto downtown, making best use of difficult site topography. The center is expected to cost $11.6 million, with an annual operating cost of $133,000.

The University of Georgia's Campus Transit System (CTS) operates 47 buses, and Athens Transit (AT) operates around 20. CTS has fewer routes than AT but runs more frequently. A long-standing student transportation fee has recently been extended to faculty/staff via parking permit fees. These fees pay for CTS and for UPass-type travel on AT. People must swipe their UGa card when boarding an AT bus. UGa pays AT for each ride – based on a 3-year average for student trips and on actual numbers (quarterly) for F/S trips.

According to Ron Hamlin, the Manager of the CTS, the two systems concentrate on their core functions – CTS around the campus area and AT around the city and county. The relationship is good, with a feeling that the systems should and do work together. Students and faculty/staff all use both CTS and AT, and there is a U-Pass arrangement. People do seem to transfer between systems on individual trips, although there are no real figures. A lot of people take AT to campus and then CTS to their workplace.

CTS does not serve the current AT transfer point, which is just off-campus in downtown. The history behind this is unclear, but Mr. Hamlin has received no calls to serve it. There is no formal transfer arrangement between the two systems. As they share stops, and as about half of the AT routes run past campus, people likely just get off one bus and onto another. The main issue is helping people to work out the system. Both CTS and AT have people on-site at the start of the year to help passengers.

The Center may make transfers more complicated, as it is a few large blocks away from downtown, downhill. The decision on its site was dominated by the need to accommodate rail. Although rail is some years off, this was deliberate forward-planning.

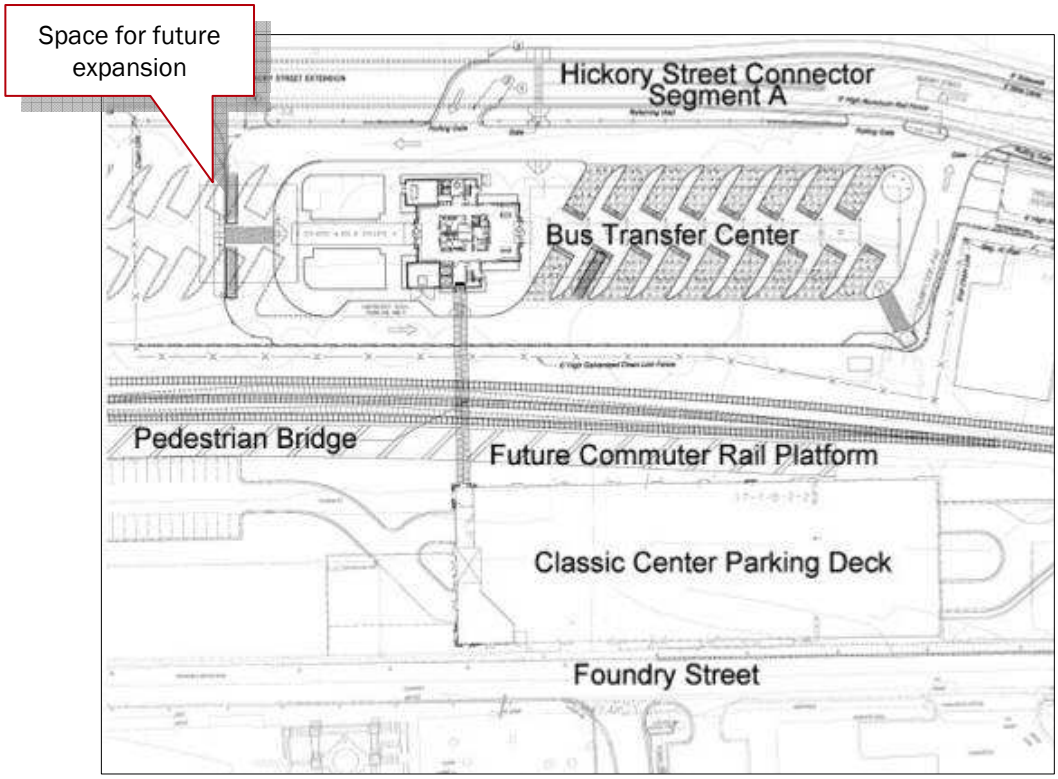
CTS has decided that it will take part in the Center, starting with one route and seeing how it goes from there. This is based on three factors:

- the Center will be the place where connections are made;

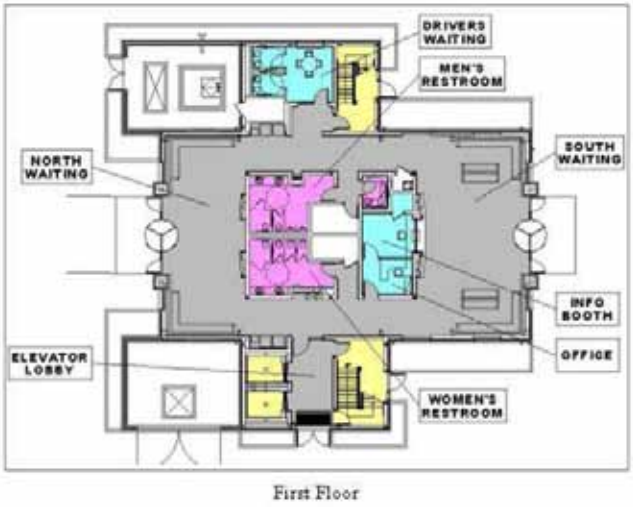
- AT has a long-term aspiration to run fewer routes through the campus, so the MMC will become more important as a link to the campus; and
- a lot of students come from Atlanta or the dormitory towns along the way, so there is hope that students may reverse-commute by rail into Athens in future.

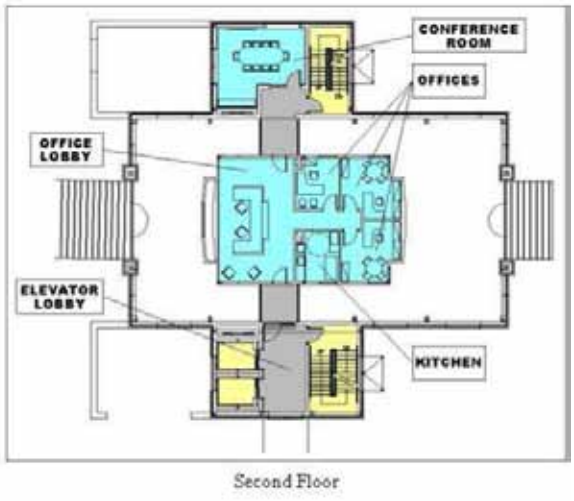
With the center still under construction, there are no specific lessons for Greenville. However, the organizational parallels with Greenville suggest that a Center can be to the mutual advantage of both City and University transit systems.

Figure A1.5: Athens (GA) Multi-Modal Center



(a) Site Plan





(b) (c) Building layouts (third floor, not shown, is the bridge level)

Source for this Figure: Athens - Clarke County Government. www.athensclarkecounty.com/ documents/powerpoint/multimodal/index.htm (last accessed on February 16, 2006)

Athens (GA) Multi-Modal Center (continued)

(d) (e) (f) Artist's impressions – Exterior and interior

A1.11 Binghamton, NY

The City of Binghamton, NY (population 47,000, with a metropolitan area population of 251,000) is another example of a planned multi-modal center in a city with both municipal and university transit systems. However, the campus is some distance from downtown.

Binghamton is a manufacturing and college city in Broome County, in upstate New York. As well as a decline in traditional manufacturing industry, the more recent IBM and defense aerospace industries have also been shrinking.

Broome County Transit operates 43 buses on a hub system, with 2.8 million annual trips. Transfers are currently made on-street downtown, in two pulses each hour. The student-owned and -operated Off Campus College Transport operates 11 buses, with 500,000 annual trips. Inter-city services are provided by Coach USA/Shortline, and Greyhound. Adjoining rural counties have paratransit with a small fixed-route element.

According to Steven Gayle of the Binghamton Metropolitan Transportation Study, there is overlap between the BCT and OCCT systems, and people can generally use one or other to make their trip. There is no formal transfer arrangement. The university was peripherally involved in the project development, and had been offered use of 1 or 2 bays; it was not yet clear if they will take this up. However, the University is also opening some downtown facilities near the center (and also due to open in 2007), so there may be a demand for student travel to the area anyway.

The center is a County-led project, due to open in Fall 2007. It will be owned and operated by the County, with space leased to the inter-city operators. The construction cost is estimated at $10 million, mainly from FTA funds with a Congressional earmark. Figure A1.6 shows an aerial view of the proposed site, and a site plan.

A key issue in site selection was whether or not to build the center on the rail line, in anticipation of restoring passenger rail service, which had ceased in 1970. The city's Congressman is a particular supporter of rail service, and supported the center being on the rail line. However, that location, although still relatively close to Downtown, would not be ideal for the downtown market, and consultants reported that this was not the best option. The city therefore decided that the priority was to make the center work well as a downtown transit center. However, the chosen site is only a block away from the railroad tracks. A proposed downtown circulator could also link the center with the station if necessary.

The site layout has a terminal building at the corner of the site closest to the heart of downtown. Inter-city buses will have pull-in bays and city buses will have an island of sawtooth bays.

Table A1.4 lists the center's objectives. As it is still under construction, the success cannot be evaluated. Interestingly, increased passenger numbers was not an objective; the aim was to improve the system for existing riders. Nor were there operational objectives - the focus was strongly on passengers.

Table A1.4: Objectives of the Binghamton, NY Multi-Modal Center

Objective
Provide passengers with safe, convenient off-street transfer instead of current on-street transfer.
Make transfers between city and inter-city buses more convenient. Currently there are two inter-city bus terminals – one for Coach USA / Shortline, the other for Greyhound, half a block apart.
Assist downtown regeneration. Terminal seen as an anchor for levering-in private developments to the nearby blocks, providing accessibility and busyness.

Mr. Gayle reports that the community has been generally supportive. The chosen site is across the street from two high-rise residential buildings for seniors. They recognized the benefits of having transit nearby but were concerned about noise and fumes. In the outreach process, the design consultant made it clear that this would be addressed, by having the buses at the other side of the site and other measures. This seemed to have addressed the concerns.

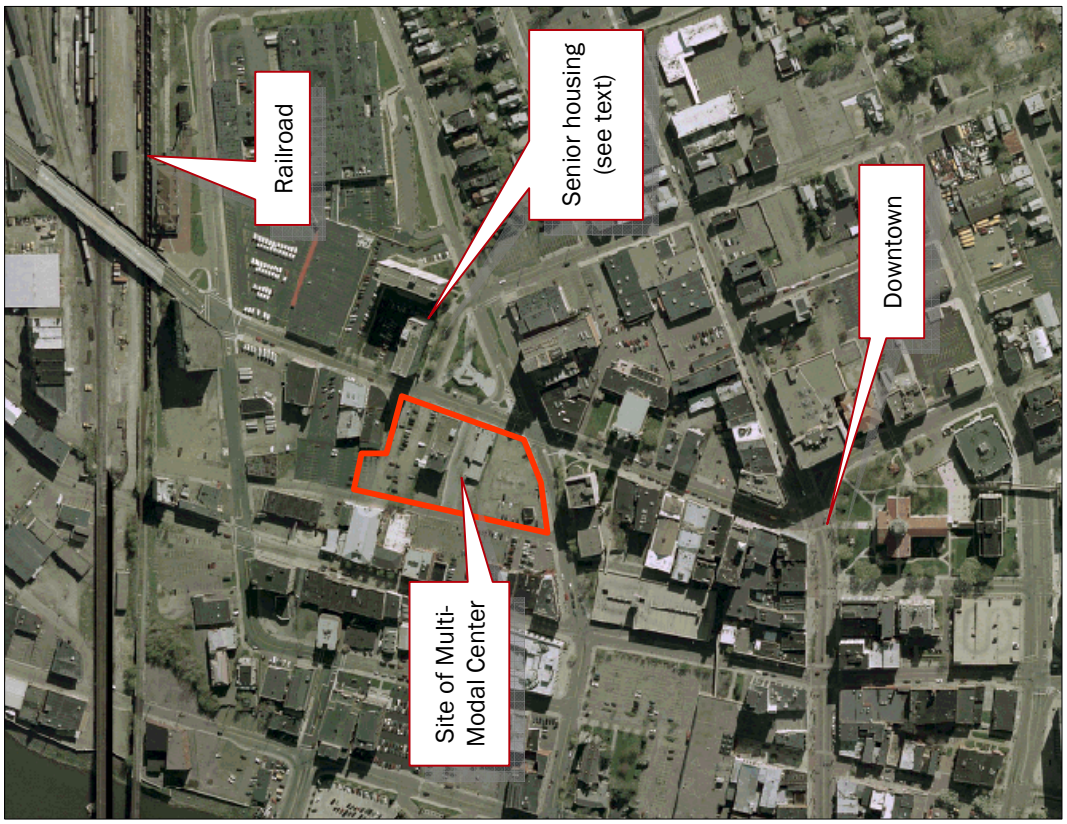
When asked about the lessons for Greenville, the following points were made:

- Continuity of local political support is important. Although the current administration is championing the project, an earlier administration had been supportive but not championing. If the championing had been continuous, the center would have been opened sooner.

- Make sure the City can actually spend any earmarks it is offered. Being unable to do so (e.g. by not having the matching funds, or by needing more money overall) will not win any favors for next time. (Part of the earmark for the Binghamton project was transferred from another project in the State that couldn't spend it.)

Figure A1.6: Binghamton (NY): Proposed Multi-Modal Center

(a) Site plan (courtesy of Steven Gayle, Binghamton Metropolitan Transportation Study)



(b) Aerial photo

A1.12 Greenville, SC

The transit center in Greenville, SC (city population 56,000) was opened in 1990. It is the only one of the case studies in which the transit facilities have parking above, although other examples of this approach do exist. Figure A1.7 shows the center.

The city bus system has 13 routes, most of which serve downtown. The center serves these routes and also Greyhound services. The transit facilities are at ground level, with buses circulating in a 'U' around the Trailways office and vending machines. The second level has 130 parking spaces.

Although an efficient use of space, it is not an attractive environment for transit passengers. The General Manager concurs, commenting that parking decks leak, are dark, are difficult to secure and signal a negative message to the public. There are also exhaust fume issues with this design.

Figure A1.7: Greenville (SC) Transportation Center

(a) Transportation Center

(b) (c) (d) Passenger facilities and waiting areas

A1.13 Spartanburg SC

Spartanburg, SC (city population 40,000, plus more outside the city limits) is a relatively small city in South Carolina's Piedmont region. The University of South Carolina Upstate is on the edge of the city, with the hospital and smaller colleges nearer the downtown.

City-owned SPARTA (Spartanburg Regional Transit Agency) operates eight routes on a hub-and-spoke system, carrying 500,000 riders annually. The downtown SPARTA Passenger Center, opened in 2002, is the hub and is also the Greyhound stop. SPARTA serves 2-3 of the city's seven colleges, going on-campus in one case. Students do use SPARTA – particularly at Spartanburg Technical College, where the college buys bus passes to sell to the students.

The Center is not on the rail network, and Amtrak trains (one train each way daily, *The Crescent*) stop at the small, recently-restored historic depot a few blocks away. The City owns and maintains the depot, reopened 1999, as a community center which also hosts the Convention Center & Visitors Bureau as well as the Amtrak facilities[4].

Figure A1.8 shows external and internal views of the Center. It is a smart, modern two-storey brick building with passenger facilities downstairs and other facilities upstairs. The bus bays directly surround the building; seven are used by SPARTA and one by Greyhound. There are SPARTA and Greyhound ticket counters at either end of the waiting area, along with restrooms. Space is available for a taxi operator's office, but so far this has not been used. The upper storey has a police substation and a drivers' break room. There remains some vacant space on that level, for which a dispatch office and a conference room are planned.

Table A1.5: Objectives of the SPARTA Passenger Center, Spartanburg, SC

Objective	Was it achieved?
Give passengers a better place to wait when making transfers. Previously, transfers were made at a street corner. Major reason was to protect people from the weather. Also safety and general quality benefits.	Yes.
Provide a place for Greyhound and taxis.	Greyhound yes, taxis not yet.

Table A1.5 lists the center's objectives. SPARTA's General Manager, Marc Keenan, was very positive about the Center, which has been a success on several counts:

- Before/after surveys show that passengers like the facility – it addressed their biggest concern.
- Passengers also appreciate being able to talk to a 'live person' (at the ticket office – the Customer Service Person).
- Having the Police substation above is good for security. If there is a problem, the Customer Service Person can just call upstairs.

[4] http://www.reconnectingamerica.org/html/revit/spartanburg.htm

There had been no neighborhood issues. The one thing they would do differently next time would be to provide more bays. Greyhound has one of the eight bays, leaving seven for the eight city routes. This has affected scheduling, as they could not have all buses meeting at once (the pulses are at :00 and :30, with some routes at :00 or :30 only). They would also like to be able to offer Greyhound an extra bay.

Interestingly, when some of these case studies were presented at a public meeting for the Greenville study, the Spartanburg center was the one that attracted the most positive comments. The style of building and the presence of the police substation particularly caught the public eye. Field visits by M/A/B and City of Greenville staff have confirmed that it is an attractive center whose level of quality Greenville could usefully emulate.

Figure A1.8: Spartanburg (SC) Transportation Center

(a) Streetscape. Greyhound bus has arrived.

(b) (c) (d) (e) External layout. Waiting area leads directly to bus slips. Buses pull directly off the street.

Spartanburg (SC) Transportation Center (continued)

(f) SPARTA information desk

(g) Waiting area (Greyhound ticket counter to left of picture)

A1.14 Wilson

Wilson, North Carolina (population 47,000) has a transportation center (serving buses) on the corner of a downtown block, diagonally across the street from the Amtrak station. Figure A1.9 shows the two sets of facilities.

The city bus system has five routes through downtown, which stop on-street directly outside the transportation center. This is unusual, but not unique, and is operationally very straightforward. The center has several small waiting rooms, one on each street frontage and another alongside the Greyhound bays which are at the side of the center. There is no Greyhound ticket office, but there is a snack bar, and a taxi firm has a small office in the center.

The 1924 railroad station now houses an Amtrak ticket office, waiting room, baggage room and vending area. The station was restored in two phases. In Phase I, the main station building and canopy were rebuilt and modernized while restoring the original architecture. The renovation included restoration of the historic platform and canopy, as well as construction of a new connecting canopy between the station and the platform. Phase 1 cost $1.3 million, with construction beginning in 1996 and the renovated station opening in 1998. In Phase 2, long-term parking facilities were added, and the adjacent REA building was renovated for use as a police substation. This phase cost $1.2 million and was completed in April 2003. Both phases received Federal enhancement funds.

City staff were not interviewed for this study, but a field visit was made. The transportation center, although functional and compact, is not likely to be attracting many discretionary riders. The small waiting areas and interior layout are a contrast to the open and straightforward design seen in Spartanburg. Although the site is very visible, in the heart of downtown, the architectural style is of its era and would perhaps not be the chosen approach today. The Amtrak station, with its more straightforward layout and prominent ticket office, is more attractive and user-friendly.

Figure A1.9: Wilson Transportation Center and Amtrak Station

(a) Transportation Center

(b) Buses stop on the street. Amtrak station in left background.

(c) Parking at rear

(d) Greyhound bays at side

(e) Amtrak station

(f) Amtrak waiting room and ticket office

A1.15 Conclusions

The most common objectives for transportation centers are to improve transfers (between buses and/or between different modes) and to assist downtown revitalization efforts. Most centers reported these objectives. Typically, before a center was built, transfers between city buses were made on-street with no more than bus shelters for facilities – the same situation as in Greenville.

Other reported objectives included providing rest areas for drivers, enhancing the public image of transit, reducing accident risks, and (more generally) improving transit service quality or convenience. Increased ridership is sometimes an objective, but not always. Operational objectives are rare – the focus is mainly on improving the passenger experience.

In cities with existing rail service, the rail station mostly (but not always) becomes the site of the transfer center (Spartanburg, SC is one of the exceptions). In the two cities studied with potential future rail service, both have chosen sites that better served the existing bus riders to/from downtown.

The scale of the facilities can match the scale of the service. A center can be relatively small (such as Cary) or relatively large (such as Greensboro). However, centers should be planned with future service expansion in mind. Two of the transit systems studied have outgrown their centers, just a few years after opening.

A variety of site layouts are in use. Some centers have 'all-in-one' facilities, with rail in the same building as other modes. Others have split layouts, with separate buildings for rail and bus services (such as Greensboro and Wilson). Vehicular circulation needs careful planning, to minimize conflicts with pedestrians and conflicts between cars and buses.

Many, but not all, centers include a ticketing/information desk, a news-stand and a café. Some centers have a particularly wide range of facilities. Shared use on-site is helpful in providing busyness, security and income. Indeed, there is potential synergy with other facilities that a community might need. These may range from simply a community meeting room to a full set of non-transit facilities (one center has a bank, a day care center and other users), making the transportation center very much a community resource.

The centers usually 'work', and few operational problems have been reported. However, there is a very clear difference between the most attractive and welcoming centers and those which are less so. In particular, placing facilities underneath a parking deck is undesirable. 'Lightness' and quality pay dividends for attractiveness. Re-using a historic building presents costs and challenges for construction, but can provide a particularly attractive center for passengers.

Staff presence, security and upkeep are also important in keeping the center attractive and in improving passenger satisfaction. It is common to have either a police sub-station on-site or dedicated security staff. The presence of non-transit-users, such as local youths or homeless people, has sometimes been reported as a problem, but active management can generally avoid this.

The centers' objectives are usually reported to be achieved – particularly the objectives of improving the quality and convenience of transit services. Existing riders generally appreciate the improved quality of service offered by a center. However, ridership does not always increase.

SITE SELECTION CRITERIA TABLE

		High (3)	High (3)
10-21-11		(Fatal Flaws)	Med (2)
			Low (3)
HLA = High Level Analysis; DA = Detailed Analysis			
Item	**Description**	**Area of Consideration**	**Site Test Fit**
SITE LOCATION REQUIREMENTS			
Surrounding Area and Characteristics			
Impact/Compatibility on Adjacent Community	Minimize impact to adjacent neighborhoods and parks		
Surrounding area character	Positive / Negative related to Design Guidelines		
Compatibility with Local Zoning / Land Use	Maximize compatibility with local zoning including building height, maximum lot coverage, public review times / schedule, parking, floor area ratio, and noise ordinances.	**HLA**	**DA**
Amenities			
Restaurants	Location, Type, Proximity		
Retail	Location, Type, Proximity		
Lodging	Location, Type, Proximity		
Civic Space (Governmental Functions	Location, Type, Proximity		
Conference Center	Location, Type, Proximity		
Sports Arena	Location, Type, Proximity		
Higher Education Institutions	Location, Type, Proximity		
Cultural Centers/Museums	Location, Type, Proximity		
Parks and Open Space	Location, Type, Proximity		
Community/Fitness Center	Location, Type, Proximity		
Transportation (Connectivity/Traffic Circulation/ Travel Patterns)			
Airport Shuttle Proximity	Distance to Routes		
Commuter Rail Line (Future/FEC)			
Proximity	Distance		
Accessibility: Max Distance	Ease of access		
Freight Rail Line			
Proximity	Distance		
Metrobus	Proximity to stations		
	Current level of service		
Metrorail	Proximity to stations		
	Current level of service		
Metromover	Proximity to stations		
	Current level of service		

SITE SELECTION CRITERIA TABLE

10-21-11		High (3) (Fatal Flaws)	High (3) Med (2) Low (3)
HLA = High Level Analysis; DA = Detailed Analysis			
Item	**Description**	**Area of Consideration**	**Site Test Fit**
Transportation (Connectivity/Traffic Circulation/ Travel Patterns) *Continued*			
Bus	Proximity to bus stops		
	Current level of service		
Parking Garages	Proximity to nearest garages (desired or not desired?)		
	Capacity of garages		
Cruise Ship Port Proximity	Distance (desired or not desired?)		
Proximity to Interstates			
	Proximity to interstate highways and interchanges (min distance)		
	Accessibility (distance/maneuverability)		
Roads			
Impact on Adjacent Roadways	Minimize required upgrades, street closings and modifications to existing roadways		
Street Configuration			
Street Jurisdiction			
Traffic			
Extreme Congestion	Avoid areas of extreme traffic congestion		
High Crash Location	Avoid areas of high automobile/pedestrian conflicts		
Tour/Charter Bus Service	Proximity to tour/charter bus services		
Walking Routes			
Sidewalks	Present or not present along route		
Condition	Good, Fair, Poor		
Width	Good, Fair, Poor		
Connectivity	Connectivity to other major walking paths/routes		
Pedestrian Crossing Signals	Present or not present along route		
ADA Compliance	Compliant or not compliant along route		
Traffic Volume	Traffic volume along the streets in the adjacent area to the proposed facility		

SITE SELECTION CRITERIA TABLE

10-21-11		High (3) (Fatal Flaws)	High (3) Med (2) Low (3)
HLA = High Level Analysis; DA = Detailed Analysis			
Item	**Description**	**Area of Consideration**	**Site Test Fit**
Transportation (Connectivity/Traffic Circulation/ Travel Patterns) *Continued*			
Bicycling Routes			
Bike Lanes	Present or not present along route		
Condition	Good, Fair, Poor		
Width	Good, Fair, Poor		
Bike Racks	Parking/Bike Racks		
Connectivity	Connectivity to other major biking paths/routes		
ROW Availability	Ability to modify the road to accommodate bikes		
Traffic Volume	Traffic volume along the streets in the adjacent area to the proposed facility		
Safety and Security			
Public Safety	Emergency response must meet 3 minute (?) response average and be capable of handling explosive detection and containment and moderate HAZMAT events (OPSS)		
Risk and Hazards			
Gas and Oil transmission line 8" or larger	Proximity and amount of generated risk		
Hazardous Material Storage Sites	Proximity and amount of generated risk		
DEMOGRAPHICS AND ECONOMIC DEVELOPMENT			
Residential			
Proximity	Current residential density		
Projected Growth			
Work Force			
Proximity	Current major places of employment		
Projected Growth			
Local Economic Development	Compliment local economic development and planning initiatives, tax incentives, and consider compatibility.	**HLA**	**DA**

SITE SELECTION CRITERIA TABLE

10-21-11		High (3) (Fatal Flaws)	High (3) Med (2) Low (3)
HLA = High Level Analysis; DA = Detailed Analysis			
Item	**Description**	**Area of Consideration**	**Site Test Fit**
SITE REQUIREMENTS			
Land Availability			
Overall Property Size	Overall total size sufficient per program		
Property Ownership	Type of ownership structure		
Adjacent Property Availability	Amount and proximity of other properties available for purchase/expansion		
Zoning/Land Use	Rezoning or LUPA of property required to allow desired use		
Site Geometry	Can accommodate the general minimum development site length and width		
Geography/Characteristics			
Topography/Drainage	The vertical contour promotes good drainage. Good is most favorable (flat/gently sloped).		
Elevation	General site elevation (above min. floodplain)		
Soils/Geology	General sub-surface characteristics (also considering groundwater issues)		
Accessibility	Accessible for vehicular, service, and delivery entrances	**HLA**	**DA**
Land Use Compatibility	An appropriate "best" use context		
Impact to adjacent area	Positive/Negative (existing surrounding uses)		
Impact from adjacent area	Positive/Negative (existing surrounding uses)		
Surrounding area character	Positive/Negative (existing context)		
Segregation of Uses/Site Zoning	Ability to separate users and create distinct spaces and user zones		
Surrounding Negative Influences	Sound		
Surrounding Negative Influences	Odor		
Development Form and Mass Impacts	Appropriate scale to existing adjacent development		
Image and Visibility	Presence and visual recognition/Views In and Out		

SITE SELECTION CRITERIA TABLE

10-21-11		High (3) (Fatal Flaws)	High (3) Med (2) Low (3)
HLA = High Level Analysis; DA = Detailed Analysis			
Item	**Description**	**Area of Consideration**	**Site Test Fit**
Environmental Hazards and Issues			
Natural Disasters	Risks caused by extreme natural forces likely to cause property damage and/or increase design criteria and construction costs.		
Flood Hazard Areas (100-year)	Presence, frequency and risk		
Storm Surge/Wind Velocity Zone	Presence, frequency and risk		
Hurricane/Evacuation Zone	Presence, frequency and risk		
Endangered Species (Plant and Animal)	The presence of endangered plant or animal species that would restrict redevelopment area or delay construction		
Wetlands/Fragile Ecosystems	Presence, percent coverage, and level of impact to developable area	**HLA**	**DA**
Coastal or Inland Waterway	Proximity and impact		
Vegetative Coverage	Avoidance of removal of significant areas of vegetation		
Tree Preservation Ordinances	Requirement of tree preservation, replacement, or banking		
Cultural Resources (Artifacts)	The presence of human, historical, cultural, or other remains that would restrict developable area or delay construction		
Environmental Contamination	Presence of contaminants that would require mitigation/GIS level map analysis		
Security			
Security			
Physical Setbacks	Ability to mitigate threat with setbacks		
Access Control	Ability to control main points of site access		
Sabotage	Ability to mitigate the threat of sabotage		
Utilities			
Power			
Available Capacity	Three Phase power feed to cover planned program service needs		
Redundancy	Service redundancy available at the site/feed alternatives		
Future Sourcing	Are there opportunities for future sustainable energy sources		
Natural Gas	Availability and Capacity		

SITE SELECTION CRITERIA TABLE

10-21-11		High (3) (Fatal Flaws)	High (3) Med (2) Low (3)
HLA = High Level Analysis; DA = Detailed Analysis			
Item	**Description**	**Area of Consideration**	**Site Test Fit**
Utilities *(continued)*			
Sanitary Sewer			
Capacity (now and future)	Assigned Service Plant		
Redundancy	System redundancy vs site main redundancy		
Recycled Water	Availability		
Costs	Service impact fees		
Potable Water			
Capacity (now and future)	Assigned Service Plant		
Redundancy	System redundancy vs site main redundancy		
Pressure	Fire service pressure at hydrant(s)		
Fire Protection Water Availability			
Ground Water Well Availability	Depth and quality		
Costs	Service impact fees		
Storm System			
Capacity (now and future)	Outfall service lines availability		
Redundancy	System redundancy vs site main redundancy		
Surface, piped, or both			
Quality Treatment Regs.	Treatment of water after capture		
Costs	Service impact fees		
Drainage/Flood Control	Presence of surrounding area flood control system(s) to prevent or mitigate flooding of a potential site and access roads	**HLA**	
Construction			
Cut and Fill	Amount of grading likely required for construction		
Impact to Environment	Minimized construction impact to the environment, vegetation, significant trees, or other natural features		
Demolition	Amount of demolition necessary for new construction		
Ease of Construction	Ability to easily stage and execute construction		
Safety of Construction	Ability to provide a safe, secured construction environment. Avoid injury of public during construction activities (safe thoroughfare).		

SITE SELECTION CRITERIA TABLE

10-21-11 HLA = High Level Analysis; DA = Detailed Analysis		High (3) (Fatal Flaws)	High (3) Med (2) Low (3)
Item	**Description**	**Area of Consideration**	**Site Test Fit**
Construction *(continued)*			
Timing/Schedule - Approvals and Permits	Ability to begin construction sooner versus later on specific site, per specific regulations		
Timing/Schedule - Property Rights	Acquisition and/or Assembly timing affects on schedule		
Operations and Maintenance			
Repairs and Support Services	Availability and proximity of the site to transit support (maintenance) services		
Continuation of Operations	Minimization of negative impacts to daily operations due to maintenance interruptions		
Functional Relationships			
Optimized Internal Efficiencies	Proximity/size site optimized to internal program components		
Optimized Internal Movement	Configuration of site to accommodate optimized internal transit movements without conflicts		
Optimized Internal Operations	Configuration of site to the optimized transit staffing locations		
Sustainability			
Redevelopment and Rehabilitation	Maximizes the ability to promote adjacent sites/area redevelopment opportunities		
Water quality	Site allows full program development without degradation to surrounding water bodies		
Recycling	Site can accommodate/promote recycling		
LEED	Self certifying (LEED Redevelopment site criteria, or SSI)		
BUSINESS ENVIRONMENT			
Regulations			
Easements	Presence of existing easements (or future required) that impact the site		
Rights of Way	Presence of ROW's (or future ROW dedication requirements) that impact the site		
Public Support	Likelyhood of agency and public support related to the project site/ surrounding uses		

SITE SELECTION CRITERIA "DESIRABILITY" SCORES		
Category	**GIS Analysis (Buffer/Query)**	**Score**
Transportation		
Bus Terminal	Less than 264 feet (1 min. walk)	3
	265 feet to 792 feet (3 min. walk)	2
	793 feet to 1320 feet (5 min. walk)	1
Bus Routes	Low (1 to 3 bus routes) - 250 feet	1
	Medium (4 to 6 bus routes) - 500 feet	2
	High (More than 7 bus routes) - 1000 feet	3
MetroRail	Less than 264 feet (1 min. walk)	3
	265 feet to 792 feet (3 min. walk)	2
	793 feet to 1320 feet (5 min. walk)	1
MetroMover	Less than 264 feet (1 min. walk)	3
	265 feet to 792 feet (3 min. walk)	2
	793 feet to 1320 feet (5 min. walk)	1
Interstates	Less than 2640 feet (or half-mile)	3
	More than 2640 feet (or half-mile)	1
Jitney and Taxis	1 space	1
	2-3 spaces	2
	6 or more spaces	3
Freight Train	Less than 250 feet	-3
	251 feet to 500 feet	-1
Landuse		
Vacant Lots and Parking	No	1
	Yes	3
Compatible Landuse	No	1
	Yes	3
Jobs	Less than 600	1
	601 jobs to 900 jobs	2
	More than 901 jobs	3

Category	GIS Analysis (Buffer/Query)	Score
Economic Development		
Enterprise Zones	Outside	1
	Inside	3
Empowerment Zones	Outside	1
	Inside	3
Community Redevelopment	Outside	1
	Inside	3
Environment		
Floodplain	100-year floodplain	-3
	500-year floodplain	-1
Contaminated Sites	Yes	1
	No	3
Community Facility		
Civic Buildings	Less than 264 feet (1 min. walk)	3
	265 feet to 792 feet (3 min. walk)	2
	793 feet to 1320 feet (5 min. walk)	1
Cultural Centers	Less than 264 feet (1 min. walk)	3
	265 feet to 792 feet (3 min. walk)	2
	793 feet to 1320 feet (5 min. walk)	1
Higher Education	Less than 264 feet (1 min. walk)	3
	265 feet to 792 feet (3 min. walk)	2
	793 feet to 1320 feet (5 min. walk)	1
Sports Arena	Less than 264 feet (1 min. walk)	2
	265 feet to 792 feet (3 min. walk)	1
	793 feet to 1320 feet (5 min. walk)	3
Parks	Less than 264 feet (1 min. walk)	3
	265 feet to 792 feet (3 min. walk)	2
	793 feet to 1320 feet (5 min. walk)	1
Emergency Response	Less than 2640 feet (or half-mile)	3
	More than 2640 feet (or half-mile)	1

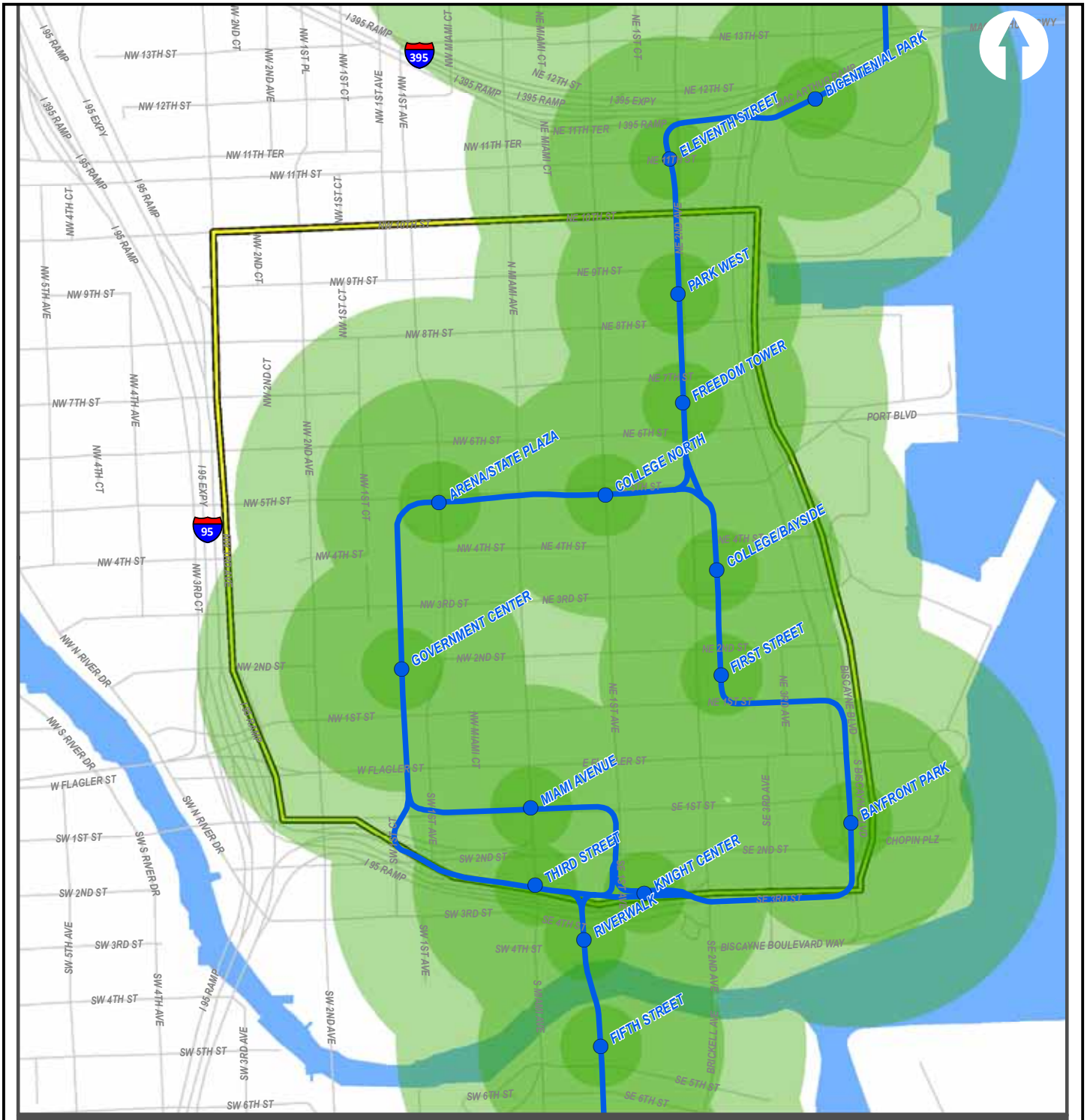


FIGURE B01 - METRO MOVER

Downtown Miami Intermodal Terminal Feasibility Study

0 0.25 0.5 Miles

LEGEND

- Study Area
- MetroMover Stations
- MetroMover
- 1 Minute Walk - 264ft
- 3 Minute Walk - 792ft
- 5 Minute Walk - 1320ft

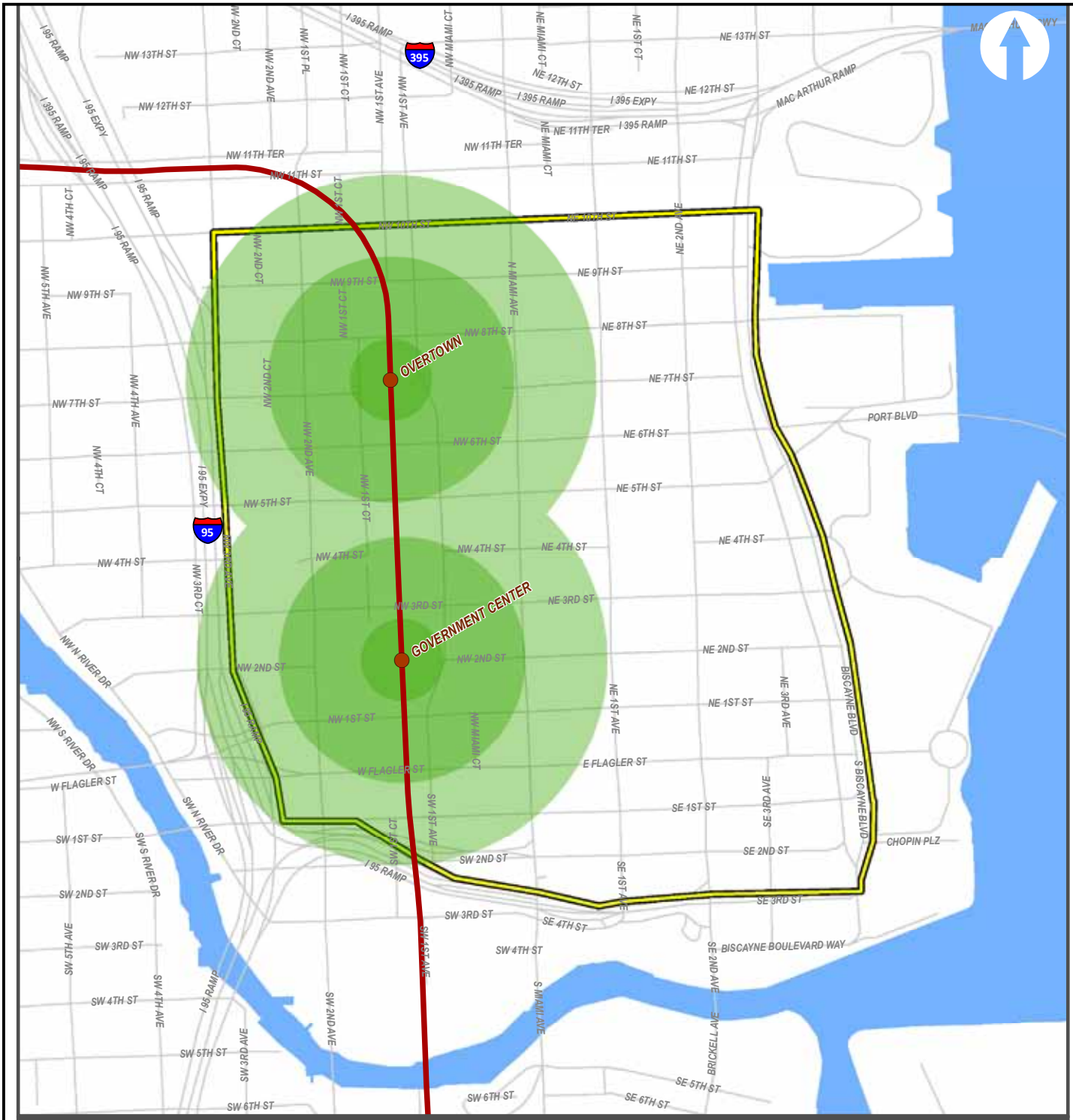


FIGURE B02 - METRORAIL

Downtown Miami Intermodal Terminal Feasibility Study

0 0.25 0.5 Miles

LEGEND

- Study Area
- MetroRail Stations
- MetroRail
- 1 Minute Walk - 264ft
- 3 Minute Walk - 792ft
- 5 Minute Walk - 1320ft

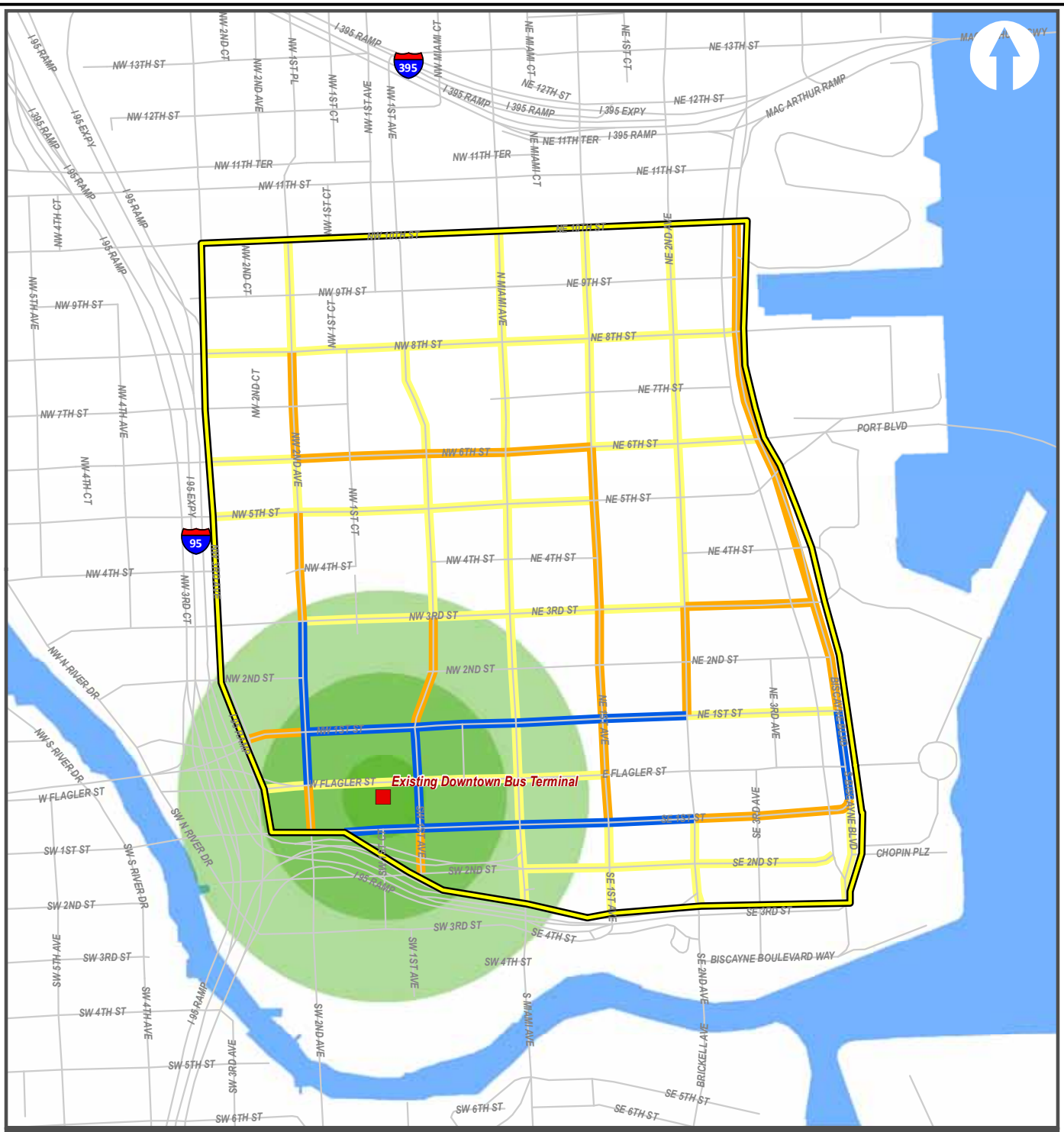


FIGURE B03 - BUS ROUTE FREQUENCY & EXISTING DOWNTOWN BUS TERMINAL

Downtown Miami Intermodal Terminal Feasibility Study

0 0.25 0.5 Miles

LEGEND

- Study Area
- Existing Downtown Bus Terminal
- Bus Route Frequency - High
- Bus Route Frequency - Medium
- Bus Route Frequency - Low
- 1 Minute Walk - 264ft
- 3 Minute Walk - 792ft
- 5 Minute Walk - 1320ft

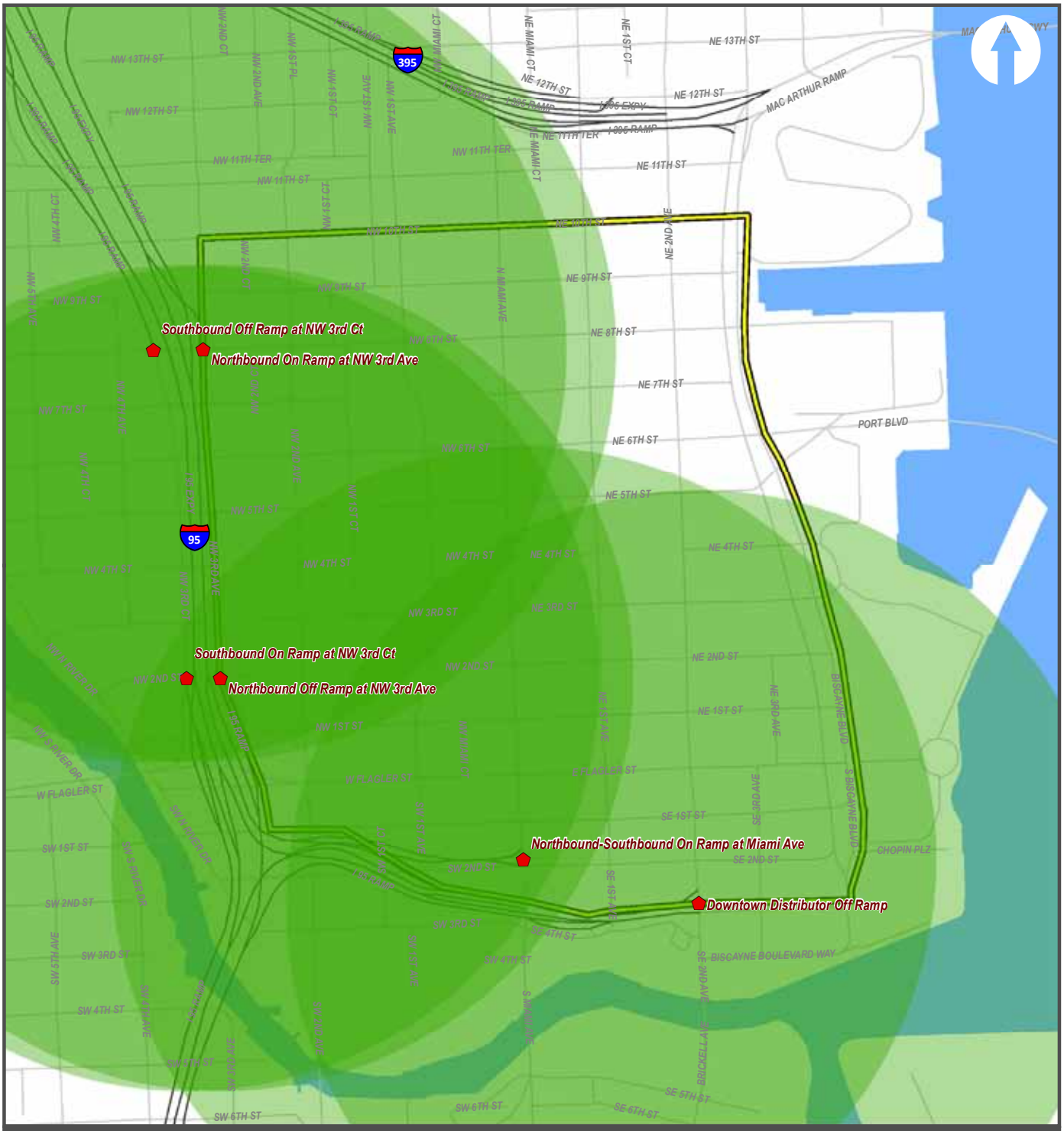


FIGURE B04 - INTERSTATE ON/OFF RAMPS

Downtown Miami Intermodal Terminal Feasibility Study

0 0.25 0.5 Miles

LEGEND

- Study Area
- Interstate On/Off Ramps
- Interstate On/Off Ramp Setback - 2640ft

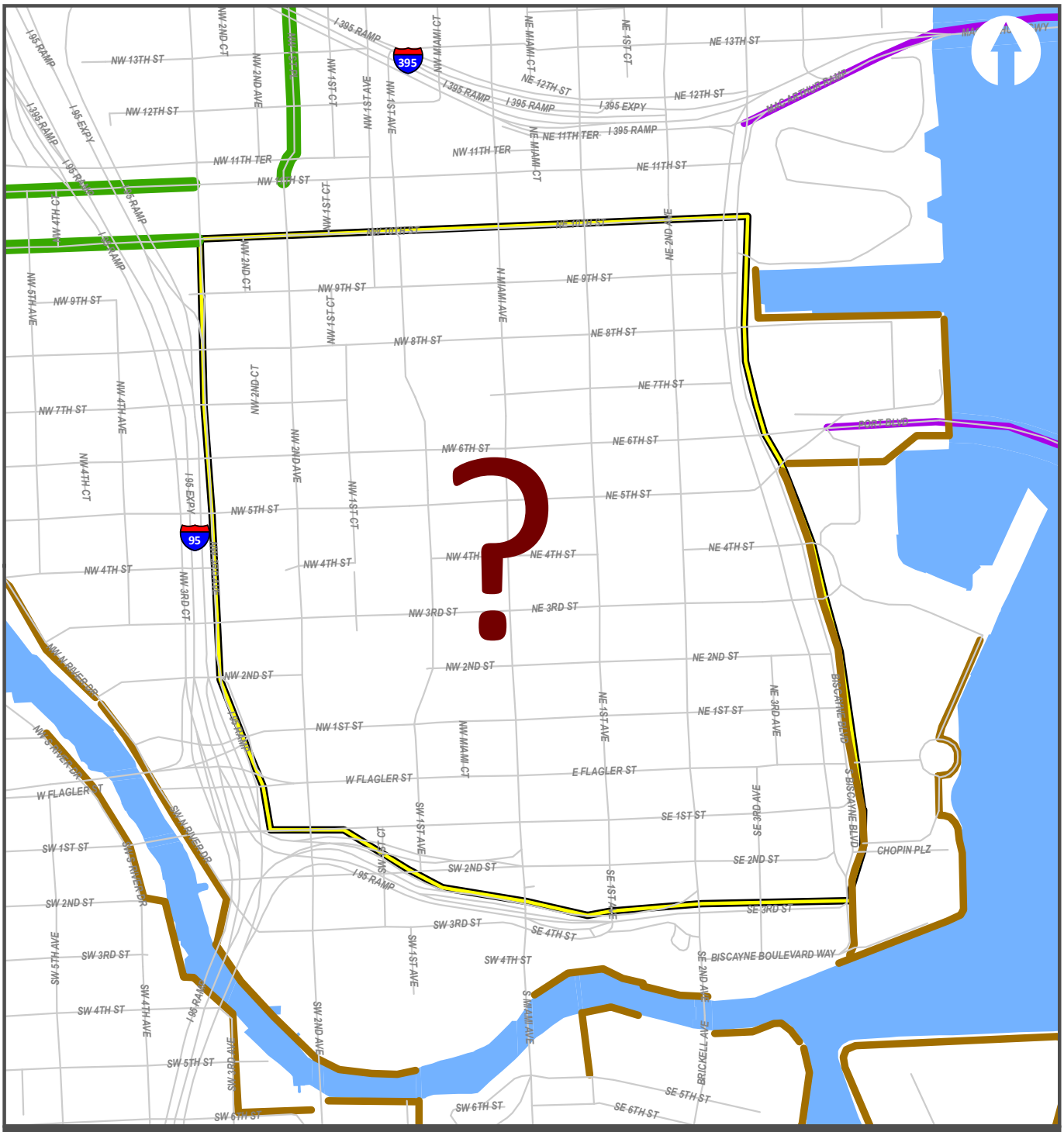


FIGURE B05 - BICYCLE FACILITIES

Downtown Miami Intermodal Terminal Feasibility Study

0 0.25 0.5 Miles

LEGEND

- Study Area
- Paved Path
- Striped Bike Lanes
- Paved Shoulder

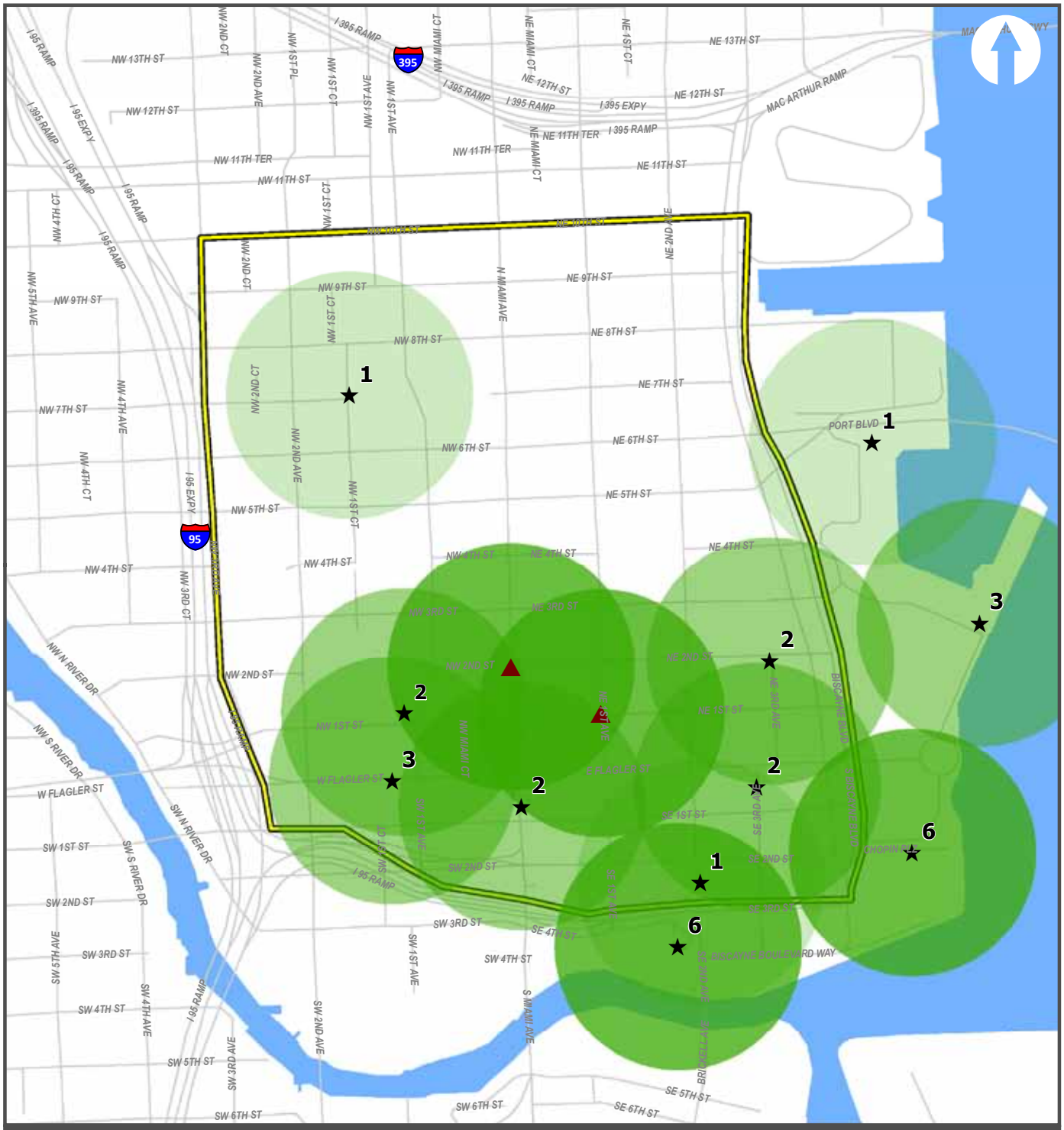


FIGURE B06 - EXISTING TAXI STANDS & JITNEY STANDS

Downtown Miami Intermodal Terminal Feasibility Study

0 0.25 0.5 Miles

LEGEND

- Study Area
- Existing Taxi Stands
- Existing Jitney Stands
- 6 Spaces For Taxis
- 2-3 Spaces For Taxis
- 1 Space For Taxis

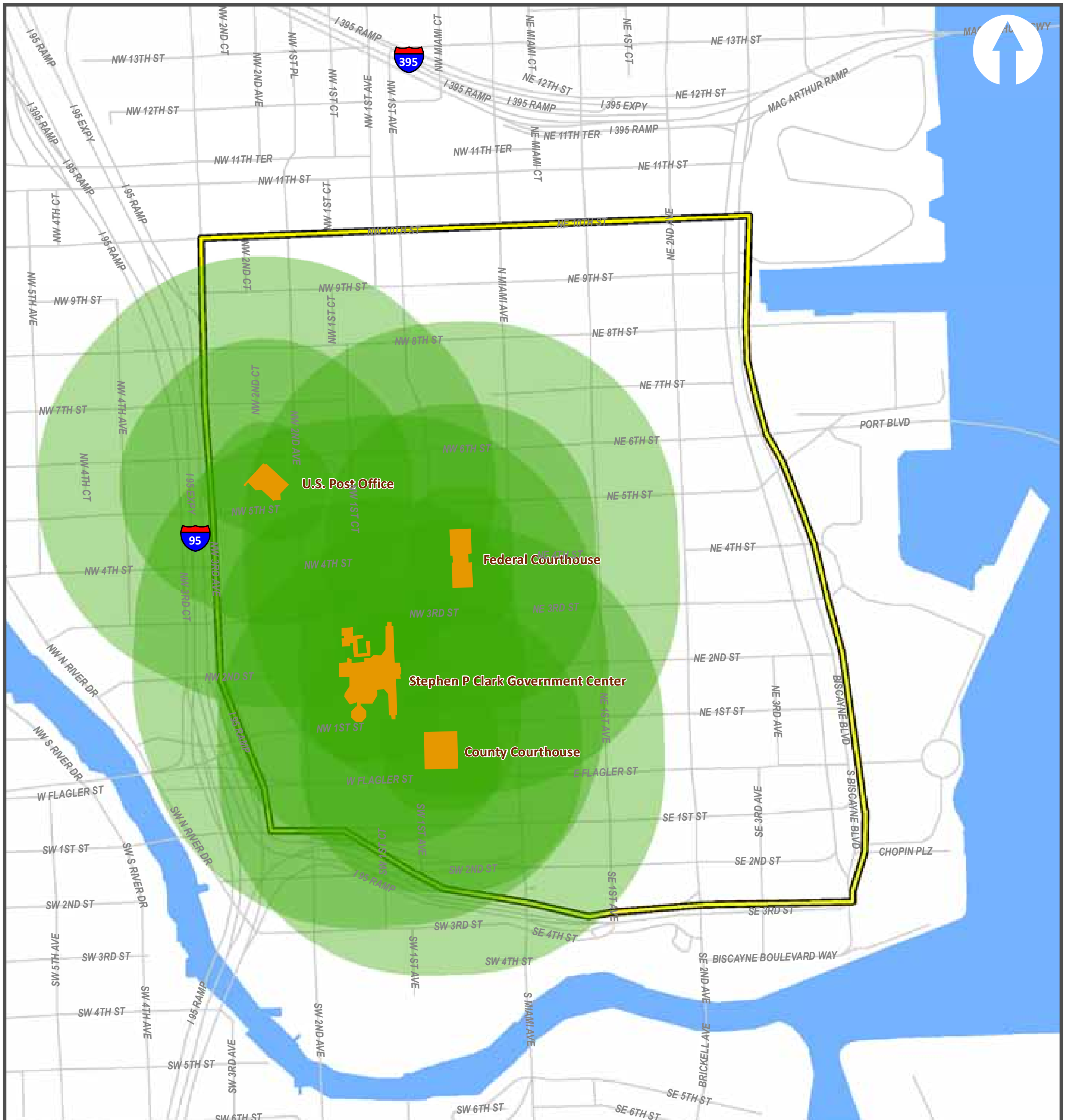


FIGURE C01 - CIVIC SPACE

Downtown Miami Intermodal Terminal Feasibility Study

0 — 0.25 — 0.5 Miles

LEGEND

- Study Area
- Civic Buildings
- 1 Minute Walk - 264ft
- 3 Minute Walk - 792ft
- 5 Minute Walk - 1320ft

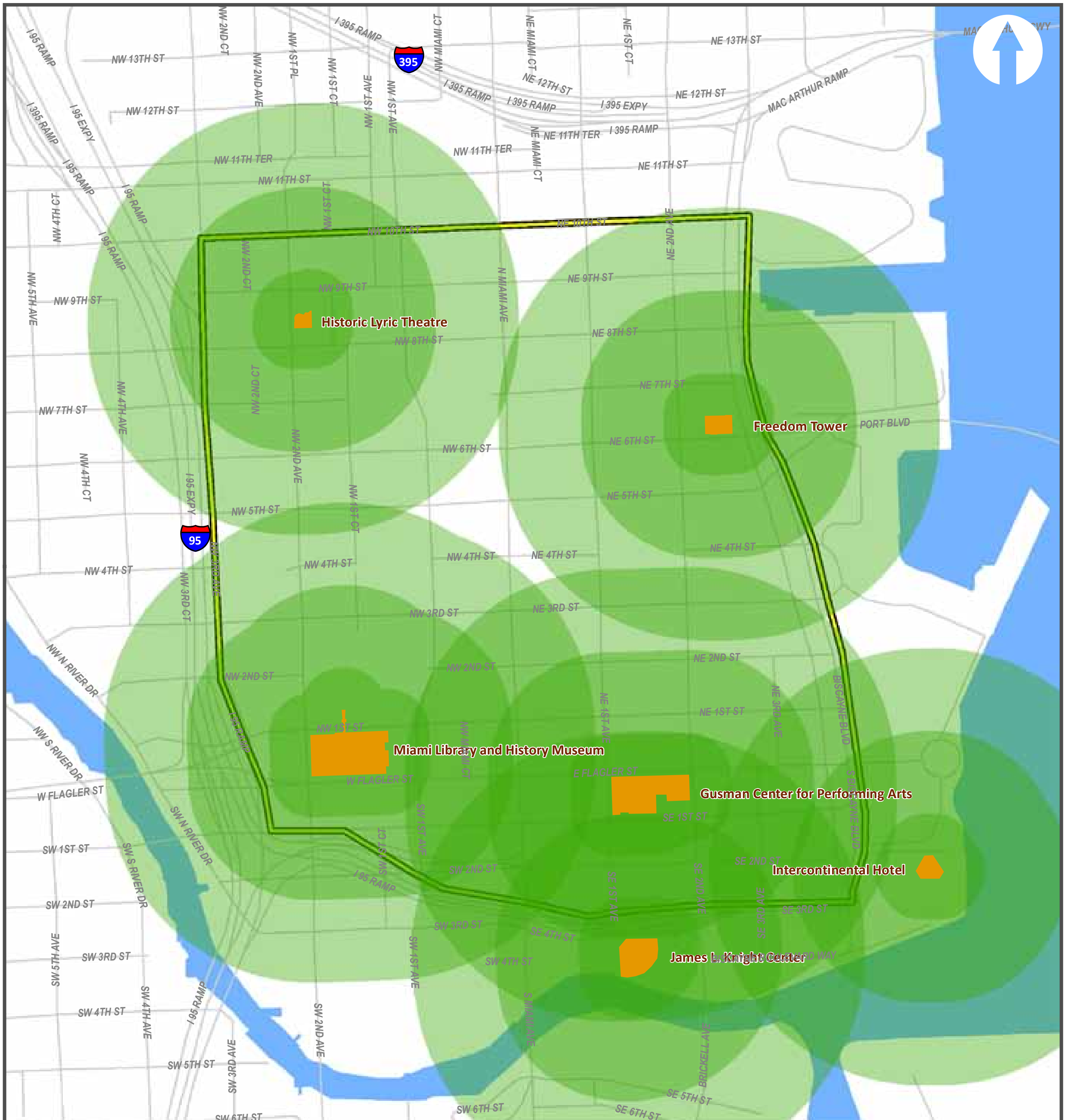


FIGURE C02 - CULTURAL CENTERS

Downtown Miami Intermodal Terminal Feasibility Study

0 — 0.25 — 0.5 Miles

LEGEND

- Study Area
- Cultural Centers
- 1 Minute Walk - 264ft
- 3 Minute Walk - 792ft
- 5 Minute Walk - 1320ft

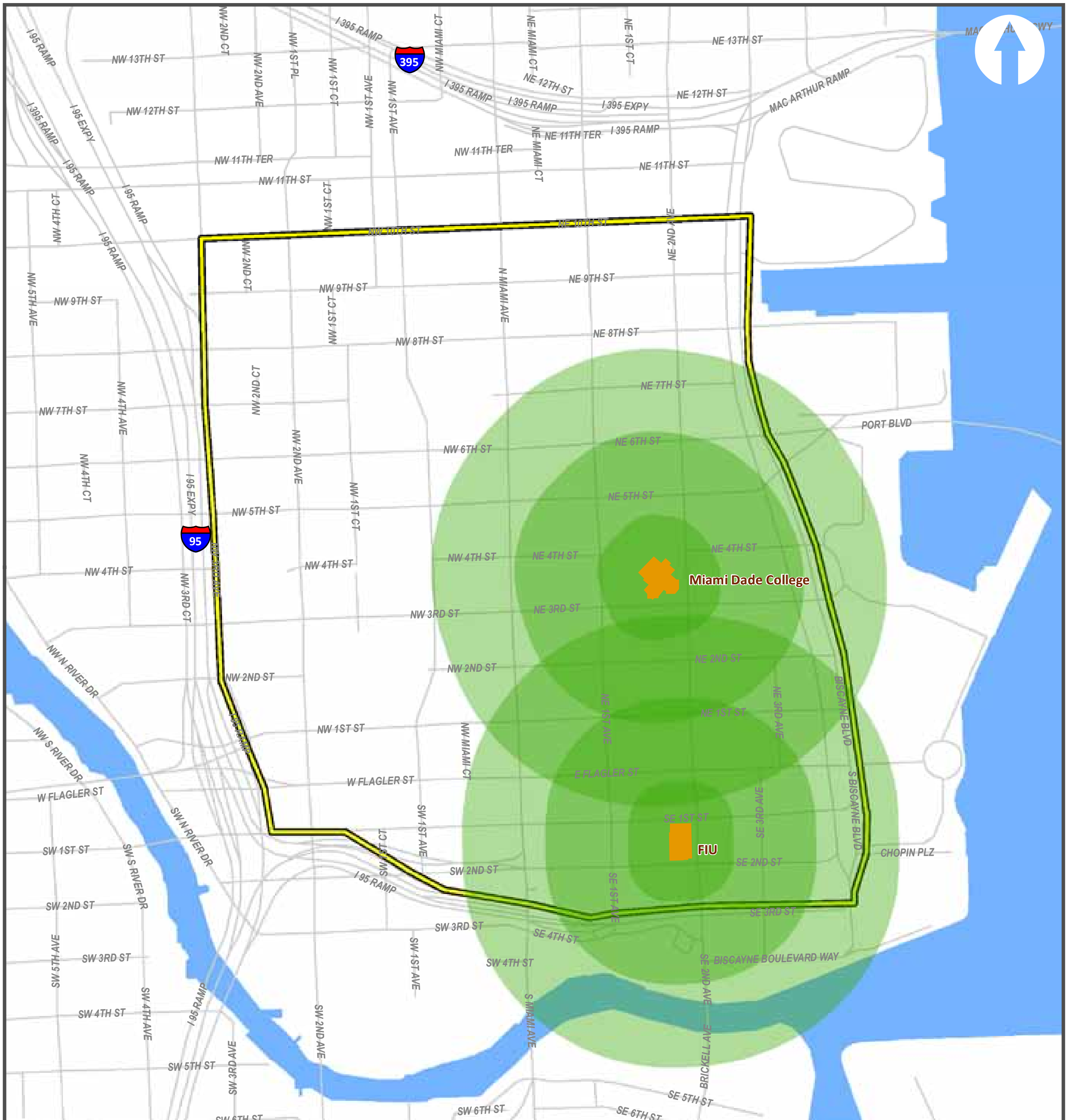


FIGURE C03 - HIGHER EDUCATION INSTITUTIONS

Downtown Miami Intermodal Terminal Feasibility Study

0 0.25 0.5 Miles

LEGEND

- Study Area
- Higher Education Buildings
- 1 Minute Walk - 264ft
- 3 Minute Walk - 792ft
- 5 Minute Walk - 1320ft

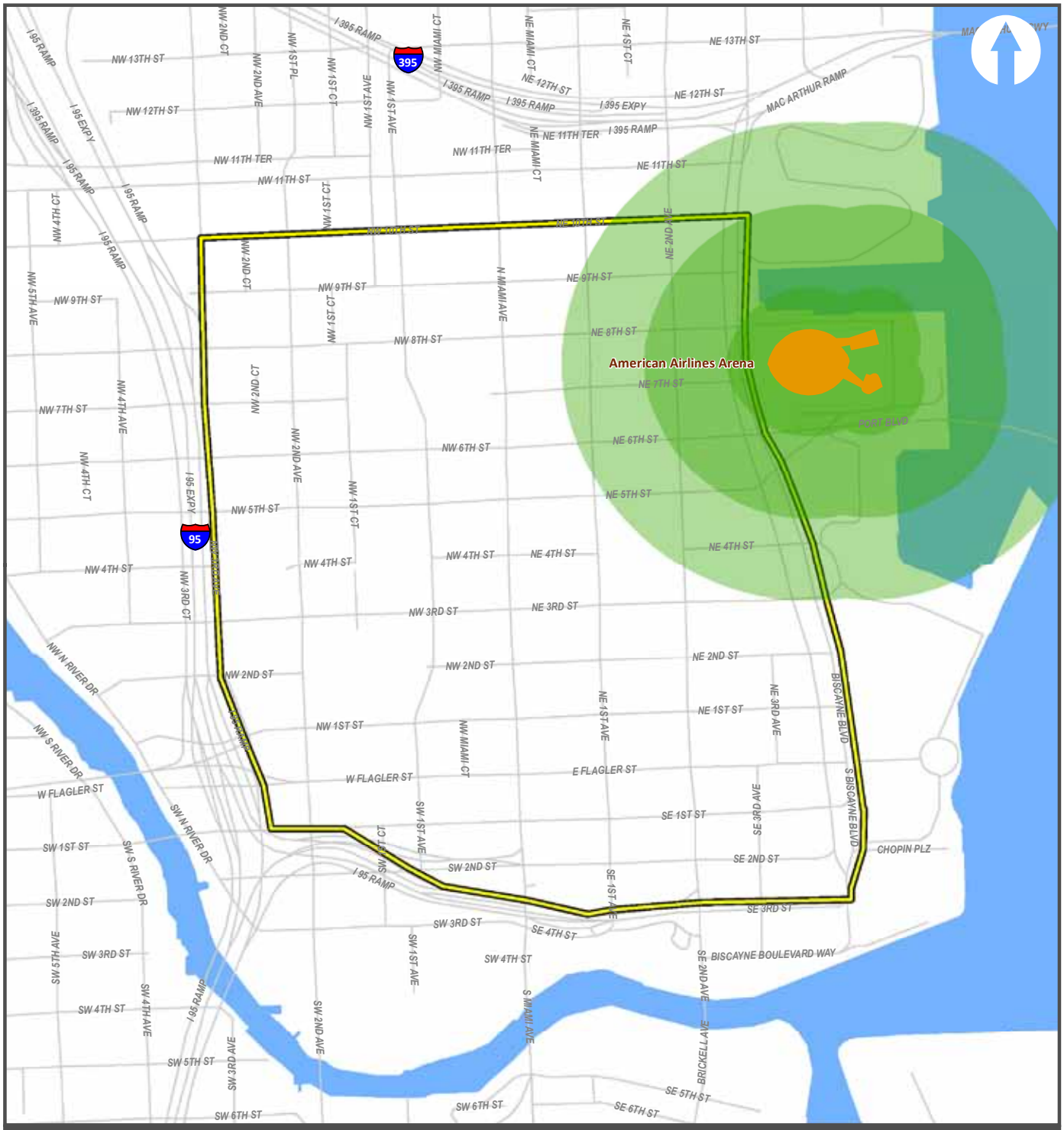


FIGURE C04 - SPORTS ARENA

Downtown Miami Intermodal Terminal Feasibility Study

0 0.25 0.5 Miles

LEGEND

- Study Area
- American Airlines Arena
- 1 Minute Walk - 264ft
- 3 Minute Walk - 792ft
- 5 Minute Walk - 1320ft

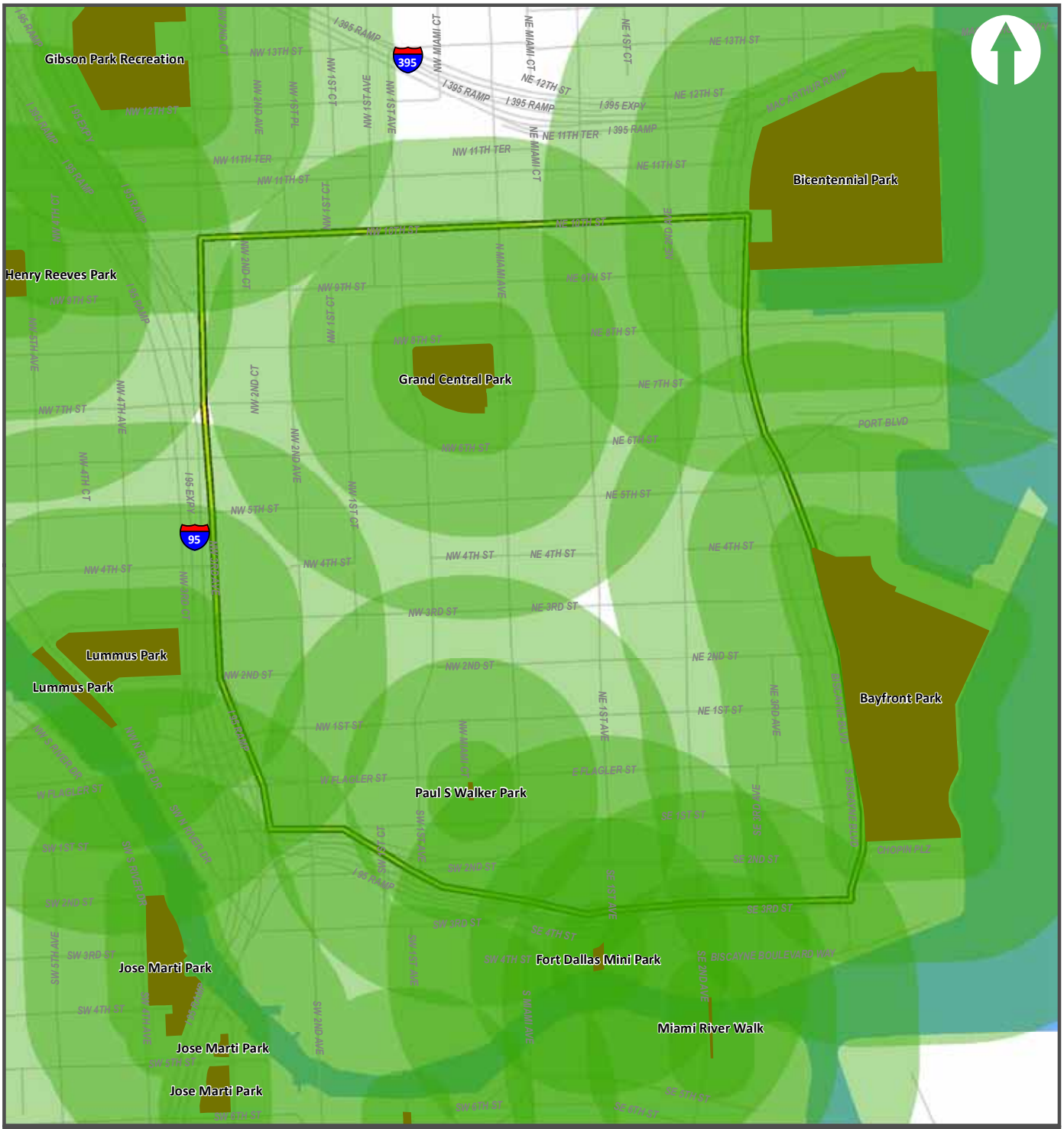


FIGURE C05 - PARKS

Downtown Miami Intermodal Terminal Feasibility Study

LEGEND

- Study Area
- Parks
- 1 Minute Walk - 264ft
- 3 Minute Walk - 792ft
- 5 Minute Walk - 1320ft

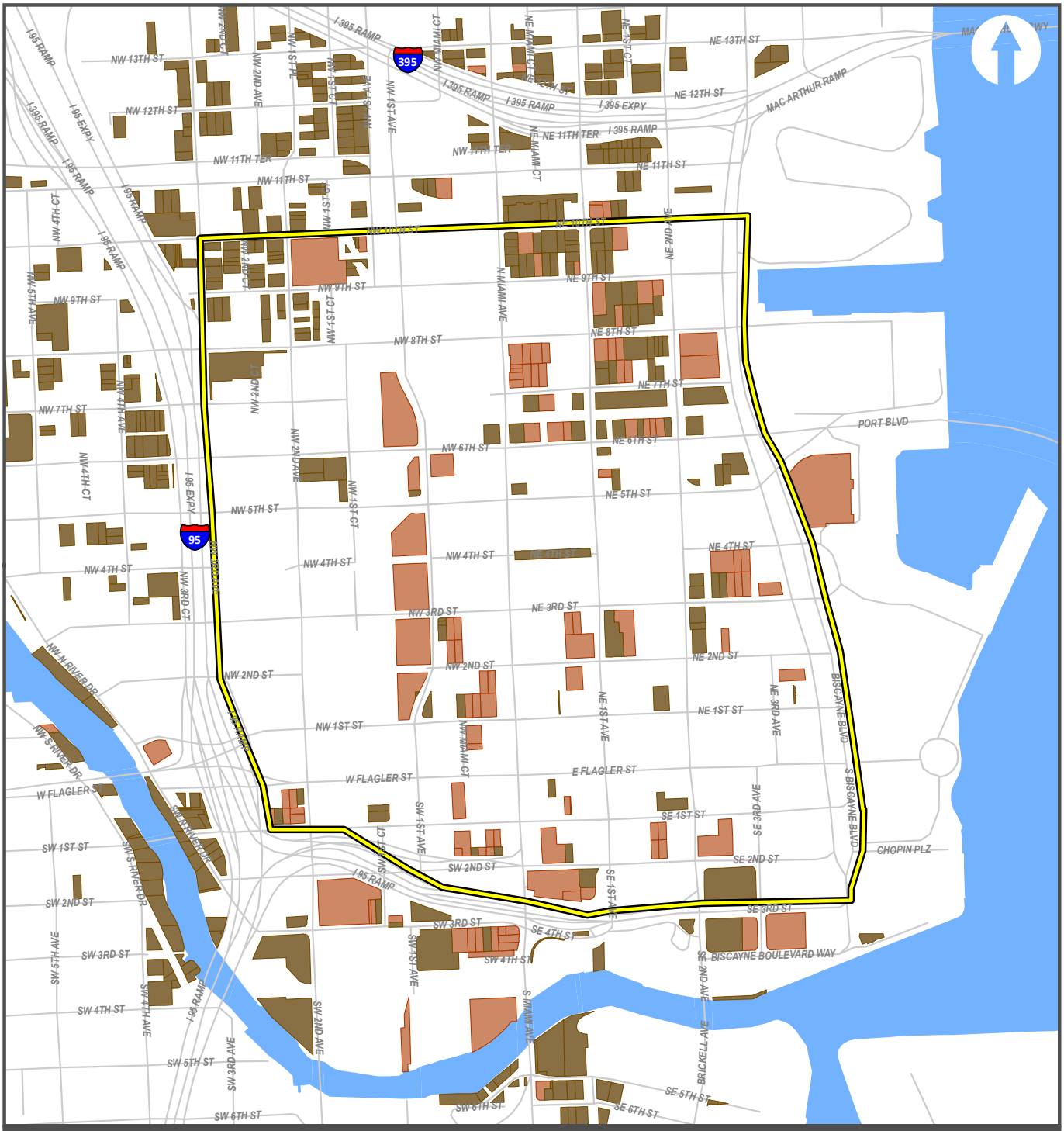


FIGURE C06 - VACANT LAND & PARKING LOTS

Downtown Miami Intermodal Terminal Feasibility Study

0 0.25 0.5 Miles

LEGEND

- Study Area
- Vacant Land
- Parking Lots

Note: The Vacant Land and Parking Lot layers were created from DOR codes in the Parcel file. Some polygons do not appear to accurately reflect the actual land use. The data may be old, or the DOR codes may be inaccurate. Further analysis is required.

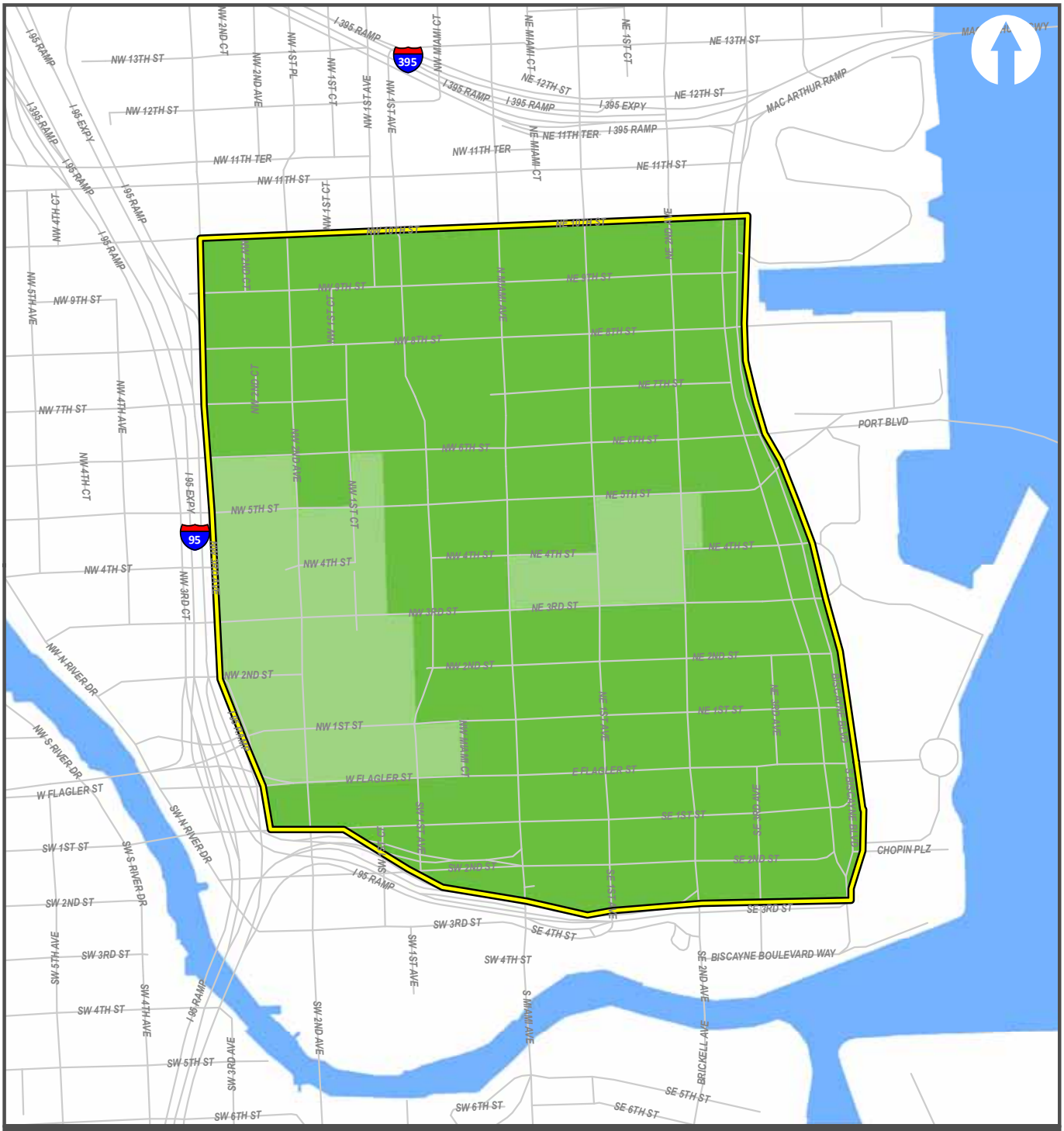


FIGURE C07 - COMPATIBLE LAND USES

Downtown Miami Intermodal Terminal Feasibility Study

0 0.25 0.5 Miles

LEGEND

- Study Area
- Allowed by PZB Exception
- Allowed by Admin. Warrant

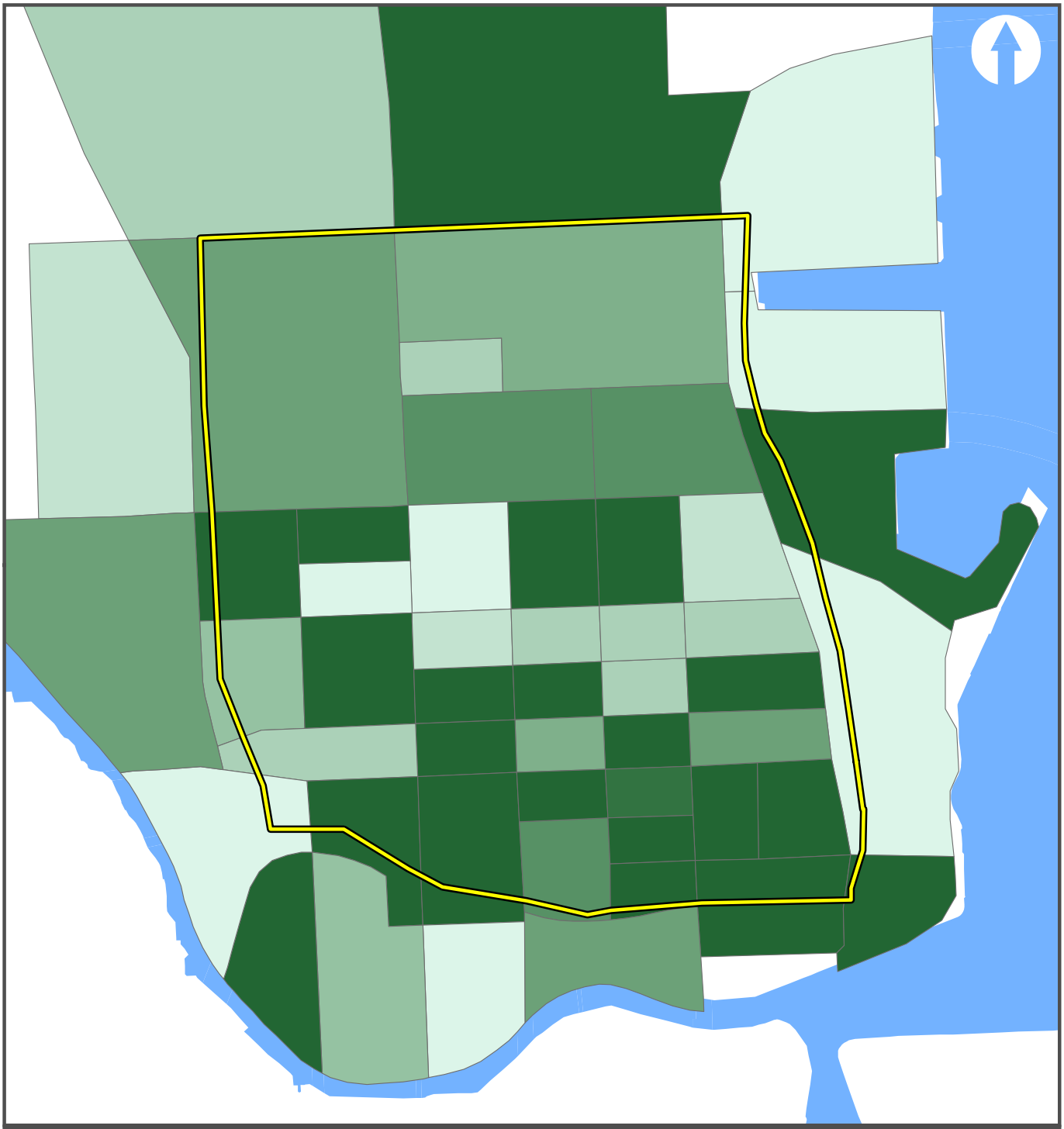


FIGURE C08 - HIGH EMPLOYMENT ZONES

Downtown Miami Intermodal Terminal Feasibility Study

0 0.25 0.5 Miles

LEGEND

Study Area

TAZ - 2010 Employment

0 - 100
101 - 200
201 - 300
301 - 400
401 - 500
501 - 600
601 - 700
701 - 800
801 - 900
901+

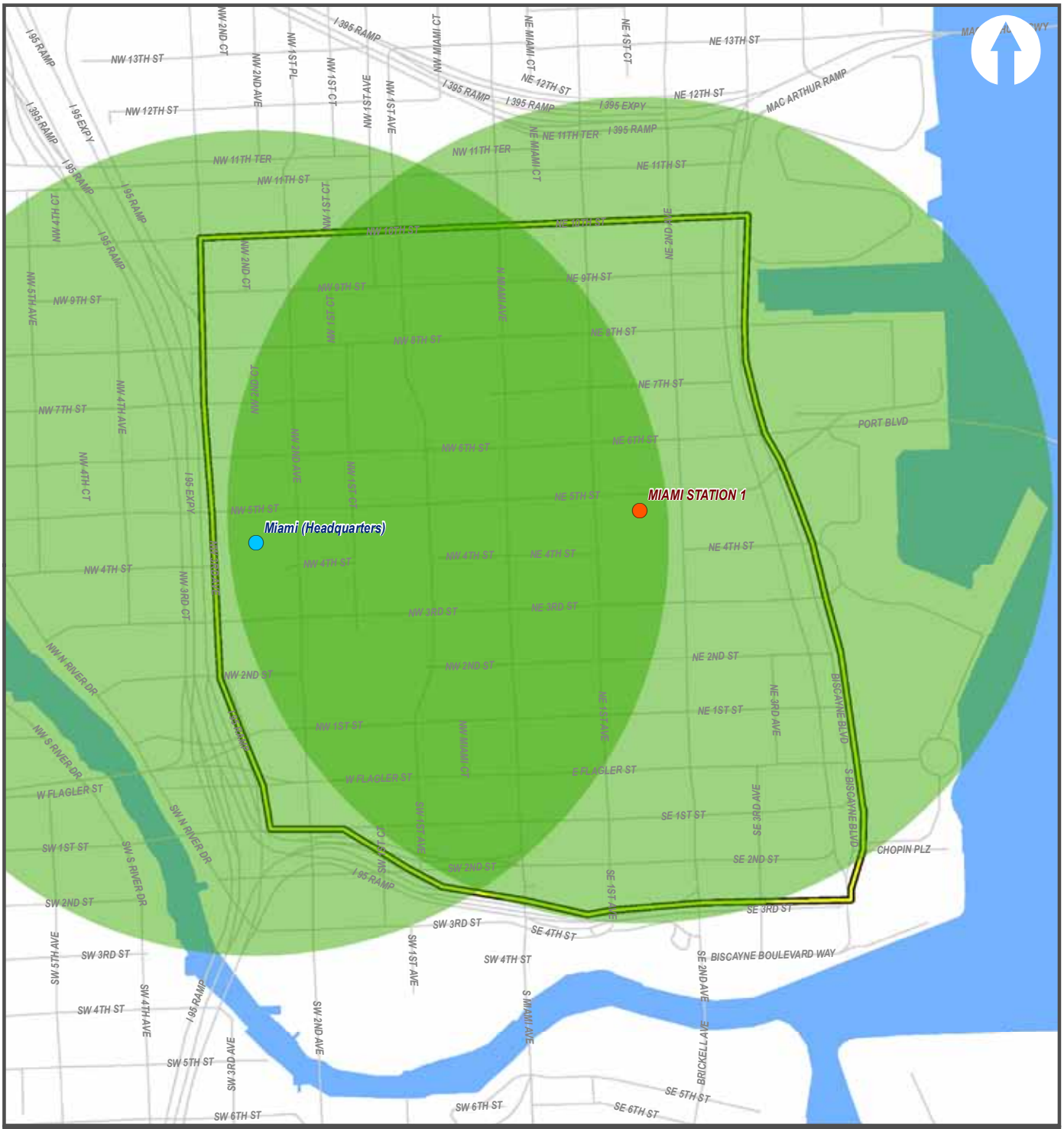


FIGURE C09 - EMERGENCY RESPONSE

Downtown Miami Intermodal Terminal Feasibility Study

0 0.25 0.5 Miles

LEGEND

- **Study Area**
- Police Station
- Fire Station
- Police Station Setback - 2640ft
- Fire Station Setback - 2640ft

FIGURE C10 - COMMUNITY REDEVELOPMENT AREAS

Downtown Miami Intermodal Terminal Feasibility Study

0 0.25 0.5 Miles

LEGEND

Study Area

SE Overtown/Park West Community Redevelopment Area

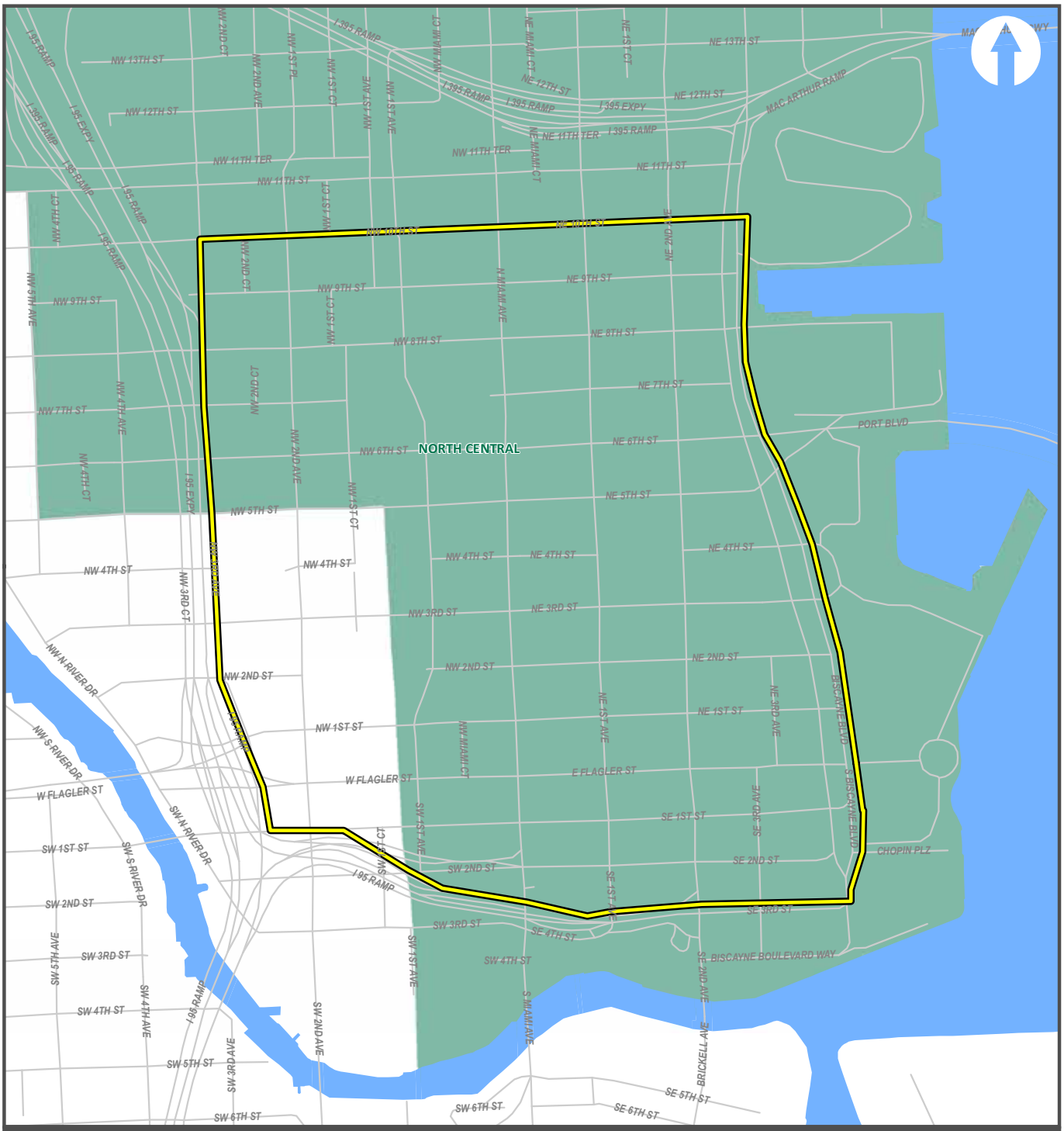


FIGURE C11 - EMPOWERMENT ZONES

Downtown Miami Intermodal Terminal Feasibility Study

0 0.25 0.5 Miles

LEGEND

Study Area

North Central Empowerment Zone

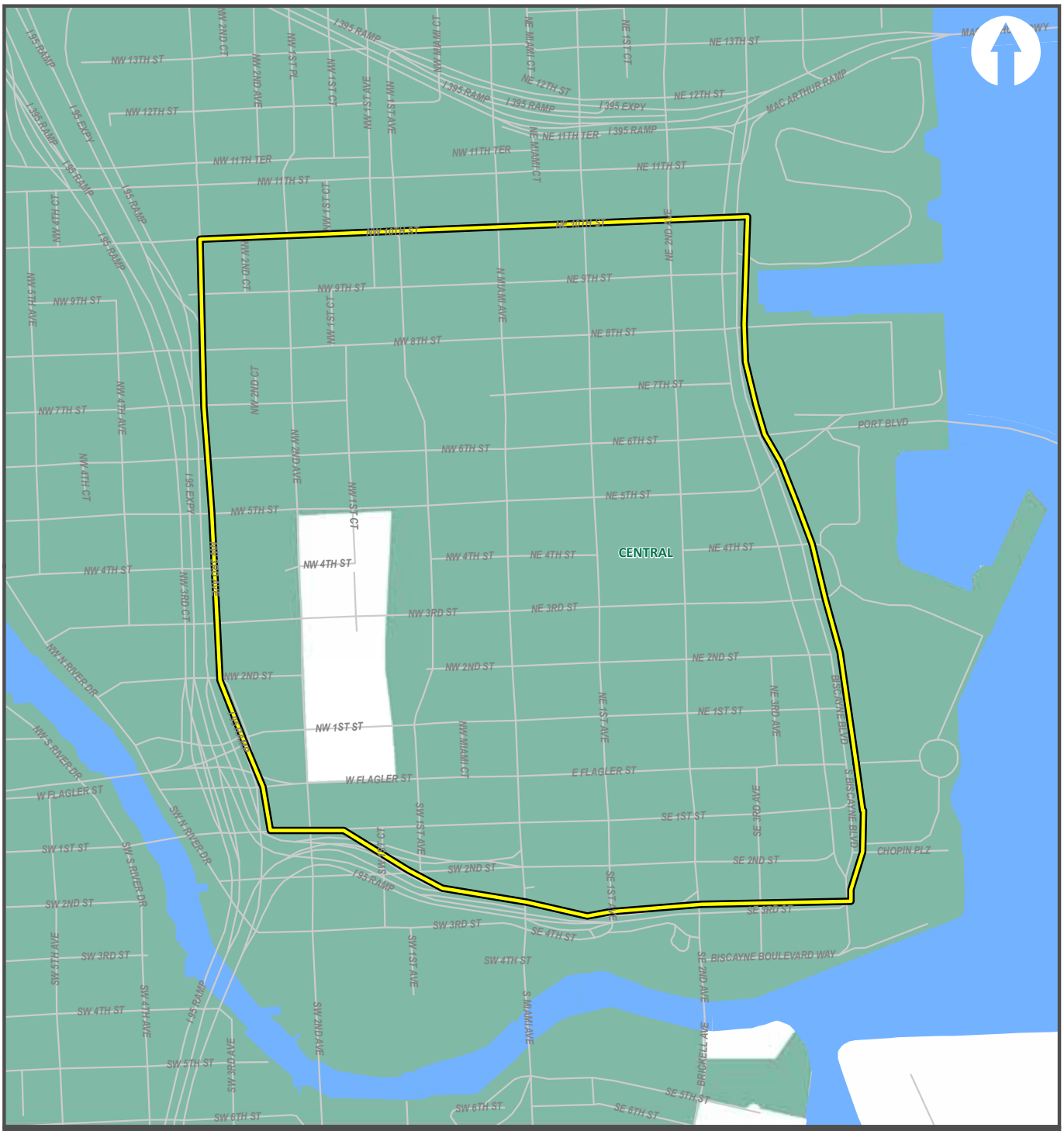


FIGURE C12 - ENTERPRISE ZONES

Downtown Miami Intermodal Terminal Feasibility Study

0 0.25 0.5 Miles

LEGEND

Study Area

Central Enterprise Zone

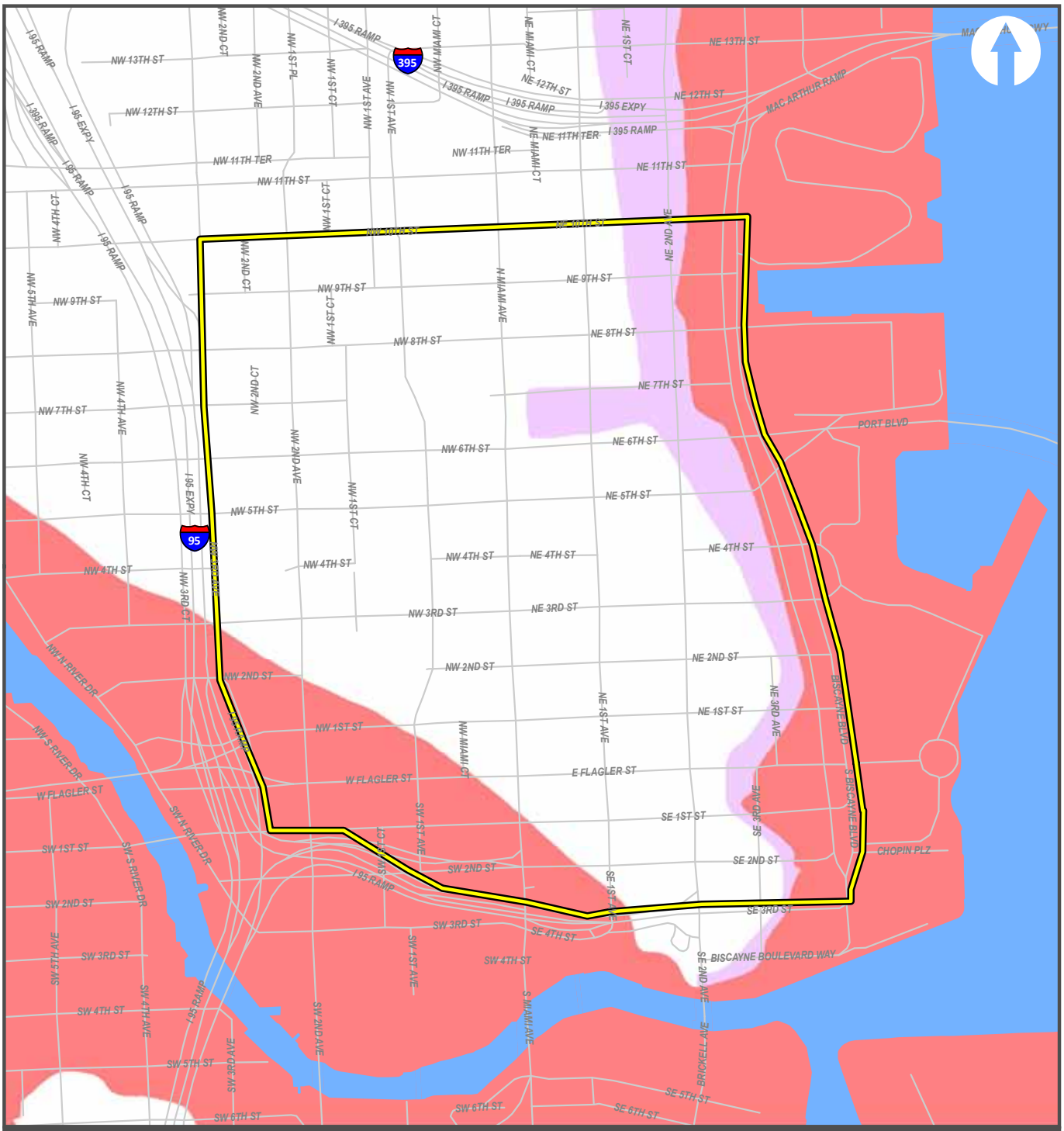


FIGURE D01 - FLOODPLAINS

Downtown Miami Intermodal Terminal Feasibility Study

0 0.25 0.5 Miles

LEGEND

- Study Area
- 100-Yr Floodplain
- 500-Yr Floodplain

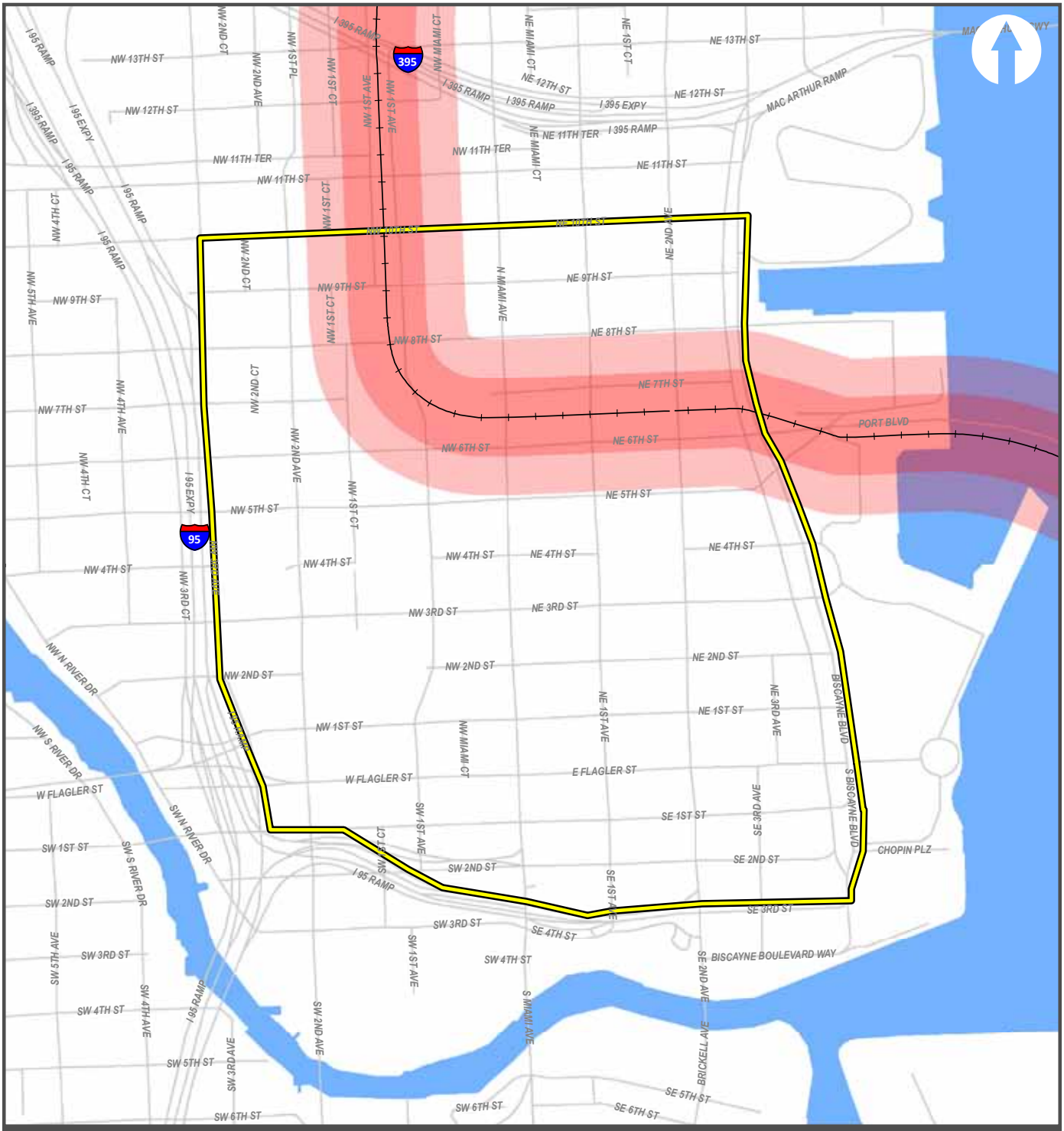


FIGURE D02 - FREIGHT RAIL

Downtown Miami Intermodal Terminal Feasibility Study

0 0.25 0.5 Miles

LEGEND

- Study Area
- Freight Rail
- Freight Rail Setback - 250ft
- Freight Rail Setback - 500ft

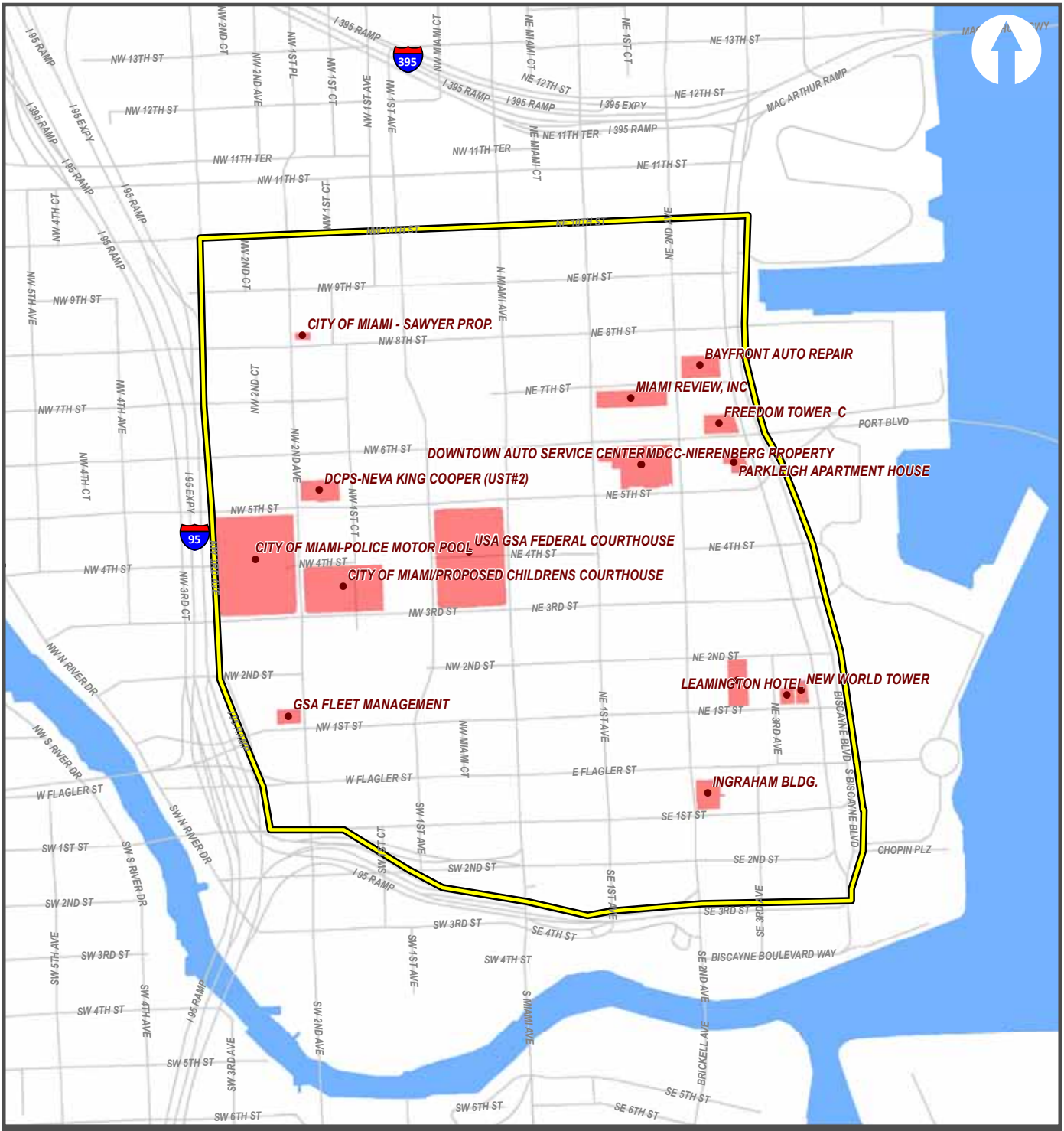


FIGURE D03 - CONTAMINATED SITES

Downtown Miami Intermodal Terminal Feasibility Study

0 0.25 0.5 Miles

LEGEND

- Study Area
- Contaminated Sites in the Study Area
- Contaminated Parcels in the Study Area

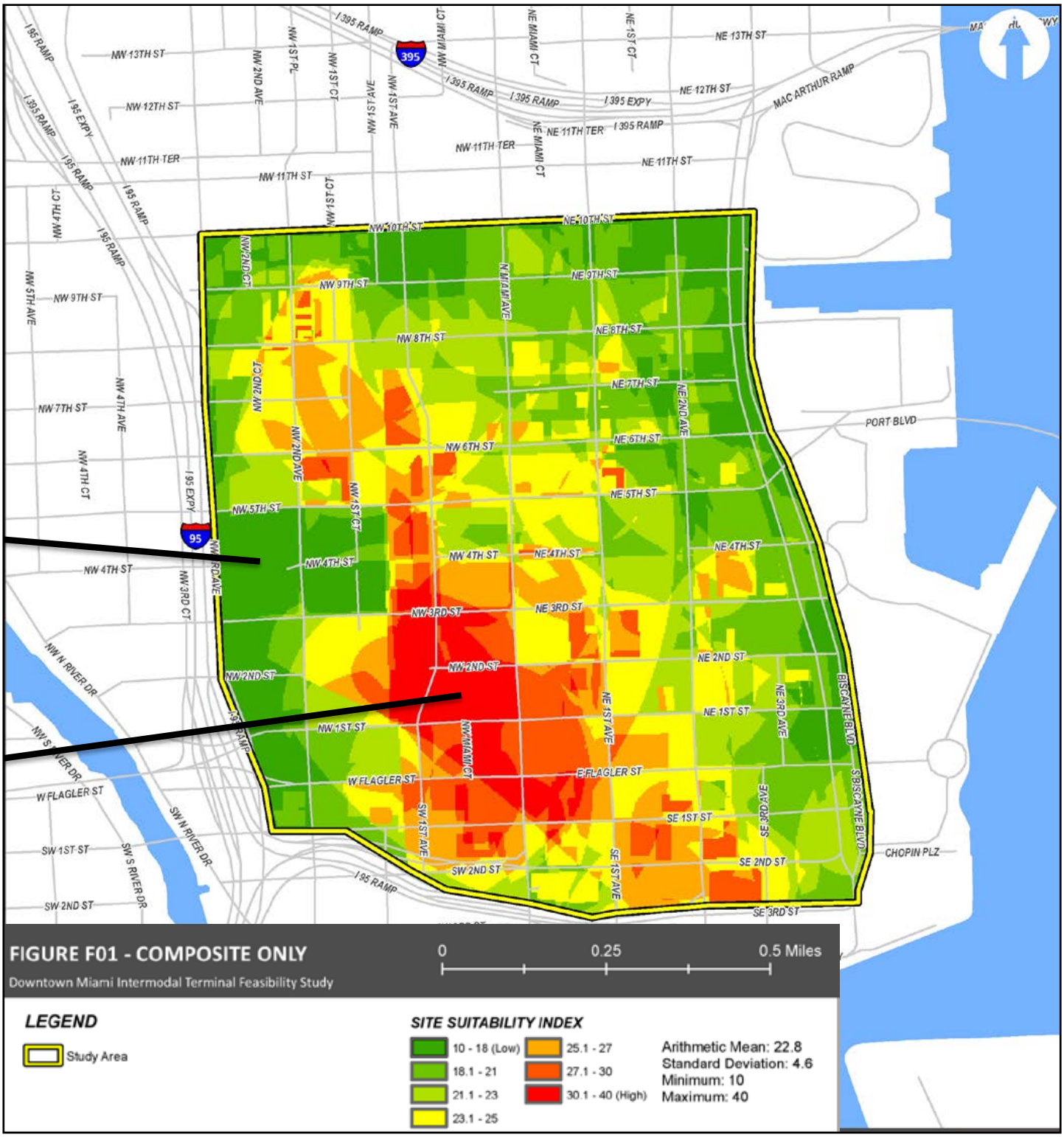


FIGURE F01 - COMPOSITE ONLY
Downtown Miami Intermodal Terminal Feasibility Study
0
0.25
0.5 Miles
LEGEND
Study Area
SITE SUITABILITY INDEX
10 - 18 (Low)
18.1 - 21
21.1 - 23
23.1 - 25
25.1 - 27
27.1 - 30
30.1 - 40 (High)
Arithmetic Mean: 22.8
Standard Deviation: 4.6
Minimum: 10
Maximum: 40
I 395 RAMP
I 395 EXPY
MAC ARTHUR RAMP
NW 13TH ST
NE 13TH ST
NW 12TH ST
NE 12TH ST
NW 11TH TER
NE 11TH TER
NW 11TH ST
NE 11TH ST
NW 10TH ST
NE 10TH ST
NW 9TH ST
NE 9TH ST
NW 8TH ST
NE 8TH ST
NW 7TH ST
NE 7TH ST
NW 6TH ST
NE 6TH ST
NW 5TH ST
NE 5TH ST
NW 4TH ST
NE 4TH ST
NW 3RD ST
NE 3RD ST
NW 2ND ST
NE 2ND ST
NW 1ST ST
NE 1ST ST
W FLAGLER ST
E FLAGLER ST
SW 1ST ST
SE 1ST ST
SW 2ND ST
SE 2ND ST
SE 3RD ST
PORT BLVD
CHOPIN PLZ
BISCAYNE BLVD
NW N RIVER DR
SW N RIVER DR
SW S RIVER DR
NW MIAMI CT
NE MIAMI CT
NW MIAMI AVE
NW 1ST PL
NW 1ST CT
NE 1ST CT
NW 1ST AVE
NE 1ST AVE
NW 2ND AVE
NE 2ND AVE
NW 2ND CT
NW 3RD AVE
NW 3RD CT
NW 4TH AVE
NW 4TH CT
NW 5TH AVE
NE 3RD AVE
SW 1ST AVE
SE 1ST AVE
SE 3RD AVE
NW 14TH CT
I 95 RAMP
I 95 EXPY
395
95

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Miami Herald
Posted on Tue, Aug. 20, 2013

All Aboard Florida seeks downtown Miami property for train hub

By Alfonso Chardy
achardy@elNuevoHerald.com

An artist's rendering of what a Miami-Orlando train station in downtown Miami may look like.

Managers for All Aboard Florida, the project to build an Orlando-to-Miami passenger train service, are about to begin negotiations with Miami's Community Redevelopment Agency to acquire two parcels in downtown Miami as part of the plan to build a massive train station and transportation hub downtown.

The goal is to persuade the CRA to sell the parcels across from the Lyric Theater in Overtown to All Aboard Florida for $5.5 million, according to Michael Reininger, president and chief development officer for the train project.

All Aboard Florida's disclosure that it is seeking to acquire the two parcels, currently operating as a parking lot, marked another significant milestone in the $1.5 billion train project. Reininger and the project's public affairs manager, Ali Soule, also provided the first glimpse of what the Miami station and transport hub would look like. It wouldn't be just a train station with amenities inside, such as restaurants, cafeterias and shops. It would also include office space, residential apartments and retail stores. One of the reasons All Aboard Florida wants to acquire the two parcels at the corner of Northwest Eighth Street and Second Avenue is because project managers want to build a multi-story building there that would feature apartments, offices, shops and parking for the area, the nearby Lyric Theater and the International Longshoremen's Association — all connected to the train station.

The station would rise on parcels where parking lots operate right now, next to the county government building downtown. Those parking lots belong to the company in charge of All Aboard Florida.

The train would run from Miami to Orlando with intermediate stops in Fort Lauderdale and West Palm Beach. The Orlando station would be at the Orlando International Airport.

Originally announced in March 2012, All Aboard Florida is expected to launch by the end of 2015.

Sixteen daily trains would leave from each of the two terminus stations, at Orlando International Airport and downtown Miami, between early morning and the evening. Trains

would take about three hours to complete each one-way trip.

Reininger said CRA officials will send recommendations to their board, which will decide whether to accept All Aboard Florida's bid at a meeting scheduled for September.

CRA officials convened a review committee recently to look at three proposals. All Aboard Florida came in second, but the score with the other bidder was very close.

"As a result of the closeness, the CRA has decided to enter into simultaneous negotiations with both teams, the two highest-point getting responders," Reininger said. "Whatever deals get negotiated will be presented to the CRA board for their vote."

He said the two parcels are key to the project, as they are integral to the planned station and transport hub, a project he said will dramatically transform downtown Miami and Overtown, where project managers expect to create jobs and new opportunities for area residents and businesses.

"We are not just developing these two blocks," Reininger said. "In fact, we're developing a very major infrastructure and development program that will be transformative for the entirety of downtown Miami."

Besides building the Miami station for the Miami-Orlando train, Reininger said, All Aboard Florida is also planning a transportation hub that would provide links between the intercity train and the Miami-Dade transit services there such as Metrorail, Metromover and Metrobus.

OrlandoSentinel.com

Orlando-to-Miami train needs just 1 more deal before it can roll

By Dan Tracy, Orlando Sentinel

1:40 PM EDT, June 26, 2013

A $1.5 billion passenger train that would link Orlando with Miami is just one deal away from becoming a reality.

The Coral Gables company behind the privately financed project has won two critical agreements it needs to begin construction.

All Aboard Florida railroad got the approval Wednesday from Orlando's main road building to lay tracks on land along the BeachLine Expressway. A similar arrangement was made late Tuesday with the state, which also owns part of the BeachLine.

That means All Aboard Florida only needs a deal with its final destination, Orlando International Airport, to complete its route through Central Florida.

Train representatives will meet Friday with airport officials to talk again, said Mike Reininger, president and chief development officer of All Aboard Florida.

He said the airport and All Aboard Florida are close to a pact. Airport spokeswoman Carolyn Fennell confirmed the meeting, but would not characterize the negotiations, saying only that "discussions are ongoing."

Reininger, who attended Wednesday's board meeting of the Orlando Orange County Expressway Authority, said the state and authority agreements move the train nearer to "the realization of this vision we have."

All Aboard Florida, owned by Florida East Coast Industries of Coral Gables, could not build its system without permission from the state and the expressway authority to lease right-of-way along the south side of the toll road that connects Interstate 4 with Cocoa.

The company already has tracks that run from Miami to Jacksonville. It is selecting engines and cars, plus planning depots in West Palm Beach, Fort Lauderdale and Miami for what promises to be a 230-mile, three-hour route.

Both the state and expressway deals are for 50-year leases, with a option for another 49 years. The train company would pay the state $275,000 a year for the land, but compensation for the authority has not

been set yet.

If there is an accident during construction or operation of the train, All Aboard Florida would take responsibility, according to the leases. The train is slated to start carrying passengers in late 2015.

Authority Chairman Walter Ketcham praised the agreement, saying, "It's an incredible opportunity to help connect us to other parts of Florida in different ways."

In a release from the state, Gov. Rick Scott was quoted as saying, "This lease is another example of how our economic policies work to create private sector jobs for Florida families and develop the best transportation and infrastructure systems in the country."

The state and authority deals could mean that opposition to the train could be waning at Deseret Ranch, the 300,000-acre tract on the south edge of the BeachLine. A meeting involving Deseret managers, the state and authority officials is set for Friday in Tallahassee.

Deseret managers have been pushing to involve All Aboard Florida in a series of planning exercises that could have delayed operations. Deseret officials fear the train could hamper their future plans to turn sections of the sprawling ranch into housing and commercial development near Orlando International.

The ranch, which spans Orange, Osceola and Brevard counties, is owned by Farmland Reserve Inc., a trust of The Church of Jesus Christ of Latter-day Saints. Deseret donated some of the land for the BeachLine in 1965.

dltracy@tribune.com or 407-420-5444.

December 25, 2012 By Dan Tracy, Orlando Sentinel

Orlando-to-Miami train could generate $145 million

By Dan Tracy
Staff writer

If the All Aboard Florida train becomes a reality, the system linking Orlando International Airport with Miami would generate $145 million in fares annually by 2018, according to records filed by the company with the state.

With one-way tickets estimated in the $100 range, that would mean the Coral Gables-based company is expecting to carry nearly 1.5 million passengers between Central and South Florida within three years of its inaugural trip in 2015.

All Aboard Florida also is seeking a 99-year lease, presumably for free or a token payment, to lay down tracks along the south edge of the BeachLine Expressway, which runs from Interstate 4 south of downtown Orlando to Cocoa on the East Coast.

Those details were revealed in an 81-page proposal All Aboard Florida sent the state Department of Transportation last month. The document was released to the public after the company was given the go-ahead by the state to open talks for securing the BeachLine property.

Spokeswoman Ali Soule said her company would not comment publicly about the train until negotiations are complete. "Everything in that document is all we have to say right now," she said.

The project's cost has been pegged at $1.5 billion, up from an original estimate of $1 billion. Soule would not say why the number grew.

All Aboard is seeking to become the nation's first privately financed passenger-rail system to operate successfully since the automobile became the prime choice of travelers. Government typically underwrites mass-transit systems because they are so expensive to build and operate.

The only private system to open recently was a 3.9-mile monorail line behind the Las Vegas strip of casinos in 2004. It has been in Chapter 11 bankruptcy since 2010.

All Aboard Florida told the state in its proposal that a financial plan is still being developed. It was based in part on interviews with nearly 10,000 travelers in Florida.

Company executives are bullish because a sister company, Florida East Coast Railway, already owns about 200 miles of track from Miami to Cocoa. That could dramatically reduce startup costs.

The FEC railroad runs about 10 freight trains a day in the corridor, down from a high of 23 in 2006, according to another set of documents about the project filed with the state.

Keith Dierkx, who directs IBM's global rail innovation center, said All Aboard Florida has a good shot at success, given its railroad experience and that it would offer a "seamless travel" option at

See ***TRAIN, 3D***

TRAIN

Continued from ***Page 1D***

Orlando's airport, where visitors can get off a plane and catch a train to another destination, or vice versa.

"In principle, I don't think there are any obstacles to doing this privately," Dierkx said.

The state and Orlando's expressway authority, joint owners of the BeachLine, have indicated they would give up the right of way for next to nothing, but the train would have to be built to accommodate future expansion of the toll road.

That means sections of the track would either have to be elevated or placed beneath proposed or improved interchanges. Some experts say that could increase the cost per mile from $5 million to $30 million along the BeachLine.

All Aboard also would have to pay for stations in Miami, Fort Lauderdale, West Palm Beach and at OIA.

The airport, which is considering construction of a new southern terminal, would be responsible for building a mile-long, elevated monorail to serve the station, at a cost of $181.4 million. OIA also would be responsible for roads and other infrastructure costs of about $78 million.

In addition, a 3,500-space garage and depot would cost $210.7 million, OIA estimates. About 80 percent of that expense would be the garage, presumably leaving the rest for All Aboard.

Airport spokeswoman Carolyn Fennell said talks continue with train officials but did not offer specifics.

All Aboard says it intends to compete with airlines flying between Orlando and South Florida. The train trip would take about three hours, as opposed to four hours by car. Top speed could be 125 mph.

Construction could start as early as next year, if agreements can be reached with the state, the expressway authority and the airport.

dltracy@tribune.com or 407-420-5444.

Monday, December 10, 2012 - SunSentinel

Fast rail on track

Miami-Orlando passenger line set to debut in 2015

BY MICHAEL TURNBELL Staff writer

A new passenger rail service is on track to begin in 2015, whisking travelers from Miami to Orlando, while offering hourly trains, gourmet meals and Wi-Fi.

The $1 billion project will generate about 1,200 construction jobs and 400 permanent jobs – as well as some inconveniences for motorists. They'll have to wait often at railroad crossings and in a few instances find another route because three crossings will close to accommodate stations.

The trains will stop in Miami, Fort Lauderdale, West Palm Beach and Orlando International Airport, making the 230-mile trip in 3 hours. The service is not geared towards commuters but business travelers and tourists.

Florida East Coast Industries, a Coral Gables based railroad and real estate company, insists it can build and operate the project – dubbed All Aboard Florida – without any public subsidy. "We wouldn't be doing this is we didn't think it was viable," said Husein Cumber, who is leading the project.

Here is what to expect and how it may affect you.

When will construction begin?

In 2013.

Will Additional tracks be built?

A second track would be added to about 50 of the 66 miles between Miami and West Palm Beach. Single tracks would remain on seven bridges. No additional right of way is required along the FEC's existing line.

Which crossings could close?

In Fort Lauderdale Northwest Second Street would close at the tracks if the preferred station size is chosen. Second Street is home to the city's main fire station just west of the tracks. In downtown West Palm Beach, Evernia and Dature streets would close at the tracks. An official announcement about the station sites may come in early 2013.

Will crossings be improved?

Yes; 134 of the 138 crossings between Miami and West Palm Beach will be enhanced with raised medians and full-closure gates, similar to what was done when Tri-Rail added a second track.

What about train horns?

The city of Fort Lauderdale is considering applying for quite zones, which will require additional safety measures and federal approval to determine that safety wouldn't be compromised if horns were silenced. Other municipalities may do the same. Stationary wayside horns, which direct horn blasts to the roadway, also are possible,

How fast would trains travel?

South of West Palm Beach, trains would average 60 mph up to 79 mph – the speed of Tri-Rail and Amtrak. North of there, the maximum would be 110 mph. Between Cocoa and Orlando, as high as 125 mph.

How long would the trip take and how does it compare?

Figure on 3 hours from Miami, 2 hours 20 minutes from Fort Lauderdale and 1 hour 45 minutes from West Palm Beach. Officials say that meets or beats driving times. Amtrak takes about 5 hours from Miami.

How many trains a day?

There will be 16 to 19 trains each way, or about one per hour.

Won't more trains delay drivers at crossings?

It should take the passenger trains about 52 seconds to get through most crossings.

How much will it cost to ride?

Officials speculate a one-way ticket will cost less than $100 from Miami to Orlando, and less from Fort Lauderdale and West Palm Beach.

What about connections when I get off the train?

In Fort Lauderdale, a proposed downtown streetcar will pass the station. Broward County Transit's central bus terminal is next door. In West Palm Beach trolleys will pick up passengers at the station. Tri-Rail is a few blocks to the west. The Miami station will be next to two Metrorail stations and two Metromover stops. At Orlando International Airport, future plans call for SunRail commuter train to be extended to the station. But in the short-term, shuttles will be provided for key destinations.

How many people will ride?

Projections show about 1,827 boarding daily in Fort Lauderdale, 1,998 in West Palm Beach and 1,868 in Miami by 2030.

Can I take the train to commute between Miami, Fort Lauderdale and West Palm Beach?

Pricing probably will preclude that. The service is designed as an intrastate service rather than a commuter rail service.

How will the trains get from the coast, where the FEC runs to Orlando?

A 40-mile spur is planned from Cocoa to Orlando International Airport.

Who's paying for the service?

All Aboard Florida is footing the $1 billion cost. However, it is eligible to apply for federal financing for track construction and improvements.

mturnbell@tribune.com,
954-356-4155, Twitter
@MikeTurnbell

Rail economic stimulus on fast track to chug into downtown

By Scott Blake

Miami officials are excited about what a 240-mile passenger rail to Orlando with a train station at the end of the line in the heart of Miami can do for that neighborhood, as well as the entire downtown.

Coral Gables-based Florida East Coast Industries Inc. is proposing to build a station on a 9-acre site it owns along Northwest First Avenue, north of the Miami-Dade County Courthouse on the west side of downtown.

"It's a huge economic stimulus any time you get a mass movement of people into an area," says Miami City Commissioner Marc Sarnoff, whose district includes the proposed station site.

The station would be modeled after London's Paddington railway station, as part of the company's All Aboard Florida project to create a passenger rail system connecting Miami to Fort Lauderdale, West Palm Beach and Orlando.

The line would start operating by the end of 2014, but the company so far has disclosed few details of the proposed station.

The station should be carefully planned so that it becomes a landmark, says Alan Ojeda, president and CEO of the Rilea Group, a real estate development firm based on Brickell Avenue and a Downtown Development Authority board member.

"This is the starting point of things," Mr. Ojeda says. "It has to be an important building."

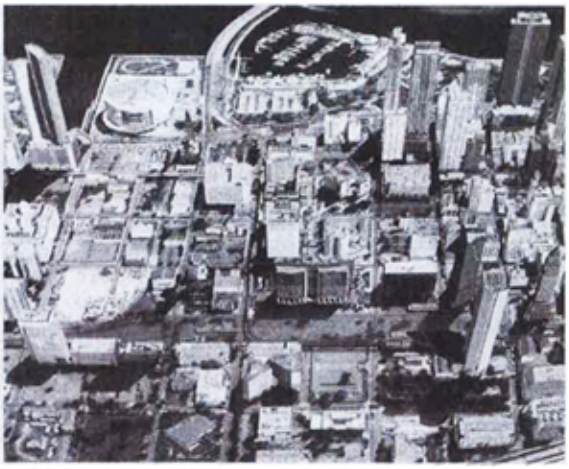
He says the station and passenger line could lay the foundation for farther-reaching and faster trains in the future linking Miami to cities such as Atlanta.

"It's the first big step," he says.

Florida East Coast Industries is the holding company for Florida East Coast Railway, which operates a freight rail line along the state's East Coast from Jacksonville to Miami.

Photo by Maxine Usdan

Florida East Coast Industries owns 9 acres on Northwest First Avenue where it plans a railway station.



Aerial view shows a wide-open strip for rail station in heart of the city.

The passenger rail would run alongside the freight line from Miami to Cocoa in Brevard County, and new passenger tracks would be laid from Cocoa to Orlando.

Company officials say the estimated $1 billion project would be the first private, unsubsidized passenger rail service built in generations between major US cities.

Although not considered a high-speed rail, trains could reach speeds near 125 mph along the less-populated areas of the route. In more densely settled South Florida, the trains could go no faster than 79 mph. The goal is to provide trips between Miami and Orlando in about three hours.

Amtrak, the federally-owned national rail corporation, currently offers twice-daily service between Orlando and the outskirts of Miami, but those trips take five hours or longer.

With All Aboard Florida, Miami officials have high hopes for what the influx of thousands, perhaps even millions of rail passengers each year into the center of the city can do for downtown, especially for what they describe as under-developed areas in the vicinity of the station site.

"It will be the catalyst for development of western downtown Miami," says Miami attorney Neisen Kasdin, a Downtown Development Authority board member and former mayor of Miami Beach. "I think you'll see larger-scale and smaller businesses open up."

Mr. Kasdin says the passenger rail and station would be "a very exciting addition" to downtown, helping to transform the neighborhood to a more vibrant transportation hub.

For years, he says, the east side of downtown along the Biscayne Boulevard and Brickell Avenue corridor has seen the most expensive development, but the west side of downtown could gain more of that when the station opens.

"This could create a new focus for development," he adds. "This is an important initiative for everyone to get behind.

"It will not only create investment in that [immediate] area, but it will strengthen all of downtown as business and activity center."

Mr. Sarnoff, a lawyer, has broached the idea of moving the Third District Court of Appeal to the site to help create a "legal campus" there. The Court of Appeal is now located west of Miami near the Florida Turnpike in the Tamiami area.

Mr. Sarnoff says he has discussed the idea with the court's chief judge, who seemed intrigued. So far, nothing has been formally planned.

In addition to the county courthouse, state and federal courts sit near the downtown site. The only other thing needed there, Mr. Sarnoff says, is a law school to round out his idea for a legal campus, which would attract more law firms and restaurants and other businesses.

"It would make for a legal community with live-work opportunities" in the neighborhood, he adds.

An intercity passenger rail downtown, Mr. Ojeda says, is long overdue.

"This should have been done 50 years ago," he says. "Every serious city in the world has it."

Mr. Ojeda foresees the passenger rail leading to greater development, such as retail and offices.

"I think any method of transportation opens up places" for economic development.

www.southfloridabusinessjournal.com JUNE 29-JULY 5, 2012

South Florida BUSINESS JOURNAL

FEC's review of rail station sites signals opportunities

BY OSCAR PEDRO MUSIBAY

Some of the region's biggest development opportunities may be brewing as Florida East Coast Industries (FECI) looks at passenger station sites.

The political feedback and ridership analysis FECI's All Aboard Florida division has generated for its proposed passenger rail line between Miami and Orlando appear to be encouraging. That has given the Coral Gables-based private company the confidence to scout possible sites and develop plans, local transportation officials say.

At the end of March, FECI said it was planning a $1 billion project to develop a three-hour, Miami-to-Orlando passenger train service by 2014, using a right of way that runs through the downtown areas of South Florida's coastal cities.

The move would restore passenger service for first time since 1968 on the Florida East Coast Railway (FEC), which Henry Flagler built more than 100 years ago.

SEE FEC | 37

MARK FREERKS

This lot at Northwest Eighth Street and First Avenue is part of a potential station site.

FEC: All Aboard service could link buses, Metrorail and Metromover

FROM PAGE 1

FEC, sister holding company to FECI, currently uses the track for freight.

All Aboard officials declined comment for this story amid ongoing presentations to public officials, including one that was scheduled for June 28 before the Miami City Commission.

The All Aboard service could conceivably tie into both existing systems – including bus service, Metrorail and Metromover – and future concepts, such as adding Tri-Rail service to the FEC tracks and downtown Fort Lauderdale's proposed Wave streetcar system.

Major questions are which properties might be used for stations in Miami, Fort Lauderdale and West Palm Beach, and whether the stations would be part of mixed-use projects that could include office, residential and retail space.

There's a logical site in Miami: FECI controls more than 9 acres on the west side of the downtown area that is used as surface parking lots near the county's Stephen P. Clark Government Center, inside of which is a Metro station.

"It would have to be next to the government center," Miami-Dade Mayor Carlos Gimenez said when asked about the best location for the Miami station. The government center already serves as a hub for buses, Metrorail and Metromover, which could to tie into the All Aboard project.

Gimenez said June 27 that he had already spoken with officials from All Aboard, which is led by FEC Executive VP Hussein Cumber. He said the company does not want any public subsidy. That is a key point because Gov. Rick Scott rejected federal high-speed rail funding because he was concerned about the state having to absorb the cost of running the system after it was built.

MIAMI-DADE Mayor Carlos Gimenez would like the Miami All Aboard station to be next to the Steven P. Clark Government Center.

The FEC's slideshow for a May 10 presentation to the Broward Metropolitan Planning Organization (MPO) says service could tie in to the 2.7-mile Wave, which is to receive $18 million in federal funding.

In Broward, a seemingly ideal location would be next to the central bus terminal in downtown Fort Lauderdale. The city owns land between Andrews Avenue and the railroad tracks. The MPO has dedicated $8 million for a gateway station in that area that would serve bus riders and be home to both a streetcar maintenance facility and the All Aboard passenger line, said James Cromar, the MPO's livability planner.

He said All Aboard officials are in constant dialogue with local officials about the project, but details about a possible station are not known.

At this point, it is less clear where a station in West Palm Beach might logically go.

FECI has plenty of real estate expertise, since it also encompasses Flagler, one of South Florida's largest development companies.

SUPPORT FOR PASSENGER SERVICE

Many South Florida business leaders have been enthusiastic about restoration of passenger service on the FEC – whether it is an Amtrak route that goes up the coast to Jacksonville, or Tri-Rail service from Miami to Jupiter.

Amtrak currently runs on the CSX right of way along Interstate 95 in South Florida, and up to Jacksonville indirectly via Orlando. The CSX tracks curve northwest along the Beeline Highway after West Palm Beach, so Tri-Rail service to Jupiter along that right of way is not possible.

The All Aboard trains would run on 200 miles of existing tracks from Miami to Cocoa, and then on 40 miles of new tracks to Orlando. Christine Barney, CEO and managing partner of RBB Public Relations in Coral Gables and an FECI spokeswoman, has said that several routes are under consideration for the 40-mile section.

Eventually, the system could be expanded with connections to Tampa and Jacksonville.

Barney said the goal is for the trains to average 100 mph, with speeds generally faster in rural areas than in urban areas.

The average falls short of the 200 mph speeds that high-speed trains sometimes hit.

In contrast to the heavy public funding for high speed rail, FECI's announcement indicated its All Aboard Florida system would be privately funded but cost less because it would largely utilize existing tracks.

The system would include business- and coach-class service with advance purchase reserved seating, gourmet meals, Wi-Fi and the ability to work productively throughout the entire trip, according to a news release.

The Orlando station would connect to the upcoming SunRail commuter system.

The goal is for All Aboard Florida service to help ridership on local transit systems, Barney said.

About 6,000 direct jobs will be needed to construct the system, and more than 1,000 additional jobs to operate and maintain it. New economic development opportunities will also be created for communities along the route.

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C H Perez and Associates Consulting Engineers, Inc.
9594 NW 41 Street, Suite 201
Doral, Florida 33178
ENGINEERS AND SURVEYORS DEDICATED TO TRANSPORTATION
CA 25976 / LB 7360

TO: Jesus Guerra, P.E. / Miami-Dade MPO Project Manager
Brett A. Nein, ASLA / Jacobs Project Manager

FROM: Carlos Francis, P.E., PTOE /CHP Project Manager

DATE: August 10, 2012

SUBJECT: **Draft Executive Summary - Downtown Intermodal Terminal Qualitative Traffic Impact Assessment**

As requested, C. H. Perez & Associates Consulting Engineers, Inc (P&A) as a sub consultant to Jacobs Engineering Group, Inc., a consultant to the Miami-Dade MPO, has prepared this executive summary for a qualitative traffic impact assessment of a proposed intermodal terminal for downtown Miami. The terminal would include a pedestrian/transit mall. Various locations are being considered for the terminal that will require up to three scenarios of possible road closures to be considered relative to the impact on the existing traffic circulation. The qualitative traffic assessment was undertaken to determine the feasibility of the proposed downtown intermodal terminal from a traffic impact perspective.

STUDY AREA

Based on the information presented by Jacobs to the Urban Land Institute Conference on May 4, 2012 regarding the proposed intermodal facility and subsequent internal discussions among members of the project team, the following three road closure scenarios in downtown Miami were assessed independent of each other:

1. NW 1st Avenue – Road closure from NW 5th Street to NW 3rd Street
2. NW 1st Avenue – Road closure from NW 3rd Street to NW 1st Street
3. NW 1st Street – Road closure from NW 2nd Avenue to NW 1st Avenue

A study area was developed to include roadway links and intersections likely to be impacted by diverted traffic as a result of these potential road closures considering the existing one-way/two-way traffic circulation system in downtown area. **Figures ES1** through **ES 3** depict the study area and the likely alternative traffic circulation routes that could result from the closures.

NW 2nd Ave
NW 1st Ave
N Miami Ave
NE 1st Ave
NW 6th Street
NE 6th Street
Christ Fellowship Church
NW 5th Street
NE 5th Street
Miami Police Dept. & Law Enforcement High School
Wilkie D. Ferguson Federal US Court House
NE 4th Street
Miami-Dade College Wolfson Campus.
NW 4th Street
US Federal Court House David W. Dyer Bldg.
NW 3rd Street
NE 3rd Street
West Lot Parking Garage
Stephen P. Clark Government Center
NE 2nd Street
NW 1st Street
NE 1st Street
Cultural Center
Flagler Street
Flagler Street

LEGEND

- Roadway Direction of Travel
- Special Land Uses
- Likely Diverted Traffic
- Road Closure
- Signalized Intersection

CH PEREZ & ASSOCIATES CONSULTING ENGINEERS, INC
CERTIFICATE OF AUTHORIZATION NO. EB-25976
9594 NW 41 STREET, SUITE 201
MIAMI, FLORIDA 33178
(305)592-1070 / FAX: (305)592-1078

Figure ES 1

TRAFFIC CIRCULATION SKETCH - SCENARIO 1
DOWNTOWN INTERMODAL TERMINAL

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LEGEND

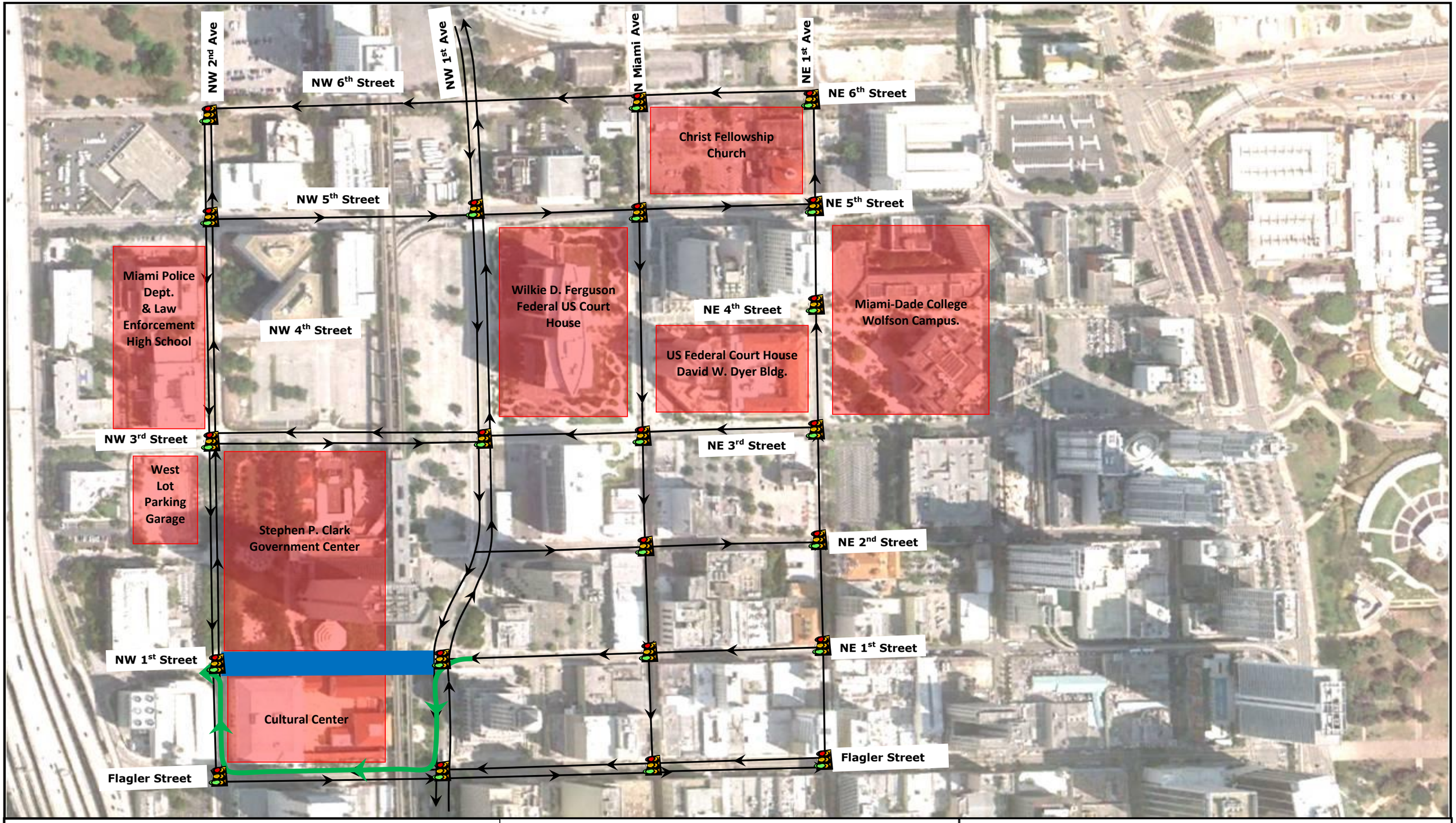
- Roadway Direction of Travel
- Special Land Uses
- Likely Diverted Traffic
- Road Closure
- Signalized Intersection

CH PEREZ & ASSOCIATES CONSULTING ENGINEERS, INC
CERTIFICATE OF AUTHORIZATION NO. EB-25976
9594 NW 41 STREET, SUITE 201
MIAMI, FLORIDA 33178
(305)592-1070 / FAX: (305)592-1078

Figure ES 2

TRAFFIC CIRCULATION SKETCH - SCENARIO 2
DOWNTOWN INTERMODAL TERMINAL

T:\MPO GPC-subs to Jacobs\DownTown Intermodal Facility\Report\Scenario_2_circulation_sketch.docx



LEGEND

- Roadway Direction of Travel
- Special Land Uses
- Likely Diverted Traffic
- Road Closure
- Signalized Intersection

CH PEREZ & ASSOCIATES CONSULTING ENGINEERS, INC
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9594 NW 41 STREET, SUITE 201
MIAMI, FLORIDA 33178
(305)592-1070 / FAX: (305)592-1078

Figure ES 3

TRAFFIC CIRCULATION SKETCH - SCENARIO 3
DOWNTOWN INTERMODAL TERMINAL

T:\MPO GPC-subs to Jacobs\DownTown Intermodal Facility\Report\Scenario_3_circulation_sketch.docx

DATA GATHERING

Existing traffic data for roadways within the study area were gathered to the extent available from Miami-Dade County Public Works Department, Miami-Dade MPO, the Florida Department of Transportation, the City of Miami and the Miami-Dade Transit **Tables ES1** and **ES2** on the following pages, contain summaries of roadways and intersections respectively within the study area for which data were available. Only roadways and intersections for which data were available were included in these summaries. **Table ES1** depicts actual link peak-hour volumes whereas **Table ES 2** denotes the time periods for which turning movement volumes (TMVs) were available.

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Table ES1: Data Gathering Summary for Study Area Roadway Links

Links		Scenario[1]			Available Link Volumes				
From	To	1	2	3	2008	2009	2010	2011	Miami-Dade Transit Bus Routes[4]
NW 6th Street									
NW 1st Ave	N Miami Ave	√	-	-	-	-	-	436 vph [2]	Route #s 2, 7, 211, 243
N Miami Ave	NE 1st Ave	√	-	-	-	-	-	-	Route #s 2, 7, 8, 243
NW 3rd Street									
NW 2nd Ave	NW 1st Ave	√	-	-	860 vph [3]	-	-	680 vph [2]	Route #s 95, 207, 246
NW 1st Ave	N Miami Ave	√	-	-	860 vph [3]	-	-	1048 vph [3]	Route #s 3, 21
N Miami Ave	NE 1st Ave	√	√	-	-	-	-	-	Route #s 3, 21
NW 1st Street									
NW 2nd Ave	NW 1st Ave	-	√	√	-	-	-	-	Route #s 11, 51, 77, 95, 207, 208, 500
Flagler Street									
NW 2nd Ave	NW 1st Ave	-	√	√	-	-	-	-	Route #s 21, 95
NW 2nd Ave									
Flagler St	NW 1st St	-	√	√	-	-	-	-	Route #s 2, 7, 21, 95, 207, 208, 246, 500
NW 1st St	NW 2nd St	-	√	-	-	-	-	-	Route #s 2, 7, 21, 95, 207, 208, 246
NW 2nd St	NW 3rd St	-	√	-	671 vph [3]	-	-	911 vph [3]	Route #s 2, 7, 21, 95, 207, 208, 246
NW 3rd St	NW 5th St	√	-	-	671 vph [3]	-	-	911 vph [3]	Route #s 2, 7, 21, 95, 246
NW 5th St	NW 6th St	√	-	-	-	-	-	-	Route #s 2, 21, 246
NW 1st Ave									
Flagler St	NW 1st St	-	√	√	-	-	-	-	Route #s 3, 9, 51, 93, 95, 246, 277, 500
NW 1st St	NW 2nd St	-	√	-	-	-	-	523 vph [2]	Route #s 3, 93, 95, 207, 208, 246
NW 2nd St	NW 3rd St	√	-	-	-	-	-	523 vph [2]	Route #s 3, 93, 95, 207, 208, 246
NW 3rd St	NW 5th St	√	-	-	-	-	-	-	Route #s 95
NE 1st Ave									
NE 3rd St	NE 5th St	√	-	-	-	-	-	-	Route #s 2, 6, 7, 8, 9, 120
NE 5th St	NE 6th St	√	-	-	-	-	-	-	Route #s 2, 6, 7, 8, 9, 120, 211

Notes
1. Indicates which traffic circulation scenario will impact the link segment for which data have been gathered.
2. 2011 FDOT Florida Traffic On-Line (2011) with 48-Hour machine counts and peak hour data
3. 2008 Miami-Dade Children's Court House MUSP Traffic Impact Study - Richard Garcia & Associates, Inc.
4. Miami-Dade Transit System Map

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As can be seen from **Table ES1,** only Miami-Dade Transit route information is available for all links within the study area. Traffic count data are available for only a handful of study area links. Additional link volume information is included in **Attachment 'A'** and additional Miami-Dade Transit bus route information is included in **Attachment 'B'**.

Table ES2: Data Gathering Summary for Study Area Roadway Intersections

Intersections	Scenario[1]			Available TMCs			
	1	2	3	2008	2009	2010	2011
NW 6th St							
at N Miami Ave	√	-	-	-	AM/PM[2]	-	-
NW 5th St							
at NW 2nd Ave	√	-	-	PM[3]	AM/PM[2]	-	PM[3]
at NW 1st Ave	√	-	-	PM[3]	AM/PM[2]	-	PM[3]
at N Miami Ave	√	-	-	-	AM/PM[2]		
NW 4th St							
at NW 2nd Ave	√	-	-	PM[3]	-	-	PM[3]
NW 3rd St							
at NW 2nd Ave	√	√	-	PM[3]	-	PM[4]	PM[3]
at NW 1st Ave	√	√	-	PM[3]	-	-	PM[3]
NW 2nd St							
at NW 2nd Ave	-	√	-	-	-	PM[4]	PM[3]

Notes

1. Indicates which traffic circulation scenario will impact the intersection for which data have been gathered.

2. Southeast Overtown Parkwest DRI

3. 2008 Miami-Dade Children's Court House MUSP Traffic Impact Study - Richard Garcia & Associates, Inc.

4. 2010 West Lot Multi-Use Facility MUSP Traffic Impact Study - Richard Garcia & Associates, Inc.

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Additional turning movement volume information is included as **Attachment 'C'**.

FIELD REVIEWS

The period selected for the field review was based on the peak period recorded in the 2011 traffic counts gathered from the 2011 FDOT Traffic On-Line website which shows the peak period predominantly occurring between the typical 4:00PM and 6:00 PM period at the three FDOT count sites within the study area. Consequently, a field review was conducted between 4:00 PM and 6:00 PM on Wednesday August 8, 2012. In addition, a supplemental field review was conducted on Thursday August 9, 2012, during the 12:00 PM to 1:00 PM lunch period to observe traffic conditions during that period. The findings are summarized below:

PM Period

- Traffic conditions throughout the study area appeared to be moderate with no major constraints observed. No significant delay was observed for turning vehicles. No signal phase failures were observed at signalized intersections throughout the study area.
- Northbound traffic on NE 1st Avenue (at the eastern end of the study area) was steady, a significant proportion of which most likely comprised vehicles headed towards I-395.
- On NW 1st Street between NW 2nd Avenue and NW 1st Avenue, significant pick-up, drop-off activity was observed in the area of the Miami-Dade metro bus terminal. General pedestrian activity in this area appeared to be high.
- On NW 2nd Avenue, within the vicinity of the NW 2nd Street intersection near the West Lot Parking Garage and the Stephen P. Clark Government Center, light to moderate pedestrian activity (crossing NW 2nd Avenue between the two buildings) was observed.
- A concentration of what appeared to be indigent individuals was observed loitering along NW 6th Street between NW 1st avenue and NE 1st Avenue.

Midday Period

Conditions similar to the PM peak period were observed during the Midday period.

Photos 1 and **2** capture some of the highlights of the traffic conditions just described.

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Photo 1: Northbound NE 2nd Ave at NW 6th St

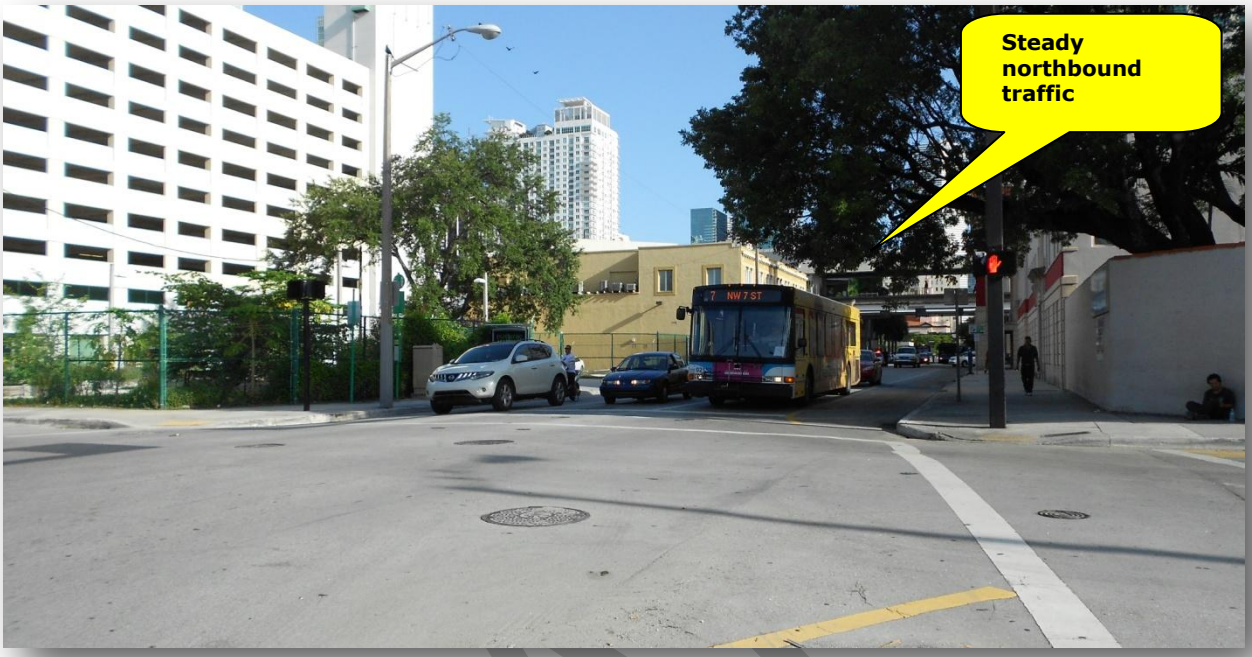
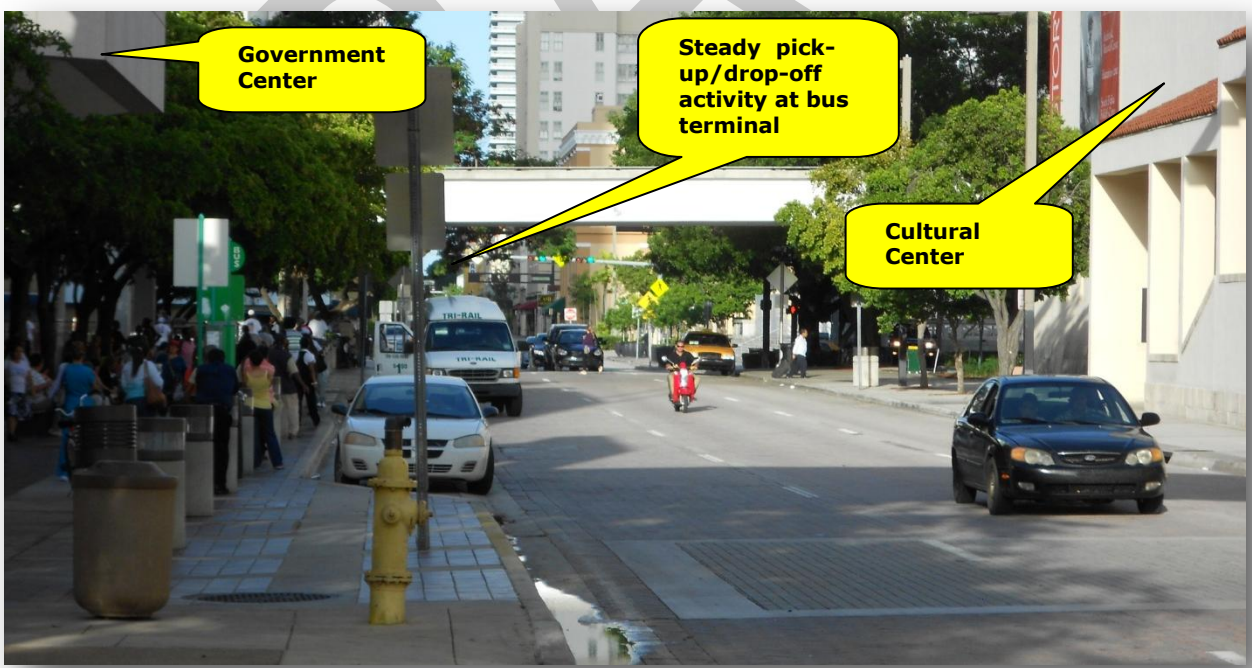


Photo 2: Westbound NE 1st St Between NW 2nd Ave and NW 1st Ave



QUALITATIVE IMPACT ASSESSMENT

For the purposes of qualitatively assessing the traffic impacts of the three potential road closure scenarios, the following performance metrics were established:

- Potential to exacerbate existing traffic constraints
- Number of bus re-routes
- Potential for increased conflicts with pedestrian traffic

Following is a brief discussion of the utility of each performance metric in assessing each road closure scenario given the nature and level of available data that were gathered as previously described:

Potential to Exacerbate Existing Traffic Constraints

This performance metric relies upon the availability of turning movement volumes at all affected intersections along the alternate routes for each scenario in order to assess the relative change in turning movement volumes that could result from diverted traffic associated with the road closure. In addition, the availability of peak hour link volumes could help determine how much additional capacity remains on a given link segment along an alternate route and thereby provide a basis for assessing the relative impacts that could result from likely traffic diversions. As can be seen in **Tables ES 1** and **ES 2** the coverage of turning movement volume data and link data is spotty throughout the study area. Notwithstanding, while the data coverage is still spotty, the likely alternate routes that result from the road closure in Scenario 1 (i.e. NW 1st Avenue between NW 3rd Street and NW 5th Street) comprise most of the available turning movement and link data gathered.

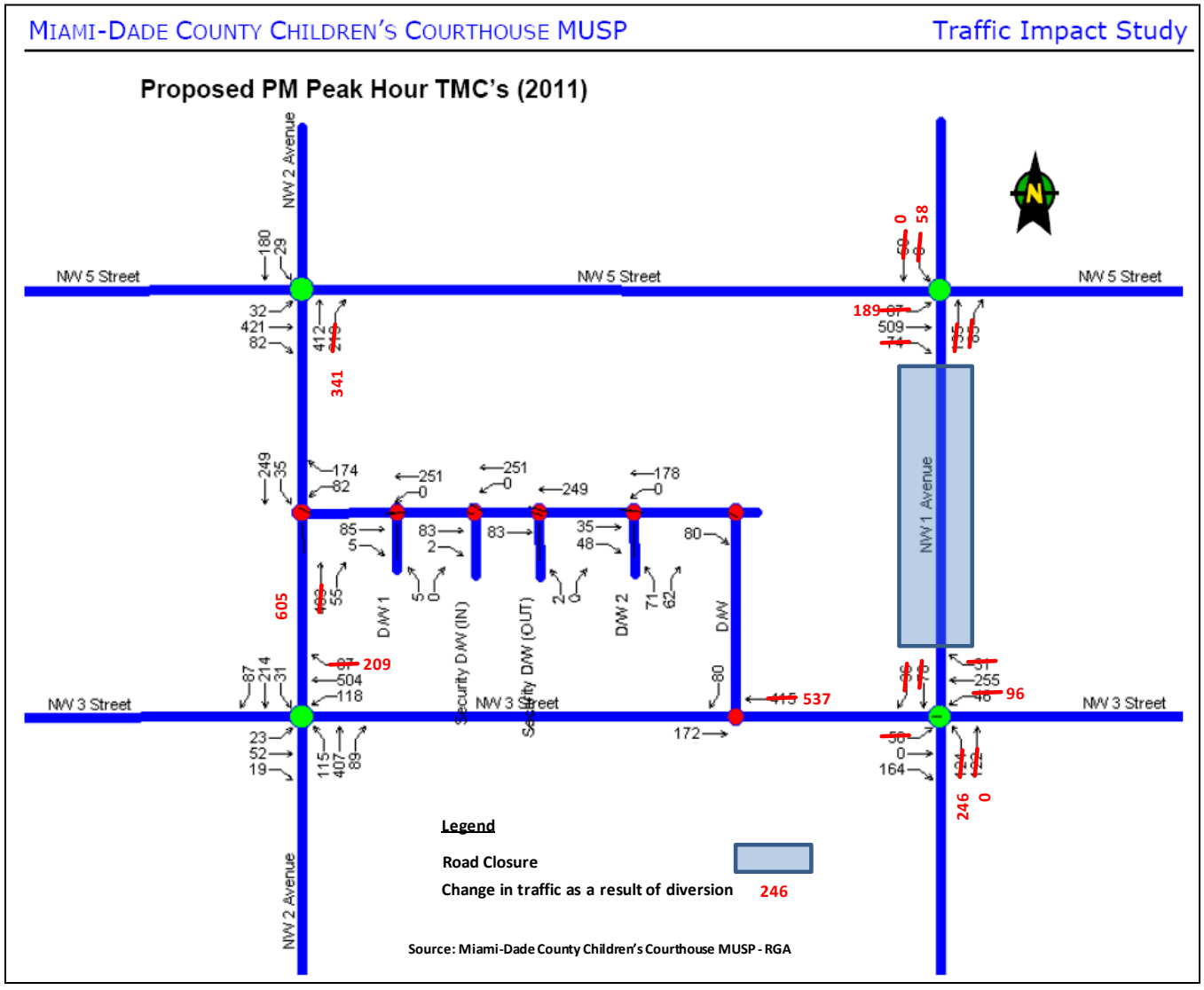
Figure ES4 (on the next page) presents an excerpt from a traffic impact study performed by Richard Garcia & Associates, Inc., for the 2008 Miami-Dade Children's Court House MUSP. The excerpt depicts turning movement volume information that was developed for intersections on NW 2nd Avenue and on NW 1st Avenue that are located along the likely traffic diversion routes that would result from the road closure under Scenario 1. As can be seen, significant increases in traffic turning movement volumes would most likely result for the following:

- NW 3rd Street at NW 1st Avenue – On the northbound and westbound approaches
- NW 3rd Street at NW 2nd Avenue – On the westbound approach
- NW 5th Street at NW 2nd Avenue – On the northbound approach
- NW 5th Street at NW 1st Avenue – On the southbound and eastbound approaches

While a reanalysis of the impacted intersections is outside the scope of this assessment, a cursory review of the level of traffic diversion indicates that traffic patterns at the impacted intersection would be significantly altered. However, it is possible that an

operational analysis would find that adequate intersection capacity is available given that the level of service at these intersections were found to be operating at between LOS 'A' and 'C' in the TIA performed by Richard Garcia & Associates, Inc.. See **Attachment 'C'**.

Figure ES 4: Likely Traffic Diversions for Road Closure – Scenario 1



Since, unlike Scenario 1, a similar level of available traffic volume data does not exist along alternate routes for the other two scenarios, it is not possible to perform an apples to apples comparison between the alternatives by just reviewing the volume data presented in **Figure ES 4**. As a consequence, a more qualitative approach was used in assessing this performance metric for each scenario by considering the relative number of intersections that would likely be impacted by diverted traffic under each scenario.

Number of Bus Re-Routes

This performance metric relies upon the availability of bus route information on all impacted links in order to assess the number of bus routes that would have to be re-routed as a result of the road closure in each scenario. As can be seen in **Table ES 1**, bus route information is available on all links throughout the study area.

Potential For Increased Conflicts with Pedestrian Traffic

This performance metric relies upon the identification of roadway links that already experience or have the propensity for relatively high pedestrian activity where increased conflicts could result if vehicular traffic increases as a result of road closures. As described in the Field Review section of this report, on NW 1st Street between NW 2nd Avenue and NW 1st Avenue, general pedestrian activity in this area appeared to be high and was due mainly to the significant pick-up, drop-off activity that occurred in the area of the Miami-Dade metro bus terminal. In addition it is anticipated, that during special events at the cultural center on the south side of NW 1st Street, increased pedestrian activity is likely along this link of NW 1st Street. Although not observed during the field reviews, it is also anticipated that on occasion, N Miami Avenue between NE 3rd Street and NE 5th Street could experience significant pedestrian traffic between the two federal court buildings on the east and west side of the street, thus making this roadway segment susceptible to increased pedestrian/vehicular conflicts resulting from traffic diversions due to road closure described in Scenario 1.

For each performance metric, the following scoring system was developed using a scale of 1 to 5 where a score of 1 represents the least impact and a score of 5 represents the greatest impact. The road closure scenario that received the highest aggregate score would be deemed the least attractive and considered to be the alternative with the highest potential for traffic impact. **Table ES3** on the next page presents a summary of the performance matrix used to assess each road closure scenario.

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Table ES3: Performance Matrix

Performance Metric	Scenario 1	Scenario 2	Scenario 3
Potential to Exacerbate Existing Traffic Constraints[1, 2]	5	3	2
Number of bus re-routes[3]	1	4	5
Potential For Increased Conflicts with Pedestrian Traffic[4]	3	5	1
Total Score	9	12	8

Notes

1. As noted in the field review, no major traffic constraints were observed.

2. While no operational analyses were performed, the relative performance of each scenario was assessed based on the number of intersections that would likely be impacted by diverted traffic as a result of the road closure.

3. Scenario 1 impacts one bus route; Scenario 2 impacts six bus routes; Scenario 3 impacts seven bus routes

4. Scenario 2 will lead to the highest instance of diverted traffic onto NW 1st Street between NW 2nd Avenue and NW 1st Avenue which as noted previously, has a high incidence of pedestrian activity. Scenario 1 has the potential to create significant conflict due to the link segment on N Miami Avenue between NE 3rd Street and NW 5th Street that traverses federal cour buildings on either side.

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As can be seen from **Table ES3**, of the three road closure scenarios reviewed, Scenario 3, which involves the road closure of NW 1st Street between NW 2nd Avenue and NW 1st Avenue is likely to have the least traffic impact with a relative score of 8. With a relative score of 12, Scenario 2 which involves the road closure of NW 1st Avenue between NW 1st Street and NW 3rd Street is projected to have the greatest impact.

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CONCLUSION & RECOMMENDATIONS

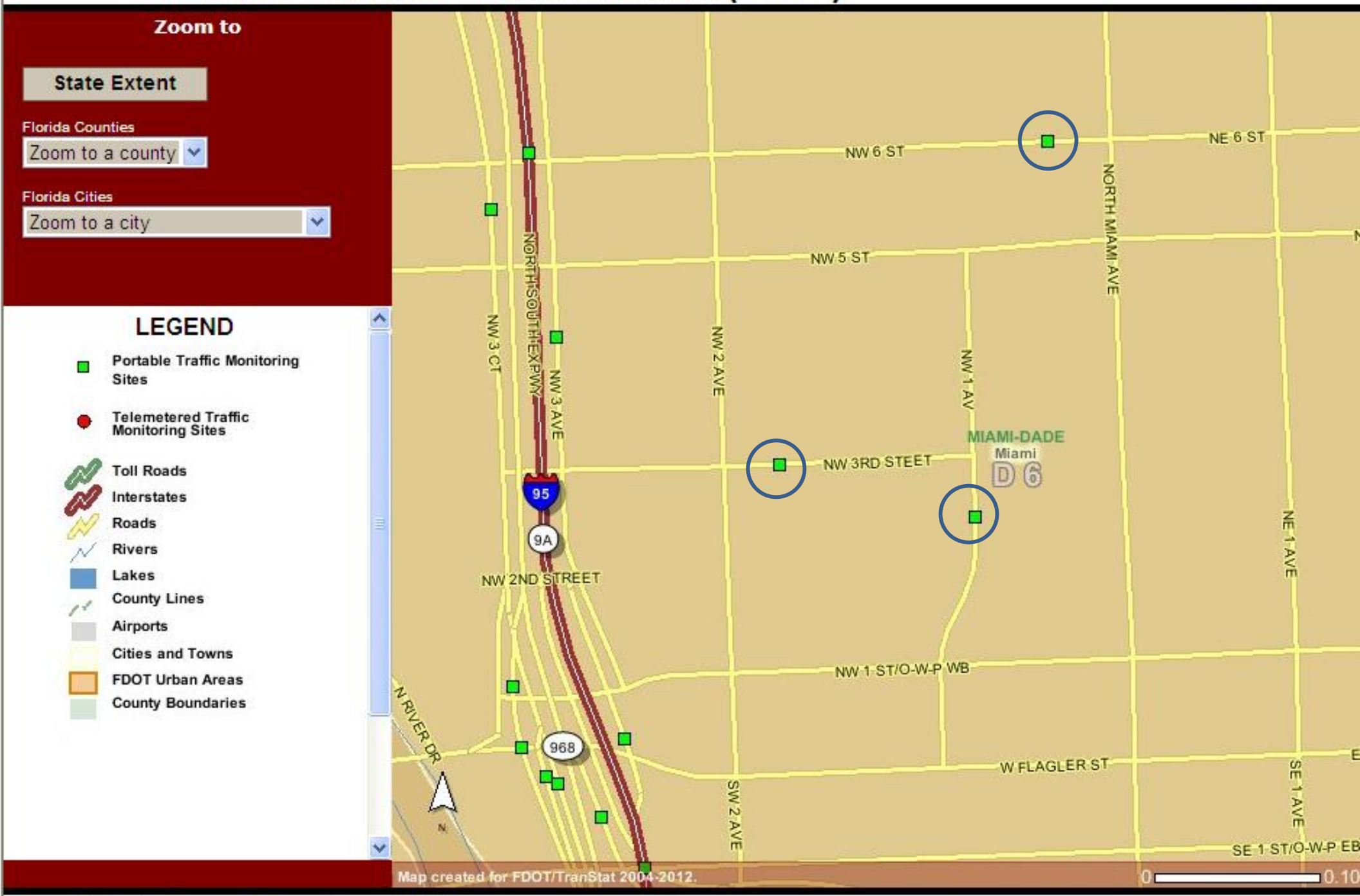
Based on the foregoing qualitative traffic impact assessment of potential road closures associated with the proposed intermodal terminal for downtown Miami, it was determined that the scenario that involves the road closure of NW 1st Street between NW 2nd Avenue and NW 1st Avenue (Scenario 3) will likely result in the least traffic impact in the downtown area according to the three performance metrics established in this assessment. Notwithstanding, it should be noted that prior to making any final determination on the preferred location of the downtown intermodal terminal and hence the associated road closure scenario, an in-depth traffic analysis is recommended. The in-depth traffic analysis should include an Origin-Destination survey to better quantify the proportion of likely diverted traffic whereupon an do operational analysis of affected intersection can be undertaken to determine change in intersection delay by movement, approach and overall intersection performance.

Attachments:
A. Roadway Link Volumes
B. Miami-Dade Transit Bus Route System Map
C. Turning Movement Volumes

ATTACHMENT A
(ROADWAY LINK VOLUMES)

2011 FDOT TRAFFIC ONLINE

FDOT Florida Traffic Online (2011)



COUNTY: 87
STATION: 8156
DESCRIPTION: NE/NW 6TH ST, 200' EAST OF N MIAMI AVE
START DATE: 06/21/2011
START TIME: 2200

DIRECTION: W

TIME	1ST	2ND	3RD	4TH	TOTAL
0000	11	11	7	3	32
0100	9	3	2	2	16
0200	3	1	2	2	8
0300	3	2	7	2	14
0400	1	2	0	4	7
0500	0	2	13	7	22
0600	15	17	12	19	63
0700	16	27	32	46	121
0800	30	41	36	44	151
0900	37	40	48	67	192
1000	48	65	42	53	208
1100	33	61	76	86	256
1200	86	65	69	82	302
1300	70	57	59	62	248
1400	76	60	52	58	246
1500	74	68	71	79	292
1600	98	85	98	91	372
1700	142	100	84	90	416
1800	114	81	75	62	332
1900	52	38	33	33	156
2000	29	21	26	23	99
2100	41	15	20	18	94
2200	30	15	20	6	71
2300	9	6	9	10	34
24-HOUR TOTALS:					3752

PEAK VOLUME INFORMATION

	HOUR	VOLUME
A.M.	845	169
P.M.	1630	431
DAILY	1630	431

TRUCK PERCENTAGE 10.31 NAN 10.31

CLASSIFICATION SUMMARY DATABASE

DIR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TOTTRK	TOTVOL
W	35	2890	440	261	81	19	2	2	22	0	0	0	0	0	0	387	3752

GENERATED BY SPS 5.0.21

COUNTY: 87
STATION: 8156
DESCRIPTION: NE/NW 6TH ST, 200' EAST OF N MIAMI AVE
START DATE: 06/22/2011
START TIME: 2200

DIRECTION: W

TIME	1ST	2ND	3RD	4TH	TOTAL
0000	10	8	4	5	27
0100	12	1	2	1	16
0200	0	1	1	2	4
0300	2	2	2	1	7
0400	2	3	0	3	8
0500	0	2	14	10	26
0600	9	8	12	19	48
0700	25	24	25	32	106
0800	33	42	41	43	159
0900	36	41	54	64	195
1000	51	58	57	55	221
1100	65	73	94	83	315
1200	96	60	71	71	298
1300	63	71	72	74	280
1400	75	72	87	90	324
1500	98	88	86	78	350
1600	104	87	109	98	398
1700	146	82	101	86	415
1800	76	93	56	53	278
1900	48	63	28	37	176
2000	23	42	29	30	124
2100	34	29	27	23	113
2200	27	20	17	7	71
2300	15	11	14	9	49
24-HOUR TOTALS:					4008

PEAK VOLUME INFORMATION

	HOUR	VOLUME
A.M.	845	174
P.M.	1615	440
DAILY	1615	440

TRUCK PERCENTAGE 11.15 NAN 11.15

CLASSIFICATION SUMMARY DATABASE

DIR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TOTTRK	TOTVOL
W	31	3083	447	279	95	32	1	7	33	0	0	0	0	0	0	447	4008

GENERATED BY SPS 5.0.21

COUNTY: 87
STATION: 8254
DESCRIPTION: NW 3RD ST, 200' EAST OF NW 2ND AVENUE
START DATE: 06/21/2011
START TIME: 2200

	DIRECTION: E					DIRECTION: W					COMBINED
TIME	1ST	2ND	3RD	4TH	TOTAL	1ST	2ND	3RD	4TH	TOTAL	TOTAL
0000	4	5	0	7	16	21	8	5	4	38	54
0100	1	3	0	1	5	1	4	2	1	8	13
0200	1	2	1	4	8	3	3	4	2	12	20
0300	0	2	1	2	5	4	4	1	2	11	16
0400	0	4	3	4	11	2	3	2	4	11	22
0500	6	10	12	21	49	3	1	7	3	14	63
0600	9	14	37	38	98	14	12	16	14	56	154
0700	33	56	86	109	284	22	26	24	43	115	399
0800	98	79	76	90	343	51	32	45	41	169	512
0900	96	97	92	18	303	44	62	41	84	231	534
1000	15	22	49	58	144	67	75	72	74	288	432
1100	56	55	53	50	214	73	77	80	81	311	525
1200	60	56	66	64	246	90	81	80	69	320	566
1300	67	49	61	52	229	83	66	77	67	293	522
1400	51	51	50	45	197	82	70	73	87	312	509
1500	56	41	40	32	169	87	87	80	89	343	512
1600	30	33	45	32	140	116	86	97	144	443	583
1700	34	46	29	30	139	145	137	83	86	451	590
1800	18	21	29	14	82	72	62	42	39	215	297
1900	8	16	10	15	49	27	29	26	17	99	148
2000	7	6	13	11	37	20	20	18	21	79	116
2100	3	7	11	11	32	23	12	10	12	57	89
2200	5	11	7	7	30	14	11	12	12	49	79
2300	8	4	7	0	19	8	2	14	7	31	50
24-HOUR TOTALS:					2849					3956	6805

PEAK VOLUME INFORMATION

	DIRECTION: E		DIRECTION: W		COMBINED DIRECTIONS	
	HOUR	VOLUME	HOUR	VOLUME	HOUR	VOLUME
A.M.	845	375	830	192	845	563
P.M.	1215	253	1630	523	1630	680
DAILY	845	375	1630	523	1630	680

TRUCK PERCENTAGE 5.58 1.74 3.35

CLASSIFICATION SUMMARY DATABASE

DIR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TOTTRK	TOTVOL
E	21	2273	396	118	31	6	0	2	2	0	0	0	0	0	0	159	2849
W	37	3196	654	8	51	7	1	2	0	0	0	0	0	0	0	69	3956

GENERATED BY SPS 5.0.21

COUNTY: 87
STATION: 8254
DESCRIPTION: NW 3RD ST, 200' EAST OF NW 2ND AVENUE
START DATE: 06/22/2011
START TIME: 2200

	DIRECTION: E					DIRECTION: W					COMBINED
TIME	1ST	2ND	3RD	4TH	TOTAL	1ST	2ND	3RD	4TH	TOTAL	TOTAL
0000	5	5	1	3	14	15	8	0	6	29	43
0100	3	0	1	0	4	4	1	3	1	9	13
0200	1	1	0	5	7	1	1	6	1	9	16
0300	2	1	0	4	7	4	0	2	9	15	22
0400	1	1	4	6	12	1	0	2	2	5	17
0500	2	11	11	17	41	1	3	3	3	10	51
0600	16	20	26	46	108	16	9	10	11	46	154
0700	27	53	83	104	267	18	28	33	49	128	395
0800	98	78	89	101	366	43	45	42	43	173	539
0900	94	105	79	79	357	40	50	69	53	212	569
1000	73	62	62	61	258	63	66	77	80	286	544
1100	74	57	59	54	244	69	80	87	70	306	550
1200	64	46	60	72	242	102	60	70	64	296	538
1300	71	59	48	57	235	73	69	80	93	315	550
1400	59	60	52	48	219	74	78	105	68	325	544
1500	44	43	35	31	153	92	114	97	91	394	547
1600	32	40	35	42	149	113	94	124	142	473	622
1700	35	35	34	29	133	155	111	102	65	433	566
1800	28	23	16	13	80	82	62	50	30	224	304
1900	16	14	18	14	62	28	28	33	16	105	167
2000	12	12	16	8	48	14	23	23	24	84	132
2100	10	8	13	12	43	30	31	7	8	76	119
2200	7	2	3	7	19	13	13	1	9	36	55
2300	3	3	3	6	15	14	7	6	5	32	47
24-HOUR TOTALS:					3083					4021	7104

PEAK VOLUME INFORMATION

	DIRECTION: E		DIRECTION: W		COMBINED DIRECTIONS	
	HOUR	VOLUME	HOUR	VOLUME	HOUR	VOLUME
A.M.	830	389	845	202	845	581
P.M.	1230	262	1630	532	1630	679
DAILY	830	389	1630	532	1630	679

TRUCK PERCENTAGE 5.38 1.91 3.42

CLASSIFICATION SUMMARY DATABASE

DIR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TOTTRK	TOTVOL
E	28	2430	459	120	44	1	0	0	1	0	0	0	0	0	0	166	3083
W	28	3255	661	1	67	4	4	1	0	0	0	0	0	0	0	77	4021

GENERATED BY SPS 5.0.21

COUNTY: 87
STATION: 8204
DESCRIPTION: NW 1ST AVE, 200' SOUTH OF NW 3RD STREET
START DATE: 06/21/2011
START TIME: 0700

	DIRECTION: N					DIRECTION: S					COMBINED
TIME	1ST	2ND	3RD	4TH	TOTAL	1ST	2ND	3RD	4TH	TOTAL	TOTAL
0000	4	0	5	6	15	10	5	2	9	26	41
0100	2	4	0	2	8	5	4	0	6	15	23
0200	1	1	0	1	3	0	5	3	3	11	14
0300	2	1	2	0	5	2	0	2	5	9	14
0400	1	0	1	2	4	1	0	1	7	9	13
0500	2	1	1	5	9	8	7	17	27	59	68
0600	4	8	6	8	26	19	22	39	52	132	158
0700	19	28	26	32	105	46	64	93	125	328	433
0800	37	36	41	34	148	99	104	102	119	424	572
0900	40	43	38	38	159	128	127	102	97	454	613
1000	34	48	43	47	172	96	83	92	69	340	512
1100	37	44	38	46	165	68	67	70	77	282	447
1200	52	39	53	55	199	74	83	76	83	316	515
1300	54	38	49	49	190	75	78	92	88	333	523
1400	48	55	48	49	200	73	90	73	78	314	514
1500	45	53	47	40	185	86	67	73	61	287	472
1600	41	34	55	61	191	59	46	64	69	238	429
1700	55	41	44	24	164	70	62	57	51	240	404
1800	25	20	14	13	72	34	33	53	38	158	230
1900	13	14	12	8	47	27	27	31	13	98	145
2000	5	5	3	5	18	19	16	15	10	60	78
2100	8	1	4	3	16	13	14	16	14	57	73
2200	5	3	6	5	19	4	7	8	7	26	45
2300	5	2	1	0	8	9	7	7	4	27	35
24-HOUR TOTALS:					2128					4243	6371

PEAK VOLUME INFORMATION

	DIRECTION: N		DIRECTION: S		COMBINED DIRECTIONS	
	HOUR	VOLUME	HOUR	VOLUME	HOUR	VOLUME
A.M.	830	158	830	476	830	634
P.M.	1630	212	1330	343	1330	544
DAILY	1630	212	830	476	830	634

TRUCK PERCENTAGE 1.69 6.53 4.91

CLASSIFICATION SUMMARY DATABASE

DIR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TOTTRK	TOTVOL
N	36	1819	237	3	25	6	0	1	0	1	0	0	0	0	0	36	2128
S	63	3386	517	151	116	7	0	1	1	0	0	0	1	0	0	277	4243

GENERATED BY SPS 5.0.21

COUNTY: 87
STATION: 8204
DESCRIPTION: NW 1ST AVE, 200' SOUTH OF NW 3RD STREET
START DATE: 06/22/2011
START TIME: 0700

	DIRECTION: N					DIRECTION: S					COMBINED
TIME	1ST	2ND	3RD	4TH	TOTAL	1ST	2ND	3RD	4TH	TOTAL	TOTAL
0000	5	1	2	5	13	8	12	1	9	30	43
0100	2	0	1	1	4	7	1	4	3	15	19
0200	0	0	1	2	3	1	1	2	1	5	8
0300	1	1	3	7	12	2	3	1	4	10	22
0400	0	0	0	2	2	1	5	1	9	16	18
0500	1	2	1	2	6	5	6	16	17	44	50
0600	2	5	10	16	33	24	29	35	55	143	176
0700	23	21	28	37	109	48	81	85	122	336	445
0800	45	32	36	46	159	123	102	102	110	437	596
0900	46	44	38	39	167	117	96	113	106	432	599
1000	43	32	42	38	155	95	87	89	72	343	498
1100	43	50	33	43	169	86	64	53	78	281	450
1200	39	39	28	43	149	74	67	69	79	289	438
1300	32	35	41	47	155	86	60	65	49	260	415
1400	42	47	40	60	189	76	70	78	69	293	482
1500	42	36	44	42	164	76	69	60	54	259	423
1600	47	31	47	68	193	67	72	63	66	268	461
1700	66	59	32	35	192	67	66	42	36	211	403
1800	18	17	19	15	69	43	35	42	22	142	211
1900	12	10	3	7	32	16	16	22	17	71	103
2000	6	7	12	6	31	10	13	16	12	51	82
2100	10	4	4	7	25	8	11	11	5	35	60
2200	3	0	1	3	7	10	9	5	10	34	41
2300	7	1	2	3	13	3	6	5	9	23	36
24-HOUR TOTALS:					2051					4028	6079

PEAK VOLUME INFORMATION

	DIRECTION: N		DIRECTION: S		COMBINED DIRECTIONS	
	HOUR	VOLUME	HOUR	VOLUME	HOUR	VOLUME
A.M.	845	174	745	449	845	610
P.M.	1630	240	1215	301	1630	502
DAILY	1630	240	745	449	845	610

TRUCK PERCENTAGE 1.61 7.22 5.33

CLASSIFICATION SUMMARY DATABASE

DIR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TOTTRK	TOTVOL
N	40	1758	220	4	22	5	0	2	0	0	0	0	0	0	0	33	2051
S	43	3191	503	176	107	5	0	3	0	0	0	0	0	0	0	291	4028

GENERATED BY SPS 5.0.21

MIAMI-DADE COUNTY CHILDREN'S COURTHOUSE MUSP

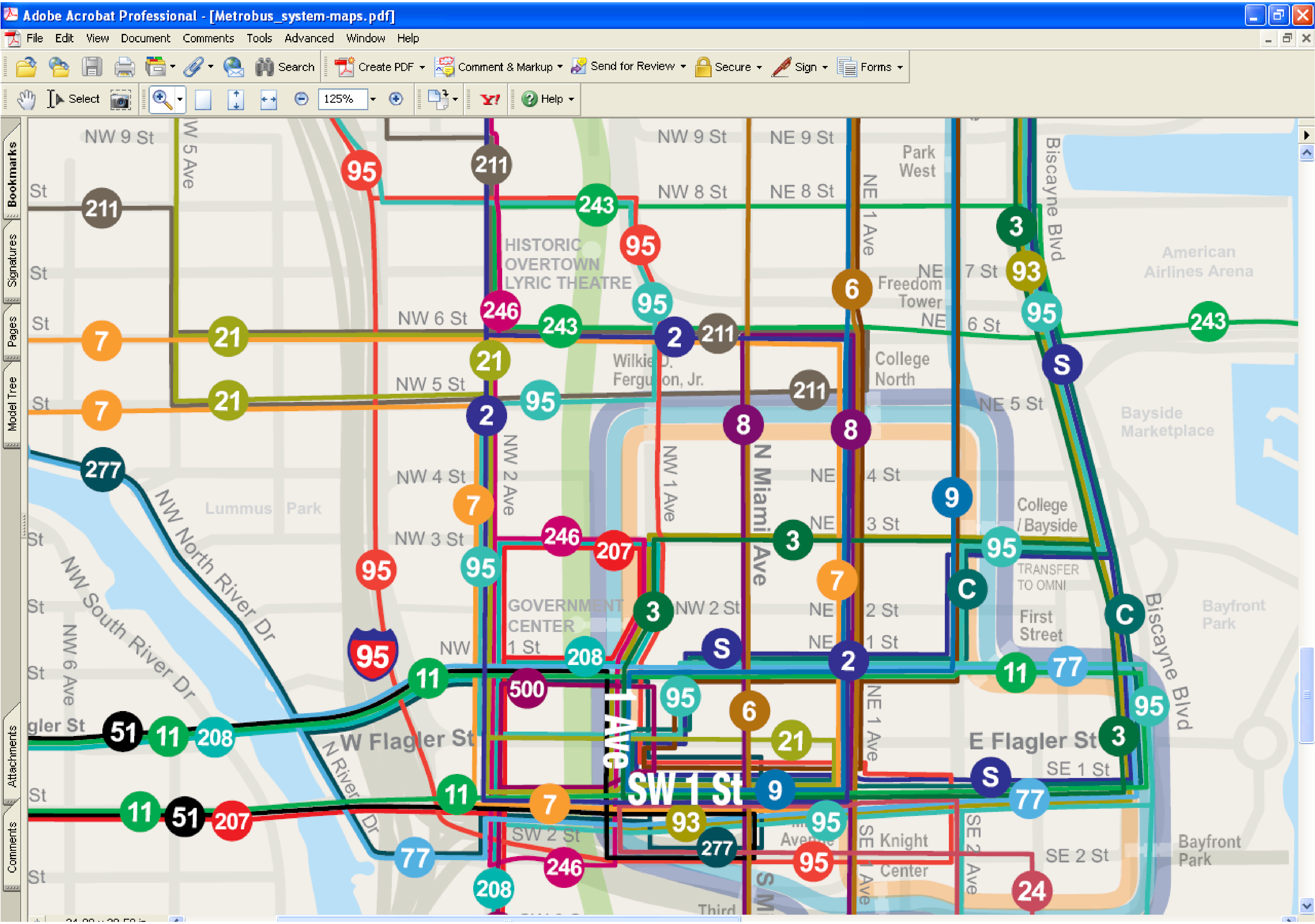
Table 2: PM Person Trip Corridor Analysis Summary (One-Way Analysis)

ROADWAY					ROADWAY MODE						
										ROADWAY PERSON TRIP	
FROM	TO	DIR	MIAMI ADOPTED LOS	CORRIDOR TYPE	ROADWAY VEHICULAR CAPACITY	PERSON-TRIP CAPACITY @ 1.6 PPV	ROADWAY VEHICULAR VOLUME	PERSON-TRIP VOLUME @ 1.4 PPV	EXCESS PERSON TRIP CAPACITY	V/C	LOS
EXISTING CONDITION (Seasonally Adjusted)											
NW 2nd Avenue											
W Flagler St	NW 8 St	NB	E	1LD-Non State	851	1361	**427**	598	763	0.44	**C**
NW 8 St	W Flagler St	SB	E	1LD-Non State	851	1361	**244**	341	1020	0.25	**C**
NW 3rd Street											
N Miami Ave	N River Dr	EB	E	1LD-Non State	851	1361	**348**	487	874	0.36	**C**
N River Dr	N Miami Ave	WB	E	2LD-Non State	1720	2752	**512**	717	2035	0.26	**C**
WITH BACKGROUND TRAFFIC (2011)											
NW 2nd Avenue											
W Flagler St	NW 8 St	NB	E	1LD-Non State	851	1361	**466**	653	708	0.48	**C**
NW 8 St	W Flagler St	SB	E	1LD-Non State	851	1361	**266**	373	988	0.27	**C**
NW 3rd Street											
N Miami Ave	N River Dr	EB	E	1LD-Non State	851	1361	**380**	532	829	0.39	**C**
N River Dr	N Miami Ave	WB	E	2LD-Non State	1720	2752	**560**	784	1968	0.28	**C**
WITH BACKGROUND & COMMITTED TRAFFIC											
NW 2nd Avenue											
W Flagler St	NW 8 St	NB	E	1LD-Non State	851	1361	**466**	653	708	0.48	**C**
NW 8 St	W Flagler St	SB	E	1LD-Non State	851	1361	**266**	373	988	0.27	**C**
NW 3rd Street											
N Miami Ave	N River Dr	EB	E	1LD-Non State	851	1361	**380**	532	829	0.39	**C**
N River Dr	N Miami Ave	WB	E	2LD-Non State	1720	2752	**560**	784	1968	0.28	**C**
WITH PROJECT AND BACKGROUND & COMMITTED TRAFFIC											
NW 2nd Avenue											
W Flagler St	NW 8 St	NB	E	1LD-Non State	851	1361	**606**	849	512	0.62	**D**
NW 8 St	W Flagler St	SB	E	1LD-Non State	851	1361	**305**	427	933	0.31	**C**
NW 3rd Street											
N Miami Ave	N River Dr	EB	E	1LD-Non State	851	1361	**380**	532	829	0.39	**C**
N River Dr	N Miami Ave	WB	E	2LD-Non State	1720	2752	**668**	935	1817	0.34	**C**

In conclusion, the results of the analysis contained in this report finds that the levels of service thresholds are maintained within the LOS standard of E for the Person-Trip methodology for the roadway segment. Additionally, all the intersections analyzed have acceptable Level of Service. The results indicated the intersections analyzed will be within the LOS standard of E threshold. As such, sufficient roadway person-trip capacity exists to support this development.

ATTACHMENT B

(MIAMI-DADE TRANSIT BUS ROUTE SYSTEM MAP)


Adobe Acrobat Professional - [Metrobus_system-maps.pdf]
File Edit View Document Comments Tools Advanced Window Help
Search
Create PDF
Comment & Markup
Send for Review
Secure
Sign
Forms
Select
125%
Help
Bookmarks
Signatures
Pages
Model Tree
Attachments
Comments
NW 9 St
NW 8 St
NE 9 St
NE 8 St
Park West
NE 1 Ave
Biscayne Blvd
American Airlines Arena
HISTORIC OVERTOWN LYRIC THEATRE
NE 7 St
Freedom Tower
NE 6 St
NW 6 St
NW 5 St
Wilkie D. Ferguson, Jr.
College North
NE 5 St
Bayside Marketplace
NW 4 St
NW 3 St
NW 2 Ave
NW 1 Ave
N Miami Ave
NE 4 St
NE 3 St
College / Bayside
TRANSFER TO OMNI
First Street
Lummus Park
NW North River Dr
NW South River Dr
NW 6 Ave
GOVERNMENT CENTER
NW 1 St
NW 2 St
NE 2 St
NE 1 St
Bayfront Park
W Flagler St
E Flagler St
N River Dr
1 Ave
SW 1 St
SE 1 St
SW 2 St
SE Knight Center
SE 2 Ave
SE 2 St
Third
W 5 Ave
243
211
95
3
93
S
6
2
21
7
8
277
9
246
207
C
500
11
208
51
77
24

ATTACHMENT C
(TURNING MOVEMENT VOLUMES)

SOUTHEAST OVERTOWN PARKWEST DRI

TRAFFIC SURVEY SPECIALISTS, INC.
624 GARDENIA TERRACE
DELRAY BEACH, FLORIDA 33444
(561) 272-3255 FAX (561) 272-4381

NE/NW 6TH STREET & N MIAMI AVENUE
MIAMI, FLORIDA
COUNTED BY: JOHNNY MOLESTINA
SIGNALIZED

Site Code : 00900010
Start Date: 02/12/09
File I.D. : 6STMIAMI
Page : 1

LIGHT VEHICLES, HEAVY VEHICLES

	N MIAMI AVENUE From North				NE 6TH STREET From East				N MIAMI AVENUE From South				NW 6TH STREET From West				
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	Total
Date 02/12/09																	
07:00	0	0	56	2	0	9	18	0	0	0	0	0	0	0	0	0	85
07:15	0	0	79	14	0	8	23	0	0	0	0	0	0	0	0	0	124
07:30	0	0	107	14	0	8	26	0	0	0	0	0	0	0	0	0	155
07:45	0	0	136	22	0	8	33	0	0	0	0	0	0	0	0	0	199
Hr Total	0	0	378	52	0	33	100	0	0	0	0	0	0	0	0	0	563
08:00	0	0	148	26	0	16	18	0	0	0	0	0	0	0	0	0	208
08:15	0	0	189	22	0	12	22	0	0	0	0	0	0	0	0	0	245
08:30	0	0	150	27	0	13	26	0	0	0	0	0	0	0	0	0	216
08:45	0	0	164	21	0	16	17	0	0	0	0	0	0	0	0	0	218
Hr Total	0	0	651	96	0	57	83	0	0	0	0	0	0	0	0	0	887
---------- * BREAK * ----------																	
16:00	0	0	60	11	0	10	85	0	0	0	0	0	0	0	0	0	166
16:15	0	0	49	8	0	13	43	0	0	0	0	0	0	0	0	0	113
16:30	0	0	71	17	0	7	71	0	0	0	0	0	0	0	0	0	166
16:45	0	0	75	10	0	11	66	0	0	0	0	0	0	0	0	0	162
Hr Total	0	0	255	46	0	41	265	0	0	0	0	0	0	0	0	0	607
17:00	0	0	69	16	0	9	98	0	0	0	0	0	0	0	0	0	192
17:15	0	0	67	5	0	17	77	0	0	0	0	0	0	0	0	0	166
17:30	0	0	73	12	0	16	60	0	0	0	0	0	0	0	0	0	161
17:45	0	0	66	7	0	14	81	0	0	0	0	0	0	0	0	0	168
Hr Total	0	0	275	40	0	56	316	0	0	0	0	0	0	0	0	0	687
TOTAL	0	0	1559	234	0	187	764	0	0	0	0	0	0	0	0	0	2744

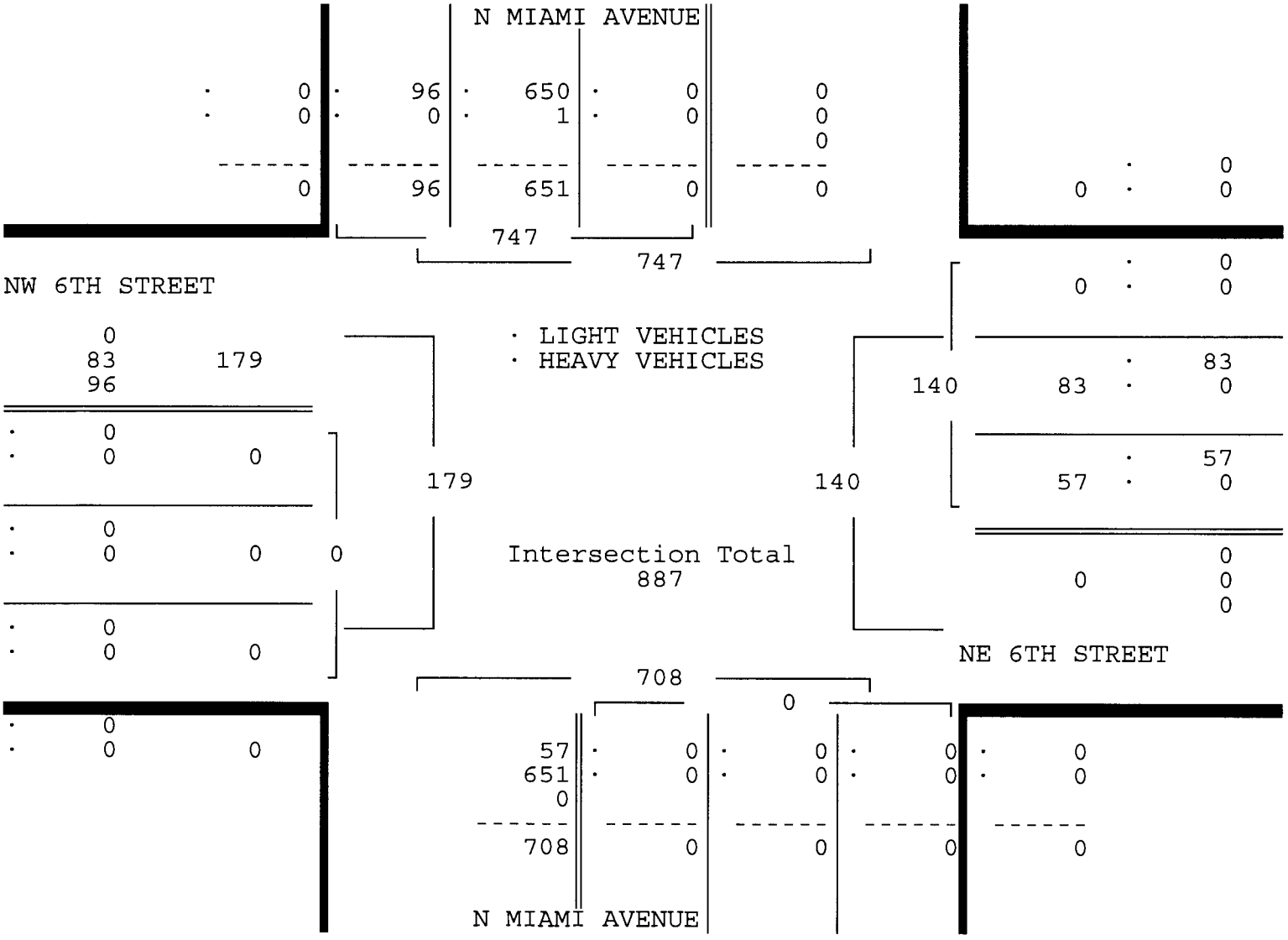
NE/NW 6TH STREET & N MIAMI AVENUE
MIAMI, FLORIDA
COUNTED BY: JOHNNY MOLESTINA
SIGNALIZED

TRAFFIC SURVEY SPECIALISTS, INC.
624 GARDENIA TERRACE
DELRAY BEACH, FLORIDA 33444
(561) 272-3255 FAX (561) 272-4381

Site Code : 00900010
Start Date: 02/12/09
File I.D. : 6STMIAMI

LIGHT VEHICLES, HEAVY VEHICLES

	N MIAMI AVENUE From North				NE 6TH STREET From East				N MIAMI AVENUE From South				NW 6TH STREET From West				
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	Total
Date 02/12/09																	
Peak Hour Analysis By Entire Intersection for the Period: 07:00 to 09:00 on 02/12/09																	
Peak start 08:00					08:00				08:00				08:00				
Volume	0	0	651	96	0	57	83	0	0	0	0	0	0	0	0	0	
Percent	0%	0%	87%	13%	0%	41%	59%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Pk total	747				140				0				0				
Highest	08:15				08:30				07:00				07:00				
Volume	0	0	189	22	0	13	26	0	0	0	0	0	0	0	0	0	
Hi total	211				39				0				0				
PHF	.89				.90				.0				.0				



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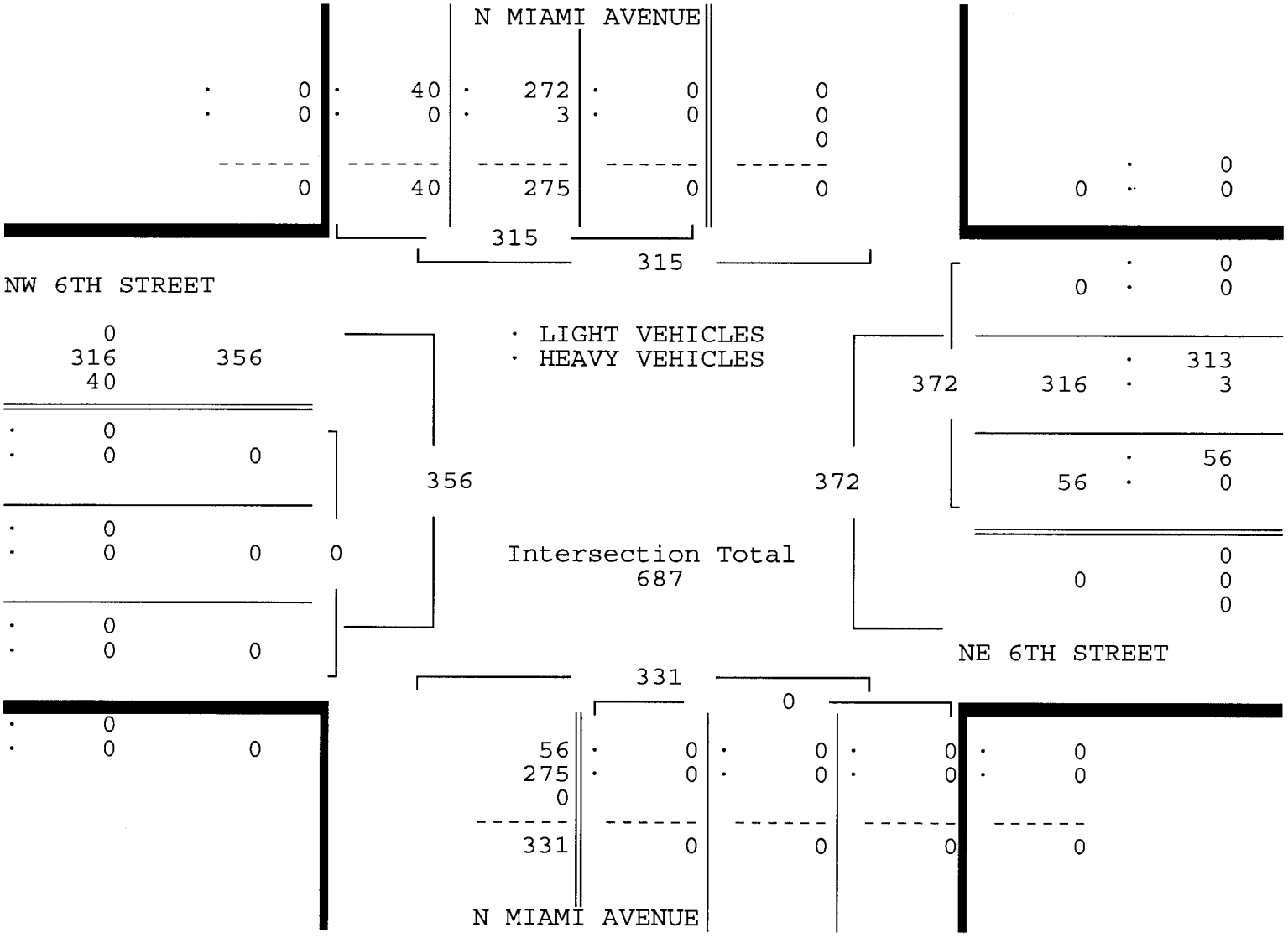
(561) 272-3255 FAX (561) 272-4381

NE/NW 6TH STREET & N MIAMI AVENUE
MIAMI, FLORIDA
COUNTED BY: JOHNNY MOLESTINA
SIGNALIZED

Site Code : 00900010
Start Date: 02/12/09
File I.D. : 6STMIAMI

LIGHT VEHICLES, HEAVY VEHICLES

	N MIAMI AVENUE From North				NE 6TH STREET From East				N MIAMI AVENUE From South				NW 6TH STREET From West				
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	Total
Date 02/12/09																	
Peak Hour Analysis By Entire Intersection for the Period: 16:00 to 18:00 on 02/12/09																	
Peak start	17:00				17:00				17:00				17:00				
Volume	0	0	275	40	0	56	316	0	0	0	0	0	0	0	0	0	
Percent	0%	0%	87%	13%	0%	15%	85%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Pk total	315				372				0				0				
Highest	17:00				17:00				07:00				07:00				
Volume	0	0	69	16	0	9	98	0	0	0	0	0	0	0	0	0	
Hi total	85				107				0				0				
PHF	.93				.87				.0				.0				



TRAFFIC SURVEY SPECIALISTS, INC.

NE/NW 6TH STREET & N MIAMI AVENUE
MIAMI, FLORIDA
COUNTED BY: JOHNNY MOLESTINA
SIGNALIZED

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(561) 272-3255 FAX (561) 272-4381

Site Code : 00900010
Start Date: 02/12/09
File I.D. : 6STMIAMI
Page : 1

HEAVY VEHICLES

	N MIAMI AVENUE From North				NE 6TH STREET From East				N MIAMI AVENUE From South				NW 6TH STREET From West				
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	Total
Date 02/12/09																	
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Hr Total	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Hr Total	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
---------- * BREAK * ----------																	
16:00	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	3
16:15	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2
16:30	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
16:45	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Hr Total	0	0	2	0	0	0	5	0	0	0	0	0	0	0	0	0	7
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	3
17:30	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
17:45	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	2
Hr Total	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	6
TOTAL	0	0	7	0	0	0	8	0	0	0	0	0	0	0	0	0	15

TRAFFIC SURVEY SPECIALISTS, INC.

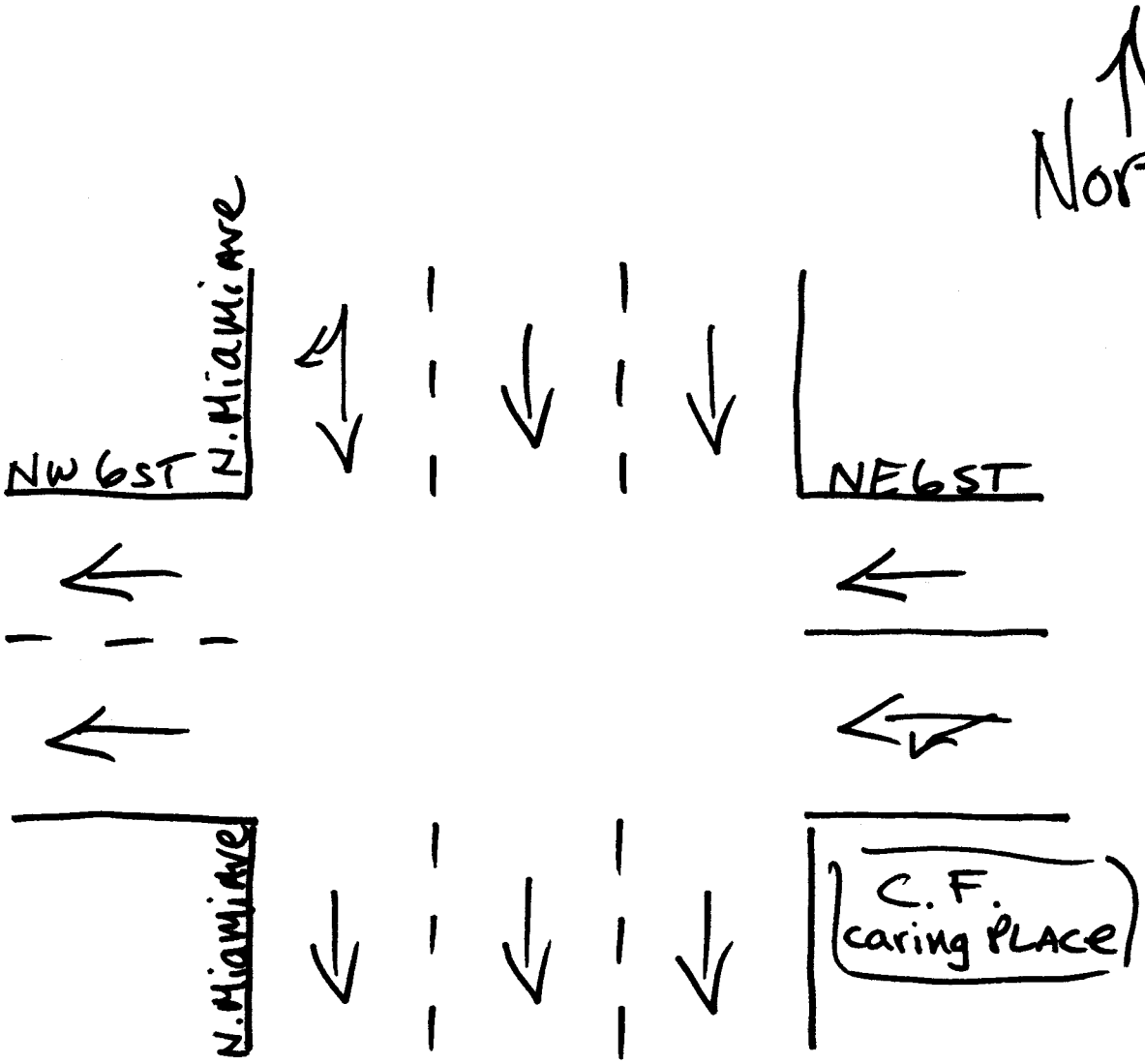
NE/NW 6TH STREET & N MIAMI AVENUE
MIAMI, FLORIDA
COUNTED BY: JOHNNY MOLESTINA
SIGNALIZED

624 GARDENIA TERRACE
DELRAY BEACH, FLORIDA 33444
(561) 272-3255 FAX (561) 272-4381

Site Code : 00900010
Start Date: 02/12/09
File I.D. : 6STMIAMI
Page : 1

PEDESTRIANS

	N MIAMI AVENUE From North				NE 6TH STREET From East				N MIAMI AVENUE From South				NW 6TH STREET From West				
	Left	Thru	RIGHT	PEDS	Left	Thru	RIGHT	PEDS	Left	Thru	RIGHT	PEDS	Left	Thru	RIGHT	PEDS	Total
Date 02/12/09																	
07:00	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	2
07:15	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	4
07:30	0	0	0	2	0	0	0	2	0	0	0	5	0	0	0	1	10
07:45	0	0	0	2	0	0	0	6	0	0	0	7	0	0	0	4	19
Hr Total	0	0	0	6	0	0	0	8	0	0	0	13	0	0	0	8	35
08:00	0	0	0	1	0	0	0	12	0	0	0	2	0	0	0	2	17
08:15	0	0	0	0	0	0	0	2	0	0	0	1	0	0	0	3	6
08:30	0	0	0	1	0	0	0	4	0	0	0	2	0	0	0	6	13
08:45	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3	4
Hr Total	0	0	0	2	0	0	0	18	0	0	0	6	0	0	0	14	40
* BREAK *																	
16:00	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	5	7
16:15	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	4	7
16:30	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2
16:45	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	3	5
Hr Total	0	0	0	3	0	0	0	6	0	0	0	0	0	0	0	12	21
17:00	0	0	0	0	0	0	0	3	0	0	0	1	0	0	0	0	4
17:15	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	1	5
17:30	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	2
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Hr Total	0	0	0	1	0	0	0	5	0	0	0	3	0	0	0	3	12
TOTAL	0	0	0	12	0	0	0	37	0	0	0	22	0	0	0	37	108



Miami, FLorida
February 12, 2009
drawn by: Luis Palomino
Signalized

TRAFFIC SURVEY SPECIALISTS, INC.

NW 5TH STREET & NW 2ND AVENUE
MIAMI, FLORIDA
COUNTED BY: LEONA PASS
SIGNALIZED

624 GARDENIA TERRACE
DELRAY BEACH, FLORIDA 33444
(561) 272-3255 FAX (561) 272-4381

Site Code : 00090010
Start Date: 02/19/09
File I.D. : 5ST_2AVE
Page : 1

LIGHT VEHICLES, HEAVY VEHICLES

	NW 2ND AVENUE From North				NW 5TH STREET From East				NW 2ND AVENUE From South				NW 5TH STREET From West				
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	Total
Date 02/19/09																	
07:00	0	2	29	0	0	0	0	0	0	0	51	25	0	6	111	33	257
07:15	0	8	40	0	0	0	0	0	0	0	24	28	0	3	119	21	243
07:30	0	19	57	0	0	0	0	0	0	0	41	35	0	4	177	43	376
07:45	0	13	82	0	0	0	0	0	0	0	53	50	0	2	253	57	510
Hr Total	0	42	208	0	0	0	0	0	0	0	169	138	0	15	660	154	1386
08:00	0	10	113	0	0	0	0	0	0	0	54	45	0	7	220	57	506
08:15	0	18	90	0	0	0	0	0	0	0	56	56	1	6	208	66	501
08:30	0	10	78	0	0	0	0	0	0	0	57	34	0	5	189	44	417
08:45	0	10	71	0	0	0	0	0	0	0	58	44	0	7	205	47	442
Hr Total	0	48	352	0	0	0	0	0	0	0	225	179	1	25	822	214	1866
---------- * BREAK * ----------																	
16:00	0	6	40	0	0	0	0	0	0	0	65	21	0	8	60	9	209
16:15	0	6	39	0	0	0	0	0	0	0	85	15	0	4	42	11	202
16:30	0	3	45	0	0	0	0	0	0	0	108	19	0	8	58	16	257
16:45	0	6	43	0	0	0	0	0	0	0	86	26	0	4	54	16	235
Hr Total	0	21	167	0	0	0	0	0	0	0	344	81	0	24	214	52	903
17:00	0	6	41	0	0	0	0	0	0	0	111	42	0	4	89	17	310
17:15	0	9	49	0	0	0	0	0	0	0	94	44	0	5	79	13	293
17:30	0	5	32	0	0	0	0	0	0	0	69	34	0	3	72	21	236
17:45	0	4	38	0	0	0	0	0	0	0	75	26	0	4	74	12	233
Hr Total	0	24	160	0	0	0	0	0	0	0	349	146	0	16	314	63	1072
TOTAL	0	135	887	0	0	0	0	0	0	0	1087	544	1	80	2010	483	5227

TRAFFIC SURVEY SPECIALISTS, INC.

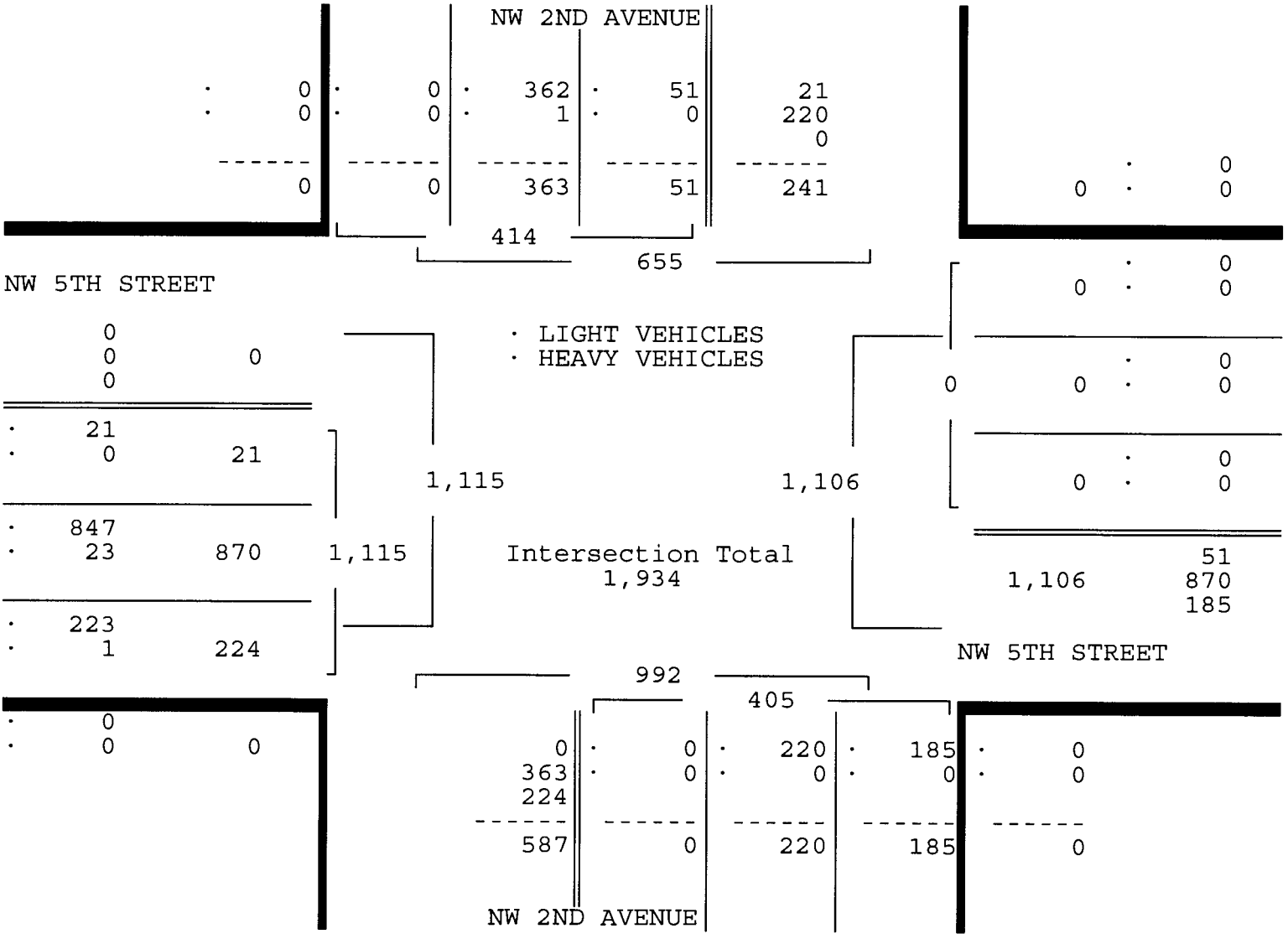
NW 5TH STREET & NW 2ND AVENUE
MIAMI, FLORIDA
COUNTED BY: LEONA PASS
SIGNALIZED

624 GARDENIA TERRACE
DELRAY BEACH, FLORIDA 33444
(561) 272-3255 FAX (561) 272-4381

Site Code : 00090010
Start Date: 02/19/09
File I.D. : 5ST_2AVE
Page : 2

LIGHT VEHICLES, HEAVY VEHICLES

	NW 2ND AVENUE From North				NW 5TH STREET From East				NW 2ND AVENUE From South				NW 5TH STREET From West				
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	Total
Date 02/19/09																	
Peak Hour Analysis By Entire Intersection for the Period: 07:00 to 09:00 on 02/19/09																	
Peak start	07:45				07:45				07:45				07:45				
Volume	0	51	363	0	0	0	0	0	0	0	220	185	1	20	870	224	
Percent	0%	12%	88%	0%	0%	0%	0%	0%	0%	0%	54%	46%	0%	2%	78%	20%	
Pk total	414				0				405				1115				
Highest	08:00				07:00				08:15				07:45				
Volume	0	10	113	0	0	0	0	0	0	0	56	56	0	2	253	57	
Hi total	123				0				112				312				
PHF	.84				.0				.90				.89				



TRAFFIC SURVEY SPECIALISTS, INC.

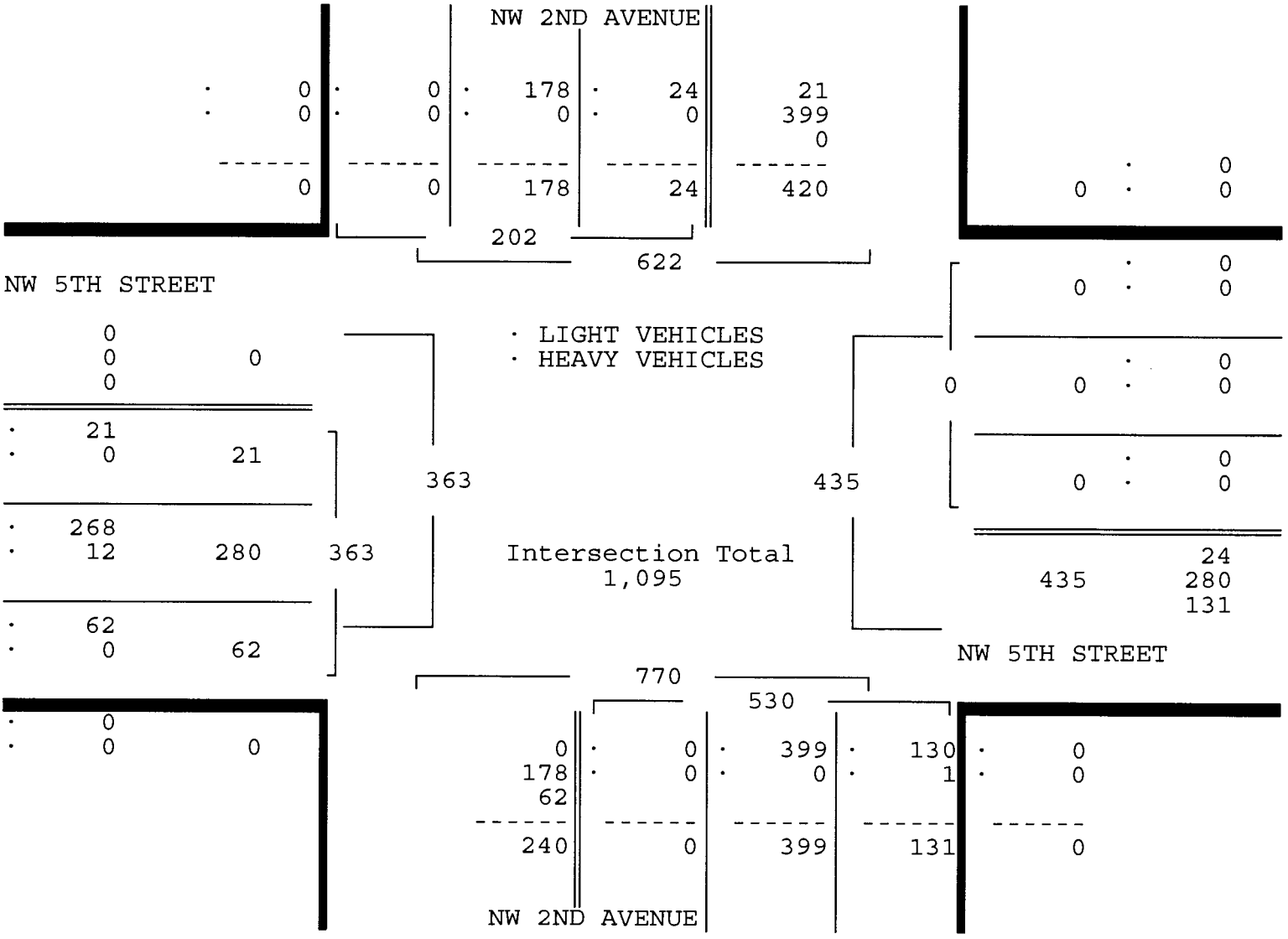
NW 5TH STREET & NW 2ND AVENUE
MIAMI, FLORIDA
COUNTED BY: LEONA PASS
SIGNALIZED

624 GARDENIA TERRACE
DELRAY BEACH, FLORIDA 33444
(561) 272-3255 FAX (561) 272-4381

Site Code : 00090010
Start Date: 02/19/09
File I.D. : 5ST_2AVE
Page : 3

LIGHT VEHICLES, HEAVY VEHICLES

	NW 2ND AVENUE From North				NW 5TH STREET From East				NW 2ND AVENUE From South				NW 5TH STREET From West				
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	Total
Date 02/19/09																	
Peak Hour Analysis By Entire Intersection for the Period: 16:00 to 18:00 on 02/19/09																	
Peak start	16:30				16:30				16:30				16:30				
Volume	0	24	178	0	0	0	0	0	0	0	399	131	0	21	280	62	
Percent	0%	12%	88%	0%	0%	0%	0%	0%	0%	0%	75%	25%	0%	6%	77%	17%	
Pk total	202				0				530				363				
Highest	17:15				07:00				17:00				17:00				
Volume	0	9	49	0	0	0	0	0	0	0	111	42	0	4	89	17	
Hi total	58				0				153				110				
PHF	.87				.0				.87				.82				



TRAFFIC SURVEY SPECIALISTS, INC.
624 GARDENIA TERRACE
DELRAY BEACH, FLORIDA 33444
(561) 272-3255 FAX (561) 272-4381

NW 5TH STREET & NW 2ND AVENUE
MIAMI, FLORIDA
COUNTED BY: LEONA PASS
SIGNALIZED

Site Code : 00090010
Start Date: 02/19/09
File I.D. : 5ST_2AVE

HEAVY VEHICLES

	NW 2ND AVENUE From North				NW 5TH STREET From East				NW 2ND AVENUE From South				NW 5TH STREET From West				
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	Total
Date 02/19/09																	
07:00	0	0	0	0	0	0	0	0	0	0	1	0	0	0	4	0	5
07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	5
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	7
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	1	10
Hr Total	0	0	0	0	0	0	0	0	0	0	1	0	0	0	25	1	27
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4
08:15	0	0	1	0	0	0	0	0	0	0	0	0	0	0	5	0	6
08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	5
08:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	6
Hr Total	0	0	1	0	0	0	0	0	0	0	0	0	0	0	20	0	21
---------- * BREAK * ----------																	
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	1	8
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3
16:45	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	2
Hr Total	0	0	0	0	0	0	0	0	0	0	0	1	0	0	14	1	16
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	5
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	7
Hr Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	0	16
TOTAL	0	0	1	0	0	0	0	0	0	0	1	1	0	0	75	2	80

TRAFFIC SURVEY SPECIALISTS, INC.

NW 5TH STREET & NW 2ND AVENUE
MIAMI, FLORIDA
COUNTED BY: LEONA PASS
SIGNALIZED

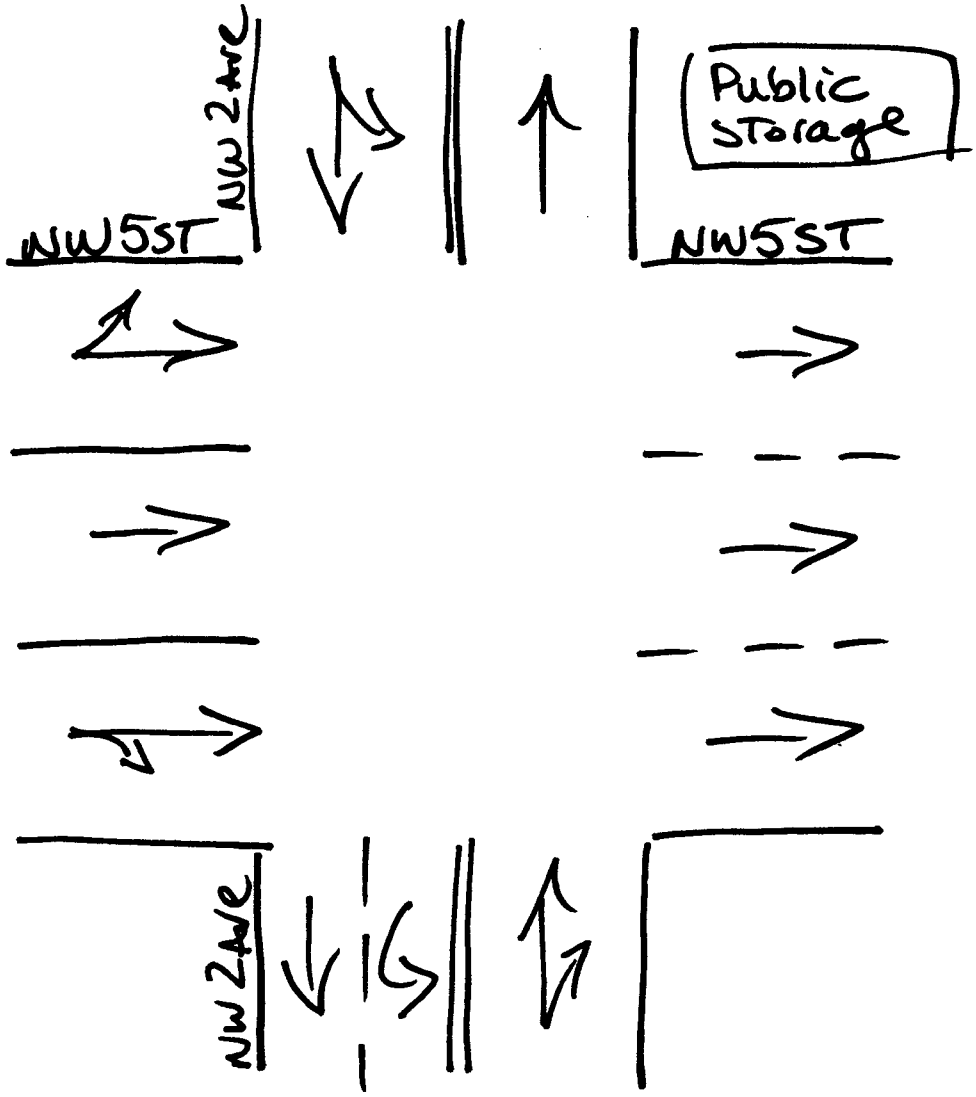
624 GARDENIA TERRACE
DELRAY BEACH, FLORIDA 33444
(561) 272-3255 FAX (561) 272-4381

Site Code : 00090010
Start Date: 02/19/09
File I.D. : 5ST_2AVE
Page : 1

PEDESTRIANS

	NW 2ND AVENUE From North				NW 5TH STREET From East				NW 2ND AVENUE From South				NW 5TH STREET From West				
	Left	Thru	RIGHT	PEDS	Left	Thru	RIGHT	PEDS	Left	Thru	RIGHT	PEDS	Left	Thru	RIGHT	PEDS	Total
Date 02/19/09																	
07:00	0	0	0	0	0	0	0	5	0	0	0	2	0	0	0	1	8
07:15	0	0	0	1	0	0	0	4	0	0	0	4	0	0	0	3	12
07:30	0	0	0	2	0	0	0	5	0	0	0	1	0	0	0	1	9
07:45	0	0	0	1	0	0	0	6	0	0	0	3	0	0	0	2	12
Hr Total	0	0	0	4	0	0	0	20	0	0	0	10	0	0	0	7	41
08:00	0	0	0	2	0	0	0	2	0	0	0	4	0	0	0	6	14
08:15	0	0	0	4	0	0	0	10	0	0	0	4	0	0	0	11	29
08:30	0	0	0	2	0	0	0	8	0	0	0	4	0	0	0	7	21
08:45	0	0	0	3	0	0	0	10	0	0	0	4	0	0	0	10	27
Hr Total	0	0	0	11	0	0	0	30	0	0	0	16	0	0	0	34	91
* BREAK *																	
16:00	0	0	0	7	0	0	0	20	0	0	0	4	0	0	0	8	39
16:15	0	0	0	4	0	0	0	5	0	0	0	8	0	0	0	4	21
16:30	0	0	0	2	0	0	0	9	0	0	0	9	0	0	0	6	26
16:45	0	0	0	3	0	0	0	6	0	0	0	4	0	0	0	2	15
Hr Total	0	0	0	16	0	0	0	40	0	0	0	25	0	0	0	20	101
17:00	0	0	0	6	0	0	0	5	0	0	0	7	0	0	0	7	25
17:15	0	0	0	3	0	0	0	7	0	0	0	3	0	0	0	3	16
17:30	0	0	0	1	0	0	0	6	0	0	0	2	0	0	0	1	10
17:45	0	0	0	1	0	0	0	4	0	0	0	7	0	0	0	2	14
Hr Total	0	0	0	11	0	0	0	22	0	0	0	19	0	0	0	13	65
TOTAL	0	0	0	42	0	0	0	112	0	0	0	70	0	0	0	74	298

North



Miami, Florida
February 19, 2009
drawn by: Luis Palomino
Signalized

TRAFFIC SURVEY SPECIALISTS, INC.

NW 5TH STREET & NW 1ST AVENUE
MIAMI, FLORIDA
COUNTED BY: CARLOS RUIZ
SIGNALIZED

624 GARDENIA TERRACE
DELRAY BEACH, FLORIDA 33444
(561) 272-3255 FAX (561) 272-4381

Site Code : 00090010
Start Date: 02/18/09
File I.D. : 5STR_1AV
Page : 1

LIGHT VEHICLES, HEAVY VEHICLES

	NW 1ST AVENUE From North				NW 5TH STREET From East				NW 1ST AVENUE From South				NW 5TH STREET From West				
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	Total
Date 02/18/09																	
07:00	0	2	9	0	0	0	0	0	0	0	7	12	0	2	127	13	172
07:15	1	2	16	0	0	0	0	0	0	0	10	12	0	5	131	24	201
07:30	0	2	13	0	0	0	0	0	0	0	6	19	0	4	204	25	273
07:45	1	3	31	0	0	0	0	0	0	0	25	17	0	6	225	41	349
Hr Total	2	9	69	0	0	0	0	0	0	0	48	60	0	17	687	103	995
08:00	0	4	19	0	0	0	0	0	0	0	15	11	0	8	177	30	264
08:15	0	7	30	0	0	0	0	0	0	0	21	19	0	4	173	37	291
08:30	0	5	23	0	0	0	0	0	0	0	16	14	0	4	185	36	283
08:45	0	3	17	0	0	0	0	0	0	0	20	23	0	8	197	33	301
Hr Total	0	19	89	0	0	0	0	0	0	0	72	67	0	24	732	136	1139
---------- * BREAK * ----------																	
16:00	0	2	6	0	0	0	0	0	0	0	31	21	0	10	67	11	148
16:15	0	2	12	0	0	0	0	0	0	0	26	16	0	5	65	7	133
16:30	0	3	8	0	0	0	0	0	0	0	18	25	0	15	67	10	146
16:45	0	1	14	0	0	0	0	0	0	0	35	16	0	15	73	13	167
Hr Total	0	8	40	0	0	0	0	0	0	0	110	78	0	45	272	41	594
17:00	0	2	14	0	0	0	0	0	0	0	34	28	0	13	107	12	210
17:15	1	5	12	0	0	0	0	0	0	0	35	24	0	21	133	24	255
17:30	0	6	7	0	0	0	0	0	0	0	35	20	0	22	96	23	209
17:45	0	0	11	0	0	0	0	0	0	0	25	25	0	16	108	10	195
Hr Total	1	13	44	0	0	0	0	0	0	0	129	97	0	72	444	69	869
TOTAL	3	49	242	0	0	0	0	0	0	0	359	302	0	158	2135	349	3597

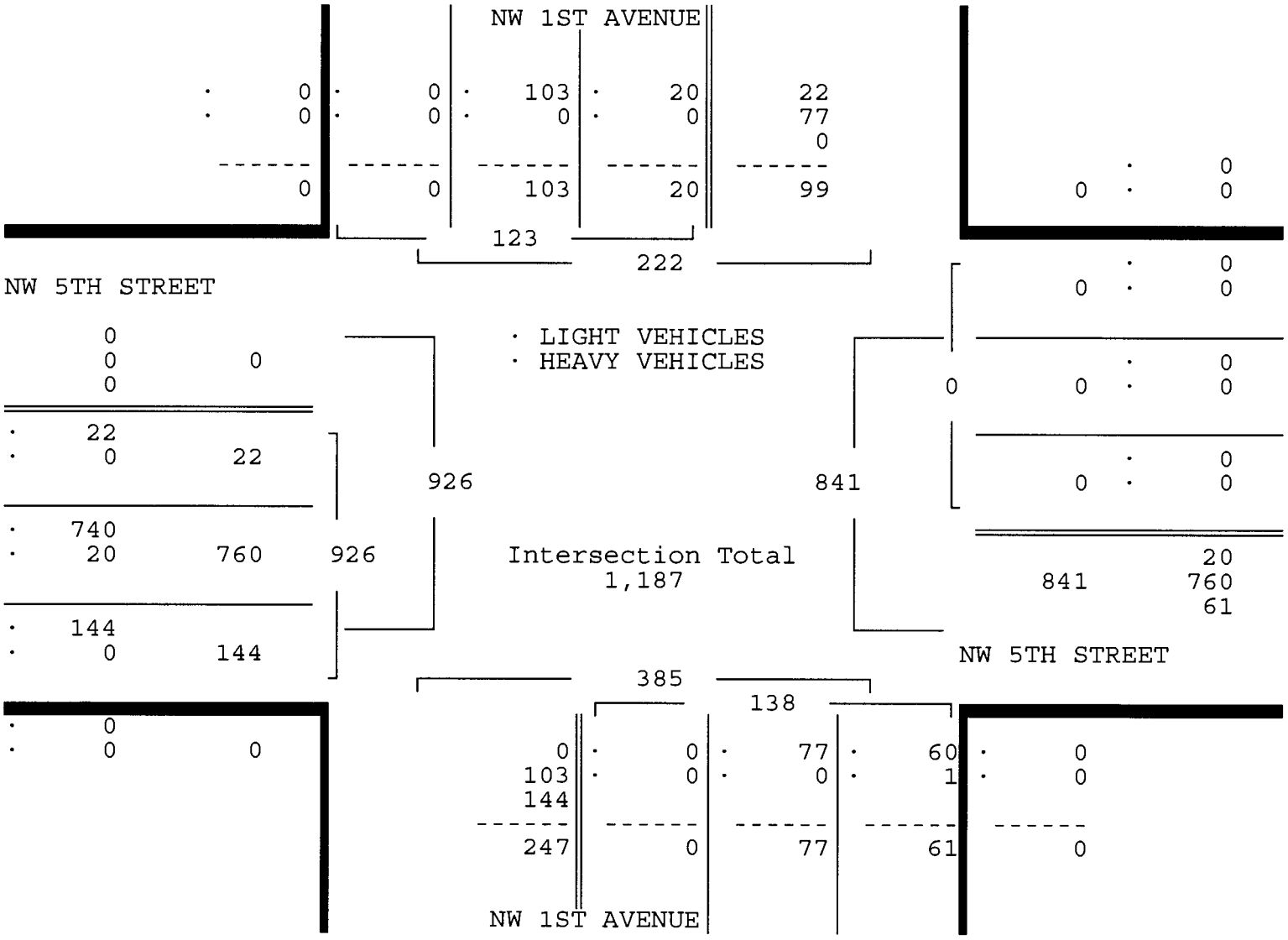
TRAFFIC SURVEY SPECIALISTS, INC.
624 GARDENIA TERRACE
DELRAY BEACH, FLORIDA 33444
(561) 272-3255 FAX (561) 272-4381

NW 5TH STREET & NW 1ST AVENUE
MIAMI, FLORIDA
COUNTED BY: CARLOS RUIZ
SIGNALIZED

Site Code : 00090010
Start Date: 02/18/09
File I.D. : 5STR_1AV

LIGHT VEHICLES, HEAVY VEHICLES

	NW 1ST AVENUE From North				NW 5TH STREET From East				NW 1ST AVENUE From South				NW 5TH STREET From West				
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	Total
Date 02/18/09																	
Peak Hour Analysis By Entire Intersection for the Period: 07:00 to 09:00 on 02/18/09																	
Peak start 07:45					07:45				07:45				07:45				
Volume	1	19	103	0	0	0	0	0	0	0	77	61	0	22	760	144	
Percent	1%	15%	84%	0%	0%	0%	0%	0%	0%	0%	56%	44%	0%	2%	82%	16%	
Pk total	123				0				138				926				
Highest	08:15				07:00				07:45				07:45				
Volume	0	7	30	0	0	0	0	0	0	0	25	17	0	6	225	41	
Hi total	37				0				42				272				
PHF	.83				.0				.82				.85				



TRAFFIC SURVEY SPECIALISTS, INC.

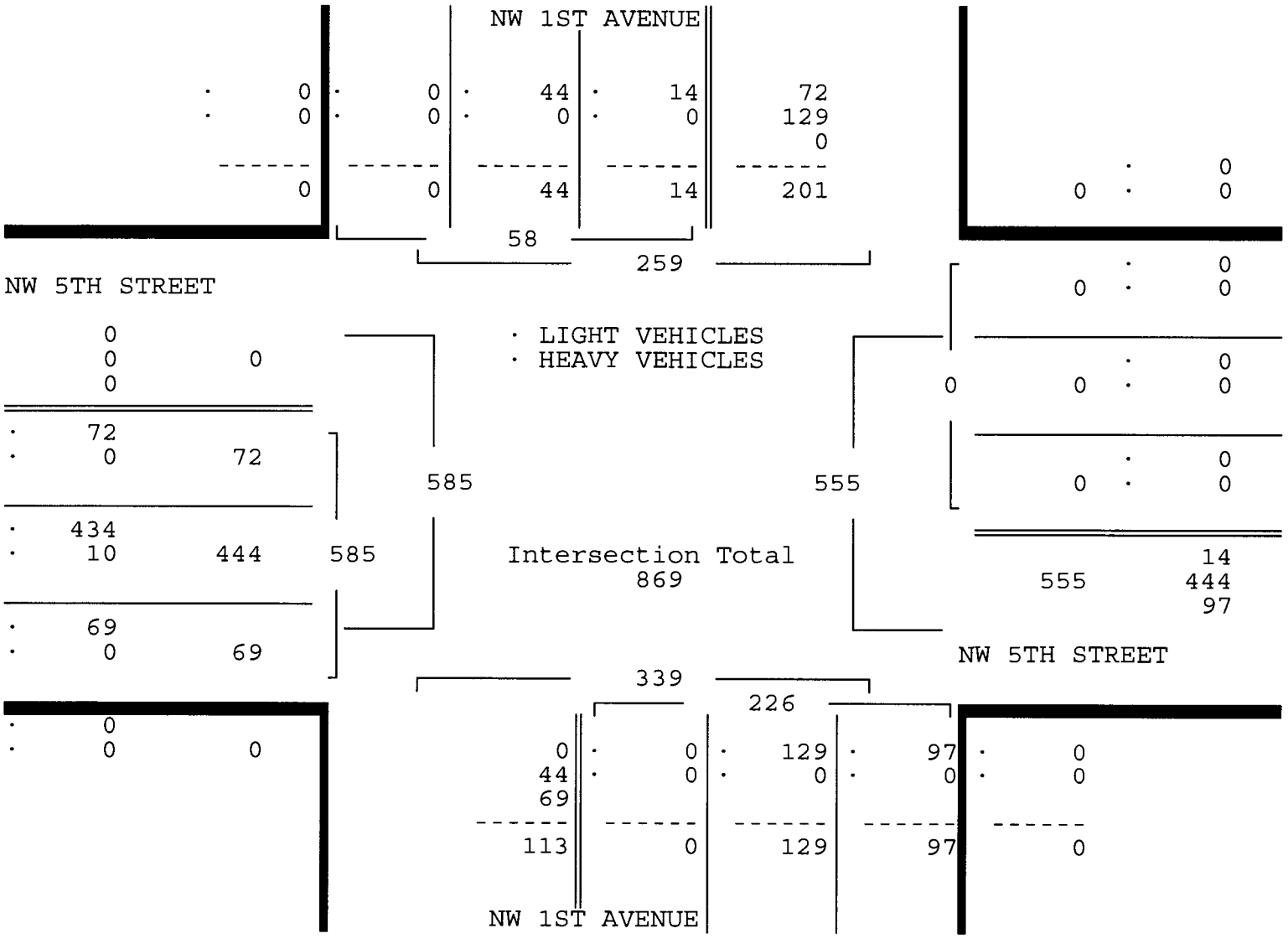
NW 5TH STREET & NW 1ST AVENUE
MIAMI, FLORIDA
COUNTED BY: CARLOS RUIZ
SIGNALIZED

624 GARDENIA TERRACE
DELRAY BEACH, FLORIDA 33444
(561) 272-3255 FAX (561) 272-4381

Site Code : 00090010
Start Date: 02/18/09
File I.D. : 5STR_1AV
Page : 3

LIGHT VEHICLES, HEAVY VEHICLES

	NW 1ST AVENUE From North				NW 5TH STREET From East				NW 1ST AVENUE From South				NW 5TH STREET From West				
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	Total
Date 02/18/09																	
Peak Hour Analysis By Entire Intersection for the Period: 16:00 to 18:00 on 02/18/09																	
Peak start	17:00				17:00				17:00				17:00				
Volume	1	13	44	0	0	0	0	0	0	0	129	97	0	72	444	69	
Percent	2%	22%	76%	0%	0%	0%	0%	0%	0%	0%	57%	43%	0%	12%	76%	12%	
Pk total	58				0				226				585				
Highest	17:15				07:00				17:00				17:15				
Volume	1	5	12	0	0	0	0	0	0	0	34	28	0	21	133	24	
Hi total	18				0				62				178				
PHF	.81				.0				.91				.82				



TRAFFIC SURVEY SPECIALISTS, INC.

NW 5TH STREET & NW 1ST AVENUE
MIAMI, FLORIDA
COUNTED BY: CARLOS RUIZ
SIGNALIZED

624 GARDENIA TERRACE
DELRAY BEACH, FLORIDA 33444
(561) 272-3255 FAX (561) 272-4381

Site Code : 00090010
Start Date: 02/18/09
File I.D. : 5STR_1AV
Page : 1

HEAVY VEHICLES

	NW 1ST AVENUE From North				NW 5TH STREET From East				NW 1ST AVENUE From South				NW 5TH STREET From West				
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	Total
Date 02/18/09																	
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3
07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	5
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4
07:45	0	0	0	0	0	0	0	0	0	0	0	1	0	0	4	0	5
Hr Total	0	0	0	0	0	0	0	0	0	0	0	1	0	0	16	0	17
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3
08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3
08:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	5
Hr Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21	0	21
---------- * BREAK * ----------																	
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4
Hr Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	6
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4
Hr Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
TOTAL	0	0	0	0	0	0	0	0	0	0	0	1	0	0	53	0	54

TRAFFIC SURVEY SPECIALISTS, INC.

NW 5TH STREET & NW 1ST AVENUE
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SIGNALIZED

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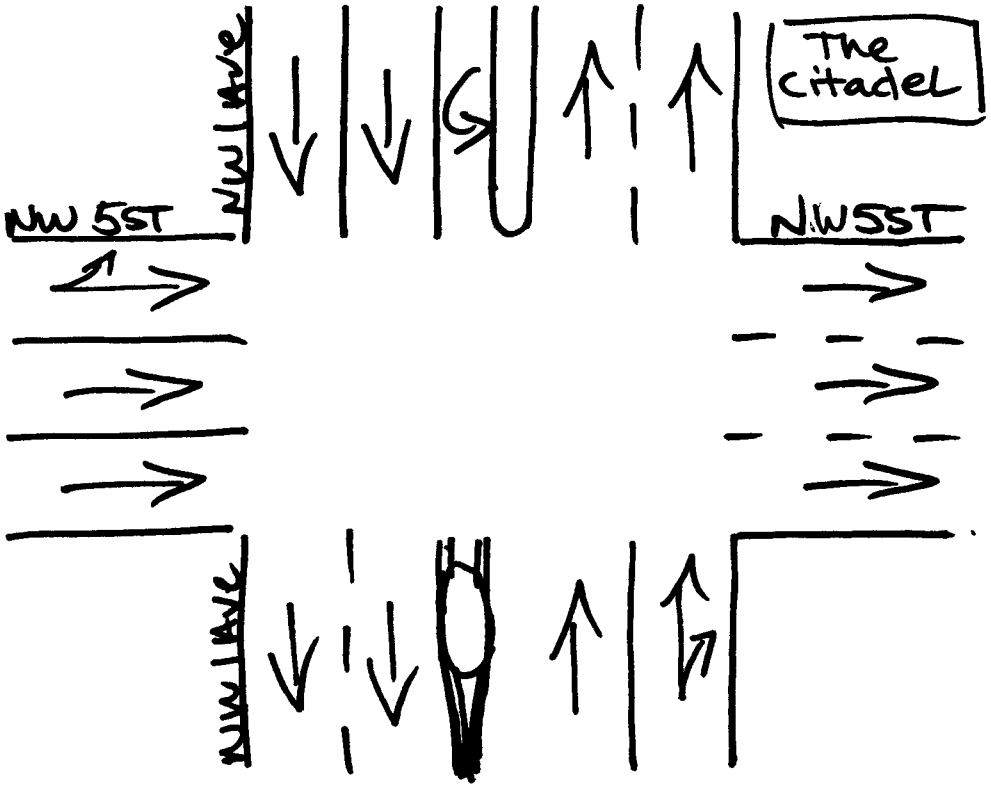
DELRAY BEACH, FLORIDA 33444
(561) 272-3255 FAX (561) 272-4381

Site Code : 00090010
Start Date: 02/18/09
File I.D. : 5STR_1AV
Page : 1

PEDESTRIANS

	NW 1ST AVENUE From North				NW 5TH STREET From East				NW 1ST AVENUE From South				NW 5TH STREET From West				
	Left	Thru	RIGHT	PEDS	Left	Thru	RIGHT	PEDS	Left	Thru	RIGHT	PEDS	Left	Thru	RIGHT	PEDS	Total
Date 02/18/09																	
07:00	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	1	5
07:15	0	0	0	1	0	0	0	3	0	0	0	2	0	0	0	4	10
07:30	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	4	8
07:45	0	0	0	0	0	0	0	12	0	0	0	1	0	0	0	11	24
Hr Total	0	0	0	1	0	0	0	23	0	0	0	3	0	0	0	20	47
08:00	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	4
08:15	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	6	8
08:30	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	2	6
08:45	0	0	0	0	0	0	0	9	0	0	0	2	0	0	0	10	21
Hr Total	0	0	0	1	0	0	0	11	0	0	0	7	0	0	0	20	39
---------- * BREAK * ----------																	
16:00	0	0	0	3	0	0	0	2	0	0	0	1	0	0	0	6	12
16:15	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	6	9
16:30	0	0	0	0	0	0	0	10	0	0	0	6	0	0	0	10	26
16:45	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	3	6
Hr Total	0	0	0	5	0	0	0	15	0	0	0	8	0	0	0	25	53
17:00	0	0	0	0	0	0	0	5	0	0	0	3	0	0	0	6	14
17:15	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	4	5
17:30	0	0	0	0	0	0	0	6	0	0	0	1	0	0	0	5	12
17:45	0	0	0	3	0	0	0	6	0	0	0	1	0	0	0	6	16
Hr Total	0	0	0	3	0	0	0	18	0	0	0	5	0	0	0	21	47
TOTAL	0	0	0	10	0	0	0	67	0	0	0	23	0	0	0	86	186

North



Miami, Florida
February 18, 2009
drawn by: Luis Palomino
Signalized

TRAFFIC SURVEY SPECIALISTS, INC.

NE/NW 5TH STREET & N MIAMI AVENUE
MIAMI, FLORIDA
COUNTED BY: GIANCARLO JOHN
SIGNALIZED

624 GARDENIA TERRACE
DELRAY BEACH, FLORIDA 33444
(561) 272-3255 FAX (561) 272-4381

Site Code : 00090010
Start Date: 02/18/09
File I.D. : 5STMIAMI
Page : 1

LIGHT VEHICLES, HEAVY VEHICLES

	N MIAMI AVENUE From North				NE 5TH STREET From East				N MIAMI AVENUE From South				NW 5TH STREET From West				
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	Total
Date 02/18/09																	
07:00	0	23	40	0	0	0	0	0	0	0	0	0	0	0	130	9	202
07:15	0	37	48	0	0	0	0	0	0	0	0	0	0	0	120	11	216
07:30	0	52	81	0	0	0	0	0	0	0	0	0	0	0	204	17	354
07:45	0	65	100	0	0	0	0	0	0	0	0	0	0	0	186	25	376
Hr Total	0	177	269	0	0	0	0	0	0	0	0	0	0	0	640	62	1148
08:00	0	47	108	0	0	0	0	0	0	0	0	0	0	0	165	23	343
08:15	0	49	111	0	0	0	0	0	0	0	0	0	0	0	143	35	338
08:30	0	50	123	0	0	0	0	0	0	0	0	0	0	0	176	28	377
08:45	0	71	146	0	0	0	0	0	0	0	0	0	0	0	206	18	441
Hr Total	0	217	488	0	0	0	0	0	0	0	0	0	0	0	690	104	1499
---------- * BREAK * ----------																	
16:00	0	20	53	0	0	0	0	0	0	0	0	0	0	0	77	6	156
16:15	0	14	50	0	0	0	0	0	0	0	0	0	0	0	75	10	149
16:30	0	20	37	0	0	0	0	0	0	0	0	0	0	0	88	10	155
16:45	0	14	48	0	0	0	0	0	0	0	0	0	0	0	81	9	152
Hr Total	0	68	188	0	0	0	0	0	0	0	0	0	0	0	321	35	612
17:00	0	23	52	0	0	0	0	0	0	0	0	0	0	0	126	13	214
17:15	0	31	56	0	0	0	0	0	0	0	0	0	0	0	150	12	249
17:30	0	31	60	0	0	0	0	0	0	0	0	0	0	0	133	6	230
17:45	0	27	52	0	0	0	0	0	0	0	0	0	0	0	125	9	213
Hr Total	0	112	220	0	0	0	0	0	0	0	0	0	0	0	534	40	906
TOTAL	0	574	1165	0	0	0	0	0	0	0	0	0	0	0	2185	241	4165

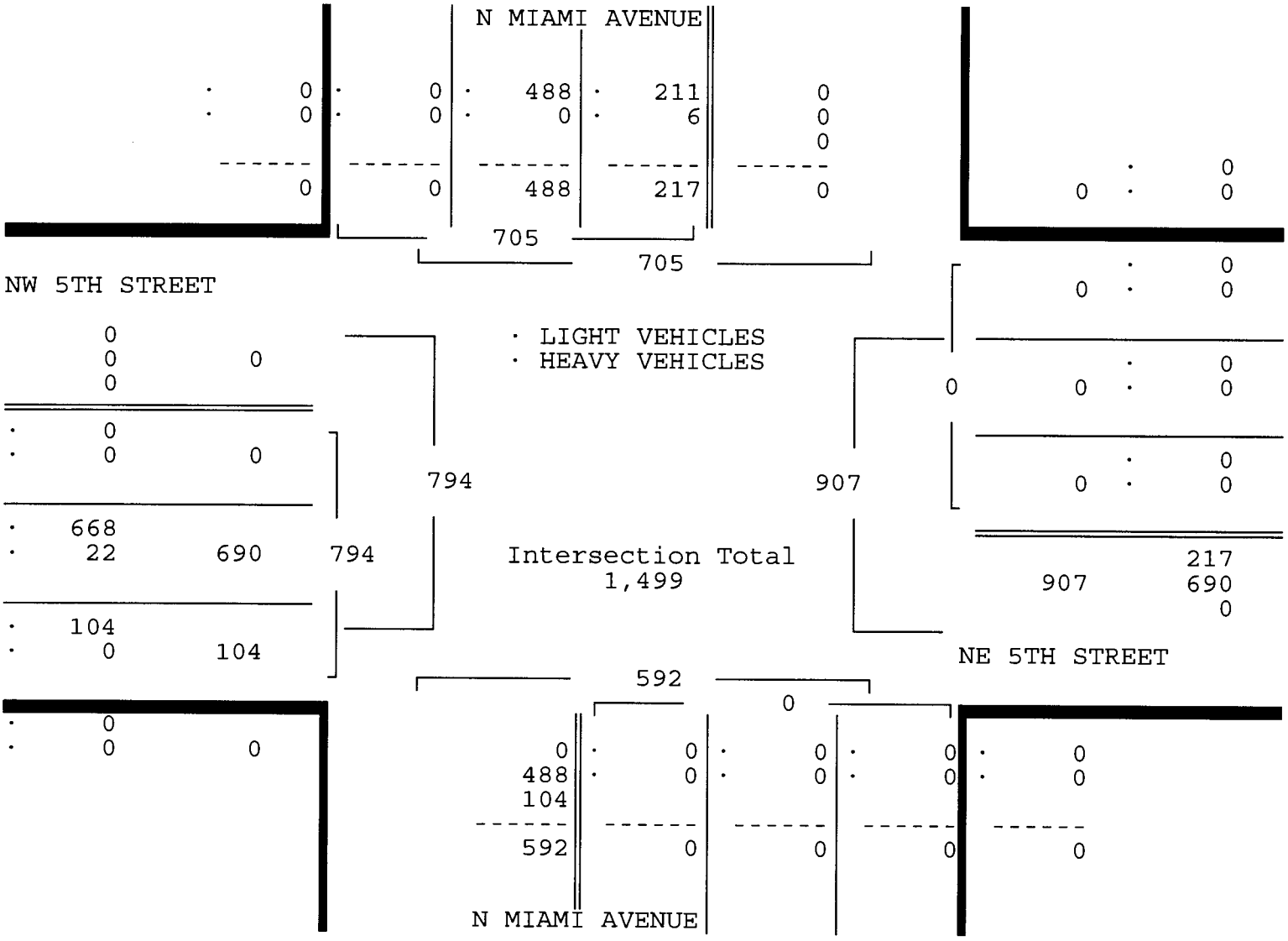
NE/NW 5TH STREET & N MIAMI AVENUE
MIAMI, FLORIDA
COUNTED BY: GIANCARLO JOHN
SIGNALIZED

TRAFFIC SURVEY SPECIALISTS, INC.
624 GARDENIA TERRACE
DELRAY BEACH, FLORIDA 33444
(561) 272-3255 FAX (561) 272-4381

Site Code : 00090010
Start Date: 02/18/09
File I.D. : 5STMIAMI
Page : 2

LIGHT VEHICLES, HEAVY VEHICLES

	N MIAMI AVENUE From North				NE 5TH STREET From East				N MIAMI AVENUE From South				NW 5TH STREET From West				
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	Total
Date 02/18/09																	
Peak Hour Analysis By Entire Intersection for the Period: 07:00 to 09:00 on 02/18/09																	
Peak start	08:00				08:00				08:00				08:00				
Volume	0	217	488	0	0	0	0	0	0	0	0	0	0	0	690	104	
Percent	0%	31%	69%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	87%	13%	
Pk total	705				0				0				794				
Highest	08:45				07:00				07:00				08:45				
Volume	0	71	146	0	0	0	0	0	0	0	0	0	0	0	206	18	
Hi total	217				0				0				224				
PHF	.81				.0				.0				.89				



TRAFFIC SURVEY SPECIALISTS, INC.

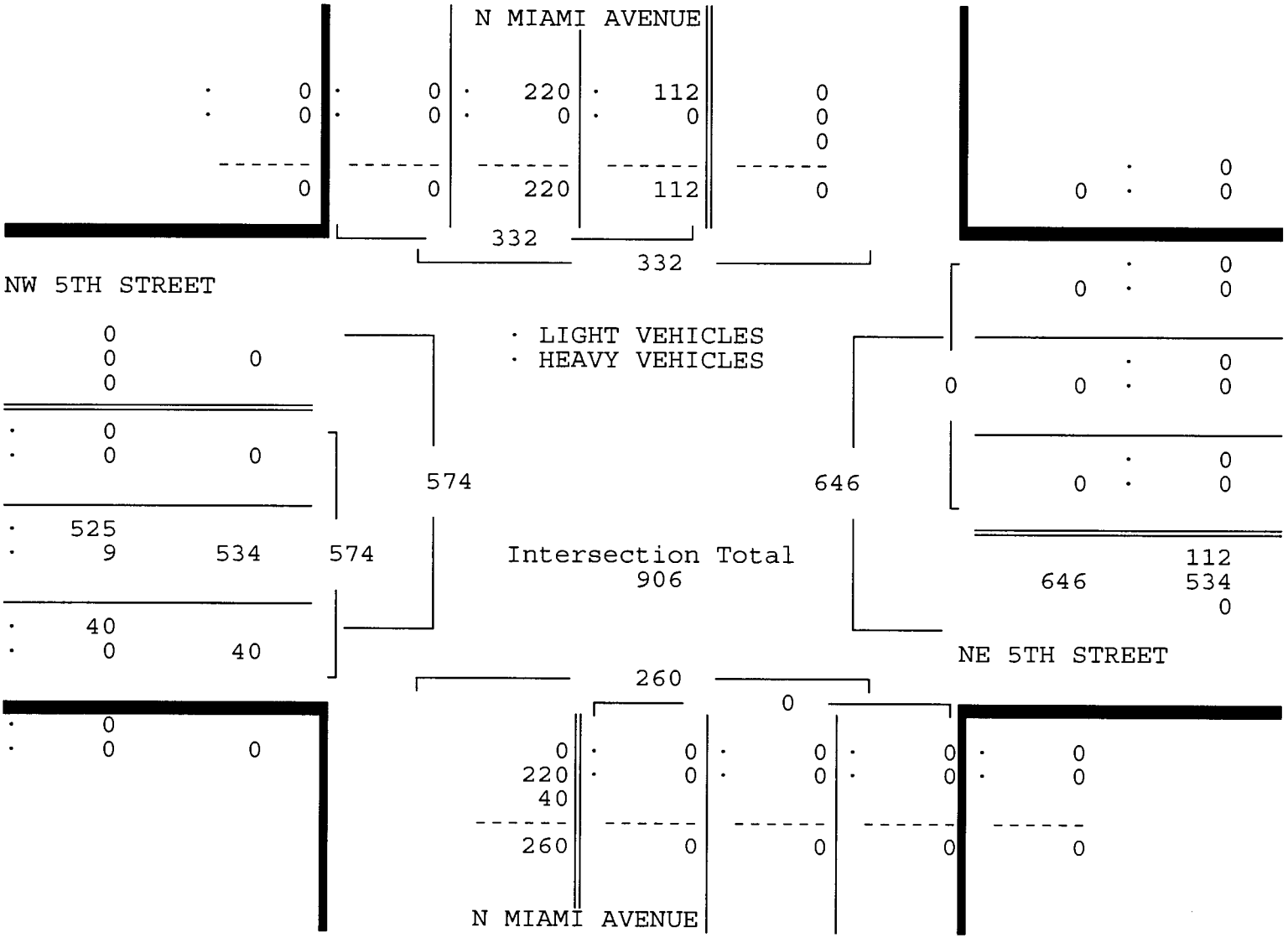
NE/NW 5TH STREET & N MIAMI AVENUE
MIAMI, FLORIDA
COUNTED BY: GIANCARLO JOHN
SIGNALIZED

624 GARDENIA TERRACE
DELRAY BEACH, FLORIDA 33444
(561) 272-3255 FAX (561) 272-4381

Site Code : 00090010
Start Date: 02/18/09
File I.D. : 5STMIAMI
Page : 3

LIGHT VEHICLES, HEAVY VEHICLES

	N MIAMI AVENUE From North				NE 5TH STREET From East				N MIAMI AVENUE From South				NW 5TH STREET From West				
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	Total
Date 02/18/09																	
Peak Hour Analysis By Entire Intersection for the Period: 16:00 to 18:00 on 02/18/09																	
Peak start	17:00				17:00				17:00				17:00				
Volume	0	112	220	0	0	0	0	0	0	0	0	0	0	0	534	40	
Percent	0%	34%	66%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	93%	7%	
Pk total	332				0				0				574				
Highest	17:30				07:00				07:00				17:15				
Volume	0	31	60	0	0	0	0	0	0	0	0	0	0	0	150	12	
Hi total	91				0				0				162				
PHF	.91				.0				.0				.89				



TRAFFIC SURVEY SPECIALISTS, INC.
624 GARDENIA TERRACE
DELRAY BEACH, FLORIDA 33444
(561) 272-3255 FAX (561) 272-4381

NE/NW 5TH STREET & N MIAMI AVENUE
MIAMI, FLORIDA
COUNTED BY: GIANCARLO JOHN
SIGNALIZED

Site Code : 00090010
Start Date: 02/18/09
File I.D. : 5STMIAMI

HEAVY VEHICLES

	N MIAMI AVENUE From North				NE 5TH STREET From East				N MIAMI AVENUE From South				NW 5TH STREET From West				
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	Total
Date 02/18/09																	
07:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	3	0	4
07:15	0	2	0	0	0	0	0	0	0	0	0	0	0	0	3	0	5
07:30	0	2	0	0	0	0	0	0	0	0	0	0	0	0	6	0	8
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	5
Hr Total	0	5	0	0	0	0	0	0	0	0	0	0	0	0	17	0	22
08:00	0	2	0	0	0	0	0	0	0	0	0	0	0	0	10	0	12
08:15	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3	0	6
08:30	0	1	0	0	0	0	0	0	0	0	0	0	0	0	3	0	4
08:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	6
Hr Total	0	6	0	0	0	0	0	0	0	0	0	0	0	0	22	0	28
* BREAK *																	
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
16:30	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3
Hr Total	0	1	0	0	0	0	0	0	0	0	0	0	0	0	6	0	7
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4
Hr Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	9
TOTAL	0	12	0	0	0	0	0	0	0	0	0	0	0	0	54	0	66

TRAFFIC SURVEY SPECIALISTS, INC.
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DELRAY BEACH, FLORIDA 33444
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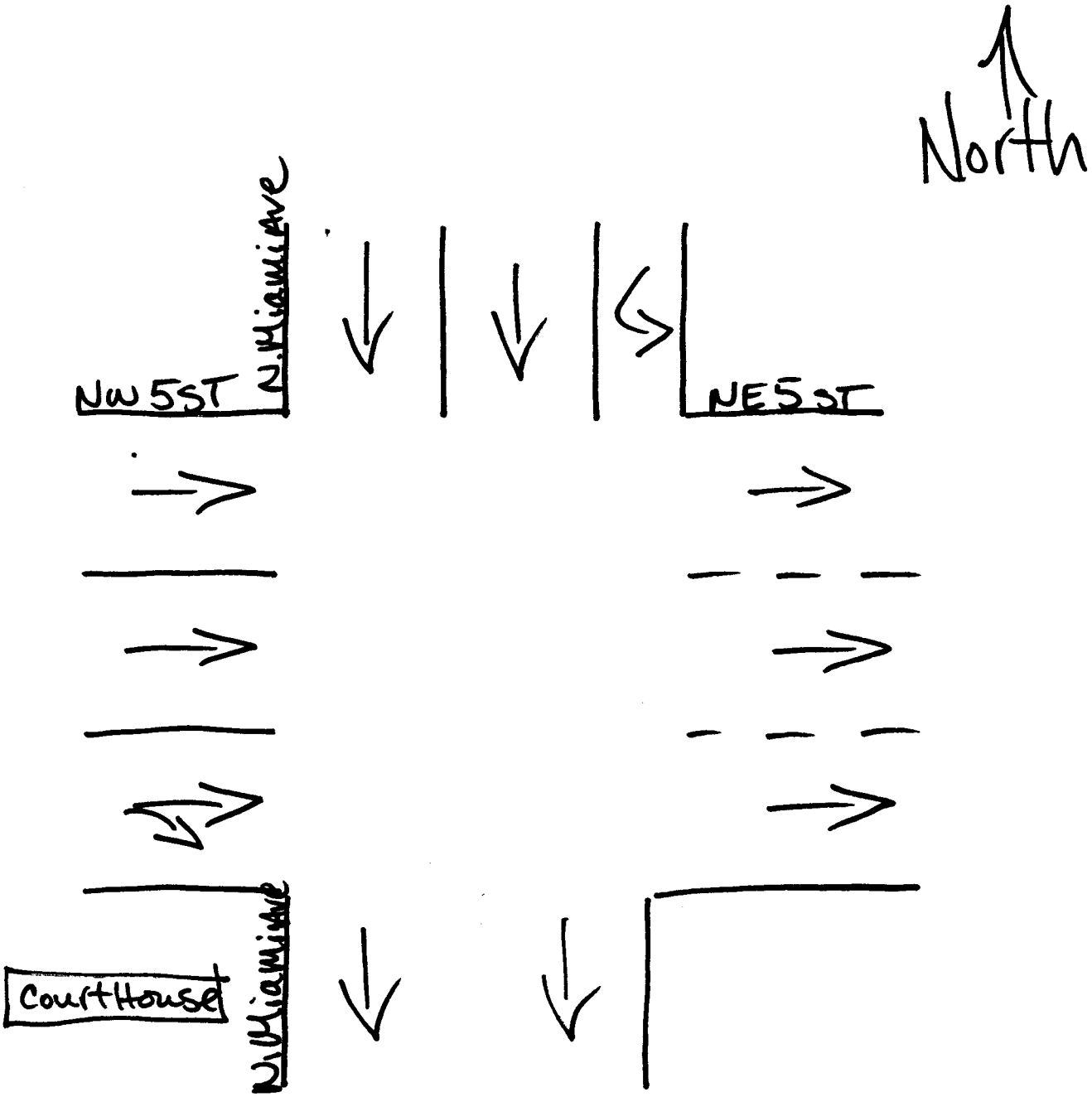
NE/NW 5TH STREET & N MIAMI AVENUE
MIAMI, FLORIDA
COUNTED BY: GIANCARLO JOHN
SIGNALIZED

Site Code : 00090010
Start Date: 02/18/09
File I.D. : 5STMIAMI

PEDESTRIANS

	N MIAMI AVENUE From North				NE 5TH STREET From East				N MIAMI AVENUE From South				NW 5TH STREET From West				
	Left	Thru	RIGHT	PEDS	Left	Thru	RIGHT	PEDS	Left	Thru	RIGHT	PEDS	Left	Thru	RIGHT	PEDS	Total
Date 02/18/09																	
07:00	0	0	0	1	0	0	0	1	0	0	0	6	0	0	0	6	14
07:15	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	2	4
07:30	0	0	0	0	0	0	0	5	0	0	0	3	0	0	0	5	13
07:45	0	0	0	2	0	0	0	2	0	0	0	1	0	0	0	2	7
Hr Total	0	0	0	3	0	0	0	9	0	0	0	11	0	0	0	15	38
08:00	0	0	0	1	0	0	0	11	0	0	0	3	0	0	0	4	19
08:15	0	0	0	0	0	0	0	11	0	0	0	2	0	0	0	3	16
08:30	0	0	0	3	0	0	0	13	0	0	0	4	0	0	0	4	24
08:45	0	0	0	0	0	0	0	11	0	0	0	9	0	0	0	3	23
Hr Total	0	0	0	4	0	0	0	46	0	0	0	18	0	0	0	14	82
---------- * BREAK * ----------																	
16:00	0	0	0	3	0	0	0	6	0	0	0	4	0	0	0	8	21
16:15	0	0	0	4	0	0	0	7	0	0	0	1	0	0	0	4	16
16:30	0	0	0	1	0	0	0	8	0	0	0	0	0	0	0	8	17
16:45	0	0	0	2	0	0	0	8	0	0	0	2	0	0	0	1	13
Hr Total	0	0	0	10	0	0	0	29	0	0	0	7	0	0	0	21	67
17:00	0	0	0	2	0	0	0	14	0	0	0	2	0	0	0	3	21
17:15	0	0	0	1	0	0	0	12	0	0	0	1	0	0	0	2	16
17:30	0	0	0	1	0	0	0	8	0	0	0	3	0	0	0	1	13
17:45	0	0	0	2	0	0	0	7	0	0	0	4	0	0	0	5	18
Hr Total	0	0	0	6	0	0	0	41	0	0	0	10	0	0	0	11	68
TOTAL	0	0	0	23	0	0	0	125	0	0	0	46	0	0	0	61	255

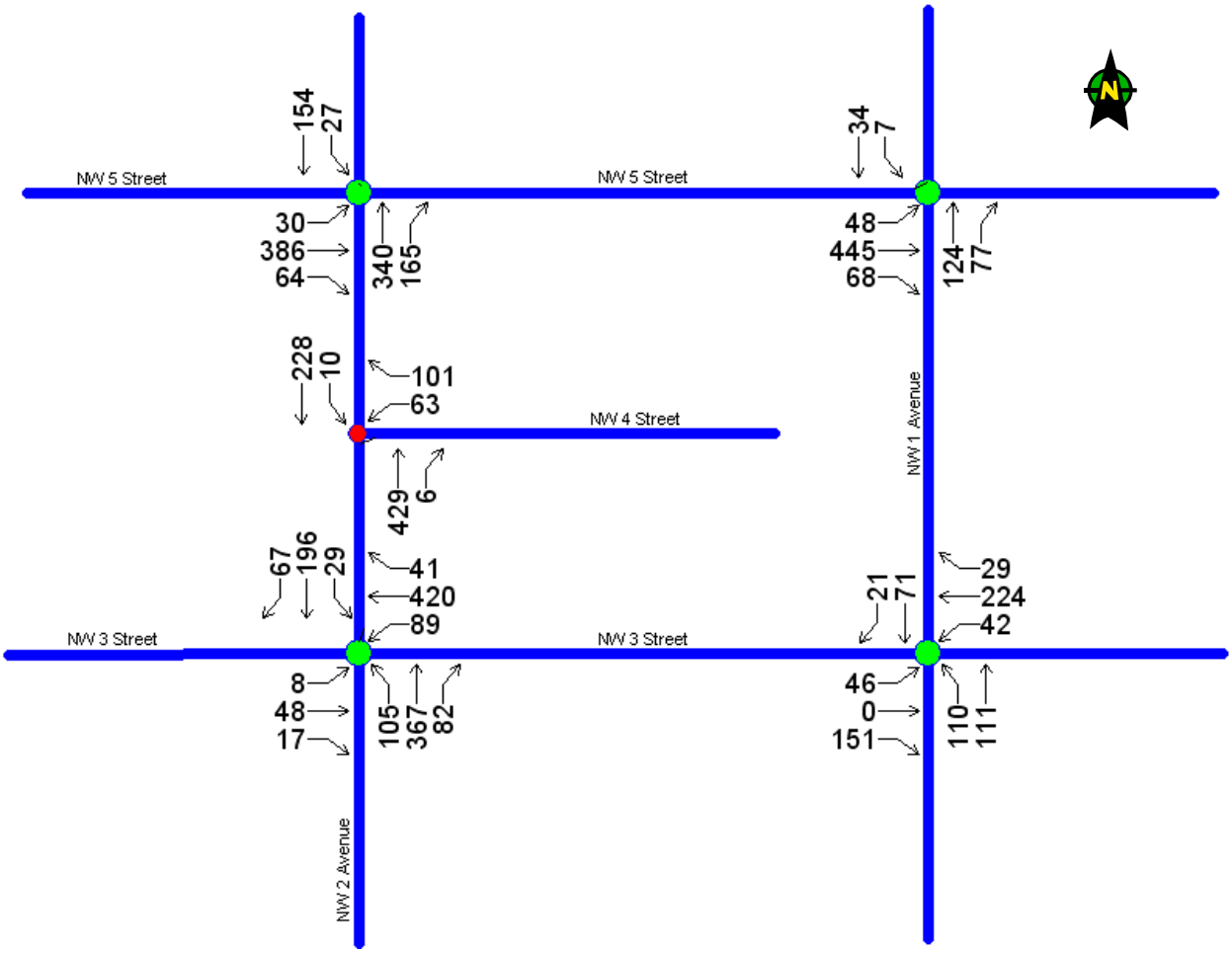


Miami, Florida
February 18, 2009
drawn by: Luis Palomino
Signalized

MIAMI-DADE COUNTY CHILDREN'S COURTHOUSE MUSP

Manual Turning Movement Counts (TMC) were taken at the nearby intersections surrounding the subject site. Figure 3 is a graphical representation of the existing PM TMC's that have been seasonally adjusted for peak annual conditions.

Figure 3: Existing PM Peak Hour TMC's (2008)



Geometry

- **NW 1st Avenue**

  NW 1st Avenue is a four lane divided non-state road. It provides connectivity in the north-south direction. On-street parking is not permitted.

- **NW 2nd Avenue**

  NW 2nd Avenue is a two lane divided non-state road. It provides connectivity in the north-south direction. On-street parking is permitted, however bus routes/stops do exist within this corridor.

Figure 7: Proposed PM Peak Hour TMC's (2011)

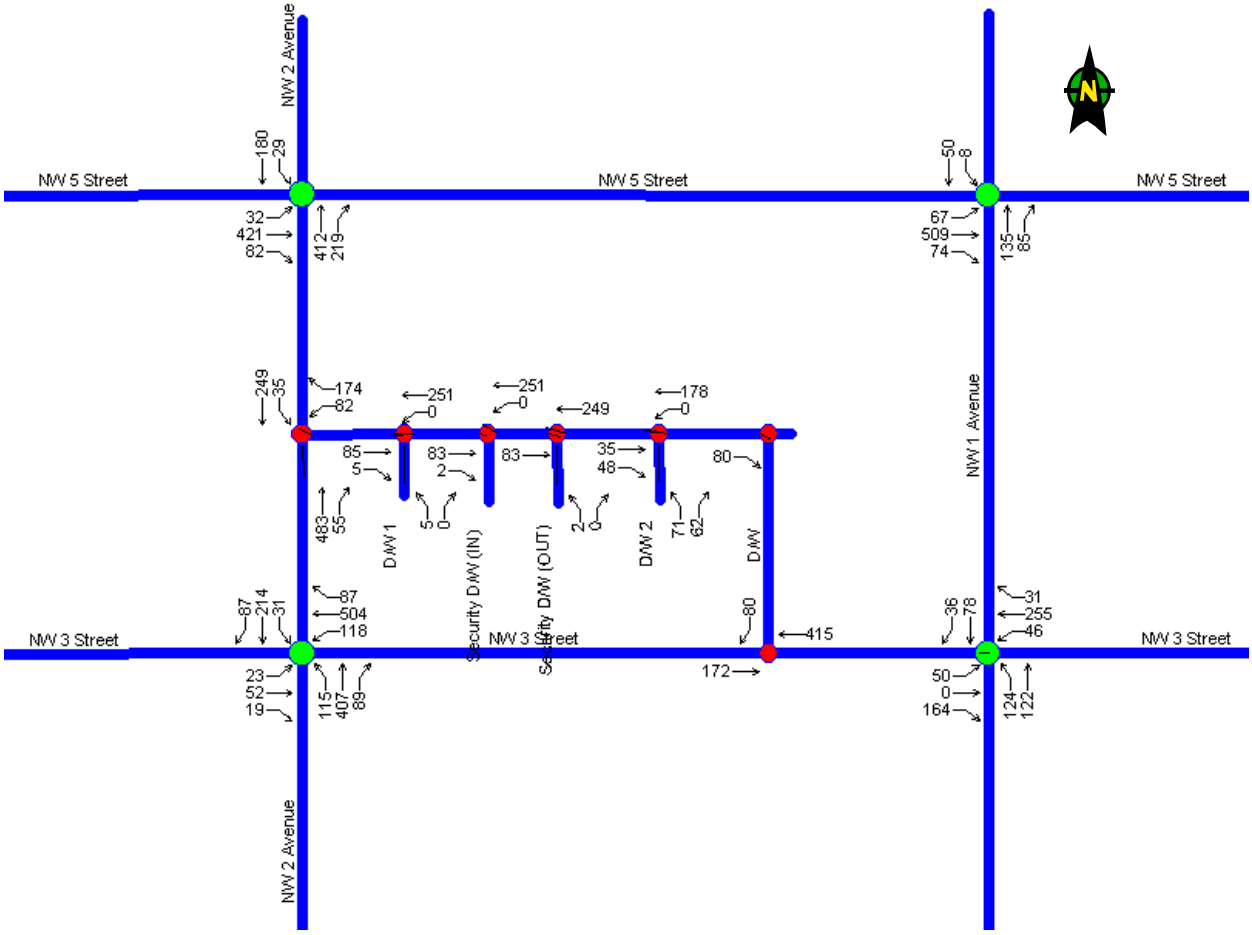


Table 9: PM Proposed Level of Service (LOS)

Intersection	*Proposed (2011)*	
	Delay	*LOS*
NW 1st Avenue & NW 3rd Street	***20.1***	***C***
NW 1st Avenue & NW 5th Street	***19.2***	***B***
NW 2nd Avenue & NW 3rd Street	***22.6***	***C***
NW 2nd Avenue & NW 4th Street	***7.2***	***A***
NW 2nd Avenue & NW 5th Street	***18.9***	***B***
NW 4th Street & Driveway 1	***0.2***	***A***
NW 4th Street & Security Driveway (OUT)	***0.1***	***A***
NW 4th Street & Driveway 2	***3.4***	***A***
NW 3rd Street & Driveway 3	***1.2***	***A***

Using the TMC's from figure 7 the approaching volumes were determined at the site driveways. The driveways volumes were determined by the trip distribution analysis according to the ingress and egress calculations from the trip generation. Lastly, the LOS analysis for the driveways resulted in a range between 0.1 to 3.4 seconds of delay which it is equivalent to level of service A Appendix H contains the supporting documentation.

WEST LOT MULTI-USE FACILITY MUSP

TABLE: A2

West Lot Multi-Use Facility MUSP

INTERSECTION APPROACH VOLUMES

INTERSECTION NO.	INTERSECTION NAME	APPROACH	MOVEMENT	PM PEAK HR COUNT	Date of Count	PHF	PSCF	PEAK SEASONAL ADJUSTMENT (EXISTING)	BACKGROUND GROWTH @ 2.86% FOR 3 YEARS	Committed Developments	Net Traffic w/o Project	Site Traffic (VPH)	Total Traffic (VPH) (PROPOSED)
	1	2	3	4	5	6	7	8	9	10	11	12	13
1	NW 2 Avenue & NW 2 Street	SOUTHBOUND	SBR	21	Thursday, May 13, 2010	0.809	1.02	21	23	0	23	2	25
			SBT	262			1.02	267	291	0	291	2	293
			SBL	0			1.02	0	0	0	0	0	0
			TOTAL	**283**				**289**	**314**	**0**	**314**	**4**	**318**
		WESTBOUND	WBR	0			1.02	0	0	0	0	0	0
			WBT	0			1.02	0	0	0	0	0	0
			WBL	0			1.02	0	0	0	0	0	0
			TOTAL	**0**				**0**	**0**	**0**	**0**	**0**	**0**
		NORTHBOUND	NBR	0			1.02	0	0	0	0	0	0
			NBT	480			1.02	490	533	6	539	0	539
			NBL	51			1.02	52	57	0	57	1	58
			TOTAL	**531**				**542**	**589**	**6**	**595**	**1**	**596**
		EASTBOUND	EBR	82			1.02	84	91	0	91	4	95
			EBT	0			1.02	0	0	0	0	0	0
			EBL	50			1.02	51	56	0	56	5	61
			TOTAL	**132**				**135**	**147**	**0**	**147**	**9**	**156**
	TOTAL			***946***				***965***	***1050***	***6***	***1056***	***14***	***1070***
2	NW 2 Avenue & NW 3 Street	SOUTHBOUND	SBR	76	Thursday, May 13, 2010	0.920	1.02	78	84	14	98	0	98
			SBT	186			1.02	190	206	0	206	1	207
			SBL	23			1.02	23	26	0	26	0	26
			TOTAL	**285**				**291**	**316**	**14**	**330**	**1**	**331**
		WESTBOUND	WBR	38			1.02	39	42	42	84	0	84
			WBT	390			1.02	398	433	45	478	1	479
			WBL	62			1.02	63	69	21	90	1	91
			TOTAL	**490**				**500**	**544**	**108**	**652**	**2**	**654**
		NORTHBOUND	NBR	69			1.02	70	77	0	77	0	77
			NBT	333			1.02	340	370	6	376	3	379
			NBL	128			1.02	131	142	0	142	0	142
			TOTAL	**530**				**541**	**588**	**6**	**594**	**3**	**597**
		EASTBOUND	EBR	14			1.02	14	16	0	16	3	19
			EBT	64			1.02	65	71	0	71	2	73
			EBL	9			1.02	9	10	14	24	2	26
			TOTAL	**87**				**89**	**97**	**14**	**111**	**7**	**118**
	TOTAL			***1392***				***1420***	***1545***	***142***	***1687***	***13***	***1700***