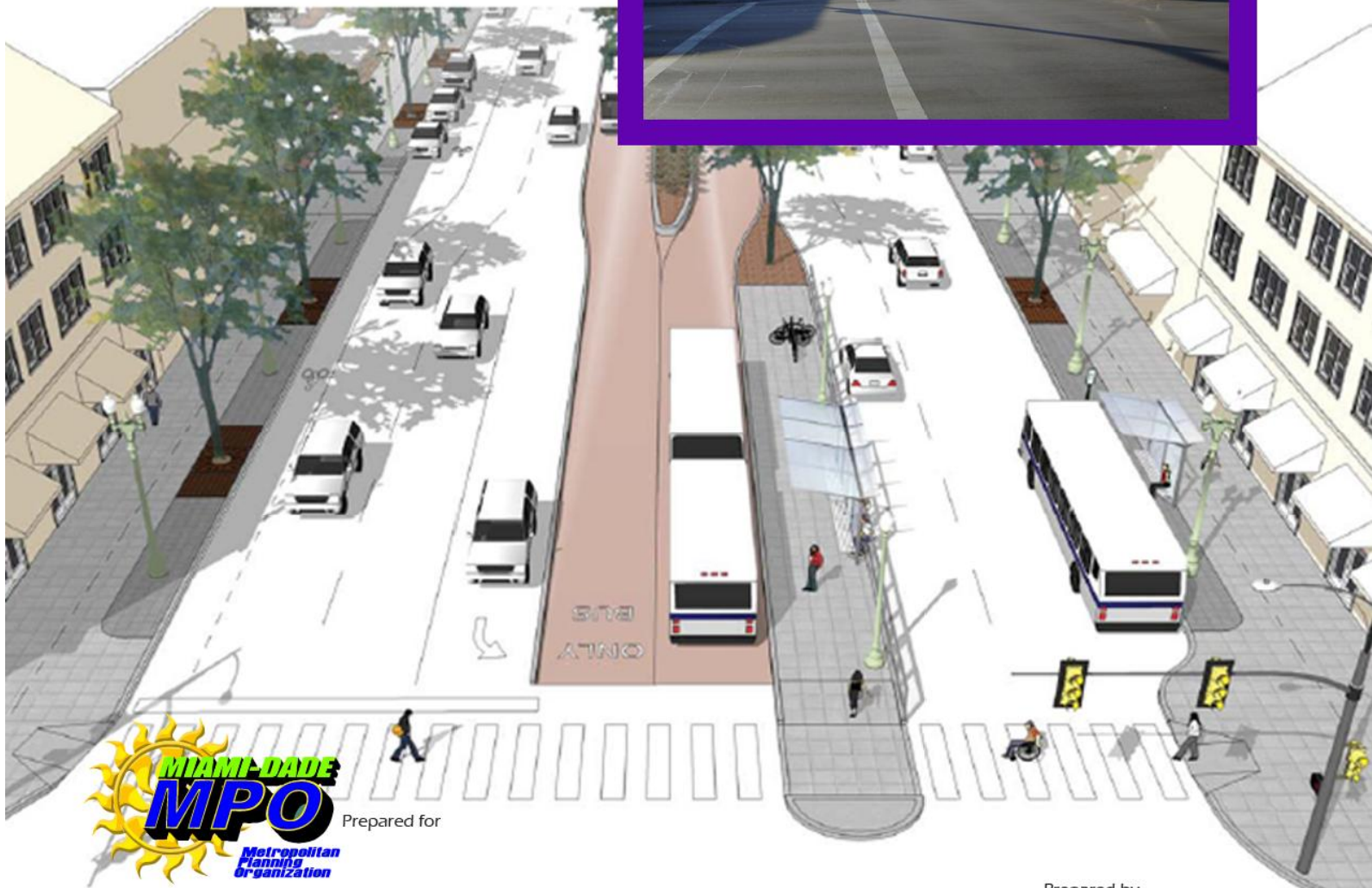


ARTERIAL GRID ANALYSIS

PHASE II WORK ORDER # GPC V-05



Prepared for

Prepared by

January 2014



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Arterial Grid Analysis – Phase II

Final Report

Prepared for:



Miami-Dade County Metropolitan Planning Organization

Prepared by:



Kimley-Horn
and Associates, Inc.

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ARTERIAL GRID ANALYSIS PHASE II

1.0 Introduction

This report documents an update to the first *Arterial Grid Analysis* study (hereafter referred to as the *Phase I* study) performed in 2006. The first study included a summary of the historical development of grid roadway network in Miami-Dade County (included in this report as Appendix A), generation of a series of maps to illustrate roadway and traffic characteristics, a systemwide assessment to identify potential roadway capacity and connectivity improvements, and policy recommendations to maintain and improve grid network. Since the *Phase I* study was completed in 2006, there have been notable changes in travel characteristics. In particular, a general reduction of traffic volume can be observed within traffic data on many arterial roadways.

Driven by economic challenges and an overall improvement of transit options, an increase in transit ridership occurred during this same period.

The changes in travel characteristics observed in Miami-Dade County are consistent with national trends in vehicle-miles traveled reported by USDOT and other sources. The U.S. fuel consumption peaked in 2006 after stagnating in 2004. It is likely that a sharp increase in oil prices caused demand to stagnate; then the economic recession led to a steep drop in fuel demand in

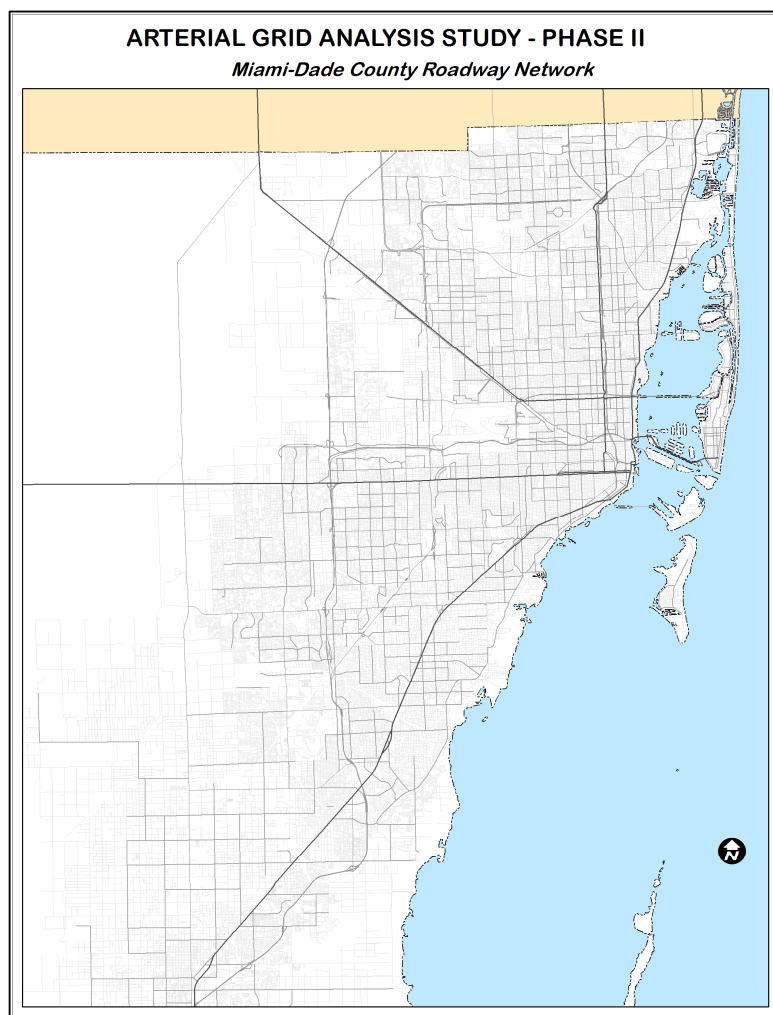


Figure 1: Miami-Dade County Roadway Network

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2008. The post-recession period has been characterized by reductions in vehicle-miles traveled and fuel consumption (Sivak, “Has Motorization in the U.S. Peaked?” 2013; Levine-Weinburg, “Three Reasons Why America is Using Less Oil,” 2013; Litman, “The Future Isn’t What It Used to Be,” 2013; U.S. PIRG Education Fund and Frontier Group, “A New Direction – Our Changing Relationship with Driving and the Implications for America’s Future,” 2013). The Texas Transportation Institute (TTI) reports that the Travel Time Index (a measure of wasted time due to congestion) has decreased since 2005 (TTI, “2012 Urban Mobility Report,” 2013).

These changes have given rise to the need for reevaluating the roadway system and updating the roadway condition map series. Therefore, the Miami-Dade Metropolitan Planning Organization (MPO) retained Kimley-Horn and Associates, Inc. (KHA) to perform the *Phase II* study.

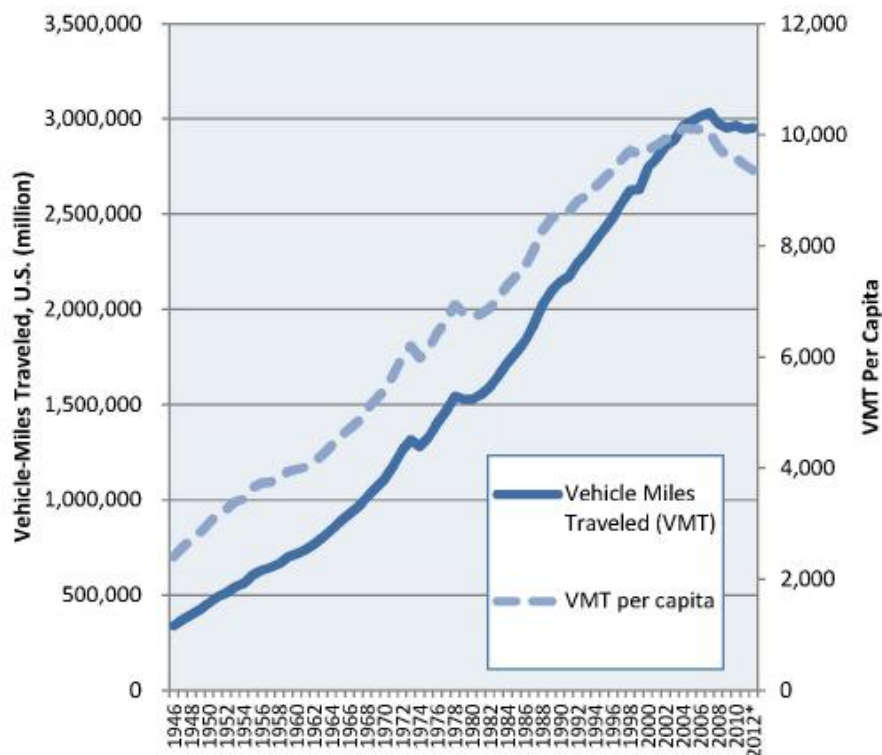


Figure 2: Total and Per Capita Vehicle Miles Traveled, U.S.

U.S. PIRG Education Fund and Frontier Group, “A New Direction – Our Changing Relationship with Driving and the Implications for America’s Future,” 2013

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Study Need

The roadway network in Miami-Dade County is comprised of a grid system of section line and half-section line roadways. This grid system creates many travel benefits such as providing alternative travel paths, an easily-definable functional hierarchy centered around section line and half-section line roadways, and a logical naming convention that can allow visitors to quickly become familiar with local roadways. Despite the effectiveness of the grid system and the reduction in traffic volumes on many arterial roadways, current traffic levels in Miami-Dade County exceed the carrying capacity of many section and half-section roadways. Therefore, the Miami-Dade MPO identified the need for assessment of the roadway system to identify problem areas and evaluate potential solutions.



Study Objectives

This study is intended to determine potential improvements to the arterial grid system for long-term traffic congestion relief, rather than short-term stop-gap improvements that may slightly improve traffic flow in one corridor while “shifting” the problem to a different corridor. It is expected that the recommendations of this study would provide concepts for further assessment through the 2040 Long Range Transportation Plan (LRTP) Update and other roadway maintaining agency planning efforts. Another objective of this study is to develop a series of roadway system and traffic condition maps to reflect current conditions of State and non-State roadways. Similar maps developed through *Phase I* have been a resource for other planning efforts and agency meetings and workshops.

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What's New?

While the *Arterial Grid Analysis Study – Phase II* retained much of the scope from its predecessor, there were additions and modifications to the approach and work products. The new elements of the *Phase II* study are listed below.



What's
new?

- A map depicting the posted speed on State and non-State roadways was prepared to facilitate the estimation of level of service (LOS) per the Florida Department of Transportation's (FDOT) Generalized LOS Tables.
- Identification of priority corridors. The priority corridors are defined as roadway segments that currently operate at LOS E or F that do not have programmed roadway improvements in the 2035 LRTP Update. The priority corridors were the focus of this study for developing specific improvement strategies.
- Summary sheets were developed for each recommendation providing an overview of existing conditions, potential issues, next steps, project location, and jurisdiction.

Organization of Report

The *Phase II* study report is divided into the following major chapters:

- Chapter 1.0: Introduction
- Chapter 2.0: Coordination and Meetings
- Chapter 3.0: Data Collection
- Chapter 4.0: Existing Conditions Analysis and Map Series
- Chapter 5.0: Priority Corridors and Improvement Strategies
- Chapter 6.0: Roadway System Connectivity Review
- Chapter 7.0: Project Screening and Recommendations
- Chapter 8.0: Summary and Conclusions

The Appendix contains a brief description of the development of arterial roadway network in Miami-Dade County. This information was included in the *Phase I* study report as well. Copies of presentations given to the Study Advisory Committee (SAC) and their input, traffic volume database, existing conditions maps, and priority corridors are included in the Appendix. An assessment of Miami-Dade County's overall traffic count program, which was requested by the Miami-Dade MPO, is included in the Appendix.

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2.0 Coordination and Meetings

The Miami-Dade MPO's Transportation Planning Technical Advisory Committee (TPTAC) served as the SAC providing guidance for the study by reviewing the study deliverables and providing input. TPTAC, which performs technical reviews of projects on behalf of the Transportation Planning Committee (TPC), consists of representatives of the following agencies:

- Miami-Dade MPO
- Florida Department of Transportation
- Miami-Dade Public Works and Waste Management
- Miami-Dade Permitting, Environment & Regulatory Affairs
- Miami-Dade Expressway Authority (MDX)
- Miami-Dade Transit (MDT)
- Miami-Dade Aviation Department
- Miami-Dade Seaport Department
- Miami-Dade Public Schools
- South Florida Regional Transportation Authority (SFRTA)



The SAC met two times during the course of the study. The first meeting of the SAC was held on July 3, 2013. The presentation and discussion topics included a historical background of arterial grid network, traffic data review, existing conditions mapping, a comparison of roadway LOS deficiencies with the 2035 LRTP's Cost Feasible Plan (CFP) projects, and draft priority corridors. A copy of the presentation given at the first SAC meeting is included in Appendix B.

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The second meeting of the SAC was held on October 23, 2013. The presentation and discussion topics included a summary of existing conditions analysis, priority corridors, and preliminary concepts of specific recommendations. A copy of the presentation given at the second SAC meeting is included in Appendix B. The input provided by Miami-Dade County's Department of Regulatory and Economic Resources is also included in Appendix B.

The study findings were presented to the TPC on January 13, 2014. The presentation included a summary of key results of data analysis and specific recommendations. The TPC recommended a review of resolutions made by municipalities and Miami-Dade County that may impact the proposed recommendations. A copy of the presentation given at the TPC meeting is included in Appendix B.

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3.0 Data Collection

The data collection task consisted of obtaining or collecting traffic counts, gathering of posted speed information, and GIS shapefiles of functional classification, number of lanes, and 2035 LRTP CFP projects. Traffic data were obtained from existing FDOT and Miami-Dade County databases and additional counts were collected to fill in key gaps in the data to determine LOS of section line and half-section line roadways. The traffic data collection steps of the study are listed below.

- Available roadway traffic data were obtained from FDOT's 2011 Level of Service Inventory for District Six and Miami-Dade County's annual traffic count program.
- The data retrieved from the above sources were screened for consistency and reliability by comparing data with prior years.
- Gaps within the data were identified based on lack of recent data. Following the identification of gaps in the data, additional traffic counts were performed to provide data for roadways considered important for this study that had no identifiable data availability. The traffic count locations collected to fill in these gaps are listed in Table 1. These additional traffic counts were collected in March 2013.

The GIS shapefiles of roadway and traffic characteristics as well as additional background layers that are necessary to develop maps were obtained from FDOT and Miami-Dade County. While the speed limit data for State roadways is available in GIS format, similar data for non-State roadways were gathered by reviewing Google Street-View map products. GIS compatible databases were created to map the speed limit data.

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Table 1: Locations of Additional Traffic Counts

Road	From	To
NW 191 Street	NW 37 Avenue	NW 42 Avenue
NW 175 Street	NW 27 Avenue	NW 32 Avenue
W Dixie Highway	NE 172 Street	NE 179 Street
NE 159 Street	NE 6 Street	Miami Avenue
Gratigny Drive	Palm Avenue	E 4 Avenue
W 60 Street	Palmetto Expressway	W 16 Avenue
NW 74 Street	NW 107 Avenue	NW 112 Avenue
N Royal Poinciana Boulevard	NW 74 Street	Bluebird Avenue
NW 22 Avenue	NW 11 Street	NW 14 Street
NW 17 Avenue	NW 20 Street	N River Drive
NW 37 Avenue	NW 54 Street	NW 62 Street
NW 62 Street (E 9 Street)	E 4 Avenue	E 8 Avenue
NW 7 Street	NW 17 Avenue	NW 22 Avenue
N Miami Avenue	NE 14 Street	NE 17 Street
SW 16 Street	SW 97 Avenue	SW 92 Avenue
SW 16 Street	SW 67 Avenue	SW 62 Avenue
SW 32 Street	SW 92 Avenue	SW 97 Avenue
SW 48 Street	SW 102 Avenue	SW 107 Avenue
SW 48 Street	SW 57 Avenue	SW 62 Avenue
SW 62 Avenue	SW 64 Street	SW 72 Street
SW 80 Street	SW 57 Avenue	SW 62 Avenue
SW 92 Avenue	SW 40 Street	SW 32 Street
SW 102 Avenue	SW 40 Street	SW 32 Street
SW 88 Street	SW 57 Avenue	SW 67 Avenue
SW 82 Avenue	SW 136 Street	SW 144 Street
SW 120 Street	SW 72 Avenue	SW 77 Avenue
SW 157 Avenue	SW 136 Street	SW 152 Street
SW 152 Street	SW 152 Avenue	SW 157 Avenue
SW 137 Avenue	SW 336 Street	Speedway Boulevard
Palm Drive	Kingman Road	Farm Life School Road

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4.0 Existing Conditions Analysis and Map Series

An existing conditions LOS analysis for the non-State section line and half-section line corridor segments of the grid network was performed using the 2011 traffic data (supplemented by additional counts in 2012) obtained from FDOT and Miami-Dade County. Since the primary objective of this study is to identify long-term improvements, average daily traffic (ADT) was utilized instead of peak hour traffic data. Results of the analysis were screened for reliability. The databases used in this study and LOS estimations are provided in Appendix C.

Level of Service

The existing conditions LOS was calculated using methodologies established by FDOT's *Quality/Level of Service Handbook* for daily roadway volumes and capacities (generalized tables). Since the State and non-State roadway traffic data exist as separate databases, separate shapefiles were created and later combined into one LOS map. Map 1 in Appendix D depicts the existing conditions LOS for section line and half-section line roadways for which data were available. Key observations based on the LOS analysis results are documented below.

Observation 1: A higher proportion of the roadways that operate at LOS E or F are concentrated south of Flagler Street. This observation can be seen within the data in Table 2. The sub-urban growth patterns, which are characterized by single-family and low/medium density housing, commercial uses concentrated along arterial roadways, and discontinuities in the grid roadway network are possible reasons for a higher proportion of LOS E and F corridors in south Miami-Dade County.

Observation 2: Fewer roadway segments now operate at LOS F than during the *Phase I* study. As shown in Table 3, in 2004/05 approximately 17 percent of the collector roadway segments and 42 percent of arterial roadway segments operate at LOS F, whereas 7 percent of collector roadway segments and 35 percent of arterial roadway segments operated at LOS F in 2011/12. As discussed in Chapter 1.0, reduced automobile trips and shift in travel mode from automobile to transit are possible reasons for fewer deficient roadway segments.

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Table 2: Level of Service Summary by Centerline Miles

	C or better	D	E	F	Total
<i>LOS Summary by Centerline Miles</i>					
North of Flagler Street	317	143	38	110	608
South of Flagler Street	253	148	33	136	570
Total	570	291	71	246	1,178
<i>LOS Summary by Percentage Centerline Miles</i>					
North of Flagler Street	52%	24%	6%	18%	100%
South of Flagler Street	44%	26%	6%	24%	100%
Total	48%	25%	6%	21%	100%

Table 3: LOS F Segments by Functional Classification

Functional Class	% LOS F Segments (2004/05 data)	% LOS F Segments (2011/12 data)
Collectors	17%	7%
Arterials	42%	35%

Existing Conditions Map Series

An important element of this study is to develop databases and maps depicting existing roadway and traffic conditions. Appendix D contains maps that depict the existing conditions/attributes of Miami-Dade County section line and half-section line roadways. A brief description of the different maps and observations are documented below.

Traffic Count Availability

As described in the Data Collection section of this report, State and County traffic counts were used in this study, although 30 new traffic counts were collected to fill in specific data gaps. Existing State and County traffic count locations are generally spaced at one-mile intervals, although longer intervals are found in some areas. Map 2 in Appendix D presents the traffic count availability map, which shows roadway segments for which traffic count data were used for

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this study. Based on the review of traffic count availability map, the following recommendations are made:

- Improve traffic count coverage to include all key arterials and collectors.
- Consider developing a centralized traffic count database by including the data collected by FDOT, Miami-Dade County, and municipalities. Such database will eliminate duplication of data collection efforts and provide easy access to available data.

A more detailed assessment of traffic counts in Miami-Dade County was performed to provide input for the validation of SERPM 7.0. As part of this effort, traffic counts in Miami-Dade County were compared with Broward and Palm Beach County traffic counts. A memorandum that documents the detailed review of traffic count program is included as Appendix E. Key observations are summarized below.

- In Miami-Dade County, 27 percent of total count locations are on ramps. When ramp counts are excluded, Broward County has a higher number of traffic counts than Miami-Dade County.
- Miami-Dade County has 30 percent fewer off-system (non-State roadway) traffic counts per centerline mile than Broward and Palm Beach counties.

Average Daily Traffic

Map 3 in Appendix D presents a thematic map of daily traffic volumes on State and County roadway segments. Traffic counts used in the *Phase 1* study were compared with the *Phase 2* study counts. Map 4 in Appendix D identifies roadway segments that experienced an increase or a decrease in traffic volume. Key results of the comparative analysis are summarized below.

- Traffic volumes decreased on 68 percent of roadway segments in 2011/12 compared to 2004/05. The corresponding net change of ADT on 1040 roadway segments is -1.94 million. This overall decrease in traffic volume could be primarily attributed to the socio-economic impacts of recession. However, traffic volumes in 2012 show an increasing trend in comparison to the prior years.
- In general, traffic volumes increased on freeways and expressways, and decreased on arterials and collectors.

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Laneage

The number of travel lanes on a roadway segment is a primary determinant of roadway capacity and is therefore vital for LOS analysis. Map 5 in Appendix D presents the existing bi-directional number of travel lanes for study roadway segments.

Functional Classification

Functional classification for study roadways was collected based upon FDOT GIS shapefiles. Map 6 in Appendix D presents the functional classification of roadway segments. Functional classification was used in this study to analyze roadway conditions along arterial and collector roadways (see Table 3). Map 6 demonstrates that most half-section line roadways and some section line roadways are classified as collectors.

Right-of-Way

Right-of-way data for study roadways were obtained from Miami-Dade County Public Works Right-of-Way Division's GIS database. Right-of-way data are used in this study to determine the potential for roadway capacity improvements along specific roadway segments within the existing public right-of-way. Map 7 in Appendix D presents the approximate right-of-way of study roadway segments.

Maximum Posted Speed Limit

Posted speed limit on roadways was collected from two sources: State roadway data were obtained from an FDOT GIS shapefile, and non-State roadway speed limits were obtained by reviewing Google StreetView maps. Map 8 in Appendix D presents the approximate posted speed limit on roadway segments.

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5.0 Priority Corridors and Improvement Strategies

The existing conditions LOS map was used to identify grid roadways that operate at LOS E or F. Thereafter, the CFP projects included in the 2035 LRTP were reviewed to determine if roadway capacity improvements have been identified to address LOS deficiencies. Appendix F includes a GIS map of CFP projects. Section line roadways currently operating at LOS E or F were identified as “priority corridors” if those segments did not have a planned capacity enhancement project in the 2035 LRTP (see Map 1 Appendix G). The identification of priority corridors is intended to direct the efforts of identifying improvement strategies to the corridors of greatest need. It’s envisioned that concepts recommended in this study will be refined through detailed studies by the planning and implementing agencies and considered for inclusion in the work programs for implementation.

The priority corridors were grouped by their orientation: east-west corridors and north-south corridors. For each corridor, potential multimodal improvement strategies were identified. Table 4 summarizes east-west oriented priority corridors and improvement strategies, and Table 5 summarizes north-south oriented priority corridors.

Table 4: East-West Oriented Priority Corridors

Corridor	Segment	Improvement Strategies
SW 8 Street	SW 137 Ave to SW 27 Ave	Grade separation, congestion management, premium transit
SW 40 Street	SW 137 Avenue to US 1	Widening, grade separation, congestion management
SW 56 Street	SW 117 Ave to SW 87 Ave	Widening, interchange, congestion management
SW 72 Street	SW 117 Ave to US 1	Interchange, congestion management
SW 88 Street	SW 137 Ave to US 1	Grade separation, congestion management, park and ride facilities
SW 120 Street	SW 137 Ave to SW 117 Ave	Widening, congestion management
SW 152 Street	SW 117 Ave to US 1	Widening, premium transit
NE 163 Street	I-95 to US 1	Grade separation, congestion management, transit hub
NW 103 Street	SR 826 to E 10 Avenue	Congestion management
NW 36 Street	SR 826 to SR 25	Grade separation, congestion management

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Table 5: North-South Oriented Priority Corridors

Corridor	Segment	Improvement Strategies
US 1/S Dixie Hwy	I-95 to SW 88 Street	Grade separation, congestion management
US 1/S Dixie Hwy	SW 104 Street to SW 184 Street	Transit signal priority, managed lanes
SW 117 Ave	SW 104 St to SW 136 St	Continuous flow lanes at select T-intersections
US 1/Biscayne Blvd	Flagler St to Broward CL	Grade separation, premium transit, transit hub
NW 27 Avenue	Flagler St to Broward CL	Premium transit, congestion management

After the identification of broad improvement strategies (Tables 4 and 5), specific roadway improvement strategies were assessed for the priority corridors. As part of this effort, several prior planning studies conducted by the Miami-Dade MPO were reviewed. The purpose of this review was to identify prior study recommendations that could help to address capacity issues within the priority corridors. A list of studies reviewed and their recommendations that have not been implemented or incorporated into a work program are summarized in Appendix H.

Improvement Strategies

The information collected in this study and aerial photography was reviewed to identify specific recommendations. Please note that the recommendations outlined in this section are preliminary and were further refined with SAC input and screening. Among the strategies considered when developing preliminary recommendations include (1) improving capacity within congested (priority corridors), (2) improving parallel corridors to relieve adjacent congested corridors, and (3) improving access to expressways. For the simplicity of presentation, the preliminary recommendations were broadly classified into four categories:

- Roadway widening
- Arterial grade separation
- Interchanges at expressways
- Intersection improvements

Roadway Widening

In general, the opportunities for widening existing arterial roadways are minimal due to right-of-way constraints. Typical right-of-way requirements for six-lane county and state roadways are

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100 feet and 130 feet, respectively. Table 6 lists preliminary roadway capacity projects and additional information is provided in Chapter 7. The proposed widening projects would add 17 lane miles to the roadway system and increase the vehicle carrying capacity on each roadway segment by approximately 20,000 vehicles per day.

Table 6: Roadway Widening

Road	From	To	Improvement
SW 42 Street	HEFT	SW 137 Avenue	Widen to 6 lanes
SW 56 Street	SW 87 Avenue	SW 107 Avenue	Widen to 6 lanes
SW 120 Street	SW 117 Avenue	SW 137 Avenue	Widen to 6 lanes
SW 152 Street	SW 117 Avenue	US 1	Widen to 6 lanes

Arterial Grade Separation

The grade separation recommendations focus on high volume intersections on principal arterial roadways. Due to right-of-way constraints, partial grade separation of through lanes on only one of the two intersecting corridors is recommended. Table 7 lists preliminary arterial grade separation recommendations and additional information is provided in Chapter 7. The seven proposed grade separation projects would benefit approximately 550,000 vehicles per day through reduced conflicts and delay (550,000 is the total ADT at the above seven intersections).

Table 7: Arterial Grade Separation

Street 1	Street 2	Improvement
SW 8 Street	SW 107 Avenue	Grade separate E-W through lanes
SW 8 Street	SW 137 Avenue	Grade separate E-W through lanes
SW 40 Street	SW 107 Avenue	Grade separate E-W through lanes
SW 88 Street	SW 137 Avenue	Grade separate E-W through lanes
US 1	SW 27 Avenue	Grade separate US 1 through lanes
US 1	NE 163 Street	Grade separate N-S through lanes
NW 36 Street	NW 72 Avenue	Grade separate E-W through lanes

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Expressway Interchanges

The feasibility of improving connectivity to expressways via partial interchanges was explored to relieve congestion in Miami-Dade County. Table 8 lists the proposed expressway interchange locations and additional information is provided in Chapter 7. The proposed partial interchange at HEFT and SW 56 Street (or SW 72 Street) is intended to relieve HEFT interchanges at SW 40 Street and SW 88 Street. These improvements may require design exceptions for interchange spacing.

Table 8: Expressway Interchanges

Expressway	Arterial	Improvement
HEFT	SW 56 Street or SW 72 Street	Partial interchange
SR 874	SW 72 Street	Partial interchange

Intersection Improvements

This category includes intersection improvements other than grade separation. Both traditional and non-traditional intersection improvements strategies were considered. Table 9 lists the proposed intersection improvement concepts and additional information is provided in Chapter 7. All the improvements listed in Table 9 were developed by prior MPO planning studies.

Table 9: Intersection Improvements

Expressway	Arterial	Improvement
SW 72 Street	SW 107 Avenue	Indirect left turns
SW 117 Avenue	SW 128 Street, SW 134 Street, and SW 136 Street	Continuous flow (turbo) lanes – southbound SW 117 Avenue

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6.0 Roadway System Connectivity

Connectivity is a vital characteristic of a fully developed grid roadway system. A connected grid roadway system provides the user alternatives paths whereby longer trips are expected to utilize arterial roadways and shorter trips can utilize collector streets. Such roadway network is better equipped to handle congestion and incidents by rerouting traffic to alternative routes. Therefore, improving the connectivity of roadway system can be an effective approach to address congestion and increase capacity.



Figure 3: Hierarchical and Grid Roadway Systems

Source: Kulash, Anglin and Marks, 1990

The existing conditions maps and aerials were utilized to identify discontinuities in the existing grid roadway system with the objective assessing opportunities for connecting discontinuous roadway segments. There could be a variety of reasons for the existing discontinuities in the grid roadway system: to accommodate large scale developments such as Miami International Airport and expressways; public opposition; environmental impacts; and cost in comparison to the benefits. However, with current congested road conditions and limited opportunities for widening existing roadways, an assessment of improving network connectivity deserves attention.

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Further, advancement in construction methods and technology could help to lessen the perceived impacts that prevented some of these projects from happening in the past.

The review of roadway system connectivity was divided into two components:

- Roadway discontinuities within Miami-Dade County
- Roadway discontinuities at the Broward County Line

Roadway Discontinuities within Miami-Dade County

A review of grid system resulted in the identification of the following prominent barriers that contributed to roadway discontinuities:

- Canals and waterways (e.g., C-100 Canal\Cutler Drain)
- Expressways (e.g., Palmetto Expressway)
- Miami International Airport

Other barriers to grid roadway continuity can be found at parks and where suburban neighborhoods designed with a hierarchical roadway system have been built without reserving right-of-way for section line or half-section line roadways. In addition, the County's northwestern and southwestern parts have been experiencing development and the roadway network is being gradually expanded through public and developer funded projects. For example, missing segments of NW 87 Avenue in northwest Miami-Dade County are currently under construction or included in the work programs. The expanded grid network in those areas was reviewed to identify the need for completing missing links.

As part of the *Phase 1* study a list of section line and half-section line roadway discontinuities was developed. Additional discontinuities were identified through the *Phase 2* study and considered for potential projects. Examples of discontinuous section line and half-section line roadways are listed below under the barriers that caused those discontinuities.

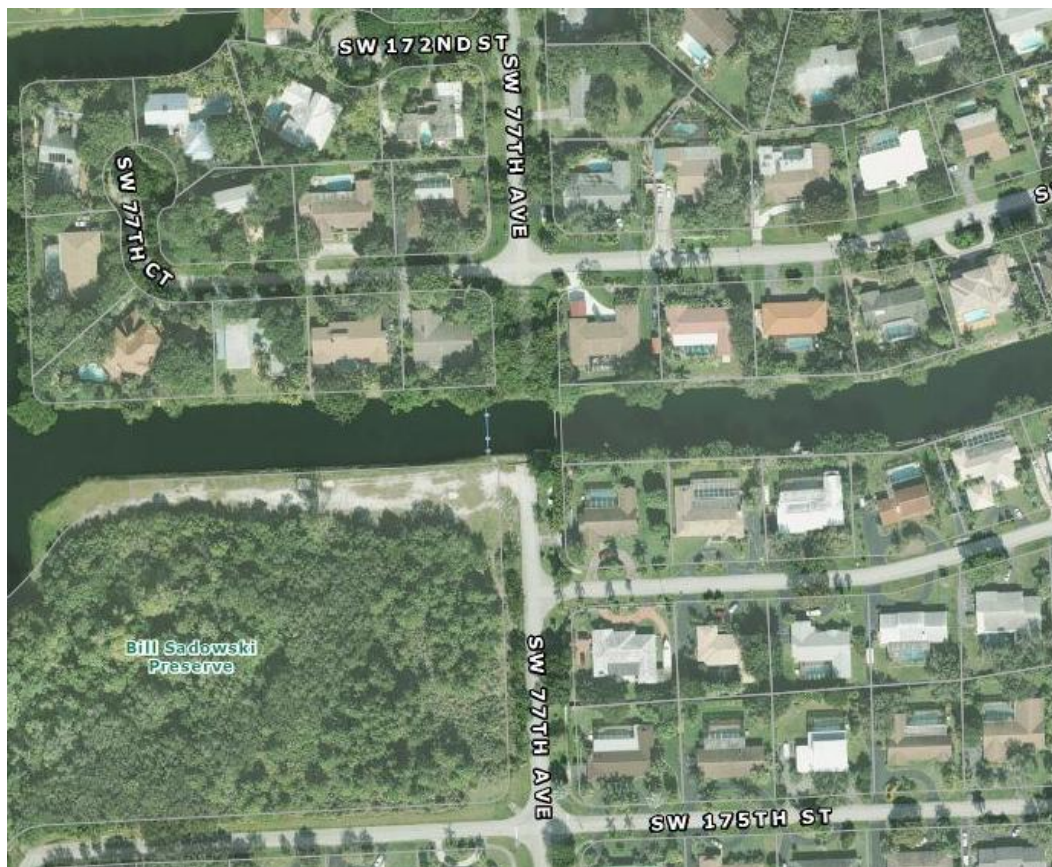
C-100 Canal (Cutler Drain)

- SW 136 Street (SW 112 Avenue to SW 112 Court)
- SW 112 Avenue (SW 138 Street to SW 136 Street)
- SW 107 Avenue (SW 142 Lane to SW 140 Street)

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- SW 144 Street (SW 104 Avenue to SW 105 Avenue)
- SW 102 Avenue (SW 144 Street to SW 146 Street)
- SW 97 Avenue (SW 148 Street to SW 152 Street)
- SW 92 Avenue at SW 160 Street
- SW 87 Avenue (SW 163 Terrace to SW 164 Street)
- SW 82 Avenue (SW 173 Terrace to SW 174 Terrace)
- SW 77 Avenue (SW 173 Street to SW 174 Street)

US 1 is the only north-south roadway that crosses the C-100 Canal between SW 117 Avenue and Old Cutler Road, which severely limits north-south mobility options in the area.



Missing Segment of SW 77 Avenue at C-100 Canal

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Palmetto Expressway (SR 826)

- SW 80 Street (SW 76 Avenue to SW 77 Avenue)^(A)
- SW 64 Street (SW 76 Avenue to SW 79 Court)^(B)
- SW 48 Street (SW 74 Court to SW 82 Avenue)^(C)
- SW 32 Street (SW 76 Avenue to SW 77 Court)
- SW 16 Street (SW 76 Court to SW 77 Avenue)
- NW 66 Street (NW 77 Avenue to NW 77 Court)
- NW 98 Street/W 44 Place (W 20 Avenue to NW 77 Avenue)
- NW 130 Street/W 76 Street (W 20 Avenue to W 20 Avenue)
- NW 52 Avenue (NW 167 Street to NW 167 Street)

(A) – SW 80 Street is a local roadway in this area that parallels the Snapper Creek Expressway, which was built along the SW 80 Street section line

(B) – SW 64 Street is blocked by both the Palmetto Expressway and Miami Memorial Park Cemetery

(C) – SW 48 Street is blocked by both the Palmetto Expressway and Miami-Dade County Tropical Park

Most half-section line roadways are not continuous from one side of the Palmetto Expressway to the other side, especially south of SW 8 Street and in the Hialeah area. One example of a project that improved half-section line roadway connectivity is the construction of an underpass for W 60 Street/NW 114 Street under the Palmetto Expressway. Future expressway reconstruction projects may present opportunities for connecting missing links on section line and half-section line roadways.

Miami International Airport

- NW 25 Street (NW 67 Avenue to NW 42 Avenue)
- NW 67 Avenue (Flagler Street to NW 36 Street)
- NW 62 Avenue (Blue Lagoon Drive to NW 36 Street)
- NW 57 Avenue (Perimeter Road/NW 12 Street to NW 36 Street/Curtiss Parkway)
- NW 52 Avenue (Flagler Street to NW 36 Street/South Drive)
- NW 47 Avenue (NW 7 Street to NW 36 Street/East Drive)

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The roadway discontinuities associated with Miami International Airport are much longer than discontinuities associated with canals or roadways because of the size and shape of the airport. Given the lack of feasible alternatives, roadway discontinuities at Miami International Airport were not assessed further for potential projects.

Based on the review of roadway discontinuities, the following missing links were identified for future consideration. Project summary sheets are provided in Chapter 7.

Table 10: Missing Link Projects

Roadway	From	To	Improvement
At Canals			
SW 77 Avenue	SW 159 Terrace	SW 160 Terrace	Bridge over C-100A feeder canal
SW 77 Avenue	SW 173 Street	SW 174 Street	Bridge over C-100 canal
SW 87 Avenue	SW 163 Terrace	SW 164 Street	Bridge over C-100 canal
SW 102 Avenue	SW 145 Street	SW 146 Street	Bridge over C-100 canal
SW 122 Avenue	SW 210 Street	SW 212 Street	Bridge over Black Creek canal
SW 120 Street	SW 99 Court	SW 99 Avenue	Bridge over C-100C canal
SW 136 Street	Harrison Street	SW 112 Avenue	Bridge over C-100 canal
At Expressways			
SW 16 Street	SW 76 Court	SW 77 Avenue	Connect across Palmetto Expressway
SW 47 Terrace	SW 117 Avenue	SW 118 Avenue	Connect across HEFT
SW 120 Street	SW 114 Place	SW 113 Avenue	Connect across SR 874
Other Missing Links			
NE 215 Street	NE 14 Avenue	I-95	Construct as 2-lane facility
NW 90 Street	NW 87 Avenue	NW 97 Avenue	Construct as 2-lane facility
SW 120 Street	SW 82 Road	US 1	Construct as 2-lane facility
SW 127 Avenue	South of SW 224 Street	W Dixie Highway	Construct as 2-lane facility

The level of connectivity of section line roadways at the Broward County Line was assessed to identify the potential for future connections. Table 11 lists streets that match-up with each other between the two counties. Table 11 shows existing laneage, future laneage, and available right-of-way of roadways on either side of the county line.

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Table 11: Comparison of Matching Roadways at the Broward County Line

Miami-Dade Road Name	Broward Road Name	Existing Lanes		2035 Lanes		ROW		Notes	
		Dade ⁽¹⁾	Broward ⁽¹⁾	Dade ⁽²⁾	Broward ⁽³⁾	Dade ⁽⁴⁾	Broward ⁽⁵⁾	Dade	Broward
US 1	US 1	6	6	6	6	120	120		
W Dixie Hwy	Dixie Hwy	2	4	2	4	55	54		
NE 2 Ave	SW 56 Ave	2	2	2	2	65	80		
SR 7/NW 2 Ave	SR 7/SW 60 Ave	6	6	6	6	100	120		
NW 17 Ave	SW 68 Ave	0	0	0	0	0	0	NW 17 Ave ends at Snake Creek Canal	SW 68 Ave does not connect to County Line Road
SR 817/NW 27 Ave	SR 817/University Dr	6	6	6	6	110	200		
NW 37 Ave (Douglas Rd)	SW 89 Ave (Douglas Rd)	4	4	4	4	70	110		
NW 47 Ave	Palm Ave	2	2	4	2	100	110	Widening is included as a Priority I project	Palm Ave - 2 lanes existing up to Miramar Pkwy; 4 lanes north
SR 823/NW 57 Ave	SR 823/Red Road	6	6	6	6	120	200		
NW 67 Ave/Ludlam Rd	Flamingo Road	4	4	4	4	110	110		
NW 77 Ave	SW 136 Ave	0	0	0	0	0	0	NW 77 Ave not an arterial north of Palmetto Expy	SW 136 Ave ends north of HEFT
NW 87 Ave	SW 148 Ave	0	0	0	0	0	0	NW 87 Ave ends south of HEFT in Miami-Dade County	SW 148 Ave ends in a residential neighborhood
NW 97 Ave	SW 160 Ave	0	0	0	0	0	0	NW 97 Ave not planned to extend north of HEFT	SW 160 Ave ends in a residential neighborhood
NW 107 Ave	SW 172 Ave	unpaved	2	unpaved	2	0	80	NW 107 Ave does not extend to county line	Portion of SW 172 Ave removed from Trafficways Plan
NW 117 Ave	SW 184 Ave	unpaved	0	unpaved	0	0	0	NW 117 Ave not planned to extend north of HEFT	SW 184 Ave ends in a residential neighborhood
NW 127 Ave	SW 196 Ave	0	unpaved	0	unpaved		0	NW 127 Ave is industrial access	SW 196 Ave curves to the east & connects to Miramar Pkwy; to be widened to 4L
NW 137 Ave	SW 208 Ave	0	unpaved	0	unpaved	0			
US 27	US 27	4	4	6	4	325	325		

Notes:

(1) Per FDOT Laneage Shapefile and aerial maps.

(2) Per Miami-Dade MPO 2035 L RTP.

(3) Per Broward MPO 2035 L RTP

(4) Per Miami-Dade County GIS Database.

(5) Per Broward County Trafficways Map (June 28, 2012). The given ROW could be higher than the actual ROW available currently.

ARTERIAL GRID ANALYSIS PHASE II

7.0 Project Screening and Recommendations

The recommendations identified in Chapters 5 and 6 were further refined through project screening and input from the SAC and TPC. Input provided by the SAC members is summarized in Appendix B. For each recommended project, a summary sheet was prepared outlining the improvement, information used to justify the recommendation, potential issues, project location and jurisdiction, and next steps. Map 2 in Appendix G shows approximate locations of recommended projects. Similar summary sheets were also prepared for concepts that were discarded based on the SAC input or further screening.

Recommended Projects

A total of 21 projects out of the preliminary list of 30 concepts are recommended for further consideration. A breakdown of recommended projects is provided below.

- Arterial roadway widening – two projects.
- Arterial grade separation – three projects.
- Expressway interchanges – two projects.
- Intersection improvements – two projects.
- Network connectivity improvements (missing links) – 12 projects.

Nineteen projects are located in south Miami-Dade County (south of Flagler Street) where the proportion of deficient roadway segments is higher. The primary focus of these recommendations is to improve roadway network connectivity to provide alternative travel routes, ensure section line roads are continuous, and relieve congested roadways. Improved connectivity will also increase opportunities for multimodal enhancements such as new transit routes, bicycle lanes, and sidewalks.

ARTERIAL GRID ANALYSIS PHASE II

PROJECT 1: PRIORITY CORRIDORS - ARTERIAL ROADWAY WIDENING SW 42 STREET/BIRD ROAD FROM HEFT TO SW 137 AVENUE

Improvement Concept	Widen SW 42 Street from 4L to 6L between west of HEFT and SW 137 Avenue.
ADT (2011)	34,000 – 52,500
LOS	LOS F
Laneage	4 lanes
ROW	Between HEFT and SW 127 Avenue: 80-100 feet Between SW 127 Avenue and SW 137 Avenue: 120 feet
Potential Issues	Impacts on developments on the north side Canal on the south side
2035 LRTP Status	Not included
Prior Studies	None
Next Steps	Include in the 2040 LRTP Needs Assessment Coordinate with Miami-Dade County
Location	Unincorporated Miami-Dade County
Jurisdiction	Miami-Dade County



SW 42 Street near SW 127 Avenue

Source: Miami-Dade Property Appraiser

ARTERIAL GRID ANALYSIS PHASE II

PROJECT 2: PRIORITY CORRIDORS - ARTERIAL ROADWAY WIDENING SW 152 STREET/CORAL REEF DRIVE FROM SW 117 AVENUE TO US 1

Improvement Concept	Widen SW 152 Street from 4L to 6L between SW 117 Avenue and US 1.
ADT (2011)	38,000
LOS	LOS F
Laneage	4 lanes
ROW	68-80 feet
Potential Issues	Impacts on adjacent developments ROW acquisition needed
2035 LRTP Status	Not included
Prior Studies	Recommended in the MPO's SW 152 Street Corridor Transportation Study (2008)
Next Steps	Include in the 2040 LRTP Needs Assessment Coordinate with FDOT
Location	Unincorporated Miami-Dade County
Jurisdiction	FDOT



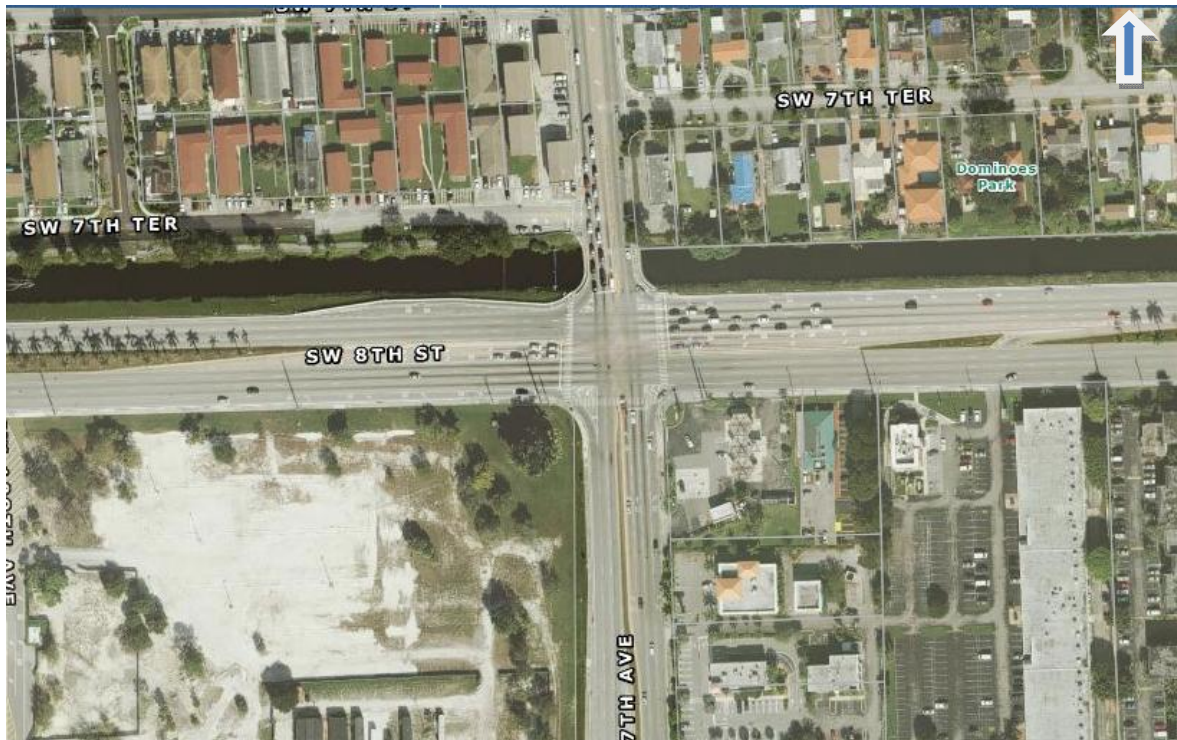
SW 152 Street near SW 102 Avenue

Source: Miami-Dade Property Appraiser

ARTERIAL GRID ANALYSIS PHASE II

PROJECT 3: PRIORITY CORRIDORS - ARTERIAL GRADE SEPARATION SW 8 STREET/TAMIAMI TRAIL AT SW 107 AVENUE

Improvement Concept	Partial grade separation of SW 8 Street/Tamiami Trail and SW 107 Avenue. Grade separate E-W through lanes while maintaining other movements at grade.
ADT (2011)	SW 8 Street (58,500); SW 107 Avenue (38,500-52,000)
LOS	SW 8 Street west of SW 107 Avenue (LOS F); SW 107 Avenue (LOS F)
Laneage	SW 8 Street - 7 lanes west of SW 107 Avenue; 8 lanes east of SW 107 Avenue SW 107 Avenue - 4 lanes north of SW 8 Street; 6 lanes south of SW 8 Street
ROW	SW 8 Street (118-130 feet); SW 107 Avenue (66-105 feet)
Potential Issues	Potential impacts on local access Canal on the north side of SW 8 Street Nearby signals: SW 109 Avenue (1,320 feet); SW 4 Street (1,120 feet); and SW 12 Street (1,280 feet)
2035 LRTP Status	2035 LRTP includes widening of SW 107 Avenue as 6L between Flagler Street and SW 8 Street (construction 2026-2035)
Prior Studies	Recommended in the MPO's Grade Separation Study (2005)
Next Steps	Conduct further analysis through MPO's SW 8 Street Corridor Study Include in the 2040 LRTP Needs Assessment
Location	Sweetwater and unincorporated Miami-Dade County
Jurisdiction	FDOT



Source: Miami-Dade Property Appraiser

ARTERIAL GRID ANALYSIS PHASE II

PROJECT 4: PRIORITY CORRIDORS - ARTERIAL GRADE SEPARATION SW 8 STREET/TAMIAMI TRAIL AT SW 137 AVENUE

Improvement Concept	Partial grade separation of SW 8 Street/Tamiami Trail and SW 137 Avenue. Grade separate E-W through lanes while maintaining other movements at grade.
ADT (2011)	SW 8 Street (57,000); SW 137 Avenue (43,000)
LOS	SW 8 Street east of SW 137 Avenue (LOS F); SW 137 Avenue (LOS D)
Laneage	SW 8 Street - 6 lanes SW 137 Avenue - 6 lanes north of SW 8 Street; 4 lanes south of SW 8 Street
ROW	SW 8 Street (106 feet); SW 137 Avenue (100-120 feet)
Potential Issues	Potential impacts on local access Canal on the north side of SW 8 Street Nearby signals: SW 152 Avenue (1.5 miles); SW 132 Avenue (2,300 feet); NW 6 Street (4,200 feet); SW 18 Street (3,700 feet)
2035 LRTP Status	2035 LRTP includes widening of SW 137 Avenue as 6L between SW 8 Street and SW 26 Street (construction 2015-2020)
Prior Studies	Recommended in the MPO's Superarterial Network Study (1998)
Next Steps	Include in the 2040 LRTP Needs Assessment
Location	Unincorporated Miami-Dade County
Jurisdiction	FDOT except SW 137 Avenue south of SW 8 Street is a county road

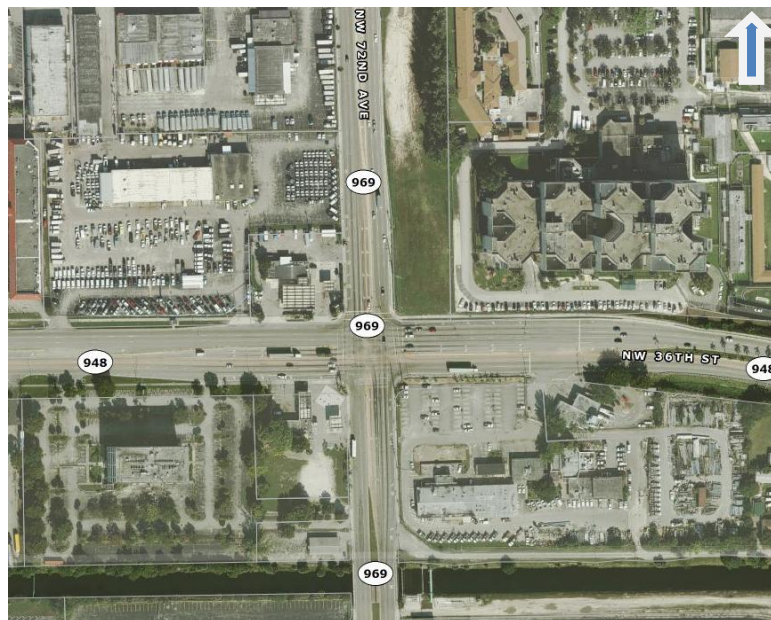


Source: Miami-Dade Property Appraiser

ARTERIAL GRID ANALYSIS PHASE II

PROJECT 5: PRIORITY CORRIDORS - ARTERIAL GRADE SEPARATION NW 36 STREET AT NW 72 AVENUE

Improvement Concept	Partial grade separation of NW 36 Street at NW 72 Avenue. Grade separate NW 36 Street through lanes while maintaining other movements at grade.
ADT (2011)	NW 36 Street (66,000); NW 72 Avenue (33,500)
LOS	NW 36 Street (LOS F); NW 72 Avenue (LOS C)
Laneage	NW 36 Street – 6 lanes NW 72 Avenue – 5 lanes
ROW	NW 36 Street (85 feet); NW 72 Avenue (91 feet)
Potential Issues	<p>FDOT conducted a grade separation feasibility study and recommended the no-build alternative due to local opposition and adjacent site access concerns. During the TPC discussion, MPO staff indicated that land use patterns at this location are expected to change and the area is critical to regional freight truck traffic/access to the South Florida Intermodal logistics center (ILC); therefore, a reassessment of grade separation may be warranted in the future.</p> <p>Horizontal curve on NW 36 Street east of intersection Proximity to adjacent driveways/access concerns Proximity to the airport Nearby signals: SR 826 ramp (2,200 feet); NW 7100 Block (400 feet); NW 31 Street (2,450 feet)</p>
2035 LRTP Status	Congestion management along NW 36 Street
Prior Studies	Recommended in the MPO's Grade Separation Study (2005) FDOT feasibility study recommended no-build due to local opposition
Next Steps	Include in the 2040 LRTP Needs Assessment
Location	Unincorporated Miami-Dade County
Jurisdiction	FDOT

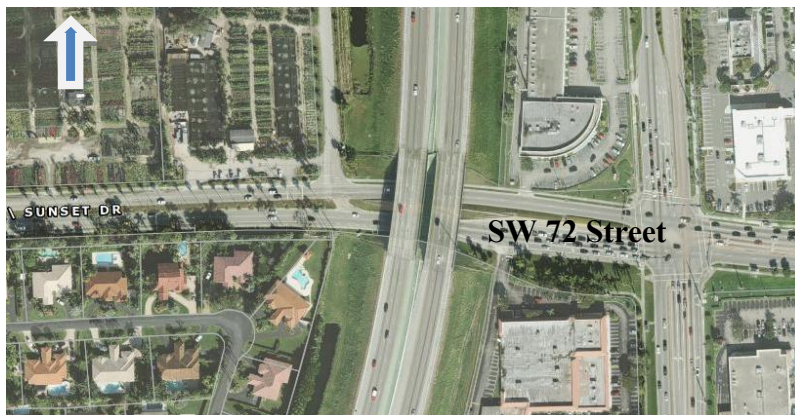


Source: Miami-Dade Property Appraiser

ARTERIAL GRID ANALYSIS PHASE II

PROJECT 6: PRIORITY CORRIDORS - EXPRESSWAY INTERCHANGES SR 821/HEFT AT SW 56 STREET OR SW 72 STREET

Improvement Concept	An interchange (full or partial) at HEFT and SW 56 Street <u>or</u> at HEFT and SW 72 Street to relieve SW 40 Street and SW 88 Street.
ADT (2011)	SW 56 Street (32,000); SW 72 Street (40,000)
LOS	SW 56 Street (LOS C); SW 72 Street (LOS F)
Laneage	SW 56 Street – 4 lanes SW 72 Street – 4 lanes
ROW	SW 56 Street (100-120 feet); SW 72 Street (92 feet)
Potential Issues	Does not meet FDOT's interchange spacing criteria Spacing between Bird Road and SW 56 Street is 1.15 miles Spacing between SW 72 Street and SW 88 Street is 1.1 miles Canals that parallel HEFT Adjacent intersections and streets
2035 LRTP Status	Congestion management along SW 56 Street Widen SW 72 Street to 6 lanes west of HEFT (2026-2035)
Prior Studies	None
Next Steps	Include in the 2040 LRTP Needs Assessment Coordinate with Florida's Turnpike Enterprise
Location	Unincorporated Miami-Dade County
Jurisdiction	SW 56 Street and SW 72 Street are county roadways except SW 72 Street east of HEFT is an FDOT road.

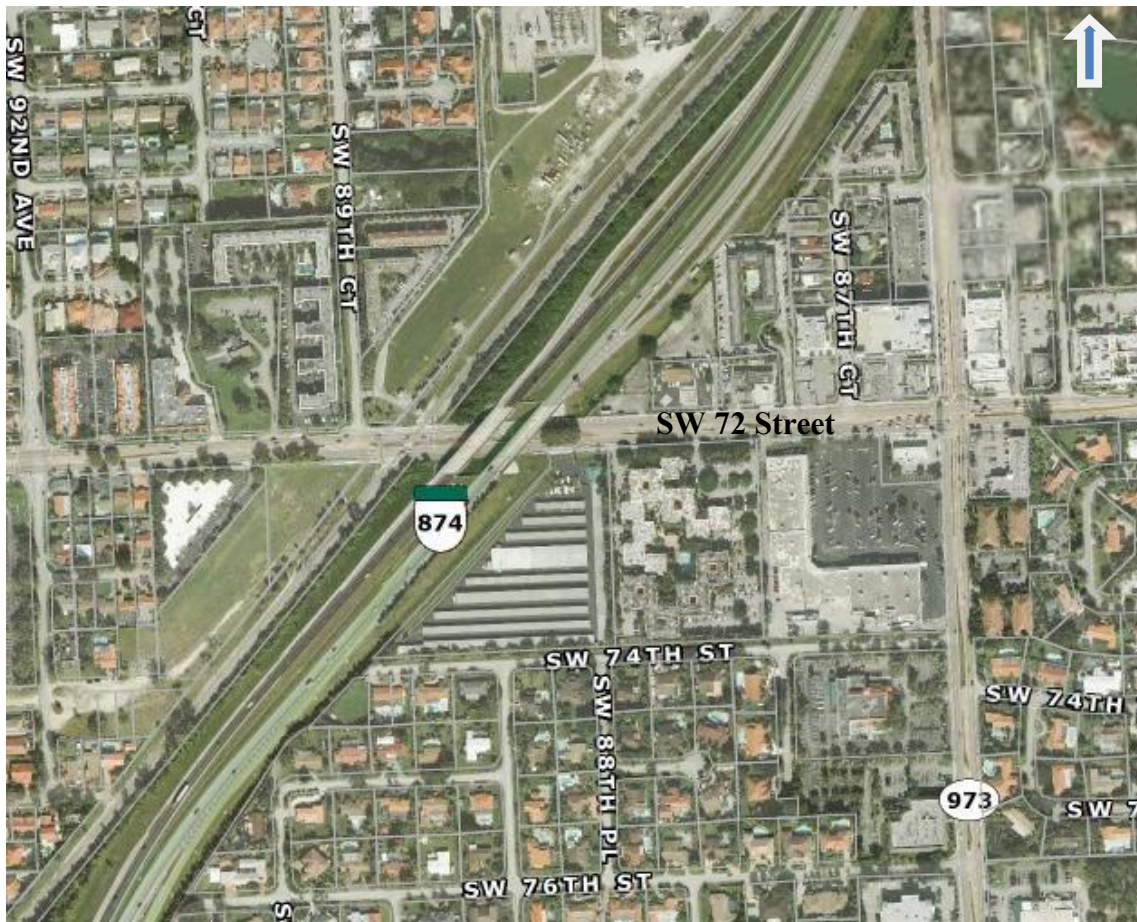


Source: Miami-Dade Property Appraiser

ARTERIAL GRID ANALYSIS PHASE II

PROJECT 7: PRIORITY CORRIDORS - EXPRESSWAY INTERCHANGES SR 874/DON SHULA EXPRESSWAY AT SW 72 STREET

Improvement Concept	Partial interchange at SR 874 and SW 72 Street. Provide connections to and from north SR 874 to SW 72 Street.
ADT (2011)	SW 72 Street (40,500)
LOS	SW 72 Street (LOS F)
Laneage	SW 72 Street – 4 lanes
ROW	SW 72 Street (70 feet)
Potential Issues	Requires an exception for interchange spacing (standard is 2 miles) Spacing between SR 878 and SW 72 Street is 0.6 miles Spacing between SW 72 Street and SR 826 is 1.8 miles
2035 LRTP Status	Not included
Prior Studies	None
Next Steps	Include in the 2040 LRTP Needs Assessment Coordinate with MDX
Location	Unincorporated Miami-Dade County
Jurisdiction	FDOT and MDX



Source: Miami-Dade Property Appraiser

ARTERIAL GRID ANALYSIS PHASE II

PROJECT 8: PRIORITY CORRIDORS – INTERSECTION IMPROVEMENTS SW 72 STREET/SUNSET DRIVE AT SW 107 AVENUE

Improvement Concept	Replace existing left-turn lanes with indirect left turns utilizing adjacent streets and intersections to reduce peak period congestion.
ADT (2011)	SW 72 Street (42,500); SW 107 Avenue (35,500)
LOS	LOS F – both streets
Laneage	4 lanes – both streets
ROW	SW 72 Street (80-120 feet); SW 107 Avenue (60-100 feet)
Potential Issues	Increase in delay at adjacent intersections Indirect left-turn routes cross the future Snapper Creek Multiuse Trail
2035 LRTP Status	Not included
Prior Studies	Recommended in the MPO's Indirect Left Turns Study (2008)
Next Steps	Include in the 2040 LRTP Needs Assessment Coordinate with Miami-Dade County
Location	Unincorporated Miami-Dade County
Jurisdiction	Miami-Dade County



Source: Miami-Dade Property Appraiser

ARTERIAL GRID ANALYSIS PHASE II

PROJECT 9: PRIORITY CORRIDORS – INTERSECTION IMPROVEMENTS SW 117 AVENUE CONTINUOUS FLOW (TURBO) LANES

Improvement Concept	Provide continuous flow (turbo) lanes on southbound SW 117 Avenue at SW 128 Street, SW 134 Street, and SW 136 Street
ADT (2011)	SW 117 Avenue (39,300)
LOS	LOS F
Laneage	4 lanes
ROW	80-100 feet
Potential Issues	None
2035 LRTP Status	Not included
Prior Studies	Recommended in the MPO's Adding Turbo Lanes to T-Intersection Study (2010)
Next Steps	Include in the 2040 LRTP Needs Assessment Coordinate with Miami-Dade County
Location	Unincorporated Miami-Dade County
Jurisdiction	Miami-Dade County



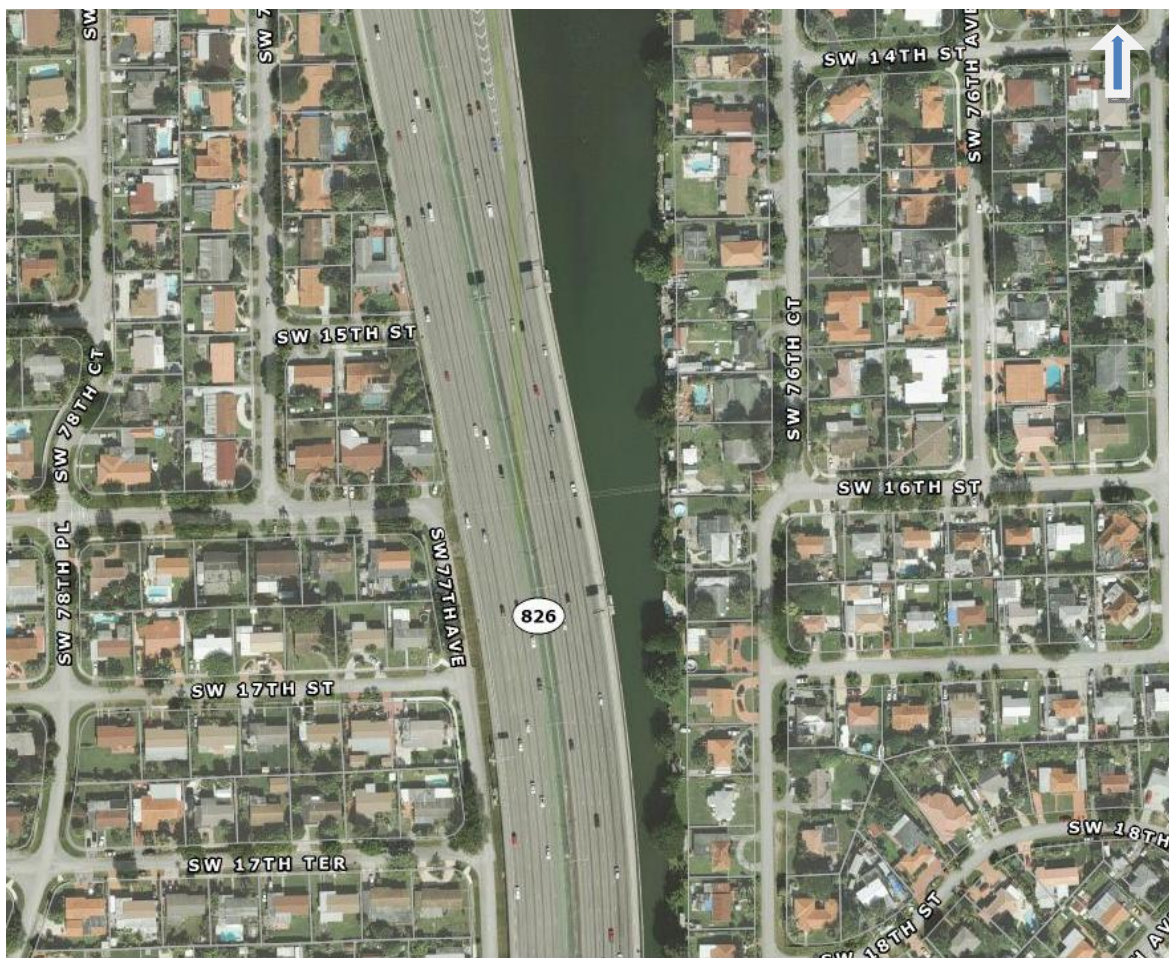
SW 117 Avenue near SW 128 Street

Source: Miami-Dade Property Appraiser

ARTERIAL GRID ANALYSIS PHASE II

PROJECT 10: MISSING LINKS AT EXPRESSWAYS SW 16 STREET AT PALMETTO EXPRESSWAY

Improvement Concept	Connect SW 16 Street across Palmetto Expressway by constructing an underpass.
ADT (2011)	8,800 (west of SW 82 Avenue)
LOS	n/a
Laneage	2 lanes - proposed
ROW	n/a
Potential Issues	Cost – may need to elevate Palmetto Expressway Impacts on existing residential units Canal on the east side - requires environmental/biological impact assessments
2035 LRTP Status	Not included
Prior Studies	None
Next Steps	Include in the 2040 LRTP Needs Assessment Coordinate with Miami-Dade County and FDOT
Location	Unincorporated Miami-Dade County
Jurisdiction	Miami-Dade County

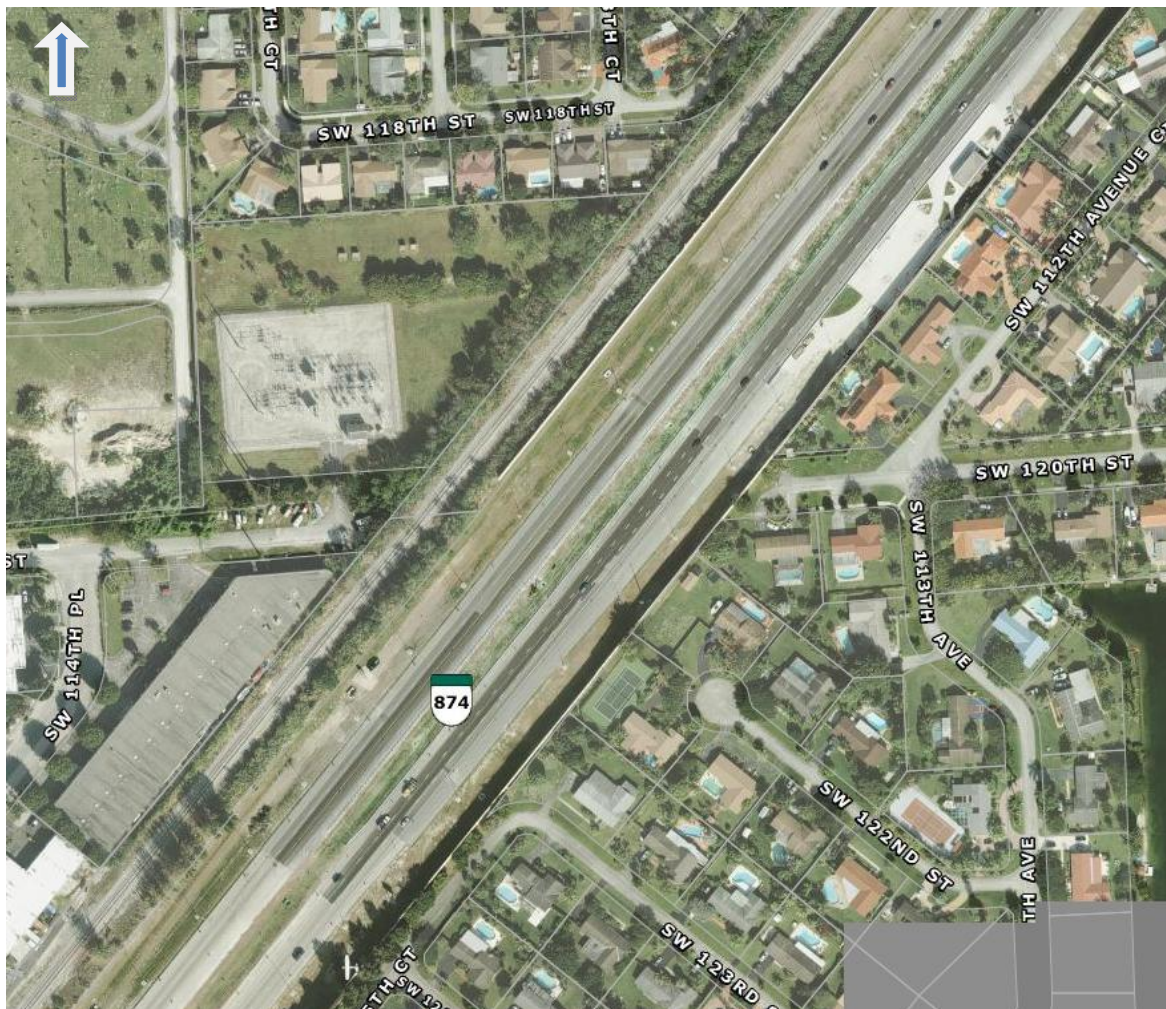


Source: Miami-Dade Property Appraiser

ARTERIAL GRID ANALYSIS PHASE II

PROJECT 11: MISSING LINKS AT EXPRESSWAYS SW 120 STREET UNDERPASS ACROSS SR 874

Improvement Concept	Connect SW 120 Street across SR 874 by constructing an underpass.
ADT (2011)	n/a
LOS	n/a
Laneage	2 lanes - proposed
ROW	n/a
Potential Issues	Cost Requires a railroad crossing
2035 LRTP Status	Not included
Prior Studies	None
Next Steps	Include in the 2040 LRTP Needs Assessment Coordinate with Miami-Dade County
Location	Unincorporated Miami-Dade County
Jurisdiction	Miami-Dade County

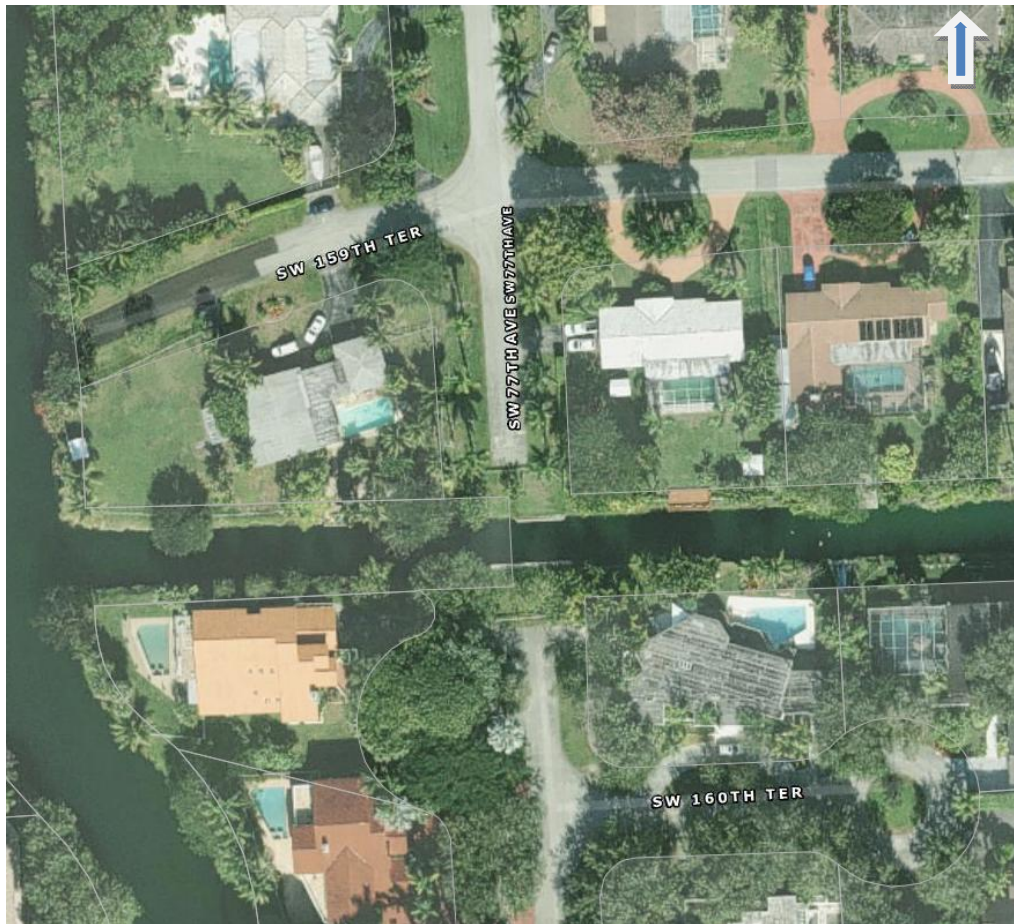


Source: Miami-Dade Property Appraiser

ARTERIAL GRID ANALYSIS PHASE II

PROJECT 12: MISSING LINKS AT CANALS SW 77 AVENUE BETWEEN SW 159 TERRACE AND SW 160 TERRACE

Improvement Concept	Construct a bridge over C-100A's feeder canal and connect SW 77 Avenue between SW 159 Terrace and SW 160 Terrace.
ADT (2011)	n/a
LOS	n/a
Laneage	2 lanes - proposed
ROW	n/a
Potential Issues	Palmetto Bay Community Council Resolution CC13-03-98 states that it opposes any feasibility study for construction of a north-south bridge across C100-A canal at SW 77 Avenue. Located in a residential area Requires environmental/biological impact assessments
2035 LRTP Status	Not included
Prior Studies	None
Next Steps	Include in the 2040 LRTP Needs Assessment Continue to coordinate with Miami-Dade County and Palmetto Bay
Location	Palmetto Bay
Jurisdiction	Palmetto Bay, Miami-Dade County

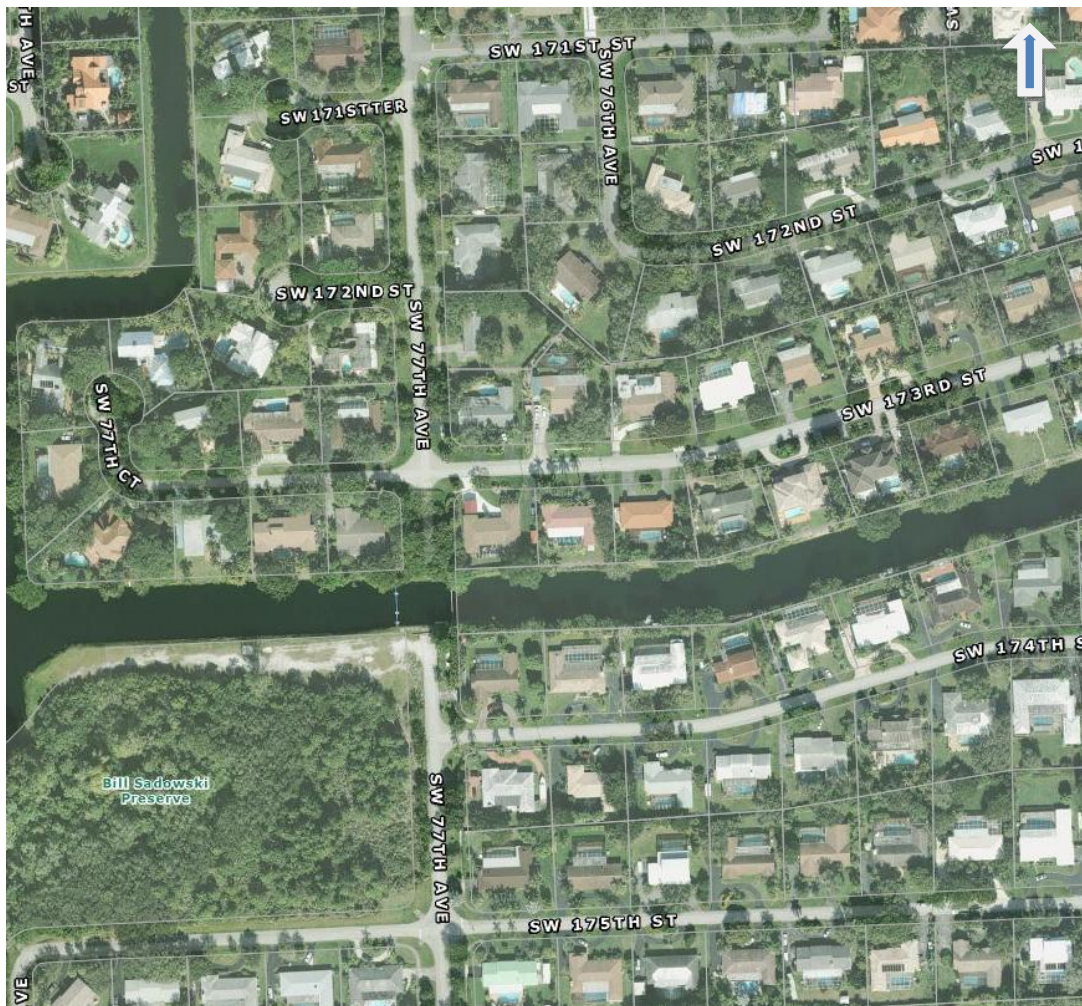


Source: Miami-Dade Property Appraiser

ARTERIAL GRID ANALYSIS PHASE II

PROJECT 13: MISSING LINKS AT CANALS SW 77 AVENUE BETWEEN SW 173 STREET AND SW 174 STREET

Improvement Concept	Construct a bridge over C-100 Canal and connect SW 77 Avenue between SW 173 Street and SW 174 Street.
ADT (2011)	n/a
LOS	n/a
Laneage	2 lanes - proposed
ROW	n/a
Potential Issues	Located in a residential area Requires environmental/biological impact assessments
2035 LRTP Status	Not included
Prior Studies	None
Next Steps	Include in the 2040 LRTP Needs Assessment Continue to Coordinate with Miami-Dade County and Palmetto Bay
Location	Palmetto Bay
Jurisdiction	Palmetto Bay, Miami-Dade County



Source: Miami-Dade Property Appraiser

ARTERIAL GRID ANALYSIS PHASE II

PROJECT 14: MISSING LINKS AT CANALS SW 87 AVENUE BETWEEN SW 163 TERRACE AND SW 164 STREET

Improvement Concept	Construct a bridge over C-100 Canal and connect SW 87 Avenue between SW 163 Terrace and SW 164 Street.
ADT (2011)	n/a
LOS	n/a
Laneage	2 lanes - proposed
ROW	n/a
Potential Issues	Located in a residential area Requires environmental/biological impact assessments
2035 LRTP Status	Not included
Prior Studies	None
Next Steps	Include in the 2040 LRTP Needs Assessment Continue to Coordinate with Miami-Dade County and Palmetto Bay
Location	Palmetto Bay
Jurisdiction	Palmetto Bay, Miami-Dade County

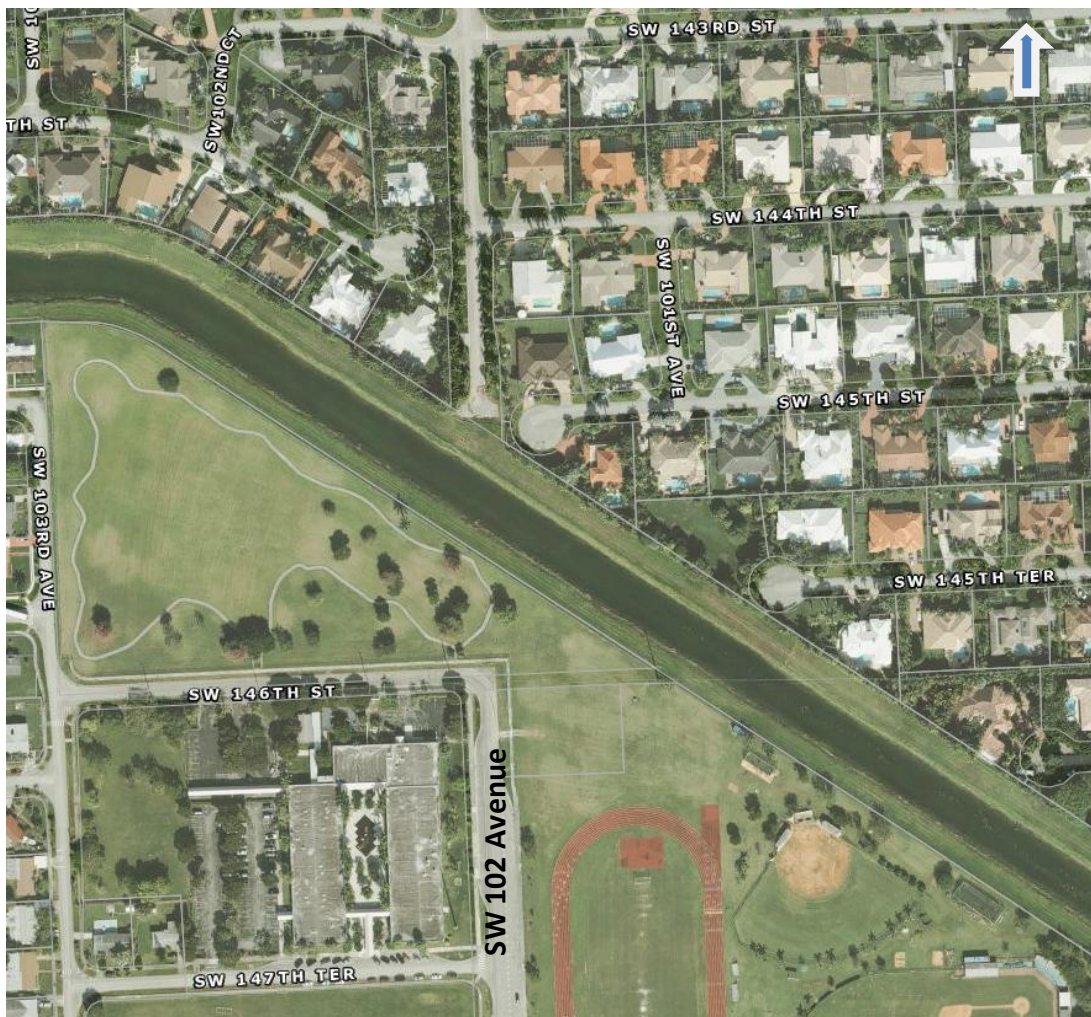


Source: Miami-Dade Property Appraiser

ARTERIAL GRID ANALYSIS PHASE II

PROJECT 15: MISSING LINKS AT CANALS SW 102 AVENUE BETWEEN SW 145 STREET AND SW 146 STREET

Improvement Concept	Construct a bridge over C-100 Canal and connect SW 102 Avenue between SW 145 Street and SW 146 Street.
ADT (2011)	n/a
LOS	n/a
Laneage	2 lanes - proposed
ROW	n/a
Potential Issues	Impacts on Coral Reef Senior HS recreational facilities/park Requires environmental/biological impact assessments
2035 LRTP Status	Not included
Prior Studies	None
Next Steps	Include in the 2040 LRTP Needs Assessment Coordinate with Miami-Dade County
Location	Unincorporated Miami-Dade County
Jurisdiction	Miami-Dade County

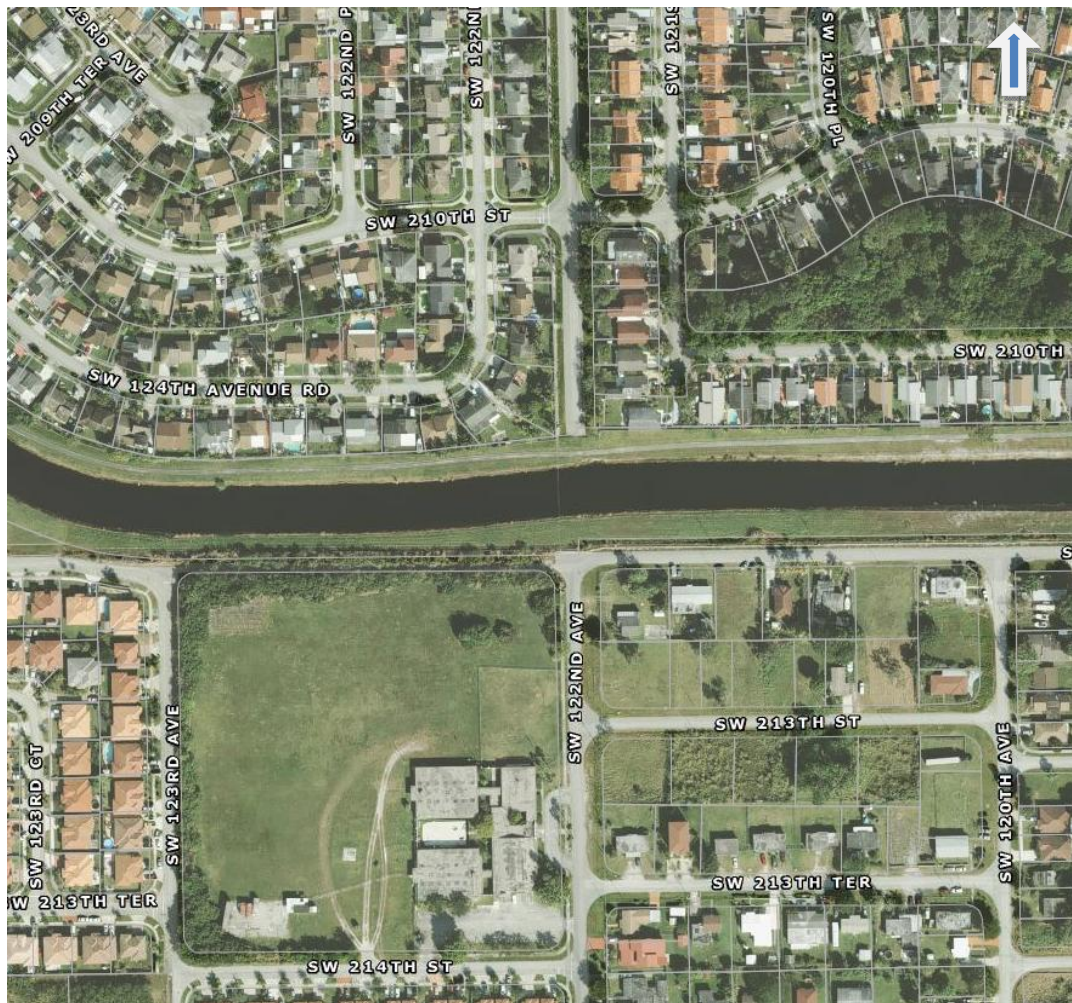


Source: Miami-Dade Property Appraiser

ARTERIAL GRID ANALYSIS PHASE II

PROJECT 16: MISSING LINKS AT CANALS SW 122 AVENUE AT BLACK CREEK CANAL

Improvement Concept	Connect SW 122 Avenue between SW 210 Street and SW 212 Street by constructing a bridge over Black Creek Canal.
ADT (2011)	n/a
LOS	n/a
Laneage	2 lanes - proposed
ROW	n/a
Potential Issues	Crosses Black Creek Multiuse Trail Requires environmental/biological impact assessments
2035 LRTP Status	Not included
Prior Studies	None
Next Steps	Include in the 2040 LRTP Needs Assessment Coordinate with Miami-Dade County
Location	Unincorporated Miami-Dade County
Jurisdiction	Miami-Dade County

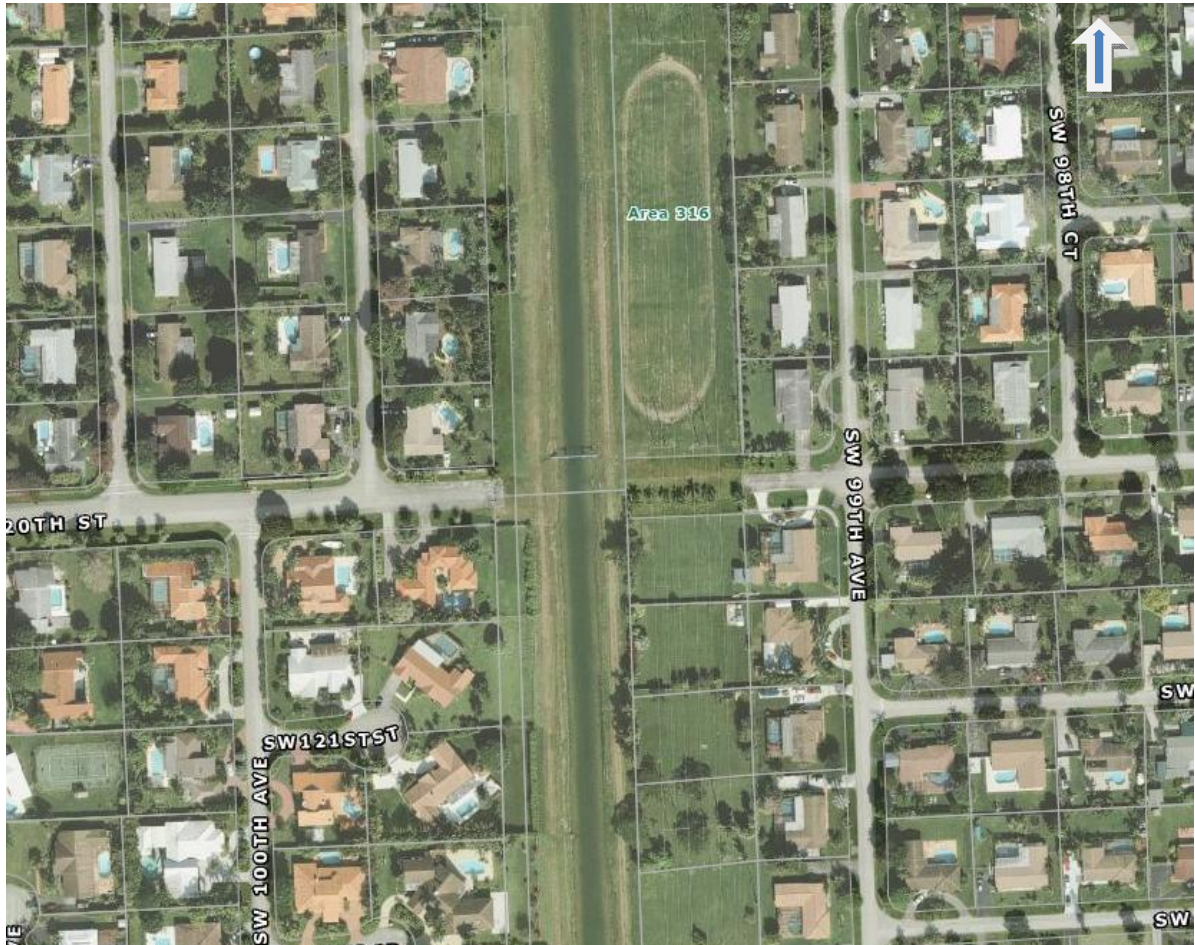


Source: Miami-Dade Property Appraiser

ARTERIAL GRID ANALYSIS PHASE II

PROJECT 17: MISSING LINKS AT CANALS SW 120 STREET BETWEEN SW 99 COURT AND NW 99 AVENUE

Improvement Concept	Construct a bridge over C-100C canal and connect SW 120 Street between SW 99 Court and SW 99 Avenue.
ADT (2011)	n/a
LOS	n/a
Laneage	2 lanes - proposed
ROW	n/a
Potential Issues	Requires environmental/biological impact assessments
2035 LRTP Status	Not included
Prior Studies	None
Next Steps	Include in the 2040 LRTP Needs Assessment Coordinate with Miami-Dade County
Location	Unincorporated Miami-Dade County
Jurisdiction	Miami-Dade County

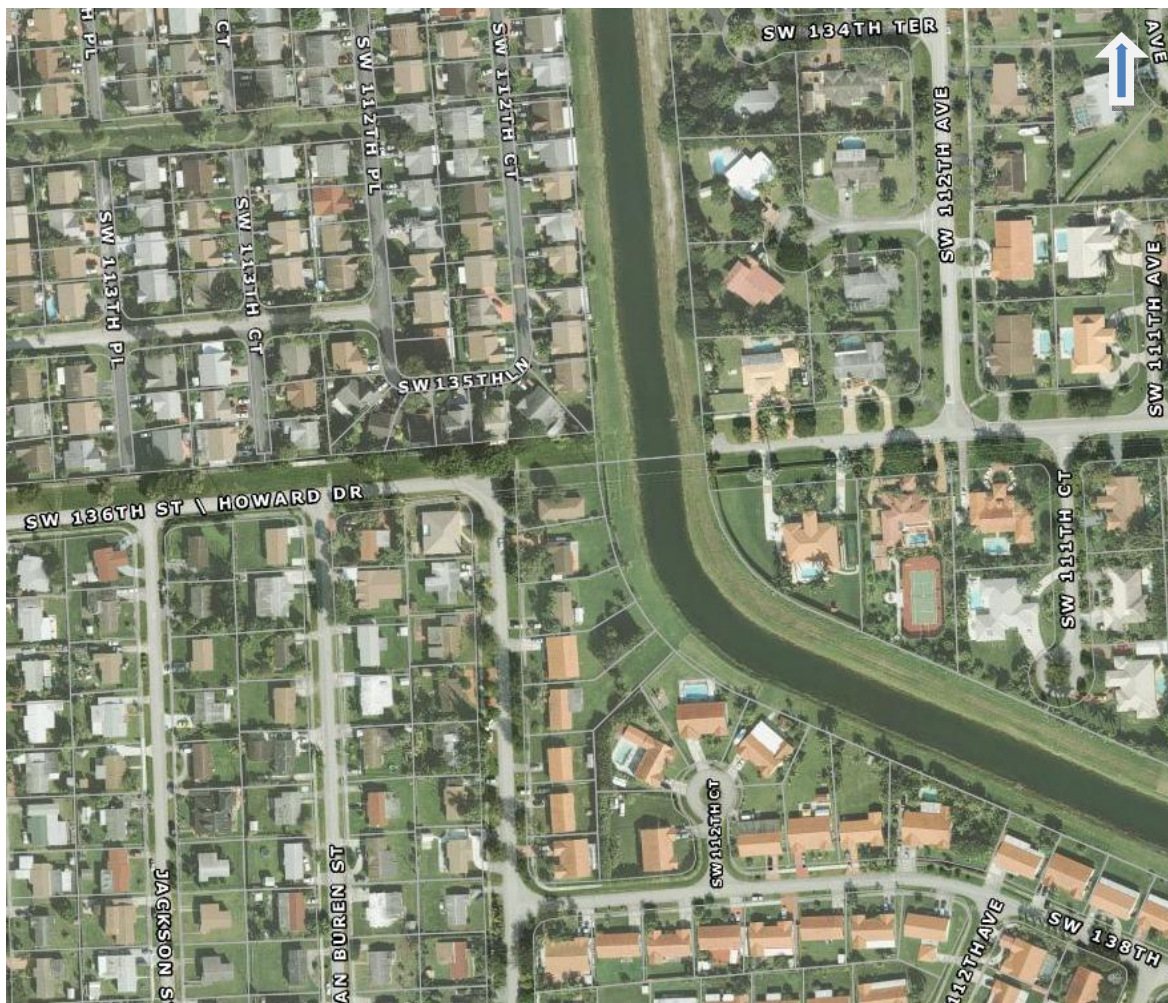


Source: Miami-Dade Property Appraiser

ARTERIAL GRID ANALYSIS PHASE II

PROJECT 18: MISSING LINKS AT CANALS SW 136 STREET BETWEEN HARRISON STREET AND SW 112 AVENUE

Improvement Concept	Construct a bridge over C-100 Canal and connect SW 136 Street between Harrison Street and SW 112 Avenue
ADT (2011)	n/a
LOS	n/a
Laneage	2 lanes - proposed
ROW	n/a
Potential Issues	An existing residential unit may be impacted. Requires environmental/biological impact assessments
2035 LRTP Status	Not included
Prior Studies	None
Next Steps	Include in the 2040 LRTP Needs Assessment Coordinate with Miami-Dade County
Location	Unincorporated Miami-Dade County
Jurisdiction	Miami-Dade County

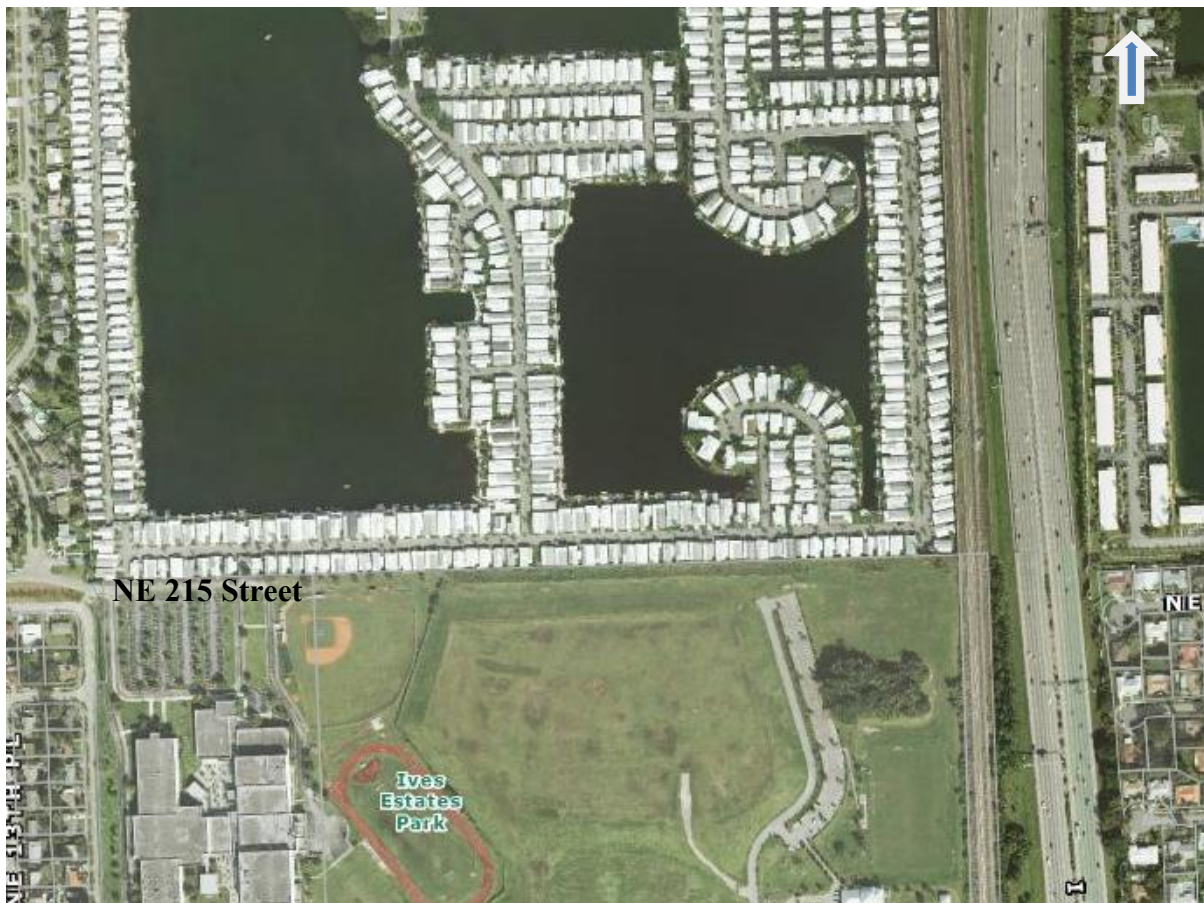


Source: Miami-Dade Property Appraiser

ARTERIAL GRID ANALYSIS PHASE II

PROJECT 19: MISSING LINKS NE 215 STREET BETWEEN NE 14 AVENUE AND I-95

Improvement Concept	Construct the missing segment of NE 215 Street between NE 14 Avenue and east of I-95
ADT (2011)	7,600 (west of NE 10 Avenue)
LOS	C
Laneage	2 lanes
ROW	<60 feet
Potential Issues	Park on the south side (Section 4F of DOT Act of 1966 considerations) Impacts mobile home park Need an underpass across I-95 Railroad crossing
2035 LRTP Status	Not included
Prior Studies	None
Next Steps	Include in the 2040 LRTP Needs Assessment Coordinate with Miami-Dade County
Location	Unincorporated Miami-Dade County
Jurisdiction	Miami-Dade County



Source: Miami-Dade Property Appraiser

ARTERIAL GRID ANALYSIS PHASE II

PROJECT 20: MISSING LINKS SW 120 STREET AT US 1

Improvement Concept	Connect SW 120 Street to US 1 from the west by constructing a 2L road between SW 82 Road and US 1.
ADT (2011)	n/a
LOS	n/a
Laneage	2 lanes - proposed
ROW	n/a
Potential Issues	Require signalized intersections at the Busway and US 1
2035 LRTP Status	Not included
Prior Studies	None
Next Steps	Include in the 2040 LRTP Needs Assessment Coordinate with Miami-Dade County
Location	Unincorporated Miami-Dade County
Jurisdiction	Miami-Dade County

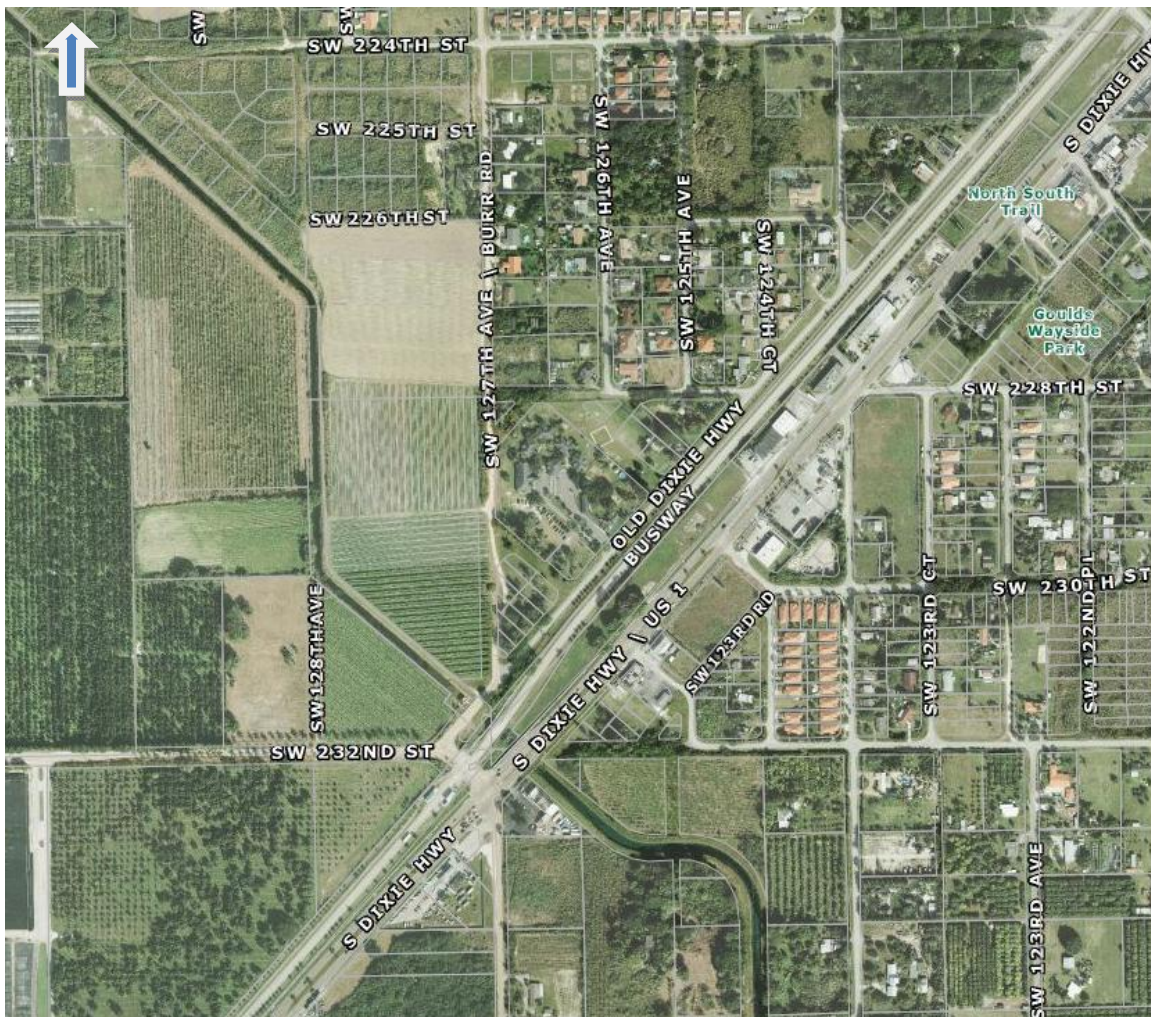


Source: Miami-Dade Property Appraiser

ARTERIAL GRID ANALYSIS PHASE II

PROJECT 21: MISSING LINKS SW 127 AVENUE BETWEEN SOUTH OF SW 224 STREET AND W DIXIE HIGHWAY

Improvement Concept	Construct SW 127 Avenue between SW 224 Street and W Dixie Highway.
ADT (2011)	n/a
LOS	n/a
Laneage	2 lanes - proposed
ROW	n/a
Potential Issues	n/a
2035 LRTP Status	Not included
Prior Studies	None
Next Steps	Include in the 2040 LRTP Needs Assessment Coordinate with Miami-Dade County
Location	Unincorporated Miami-Dade County
Jurisdiction	Miami-Dade County



Source: Miami-Dade Property Appraiser

ARTERIAL GRID ANALYSIS PHASE II

Discarded Projects

A total of nine out of the preliminary concepts were discarded after further screening and stakeholder input. Land use compatibility, right-of-way and cost feasibility, community impacts, environmental concerns, and alternative plans were among the reasons for discarding these nine projects. The planning agencies should consider other improvement strategies such as congestion management measures and multimodal improvements on these corridors.

A breakdown of discarded projects is provided below.

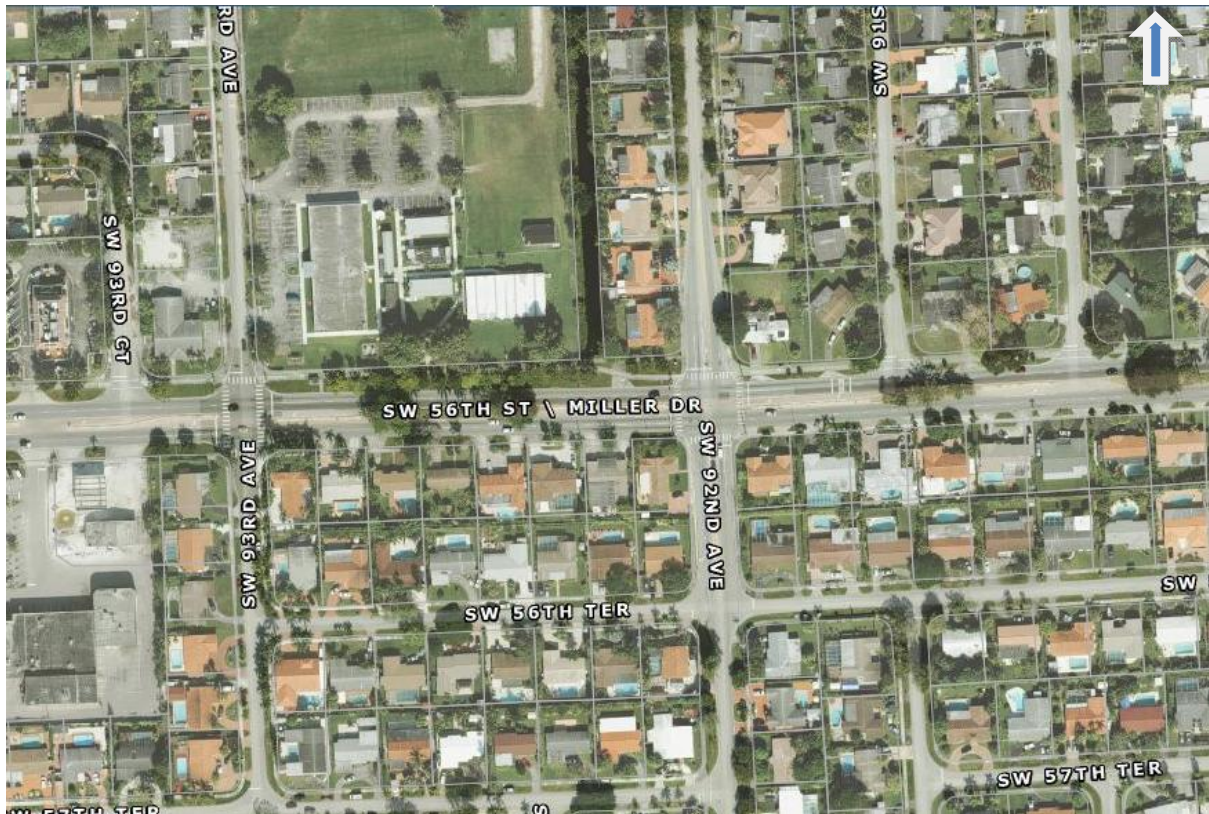
- Arterial roadway widening – two projects.
- Arterial grade separation – four projects.
- Network connectivity improvements (missing links) – three projects.

Additional information on the discarded projects is provided in the project summary sheets.

ARTERIAL GRID ANALYSIS PHASE II

PROJECT 1X: PRIORITY CORRIDORS - ARTERIAL ROADWAY WIDENING SW 56 STREET/MILLER DRIVE FROM SW 87 AVENUE TO SW 107 AVENUE

Improvement Concept	Widen SW 56 Street from 4L to 6L between SW 87 Avenue and SW 107 Avenue.
ADT (2011)	35,400 – 36,300
LOS	LOS F
Laneage	4 lanes
ROW	100-120 feet
2035 LRTP Status	2035 LRTP includes congestion management improvements
Prior Studies	None
Location	Unincorporated Miami-Dade County
Jurisdiction	Miami-Dade County
Reasons for Discarding	Roadway segments to the east and west of the study segment are four lanes Impacts on multiuse path on the north side
Alternatives	Congestion management measures



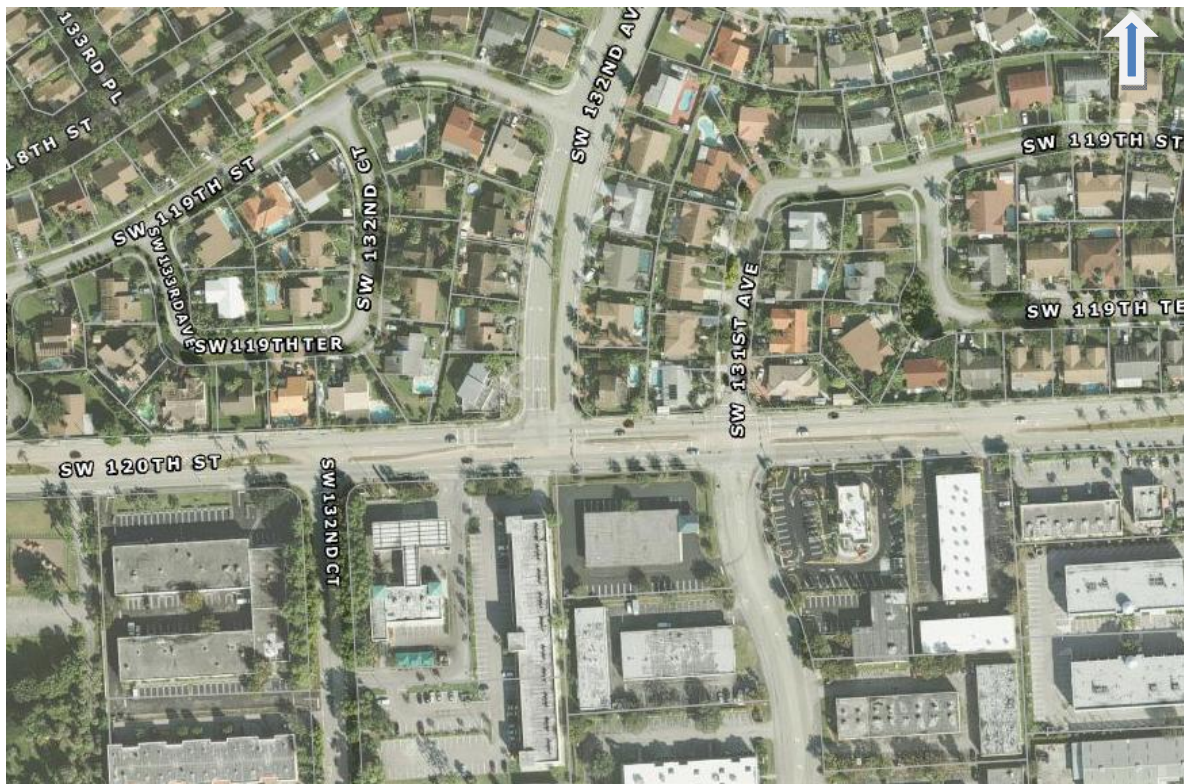
SW 56 Street near SW 92 Avenue

Source: Miami-Dade Property Appraiser

ARTERIAL GRID ANALYSIS PHASE II

PROJECT 2X: PRIORITY CORRIDORS - ARTERIAL ROADWAY WIDENING SW 120 STREET FROM SW 117 AVENUE TO SW 137 AVENUE

Improvement Concept	Widen SW 120 Street from 4L to 6L between SW 117 Avenue and SW 137 Avenue.
ADT (2011)	36,800
LOS	LOS F
Laneage	4 lanes
ROW	60-80 feet
Potential Issues	Impacts on adjacent developments ROW acquisition may be needed
2035 LRTP Status	Included in the 2030 LRTP but not in the 2035 LRTP
Prior Studies	None
Location	Unincorporated Miami-Dade County
Jurisdiction	Miami-Dade County
Reasons for Discarding	Areas surrounding the roadway segment are built out - will require ROW acquisition Potential fiscal and social costs to acquire the additional ROW appear to be excessive
Alternatives	Congestion management measures



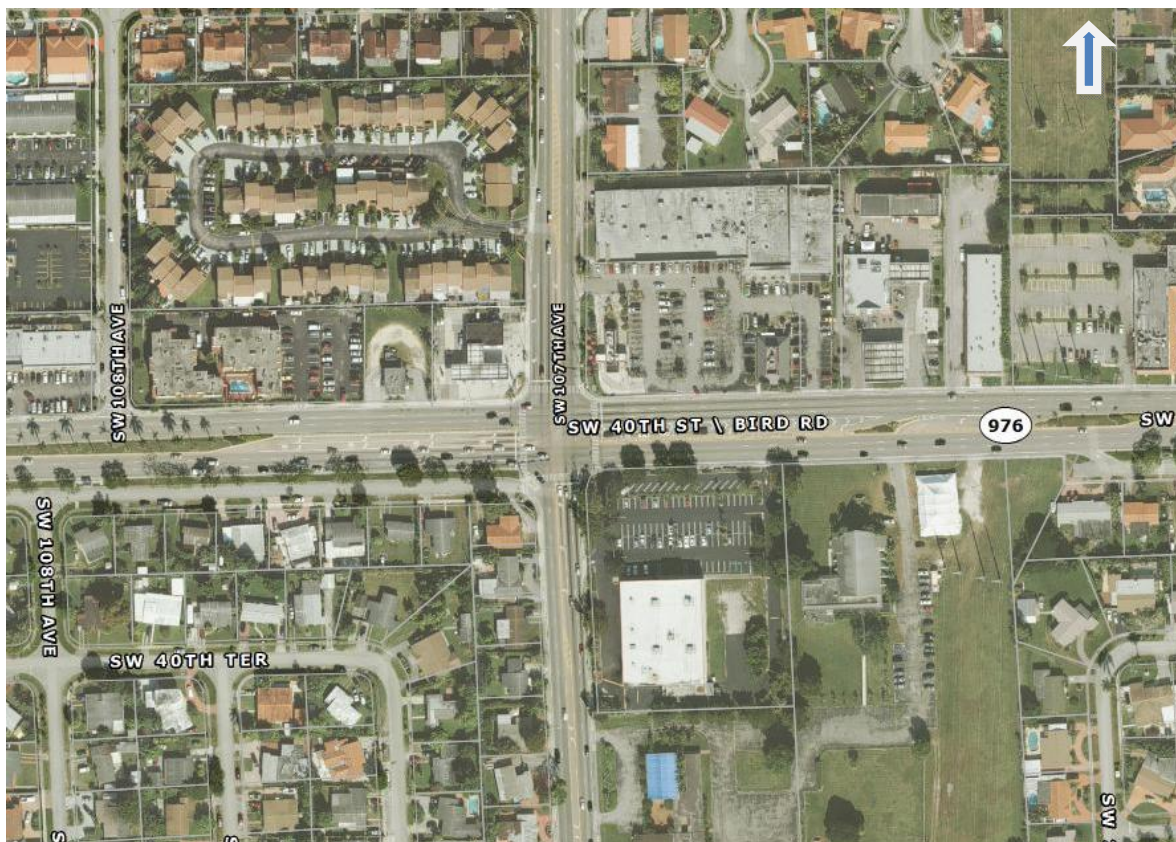
SW 120 Street near SW 132 Avenue

Source: Miami-Dade Property Appraiser

ARTERIAL GRID ANALYSIS PHASE II

PROJECT 3X: PRIORITY CORRIDORS - ARTERIAL GRADE SEPARATION SW 40 STREET/BIRD ROAD AT SW 107 AVENUE

Improvement Concept	Partial grade separation of SW 40 Street/Bird Road and SW 107 Avenue. Grade separate E-W through lanes while maintaining other movements at grade.
ADT (2011)	SW 40 Street (57,000); SW 107 Avenue (33,000)
LOS	SW 40 Street (LOS F); SW 107 Avenue (LOS D)
Laneage	SW 40 Street - 6 lanes SW 107 Avenue - 4 lanes
ROW	SW 40 Street (86 feet); SW 107 Avenue (58 feet)
2035 LRTP Status	Not included
Prior Studies	Recommended in the MPO's Superarterial Network Study (1998) Bird Road Corridor Charrette Study (2010) - recommended more intense, pedestrian-friendly urban redevelopment.
Location	Unincorporated Miami-Dade County
Jurisdiction	FDOT
Reasons for Discarding	Potential adverse impacts on the redevelopment envisioned in the Bird Road Corridor Charrette Study.
Alternatives	Congestion management measures

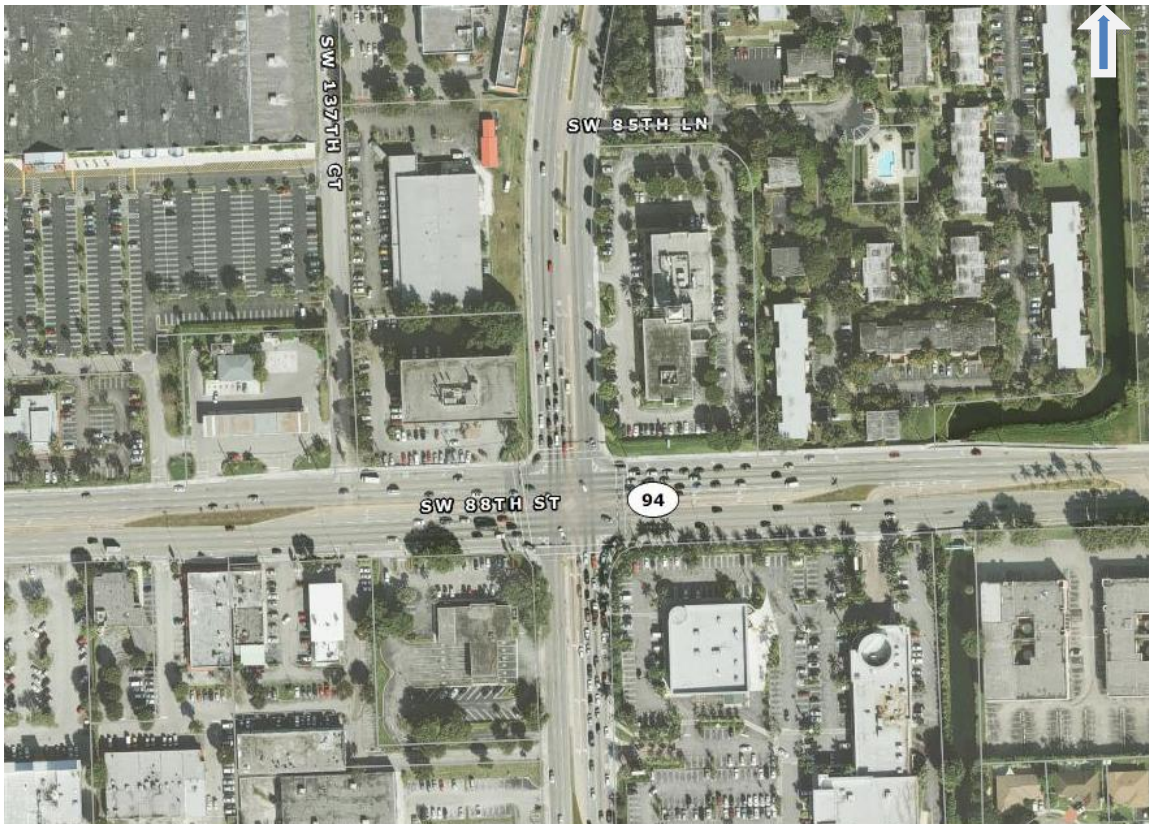


Source: Miami-Dade Property Appraiser

ARTERIAL GRID ANALYSIS PHASE II

PROJECT 4X: PRIORITY CORRIDORS - ARTERIAL GRADE SEPARATION SW 88 STREET/KENDALL DRIVE AT SW 137 AVENUE

Improvement Concept	Partial grade separation of SW 88 Street/Kendall Drive at SW 137 Avenue. Grade separate E-W through lanes while maintaining other movements at grade.
ADT (2011)	SW 88 Street (74,000); SW 137 Avenue (40,000)
LOS	SW 88 Street (LOS F); SW 137 Avenue (LOS D)
Laneage	SW 88 Street - 6 lanes SW 137 Avenue - 6 lanes
ROW	SW 88 Street (98 feet); SW 137 Avenue (97 feet)
2035 LRTP Status	Premium transit
Prior Studies	Recommended in the MPO's Superarterial Network Study (1998) A 'Community Urban Center' is proposed at the intersection in the County's 2020 and 2030 Land Use Plan Miami-Dade County is preparing the West Kendall Corridor Charrette Study (completion in 2014).
Location	Unincorporated Miami-Dade County
Jurisdiction	FDOT, except SW 137 Avenue north of SW 88 Street is a county road
Reasons for Discarding	Potential adverse impacts to the proposed Community Urban Center which envisions physical cohesiveness, direct access to mass transit, and pedestrian friendly environment.
Alternatives	Congestion management measures; premium transit

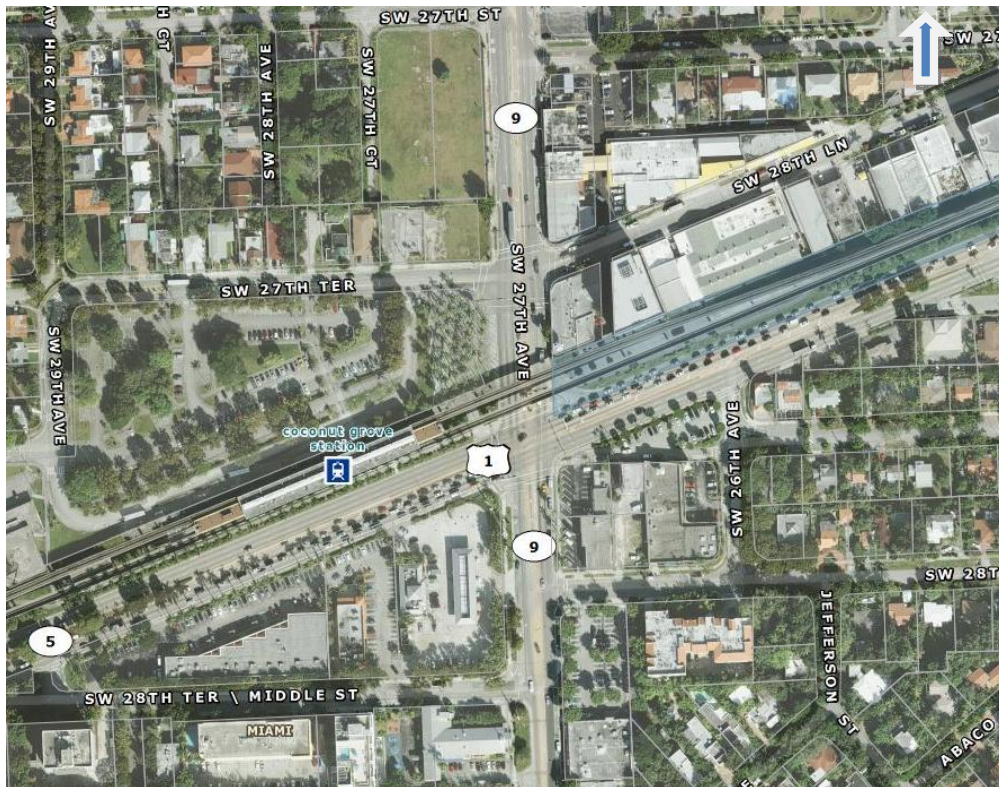


Source: Miami-Dade Property Appraiser

ARTERIAL GRID ANALYSIS PHASE II

PROJECT 5X: PRIORITY CORRIDORS - ARTERIAL GRADE SEPARATION US 1/SOUTH DIXIE HIGHWAY AT SW 27 AVENUE

Improvement Concept	Grade separate US 1 through lanes while maintaining other movements at grade.
ADT (2011)	US 1 (89,500); SW 27 Avenue (27,000 north/15,500 south)
LOS	US 1 (LOS F); SW 27 Avenue (LOS D/F)
Laneage	US 1 - 6 lanes SW 27 Avenue - 4 lanes (2 lanes south of US 1)
ROW	US 1 (84 feet); SW 27 Avenue (84 feet)
2035 LRTP Status	Widen SW 27 Avenue to 3 lanes south of US 1 (construction 2010-2014) Park and ride lot (construction 2010-2014) US 1 corridor improvements and managed lanes (planning 2026-2035)
Prior Studies	Recommended in the MPO's Grade Separation Study (2005) A 'Community Urban Center' is proposed at the intersection in the County's 2020 and 2030 Land Use Plan
Location	Miami
Jurisdiction	FDOT, except SW 27 Avenue south of US 1 is a local road
Reasons for Discarding	Access issues to Metrorail on the north side of US 1 Potential adverse impacts to the proposed Community Urban Center which envisions physical cohesiveness, direct access to mass transit, and pedestrian friendly environment.
Alternatives	Congestion management measures; multimodal

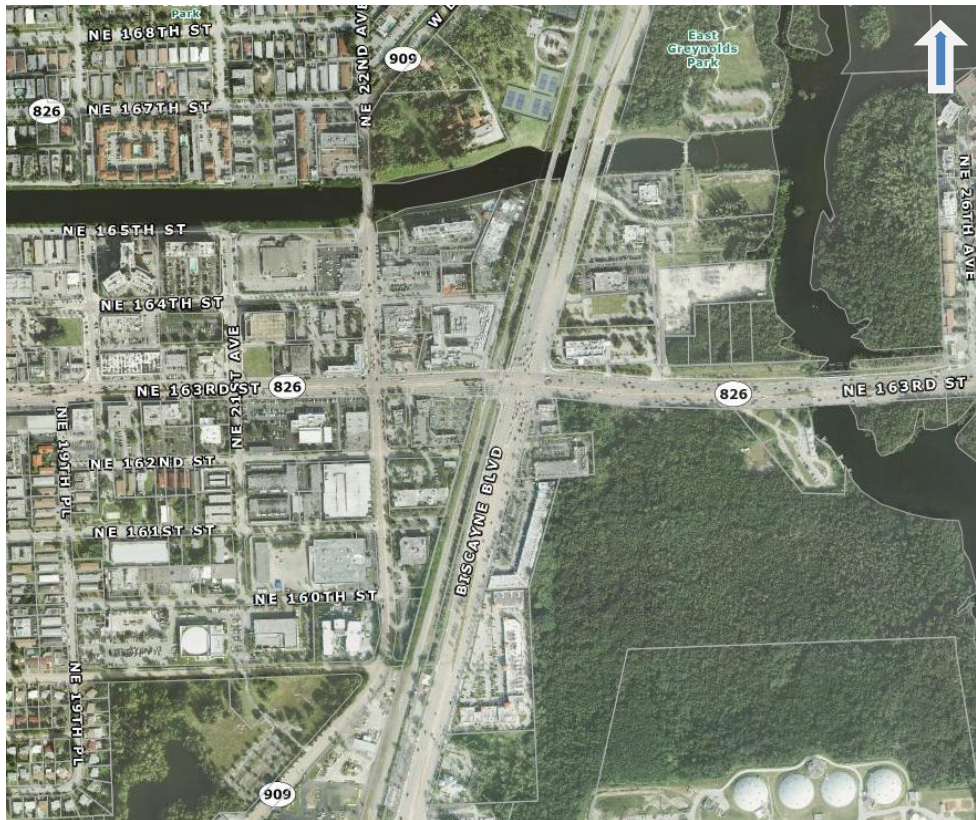


Source: Miami-Dade Property Appraiser

ARTERIAL GRID ANALYSIS PHASE II

PROJECT 6X: PRIORITY CORRIDORS - ARTERIAL GRADE SEPARATION US 1/BISCAYNE BOULEVARD AT NE 163 STREET

Improvement Concept	Partial grade separation of US 1 at NE 163 Street. Grade separate US 1 through lanes while maintaining other movements at grade.
ADT (2011)	US 1 (61,500); NE 163 Street (55,000/63,500)
LOS	US 1 (LOS D); NE 163 Street (LOS D/F)
Laneage	US 1 - 8 lanes NE 163 Street – 6/8 lanes
ROW	US 1 (117-130 feet); NE 163 Street (116 feet)
2035 LRTP Status	Premium transit
Prior Studies	Recommended in the MPO's Implementation Plan for Northeast Corridor Traffic Study (2010) A 'Community Urban Center' is proposed at the intersection in the County's 2020 and 2030 Land Use Plan
Location	North Miami Beach
Jurisdiction	FDOT
Reasons for Discarding	Potential adverse impacts to the proposed Community Urban Center which envisions physical cohesiveness, direct access to mass transit, and pedestrian friendly environment. FEC Railroad on the west side of US 1
Alternatives	Congestion management measures; premium transit

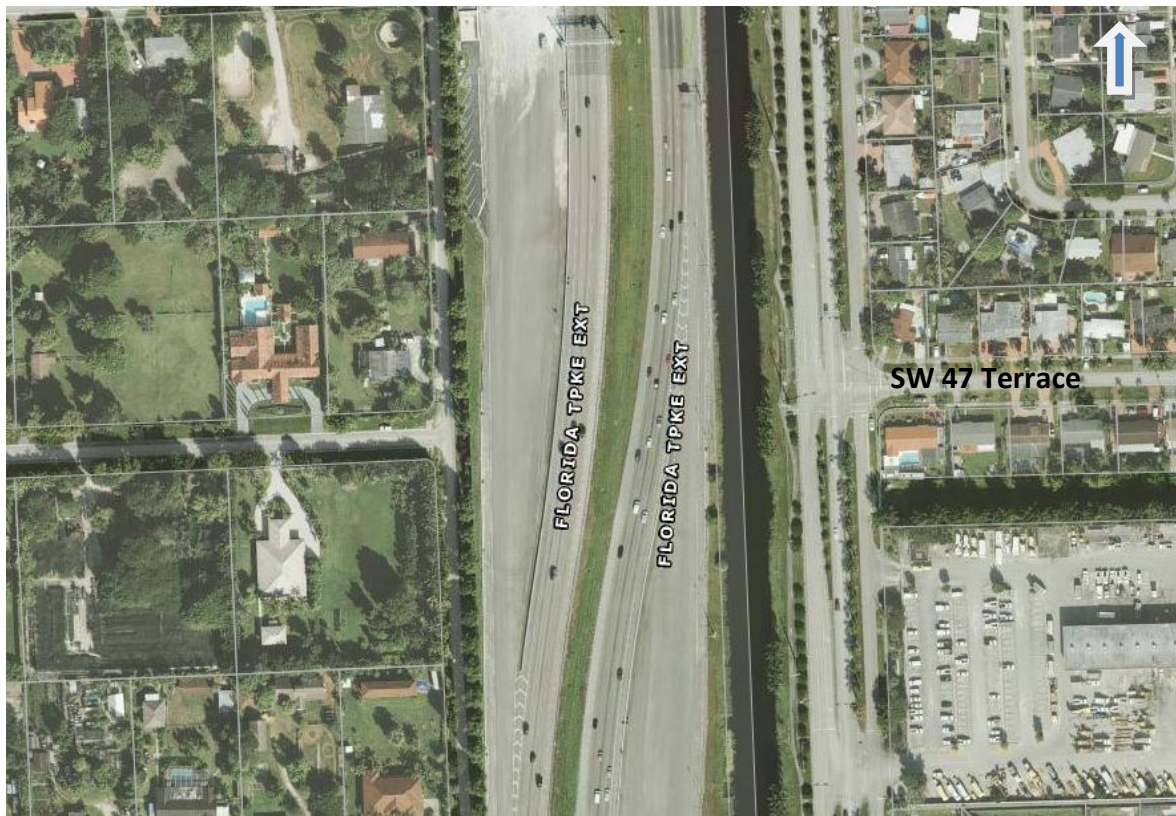


Source: Miami-Dade Property Appraiser

ARTERIAL GRID ANALYSIS PHASE II

PROJECT 7X: MISSING LINKS AT EXPRESSWAYS SW 47 TERRACE AT HOMESTEAD EXTENSION OF FLORIDA'S TURNPIKE

Improvement Concept	Connect SW 47 Terrace across HEFT to relieve parallel corridors (e.g., SW 40 Street).
ADT (2011)	7,300 (west of SW 82 Avenue)
LOS	n/a
Laneage	2 lanes - proposed
ROW	n/a
2035 LRTP Status	Not included
Prior Studies	None
Location	Unincorporated Miami-Dade County
Jurisdiction	Miami-Dade County
Reasons for Discarding	Lack of direct continuity of the street alignment Located in an area designated for agriculture on the Adopted 2020 and 2030 Land Use Plan. Cost – may need to elevate HEFT
Alternatives	None



Source: Miami-Dade Property Appraiser

Improvement Concept	Construct NW 90 Street between NW 87 Avenue and NW 97 Avenue.
ADT (2011)	n/a
LOS	n/a
Laneage	2 lanes - proposed
ROW	n/a
2035 LRTP Status	Construction of NW 90 Street between NW 97 Avenue and NW 107 Avenue is included as a private sector project
Prior Studies	None
Next Steps	Include in the 2040 LRTP Needs Assessment Coordinate with Miami-Dade County
Location	Medley
Jurisdiction	Miami-Dade County
Reasons for Discarding	Miami-Dade County wishes the subject project to be implemented by private developers as the area undergoes development.
Alternatives	None

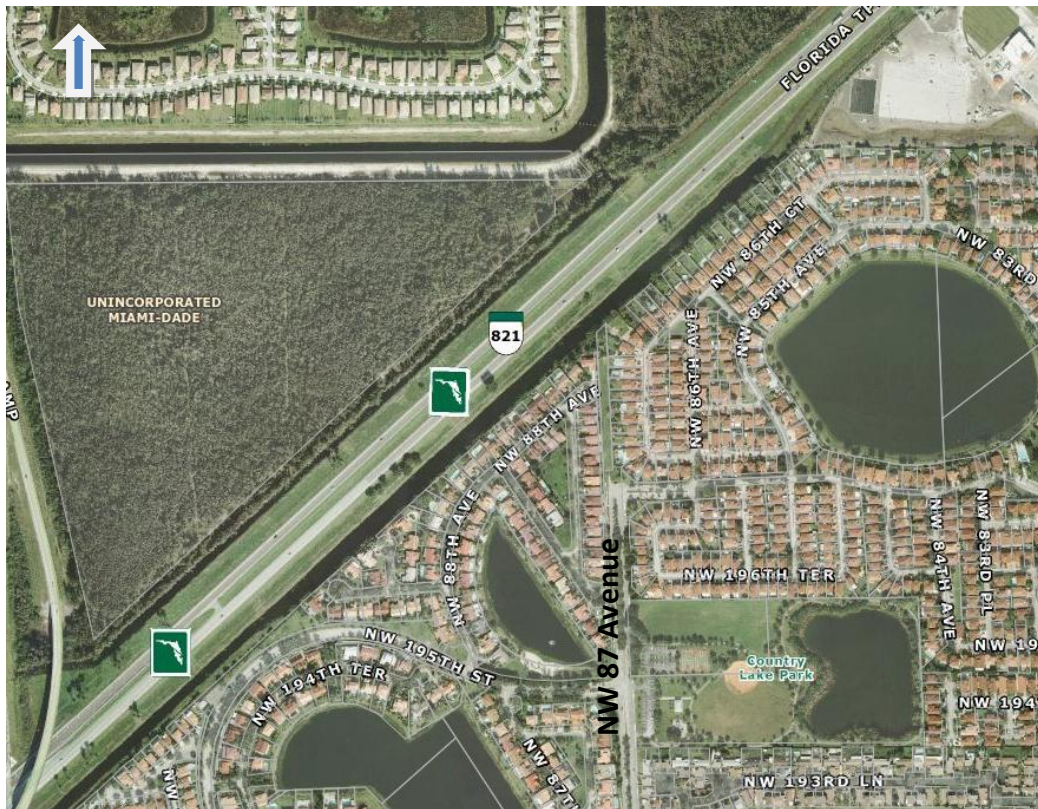


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PROJECT 9X: MISSING LINKS AT BROWARD COUNTY LINE NW 87 AVENUE BETWEEN NW 197 TERRACE AND SW 148 AVENUE

Improvement Concept	Construct NW 87 Avenue between NW 197 Terrace (in Miami-Dade County) and SW 148 Avenue (in Broward County)
ADT (2011)	n/a
LOS	n/a
Laneage	2 lanes - proposed
ROW	n/a
Potential Issues	Houses encroach into NW 87 Avenue right-of-way Requires connection across HEFT and canals SW 148 Avenue in Broward County terminates within a residential neighborhood
2035 LRTP Status	Not included
Prior Studies	None
Location	Unincorporated Miami-Dade County
Jurisdiction	Miami-Dade County
Reasons for Discarding	NW 87 Avenue dead ends at NW 197 Terrace; the ROW of theoretical NW 87 Avenue north of NW 197 Avenue to the canal south of the HEFT has been closed, and vacated by the Board of County Commissioners via Resolution R-8-99 passed and adopted on January 1, 1999, and the ROW was reversed to the abutting property owners.
Alternatives	None



Source: Miami-Dade Property Appraiser

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Policy Recommendations

As part of the *Phase I* study, the need for policy changes for maintaining and improving the grid roadway network was identified to meet the long term demand. These policy recommendations were reviewed and slight modifications were made as necessary during the *Phase II* study. Policy recommendations were developed in light of the following issues that negatively impact the ability to implement effective roadway improvements:

- The available right-of-way on many roadways is to be insufficient for future improvements.
- Developments have encroached the right-of-way of section line and half-section line roadways.
- Expressways have resulted in discontinuities in the section line and half-section line roadways.

The following policy recommendations are made:

- Maintain both section line and half-section line right-of-way along existing roadways and theoretical roadways. Public right-of-way along section line and half-section line roadways should not be vacated unless the landowner is required to construct a roadway to serve as a continuous section line or half-section line roadway.
- Miami-Dade County should consider adopting the following minimum right-of-way standards to provide 4- or 6-lane roadway capacity while allowing adequate space for other transportation mobility features such as bike lanes, sidewalks, and bus stops.
 - Maintain at least 130 feet of ROW along section lines in rural and suburban areas. This ROW is based upon the FDOT typical section for a 6-lane divided arterial with bike lanes and a design speed of 45 mph or less.
 - Maintain at least 86 feet of ROW along section lines in urban centers where the roadway is not planned to have more than four through lanes. This ROW is based upon Miami-Dade County Standard Road Detail R.4.5 for 4-lane divided arterials.
 - Maintain at least 80 feet of ROW along half-section lines. This ROW is based upon Miami-Dade County Standard Road Detail R.4.4 for 4-lane divided arterials and collectors.

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- Right-of-way standards identified above should be applied both within and outside of the existing urban development boundary (UDB).
- Recommend the evaluation of reestablishing section line and half-section line connectivity as part of future expressway reconstruction projects.
- Improve connectivity and capacity of collector roadways to relieve failing parallel arterials.
- Encourage mixed-use nodes supported by a grid roadway system to relieve arterials from their commercial accessibility function. Mixed-use nodes should be encouraged for new development and for urban infill re-development.

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8.0 Summary and Conclusions

The *Arterial Grid Analysis – Phase II* study was performed to update the analysis and recommendations developed as part of the *Phase I* study in 2006. The *Phase II* study evaluated existing arterial grid operations in Miami-Dade County to identify deficiencies and ways to increase the efficiency and capacity of the grid system, principally along section line and half-section line roadways. The primary focus of the study was to identify improvements to relieve congestion in the long-term, rather than short-term stop-gap improvements. As part of the existing conditions assessment, maps were created to illustrate roadway system characteristics such as LOS, laneage, posted speed limit, functional classification, and traffic data trends between the *Phase I* and *Phase II* study base years (2004/05 vs. 2011/12).

The main findings of the study include:

- A general reduction in roadway segments that operate at LOS F (compared to the *Phase I* statistics).
- The proportion of congested arterial roadways is greater than collector roadways.
- More congested road segments are located south of Flagler Street where the development densities are lower than the urban core.
- Roadway improvements identified within the CFP of 2035 LRTP Update are insufficient to fully address current congestion on the arterial grid roadway system.

The roadway segments that currently operate at LOS E or F with no programmed capacity improvements in the 2035 LRTP Update were given the highest priority when evaluating potential improvement strategies. Among the strategies considered for improving capacity within priority corridors include roadway widening, arterial grade separation, improved access to expressways, and intersection improvements. A total of nine capacity improvement projects were identified. The majority of the recommended capacity improvements are located in the southern part of Miami-Dade County where the roadway deficiencies are pronounced. The second approach for improving the roadway system was to identify opportunities for enhancing the connectivity of grid roadways. A connected grid roadway system can be an effective approach to address congestion and increase capacity by providing alternative travel routes. Typical sources of roadway discontinuities include canals, expressways, airports, parks, and residential

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developments. A total of 12 roadway connectivity improvement projects were identified. Three connectivity improvement projects are located within the SW 120 Street corridor -- the implementation of proposed improvements would establish SW 120 Street as a continuous section line road. Input provided by the SAC member agencies were taken into consideration when refining the study recommendations. Some preliminary project concepts were eliminated based on the stakeholder input.

In addition to the capacity and connectivity improvements, policy recommendations were developed to support the efforts to increase the efficiency of the arterial grid system. These policy recommendations include maintaining at least 80 feet of right-of-way along half-section line roads and 130 feet along section line roads; improving capacity and connectivity of collector roads; and encouraging mixed-use development around nodes supported by a connected grid roadway system to relieve arterials from their commercial accessibility function.