

**RESOLUTION No. 24-254**

**A RESOLUTION OF THE MAYOR AND THE CITY COUNCIL OF THE CITY OF DORAL, FLORIDA, ADOPTING THE 2024 CITY OF DORAL TRANSPORTATION MASTER PLAN; AND PROVIDING FOR AN EFFECTIVE DATE**

**WHEREAS**, approximately every five (5) years the Public Works Department (PWD) updates the City of Doral's Transportation Master Plan (TMP) to serve as the transportation blueprint for implementing the goals, objectives, and policies of the Comprehensive Plan to create a safe, convenient, and sustainable transportation network that meets the needs of the community while ensuring that the transportation network evolves in a coordinated and efficient matter; and

**WHEREAS**, the Transportation Master Plan includes strategies for reducing environmental impact, such as promoting public transit, encouraging walking and cycling; and

**WHEREAS**, the Transportation Master Plan takes into considerations the City's Bicycle Master Plan, the Transit Mobility Plan, the Doral Boulevard Master Plan, and the Doral Transit System; and

**WHEREAS**, the goal of the Transportation Master Plan is to in a holistic manner provide a long-term vision and framework for developing transportation infrastructure; and

**WHEREAS**, the City of Doral completed the 2024 Transportation Master Plan dated September 2024; and

**WHEREAS**, a copy of the Doral's 2024 Transportation Master Plan is attached as Exhibit "A"; and

**WHEREAS**, the PWD is requesting that the Mayor and Councilmembers adopt the 2024 Transportation Master Plan in order for the City to begin to prioritize and include projects in the City's Capital Improvement Plan (CIP) for implementation.

**NOW, THEREFORE, BE IT RESOLVED BY THE MAYOR AND THE CITY COUNCIL OF THE CITY OF DORAL AS FOLLOWS:**

**Section 1. Recitals.** The above recitals are true and correct and incorporated herein.

**Section 2. Approval.** The City Council hereby approves the adoption of the 2024 Transportation Master Plan dated September 2024.

**Section 3. Authorization.** The City Manager is authorized to adopt the findings and recommendations as outlined in the 2024 Transportation Master Plan.

**Section 4. Implementation.** The City Manager and the City Attorney are hereby authorized to take such further action as may be necessary to implement the purpose and the provisions of this Resolution.

**Section 5. Effective Date.** This Resolution shall take effect immediately upon adoption.

The foregoing Resolution was offered by Vice Mayor Puig-Corve who moved its adoption. The motion was seconded by Councilmember Pineyro and upon being put to a vote, the vote was as follows:

Mayor Christi Fraga	Yes
Vice Mayor Oscar Puig-Corve	Yes
Councilwoman Digna Cabral	Yes
Councilman Rafael Pineyro	Yes
Councilwoman Maureen Porras	Yes

PASSED AND ADOPTED this 23 day of October, 2024.



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CHRISTI FRAGA, MAYOR


ATTEST:



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CONNIE DIAZ, MMC  
CITY CLERK

APPROVED AS TO FORM AND LEGAL SUFFICIENCY  
FOR THE USE AND RELIANCE OF THE CITY OF DORAL ONLY:



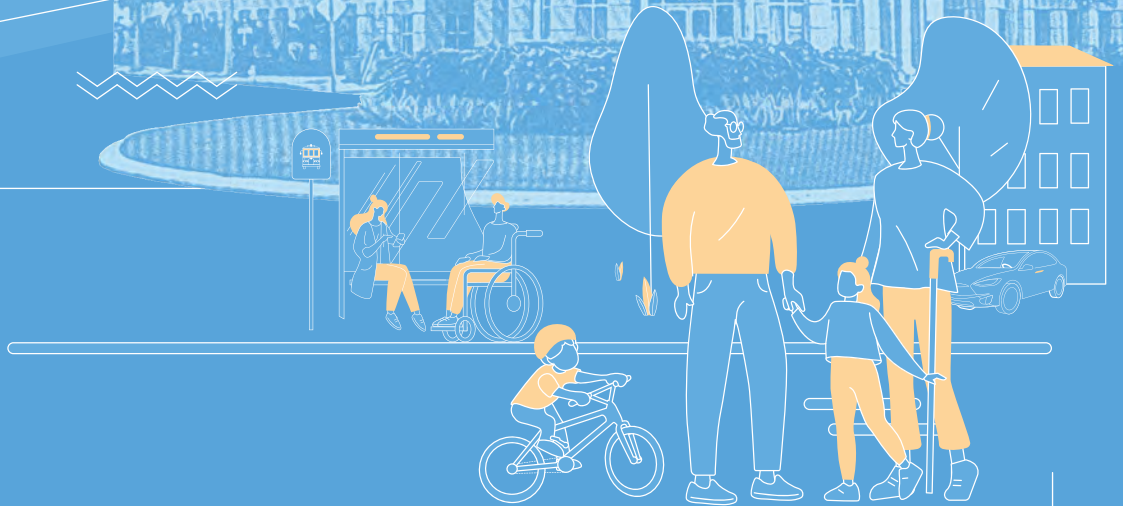
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LORENZO COBIELLA  
GASTESI, LOPEZ & MESTRE, PLLC  
CITY ATTORNEY

# EXHIBIT “A”



2024



# TRANSPORTATION MASTER PLAN



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# 01



## INTRODUCTION

- 1.1 **PLAN PURPOSE**
- 1.2 **PLAN OBJECTIVES**
- 1.3 **PLAN STRUCTURE**

The City of Doral is quickly cementing its reputation as a “live, work, play” destination in Miami-Dade County. Infused with a vibrant Latin American culture, the city is home to a growing downtown, thriving residential communities, modern and attractive public parks, one of the most important warehousing districts in South Florida, large entertainment and shopping complexes, and world-class golf courses. To maintain this rich and diverse urban fabric, and grow sustainably, the need for an efficient multi-modal transportation system becomes more evident. Doral’s residential and working/visiting population keep rising while the personal automobile continues to be the top choice for trips in, out, and within the city, with nearly 90% mode share. Although providing more capacity in an already limited roadway network should remain a priority, the ways in which such capacity is achieved is what can perhaps be reconsidered. Physical road space is constrained by available public right-of-way, and thus alternate solutions that enhance modes such as transit can be options to move people more effectively through the same street system. The same can be done with a more interconnected network of bicycle facilities which could be used to replace short automobile trips within the city, if safely integrated within the context of the origins and destinations it serves.

Understanding its rapid growth and the role that mobility options play into the evolution and success of a city financially, socially, and environmentally. The City of Doral intends this Transportation Master Plan to be a blueprint for a safe, sustainable, efficient, and accessible transportation network.

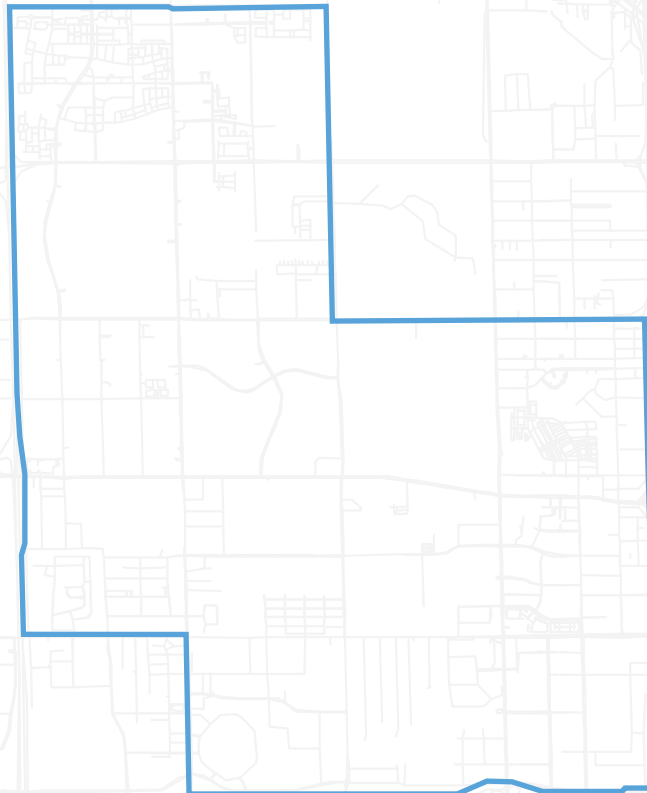
## 1.1 PLAN PURPOSE

Comprehensive planning can yield functional transportation infrastructure that is responsive to its context. By combining the eclectic insights of professionals, residents, and interest groups, transportation planning can result in public facilities and programs that support community goals, provide safe and efficient movement of people and goods, enhance the economy, and protect the natural environment.

The purpose of this Doral Transportation Master Plan is to build upon previous citywide efforts and:

Provide decision-makers and designers with a framework for incorporating multi-modal elements and context sensitive solutions into future improvements for the City's roadway network. Emphasizing that investments in transportation infrastructure should return projects that consider the local context while meeting the needs of the city and the people they serve.

By identifying specific intersections, corridors, and actions within the city needing enhancements, this Plan supplies a bank of recommendations that would benefit the roadway system throughout the city and beyond.



## 1.2 PLAN OBJECTIVES

The overall goal of this Plan is that future projects within the city, whether carried out by Doral or partner agencies, are multi-modal in nature, provide context sensitivity, and follow a clear development process from when they are conceived to when road users are enjoying their benefits.



### Objective 1

#### Multi-modal Considerations

The recommended improvements from this Plan for the roadway system within the city seek to safely accommodate all users of the public right-of-way including:

- Pedestrians, including people requiring Wmobility aids (canes, service animals, wheelchairs, walkers, and scooters)
- Bicyclists
- Drivers and Passengers
  - Transit vehicles
  - Trucks
  - Automobiles and Motorcycles
- Emergency Services

Transportation plans have traditionally focused on ensuring safe operation of motor vehicles. This Plan still places emphasis on providing a safe environment for automobiles while offering guidance on more balanced roadway designs to serve both non-motorized (i.e., bicycles and pedestrians) and motorized travel. As such, design elements benefiting pedestrians and bicyclists are prioritized equally, and sometimes higher depending on the context, throughout the recommendations of this Plan. Prioritizing these modes should encourage decision-makers and designers to seriously consider non-motorized travel throughout the planning, design, and construction phases of a transportation improvement project. Resulting in a robust, multi-modal transportation system for the city that accommodates all users safely and efficiently with a better-balanced mode share.



### Objective 2

#### Context Sensitive Design of Projects

Roadways should be planned and designed to serve the context they are in. This Plan recommends that improvements to the roadway network of the city are implemented in such a way that the character of project areas, the values of the community, and the needs of all road users are thoroughly considered.

Every roadway project is distinctive in nature. Whether a small safety improvement, or a two-mile arterial reconstruction, there are no universal solutions. Each project requires its intended improvements to be achieved while safely and seamlessly integrating into the surrounding natural and built environment. Context-sensitive project design concepts integrated within the recommendations of this Plan are as follow:

- The project satisfies its purpose and need as accepted by a wide range of constituents.
- The project creates a safe facility for users of all ages and abilities as well as for the surrounding community.
- The project meets minimum design standards for accessibility for people with disabilities.
- The project preserves environmental, scenic, aesthetic, historic, and built and natural resources of the area.
- The project is designed and built with the least possible disruption to the community.
- The project is seen as having added lasting value to the community.

**Objective 3**

**Transparent Project Development Process**

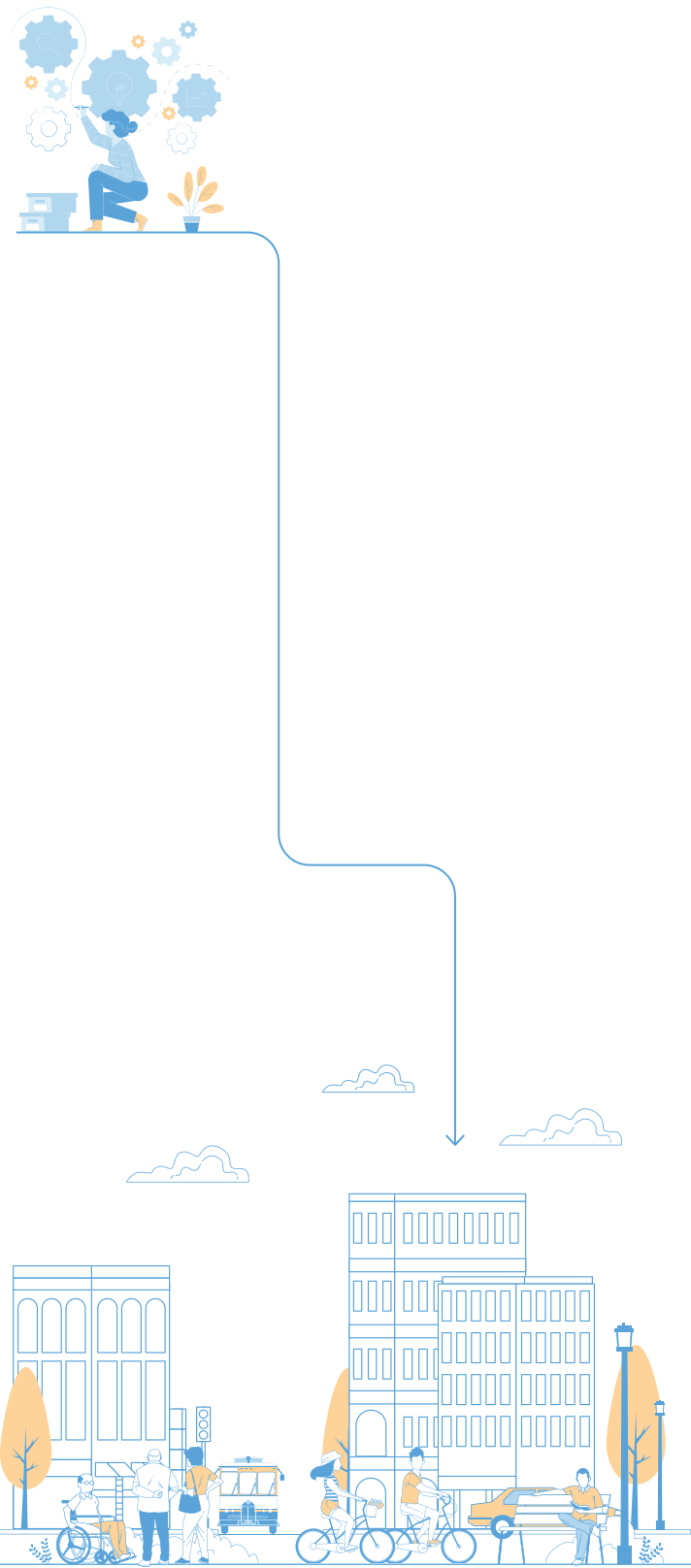
The phases of a project from inception to construction should be easily understood by project proponents and constituents and simply and consistently administered by those agencies overseeing the transportation system.

The process through which a project is developed is as important as the design standards employed. This Plan encourages a project development process that outlines the need for early identification of issues and alternatives, open and continuous involvement with project constituents, and a clear prioritization process. This process should ensure that community values, natural, historic, and cultural resources, and transportation needs are fully considered throughout the planning, design, and construction phases of a project.

A clear and consistent project development process is crucial for:

- Encouraging early planning and evaluation so that project needs, goals and objectives, issues, and impacts can be identified before significant resources are expended.
- Ensuring context sensitivity through open, consensus-building communication with project constituents.
- Achieving consistent expectations and understanding between project proponents and those entities who evaluate and prioritize projects.
- Facilitating efficient allocation of resources based on pre-established project selection criteria and consistency with local, regional, and statewide priorities.

An effective process yields projects that respect the values of the community and the natural and built environment, while meeting transportation needs.



**1.3 PLAN STRUCTURE**

This Plan is envisioned to act as guidance for advancing a set of prioritized improvements. Understanding that numerous roads within the city’s network are not under Doral’s jurisdiction, the intent of the plan is to assist the city in developing more multi-modal future capital improvement plans for those roads they do control, and to facilitate communicating their priorities when other agencies are advancing projects on their roads within the city’s system.

This Transportation Master Plan is structured as such:

**1. Introduction**

Highlights the purpose for the Plans development, its objectives, and the various sections included in it.

**2. Existing Conditions Analysis**

Presents the several data collected for the City’s roadway network and adjacent context and the analysis of such data yielding specific needs, challenges, and opportunities. Places emphasis multi-modal capacity and safety needs.

**3. Multi-Modal Improvements**

Establishes modal priorities for specific corridors based on identifies needs and committed upcoming improvements. Proposes future mode share for the City and presents a bank of mode specific improvements throughout the City’s roadway network.

**4. Recommendations**

Defines comprehensive criteria and methodology to prioritize the bank of multi-modal improvements previously developed. Prioritizes projects and identifies short-, mid-, and long-term implementation timeframes.

**5. Funding and Financial Analysis**

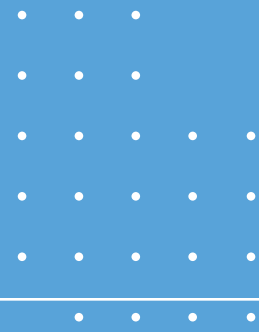
Develops conceptual costs for prioritized projects to assist in the development of the City’s Capital Improvement Plan and proposes potential funding opportunities. Identifies development processes for prioritized projects to pursue successful implementation.



Obtaining public insights will be a key element in the success of this Plan. Additionally, a Steering Committee comprising members of the City staff and partner agency transportation professionals was created to oversee the development of the Plan and provide key input to the team during various stages of the process.



# 02



## EXISTING CONDITIONS ANALYSIS

- 2.1 **SOCIO-ECONOMIC DATA**
- 2.2 **LAND USE DATA**
- 2.3 **ACTIVE TRANSPORTATION**
- 2.4 **TRANSIT INFRASTRUCTURE**
- 2.5 **ROADWAY CHARACTERISTICS**
- 2.6 **CRASH DATA ANALYSIS**
- 2.7 **POPULATION TRIP ANALYSIS**
- 2.8 **EXISTING OPERATIONS ANALYSIS**

Understanding the current state of Doral's transportation network is essential for planning future improvements. This section of the Doral Transportation Master Plan provides a comprehensive assessment of the city's existing conditions, including the current roadway infrastructure, traffic patterns, public transit services, pedestrian and cycling facilities, and overall connectivity. By analyzing the strengths and weaknesses of the current system, as well as identifying critical areas of congestion, safety concerns, and gaps in service, this section sets the foundation for informed decision-making. The evaluation of these existing conditions will serve as a baseline for developing targeted solutions that address the city's transportation challenges while supporting future growth and sustainability.

Building on this assessment, the analysis of existing conditions will also consider external factors that influence Doral's transportation network, such as regional connectivity, land use patterns, and demographic trends. The city's current traffic volumes, intersection performance, and transit usage will be examined in relation to population growth and economic development, providing a clearer understanding of how the network functions today and where it may be under strain. Additionally, this section will evaluate the condition of transportation assets, including roadway quality, sidewalk coverage, bike lane availability, and transit infrastructure. By identifying these key issues, the city can prioritize areas for immediate improvements and set the stage for long-term, strategic investments that ensure Doral's transportation system evolves in line with community needs.

## 2.1 SOCIO-ECONOMIC DATA

City of Doral's Socio-Economic Existing Conditions Doral has a population of 75,874 people with a median age of 36.4 and a median household income of \$77,774. Between 2020 and 2021 the population of Doral, FL grew from 62,367 to 75,874, a 21.7% increase and its median household income grew from \$75,138 to \$77,774, a 3.51% increase.

The 5 largest ethnic groups in Doral, FL are White (Hispanic) (62.7%), Two+ (Hispanic) (15.5%), White (Non-Hispanic) (11.9%), Other (Hispanic) (4.86%), and Asian (Non-Hispanic) (2.67%).

4% of the households in Doral, FL reported speaking a non-English language at home as their primary shared language. This does not consider the potential multi-lingual nature of households, but only the primary self-reported language spoken by all members of the household. 62% of the residents in Doral, FL are U.S. citizens. On average 1.5 households per acre have limited to no comprehension of the English language.

In 2021, the median property value in Doral, FL was \$420,300, and the homeownership rate was 45.2%. Most people in Doral, FL drove alone to work and the average commute time was 25.6 minutes. The average car ownership in Doral, FL was 2 cars per household.

**Figure 2-1 – Figure 2-10** visually display the individual socio-economic items.

### Justice 40 Initiative - Disadvantaged Communities

Issued by the Biden Administration, the Justice 40 Initiative sets out to ensure 40 percent of the overall benefits of certain Federal investments flow to disadvantaged communities that are marginalized, underserved, and overburdened by pollution.

**Figure 2-1** displays the number of burdens per Census tract. The burdens are organized into categories. A community is highlighted as disadvantaged if it is in a census tract that is (1) at or above the threshold for one or more environmental, climate, or other burdens, and (2) at or above the threshold for an associated socioeconomic burden.

In addition, a census tract that is completely surrounded by disadvantaged communities and is at or above the 50% percentile for low income is also considered disadvantaged.

**Figure 2-1:** Justice 40 Initiative - Disadvantaged Communities

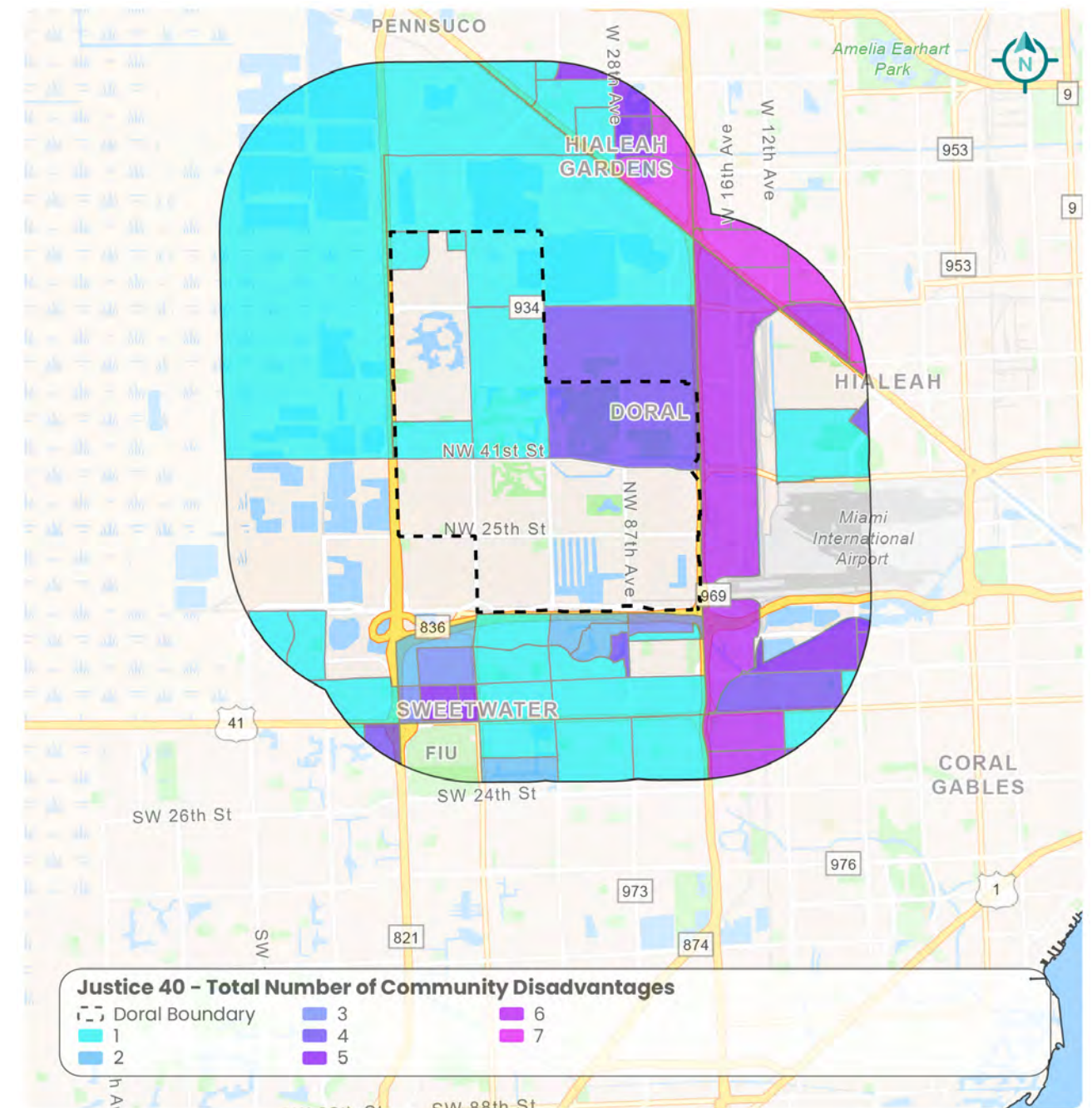


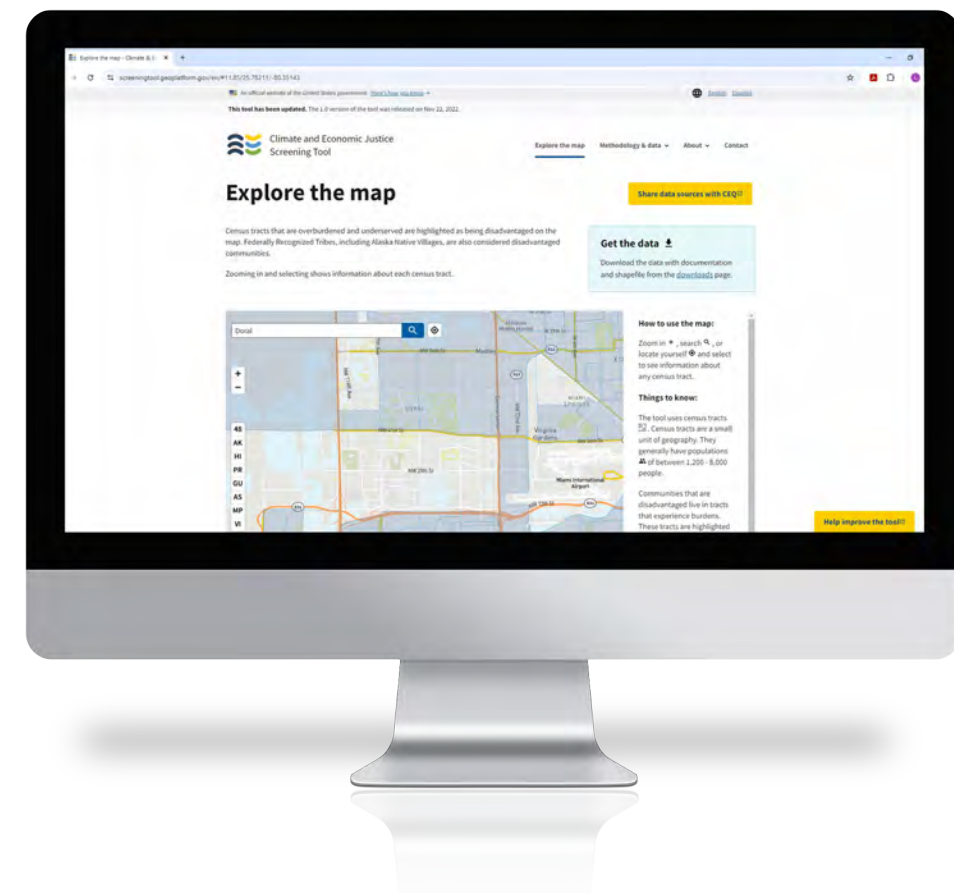
Figure 2-2 displays the eight primary indicators of a burdened community, along with each indicator's criteria for evaluation.

Figure 2-2: Eight Primary Indicators

<p><b>CLIMATE CHANGE</b></p> <p>Communities are identified as disadvantaged if they are in census tracts that:</p> <ul style="list-style-type: none"> <li>ARE at or above the 90th percentile for expected agriculture loss rate OR expected building loss rate</li> <li>OR expected population loss rate OR projected flood risk OR projected wildfire risk</li> <li>AND are at or above the 65th percentile for low income</li> </ul>	<p><b>ENERGY</b></p> <p>Communities are identified as disadvantaged if they are in census tracts that:</p> <ul style="list-style-type: none"> <li>ARE at or above the 90th percentile for energy cost OR PM2.5 in the air</li> <li>AND are at or above the 65th percentile for low income</li> </ul>
<p><b>HEALTH</b></p> <p>Communities are identified as disadvantaged if they are in census tracts that:</p> <ul style="list-style-type: none"> <li>ARE at or above the 90th percentile for asthma OR diabetes OR heart disease OR low life expectancy</li> <li>AND are at or above the 65th percentile for low income</li> </ul>	<p><b>HOUSING</b></p> <p>Communities are identified as disadvantaged if they are in census tracts that:</p> <ul style="list-style-type: none"> <li>Experienced historic underinvestment OR are at or above the 90th percentile for housing cost OR lack of green space OR lack of indoor plumbing OR lead paint</li> <li>AND are at or above the 65th percentile for low income</li> </ul>
<p><b>LEGACY POLLUTION</b></p> <p>Communities are identified as disadvantaged if they are in census tracts that:</p> <ul style="list-style-type: none"> <li>Have at least one abandoned mine land OR Formerly Used Defense Sites OR are at or above the 90th percentile for proximity to hazardous waste facilities OR proximity to Superfund sites (National Priorities List (NPL)) OR proximity to Risk Management Plan (RMP) facilities</li> </ul>	<p><b>TRANSPORTATION</b></p> <p>Communities are identified as disadvantaged if they are in census tracts that:</p> <ul style="list-style-type: none"> <li>ARE at or above the 90th percentile for diesel particulate matter exposure OR transportation barriers OR traffic proximity and volume</li> <li>AND are at or above the 65th percentile for low income</li> </ul>
<p><b>WATER AND WASTEWATER</b></p> <p>Communities are identified as disadvantaged if they are in census tracts that:</p> <ul style="list-style-type: none"> <li>ARE at or above the 90th percentile for underground storage tanks and releases OR wastewater discharge</li> <li>AND are at or above the 65th percentile for low income</li> </ul>	<p><b>WORKFORCE DEVELOPMENT</b></p> <p>Communities are identified as disadvantaged if they are in census tracts that:</p> <ul style="list-style-type: none"> <li>ARE at or above the 90th percentile for linguistic isolation OR low median income OR poverty OR unemployment</li> <li>AND more than 10% of people ages 25 years or older whose high school education is less than a high school diploma</li> </ul>

Within Doral there are six census tracts that meet at least one of the eight burden indicators. The most common burden indicator within Doral is Workforce Development category. Among the five sub-categories within the workforce development indicator listed in Figure 2-2, Linguistic Isolation is the most common item to trigger this community burden indicator. Linguistic Isolation is defined as households where no one over age 14 speaks English very well.

An online Interactive Climate and Economic Justice screening tool may be explored to review all of the individual burden characteristics found within the Doral's municipal boundary [here](#).

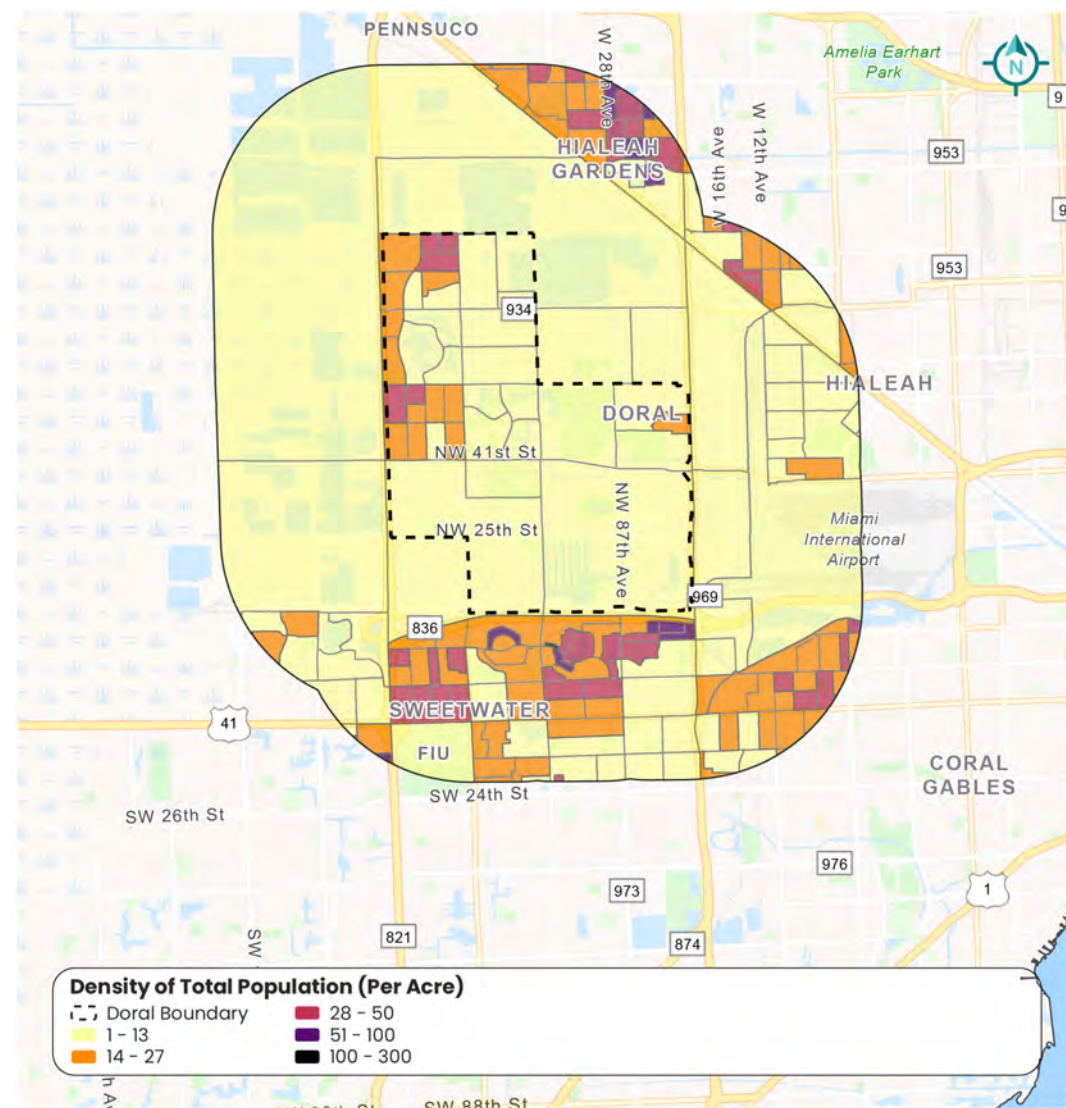




**Density of Total Population**

Figure 2-3 displays Doral's geographic distribution of its existing population density per acre. As can be seen, the population density is almost exclusively located to the northwest section of the municipality, west of NW 107th Ave, between NW 90th Street and NW 41st Street/Doral Boulevard. This section of Doral will be hence forth referred to as the "demographic hot spot" throughout the remainder of the Network and Existing Condition Analysis. Within this demographic hot spot the average total population density is 32 people per acre.

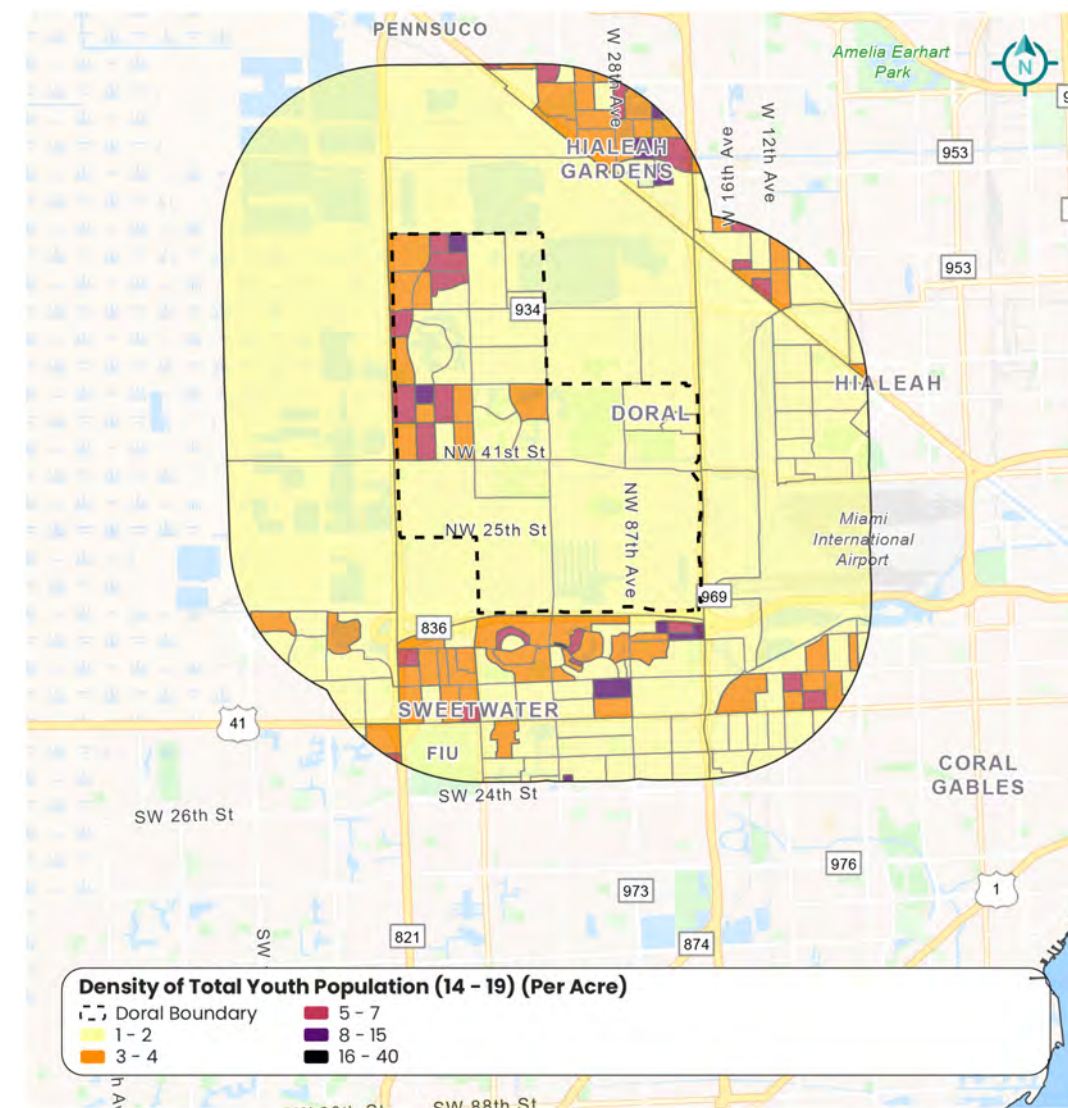
Figure 2-3: Density of Total Population



**Density of Total Youth Population**

As previously mentioned, the demographic hot spot creates a repeating trend where other population related data set categories are located. Figure 2-4 displays the population density of Doral's youths. Youths are categorized as individuals between the ages of 14 and 19 who are likely to travel independently but maintain a greater probability of not possessing a driver's license or personal vehicle and therefore must rely on alternate modes of transportation. On average, within Doral's demographic hot spot there are 6.5 youths per acre.

Figure 2-4: Density of Total Youth Population

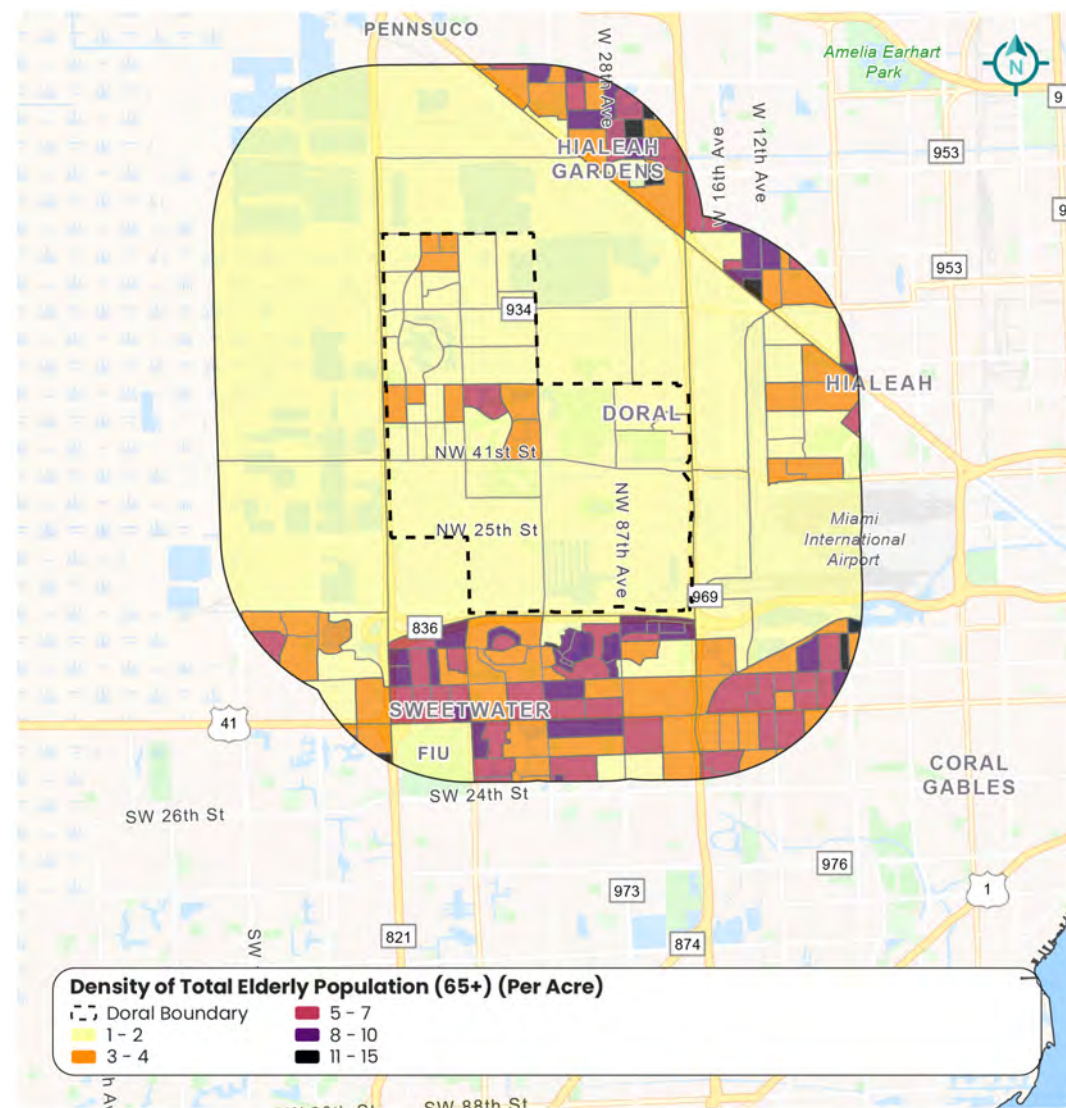




### Density of Total Elderly Population

Figure 2-5 displays Doral's elderly population density per acre. Elderly is categorized as individuals who are 65 years of age or greater. Along with youths, elderly are one of the demographics that may rely on alternate modes of transportation either due to limiting faculties or restricted finances. Between NW 58th Street and NW 41st Street is the greatest concentration of this demographic group. Particularly centered around the Doral Sands Community near the Morgan Levy Park.

Figure 2-5: Density of Total Elderly Population



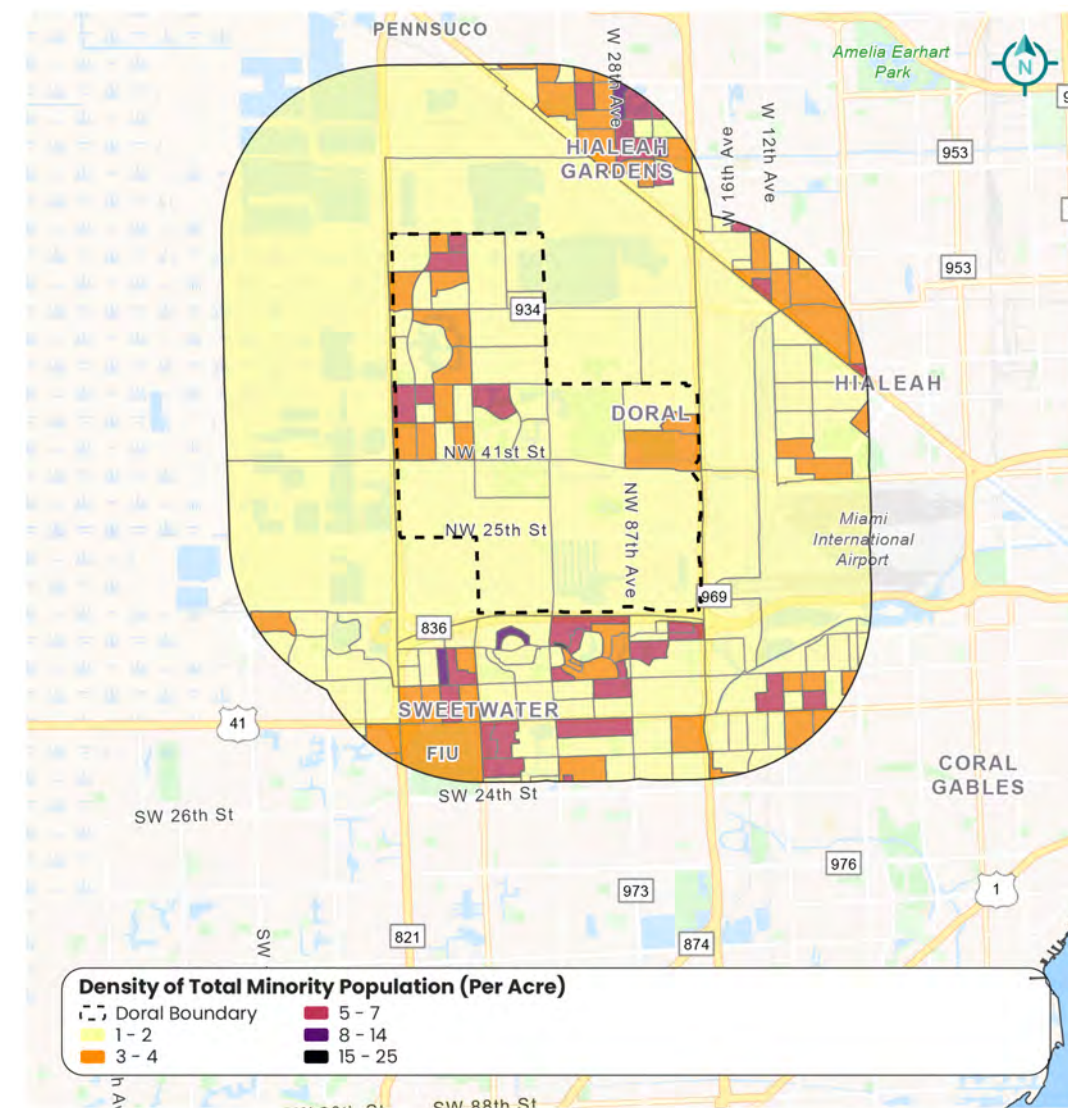
### Density of Total Minority Population

In 2021, there were 4.04 times more White (Hispanic) residents (45.9k people) in Doral, FL than any other race or ethnicity. There were 11.4k Two+ (Hispanic) and 8.69k White (Non-Hispanic) residents, the second and third most common ethnic groups. 83.7% of the people in Doral are Hispanic (61.2k people).

Minority populations in Figure 2-6 are identified as individuals not part of the White (non-Hispanic) demographic group. It is crucial to identify the locations of minority and underserved populations

within an area for transportation planning to ensure equitable access to transportation services. Understanding the distribution of these communities helps planners address disparities in mobility, ensuring that transportation infrastructure and services are designed to serve everyone, regardless of their socio-economic status or ethnicity. This knowledge enables the development of inclusive and responsive transportation policies that cater to the diverse needs of the entire population, promoting social equity and sustainable urban development.

Figure 2-6: Density of Total Minority Population

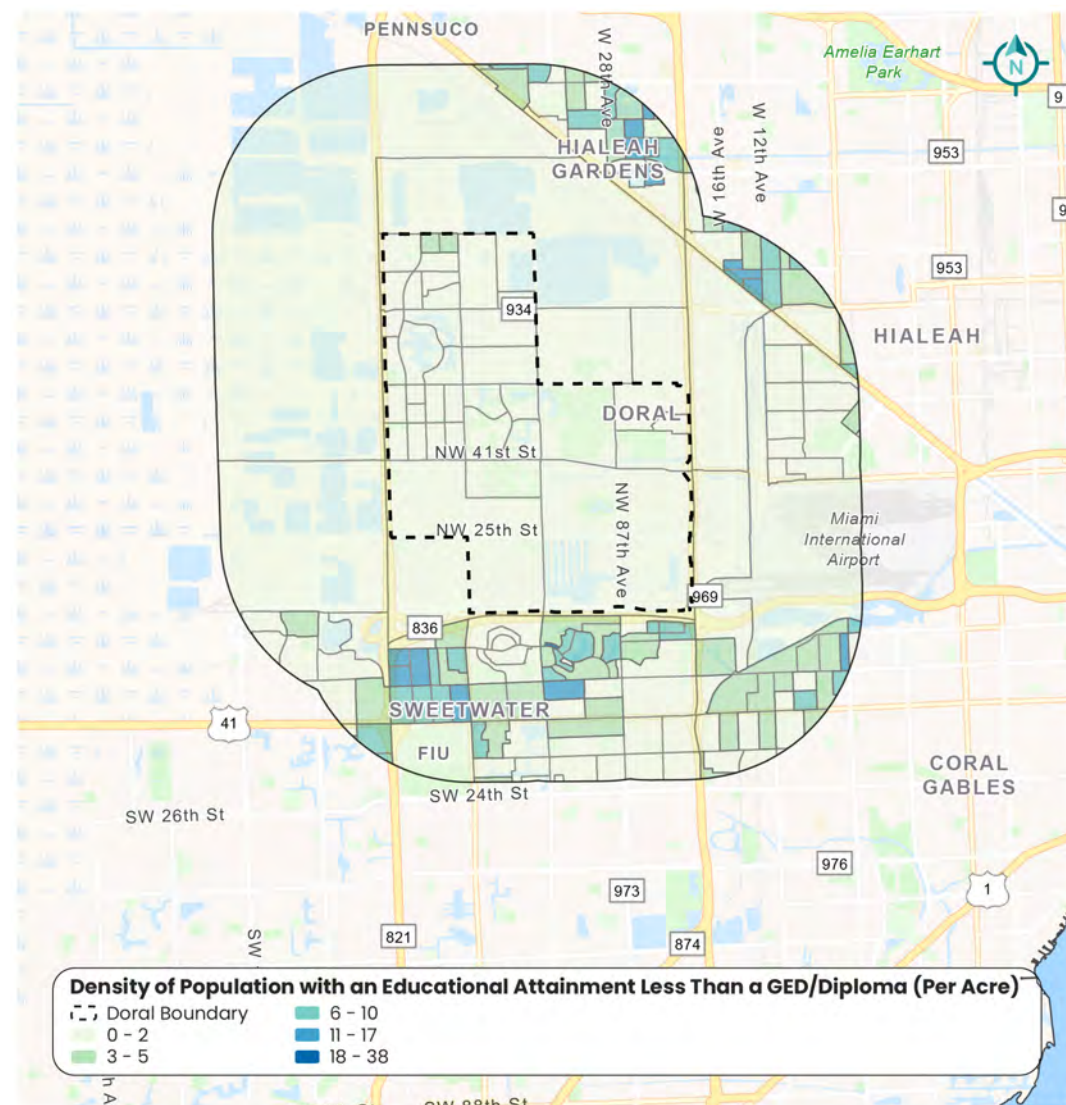




**Density of Population with an Educational Attainment Less Than a GED/Diploma**

Figure 2-7 displays the density of the population with an educational attainment less than a GED or diploma per acre. Doral's population is an educated group, where the average individual's maximum level of educational attainment is a bachelor's degree or above.

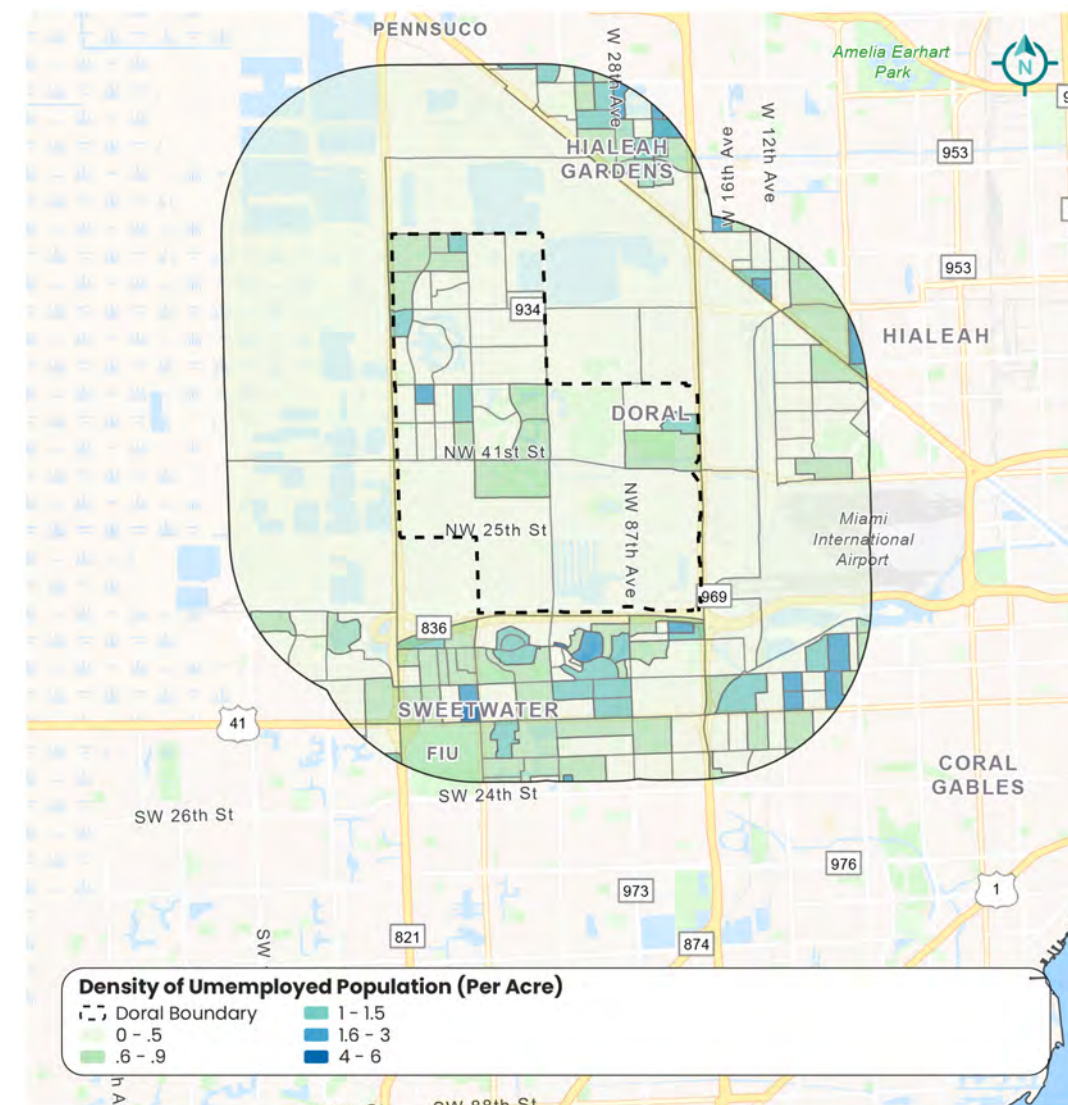
Figure 2-7: Density of Population with an Educational Attainment Less Than a GED/Diploma



**Density of Unemployed Population**

The most common job groups, by number of people living in Doral are Management Occupations (8,088 people), Sales & Related Occupations (7,036 people), and Office & Administrative Support Occupations (4,049 people). Figure 2-8 illustrates the share breakdown of the primary jobs held by residents of Doral, FL.

Figure 2-8: Density of Unemployed Population

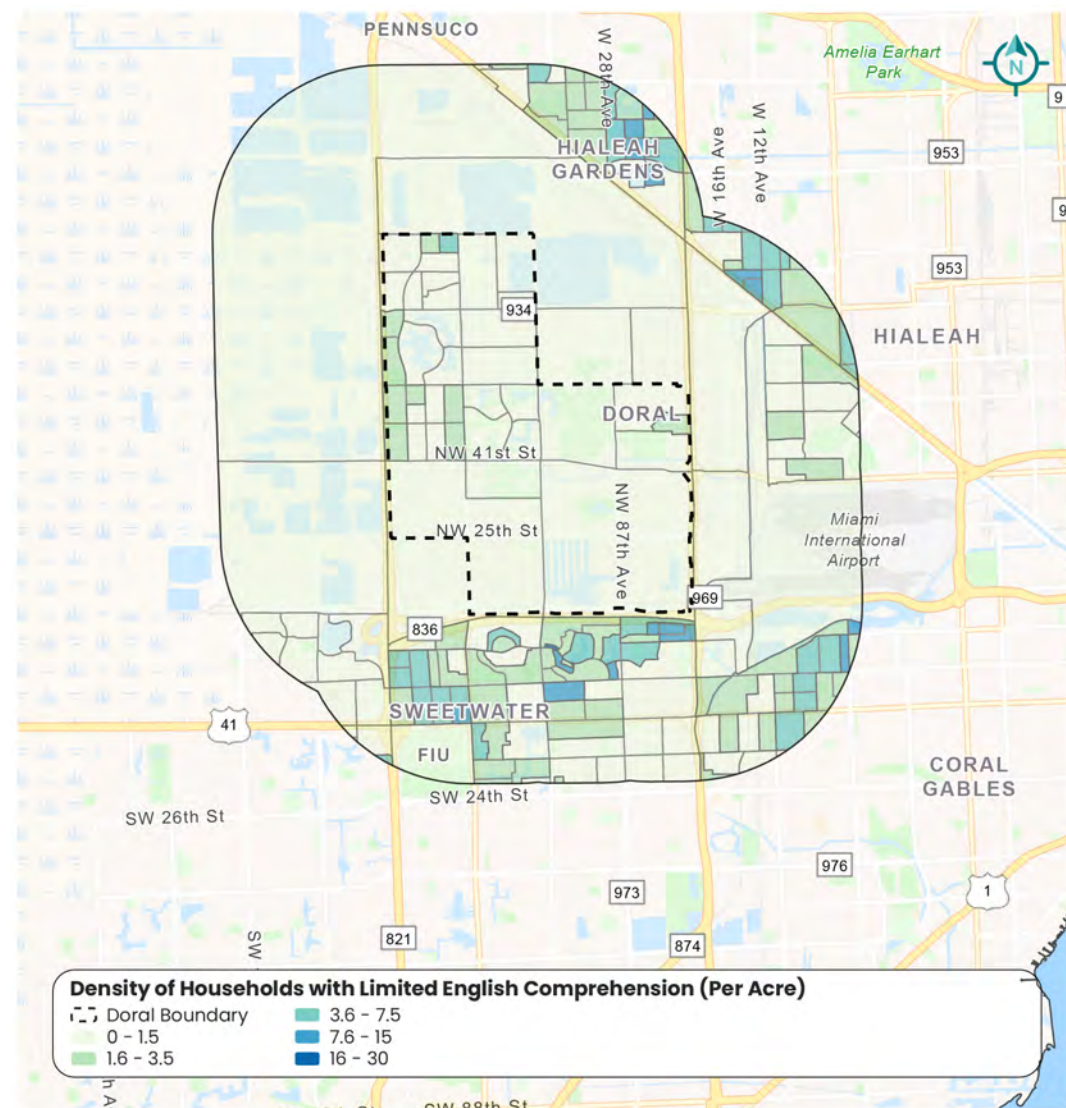




### Density of Households with Limited English Comprehension

Figure 2-9 displays the density of households which, as reported on the American Community Survey, maintain no or limited comprehension of the English language. Doral overall represents a population that is multilingual and fluent in English, the largest concentration of homes associated with this demographic category reside in the demographic hotspot with 3.5 households per acre with limited English comprehension.

Figure 2-9: Density of Households with Limited English Comprehension



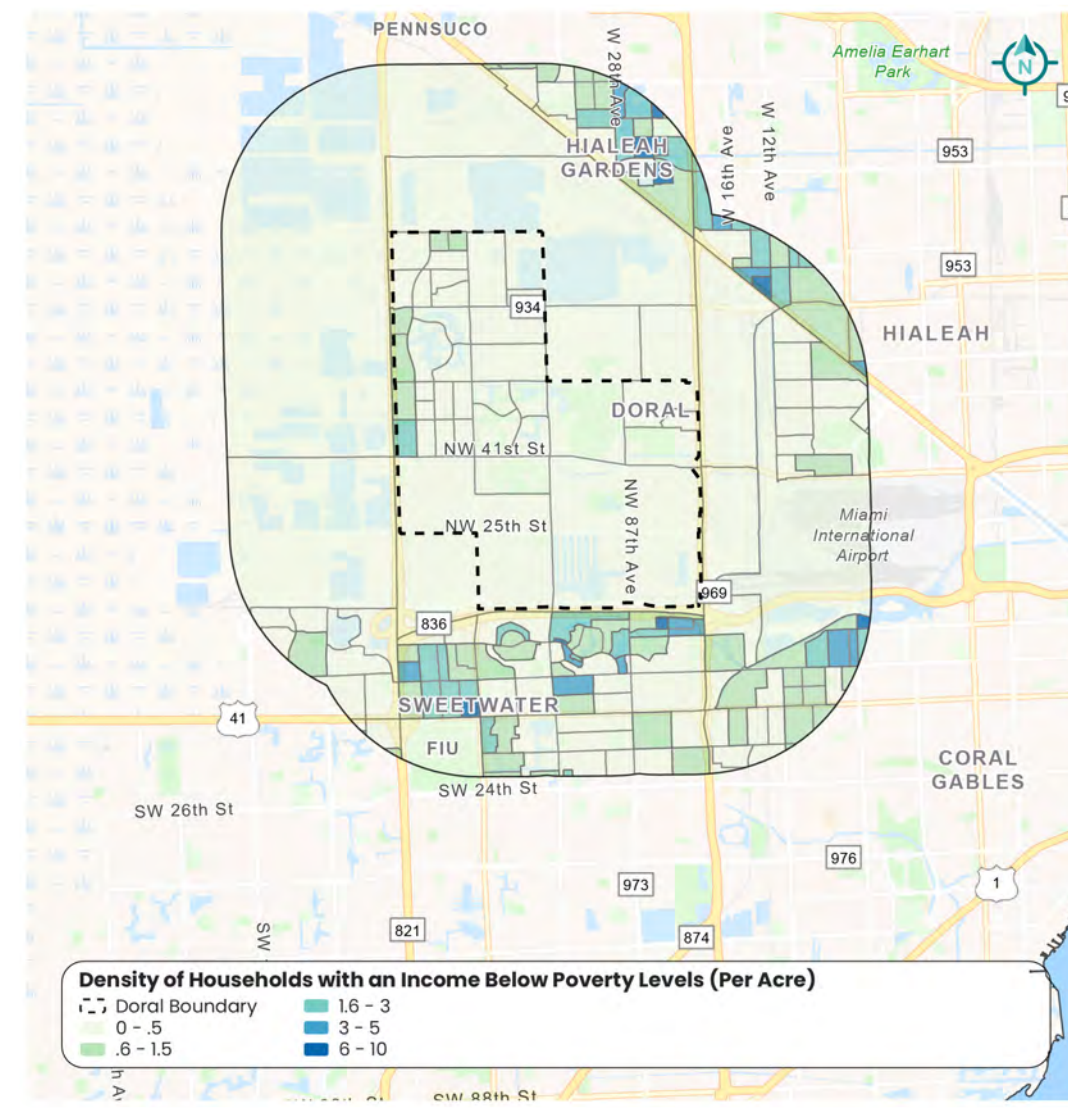
### Density of Households with an Income Below Poverty Levels

The January 2023 poverty guidelines are calculated by taking the 2021 Census Bureau's poverty thresholds and adjusting them for price changes between 2021 and 2022 using the Consumer Price Index (CPI-U). The poverty thresholds used by the Census Bureau for statistical purposes are complex and are not composed of standardized increments between family sizes. Since many program officials prefer to use guidelines with uniform increments across family sizes, the poverty guidelines include rounding and standardizing adjustments.

[Click here to learn more about nationwide poverty guidelines.](#)

Figure 2-10 displays the density of households with an income below poverty levels.

Figure 2-10: Density of Households with an Income Below Poverty Levels





## 2.2 LAND USE DATA

Comprehending land use and identifying locations that serve as trip generators within the City of Doral is essential for effective transportation planning. Firstly, the type of land use, whether residential, commercial, or industrial, directly influences the demand for transportation services. Residential areas generate commuting trips, while commercial and retail zones contribute to both commuting and non-commuting trips. Secondly, trip generators play a pivotal role in determining traffic patterns and congestion levels. Concentrations of trip generators in specific areas can lead to increased vehicular demand during peak hours, necessitating strategic transportation infrastructure planning to accommodate these flows.

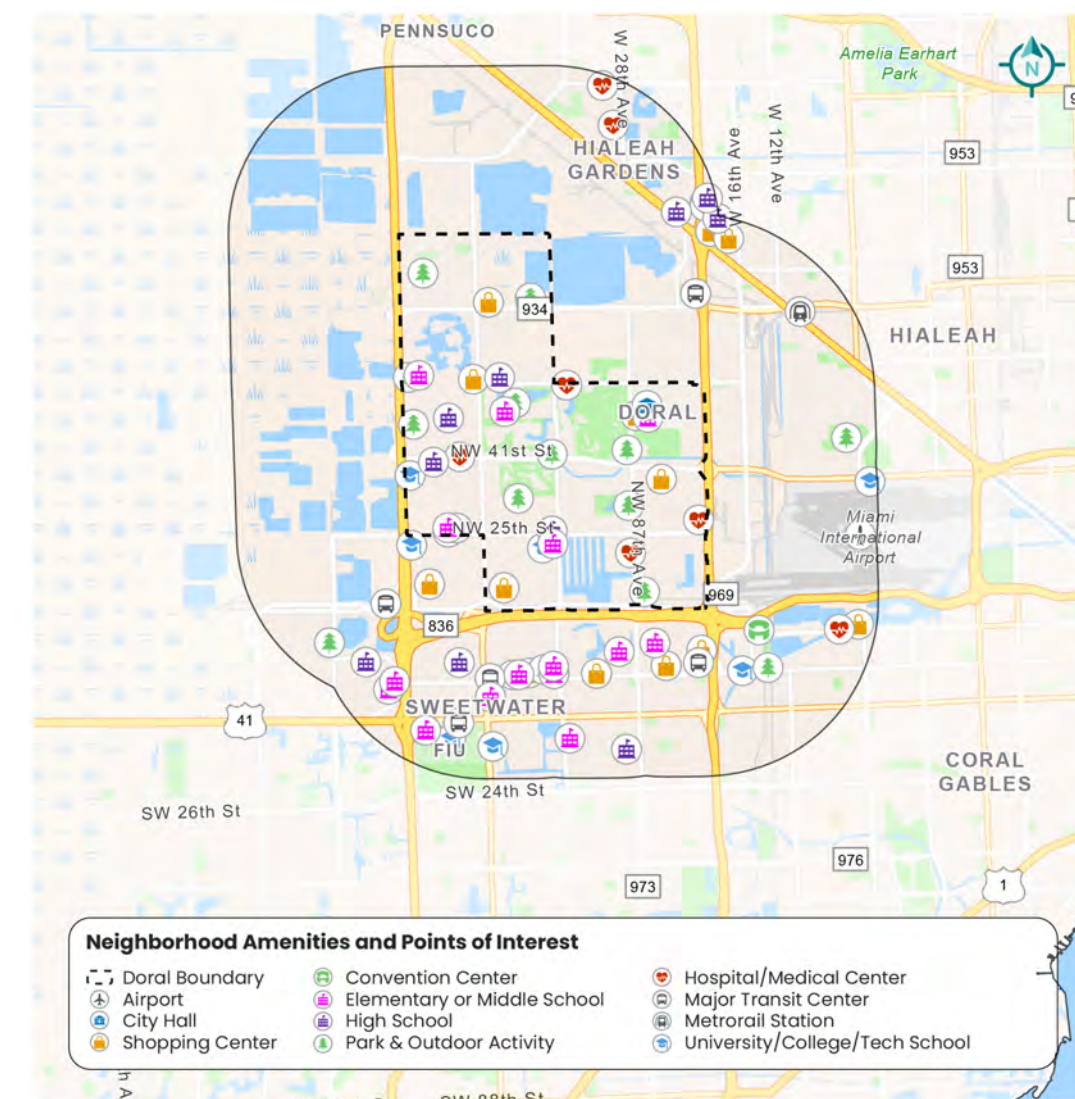
Moreover, understanding the locations of trip generators aids in designing efficient public transportation routes, as transit demand is closely tied to the distribution of trip-generating activities. This information is crucial for promoting sustainable transportation options and reducing reliance on private vehicles. Additionally, it allows planners to anticipate potential challenges such as parking demand and traffic bottlenecks around these generators.

Strategic placement of transportation facilities and infrastructure in proximity to trip generators helps enhance accessibility, encouraging the use of alternative modes of transportation and fostering a more integrated and sustainable urban transportation system. Overall, a comprehensive understanding of land use and trip generators within the City of Doral is fundamental for developing transportation solutions that cater to the specific needs and dynamics of the community.

### Existing Points of Interest

Figure 2-11 displays some of the most typical points of interests within the City of Doral and its surrounding areas that act as trip generators on a semi-daily basis.

Figure 2-11: Existing Points of Interest



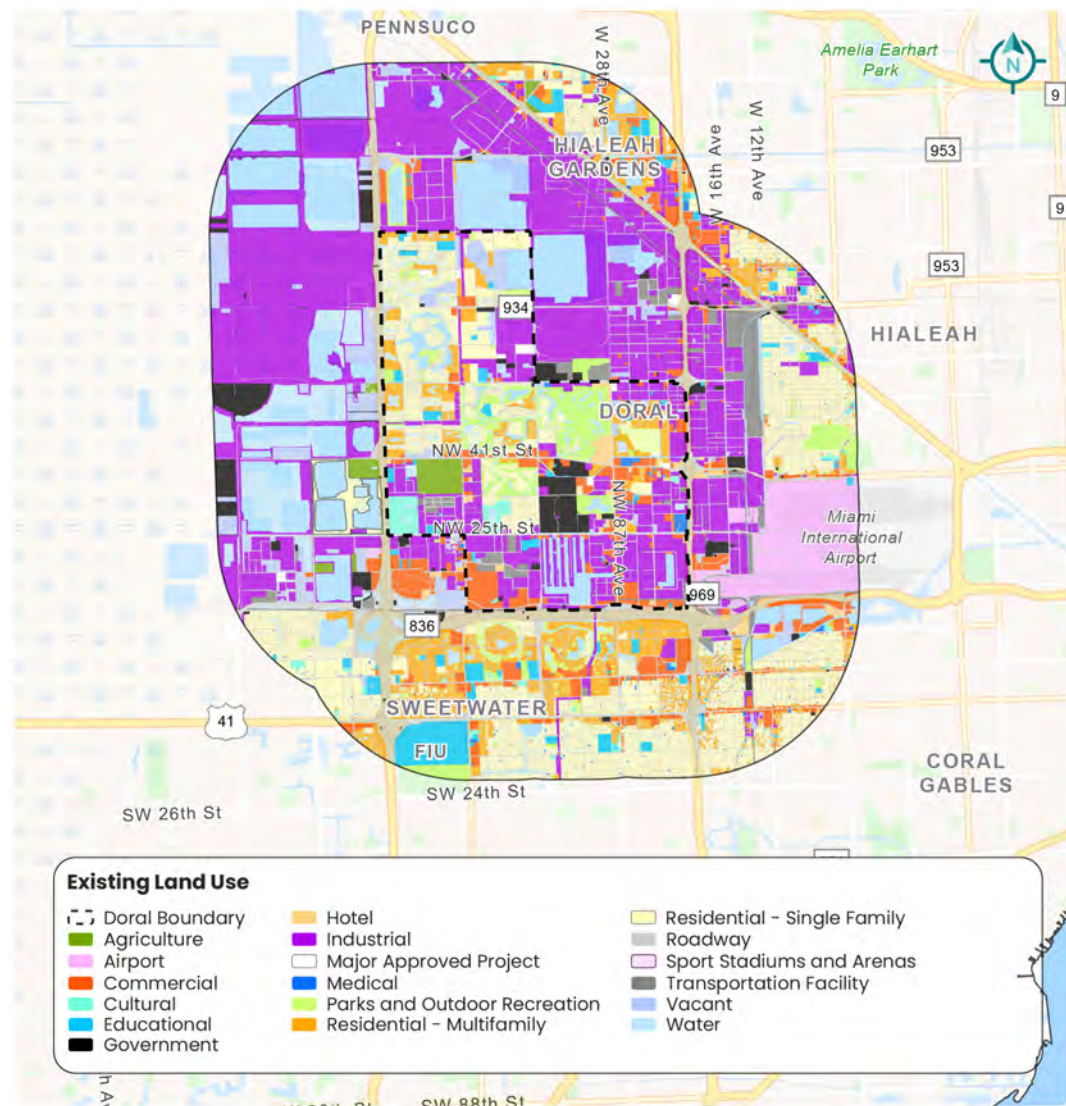


**Existing Land Use**

**Figure 2-12** displays the existing land use. The City of Doral and its surrounding areas exhibit a land use pattern, characterized by a mix of single-family residential encircled by various types of industrial zones. The residential areas contribute to the community’s housing needs, catering to a mix of demographics within the city. Simultaneously, strategically placed parks, cultural city centers, and shopping centers provide residents with recreational spaces, cultural activities, and convenient retail

options. This combination of land uses creates a balanced urban environment, fostering a sense of community while accommodating the economic activities associated with industrial zones.

**Figure 2-12:** Existing Land Use



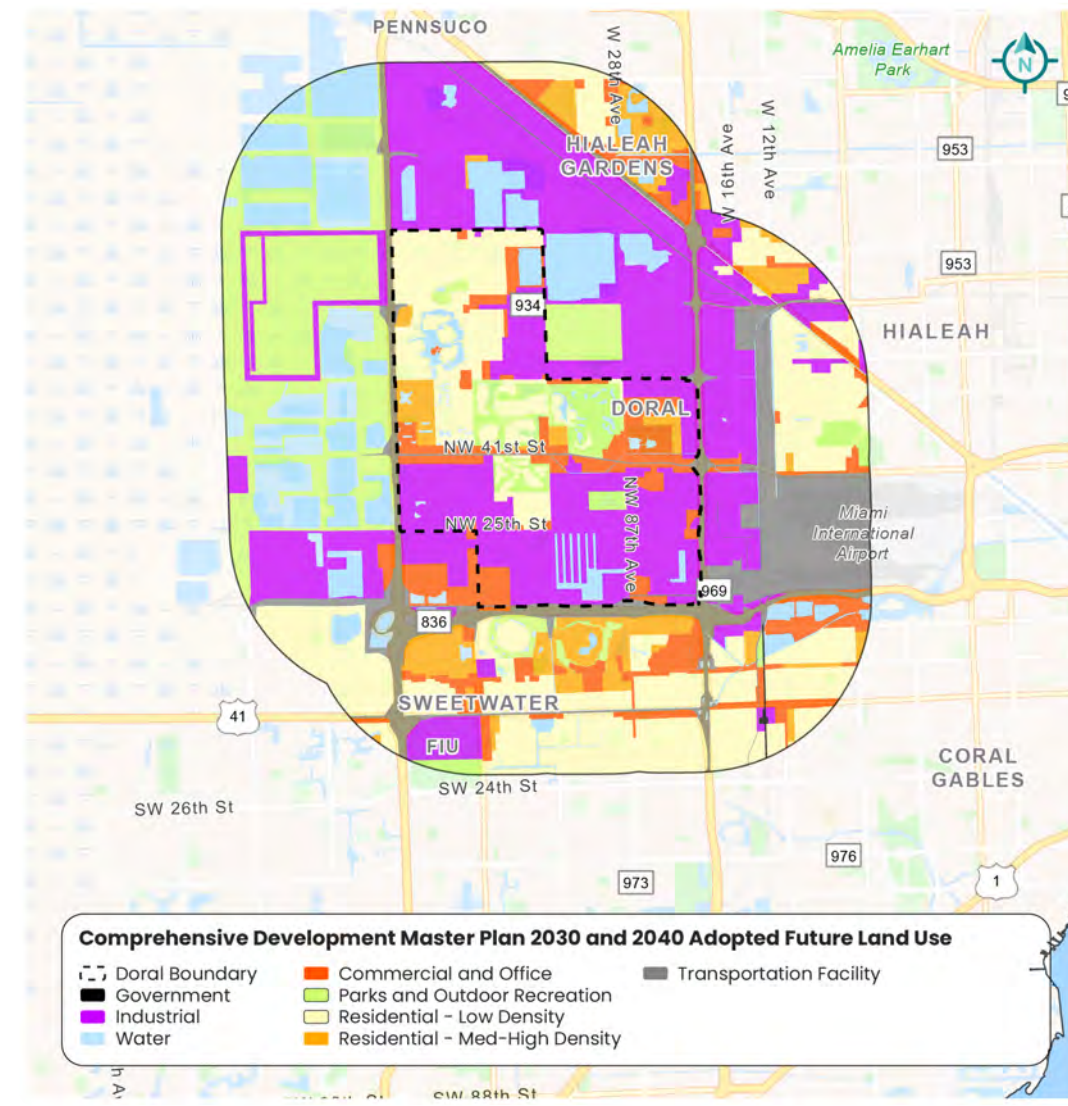
**Future Land Use**

**Figure 2-13** displays the adopted 2030 and 2040 future land use of Miami-Dade County through The Comprehensive Development Master Plan (CDMP). The CDMP expresses Miami-Dade County’s general objectives and policies addressing where and how it intends development or conservation of land and natural resources will occur during the next 10-20 years, and the delivery of County services to accomplish the Plan’s objectives.

The CDMP establishes the broad parameters for government to do detailed land use planning and zoning activities, functional planning and programming of infrastructure and services. As such, it is a framework for use by other programs to be developed to support its long-range planning goals.

**Figure 2-13** has simplified the adopted future land use zone categories for quicker information assimilation. If any reader is interested in greater detail, they may use the following link to review the [adopted future land use map](#).

**Figure 2-13:** Future Land Use





## 2.3 ACTIVE TRANSPORTATION

An active transportation network refers to a system of interconnected infrastructure designed to facilitate human-powered modes of transportation, such as walking, cycling, and other non-motorized means. It typically includes well-maintained sidewalks, bike lanes, pedestrian crossings, and other facilities that prioritize the safety and accessibility of individuals using sustainable modes of travel. The goal of an active transportation network is to promote healthier lifestyles, reduce environmental impact, and create more inclusive and vibrant communities by encouraging people to choose alternative and physically active ways of getting around.

### Existing Bicycle Network

The total mileage of Doral's existing bicycle network is 27.2 miles. **Figure 2-14** displays the existing bicycle network facilities' type and alignments. Doral, FL, has emerged as a pioneer in fostering sustainable urban mobility by establishing a robust bicycle network. The city's commitment to promoting eco-friendly transportation is evident through the well-designed bike lanes and interconnected pathways that offer excellent coverage across various neighborhoods. While Doral's bicycle network has made significant strides in enhancing accessibility and encouraging cycling as a viable mode of transportation, there remain some gaps in the system that could be addressed for further improvement. Identifying and addressing these gaps would contribute to a more comprehensive and seamless active transportation network, ensuring that residents have safe and convenient routes for cycling throughout the city.

**Table 2-1** outlines the specific facility types present within Doral's municipal boundaries, their total miles, and percentage of the total existing bicycle network.

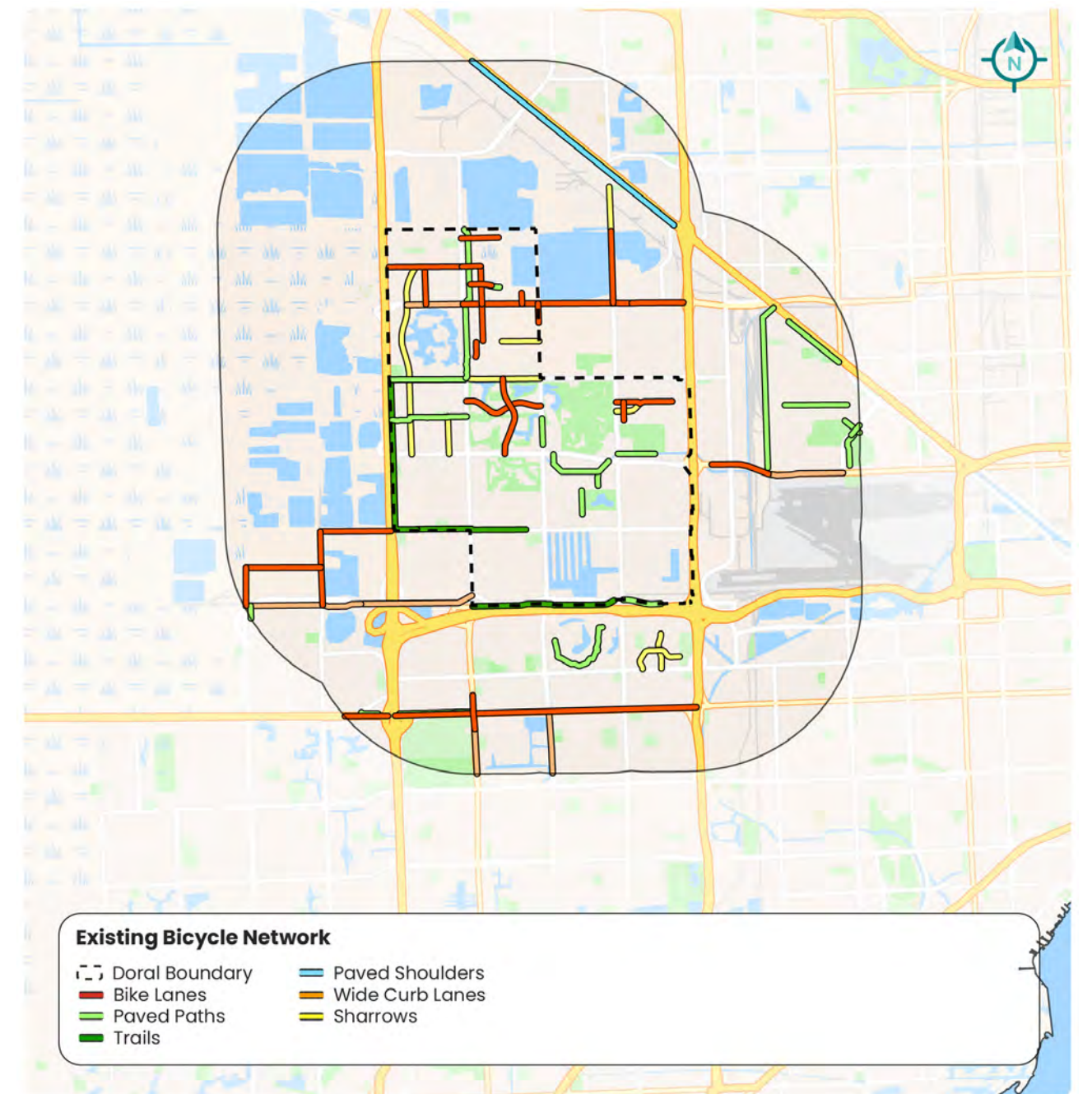
**Table 2-1** also distinguishes if the facility type is considered dedicated or not. A dedicated bicycle facility provides space only for bicycle traffic. The only exception to this are the trails and paved paths which share their operating space with pedestrians. Trails are shared-use paths that are individually identified in the South and North Dade Greenways Master Plans. These trails differentiate themselves from paved paths by their longer alignment providing countywide connectivity, therefore acting like the "expressways" of cyclists.

Wide Curb Lanes, Paved Shoulders, and Sharrows are not considered dedicated facilities due to their ability to foster bicycle traffic while also permitting motor vehicle activity within the same space.

**Table 2-1: Existing Bicycle Facility Miles and Type**

Facility Type	Dedicated Facility	Length (Miles)	% of Existing Network
Trails	Yes	5.65	20.70%
Paved Path	Yes	6.36	23.30%
Bike Lane	Yes	9.60	35.20%
Paved Shoulder	No	0	0
Wide Curb Lane	No	0.75	2.70%
Sharrow	No	4.89	17.90%

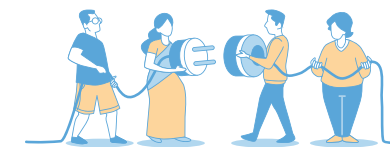
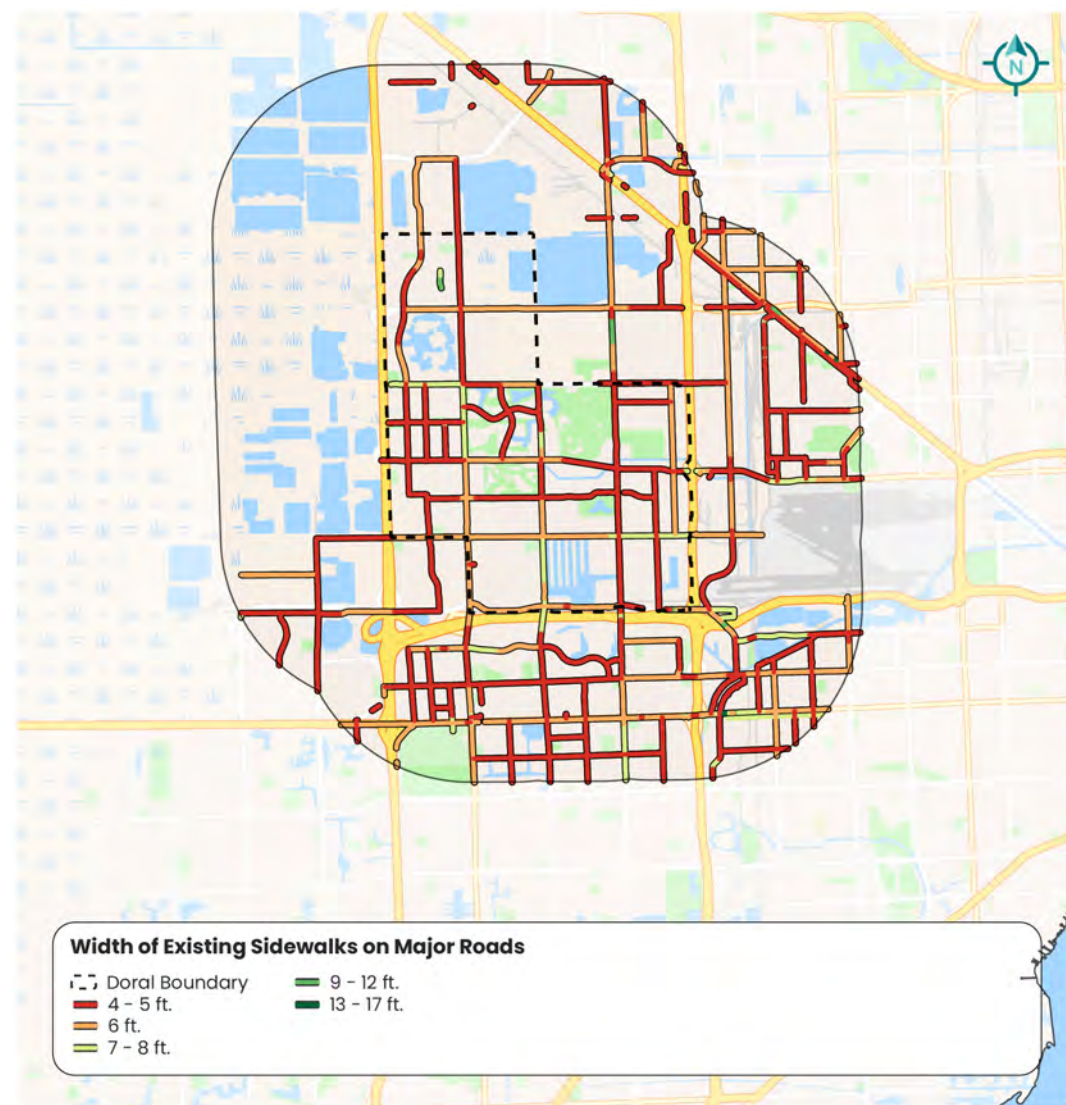
**Figure 2-14: Existing Bicycle Network**



**Existing Pedestrian Network**

**Figure 2-15** displays the existing pedestrian sidewalk network on major state and county roadways. Doral's sidewalk coverage along its major roadways is robust, but similar to the existing bicycle network, maintains some gaps such as NW 58 Street from NW 97 Avenue to NW 87 Avenue. Doral's most common pedestrian sidewalk maintains a 5 ft. width with few select locations providing greater dedicated space for pedestrians.

**Figure 2-15:** Existing Pedestrian Network



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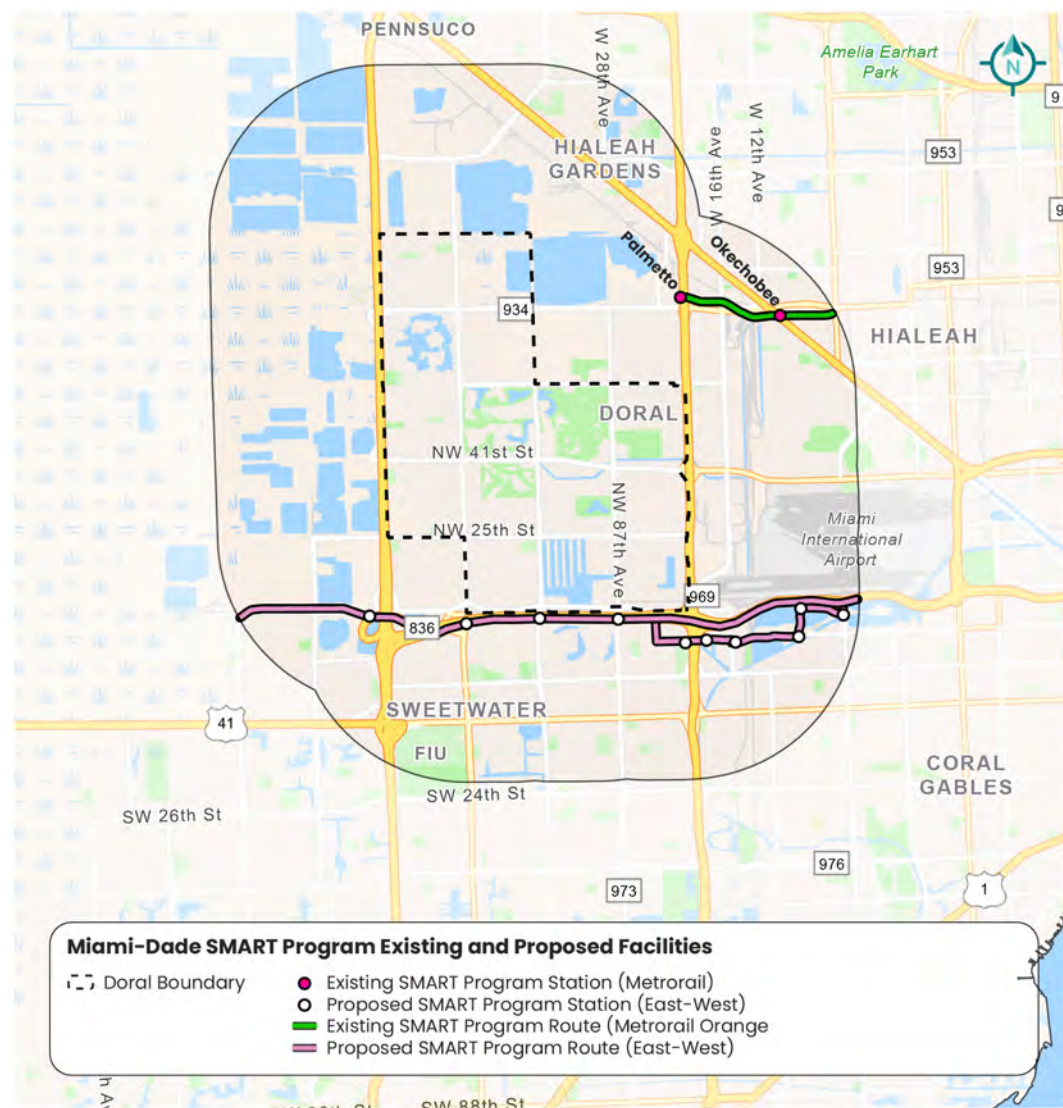
### Strategic Miami Area Rapid Transit (SMART) Program Existing and Proposed Facilities

The SMART Program is advancing five rapid transit corridors that will expand and enhance Miami-Dade County's public transit infrastructure. It is the implementation of a vision for the Miami-Dade region that is both strategic and far-reaching, creating a system of multiple transportation options by leveraging existing infrastructure and integrating technology at the highest levels.

**Figure 2-17** highlights how the existing Metrorail orange line and the proposed East-West Corridor can assist Doral residents in utilizing premium transit in their daily commutes.

**Figure 2-18** and **Figure 2-19** on the following page display the SMART Program's complete East-West route and proposed network, countywide.

**Figure 2-17:** Miami-Dade SMART Program Existing and Proposed Facilities



To delve deeper into the East-West rapid transit corridor and the Miami-Dade SMART Program visit [East-West Corridor](#) where you can find details about the project's scope, timeline, and anticipated benefits. Additionally, for insights into the broader Miami-Dade SMART Program including its goals and initiatives, please refer to [SMART Program](#) for information directly from Miami-Dade County.

**Figure 2-18:** Miami-Dade Smart Program Full Proposed Network

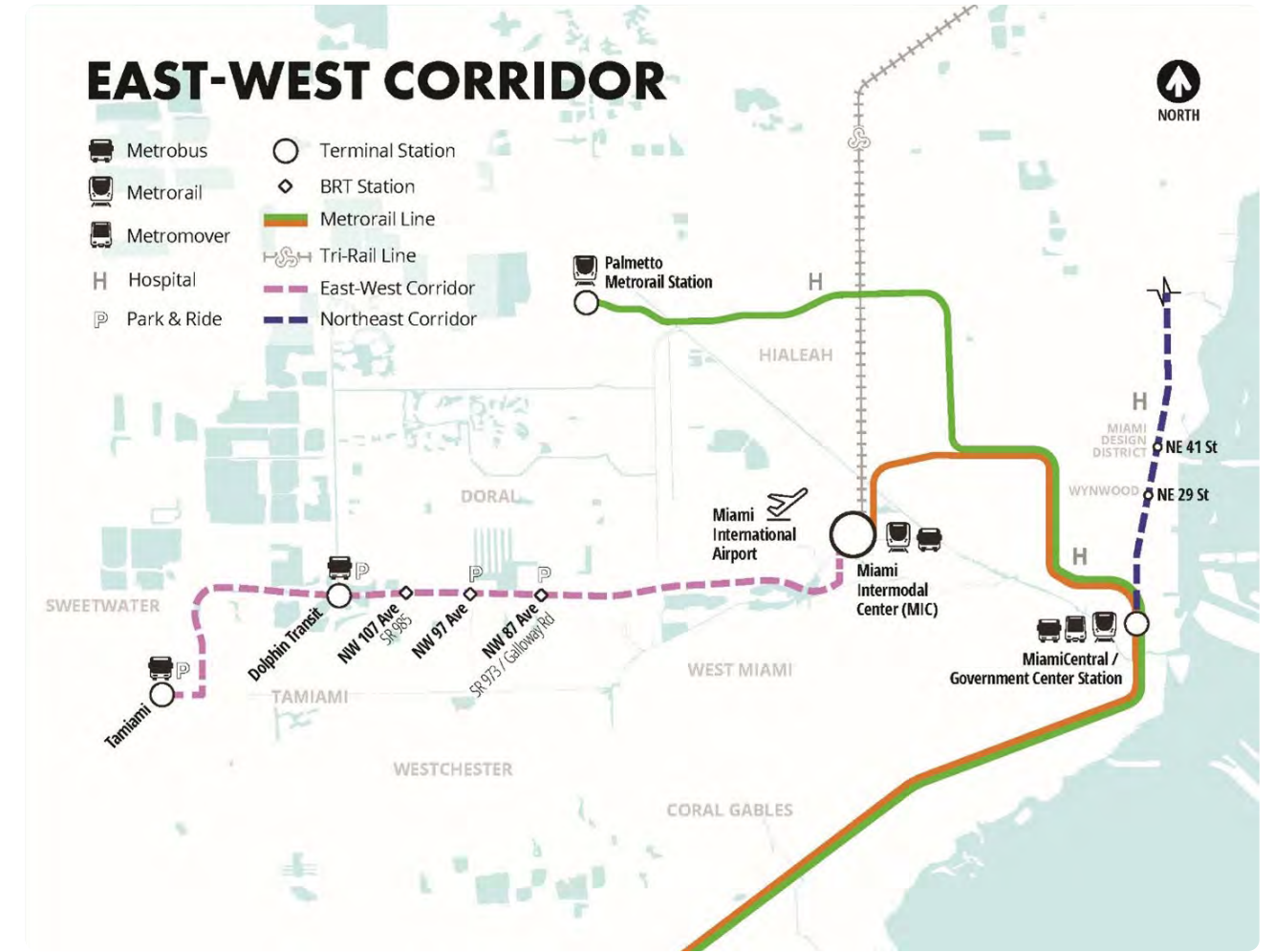
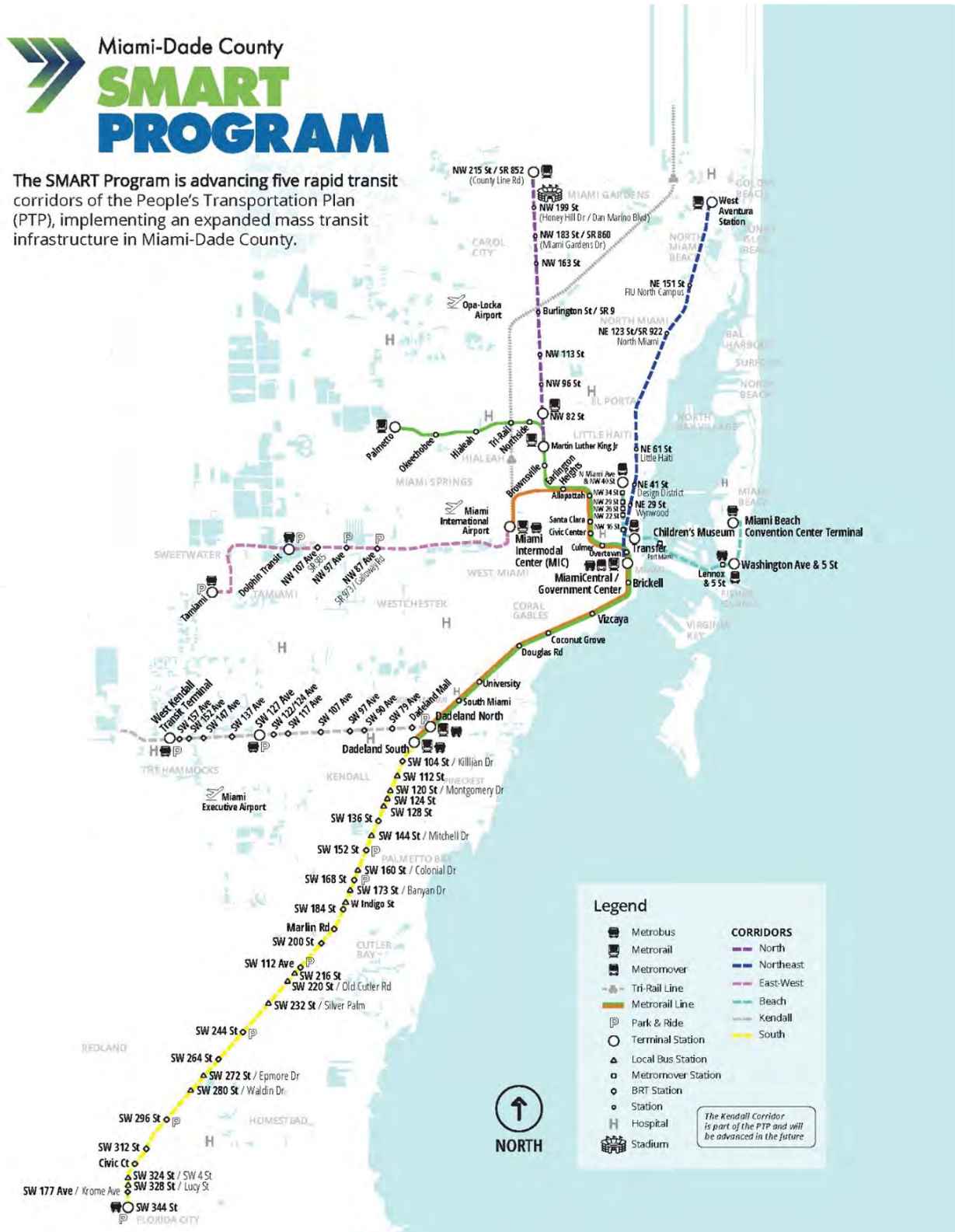




Figure 2-19: Miami-Dade Smart Program Full Proposed Network

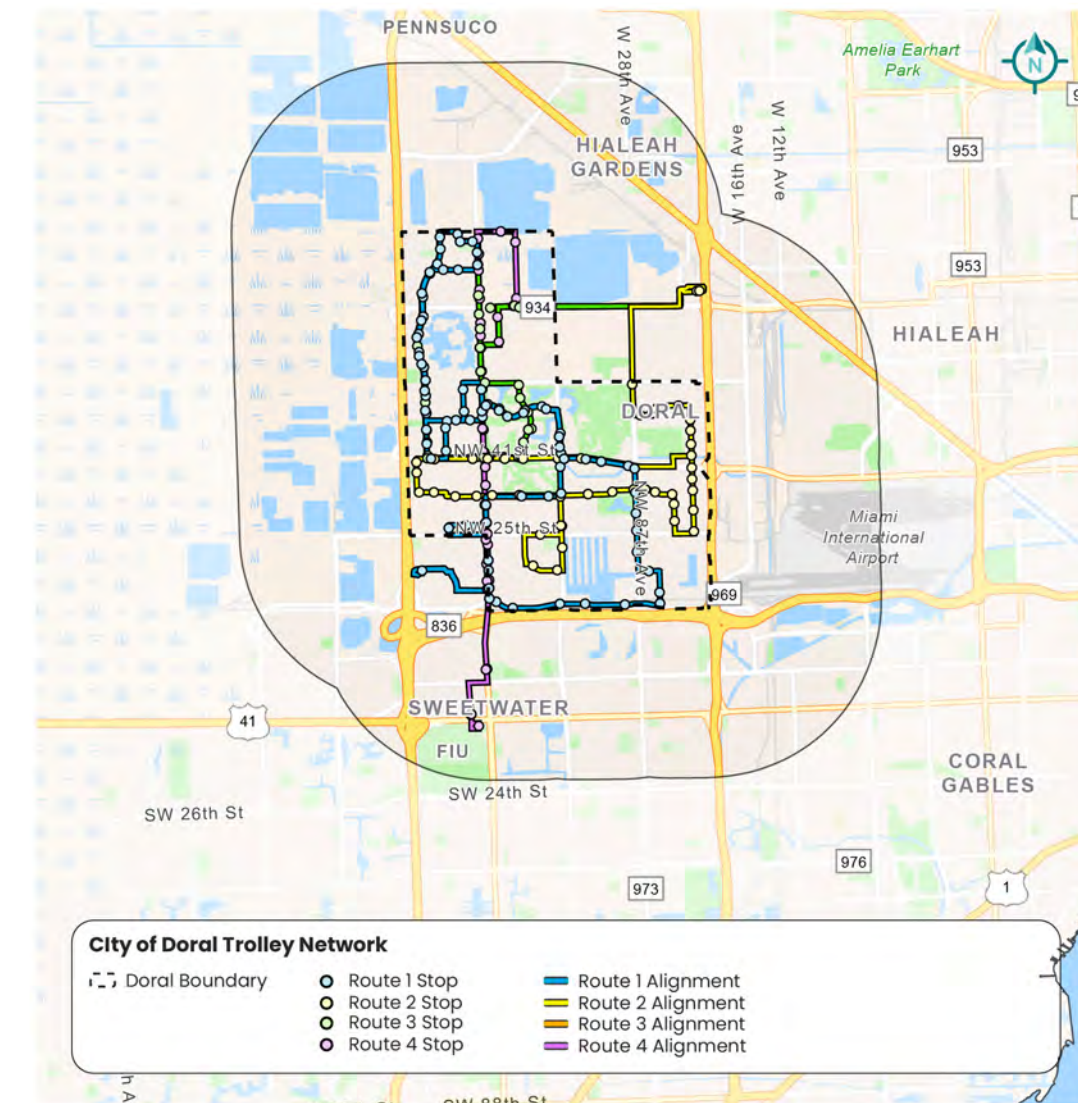


**City of Doral Trolley Network**

Doral's Trolley Network stands out as a local and distinctive mode of transportation within the city. The trolley's route routes serve as a convenient and accessible means of transit for residents and visitors alike. The network operates on designated routes, strategically covering key areas within Doral, and its frequent stops contribute to improved last-mile connectivity. It also reaches beyond Doral's municipal boundary to reach essential points of interest such as the Palmetto Metrorail station and Dolphin Mall. With its distinct charm and local flair, the Doral

Trolley Network not only provides an efficient mode of transportation, but also adds to the city's unique identity and community cohesion.

Figure 2-20: City of Doral Trolley Network





## 2.5 ROADWAY CHARACTERISTICS

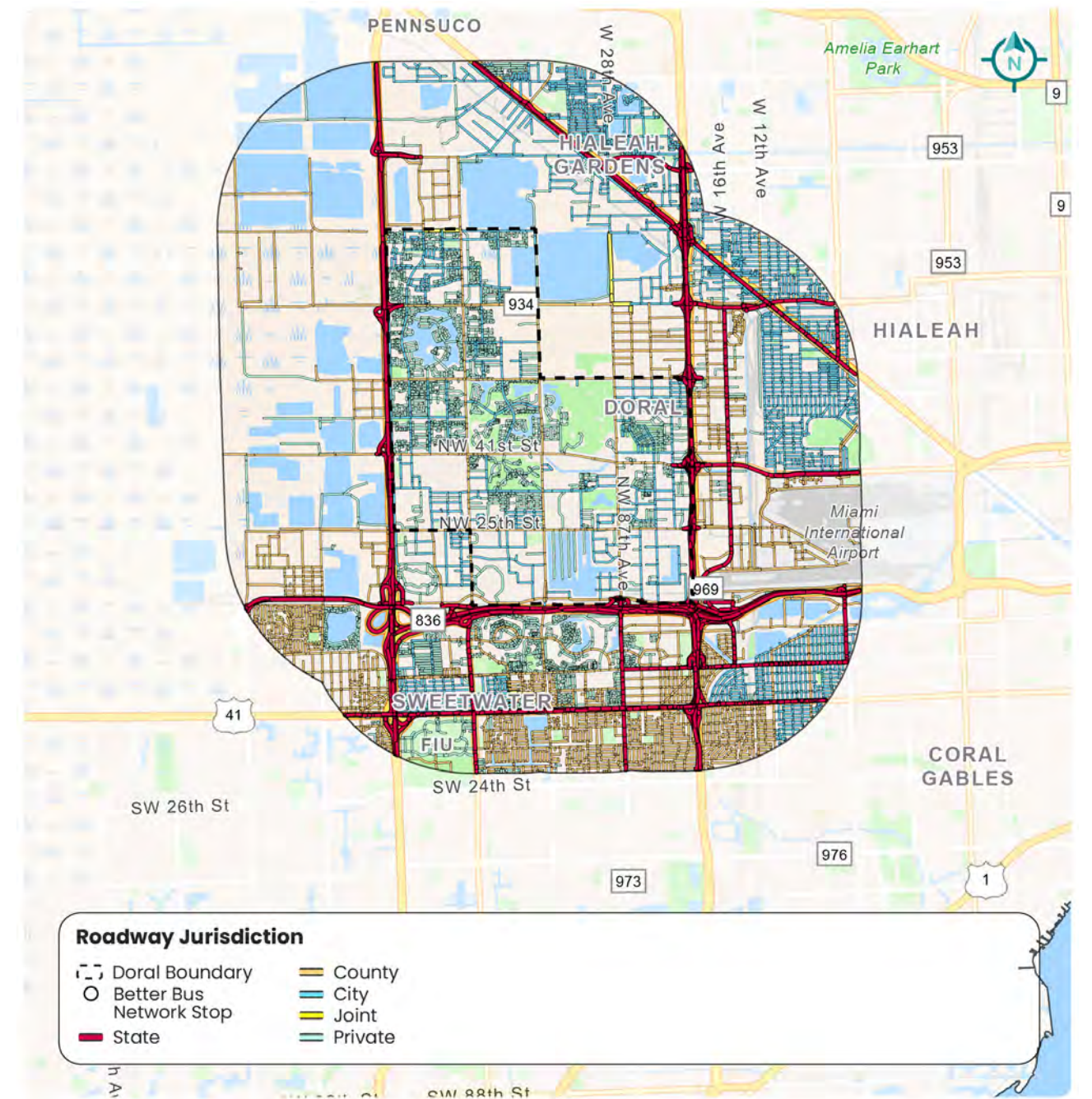
Understanding the existing roadway characteristics is crucial for effective transportation planning as it forms the foundation for informed decision-making and infrastructure development. Jurisdiction details delineate the responsible authority, enabling coordinated efforts and collaboration between local, regional, and national agencies. Context classification, which considers factors like urban, suburban, or rural settings, aids planners in tailoring solutions that align with the specific needs of diverse environments. Average Annual Daily Traffic (AADT) volumes provide insights into the usage patterns of roads, guiding the determination of capacity requirements and potential congestion points.

The number of lanes is a fundamental factor influencing traffic flow and safety, and it informs decisions related to road expansion or redesign. Examining trip trends helps anticipate travel behaviors, allowing for the development of efficient routes and the identification of areas requiring transportation enhancements. Mode split data, indicating the proportion of trips made by different transportation modes, informs the promotion of sustainable and diverse transportation options. Additionally, commute times are essential metrics that impact the overall accessibility and livability of a region, influencing land use and development planning. In essence, a comprehensive understanding of these roadway characteristics empowers transportation planners to create integrated, sustainable, and resilient systems that cater to the diverse needs of communities while promoting safety, efficiency, and environmental consciousness.

### Existing Roadway Jurisdiction

**Figure 2-21** displays the existing roadway jurisdiction within and around Doral. Roadway jurisdiction refers to the authority and responsibility that a particular entity, such as a government agency or municipality, has over a specific stretch of road or highway. It involves the legal and administrative control exercised by that entity to manage and maintain the roadway infrastructure within its boundaries. Roadway jurisdiction is crucial for coordinating maintenance efforts, implementing traffic regulations, and ensuring the overall safety and functionality of the road network within a defined geographical area.

**Figure 2-21:** Roadway Jurisdiction





### Florida Department of Transportation Context Classification

Figure 2-23 displays the established and estimated FDOT context classifications within and around Doral. The established classifications were determined by FDOT. The estimated classifications were performed by this effort's team utilizing the matrix found in the [FDOT Context Classification Handbook](#) to determine roadway context.

The context classification system broadly identifies the various built environments existing in Florida. State, County, and City roadways extend through a variety of context classifications. FDOT's context classification system (Figure 2-22) describes the general characteristics of the land use, development patterns, and roadway connectivity along a roadway, providing cues as to the types of uses and user groups that will likely utilize the roadway. Identifying the context classification is a step in the planning and design processes, as different context classifications will have different design criteria and standards.

The use of context classifications to determine criteria for roadway design elements is consistent with national best practices and direction, including

the 2018 American Association of State Highway and Transportation Officials (AASHTO) Greenbook and the National Cooperative Highway Research Program (NCHRP) Report 855: An Expanded Functional Classification System for Highways and Streets. These documents propose a similar context-based approach to design that incorporates context, user needs, and transportation functions into the design process. This research was born out of a need to better define contexts beyond urban and rural classifications and to incorporate multi-modal needs into the existing functional classification system.

Figure 2-22: FDOT's Context Classification Ratings

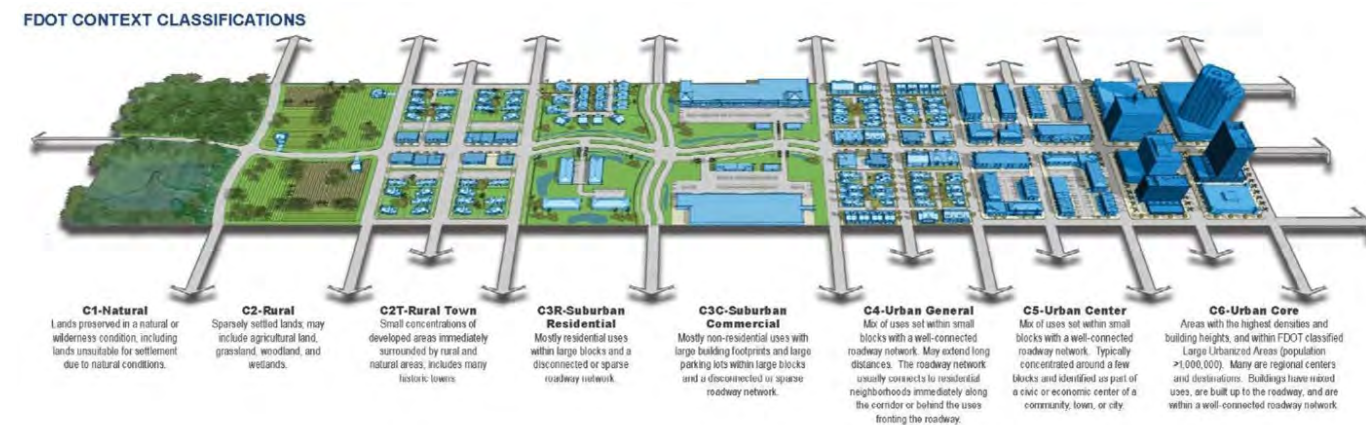
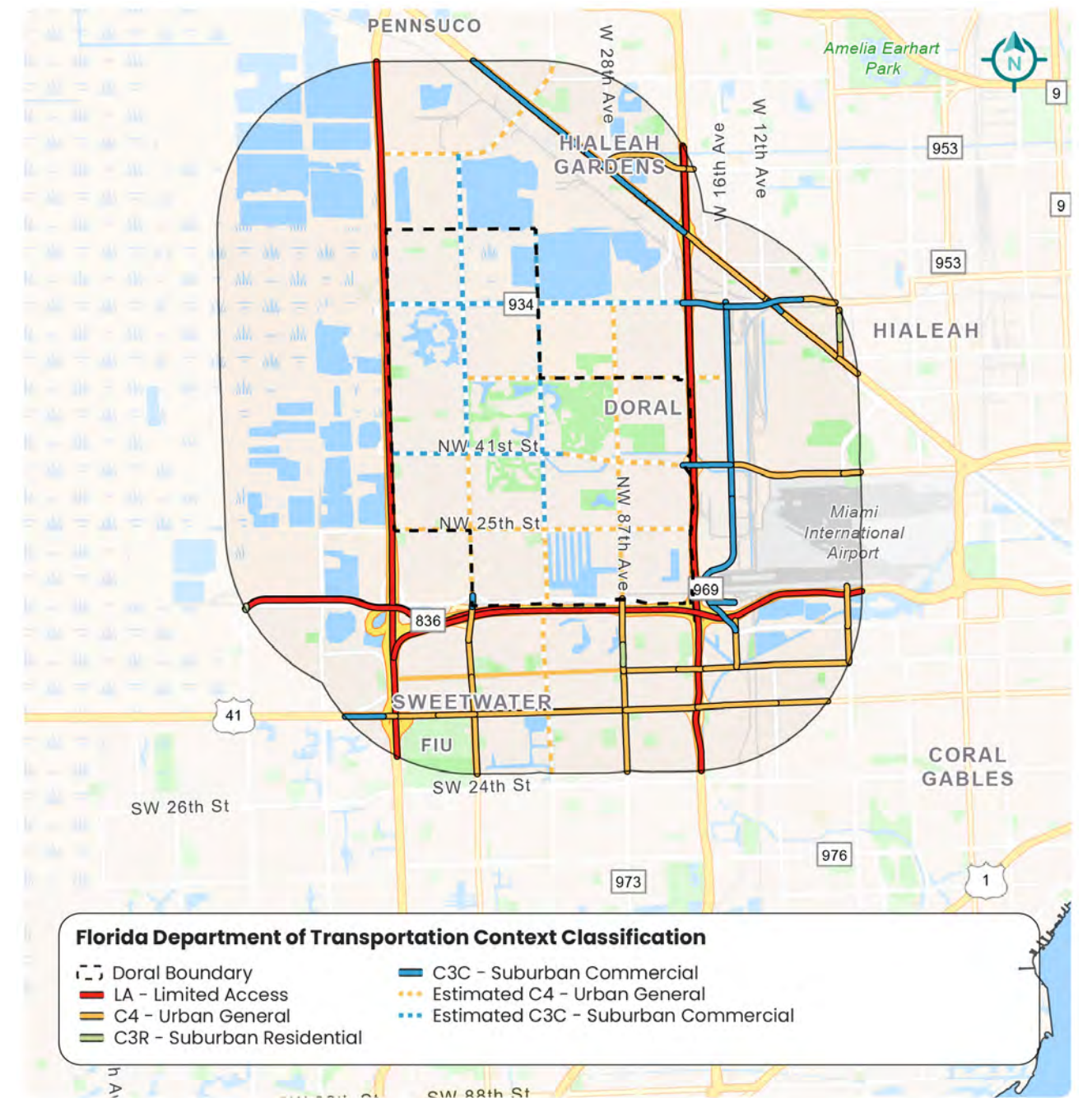


Figure 2-23: Established and Estimated Context Classification



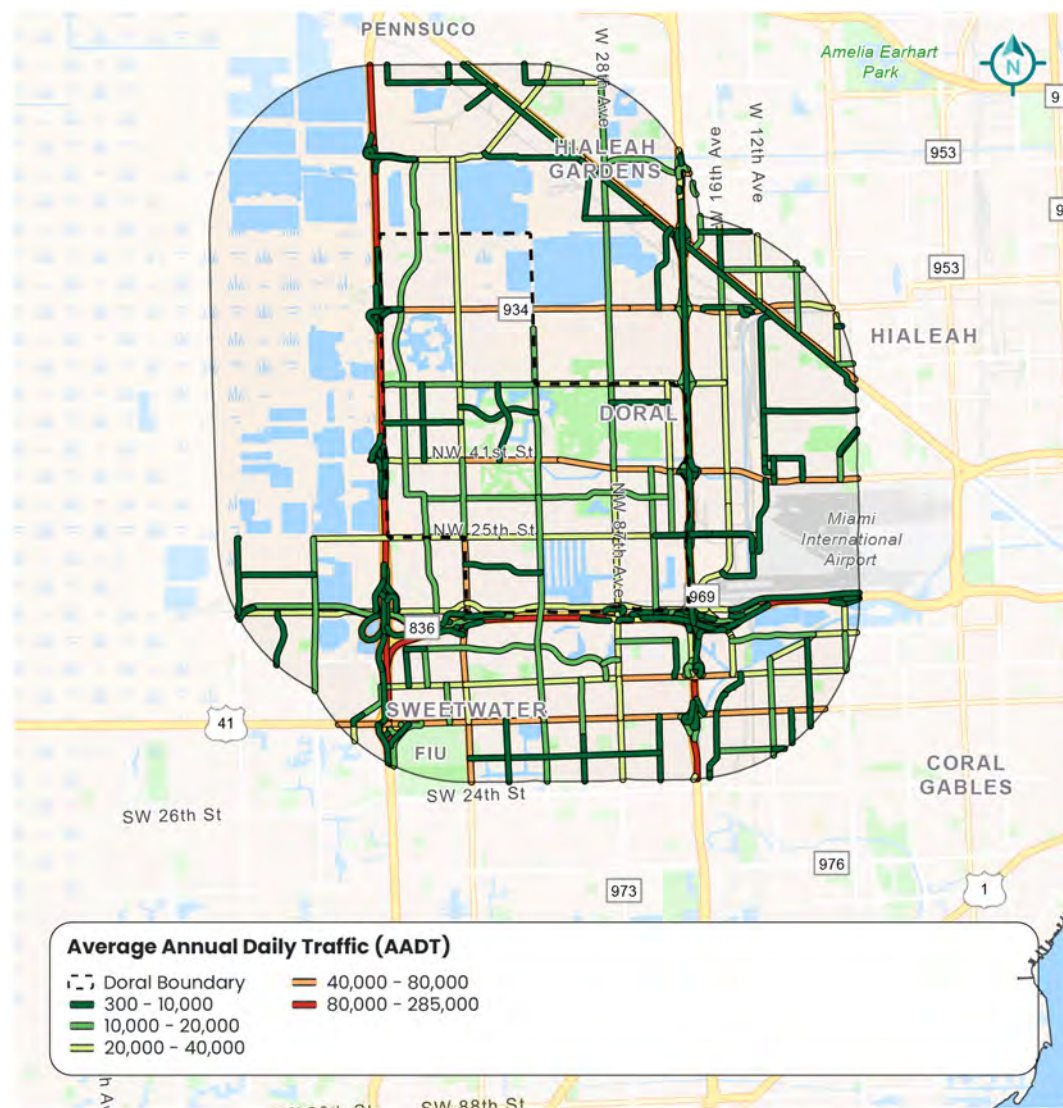


**Existing Average Annual Daily Traffic (AADT)**

Figure 2-24 displays the Average Annual Daily Traffic (AADT) within and around Doral. The AADT is a key metric used to assess the average volume of vehicles, including cars and trucks, that traverse a specific road or highway on any given day throughout the year. This metric provides valuable insights into the usage and demand for

transportation infrastructure, aiding in the planning and design of roads and highways. By understanding AADT, transportation planners can make informed decisions about capacity improvements, maintenance needs, and traffic management strategies to enhance overall road network efficiency and safety.

Figure 2-24: Existing Average Annual Daily Traffic (AADT)

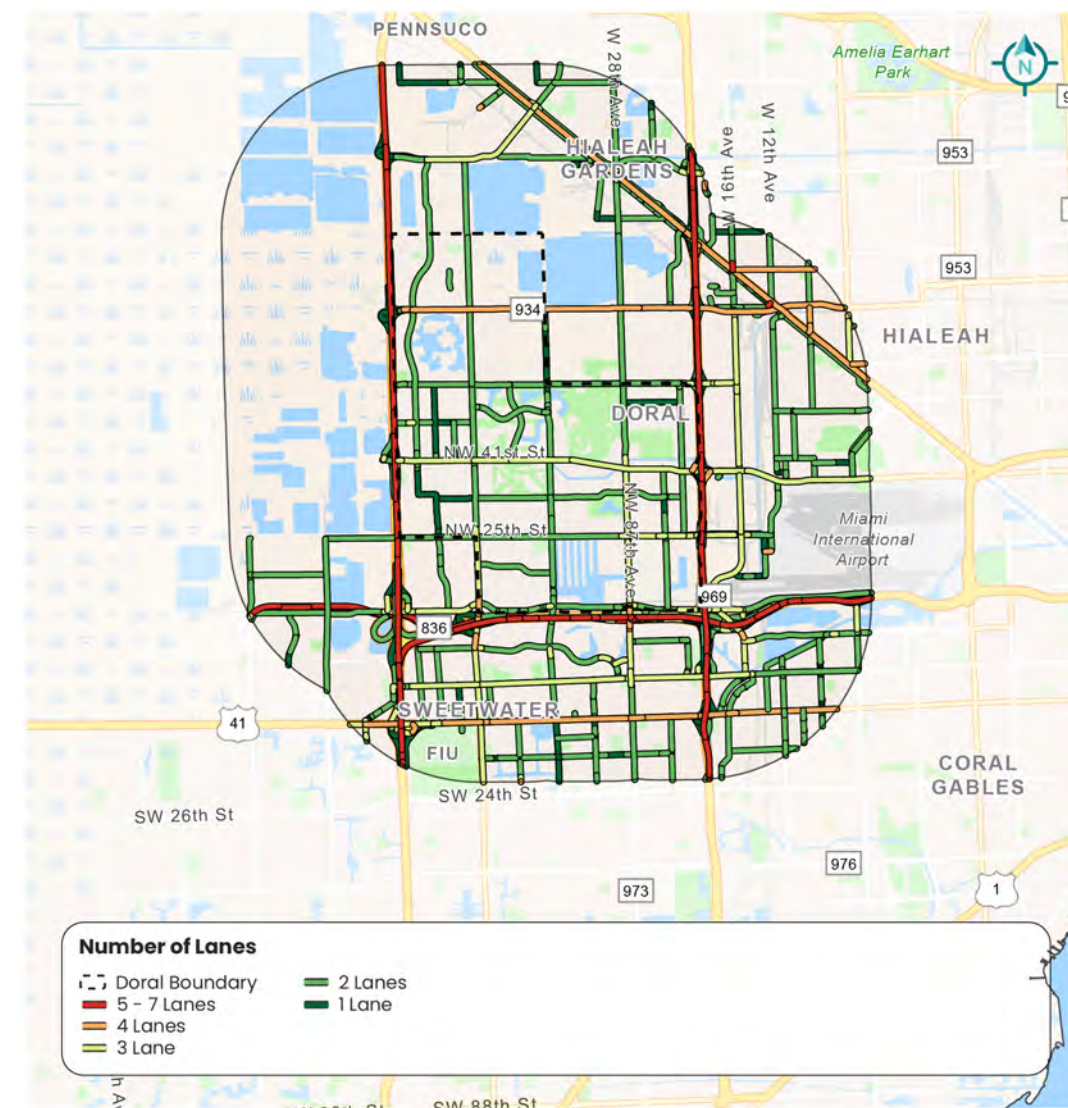


**Existing Number of Lanes**

Figure 2-25 displays the number of travel lanes on roadways within and around Doral. Understanding the number of lanes on a road is crucial for assessing several key factors, including the relationship between operating speed and posted speed limits. The number of lanes directly influences motor vehicle levels of service, providing insights into

traffic flow, congestion, and overall efficiency on a given roadway. This information aids transportation planners and engineers in optimizing road design and traffic management strategies to enhance the safety and effectiveness of the transportation network.

Figure 2-25: Existing Number of Lanes



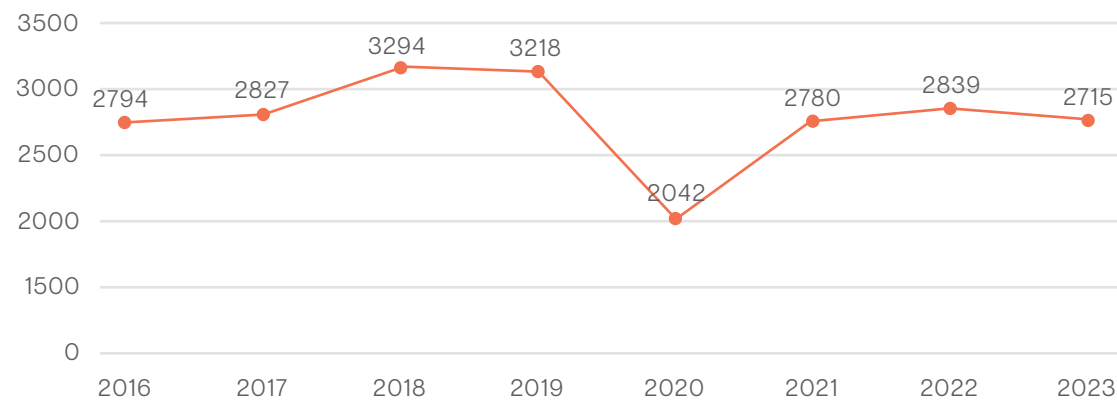
## 2.6 CRASH DATA ANALYSIS

To inform the recommendations outlined later on in Section 4 of this plan, an evaluation of eight years (2016-2023) of the most recent crash data from the Signal4 database specific to the City of Doral was conducted. Through data analysis, crashes were identified by mode, location, behavior, and environmental elements influencing them and their severity. Knowing where and why deadly and life-altering crashes are occurring sheds light on resulting patterns and contributing systemic factors and informs targeted strategies and actions for effective intervention. The data not only validates the concerns expressed by residents and visitors of Doral, but also highlights the alarming safety risks faced by road users across various modes of transportation.

Examining the crash data helps identify high-risk areas and specific factors contributing to traffic incidents. The findings from this analysis will be used to inform Doral's approach to future safety enhancements and roadway design improvements. The goal is to reduce crash frequency and severity through a combination of engineering, enforcement, and education strategies.

### Crashes by Severity (2016 - 2023)

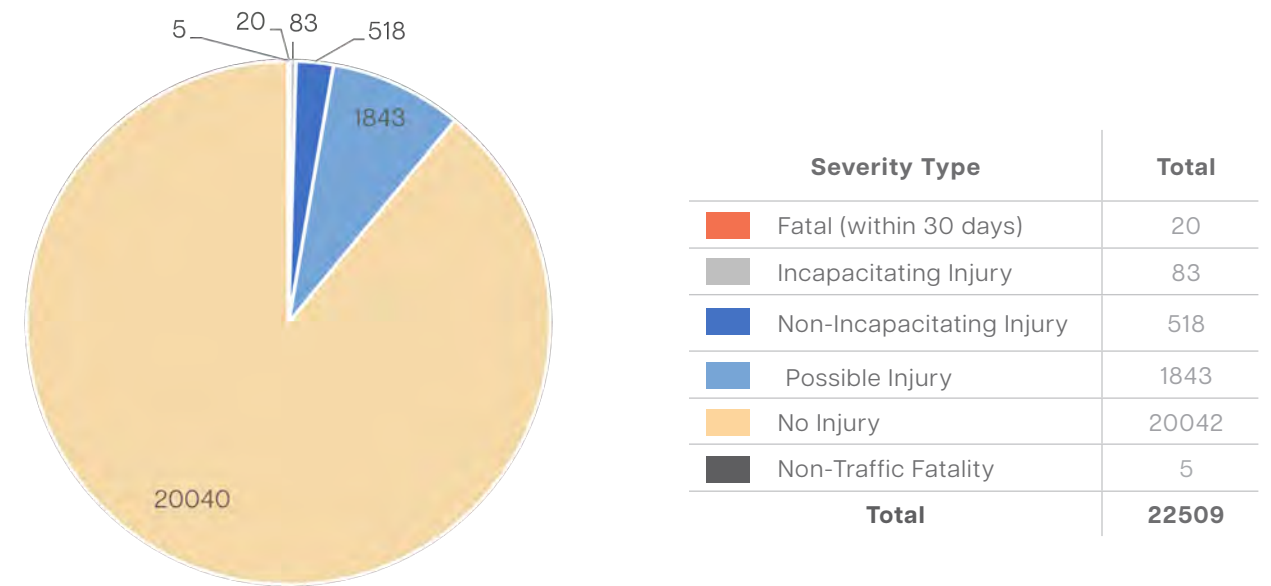
Figure 2-26: Number of Crashes by Year (2016 - 2023)



Source: Signal4 Analytics

### Crashes by Severity (2016 - 2023)

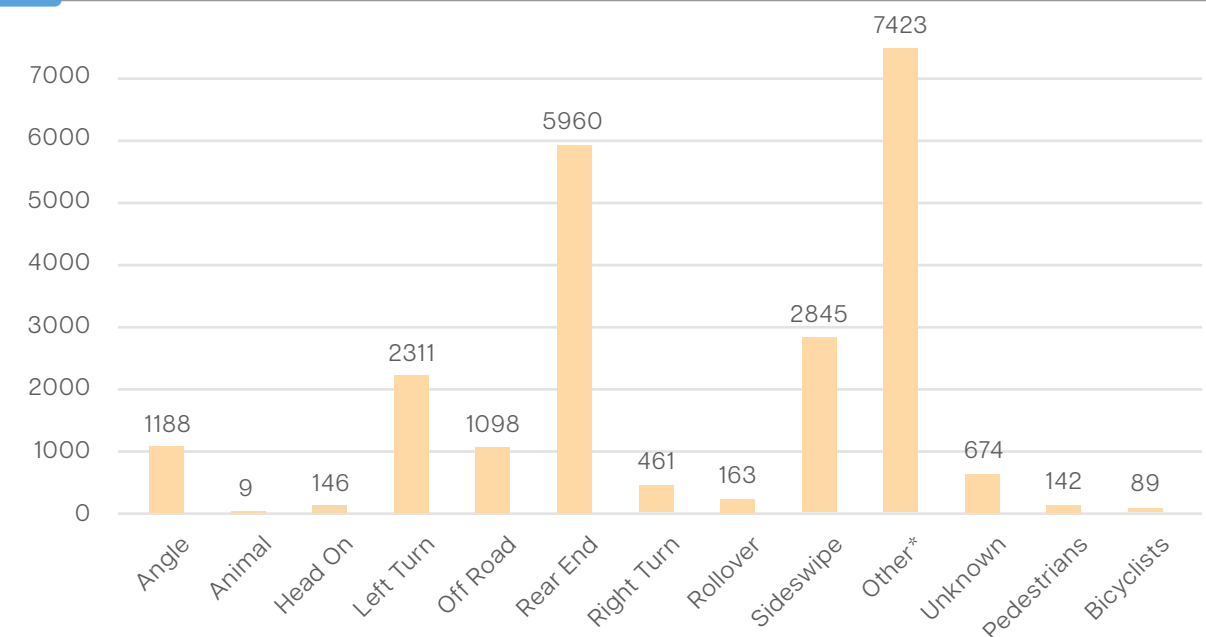
Figure 2-27: Number of Crashes by Severity Type



Source: Signal4 Analytics

### Crashes by Type (2016 - 2023)

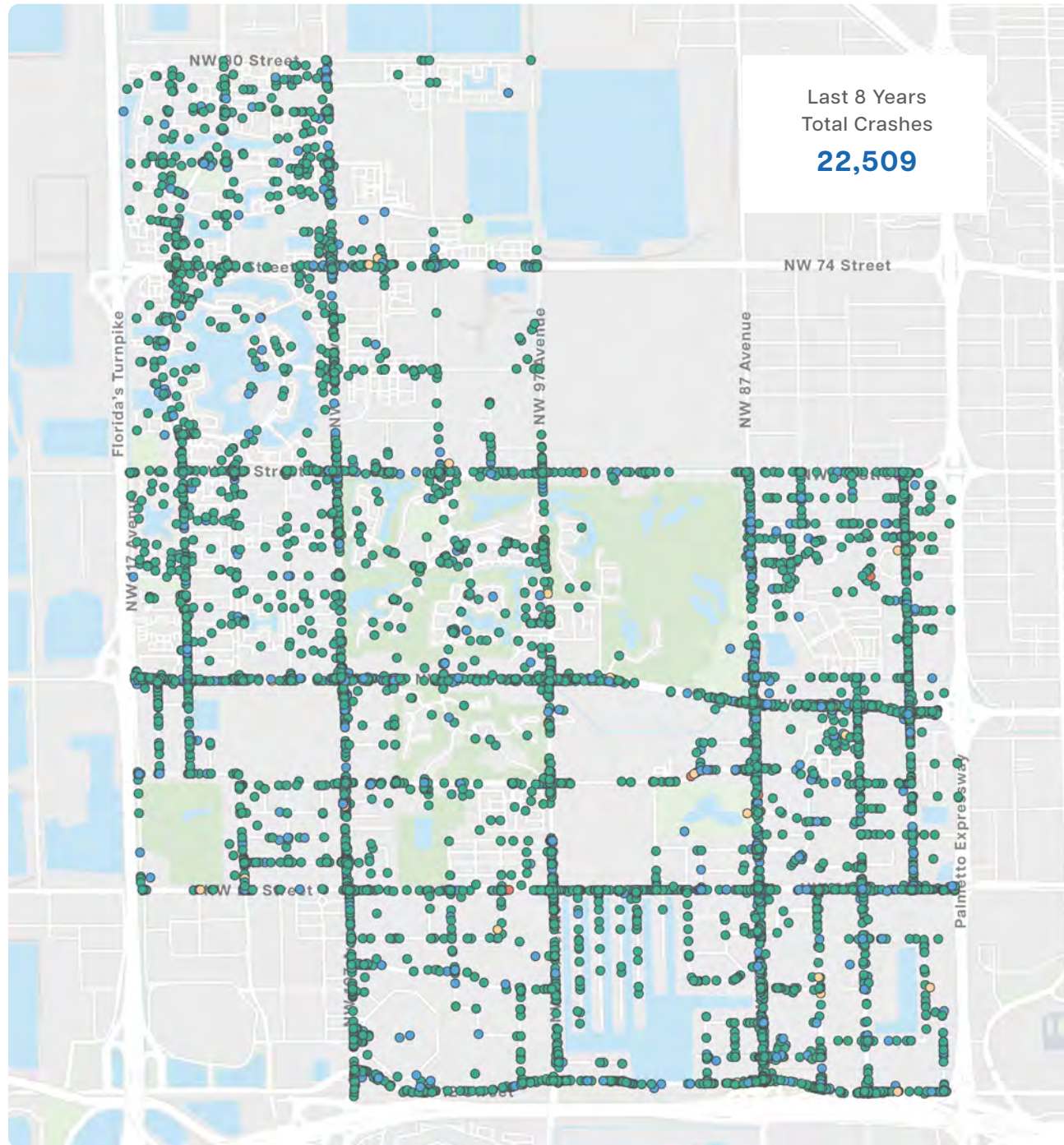
Figure 2-25: Number of Crashes by Type



\*Other crashes : Backed Into, Parked, Single Vehicle



Figure 2-29: Last 8 Years Total Crashes

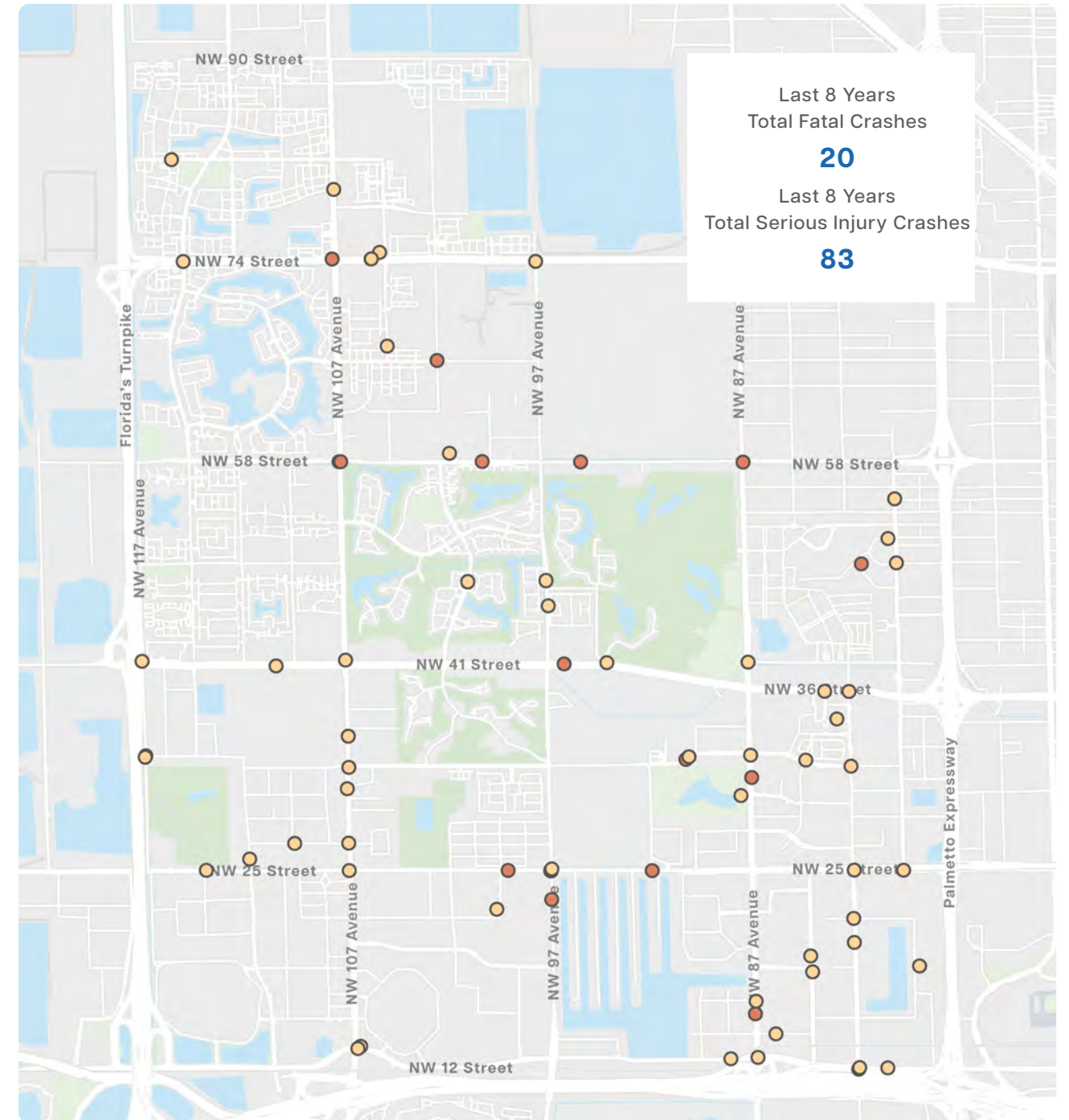


Source: Signal4 Analytics

LEGEND

- Fatal
- Serious Injury
- Injury
- No Injury

Figure 2-30: Last 8 Years Total Killed or Serious Injury Crashes



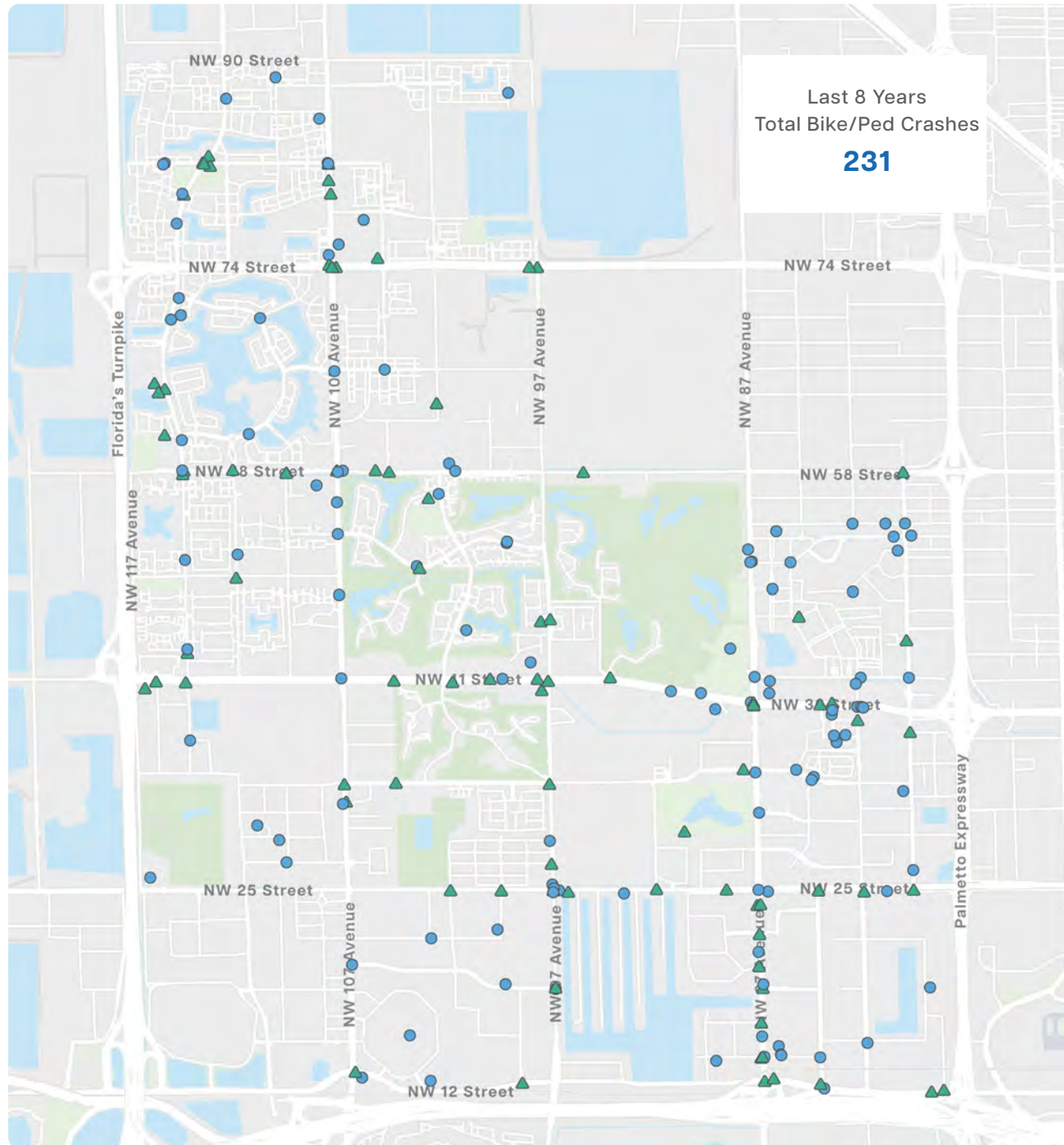
Source: Signal4 Analytics

LEGEND

- Fatal
- Serious Injury



Figure 2-31: Last 8 Years Total Bike/Ped Crashes

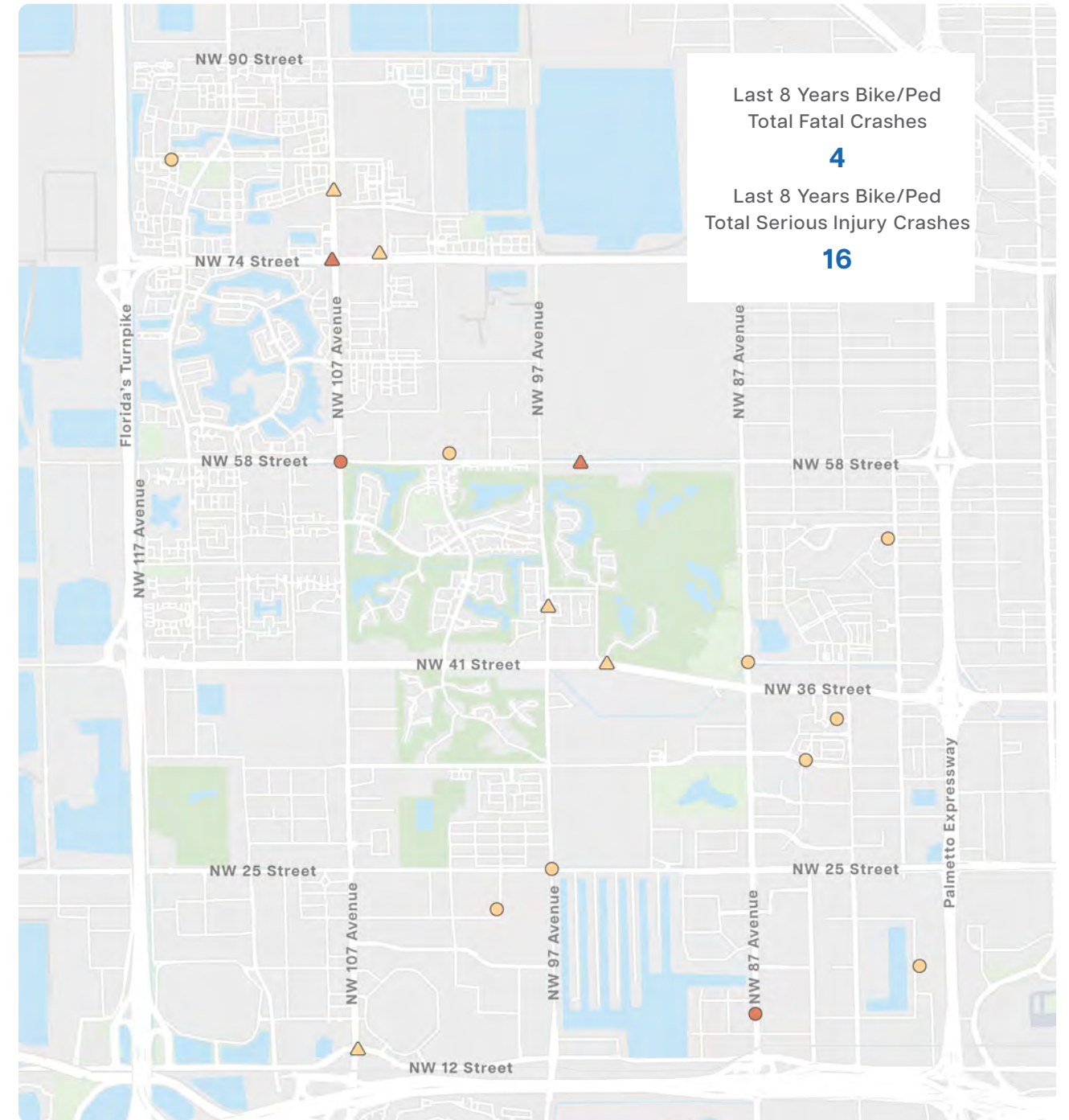


Source: Signal4 Analytics

LEGEND

- ▲ Bike Crash
- Pedestrian Crash

Figure 2-32: Last 8 Years Total Killed or Serious Injury Bike/Ped Crashes



Source: Signal4 Analytics

LEGEND

- ▲ Bike Fatal Injury
- ▲ Bike Serious Injury
- Pedestrian Fatal Injury
- Pedestrian Serious Injury

### Lighting Conditions

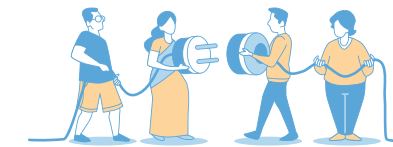
**Table 2-2:** Number of Crashes by Lighting Condition

Lighting Condition	2016	2017	2018	2019	2020	2021	2022	2023	Total	% Total
Daylight	2,365	2,289	2,686	2,619	1,560	2,155	2,245	2,152	18,071	80.3%
Dark - Lighted	311	392	461	435	349	480	462	433	3,323	14.8%
Dusk	45	30	47	40	55	41	53	55	366	1.6%
Dawn	27	37	35	57	31	31	32	27	277	1.2%
Dark - Not Lighted	32	66	50	59	33	54	32	28	354	1.6%
Dark - Unknown Lighting	1	6	4	2	4	3	2	3	25	0.1%
Other	1	-	1	2	-	3	4	2	13	0.1%
Unknown	12	7	10	4	10	13	9	15	80	0.4%
<b>Total</b>	<b>2,794</b>	<b>2,827</b>	<b>3,294</b>	<b>3,218</b>	<b>2,042</b>	<b>2,780</b>	<b>2,839</b>	<b>2,715</b>	<b>22,509</b>	<b>100%</b>

### Road Surface Conditions

**Table 2-3:** Number of Crashes by Road Surface Condition

Road Surface Condition	2016	2017	2018	2019	2020	2021	2022	2023	Total	% Total
Dry	2,498	2,505	3,019	2,841	1,731	2,461	2,580	2,469	20,104	89.32%
Wet	287	314	265	368	294	308	249	235	2,320	10.31%
Water (Standing/Moving)	-	1	-	-	3	-	-	1	5	0.02%
Mud, Dirt, Gravel	3	-	1	1	1	-	3	-	9	0.04%
Oil	-	-	-	2	-	1	-	-	3	0.01%
Other	1	-	1	2	-	1	-	1	6	0.03%
Unknown	5	7	8	4	13	9	7	9	62	0.28%
<b>Total</b>	<b>2,794</b>	<b>2,827</b>	<b>3,294</b>	<b>3,218</b>	<b>2,042</b>	<b>2,780</b>	<b>2,839</b>	<b>2,715</b>	<b>22,509</b>	<b>100%</b>



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## 2.7 POPULATION TRIP ANALYSIS

Part of the existing conditions and network analysis involved data acquisition and examination of various transportation trip characteristics. This study utilized an independent data gathering program named Replica. Replica's databases offer various information such as, Origin and Destination pairs in the City of Doral. This involves analyzing the patterns of where trips begin and end within the city. This data provides insights into commuting trends, helping urban planners and policymakers optimize transportation infrastructure. This also helps understanding the Transportation Mode Split Doral residents utilize. Knowing this information may enhance the efficiency and sustainability of the City's transportation system.

Transportation Mode Split is the distribution of various transportation modes, such as cars, public transit, walking, and cycling. A part of this mode split information also highlights transit locations within the study area with high user frequency. Analyzing average trip characteristics, including distance and duration allows for a comprehensive understanding of travel behavior in Doral, assisting in the formulation of targeted transportation policies and improvements.

### Replica's Data Acquisition Methodology

Replica generates its data by running large-scale, computationally intensive simulations. These simulations allow us to deliver granular data outputs that match behavior in aggregate, but don't surface the actual movements (or compromise the privacy) of any one individual. Rather than simply cleansing, normalizing, and scaling individual data sources, Replica uses a composite of data sources to:

- Create a synthetic population that matches the characteristics of a given region.
- Train several behavior models specific to that region.
- Run simulations of those behavior models applied to the synthetic population in order to create a "replica" of transportation and economic patterns.
- Calibrate the outputs of the model against observed "ground-truth" to improve quality.

Replica builds its simulations using a diverse set of third-party data from public and private-sector sources. These sources include five categories of data:

- **Mobile Location Data:** To create a representative sample of daily movement patterns within a place, Replica uses multiple types of mobile location data as inputs to our model – location-based services (LBS) data collected from personal mobile devices; vehicle in-dash GPS data; and point-of-interest aggregates. Previous versions of Replica's model also included cellular networks data as another source of mobile location data. Replica only acquires de-identified mobile location data.
- **Consumer/Resident Data:** Demographic data from public and private sources provides the basis for determining where people live and work and the characteristics of the population such as age, race, income, and employment status.
- **Built Environment Data:** Land use data (such as zoning regulations), building data (such as total square footage and use types), and transportation network data (such as road and transit networks) are used to determine where people live, work, and shop, and by what means it is possible to travel to each activity.
- **Economic Activity Data:** Includes all transactions, including credit card, debit card, and cash transactions that take place at a point of sale. With this input, Replica depicts the level and types of spending that occurred at a particular time and place.
- **Ground Truth Data:** Ground truth data is used to calibrate and improve the overall accuracy of Replica outputs. The types of ground truth collected by Replica include auto and freight volumes, transit ridership, and bike and pedestrian counts. Ground truth is both acquired directly by Replica and provided by customers.

Each of Replica's data processing pipelines leverages a composite of these data sets. This process minimizes the risk of sampling bias that exists in any single source on its own. For example, a product that relies more heavily on data from personal mobile devices risks failing to adequately simulate the portions of the population that do not have mobile devices or those who opt out of device tracking technologies. This composite approach also creates redundancy against data quality issues and protects against disruptions of individual data sources.

### Average Number of City of Doral Resident Daily Trips Analysis

**Figure 2-33** displays the number of trips by destination that Doral residents are taking per day averaged over a 3-month period (January – March 2023). This data includes all trips a Doral resident might take during their day. This might include, but is not limited to:

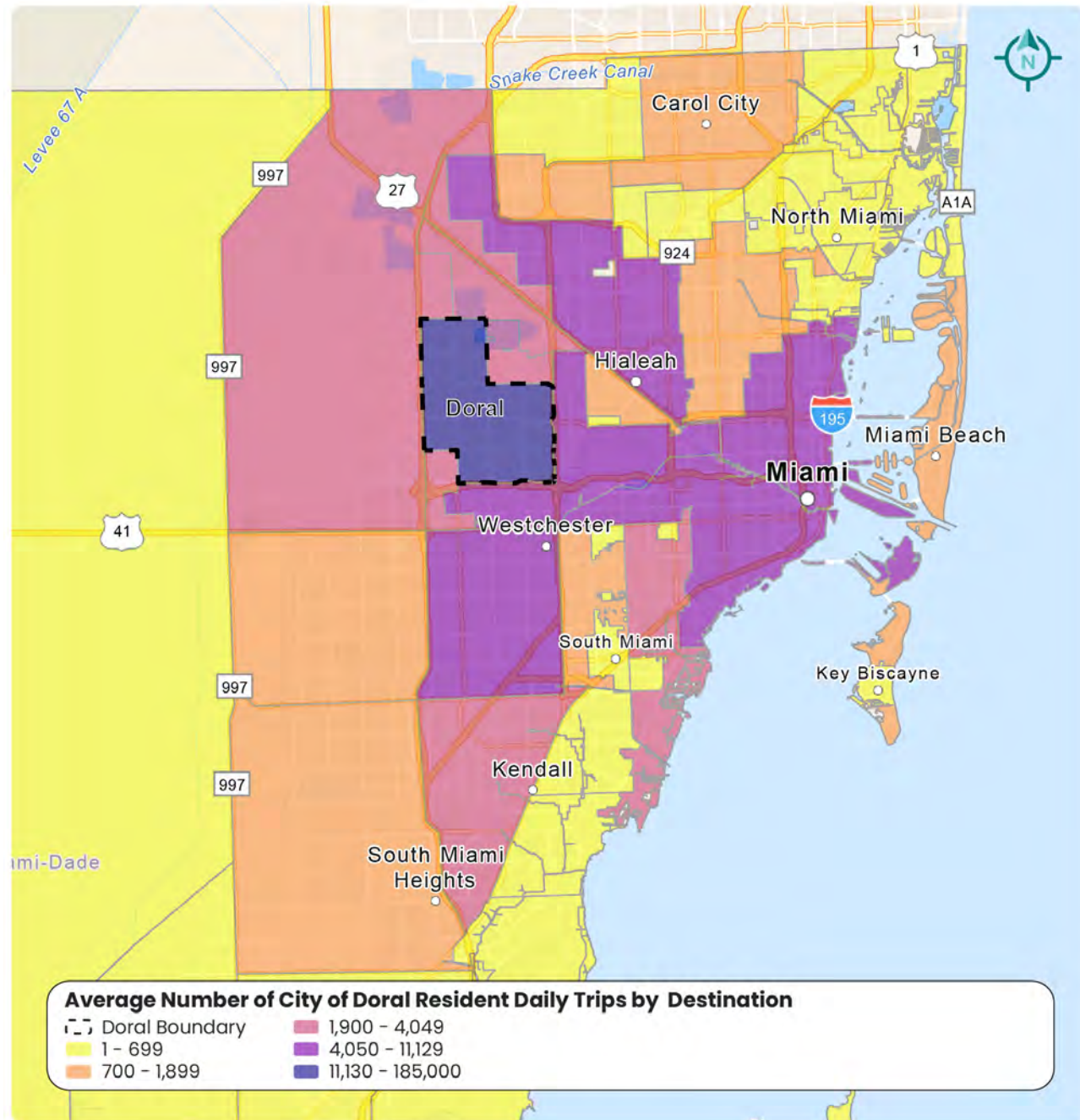
- Commute trip to work,
- Lunch break trip to a restaurant,
- Commute trip back to home,
- Trip to the grocery store,
- Trip to bring their children or themselves to an extracurricular activity,
- Trip to a restaurant for dinner.

Amongst the 3-month period this data was derived from, on average, 66,500 trip takers made approximately 264,000 trips per day. As can be seen in Figure XX, most of the destinations associated with these trips made by Doral residents end in Doral suggesting a high amount of intercity travel to employment, shopping, or recreation points of interest.

Following **Figure 2-33**, **Figure 2-34** – **Figure 2-39** highlight specific characteristics of trip trends from Doral residents.



Figure 2-33: Average Number of City of Doral Resident Daily Trips by Destination



**Doral Resident's Trip Characteristics**

Figure 2-34: Doral Resident's Primary Means of Transportation

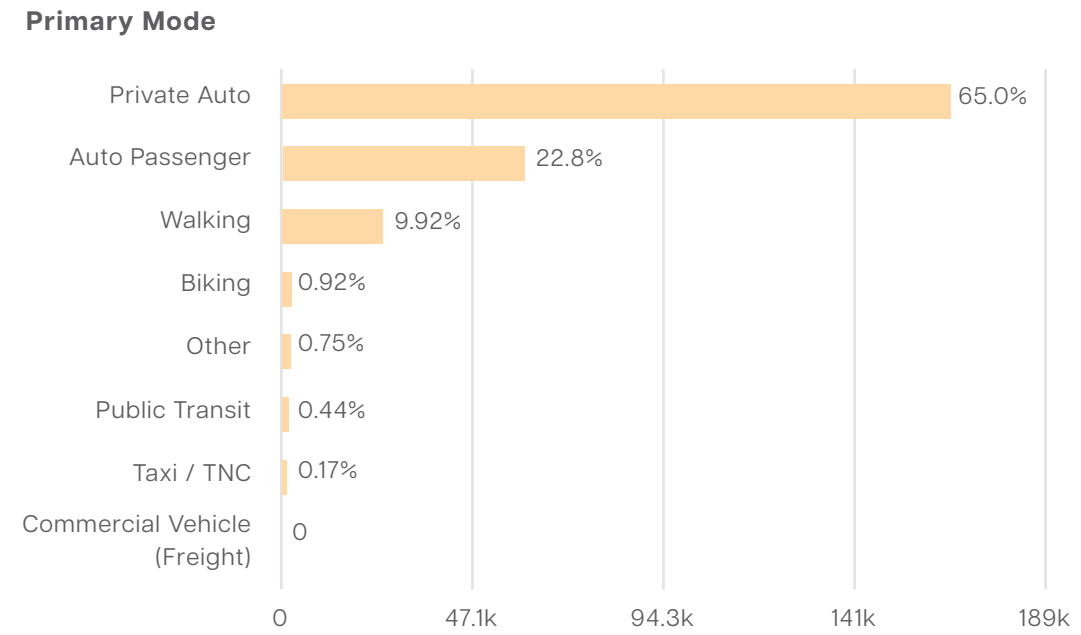


Figure 2-35: Doral Resident's Preferred Transit Method

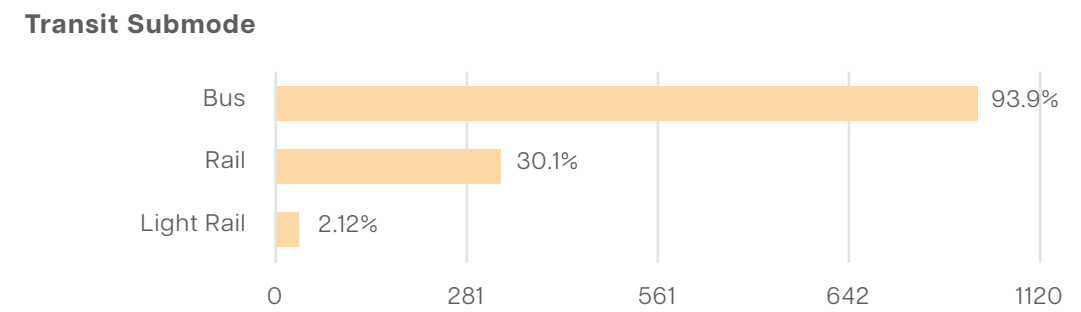
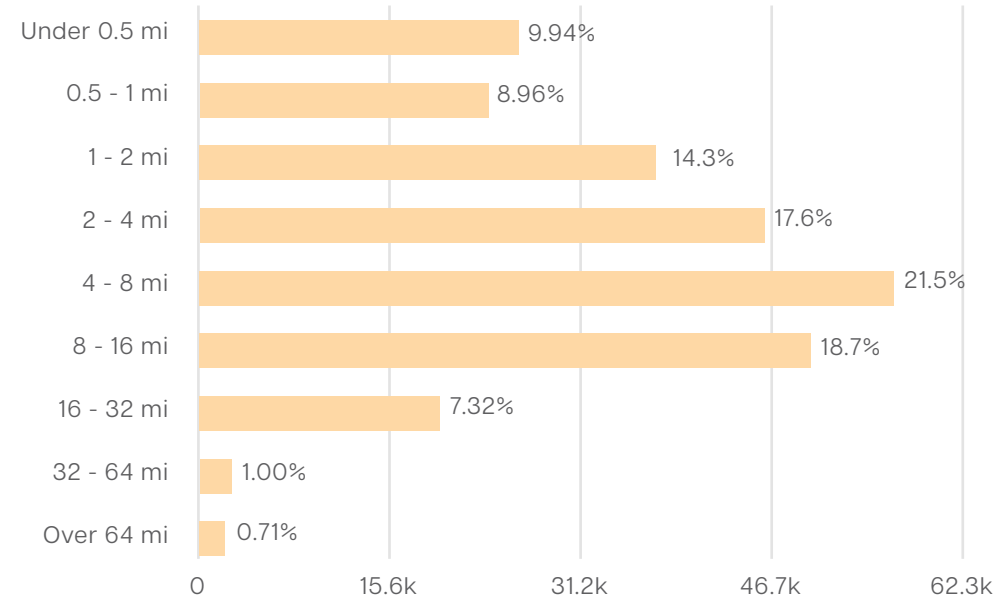


Figure 2-36: Doral Resident's Primary Means of Transportation

Trip Distance (Miles)



Average Miles Traveled

**8.2**

Median Miles Traveled

**3.9**

Figure 2-37: Doral Resident's Primary Trip Purpose

Trip Purpose

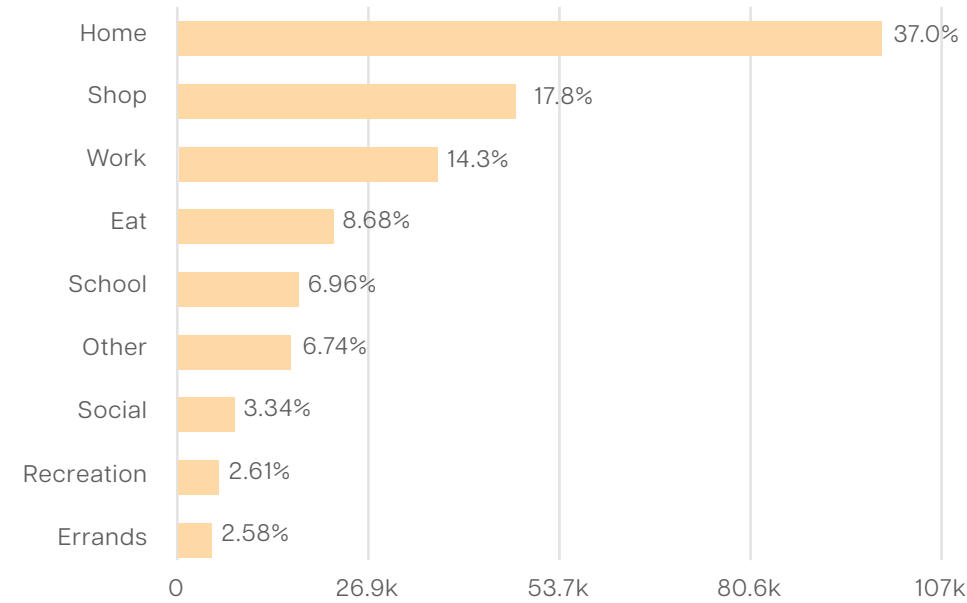
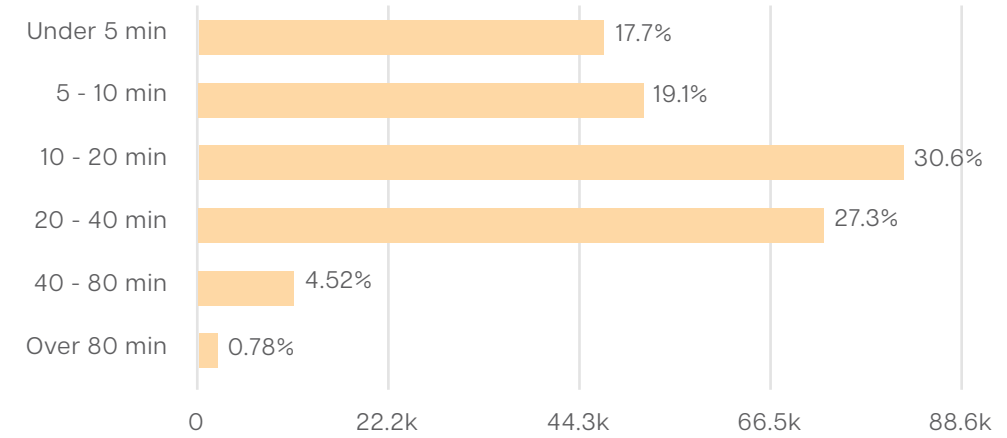


Figure 2-38: Doral Resident's Average Daily Trip Distance

Trip Duration (Minutes)



Average Minutes Traveled

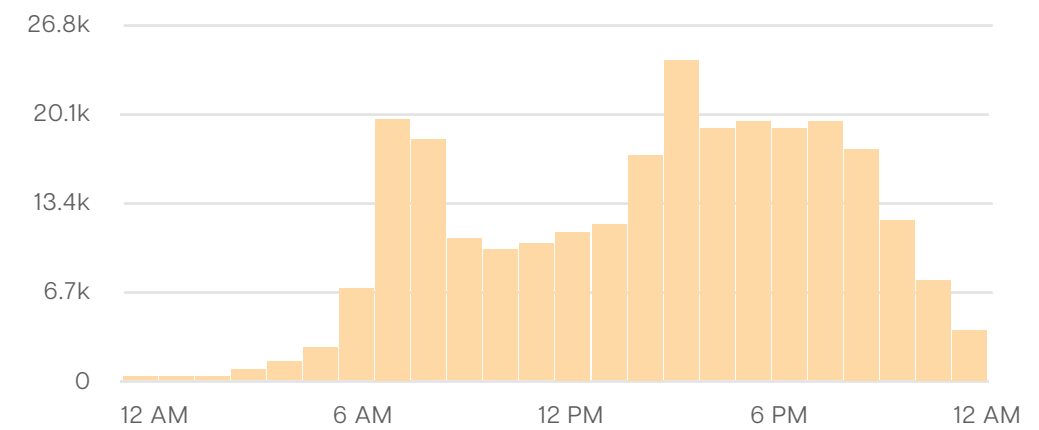
**17.5**

Median Minutes Traveled

**13**

Figure 2-39: Doral Resident's Average Daily Trip Start Time

Starting Hour (in Local Time)



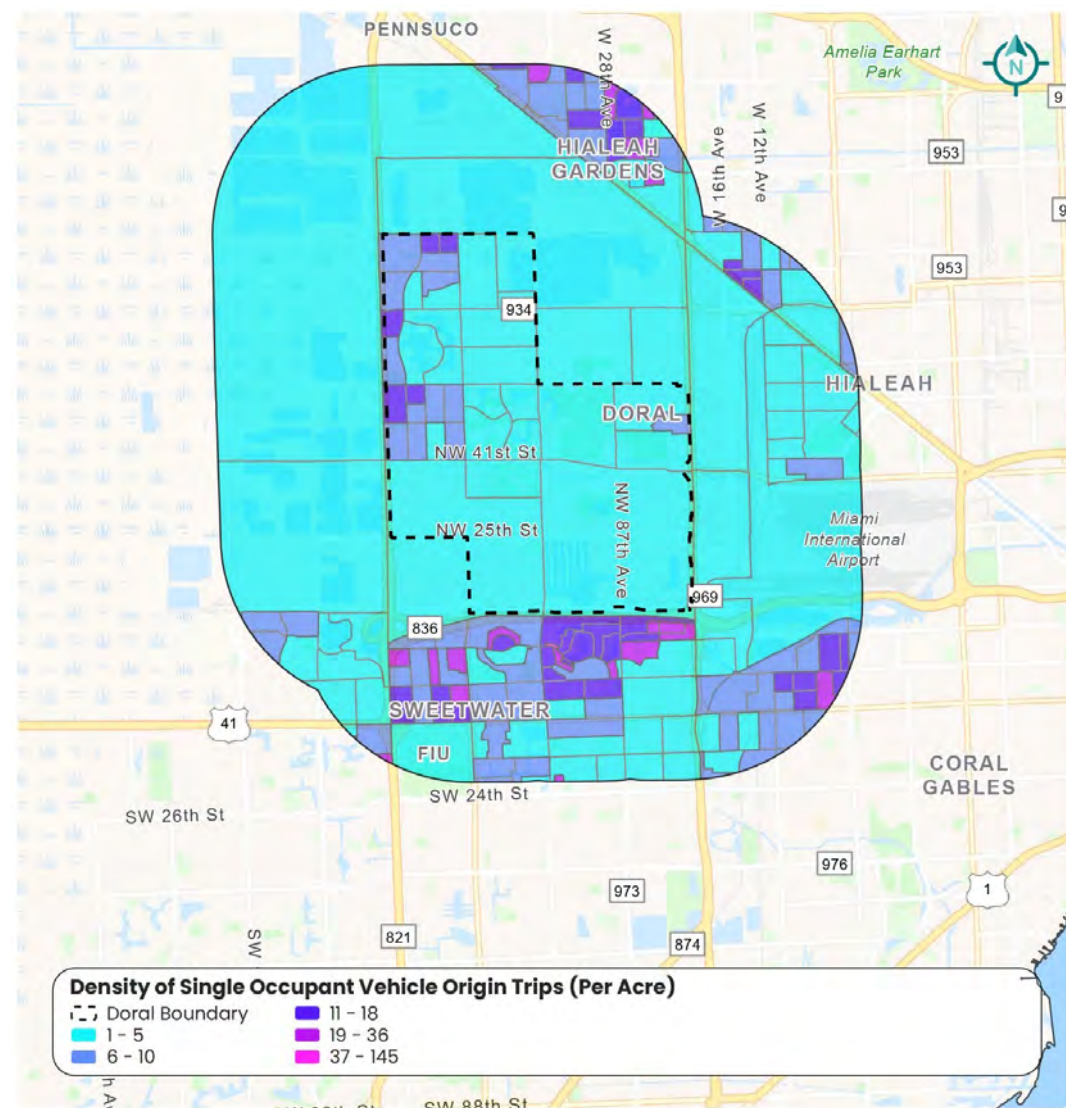
Trip Characteristics Source: Replica HQ

**Density of Single Occupant Vehicle Origin Trips**

The US Census Bureau ask questions about where people work, how they get there, when they leave home, and how long it takes, to create statistics about commuting, or a person's journey to work. Commuting patterns and characteristics are crucial to planning for improvements to road and highway infrastructure, developing transportation plans and services, and understanding where people are traveling in a normal day. Doral's single occupant

vehicle trips are the most common method of travel for Doral residents. According to the American Community Survey 2021 5-year estimate of those who responded to the survey, 22,911 residents say they drive alone on a semi-daily basis.

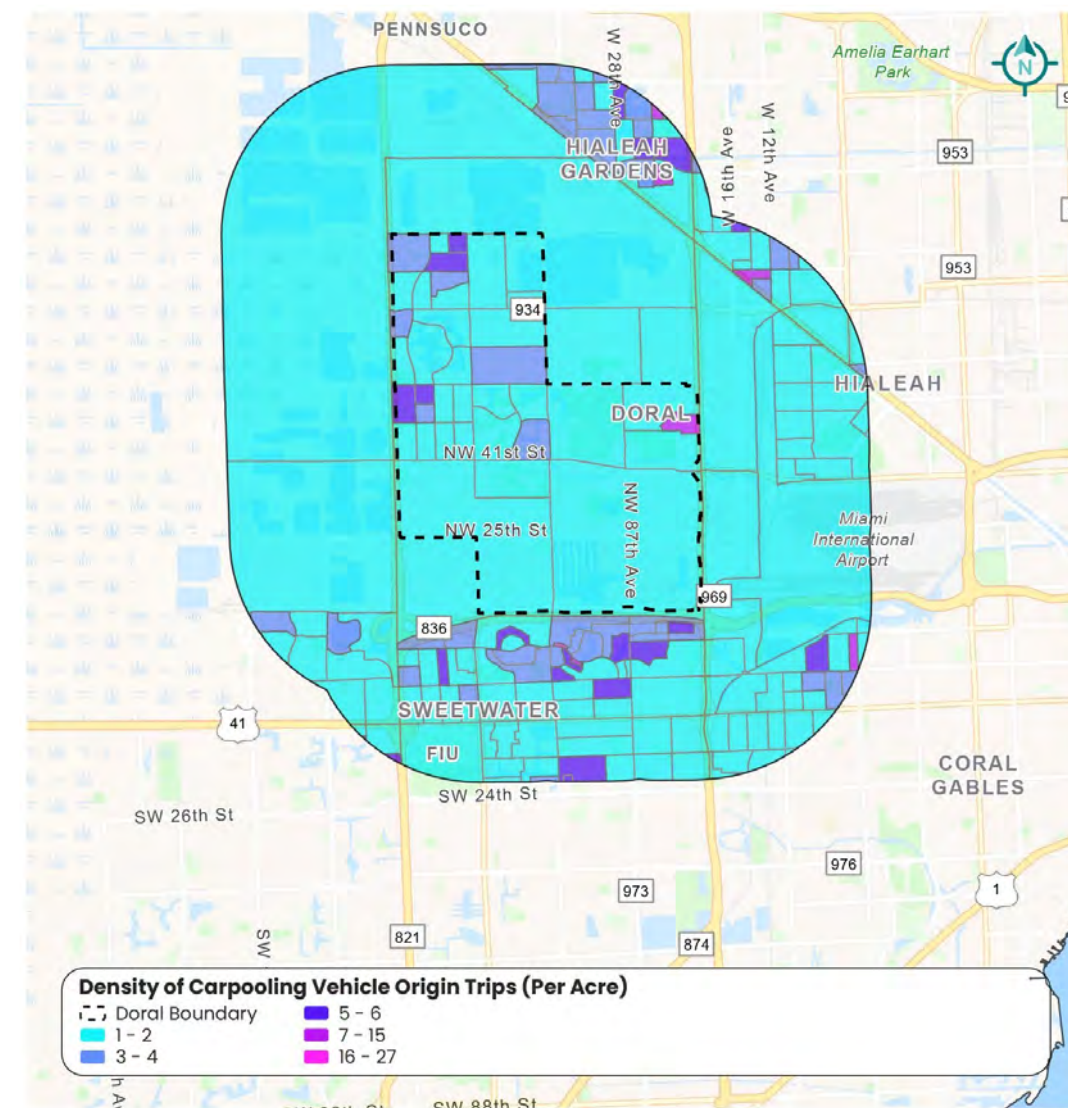
**Figure 2-40:** Density of Single Occupant Vehicle Origin Trips



**Density of Carpooling Vehicle Origin Trips**

Figure 2-41 is a map illustrating the population density of Doral residents who carpool. The figure provides a visual representation of the concentration of individuals sharing rides in the city. Carpool population densities are predominately west of NW 107 Ave and north of NW 41 Street. According to the American Community Survey 2021 5-year estimate of those who responded to the survey, 3,546 residents say they carpool on a semi-daily basis.

**Figure 2-41:** Density of Carpooling Vehicle Origin Trips

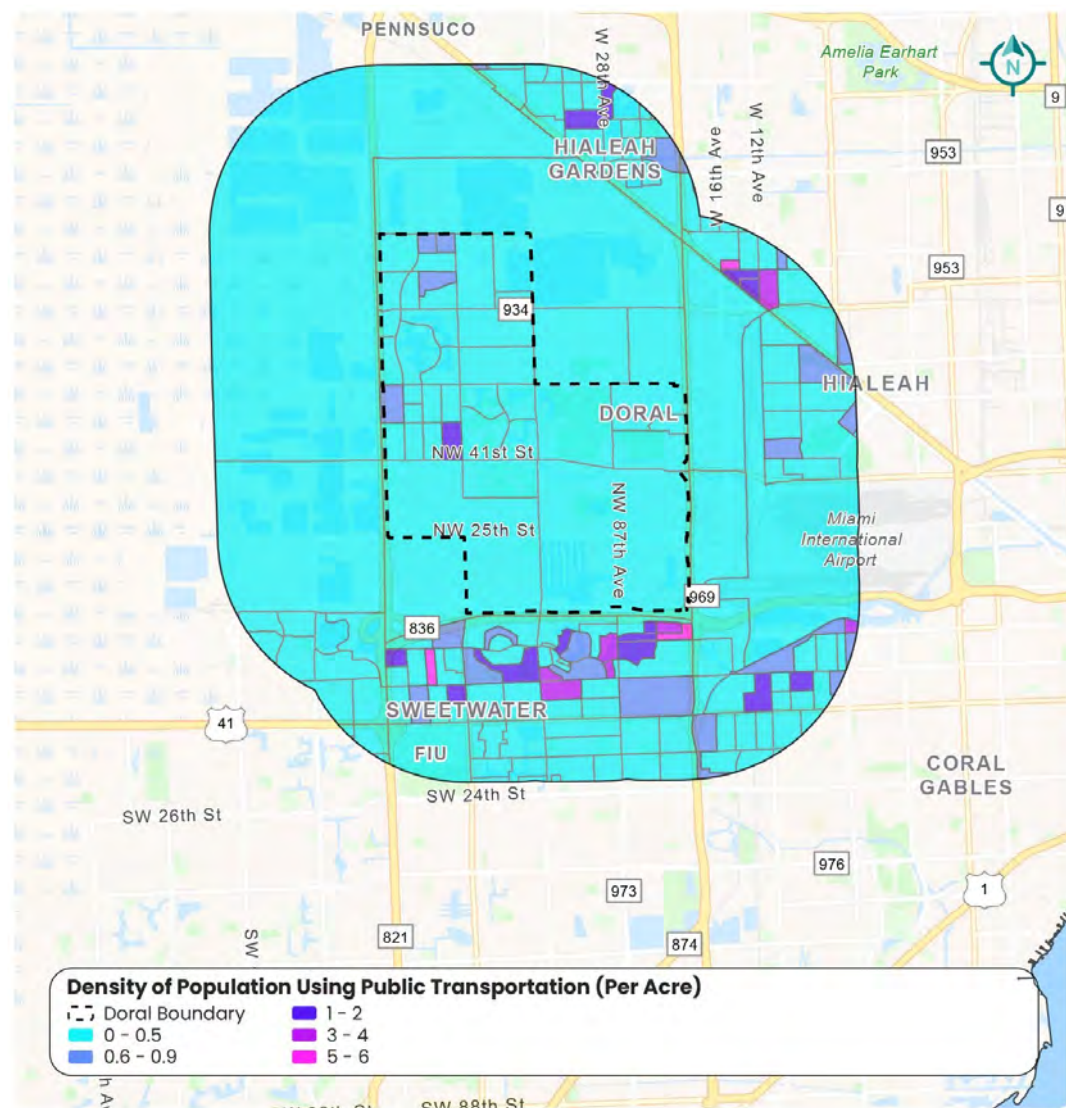




**Density of Population Using Public Transportation**

Figure 2-42 highlights existing concentration of the Doral population that currently utilizes public transportation. Accessibility, Infrastructure, Population Density, Urban Planning and Land Use can all be contributing factors as to why this public transportation density currently exists.

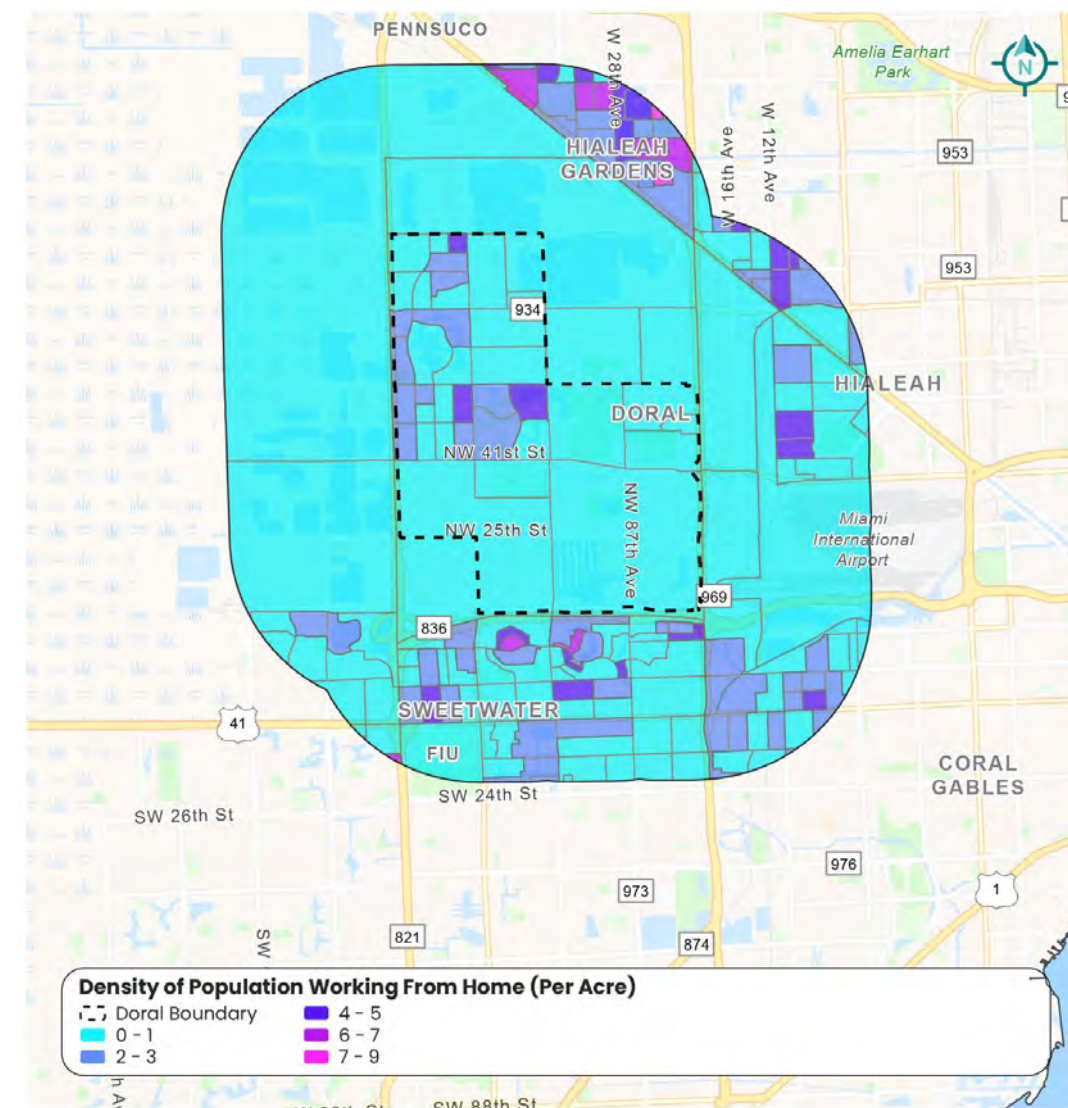
Figure 2-42: Density of Population Using Public Transportation



**Density of Population Working From Home**

Figure 2-43 displays how many residents of Doral, per acre, work from home. According to the American Community Survey 2021 5-year estimate of those who responded to the survey, 2,602 residents say they work from home on a semi-daily basis.

Figure 2-43: Density of Population Working From Home

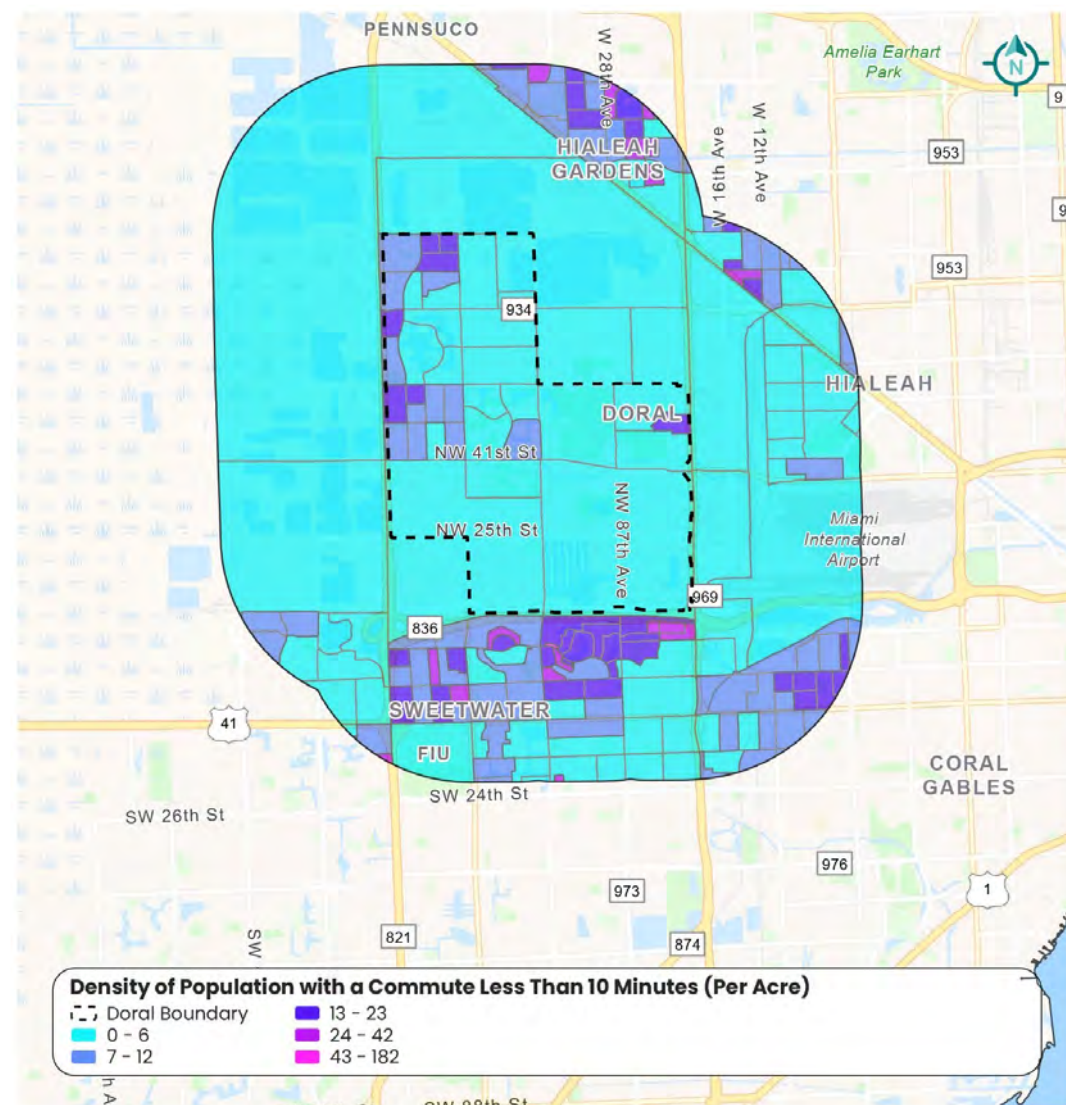




**Density of Population with a Commute Less Than 10 Minutes**

Figure 2-44 displays how many residents of Doral, per acre with all modes of transportation and carpooling considered, commute is less than 10 minutes. According to the American Community Survey 2021 5-year estimate of those who responded to the survey, 29,353 residents say they commute on a semi-daily basis is less than 10 minutes.

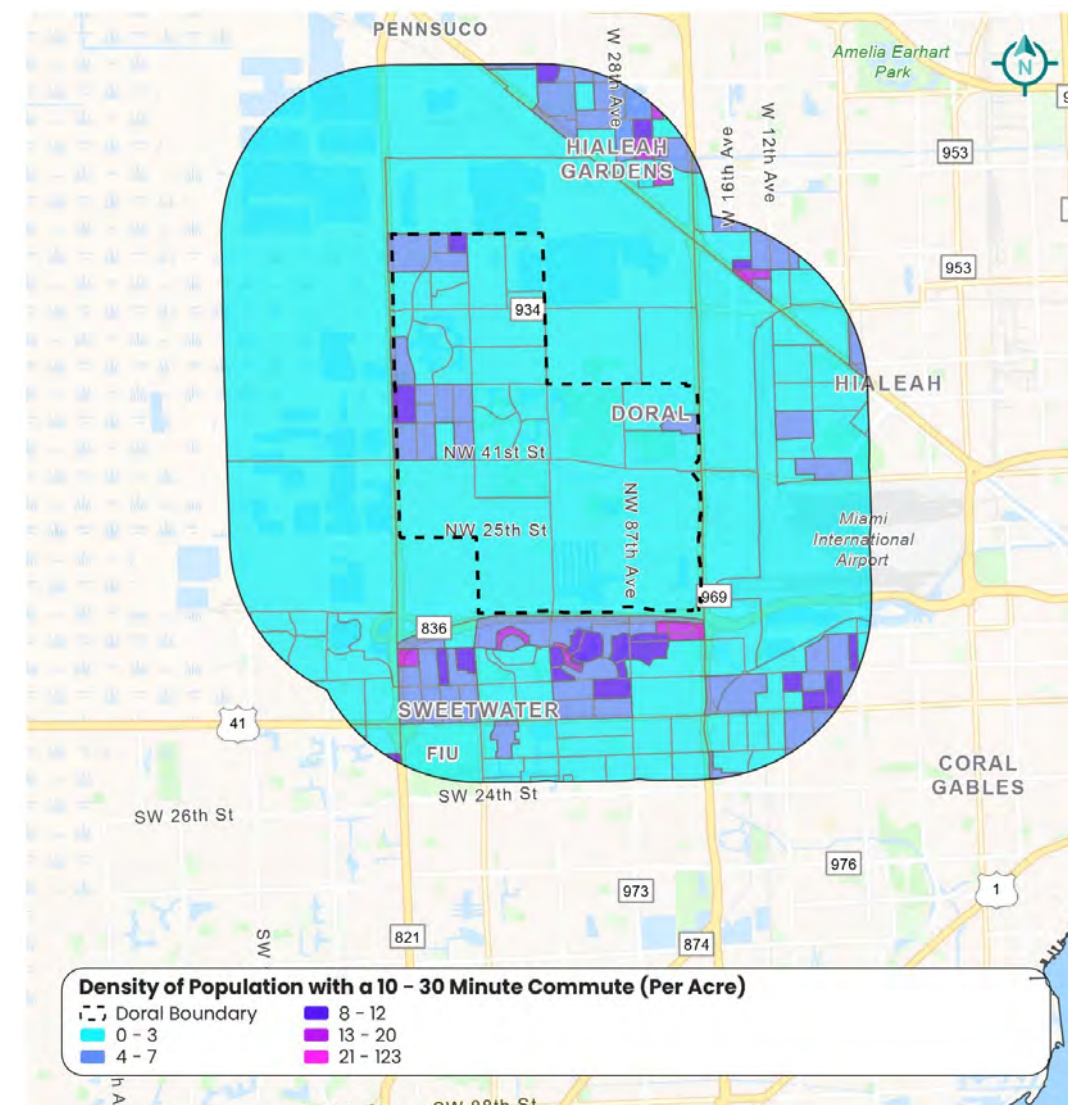
Figure 2-44: Density of Population with a Commute Less Than 10 Minutes



**Density of Population with a 10 - 30 Minute Commute**

Figure 2-45 displays how many residents of Doral, per acre, have a commute between 10 to 30 minutes. According to the American Community Survey 2021 5-year estimate of those who responded to the survey, 13,545 residents say they commute on a semi-daily basis is 10 to 30 minutes.

Figure 2-45: Density of Population with a 10 - 30 Minute Commute

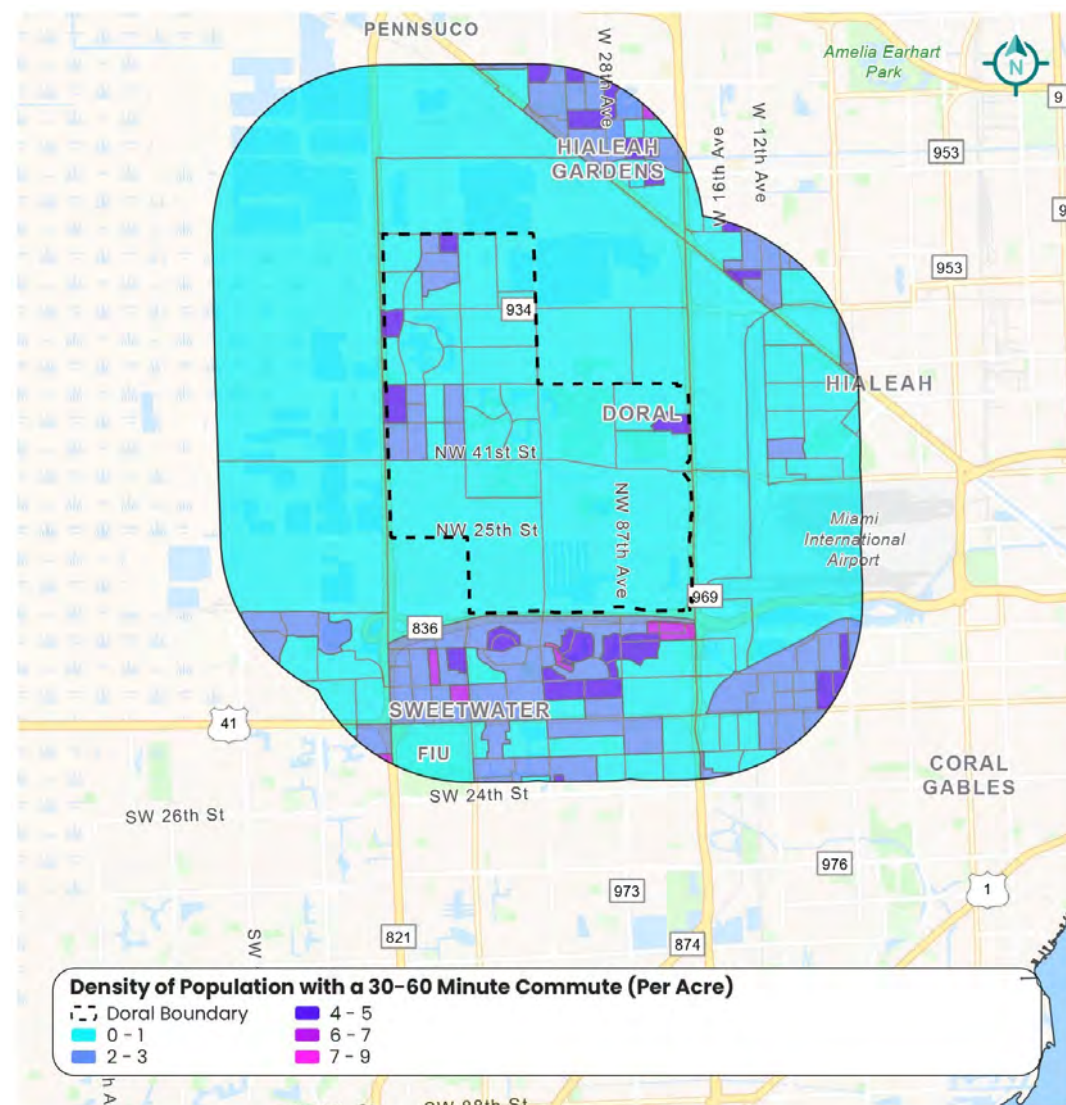




**Density of Population with a 30-60 Minute Commute**

Figure 2-46 displays how many residents of Doral, per acre, commute between 30 to 60 minutes. According to the American Community Survey 2021 5-year estimate of those who responded to the survey, 9,699 residents say they commute on a semi-daily basis is 30 to 60 minutes.

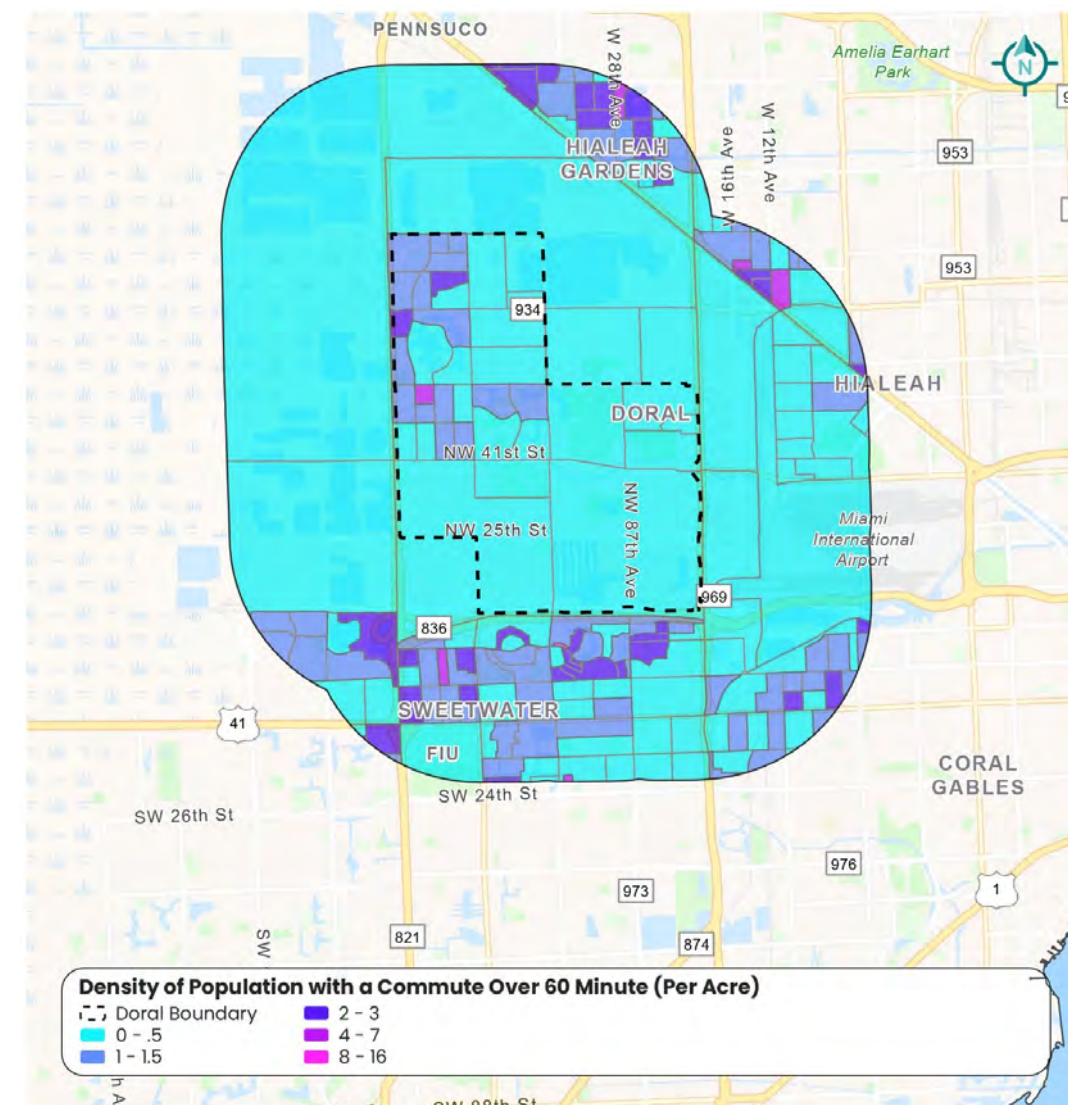
Figure 2-46: Density of Population with a 30-60 Minute Commute



**Density of Population with a Commute Over 60 Minutes**

Figure 2-47 displays how many residents of Doral, per acre, commute over 60 minutes. According to the American Community Survey 2021 5-year estimate of those who responded to the survey, 2,337 residents say they commute on a semi-daily basis is over 60 minutes.

Figure 2-47: Density of Population with a Commute Over 60 Minutes





## 2.8 EXISTING OPERATIONS ANALYSIS

As part of the master plan update, traffic operation analysis was carried out for existing conditions, as of 2023, to evaluate the performance of the City of Doral's Transportation system.

Traffic counts were collected in September of 2023 at 31 intersections that were previously identified for existing condition traffic analysis for the following weekday peak periods:

**AM - 7:00 to 9:00**

**PM - 4:00 to 6:00**

The study area intersections are listed in [Table 2-4](#).

### Traffic Counts

The study area was divided into 3 zones for the purpose of traffic counts as outlined in [Figure 2-48](#) shows the traffic counts locations and three zones as identified for traffic count.

Turning movement counts (TMCs) were carried out on the following dates:

- **Zone 1:** September 13, 2023 (Wednesday)
- **Zone 2:** September 19, 2023 (Tuesday)
- **Zone 3:** September 27, 2023 (Wednesday)

TMCs for the 4 approaches (NB, SB, EB, and WB) recording 4 movements (U-turn, Left, Through and Right) for Vehicle (Passenger Car), Trucks, and Pedestrians and bicyclists were documented for each 15-minute interval.

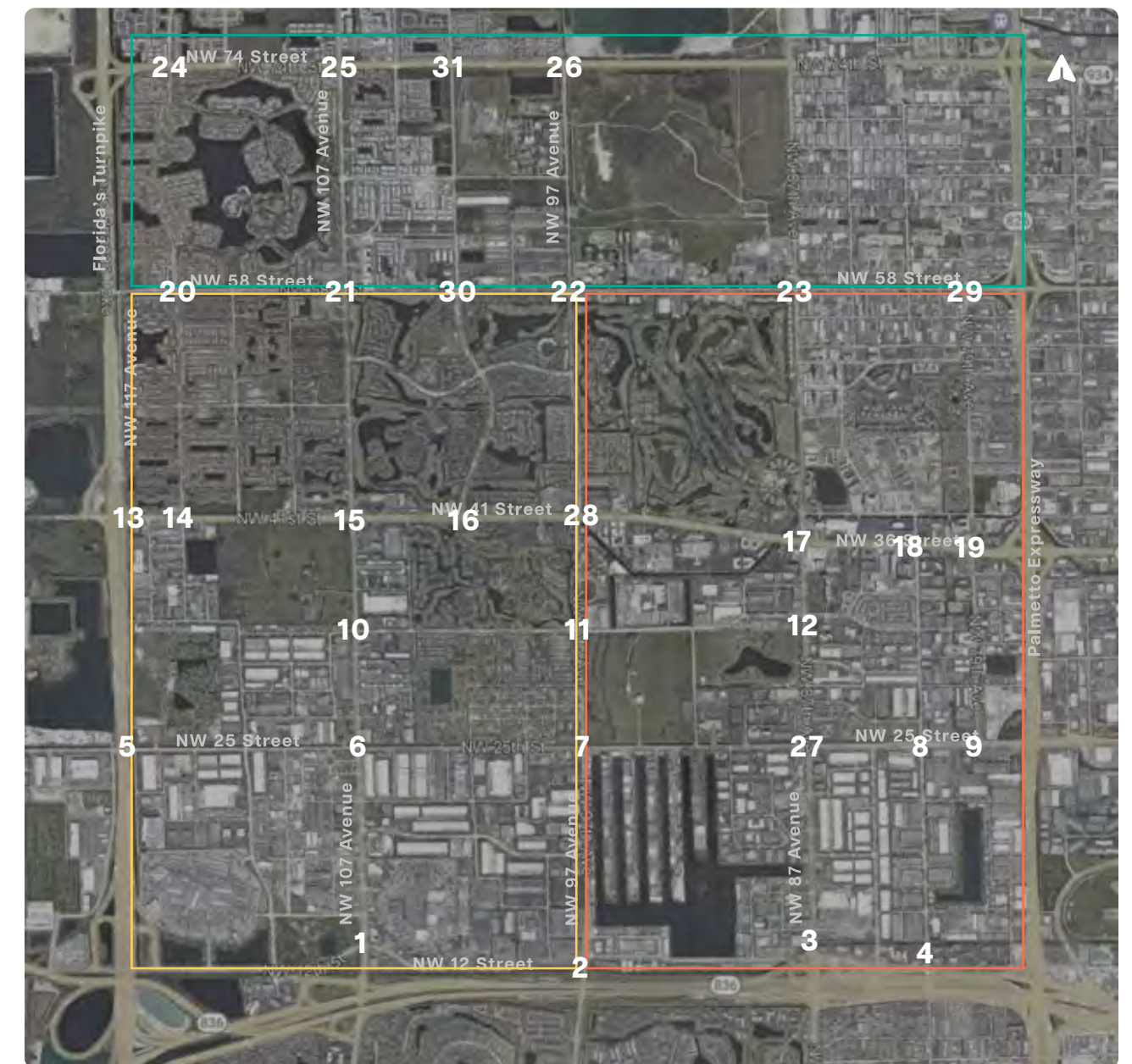
### Common Peak Hour

As individual intersections might experience peak hour at different time during the peak period, common peak period is important to calculation. Hence, total intersection volumes of 4 consecutive 15-minute intervals (1 hour) were calculated for each intersection and 1-hour interval with the highest traffic volumes for all 31 study area intersections was considered as a peak hour for entire study area. For this study, AM peak hour was identified to be 7:45 AM to 8:45 AM and PM peak hour was 5:00 PM to 6:00 PM. Accordingly, peak hour volume (passenger car + trucks) for each movement was then used for the purpose of synchro modeling.

**Table 2-4: 48 Hour Turning Movement Counts (TMCs)**

TMC	Intersection
1	NW 107 <sup>th</sup> Avenue at NW 12 <sup>th</sup> Street
2	NW 97 <sup>th</sup> Avenue at NW 12 <sup>th</sup> Street (E/W)
3	NW 12 <sup>th</sup> Street at NW 87 <sup>th</sup> Avenue
4	NW 12 <sup>th</sup> Street at NW 82 <sup>nd</sup> Avenue
5	NW 25 <sup>th</sup> Street at NW 117 <sup>th</sup> Avenue
6	NW 25 <sup>th</sup> Street at NW 107 <sup>th</sup> Avenue
7	NW 25 <sup>th</sup> Street at NW 97 <sup>th</sup> Avenue
8	NW 25 <sup>th</sup> Street at NW 82 <sup>nd</sup> Avenue
9	NW 25 <sup>th</sup> Street at NW 79 <sup>th</sup> Avenue
10	NW 107 <sup>th</sup> Avenue at NW 33 <sup>rd</sup> Street
11	NW 97 <sup>th</sup> Avenue at NW 33 <sup>rd</sup> Street
12	NW 33 <sup>rd</sup> Street at NW 87 <sup>th</sup> Avenue
13	NW 41 <sup>st</sup> Street at NW 115 <sup>th</sup> Avenue
14	NW 41 <sup>st</sup> Street at NW 114 <sup>th</sup> Avenue
15	NW 41 <sup>st</sup> Street at NW 107 <sup>th</sup> Avenue
16	NW 41 <sup>st</sup> Street at NW 102 <sup>nd</sup> Avenue
17	NW 36 <sup>th</sup> Street at NW 87 <sup>th</sup> Avenue
18	NW 36 <sup>th</sup> Street at NW 82 <sup>nd</sup> Avenue
19	NW 36 <sup>th</sup> Street at NW 79 <sup>th</sup> Avenue
20	NW 58 <sup>th</sup> Street at NW 114 <sup>th</sup> Avenue
21	NW 58 <sup>th</sup> Street at NW 107 <sup>th</sup> Avenue
22	NW 58 <sup>th</sup> Street at NW 97 <sup>th</sup> Avenue
23	NW 58 <sup>th</sup> Street at NW 87 <sup>th</sup> Avenue
24	NW 74 <sup>th</sup> Street at NW 114 <sup>th</sup> Avenue
25	NW 74 <sup>th</sup> Street at NW 107 <sup>th</sup> Avenue
26	NW 74 <sup>th</sup> Street at NW 97 <sup>th</sup> Avenue
27	NW 25 <sup>th</sup> Street at NW 87 <sup>th</sup> Avenue
28	NW 41 <sup>st</sup> Street at NW 97 <sup>th</sup> Avenue
29	NW 58 <sup>th</sup> Street at NW 79 <sup>th</sup> Avenue
30	NW 58 <sup>th</sup> Street at NW 102 <sup>nd</sup> Avenue
31	NW 74 <sup>th</sup> Street at NW 102 <sup>nd</sup> Avenue

**Figure 2-48: Study Area Intersections and Zones**



**LEGEND**

- █ Zone 1
- █ Zone 2
- █ Zone 3



**Peak Hour Factor (PHF) and Heavy Vehicle Percentage (HV%)**

PHF is an important factor for traffic analysis work. PHF shows the severity of traffic volume variations within the peak hour. Larger PHF, indicates flat (continuous) traffic flow is experienced and vice versa. PHF was calculated for each intersection for each movement using the following formula:

$$PHF = \frac{\text{Hourly Volume (V)}}{4 \times \text{Volume During the Peak 15 Minutes of Flow (V}_{15})}$$

HV% is a factor that is used to determine percentage of heavy vehicles in the traffic volumes. HV% was calculated for this project using the formula below:

$$HV\% = \frac{\text{Volume of Trucks}}{\text{Total Volume (Trucks + Passenger Cars)}} \times 100\%$$

**Synchro Model**

Synchro 11 was used for the purpose of modeling of this project. Synchro network was created to evaluate the existing (2023) conditions for morning peak (07:45 – 08:45 AM) and evening peak (5:00 – 6:00 PM) periods for 31 signalized intersections. Intersection geometry was coded using latest satellite images of Google earth, which included number of lanes, turning movements, storage lanes, storage lane length, and right turn channelization etc. Peak hour volume, %HV, and PHF were added to volume settings from the traffic data collected. Speed limits of each corridor were obtained from Miami-Dade County’s Open Data Hub as well as existing signal timings and signal operating plans.

**Evaluation Criteria**

The intersection operations will be evaluated in terms of the Level of Service (LOS). LOS is a common measure of the quality of performance at an intersection and is defined in terms of vehicular delay. This delay includes deceleration delay, queue time, stopped delay, and acceleration delay. LOS is expressed on a scale of A through F, where LOS A represents the least delay (i.e., less than 10 seconds per vehicle) and LOS F represents the highest delay

(i.e., greater than 80 seconds per vehicle for a signalized intersection). The LOS criteria for signalized intersections are shown in **Table 2-5**. A description of traffic performance characteristics is included for each LOS.

**Table 2-5: Level of Service Criteria for Intersections**

LOS	Overall	Controlled Delay (Sec/Veh.)
A	Very low delay: most vehicles do not stop ( <i>Excellent</i> )	< 10.0
B	Higher delay: more vehicles stop ( <i>Very Good</i> )	10.0 - 20.0
C	Higher level of congestion: number of vehicles stopping is significant, although many still pass through intersection without stopping ( <i>Good</i> )	20.0 - 35.0
D	Congestion becomes noticeable; vehicles sometimes wait through more than one red light; many vehicles stop ( <i>Satisfactory</i> )	35.0 - 55.0
E	Vehicles must often wait through more than one red light; considered by many agencies to be the limit of <i>acceptable</i> delay	55.0 - 80.0
F	This level is unacceptable to most drivers; occurs when arrival flow rates exceed the capacity of the intersection ( <i>Unacceptable</i> )	> 80.0

HCM Signalized Intersection Capacity Analysis Reports were generated for both AM and PM peak periods using HCM 2000 method. **Table 2-6 & Table 2-7** show the summary of results for AM and PM peaks, respectively.

It can be seen from **Table 2-6 & Table 2-7** that 19 and 17 intersections out of 31 were operating at overall LOS E or F during AM and PM peak hours, respectively. Intersections 5, 7, 10, 15, 19, 22 and 29 are operating in overall LOS F in at least one or both the peak hours.

**Figure 2-49: Overall Intersection Level of Service**



**LEGEND**

- AM Peak Hour 7:45 - 8:45
- PM Peak Hour 5:00 - 6:00
- LOS A
- LOS B
- LOS C
- LOS D
- LOS E
- LOS F

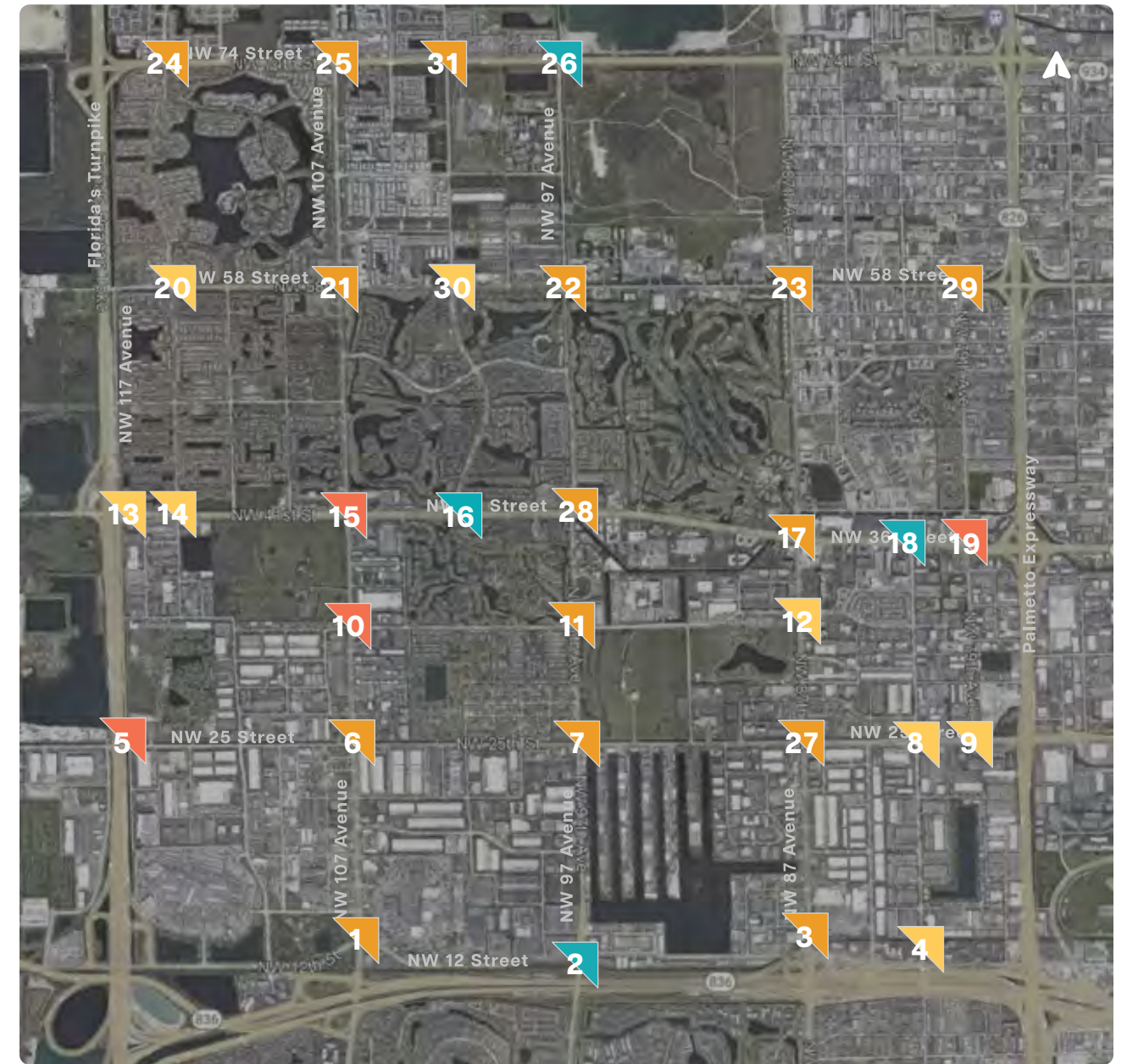
<sup>1</sup><https://gis-mdc.opendata.arcgis.com/datasets/b0107c2e893a4ff78367837cf80bdfaa/explore?location=25.834463%2C-80.365184%2C14.97>



Table 2-6: AM Peak Results Summary

Intersection No.	Overall		Worst Movement			Number of Movements with	
	Delay	LOS	Movement	Delay	LOS	LOS E	LOS F
1	61.3	E	SBL	150.8	F	0	6
2	23.9	C	NBT	71.8	E	1	0
3	65.4	E	SBL	158.3	F	2	5
4	52.8	D	NBT	83.8	F	2	1
5	127.1	F	SBT	237.2	F	0	6
6	62.5	E	NBL	119.7	F	2	4
7	70.2	E	SBL	103.8	F	1	3
8	38.6	D	WBL	85.4	F	5	1
9	35.4	D	SBL	71.9	E	4	0
10	224.1	F	WBL	302.4	F	0	6
11	57.9	E	EBT	69.6	E	3	0
12	49.3	D	NBL	108.8	F	4	1
13	45.0	D	NBL	107.8	F	2	3
14	53.8	D	SBL	112.9	F	1	5
15	92.2	F	WBL	192.4	F	2	6
16	34.6	C	SBL	81.1	F	0	1
17	72.0	E	SBL	124.5	F	4	4
18	31.6	C	SBT	101.1	F	3	3
19	95.0	F	SBL	160.5	F	2	7
20	41.3	D	SBT	62.6	E	1	0
21	55.6	E	WBR	147.1	F	3	1
22	79.8	E	NBT	132.8	F	3	3
23	60.7	E	NBL	94.8	F	5	1
24	72.0	E	SBT	135.2	F	0	3
25	76.1	E	WBR	262.6	F	4	4
26	21.5	C	NBR	245.4	F	1	4
27	58.4	E	NBL	121.6	F	2	3
28	71.1	E	WBL	136.1	F	1	6
29	70.3	E	NBT	146.1	F	3	4
30	51.9	D	NBT	86.6	F	4	1
31	70.0	E	NBT	149.0	F	1	3

Figure 2-50: AM Peak Hour Level of Service



LEGEND

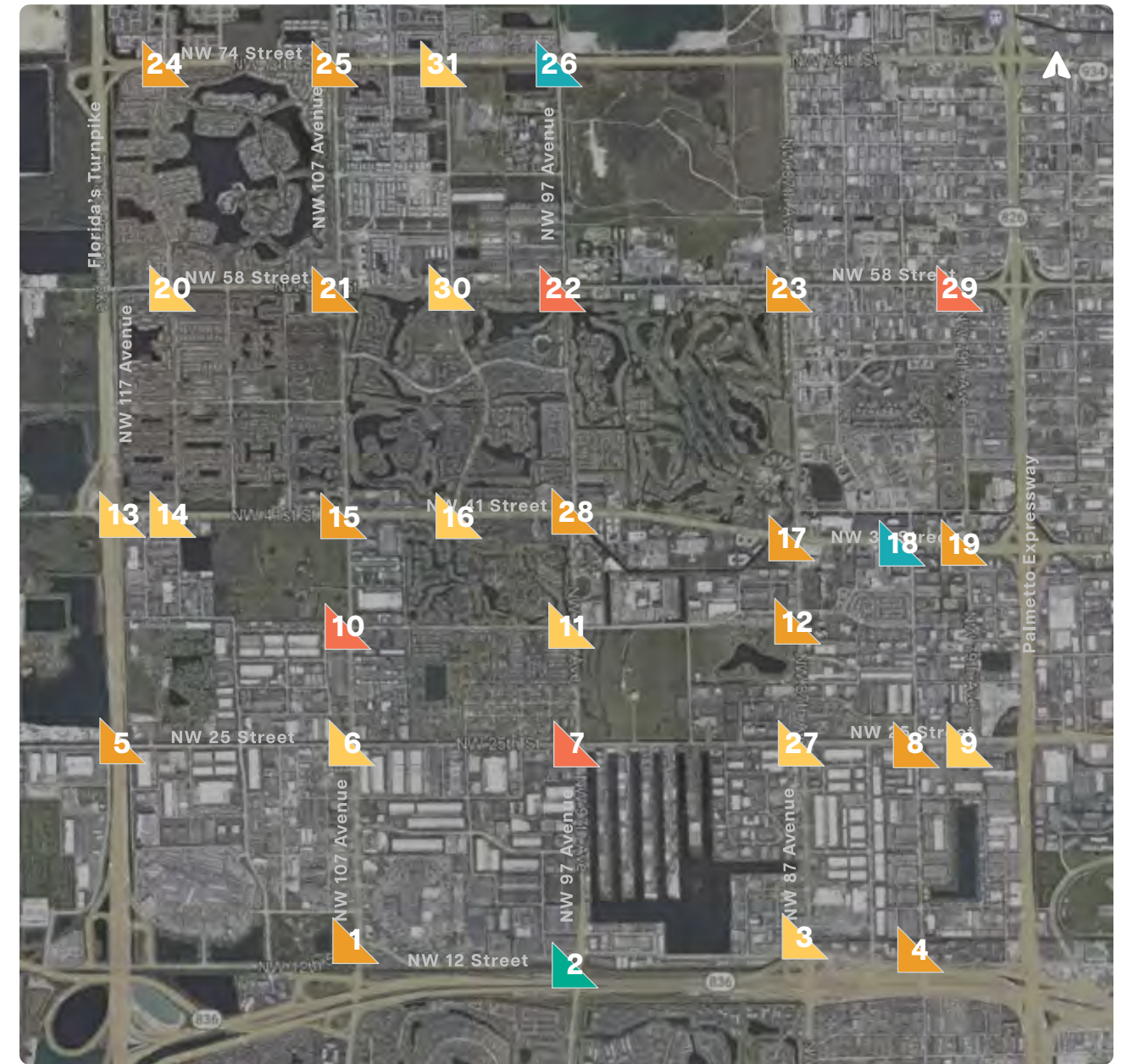




Table 2-7: PM Peak Results Summary

Intersection No.	Overall		Worst Movement			Number of Movements with	
	Delay	LOS	Movement	Delay	LOS	LOS E	LOS F
1	62.0	E	NBL	98.4	F	0	4
2	16.3	B	SBT	55.6	E	1	0
3	50.0	D	NBL	88.1	F	4	2
4	60.9	E	SBR	111.9	F	4	2
5	71.1	E	NBT	129.2	F	0	3
6	43.5	D	NBL	118.0	F	1	2
7	86.0	F	NBT	111.7	F	0	6
8	58.5	E	EBL	88.0	F	3	4
9	53.5	D	EBL	95.7	F	4	2
10	138.2	F	NBT	173.8	F	3	3
11	49.3	D	WBT	59.7	E	2	0
12	62.8	E	WBT	72.5	E	4	0
13	36.9	D	NBL	88.6	F	1	3
14	48.7	D	EBL	119.4	F	3	3
15	63.7	E	SBL	114.3	F	2	4
16	38.4	D	SBR	121.5	F	1	4
17	71.8	E	SBL	104.1	F	6	2
18	31.9	C	SBT	88.7	F	5	1
19	61.2	E	EBL	142.4	F	2	5
20	37.1	D	SBT	45.3	D	0	0
21	62.1	E	SBT	85.4	F	6	1
22	100.0	F	SBT	133.7	F	0	5
23	58.0	E	NBL	77.3	E	4	0
24	66.7	E	NBL	114.2	F	1	5
25	61.3	E	WBL	94.1	F	6	3
26	31.2	C	SBT	88.8	F	1	2
27	54.7	D	NBL	130.8	F	3	4
28	61.9	E	WBL	94.0	F	3	3
29	83.9	F	EBR	871.4	F	3	4
30	48.6	D	SBT	87.7	F	5	1
31	37.0	D	NBT	67.0	E	4	0

Figure 2-51: PM Peak Hour Level of Service



LEGEND

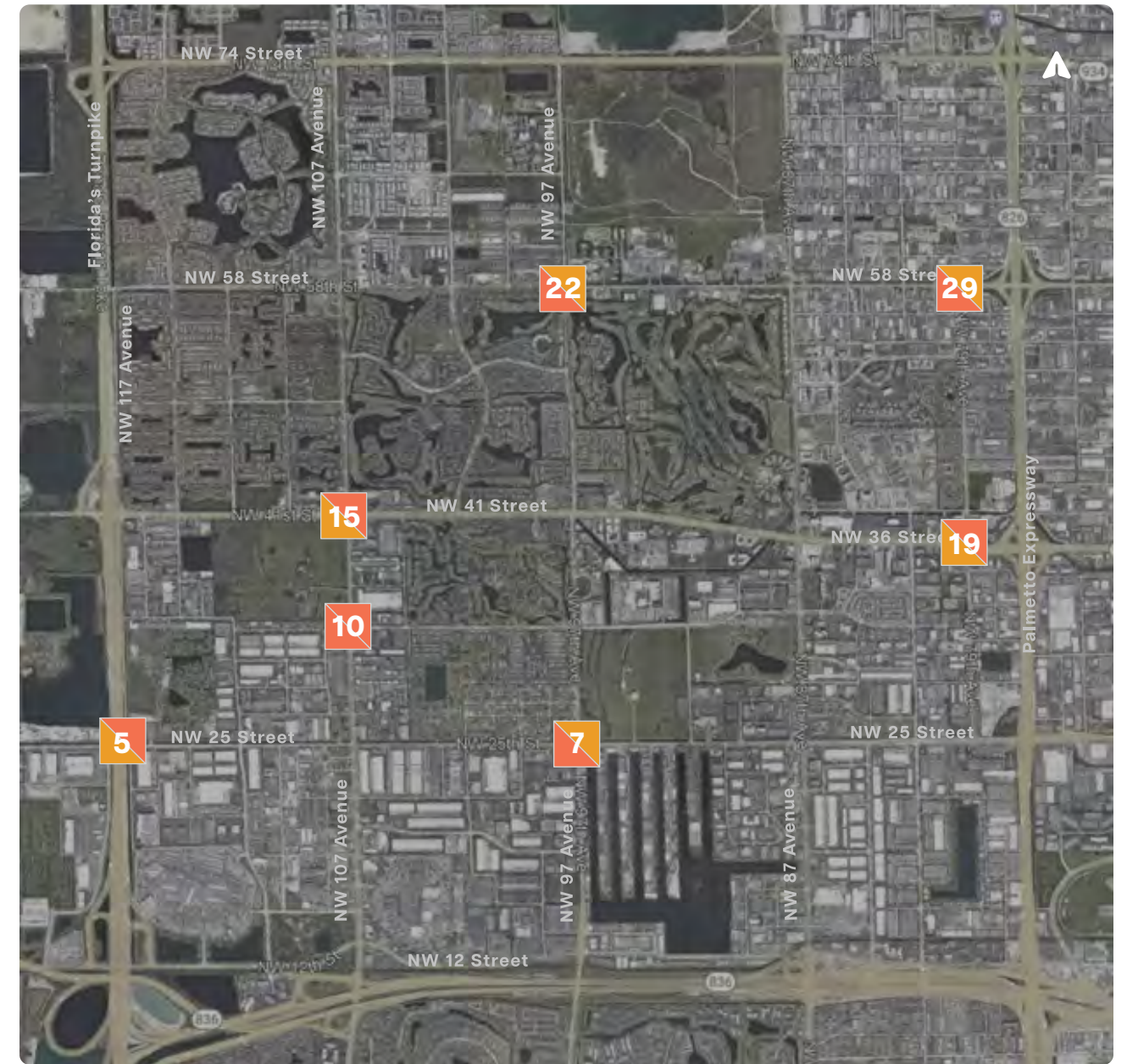




Table 2-8: Failing Intersections Results Summary

Intersection No.	AM Peak Hour					PM Peak Hour				
	Overall		Worst Movement			Overall		Worst Movement		
	Delay	LOS	Move-ment	Delay	LOS	Delay	LOS	Move-ment	Delay	LOS
5	71.1	E	NBT	129.2	F	71.1	E	NBT	129.2	F
7	86.0	F	NBT	111.7	F	86.0	F	NBT	111.7	F
10	138.2	F	NBT	173.8	F	138.2	F	NBT	173.8	F
15	63.7	E	SBL	114.3	F	63.7	E	SBL	114.3	F
19	61.2	E	EBL	142.4	F	61.2	E	EBL	142.4	F
22	100.0	F	SBT	133.7	F	100.0	F	SBT	133.7	F
29	83.9	F	EBR	871.4	F	83.9	F	EBR	871.4	F

Figure 2-52: Failing Intersections



LEGEND

-  AM Peak Hour 7:45 - 8:45
-  PM Peak Hour 5:00 - 6:00



Table 2-9: Overall Corridor Level of Service

Corridor No.	Corridor Limits			LOS
	Road	From	To	
1	NW 74 <sup>th</sup> St	NW 117 <sup>th</sup> Ave	NW 107 <sup>th</sup> Ave	C or Better
2	NW 74 <sup>th</sup> St	NW 107 <sup>th</sup> Ave	NW 97 <sup>th</sup> Ave	D
3	NW 107 <sup>th</sup> Ave	NW 74 <sup>th</sup> St	NW 58 <sup>th</sup> St	D
4	NW 58 <sup>th</sup> St	NW 117 <sup>th</sup> Ave	NW 107 <sup>th</sup> Ave	C or Better
5	NW 58 <sup>th</sup> St	NW 107 <sup>th</sup> Ave	NW 97 <sup>th</sup> Ave	D
6	NW 58 <sup>th</sup> St	NW 97 <sup>th</sup> Ave	NW 87 <sup>th</sup> Ave	D
7	NW 58 <sup>th</sup> St	NW 87 <sup>th</sup> Ave	NW 77 <sup>th</sup> Ct	D
8	NW 107 <sup>th</sup> Ave	NW 58 <sup>th</sup> St	NW 41 <sup>st</sup> St	D
9	NW 97 <sup>th</sup> Ave	NW 58 <sup>th</sup> St	NW 41 <sup>st</sup> St	C or Better
10	NW 87 <sup>th</sup> Ave	NW 58 <sup>th</sup> St	NW 36 <sup>th</sup> St	D
11	NW 79 <sup>th</sup> Ave	NW 58 <sup>th</sup> St	NW 36 <sup>th</sup> St	C or Better
12	NW 41 <sup>st</sup> St	NW 117 <sup>th</sup> Ave	NW 107 <sup>th</sup> Ave	C or Better
13	NW 41 <sup>st</sup> St	NW 107 <sup>th</sup> Ave	NW 97 <sup>th</sup> Ave	D
14	NW 41 <sup>st</sup> /36 <sup>th</sup> St	NW 97 <sup>th</sup> Ave	NW 87 <sup>th</sup> Ave	C or Better
15	NW 36 <sup>th</sup> St	NW 87 <sup>th</sup> Ave	NW 77 <sup>th</sup> Ct	D
16	NW 97 <sup>th</sup> Ave	NW 41 <sup>st</sup> St	NW 33 <sup>rd</sup> St	D
17	NW 107 <sup>th</sup> Ave	NW 41 <sup>st</sup> St	NW 25 <sup>th</sup> St	D
18	NW 33 <sup>th</sup> St	NW 107 <sup>th</sup> Ave	NW 97 <sup>th</sup> Ave	C or Better
19	NW 33 <sup>th</sup> St	NW 97 <sup>th</sup> Ave	NW 87 <sup>th</sup> Ave	C or Better
20	NW 82 <sup>nd</sup> Ave	NW 36 <sup>th</sup> St	NW 25 <sup>th</sup> St	C or Better
21	NW 79 <sup>th</sup> Ave	NW 36 <sup>th</sup> St	NW 25 <sup>th</sup> St	C or Better
22	NW 97 <sup>th</sup> Ave	NW 33 <sup>rd</sup> St	NW 25 <sup>th</sup> St	D
23	NW 87 <sup>th</sup> Ave	NW 36 <sup>th</sup> St	NW 25 <sup>th</sup> St	C or Better
24	NW 25 <sup>th</sup> St	NW 117 <sup>th</sup> Ave	NW 107 <sup>th</sup> Ave	C or Better
25	NW 25 <sup>th</sup> St	NW 107 <sup>th</sup> Ave	NW 97 <sup>th</sup> Ave	D
26	NW 25 <sup>th</sup> St	NW 97 <sup>th</sup> Ave	NW 87 <sup>th</sup> Ave	E
27	NW 25 <sup>th</sup> St	NW 87 <sup>th</sup> Ave	NW 77 <sup>th</sup> Ct	C or Better
28	NW 97 <sup>th</sup> Ave	NW 25 <sup>th</sup> St	NW 12 <sup>th</sup> St	D
29	NW 87 <sup>th</sup> Ave	NW 25 <sup>th</sup> St	NW 12 <sup>th</sup> St	C or Better
30	NW 82 <sup>nd</sup> Ave	NW 25 <sup>th</sup> St	NW 12 <sup>th</sup> St	C or Better
31	NW 12 <sup>th</sup> St	NW 107 <sup>th</sup> Ave	NW 97 <sup>th</sup> Ave	C or Better
32	NW 12 <sup>th</sup> St	NW 97 <sup>th</sup> Ave	NW 87 <sup>th</sup> Ave	D
33	NW 12 <sup>th</sup> St	NW 87 <sup>th</sup> Ave	NW 78 <sup>th</sup> Ave	C or Better

Figure 2-53: Overall Corridor Level of Service (LOS)



LEGEND

- LOS C or Better
- LOS D
- LOS E
- LOS F

Corridor LOS was derived by comparing AADT volumes with capacities provided in FDOT 2023 Multi-modal Quality/Level of Service Handbook.

# 03



## MULTI-MODAL IMPROVEMENTS

- 3.1 **DORAL MODE SHARE VISION**
- 3.2 **IMPROVING SAFETY**
- 3.3 **PROMOTING ACTIVE TRANSPORTATION**
- 3.4 **ENHANCING TRANSIT INFRASTRUCTURE**
- 3.5 **IMPROVING OPERATIONS**

By way of this plan, the City of Doral aims to enhance mobility and accessibility through a comprehensive multi-modal approach with the goal of building a well-connected and efficient transportation system. As Doral continues to expand and diversify, the travel needs of its communities and visiting public are evolving. In response, this section of the plan will outline the city's vision for enhancing multi-modal travel and recommend improvements based on identified needs for different modes of transportation, while also addressing safety and accessibility across the network.

A central component of this plan is setting travel mode share goals to act as the basis for projects recommended herein and future ones as well. By analyzing local transportation patterns, demographic needs, and existing infrastructure commitments, improvements can be tailored to the unique characteristics of the distinct areas of the city. This approach ensures that the most appropriate modes—whether pedestrians, cyclists, transit riders, or drivers—are prioritized based on the areas' needs while still creating a cohesive network.



### 3.1 DORAL MODE SHARE VISION

The travel mode share for the City of Doral reflects the diverse transportation needs and behaviors of its residents and businesses. As the city continues to grow, understanding and optimizing this mode share is crucial for developing a balanced and efficient transportation network. Currently, Doral's transportation system is characterized by a mix of various travel modes, including personal vehicles, public transit, cycling, and walking. The distribution of these modes varies significantly across different areas of the city, influenced by land use patterns, economic activity, and infrastructure availability.

Doral's transportation network is distinctly compartmentalized, with specific areas catering to different modes of travel. In bicyclist and pedestrian-friendly areas, such as the downtown district and near parks and recreational facilities, the focus should be on enhancing accessibility for non-motorized users. While some of these areas already feature well-developed sidewalks, dedicated bike facilities, and safe crossings to encourage walking and cycling, the city should aim to expand its non-motorized transportation to promote a healthier lifestyle for residents and visitors and reduce reliance on motor vehicles in densely populated areas.

In contrast, freight and commercial areas have distinct transportation needs and prioritize efficient goods movement and access for large vehicles. These zones are equipped with robust roadway infrastructure to accommodate heavy trucks and logistics operations, with a focus on minimizing disruptions to local traffic. The roadways in these areas are designed for high-capacity traffic and often include features such as wide lanes and turn radii to facilitate the maneuvering of large freight vehicles.

Residential and mixed-use areas within Doral also exhibit a unique mode share profile, balancing the needs of local commuters with accessibility to nearby amenities. These areas typically see a higher proportion of personal vehicle use due to their suburban nature, but citywide efforts have been made and should continue to be made to enhance multi-modal connectivity in such zones.

This includes improving access to public transit options such as the city's trolley system and creating safe pedestrian pathways to connect residential neighborhoods with commercial hubs and recreational spaces.

By addressing the specific needs of each distinct area, Doral can work toward a more integrated and efficient transportation network that serves the diverse needs of its community and daily visiting and working population.

**Figure 3-1** provides a snapshot of Doral's residential and working population as well as the existing travel mode share for the city's residents. The mode share data was obtained for years 2019 and 2022 to assess a distinction in travel patterns before and after the 2020 COVID-19 Pandemic. Additionally, the figure establishes an aspirational travel mode share for the year 2045 to help guide future transportation projects. Below is the rationale for the percentages established for the main travel modes.

**Private Vehicles (60%):** Private vehicles will remain a dominant mode of transportation due to their convenience and necessity for certain trips. The goal is to resort to carpooling when possible.

**Public Transit (10%):** Increasing public transit usage can reduce overall single occupant vehicle trips, decrease congestion, and improve air quality.

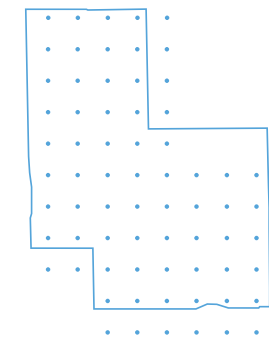
**Walking (10%):** Enhancing walkability and accessibility improves local quality of life by supporting health and a sense of community while reducing local congestion by replacing short vehicular trips.

**Cycling (5%):** Promoting cycling supports health, reduces environmental impact, and can ease local traffic congestion by replacing short vehicular trips.

Working toward achieving this aspirational mode share can aid the City of Doral in creating a more balanced and sustainable transportation system, ultimately improving the quality of life for its residents and visitors while addressing the challenges of growth and urbanization.

**Figure 3-1:** City of Doral Residential and Working Population and Existing Travel Mode Share

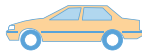






#### DORAL POPULATION OVERVIEW



RESIDENT POPULATION:	<b>82,100</b>
RESIDENT WORKING POPULATION:	<b>47,500</b>
RESIDENTS WORKING IN DORAL:	<b>24,000</b>
JOB IN DORAL:	<b>145,500</b>
BUSINESSES IN DORAL:	<b>21,175</b>

Source: Miami-Dade Beacon Council (as of 2023)

#### DORAL TRAVEL MODE SHARE

	2019	2022	2045 GOAL
 DRIVING ALONE	74.0%	60.3%	40%
 CARPOOLING	12.7%	10.8%	20%
 TRANSIT	1.7%	1.1%	10%
 WALKING	2.3%	2.1%	10%
 BICYCLING	0.1%	0.5%	5%
 OTHER*	1.6%	2.9%	5%
 WORK FROM HOME	7.7%	22.3%	10%

\*Other includes: scooters/micromobility and taxis/ridesharing companies (TNCs)  
Source: US Census Bureau – American Community Survey

## 3.2 IMPROVING SAFETY

Doral's commitment to enhancing road safety is central to its transportation planning efforts. Safety improvements are aimed at reducing traffic crashes, minimizing injury severity, and creating a more secure environment for all road users, including drivers, cyclists, and pedestrians. These initiatives are data-driven, focusing on high-crash locations and addressing the most common types of accidents, such as rear-end, sideswipe, and left-turn collisions. By analyzing crash data and identifying patterns, the city can prioritize interventions that have the most significant impact on reducing both the frequency and severity of accidents.

A planning level safety analysis was conducted to identify abnormal crash patterns, identify high crash corridors and intersections within the city limits, and to develop potential countermeasures to enhance the overall safety of all road users in the City of Doral. The safety analysis was based on the latest eight-year crash data available from Signal 4 Analytics (January 1, 2016, to December 31, 2023). The historical crash data showed that there were 22,509 reported crashes in the eight-year analysis period with an average of 2,800 crashes per year.

### Type of Crashes

The results showed that the predominant type of crashes consist of rear end crashes, sideswipe crashes, left turn crashes, and "Other" type of crashes, which mostly includes parked vehicle crashes and "backed-into" crashes. The predominant type of crashes are consistent with typical crash patterns found at urban intersections under congested conditions.

### Crashes Severity

The crash analysis showed that most of the crashes (89%) resulted in property damage only, and 11% of the crashes resulted in injuries. There were twenty reported fatal crashes (0.1 %) within the analysis period. The twenty fatal crashes consisted primarily of "other" type of crashes, off-road crashes, rollover crashes, and pedestrian and bicycle crashes. The serious injury type crashes consist primarily of left turn crashes, other type of crashes, pedestrian crashes, and rear end crashes.

### High Crash Corridors

The purpose of this analysis was to identify the segments with the highest number of crashes on the major roads within the City limits. For this analysis, the major roads were divided into smaller segments of approximately equal length (5,100 feet). Then, ArGis Pro analysis tools were used to estimate the number of crashes that occurred within each the major roadway segment. The step-by-step process is presented below:

- Downloaded historical crash data from Signal 4 Analytics (2016 -2023).
- Created a point shapefile in ArcGIS Pro for each crash event based on latitude and longitude coordinates and refined the points to only include crashes that occurred within the City limits.
- Created a line shapefile in ArcGIS Pro to represent the centerline of each major roadway broken down into approximately equal distance segments.
- Created a buffer around each major road centerline. For this analysis, it was assumed that the right-of-way for the major roads were 150 feet.
- The ArcGIS Pro "summarize within" analysis tool was used to estimate the number of crashes that occurred within each buffer zone (roadway segment).

The top five corridors with the highest number of crashes are presented in [Table 3-1](#) and illustrated in [Figure 3-2](#).

### High Crash Intersections

The purpose of this analysis was to identify the intersections with the highest number of crashes on within the City limits. For this analysis, only signalized intersections were considered. ArGis Pro analysis tools were used to estimate the number of crashes that occurred within each the signalized intersection. The step-by-step process is presented below:

- Downloaded historical crash data from Signal 4 Analytics (2016 -2023).
- Created a point shapefile in ArcGIS Pro for each crash event based on latitude and longitude coordinates and refined the points to only include crashes that occurred within the City limits.

- Downloaded the traffic signal shapefile available from Miami-Dade County GIS Data Hub.
- Created a buffer around each signalized intersection. For this analysis, it was assumed that the influence area of each signalized intersection was 300 feet.
- The ArcGIS Pro "summarize within" analysis tool was used to estimate the number of crashes that occurred within each buffer zone (intersection influence area).

The ten intersections with the highest number of crashes are presented in [Table 3-2](#) and illustrated in [Figure 3-3](#).

**Table 3-1: High Crash Corridors (All Crashes) - Top 5 Corridors**

Corridor Name	Limits	Jurisdiction
NW 36 <sup>th</sup> Street	NW 87 <sup>th</sup> Avenue to Palmetto Expressway Ramps	County
NW 79 <sup>th</sup> Avenue	NW 36 <sup>th</sup> Street to NW 58 <sup>th</sup> Street	City
NW 87 <sup>th</sup> Avenue	NW 12 <sup>th</sup> Street to NW 25 <sup>th</sup> Street	County
NW 25 <sup>th</sup> Street	NW 97 <sup>th</sup> Avenue to NW 87 <sup>th</sup> Avenue	County
NW 107 <sup>th</sup> Avenue	NW 25 <sup>th</sup> Street to NW 41 <sup>st</sup> Street	County

**Table 3-2: High Crash Intersection (All Crashes) - Top 10 Intersections**

Intersection	Jurisdiction
NW 79 <sup>th</sup> Avenue at NW 36 <sup>th</sup> Street	County/City
NW 107 <sup>th</sup> Avenue at NW 41 <sup>st</sup> Street	County
NW 97 <sup>th</sup> Avenue at NW 41 <sup>st</sup> Street	County
NW 87 <sup>th</sup> Avenue at NW 36 <sup>th</sup> Street	County
NW 97 <sup>th</sup> Avenue at NW 25 <sup>th</sup> Street	County
NW 87 <sup>th</sup> Avenue at NW 12 <sup>th</sup> Street	County
NW 79 <sup>th</sup> Avenue at NW 25 <sup>th</sup> Street	County/City
NW 82 <sup>nd</sup> Avenue at NW 25 <sup>th</sup> Street	County/City
NW 87 <sup>th</sup> Avenue at NW 25 <sup>th</sup> Street	County
NW 114 <sup>th</sup> Avenue at NW 41 <sup>st</sup> Street	County/City



Figure 3-2: High Crash Corridors (All Crashes)

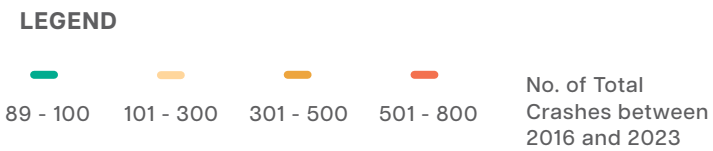
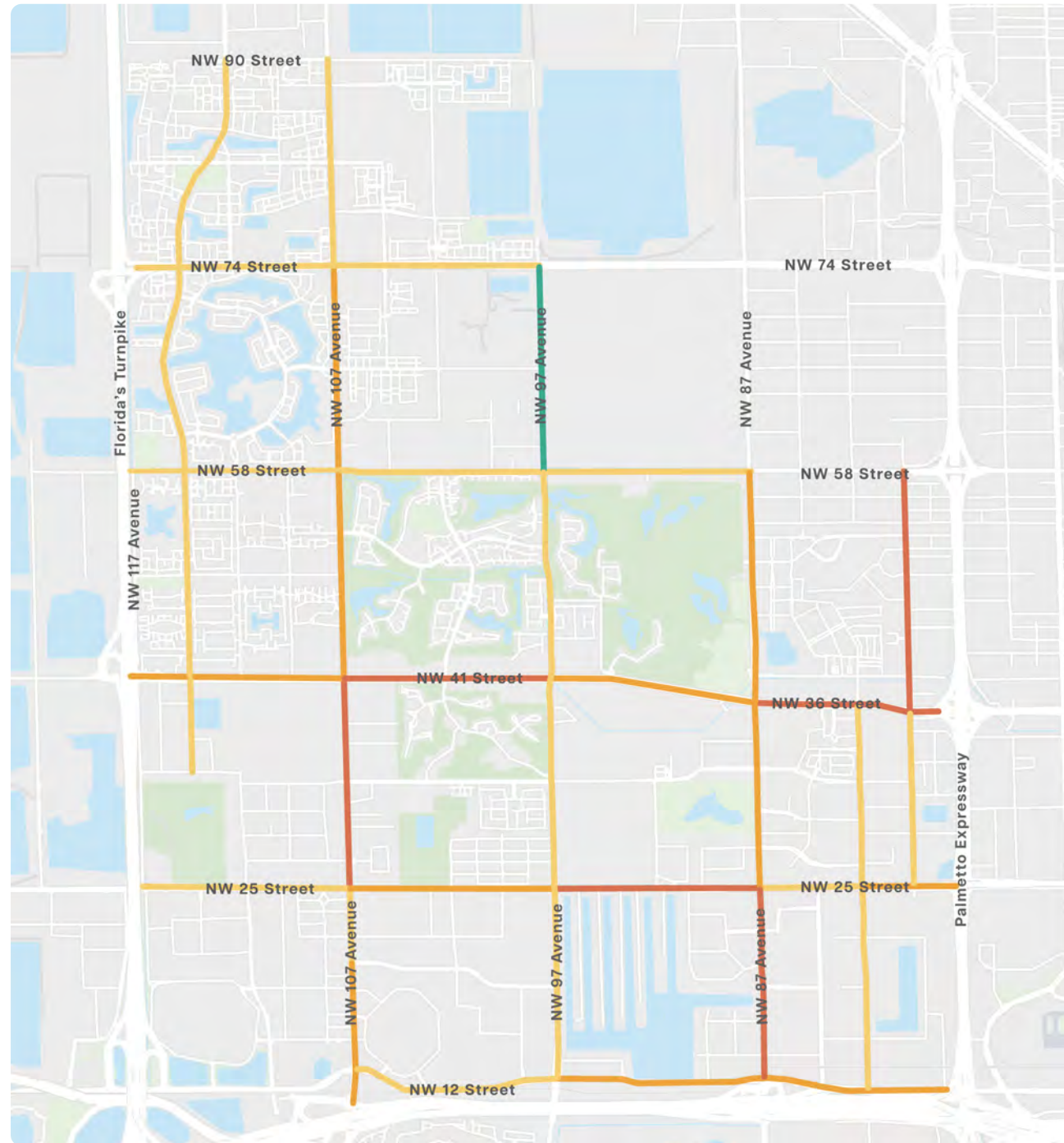
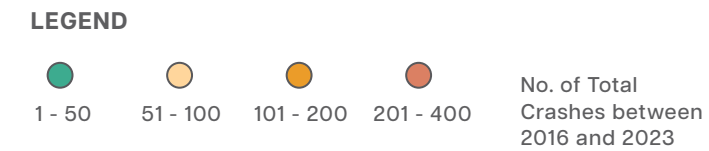
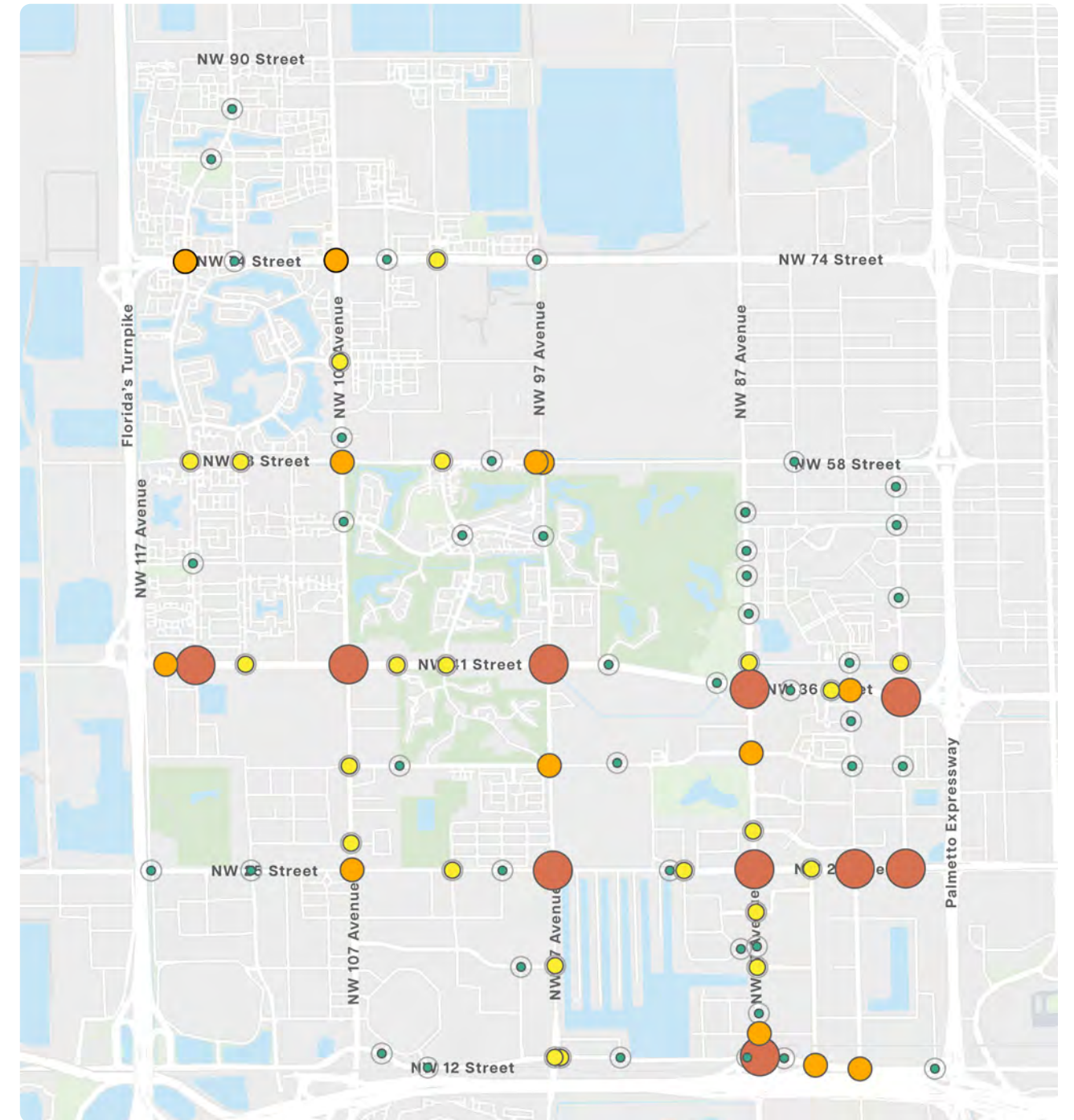


Figure 3-3: High Crash Intersection (All Crashes)





**Safety Countermeasures**

Based on the safety analysis, general countermeasures were developed to reduce the number of total crashes for all road users based on proven and effective countermeasures per guidance provided by the Federal Highway Administration (FHWA). In addition, it is recommended to perform further safety studies at the high crash corridors and high crash intersections identified in this analysis to address specific safety concerns at those locations. The tables below present the predominant type of crashes, probable causes, and potential countermeasures to enhance the safety of all road users within the City limits.

**Table 3-3: Safety Countermeasures - Citywide**

Crash Pattern(s)	Probable Cause(s)	Potential Countermeasure(s)
<b>Rear End Crashes</b>	Traffic congestion at intersections, and poor traffic signal visibility.	Install backplates with retroreflective borders at all signalized intersections, provide exclusive right turn and left turn lanes at intersections where minimum recommended turning volume thresholds are met.
<b>Sideswipe Crashes</b>	Substandard pavement markings, inadequate advance warning signs.	Install additional warning signs at signalized and unsignalized intersection and pavement marking improvements.
<b>Left Turn Crashes</b>	Inadequate signal phasing and signal timing, high demand for left turn movement, inadequate storage length for turn bay.	Provide dedicated left turn lanes where justified by a traffic study, provide positive off-set left turn lanes, modify left turn phase as justified by a traffic study which may include protective phase, permissive phase, and protected permissive phase.
<b>Other - Parked Vehicle Crashes &amp; Backed into</b>	Narrow parking spaces, and inadequate lighting.	Ensure adequate lighting and standard parking space dimensions are provided.

**Table 3-4: Safety Countermeasures - Multi-Modal**

Crash Pattern(s)	Probable Cause(s)	Potential Countermeasure(s)
<b>Pedestrian and Bicycle Crashes</b>	Poor pedestrian and bicyclist visibility.	<ul style="list-style-type: none"> <li>Install special emphasis crosswalks at all intersections, across all legs/approaches.</li> <li>Install "Turning Vehicles Stop for Pedestrian" Signs (R10-15a) at all signalized intersections to increase pedestrian visibility.</li> <li>Install leading pedestrian interval (LPI) at signalized intersections.</li> <li>Review pedestrian clearance times at major signalized intersections to ensure pedestrians have sufficient time to cross the street.</li> <li>Complete pedestrian sidewalk network within the City.</li> <li>Complete bicycle network within the City, including buffered bicycle lane, and green colored bicycle lanes.</li> </ul>

**Figure 3-4: High Visibility Bicycle Lanes - NW 112<sup>th</sup> Avenue between NW 74<sup>th</sup> Street and NW 82<sup>nd</sup> Court**





**Special Emphasis Crosswalks**

As part of Doral's commitment to improving pedestrian safety, this plan proposes the installation of special emphasis crosswalks at identified locations throughout the city. Special emphasis crosswalks are designed with bold pavement markings and enhanced visibility features, making them highly noticeable to drivers and ensuring safer passage for pedestrians. These crosswalks, often marked with wide ladder-style stripes or patterned with durable thermoplastic materials, are proven to reduce pedestrian-vehicle conflicts and create a safer environment for all road users. This citywide improvement would be implemented in stages, focusing first on city-owned intersections, followed by city-county-owned intersections, and finally county-county-owned intersections.

The benefits of special emphasis crosswalks are numerous. By increasing the visibility of pedestrian crossings, they help alert drivers earlier and more clearly to the presence of pedestrians, especially in high-traffic areas or locations with limited visibility. These crosswalks also enhance pedestrian confidence, encouraging more walking as a viable and safe mode of transportation, which in turn supports the city's goals for a more walkable, connected community. Research from the Florida Department of Transportation (FDOT) and the Miami-Dade Transportation and Public Works Department (DTPW) shows that special emphasis crosswalks significantly reduce the likelihood of pedestrian crashes by making crossings more conspicuous, particularly in urban areas with complex traffic flows.

The design and implementation of these crosswalks would adhere to FDOT and DTPW standards, ensuring that all crosswalks meet ADA (Americans with Disabilities Act) compliance and are consistent with statewide best practices. FDOT's Manual of Uniform Minimum Standards for Design, Construction, and Maintenance for Streets and Highways outlines specific guidelines for special emphasis crosswalks, including the use of reflective materials, specific spacing for lines, and the incorporation of accompanying signage or flashing beacons where necessary.

By following these standards, Doral can ensure that the crosswalks are not only effective, but also meet regulatory requirements.

Because of the low approach angle at which pavement markings are viewed by drivers, the use of longitudinal stripes in addition to or in place of transverse markings can significantly increase the visibility of a crosswalk to oncoming traffic. The staged implementation approach allows the city to focus on high-priority areas first, ensuring that pedestrian safety improvements are systematically rolled out and eventually cover all critical intersections.

All intersections were evaluated and **Figure 3-6** through **Figure 3-8** illustrate those that are viable candidates, infrastructure and location-wise, for a special emphasis crosswalk.

**SAFETY BENEFITS**

High-visibility crosswalks can reduce pedestrian injury crashes up to **40%**

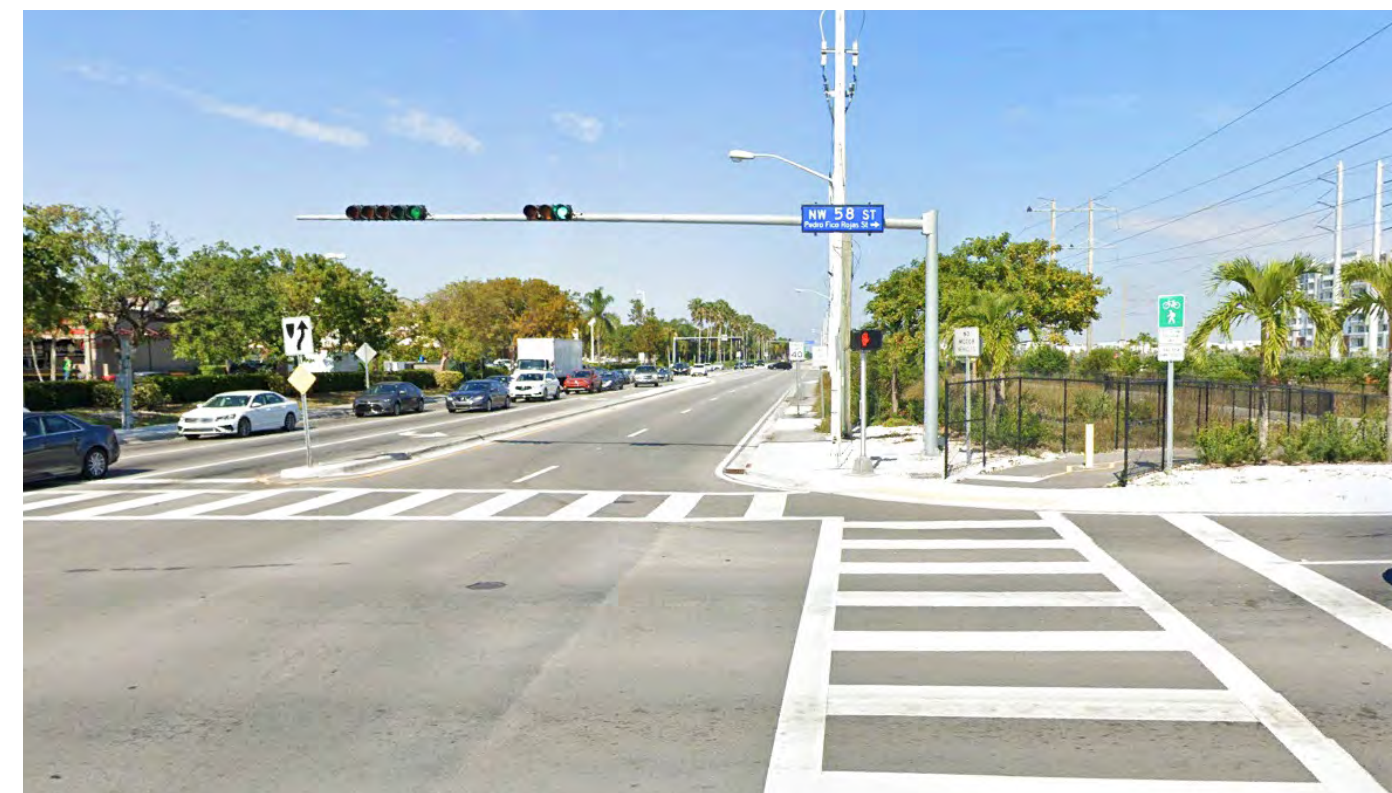
Intersection lighting can reduce pedestrian crashes up to **42%**

Advance yield or stop markings and signs can reduce pedestrian crashes up to **25%**

*Source: Federal Highway Administration (FHWA)*



**Figure 3-5:** Existing Special Emphasis Crosswalk - NW 107<sup>th</sup> Avenue at NW 58<sup>th</sup> Street









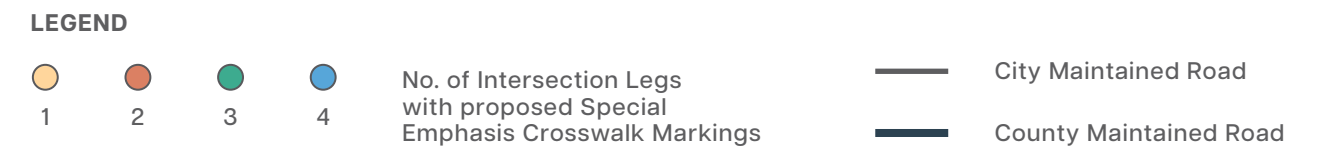
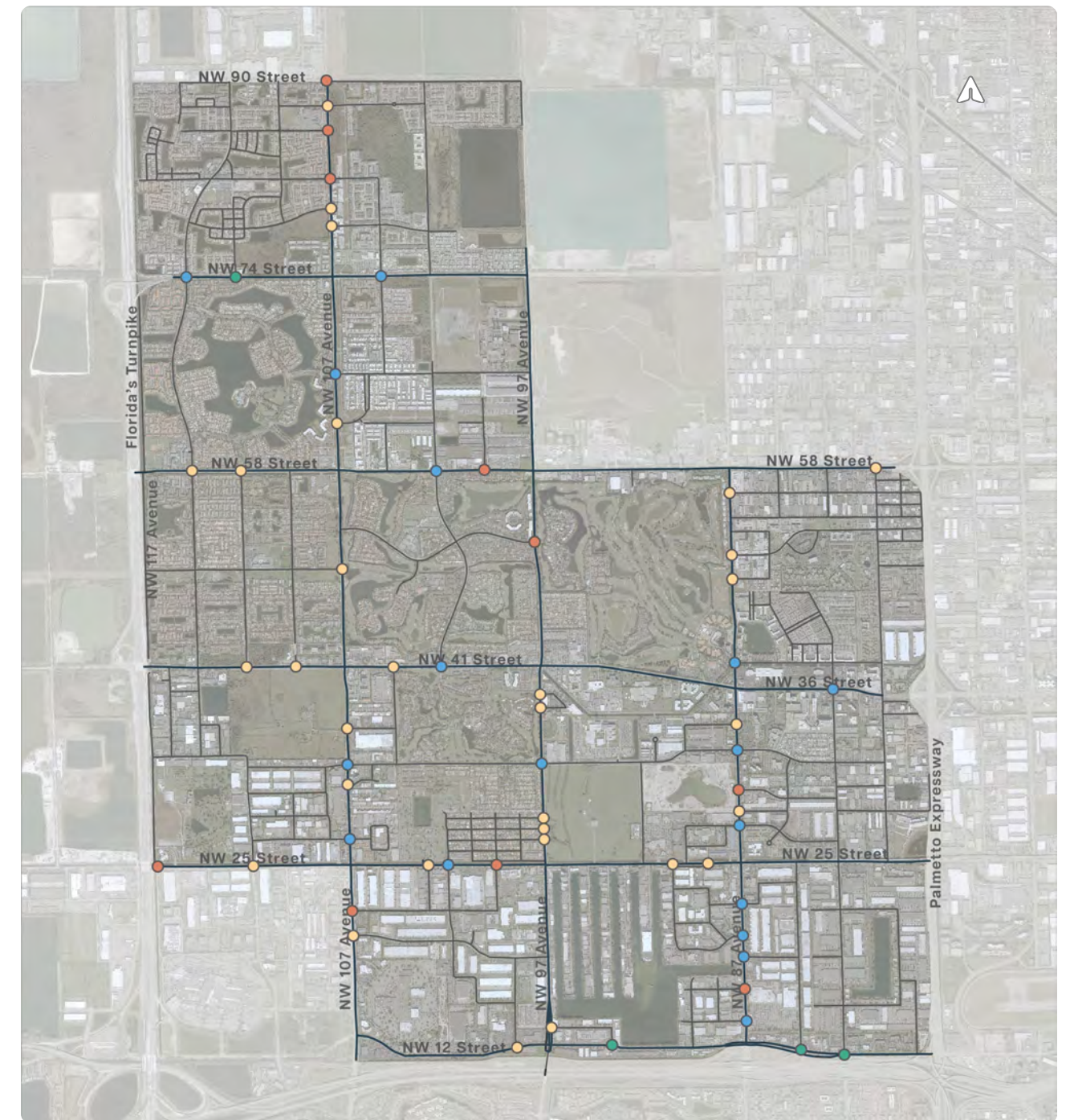
**Table 3-6:** Proposed Special Emphasis Crosswalk Locations (City/County Intersections)

No.	North/South Roadway	East/West Roadway	Crosswalk Location			
			N	S	E	W
1	NW 87 <sup>th</sup> Ave	NW 21 <sup>st</sup> Terr	1	1	1	1
2	NW 87 <sup>th</sup> Ave	NW 17 <sup>th</sup> St	1	1	1	1
3	NW 87 <sup>th</sup> Ave	NW 27 <sup>th</sup> St	1	1	1	1
4	NW 87 <sup>th</sup> Ave	NW 29 <sup>th</sup> St			1	
5	NW 87 <sup>th</sup> Ave	NW 30 <sup>th</sup> Terr			1	1
6	NW 87 <sup>th</sup> Ave	NW 33 <sup>rd</sup> St	1	1	1	1
7	NW 87 <sup>th</sup> Ave	NW 35 <sup>th</sup> Ln				1
8	NW 87 <sup>th</sup> Ave	NW 56 <sup>th</sup> St			1	
9	NW 87 <sup>th</sup> Ave	NW 53 <sup>rd</sup> St	1			
10	NW 87 <sup>th</sup> Ave	NW 52 <sup>nd</sup> St			1	
11	NW 87 <sup>th</sup> Ave	NW 41 <sup>st</sup> St	1	1	1	1
12	NW 82 <sup>nd</sup> Ave	NW 36 <sup>th</sup> St	1	1	1	1
13	NW 82 <sup>nd</sup> Ave	NW 12 <sup>th</sup> St	1		1	1
14	NW 97 <sup>th</sup> Ave	NW 28 <sup>th</sup> Terr				1
15	NW 97 <sup>th</sup> Ave	NW 27 <sup>th</sup> Terr				1
16	NW 97 <sup>th</sup> Ave	NW 27 <sup>th</sup> St				1
17	NW 107 <sup>th</sup> Ave	NW 27 <sup>th</sup> St	1	1	1	1
18	NW 107 <sup>th</sup> Ave	NW 33 <sup>rd</sup> St	1	1	1	1
19	NW 107 <sup>th</sup> Ave	NW 31 <sup>st</sup> Terr			1	
20	NW 109 <sup>th</sup> Ave	NW 41 <sup>st</sup> St	1			
21	NW 112 <sup>th</sup> Ave	NW 41 <sup>st</sup> St	1			
22	NW 97 <sup>th</sup> Ave	NW 52 <sup>nd</sup> St		1		1
23	NW 102 <sup>nd</sup> Ave	NW 58 <sup>th</sup> St	1	1	1	1
24	NW 107 <sup>th</sup> Ave	NW 86 <sup>th</sup> St	1	1		
25	NW 107 <sup>th</sup> Ave	NW 88 <sup>th</sup> St		1		
26	NW 107 <sup>th</sup> Ave	NW 82 <sup>nd</sup> St			1	1
27	NW 107 <sup>th</sup> Ave	NW 78 <sup>th</sup> St				1
28	NW 107 <sup>th</sup> Ave	NW 78 <sup>th</sup> St			1	
29	NW 104 <sup>th</sup> Ave	NW 74 <sup>th</sup> St	1	1	1	1
30	NW 112 <sup>th</sup> Ave	NW 58 <sup>th</sup> St			1	
31	NW 114 <sup>th</sup> Ave	NW 58 <sup>th</sup> St			1	
32	NW 107 <sup>th</sup> Ave	NW 50 <sup>th</sup> St				1
33	NW 99 <sup>th</sup> Ave	NW 25 <sup>th</sup> St	1	1		
34	NW 102 <sup>nd</sup> Ave	NW 25 <sup>th</sup> St	1	1	1	1
35	NW 102 <sup>nd</sup> Pl	NW 25 <sup>th</sup> St		1		
36	NW 89 <sup>th</sup> Pl	NW 25 <sup>th</sup> St		1		
37	NW 24 <sup>th</sup> Terr	NW 25 <sup>th</sup> St		1		
38	NW 93 <sup>rd</sup> Ct	NW 12 <sup>th</sup> St	1		1	1
39	NW 97 <sup>th</sup> Ave	NW 13 <sup>th</sup> St			1	
40	NW 107 <sup>th</sup> Ave	NW 19 <sup>th</sup> St			1	
41	NW 112 <sup>th</sup> Ave	NW 74 <sup>th</sup> St	1		1	1
42	NW 114 <sup>th</sup> Ave	NW 74 <sup>th</sup> St	1	1	1	1
43	NW 107 <sup>th</sup> Ave	NW 66 <sup>th</sup> St	1	1	1	1
44	NW 107 <sup>th</sup> Ave	NW 62 <sup>nd</sup> St			1	
45	NW 107 <sup>th</sup> Ave	NW 90 <sup>th</sup> St		1		1
46	NW 79 <sup>th</sup> Ave	NW 58 <sup>th</sup> St		1		
47	NW 99 <sup>th</sup> Ave	NW 58 <sup>th</sup> St	1			1
48	NW 98 <sup>th</sup> Ct	NW 12 <sup>th</sup> St	1			
49	NW 107 <sup>th</sup> Ave	NW 21 <sup>st</sup> St			1	1
50	NW 112 <sup>th</sup> Ave	NW 25 <sup>th</sup> St			1	

No.	North/South Roadway	East/West Roadway	Crosswalk Location			
			N	S	E	W
51	NW 117 <sup>th</sup> Ave	NW 25 <sup>th</sup> St		1	1	
52	NW 102 <sup>nd</sup> Ave	NW 41 <sup>st</sup> St	1	1	1	1
53	NW 97 <sup>th</sup> Ave	NW 33 <sup>rd</sup> St	1	1	1	1
54	NW 97 <sup>th</sup> Ave	NW 38 <sup>th</sup> St			1	
55	NW 97 <sup>th</sup> Ave	NW 40 <sup>th</sup> St Rd			1	
56	NW 84 <sup>th</sup> Ave	NW 12 <sup>th</sup> St	1	1		1
57	NW 107 <sup>th</sup> Ave	NW 36 <sup>th</sup> St			1	
58	NW 104 <sup>th</sup> Ave	NW 41 <sup>st</sup> St		1		
59	NW 87 <sup>th</sup> Ave	NW 15 <sup>th</sup> St			1	1
60	NW 87 <sup>th</sup> Ave	NW 13 <sup>th</sup> Terr	1	1	1	1
61	NW 87 <sup>th</sup> Ave	NW 18 <sup>th</sup> Terr	1	1	1	1

**Figure 3-7:** Proposed Special Emphasis Crosswalk Locations (City/County Intersections)

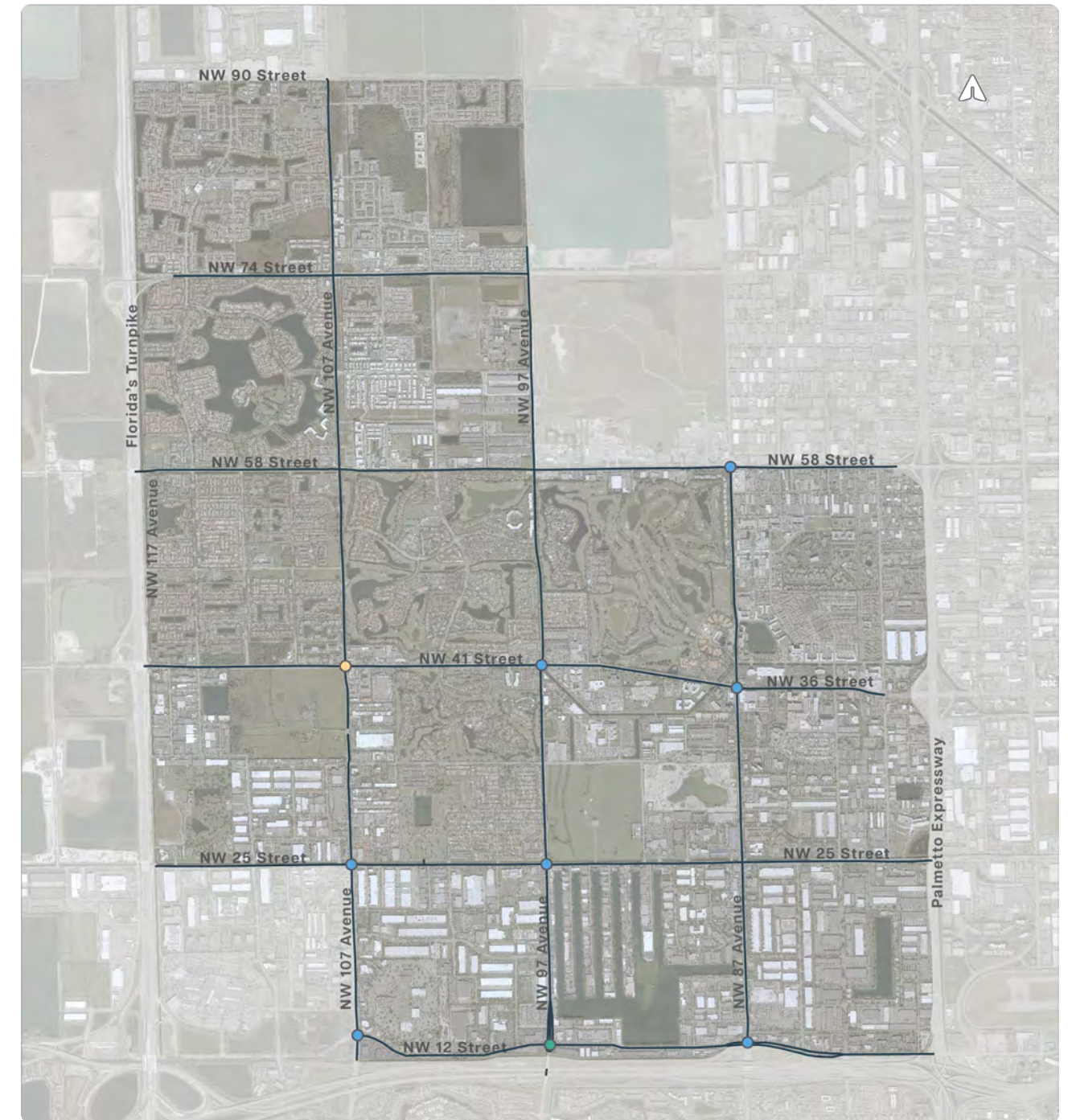




**Table 3-7:** Proposed Special Emphasis Crosswalk Locations (County/County Intersections)

No.	North/South Roadway	East/West Roadway	Crosswalk Location			
			N	S	E	W
1	NW 87 <sup>th</sup> Ave	NW 36 <sup>th</sup> St	1	1	1	1
2	NW 97 <sup>th</sup> Ave	NW 41 <sup>st</sup> St	1	1	1	1
3	NW 107 <sup>th</sup> Ave	NW 41 <sup>st</sup> St				1
4	NW 107 <sup>th</sup> Ave	NW 25 <sup>th</sup> St	1	1	1	1
5	NW 97 <sup>th</sup> Ave	NW 25 <sup>th</sup> St	1	1	1	1
6	NW 87 <sup>th</sup> Ave	NW 12 <sup>th</sup> St	1	1	1	1
7	NW 107 <sup>th</sup> Ave	NW 12 <sup>th</sup> St	1	1	1	1
8	NW 87 <sup>th</sup> Ave	NW 58 <sup>th</sup> St	1	1	1	1
9	NW 97 <sup>th</sup> Ave	NW 12 <sup>th</sup> St	1		1	

**Figure 3-8:** Proposed Special Emphasis Crosswalk Locations (County/County Intersections)



**LEGEND**

- 1
- 2
- 3
- 4
- No. of Intersection Legs with proposed Special Emphasis Crosswalk Markings
- County Maintained Road



Vision Zero is a comprehensive strategy built around the guiding principle that even one death on our transportation system is unacceptable. Developed in Sweden in 1997, this strategy has proven successful in multiple communities across the world.

**Miami-Dade County’s Vision Zero Initiative:**

- Started in 2018 with the publication of the County’s first Vision Zero Plan by the Miami-Dade Transportation Planning Organization.
- Was formally established as the Vision Zero Program in 2021 by Miami-Dade County Mayor Daniella Levine Cava and the County Commission.
- Developed the Vision Zero Framework Plan in 2021.

Each year there are more than 300 fatalities on Miami-Dade County roads and hundreds more are severely injured. Smart Growth America, a non-profit think tank focused on better development, have identified Florida as the most dangerous state for cyclists and pedestrians. More specifically, in their 2022 Dangerous by Design report, the Miami-Dade/Broward area is ranked 14 nationwide for having some of the most dangerous roadways. According to Miami-Dade County, these tragic events were thought of as inevitable by the general population and transportation engineers alike. As such, achieving Vision Zero requires a paradigm shift to embrace the thought that crashes should not result in deaths or serious injuries, and we all share responsibility in achieving our vision.

Making a commitment to zero traffic deaths means addressing all aspects of safety through five overarching program focus areas. Our focus areas are based on FHWA’s Safe System Approach that together create a holistic approach with layers of protection for all road users.

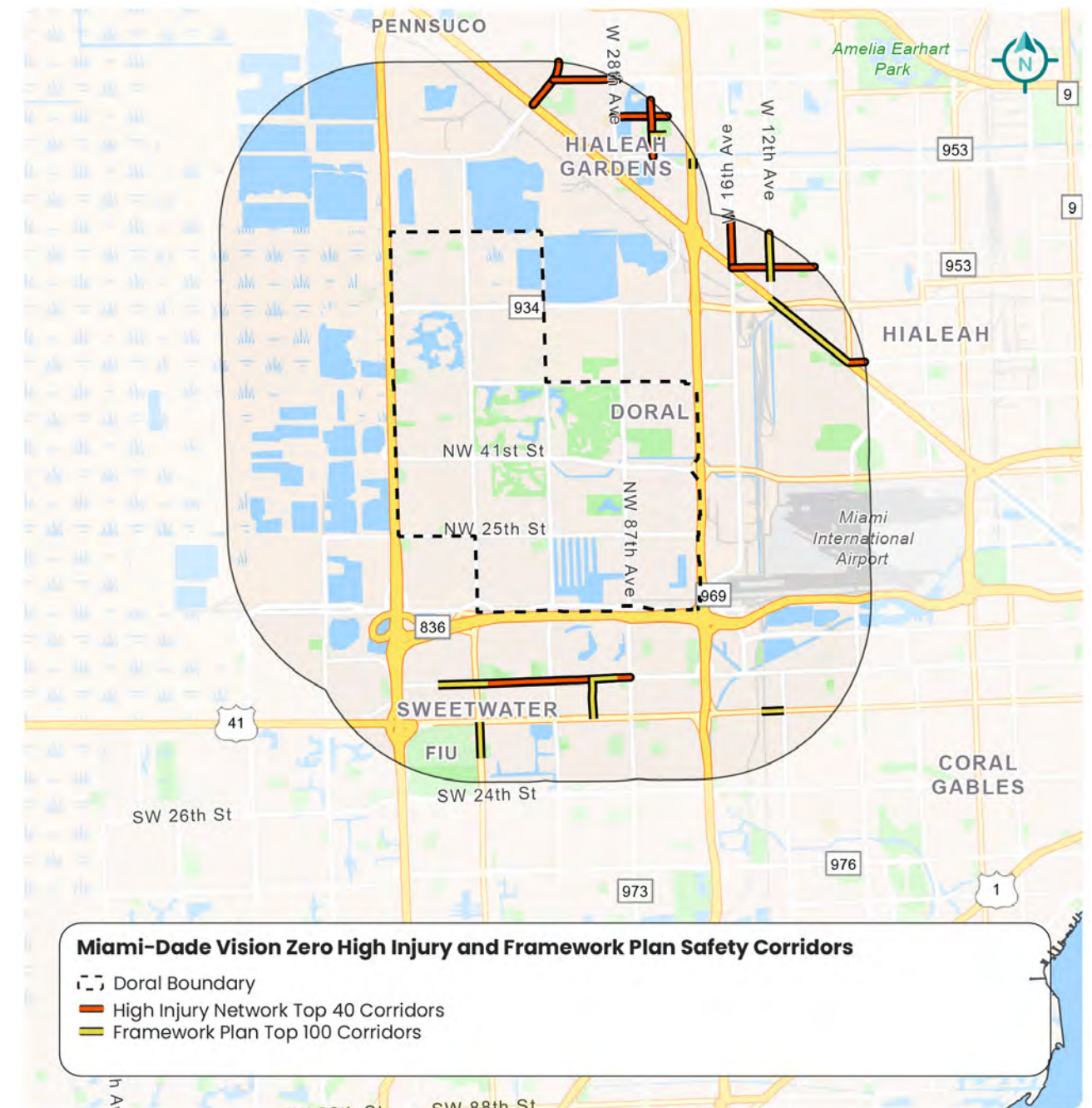
**Our focus areas are:**

- Promote a Culture of Safety.
- Enhance Process and Collaboration.
- Build Safe Streets for Everyone.
- Create Safe Speeds.
- Make Data-Driven Decisions.

**Figure 3-9** displays the High Injury Network (HIN) to 40 priority corridors that account for approximately 31% of the 2,505 crashes in 1.2% of the total County/ Municipal Road centerline miles, as well as the Framework Plan Top 100 Corridors. The Framework Plan further advances the Vision Zero program by identifying current proactive efforts towards the County’s Vision Zero goal within the County’s various departments, agency partners, municipalities, and the Florida Department of Transportation (FDOT). The Framework Plan 1) identifies time-bound actions within the first 36 months to eliminate roadway crashes resulting in fatalities and severe injuries and 2) provides supporting tools specifically calibrated for Miami-Dade County using practices with proven safety outcomes.

As **Figure 3-9** highlights there are no HIN or Framework Plan corridors located within Doral’s municipal boundaries.

**Figure 3-9:** Vision Zero High Injury and Framework Plan



**Recommended Safety Projects**

Minimizing transportation related incidents is a top priority for the City of Doral and targeted improvements are recommended for key intersections and corridors to reduce crashes, improve visibility, and protect vulnerable road users. **Table 3-8** lists recommendations that aim to reduce common crash types and serious and fatal injuries.

**Table 3-8: Recommended Safety Projects**

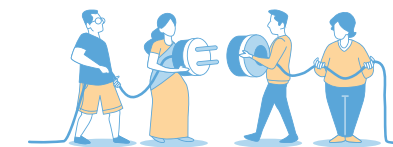
Proj. No.	Roadway/Facility Name	Project Limits		Jurisdiction	Project Description
		From	To		
S - 1	NW 114 Ave	NW 41 St		City/County	Installation of new signal heads with backplates with retroreflective borders on all mast arm assemblies at the intersection.  Installation of raised/retroreflective pavement markers for traffic separator pavement markings extensions on South leg of the intersection.
S - 2	NW 114 Ave	NW 74 St		City/County	Installation of new signal heads with backplates with retroreflective borders on all mast arm assemblies at the intersection.  Provision of pavement marking extension for traffic separators beyond crosswalks for North, West, and South legs of the intersection and installation of raised/retroreflective pavement markers for traffic separator pavement marking extensions.  Provision of special emphasis crosswalk markings for all legs of the intersection.
S - 3	NW 79 Ave	NW 25 St		City/County	Installation of pedestrian crosswalk with special emphasis markings and pedestrian signals on East and West leg of the intersection.
S - 4	NW 79 Ave	NW 36 St		City/County	Installation of new signal heads with backplates with retroreflective borders on the mast arm assemblies at the South and East legs of the intersection.  Installation of pedestrian crosswalk and pedestrian signals on East leg of the intersection.  Provision of special emphasis crosswalk markings for all legs of the intersection.

Proj. No.	Roadway/Facility Name	Project Limits		Jurisdiction	Project Description
		From	To		
S - 5	NW 33 St	NW 87 Ave		City/County	Installation of new signal heads with backplates with retroreflective borders on all mast arm assemblies at the intersection.  Provision of pavement marking extension for traffic separators beyond crosswalks for North, West, and South legs of the intersection and installation of raised/retroreflective pavement markers for traffic separator pavement marking extensions.  Provision of special emphasis crosswalk markings for all legs of the intersection.
S - 6	NW 33 St	NW 97 Ave		City/County	Installation of new signal heads with backplates with retroreflective borders on all mast arm assemblies at the intersection.  Provision of special emphasis crosswalk markings for all legs of the intersection.
S - 7	NW 41 St	NW 87 Ave		City/County	Installation of new signal heads with backplates with retroreflective borders on all mast arm assemblies at the intersection.  Installation of pedestrian crosswalk and pedestrian signals on South leg of the intersection.  Provision of special emphasis crosswalk markings for all legs of the intersection.  Elimination of Right Turn on Red for eastbound approach (West leg).
S - 8	NW 58 St	NW 107 Ave		County	Widening of sidewalk on the NW corner of the intersection to provide more capacity and refuge for pedestrians and bicyclists entering and exiting the existing trail.  Installation of new signal heads with backplates with retroreflective borders on all mast arm assemblies at the intersection.
S - 9	NW 74 St	NW 107 Ave		County	Installation of bollards at entrance of Atlas Trail on the NW corner of the intersection.  Realignment of existing key hole bike lane to go on the outside of existing westbound right turn lane.  Widening sidewalk on NW corner of intersection to receive bike lane and reconfiguring/reducing existing ramp at entrance of Atlas Trail which can currently be mistaken for a driveway.



Proj. No.	Roadway/Facility Name	Project Limits		Jurisdiction	Project Description
		From	To		
S-10	NW 78 St	NW 107 Ave		City/County	Installation of pedestrian crosswalk with special emphasis markings and mast arm (overhead) pedestrian signals on North and South leg of the intersection.
S-11	NW 87 Ave	NW 14 St		County	Installation of new signal heads with backplates with retroreflective borders on the mast arm assemblies at all legs of the intersection.  Installation of pedestrian crosswalk and pedestrian signals on South leg of the intersection.  Provision of special emphasis crosswalk markings for all legs of the intersection.
S-12	Various			City	Provision of special emphasis crosswalk markings at specified legs of 101 City Road/City Road intersections. ( <i>Specific locations provided within Section 3.2 of this Transportation Master Plan</i> ).
S-13	Various			City/County	Provision of special emphasis crosswalk markings at specified legs of 61 City Road/County Road intersections. ( <i>Specific locations provided within Section 3.2 of this Transportation Master Plan</i> ).
S-14	Various			County	Provision of special emphasis crosswalk markings at specified legs of 9 County Road/County Road intersections. ( <i>Specific locations provided within Section 3.2 of this Transportation Master Plan</i> ).

Note: A structural analysis will be required for any recommended signal head modifications to ensure that existing mast arm assembly can handle additional weight.



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### 3.3 PROMOTING ACTIVE TRANSPORTATION

Prioritizing the safety of bicyclists and pedestrians is crucial for creating a livable city. These vulnerable road users are at higher risk of accidents, and ensuring their safety through dedicated infrastructure reduces the likelihood of collisions with motor vehicles. By designing safer streets and implementing traffic-calming measures, a city can encourage those who live and work in it to walk or cycle, which in turn alleviates congestion, reduces air pollution, and promotes healthier lifestyles. Focusing on these groups demonstrates a commitment from the city to protecting all citizens, not just drivers.

A connected network of accessible facilities for bicyclists and pedestrians plays a vital role in shaping a more inclusive and efficient transportation system. When walking and cycling routes are safe, well-maintained, and interconnected, they become more attractive alternatives to driving, specifically for short trips. Trips like grocery shopping, or visiting friends, or running errands after having finished the workday, which make up more than half of a person's daily travels could be safely made on foot or bike. And so, greenhouse emissions are reduced but more importantly, so is the city's dependency on cars and the result—a stronger, more self-sufficient community. A well-planned network encourages more people to adopt active modes of transportation for their daily commutes, further enhancing the city's environmental sustainability and mobility options.

Placing active transportation at the forefront of this plan ensures a more comprehensive and forward-thinking approach to urban mobility. It helps accommodate the diverse needs of all residents and visitors, from children to seniors, and supports the city's long-term growth objectives. A well-rounded system for all road users fosters community well-being, increases the city's appeal to businesses and future residents, and helps Doral achieve its goals of being a modern, accessible, and vibrant city.

This section identifies issues and opportunities with the current bicycle and pedestrian infrastructure within the City of Doral. It also provides suggestions for addressing these issues to improve safety,

accessibility, and connectivity. The recommendations herein aim to guide future infrastructure enhancements for a more bicyclist- and pedestrian-friendly environment.

#### Shared Use Paths

It should be noted that given Doral's young age and previous regressive community building habits, which have been fading over the past years, the city features a promising network of shared use paths, providing safer and more accessible routes for cyclists. These paths are ideal for less experienced riders, offering a low-stress environment for navigating their surroundings by bike. They are great at times while at others they leave ample room for opportunities.

#### Material Application, Pavement Markings, and Physical Separation

When examining the existing shared use paths throughout the city, it becomes apparent that some paths can benefit from upgrades that would enhance the user experience. These upgrades relate to the paths being constructed with standard sidewalk concrete material with contraction joints. While functional, these paths can be improved by incorporating asphalt, which offers a smoother ride for cyclists. The transition from concrete to asphalt not only enhances the cycling experience but also signals to pedestrians that they are entering a shared-use space, encouraging them to be more mindful of cyclists. This change in pavement texture serves as a subtle reminder of the shared nature of the path, promoting greater awareness and safety for all users.

See **Figure 3-10** provides a view of the Dressels Dairy Trail and the NW 92nd Avenue Sidepath. Both facilities permit both non-motorized modes of travel.

Furthermore, these particular concrete shared-use paths within the city currently lack center-lined, dashed markings along the length of the path to separate directional flows. Introducing these markings would help reduce conflicts between cyclists and pedestrians by clearly delineating where each direction of flow should be. By increasing predictability and guiding the flow of traffic, these markings can minimize operational friction, ensuring a smoother and safer experience for both pedestrians and cyclists.

Many of these pathways lack physical separation from the adjacent roadway travel lanes, which can compromise the safety of pedestrians and cyclists. Implementing physical barriers, such as landscaped buffers or curbs, would enhance safety by creating a clear division between the path and vehicle traffic. This separation also allows for the placement of utility strips, preventing overcrowding of essential elements like street lighting and signage. By organizing these elements more effectively, the overall functionality and safety of the pathway are significantly improved.

**Figure 3-10:** Existing Shared-Use Paths Material Treatment Examples (Left - Dressel's Dairy Trail, Right - NW 92<sup>nd</sup> Ave)





### Bike Lanes

Continuing the examination of the bicycle infrastructure as portrayed in the city’s current Existing and Planned Bikeway Network, a discrepancy was noticed with the pairing of bike lanes and sharrows under the same identification. Bike lanes are dedicated spaces on the road exclusively for cyclists, typically marked with solid lines and bike symbols, while sharrows are shared lane markings that indicate cyclists and vehicles must share the same roadway. In the most up to date Existing and Planned Bikeway Network, both sharrows and bike lanes are considered to improve cycling infrastructure, though bike lanes offer more defined separation and dedicated space for cyclists. Bike lanes provide greater safety benefits compared to sharrows by reducing conflicts with vehicles and offering cyclists more predictable, protected spaces to ride. Below are two examples found within the city of each.



**Figure 3-11:** Existing Bike Lane vs. Sharrow Examples (Left - NW 102<sup>nd</sup> Ave, Right - NW 114<sup>th</sup> Ave)



### Private Communities and Roadway Jurisdiction

Refer to **Figure 2-21** in the existing conditions section, which identifies roadway jurisdiction within the City and surrounding areas, private roadway ownership is a significant presence in the Northwest sector of Doral. Private gated communities offer numerous benefits to their residents, such as enhanced security, exclusivity, and a controlled environment. These developments also contribute positively to the overall appeal and property values of the cities they reside in, including Doral. However, a challenge that arises from the concentration of these gated neighborhoods is the limitation they impose on expanding the city’s active transportation network. Their restricted access prevents the use of lower-speed, lower-volume roadways for public non-motorized travel, which could otherwise offer safer and more appealing routes for cyclists and pedestrians.

The close proximity of these gated communities funnels all public infrastructure improvements to a limited number of high-traffic roadways, especially for east-west travel. This creates increased competition among different modes—vehicles, cyclists, and pedestrians—making these corridors less conducive to a non-motorized network that supports people of all ages and abilities. A long-term solution for this is continuing to enhance and enforce policy requirements that all new developments should incorporate publicly accessible multimodal elements in their design. The publicly accessible main roadways through their communities or public roadways adjacent to their outer perimeters should incorporate space for dedicated bike lanes or shared-use paths, ensuring that non-motorized infrastructure is integrated from the start and providing safe, accessible options that end up benefiting the resident of those private communities as well as the public.

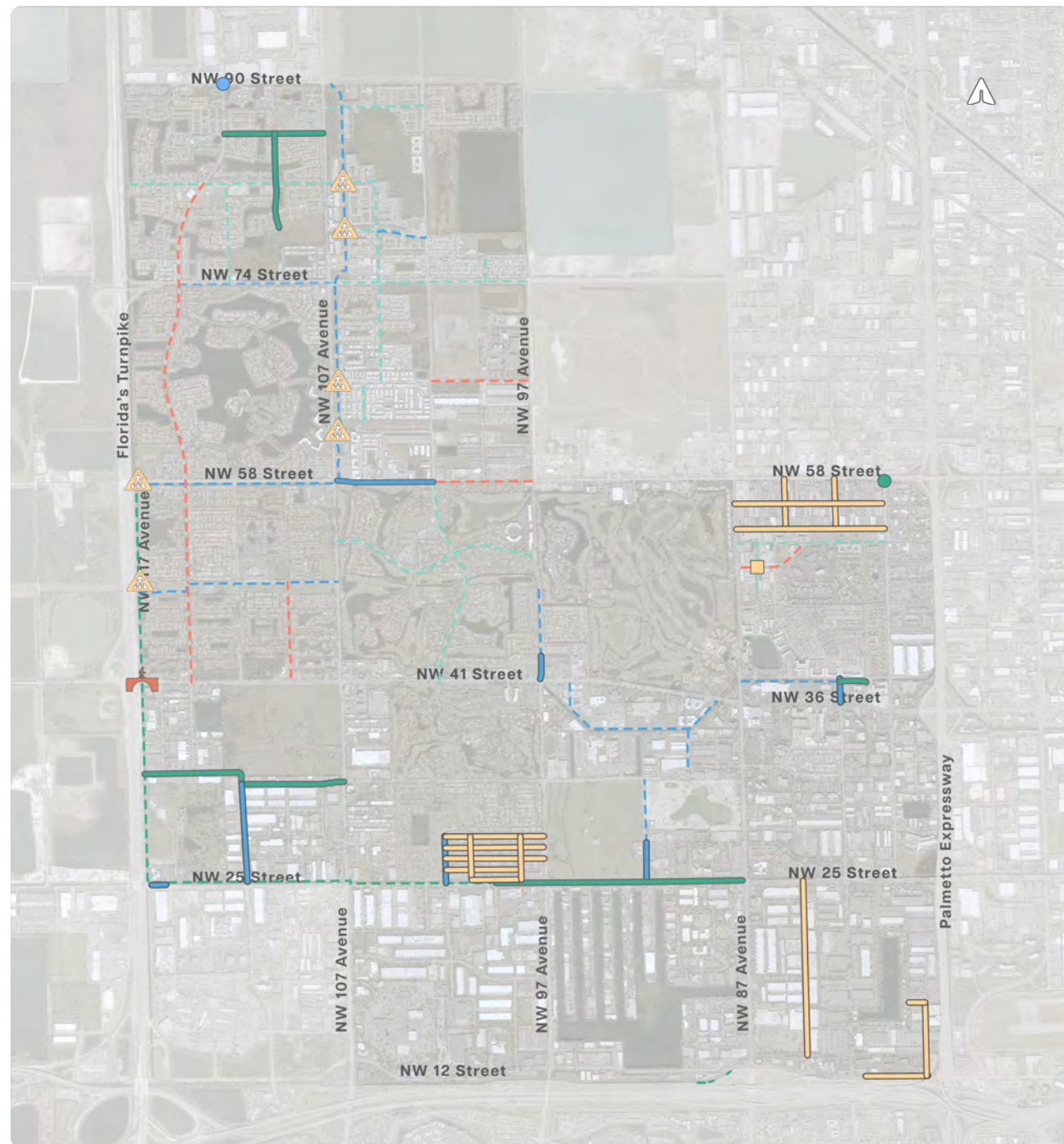
### Active Transportation Recommendations

All recommended improvements are being proposed with a focus on increasing safety and closing gaps between existing bicycle infrastructure wherever possible. By utilizing the existing available public right of way and employing road dieting methods where feasible, the city can efficiently implement these improvements without the need of significant land acquisition or disruption. Road dieting involves reallocating road space to better accommodate all users, often by reducing the number of lanes or lane widths to add bicycle lanes or wider sidewalks, thereby enhancing accessibility and safety for cyclists and pedestrians.

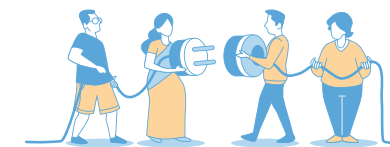
The proposed enhancements aim to create a safer and more connected environment for active transportation within the city. By focusing on key areas that can benefit from new infrastructure, these modifications/additions seek to encourage residents to choose biking or walking as viable modes for commuting and/or recreational trips.

While these improvements prioritize roadways under Doral’s jurisdiction, their successful implementation will require close coordination with county and state agencies. Collaborating with these entities is essential to ensure that all projects are seamlessly integrated into the broader transportation network. Such cooperation will facilitate the inclusion of the proposed changes into existing plans and funding mechanisms, maximizing their chances of success.

Figure 3-12: City of Doral Proposed Bicyclist/Pedestrian Improvements and Existing Infrastructure



LEGEND		Existing Infrastructure	
<b>Proposed Improvements</b>	Bike & Ped Bridge	Paved Paths	Bike Lanes
Crosswalk	Raised Intersection	Trails	Wide Curb Lanes
Pedestrian Signal	Shared-Use Path	Sharrows	
Rectangular Rapid Flashing Beacon (RRFB)	Sidewalk		



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**Recommended Active Transportation Projects**

**Table 3-8** provides a detailed bank of the individual proposed improvements shown in **Figure 3-12**. This information includes the project location with limits, and a general description. Each recommended project will require a more in-depth feasibility analysis to ultimately determine its potential for implementation.

**Table 3-8: Recommended Active Transportation Projects**

Proj. No.	Roadway/Facility Name	Project Limits		Jurisdiction	Project Description
		From	To		
AT - 1	Various			City	Construction of 6 ft. sidewalks on both sides of the road throughout neighborhood bound by NW 102 Ave on the west, NW 97 Ave on the east, NW 28th Terr on the north, and NW 25 Terr on the south.
AT - 2	NW 102 Ave	NW 25 St	NW 28 Terr	City	Construct a 10 ft. Sidepath existing public right of way on the west side of NW 102nd Avenue as a feeder facility for the local neighborhood to the existing Beacon Trail extension.
AT - 3	Various			City	Construction of 6 ft. sidewalks on the following city maintained roadway segments: NW 54 St (north side) from NW 87 Ave to NW 79 Ave NW 56 St (both sides) from NW 87 Ave to NW 79 Ave NW 84 Ave (both sides) from NW 54 St to NW 58 St NW 82 Ave (both sides) from NW 54 St to NW 58 St
AT - 4	NW 84 Ave	NW 12 St	NW 25 St	City	Construction of 6 ft. sidewalks on both sides of the road starting approximately 460 ft. north of NW 12 St where existing sidewalk on NW 84 Ave ends.
AT - 5	Various			City	Construction of 6 ft. sidewalks on the following city maintained roadway segments: NW 78 Ave (both sides) from NW 12 St to NW 15 St NW 15 St (both sides) from NW 79 Ave to NW 78 Ave
AT - 6	NW 12 St	NW 82 Ave	NW 78 Ave	County	Construction of 6 ft. sidewalk on the north side of the road. Western limit would begin approximately 325 ft. East of NW 82nd Ave where existing sidewalk ends.

Proj. No.	Roadway/Facility Name	Project Limits		Jurisdiction	Project Description
		From	To		
AT - 7	NW 112 Ave	NW 25 St	NW 34 St	City	Construction of a 10 ft. asphalt sidepath on the west side of the road to replace existing concrete sidewalk and marked appropriately for shared use by bicyclists and pedestrians, and with special emphasis crossing markings at conflict areas.  Widening of existing 5 ft. sidewalk on the east side of the road where there is an existing grass utility strip to enhance capacity for pedestrians given this is a school area.
AT - 8	NW 27 St	NW 112 Ave	NW 109 Ave	City	Construction of 6 ft. sidewalk on the north side of the road.
AT - 9	NW 82 Ave	NW 36 St	NW 41 St	City	Construction of a 10 ft. asphalt sidepath on the west side of the road marked appropriately for shared use by bicyclists and pedestrians, and with special emphasis crossing markings at conflict areas.
AT - 10	NW 92 Ave	NW 25 St	NW 33 St	City	Construction of a 10 ft. asphalt sidepath on the east side of the road marked appropriately for shared use by bicyclists and pedestrians, and with special emphasis crossing markings at conflict areas.  New sidepath from NW 25 St to NW 27 St. Replacement of existing concrete material for asphalt on existing sidepath segment from NW 27 St to NW 33 St.
AT - 11	NW 33 St	NW 112 Ave	NW 107 Ave	City	Construction of a 10 ft. asphalt separated shared use path on the south side of the road replacing the existing sidewalk and marked appropriately for shared use by bicyclists and pedestrians, and with special emphasis crossing markings at conflict areas.  Installation of a pedestrian crossing signal (Rapid Flashing Beacon) with special emphasis crosswalk markings and across the south leg to the intersection of NW 33 St and NW 112 St to connect to proposed sidepath.
AT - 12	NW 34 St	NW 117 Ave	NW 112 Ave	City	Construction of a 12 ft. asphalt separated shared use path on the north side of the road marked appropriately for shared use by bicyclists and pedestrians, and with special emphasis crossing markings at conflict areas to connect proposed sidepath on NW 112 Ave and proposed shared use path on NW 33 St to existing Turnpike Trail on NW 117 Ave.

Proj. No.	Roadway/Facility Name	Project Limits		Jurisdiction	Project Description
		From	To		
AT - 13	NW 25 St	NW 99 Ave	NW 87 Ave	County	Construction of a 10 ft. asphalt separated shared used path on the north side of the road replacing the existing sidewalk (in some segments) and marked appropriately for shared use by bicyclists and pedestrians, and with special emphasis crossing markings at conflict areas to provide an extension of existing Beacon Trail to the east.
AT - 14	Dressel's Dairy Canal	NW 82 Ave		County	Construction of a 10 ft. asphalt separated shared used path on the south side of Dressel's Dairy Canal and marked appropriately for shared use by bicyclists and pedestrians, and with special emphasis crossing markings at conflict areas to provide a missing link of the existing Dressel's Dairy Trail that runs from NW 97 Ave to NW 79 Ave.
AT - 15	NW 86 St	NW 112 Ave		City	Construction of a 10 ft. asphalt separated shared used path on the south side of the road replacing the existing sidewalk and marked appropriately for shared use by bicyclists and pedestrians, and with special emphasis crossing markings at conflict areas.
AT - 16	NW 109 Ave	NW 86 St	NW 78 St	City	Construction of an 8 ft. asphalt separated shared used path on both sides of the road replacing the existing sidewalk and marked appropriately for shared use by bicyclists and pedestrians, and with special emphasis crossing markings at conflict.
AT - 17	NW 97 Ave	NW 41 St	NW 52 St	County	Construction of a 10 ft. asphalt sidepath on the west side of the road replacing the existing sidewalk and marked appropriately for shared use by bicyclists and pedestrians, and with special emphasis crossing markings at conflict areas.
AT - 18	NW 25 St	NW 117 Ave		County	Construction of a 10 ft. asphalt sidepath on the north side of the road and marked appropriately for shared use by bicyclists and pedestrians, and with special emphasis crossing markings at conflict areas to provide a connection to the existing Beacon Trail as well as the Turnpike Trail.  Provision of special emphasis marking on the existing crosswalk across the east leg of the intersection.

Proj. No.	Roadway/Facility Name	Project Limits		Jurisdiction	Project Description
		From	To		
AT - 19	Turnpike Trail	NW 41 St		County	Construction of a bicycle/pedestrian bridge over NW 41 St to provide a safe separated connection/missing link for the Turnpike Trail.
AT - 20	Various			City/County	Installation of a Rectangular Rapid Flashing Beacon (RRFB) for existing trail crossing according to MUTCD guidelines, with the necessary crossing warning signage and special emphasis crosswalk markings at the following locations: <i>NW 105 Ct at Approx. 120 ft. East of NW 107 Ave</i> <i>NW 50 St/Turnpike Trail at Approx. 80 ft. east of NW 117 Ave</i> <i>NW 58 St/Turnpike Trail at Approx. 115 ft. east of NW 117 Ave (County maintained road)</i> <i>NW 66 St at Approx. 150 ft. East of NW 107 Ave</i> <i>NW 78 St Approx. 450 ft. east of NW 107 Ave</i> <i>NW 82 St Approx. 450 ft. east of NW 107 Ave</i>
AT - 21	NW 53 St	NW 85 Pl		City	Construction of a raised intersection to place heightened focus on pedestrian crossing activities for motor vehicles at this busy intersection.
AT - 22	NW 58 St	NW 79 Ave		City	Installation of pedestrian signal on existing mast arm assembly for existing pedestrian crosswalk across south leg of the intersection and signal phasing adjustment to incorporate pedestrian phase.
AT - 23	NW 90 St	NW 112 Ave		City	Provision of new crosswalk across north leg of the intersection which would require re-striping to shift stop bar to the north approximately 10 ft. Extension of existing crosswalk across east leg of the intersection to intersect with proposed new crosswalk and reach the existing ADA curb ramp.  Provision of special emphasis markings for all crosswalks.
AT - 24	NW 58 St	NW 107 Ave	NW 102 Ave	County	Construction of a 10 ft. asphalt sidepath on the north side of the road replacing the existing sidewalk and marked appropriately for shared use by bicyclists and pedestrians, and with special emphasis crossing markings at conflict areas to provide a connection to the existing Greenway Trail.



### 3.4 ENHANCING TRANSIT INFRASTRUCTURE

The City of Doral's existing transit infrastructure primarily revolves around its trolley system, which serves as a free, convenient public transportation option for residents and visitors. The Doral Trolley operates on several routes connecting key locations within the city, including residential areas, commercial centers, and important transit hubs such as the Miami International Airport Metrorail Station. The trolley system is integrated with the regional transit network, providing connections to Miami-Dade Transit services, allowing riders to access broader transportation options throughout the county.

The purpose of this analysis was to develop recommendations to enhance the experience for the riders of the existing trolley system by providing them opportunities to connect with other modes of transportation at the stops, as well as providing a more comfortable and safer environment.

#### Evaluation Criteria

In order to accurately recommended location-specific improvements/enhancement, each trolley stop was analyzed across the 4 current routes. The analysis was conducted using ridership data from 2019 and considered the location, ridership, and amenities provided at each of the existing trolley stops. The city is currently working on retrofitting the existing trolley fleet with counters to accurately gauge daily ridership. The city is also currently conducting a separate study to review and improve the trolley routes under the Doral Trolley System Study Update; therefore, changes to the existing trolley system routes were not considered under this analysis.

#### Recommended Trolley Improvements

To enhance the rider experience of the existing trolley system, general recommendations are summarized below.

- Provide shelters at trolley stops with a minimum ridership of 25 boardings per day. It is critical to provide safe and comfortable environments for users to wait for the trolley to make this system a more attractive and desirable commute mode.
- Provide bicycle racks at trolley stops located in the vicinity of bicycle facilities. This improvement enhances multi-modal connectivity within the City of Doral by providing a place where bicyclists can secure their bicycles and transfer to the trolley system.
- Install midblock crossings at locations where two trolley stops are located across the road from each other, and they are not within a close walking distance from a pedestrian crosswalk. This improvement provides a more convenient opportunity for trolley riders to safely cross the roadway and transfer to other routes.

**Tables 3-9** through **Table 3-12** list the current and recommended amenities per trolley stop per route. **Figures 3-13** through **Figure 3-16** illustrate the recommended improvements per stop per route.

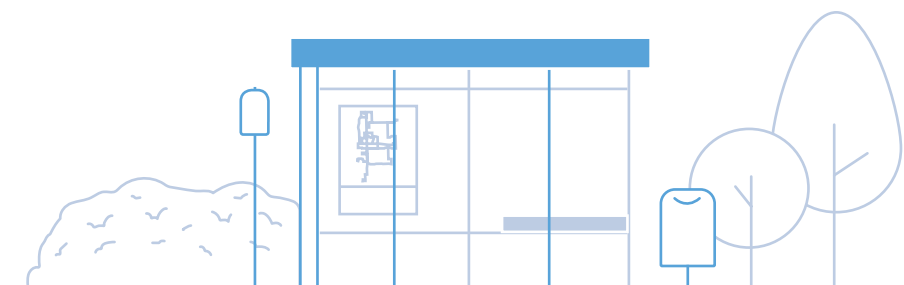
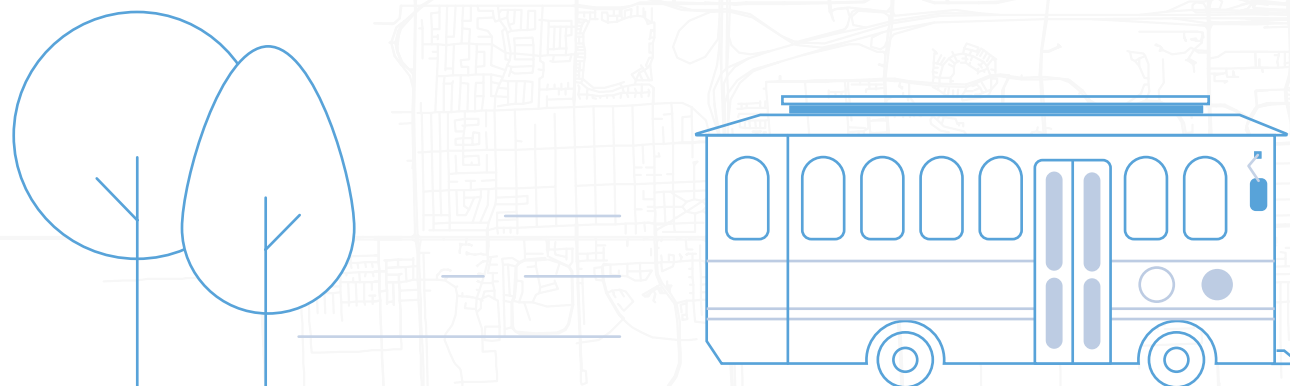
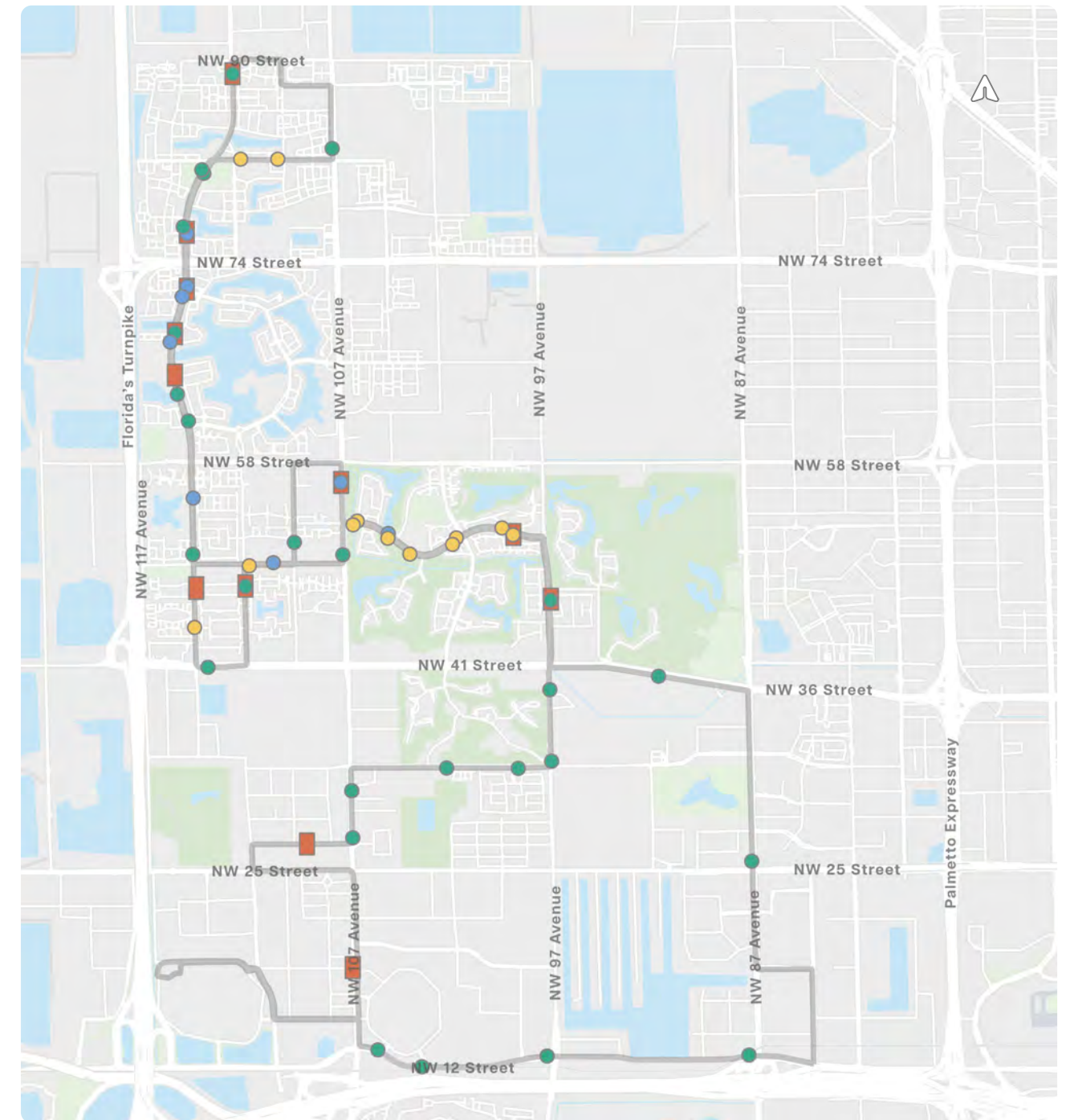


Table 3-9: Doral Trolley Stop Route 1 Recommended Improvements

Trolley Stop No.	Existing Amenities	Recommended Amenities	Midblock Crossing Rec.	Jurisdiction
1001	Bench	Shelter		County
1003	Bench	Shelter		County
1004	Bench	Shelter		County
1005	Bench	Shelter		County
1011	Shelter		Yes	City
1012	Bench	Shelter		County
1013	Bench	Shelter		County
1014	Bench	Shelter		City
1015	Bench	Shelter		City
1016	Bench	Shelter		County
1017	Bench	Shelter		County
1019	Bench	Shelter	Yes	County
1020	Bench	Shelter and Bike Rack		City
1021	Bench	Shelter and Bike Rack		City
1022	Bench	Bike Rack		City
1023	Bench	Shelter and Bike Rack		City
1024	Bench	Shelter		County
1026	Shelter	Bike Rack		City
1028	Shelter	Bike Rack		City
1030	Bench	Shelter		City
1031	Bench		Yes	City
1032	Bench	Shelter	Yes	City
1033	Shelter	Bike Rack	Yes	City
1034	Shelter	Bike Rack	Yes	City
1035	Bench	Shelter		City
1038	Bench	Shelter	Yes	City
1043	Bench	Shelter		County
1045	Sign Post	Shelter and Bike Rack		City
1046	Sign Post	Shelter and Bike Rack		City
1047	Sign Post	Shelter		City
1048	Bench	Shelter		City
1049	Shelter	Bike Rack		City
1050	Bench	Bike Rack		City
1051	Bench	Shelter		City
1054	Sign Post	Shelter		City
1055	Sign Post	Shelter and Bike Rack		City
1056	Bench	Shelter		City
1058	Shelter	Bike Rack	Yes	County
1059	Bench	Shelter and Bike Rack		City
1060	Bench	Shelter and Bike Rack		City
1061	Bench	Shelter and Bike Rack		City
1062	Sign Post	Shelter and Bike Rack		City
1063	Bench	Shelter and Bike Rack	Yes	City
1068	Sign Post	Shelter		County
1073	Bench	Shelter		County
1078	Shelter		Yes	County
1080	Sign Post		Yes	City
1081	Sign Post	Shelter and Bike Rack		City
1082	Bench	Shelter		County
1084	Sign Post	Shelter	Yes	City

Figure 3-13: Doral Trolley Route 1 Recommended Improvements



LEGEND

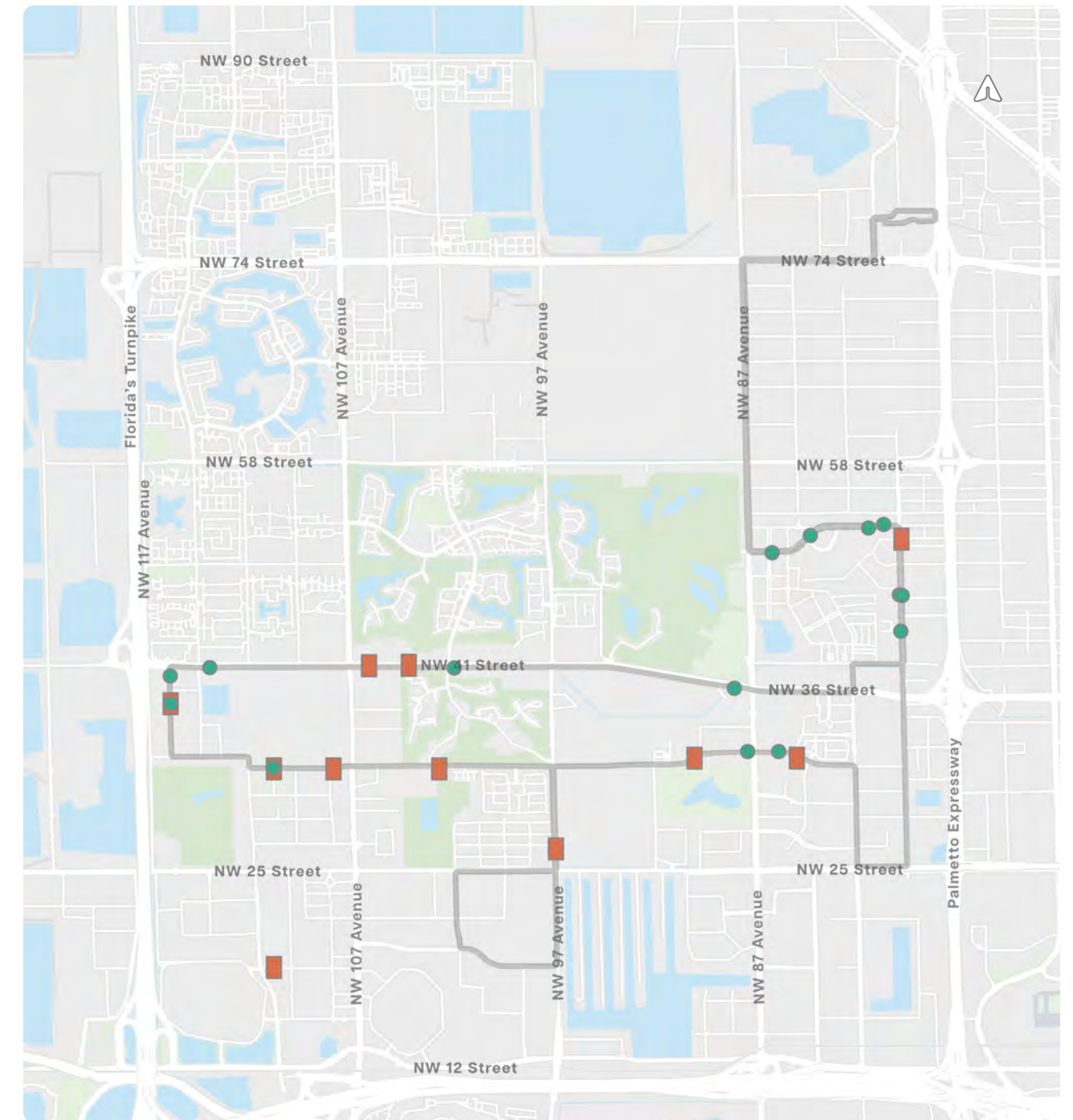
- Shelter
- Bike Rack
- Bike Rack and Shelter
- Midblock Crossing
- Route
- Recommended Trolley Stop Improvement



**Table 3-10:** Doral Trolley Stop Route 2 Recommended Improvements

Trolley Stop No.	Existing Amenities	Recommended Amenities	Midblock Crossing Rec.	Jurisdiction
2003	Bench	Shelter		City
2005	Sign Post	Shelter		City
2006	Sign Post	Shelter		City
2007	Bench		Yes	City
2008	Bench	Shelter		City
2009	Bench	Shelter		City
2015	Sign Post		Yes	City
2016	Bench	Shelter		City
2017	Bench	Shelter		City
2018	Bench		Yes	City
2021	Bench		Yes	City
2023	Sign Post		Yes	City
2024	Sign Post	Shelter	Yes	City
2027	Bench	Shelter	Yes	City
2028	Sign Post	Shelter		City
2029	Bench	Shelter		County
2031	Shelter		Yes	County
2032	Bench		Yes	County
2033	Bench	Shelter		County
2048	Bench	Shelter		County
2056	Sign Post	Shelter		City
2058	Sign Post	Shelter		City
2067	Sign Post		Yes	County
2070	Sign Post		Yes	City

**Figure 3-14:** Doral Trolley Route 2 Recommended Improvements



**LEGEND**

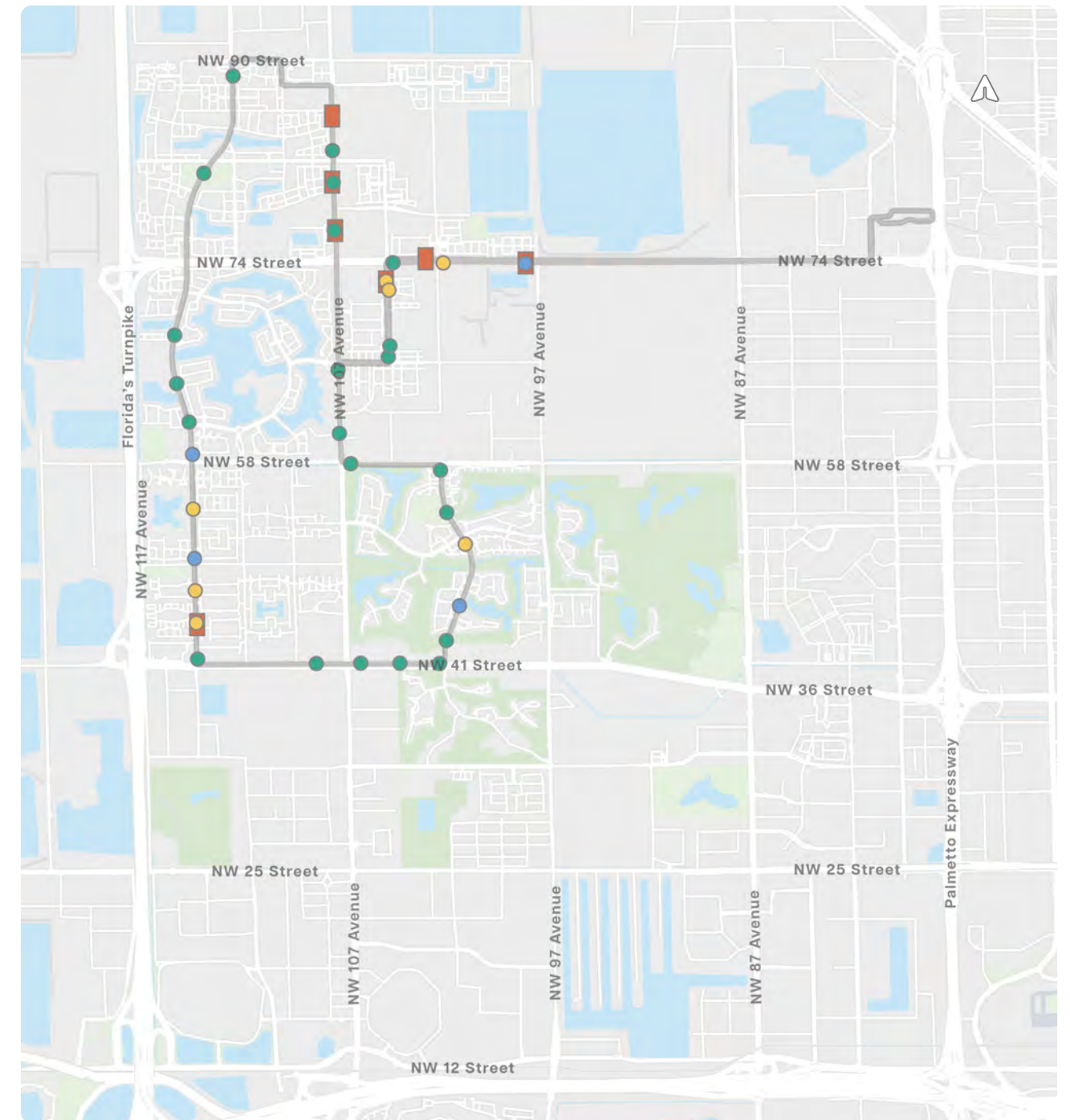
- Shelter
- Midblock Crossing
- Route
- Recommended Trolley Stop Improvement

**Table 3-11: Doral Trolley Stop Route 3 Recommended Improvements**

Trolley Stop No.	Existing Amenities	Recommended Amenities	Midblock Crossing Rec.	Jurisdiction
3001	Sign Post		Yes	County
3003	Sign Post		Yes	County
3005	Bench	Shelter		County
3006	Bench	Shelter		County
3007	Bench	Shelter		County
3008	Bench	Shelter		City
3009	Bench	Shelter		City
3010	Bench	Shelter and Bike Rack		City
3011	Bench	Bike Rack		City
3012	Sign Post	Shelter		City
3013	Bench	Shelter		County
3014	Bench	Shelter		County
3015	Bench	Shelter		County
3016	Bench	Shelter		County
3017	Bench	Shelter		City
3018	Sign Post	Shelter and Bike Rack	Yes	City
3019	Bench	Shelter and Bike Rack		City
3020	Shelter	Bike Rack		City
3021	Bench	Shelter and Bike Rack		City
3022	Shelter	Bike Rack		City
3023	Bench	Shelter		City
3024	Bench	Shelter		City
3025	Sign Post	Shelter		City
3028	Bench	Shelter		City
3031	Bench	Shelter		City
3035	Shelter		Yes	County
3036	Bench	Shelter		County
3037	Bench	Shelter	Yes	County
3038	Bench	Shelter	Yes	County
3039	Sign Post	Shelter		County

Trolley Stop No.	Existing Amenities	Recommended Amenities	Midblock Crossing Rec.	Jurisdiction
3040	Sign Post	Shelter and Bike Rack		County
3041	Sign Post	Bike Rack		County
3042	Sign Post	Shelter and Bike Rack	Yes	City
3044	Sign Post	Shelter		City
3045	Sign Post	Shelter		City
3046	Sign Post	Shelter and Bike Rack		City

**Figure 3-15: Doral Trolley Route 3 Recommended Improvements**



**LEGEND**

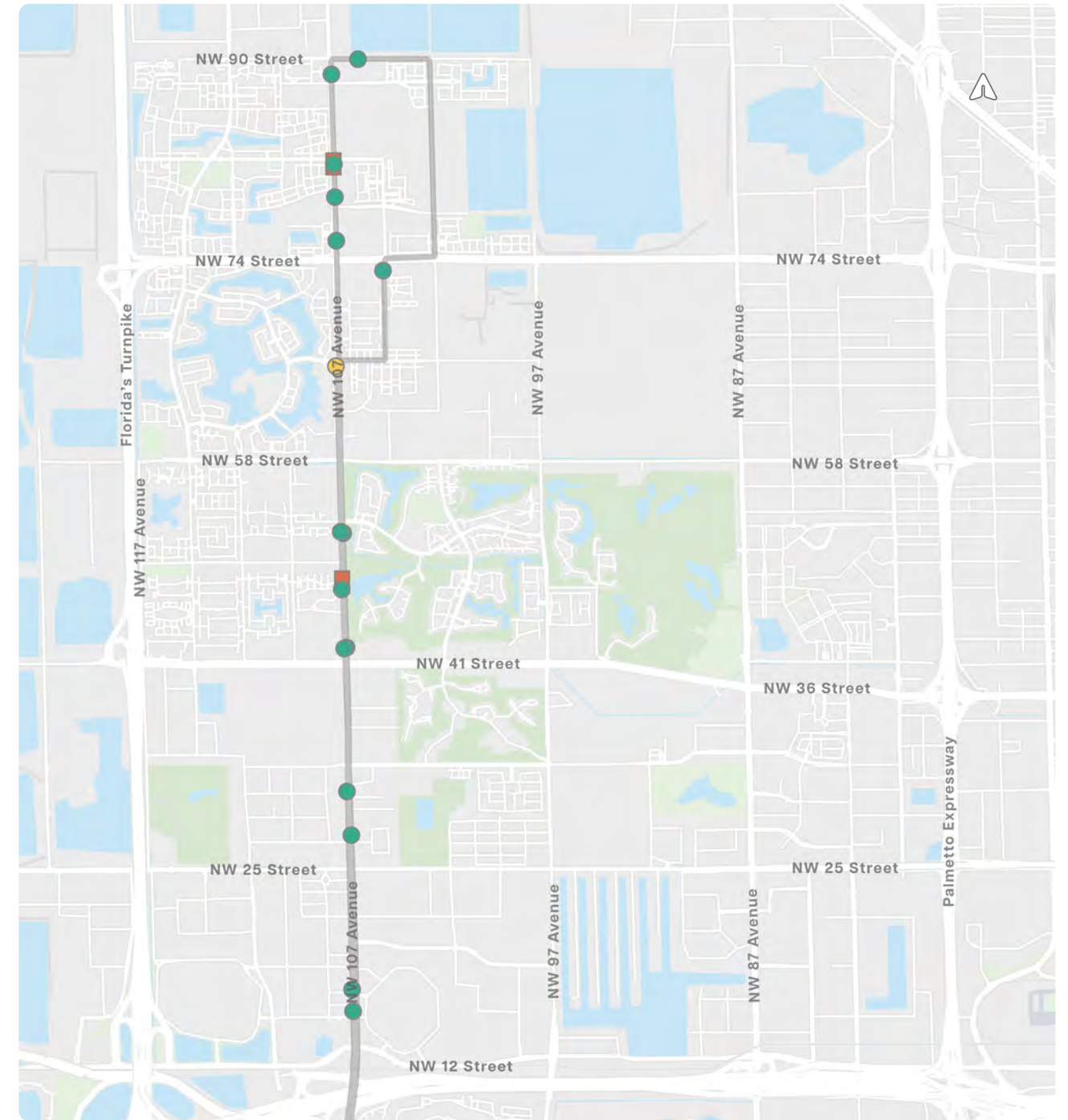
- Shelter
- Bike Rack
- Bike Rack and Shelter
- Midblock Crossing
- Route
- Recommended Trolley Stop Improvement



**Table 3-12:** Doral Trolley Stop Route 4 Recommended Improvements

Trolley Stop No.	Existing Amenities	Recommended Amenities	Midblock Crossing Rec.	Jurisdiction
4001	Sign Post	Shelter		City - Sweetwater
4002	Bench	Shelter	Yes	County
4010	Bench	Shelter		County
4014	Bench	Shelter		County
4015	Sign Post		Yes	County
4016	Sign Post	Shelter		County
4022	Sign Post	Shelter		County
4023	Sign Post	Shelter		County
4024	Sign Post	Shelter	Yes	County
4026	Sign Post	Shelter		County
4027	Sign Post	Shelter		City
4034	Sign Post	Shelter		City
4037	Bench	Shelter and Bike Rack		County
4040	Bench	Shelter		County
4041	Sign Post	Shelter		County
4042	Sign Post	Shelter		County
4043	Bench	Shelter		County
4047	Bench	Shelter		County
4048	Bench	Shelter		County

**Figure 3-16:** Doral Trolley Route 4 Recommended Improvements



**LEGEND**

- Shelter
- Bike Rack and Shelter
- Midblock Crossing
- Route
- Recommended Trolley Stop Improvement

*Note: Map only shows recommended trolley improvements within the city limits. Route 4 extends south past SW 8<sup>th</sup> St to within the Florida International University (FIU) campus.*



Figure 3-17: Existing Trolley Stop Amenities



**Recommended Transit Projects**

To enhance the efficiency, reliability, and accessibility of public transit within the City of Doral, targeted improvements are recommended for key intersections and corridors in **Table 3-13**. These improvements focus on reducing transit delays, improving access to bus stops, and enhancing overall transit operations.

Table 3-13: Recommended Transit Projects

Proj. No.	Roadway/ Facility Name	Project Limits		Jurisdiction	Project Description
		From	To		
T - 1	Trolley Stops- New Shelter (City Roads)	Varies		City	Installation of Doral branded transit stop shelter at 55 identified trolley stops located on city maintained roads.
T - 2	Trolley Stops- New Shelter (County Roads)	Varies		County	Installation of Doral branded transit stop shelter at 45 identified trolley stops located on county maintained roads.
T - 3	Trolley Stops- Bike Parking (City Roads)	Varies		City	Installation of bicycle parking racks at 28 identified trolley stops located on city maintained roads.
T - 4	Trolley Stops- Bike Parking (County Roads)	Varies		County	Installation of bicycle parking racks at 4 identified trolley stops located on county maintained roads.
T - 5	Trolley Stops- Midblock Crossing (City Roads)	Varies		City	Installation of a midblock crossing at 19 identified locations where trolley stops are located on both sides of the road across each other. City maintained roads.
T - 6	Trolley Stops- Midblock Crossing (County Roads)	Varies		County	Installation of a midblock crossing at 14 identified locations where trolley stops are located on both sides of the road across each other. County maintained roads.



### 3.5 IMPROVING OPERATIONS

The future conditions analysis for the Doral Transportation Master Plan was conducted to evaluate the projected performance of key intersections and corridors by 2045. This analysis was essential for understanding how the city's transportation network will handle future traffic demands and identifying areas where improvements are necessary to prevent congestion and improve safety. The methodology involved multiple steps, including traffic forecasting, level of service (LOS) evaluation, and mitigation strategies for failing intersections.

#### Evaluation Criteria

Like with the existing traffic operations analysis, the intersection operations was evaluated in terms of the Level of Service (LOS). LOS is expressed on a scale of A through F, where LOS A represents the least delay (i.e., less than 10 seconds per vehicle) and LOS F represents the highest delay (i.e., greater than 80 seconds per vehicle for a signalized intersection).

For the future traffic analysis, the future peak hour traffic volumes were derived using the Southeast Florida Regional Planning Model (SERPM) activity-based model from 2015 to 2045 using a Weighted Average Compound Annual Growth Factor of 1.2682.

	Compound Annual Growth Rate	Growth Factor from 2023 to 2045	Weighted Average Growth Factor
Total HH	1.58%	1.3794	1.2682
Total POP	1.36%	1.3245	
Total EMP	0.87%	1.2017	

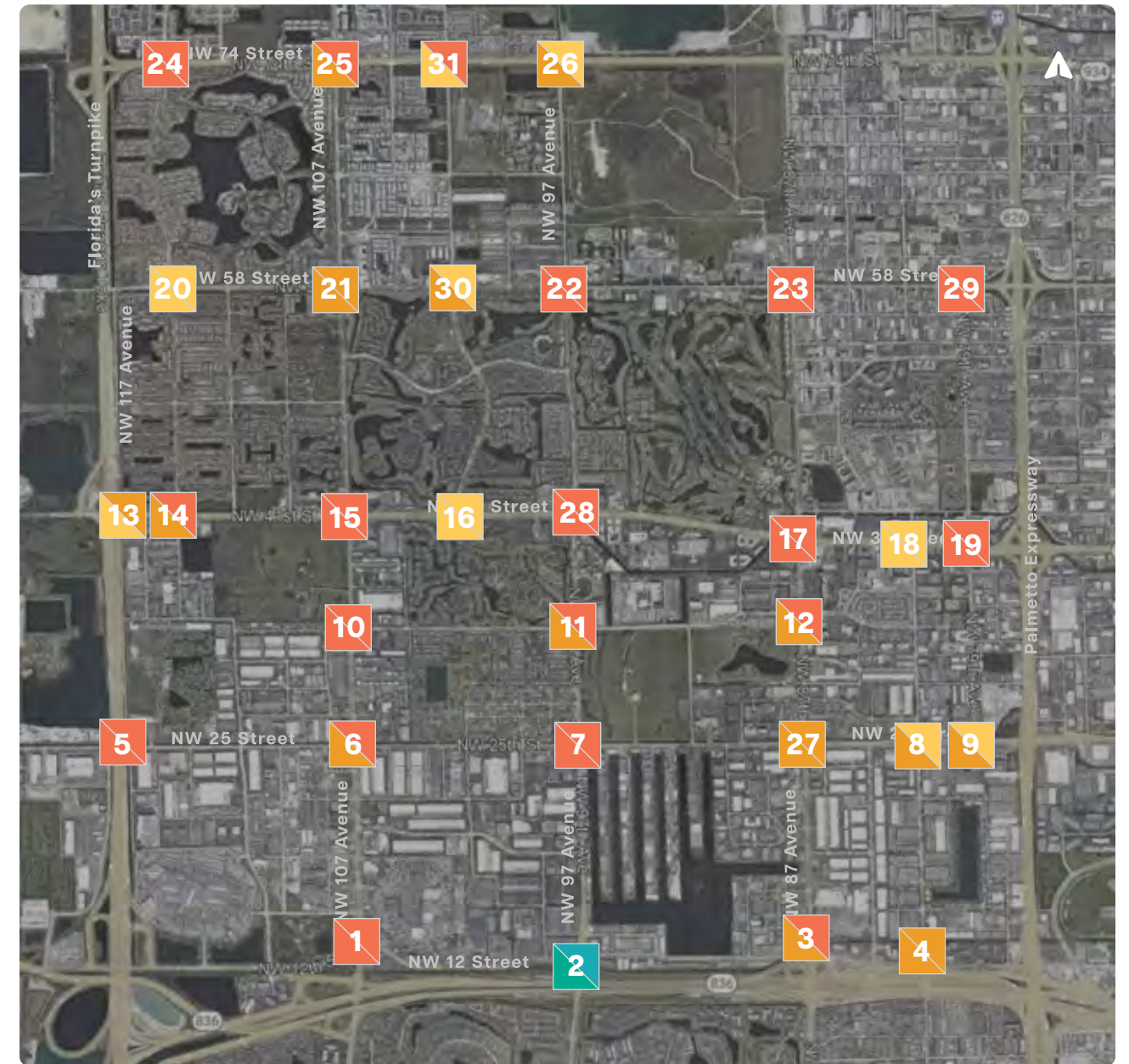
To accurately project future traffic conditions, the analysis incorporated data on upcoming developments within the City of Doral, including new residential, commercial, and industrial projects expected to generate additional traffic. Regional growth projections for population and employment were also used to estimate future travel demand.

#### Forecasted Conditions

The analysis revealed that most intersections and corridors would experience significant congestion by 2045, with 17 of the 31 intersections projected to operate at LOS E or F, indicating failing conditions. These failing intersections are key bottlenecks where delays and congestion would severely impact travel times and overall network efficiency.

Capacity and operational improvements are critical to ensuring the currently failing intersections and soon-to-be-failing intersections are remedied.

Figure 3-18: Overall Future 2045 Projected Intersection Level of Service



#### LEGEND

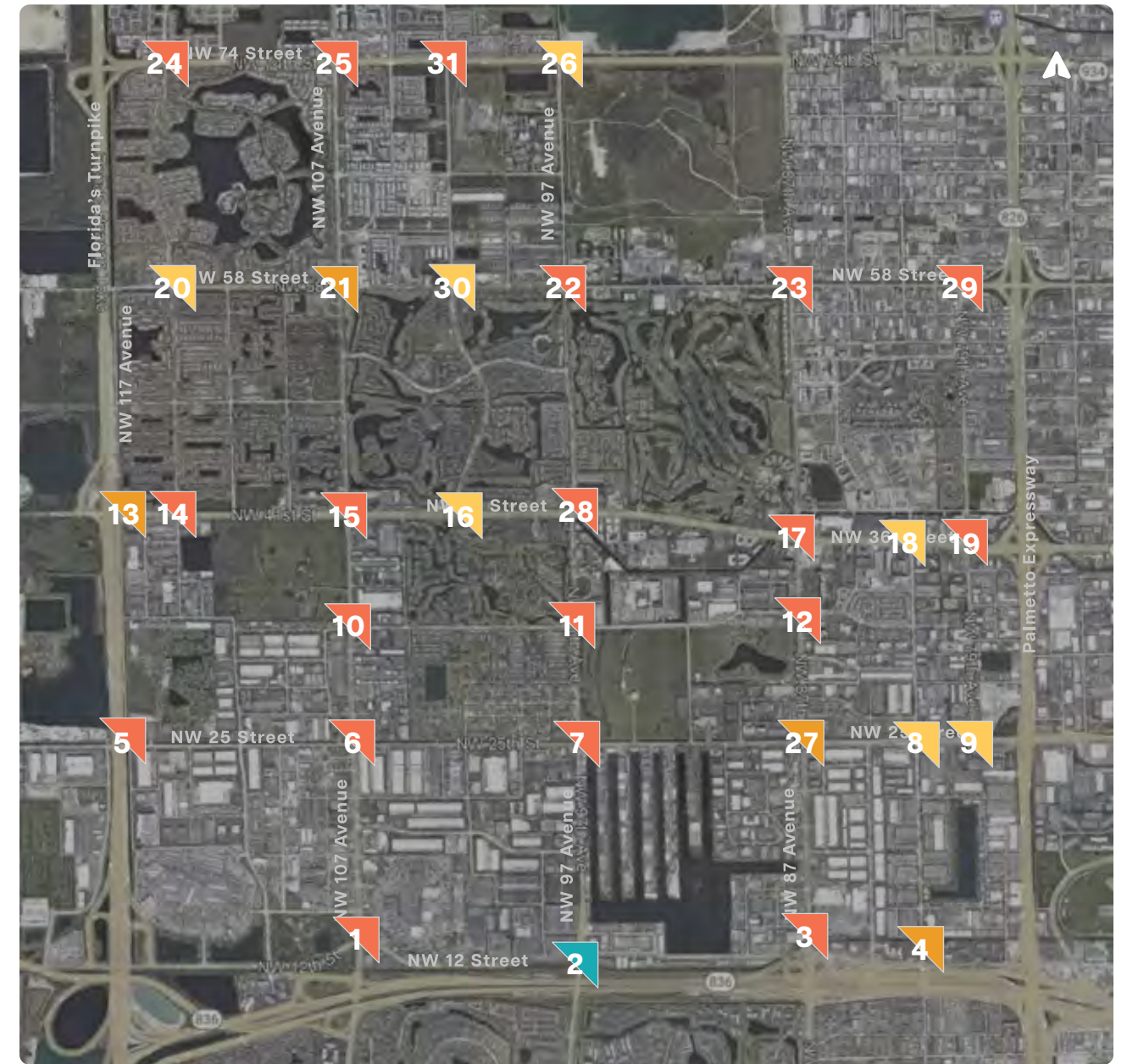
- ◁ AM Peak Hour  
7:45 - 8:45
- ▷ PM Peak Hour  
5:00 - 6:00
- LOS A
- LOS B
- LOS C
- LOS D
- LOS E
- LOS F



Table 3-14: AM Peak Results Summary

Intersection No.	Overall		Worst Movement			Number of Movements with	
	Delay	LOS	Movement	Delay	LOS	LOS E	LOS F
1	93.9	F	SBL	194.5	F	2	6
2	30.2	C	NBT	118.7	F	0	1
3	86.3	F	SBL	246.2	F	3	5
4	79	E	NBT	131.4	F	6	2
5	109.3	F	SBT	209.6	F	1	5
6	88	F	EBL	160.3	F	1	6
7	108.4	F	SBL	176.4	F	1	5
8	45.4	D	EBL	85.1	F	3	4
9	42.6	D	SBT	81.4	F	4	2
10	347.4	F	NBT	433	F	0	6
11	81.2	F	EBT	100.6	F	1	4
12	119.8	F	NBL	208.2	F	1	6
13	69.9	E	NBL	187.6	F	2	4
14	80.8	F	SBL	151.3	F	2	5
15	169.6	F	WBL	307.7	F	1	7
16	53.9	D	SBL	191.2	F	0	1
17	178.8	F	EBL	311	F	0	9
18	49.8	D	SBL	150.1	F	4	3
19	265.5	F	WBT	387.2	F	2	6
20	40.7	D	SBT	52	D	0	0
21	65.7	E	WBR	168.6	F	5	2
22	106.7	F	NBT	183	F	1	5
23	93.1	F	NBL	135	F	2	5
24	101.3	F	NBL	163.2	F	2	5
25	92.9	F	WBR	366.7	F	4	6
26	50	D	NBR	733.6	F	0	5
27	67.9	E	NBL	120.8	F	4	4
28	147.2	F	WBL	256.3	F	0	7
29	146.8	F	EBR	2027	F	3	5
30	52.5	D	WBL	94.9	F	3	2
31	106.9	F	SBL	193.3	F	0	4

Figure 3-19: Future 2045 AM Peak Hour Level of Service



LEGEND

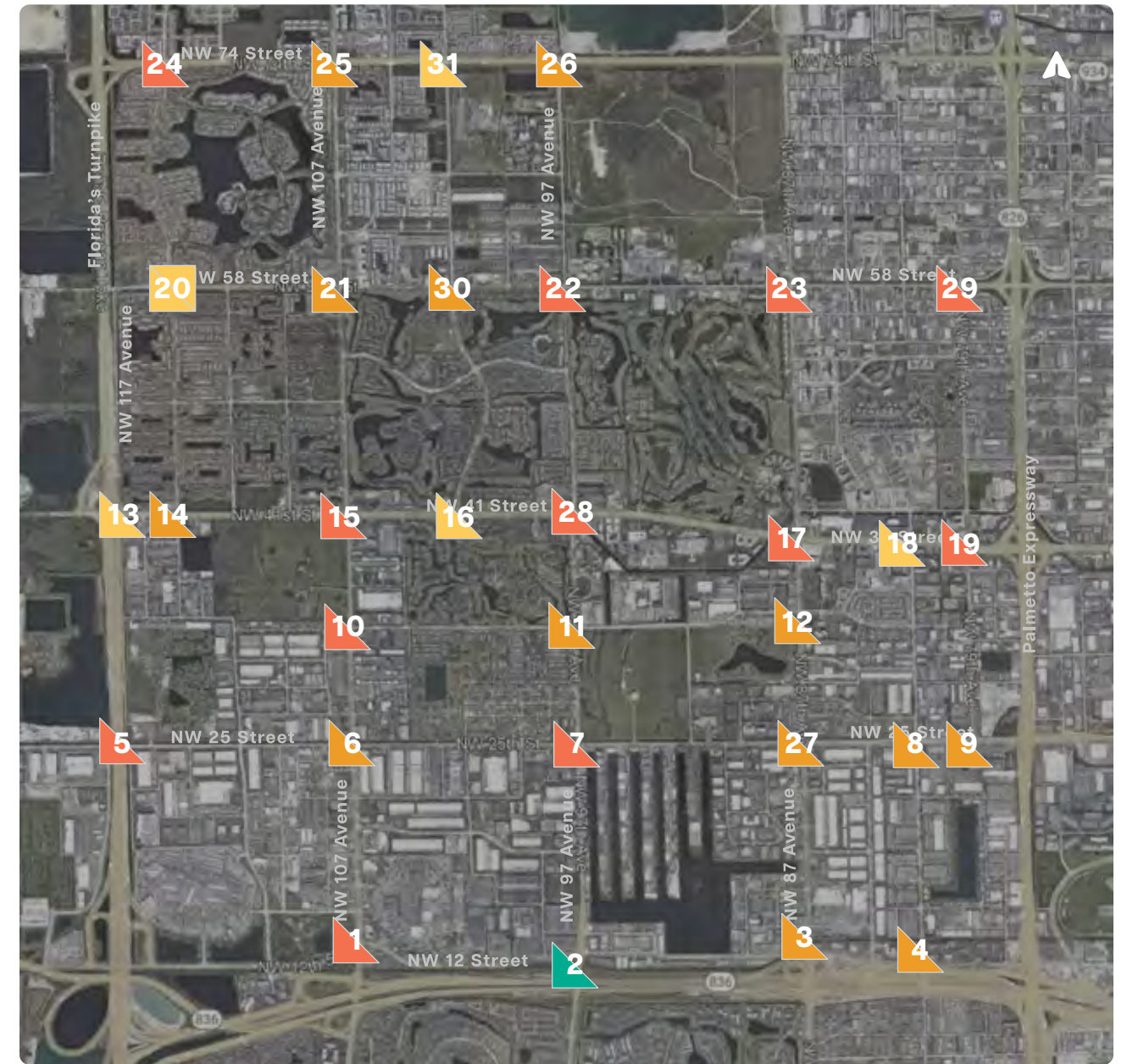




Table 3-15: PM Peak Results Summary

Intersection No.	Overall		Worst Movement			Number of Movements with	
	Delay	LOS	Movement	Delay	LOS	LOS E	LOS F
1	80.4	F	EBR	155.7	F	4	4
2	15.8	B	SBT	56.3	E	1	0
3	59.7	E	NBL	126.8	F	4	2
4	72.5	E	SBR	115.8	F	3	4
5	98.1	F	SBT	164.3	F	0	4
6	58.5	E	NBL	153.5	F	2	2
7	131.8	F	WBL	173.3	F	1	6
8	67.6	E	SBL	106.2	F	3	5
9	57.1	E	EBL	102.4	F	3	4
10	250.1	F	NBT	326.7	F	1	5
11	79.5	E	WBT	99.8	F	2	3
12	76.7	E	WBT	108.6	F	4	2
13	45	D	NBL	156.6	F	2	3
14	67.2	E	EBL	152.8	F	0	6
15	114	F	NBL	187.8	F	2	7
16	43.3	D	NBL	92.2	F	0	5
17	95.4	F	SBL	139.8	F	4	4
18	39.3	D	WBL	99.8	F	5	1
19	96.3	F	NBT	225.4	F	2	6
20	41.2	D	SBT	45.9	D	0	0
21	77.7	E	SBL	108.4	F	3	5
22	156	F	WBL	210.2	F	0	5
23	84.7	F	NBL	124.9	F	3	4
24	113	F	EBL	219.2	F	0	7
25	71.9	E	EBL	113.8	F	5	4
26	56.1	E	NBR	99.8	F	1	4
27	61	E	NBL	136.4	F	3	4
28	94.3	F	NBL	127.1	F	2	5
29	87.2	F	NBT	141.9	F	1	6
30	56.7	E	SBT	106.3	F	4	3
31	47.4	D	SBL	131.3	F	3	2

Figure 3-20: Future 2045 PM Peak Hour Level of Service



LEGEND





Table 3-16: Future 2045 Overall Corridor Level of Service

Corridor No.	Corridor Limits			LOS
	Road	From	To	
1	NW 74 <sup>th</sup> St	NW 117 <sup>th</sup> Ave	NW 107 <sup>th</sup> Ave	C or Better
2	NW 74 <sup>th</sup> St	NW 107 <sup>th</sup> Ave	NW 97 <sup>th</sup> Ave	E
3	NW 107 <sup>th</sup> Ave	NW 74 <sup>th</sup> St	NW 58 <sup>th</sup> St	D
4	NW 58 <sup>th</sup> St	NW 117 <sup>th</sup> Ave	NW 107 <sup>th</sup> Ave	C or Better
5	NW 58 <sup>th</sup> St	NW 107 <sup>th</sup> Ave	NW 97 <sup>th</sup> Ave	D
6	NW 58 <sup>th</sup> St	NW 97 <sup>th</sup> Ave	NW 87 <sup>th</sup> Ave	E
7	NW 58 <sup>th</sup> St	NW 87 <sup>th</sup> Ave	NW 77 <sup>th</sup> Ct	D
8	NW 107 <sup>th</sup> Ave	NW 58 <sup>th</sup> St	NW 41 <sup>st</sup> St	D
9	NW 97 <sup>th</sup> Ave	NW 58 <sup>th</sup> St	NW 41 <sup>st</sup> St	D
10	NW 87 <sup>th</sup> Ave	NW 58 <sup>th</sup> St	NW 36 <sup>th</sup> St	E
11	NW 79 <sup>th</sup> Ave	NW 58 <sup>th</sup> St	NW 36 <sup>th</sup> St	C or Better
12	NW 41 <sup>st</sup> St	NW 117 <sup>th</sup> Ave	NW 107 <sup>th</sup> Ave	C or Better
13	NW 41 <sup>st</sup> St	NW 107 <sup>th</sup> Ave	NW 97 <sup>th</sup> Ave	D
14	NW 41 <sup>st</sup> /36 <sup>th</sup> St	NW 97 <sup>th</sup> Ave	NW 87 <sup>th</sup> Ave	D
15	NW 36 <sup>th</sup> St	NW 87 <sup>th</sup> Ave	NW 77 <sup>th</sup> Ct	E
16	NW 97 <sup>th</sup> Ave	NW 41 <sup>st</sup> St	NW 33 <sup>rd</sup> St	D
17	NW 107 <sup>th</sup> Ave	NW 41 <sup>st</sup> St	NW 25 <sup>th</sup> St	E
18	NW 33 <sup>th</sup> St	NW 107 <sup>th</sup> Ave	NW 97 <sup>th</sup> Ave	C or Better
19	NW 33 <sup>th</sup> St	NW 97 <sup>th</sup> Ave	NW 87 <sup>th</sup> Ave	C or Better
20	NW 82 <sup>nd</sup> Ave	NW 36 <sup>th</sup> St	NW 25 <sup>th</sup> St	C or Better
21	NW 79 <sup>th</sup> Ave	NW 36 <sup>th</sup> St	NW 25 <sup>th</sup> St	C or Better
22	NW 97 <sup>th</sup> Ave	NW 33 <sup>rd</sup> St	NW 25 <sup>th</sup> St	D
23	NW 87 <sup>th</sup> Ave	NW 36 <sup>th</sup> St	NW 25 <sup>th</sup> St	D
24	NW 25 <sup>th</sup> St	NW 117 <sup>th</sup> Ave	NW 107 <sup>th</sup> Ave	D
25	NW 25 <sup>th</sup> St	NW 107 <sup>th</sup> Ave	NW 97 <sup>th</sup> Ave	D
26	NW 25 <sup>th</sup> St	NW 97 <sup>th</sup> Ave	NW 87 <sup>th</sup> Ave	F
27	NW 25 <sup>th</sup> St	NW 87 <sup>th</sup> Ave	NW 77 <sup>th</sup> Ct	C or Better
28	NW 97 <sup>th</sup> Ave	NW 25 <sup>th</sup> St	NW 12 <sup>th</sup> St	E
29	NW 87 <sup>th</sup> Ave	NW 25 <sup>th</sup> St	NW 12 <sup>th</sup> St	D
30	NW 82 <sup>nd</sup> Ave	NW 25 <sup>th</sup> St	NW 12 <sup>th</sup> St	C or Better
31	NW 12 <sup>th</sup> St	NW 107 <sup>th</sup> Ave	NW 97 <sup>th</sup> Ave	D
32	NW 12 <sup>th</sup> St	NW 97 <sup>th</sup> Ave	NW 87 <sup>th</sup> Ave	E
33	NW 12 <sup>th</sup> St	NW 87 <sup>th</sup> Ave	NW 78 <sup>th</sup> Ave	C or Better

Figure 3-21: Future 2045 Overall Corridor Level of Service (LOS)



LEGEND

- LOS C or Better
- LOS D
- LOS E
- LOS F

Corridor LOS was derived by comparing AADT volumes with capacities provided in FDOT 2023 Multi-modal Quality/Level of Service Handbook.



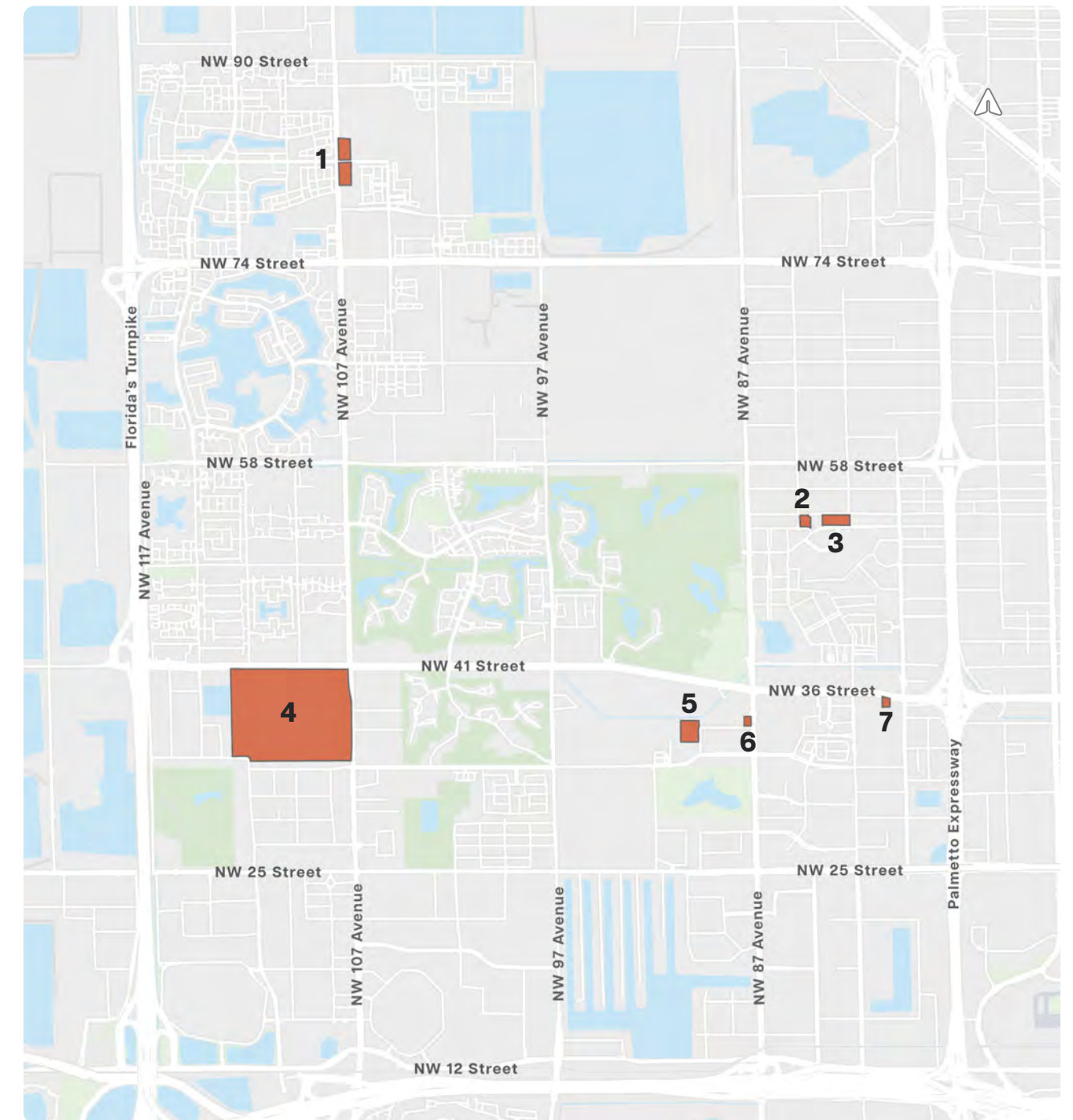
**Upcoming Developments and Improvements**

The following upcoming city developments presented in **Table 3-17** and illustrated in **Figure 3-22** were taken into consideration when assessing the Future 2045 expected traffic volumes.

**Table 3-17: Upcoming Developments and Improvements**

No.	Development Name	Proposed Roadway and Multi-Modal Improvements
1	<b>Century Town Center</b> <i>Expected Completion: 2024</i>	<ul style="list-style-type: none"> <li>No proposed major changes to the adjacent roadway.</li> </ul>
2	<b>UM Ambulatory Care Center</b> <i>Expected Completion: 2024</i>	<ul style="list-style-type: none"> <li>No proposed major changes to the adjacent roadway.</li> </ul>
3	<b>Sevilla at Doral</b> <i>Expected Completion: 2026</i>	<ul style="list-style-type: none"> <li>Proposed 10' &amp; 6' wide crosswalks with 12" white striping.</li> <li>Proposed left turn lane into property on NW 53rd St.</li> <li>Proposed raised traffic separator at the intersection of NW 53rd St and NW 82nd Ave.</li> </ul>
4	<b>Bridge Point Doral</b> <i>Expected Completion: 2030</i>	<ul style="list-style-type: none"> <li>Proposed 6' min. sidewalk throughout.</li> <li>Proposed special emphasis crosswalks at all proposed signalized intersections.</li> <li>Proposed exclusive right-turn lanes at 5 approaches.</li> <li>Proposed exclusive left-turn lanes at 5 approaches.</li> </ul>
5	<b>Doral K-8 Public Charter School</b> <i>Expected Completion: Fall 2024</i>	<ul style="list-style-type: none"> <li>Recommended providing school flashers on NW 89th Ct (from NW 33rd St to just south of NW 35th Ln).</li> <li>Recommended pedestrian path linking the school with the Doral Central Park project.</li> <li>Recommended sidewalk along NW 35th Ave from NW 89th Ct to NW 87th Ave.</li> </ul>
6	<b>Doral Chick-Fil-A</b> <i>Expected Completion: 2024</i>	<ul style="list-style-type: none"> <li>No proposed major changes to the adjacent roadway.</li> </ul>
7	<b>ABC Fine Wine &amp; Liquor</b> <i>Expected Completion: 2025</i>	<ul style="list-style-type: none"> <li>No proposed major changes to the adjacent roadway.</li> </ul>

**Figure 3-22: City of Doral Upcoming Developments**



**LEGEND**

- Upcoming Development

**Identifying Failing Intersections**

**Existing Condition Analysis**

The existing configuration of the intersection was analyzed using 2023 traffic counts and signal timings. The results were summarized to identify failing intersections in the existing condition and are summarized in **Table 3-18**. Intersections that are failing in existing conditions require urgent attention or mitigation.

**Future 2045 No Build Condition**

Assuming that no upgrades or mitigations will take place in next 20 years (i.e. 2045), the existing intersection configuration was tested with growth factored traffic volumes for the next 20 years. Signal phasing was kept the same and timings were optimized. **Table 3-18** also includes a summary of results that was prepared to identify any additional failing intersections from the existing condition.

**Mitigation Strategy**

As part of this analysis, four of the severely failing intersections within the City’s jurisdiction were chosen to identify and perform mitigation strategies in an attempt to correct the contributing factors.

Currently failing intersections 5, 10, 19, and 29 were analyzed further for mitigation options and recommendations as depicted in **Figure 3-23** through **Figure 3-41**. The three mitigation strategies are described in greater detail below.

**Option 1: Soft Mitigations**

As a starting point, soft mitigations were tested for the selected intersections. Soft mitigation strategies include following:

- Signal timing optimization (including cycle lengths).
- Signal phasing optimization – changing signal phasing and sequencing to optimize the performance of the signal.
- Lane assignment adjustments – adjustments are applied to lane assignments to optimize signal performance in the future year. There are no physical changes to the roadway limits, and curbs are expected in this option.

This option is expected to provide basic improvements, and the improvements are quantified in percentages in comparison with the Future No Build 2045 condition performances.

**Option 2: Constrained Mitigations**

Following the soft mitigations, constrained mitigations are then tested for the selected intersections. Constrained mitigation strategies include the following:

- Identifying additional lanes that can be provided within available right-of-way (ROW) without acquiring new land.
- Lane assignments and signal timing and phasing optimization to suit improvements.

This option is expected to provide significant improvements in many cases, and the improvements are quantified in percentages in comparison with the Future No Build 2045 condition performances. Conceptual sketches are required to make sure that the suggested mitigations fit within the available ROW and to identify any departures from standards for their acceptability.

**Option 3: Unconstrained Mitigations**

In the final step, unconstrained mitigations are tested for the selected intersections. Unconstrained mitigations aim to achieve LOS D or better within the permissible maximum number of turn lanes for the selected intersections irrespective of available land acquisition.

This option is expected to solve the failures in most cases. Conceptual sketches are required to make sure that the suggested mitigations are feasible with the least possible ROW acquisition.

**Table 3-18: Current and Future 2045 Failing Intersections**

Intersection No.	N-S Roadway	Roadway Jurisdiction	E-W Roadway	Roadway Jurisdiction	2017 TMP Recommended Improvements	Status
<b>Intersections Failing in 2023</b>						
5	NW 117 Ave	City	NW 25 St	County	Project 66 (Operations) (Proj. 16 Tier II) <i>Split phase removal/realignment; signal optimization.</i>	Not Completed
7	NW 97 Ave	County	NW 25 St	County	Project 68 (Capacity/Operations) (Proj. 13 Tier III) <i>Add NB, SB, EB and WB right turn lanes.</i>	Not Completed
10	NW 107 Ave	County	NW 33 St	City	Project 71 (Operations) (Proj. 19 Tier II) <i>Remove split phase EB/WB right turn lanes.</i>	Not Completed
15	NW 107 Ave	County	NW 41 St	County	Project 76 (Operations) (Proj. 26 Tier I) <i>Remove split phase; signal optimization.</i>	Not Completed
19	NW 79 Ave	City	NW 36 St	County	Project 80 (Capacity/Operations) (Proj. 27 Tier I) <i>Split phase removal, add EB thru lane, add SB and WB right turn lanes; signal optimization.</i>	Not Completed
22	NW 97 Ave	County	NW 58 St	County	Project 83 (Capacity/Operations) (Proj. 23 Tier I) <i>Remove split phase, add NB, SB, WB, and EB right turn lanes; signal optimization.</i>	Not Completed
29	NW 79 Ave	City	NW 58 St	County		
<b>Intersections will be Failing in 2045</b>						
1	NW 107 Ave	County	NW 12 St	County	Project 64 (Capacity/Operations) (Proj. 23 Tier I) <i>Add WB right turn lane; signal optimization.</i>	Not Completed
3	NW 87 Ave	County	NW 12 St	County	Project 65 (Capacity/Operations) (Proj. 11 Tier III) <i>Add NB left turn lane, add SB right turn lane; signal optimization.</i>	Not Completed
6	NW 107 Ave	County	NW 25 St	County	Project 67 (Capacity/Operations) (Proj. 17 Tier II) <i>Add SB right turn lane; signal optimization.</i>	Not Completed
11	NW 97 Ave	County	NW 33 St	City	Project 72 (Capacity/Operations) (Proj. 20 Tier II) <i>Add NB right turn lane; signal optimization</i>	Not Completed
12	NW 87 Ave	County	NW 33 St	City	Project 73 (Capacity/Operations) (Proj. 21 Tier II) <i>Add EB, WB right turn lanes; signal optimization.</i>	Not Completed
14	NW 114 Ave	City	NW 41 St	County	Project 75 (Capacity/Operations) (Proj. 25 Tier I) <i>Add EB, WB right turn lanes; signal optimization.</i>	Not Completed
17	NW 87 Ave	County	NW 36 St	County	Project 78 (Capacity/Operations) (Proj. 22 Tier II) <i>Add SB and WB turn lanes; signal optimization.</i>	Not Completed
23	NW 87 Ave	County	NW 58 St	County	Project 84 (Capacity/Operations) (Proj. 18 Tier III) <i>Add NB, EB and WB right turn lanes; signal optimization.</i>	Not Completed
24	NW 114 Ave	City	NW 74 St	County	Project 85 (Capacity/Operations) (Proj. 29 Tier I) <i>Add NB right turn lane, add SB right turn lane, add EB right turn lane and WB right turn lane.</i>	Not Completed
25	NW 107 Ave	County	NW 74 St	County	Project 86 (Capacity/Operations) (Proj. 24 Tier II) <i>Add SB, EB and WB turn lanes; signal optimization.</i>	Completed
28	NW 97 Ave	County	NW 41 St	County		



Intersection 5 - NW 117<sup>th</sup> Avenue and NW 25<sup>th</sup> Street

Figure 3-23: Intersection 5 - Existing 2023 Network Performance

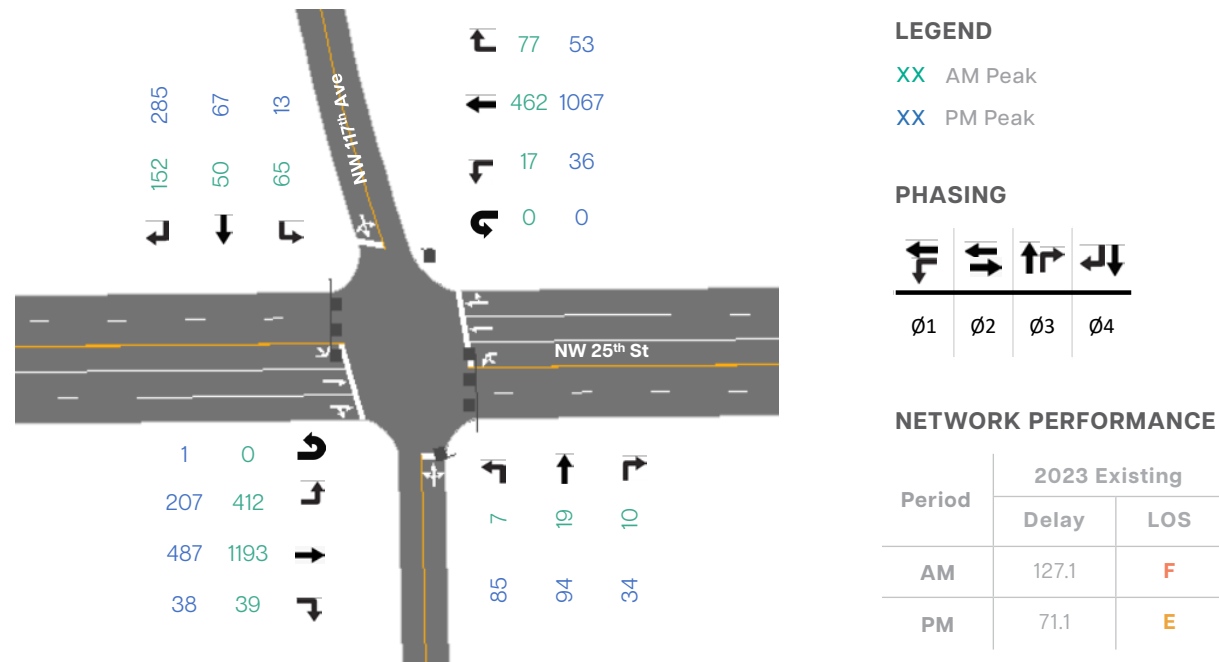


Figure 3-24: Intersection 5 - Future 2045 No-Build Scenario

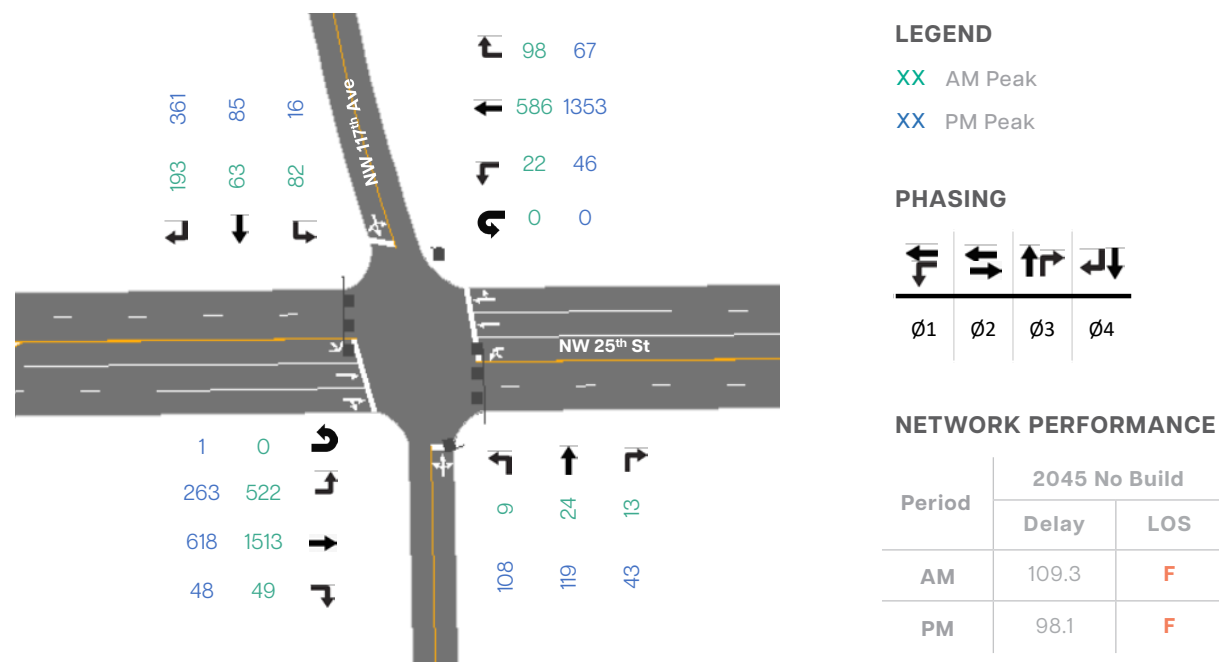


Figure 3-25: Intersection 5 - Option 1 Soft Mitigation (Future 2045 Scenario)

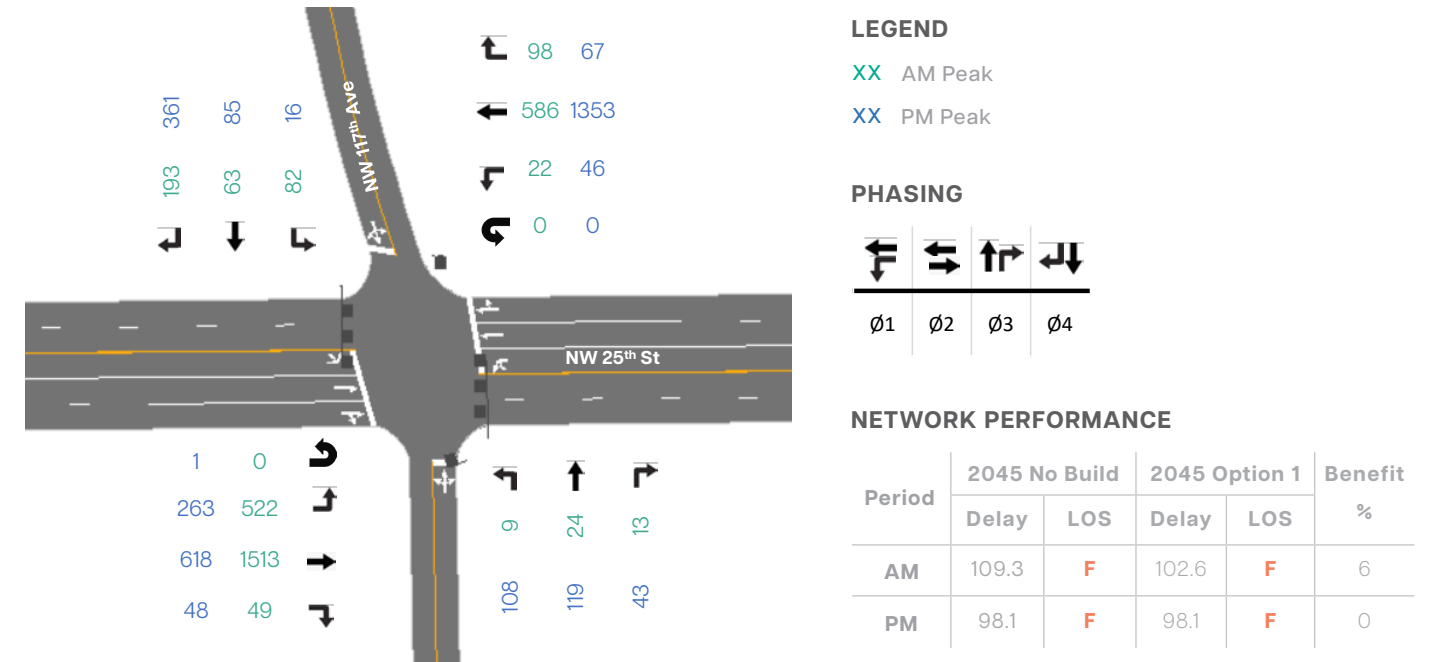
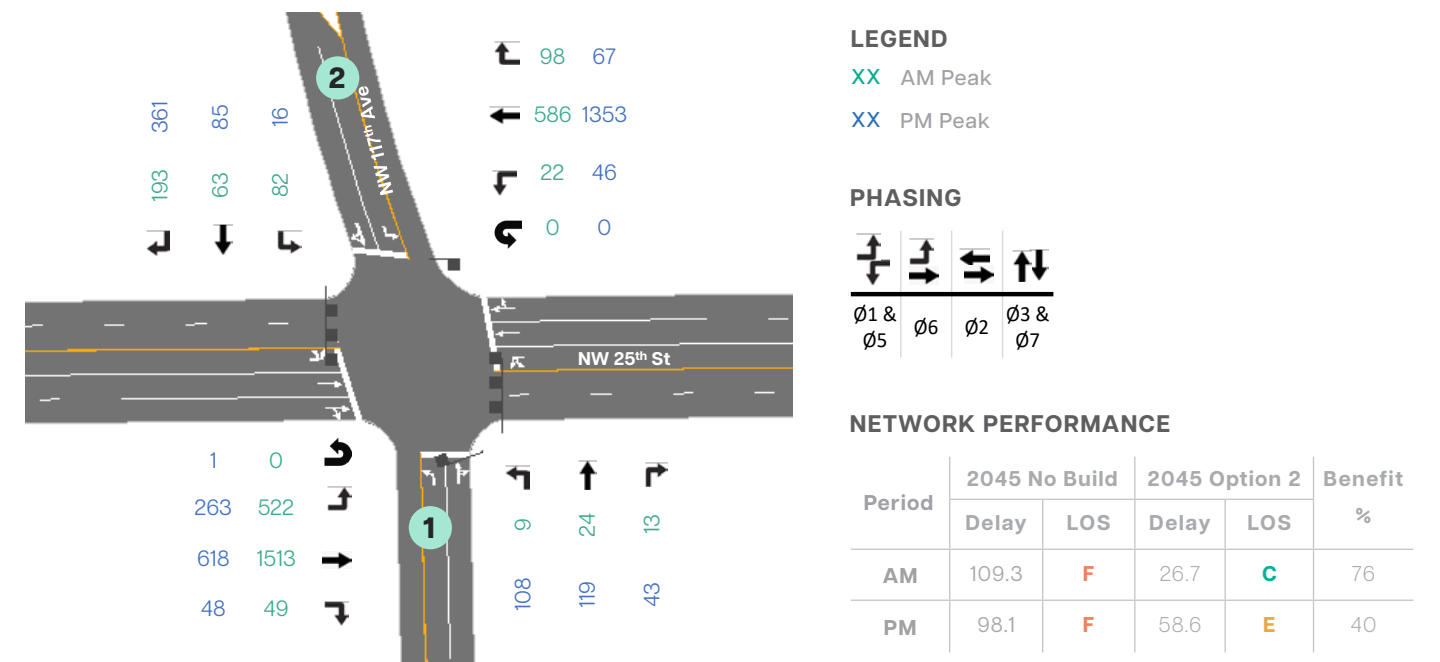
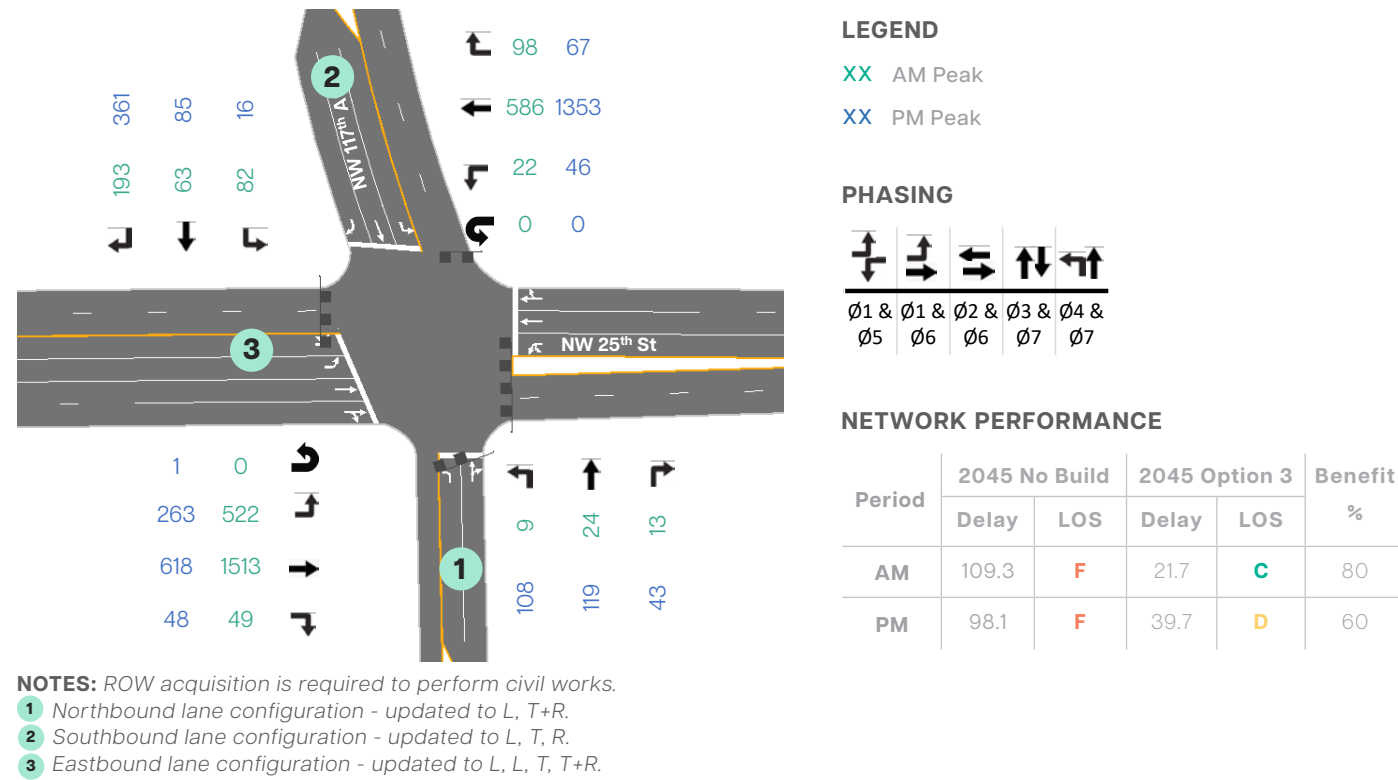


Figure 3-26: Intersection 5 - Option 2 Constrained Mitigation (Future 2045 Scenario)



**NOTES:** No civil works within available ROW.  
 1 Northbound lane configuration - updated to L, T+R.  
 2 Southbound lane configuration - updated to L, T+R.

Figure 3-27: Intersection 5 - Option 3 Unconstrained Mitigation (Future 2045 Scenario)



**Intersection 5 - NW 117<sup>th</sup> Ave and NW 25<sup>th</sup> St Conclusions**

Option 3, unconstrained mitigation, operates with the best Level of Service (LOS C & D) for intersection 5.

Cost benefit analysis should be carried out for all failing intersections to select the most suitable mitigation option.

Intersection 10 - NW 107<sup>th</sup> Avenue and NW 33<sup>rd</sup> Street

Figure 3-28: Intersection 10 - Existing 2023 Network Performance

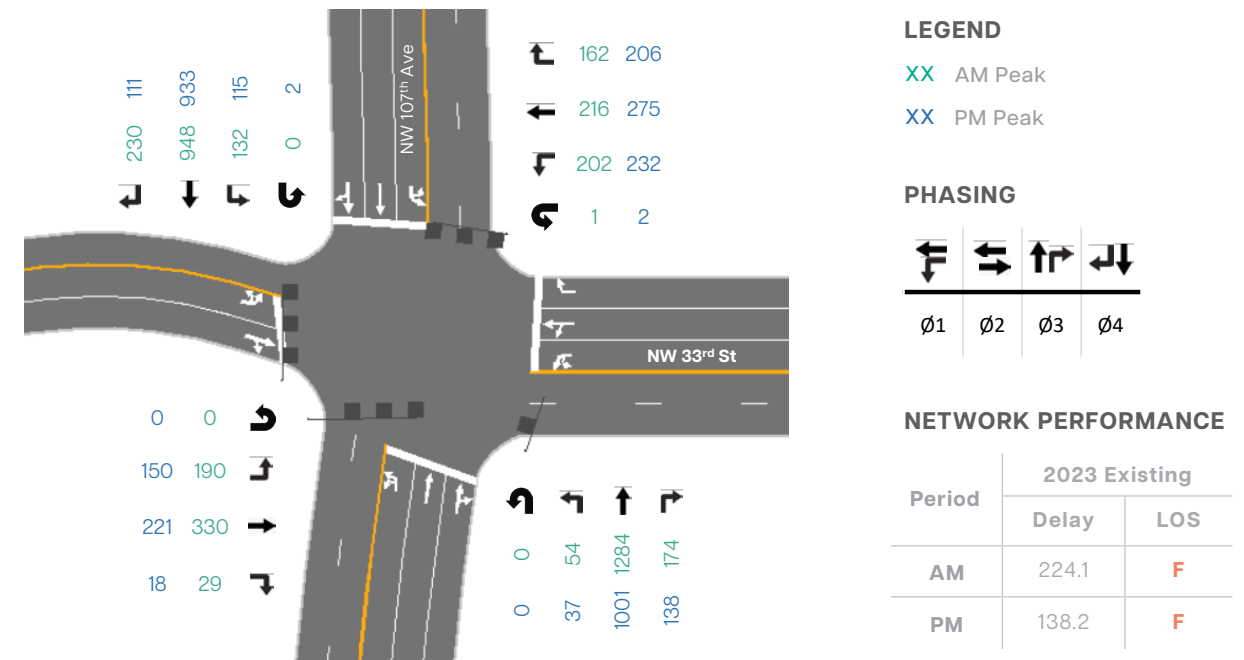


Figure 3-29: Intersection 10 - Future 2045 No-Build Scenario

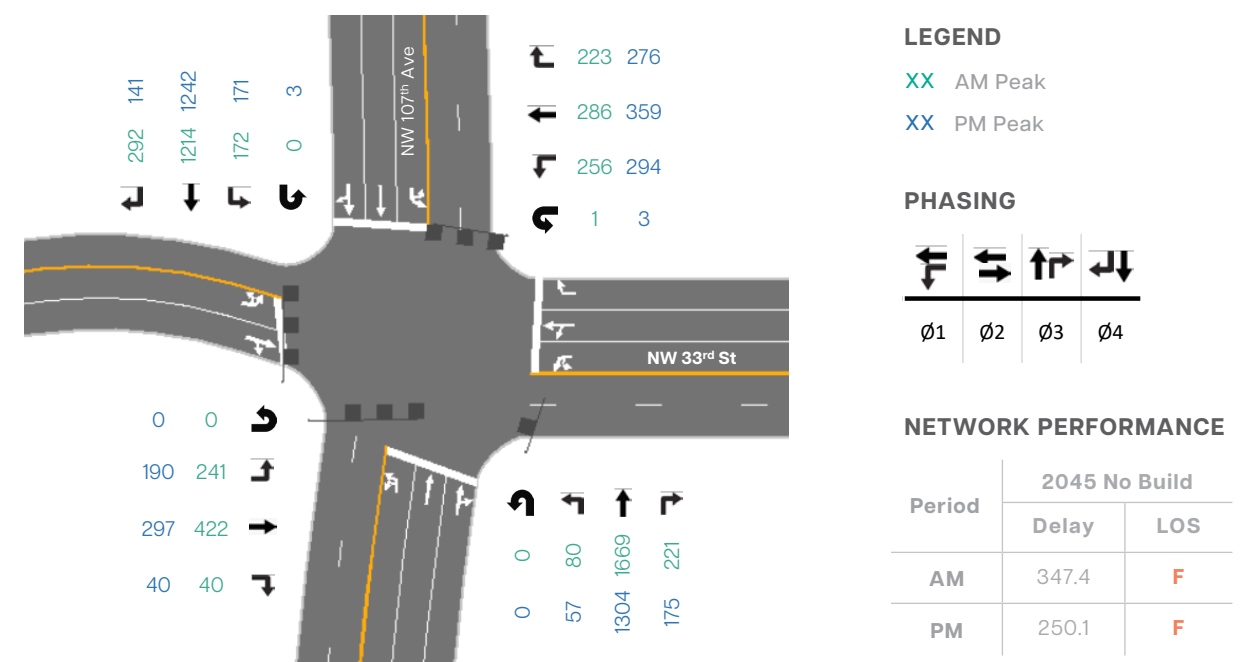
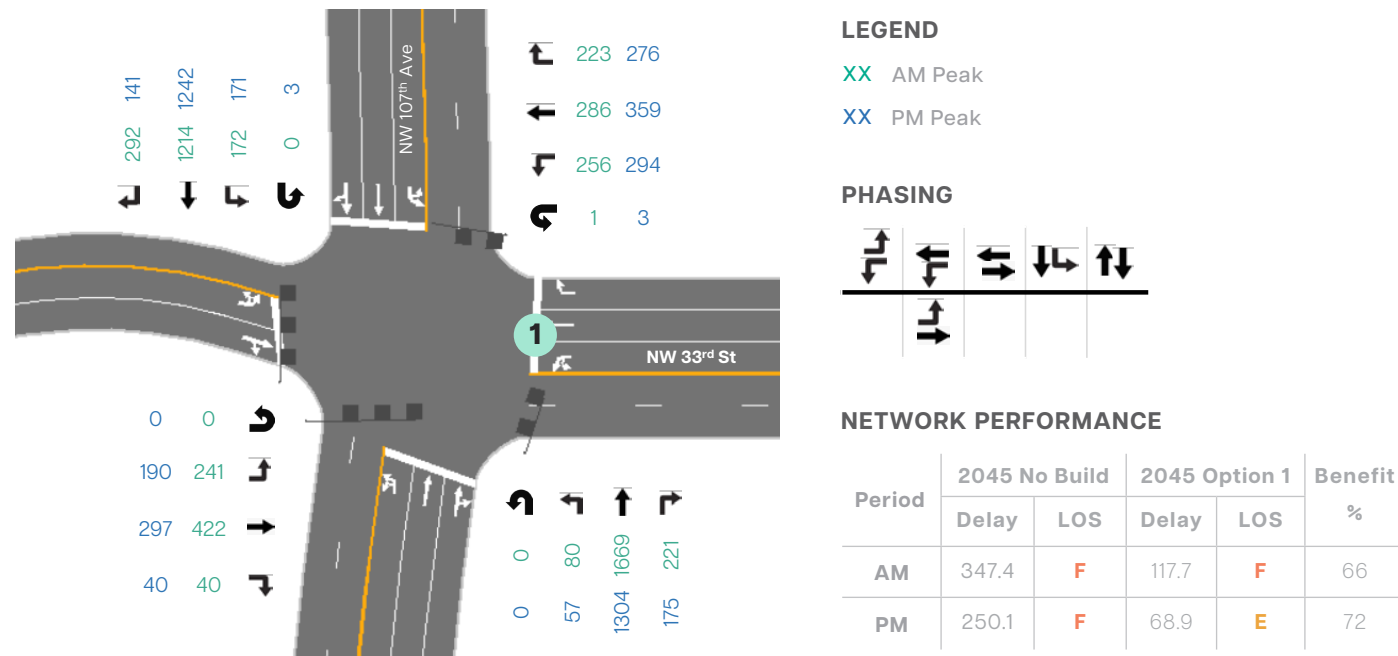


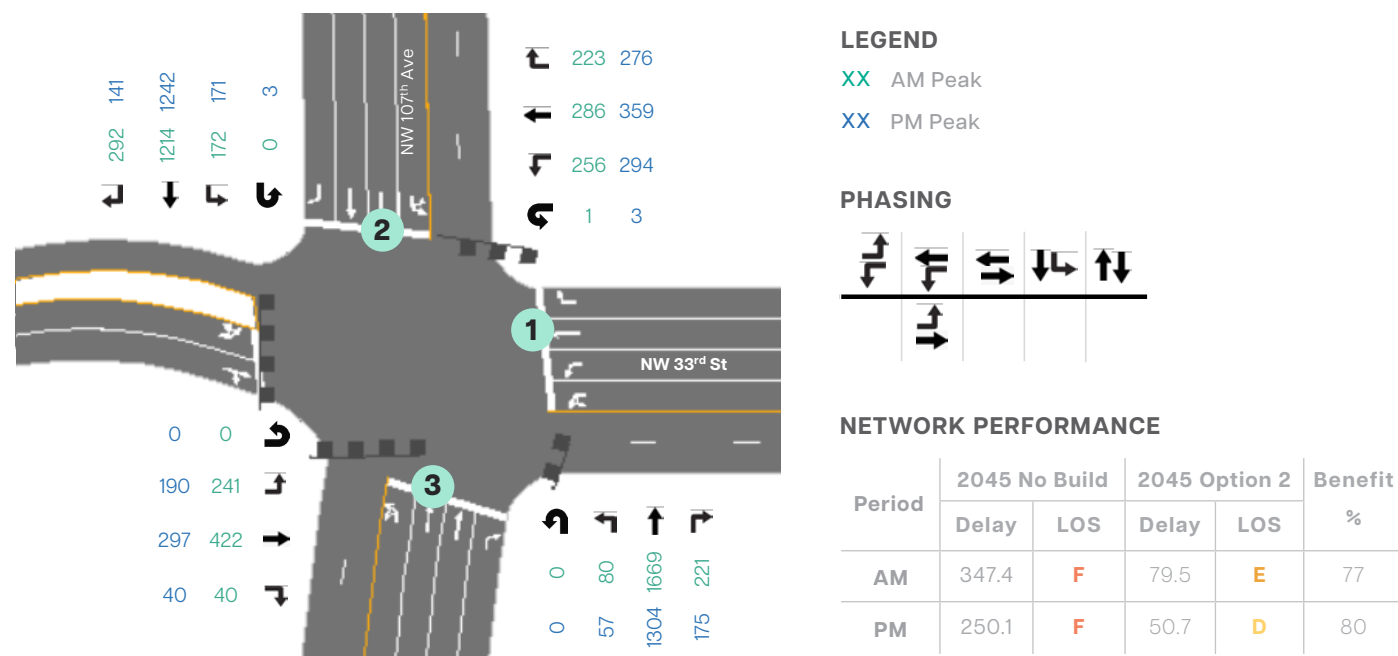


Figure 3-30: Intersection 10 - Option 1 Soft Mitigation (Future 2045 Scenario)



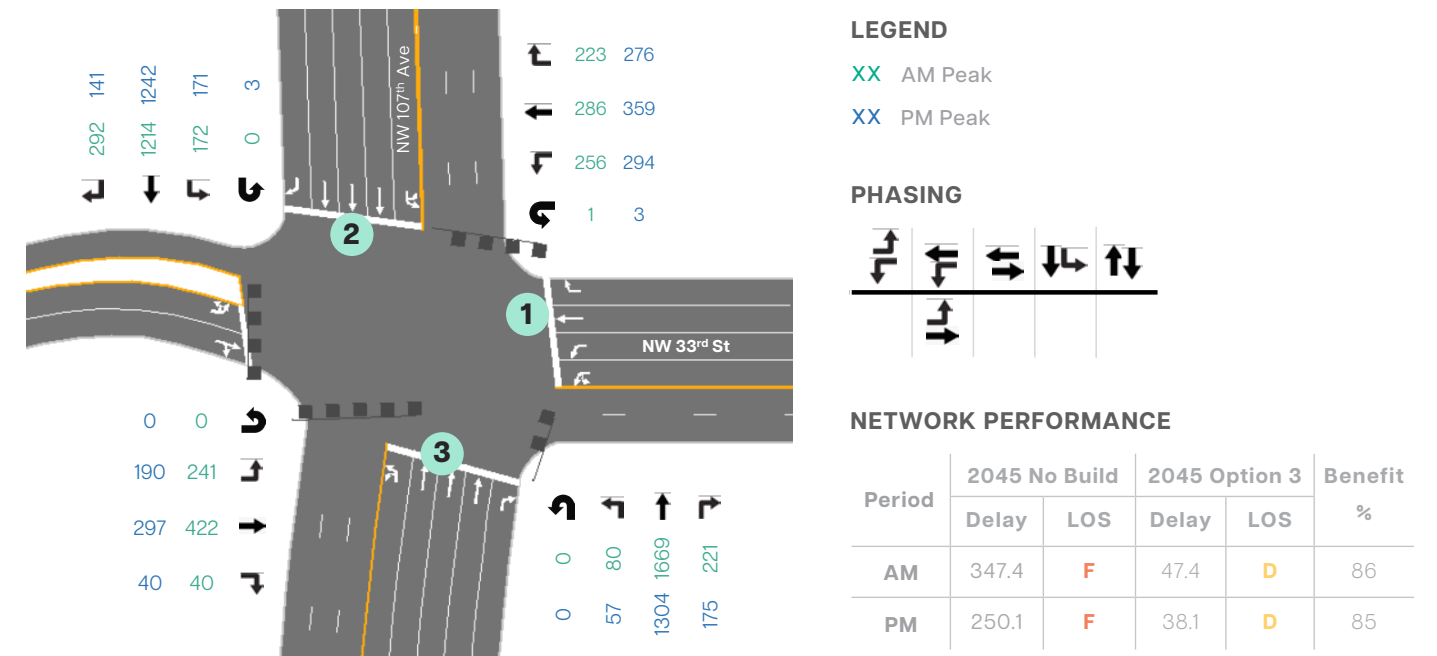
NOTES: No civil work required. Phasing adjustments.  
 1 Westbound lane configuration - updated to L, T, R.

Figure 3-31: Intersection 10 - Option 2 Constrained Mitigation (Future 2045 Scenario)



NOTES: No civil works within available ROW. Phasing & cycle length adjustments.  
 1 Westbound lane configuration - updated to L, L, T, R.  
 2 Southbound lane configuration - updated to L, T, T, R, with 100 ft storage length for right turn.  
 3 Northbound lane configuration - updated to L, T, T, R, with 100 ft storage length for right turn.

Figure 3-32: Intersection 10 - Option 3 Unconstrained Mitigation (Future 2045 Scenario)



NOTES: ROW acquisition is required to perform civil works. Phasing & cycle length adjustments.  
 1 Westbound lane configuration - updated to L, L, T, R.  
 2 Southbound lane configuration - updated to L, T, T, T, R, with 100 ft storage length for right turn.  
 3 Northbound lane configuration - updated to L, T, T, T, R, with 100 ft storage length for right turn.

**Intersection 10 - NW 107<sup>th</sup> Ave at NW 33<sup>rd</sup> St Conclusions**

Option 3, unconstrained mitigation, operates with the best Level of Service (LOS D) for intersection 10.

Option 1 be implemented at this intersection for immediate relief. Cost benefit analysis should be carried out for all failing intersections to select the most suitable mitigation option.

Intersection 19 - NW 79<sup>th</sup> Avenue and NW 36<sup>th</sup> Street

Figure 3-33: Intersection 19 - Existing 2023 Network Performance

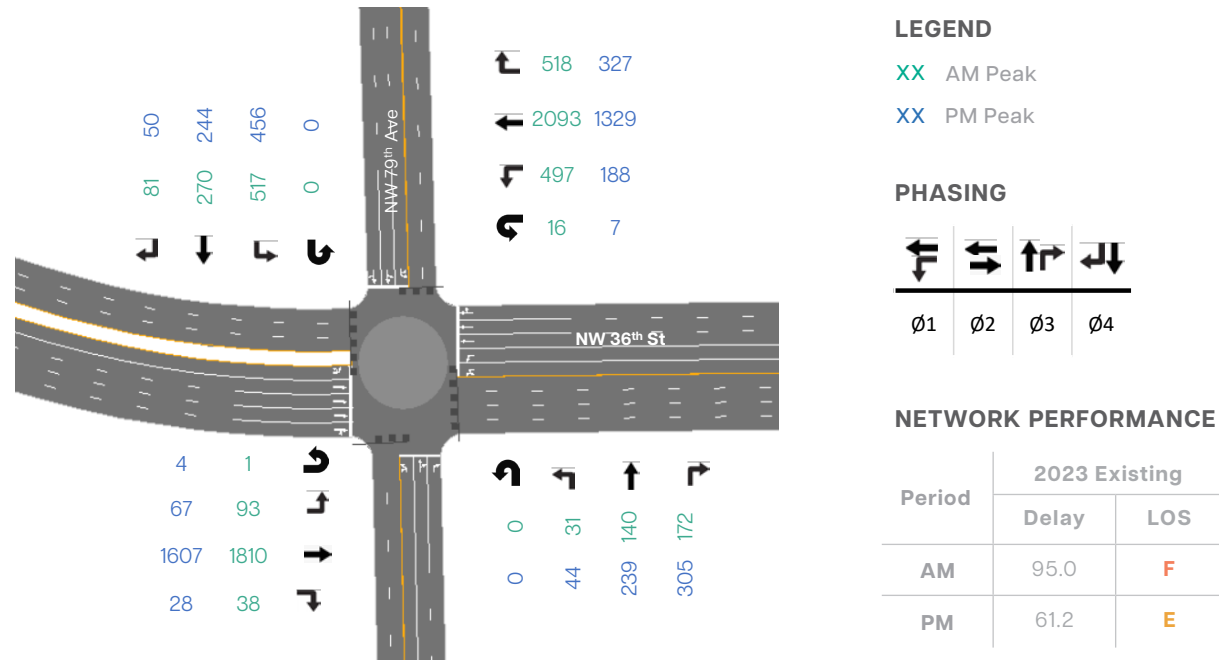


Figure 3-34: Intersection 19 - Future 2045 No-Build Scenario

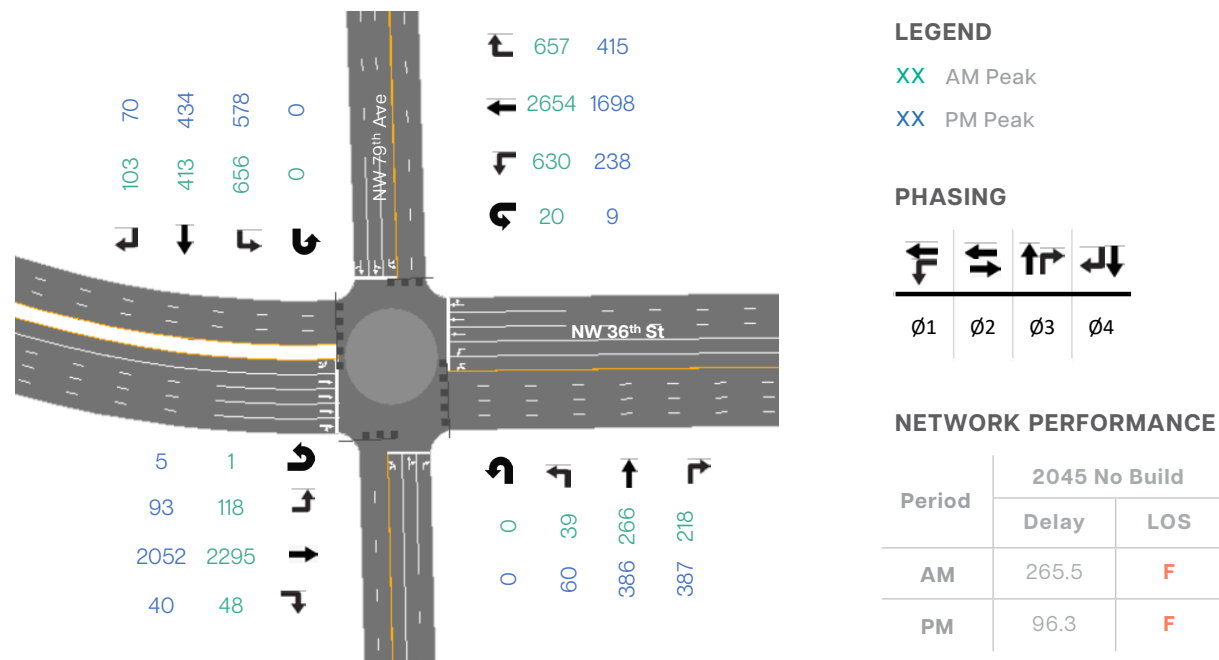


Figure 3-35: Intersection 19 - Option 1 Soft Mitigation (Future 2045 Scenario)

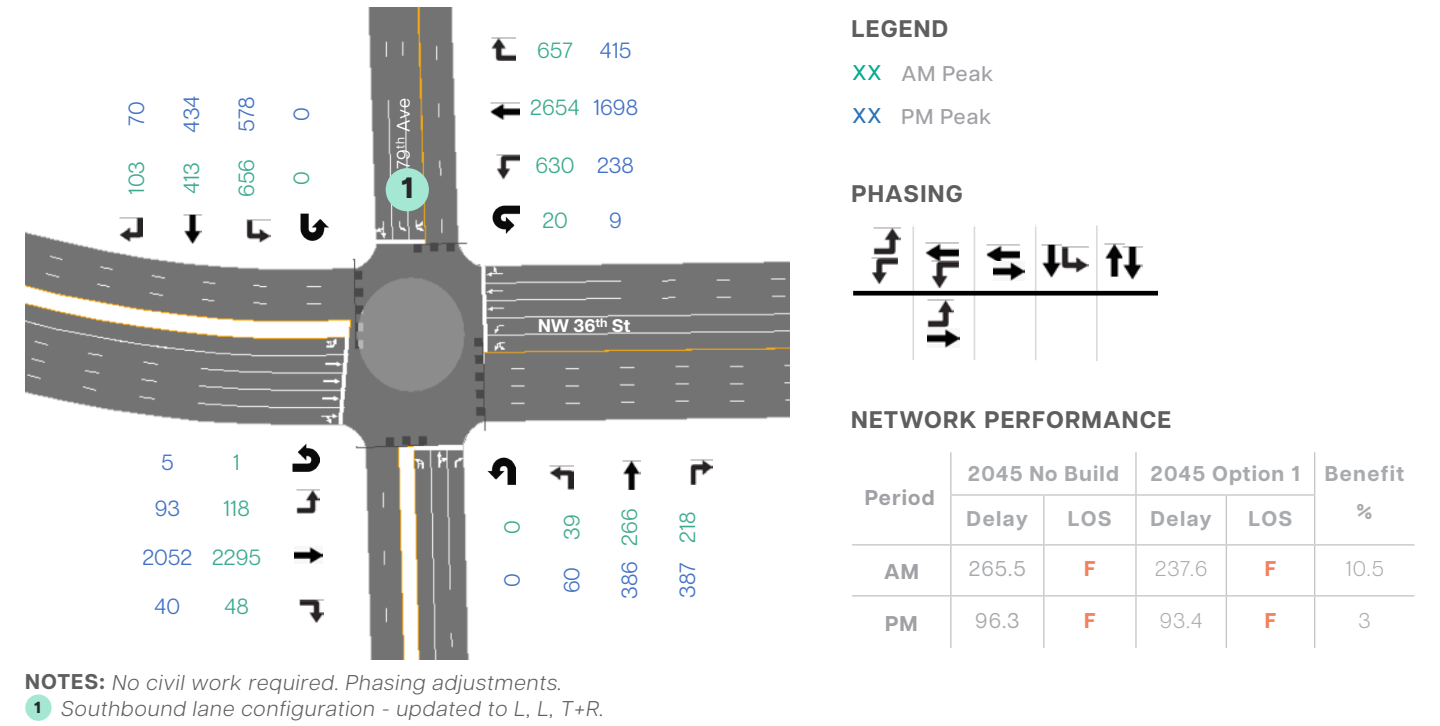


Figure 3-36: Intersection 19 - Option 2 Constrained Mitigation (Future 2045 Scenario)

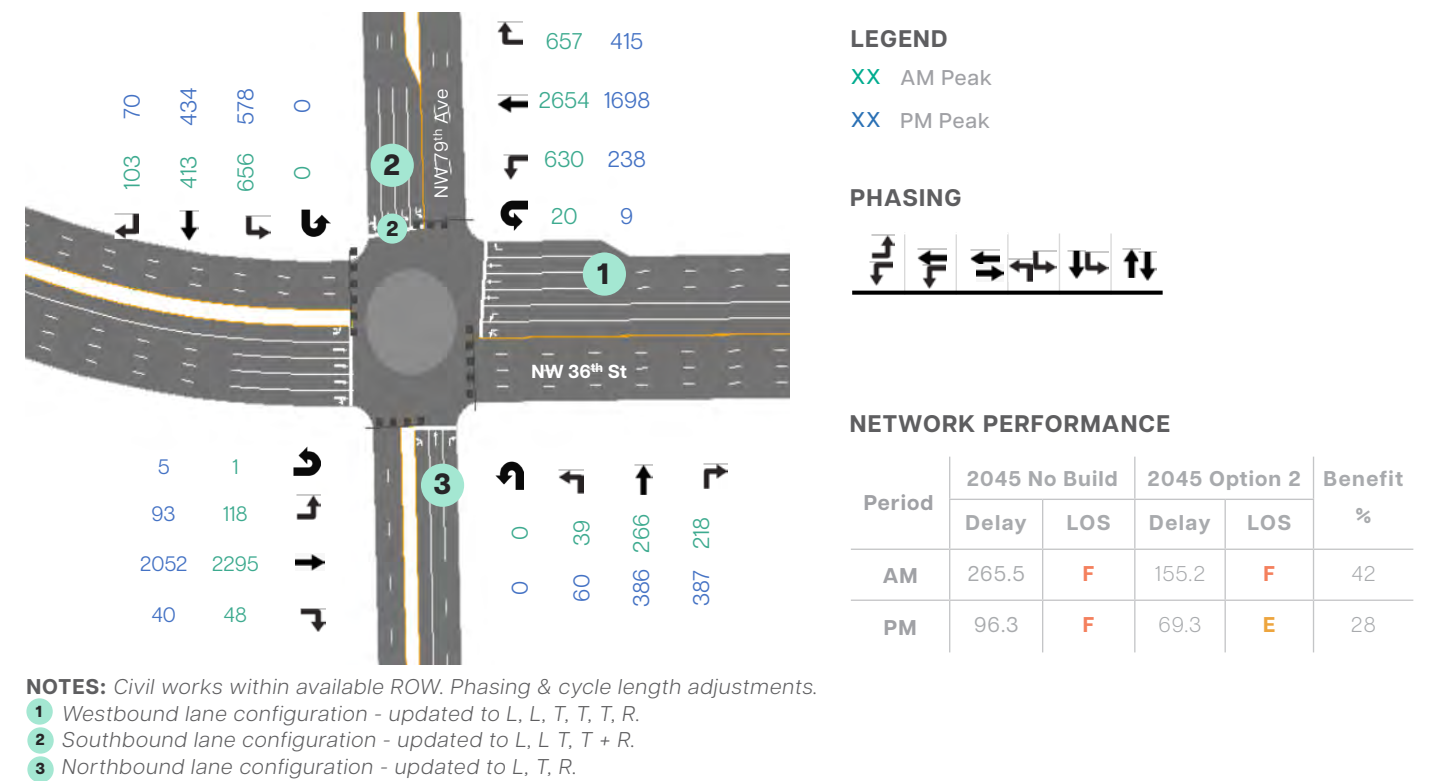
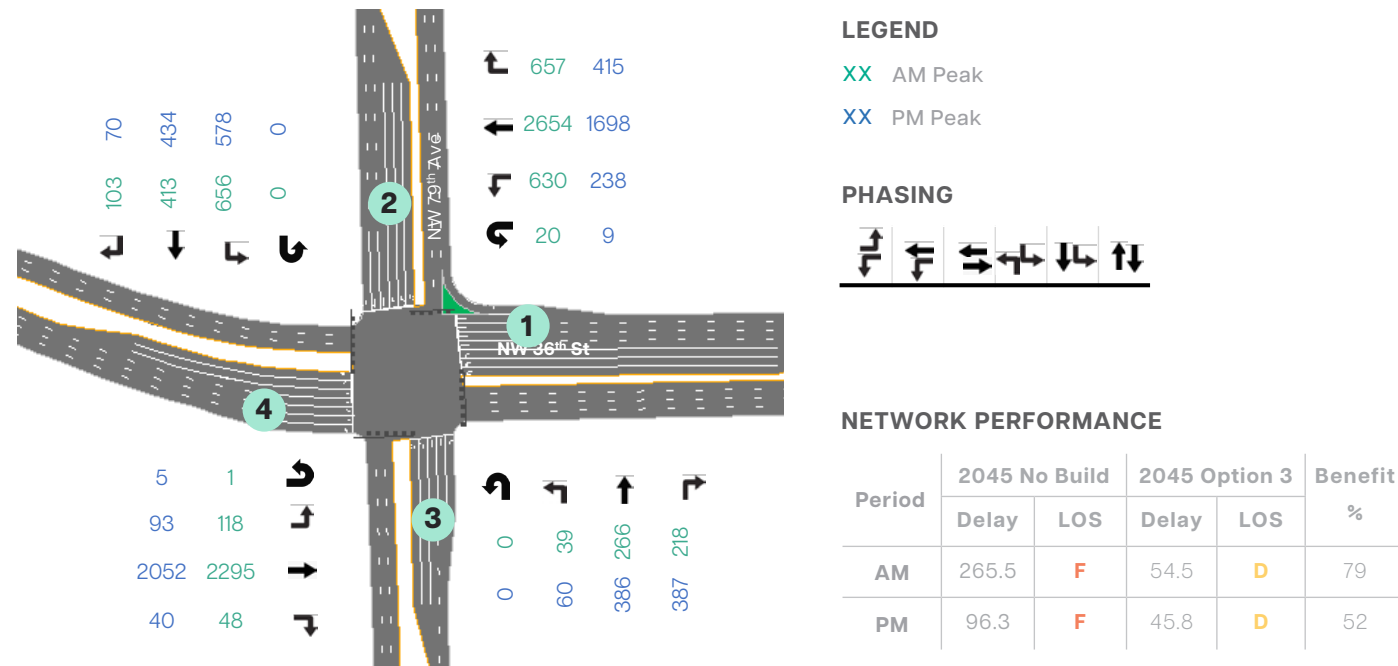




Figure 3-37: Intersection 19 - Option 3 Unconstrained Mitigation (Future 2045 Scenario)



**NOTES:** ROW acquisition is required to perform civil works. Phasing & cycle length adjustments.

- 1 Westbound lane configuration - updated to L, L, L, T, T, T, T, R.
- 2 Southbound lane configuration - updated to L, L, L, T, T, R.
- 3 Northbound lane configuration - updated to L, T, T, R.
- 4 Eastbound lane configuration - updated to L, T, T, T, T, R.

**Intersection 19 - NW 79<sup>th</sup> Ave and NW 36<sup>th</sup> St Conclusions**

Option 3, unconstrained mitigation, operates with the best Level of Service (LOS D) for intersection 19.

Cost benefit analysis should be carried out for all failing intersections to select the most suitable mitigation option.

Intersection 29 - NW 79<sup>th</sup> Avenue and NW 58<sup>th</sup> Street

Figure 3-38: Intersection 29 - Existing 2023 Network Performance

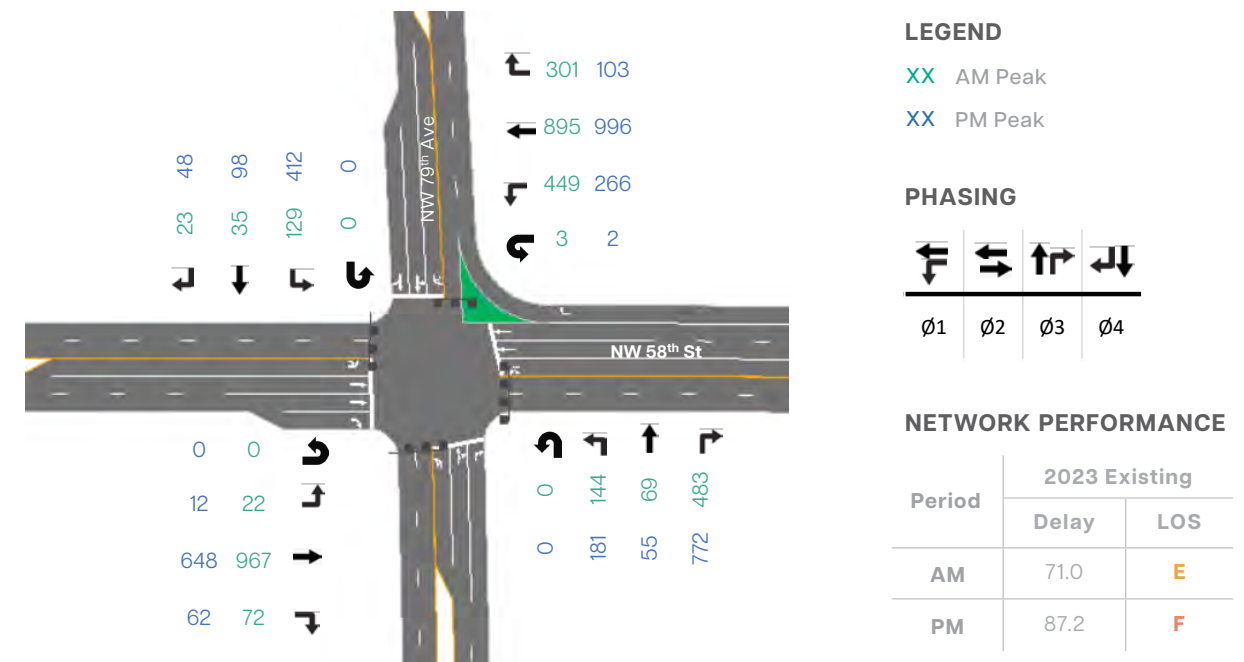


Figure 3-39: Intersection 29 - Future 2045 No-Build Scenario

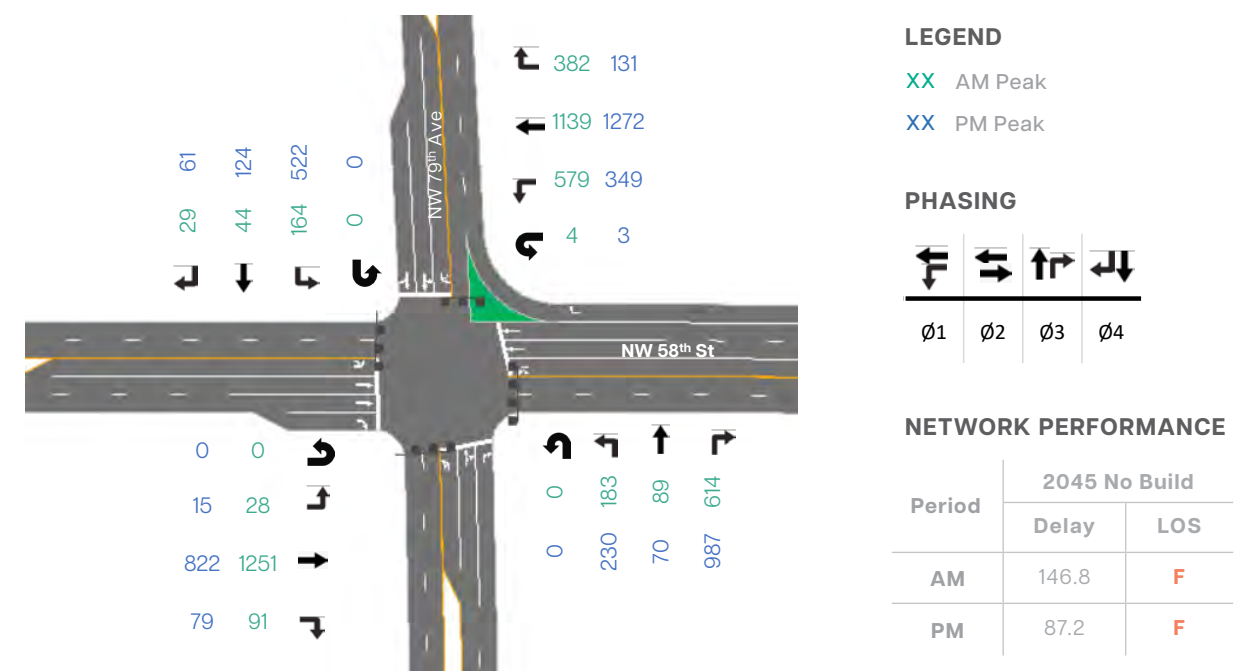
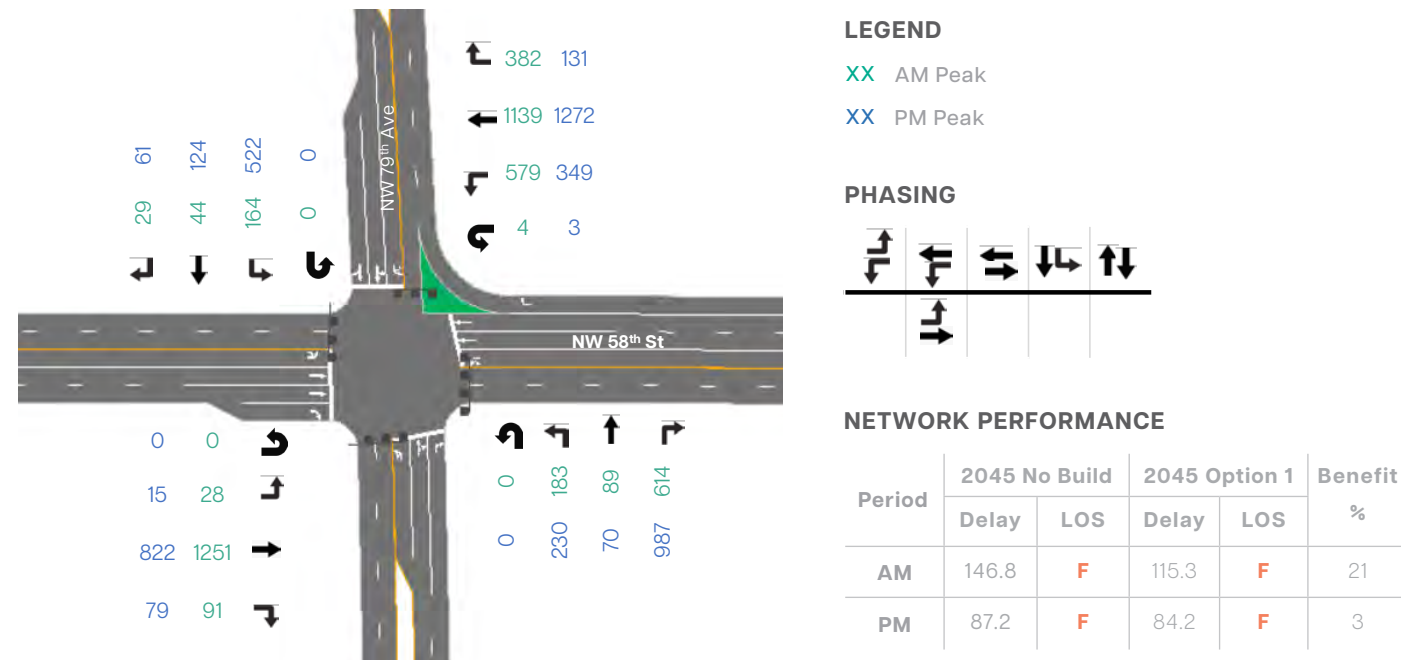
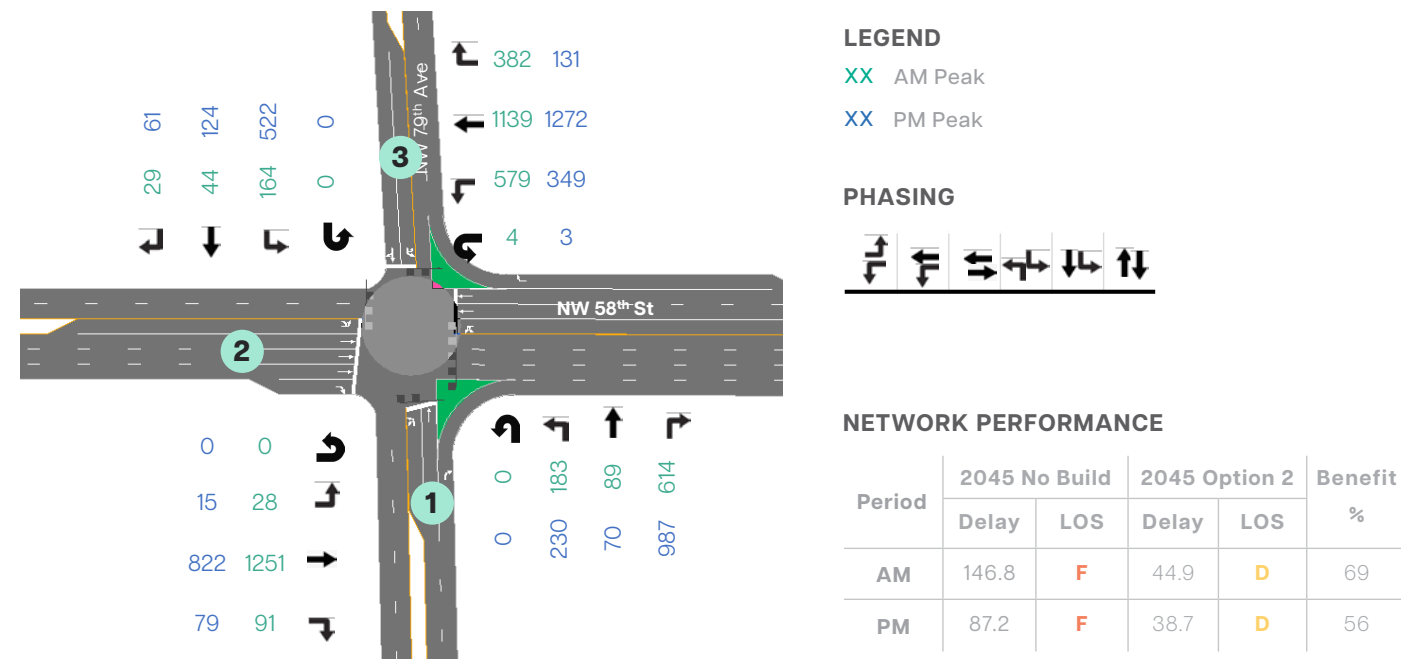


Figure 3-40: Intersection 29 - Option 1 Soft Mitigation (Future 2045 Scenario)



NOTES: No civil work required. Optimized cycle length and splits.

Figure 3-41: Intersection 29 - Option 2 Constrained Mitigation (Future 2045 Scenario)

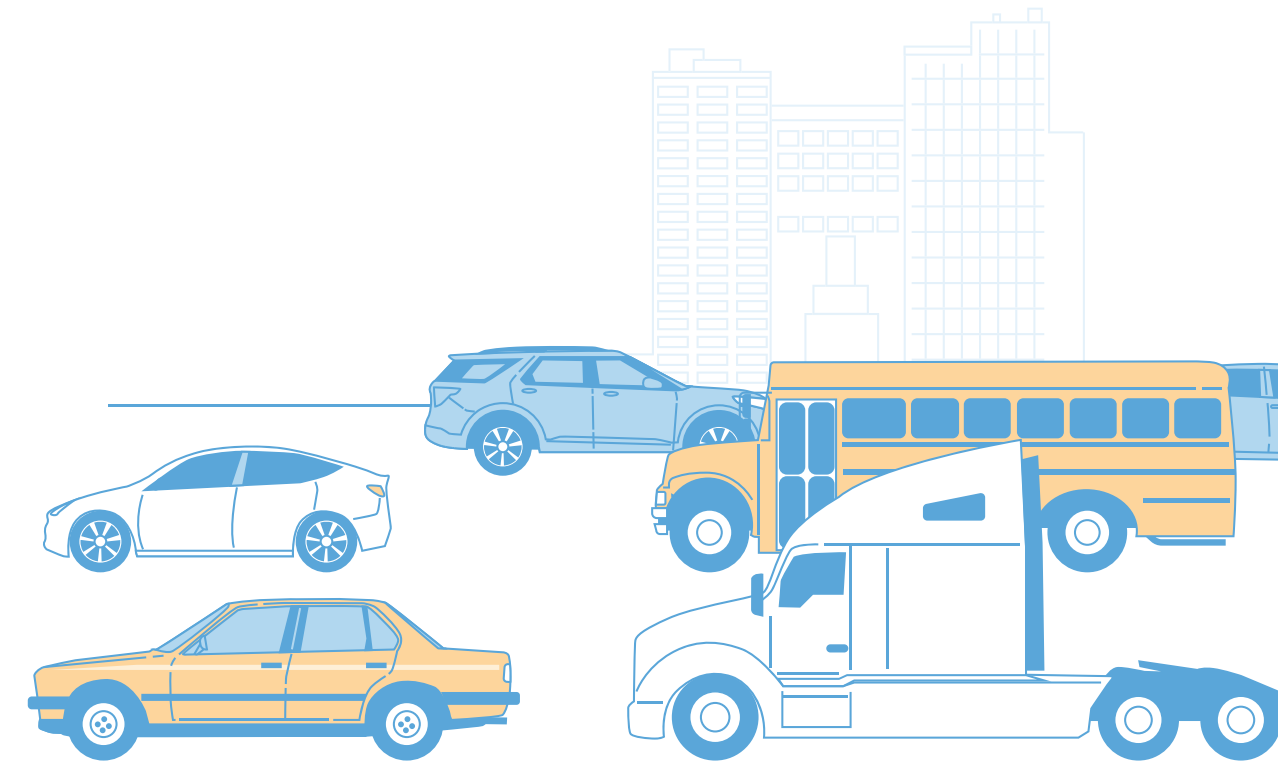


NOTES: Civil works within available ROW. Phasing & cycle length adjustments.

- 1 Northbound lane configuration - updated to L, T, R.
- 2 Eastbound lane configuration - updated to L, T, T, T, R.
- 3 Southbound lane configuration - updated to L, T+R.

**Intersection 29 - NW 79th Ave and NW 58th St Conclusions**

Unconstrained mitigation option 3 was not required for this intersection because Option 2 brought the LOS to D for both AM and PM. Cost benefit analysis should be carried out for all failing intersections to select the most suitable mitigation option.





**Recommended Capacity/Operations Projects**

After a thorough analysis of future operations including projected 2045 Levels of Service for the major intersections and corridors as well as failing current and future intersections, **Table 3-19** lists the proposed Capacity/Operations projects within the City of Doral that aim to improve existing and expected conditions.

**Table 3-19: Recommended Capacity/Operations Projects**

Proj. No.	Roadway/Facility Name	Project Limits		Jurisdiction	Project Description
		From	To		
O - 1	NW 33 St	NW 107 Ave		City/County	Reconfiguration of lane assignment for the westbound approach of the intersection to Left, Thru, and Right through re-striping. Optimization of signal phasing.
O - 2	NW 33 St	NW 107 Ave		City/County	Widening of the intersection to provide the following lane configuration: Westbound approach = L, L, T, R Southbound approach = L, T, T, R, with 100 ft storage length for right turn Northbound approach = L, T, T, R, with 100 ft storage length for right turn  Optimization of signal phasing and adjustment of cycle length.
O - 3	NW 117 Ave	NW 25 St		City/County	Widening of the southbound and northbound approaches of NW 117 Ave at the intersection to provide the following lane configuration: Northbound approach = L, T+R Southbound approach = L, T+R  Optimization of signal phasing and adjustment of cycle length and splits.
O - 4	NW 79 Ave	NW 36 St		City/County	Widening of the northbound approach of NW 79 Ave and the westbound approach of NW 36 St at the intersection to provide exclusive right turn lanes. The following lane configuration: Northbound approach = L, T+R, R Westbound approach = L, L, T, T, T+R, R  Optimization of signal phasing and adjustment of cycle length and splits.

Proj. No.	Roadway/Facility Name	Project Limits		Jurisdiction	Project Description
		From	To		
O - 5	NW 79 Ave	NW 58 St		City/County	Widening of the eastbound approach to provide an additional thru lane and widening on the east of the intersection to provide a receiving thru lane and another receiving lane (acceleration lane) for the exclusive right turn lane from the northbound approach. The following configuration: Eastbound approach = L, T, T, T, R Northbound Approach = L, T, R  Addition of a channelization island between the northbound approach thru lane and right turn lane.  Optimization of signal phasing and adjustment of cycle length and splits.

# 04



## RECOMMENDATIONS

- 4.1 **PRIORITIZATION CRITERIA**
- 4.2 **PRIORITIZED RECOMMENDATIONS**

This Transportation Master Plan, as well as previous related efforts and others to come, represents a dedicated commitment to addressing the city’s mobility needs and most pressing traffic safety concerns. It acts as a foundational framework of initial actions, some new based on recent data and some that resurface from prior assessments because certain needs have yet to be addressed. This recommendations section outlines a systematic approach to advancing the previously presented multi-modal improvements and is grounded in a defined set of criteria and methodology used to prioritize the projects from each category. Emphasis is placed on safety and active transportation as to tie the recommendations back to the city’s future mode share vision of achieving a more balanced and accessible transportation network. Criteria-based prioritization ensures that the recommended improvements address the city’s vital needs and deliver the greatest benefits to its community.

The result of this section is a bank of projects from the categories presented before ranked in proposed implementation tiers. Exercising transparent project planning and development practices, the ranking process is centered on prioritizing improvements identified by this plan that had already been recognized in preceding efforts. The project bank presented herein provides potential costs for the proposed improvements with the goal of assisting the city with budgeting and supplementing its Capital Improvement Element.



## 4.1 PRIORITIZATION CRITERIA

The proposed improvements in the previous section of this plan were grouped into four main categories: safety, active transportation, transit, and operations. Though these improvement types are clearly defined, it should be noted that most of the recommendations straddle between more than one specific category. For example, providing high emphasis crosswalks is an enhancement to the active transportation network of the city and is also a substantial improvement to the safety of the most vulnerable roads users. Similarly, lane reconfiguration of a failing intersection may improve the operations of a critical network node while also providing a reduction countermeasure for serious crash types. Moreover, provision of enhanced transit amenities seeks to increase ridership and also promotes the used of active transportation facilities.

Therefore, ranking certain improvement types against each other becomes less defined, especially since they are not all of equal magnitude. And so, the process looks at how each recommendation impacts a set of criteria that are directly derived from the goals established by this plan. While professional judgement does become a factor in weighing project impacts, transparency in the process conveys useful qualitative/quantitative results.

Five main criteria were established to evaluate projects in their potential to propel the city toward attaining this plan's main goal: create a network of roadways that is **accessible and safe for ALL**.

Since improvements are recommended to have positive impacts, the point system was established as to simply be able to differentiate degrees of effect. Thus, an improvement perceived to have minimal positive effect on the city's overall network received the minimum of 1 point while one perceived to have substantial positive effect received a maximum of 5 points. This methodology was followed for each recommended project compared to each of the five criteria which are described below.

Full details for each recommended project can be found in **Appendix A**.

### 1. Road User Safety

**Evaluation:** Projects are assessed on their potential to reduce crashes, serious injuries, and fatalities. Safety improvements such as traffic signal upgrades, and signalized pedestrian crossings are evaluated based on addressing accident hotspots and providing crash reduction factors and improving visibility. Active transportation projects are checked for enhanced safety features like protected bicycle facilities, wider sidewalks, and enhancements near school zones. Transit improvements are evaluated for measures like stop shelters and safe access and capacity for pedestrians and bicyclists, while operations improvements focus on congestion mitigation and accident-prone intersections.

**Prioritization:** Projects are scored higher if they demonstrate potential to significantly reduce traffic-related serious injuries and fatalities.

### 2. Mobility and Accessibility

**Evaluation:** Projects are measured on their potential to allow all travel modes to efficiently move through the city while having access to intermodal connection areas and major destinations. Safety improvements are evaluated on removing mobility barriers by providing protected connections, particularly for pedestrians and cyclists. Active transportation improvements like sidewalks, bike

lanes, and multi-use trails are prioritized based on how they improve access to key destinations such as schools, parks, and commercial areas by creating continuous corridors or filling network gaps. Transit improvements are assessed based on how they provide access to amenities in underserved areas and increase reliability and convenience. Operations Improvements like signal synchronization and intersection redesigns are checked for how they improve the overall efficiency of the network, reduce congestion, and ensure smoother traffic flow.

**Prioritization:** Projects deemed to largely improve intermodal connections and access, especially for non-motorized users and transit riders, are given higher scores.

### 3. Community Enhancement

**Evaluation:** Projects are evaluated based on their impact on the surrounding community, with an emphasis on equity and enrichment to quality of life. Safety projects are prioritized if they target high-risk or underserved areas like school zones or high-pedestrian areas. Active transportation projects are checked for their potential to connect neighborhoods, schools, and parks. Transit improvements are evaluated based on how well they serve low-income, elderly, or transit-dependent populations. Operations improvements are checked for their ability to relieve congestion in high-traffic corridors, benefiting a broader portion of the community.

**Prioritization:** Projects with significant community-wide benefits, especially those improving transportation equity, are scored higher.

### 4. Cost Effectiveness

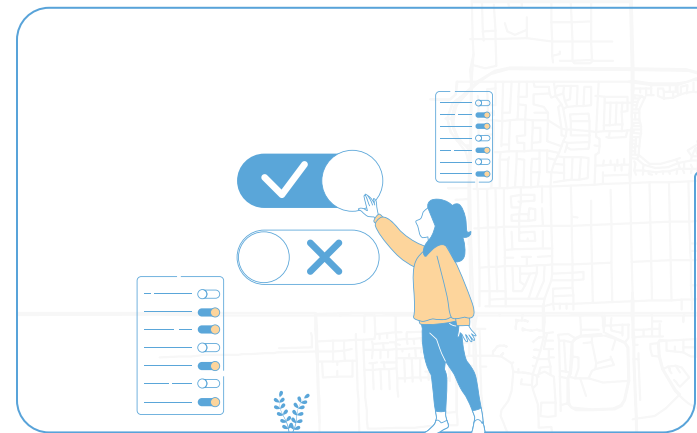
**Evaluation:** Each project's costs are weighed against its expected benefits. For example, safety projects are checked for crash reduction potential relative to their cost, such as installing cost-efficient traffic calming measures. Active transportation projects are evaluated for long-term use and number of users who will benefit and for supplying missing critical network links, while transit improvements are assessed for the potential increase in ridership per dollar spent. Operations improvements are checked for their ability to reduce congestion and delays at a lower cost.

**Prioritization:** Projects with higher benefit-cost ratios or those that can be phased or bundled with other initiatives to maximize resources are scored higher.

### 5. Feasibility and Readiness

**Evaluation:** This criterion checks whether projects are "shovel-ready" and can be implemented quickly. Safety projects are evaluated for ease of design and implementation and ability to be executed through preexisting delivery mechanisms (e.g., adding crosswalk markings through yearly road maintenance contracts). Active transportation projects are checked for sufficient available right-of-way and public support, specifically in "missing link" areas. Transit improvements are evaluated for whether infrastructure (e.g., trolley stops or transit station locations) is already in place or easily adapted. Operations improvements are evaluated for quick fixes like signal timing changes or roadway re-striping.

**Prioritization:** Projects are scored higher if deemed to require minor design/engineering work, have apparent available public right-of-way, specifically on city-maintained roads, and can be implemented within a short time frame.



## 4.2 PRIORITIZED RECOMMENDATIONS

### Prioritization Process

After evaluating projects against the previously defined five criteria, they were grouped into three prioritization tiers depending on their aggregate score. The minimum combined score a project could receive is 5 and the maximum is 25. After going through the project prioritization process, the highest score achieved was 21 while the lowest was 15. The complete prioritization table can be found in [Appendix A](#). The priority tiers are described below.

#### Tier 1 (High Priority) (19 Points and Above)

Projects that score high across multiple criteria, particularly in terms of safety impact, cost-effectiveness, and immediate feasibility. These projects address pressing needs and have a clear benefit to the city's transportation system. They typically include safety improvements in high-crash areas, and shovel-ready active transportation projects with available right-of-way to "close gaps".

#### Tier 2 (Medium Priority) (17-18 Points)

Projects that meet several criteria but may have longer timelines or slightly lower impact. They are still beneficial but less critical in the short term. These could include transit projects requiring more planning or community outreach, or safety improvements that align with long-range goals but need more detailed analysis and design work.

#### Tier 3 (Low Priority) (15 Points and Below)

Projects that meet fewer criteria or may have less community backing but could be valuable in the long term. These projects are lower priority but remain important for future consideration, such as smaller-scale operations improvements or active transportation projects that require extensive planning and right-of-way acquisition before implementation.

Table 4-1 through Table 4-3 show each recommended project within the tier they ranked and their respective estimated capital cost.

Table 4-1: Tier 1 Recommended Projects

TIER 1 PROJECTS						
Proj. No.	Roadway/Facility Name	Project Limits		Jurisdiction	Project Description	Cost Estimate
		From	To			
<b>SAFETY</b>						
S-1	NW 114 Ave	NW 41 St		City/County	Installation of new signal heads with backplates with retroreflective borders on all mast arm assemblies at the intersection. Installation of raised/retroreflective pavement markers for traffic separator pavement markings extensions on South leg of the intersection.	\$17,800.00
S-3	NW 79 Ave	NW 25 St		City/County	Installation of pedestrian crosswalk with special emphasis markings and pedestrian signals on East and West leg of the intersection.	\$7,620.00
S-4	NW 79 Ave	NW 36 St		City/County	Installation of new signal heads with backplates with retroreflective borders on the mast arm assemblies at the South and East legs of the intersection. Installation of pedestrian crosswalk and pedestrian signals on East leg of the intersection. Provision of special emphasis crosswalk markings for all legs of the intersection.	\$26,300.00
S-7	NW 41 St	NW 87 Ave		City/County	Installation of new signal heads with backplates with retroreflective borders on the mast arm assemblies at all legs of the intersection. Installation of pedestrian crosswalk and pedestrian signals on South leg of the intersection. Provision of special emphasis crosswalk markings for all legs of the intersection. Elimination of Right Turn on Red for eastbound approach (west leg).	\$26,300.00



**TIER 1 PROJECTS**

Proj. No.	Roadway/Facility Name	Project Limits		Jurisdiction	Project Description	Cost Estimate
		From	To			
<b>S-12</b>	Various			City	Provision of special emphasis crosswalk markings at specified legs of 101 City Road/City Road intersections. (Specific locations provided within Sections 3.2 of this Transportation Master Plan).	\$204,037.68

**ACTIVE TRANSPORTATION**

<b>AT-2</b>	NW 102 Ave	NW 25 St	NW 28 Terr	City	Construct a 10 ft. Sidepath existing public right of way on the west side of NW 102nd Avenue as a feeder facility for the local neighborhood to the existing Beacon Trail extension.	\$208,077.50
<b>AT-9</b>	NW 82 Ave	NW 36 St	NW 41 St	City	Construction of a 10 ft. asphalt sidepath on the west side of the road marked appropriately for shared use by bicyclists and pedestrians, and with special emphasis crossing markings at conflict areas.	\$104,017.20
<b>AT-11</b>	NW 33 St	NW 112 Ave	NW 107 Ave	City	Construction of a 10 ft. asphalt separated shared used path on the south side of the road replacing the existing sidewalk and marked appropriately for shared use by bicyclists and pedestrians, and with special emphasis crossing markings at conflict areas.  Installation of a pedestrian crossing signal (Rapid Flashing Beacon) with special emphasis crosswalk markings and across the south leg to the intersection of NW 33 St and NW 112 St to connect to proposed sidepath.	\$458,075.00

**TIER 1 PROJECTS**

Proj. No.	Roadway/Facility Name	Project Limits		Jurisdiction	Project Description	Cost Estimate
		From	To			
<b>AT-14</b>	Dressel's Dairy Canal	NW 82 Ave	NW 80 Ave	County	Construction of a 10 ft. asphalt separated shared used path on the south side of Dressel's Dairy Canal and marked appropriately for shared use by bicyclists and pedestrians, and with special emphasis crossing markings at conflict areas to provide a missing link of the existing Dressel's Dairy Trail that runs from NW 97 Ave to NW 79 Ave.	\$172,672.00
<b>AT-15</b>	NW 86 St	NW 112 Ave	NW 107 Ave	City	Construction of a 10 ft. asphalt separated shared used path on the south side of the road replacing the existing sidewalk and marked appropriately for shared use by bicyclists and pedestrians, and with special emphasis crossing markings at conflict areas.	\$430,645.00
<b>AT-16</b>	NW 109 Ave	NW 86 St	NW 78 St	City	Construction of an 8 ft. asphalt separated shared used path on both sides of the road replacing the existing sidewalk and marked appropriately for shared use by bicyclists and pedestrians, and with special emphasis crossing markings at conflict.	\$520,193.75
<b>AT-18</b>	NW 25 St	NW 117 Ave		County	Construction of a 10 ft. asphalt sidepath on the north side of the road and marked appropriately for shared use by bicyclists and pedestrians, and with special emphasis crossing markings at conflict areas to provide a connection to the existing Beacon Trail as well as the Turnpike Trail.  Provision of special emphasis marking on the existing crosswalk across the east leg of the intersection.	\$85,301.00

TIER 1 PROJECTS						
Proj. No.	Roadway/Facility Name	Project Limits		Jurisdiction	Project Description	Cost Estimate
		From	To			
<b>AT-20</b>	Various			City/County	Installation of a Rectangular Rapid Flashing Beacon (RRFB) for existing trail crossing according to MUTCD guidelines, with the necessary crossing warning signage and special emphasis crosswalk markings at the following locations: <i>NW 105 Ct at Approx. 120 ft. East of NW 107 Ave</i> <i>NW 50 St/Turnpike Trail at Approx. 80 ft. east of 117 Ave</i> <i>NW 58 St/Turnpike Trail at Approx. 115 ft. east of NW 117 Ave (County maintained road)</i> <i>NW 66 St at Approx. 150 ft. East of NW 107 Ave</i> <i>NW 78 St Approx. 450 ft. East of NW 107 Ave</i> <i>NW 82 St Approx. 450 ft. East of NW 107 Ave</i>	\$214,260.00
<b>AT-21</b>	NW 53 St	NW 85 Pl		City	Construction of a raised intersection to place heightened focus on pedestrian crossing activities for motor vehicles at this busy intersection.	\$668,050.00
<b>AT-23</b>	NW 90 St	NW 112 Ave		City	Provision of new crosswalk across north leg of the intersection which would require re-striping to shift stop bar to the north approximately 10 ft. Extension of existing crosswalk across east leg of the intersection to intersect with proposed new crosswalk and reach the existing ADA curb ramp.  Provision of special emphasis markings for all crosswalks.	\$8,280.00

TIER 1 PROJECTS						
Proj. No.	Roadway/Facility Name	Project Limits		Jurisdiction	Project Description	Cost Estimate
		From	To			
<b>TRANSIT</b>						
<b>T-5</b>	Trolley Stops - Midblock Crossing (City Roads)	Varies		City	Installation of a midblock crossing at 19 identified locations where trolley stops are located on both sides of the road across each other. City maintained roads.	\$639,160.00
<b>OPERATIONS</b>						
<b>O-1</b>	NW 33 St	NW 107 Ave		City/County	Reconfiguration of lane assignment for the westbound approach of the intersection to Left, Thru, and Right through re-striping.  Optimization of signal phasing.	\$13,300.00
<b>O-2</b>	NW 33 St	NW 107 Ave		City/County	Widening of the intersection to provide the following lane configuration: <i>Westbound approach = L, L, T, R</i> <i>Southbound approach = L, T, T, R, with 100 ft storage length for right turn</i> <i>Northbound approach = L, T, T, R, with 100 ft storage length for right turn</i>  Optimization of signal phasing and adjustment of cycle length.	\$1,254,370.00



Table 4-2: Tier 2 Recommended Projects

TIER 2 PROJECTS						
Proj. No.	Roadway/Facility Name	Project Limits		Jurisdiction	Project Description	Cost Estimate
		From	To			
<b>SAFETY</b>						
S-2	NW 114 Ave	NW 74 St		City/County	Installation of new signal heads with backplates with retroreflective borders on all mast arm assemblies at the intersection.  Provision of pavement marking extension for traffic separators beyond crosswalks for North, West, and South legs of the intersection and installation of raised/retroreflective pavement markers for traffic separator pavement marking extensions.  Provision of special emphasis crosswalk markings for all legs of the intersection.	\$23,110.00
S-5	NW 33 St	NW 87 Ave		City/County	Installation of new signal heads with backplates with retroreflective borders on all mast arm assemblies at the intersection.  Provision of pavement marking extension for traffic separators beyond crosswalks for North and South legs of the intersection and installation of raised/retroreflective pavement markers for traffic separator pavement marking extensions.  Provision of special emphasis crosswalk markings for all legs of the intersection.	\$29,060.00
S-8	NW 58 St	NW 107 Ave		County	Widening of the sidewalk on the NW corner of the intersection to provide more capacity and refuge for pedestrians and bicyclists entering and existing the existing trail.  Installation of new signal heads with backplates with retroreflective borders on the mast arm assemblies at all legs of the intersection.	\$34,519.77

TIER 2 PROJECTS						
Proj. No.	Roadway/Facility Name	Project Limits		Jurisdiction	Project Description	Cost Estimate
		From	To			
S-11	NW 87 Ave	NW 14 St		County	Installation of new signal heads with backplates with retroreflective borders on the mast arm assemblies at all legs of the intersection.  Installation of pedestrian crosswalk and pedestrian signals on South leg of the intersection.  Provision of special emphasis crosswalk markings for all legs of the intersection.	\$26,300.00
S-13	Various			City/County	Provision of special emphasis crosswalk markings at specified legs of 61 City Road/County Road intersections. ( <i>Specific locations provided within Sections 3.2 of this Transportation Master Plan</i> )	\$172,239.60
<b>ACTIVE TRANSPORTATION</b>						
AT-4	NW 84 Ave	NW 12 St	NW 25 St	City	Construction of 6 ft. sidewalks on both sides of the road starting approximately 460 ft. north of NW 12 St where existing sidewalk on NW 84 Ave ends.	\$833,046.90
AT-7	NW 112 Ave	NW 25 St	NW 34 St	City	Construction of a 10 ft. asphalt sidepath on the west side of the road to replace existing concrete sidewalk and marked appropriately for shared use by bicyclists and pedestrians, and with special emphasis crossing markings at conflict areas.  Widening of existing 5 ft. sidewalk on the east side of the road where there is an existing grass utility strip to enhance capacity for pedestrians given this is a school area.	\$620,597.90
AT-8	NW 27 St	NW 112 Ave	NW 109 Ave	City	Construction of 6 ft. sidewalk on the north side of the road.	\$96,306.00

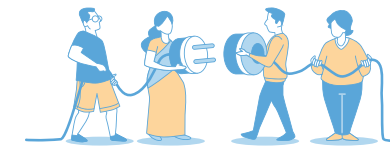
TIER 2 PROJECTS						
Proj. No.	Roadway/Facility Name	Project Limits		Jurisdiction	Project Description	Cost Estimate
		From	To			
AT-10	NW 92 Ave	NW 25 St	NW 33 St	City	Construction of a 10 ft. asphalt sidepath on the east side of the road marked appropriately for shared use by bicyclists and pedestrians, and with special emphasis crossing markings at conflict areas. New sidepath from NW 25 St to NW 27 St. Replacement of existing concrete material for asphalt on existing sidepath segment from NW 27 St to NW 33 St.	\$430,688.10
AT-12	NW 34 St	NW 117 Ave	NW 112 Ave	City	Construction of a 12 ft. asphalt separated shared use path on the north side of the road marked appropriately for shared use by bicyclists and pedestrians, and with special emphasis crossing markings at conflict areas to connect proposed sidepath on NW 112 Ave and proposed shared use path on NW 33 St to existing Turnpike Trail on NW 117 Ave.	\$447,334.30
AT-13	NW 25 St	NW 99 Ave	NW 87 Ave	County	Construction of a 10 ft. asphalt separated shared used path on the north side of the road replacing the existing sidewalk (in some segments) and marked appropriately for shared use by bicyclists and pedestrians, and with special emphasis crossing markings at conflict areas to provide an extension of existing Beacon Trail to the east.	\$1,054,877.50
AT-22	NW 58 St	NW 79 Ave		City	Installation of pedestrian signal on existing mast arm assembly for existing pedestrian crosswalk across south leg of the intersection and signal phasing adjustment to incorporate pedestrian phase.	\$8,740.00
AT-24	NW 58 St	NW 107 Ave	NW 102 Ave	County	Construction of a 10 ft. asphalt sidepath on the north side of the road replacing the existing sidewalk and marked appropriately for shared use by bicyclists and pedestrians, and with special emphasis crossing markings at conflict areas to provide a connection to the existing Greenway Trail.	\$436,855.00

TIER 2 PROJECTS						
Proj. No.	Roadway/Facility Name	Project Limits		Jurisdiction	Project Description	Cost Estimate
		From	To			
<b>TRANSIT</b>						
T-1	Trolley Stops-New Shelter (City Roads)	Varies		City	Installation of Doral branded transit stop shelter at 55 identified trolley stops located on city maintained roads.	\$3,252,700.00
T-3	Trolley Stops-Bike Parking (City Roads)	Varies		City	Installation of bicycle parking racks at 28 identified trolley stops located on city maintained roads.	\$65,240.00
T-6	Trolley Stops - Midblock Crossing (County Roads)	Varies		County	Installation of a midblock crossing at 14 identified locations where trolley stops are located on both sides of the road across each other. County maintained roads.	\$470,960.00
<b>OPERATIONS</b>						
O-3	NW 117 Ave	NW 25 St		City/County	Widening of the southbound and northbound approaches of NW 117 Ave at the intersection to provide the following lane configuration: Northbound approach = L, T+R Southbound approach = L, T+R  Optimization of signal phasing and adjustment of cycle length and splits.	\$838,580.00
O-4	NW 79 Ave	NW 36 St		City/County	Widening of the northbound approach of NW 79 Ave and the westbound approach of NW 36 St at the intersection to provide exclusive right turn lanes. The following lane configuration: <i>Northbound approach = L, T+R, R</i> <i>Westbound approach = L, L, T, T, T+R, R.</i>  Optimization of signal phasing and adjustment of cycle length and splits.	\$838,580.00



**TIER 2 PROJECTS**

Proj. No.	Roadway/Facility Name	Project Limits		Jurisdiction	Project Description	Cost Estimate
		From	To			
O-5	NW 79 Ave	NW 58 St		City/County	<p>Widening of the eastbound approach to provide an additional thru lane and widening on the east of the intersection to provide a receiving thru lane and another receiving thru lane (acceleration lane) for the exclusive right turn lane from the northbound approach. The following configuration:</p> <p><i>Eastbound approach = L, T, T, T, R</i></p> <p><i>Northbound Approach = L, T, R</i></p> <p>Addition of a channelization island between the northbound approach thru lane and right turn lane.</p> <p>Optimization of signal phasing and adjustment of cycle length and splits.</p>	\$838,580.00



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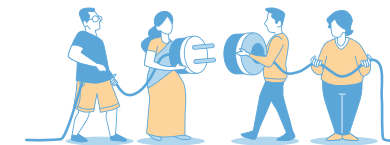
Table 4-3: Tier 3 Recommended Projects

TIER 3 PROJECTS						
Proj. No.	Roadway/Facility Name	Project Limits		Jurisdiction	Project Description	Cost Estimate
		From	To			
<b>SAFETY</b>						
S-6	NW 33 St	NW 97 Ave		City/County	Installation of new signal heads with backplates with retroreflective borders on all mast arm assemblies at the intersection.  Provision of special emphasis crosswalk markings for all legs of the intersection.	\$24,560.00
S-9	NW 74 St	NW 107 Ave		County	Installation of bollards at entrance of Atlas trail on the NW corner of the intersection.  Realignment of existing key hole bike line to go on the outside of existing westbound right turn lane.  Widening sidewalk on NW corner of the intersection to receive bike lane and reconfiguring/reducing existing ramp at entrance of Atlas Trail which can currently be mistaken for a driveway.	\$91,198.86
S-10	NW 78 St	NW 107 Ave		City/County	Installation of pedestrian crosswalk with special emphasis markings and mast arm (overhead) pedestrian signals on North and South leg of the intersection.	\$302,970.00
S-14	Various			County	Provision of special emphasis crosswalk markings at specified legs of 9 County Road/County Road intersections. (Specific locations provided within Sections 3.2 of this Transportation Master Plan)	\$41,072.52
<b>ACTIVE TRANSPORTATION</b>						
AT-1	Various			City	Construction of 6 ft. sidewalks on both sides of the road throughout neighborhood bound by NW 102 Ave on the west, NW 97 Ave on the east, NW 28th Terr on the north, and NW 25 Terr on the south.	\$3,062,530.80

TIER 3 PROJECTS						
Proj. No.	Roadway/Facility Name	Project Limits		Jurisdiction	Project Description	Cost Estimate
		From	To			
AT-3	Various			City	Construction of 6 ft. sidewalks on the following city maintained roadway segments: <i>NW 54 St (north side) from NW 87 Ave to NW 79 Ave</i> <i>NW 56 St (both sides) from NW 87 Ave to NW 79 Ave</i> <i>NW 84 Ave (both sides) from NW 54 St to NW 58 St</i> <i>NW 82 Ave (both sides) from NW 54 St to NW 58 St</i>	\$1,564,972.50
AT-5	Various			City	Construction of 6 ft. sidewalks on the following city maintained roadway segments: <i>NW 54 St (north side) from NW 87 Ave to NW 79 Ave</i> <i>NW 56 St (both sides) from NW 87 Ave to NW 79 Ave</i> <i>NW 84 Ave (both sides) from NW 54 St to NW 58 St</i> <i>NW 82 Ave (both sides) from NW 54 St to NW 58 St</i>	\$1,564,972.50
AT-6	NW 12 St	NW 82 Ave	NW 78 Ave	County	Construction of 6 ft. sidewalk on the north side of the road. Western limit would begin approximately 325 ft. East of NW 82nd Ave where existing sidewalk ends.	\$134,828.40
AT-17	NW 97 Ave	NW 41 St	NW 52 St	County	Construction of a 10 ft. asphalt sidepath on the west side of the road replacing the existing sidewalk and marked appropriately for shared use by bicyclists and pedestrians, and with special emphasis crossing markings at conflict areas.	\$518,059.10
AT-19	Turnpike Trail	NW 41 St		County	Construction of a bicycle/pedestrian bridge over NW 41 St to provide a safe separated connection/missing link for the Turnpike Trail.	\$3,816,000.00

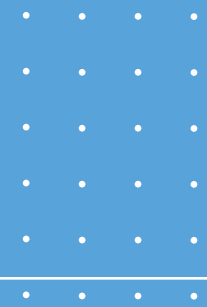


TIER 3 PROJECTS						
Proj. No.	Roadway/ Facility Name	Project Limits		Jurisdiction	Project Description	Cost Estimate
		From	To			
<b>TRANSIT</b>						
T-2	Trolley Stops- New Shelter (County Roads)	Varies		County	Installation of Doral branded transit stop shelter at 45 identified trolley stops located on county maintained roads.	\$2,661,300.00
T-4	Trolley Stops- Bike Parking (County Roads)	Varies		County	Installation of bicycle parking racks at 4 identified trolley stops located on county maintained roads.	\$9,320.00



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# 05



## COST ESTIMATING & FUNDING

### 5.1 ESTIMATING COSTS

Estimating potential costs for proposed multi-modal improvements is essential for project planning and prioritization. Identifying the economic impacts of projects is a major part of assessing their feasibility since changing the existing transportation infrastructure of a city requires major capital investments and sources are often scarce. Cost estimates help ensure that projects are programmed in alignment with the city's long-term goals and provide clarity on financial obligations over time. They also allow the city to evaluate project benefits in relation to community needs and allocate resources effectively.

### 5.2 FUNDING SOURCES

Equally important is identifying specific funding sources to finance these transportation improvements. Capital funds needed for project implementation are significant and may strain the city's budget if not carefully planned. Funding options typically consist of Federal, State, and Local sources; however, these pots are limited and are often pursued by numerous entities. Additionally, securing dedicated funding sources in advance helps mitigate financial risks, ensures timely project completion, and may increase the city's chances of receiving supplementary grants.

This section of the plan discusses the resources used to formulate the conceptual capital costs for the recommended improvements previously presented and examines potential sources that the city may employ for funding them.



## 5.1 ESTIMATING COSTS

Developing conceptual capital costs for city transportation infrastructure projects in early planning stages involves the use of various cost references from agencies that have well established estimating processes like the Florida Department of Transportation (FDOT). FDOT has historically defined components associated with roadway construction projects and their associated costs. The estimating process typically begins with defining the scope of a project, such as road widening, shared-used paths, transit facilities and amenities, or complete streets improvements. Once the project type is established, FDOT pay items are used to identify the specific components, such as pavement, lighting, traffic signals, and signage, which are then assigned unit costs based on standard FDOT pricing data. These pay items unit costs typically include materials, labor, and equipment.

Given the typical nature of various roadway project types, FDOT has developed cost-per-mile models which can be used for linear projects like road expansions, sidewalks, bicycle facilities, etc. Cost-per-mile models can often be applied to obtain an initial estimate based on typical unit costs of similar projects. Then these costs are adjusted for local market conditions, labor rates, and construction standards specific to the region.

The develop the unit costs for the specific project types recommended in this plan, applicable FDOT cost-per-mile models were used and supplemented with pay item unit costs from the historical cost tables of FDOT Region 13 which comprises Miami-Dade County averages.

It is important to conservatively estimate to ensure sufficient funding allocation. Since most recommended projects lack detailed design and defined scopes of work, the following percentages were factored into the unit costs.



**Design**

**10%**



**Mobilization**

**10%**



**Maintenance of Traffic (MOT)**

**10%**



**Contingency**

**25%**

**Table 5-1** provides a summary of the types of recommended improvements, a brief description of the cost references used, and the associated unit costs.

**Table 5-1:** Estimated Unit Costs for Proposed Improvement Types

Project Category	Improvement Type	Cost References	Unit Cost		Unit
			Sub-Total	Total <i>Including: Design-10% Mobilization-10% MOT-10% Contingency-25%</i>	
Safety	Retroreflective Signal Heads	FDOT Market Area 13 (Miami) Item Average Unit Cost Average Unit Costs from 8/23 to 8/24	\$2,620	\$4,070	EA
	Special Emphasis Crosswalk	FDOT Market Area 13 (Miami) Item Average Unit Cost Average Unit Costs from 8/23 to 8/24	\$1,330	\$2,070	EA
	Pedestrian Signal (On Existing Mast Arm with New Pole Detector)	FDOT Market Statewide Item Average Unit Cost Average Unit Costs from 8/23 to 8/24	\$1,120	\$1,740	EA
	Overhead Pedestrian Crossing Signal	FDOT Signalized Midblock Crossing Cost Model	\$195,460	\$302,970	EA
	Median Extension (Pavement Markings)	FDOT Market Area 13 (Miami) Item Average Unit Cost Average Unit Costs from 8/23 to 8/24	\$960	\$1,490	EA
	Median Extension (Retroreflective Pavement Markers)	FDOT Market Area 13 (Miami) Item Average Unit Cost Average Unit Costs from 8/23 to 8/24	\$490	\$760	EA
Active Transportation	Sidewalk	FDOT Sidewalk Cost Per Mile Model	\$310,660	\$481,530	MILE
	Sidepath	FDOT Two Directional, 12' Shared Use Path Cost Per Mile Model	\$536,970	\$832,310	MILE
	Shared-Used Path	FDOT Two Directional, 12' Shared Use Path Cost Per Mile Model	\$536,970	\$832,310	MILE
	Raised Intersection	City of Miami Traffic Calming Construction Projects	\$431,000	\$668,050	EA
	Bicycle/Pedestrian Bridge	FDOT Market Statewide Item Average Unit Cost Average Unit Costs from 8/23 to 8/24	\$1,020	\$1,590	SF
Transit	Shelter	Engineering Cost Estimates from WO 3 – Trolley Infrastructure Improvements performed under City of Doral Contract RFQ#2014-24	\$38,150	\$59,140	EA
	Bicycle Parking	FDOT Market Statewide Item Average Unit Cost Average Unit Costs from 2023	\$1,500	\$2,330	EA
	Mid-Block Crossing Rectangular Rapid Flashing Beacon (RRFB)	FDOT Market Area 13 (Miami) Item Average Unit Cost Average Unit Costs from 8/23 to 8/24	\$21,700	\$33,640	EA
Operations	Lane Assignment Reconfiguration (Re-Striping)	FDOT Market Area 13 (Miami) Item Average Unit Cost Average Unit Costs from 8/23 to 8/24	\$8,580	\$13,300	EA
	Intersection Widening	FDOT Add 2 Lanes to Existing 2 Lane Undivided Arterial (1 Lane Each Side), with 4' Bike Lanes, curb & gutter, sidewalk, drainage and lighting system per Mile Cost Model	\$268,250	\$415,790	EA

## 5.2 FUNDING SOURCES

To fund the implementation of multi-modal improvement projects, the city can explore various specific sources. Each source has its own applicability depending on the type of project, the scope of work, and the city's objectives. Major project funding opportunities range from Federal to State to Local. The following are some key funding mechanisms and their applicability.



### Federal

#### Safe Streets and Roads for All (SS4A) Grant

Part of the U.S. Department of Transportation's (USDOT) initiatives to reduce traffic-related fatalities and serious injuries. This grant specifically targets projects that improve safety for all road users, including pedestrians, cyclists, motorists, and transit riders. The city could use SS4A funding for projects like adding protected bike lanes, improving crosswalks, enhancing street lighting, or implementing traffic-calming measures to reduce speeding. To qualify, Doral must develop or have an existing comprehensive safety action plan that identifies high-risk areas and outlines strategies to address them. The grant can be used for both planning and implementation projects, allowing the city to either create new safety plans or put existing plans into action. The SS4A program requires a strong focus on equity, ensuring that improvements benefit all members of the community, including underserved areas. Local matching funds are required, typically 20%, and applicants must show how their project aligns with federal safety goals, such as reducing the number of traffic deaths and promoting safe, walkable, and bikeable communities.

#### Better Utilizing Investments to Leverage Development (BUILD) Grant

The BUILD Grant, formerly known as TIGER, is administered by the USDOT and focuses on road, transit, rail, and port infrastructure projects. For multi-modal projects, Doral can apply for funding to develop bike lanes, pedestrian walkways, and/

or transit lanes. Projects must demonstrate regional significance, improve safety, enhance economic competitiveness, and support environmental sustainability. Requirements include a detailed project description, cost-benefit analysis, and matching funds, with urban projects typically requiring a 20% local funding match. The city must also demonstrate community involvement and stakeholder engagement.

#### Congestion Mitigation and Air Quality Improvement (CMAQ) Program

The CMAQ Program, administered by the Federal Highway Administration (FHWA), provides funding for projects that reduce traffic congestion and improve air quality in areas that do not meet National Ambient Air Quality Standards (non-attainment areas) or have been re-designated to attainment. Doral can apply for funding for projects that promote alternative modes of transportation, such as bike-sharing programs, pedestrian pathways, or transit improvements like dedicated lanes or signal priority systems. To be eligible, the city must demonstrate that the proposed project will reduce vehicle emissions and congestion. The grant requires a local match of at least 20% for most projects, and Doral would need to track and report the project's air quality benefits.

#### Rebuilding American Infrastructure with Sustainability and Equity (RAISE) Grant

The RAISE Grant, also administered by USDOT, funds transportation infrastructure projects with significant regional or local impact. Doral can use this grant to support multi-modal projects like expanding transit systems, adding pedestrian-friendly streets, or creating complete streets that integrate various modes of transportation. The RAISE Grant places a strong emphasis on projects that address safety, sustainability, equity, and economic growth. It requires a local match of 20% for urban areas, though no match is required for areas with economic hardship. Applicants must submit a comprehensive project narrative, detailed budget, and an analysis demonstrating how the project aligns with USDOT priorities like climate resilience, mobility, and inclusivity.

#### Surface Transportation Block Grant Program (STBG)

Administered by the FHWA, the STBG provides flexible funding that can be used by states and localities for a variety of transportation projects, including roadway improvements, public transit systems, bike and pedestrian paths, and even freight and port infrastructure. For Doral's multi-modal improvement projects, STBG funds can support initiatives like building complete streets, enhancing transit access, and constructing pedestrian or cycling infrastructure. To qualify, the city must submit projects that align with regional transportation plans and meet federal performance measures, such as improving mobility, reducing congestion, and increasing safety. Projects must be included in the Transportation Planning Organization's (TPO) Transportation Improvement Program (TIP). Local governments are required to provide a funding match, typically around 20%. Additionally, Doral must demonstrate that the projects contribute to the maintenance of transportation infrastructure or help enhance transportation options for the public, supporting both mobility and sustainability goals.



### State

#### Florida Department of Transportation (FDOT) Safe Routes to School (SRTS) Program

The SRTS program provides funding to enhance the safety and accessibility of walking and biking routes to schools. Doral can apply for funds to improve crosswalks, sidewalks, and signage around school zones, encouraging safer travel for students. Eligible projects must directly benefit elementary and middle school children by providing safer walking or biking routes. SRTS funding does not require a local match, making it an attractive option for school-related transportation improvements. However, the city must demonstrate community engagement and collaboration with local schools and stakeholders to prioritize safety concerns.

#### Florida Transportation Alternatives (TA) Program

The TA Program funds projects that expand travel choices and improve the quality of life by increasing non-motorized transportation options. Doral can apply for funding to build sidewalks, bike lanes, multi-use trails, or safe routes to schools. Projects must enhance the safety and mobility of pedestrians and cyclists. To qualify, projects must be included in the TPO's Transportation Improvement Program (TIP) and demonstrate a clear public benefit, such as improved safety or environmental sustainability. A local match is typically required but can vary depending on the specific project and region.

#### Sun Trail Network Program

The Shared-Use Nonmotorized (SUN) Trail Network Program funds the development of a statewide network of paved trails for pedestrians, cyclists, and other non-motorized users. Doral can apply for funding to construct or improve greenways and multi-use trails that connect with the regional trail network. Eligible projects must be part of the state's designated SUN Trail network or connect to it. Local governments are typically required to provide a match of at least 20%, and projects must demonstrate benefits to public health, mobility, and environmental sustainability by promoting active transportation.

#### FDOT County Incentive Grant Program (CIGP)

The CIGP provides funds to local governments for projects that improve transportation infrastructure and relieve congestion on the state highway system. Doral can use CIGP funding for improvements like intersection upgrades, transit-related enhancements, or signal optimization projects that reduce congestion and improve multi-modal access. Eligible projects must show a direct benefit to the state highway system, such as reduced congestion or improved safety on nearby roads. A 50% local match is required, and projects must align with the Florida Transportation Plan and be part of the TPO's plans.



### FDOT Transportation Regional Incentive Program (TRIP)

TRIP is designed to fund regionally significant transportation projects that improve mobility across Florida's transportation system. Doral can apply for TRIP funding to support multi-modal projects that promote connectivity, such as transit hubs, complete streets, or new bike lanes. To be eligible, the City's projects must be included in a regional transportation plan (e.g., the Miami-Dade TPO's Long Range Transportation Plan) and be consistent with the Florida Transportation Plan. TRIP requires a 50% local funding match, making it important for Doral to secure additional funding sources. Projects must also demonstrate regional collaboration and benefits beyond city limits.



### Regional

#### Miami-Dade County People's Transportation Plan (PTP) Surtax

The PTP Surtax is a half-penny sales tax used to fund transportation infrastructure improvements throughout Miami-Dade County. Doral can use PTP funds for projects that enhance transit services, improve roadways, or create safer pedestrian and cycling infrastructure. The city currently uses these funds to support its trolley system; however, other projects may be applicable. Projects must be part of the city's Transportation Master Plan and align with Miami-Dade County's Long Range Transportation Plan (LRTP). Eligible projects may include roadway expansions, bike lanes, and enhanced pedestrian facilities. Local governments must submit project applications to the Citizens' Independent Transportation Trust (CITT) for approval, and the projects must demonstrate how they address the county's transportation priorities.

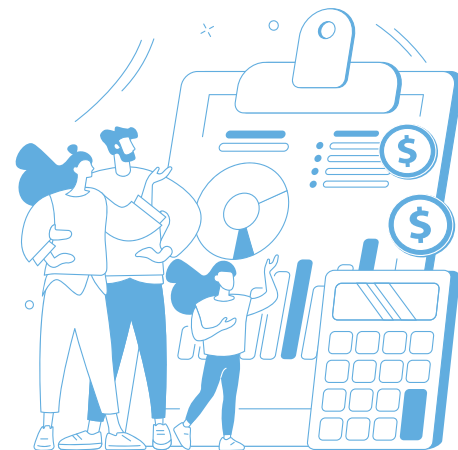
### Miami-Dade County Road Impact Fees

Road impact fees are levied on new developments to fund roadway and transportation infrastructure improvements necessary to accommodate the additional traffic generated by new growth.

Doral can use these fees to finance multi-modal improvements such as new bike lanes, intersection upgrades, or sidewalk expansions in areas affected by increased development. The funds must be used within the specific impact fee district where the development occurred and be directly tied to mitigating transportation impacts from growth. The projects must improve capacity, reduce congestion, or enhance safety in accordance with the County's transportation plans.

### Miami-Dade County General Obligation Bonds (GOB)

General Obligation Bonds (GOB) provide a flexible local funding source for a wide range of public infrastructure projects, including transportation improvements. Doral can apply for GOB funding to support multi-modal projects like complete streets, transit infrastructure, or pedestrian improvements. Voters must approve bond measures, and projects funded by GOB proceeds must serve a public benefit. GOB projects are typically identified as part of the County's capital improvement program, and Doral would need to work with the County to ensure the projects align with regional priorities and plans.



### Local

#### Capital Improvement Program (CIP)

The City of Doral's Capital Improvement Program (CIP) is a multi-year plan for major infrastructure projects, including transportation. The City allocates funds annually from its general revenue to finance capital projects like roadway improvements, bike lanes, and pedestrian walkways. To use CIP funds for multi-modal projects, the City must include them in its annual budget, with approval from the City Commission. Projects must align with Doral's long-term transportation goals, community development priorities, and comprehensive plan. Each project is evaluated based on need, feasibility, and potential impact on residents' mobility and safety.

#### Transportation Impact Fees/Concurrency Management System (CMS)

The City of Doral's CMS ensures that necessary infrastructure, including transportation, is in place to support new development without overburdening existing services. The CMS requires developers to prove that their projects will not exceed the city's capacity for roads, utilities, and other essential infrastructure. If the capacity is inadequate, developers must either mitigate the impact or contribute funding for improvements. In this context, the CMS can be used to fund multi-modal improvement projects by requiring developers to pay for or implement infrastructure that addresses the transportation demands their developments generate, such as building bike lanes, enhancing pedestrian crossings, or improving transit access, ensuring that development promotes sustainable, multi-modal transportation options.

#### Community Redevelopment Agency (CRA) Funds

If a city establishes or partners with a Community Redevelopment Agency (CRA), it can use CRA funds to support transportation projects within designated redevelopment areas. CRA funds come from the increased property tax revenue generated in these areas and can be used to finance projects that improve multi-modal access and mobility. Eligible projects may include streetscape enhancements,

pedestrian safety improvements, and transit infrastructure upgrades. To qualify, Doral must identify multi-modal improvements as a priority in its CRA plan, and the projects must demonstrate how they contribute to economic development and revitalization within the redevelopment area. Doral has already established various Community Development District (CDD) for which this funding mechanism may be applicable and could be explored.

#### Developer Contributions and Public-Private Partnerships (P3s)

Developer contributions and public-private partnerships (P3s) are agreements between the City of Doral and private developers to co-fund transportation improvements, often as part of large development projects. Developers may be required to contribute to or build multi-modal infrastructure, such as bike lanes, sidewalks, or transit facilities, as a condition of their development approval. These contributions help the City fund transportation projects without relying entirely on public funds. P3s offer flexibility and can leverage private investment for public benefits, but projects must align with the City's transportation plans and provide clear public mobility benefits.

#### Special Assessments

Special assessments are charges levied on property owners within a specific area to fund infrastructure improvements that directly benefit those properties. Doral could implement special assessments to fund multi-modal projects such as streetscape improvements, pedestrian crossings, or neighborhood bike lanes. The City must demonstrate that the assessed property owners receive a direct and tangible benefit from the improvements. Special assessment districts require approval by the affected property owners or a supermajority vote from the City Council. This funding source is particularly useful for localized projects that enhance accessibility and mobility within specific neighborhoods or districts.

By exploring these several funding sources, Doral can finance critical multi-modal transportation projects that enhance safety, mobility, and accessibility for its residents and visitors, while aligning with regional, state, and national transportation goals.

The City of Doral is at an exciting crossroads, poised to expand its vibrant, diverse community while embracing the challenge of creating a more sustainable and efficient transportation system. This Transportation Master Plan represents a pivotal step in ensuring that Doral continues to evolve as a **“live, work, play”** destination. By focusing on a multi-modal approach, the Plan seeks to accommodate the needs of all residents, workers, and visitors—whether by car, public transit, bicycle, or on foot—while enhancing the overall quality of life. With the city’s rapid growth, it is essential to rethink traditional solutions and prioritize strategies that promote safe, context-sensitive, and balanced transportation options.

As Doral grows, this Plan serves as a **blueprint for the future**, addressing the unique needs of its residential, commercial, and industrial areas. By fostering collaboration between local leaders, transportation experts, and the community, the city can move toward a system that is not only functional but also deeply reflective of its values and aspirations. Whether through enhancing public transit, expanding bicycle facilities, or promoting walkability and accessibility, the City of Doral is committed to building a transportation network that supports both its dynamic urban environment and its residents’ well-being. With this vision, the city will continue to thrive as a model of balanced, forward-thinking urban development.









# APPENDIX A

TRANSPORTATION MASTER PLAN





LEGEND	
Project No.	Project Type
S - X	Safety
AT - X	Active Transportation
T - X	Transit
O - X	Operations

**City of Doral Transportation Master Plan 2024 Update**  
**Project Prioritization**

Project No.	Roadway/ Facility Name	Project Limits		Jurisdiction	Project Description	Cost Estimate	Prioritization Criteria Min. = 1 Max = 5					Total Score	Remarks
		From	To				Road User Safety	Mobility and Accessibility	Community Enhancement	Cost Effectiveness	Feasibility and Readiness		
AT-20	Various			City/County	Installation of a Rectangular Rapid Flashing Beacon (RRFB) for existing trail crossing according to MUTCD guidelines, with the necessary crossing warning signage and special emphasis crosswalk markings at the following locations: <i>NW 105 Ct at Approx. 120 ft. East of NW 107 Ave</i> <i>NW 50 St/Turnpike Trail at Approx. 80 ft. east of 117 Ave</i> <i>NW 58 St/Turnpike Trail at Approx. 115 ft. east of NW 117 Ave (County maintained road)</i> <i>NW 66 St at Approx. 150 ft. East of NW 107 Ave</i> <i>NW 78 St Approx. 450 ft. east of NW 107 Ave</i> <i>NW 82 St Approx. 450 ft. east of NW 107 Ave</i>	\$ 214,260.00	5	4	4	5	3	<b>21</b>	
S-7	NW 41 St	NW 87 Ave		City/County	Installation of new signal heads with backplates with retroreflective borders on the mast arm assemblies at all legs of the intersection.  Installation of pedestrian crosswalk and pedestrian signals on South leg of the intersection.  Provision of special emphasis crosswalk markings for all legs of the intersection.  Elimination of Right Turn on Red for eastbound approach (west leg).	\$ 26,300.00	5	4	3	5	4	<b>21</b>	There was a Serious Injury Crash involving a pedestrian at this intersection  Signal modifications and/or lane reconfiguration/re-striping requires coordination with Miami-Dade DTPW.  A crosswalk on the South leg provides continuity to the Dressel's Dairy Trail to cross west and head South.
AT-11	NW 33 St	NW 112 Ave	NW 107 Ave	City	Construction of a 10 ft. asphalt separated shared used path on the south side of the road replacing the existing sidewalk and marked appropriately for shared use by bicyclists and pedestrians, and with special emphasis crossing markings at conflict areas.  Installation of a pedestrian crossing signal (Rapid Flashing Beacon) with special emphasis crosswalk markings and across the south leg to the intersection of NW 33 St and NW 112 St to connect to proposed sidepath.	\$ 458,075.00	5	4	4	3	4	<b>20</b>	Construction of shared use path appears to be feasible within existing Right-of-Way based on Miami-Dade property appraiser data and ROW GIS files from DTPW Open Hub site.  Consideration should be given to the existing mature trees and design of shared use path should avoid the need to impact or relocate them.
AT-14	Dressel's Dairy Canal	NW 82 Ave	NW 80 Ave	County	Construction of a 10 ft. asphalt separated shared used path on the south side of Dressel's Dairy Canal and marked appropriately for shared use by bicyclists and pedestrians, and with special emphasis crossing markings at conflict areas to provide a missing link of the existing Dressel's Dairy Trail that runs from NW 97 Ave to NW 79 Ave.	\$ 172,672.00	4	5	5	4	2	<b>20</b>	Construction of shared use path appears to be feasible within existing canal Right-of-Way based on Miami-Dade property appraiser data and ROW GIS files from DTPW Open Hub site.  Coordination with DERM will be necessary for section above Dressel's Dairy canal culvert crossing.

Project No.	Roadway/ Facility Name	Project Limits		Jurisdiction	Project Description	Cost Estimate	Prioritization Criteria Min. = 1 Max = 5					Total Score	Remarks
		From	To				Road User Safety	Mobility and Accessibility	Community Enhancement	Cost Effectiveness	Feasibility and Readiness		
AT-18	NW 25 St	NW 117 Ave		County	Construction of a 10 ft. asphalt sidepath on the north side of the road and marked appropriately for shared use by bicyclists and pedestrians, and with special emphasis crossing markings at conflict areas to provide a connection to the existing Beacon Trail as well as the Turnpike Trail.  Provision of special emphasis marking on the existing crosswalk across the east leg of the intersection.	\$ 85,301.00	5	5	3	5	2	20	Construction of sidepath appears to be feasible within existing Right-of-Way based on Miami-Dade property appraiser data and ROW GIS files from DTPW Open Hub site.  This project should be coordinated with DTPW as it may already be included as part of their NW 25 St widening project.
AT-2	NW 102 Ave	NW 25 St	NW 28 Terr	City	Construct a 10 ft. Sidepath existing public right of way on the west side of NW 102nd Avenue as a feeder facility for the local neighborhood to the existing Beacon Trail extension.	\$ 208,077.50	4	4	4	4	4	20	Construction of sidepath appears to be feasible within existing Right-of-Way based on Miami-Dade property appraiser data and ROW GIS files from DTPW Open Hub site.
AT-21	NW 53 St	NW 85 Pl		City	Construction of a raised intersection to place heightened focus on pedestrian crossing activities for motor vehicles at this busy intersection.	\$ 668,050.00	5	3	5	3	4	20	
AT-23	NW 90 St	NW 112 Ave		City	Provision of new crosswalk across north leg of the intersection which would require re-striping to shift stop bar to the north approximately 10 ft. Extension of existing crosswalk across east leg of the intersection to intersect with proposed new crosswalk and reach the existing ADA curb ramp.  Provision of special emphasis markings for all crosswalks.	\$ 8,280.00	4	3	3	5	5	20	
AT-9	NW 82 Ave	NW 36 St	NW 41 St	City	Construction of a 10 ft. asphalt sidepath on the west side of the road marked appropriately for shared use by bicyclists and pedestrians, and with special emphasis crossing markings at conflict areas.	\$ 104,017.20	4	4	3	4	5	20	Construction of sidepath appears to be feasible within existing Right-of-Way based on Miami-Dade property appraiser data and ROW GIS files from DTPW Open Hub site.  Coordination with DERM will be necessary for section above Dressel's Dairy canal culvert crossing.  This sidepath would provide an accessible connection for the residents of the new community north of NW 41 St to Dressel's Dairy Trail as well as to CityPlace on NW 36 St.
S-12	Various			City	Provision of special emphasis crosswalk markings at specified legs of 101 City Road/City Road intersections. <i>(Specific locations provided within Sections 3.2 of this Transportation Master Plan)</i>	\$ 204,037.68	5	3	4	3	5	20	
S-3	NW 79 Ave	NW 25 St		City/County	Installation of pedestrian crosswalk with special emphasis markings and pedestrian signals on East and West leg of the intersection.	\$ 7,620.00	5	3	3	5	4	20	Pedestrians and bicyclists are currently crossing in the North-South direction without marked or signalized crosswalks. The new pedestrians phases can be coordinated with the existing signal phasing of the intersection.  Signal modifications and/or lane reconfiguration/re-striping requires coordination with Miami-Dade DTPW.



Project No.	Roadway/ Facility Name	Project Limits		Jurisdiction	Project Description	Cost Estimate	Prioritization Criteria Min. = 1 Max = 5					Total Score	Remarks
		From	To				Road User Safety	Mobility and Accessibility	Community Enhancement	Cost Effectiveness	Feasibility and Readiness		
T-5	Trolley Stops - Midblock Crossing (City Roads)	Varies		City	Installation of a midblock crossing at 19 identified locations where trolley stops are located on both sides of the road across each other. City maintained roads.	\$ 639,160.00	4	4	5	4	3	20	Planning level cost estimate, assumes all conditions are the same at the forty proposed locations. The assumed pedestrian treatment for all the proposed locations was assumed to be Rectangular Rapid Flashing Beacons (RRFB)
AT-15	NW 86 St	NW 112 Ave	NW 107 Ave	City	Construction of a 10 ft. asphalt separated shared used path on the south side of the road replacing the existing sidewalk and marked appropriately for shared use by bicyclists and pedestrians, and with special emphasis crossing markings at conflict areas.	\$ 430,645.00	4	3	4	3	5	19	Construction of shared use path appears to be feasible within existing Right-of-Way based on Miami-Dade property appraiser data and ROW GIS files from DTPW Open Hub site.  Consideration should be given to the existing mature trees and design of shared use path should avoid the need to impact or relocate them.
AT-16	NW 109 Ave	NW 86 St	NW 78 St	City	Construction of an 8 ft. asphalt separated shared used path on both sides of the road replacing the existing sidewalk and marked appropriately for shared use by bicyclists and pedestrians, and with special emphasis crossing markings at conflict.	\$ 520,193.75	4	4	3	3	5	19	Construction of shared use path appears to be feasible within existing Right-of-Way based on Miami-Dade property appraiser data and ROW GIS files from DTPW Open Hub site.  Consideration should be given to the existing mature trees and design of shared use path should avoid the need to impact or relocate them.
O-1	NW 33 St	NW 107 Ave		City/County	Reconfiguration of lane assignment for the westbound approach of the intersection to Left, Thru, and Right through re-striping.  Optimization of signal phasing.	\$ 13,300.00	3	3	3	5	5	19	Signal modifications and/or lane reconfiguration/re-striping requires coordination with Miami-Dade DTPW.
O-2	NW 33 St	NW 107 Ave		City/County	Widening of the intersection to provide the following lane configuration: <i>Westbound approach = L, L, T, R</i> <i>Southbound approach = L, T, T, R, with 100 ft storage length for right turn</i> <i>Northbound approach = L, T, T, R, with 100 ft storage length for right turn</i>  Optimization of signal phasing and adjustment of cycle length.	\$ 1,254,370.00	4	5	4	2	4	19	Signal modifications and/or lane reconfiguration/re-striping requires coordination with Miami-Dade DTPW.  This would require coordination with DTPW since NW 107 Ave is a county maintained road.  Widening for proposed modifications appears to be feasible within existing Right-of-Way at the intersection based on Miami-Dade property appraiser data and ROW GIS files from DTPW Open Hub site.
S-1	NW 114 Ave	NW 41 St		City/County	Installation of new signal heads with backplates with retroreflective borders on all mast arm assemblies at the intersection.  Installation of raised/retroreflective pavement markers for traffic separator pavement markings extensions on South leg of the intersection.	\$ 17,800.00	4	4	3	5	3	19	Signal modifications and/or lane reconfiguration/re-striping requires coordination with Miami-Dade DTPW.  NW 114 Ave is not a truck route (No Thru Trucks signs through corridor) therefore turning radii for movements into this roadway can be reduced.

Project No.	Roadway/ Facility Name	Project Limits		Jurisdiction	Project Description	Cost Estimate	Prioritization Criteria Min. = 1 Max = 5					Total Score	Remarks
		From	To				Road User Safety	Mobility and Accessibility	Community Enhancement	Cost Effectiveness	Feasibility and Readiness		
S-4	NW 79 Ave	NW 36 St		City/County	Installation of new signal heads with backplates with retroreflective borders on the mast arm assemblies at the South and East legs of the intersection.  Installation of pedestrian crosswalk and pedestrian signals on East leg of the intersection.  Provision of special emphasis crosswalk markings for all legs of the intersection.	\$ 26,300.00	4	3	4	5	3	<b>19</b>	Signal modifications and/or lane reconfiguration/re-striping requires coordination with Miami-Dade DTPW.
AT-12	NW 34 St	NW 117 Ave	NW 112 Ave	City	Construction of a 12 ft. asphalt separated shared use path on the north side of the road marked appropriately for shared use by bicyclists and pedestrians, and with special emphasis crossing markings at conflict areas to connect proposed sidepath on NW 112 Ave and proposed shared use path on NW 33 St to existing Turnpike Trail on NW 117 Ave.	\$ 447,334.30	4	4	3	3	4	<b>18</b>	Construction of shared use path appears to be feasible within existing Right-of-Way based on Miami-Dade property appraiser data and ROW GIS files from DTPW Open Hub site.  Consideration should be given to the existing mature trees and design of shared use path should avoid the need to impact or relocate them.
AT-22	NW 58 St	NW 79 Ave		City	Installation of pedestrian signal on existing mast arm assembly for existing pedestrian crosswalk across south leg of the intersection and signal phasing adjustment to incorporate pedestrian phase.	\$ 8,740.00	4	2	3	5	4	<b>18</b>	
AT-7	NW 112 Ave	NW 25 St	NW 34 St	City	Construction of a 10 ft. asphalt sidepath on the west side of the road to replace existing concrete sidewalk and marked appropriately for shared use by bicyclists and pedestrians, and with special emphasis crossing markings at conflict areas.  Widening of existing 5 ft. sidewalk on the east side of the road where there is an existing grass utility strip to enhance capacity for pedestrians given this is a school area.	\$ 620,597.90	4	4	4	3	3	<b>18</b>	Construction of sidepath and sidewalk appears to be feasible within existing Right-of-Way based on Miami-Dade property appraiser data and ROW GIS files from DTPW Open Hub site.
AT-8	NW 27 St	NW 112 Ave	NW 109 Ave	City	Construction of 6 ft. sidewalk on the north side of the road.	\$ 96,306.00	3	2	3	5	5	<b>18</b>	Construction of sidewalk appears to be feasible within existing Right-of-Way based on Miami-Dade property appraiser data and ROW GIS files from DTPW Open Hub site.



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		From	To				Road User Safety	Mobility and Accessibility	Community Enhancement	Cost Effectiveness	Feasibility and Readiness		
O-3	NW 117 Ave	NW 25 St		City/County	<p>Widening of the southbound and northbound approaches of NW 117 Ave at the intersection to provide the following lane configuration: <i>Northbound approach = L, T+R</i> <i>Southbound approach = L, T+R</i></p> <p>Optimization of signal phasing and adjustment of cycle length and splits.</p>	\$ 838,580.00	4	4	5	3	2	<b>18</b>	<p>Signal modifications and/or lane reconfiguration/re-striping requires coordination with Miami-Dade DTPW.</p> <p>The proposed improvements of this project may be part of Doral's Capital Improvement Element Project 9 [NW 117 Avenue (NW 25 St - NW 34 St)].</p> <p>This project should be coordinated with DTPW since they tie directly to their NW 25 St widening project.</p> <p>Widening for proposed modifications appears to be feasible within existing Right-of-Way at the intersection based on Miami-Dade property appraiser data and ROW GIS files from DTPW Open Hub site.</p>
S-11	NW 87 Ave	NW 14 St		County	<p>Installation of new signal heads with backplates with retroreflective borders on the mast arm assemblies at all legs of the intersection.</p> <p>Installation of pedestrian crosswalk and pedestrian signals on South leg of the intersection.</p> <p>Provision of special emphasis crosswalk markings for all legs of the intersection.</p>	\$ 26,300.00	5	4	4	4	1	<b>18</b>	<p>There was a pedestrian fatality at this intersection in 12/2016.</p> <p>Signal modifications and/or lane reconfiguration/re-striping requires coordination with Miami-Dade DTPW.</p>
S-2	NW 114 Ave	NW 74 St		City/County	<p>Installation of new signal heads with backplates with retroreflective borders on all mast arm assemblies at the intersection.</p> <p>Provision of pavement marking extension for traffic separators beyond crosswalks for North, West, and South legs of the intersection and installation of raised/retroreflective pavement markers for traffic separator pavement marking extensions.</p> <p>Provision of special emphasis crosswalk markings for all legs of the intersection.</p>	\$ 23,110.00	4	4	3	4	3	<b>18</b>	<p>Signal modifications and/or lane reconfiguration/re-striping requires coordination with Miami-Dade DTPW.</p> <p>NW 114 Ave is not a truck route (No Thru Trucks signs throughout corridor) therefore turning radii for movements into this roadway can be reduced.</p>
S-5	NW 33 St	NW 87 Ave		City/County	<p>Installation of new signal heads with backplates with retroreflective borders on all mast arm assemblies at the intersection.</p> <p>Provision of pavement marking extension for traffic separators beyond crosswalks for North and South legs of the intersection and installation of raised/retroreflective pavement markers for traffic separator pavement marking extensions.</p> <p>Provision of special emphasis crosswalk markings for all legs of the intersection.</p>	\$ 29,060.00	4	3	4	4	3	<b>18</b>	<p>Signal modifications and/or lane reconfiguration/re-striping requires coordination with Miami-Dade DTPW.</p>
T-3	Trolley Stops - Bike Parking (City Roads)	Varies		City	<p>Installation of bicycle parking racks at 28 identified trolley stops located on city maintained roads.</p>	\$ 65,240.00	2	4	4	4	4	<b>18</b>	

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T-6	Trolley Stops - Midblock Crossing (County Roads)	Varies		County	Installation of a midblock crossing at 14 identified locations where trolley stops are located on both sides of the road across each other. County maintained roads.	\$ 470,960.00	4	5	4	3	2	18	Signal modifications, additions, and/or lane reconfiguration/re-striping requires coordination with Miami-Dade DTPW.
AT-10	NW 92 Ave	NW 25 St	NW 33 St	City	Construction of a 10 ft. asphalt sidepath on the east side of the road marked appropriately for shared use by bicyclists and pedestrians, and with special emphasis crossing markings at conflict areas. <i>New sidepath from NW 25 St to NW 27 St.</i> <i>Replacement of existing concrete material for asphalt on existing sidepath segment from NW 27 St to NW 33 St.</i>	\$ 430,688.10	4	3	3	3	4	17	Construction of sidepath appears to be feasible within existing Right-of-Way based on Miami-Dade property appraiser data and ROW GIS files from DTPW Open Hub site.  This sidepath would provide a connection from the proposed extension of Beacon Trail to the redeveloped Doral Central Park.
AT-13	NW 25 St	NW 99 Ave	NW 87 Ave	County	Construction of a 10 ft. asphalt separated shared used path on the north side of the road replacing the existing sidewalk (in some segments) and marked appropriately for shared use by bicyclists and pedestrians, and with special emphasis crossing markings at conflict areas to provide an extension of existing Beacon Trail to the east.	\$ 1,054,877.50	5	4	4	2	2	17	Construction of shared use path appears to be feasible within existing Right-of-Way based on Miami-Dade property appraiser data and ROW GIS files from DTPW Open Hub site.  This project should be coordinated with DTPW as it may already be included as part of their NW 25 St widening project.
AT-24	NW 58 St	NW 107 Ave	NW 102 Ave	County	Construction of a 10 ft. asphalt sidepath on the north side of the road replacing the existing sidewalk and marked appropriately for shared use by bicyclists and pedestrians, and with special emphasis crossing markings at conflict areas to provide a connection to the existing Greenway Trail.	\$ 436,855.00	4	4	3	3	3	17	Construction of sidepath appears to be feasible within existing Right-of-Way based on Miami-Dade property appraiser data and ROW GIS files from DTPW Open Hub site.  This project should be coordinated with DTPW since NW 58 Street is a county maintained roadway.
AT-4	NW 84 Ave	NW 12 St	NW 25 St	City	Construction of 6 ft. sidewalks on both sides of the road starting approximately 460 ft. north of NW 12 St where existing sidewalk on NW 84 Ave ends.	\$ 833,046.90	4	4	3	2	4	17	Construction of sidewalk appears to be feasible within existing Right-of-Way based on Miami-Dade property appraiser data and ROW GIS files from DTPW Open Hub site.
O-4	NW 79 Ave	NW 36 St		City/County	Widening of the northbound approach of NW 79 Ave and the westbound approach of NW 36 St at the intersection to provide exclusive right turn lanes. The following lane configuration: <i>Northbound approach = L, T+R, R</i> <i>Westbound approach = L, L, T, T, T+R, R</i>  Optimization of signal phasing and adjustment of cycle length and splits.	\$ 838,580.00	4	4	3	3	3	17	Signal modifications and/or lane reconfiguration/re-striping requires coordination with Miami-Dade DTPW.  This would require coordination with DTPW since NW 36 St is a county maintained road.  Widening for proposed modifications appears to be feasible within existing Right-of-Way at the intersection based on Miami-Dade property appraiser data and ROW GIS files from DTPW Open Hub site. Though ROW should be looked at in more detail since SE corner appears to be FDOT ROW. Thus coordination with FDOT would also be needed.



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O-5	NW 79 Ave	NW 58 St		City/County	<p>Widening of the eastbound approach to provide an additional thru lane and widening on the east of the intersection to provide a receiving thru lane and another receiving lane (acceleration lane) for the exclusive right turn lane from the northbound approach. The following configuration:  <i>Eastbound approach = L, T, T, T, R</i>  <i>Northbound Approach = L, T, R</i></p> <p>Addition of a channelization island between the northbound approach thru lane and right turn lane.</p> <p>Optimization of signal phasing and adjustment of cycle length and splits.</p>	\$ 838,580.00	4	4	3	3	3	17	<p>Signal modifications and/or lane reconfiguration/re-striping requires coordination with Miami-Dade DTPW.</p> <p>This would require coordination with DTPW since NW 58 St is a county maintained road.</p> <p>Widening for proposed modifications appears to be feasible within existing Right-of-Way at the intersection based on Miami-Dade property appraiser data and ROW GIS files from DTPW Open Hub site. Though ROW should be looked at in more detail since SE corner appears to be FDOT ROW. Thus coordination with FDOT would also be needed.</p>
S-13	Various			City/County	Provision of special emphasis crosswalk markings at specified legs of 61 City Road/County Road intersections. <i>(Specific locations provided within Sections 3.2 of this Transportation Master Plan)</i>	\$ 172,239.60	4	3	4	3	3	17	
S-8	NW 58 St	NW 107 Ave		County	<p>Widening of the sidewalk on the NW corner of the intersection to provide more capacity and refuge for pedestrians and bicyclists entering and existing the existing trail.</p> <p>Installation of new signal heads with backplates with retroreflective borders on the mast arm assemblies at all legs of the intersection.</p>	\$ 34,519.77	5	4	3	4	1	17	<p>There was a pedestrian fatality at this intersection in 3/2023.</p> <p>Trail exit/entrance leads directly into the NW corner of the intersection with very little sidewalk capacity for pedestrians and bicyclists to wait for their signal phase.</p> <p>This would require coordination with DTPW and the property owner who constructed the portion of the trail.</p> <p>Signal modifications and/or lane reconfiguration/re-striping requires coordination with Miami-Dade DTPW.</p>
T-1	Trolley Stops - New Shelter (City Roads)	Varies		City	Installation of Doral branded transit stop shelter at 55 identified trolley stops located on city maintained roads.	\$ 3,252,700.00	4	3	5	2	3	17	
AT-19	Turnpike Trail	NW 41 St		County	Construction of a bicycle/pedestrian bridge over NW 41 St to provide a safe separated connection/missing link for the Turnpike Trail.	\$ 3,816,000.00	5	5	4	1	1	16	<p>Construction of bicycle/pedestrian bridge appears to be feasible within existing Right-of-Way based on Miami-Dade property appraiser data and ROW GIS files from DTPW Open Hub site.</p> <p>This project will require coordination with FDOT/Turnpike and DTPW.</p>

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		From	To				Road User Safety	Mobility and Accessibility	Community Enhancement	Cost Effectiveness	Feasibility and Readiness		
AT-5	Various			City	Construction of 6 ft. sidewalks on the following city maintained roadway segments: NW 78 Ave (both sides) from NW 12 St to NW 15 St NW 15 St (both sides) from NW 79 Ave to NW 78 Ave	\$ 433,377.00	3	3	3	3	4	16	Construction of sidewalk appears to be feasible within existing Right-of-Way based on Miami-Dade property appraiser data and ROW GIS files from DTPW Open Hub site.
AT-6	NW 12 St	NW 82 Ave	NW 78 Ave	County	Construction of 6 ft. sidewalk on the north side of the road. Western limit would begin approximately 325 ft. East of NW 82nd Ave where existing sidewalk ends.	\$ 134,828.40	3	4	3	4	2	16	Construction of sidewalk appears to be feasible within existing Right-of-Way based on Miami-Dade property appraiser data and ROW GIS files from DTPW Open Hub site.  Coordination with DTPW would be required since this is a county maintained road.
S-10	NW 78 St	NW 107 Ave		City/County	Installation of pedestrian crosswalk with special emphasis markings and mast arm (overhead) pedestrian signals on North and South leg of the intersection.	\$ 302,970.00	5	3	4	2	2	16	There was a bicyclist serious injury crash at this intersection in 11/2022.  Midtown Doral development is on the east of this intersections as well as other destinations and access to the Atlas trail and there appears to be bicycle and pedestrian crossing activity while the intersections is not signalized nor marked for such movement.
S-14	Various			County	Provision of special emphasis crosswalk markings at specified legs of 9 County Road/County Road intersections. <i>(Specific locations provided within Sections 3.2 of this Transportation Master Plan)</i>	\$ 41,072.52	4	3	2	4	3	16	
S-6	NW 33 St	NW 97 Ave		City/County	Installation of new signal heads with backplates with retroreflective borders on all mast arm assemblies at the intersection.  Provision of special emphasis crosswalk markings for all legs of the intersection.	\$ 24,560.00	3	3	3	4	3	16	Signal modifications and/or lane reconfiguration/re-striping requires coordination with Miami-Dade DTPW.
S-9	NW 74 St	NW 107 Ave		County	Installation of bollards at entrance of Atlas trail on the NW corner of the intersection.  Realignment of existing key hole bike line to go on the outside of existing westbound right turn lane.  Widening sidewalk on NW corner of the intersection to receive bike lane and reconfiguring/reducing existing ramp at entrance of Atlas Trail which can currently be mistaken for a driveway.	\$ 91,198.86	5	4	2	3	2	16	There was a bicyclist fatality at this intersection in 4/2020.



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		From	To				Road User Safety	Mobility and Accessibility	Community Enhancement	Cost Effectiveness	Feasibility and Readiness		
T-2	Trolley Stops - New Shelter (County Roads)	Varies		County	Installation of Doral branded transit stop shelter at 45 identified trolley stops located on county maintained roads.	\$ 2,661,300.00	4	4	5	2	1	<b>16</b>	For this analysis trolley stop 4001, which is maintained by the City of Sweetwater, was grouped with the county maintained roads.
T-4	Trolley Stops - Bike Parking (County Roads)	Varies		County	Installation of bicycle parking racks at 4 identified trolley stops located on county maintained roads.	\$ 9,320.00	2	4	4	4	2	<b>16</b>	
AT-1	Various			City	Construction of 6 ft. sidewalks on both sides of the road throughout neighborhood bound by NW 102 Ave on the west, NW 97 Ave on the east, NW 28th Terr on the north, and NW 25 Terr on the south.	\$ 3,062,530.80	3	3	4	2	3	<b>15</b>	Construction of sidewalk appears to be feasible within existing Right-of-Way based on Miami-Dade property appraiser data and ROW GIS files from DTPW Open Hub site.  Outreach to local residents, would be required since the construction of the sidewalk would require harmonization of several driveways.
AT-17	NW 97 Ave	NW 41 St	NW 52 St	County	Construction of a 10 ft. asphalt sidepath on the west side of the road replacing the existing sidewalk and marked appropriately for shared use by bicyclists and pedestrians, and with special emphasis crossing markings at conflict areas.	\$ 518,059.10	4	4	3	3	1	<b>15</b>	Construction of sidepath appears to be feasible within existing Right-of-Way based on Miami-Dade property appraiser data and ROW GIS files from DTPW Open Hub site.  This project should be coordinated with DTPW since NW 97 Ave is a county maintained road.
AT-3	Various			City	Construction of 6 ft. sidewalks on the following city maintained roadway segments: NW 54 St (north side) from NW 87 Ave to NW 79 Ave NW 56 St (both sides) from NW 87 Ave to NW 79 Ave NW 84 Ave (both sides) from NW 54 St to NW 58 St NW 82 Ave (both sides) from NW 54 St to NW 58 St	\$ 1,564,972.50	3	4	3	2	3	<b>15</b>	Construction of sidewalk appears to be feasible within existing Right-of-Way based on Miami-Dade property appraiser data and ROW GIS files from DTPW Open Hub site.  This project has potential to be combined with any planned stormwater improvements for the area bound by these roads since this is an area that experiences heavy flooding during storm season.  Outreach to property owners on this roadway will be essential, as it will require harmonization of several businesses' driveways.