GOLDEN GLADES MULTIMODAL TRANSPORTATION FACILITY
Noise Study Report

golden glades
multimodal center

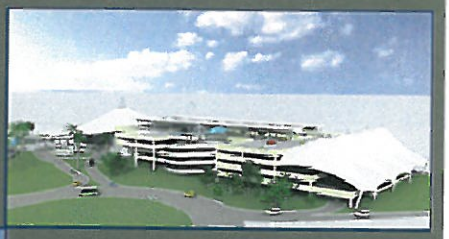

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TABLE OF CONTENTS

SECTION	DESCRIPTION	PAGE NO.
1.0	INTRODUCTION	1
2.0	PROJECT DESCRIPTION	1
2.1	Existing Conditions	1
2.2	Existing/Future Land Use	3
3.0	PROPOSED IMPROVEMENTS	5
3.1	Alternatives	5
3.1.1	No Build	5
3.1.2	Alternative 1	7
3.1.3	Alternative 2	9
3.1.4	Golden Glade Multi-Modal Transportation Facility Build-Out	9
3.1.5	Joint-Development Participation	11
3.1.6	Recommendations	12
4.0	TRAFFIC NOISE ANALYSIS	12
4.1	Noise Descriptors	12
4.2	Noise Abatement Criteria	13
4.3	Noise Sensitive Areas	13
4.4	Field Measured Noise Levels	15
4.4.1	Methodology	15
4.4.2	Field Measurement Data	16
4.4.3	Field Measurement Summary	17
4.5	Computer Noise Model Verification	17
4.6	Noise Model Development	18
4.7	Predicted Traffic Noise Levels	19
4.8	Noise Impact Analysis	19
4.9	Noise Abatement Measures	19
5.0	SUMMARY	20
6.0	CONSTRUCTION NOISE AND VIBRATION	21
7.0	COORDINATION WITH LOCAL AGENCIES	21

LIST OF FIGURES

FIGURE NO.	DESCRIPTION	PAGE NO.
1	Project Location Map	2
2	Land Use Map	4
3	Existing Conditions/No-Build	6
4	Alternative 1	8
5	Alternative 2	10
6	Field and Model Noise Receivers	14

LIST OF TABLES

TABLE NO.	DESCRIPTION	PAGE NO.
1	FHWA Noise Abatement Criteria and FDOT Noise Abatement Approach Criteria	13
2	Field Measured Traffic Noise Data	16
3	Modeled Noise Receiver Locations and Noise Analysis Results	18

1.0 INTRODUCTION

The Florida Department of Transportation (FDOT) is conducting a Project Development and Environment (PD&E) Study to construct a Multi-modal transportation facility within an urbanized FDOT property, the Golden Glades Park & Ride Lot located within Sections 13 and 14, Township 52 South, Range 41 East in north Miami-Dade County, Florida. The purpose of this report is to present the findings of a traffic noise analysis for the proposed redevelopment of this facility. Potential traffic noise impacts in the area surrounding the project corridor were assessed for all viable project alternatives, including the No Build Alternative, in accordance with Federal regulations (CFR 772) and guidelines contained in Chapter 17 of the PD&E Manual. A summary of this noise analysis may be found in the Categorical Exclusion Type 2 document for the project available from the FDOT District Six offices.

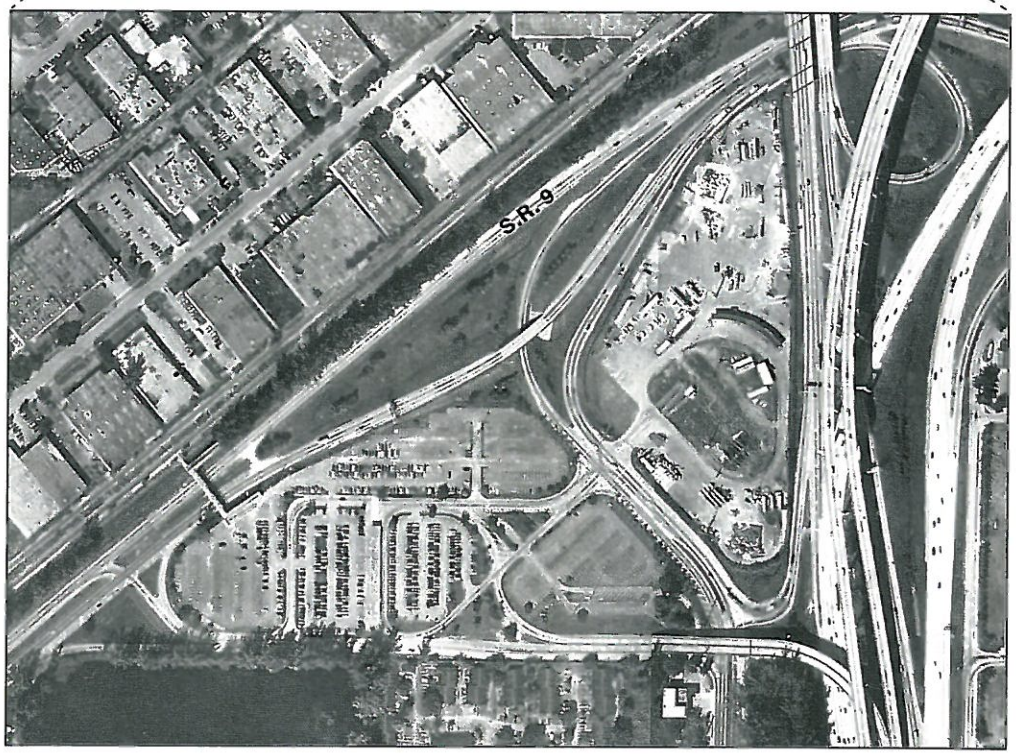
2.0 PROJECT DESCRIPTION

2.1 Existing Conditions

The project area consists of the southwest quadrant of the Golden Glades Interchange. The area is bordered by SR 9 and the South Florida Rail Corridor to the north, SR 9A (I-95) to the east, and NW 157th Street to the south and comprises approximately forty-five (45) acres within a triangular tract of land. The study area consists of a PNR Lot, an adjacent vacant parcel across from the PNR Lot, and the roadways and ramps of the Golden Glades Interchange, including SR 9/Ali Baba Avenue and US 441/SR 7/NW 7th Avenue. The South Florida Regional Transportation Authority (SFRTA) station (which provides commuter service for the railroad) is on the north side of the railroad and SR 9, and is accessed from the PNR Lot via an overhead pedestrian bridge. See Figure 1, Project Location Map.

The PNR Lot is adjacent to three major highways. The I-95 High Occupancy Vehicle (HOV) Flyover consists of a one lane ramp in each direction that provides access to and from I-95 and the PNR Lot. SR 9 provides two lanes in each direction with paved and grassed shoulder on the outside and paved shoulder on the inside. There is a one-lane ramp that connects northbound SR 9 to southbound SR 7, south of the PNR Lot. SR 7 consists of two lanes in each direction with grassed shoulder on both sides. There are three distinctive typical sections: the existing typical section along SR 7, south of the I-95 Flyover into the PNR Lot consists of 32 feet of pavement in each direction with a 16-foot curbed median and curb & gutter at the edges of pavement together with utility strips and sidewalk on both sides. North of the I-95 Flyover into the PNR Lot, SR 7 becomes a four-lane

FIGURE 1 - PROJECT LOCATION MAP



urban section with a raised median for approximately 250 feet. Then the roadway transitions to one lane in each direction except at the entrance to the PNR Lot where there are left turn lanes. SR 9 is located northwest of the PNR Lot. It consists of two lanes in two directions with a 40-foot wide median. The median varies in width as it approaches the Golden Glades Interchange.

The existing drainage system for SR 9 and SR 7 consists of swales along the roadway. Dry retention is provided in the following areas along SR 9:

1. Between southbound SR 9 and northbound SR 9 in the median north of the pedestrian overpass.
2. Between southbound SR 9 ramp to southbound SR 7
3. Between northbound SR 9 and northbound SR 7 ramp to northbound SR 9.

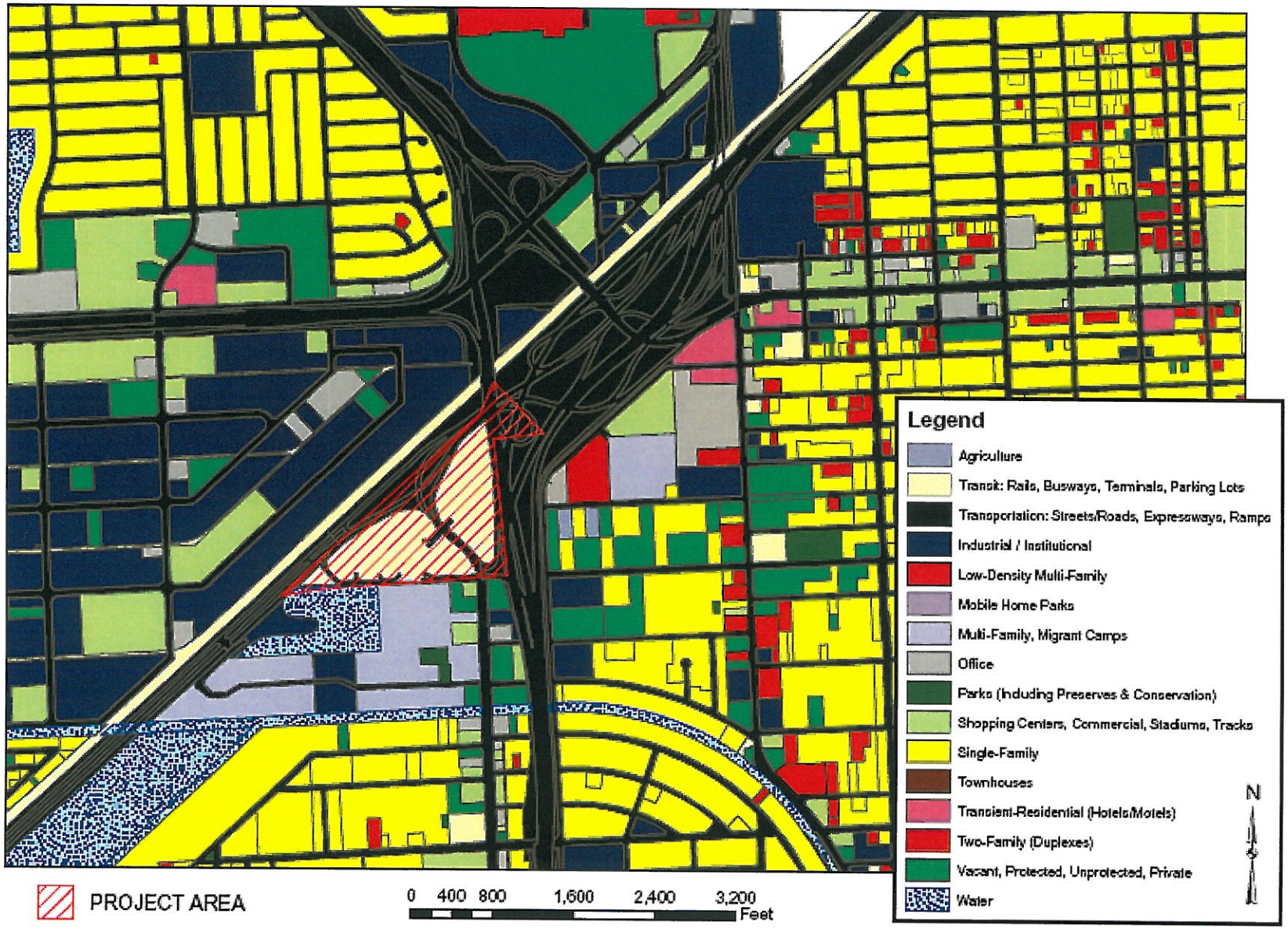
The existing PNR Lot as well as the existing storage lot along the east side of SR 7 have a combination of swales and drainage structures with french drains which capture and treat the stormwater.

2.2 Existing/Future Land use

The project area is located within the limits of unincorporated Miami-Dade County. The Cities of Opa-Locka and North Miami are located south of the project area while the City of Miami Gardens and North Miami Beach are located north of the project area. The unincorporated communities of Bunche Park and Carol City are located to the west and north of the study site, respectively. One large neighborhood, Biscayne Gardens, is located south and east of the project area. Based on the Adopted 2005 and 2015 Land Use Plan for Miami-Dade County, the principal land uses in this vicinity include Industrial (light manufacturing) to the northwest, Government (interim) to the south, Open Space southeast of the study area, Business/Office to the south, and Residential (Multi Family and Single Family) to the south and east. There are no proposed amendments to change these current land uses outside/surrounding the PNR Lot or the Golden Glades Interchange. See Figure 2, Land Use Map.

The FDOT owns the PNR Lot. Two covered bus passenger shelters, a Greyhound Bus Building and a FDOT Construction Trailer are located within the study area. Land use outside of the study area includes business/commercial uses such as gas stations, hotels, and construction and transportation related businesses such as building contractors, glass contractors, plumbers, heating and air conditioning companies, roofers, and discount auto part stores. These businesses are primarily

FIGURE 2 - LAND USE MAP



adjacent to SR 7/NW 7th Avenue. Residential uses within the immediate vicinity include rental apartments located adjacent to NW 7th Avenue on NW 155 Street (Golden Lake Apartments [single story]) and on SR 9/Ali Baba Avenue (Centre Lake Apartments [multi-story]).

3.0 PROPOSED IMPROVEMENTS

The proposed project involves a study to provide a multi-modal facility, that would include the following: a multi-story parking garage, bus bays, covered passenger waiting areas and amenities, areas for transit support, joint development including some retail/commercial areas, a new pedestrian bridge to connect the SFRTA station with the parking garage, and office space within the terminal to accommodate administrative/operations staff, and Intelligent Transportation System (ITS) equipment. The facility would also include a "kiss & ride" area for passenger pick-up and drop-off, pedestrian and bicycle facilities, landscaping, and upgraded signage.

Improvements to access roadways were evaluated in terms of improving access/egress to the Golden Glades Multi-Modal Facility (GGMTF) as well as addressing traffic operational and safety deficiencies within the site.

3.1 Alternatives

A total of three alignment design alternatives (including the No Build Alternative) are considered for this project. Descriptions for each alternative are provided as follows:

3.1.1 No Build

This alternative assumes that no improvements would be implemented for the PNR Lot or the access to the PNR Lot. See Figure 3, Existing Conditions/No Build. Aside from the parking areas and roadways, the existing structures of the PNR lot are minimal. For example, no restroom facilities are available. The bus platform has a roof, four bays, benches, and an unoccupied information booth. The SFRTA station platform is on the opposite side of SR 9 and is accessible via a pedestrian overpass. SFRTA is Florida's only commuter rail service that operates along the South Florida Rail Corridor. The No Build Alternative will be considered viable during the public hearing and final selection phase to serve as a comparison to the study alternatives.

FIGURE 3 - EXISTING CONDITIONS/NO BUILD

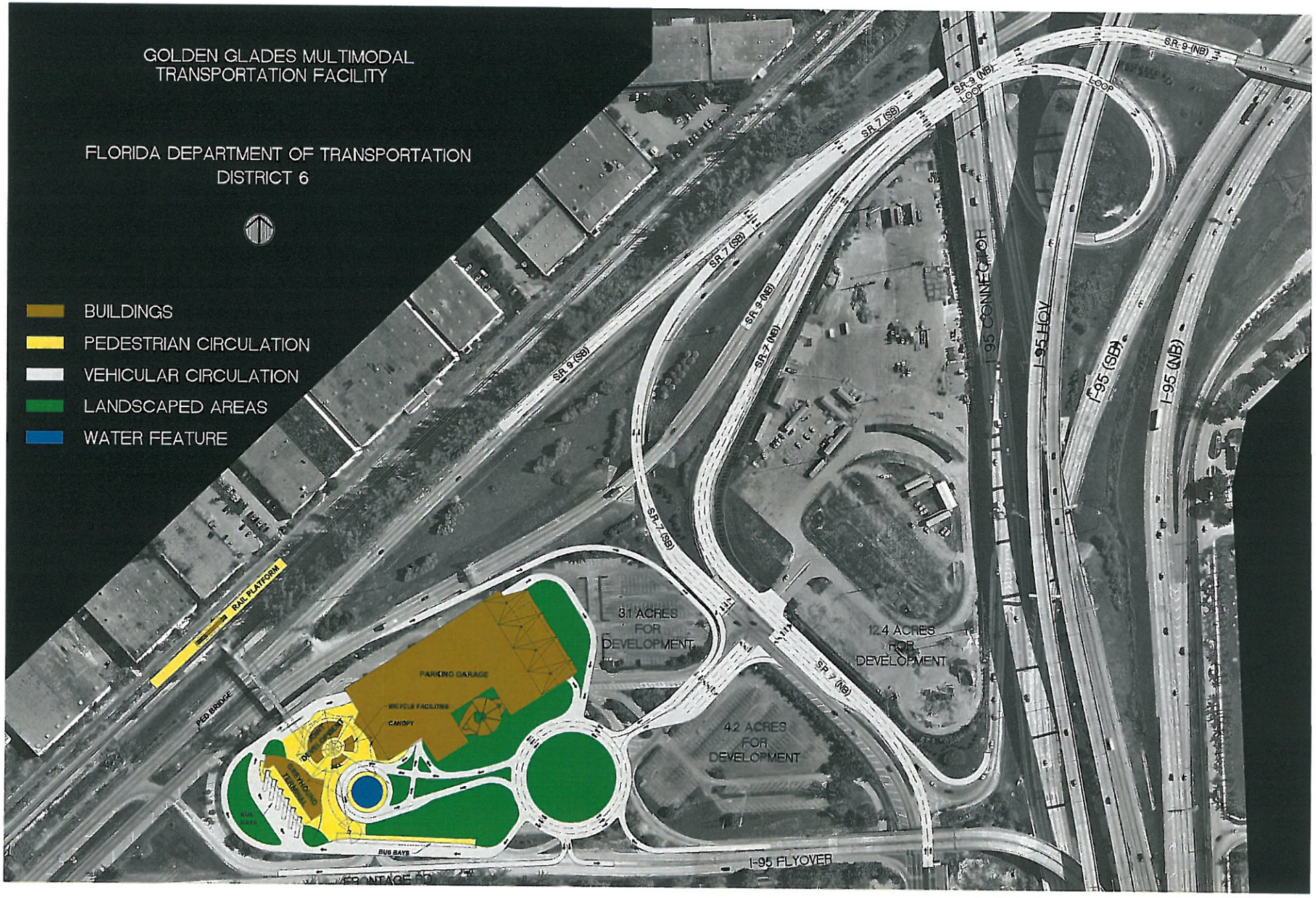
3.1.2 Alternative 1

In this alternative the SR 9 alignment remains as it is currently. See Figure 4, Alternative 1. As such, the site location remains separated from the SFRTA station by the railroad and SR 9. The GGMTF would consist of a parking garage structure for approximately 800 vehicles with bus bays located on the ground floor level. The design would provide the flexibility to accommodate additional parking garage spaces in the future. The GGMTF would include passenger waiting areas and amenities; areas for transit supportive joint development (e.g., retail); an enclosed pedestrian bridge to connect the SFRTA station with the garage, and office space within the terminal to accommodate administrative and operations staff as well as Intelligent Transportation Systems (ITS) equipment. In addition, it is anticipated that a "gateway" feature such as a fountain or statue could be accommodated within the site. The GGMTF would include kiss & ride areas for passenger pick-ups and drop-offs and remote parking along the fringes of the property. Pedestrian facilities would be integrated within the GGMTF site plan to facilitate movements from the garage to the terminal. Roadway improvements would be minor, focusing on access/egress to the facility and correcting safety and operational deficiencies.

The roadways improvements include:

- Additional through lane on SR 7 in the northbound direction, just south of the SR 7/GGMTF entrance intersection
- Additional through lane on SR 7 in the southbound direction, just north of the SR 7/GGMTF entrance intersection
- Widening of the SR 7/SR 9 merge area to improve weaving problems in this area
- Improving the geometric and signal phasing configuration of SR 7/GGMTF entrance intersection. Proposed intersection configuration consists of:
    - Northbound approach: double left turn lanes, two thru lanes and one thru/right shared lane,
    - Southbound approach: single left turn lane, two thru lanes and one exclusive right turn pocket lane,
    - Eastbound approach: double left turn lanes, one thru lane and one free right turn lane,
    - Westbound approach: single left turn lane and one thru/right-shared lane.

FIGURE 4 - ALTERNATIVE 1



3.1.3 Alternative 2

In this alternative, the site location is placed closer to the SFRTA Station. See Figure 5, Alternative 2. The GGMTF would consist of a 1,300-space garage with bus bays located on the ground floor level. The remainder of the GGMTF would be the same concept as presented in Alternative 1.

Improvements to access roads were evaluated in terms of improving access/egress to the GGMTF as well as addressing traffic operational and safety deficiencies within the site. The improvement concept is based on a major revamping of the existing roadway system (i.e. SR 7 and SR 9) to simplify access and egress as well as open up the site for development. The proposed improvements would consist of a complete realignment of SR 9, both northbound and southbound. The new alignment would follow the southern and eastern edges of the current PNR Lot. Southbound access to the GGMTF, from SR 826 and the Turnpike, would be provided via a new off ramp connection. Northbound access from the GGMTF to I-95, SR 826, and the Turnpike would also be provided by a new ramp as part of the access road improvements. Grade separations would be provided at critical intersections within the immediate vicinity of the GGMTF to enhance traffic circulation for both passenger cars and buses.

3.1.4 Golden Glades Multi-Modal Transportation Facility Build-Out

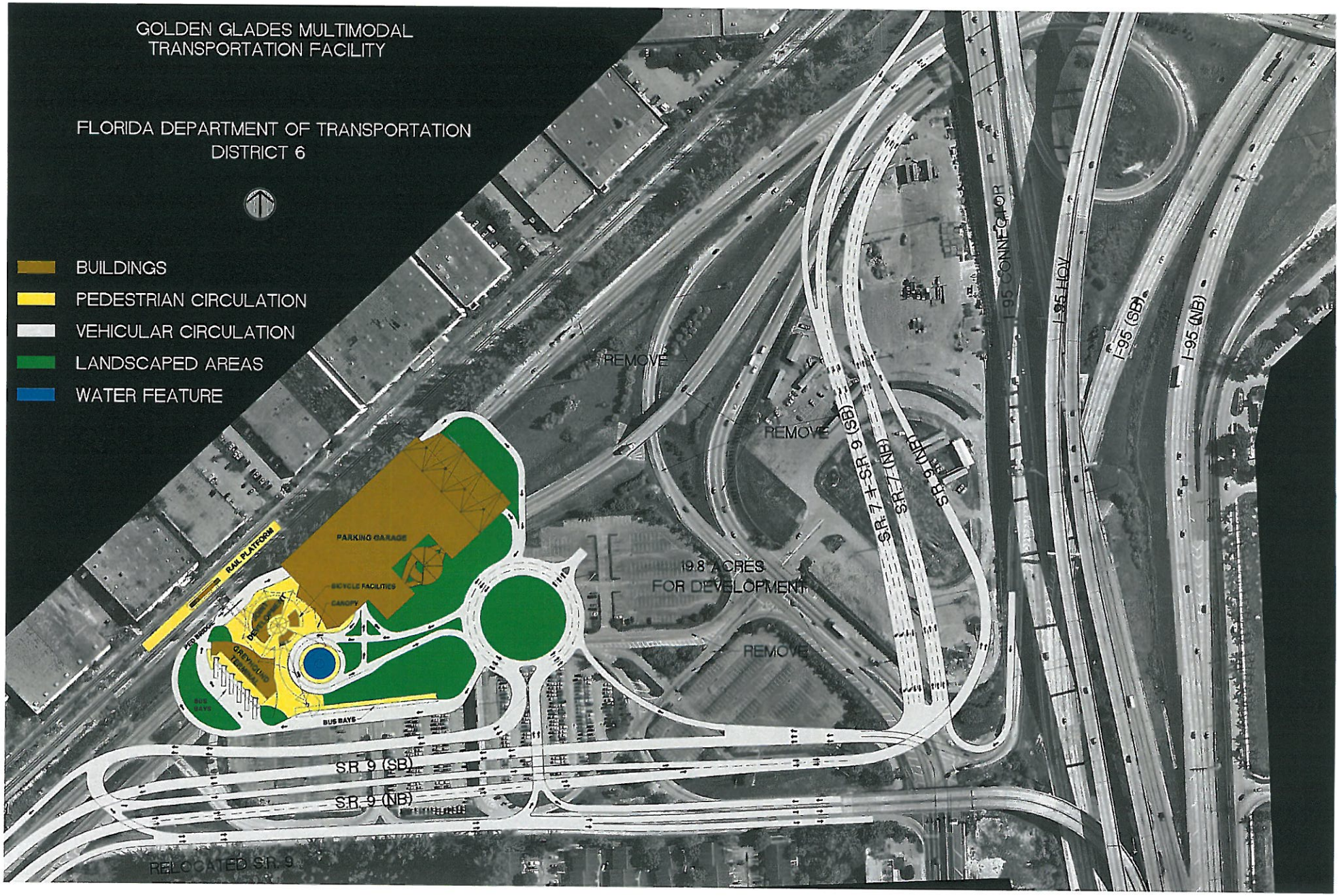
It is expected that the GGMTF improvements will be phased into an initial build and a final build-out, for both alternatives as described below:

Initial Building Development

The initial GGMTF improvements would include the following:

- A covered SFRTA station connection
- An Inter-City Bus Terminal (6 bus bays, 8,250 Square Feet)
- A Covered Hub Plaza for pedestrian circulation among transportation modes.
- Provisions for retail kiosks (by others)
- Automobile & Jitney Bus Drop-off and Taxi staging
- Local & Express Bus Bays with covered walkways (12 buses – combination of standard & articulated buses)
- Public Restrooms
- Parking Structure for approximately 800 parking spaces for Alternative 1 and 1,300 parking spaces for Alternative 2.
- Passenger Information System

FIGURE 5 - ALTERNATIVE 2



Build-out Development

For the final phase of the development the GGMTF improvements considered include the following:

- Incorporation of retail or other joint development within the Covered Hub Plaza (this is to be determined by joint development)
- A Traffic Management Center
- A Sheriff's Station
- A Chamber of Commerce Office

Several key evaluation parameters were used to evaluate the three project alternatives including: roadway/facility cost, social and neighborhood impacts, impacts to the natural environment, potential noise, air and contamination impacts, traffic level of service, traffic safety, joint development opportunity, maintenance of traffic during construction, construction time, compliance with local land use plans, utility impacts and transportation service. Based on the analyses presented herein, Alternative 1 is recommended as the "Preferred Alternative" for the following reasons:

- Alternative 1 is the only alternative which provides a balance in providing needed traffic capacity and safety improvements while minimizing disruption to traffic patterns and providing for modest roadway Level-of-Service (LOS) gains.

- Alternative 1 can be constructed faster than Alternative 2 and have much less of an impact on the motoring public, surrounding neighborhoods, drainage facilities, and utilities.

- Alternative 2 has a total roadway cost which is approximately 8 times more than Alternative 1 yet does not show significant benefits to warrant such cost.

- Alternative 2 does not provide adequate capacity gains, as compared to the increased expense, to accommodate both existing and future traffic.

3.1.5 Joint-Development Participation

The Department will be seeking participation from a Joint Development Team during the build-out phase of the GGMTF site. At this point, it is anticipated that the Department would construct the Multi-modal Facility, the improvements to the public roadway system, and the connection to the SFRTA terminal. All other improvements such as the parking structure, internal site circulation roads, gateway features, and other transit oriented development features such as retail area in the GGMTF or other buildings/landscaping items would be provided by the Joint Development Team.

These proposed improvements will remain flexible depending on the proposals received by the Department during the Request-for-Proposal phase of this project.

3.1.6 Recommendations

Based on the alternative analyses, Alternative 1 was selected as the preferred alternative. The preferred alternative was selected based on the evaluation of feasible alternatives, traffic capacity, safety, and cost.

The preferred alternative requires a one-lane ramp, 15-foot wide with 6- foot shoulders on each side, from SR 9 to the GGMTF; and a two-lane ramp, 24-foot wide with an 8- foot shoulder on the inside and a 12- foot shoulder on the outside from SR 9 westbound. In addition a three-lane section, 36-foot wide with 12-foot shoulder on each side for SR 7. Roadway construction will consist of some widening with emphasis on milling and resurfacing.

4.0 TRAFFIC NOISE ANALYSIS

Traffic noise levels were predicted for peak periods of the existing (2004) conditions and for the design year (2029) No Build Alternative and the preferred build alternative (Alternative 1). Based on the reasons stated in Section 3.1.4 - Build-out Development, Alternative 1 was determined to be the preferred alternative during this PD&E/Design Phase analysis and Alternative 2 was determined to be non-viable. A desktop review of Alternative 2 was performed to evaluate potential for increased noise impacts. Given the realignment of SR 9 and SR 7 onto elevated structures along the south side of the interchange with Alternative 2, noise levels at existing noise sensitive sites south of the interchange were expected to be significantly greater than either the No Build alternative or Alternative 1.

4.1 Noise Descriptors

All noise levels in this study are reported in decibels (dB) using the A weighting scale. This weighting scale correlates well with human response to traffic noise. Also, unless otherwise noted, all noise levels are reported as the one-hour equivalent noise level (L_{Aeq}, 1-hr.). The L_{Aeq}, 1-hr. represents the A-weighted steady-state noise level that contains the same acoustic energy over a one hour period as a fluctuating noise level due to a time variable source or sources over that same period.

4.2 Noise Abatement Criteria

Noise Abatement Criteria (NAC) have been developed by the Federal Highway Administration (FHWA) for most common land use types. Noise abatement is considered in conjunction with FDOT projects where traffic noise levels approaching or exceeding the FHWA NAC are predicted to occur as a result of increased roadway capacity or significant alterations to the roadway geometry. The FDOT defines "approach" as meaning within 1.0 dBA of the NAC for each Land Use Activity Category (LUAC). The FHWA NAC and FDOT Noise Abatement Approach Criteria (NAAC) are presented in *Table 1*. Noise abatement is also considered when a substantial noise increase is predicted to occur. A substantial noise level increase is defined by the FDOT as one where the existing noise level is predicted to be exceeded by 15 dB or more as a result of the transportation improvement project.

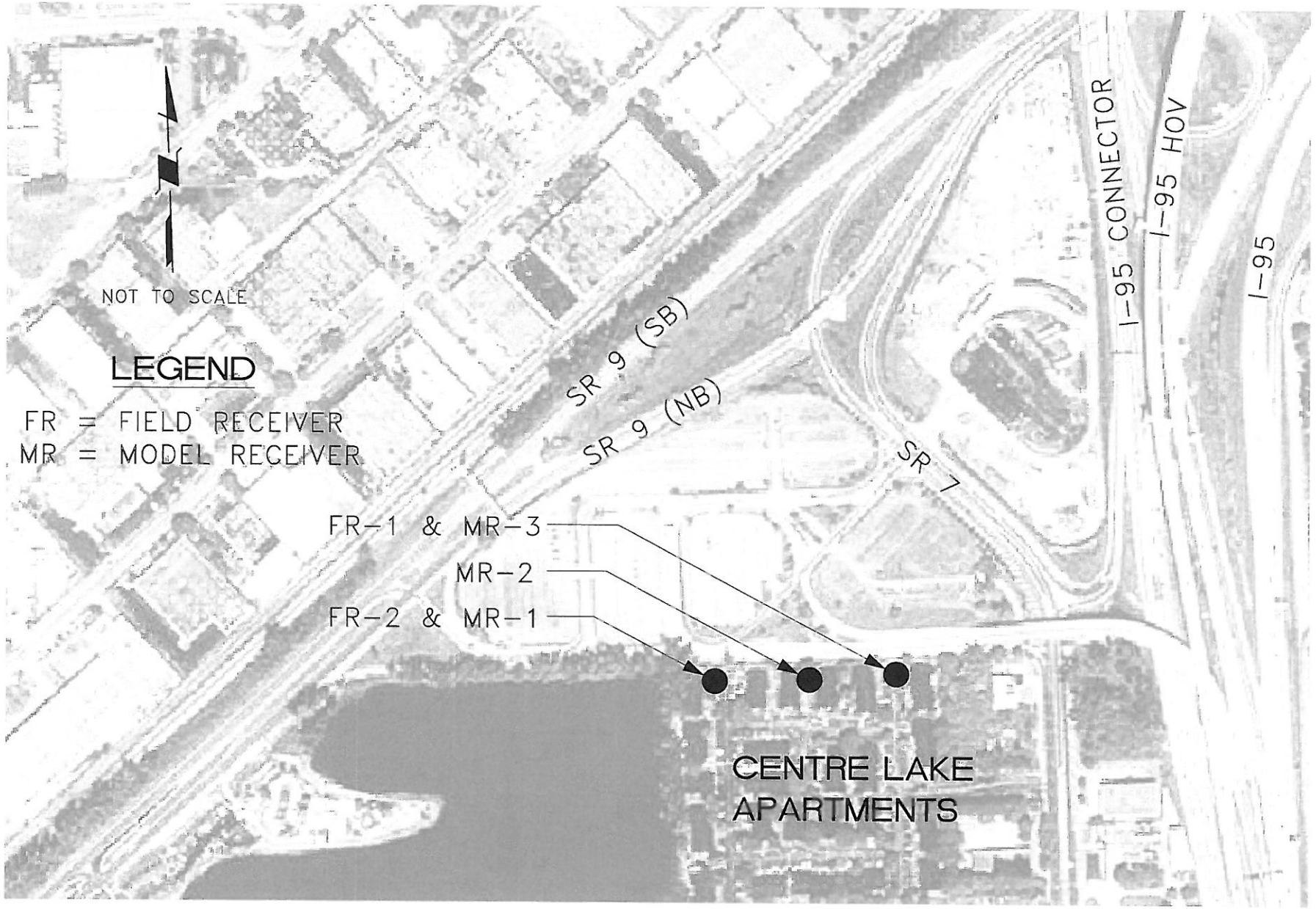
TABLE 1
FHWA NOISE ABATEMENT CRITERIA AND
FDOT NOISE ABATEMENT APPROACH CRITERIA

LAND USE ACTIVITY CATEGORY	FHWA NAC (L_{Aeq}, 1hr.)	FDOT NAAC (L_{Aeq}, 1hr.)	DESCRIPTION OF ACTIVITY CATEGORY
A	57 dBA (Exterior)	56 dBA (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose
B	67 dBA (Exterior)	66 dBA (Exterior)	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, RV parks, day care centers and hospitals.
C	72 dBA (Exterior)	71 dBA (Exterior)	Developed lands, properties, or activities not included in Categories A or B above
D*	.....	.....	Undeveloped lands
E	52 dBA (Interior)	51 dBA (Interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums

Notes: * = NAAC and NAC not defined for Activity Category D

4.3 Noise Sensitive Areas

Noise sensitive land use near the Golden Glades Interchange with potential to be impacted by this project consists of the Centre Lake Apartments. These apartments are located along the southern perimeter of the interchange, adjacent to the frontage road between northbound SR 9 and southbound SR 7 (*see Figure 6*). According to Miami-Dade property records, these apartments were constructed in 1986. The predominant noise sensitive outdoor use at this apartment complex occurs on the front patios of the single-story apartment buildings. Fifty-four (54) apartments are located



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FIELD AND MODEL NOISE RECEIVERS

Figure
6

in the group of buildings nearest the interchange. Twenty-eight (28) apartments are located in the row of buildings adjacent to the interchange and 26 apartments are located in the second row of buildings. No other noise sensitive land use with potential to be impacted by the preferred alternative exists within the project study area.

4.4 Field Measured Noise Levels

4.4.1 Methodology

Measurements of the ambient noise levels along the project corridor were performed using procedures defined in the FHWA report *Measurement of Highway-Related Noise* (FHWA-PD-96-046). Field measurements of existing noise levels were conducted on April 20, 2004 at two sites in the Centre Lake complex. Measurements at each site were taken at first and second row buildings.

Two Rion Model NL-21 Type-II integrating sound level meters were used to collect noise level data. Foam wind screens and adjustable tripods were also used. The sound level meters were calibrated to 94 dB at 1000 Hertz using a Rion Model NC-73 acoustical calibrator. The ambient temperature during the measurement periods was approximately 80°F and the wind speed remained less than approximately five miles per hour (MPH) throughout the measurement periods. The relative humidity was approximately forty percent and the cloud cover was approximately fifty percent. All roadway surfaces remained clean and dry throughout the measurements.

Highway traffic data were collected by CES staff positioned along the access roadways south of the interchange. Traffic speeds were measured using C.M.I., Inc. - Type JF100 radar speed measuring equipment. Due to the number of roadways and the large size of the interchange, it was not possible to collect traffic data on the nearby park and ride access-roads, SR 9, SR 7, I-95, the I-95 Connector and the I-95 High-Occupancy Vehicle (HOV) flyover at the same time. Thus, only traffic data from those roadways nearest the noise sensitive sites; including SR-9, the nearby park and ride access ramps and the frontage road connecting northbound SR 9 to southbound SR 7 were collected. Noise level data were collected only during periods when free-flow traffic conditions occurred. Traffic volumes, speed data and noise levels were collected during six 10-minute (10-min.) sampling periods. The hourly-equivalent traffic volumes on the nearby access lanes ranged from approximately 126 to 258 vehicles and from approximately 2,064 to 2,220 vehicles on SR 9. Traffic remained under free-flow conditions at all times. Measured vehicle speeds ranged from 20 MPH on the access roads to 76 MPH on SR 9.

4.4.2 Field Measurement Data

A summary of the field data, including the measured traffic noise levels, is shown in *Table 2*.

TABLE 2
FIELD MEASURED TRAFFIC NOISE DATA

FIELD RECEIVER	LOCATION	SAMPLE RUN	TIME	DISTANCE FROM FRONTAGE ROAD (Feet)	MEASURED TRAFFIC NOISE LEVEL (dBA)	MODELED TRAFFIC NOISE LEVEL (dBA)	DIFFERENCE (Measured - Modeled) (dBA)
FR-1	In parking lot on west side of easternmost apartment buildings.	1A	1:20PM	35	59.4	58.3	1.1
				100	56.7	54.1	2.6
		1B	1:35PM	35	61.1	57.6	3.5
				100	60.4	54.0	6.4
		1C	2:10PM	35	60.2	60.6	-0.4
				100	57.6	56.7	0.9
FR-2	In parking lot on east side of westernmost apartment buildings.	2A	2:35PM	30	62.5	60.5	2.0
				80	61.9	57.9	4.0
		2B	2:50PM	30	62.2	60.7	1.5
				80	61.5	58.0	3.5
		2C	3:00PM	30	62.9	61.4	1.5
				80	63.4	58.3	5.1

Notes: dBA = A-weighted decibels

Site FR-1

This site is located south of the SR 9 to SR 7 frontage road near the easternmost apartment building in the Centre Lake complex (*see Figure 6*). Traffic noise levels at this site were measured at ground level adjacent to the edge of the first and second-row buildings nearest the access road, at distances of approximately 35 and 100 feet from the near edge-of-pavement, respectively. Noise levels measured here are representative of those expected at patios of the nearby apartments. Measurements at this site occurred between 1:20 and 2:20 PM. Existing traffic noise levels were found to range from 59.4 to 61.1 dBA at the near receiver location and 56.7 to 60.4 dBA at the far receiver.

Site FR-2

This site is located south of the SR 9 to SR 7 frontage road near the westernmost apartment building in the Centre Lake complex (*see Figure 6*). Traffic noise levels at this site were measured at ground

level adjacent to the edge of the first and second-row buildings nearest the access road, at distances of approximately 30 and 80 feet from the near edge-of-pavement, respectively. Noise levels measured here are representative of those expected at patios of the nearby apartments. Measurements at this site occurred between 2:35 and 3:10 PM. Existing traffic noise levels were found to range from 62.2 to 62.9 dBA at the near receiver location and 61.5 to 63.4 dBA at the far receiver.

4.4.3 Field Measurement Summary

Existing traffic noise levels were measured at two locations along the project corridor during six 10-min. sample periods. Existing traffic noise levels measured at locations representative of noise sensitive sites along the project corridor were found to range from 56.7 to 63.4 dBA, and the 10-min. L_{Aeq} did not exceed 66.0 dBA during any of the measurement periods.

4.5 Computer Noise Model Verification

Site conditions and traffic data gathered during the field measurements were used to develop inputs to the FHWA's Traffic Noise Model (TNM) that were representative of the existing conditions. Additional geometric information necessary for these models was developed from 1inch=100 feet scale aerial photographs of the existing conditions in the project study area. The TNM results were then compared to the noise level data collected for each field measurement sample. The results of this analysis are shown in *Table 2*.

The model for the field conditions is deemed to be within an acceptable level of accuracy if the predicted noise levels are within 3.0 dBA of the measured noise levels. This model is then used as a basis for models used to predict existing and future noise levels at representative nearby noise sensitive locations. Using traffic data measured in the field, the average error between the measured and predicted noise level was 1.5 dBA at the sites nearest the eastbound frontage road. This is well within the 3.0 dBA verification limit using TNM in accordance with Chapter 17 of the FDOT PD&E Manual. The average error at the far measurement sites was 3.7 dBA, outside the 3.0 dBA limit. Background noise levels at the measurement sites ranged from approximately 55 to 60 dBA, generally within 5 dBA of the traffic noise levels. This indicates that other significant sources of noise were present and were particularly evident at the far measurement sites, where lower traffic noise levels were measured. Examples of other sources noted in the field include noise from activities inside the apartment complex, jet aircraft traffic overhead and noise from other roadways at the edges of the Golden Glades Interchange. This would explain the greater difference between

predicted and modeled noise levels at the measurement sites farther from the roadway. Thus, although the predicted noise levels at the far sites were not within the 3.0 dBA limit, given the extraneous noise sources present at this location, further use of TNM on this project is supported.

4.6 Noise Model Development

After verification of the prediction methodology, computer models were developed for the existing year conditions, and the design year (2029) No Build Alternative and the preferred alternative. The TNM models for all alternatives were developed using geometric information from the 1inch=100 feet scale master plans for the project. Elevations of roadways, model noise receivers, noise barriers and ground features were developed from existing and proposed roadway profile-grade data and United States Geological Survey quad maps. Traffic data used in the TNM models were derived from the project's *Design Traffic Memorandum Report*. According to Chapter 17 of the PD&E Manual "*Maximum peak-hourly traffic representing Level of Service (LOS) "C", or demand LOS of "A", "B", or "C" will be used (unless analysis shows that other conditions create a "worst-case" level)*". The failure threshold for this project is considered to be LOS D. In cases where traffic volumes on project roadways and ramps were predicted to operate at a LOS worse than LOS D, the project's LOS D data were used. This represents the highest traffic volume traveling at the highest average speed for this project. Such conditions typically generate the highest noise levels at a given site during a normal day. Receiver locations representative of the noise sensitive land uses detailed in *Section 4.3* were input into the TNM model. These locations are identified in *Table 3* and presented in *Figure 6*.

TABLE 3
MODELED NOISE RECEIVER LOCATIONS AND NOISE ANALYSIS RESULTS

MODEL RECEIVER NUMBER	RECEIVER TYPE	LOCATION	FRONTAGE ROAD STATION	NUMBER OF NOISE SENSITIVE SITES REPRESENTED	DISTANCE TO NEAR EDGE-OF-PAVEMENT* (Existing/No Build/ Preferred Alternative) (Feet)	PREDICTED TRAFFIC NOISE LEVELS (L_{Aeq}, dBA)		
						Existing	Design Year No Build	Build Alternative
1	Patio	First Row	129+70	10	30	65.0	65.7	65.4
		Second Row	129+70	8	80	62.6	63.4	63.0
2	Patio	First Row	132+40	8	30	65.6	**66.2**	**66.0**
		Second Row	132+40	8	80	63.6	64.2	64.0
3	Patio	First Row	134+60	10	35	64.6	65.2	65.1
		Second Row	134+60	10	85	62.4	63.0	62.9

Notes: Bold numbers indicate traffic noise levels predicted to be at least 66.0 dBA.
* = distances rounded to nearest five foot increment from the near edge-of-pavement.

4.7 Predicted Traffic Noise Levels

A summary of the TNM model results for the worst-case traffic conditions for all project alternatives is presented in *Table 3*. Existing traffic noise levels at the Centre Lake Apartments during peak conditions are predicted to range from 62.4 to 65.6 dBA. Design year traffic noise levels with the No Build Alternative during peak conditions are predicted to range from 63.0 to 66.2 dBA, no more than 0.8 dBA greater than existing noise levels. Design year traffic noise levels with the preferred alternative are predicted to range from 62.9 to 66.0 dBA during peak conditions, no more than 0.5 dBA greater than existing noise levels.

4.8 Noise Impact Analysis

Fifty-four (54) noise sensitive sites were identified in the Centre Lake apartments south of the Golden Glades Interchange. These apartments were constructed well after the interchange, within approximately 30 feet of the frontage road between SR 9 and SR 7. The primary source of noise at this apartment complex is traffic on the nearby interchange roadways. The distance between the apartments and the nearest roadway in the Golden Glades interchange will not be reduced as a result of this project and much of the area with the highest potential for generating noise (the bus depot and associated parking areas) will be moved north and west, away from these apartments.

Outdoor areas at approximately eight apartments in the Centre Lake apartments are predicted to experience traffic noise levels equal to the FDOT NAAC for LUAC B (66 dBA) during the design year with the preferred alternative. However, traffic noise levels with the preferred alternative are predicted to only increase by a maximum of 0.5 dBA from the existing conditions. Thus, there is no substantial increase in traffic noise, defined as 15 dBA, attributable to the project. In addition, the predicted noise level with the preferred alternative is slightly less than that of the No Build Alternative during the design year due to relocation of the bus depot and parking areas further to the northwest.

4.9 Noise Abatement Measures

The FDOT requires that noise abatement be considered for reasonableness and feasibility when the NAAC is exceeded. Noise abatement measures are considered in the following order:

- Traffic management measures (e.g. traffic control devices and signing for prohibition of certain vehicle types, time-use restriction for certain vehicle types, modified speed limits, and exclusive lane designations);
- Alignment modifications;
- Construction of noise barriers within the highway project's ROW;
- Acquisition of property rights (either in fee or lesser interest) for construction of noise barriers by donation, by purchase or by condemnation;
- Acquisition (by purchase or condemnation) of ROW for landscaping adjacent to noise barriers and for buffer zones; and,
- Acquisition (by purchase or condemnation) of the balance of a noise-sensitive property from which there is a taking, if acquisition is less expensive and disruptive than the methods shown above.

The maximum predicted future noise level from the project only matches the 66.0 dBA FDOT approach criteria for this land use type. Thus, project generated noise levels are not predicted to meet or exceed the FHWA NAC. Given that the Centre Lake Apartments were constructed well after the Golden Glades Interchange was largely completed, and that the predicted noise level with the project is virtually unchanged from existing and future noise levels without the project, construction of noise abatement for the apartments in the Centre Lake complex is not considered reasonable with this project.

5.0 SUMMARY

In summary, traffic noise levels were predicted for noise sensitive locations within the project study area for the existing conditions and the design year (2029) No Build Alternative and the preferred alternative, Alternative 1. Approximately eight noise sensitive sites are predicted to experience noise levels matching the FDOT's NAAC (66.0 dBA) with the preferred build alternative. Based on the specified FHWA and FDOT methodologies used to evaluate traffic noise levels with this study, modifications proposed with this project were determined to generate no new noise impacts at noise sensitive land use within the project study area. In accordance with FHWA and FDOT requirements, noise abatement was considered for all noise sensitive locations where design year traffic noise levels were predicted to approach or exceed the NAC. It was determined that it was not reasonable to provide noise abatement for any of the noise sensitive sites within the project study area since the project is not predicted to result in increased design year noise levels at the nearby noise sensitive sites.

6.0 CONSTRUCTION NOISE AND VIBRATION

There are no known Miami-Dade County ordinances that set specific limitations on construction noise levels applicable to FDOT projects. The potential exists for noise impacts from equipment during the construction phase of this proposed project. To mitigate those impacts, the contractor will be required to adhere to the latest edition of FDOT *Standard Specifications for Road and Bridge Construction*. Specifications include noise screening guidelines for stationary equipment, exhaust noise, noise from loose equipment parts, and excessive tailgate banging.

There are no known medical facilities near the proposed project such as optical laboratories or eye surgery centers that are particularly sensitive to construction related vibration. A reassessment of the project corridor for such sites will be performed during final design to ensure that impacts to such sites are minimized. If such sites are found during subsequent project review, coordination between the FDOT and business owners should occur and Technical Special Provisions should be developed for the project's contract package in order to ensure that impacts to such businesses are minimized.

7.0 COORDINATION WITH LOCAL AGENCIES

For the purposes of long range planning for residential land use, 66 dBA LA_{eq} noise level isopleths were estimated for the preferred alternative. The typical 66 dBA isopleths without abatement measures for residential land use extend 30 feet from the edge of the frontage road between SR 9 and SR 7. A copy of this NSR will be circulated to the appropriate local planning/zoning officials for their use in land use control once the NSR is finalized and acceptance of the Location and Design Concept occurs. No other coordination with local agencies has occurred to date.

Florida Department of Transportation
District Six

Golden Glades Interchange
Proposed Masterplan Layout Review

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