Sponsored by: Interim City Manager

ORDINANCE NO. 2025-XX

AN ORDINANCE OF THE CITY COMMISSION OF THE CITY OF OPA-LOCKA, FLORIDA, ADOPTING THE SAFE STREETS FOR ALL COMPREHENSIVE SAFETY ACTION PLAN TO ENHANCE TRANSPORTATION SAFETY, IMPROVE INFRASTRUCTURE, AND PROMOTE EQUITABLE MOBILITY THROUGHOUT THE CITY IN CONFORMITY WITH SECTION 163.3177, FLORIDA STATUTES; PROVIDING FOR INCORPORATION INTO THE CODE; PROVIDING FOR CONFLICT AND REPEALER, SEVERABILITY, AND AN EFFECTIVE DATE.

WHEREAS, Florida Statutes provide that municipalities shall have the governmental, corporate, and proprietary powers to enable them to conduct municipal government, perform municipal functions including those relating to Comprehensive Planning, and render municipal service, and exercise any power for municipal purposes, except when expressly prohibited by law; and

WHEREAS, Section 2.5 of the City Charter of the City of Opa-Locka ("City") empowers the City Commission to adopt, amend, or repeal such ordinances as may be required for the proper governing of the City; and

WHEREAS, the City of Opa-locka has identified a need to improve transportation safety, reduce traffic-related fatalities and injuries, and enhance multimodal transportation infrastructure; and

WHEREAS, the City has undertaken the development of the Safe Streets for All Comprehensive Safety Action Plan (CSAP) in alignment with Vision Zero principles, with the goal of eliminating traffic fatalities and severe injuries by the year 2030; and

WHEREAS, the CSAP includes key policies such as a Complete Streets Policy, a Residential Traffic Calming Program, and Quality of Service (QOS) Standards to ensure safer, more accessible streets for all residents; and

WHEREAS, the City Commission recognizes the importance of prioritizing pedestrian, cyclist, and motorist safety, particularly in high-crash areas, school zones, and residential neighborhoods; and

WHEREAS, the adoption of the Safe Streets for All Comprehensive Safety Action Plan aligns with the City's Sustainable Opa-locka 20/30 Comprehensive Plan, ensuring a coordinated approach to transportation planning and development; and

WHEREAS, the City Commission finds that it is in the best interest of the City and its residents to adopt the Safe Streets for All Comprehensive Safety Action Plan, attached hereto as Exhibit "A", which shall serve as the guiding framework for implementing transportation safety measures, infrastructure improvements, and policy initiatives aimed at reducing traffic-related fatalities and severe injuries.

NOW THEREFORE, BE IT ORDAINED BY THE CITY COMMISSION OF THE CITY OF OPA-LOCKA, FLORIDA, AS FOLLOWS:

SECTION 1. Incorporation of Recitals. The above recitals are true and correct and are incorporated into this Ordinance by reference.

SECTION 2. Adoption of Comprehensive Safety Action Plan. The City Commission of the City of Opa-Locka hereby adopts the Safe Streets for All Comprehensive Safety Action Plan, attached hereto as Exhibit "A", which shall serve as the guiding framework for implementing transportation safety measures, infrastructure improvements, and policy initiatives aimed at reducing traffic-related fatalities and severe injuries.

SECTION 3. Implementation Measures. The City Manager has agreed to work in coordination with: Public Works and Transportation Community Development and Planning, Police Departments, and Capital Improvements Division, to take necessary actions to implement the policies and programs outlined in the CSAP, including but not limited to: 1) Establishing a Vision Zero Task Force to oversee plan implementation and performance metrics; 2) Implementing the Complete Streets Policy to enhance pedestrian and cyclist infrastructure; 3) Developing a Residential Traffic Calming Program to reduce vehicle speeds in residential areas. 4) Allocating funding for transportation safety improvements in the City's Capital Improvement Program; and 5) Engaging with community stakeholders to ensure equitable access to safe transportation options.

SECTION 4. Severability. The provisions of this Ordinance are severable, and it is the legislative intention to confer upon the whole or any part of the Ordinance the powers herein provided. If any provision of this Ordinance shall be held unconstitutional by any court of competent jurisdiction, the decision of such court shall not affect or impair any remaining provisions of the Ordinance. It is hereby declared to be the legislative intent that this Ordinance would have been adopted had such unconstitutional provision not been included herein.

SECTION 5. Conflict & Repealer. All ordinances and parts of ordinances in conflict with this ordinance are hereby repealed.

SECTION 6. Inclusion In Code. It is the intention of the City Commission of the City of Opa-locka that the provisions of this Ordinance shall, at some time in the future, become and be made a part of the General Code of Ordinances of the City of Opa-locka and that the sections of this Ordinance may be renumbered or re-lettered and the word "Ordinance" may be changed to "Chapter," "Section," "Article" or such other appropriate word or phrase, the use of which shall accomplish the intentions herein expressed.

SECTION 7. Scrivener's Errors. Sections of this Ordinance may be renumbered or re-lettered and corrections of typographical errors which do not affect the intent may be authorized by the Interim City Manager without need of public hearing following review by the City Attorney, by filing a corrected or re-codified copy of same with the City Clerk.

SECTION 8. Effective Date. This Ordinance shall, upon adoption, become effective as specified by the City of Opa-Locka Code of Ordinances and the City of Opa-Locka Charter.

PASSED FIRST READING this __ day of ___________ 2025.

PASSED SECOND READING this __ day of ___________ 2025.

____
John Taylor, Mayor

ATTEST:

____
Joanna Flores, City Clerk

APPROVED AS TO FORM AND
LEGAL SUFFICIENCY:

____

Burnadette Norris-Weeks, P.A.
City Attorney

Moved by: __________________________

Seconded by: _______________________

VOTE:

Commissioner Bass	______
Commissioner Santiago	______
Commissioner Ervin	______
Vice Mayor Kelley	______
Mayor Taylor	______

City of Opa-locka
Agenda Cover Memo

Interim City Manager:	Sha'mecca Lawson		**ICM Signature:**	Sha'mecca Lawson			
Commission Meeting Date:	3.26.2025		**Item Type:** *(Enter X in box)*	**Resolution**	**Ordinance** X	**Other**	
Fiscal Impact: *(Enter X in box)*	**Yes**	**No** X	**Ordinance Reading:** *(Enter X in box)*	**1st Reading**		**2nd Reading**	
			Public Hearing: *(Enter X in box)*	**Yes** X	**No**	**Yes** X	**No**
Funding Source: *Account#* **:**	*(Enter Fund & Dept)* Ex: See Financial Impact Section		**Advertising Requirement:** *(Enter X in box)*	**Yes** X		**No**	
Contract/P.O. Required: *(Enter X in box)*	**Yes**	**No** X	**RFP/RFQ/Bid#:**				
Strategic Plan Related *(Enter X in box)*	**Yes** X	**No**	**Strategic Plan Priority Area:** Enhance Organizational ■ Bus. & Economic Dev ☐ Public Safety ■ Quality of Education ☐ Qual. of Life & City Image ■ Communication ☐	**Strategic Plan Obj./Strategy:** *(list the specific objective/strategy this item will address)*			
Sponsor Name	Interim City Manager		**Department:**	Capital Improvement Program			

Short Title:

AN ORDINANCE OF THE CITY OF OPA-LOCKA, FLORIDA, ADOPTING THE SAFE STREETS FOR ALL COMPREHENSIVE SAFETY ACTION PLAN TO ENHANCE TRANSPORTATION SAFETY, IMPROVE INFRASTRUCTURE, AND PROMOTE EQUITABLE MOBILITY THROUGHOUT THE CITY; PROVIDING FOR INCORPORATION INTO THE CODE; PROVIDING FOR CONFLICTS, SEVERABILITY, AND AN EFFECTIVE DATE.

Staff Summary:

The City of Opa-locka has identified a need to improve transportation safety, reduce traffic-related fatalities and injuries, and enhance multimodal transportation infrastructure; and has undertaken the development of the Safe Streets for All Comprehensive Safety Action Plan (CSAP) in alignment with Vision Zero principles, with the goal of eliminating traffic fatalities and severe injuries by the year 2030. The CSAP includes key policies such as a Complete Streets Policy, a Residential Traffic Calming Program, and Quality of Service (QOS) Standards to ensure safer, more accessible streets for all residents.

The adoption of the Safe Streets for All Comprehensive Safety Action Plan aligns with the City's Sustainable Opa-locka 20/30 Comprehensive Plan, ensuring a coordinated approach to transportation planning and development.

Financial Impact – There is no financial impact from the adoption of this plan. Any subsequent projects that may be proposed to achieve the goals and objectives of this plan will be presented to the City Commission for consideration at that time.

Proposed Action:

Staff recommends the City Commission adopts the Safe Streets For All Comprehensive Safety Action Plan to enhance transportation safety, improve infrastructure, and promote equitable mobility throughout the city.

Attachment:

THE CITY OF
OPA-LOCKA
FLORIDA

SAFE STREETS AND ROADS FOR ALL COMPREHENSIVE SAFETY ACTION PLAN

VISION ZERO

COMPREHENSIVE SAFETY ACTION PLAN

FEBRUARY 4, 2025

DISCLAIMER

The City of Opa-locka complies with the provisions of Title VI of the Civil Rights Act of 1964, which states: "*No person in the United States shall, on grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance*." The City of Opa-locka also complies with civil rights obligations and nondiscrimination laws, including the Americans with Disabilities Act (ADA), Section 504 of the Rehabilitation Act of 1973, and accompanying regulations. For materials in accessible format please contact the City of Opa-locka Office of the City Clerk, Joana Flores, at (305) 953-2800 or at jflores@opalockafl.gov.

The preparation of this report has been financed in part from the U.S. Department of Transportation (USDOT) through the Federal Highway Administration (FHWA). The contents of this report do not necessarily reflect the official views or policies of USDOT.

Achieving the goals, objectives, and actions described within this document are contingent upon multiple factors including, without limitation, available funding, and resources. Similarly, the implementation of any future engineering improvements that advance the National Roadway Safety Strategy, defined and illustrated in this Plan, are contingent upon multiple factors. These include but are not limited to:

- Right-of-way and resources availability.
- Community engagement, education, and support.
- Funding for all project phases.
- The magnitude and severity of cumulative impacts on individual resources.

City of Opa-locka

780 Fisherman Street
Opa-locka, FL 33054

City Commission

Mayor John H. Taylor, Jr.
Vice Mayor Joseph L. Kelley
Commissioner Natasha L. Ervin
Commissioner Sherelean Bass
Commissioner Luis B. Santiago

Appointed Officials

Interim City Manager Shamecca Lawson
City Attorney Burnadette Norris-Weeks
City Clerk Joanna Flores, CMC

City Staff

Airia Austin, Director of Public Works and Utilities
Robert Anathan, Budget Administrator
Adelina Gross, Capital Improvements Program Manager
Carlos González, Capital Improvements Deputy Project Manager

Project Consultant

EXP U.S. Services, Inc.
201 Alhambra Circle, Suite 800
Coral Gables, FL, 33134

Document

Final Comprehensive Safety Action Plan

Date Submitted

Tuesday, February 4, 2025

THE CITY OF **OPA-LOCKA** FLORIDA

U.S. Department of Transportation

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Introduction

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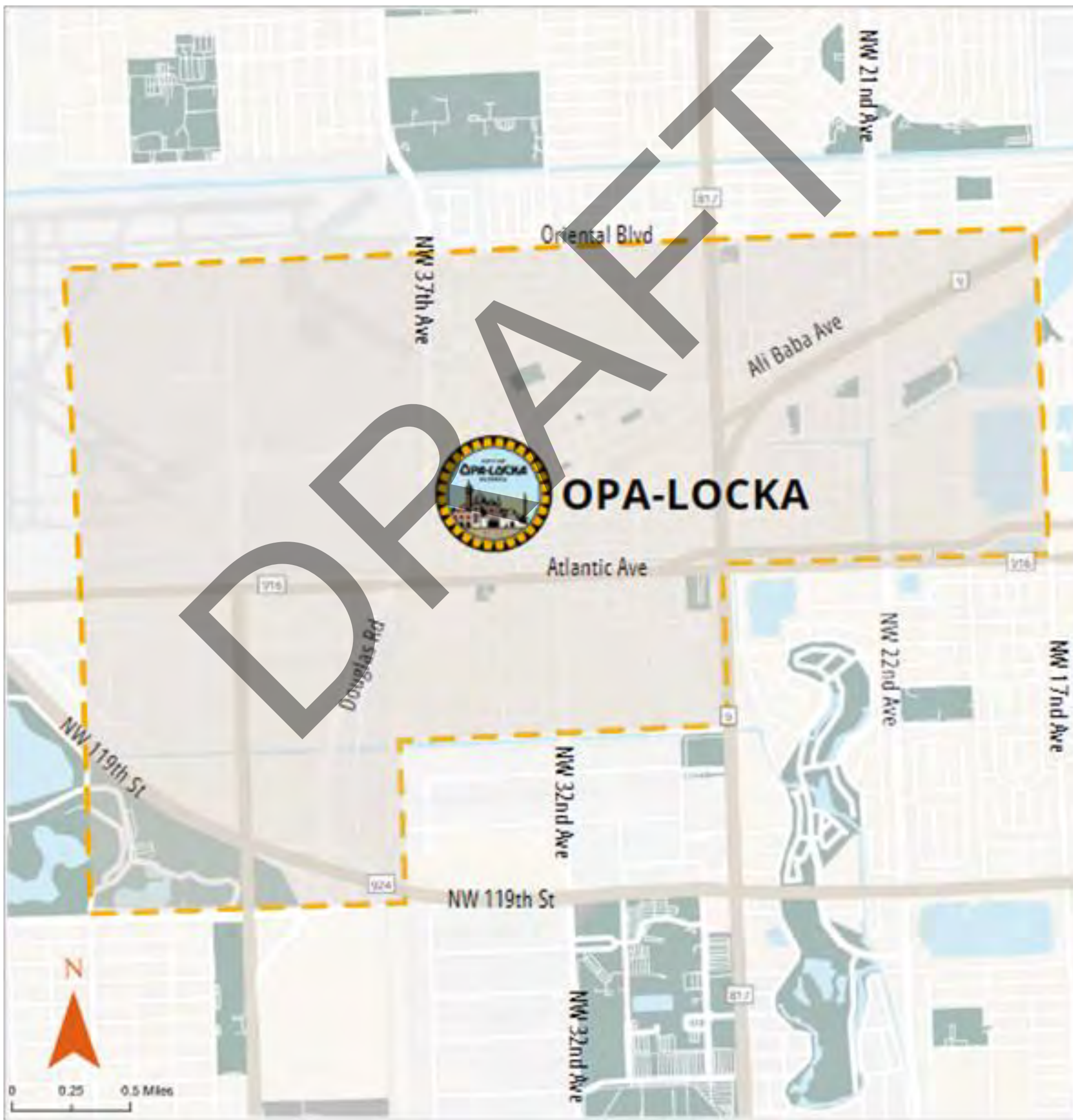
1. Introduction

The City of Opa-locka (the city) is an urban community located within the geographical boundaries shown on **Map 1-1** in northern Miami-Dade County, Florida. The city faces many challenges including continuing fatalities and serious injuries resulting from traffic crashes. With the grant award of the Fiscal Year (FY) 2022 Safe Streets and Roads for All (SS4A), the city has begun planning how to significantly reduce and eliminate fatal and serious injury crashes. In accordance with the agreement between the city and the Federal Highway Administration (FHWA), the city is developing a Comprehensive Safety Action Plan (CSAP) that will further the goals and objectives set forth in the Sustainable Opa-locka 2030 Comprehensive Development Master Plan[1].

Map 1-1: City of Opa-locka Municipal Boundaries



[1] Sustainable-Opa-Comp-Plan (opalockafl.gov)

1.1 Safe System Approach and Safety Analysis

In response to the significant number of traffic fatalities and severe injuries, the city will adopt the Safe System approach. Endorsed by the USDOT and implemented by cities and counties nationwide, this effective framework addresses and mitigates transportation system risks. The Safe System approach emphasizes infrastructure improvements, human behavior, responsible oversight of vehicles and the transportation system, and emergency response[2]. The principles of the Safe System Approach are:

Figure 1-1: *Safe System Approach*

Source: USDOT

- Death and serious injuries are unacceptable
- Humans make mistakes
- Humans are vulnerable
- Responsibility is shared
- Safety is proactive
- Redundancy is crucial

The objectives are:

- Safer people
- Safer roads
- Safer vehicles
- Safer speeds
- Post-crash care

The Safe System Approach marks a departure from traditional practices by focusing on preventing deaths and serious injuries rather than merely preventing crashes. This approach emphasizes the proactive identification and mitigation of risks and the reduction of system kinetic energy. By addressing these factors, the approach aims to both decrease the likelihood of accidents and lessen their severity. The strategies and projects in the City of Opa-locka's CSAP will be developed and assessed based on the five objectives of the Safe System Approach. As part of this safety analysis, roadway features linked to a higher risk of severe crashes were identified. Additionally, the analysis examined current safety conditions, including crash trends, contributing factors, and the occurrence of fatalities and severe injuries across various modes of transportation, using data collected from 2018 to 2023.

1.2 Safety Analysis Methodology and Data Collection

This report documents the safety analysis performed for the city's CSAP. The safety analysis includes crash trends and contributing factors that have affected the transportation safety conditions in the city. One analysis examines existing safety conditions and historical trends to provide a baseline level of crashes involving fatalities and severe injuries across roadway jurisdictions in the City of Opa-locka. This safety analysis includes an examination of locations

[2] What Is a Safe System Approach? | US Department of Transportation

where there are crashes, the severity of these crashes, contributing factors, and crash types by relevant road users (personal motorists, bicyclists, pedestrians, freight, etc.). Systemic and specific safety needs such as high-risk road features, specific safety needs of relevant road users, public health approaches, analysis of the built environment, demographic, and structural issues, will be also analyzed as needed.

Then, crash locations, severity, and other factors were mapped using Geographic Information System (GIS), which will help identify higher risk locations and develop a High-Injury Network (HIN). This step will guide the implementation process of how proposed countermeasures, improvements, policies, and projects will reduce or eliminate risks for fatal and severe crashes. The safety analysis produced the following results:

- The percentage of street miles that make up the majority percentage of fatalities, serious injuries, and fatalities and serious injuries combined.
- The percentage of street miles that make up the majority percentage of suspected traffic deaths and serious injuries.
- The average annual fatality rate (per 100,000 population) as calculated per the SS4A guidance.
- A 6-year historical baseline of fatal and serious injury crashes by mode (e.g., pedestrian, bicycle, motorcycle, and other modes).
- A ranked list of Top 5 leading causes of traffic deaths and severe injuries.
- The percentage of traffic deaths and serious injuries that are related to speeding, DUI, and inadequate lighting conditions.
- The percentage of traffic deaths and serious injuries in the proximity of mass transit facilities (e.g., Tri-Rail Station, bus stops or routes, and trolley stops or routes).
- The correlation between cycling ridership and popular cycling routes and crashes.
- The correlation between pedestrian crashes and sidewalk gaps
- Railroad crossings and location of FSI crashes
- Lightning conditions and location of FSI crashes
- Intersections with the highest number of FSI crashes
- Hospitalization data from the Florida Department of Health identifying age groups with higher number of fatalities for pedestrians and pedalcyclists.
- The preliminary High Injury Networks

Data was collected from different reliable and official sources. For instance, the University of Florida has developed and hosted the analytics system known as Signal4 Analytics, which showcases the latest data, information, and results of crashes statewide. In addition, a field visit took place in July to assess the existing sidewalk infrastructure and other conditions such as lighting, traffic control, and ADA compliance.

Further, the FDOT Traffic Online webpage provides traffic data such as the annual average daily traffic (AADT) volumes, truck AADT, as well as vehicle miles travel data. Other supplemental sources for data collection are the PeopleforBikes' Bicycle Network Analysis (or BNA) and the STRAVA Metro's heatmap, which provide multimodal data such as bicycle ridership, multimodal level of service, level of stress, and neighborhood walking score. Regarding roadway characteristics features, these were collected from the Miami-Dade County Open Data Hub Site and the FDOT's Roadway Characteristics Inventory.

Literature Review

2

2. Literature Review

Existing local, regional, State, and Federal policies, plans, studies, initiatives, and programs related to roadway safety were reviewed to identify relevant data, best practices, and opportunities to improve transportation safety in the City of Opa-locka. Information gathered from this effort will assist in the development of the CSAP from selecting and prioritizing transportation safety improvements, to increasing or strengthening collaboration and engagement with project stakeholders.

Findings from the Literature Review will be used to develop new or revised policies, guidelines, and/or standards for the City of Opa-locka that are in accordance with FHWA's Safe Systems Approach[3]. The following list summarizes some of the literature resources reviewed:

2.1 Policies and Guidelines

Transportation policies are relevant and play a crucial role in shaping the safety and wellbeing of residents in the city. Roadway and streets safety policies are included in the city's Code of Ordinance, the Miami-Dade County's Code of Ordinance, the Miami-Dade County Complete Streets Design Guidelines, the Florida Department of Transportation (FDOT) District Six Complete Streets Policy and Implementation, and the Florida Statutes Title XXVI pertinent to transportation. With regards to Federal guidelines, the National Roadway Safety Strategy provides the US Department of Transportation (USDOT) comprehensive guidance to significantly reducing serious injuries and deaths.

- **Local:**
  - City of Opa-locka Code of Ordinances

    The City's Code of Ordinances does not include much information in terms of transportation and mobility policy or programs. Instead, *Chapter 19 – Streets and Sidewalks*[4] highlights limitation when constructing streets and sidewalks, but more in terms of permits and fees than any set design requirements or laws.

- **Regional:**
  - Miami-Dade County Code of Ordinances

    Miami-Dade County's existing Transportation Policy (*Section 31-101*[5]) assures the development and maintenance of a safe, healthy, and efficient passenger transportation system for Miami-Dade County, the Commission, County Manager, and County staff, in the public interest. While Section 33 of the Code of Ordinances highlights safe pedestrian and bicycle routes through specific subzones, there is no language within the Code that specifies a Countywide policy or goal in terms of safe mobility. Although the code has

[3]The Safe System Approach works by building and reinforcing multiple layers of protection to both prevent crashes from happening in the first place and minimize the harm caused to those involved when crashes do occur. It is a holistic and comprehensive approach that provides a guiding framework to make places safer for people (FHWA, What Is a Safe System Approach?).

[4] City of Opa-locka Code of Ordinances – Streets and Sidewalk

[5] Miami-Dade Code of Ordinances – Transportation Policy

limited language in terms of safe transportation, it is worth noting that the County has adopted a Vision Zero policy, with a goal to achieve zero roadway related fatalities by 2040.

- Miami-Dade County Complete Streets Guideline

  Miami-Dade County's Complete Street Design Guideline was developed to provide policy and guidance for all roadway design projects, with the intended goal of supporting the development of streets that are safe for all users. Rooted in a context-sensitive approach, this document advises when certain roadway elements and design features can be applied and is consistent with state and federal best practices. In addition to prescribing specific design principles based on context classification, this document also prioritizes roadway typology, existing and proposed land use, and corridor characteristics to suggest specific infrastructure improvements for all modes, as well as intersections, while highlighting innovative technologies.

- **State:**
  - 2023 Florida Statutes

    The 2023 iteration of the Florida Statutes highlights regulations in terms of using mobility infrastructure, as well as design requirements, like the consideration of bicycle and pedestrian infrastructure along state roads and transportation facilities. While there are no goals surrounding Vision or Target Zero, certain movements allowances in terms of mobility are outlined, with the goal of making the roadways safer. For instance, the *2023 Florida Statute, Title XXVI – Public Transportation, Chapter 334 – Transportation Administration, Section 046 – Department mission, goals, and objectives*[6], outlines the prevailing principles and mission of the state's Department of Transportation, mentioning that their role is to provide a safe statewide transportation system that ensures the mobility of people and goods, enhances economic prosperity, and preserves the quality of our environment and communities. The literature in the Florida Statutes is imperative, as it sets forth the roles and responsibilities of the various agencies involved in the development, implementation, and maintenance of the transportation system. However, the Florida Statutes do not set forth actual policies relating to the creation of a safe mobility system.

  - FDOT Complete Streets Handbook

    FDOT embraced a Complete Streets policy in September 2014, joining other state departments in prioritizing transportation systems that cater to all users. The policy aims for flexibility in project planning and design, ensuring that roads are tailored to their specific contexts. FDOT's Complete Streets approach revolves around three core principles: serving the needs of all transportation system users, adapting designs to local land development patterns, and fostering safety, quality of life, and economic development. Context sensitivity is a key aspect, with projects being uniquely planned and designed based on the surrounding environment and user needs. This includes considering factors such as traffic patterns, pedestrian activity, and community visions.

[6] 2023 Florida Statute, Title XXVI – Public Transportation, Chapter 334 – Transportation Administration, Section 046 – Department mission, goals, and objectives

The approach emphasizes safety, investment in existing and emerging communities, enhanced system performance, support for all modes of transportation, connectivity between community centers, creation of quality places, and alignment with environmental goals. The handbook outlines guidelines for implementing the Complete Streets approach, including context classifications, collaboration with local and regional partners, and design considerations. With this document, FDOT committed to integrating the Complete Streets philosophy into its processes, with ongoing revisions to standards, manuals, and policies to align with this approach. This comprehensive effort reflects FDOT's dedication to creating transportation systems that are safe, efficient, and inclusive for all users across Florida.

- **Federal:**
  - National Roadway Safety Strategy

    The foundation of the United States Department of Transportation's (USDOT) mission is to ensure that America has the safest transportation system in the World. With the understanding that almost 95% of the nation's transportation deaths occur on the streets, the Department has developed the National Roadway Safety Strategy (NRSS), outlining a comprehensive approach to significantly reduce serious injuries and deaths on roadways.

    This collaborative approach is based around a common vision for the elimination of roadway fatalities, adopted zero as the only acceptable number of deaths. To achieve this goal, USDOT has adopted the Safe Systems Approach, which drives the Safety Strategy, while focusing on other opportunities to address safety, equity, and climate. The implementation of the NRSS is arranged around five complementary objectives corresponding to the Safe Systems Approach elements, highlighting: safer people, safer roads, safer vehicles, safer speeds, and post-crash care. The intention of this document is to improve roadway safety throughout the nation, acknowledging that roadway safety is a shared responsibility, and committing to supporting and leveraging advancements made on local, state, regional, and national levels to create a safer transportation network for all.

  - Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD)– 11th Edition
    The MUTCD defines the standards used by road managers nationwide to install and maintain traffic control devices on all streets, highways, pedestrian and bicycle facilities, and site roadways open to public travel. The new edition provides several updates aimed at improving safety for pedestrians, bicyclists, and all road users. States are required to adopt the 11th Edition as their legal standard for traffic control devices within two years from its effective date.

- **Other:**
  - National Association of City Transportation Officials (NACTO) Urban Street Design Guide

    The Urban Street Design Guide exposes the tools and techniques cities utilize to enhance street safety, livability, and economic vibrancy. It delineates a clear vision for complete streets and provides a fundamental roadmap for their implementation in cities across the United States and Canada. Moreover, the Guide functions as a flexible resource adaptable to different contexts and land uses surrounding different types of streets. It incorporates evaluations and case studies from all states, offering comparative analyses of the effects of different street treatments with before-and-after perspectives.

- NACTO Urban Bikeway Design Guide

  This Guide aims to furnish cities with cutting-edge solutions to facilitate the creation of complete streets that prioritize safety and enjoyment for bicyclists. The Urban Bikeway Design Guide offers diverse options and detailed descriptions for various types of bicycle lanes tailored to specific contexts. It covers aspects such as bicycle signals, signage, pavement markings, intersection treatments, and other design tools catering to individuals of all ages and abilities.

2.2 Plans and Studies

Plans and studies that are pertinent to roadway safety were reviewed. Local plans include the City of Opa-locka Comprehensive Plan, the Downtown Master Plan and all previous budget and Community Redevelopment Agency (CRA) reports. Regional plans include Miami-Dade 2045 Bicycle/Pedestrian Master Plan, the 2021 Vision Zero Framework Plan, and other studies that have been developed by the County. In addition, state and federal studies and plans were reviewed as they provide a framework for implementing a CSAP citywide.

- **Local:**
  - City of Opa-locka Sustainable Opa-locka 20/30 Comprehensive Plan

    With a horizon year of 2030, Sustainable Opa-locka embodies the City's vision for its present and future, and it includes a Transportation Element that is focused on multimodal transportation needs and strategies. The Transportation Element reflects the city's strategy to ensure that residents, business owners, and visitors are provided with a full array of mobility options and establishes directives and activities to push the needle towards enhanced multimodal mobility. In addition to defining set directives, the Plan also identifies goals and objectives within each element to create an accessible transportation network. The directives include:

    a) Meeting and exceeding adopted Level of Service (LOS) for vehicles, bicycles, and pedestrians.
    b) Protecting existing and future right-of-ways.
    c) Improving traffic circulation.
    d) Improving bicycle and pedestrian facilities.
    e) Ensuring the provision of safe, convenient, and efficient transit.
    f) Coordinating transportation and land use planning to ensure that all areas of the city are served with a full range of multi-modal transportation options.
    g) Reducing vehicle emissions and greenhouse gas emissions.

  - City of Opa-locka Five-Year Plan

    The city's Five-Year Plan outlines all infrastructure projects with an identified funding source and outlines the year the funding becomes available. This is sub-divided by infrastructure project type, having a section dedicated to transportation infrastructure in the Capital Improvement Program (CIP). The 2023 edition of this plan includes the addition of two new community bus routes and micro-mobility services, as well as sidewalk improvements. While this document does not provide a set policy towards safe mobility within the city, it highlights the projects that will create a safe network of mobility options.

- City of Opa-locka 2021 Downtown Master Plan

  The Downtown Master Plan is designed to tell the story of Opa-locka, with the goal of setting the stage and direction of the city's future, analyzing existing conditions and challenges, and building upon both to develop a new future of opportunity. The Plan calls for the need of foundational change, outlining the need to create more opportunities, address inequity, and create healthier communities. The Master Plan includes a brief review of national trends to consider in the future development of the city, highlighting walkability and connectivity, and multimodal mobility as imperative to create an opportunistic future. In the document's section titled *Streets and Public Spaces*, there is a call for more transit-oriented development and street activation in the public realm. This section also prescribes specific treatments for various roadways within the city's limits, including a section describing appropriate safe multimodal infrastructure based on various roadway characteristics. Finally, this document also introduces policy-based strategies to further each individual goal outlined within the document, including those related to mobility infrastructure.

- City of Opa-locka Community Redevelopment Agency (CRA) 2021-2022 Annual Report

  Opa-locka's Community Redevelopment Agency (CRA) is charged with improving challenged areas through the transformation of its focus areas, which include Transportation and Transit-Oriented Developments. This is done through projects within special taxing districts, or the CRA's limits, to bring in new infrastructure to improve the local economy and corresponding community. This document highlights various projects that have addressed the issues outlined within each focus area. As it pertains to transportation and mobility, the Plan highlights a redevelopment plan to improve the built environment, namely through potential infrastructure and neighborhood improvement projects. Additionally, this document references other adopted City Plans, like the Downtown Master Plan and Comprehensive Plan to identify potential project candidates.

- The Miami-Dade Transportation Planning Organization (TPO) City of Opa-locka Transit Circular System (2010)

  This study provides an inventory of the 2010 transportation systems within the City of Opa-locka and evaluates the potential impacts of improving transportation circulation through the implementation of a transit circulator system. To do this, thorough public involvement and agency coordination were complete to obtain resident input and assist with identifying needs and understanding the community's desired outcome. This was paired with data collection to assess existing conditions and review other transportation plans, as well as with system development to identify potential routes and map out a potential circulator route. However, this document is a technical study that does not set forth any formal policies. Instead, it suggested mobility improvements to develop services for the Opa-locka Express Circulator, which currently operates one route citywide, connecting with the Miami-Dade Transit system.

- [City of Opa-locka 2022 Transit System Title VI Program Plan]

  The Opa-locka Transit System (OTS) Title VI Program Plan was designed to ensure that the level and quality of the city's fixed-route services are provided in a nondiscriminatory manner, with opportunities for participation to all riders and residents. This document sets forth requirements for providing materials pertaining to the service in various languages to address the demographic and lingual needs of residents to ensure that no one is excluded or denied from the services provided by OTS. While this document is required by the federal government, it sets for procedures and policies for engaging residents. It also ensures that any transit-related materials and documents are easily accessible and comprehensible for all system users to ensure that the system is equitable to all.

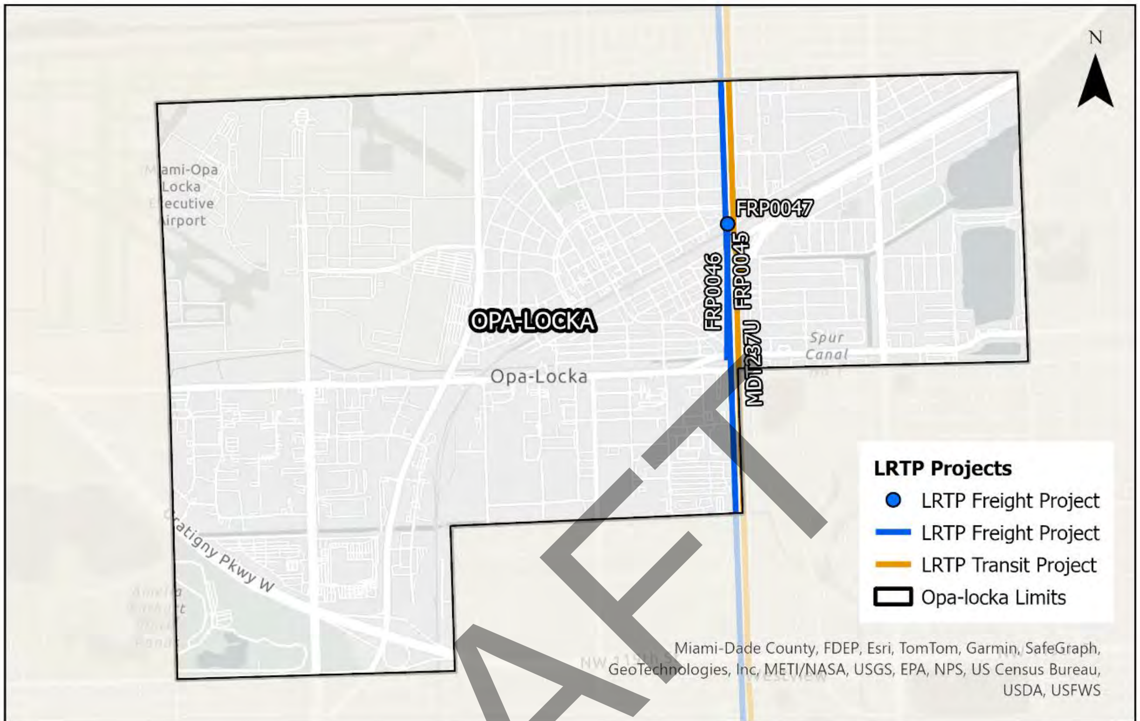
- **Regional:**

  - [Miami-Dade TPO 2045 Long-Range Transportation Plan (LRTP)]

    The Miami-Dade Transportation Planning Organization (TPO) adopted the visionary 2045 Long-Range Transportation Plan (LRTP), a strategic roadmap guiding the county's transportation evolution over the next 25 years. This comprehensive plan, overseen by the TPO as the Metropolitan Planning Organization (MPO) for the Miami-Urbanized Area, serves as a crucial tool for stakeholders, offering a dynamic framework to identify and prioritize transportation projects. With a focus on mobility, safety, security, resilience, and innovation, the LRTP addresses diverse transportation modes including highways, transit, freight, and non-motorized options. The 2045 LRTP, which is in the process of being updated to be adopted later this year, underscores a commitment to sustainability and inclusivity, catering to the evolving needs of Miami-Dade County while fostering a vibrant, efficient, and resilient transportation system for the future. Notably, within the City of Opa-locka, specific modal projects have been identified to enhance accessibility and connectivity, including:

    a) MDT237U – North Corridor from MLK Jr. Metrorail Station to Unity Station: This project entails constructing an elevated fixed guideway along SR 9/NW 27 Avenue to facilitate rapid transit services.
    b) FRP0045 – SR 817/SR 9/NW 27 Avenue to North Corridor: This project integrates truck-related enhancements into the SMART Plan North Corridor Rapid Transit Project.
    c) FRP0046 – SR 817/SR 9/NW 27 Avenue from SR 916/Opa-locka Boulevard/NW 135 Street to SR 9/Burlington Street: This project aims to expand NW 22 Avenue from a 6-lane to an 8-lane divided arterial road.
    d) ART029 – NW 22 Avenue from NW 103 Street to NW 119 Street: This project aims to expand NW 22 Avenue from a 6-lane to an 8-lane divided arterial road.
    e) FRP0047 – At SR 9/NW 27 Avenue: This project includes upgrades to the interchange to accommodate freight traffic more efficiently.

Map 2-1: Projects in Opa-locka listed in the 2045 LRTP.



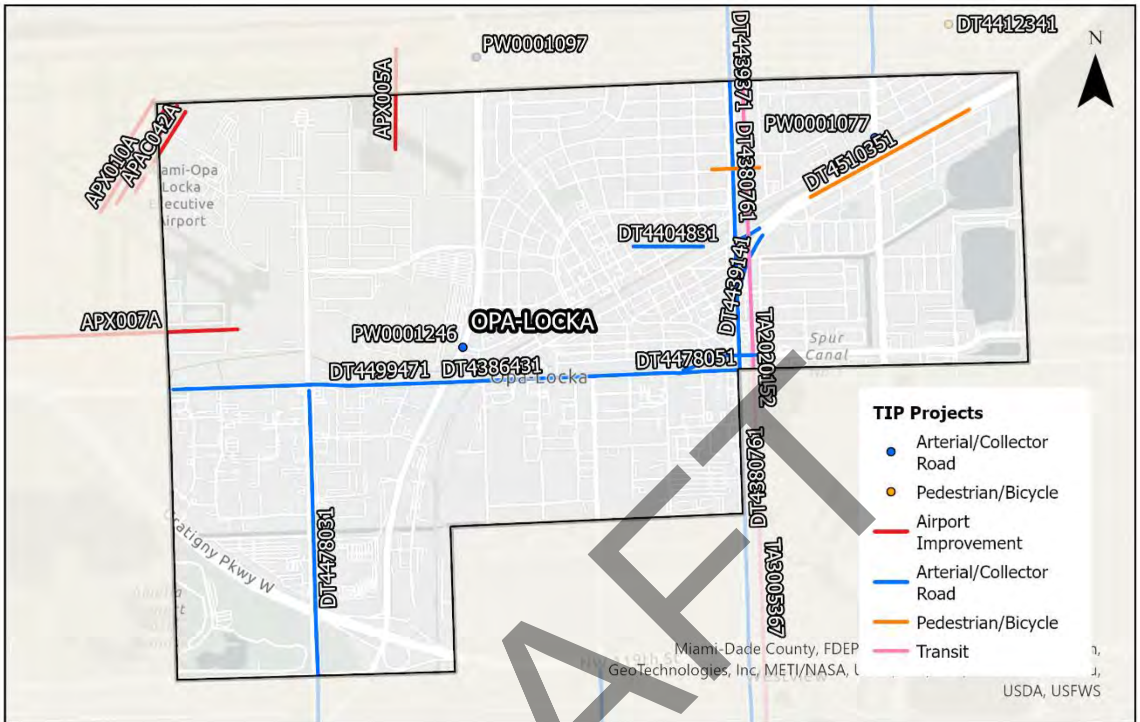
Source: 2045 LRTP

- Miami-Dade TPO 2024-2028 Transportation Improvement Program (TIP)

  The 2024-2028 Transportation Improvement Program (TIP) for the Miami-Urbanized Area mandated by federal regulations and overseen by the Miami-Dade TPO, outlines proposed transportation enhancements for Miami-Dade County over the next five years. Emphasizing the first three years, the TIP includes projects funded by federal allocations between October 1, 2023, and September 30, 2028, as well as non-federal projects integral to the area's improvement plan. With an estimated budget of $11.702 billion, the TIP encompasses intermodal, highway, transit, aviation, seaport, and non-motorized initiatives. These projects are selected in collaboration with transportation partners, aligning with federal laws and the State's Transportation Improvement Plan (STIP). The TIP reflects priorities set forth in the 2045 Long Range Transportation Plan (LRTP), emphasizing phased improvements aimed at enhancing mobility, safety, and environmental sustainability. The TIP's integration with the LRTP ensures consistency with comprehensive development plans and ongoing performance management efforts. Furthermore, it adheres to federal requirements, including those outlined in the Fixing America's Surface Transportation Action (FAST Act), which provisions for future updates and certifications to sustain Miami-Dade County's transportation evolution. In terms of the City of Opa-locka, the TIP identifies the allocated Road Impact Fee funding available to the city, as well as highlighting all upcoming funded projects within its limits, highlighting the project scope and year funding becomes available. These projects include:

a) APAA001A – OPF Taxiways/Apron Rehabilitation and Repairs - Opa-locka Executive Airport (OPF) Airfield Rehabilitation of Taxiways Y & D airfield pavements south of Runway 12-30
b) APAC042A – OPF Runway Incursion Mitigation Hot Spot 3 (RIM03) – Miami-Opa-locka Executive Airport Airfield Improvements
c) APX010A – OPF Engine Run Up Pad – Opa-locka Executive Airport Airfield Construction of Asphalt Engine Run Up
d) APX007A – Miami-Opa-locka Executive Airport Upgrade Runway 9L/27R Pavement rehabilitation – Pavement rehabilitation of Runway 9L/27R Sections of Taxiways
e) APX005A – OPF Blast Fence – Airfield/Taxiway H to OPF Airfield – Design and Install an Aircraft Blast Fence Capable of Group IV Aircraft Run-Up
f) DT4380761 – SR 9/NW 27 Avenue – Miami Intermodal Center (MIC) to NW 215 Street/Unity Station – PTC Study
g) DT4404831 – Codadad Street Railroad Crossing # 628322C
h) DT4439141 – SR 9/SR 817/NW 27 Avenue – North of NW 135 Street to Burlington Street
i) DT4439371 – SR 817/NW 27 Avenue – Burlington Street to NW 168 Terrace
j) DT4439372 – SR 817/NW 27 Avenue – Sesame Street to Dunad Avenue
k) DT4478031 – SR 953/LeJeune Road/NW 42 Avenue – North of NW 103 Street to South of NW 135 Street
l) DT4478051 – SR 916/NW 135 Street and NW 136 Street – West of NW 30 Avenue to West of NW 27 Avenue
m) DT4499471 – SR 916/NW 135 Street – NW 47 Avenue to NW 30 Avenue
n) DT4510351 – SR 9 and NW 22 Avenue Interchange
o) TA3005367 – Transit Oriented Development (TOD) Master Plan for the North corridor (OSP269)
p) PW0001077 – NW 22 Avenue and Ali Baba Avenue (Railroad Crossing) – Resurfacing
q) PW0001246 – Ali Baba Avenue/Veterans Way and NW 42 Avenue/NW 37 Avenue Connector – Intersection Improvements

Map 2-2: Projects in Opa-locka listed in the 2024-2028 TIP.



Source: 2024-2028 TIP

- Miami-Dade TPO 2045 Bicycle/Pedestrian Master Plan

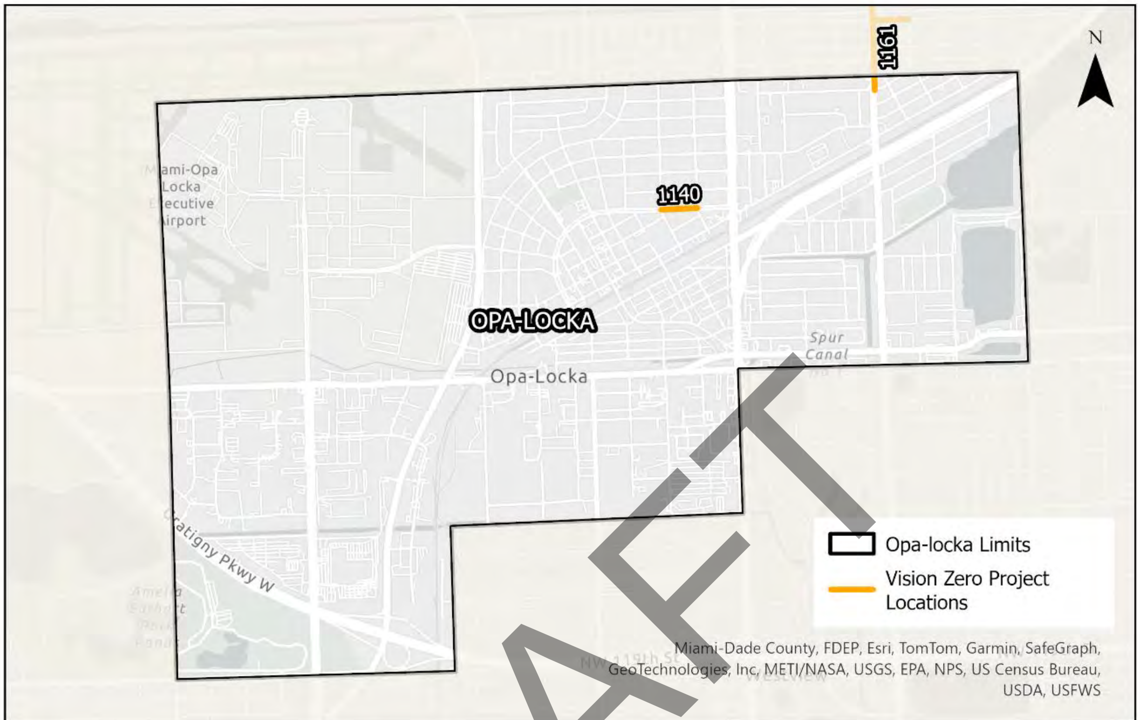
  The Miami-Dade 2045 Bicycle and Pedestrian Master Plan represents a strategic initiative aimed at enhancing accessibility, safety, and sustainability within the County's transportation infrastructure. With a focus on integrating bicycle and pedestrian pathways with transit hubs and stations, the plan seeks to extend the reach of non-motorized travel throughout the urbanized area, leveraging transit connections to promote daily commuter trips. By prioritizing projects that connect diverse communities to essential destinations like educational facilities, medical centers, and employment hubs, the plan aims to alleviate traffic congestion while fostering healthier and more sustainable communities. As an integral component of the 2045 LRTP, the Bicycle and Pedestrian Master Plan aligns with broader goals of enhancing mobility, social equity, and environmental quality. Through collaborative efforts with various stakeholders and municipal planning initiatives, the plan envisions a multimodal transportation network that promotes alternate modes of travel and strengthens community connections. By integrating bicycle and pedestrian infrastructure with existing and future transit opportunities, the plan endeavors to improve the overall quality of life for residents and visitors alike in Miami-Dade County. This Plan is currently undergoing an update process, with the update's adoption later this year. The current adopted version, however, does not highlight any pedestrian or bicycle projects within the City of Opa-locka limits.

- [Miami-Dade Department of Transportation and Public Works (DTPW) 2024 Vision Zero Action Plan]

  The Miami-Dade Department of Transportation and Public Works (DTPW) 2024 Vision Zero Action Plan outlines a comprehensive strategy to eliminate traffic-related fatalities and severe injuries in the County, aligning with the international safety philosophy of Vision Zero. Grounded in the FHWA's Safe Systems Approach, the plan prioritizes safer people, roads, vehicles, speeds, and post-crash care, aiming to mitigate risks and prevent severe injuries through proactive infrastructure changes and community engagement. The document underscores the urgency for action, particularly in disadvantaged communities like Opa-locka, identified as a traditionally underserved area due to higher densities of severe injury and fatality crashes compared to other areas of the County. Florida's ranking among the riskiest states for pedestrians and bicyclists, along with Miami-Dade County's significant number of fatal and severe injury crashes, underscores the need for targeted interventions. Supported by substantial funding and community partnerships, DTPW's Vision Zero Program focuses on implementing priority projects, pursuing federal grants, and engaging in outreach and education initiatives to create safer roadways and promote inclusive transportation practices. Through these efforts, Miami-Dade County aims to achieve measurable results in reducing traffic-related incidents and ensuring safer mobility for all residents and visitors. This Plan highlights a handful of Vision Zero projects programmed for the City of Opa-locka, including:

  a) KSI Ranking #14 – Project 1161 – NW 22 Avenue from NW 151 Street to NW 150 Street/Grant Avenue: Quick builds/Short-term countermeasures involving conducting lighting analysis and providing speed feedback signs for speed management.
  b) Top 55 – Project 1140 – Sharazad Boulevard from Ahmad Street to Kalandar Street: The quick builds/short-term countermeasures involve closing the box on the east leg of the crosswalk and providing reflective borders on signal heads to improve visibility. The median-term countermeasures (<5 years) involve providing sidewalks on Ahmad Street on the east side (just south of Sharazad Boulevard).

Map 2-3: Projects in Opa-locka included in the 2024 Vision Zero Action Plan.



Source: Miami-Dade Department of Transportation and Public Works (DTPW) 2024 Vision Zero Action Plan

- Miami-Dade DTPW 2021 Vision Zero Framework Plan

  The Miami-Dade DTPW 2021 Vision Zero Framework Plan represents a strategic response to the County's road safety challenges, integrating data-driven insights with structural, strategic, and systematic actions. Developed collaboratively with Vision Zero Champions and Implementors, the plan aligns with identified guiding values and emphasizes the importance of structural leadership from both county policymakers and DTPW staff. By analyzing socio-economic and demographic factors, the plan identifies areas disproportionately impacted by safety challenges, laying the foundation for targeted interventions. Actions outlined in the plan, categorized by structural, strategic, and systematic shifts, are attributed to key offices responsible for implementation, including the Office of the Mayor and DTPW. The plan's timeline spans 80-days, 18-months, and 36-months, reflecting the urgency and long-term commitment required to achieve the vision of eliminated fatalities and severe injuries countywide. Through a coordinated approach involving multi-jurisdictional collaboration and ongoing investment, the plan aims to foster a paradigm shift towards creating a safer transportation system for all users in Miami-Dade County. This Plan highlighted high-injury clusters and high-injury segments for the first time in the City of Opa-locka and listed a handful of Vision Zero projects programmed for the municipality. These projects match those included in the 2024 Vision Zero Action Plan, as they still are yet to be fully funded.

- [Miami-Dade DTPW Countywide Transportation Master Plan]

The Miami-Dade DTPW is initiating the development of the Countywide Transportation Master Plan (CTMP), mandated by Resolution R-138-22[7]. This pioneering plan, spanning the next two decades, aims to identify and prioritize capital investment projects and improvement initiatives across transit, pedestrian, bicycle, roadway, and freight infrastructure throughout Miami-Dade County. To ensure community input, DTPW conducted extensive listening sessions and collected feedback on mobility improvements via survey. Aligned with the SHIFT305[8] strategy, the CTMP seeks to revolutionize the transportation system, emphasizing on efficiency, connectivity, safety, and sustainability.

The plan's geographical planning areas were devised recognizing the varying needs across the county, with Opa-locka situated in the North Planning Area alongside Biscayne Park, El Portal, Miami Gardens, Miami Shores, and North Miami. Unlike previous approaches, the CTMP establishes a comprehensive prioritization framework, integrating feedback from various stakeholders and modal needs assessments. With a vision to create an integrated multimodal capital and transit service investment plan, the CTMP endeavors to shape a more efficient, connected, safe, and clean transportation system for the residents of Miami-Dade County. This Plan highlights a handful of projects programmed for the City of Opa-locka, including:

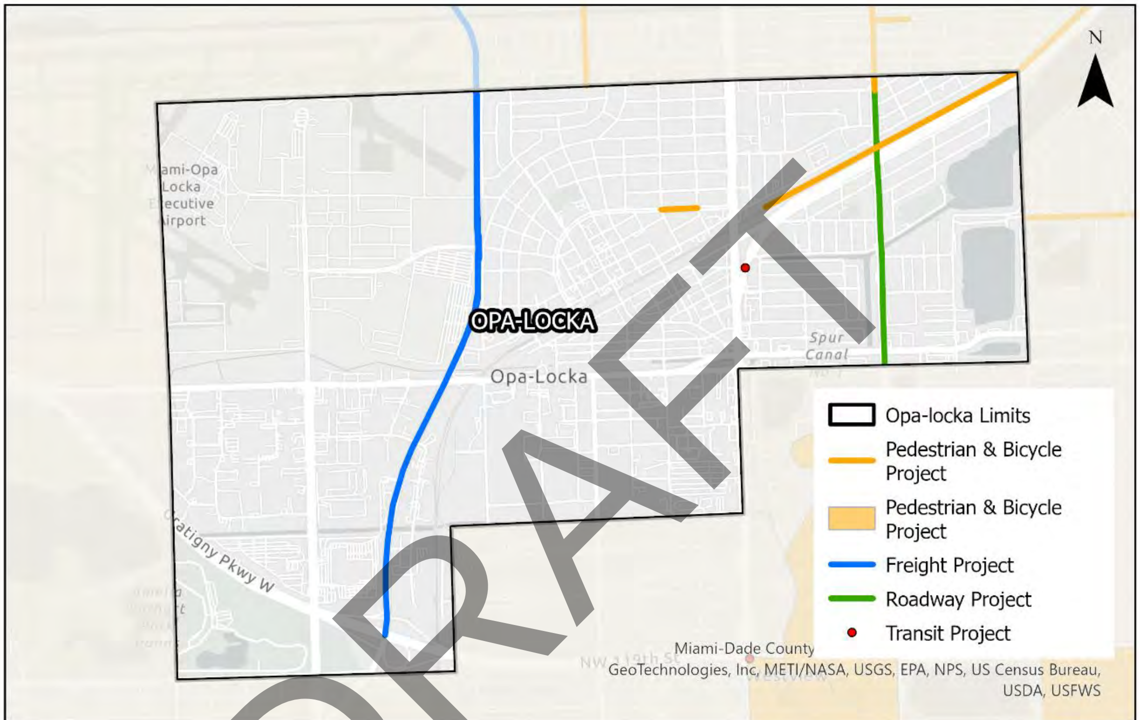
a) Sharazad Boulevard from Ahmad Street to Kalandar Street: This pedestrian and bicycle improvements project involves sidewalk construction and enhanced pedestrian crossings.
b) NW 22 Avenue from NW 151 Street to NW 150 Street/Grant Avenue: This pedestrian and bicycle improvements project also includes sidewalk construction and enhanced pedestrian crossings.
c) NW 17 Avenue and Opa-locka Boulevard to NW 17 Avenue and NW 143 Street: This roadway project includes safety, operations, and traffic calming improvements as well as the installation of median spaces.
d) NW 22 Avenue and NW 119 Street to NW 22 Avenue and NW 151 Street: This roadway project includes intersection Improvements, and the installation of no parking pavement markings.
e) NW 142 Street at Douglas Road: This is a freight project that includes TSM&O intersection improvements.
f) NW 42 Avenue at SR 916/NW 135 Street: Another freight project, involving TSM&O intersection improvements.

[7] Miami-Dade Legislative Item Number 213096 - Resolution R-138-22: Resolution directing DTPW to create a master plan, similar to the Long Range Transportation Plan (LRTP), which sets forth all Miami-Dade County transit and transportation projects planned to be completed in the next 20 years.
[8] SHIFT305: A forward thinking strategy aimed at accelerating four key goals for our transportation system: safety, sustainability, efficiency, and connectivity. Each pillar within SHIFT305 is supported by strategic action steps, timelines, and key performance indicators to ensure progress and accountability.

g) SR 916/Douglas Road from South of NW 142 Street to North of NW 142 Street: This is a freight project that includes capacity improvements such as widening the roadway to add one lane in each direction.

h) NW 135 Street from Opa-locka Tri-Rail Station to FIU Biscayne Campus: This is a transit project that involves bus service enhancements.

Map 2-4: Projects in Opa-locka included in the Countywide Transportation Master Plan.



Source: [Miami-Dade DTPW Countywide Transportation Master Plan]

- [Miami-Dade County Department of Parks, Recreation, and Open Spaces (PROS) Master Plan]

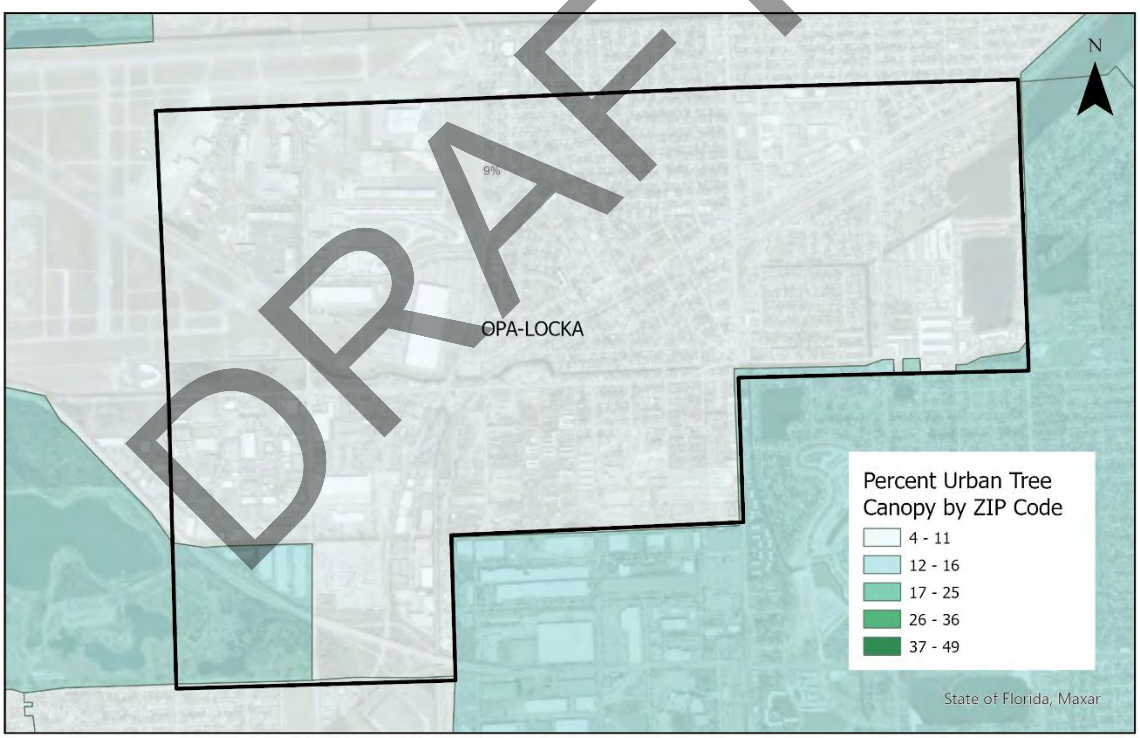
  The goal of this Plan is to create a seamless, sustainable system of parks, recreation, and conservation open spaces for this and future generations, and is developed around four main objectives, including "*a unified, physical vision for a connected regional system*." While not explicitly aimed at transportation connectivity policies, the guiding principles are seamlessness, beauty, access, equity, sustainability, and multiple benefits, emphasizing a strong relevance to multimodal access to and between parks, recreation, and open spaces.

  Some of the goals highlighted within the plan also include providing residents with a 5-minute walk to a park, creating multimodal connections, and ensuring an interconnected network of shaded and safe bikeways and trails to connect places of interest. The Plan is ultimately a visioning document, laying out no proposed projects or recommendations, however, does propose specific improvements based on the various contexts around the County.

- Miami-Dade PROS Urban Tree Canopy Assessment (2021)

The Urban Tree Canopy Assessment was completed in October 2021 to evaluate Miami-Dade County's urban tree canopy, with three primary goals outlined, including establishing baseline data, comparing changes to the canopy over time, and analyzing the association between change in canopy and surface temperature, socioeconomic patterns, and hospital intake rates. While no direct recommendations were outcomes in this analysis, key findings included that the City of Opa-locka is one of three municipalities with the smallest percent of urban tree canopy, noting about 9%. Another key finding highlighted that tree canopy increases the quality of life in neighborhoods, and that an increase in the city's urban tree canopy may decrease household poverty and increase community health.

Map 2-5: Percent Urban Tree Canopy in Opa-locka



Source: Miami-Dade PROS Urban Tree Canopy Assessment (2021)

- Miami-Dade Office of Regulatory and Economic Resources (RER) Extreme Heat Action Plan and Toolkit

The Extreme Heat Action Plan and Toolkit was developed to study the impacts and changes of the extreme heat network in Miami-Dade County. The Plan explores policy, projects, and programs to mitigate and adapt to the extreme heat impacts felt within the region because of urban sprawl and the built environment. It also establishes guiding principles based around equity, environmental pollution, safety, flexibility, and alignment to other County initiatives and plans. The Toolbox developed as a part of this initiative breaks topics into the categories of Environment, Infrastructure, and Community Engagement, and it provides detailed insight to each tool, including transportation tools in the infrastructure bucket. While this document does not include any location-based recommendations, it does suggest specific tools to make the transportation system more comfortable and mitigate heat exposure for users. The tools in the toolbox include adding shade to bus stops, enhancing the pedestrian experience with natural shading, enhancing public transportation services, and piloting innovative streets. Another tool that was identified was the implementation of the Better Bus Network, which launched in November 2023.

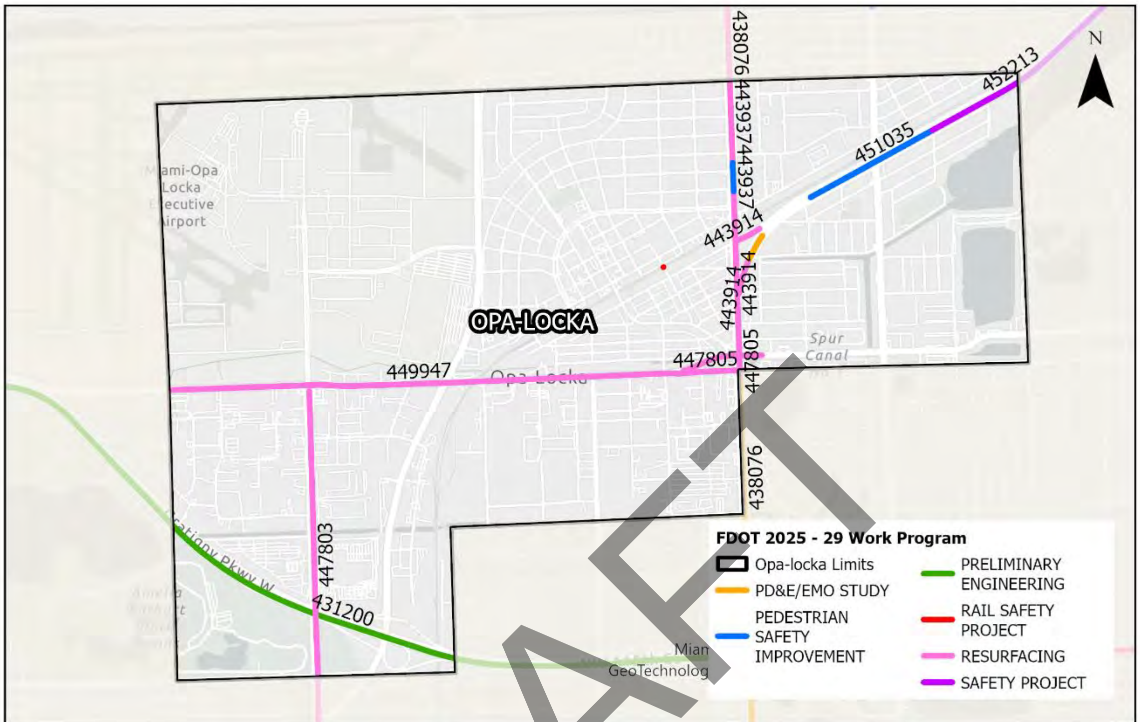
- **State:**
  - Florida Department of Transportation (FDOT) Tentative 2025 – 2029 Work Program

  FDOT has developed the Five-Year Work Program in accordance with *Section 339.135 Florida Statutes*[9]. The development of this work program involved extensive coordination with local governments, including Metropolitan Planning Organizations (MPOs), and other city and county officials. The Fiscal Year (FY) 25-29 Amended Tentative Work Program includes a few projects within the City of Opa-locka, highlighting:

  a) FM# 449947 SR 916 / NW 135th Street from NW 47th Avenue to NW 30th Avenue – Resurfacing with Railroad & Utilities
  b) FM# 443914 SR 9 / SR 817 / NW 27th Avenue from North of NW 135th Street to Burlington Street – Resurfacing
  c) FM# 447805 SR 916 / NW 135th Street & NW 136th Street from West of NW 30th Avenue to West of NW 27th Avenue – Resurfacing
  d) FM# 447803 SR 953 / Le Jeune Road / NW 42nd Avenue from North of NE 103rd Street to S of NW 135th Street – Resurfacing
  e) FM# 443937 SR 817 / NW 27th Avenue from Sesame Street to Dunad Avenue – Pedestrian Safety Improvements
  f) FM# 431200 District 6 Tracking Efforts for GMX Corridors – Preliminary Engineering
  g) FM# 438076 SR 9 / NW 27th Avenue from Miami Intermodal Center (MIC) to NW 215th Street/Unity Station PTC Study – PD&E/EMO Study
  h) FM# 451035 SR 9 and NW 22nd Avenue – Pedestrian Safety Improvement
  i) FM# 452213 Districtwide Rumblestrip Initiative and Lane Departure – Safety Project

[9] The 2023 Florida Status, Title XVI, Chapter 339, Section 339-135 – Work program; legislative budget request; definitions; preparation, adoption, execution, and amendment.

Map 2-6: Projects in Opa-locka Included in the FDOT Five Year Work Program (2025 – 2029)



Source: [Florida Department of Transportation (FDOT) Tentative 2025 – 2029 Work Program]

- [FDOT 2024 Design Manual]

  The Florida Design Manual (FDM) sets the roadway design criteria and procedures for all new construction, reconstruction, and resurfacing projects on the State and Federal Highway System. Roadway prescriptions are defined based on land use characteristics and context classification, which is also set forth in this document, and includes requirements like sidewalk width and bicycle facility type. While this document describes the necessary project requirements for State Road projects, it is not mandatory for Counties and Cities to follow. Within the City of Opa-locka, most of the roadways are city owned and maintained, with a few county roadways. State owned corridors within Opa-locka include SR 916, SR 9, NW 42 Avenue, Curtiss Parkway, Gratigny Parkway, and a few other smaller roads near the airport.

- [FDOT 2020 Context Classification Guide]

  FDOT uses a context-based approach to planning, designing, and operating the state transportation network. To do this, they have adopted a roadway classification system comprised of eight context classifications for all non-limited-access state roadways. The context classification of a roadway must be considered, along with its transportation characteristics and the built form, to understand who the users are, what the regional and local travel demand of the roadway is, and the challenges and opportunities of each roadway users. The 2020 Context Classification Guide provides guidance on how context classification can be used, describe the measures used to determine the context classification of a roadway, and describes the relationship of context classification with the FDM and other FDOT guides and manuals. For instance, following this guidance, NW 135 Street from NW 42 Avenue to NW 30 Avenue in Opa-locka is identified as having a *C3C – Suburban Commercial* context, and is expected to serve all user types, including vehicles, freight, transit, bicyclists, and pedestrians.

- **Federal:**
  - FHWA Benefit Cost Analysis Guidance 2024

    The Benefit Cost Analysis Guidance was developed to provide guidance for completing Benefit Cost Analyses (BCAs) to the satisfaction of USDOT, when submitting discretionary grant applications. This is often a requirement for federal discretionary grants that fund a wide range of surface transportation infrastructure projects, and more specifically, those that focus on alternative modes. USDOT believes that BCAs are useful methods to evaluate and compare potential transportation investments for their contribution to the region's economic vitality. The guidance outlined in this document ensures that the analyses use standard data and qualitative information to help with decision making in terms of project selection.

  - FHWA Comprehensive Safety Action Plan Components

    The Safe Streets and Roads for All (SS4A) grant program is guided by the Safe Systems Approach, which involves a paradigm shift to improve safety culture, increase collaboration across all safety stakeholders, and refocus transportation system design and operation on anticipating human mistakes and lessening impact forces to reduce crash severity and save lives. The Program defines comprehensive safety action plans as the "*basic building block*" to significantly improve roadway safety. These action plans are aimed at reducing and eliminating serious injury and fatality crashes affecting all road users. Data analyses are the backbone of the action plans, characterizing safety problems and helping to strengthen community approaches through projects and strategies that address the most significant safety risks. There are eight components that a successful action plan includes, and these are:

    a) Leadership commitment and goal setting.
    b) Planning structure.
    c) Safety analysis.
    d) Engagement and collaboration.
    e) Equity.
    f) Policy and process changes.
    g) Strategy and project selections.
    h) Progress and transparency.

  - FHWA Improving Safety for Pedestrian Bicyclists Accessing Transit (2022)

    This document is a guide for roadway owners, planning organizations, and transit and transportation agencies. It provides them with a thorough look at pedestrian and bicycle safety considerations in accessing and using transit. This guide highlights specific considerations about how agencies can help ensure that all people are considered, feel safe and welcomed at all facilities, and can have the confidence that these spaces were planned and designed for them in mind. The document explores the core principles for safe access to transit by providing a comprehensive understanding of how to address pedestrian and bicycle safety concerns related to transit, exploring tools and approaches for identifying pedestrian and bicyclist safety issues. It also identifies design and operational measures to overcome barriers to safe and accessible transit for all.

- FHWA Safe System Roadway Design Hierarchy 2024

  The Safe Systems Roadway Design Hierarchy serves as a tool to prioritize engineering measures aligned with the Safe Systems Approach, aiming to eliminate traffic-related fatalities and serious injuries. Developed by FHWA, it assists transportation agencies and practitioners in identifying and prioritizing countermeasures for transportation projects. Comprising four tiers, the hierarchy emphasizes physical modifications over relying on use behavior. While focusing on design improvements, it encourages considering all aspects of the Safe Systems Approach. This document introduces the hierarchy, describes the countermeasures for each tier, and demonstrates how Complete Streets and FHWA's Proven Safety Countermeasures support the Safe Systems Approach. Implementing safety measures aids in achieving safety goals at local, state, and national levels, offering transportation agencies and practitioners guidance through case studies and applications of Safe Systems solutions.

- FHWA Safe System Approach for Speed Management 2023

  This report underscores the importance of achieving target speeds and managing kinetic energy across all roadway networks. It highlights the intersection between safe speeds and safe roads within the Safe Systems Approach, emphasizing that target speeds should align with road design, context, and user mix. Achieving target speed involves aligning road design and speed limits with roadway purpose and implementing speed management measures when necessary. Scientific literature consistently demonstrates the correlation between speed and injury crashes, underscoring the need to lower speeds to save lives and prevent serious injuries. The Safe Systems Approach aims to manage speeds within physical tolerances to reduce impact forces on road users. This document also introduces a five-stage framework for Safe Systems Approach for Speed Management, guiding practitioners through vision establishment, data and analysis, proactive location prioritization, countermeasure selection, and ongoing monitoring and adjustment.

- FHWA Lessons Learned from Development of Vision Zero Action Plans 2021

  This report summarizes the lessons learned, and challenges and opportunities gleaned from the experiences and processes of the development of Vision Zero Action Plans for two different communities – Daly City in California, and Macon-Bibb County in Georgia. While neither community are within the State of Florida, the report found many similarities in both experiences and summarizes those commonalities, some being related to recruiting stakeholders and fostering partnerships to build support, analyzing crash data, and identifying emphasis areas. The lessons learned and opportunities and challenges discussed within the report may assist with the development of a brand-new plan and mitigate additional challenges.

- FHWA Making Our Roads Safe One Countermeasure at a Time (28 Proven Safety Countermeasures) 2021

  This document was designed to encourage the widespread use of 28 Proven safety Countermeasures, with the goal of offering significant and measurable impacts as a part of any agency's approach to improving safety. The strategies outlined within this document are designed for all kinds of road users, roads, and contexts. Thet are also designed to address at least one safety focus area, like speed management, intersections, roadway departures, or pedestrians and bicyclists. FHWA strongly encourages transportation agencies to consider the implementation of many of these strategies to accelerate the achievement of local, State, and National safety goals.

- United States Department of Transportation (USDOT) Promising Practices for Meaningful Public Involvement in Transportation Decision-Making

  This document outlines promising practices to facilitate meaningful public involvement in transportation decision-making processes. It offers guidance for transportation professionals at every stage of project development and operation, emphasizing the importance of engaging diverse representations of community members. By promoting inclusive participation, this framework ensures that communities have a voice in transportation decisions by providing early and comprehensive public involvement, which enhances project success by incorporating community input into planning and design, ultimately leading to publicly supported initiatives. The document also assists USDOT funding recipients in complying with civil rights and environmental regulations and fostering equitable access to opportunities for underserved populations.

2.3 Initiatives and Programs

Initiatives and programs pertinent to measures and practices aimed at reducing the risk of accidents, injuries, and fatalities on roads and highways were reviewed. The city's initiatives include the Street Maintenance Program, the Street Sweeping Program, and the Beautification Initiative. State and federal programs were also reviewed and summarized. These include topics such as equity, resiliency, and vulnerability, as well as climate resilience.

Local:

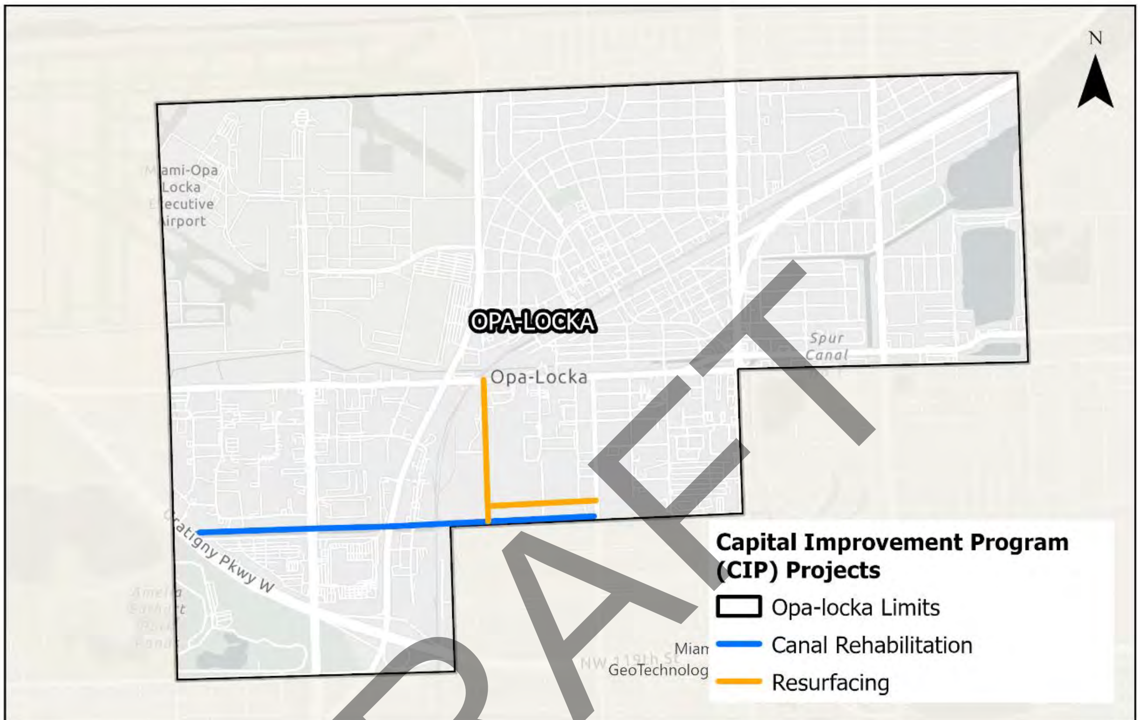
- City of Opa-locka Capital Improvement Program (CIP)

  The projects within the city's CIP are included in the City's Five-Year Work Program, with their associated project scopes and anticipated funding schedule, and are considered Capital Projects, or infrastructure. Projects that are identified as Capital Projects must be new construction, expansion, renovation, rehabilitation, maintenance, or replacement for an existing facility. Project costs may include the cost of land, engineering, architecture, planning, and contract services. Examples of current Capital Projects within the City of Opa-locka include:

  a) Canal rehabilitation project along NW 127 Street

b) Citywide Stormwater project
c) Resurfacing of Cairo Lane and NW 127 Street.

Map 2-7: Projects in Opa-locka Included the City's Capital Improvement Program (CIP)



Source: [City of Opa-locka Capital Improvement Program (CIP)]

- City of Opa-locka Tree Planting Program

  In September 2022, the City of Opa-locka partnered with Miami-Dade County's NEAT Streets Miami-Dade to plant 158 shade trees along Perviz Avenue. NEAT Streets Miami-Dade is a multi-jurisdictional board that is dedicated to the promotion of ecological and human health by creating and maintaining sustainable, beautiful, clean, and environmentally equitable spaces countywide, and is seated under the Parks, Recreation, and Open Spaces (PROS) department's purview.

- City of Opa-locka Street Maintenance Program

  Overseen by the City's Public Works Department, the Street Maintenance Program aims to maintain all city-owned roadways monthly. They oversee the Street Sweeping program, having a schedule for the roadways being swept each week throughout every month, as well as scoping the corridors for needed improvements. Additionally, this Department is responsible for fulfilling "*pothole repair*" requests, which may be submitted on their website.

- City of Opa-locka Street Sweeping Program

The City's Street Sweeping Program is a part of the Street Maintenance Program and divides all city-owned and maintained roadways into 4 colored zones. Each zone receives Street Sweeping maintenance during either the first, second, third, or fourth week of the month, with services occurring on Mondays, Wednesdays, and Fridays. This ensures that all city roadways meet the city's cleanliness standards, while also providing an opportunity for the Public Works Department to identify any future maintenance needs along these corridors.

- City of Opa-locka Beautification Initiative

  The City of Opa-locka has begun the process of undertaking several initiatives set forth in an effort to continually beautiful the city, with the goal of reigniting the city's pride and keeping the streets and city looking beautiful for all to enjoy. Since 2022, there have been a variety of projects within the limits of this program, including a butterfly garden restoration project, landscaping along NW 30 Avenue, median and landscaping restoration projects, tree planting along NW 151 Street, the Perviz Avenue medians and tree planting project, and entry sign restoration projects. Additionally, through this program, the city has been able to develop Beautification Guidelines to help harmonize and further the efforts made to improve the city's quality of life.

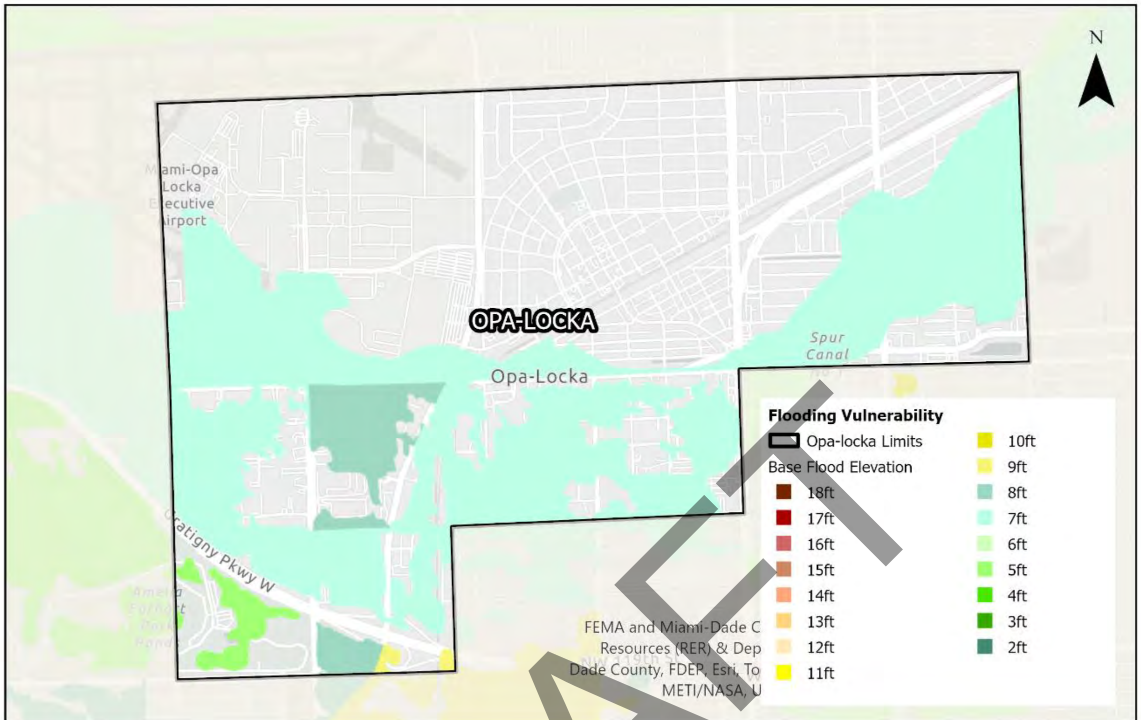
- City of Opa-locka Parks and Facilities Program

  The City of Opa-locka Park and Recreation Department (COOL Parks) aims to provide opportunities for enriching the lives and meeting the recreational and cultural needs of Opa-locka residents. This is done by developing and maintaining facilities and programs that provide a well-rounded, wholesome program of leisure time activities for the community. As a part of their program, COOL Parks is responsible for operating and maintaining 3 City-owned parks (Ingram Park, Segal Park, and Sherbondy Park), all of which offer after school and summer programs, and two of which offer additional sports facilities and programs, including football, basketball, and baseball. Additionally, COOL Parks operates the Freeman Collins & Raymon Britton Senior Citizen Facility, which offers community events and activities to the city's elderly population.

- **Regional:**
  - RER Flooding Vulnerability GIS Map

    RER's Flooding Vulnerability Viewer is an interactive online GIS mapping tool that helps users look at current and future floor risk areas by exploring and overlaying the various contributing factors, such as storm surge and sea level rise. Data layers in this tool include property boundaries and characteristics, ground elevation, storm surge, coastal high hazard areas, sea level rise, king tides, and FEMA base flood elevation. Within the City of Opa-locka, there are a few locations that are vulnerable to king tides, namely those areas surround any of the canals and retention ponds. In terms of flooding vulnerability, the area south of the airport and surrounding all water bodies are identified as a potential flood zone per the FEMA flood zone data, meaning that infrastructure and mitigation strategies could be put into place to avoid any future flooding issues.

Map 2-8: City of Opa-locka Flooding Vulnerability Map



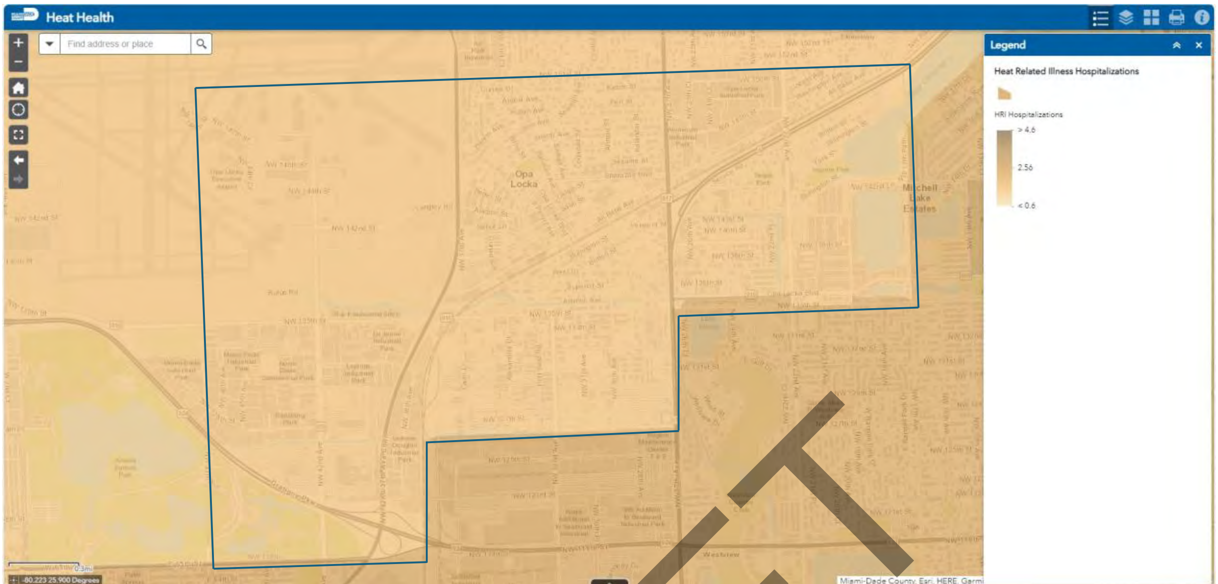
Source: [Flooding Vulnerability Map]

- [RER Heat Related Illness Hospitalization GIS Map]

  The Heat Related Illness Hospitalization Interactive Map is an outcome of the Miami-Dade County Resilient305 Plan[10], which is a Resilience Plan targeting 21st century challenges, like heat and flooding vulnerability within Miami-Dade County. The Heat Related Illness Map is a tool that was developed to help understand heat exposure within the County, and how the higher temperatures increase the risk for heat-related illnesses and death, as well as calls out neighborhoods that have been impacted by redlining, noting the correlation. In terms of the City of Opa-locka, the tool identifies the city has been having a high rate of heat-related illness and ER visits, and a medium rate of heat-related hospitalizations, scoring the city high on the heat vulnerability index and furthering the need for heat mitigation techniques like shade trees.

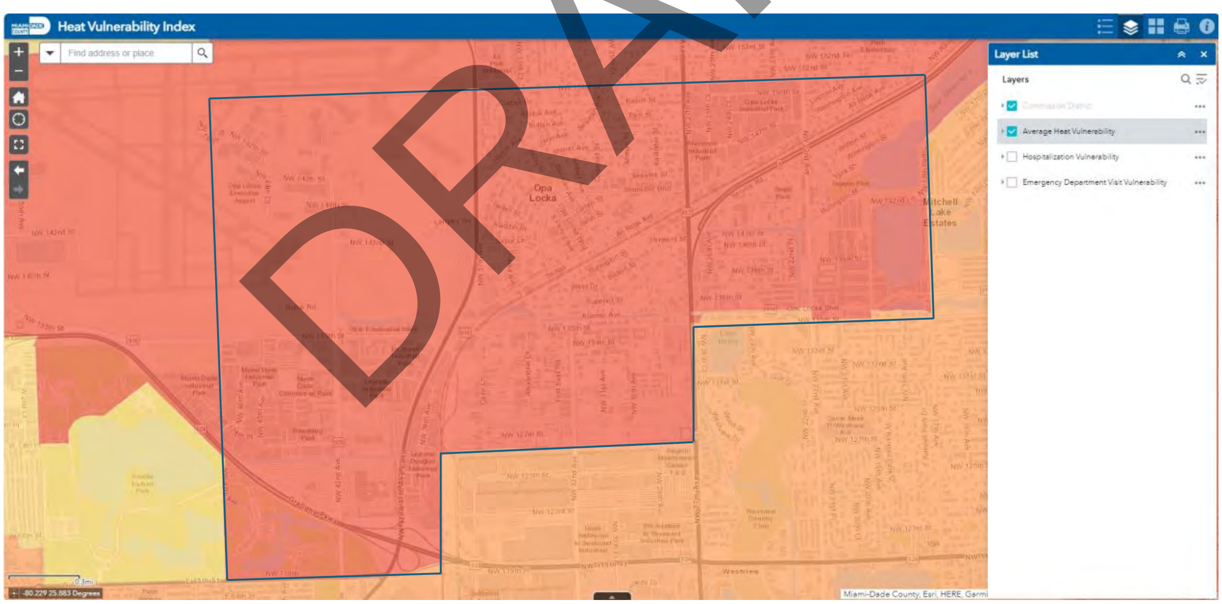
[10] Resilient305 Plan

Map 2-9: Heat Health Consequences in the City of Opa-locka



Source: [Heat Health]()

Map 2-10: Heat Vulnerability Index in the City of Opa-locka



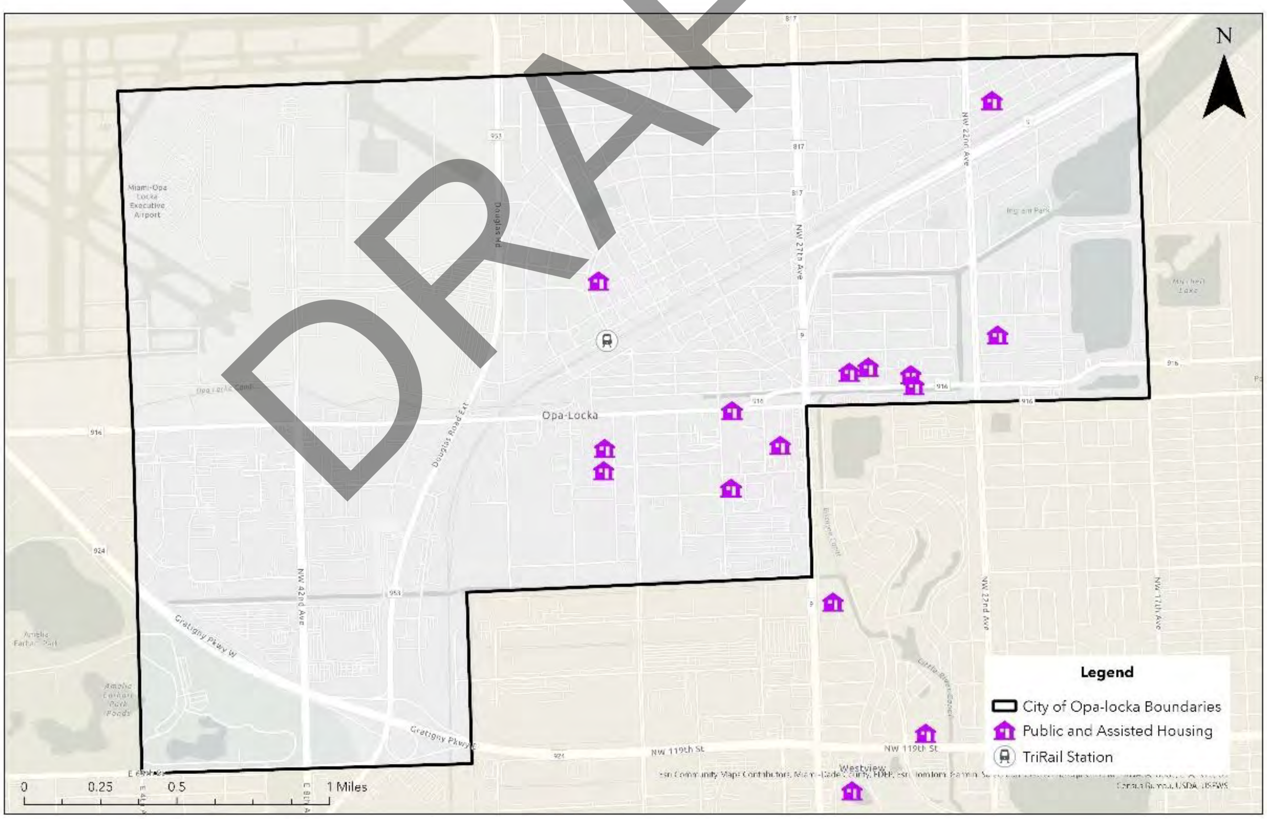
Source: [Heat Vulnerability Index]()

- [University of Miami Office of Civic and Community Engagement Miami Affordability Project (MAP)]()

  The Miami Affordability Project (MAP) is an interactive online map providing data on the distribution of affordable housing, housing needs, demographic profiles, and environmental resiliency in Greater Miami. The intent is to provide an open-access tool for anyone interested in equitable community development to better understand local housing needs and encourage data-driven housing planning and analysis. Within the City of Opa-locka, the tool identifies 1 public housing unit called Opa-locka Elderly, and 12 assisting housing units, including:

1. Town Center Assisted Housing.
2. Georgia Ayers Assisted Housing.
3. Glorieta Gardens Assisted Housing.
4. 135th Street Apartments Assisted Housing.
5. Archbishop McCarthy Resident Assisted Housing.
6. Aswan Village Assisted Housing.
7. Opa-locka Apartments Assisted Housing.
8. Lock Towns Apartments Assisted Housing.
9. Royal Palm Apartments Assisted Housing.
10. Cordoba Courts Assisted Housing.
11. Townhomes Assisted Housing.
12. Magnolia North 2145 Apartments Assisted Housing.

Map 2-11: Public and Assisted Housing Unit within Opa-locka



Source: Miami Affordability Project and 2024 Assisted Housing Inventory of the Shimberg Center for Housing Studies

- Miami-Dade TPO Bicycle Pedestrian Program

  Miami-Dade Transportation Planning Organization's (TPO) Bicycle Pedestrian Program aims to create safe places for those who walk and bicycle. The Program encompasses the Bicycle Pedestrian Advisory Committee (BPAC), an inventory of the County's over 522 miles of bicycle infrastructure by type, tools to plan your multimodal routes, related GIS layers, and information on other related programs, like Safe Routes to School, Bicycle Friendly Miami-Dade, District 6's Community Traffic Safety Team (CTS), and the FDOT Bike Network Connectivity Plan.

- Miami-Dade TPO SMART STEP: Bicycle and Pedestrian Needs Study

  This comprehensive study focuses on enhancing safety and increasing accessibility and connectivity to non-motorized modes of transportation for all Tri-Rail commuter train station areas in Miami-Dade County. One of these stations is the Opa-locka station, which is in the heart of the city. The study identifies safety issues surrounding this station, several sidewalk gaps, ADA issues, as well as other intersection/crossings concerns. The study provides cost estimates for these proposed improvements for each stations in a 1-mile radius.

- **State:**

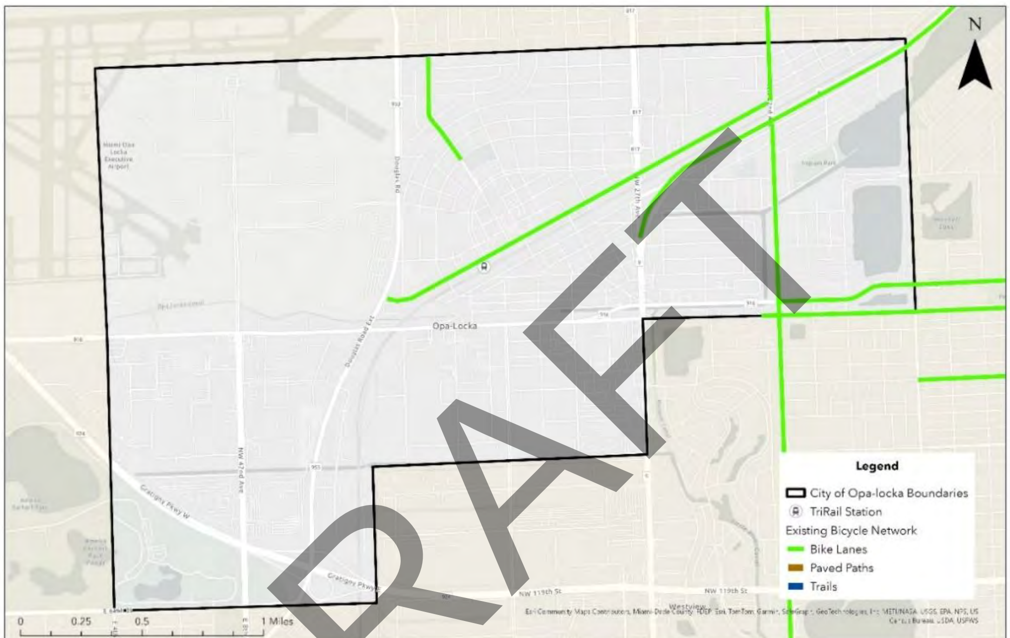
  - FDOT District Six Bicycle Pedestrian Mobility Improvement Program

    To shift the needle towards the Statewide goals set forth by Target Zero, the FDOT District Six has developed the Bicycle Pedestrian Mobility Improvement Program. This program ensures that FDOT promotes safety and mobility for non-motorized road users by planning for safe and connected facilities that accommodate pedestrians and bicyclists. FDOT District Six leads various initiatives out of this Program, including the Miami-Dade Bicycle Network Connectivity Assessment, which highlights both existing and proposed bicycle infrastructure within Miami-Dade County, including a network of unprotected bicycle lanes in the City of Opa-locka. Other initiatives include the Shared-Use Nonmotorized (SUN) Trail Program, and the ConnectPed Program. The Bicycle Connectivity Assessment identifies various proposed projects within the city, as documented below on **Map 2-12**. These corridors include:

    a) Connection 520C – County Connector – N Perviz Avenue from NW 151 Street to Ali Baba Avenue.
    b) Connection 521B – County Connector – Gold Coast Trail (SR 9 and SFRTA) from Opa Locka Boulevard to Snake Creek Trail.
    c) Connection 520A – County Connector – NW 32 Avenue from Snake Creek Trail to NW 151 Street.
    d) Connection 50A – Point of Interest – SR 9/NW 27 Avenue from SR 932 / E 49 Street to Memorial Trail.
    e) Connection 37C – Point of Interest – NW 151 Street from NW 32 Avenue to the proposed Gold Coast Trail.
    f) Connection 521A – County Connector – Ali Baba Avenue from S Perviz Avenue to Opa-locka Boulevard.

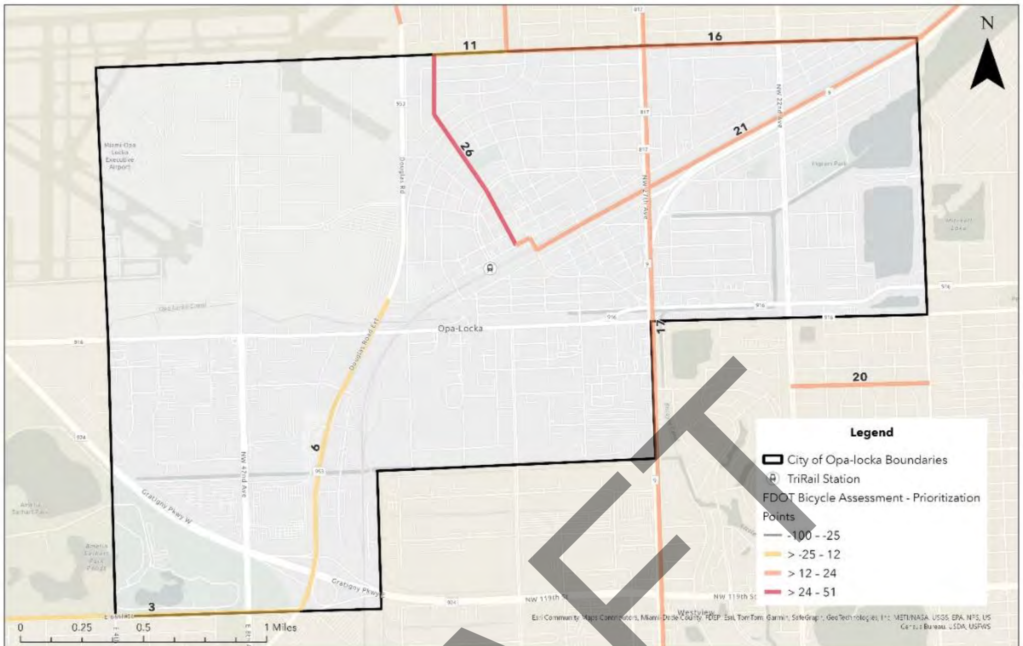
g) Connection 520B – County Connector – NW 151 Street from N Perviz Avenue to NW 32 Avenue
h) Connection 43A – Point of Interest – NW 37 Avenue/Douglas Road from Ali Baba Avenue to E 65 Street
i) Connection 135B – Point of Interest – E 65 Street from SR 823 / W 4 Avenue to NW 37 Avenue/Douglas Avenue

Map 2-12: FDOT Bicycle Connectivity Assessment for Opa-locka



Source: [FDOT District Six Bicycle Pedestrian Mobility Improvement Program]()

Map 2-13: FDOT Bicycle Projects for Opa-locka



Source: FDOT District Six Bicycle Pedestrian Mobility Improvement Program

- **Federal:**
  - FHWA Zero Deaths and Safe System

FHWA's Zero Deaths and Safe System Program aligns with the global vision of achieving zero fatalities on transportation networks. Rooted in the "*Vision Zero*" concept originating from Sweden in 1997, this program recognizes that even a single death is unacceptable. Central to this approach is the implementation of a Safe System Framework, which acknowledges that human error and the limited tolerance of the human body to crash impacts. The Safe System aims to ensure that roadway infrastructure and management minimize the risk of crashes and mitigate their severity when they occur. Six principles underpin this approach:

a) The unacceptability of deaths and serious injuries.
b) Human fallibility.
c) Human vulnerability.
d) Shared responsibility.
e) Proactive safety measures.
f) The importance of redundancy.

Embracing a commitment to zero deaths entails addressing all aspects of safety through five key elements: safe road users, safe vehicles, safe speeds, safe roads, and post-crash care. Achieving this vision requires a culture that prioritizes safety in all road system investment decisions, emphasizing that fatalities and serious injuries are preventable and unacceptable.

- [USDOT Equitable Transportation Community (ETC) Explorer]

  The USDOT's Equitable Transportation Community (ETC) Explorer Tool is a dynamic web application developed as part of the Justice40 initiative, stemming from Executive Order 14008 by the Biden-Harris Administration[11]. It aims to address historical underinvestment by empowering decision-makers with insights into communities' challenges and identifying projects to alleviate them. Utilizing 2020 census data, the tool explores five components of cumulative burden: Transportation Insecurity, Climate and Disaster Risk Burden, Environmental Burden, Health Vulnerability, and Social Vulnerability. By providing a deeper understanding of transportation disadvantages, the ETC Explorer complements CEQ's Climate & Economic Justice Screening Tool. It assists in ensuring that USDOT's investments target transportation-related causes of disadvantaged. For the City of Opa-locka, the ETC Tool identifies 92% of the population living within a disadvantaged census tract, majorly due to Climate & Disaster Risk Burden (70%), Environmental Vulnerability (86%), and Social Vulnerability (86%). A more detailed examination of the equity components will be included as part of the Transportation Equity Review.

[11] Executive Order on Tackling the Climate Crisis at Home and Abroad

Safety Analysis

3

3. Safety Analysis

3.1 Safety Analysis Summary

Though accidents are commonplace, certain corridors and intersections within the city exhibit distinct patterns warranting prioritized improvements. These areas often experience a higher frequency and severity of crashes, sometimes resulting in multiple serious injuries or fatalities. Between 2018 to 2023, the City of Opa-locka witnessed 6,276 crashes, with 119 (approximately 2%) proving fatal or causing serious injuries. Rear-end collisions and sideswipes comprised most of these incidents. Notably, weekdays between 4:00 p.m. and 8:00 p.m. witnessed the highest crash frequency. Through a Safety Analysis initiative, the city has identified key locations within its roadway network prone to severe and frequent crashes, designating them as part of the High Injury Network (HIN). This analysis will undergo biennial updates to tailor projects aimed at achieving the ambitious goal of zero fatalities and severe injury crashes by 2030.

3.2 Data Collection

Through the implementation of the Action Plan, the City aims to establish a foundational framework and employ a data-driven approach to pinpoint the most hazardous areas and corridors within the City of Opa-locka transportation network. This data serves as the basis for identifying the HIN, enabling strategic interventions aimed at reducing both the frequency and severity of crashes.

To compile historic crash data spanning six complete years from 2018 to 2023, Signal Four Analytics (S4) was predominately used, which aggregates information sourced from the Florida Department of Highway Safety and Motor Vehicles (FLHSMV). S4 offers a comprehensive dataset, incorporating both detailed and summary crash data, including the latest reports from local and state law enforcement agencies. Notably, the Florida Department of Transportation (FDOT) has transitioned to relying solely on S4 for crash data analysis, superseding previous datasets such as the State Safety Office Geographic Information System (SSOGIS) and Crash Analysis Reporting (CAR) Systems.

To comply with the SS4A, a 10-year historical baseline of fatal and serious crashes by mode will supplement the S4 crash data. The data collected was obtained from the USDOT National Highway Traffic Safety Administration (NHTSA) Fatality and Injury Reporting System Tool (FIRST). As of June 2024, the 10-year baseline is from 2013 to 2022 and the queries correspond to the Fatality Analysis Reporting System and the Crash Report Sampling System. The same source was used to calculate the average annual fatality rate per 100,000 population, following the guidelines of the SS4.

3.3 Evaluating Crash Data

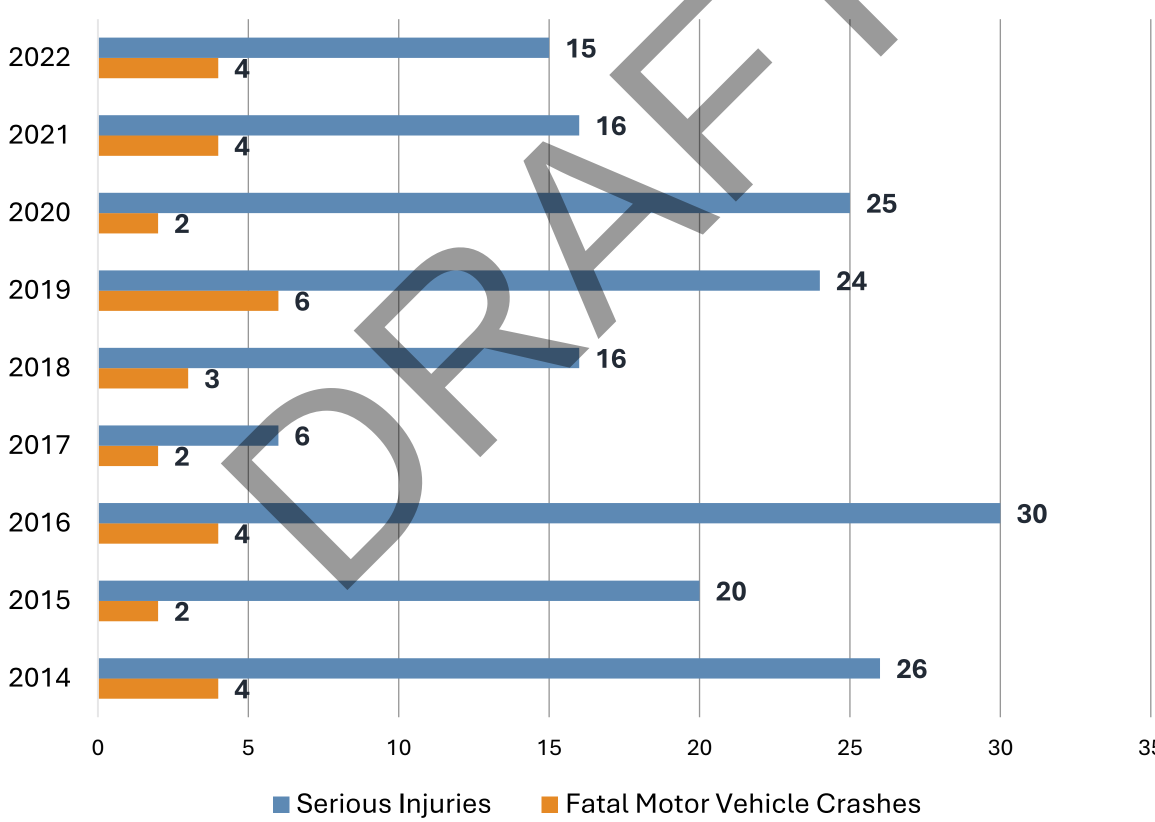
Understanding the locations and causes behind the uptick in fatal and life-altering injury crashes is crucial for decision-makers to develop effective strategies. A thorough crash analysis delves into the specifics of each incident, considering factors like mode of transport, location, behaviors, and environmental conditions that may have influenced crash occurrence and severity. By assessing the impact of these serious crashes, the city gains insight into their profound effects on individuals' lives, enabling focused efforts toward achieving the Vision Zero goal.

3.3.1 Historical Crash Baseline

A "*historical baseline*" for fatal and serious injury crashes refers to a statistically established benchmark representing the typical or average number of such incidents over a specified period in the past. This baseline is crucial for understanding trends, assessing the effectiveness of safety interventions, and setting realistic goals for reducing traffic-related fatalities and injuries. This data is used for comparing current and future data against the historical baseline to identify trends and measure progress, setting safety performance targets and evaluating the effectiveness of interventions, and informing policymakers and stakeholders about past performance and areas needing improvement.

Figure 3-1 illustrates the historical baseline for fatal and serious injury crashes in Opa-locka. Data from the National Highway Traffic Safety Administration (NHTSA) and S4 were used to calculate the baseline for fatal and serious injury crashes. The total amount of fatalities from 2014 to 2022 was 31, with an average of 3.4 fatalities per year. Regarding serious injuries, the total number was 178, with an average of 19.7 serious injury crashes per year.

Figure 3-1: Historical Baseline for Fatal and Serious Injury Crashes



Source: USDOT NHTSA and Signal 4 Analytics

3.3.2 Fatality Rate

The "*fatality rate*" refers to a metric used to evaluate the number of traffic-related fatalities per a defined unit. This rate is a crucial indicator in traffic safety programs, such as the SS4A, aimed at reducing fatalities and achieving the vision of zero traffic deaths. This rate is used for comparison of traffic safety performance between different regions or cities and helping in setting realistic and measurable targets for fatality reduction.

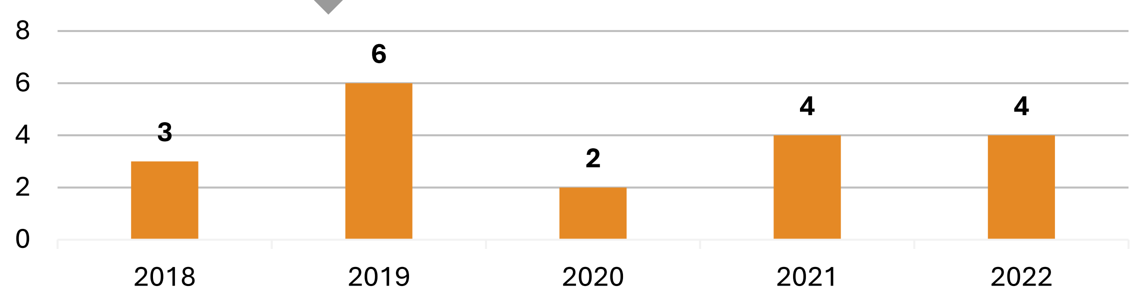
The National Highway Traffic Safety Administration (NHTSA) has established that to calculate the fatality rate, the 2020 U.S. Census American Community Survey (ACS) 5-year population estimate needs to be used. To calculate the Average Annual Fatality Rate (per 100,000 population), the following equation is used:

$$Average\ Annual\ Fatality\ Rate = \frac{\frac{Total\ number\ of\ vehicle\ crashes}{5}}{Jurisdiction\ popultaion\ \#} \times 100{,}000$$

Regarding the total number of crashes and following the SS4A FY 2022 Notice of Funding Opportunity Vision Zero Toolkit guidance[12], a 5-year annual average from the total count of fatalities from 2016 to 2020 based on Fatality Analysis Reporting System (FARS) data, an alternative traffic fatality dataset, or a comparable dataset with roadway fatality information is used to calculate this metric. However, in small jurisdictions like Opa-locka, traffic safety data might not be sufficiently abundant or may be incomplete, limiting its usefulness for improving traffic safety. Therefore, the dataset reviewed for this effort was expanded to include data up to 2022[13], encompassing years before and after the COVID-19 pandemic. This avoids relying solely on 2020 data, which may reflect travel changes due to lockdowns and travel restrictions. The data expansion, from 2018 until 2022, also aims to capture changes in transportation behaviors and the rise in telecommuting or remote work resulting from the pandemic, as crash data from 2016 and 2017 may now be too outdated for current consideration.

The total "*Persons Killed in Fatal Crashes*" reported by the NHTSA's Fatality and Injury Reporting System Tool (FIRST) is 17, shown in **Figure 3-2**.

Figure 3-2: Persons Killed in Fatal Crashes in Opa-locka (2018-2022)[14]



Source: Fatality Analysis Reporting System (FARS)

[12] Vision Zero Toolkit
[13] 2022 is the most recent year available in NHTSA's FIRST
[14] NHTSA's Motor Vehicle Crash Data Querying and Reporting

Using the equation, the average annual fatality rate (per 100,000 population) is 23.74 for the City of Opa-locka, when accounting for a 2020 U.S. Census ACS 5-year population estimate of 16,008 inhabitants[15].

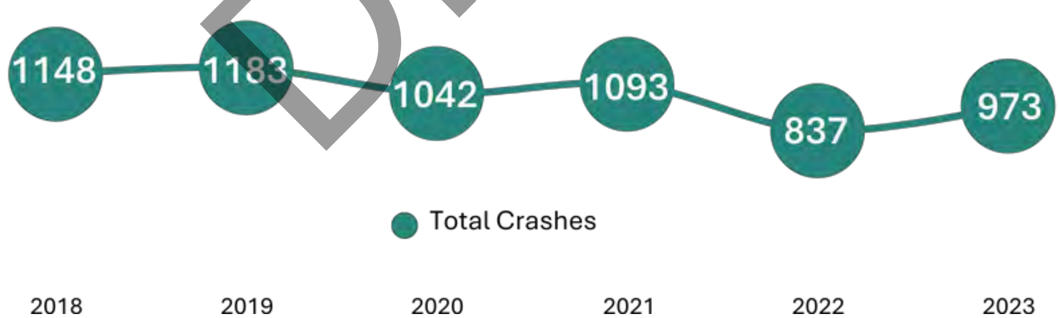
$$Average\ Annual\ Fatality\ Rate = \frac{\frac{19}{5}}{16{,}008} \times 100{,}000 = 23.74$$

This high fatality rate highlights broader public issues where traffic deaths disproportionately affect vulnerable populations, including pedestrians, cyclists, children, the elderly, and low-income communities. In Opa-locka, these fatalities exacerbate existing social inequities and injustices. This situation may discourage the use of sustainable transportation modes, leading to increased reliance on motor vehicles, which in turn contributes to higher greenhouse gas emissions and air pollution. Additionally, fear of traffic accidents can deter Opa-locka residents from engaging in physical activities such as walking and cycling, resulting in negative health outcomes like obesity, cardiovascular diseases, and mental health issues.

3.3.3 Six-Year Crash Trends

Following the SS4A FY 2022 Notice of Funding Opportunity Vision Zero Toolkit guidance[16], the latest crash data, regardless of ownership or maintaining agency, has been evaluated while conducting this analysis, encompassing years before and after the COVID-19 pandemic to avoid creating a false narrative due to lockdowns and restrictions of travel. Over the period from 2018 to 2023, the City of Opa-locka encountered a total of 6,276 crashes as seen in **Map 3-1** and summarized per year in **Figure 3-3**. Among these, 119 resulted in life-altering injuries or fatalities, comprising 2% of all crashes, while 227 led to non-incapacitating injuries. **Figure 3-4** reflects the fatalities and severe injuries by year throughout the study period, which totals 32 fatalities and 87 severe injuries.

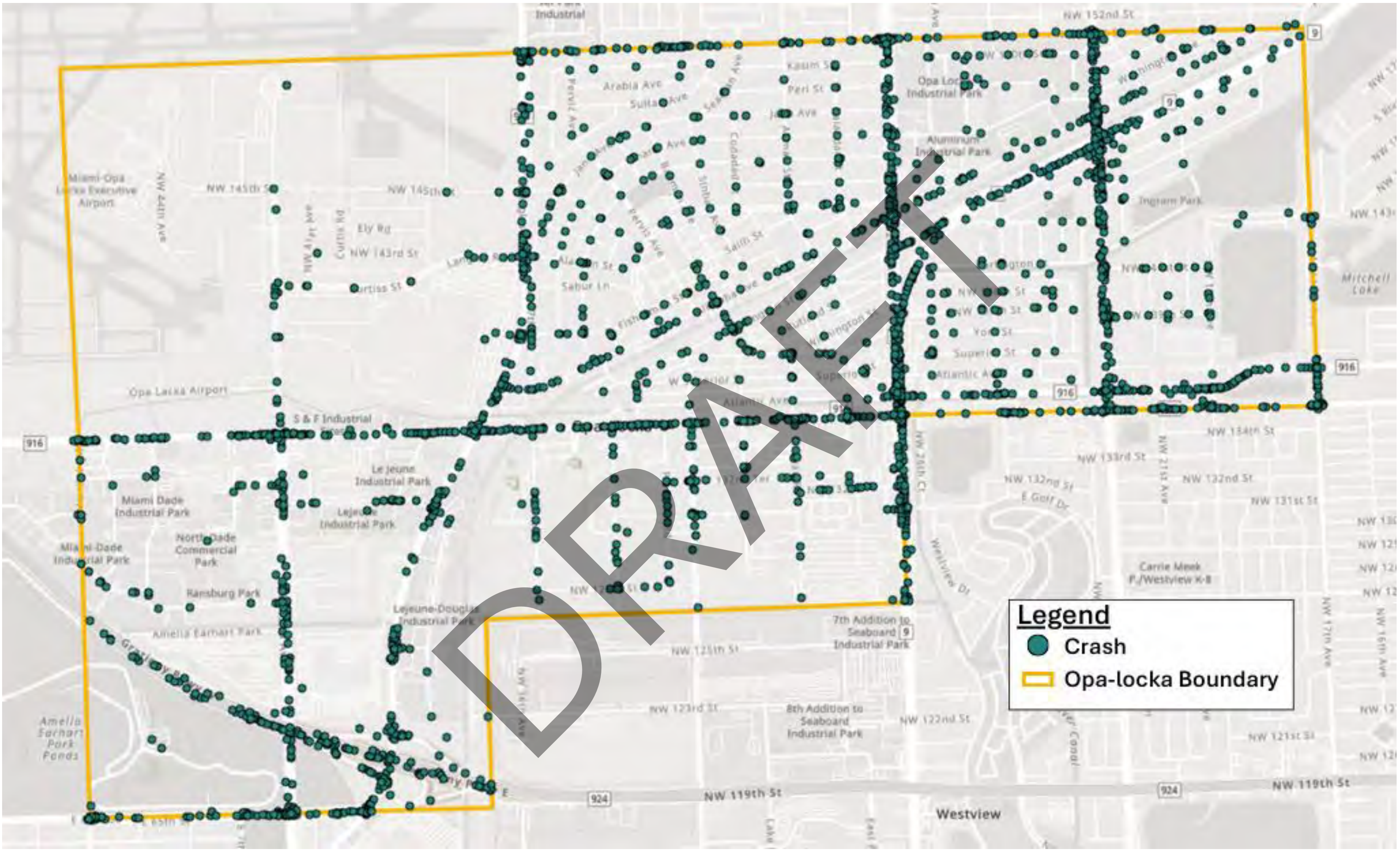
Figure 3-3: Annual Number of Total Crashes from 2018-2023



Source: Signal 4 Analytics.

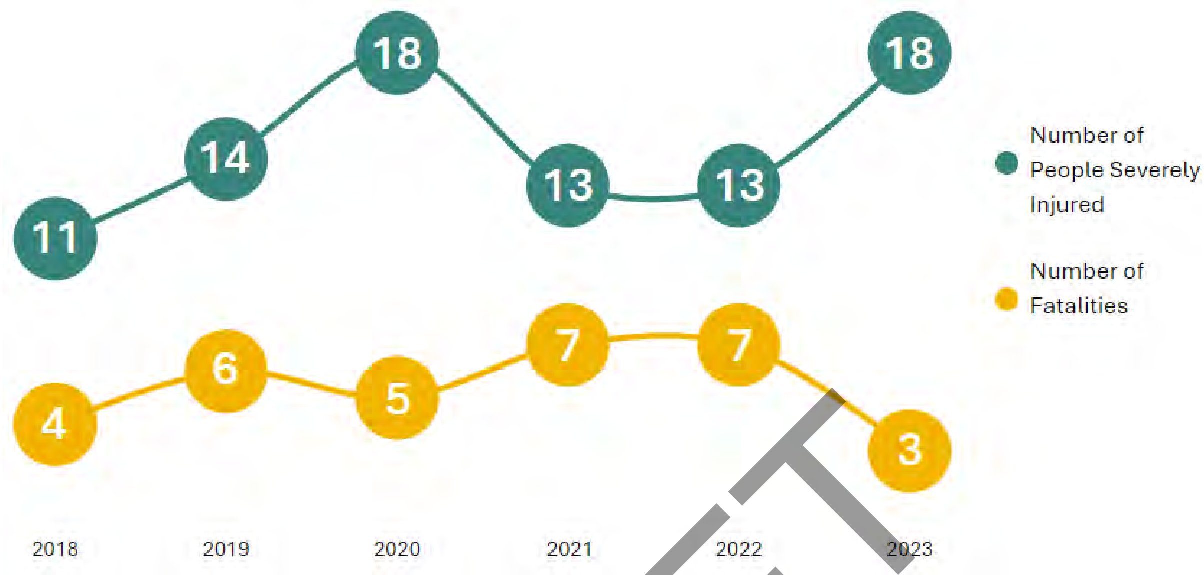
[15] 2020 U.S. Census ACS 5-year population estimate
[16] Vision Zero Toolkit

Map 3-1: All Crashes in the City of Opa-locka Between 2018 and 2023



Source: Signal 4 Analytics

Figure 3-4: Annual number of traffic-related fatalities and severe injuries from 2018-2023



Source: Signal 4 Analytics

2023 was the year with the highest number of severe injuries with 18 people severely injured in total. Conversely, in the same year, the number of fatalities was almost half of the previous year and had the lowest number of fatalities in the 6-year period. The years with the highest number of fatalities were 2021 and 2022.

3.3.4 Method of Travel

Traffic fatalities and severe injuries affect various travel groups disparately due to factors like vulnerability, exposure, and behavioral patterns. Below are some factors associated with different road users:

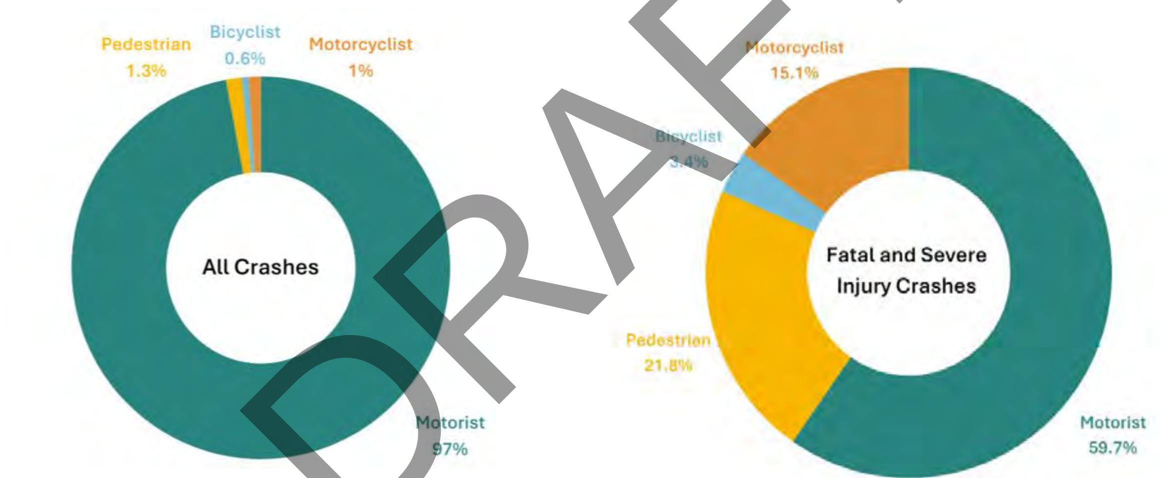
a) **Pedestrians:** Pedestrians are among the most vulnerable road users. They lack the protection that vehicle occupants have, making them more susceptible to severe injuries or fatalities in the event of a collision. Factors such as inadequate crosswalks, poor street lighting, and high-speed traffic areas contribute to higher risks for pedestrians.
b) **Cyclists:** Similar to pedestrians, cyclists are exposed and vulnerable. They share the road with larger, faster-moving vehicles, which can result in serious injuries or fatalities in crashes. The absence of dedicated bike lanes and proper signaling can exacerbate these risks.
c) **Motorcyclists:** Motorcyclists face a higher risk of severe injuries or fatalities due to the lack of a protective shell around them. Their smaller size compared to other vehicles can make them less visible to drivers, increasing the likelihood of collisions, especially at intersections and during lane changes.
d) **Vehicle Occupants:** While vehicle occupants benefit from protective features like seat belts, airbags, and the vehicle's structure, they still face significant risks, particularly in high-speed crashes or rollovers. The severity of injuries can vary based on factors like vehicle type, crash dynamics, and occupant position within the vehicle.
e) **The Elderly and Children:** Elderly individuals and children are particularly vulnerable due to their physical fragility and, in some cases, limited ability to react quickly to traffic situations.

Safety features like child car seats and slower speed zones in areas with high elderly or child pedestrian activity are crucial for their protection.

f) **Low-Income and Minority Communities:** These communities often face disproportionate risks due to factors such as poorer infrastructure, less access to safe transportation options, and higher exposure to hazardous conditions. Issues like poorly maintained roads, lack of pedestrian amenities, and limited public transportation contribute to higher rates of severe injuries and fatalities.

Data reveals that in crashes, pedestrians, bicyclists, and motorcyclists face a higher risk of sustaining fatal or severe injuries compared to occupants of vehicles. As illustrated in **Figure 3-5**, despite pedestrians being involved in only 1.3% of all city crashes during the study period, they represented 21.8% of collisions resulting in fatalities or severe injuries. Similarly, motorcyclists accounted for just 1% of all collisions but constituted 15.1% of those resulting in fatal or severe injuries. Bicyclists, involved in only 0.6% of all crashes, made up 3.4% of collisions resulting in fatalities or severe injuries. Conversely, collisions exclusively involving cars comprised 97% of all crashes, but only 59.7% of those leading to fatal or severe injuries.

Figure 3-5: Crash Breakdown of All Incidents by Vulnerable User



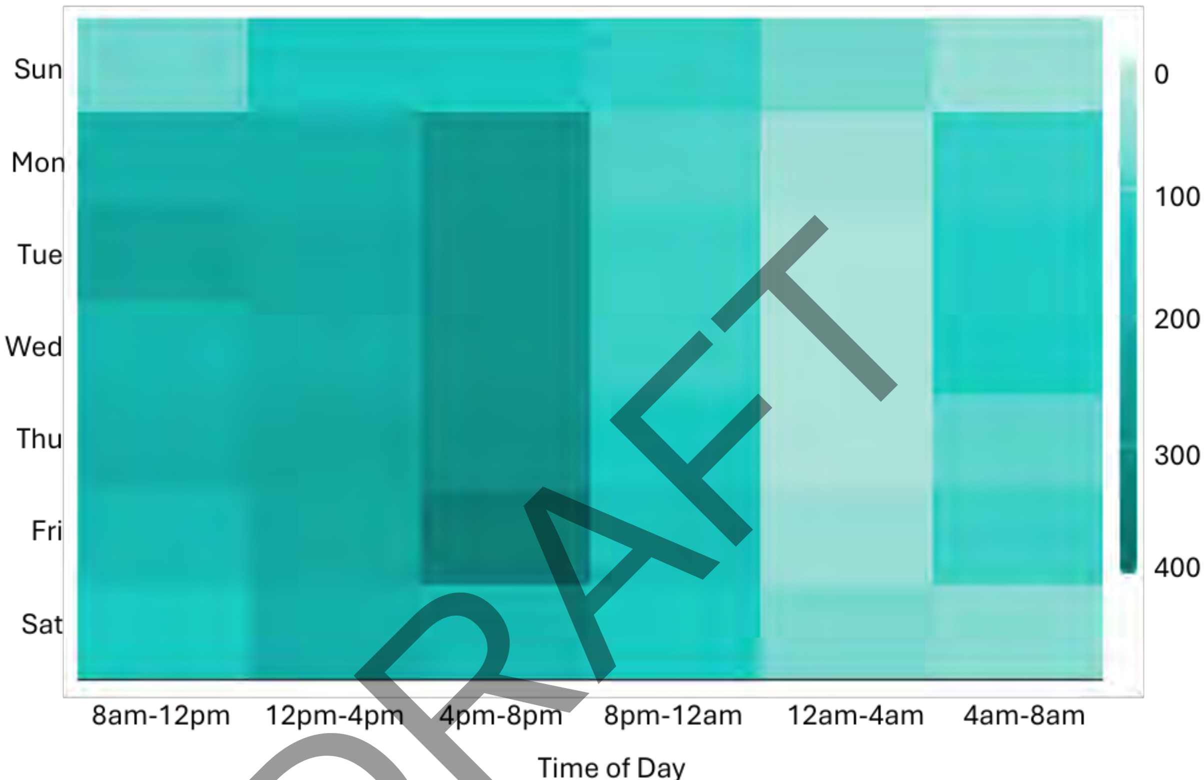
Source: Signal 4 Analytics.

3.3.5 Collision Analysis for all Crashes

Crash data from 2018 to 2023 was analyzed to provide a comprehensive overview of crash trends within Opa-locka's city limits. **Map 3-2** below illustrates all crashes in the city, categorized by severity. Additionally, specific patterns concerning the time of day when most crashes occurred were examined. **Figure 3-6** shows the frequency of crashes across the city, broken down by day of the week and time of day.

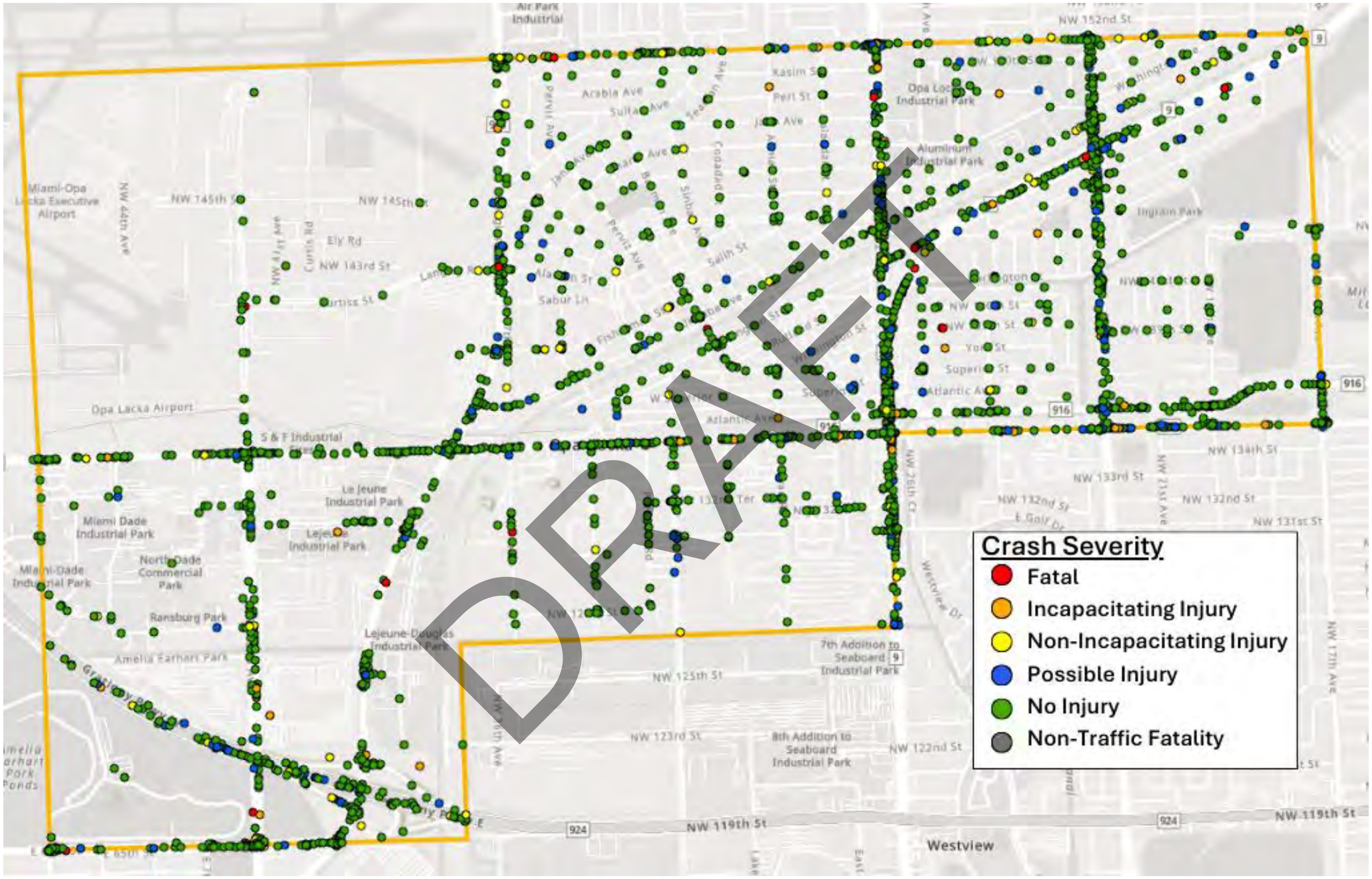
The analysis revealed that the highest crash frequency occurred on weekdays between 4:00 p.m. and 8:00 p.m. This time frame typically coincides with the heaviest rainfall, the transition period around sunset, which can cause glare, and the onset of nighttime conditions. Collision data from 2018 to 2023 also indicates that 13% of fatal and severe injury collisions in Opa-locka occurred on wet roadways, which can often be mitigated by applying friction course asphalt to the road surfaces. Additionally, 3% of these collisions took place at night under unlit conditions. To reduce nighttime crashes, installing street lighting can be effective. Streetlights improve visibility for drivers, making it easier to see other vehicles, pedestrians, and obstacles, thereby significantly lowering the risk of nighttime accidents. Other effective measures include using reflective or lighted raised pavement markers and retroreflective signage.

Figure 3-6: Crash Calendar of Accidents Occurring in the City of Opa-locka for all Crashes



Source: Signal Four Analytics

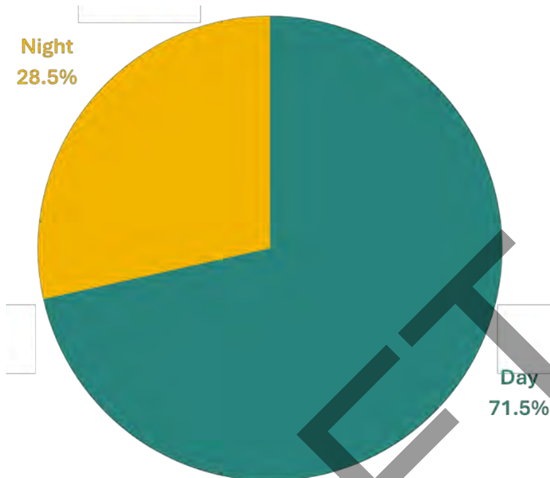
Map 3- 2: All Crashes by Crash Severity



Source: Signal Four Analytics

Understanding when crashes occur provides insight into potential contributing factors. Data from S4 shows that roughly 28.5% of all crashes happen in the evening, with the remaining 71.5% occurring during the day. Considering that nighttime traffic volume is about half of daytime traffic volume, this aligns with the patterns illustrated in **Figure 3-7**.

Figure 3-7: Time of Day for All Crashes in Opa-locka



Source: Signal Four Analytics

The crash analysis showed that in the city, certain behaviors are strongly associated with all crashes. Acknowledging and studying these patterns of behavior allows the city to take a larger step towards reducing traffic-related injuries and deaths by focusing on strategies that will mitigate the impacts of these top dangerous behaviors. **Figure 3-8** describes the top five behaviors resulting in crashes across the city throughout the study period (2018-2023).

Figure 3-8: Top Five Dangerous Contributing Factors of All Crashes in Opa-locka

Source: Signal Four Analytics and FHWA Safety Toolkit

In the context of Miami-Dade County's Vision Zero initiative, which aims to eliminated fatalities and severe injuries by 2040 while enhancing safety, mobility, and health for all the county, several contributing factors have been identified[17]. When comparing these factors across municipalities, the top five in the County include aging drivers, teenage drivers, aggressive driving, and distracted driving. Moreover, according to the updated Vision Zero Plan, "*aggressive driving KSI involved*" contributing crash factor in overall Miami-Dade County constitutes a 7.8 percent of crashes, while Opa-locka, is in the second place of the whole county with a 28 percent

Additionally, according to the Florida Highway Safety and Motor Vehicles' Traffic Crash Facts 2022 Annual Report[18], the primary contributing factor for fatal and incapacitating crashes statewide is speeding, often combined with aggressive driving. In 2022 alone, speeding-related incidents resulted in 223 fatalities and 456 incapacitating injuries in Florida

3.3.6 Collision Analysis for Fatal and Serious Injury Crashes

The SS4A program takes a data-driven approach to understanding the systemic factors behind traffic deaths and serious injuries. When a crash happens and law enforcement is notified, a report is created to document the details of the incident including location, contributing factors, time of day, and more. S4's web-based system contains all these crash data throughout the state of Florida, and it facilitates safety decision-making and evidence-based transportation planning analyses.[19]

As part of the SS4A initiative, it is of particular interest to understand crashes that result in people being killed or severely injured, which will be referred to as "*fatal and serious injury crashes (FSI)*." A serious, or life-altering, injury involves broken or fractured bones, severed limbs, etc., and it typically requires hospitalization and transport to a medical facility.[20] A major reason this data is evaluated is to identify and prioritize safety improvements based on past crashes. The FSI crash information throughout the city is illustrated in **Map 3-3** and is instrumental in identifying key corridors and intersections. The map reveals the concentration of severe crashes on a subset of the city's overall street network, which are then used to refine the development of the High Injury Network (HIN) and identify safety implementation strategies. A total of 119 FSI crashes were reported within the city boundaries.

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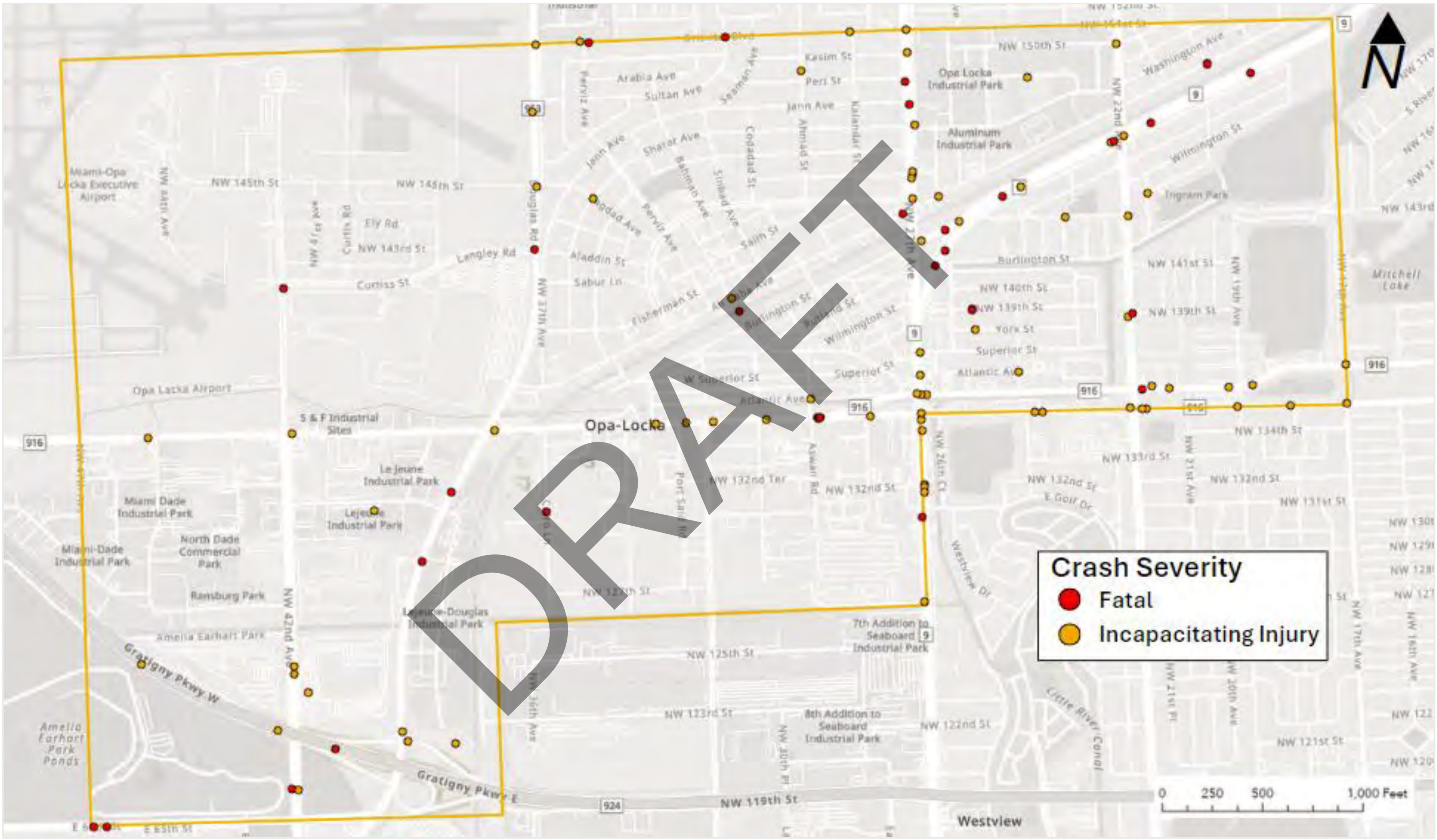
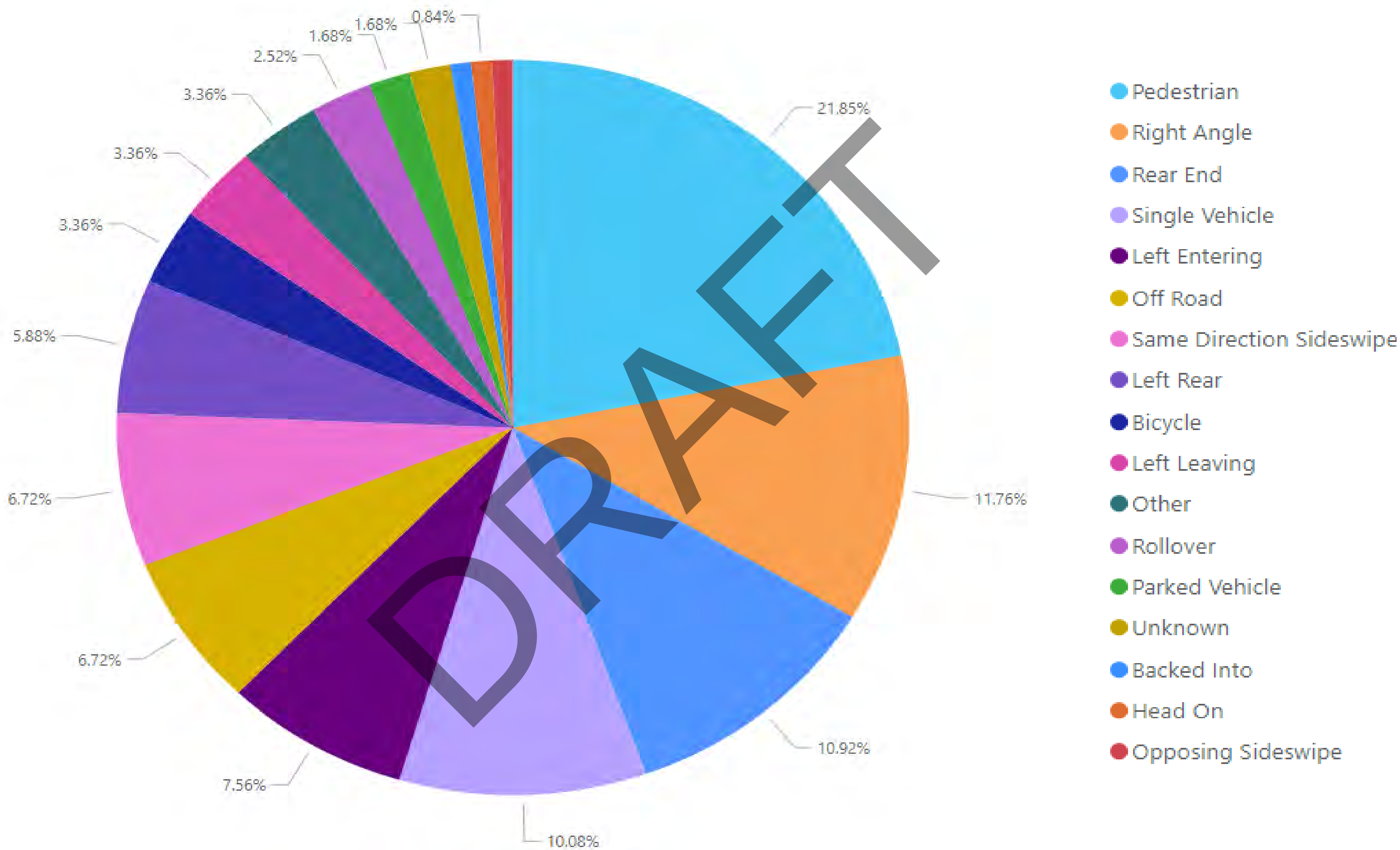
[17] Miami-Dade County Vision Zero Action Plan
[18] crash_facts_2022.pdf (flhsmv.gov)
[19] University of Florida Signal 4 Analytics
[20] FHWA KABCO Injury Classification Definitions by State

Map 3-3: Fatal and Incapacitating Injuries Throughout the City of Opa-locka from 2018-2023



Source: Signal 4 Analytics

Figure 3-9: Fatal and Incapacitating Injury Crash Type Breakdown from 2018-2023



Source: Signal 4 Analytics

Of the 119 fatal and serious injury crashes, **Figure 3-9** shows all the type of crashes experienced within the city. Of the 17 crash types, the top 5 crash types are outlined in **Table 3-1**, which involve pedestrians, right angle crashes, rear end crashes, single vehicle crashes, and left entering crashes and together account for over 62% of all FSI collisions. The crash type with the highest percentage of all FSI crashes is the pedestrian type.

Table 3-1: Top Five Fatal and Incapacitating Injury Crash Types from 2018-2023

Top 5 Crash Types for Crashes Resulting in Fatality or Serious Injury (2018-2023)	Total Crashes	Share of All FSI Crashes
Pedestrian: An individual involved in a crash who was not occupying a motor vehicle	26	21.85%
Right Angle: Two vehicles traveling on perpendicular roads collide	14	11.76%
Rear End: One vehicle collides into the back of another vehicle	13	10.92%
Single Vehicle: One vehicle crash resulting from factors such as driver error, road conditions, or mechanical failure	12	10.08%
Left Entering: A vehicle colliding while another vehicle while making a left turn	9	7.56%

Source: Signal 4 Analytics

3.3.6.1 Pedestrian FSI Crashes

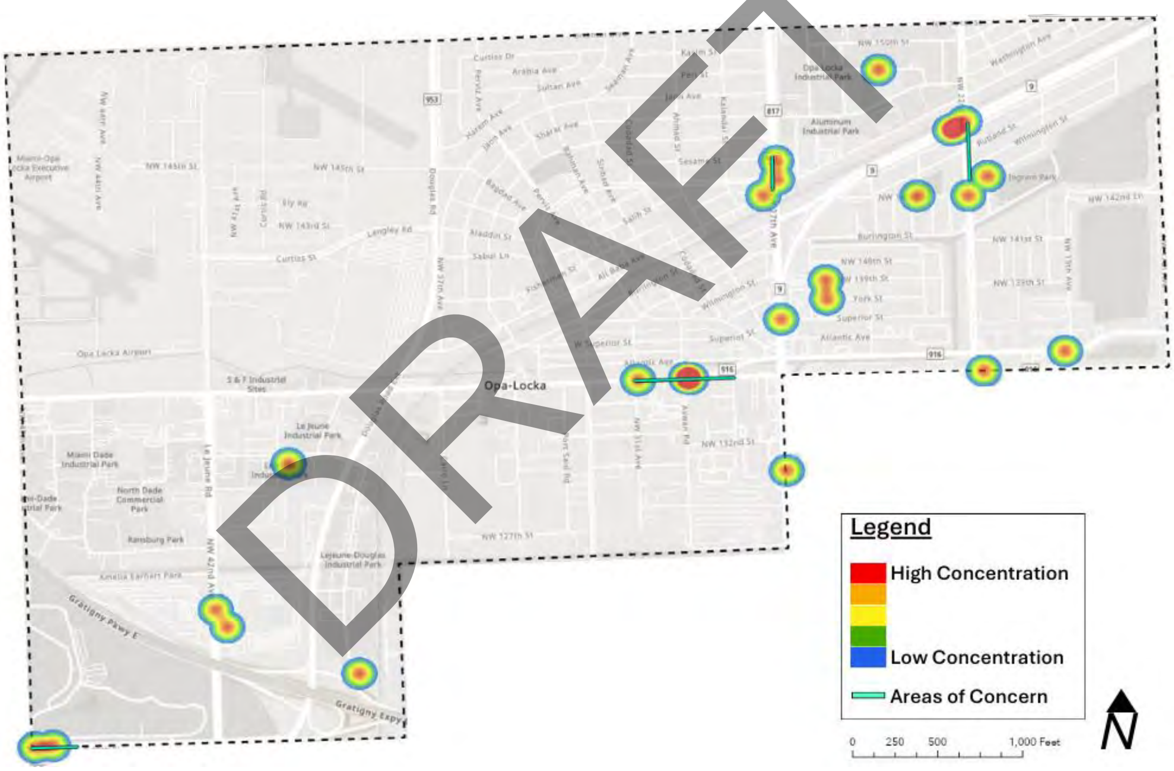
While most crashes involve people driving motorized vehicles, vulnerable road users disproportionally bear the brunt of traffic injuries and death. As previously mentioned, pedestrian-involved crashes represent only 1.3% of all crashes, yet account for 21.9% of crashes resulting in death and serious injuries, which is the largest FSI group in the City of Opa-locka. According to the

U.S. Census Bureau, 3.1% of the population in the city walks to work every day[21], which is significantly higher than in the County[22]. Further, according to the USDOT Equitable Transportation Community Explorer, most of the tracts within the city's boundaries experience transportation cost burden, which results in lack of accessible transportation means and relaying in other non-motorized modes of transportation, such as walking.

The city encountered 26 fatal and seriously injured pedestrian crashes from 2018 to 2023. Most pedestrian crashes were primarily noted along the following segments as depicted in **Map 3-4**:

- SR-9 and NW 22 Avenue
- NW 135 Street from NW 31 Avenue to NW 28 Avenue
- NW 27 Avenue from Sesame Street to Ali Baba Avenue
- East 65 Street from East 4 Avenue to East 5 Avenue

Map 3-4: Pedestrian FSI Crashes in the City of Opa-locka



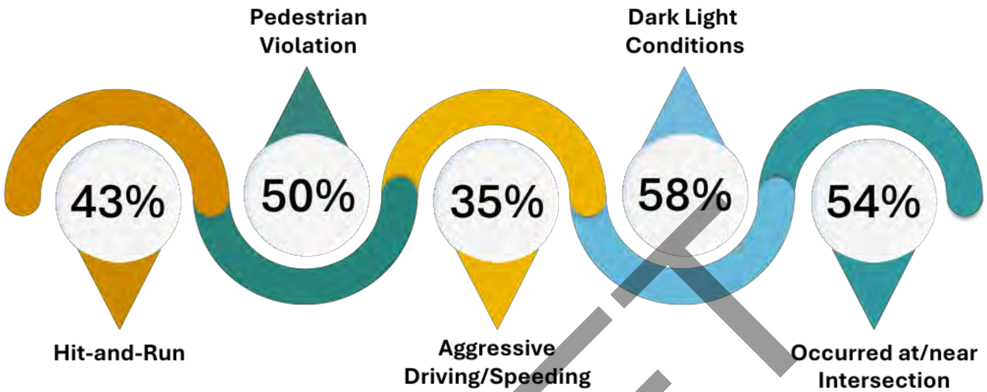
Source: Signal 4 Analytics

Pedestrians face significant risks on the roadway, and it is important to dissect contributing factors to help identify dangerous conditions and locations. **Figure 3-10** illustrates statistics that ultimately makes comprehending this data essential for understanding what is producing pedestrian fatalities and serious injuries, creating safer urban environments, and enhancing the overall road safety for all users.

[21] Opa-locka city, Florida - Census Bureau Profile
[22] Miami-Dade County – Census Bureau Profile

Of all FSI crashes, 50% were due to pedestrian violations, which entails a pedestrian disregarding traffic laws and safety regulations, such as crossing streets without using designated crosswalks or ignoring traffic "*walk*" signals. When paired with the 58% dark light conditions, these violations can prove to be deadly, as the driver's visibility is even further hindered if the incident occurs in a dimly lit area.

Figure 3-10: Pedestrian FSI Crash Statistics

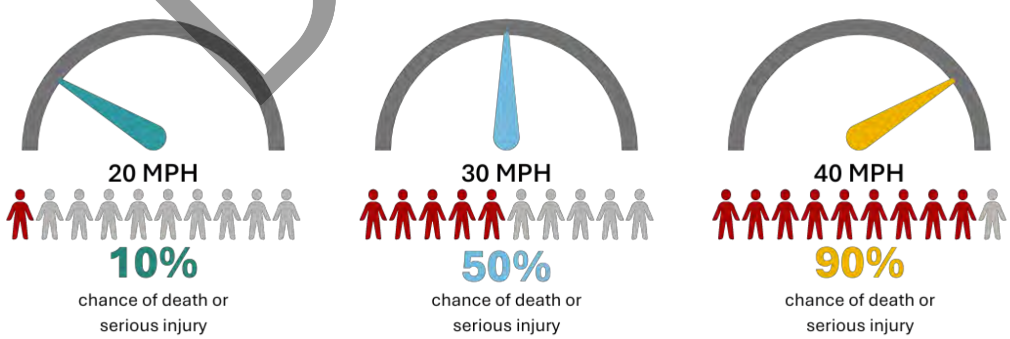


Source: Signal 4 Analytics

Collision avoidance at higher speeds is more challenging as the driver's field of vision is narrowed, with less time to react to the obstacle. The relationship between speed and injury severity is critical when it involves vulnerable users like pedestrians.

As seen in **Figure 3-11**, if a pedestrian is struck by a vehicle traveling 40 miles per hour, they have a 90% chance of death or serious injury, whereas, if struck by a vehicle traveling at 20 miles per hour, they have a 10% chance of death or serious injury.[23] Slowing down is paramount to eliminating traffic deaths.

Figure 3-11: Pedestrian FSI Crash Statistics



Source: Signal 4 Analytics and AAA Foundation for Traffic Safety

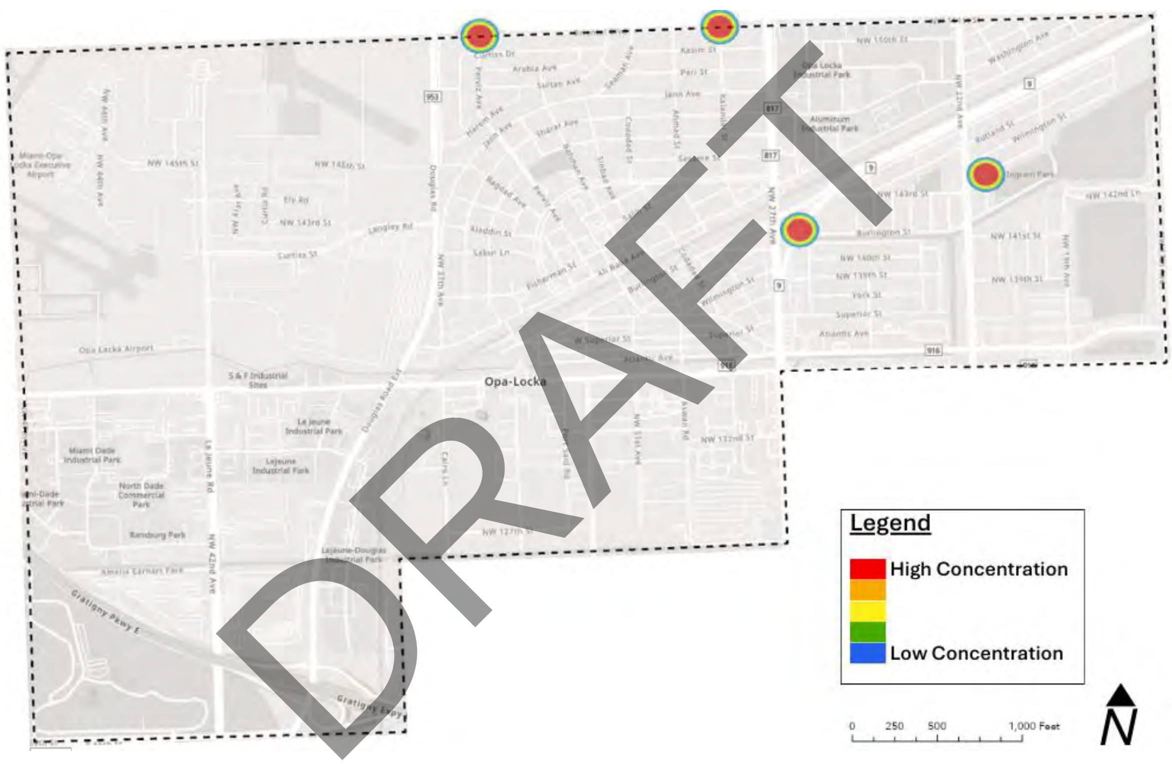
[23] AAA Foundation for Traffic Safety, Impact Speed and Pedestrian's Risk of Severe Injury or Death

3.3.6.2 Bicyclist FSI Crashes

Over the study period, there were a total of 24 bicycle-related incidents, four of which resulting in fatal or serious injuries (3.4%) throughout the six years. Each bicycle crash occurred at intersections as illustrated in **Map 3-5** and listed below:

- NW 151 Street and N Perviz Avenue
- SR-9 and Burlington Street
- NW 21 Court and York Street
- NW 151 Street and Kalandar Street

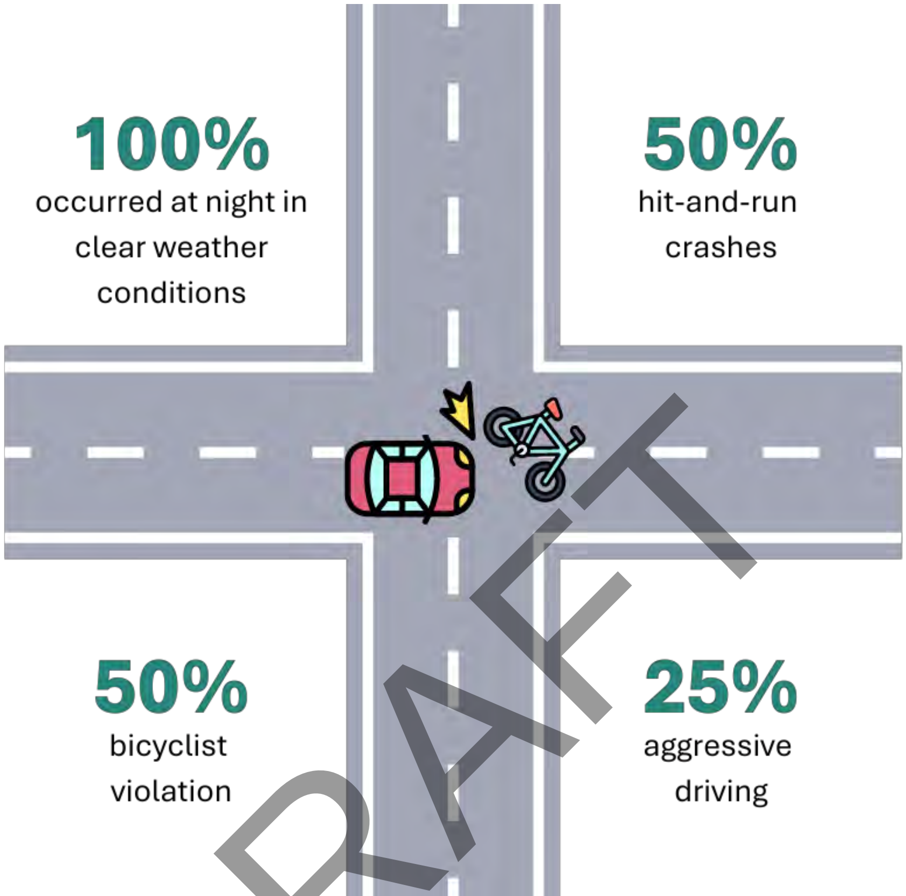
Map 3-5: Bicycle FSI Crashes in the City of Opa-locka



Source: Signal 4 Analytics

The statistics shown in **Figure 3-12** reveal alarming trends about their nature and circumstances. Notably, all fatal and serious injury bicycle crashes occurred at night in clear weather conditions, indicating a heightened risk of bicycle safety under these settings. Half of the crashes were hit-and-runs, with 25% due to aggressive and reckless driving resulting in a fatality. Equally concerning is 50% of the crashes involved violations by the bicyclist themselves, where they failed to yield to the right-of-way and improperly passing through the intersection during a *"red"* crosswalk indication. Furthermore, 75% occurred on roads with unprotected bike lanes and all the bicyclists were males over the age of 55.

Figure 3-12: Bicyclist FSI Crash Statistics



Source: Signal 4 Analytics

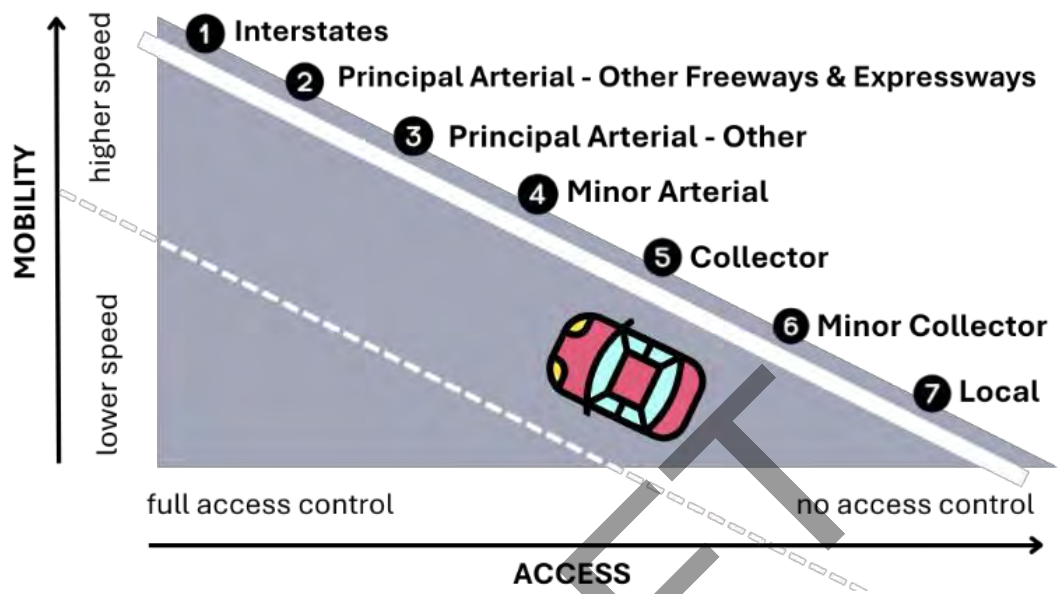
3.3.7 Crash Location Analysis

Interpreting the locations of fatal and serious injury crashes enables precise identification of high-risk areas and tailored interventions to address specific safety challenges. Different roads present unique risks necessitating customized safety measures. This detailed analysis allows for strategic resource allocation, targeted policy development, and effective public education campaigns. Functional classification is a way to define roadways based on the services they provide in relation to the entire roadway network. It helps in planning, designing, and managing roadways to ensure efficient and safe movement of people and goods.

Functional classification also helps balance the need for mobility (the ability to travel long distances quickly) with the need for access (the ability to reach local destinations). Higher classifications (interstates and arterials) prioritize mobility, while lower classifications (collectors and local roads) prioritize access. Each classification comes with specific design standards and guidelines related to lane width, speed limits, intersection control, and other factors to ensure safety and efficiency appropriate to the road's function.

Figure 3-13 describes the different types of roadway groups and their degree of mobility and access.

Figure 3-13: Roadway Functional Classification



Source: FHWA Functional Classification

These classifications are generally divided into several categories, each serving different purposes, as described below:

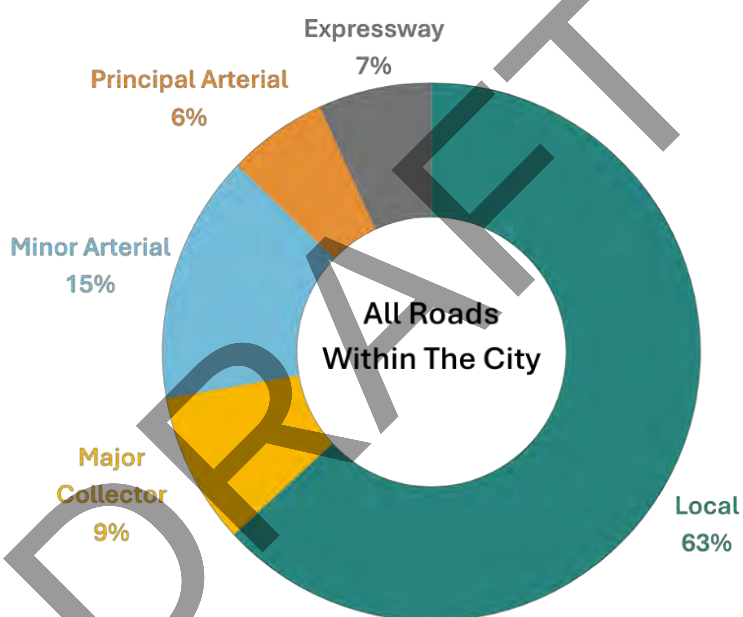
1. **Interstates and Freeways:** These roads represent approximately 7% of the total network. Examples include SR 924/Gratigny Expressway.
    - **Interstates:** These are major highways that form part of the Interstate Highway System, designed for long-distance travel and high-speed traffic. They connect major cities and regions across states, facilitating efficient movement of goods and people.
    - **Freeways:** Similar to interstates, freeways are designed for high-speed travel with limited access points. They have multiple lanes, controlled access, and no intersections, ensuring smooth traffic flow.
2. **Principal Arterials:** These roads represent approximately 21% of the total network, with minor arterials encompassing 15% of the facilities citywide. Examples include SR 9/SR 817/NW 27 Avenue, SR 916/NW 135 Street/Opa-locka Boulevard, and NW 37 Avenue/Douglas Road.
    - **Major Arterials:** These roads serve major centers of metropolitan areas, providing high-capacity urban travel routes. They are designed to carry large volumes of traffic over longer distances and often connect to freeways and interstate.
    - **Minor Arterials:** These roads provide service for moderate-length trips and connect larger urban areas to smaller towns or rural areas. They offer a balance between mobility and access to properties.
3. **Collectors:** These roads represent approximately 9% of the total facilities citywide. Examples include Ali Baba Boulevard and Seaman Avenue.

- **Major Collectors:** These roads gather traffic from local roads and funnel it to the arterial network. They serve shorter trips and provide a link between residential areas, local businesses, and the arterial roads.
- **Minor Collectors:** Similar to major collectors, but with less traffic volume. They connect local roads to the collector network, facilitating access to more localized areas.

4. **Local Roads:** These roads represent approximately 63% of the facilities within the municipality, and primarily provide direct access to residential, commercial, or other local properties. They are characterized by lower speeds and traffic volumes and are not intended for through traffic. Examples include Dunad Avenue and Sharazad Boulevard.

Figure 3-14 depicts the total distribution of roads per functional classification citywide.

Figure 3-14: All Roadways by Functional Classification

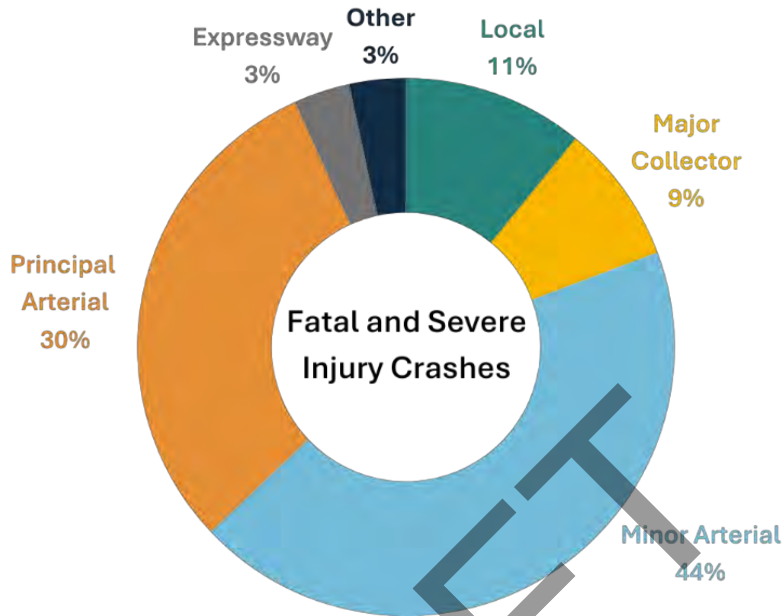


Source: Major Road Open Data Hub and FDOT TDA Functional Classification and Urban Boundary Downloads

Analyzing the location of crashes based on road functional classification also helps understand the specific conditions and factors contributing to crashes on different types of roads. **Figure 3-15** details the functional classification of all fatal and serious injury crash locations is broken down. Principal arterial and minor arterial roads account for 74% of all crashes. However, these only account for 21% of the total roadway miles in the city. This illustrates that the wider and faster the roadway is the more severe the crash.

Map 3-6 displays the locations of crashes resulting in fatalities or serious injuries in the City of Opa-locka, based on data collected from S4 and the functional classification of roadways.

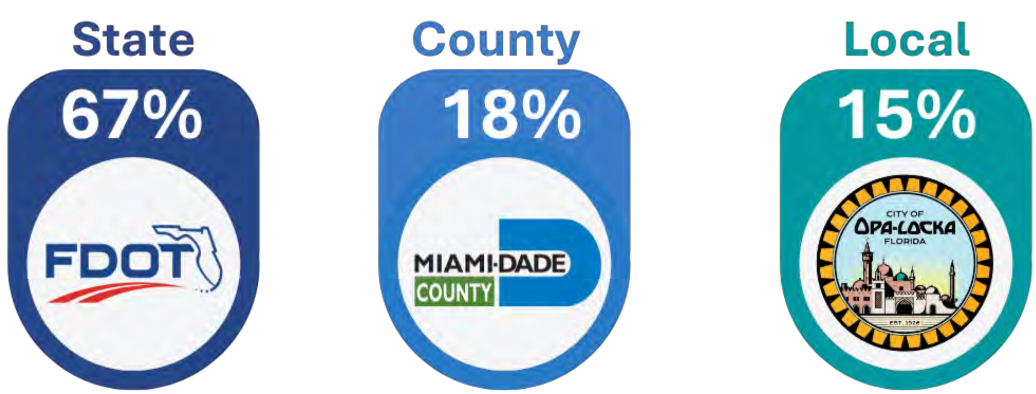
Figure 3-15: All Roadways and FSI Crashes by Functional Classification



Source: Signal Four Analytics

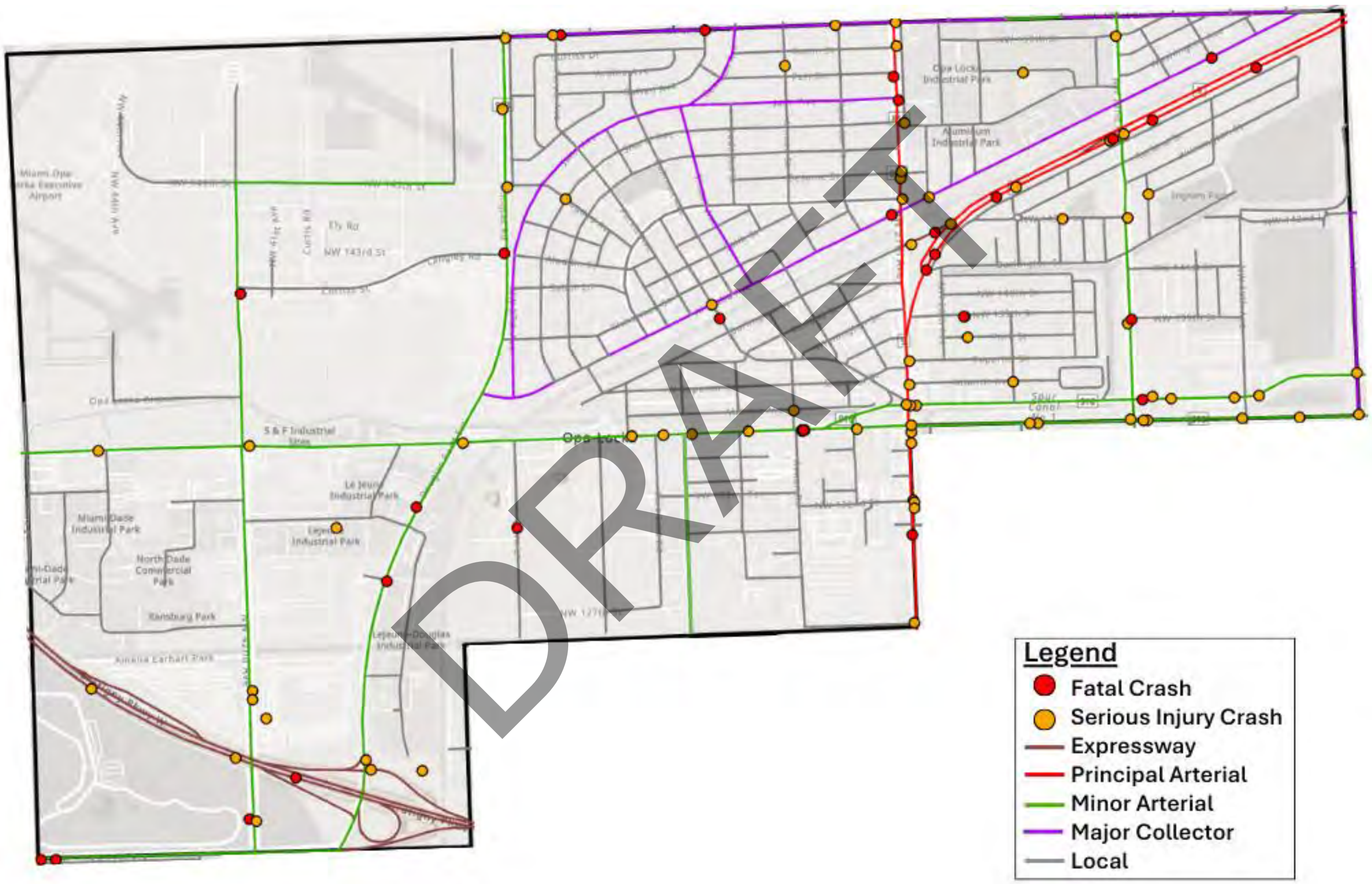
Additionally, the jurisdiction of roadways is illustrated in **Map 3-7**, which can be viewed alongside the locations of all fatal and serious injury crashes. Identifying the responsible agencies for each roadway within the city is crucial for proper maintenance and regulatory compliance. This identification also determines the entity accountable for repairs and upgrades, affecting funding and resource allocation, development planning, and emergency response protocols. **Figure 3-16** shows the percentages of fatal and severe injury crashes across all three jurisdictions, the State, Miami-Dade County, and the city. Data indicates that while state-owned roads make up 27% of all roadways in Opa-locka, they account for 67% of all fatal and severe injury crashes. Ultimately, these agencies ensure that the infrastructure serves the community efficiently and, most importantly, safely.

Figure 3-16: FSI Crashes by Roadway Jurisdiction



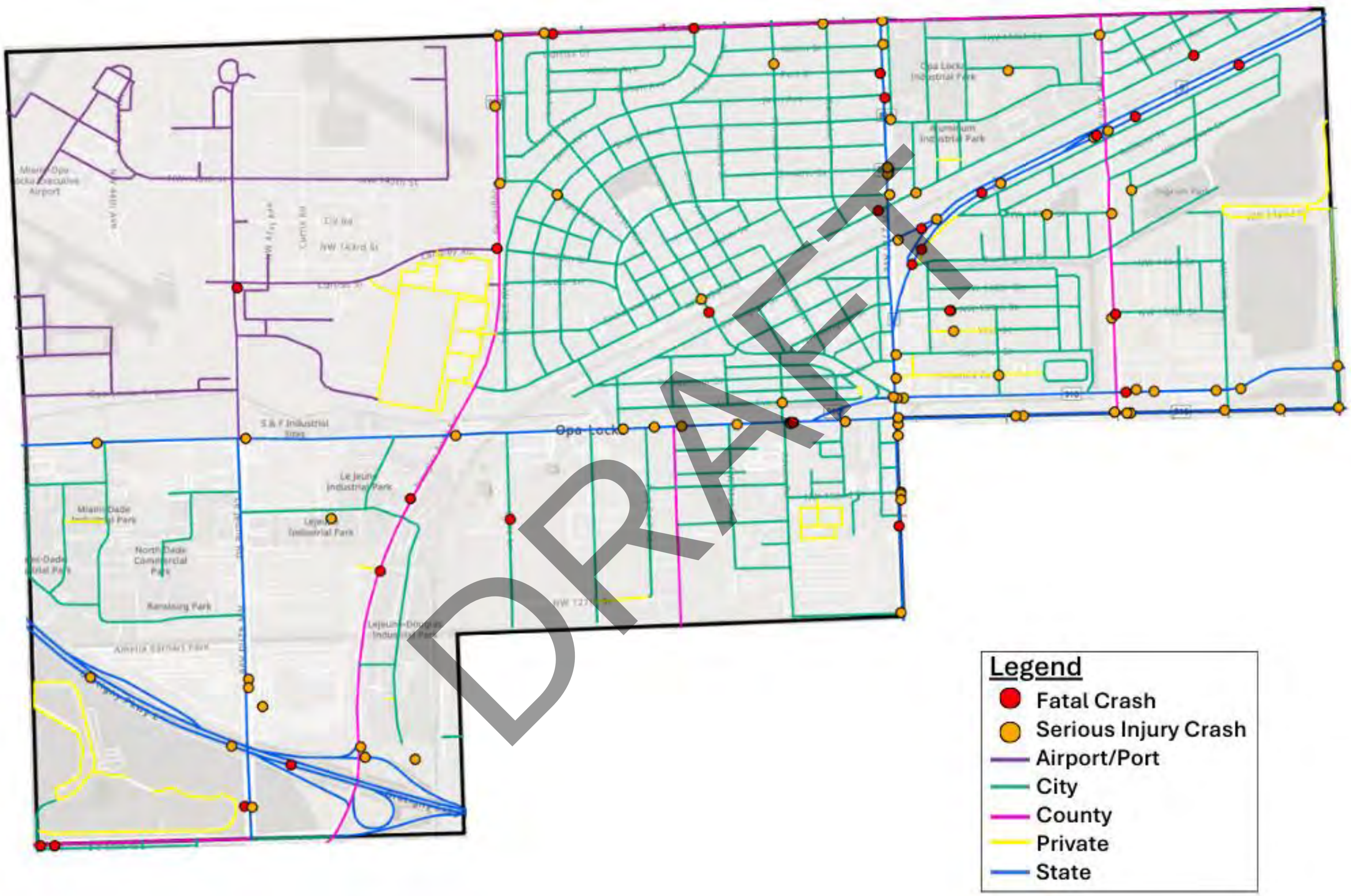
Source: Signal Four Analytics

Map 3-6: Roadway Functional Classification With Fatal and Serious Injury Crash Locations



Source: Signal Four Analytics

Map 3- 7: Roadway Jurisdiction and Fatal and Serious Injury Crash Locations



Source: Signal Four Analytics and Street Maintenance Open Data

3.3.8 Speed Limit and the Severity of Crashes

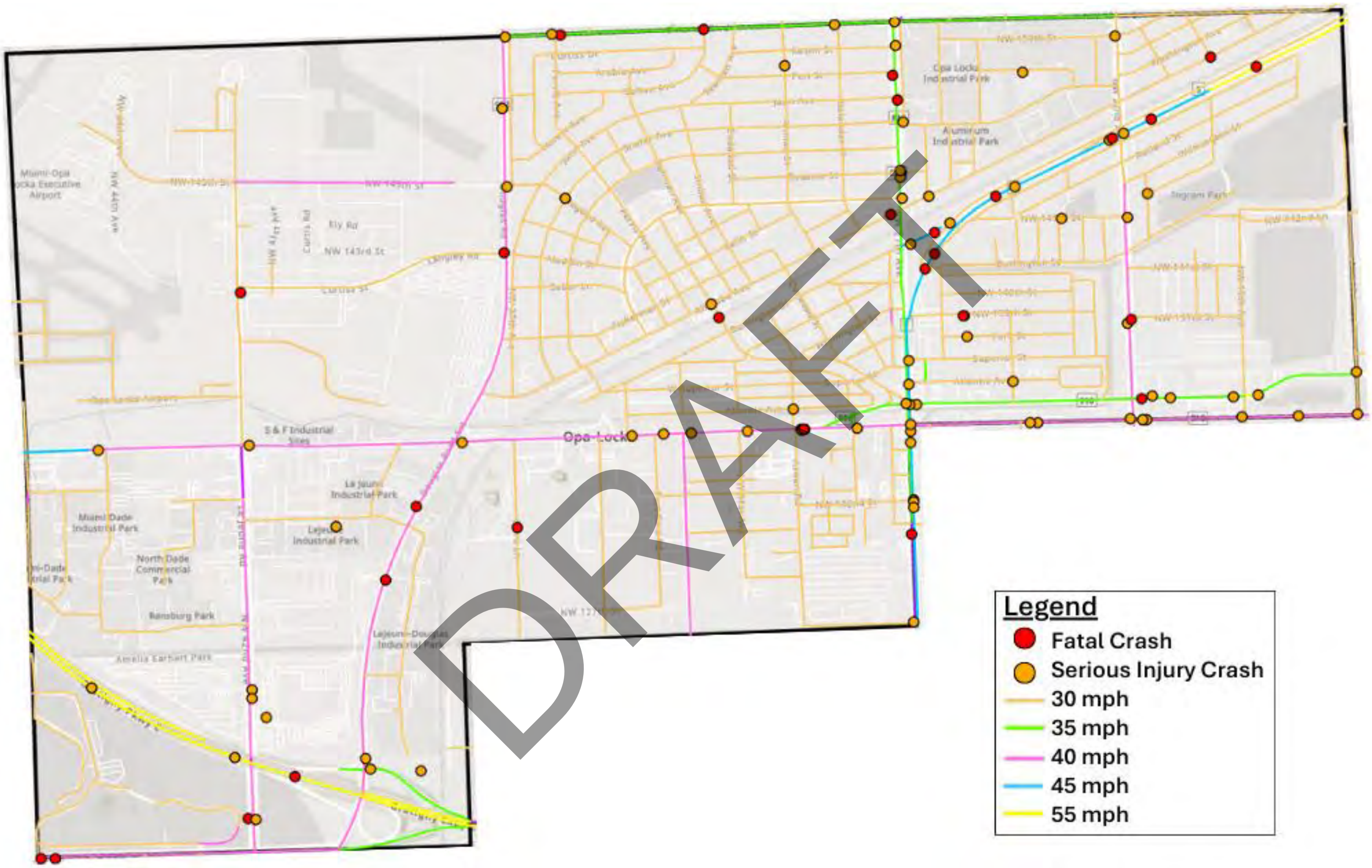
Higher speeds on roads lead to more severe crashes due to greater kinetic energy, longer stopping distances, and higher impact forces. The relationship between road speed limits and crash severity involves several key factors:

- **Kinetic Energy and Impact Force:** The severity of crashes is largely influenced by the kinetic energy involved, which depends on the vehicle's mass and speed. Higher speeds result in exponentially greater kinetic energy, leading to more severe impacts. When a collision occurs, the force of the impact is also influenced by speed. Higher speeds generate greater impact forces, increasing the likelihood of severe injuries or fatalities.
- **Reaction Time and Stopping Distance:** At higher speeds, drivers have less time to react to hazards, reducing the margin for error and increasing the likelihood of crashes. Additionally, the distance required to stop a vehicle increases with speed. This includes both the reaction distance (the distance traveled during the driver's reaction time) and the braking distance (the distance needed to stop the vehicle after the brakes are applied). Higher speeds result in longer stopping distances, making it harder to avoid collisions.
- **Severity of Impact:** Higher speed limits often correlate with higher actual travel speeds, resulting in collisions that occur at higher speeds. The severity of injuries and damage is greater at higher collision speeds.
- **Injury Risk:** The risk of severe injuries or fatalities increases significantly with speed. For example, pedestrians struck by a vehicle traveling at 30 mph have a much lower risk of fatality compared to those struck by a vehicle traveling at 40 mph or higher.

Effective speed management through appropriate speed limits and road design is essential for reducing crash severity and enhancing overall road safety. Therefore, identifying crash locations in relation to speed limits is crucial, as it provides insights that can guide and improve safety measures. **Map 3-8** displays the maximum speeds of crash locations resulting in fatalities or serious injuries in the City of Opa-locka, based on data collected from S4.

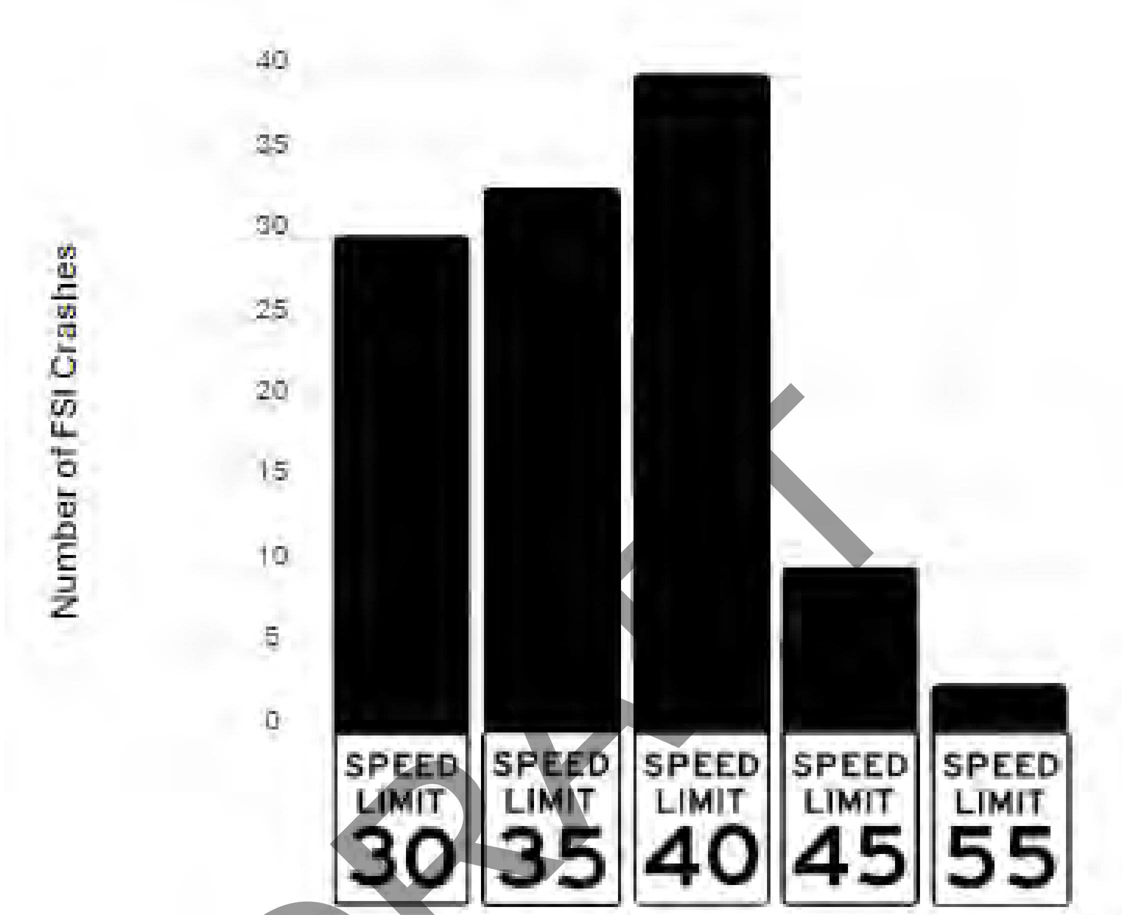
Approximately 71% of crashes resulting in fatalities or serious injuries occurred on roadways with speed limits of 35 mph or higher such as SR 9/NW 27 Avenue, SR 916/NW 135 Street, or NW 37 Avenue/Douglas Road, which are under the jurisdiction of the State or Miami-Dade County. **Figure 3-17** illustrates the distribution of crashes across different speed limits within the city, showing a clear trend that as speed limits increase, so does the probability of crashes resulting in fatalities or serious injuries. Higher vehicle speeds make avoiding a collision more difficult and can increase the severity of the collision. All local roads within the city have a maximum speed of 30 mph, and incidents occurring at 10 mph are associated with parking lots.

Map 3- 8: Speed Limit and Fatal and Serious Injury Crash Locations



Source: Signal Four Analytics and Miami Dade County Open Data Hub

Figure 3-17: Fatal and Incapacitating Crashes by Speed Limit



Source: Signal Four Analytics

3.3.9 Other Roadway Characteristics and the Severity of Crashes

Evaluating whether crashes occurred on divided or undivided roadways is also important for understanding and improving traffic safety. Conversely, divided roadways generally provide a safer environment for high-speed travel and reduce the likelihood of severe crashes, while undivided roadways require more careful management to mitigate the higher risks associated with their design. The likelihood and severity of crashes cab be explained as follows:

1. **Divided Roadways:** A divided roadway is one where opposing lanes of traffic are separated by a physical barrier or median. This design influences crashes in several ways:
    - **Reduced Head-On Collisions:** The physical barrier between opposing traffic lanes reduces the likelihood of head-on collisions, which are often severe and fatal.
    - **Improved Traffic Flow:** Divided roadways can manage high traffic volumes more efficiently, reducing congestion and the potential for rear-end collisions.

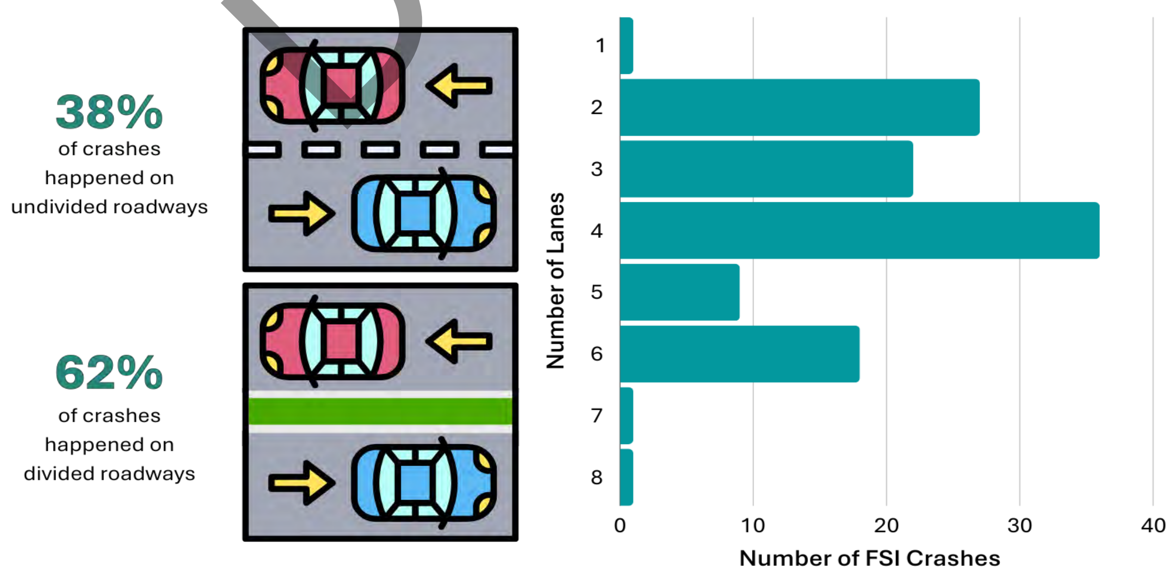
- **Controlled Access:** These roadways often have limited access points, reducing the number of conflict points where vehicles can intersect, thus decreasing the chances of angle collisions (e.g., T-bone accidents).
- **Higher Speed Limits:** Due to the safety features, divided roadways can support higher speed limits safely, although this can lead to more severe crashes if they do occur.

2. **Undivided Roadways:** An undivided roadway has no physical separation between opposing lanes of traffic. This design also influences crashes in several ways:

- **Increased Head-On Collisions:** The lack of a physical barrier means there is a higher risk of head-on collisions, which are often among the most severe types of crashes.
- **Frequent Conflict Points**: Undivided roadways tend to have more access points, such as driveways and intersections, increasing the number of potential conflict points for vehicles, pedestrians, and cyclists, leading to a higher likelihood of angle, and turning collisions.
- **Mixed Traffic Flow:** These roads often handle a mix of local and through traffic, which can lead to varied speeds and increased potential for rear-end collisions.
- **Lower Speed Limits:** To mitigate some of these risks, undivided roadways typically have lower speed limits compared to divided roadways, though this does not eliminate the risks entirely.

Figure 3-18 describes the total of crashes resulting in fatalities or severe injuries by lane characteristics, where 62% of crashes happened on divided roadways and the remaining 38% occurred on undivided roadways. Divided roadways typically have physical barriers or medians separating opposing traffic and are typically found on roads with higher speed limits. The division between roads prevent accidents caused by crossover traffic, head-on collisions, and to limit turning options to shift these movements to safer locations. Over 50% of crashes happened on roads with 4 or more lanes, which is also indicative of roads with higher speeds such as arterials.

Figure 3-18: Fatal and Serious Injury Crashes by Lane Characteristics



Source: Signal Four Analytics

3.3.10 Proximity to Public Transportation and the Severity of Crashes

Analyzing fatal and serious injury crashes relative to bus stops and transit hubs is essential to identifying high-risk areas and ultimately improving public safety. Crashes are influenced by several factors related to the design, location, and usage patterns of bus stops or other transit facilities. These factors are described as follows:

- **High Pedestrian Activity:** Bus stops draw high volumes of pedestrians, as people walk to and from these locations. Moreover, pedestrians frequently cross streets near bus stops, heightening the risk of vehicle collisions.
- **Bus Stop Design and Location:** Mid-block bus stops can increase the likelihood of pedestrians crossing at non-designated points, raising the risk of crashes. Stops at intersections may be safer if they include crosswalks and pedestrian signals. However, bus stops near intersections can also contribute to congestion and complex traffic patterns, making it more difficult for drivers to see and yield to pedestrians and cyclists.
- **Visibility and Obstruction:** A stopped bus can block drivers' views of pedestrians or cyclists, especially those crossing in front of or behind it, increasing the risk of collisions. Additionally, cyclists navigating around stopped buses may unexpectedly enter traffic lanes, putting them at greater risk of being struck by vehicles.
- **Infrastructure and Safety Measures:** The lack of pedestrian infrastructure, such as sidewalks, crosswalks, or pedestrian signals near bus stops, can increase the risk of crashes. Similarly, the absence of clearly marked bicycle lanes forces cyclists to share the road with buses and other vehicles, raising the likelihood of accidents.

The city has a robust bus network with several different routes connecting riders throughout the metropolitan area. **Table 3-2** provides a list of the six routes servicing through Opa-locka.

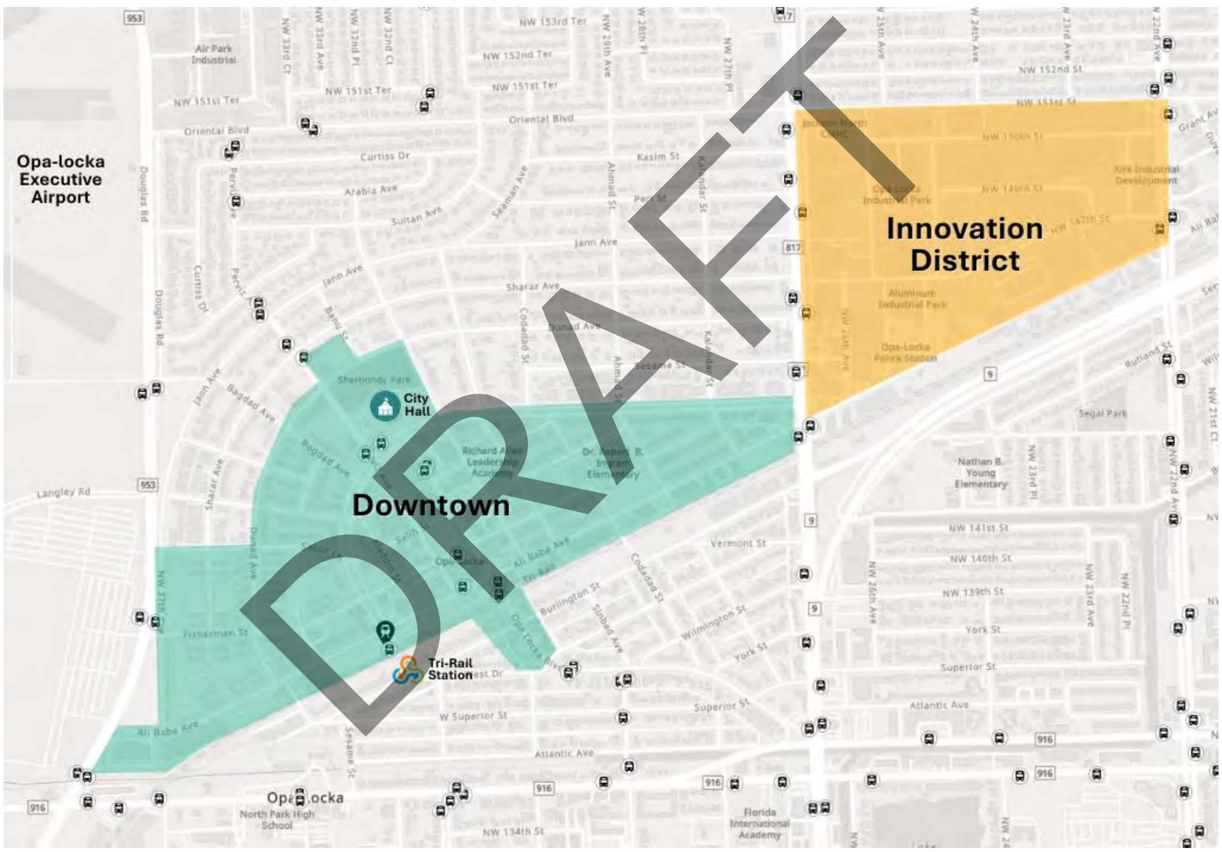
Table 3-2: Transit System Routes Traversing the City of Opa-locka

Route Number/Name	Route Information	Average Weekday Ridership FY22-23
Route 27	Travels from Coconut grove to Miami Gardens along SW/NW 27 Avenue. Stops include the Coconut Grove, Brownsville, and the Dr. Martin Luther King, Jr. Metrorail Stations.	6,940
Route 32	Travels from Miami Gardens to the Earlington Heights Metrorail Station along NW 47 Avenue and NW 32 Avenue. Stops include the Opa-locka Tri-Rail Station and Northside Metrorail Station.	2,540
Route 135	Travels from Opa-locka to the FIU Biscayne Bay Campus along NW/NE 135 Street. Stops include the Opa-locka Tri-Rail Station.	1,500
Route 401	Travels from NW 167 Street Metrobus Terminal to Downtown Miami along NE 163 Street, NW 22 Avenue, and NW 12 Avenue.	60
Opa-locka Exp North	Serves 34 bus stops departing from and ending at the Opa-locka Tri-Rail Station.	Data Unavailable
Opa-locka North Link	Serves 19 bus stops departing from and ending at the Opa-locka Tri-Rail Station.	Data Unavailable

Source: Miami Dade County Metrobus Routes and Schedules and Ridership Technical Reports

Map 3-9 highlights the historic downtown, featuring a blend of commercial, industrial, governmental, residential (both single-family and multi-family), social services, and faith-based establishments. Industrial areas along Ali Baba Avenue, which runs parallel to the train tracks, form the southern boundary of this downtown area. Opa Locka Boulevard, known as "*Main Street*," is home to government offices and commercial businesses. The eastern section primarily consists of housing and Dr. Robert B. Ingram Elementary School. This downtown area has been given a Walk Score of 73 out of 100, indicating it is "*very walkable*" due to its proximity to public transit. Additionally, it has a Bike Score of 78 out of 100, signifying that biking is convenient for most trips.[24] Walk Scores are determined based on the walkability to nearby destinations, such as grocery stores, parks, schools, culture and entertainment, shopping, and dining.

Map 3-9: Historic Downtown Opa-locka Walkability



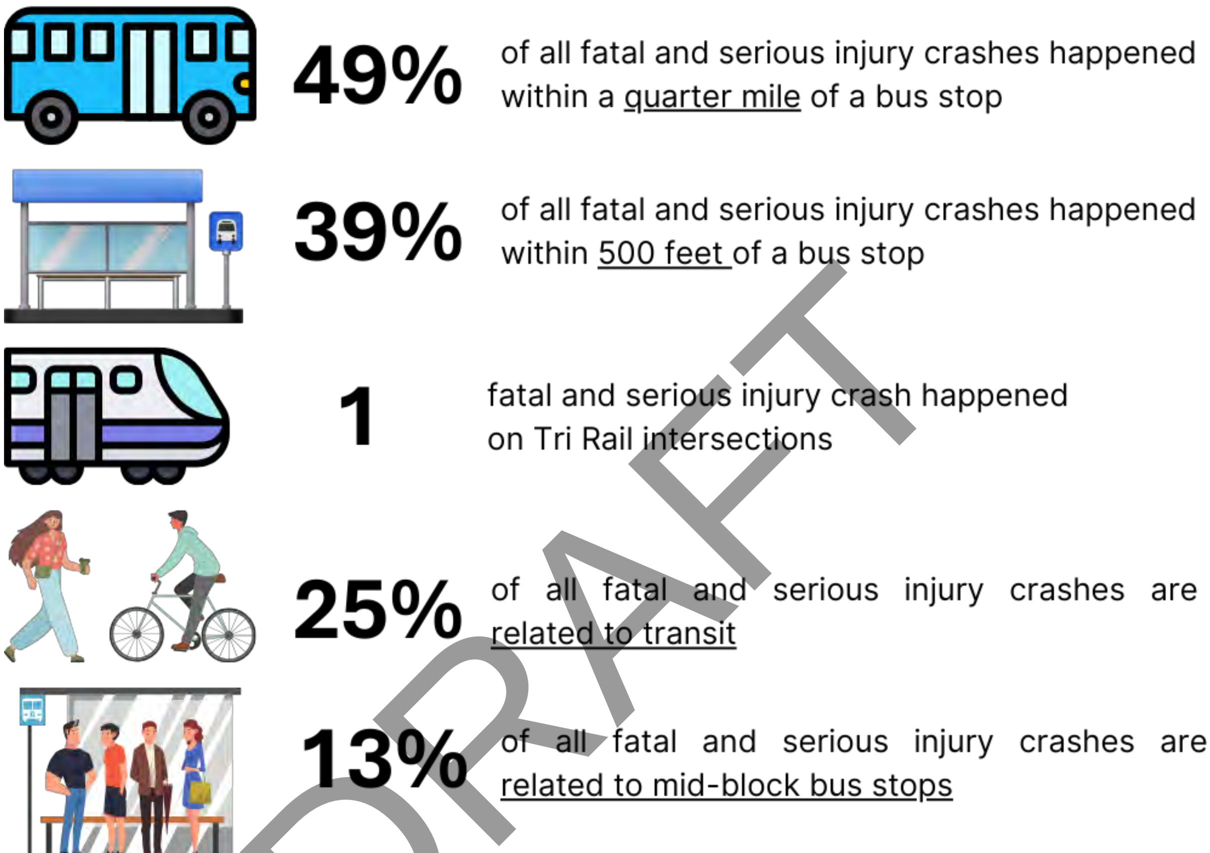
Source: Opa-locka Downtown Master Plan (2021) and Miami Dade Bus Route Open Data

Map 3-10 shows the bus stops citywide and the commuter train station in the heart of Opa-locka. This map helps put into perspective the location of crashes resulting in fatalities or severe injuries with public transit routes, mostly servicing Miami-Dade County or State roadway facilities. A total of twenty-one bus stops were identified at mid-block locations. **Figure 3-19** details that 49% of all crashes resulting in fatalities or severe injuries occurred within a quarter mile of bus stops, with 39% of them occurring within 500 feet of these transit facilities, which shows that these areas are

[24] Walk Score for the City of Opa-Locka

particularly dangerous for pedestrians and cyclists getting on and off buses. One fatality occurred on a railroad crossing near the Tri-Rail Station, where a motorist was disabled on the tracks and unable to move from the train's path.

Figure 3-19: Crashes Near Public Transit

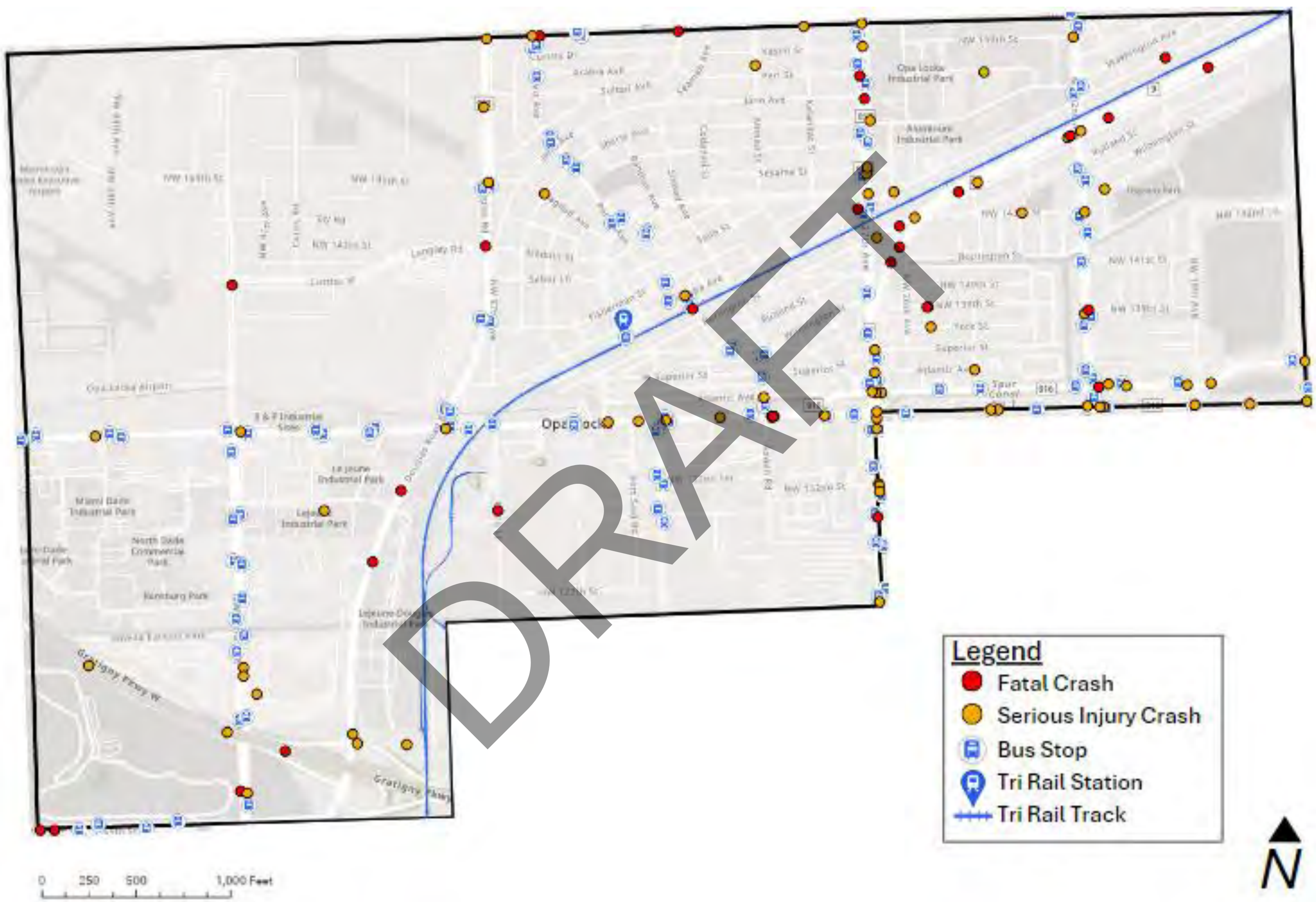


Source: Signal Four Analytics and Miami-Dade County Bus Stop Open Data

All pedestrian and bicyclist crashes were thoroughly reviewed to understand the nature of each incident, including the specific locations and their proximity to transit stops. Among the 119 FSI crashes, 30 (or 25.21%) were identified as potentially transit-related involving pedestrians or bicyclists, and 16 (or 13.45%) related to crossing the road mid-block to or from a bus stop, as shown in **Map 3-11**. The bus routes with the most incidents are Routes 27, 135, and Opa-locka Express North. According to **Table 3-2** above, Route 27 has an average weekday ridership of 6,940[25], making it the most heavily utilized bus route in the city. Additionally, of the 16 identified crashes, 5 occurred along Route 27.

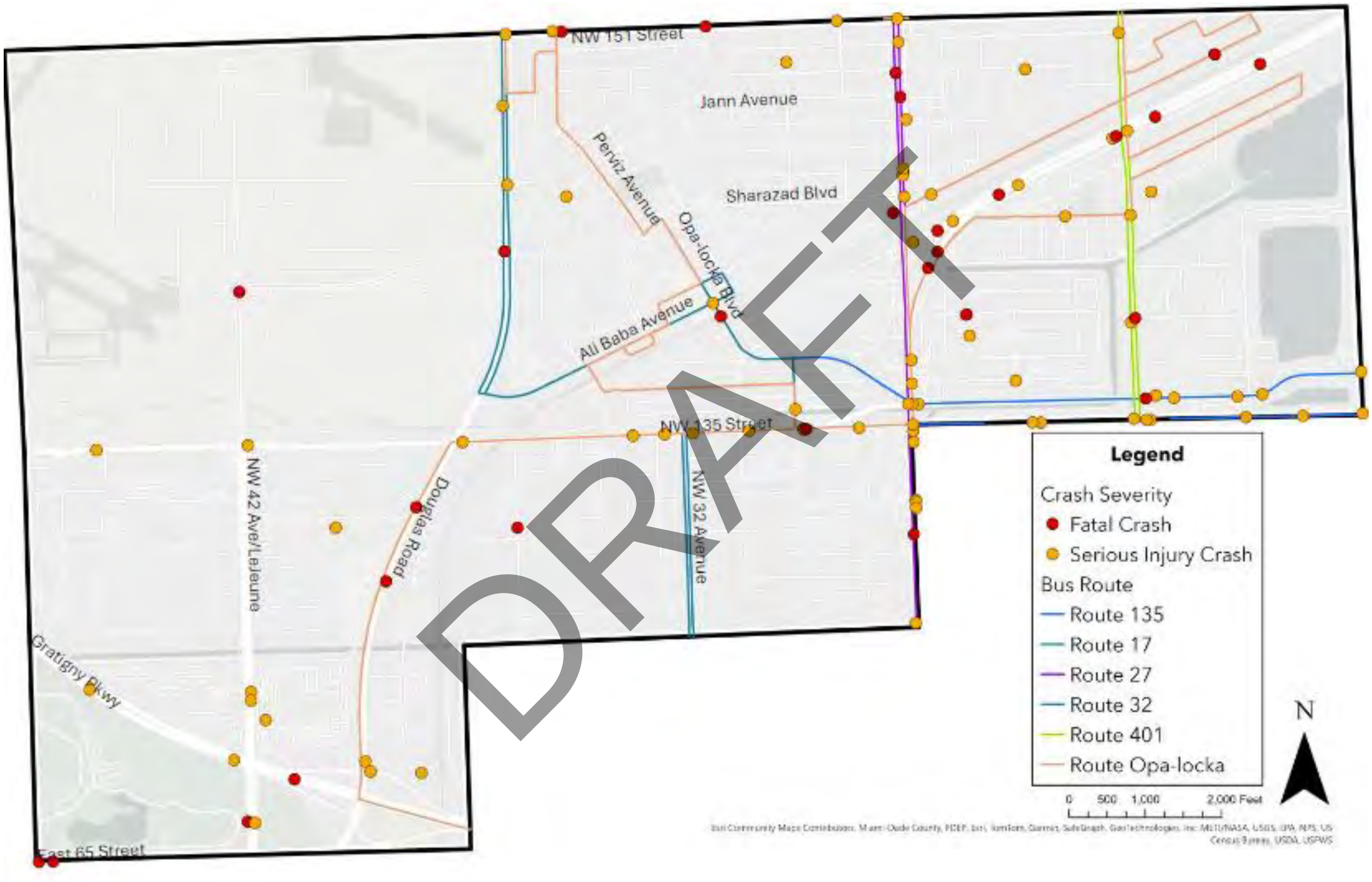
[25] Per March 2024 Miami-Dade Transit Monthly Ridership Technical Report

Map 3-10: Proximity of All Crashes to Bus Stops and Tri-Rail Train Station



Source: Signal Four Analytics and Bus Route Open Data Hub

Map 3-11: Pedestrian and Bicyclist FSI Crashes Identified as Potential Relationship to Bus Routes



Source: Signal Four Analytics and [Bus Route Open Data Hub]

3.3.11 Traffic Volume and the Severity of Crashes

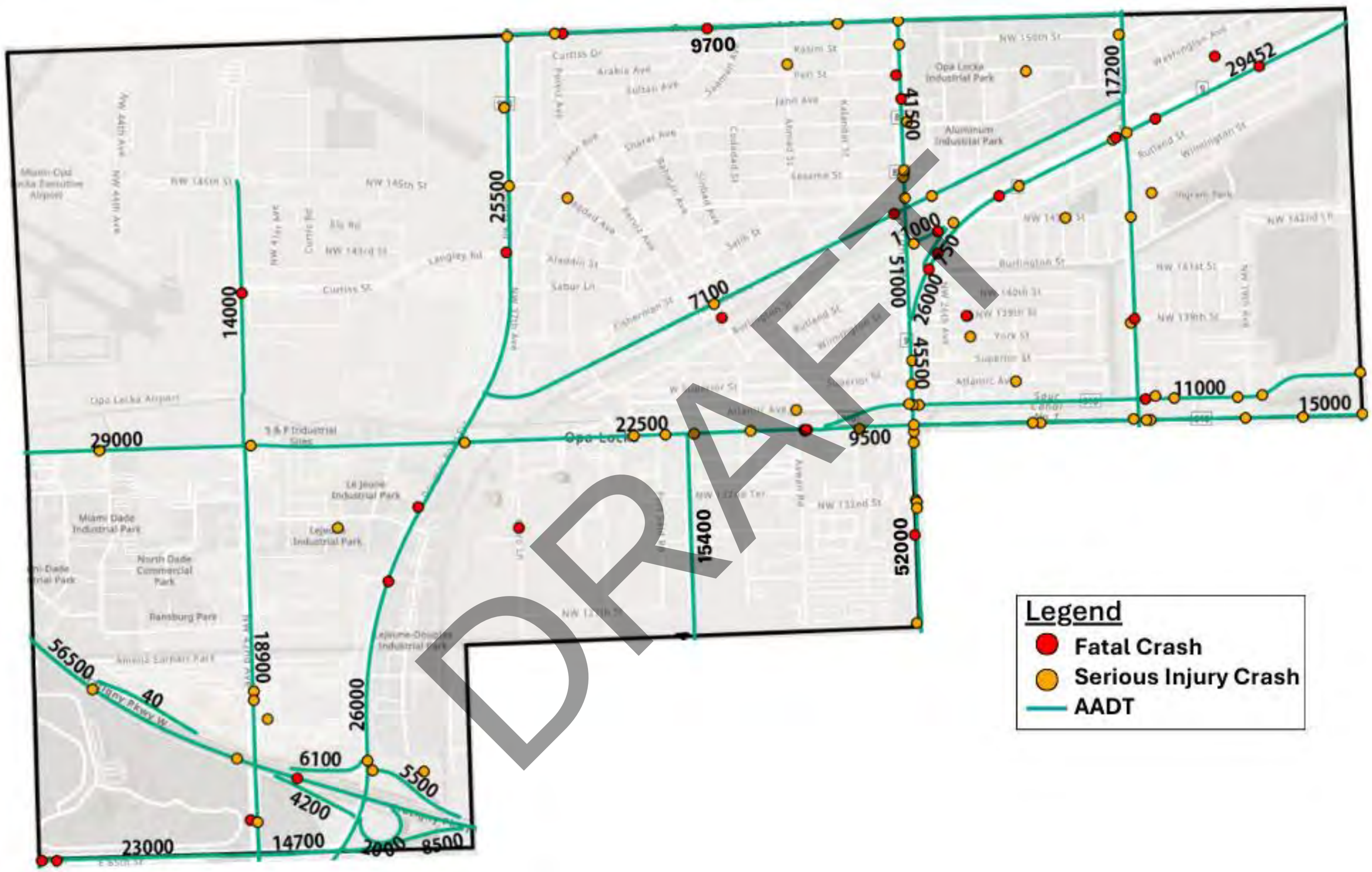
3.3.11.1 Vehicular Traffic Volume

Congestion occurs when the number of vehicles on the road exceeds its capacity, a situation commonly seen during peak hours when many people are commuting. This congestion results in longer travel times, slowing down commutes and deliveries. It also causes stop-and-go traffic and sudden changes in speed, which can lead to rear-end collisions and other types of accidents. The correlation between high vehicular traffic volumes and bicycle and pedestrian crashes is complex, and it is influenced by various factors, as described below.

- **Increased Exposure:** With more vehicles on the road, there is an increased likelihood of interactions between vehicles, bicycles, and pedestrians. This heightened exposure alone can contribute to a higher frequency of crashes involving cyclists and pedestrians.
- **Limited Infrastructure:** In areas with high vehicular traffic, infrastructure might be designed primarily to accommodate cars, with insufficient space or safety measures for pedestrians and cyclists. This lack of adequate infrastructure can lead to conflicts and collisions at intersections, crossings, or shared road spaces.
- **Speed:** High traffic volumes often correlate with higher vehicle speeds, especially on arterial roads or highways. Higher speeds increase the severity of crashes involving pedestrians and cyclists. A fast-moving vehicle is more likely to cause severe injury or fatalities in the event of a collision with a cyclist or pedestrian.
- **Driver Distraction and Impatience:** In congested traffic conditions, drivers may become more impatient or distracted, increasing the likelihood of errors or lapses in attention. This can lead to failure to yield to pedestrians or cyclists, unsafe lane changes, or other behaviors that endanger vulnerable road users.
- **Visibility and Awareness:** In heavy traffic, visibility can be reduced due to congestion or obstructed sightlines. Drivers may have difficulty seeing cyclists and pedestrians, especially in urban environments with numerous distractions. Similarly, cyclists and pedestrians may also have difficulty being seen by drivers.
- **Road Design and Layout:** High traffic areas often have complex road layouts, multiple lanes, and intricate intersections, which can be challenging for cyclists and pedestrians to navigate safely. Poorly designed roadways can increase the risk of collisions and conflicts between different types of road users.

The city experiences notable traffic volumes, as highlighted in **Map 3-12**. Major corridors with significantly higher annual average daily traffic (AADT) include SR-9, NW 27 Avenue, Douglas Road, and NW 135 Street. Fatal and serious injury crash locations within the city were also analyzed with consideration to those heavily traveled corridors to corroborate whether the number of vehicles traversing these facilities and the frequency of crashes resulting in fatalities and severe injuries along the same corridor are correlated. This data is better presented in **Map 3-12**, illustrating the annual average daily traffic (AADT) and associated crashes on each of the primary corridors citywide. SR-9, with an AADT varying from 52,000 vehicles per day (VPD) to 29,452 VPD, experienced 24 (or 20.2%) of the total FSI crashes. NW 27 Avenue, with an AADT of 51,000 VPD, experienced 8 (or 6.7%) of the total FSI crashes, while Douglas Road (26,000 VPD) experienced 9 (7.6%), and NW 135 Street (22,500 VPD) experienced 18 (15.1%) of total FSI crashes, respectively.

Map 3- 12: Average Annual Daily Traffic (AADT) by Fatal and Serious Injury Crash Location



Source: Signal Four Analytics and Florida Traffic Online (2023)

3.3.11.2 Non-motorized Traffic Volume

Complex intersections, such as those with multiple turning lanes or unconventional layouts, can pose challenges for both drivers and non-motorized road users. In such areas, the likelihood of crashes leading to fatalities and severe injuries may be elevated. Non-motorized traffic generally moves at slower speeds than motorized vehicles. In areas where there is a significant speed differential between vehicles and non-motorized traffic, the risk of crashes, especially those resulting in severe injuries, can be higher. At dense non-motorized traffic areas such as surrounding commuter train stations or bus stops, the dynamics of road use change. Motorists may encounter more frequent interactions with pedestrians and cyclists, requiring heightened awareness and response times to avoid accidents.

To further enhance safety measures, this effort will leverage STRAVA Metro data to analyze bicycle and pedestrian ridership patterns. Due to the current lack of comprehensive non-motorized data, STRAVA Metro's insights will be instrumental in identifying high-traffic areas and potential risk zones for cyclists and pedestrians. By integrating this data, resulting from anonymized data collected from cyclists and runners who use the STRAVA app, the city can make informed decisions on where to implement infrastructure improvements, such as protected bike lanes and safer crosswalks, ensuring a more secure environment for all road users.

Bicycle and pedestrian ridership heatmaps, as visual representations of the intensity and distribution of bicycle and pedestrian activity within Opa-locka, are depicted in **Map 3-13** and **Map 3-14**. These heatmaps show where cyclists and pedestrians are most frequently traveling. Key elements of these heatmaps include:

- **Intensity Gradients:** Areas of high activity are depicted in warmer colors (reds and oranges), while areas of lower activity are shown in lighter colors (yellows). This gradient helps quickly identify hotspots of non-motorized traffic. The highest pedestrian activity was observed at Amelia Earnhart Park and near Opa-locka Executive Airport. The highest bicycle activity was observed on NW 27 Avenue and Perviz Avenue.
- **Geospatial Context:** These heatmaps provide a geographical context to the data, allowing to see which streets, intersections, and paths are most and least used by cyclists and pedestrians. For instance, SR-9 from NW 22 Avenue to NW 27 Avenue observed minimal pedestrian activity, highlighting a gap in sidewalk connectivity.

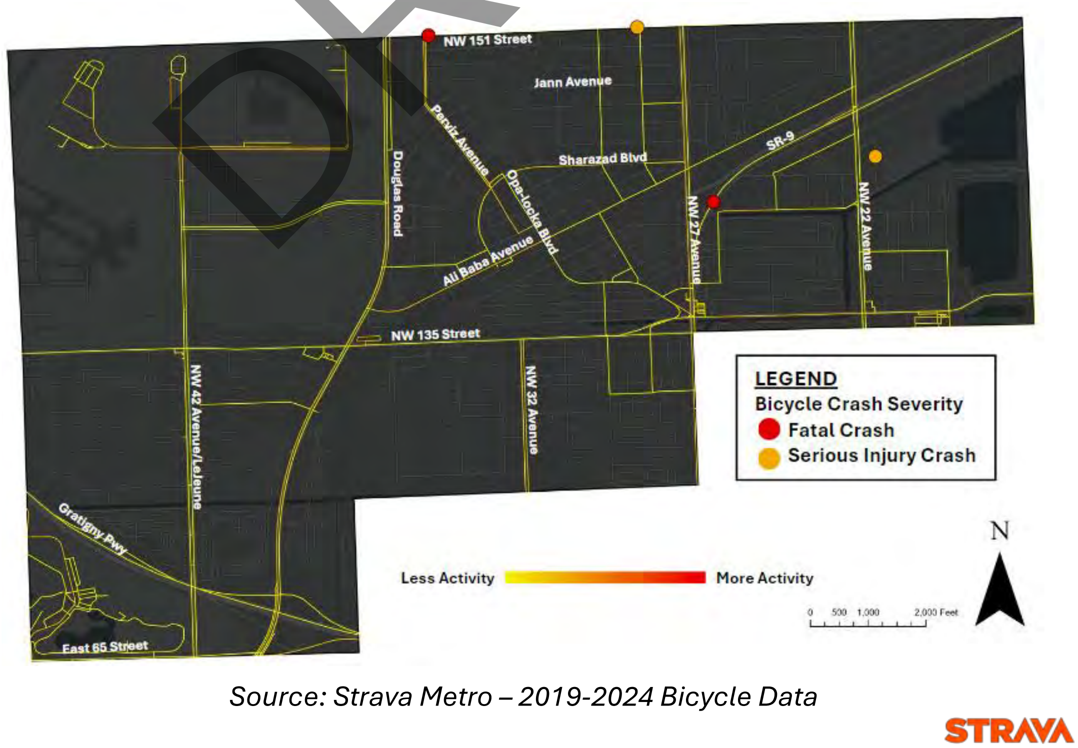
Additionally, non-motorized data from the Statewide Repository was evaluated. As part of the FDOT Statewide Non-motorized Traffic Monitoring Program (NMTMP), the Transportation Data and Analytics (TDA) Office collected bicycle and pedestrian (non-motorized) volume counts on Ali Baba Avenue, directly outside the Opa-locka Tri-Rail Station, for a period of two weeks to evaluate urban commute patterns in early 2020, prior to the COVID-19 pandemic. The data indicates the highest bicycle usage occurred at 6:00 a.m. and 5:00 p.m., with seventeen (17) and thirty-two (32) cyclists, respectively. It was also observed that the highest frequency of bicycle users occurred on weekdays, with a daily average of 23 riders as compared to the 12 average daily riders on weekend days.

By overlaying these heatmaps with injury data, high-risk areas where heavy usage intersects with frequent accidents can be identified. This helps in pinpointing specific locations that require safety interventions, such as along NW 27 Avenue.

Map 3-13: Strava Pedestrian Heat Map and overall FSI Crashes

Source: Strava Metro – 2019-2024 Walk/Hike/Run Data

Map 3- 14: Strava Bicycle Heat Map and overall FSI Crashes

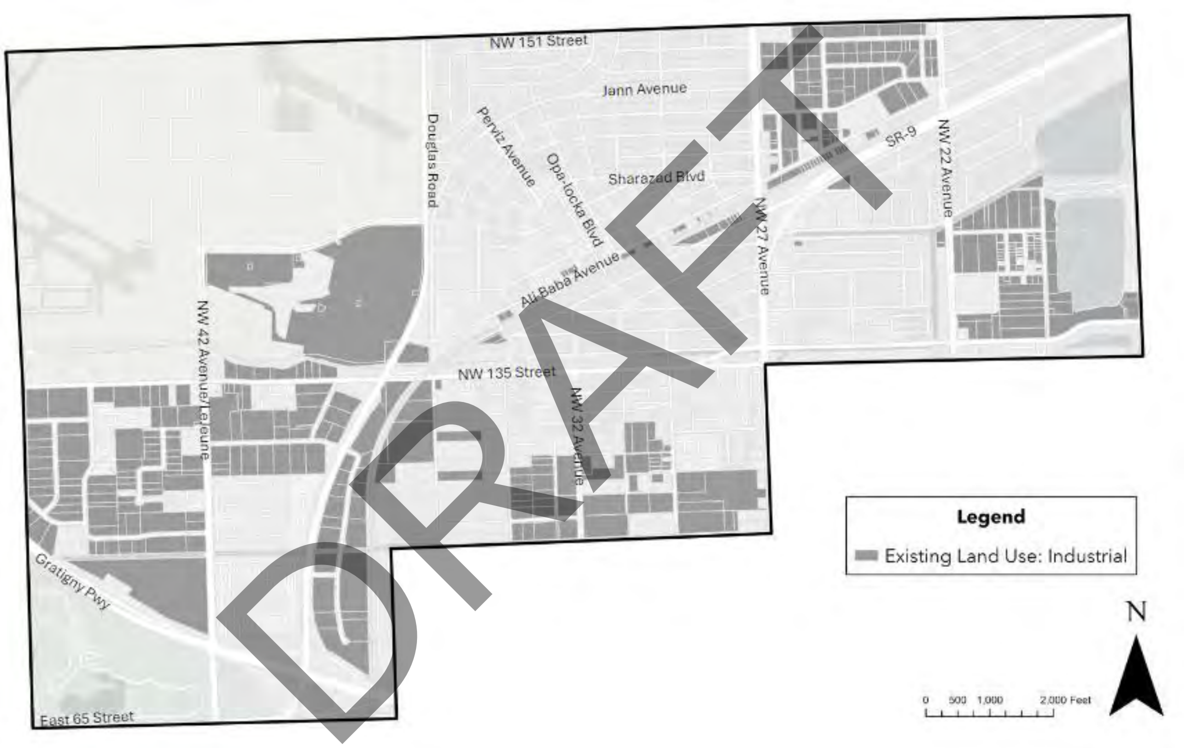


Source: Strava Metro – 2019-2024 Bicycle Data

3.3.11.3 Truck Traffic Volume

In Opa-locka, industrial land use is a cornerstone of the local economy, as depicted in **Map 3-15**. The west side of the city features a substantial amount of manufacturing and logistics activities. Industries and warehouses, including the Amazon Mega Logistics Warehouse, are strategically situated near major roads such as Gratigny Parkway and NW 42 Avenue/LeJeune Road. These commercial activities are crucial in providing employment opportunities in sectors like transportation, logistics, warehousing, manufacturing, and distribution. With strategic access to major transportation routes, including highways, railroads, and the Opa-locka Executive Airport (OPF), the city functions as a vital logistics hub.

Map 3-15: Existing Industrial Land Use in Opa-locka



Source: Miami Dade County Open Data Hub

This strategic positioning facilitates the movement of goods and materials within the region, as well as nationally and internationally. Consequently, in 2017, FDOT District Six conducted a comprehensive study titled "*City of Opa-locka Freight Implementation Plan*" (FM No. 435754-3-22-01) to identify freight improvements and enhance freight mobility within the city. The study highlighted NW 27 Avenue as the most traveled north-south road and SR-924/Gratigny Parkway as a major east-west route connecting to I-75 and I-95. Additionally, the study pinpointed truck volumes and high-volume truck intersections, including the following locations:

- Gratigny Parkway and Douglas Road
- LeJeune Road and NW 135 Street
- Douglas Road and NW 135 Street
- NW 27 Avenue and NW 135 Street

- SR-9 and NW 22 Avenue

As detailed in the existing land use and FDOT's final report, the city experiences a significant surge in truck traffic volume, illustrated in **Map 3-16**. A notable concentration of this traffic is on the southwest side of the city, particularly by the SR 916/Gratigny Parkway and NW 37 Avenue/Douglas Road interchange, where trucks remarkably make up approximately 30% of the total AADT. As of 2022, the percentage of truck traffic is significantly higher in areas with existing industrial land use and on roads such as:

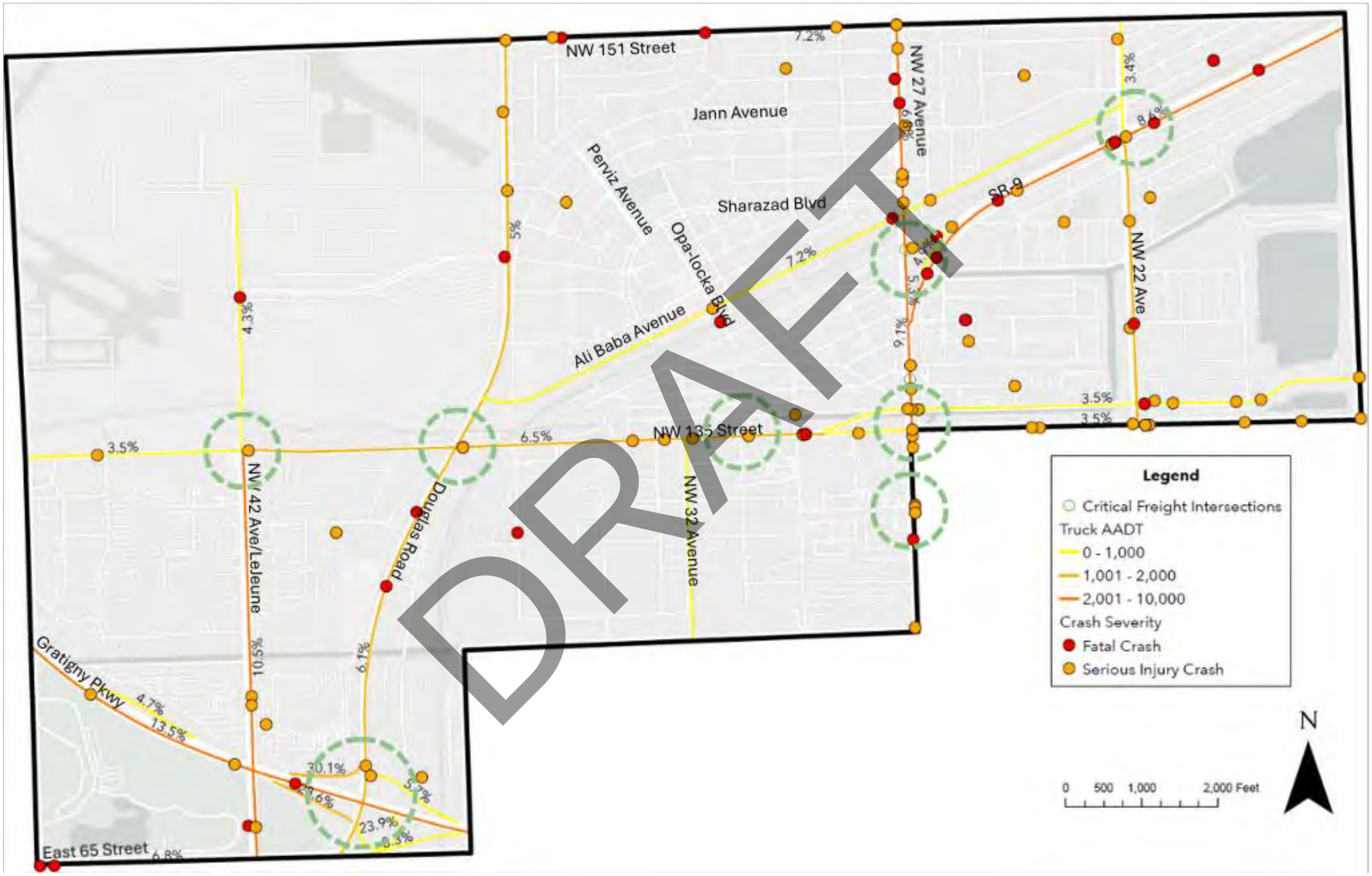
- Gratigny Parkway - 30%
- NW 42 Avenue/LeJeune Road – 10.5%
- NW 27 Avenue – 9.1%
- SR-9 – 8.6%
- NW 135 Street – 6.5 %

While high truck traffic volumes within the city's boundaries provide an economic boost to the city and the region, they also pose road safety challenges on local and state roads. A 2019 FDOT District Six "*Crossings and Intersections Study*" identified 60 main intersections with the highest number of crashes in Miami-Dade County. **Map 3-16** also shows five of these intersections that are within the City of Opa-locka. Trucks at these intersections often face difficulties with turning radii and can obstruct traffic flow during peak times. Critical freight intersections include locations along NW 27 Avenue, such as NW 27 Avenue and NE 132 Street, NW 27 Avenue and Opa-locka Boulevard, and NW 27 Avenue and Burlington Street, as well as the intersection of SR 9 and NW 22 Avenue. Prominent freight-trafficked corridors include Gratigny Parkway, NW 42 Avenue/LeJeune Road, NW 27 Avenue, SR-9, and NW 135 Street, highlighting the area's bustling activity.

Combining truck traffic with non-motorized users, such as cyclists and pedestrians, on roads can pose several risks that can lead to fatalities and severe injuries on roads due to various factors:

- **Size Disparity:** Trucks are significantly larger and heavier than bicycles and pedestrians, meaning collisions involving trucks can result in more severe consequences due to the vast difference in mass. When a truck collides with a bicycle or pedestrian, the impact can be catastrophic, often leading to fatalities or severe injuries for the cyclist or pedestrian.
- **Visibility and Blind Spots:** Trucks have larger blind spots compared to smaller vehicles, which can make it difficult for truck drivers to see cyclists or pedestrians, especially when making turns or changing lanes. This can increase the risk of accidents involving cyclists and pedestrians who may be in the truck driver's blind spots.
- **Speed and Acceleration:** Trucks typically have slower acceleration and longer stopping distances compared to smaller vehicles. This can lead to situations where cyclists or pedestrians misjudge the speed of an approaching truck or the time it takes for a truck to stop, resulting in collisions.

Map 3-16: Truck AADT, Critical Freight Intersections and FSI Crashes in Opa-locka

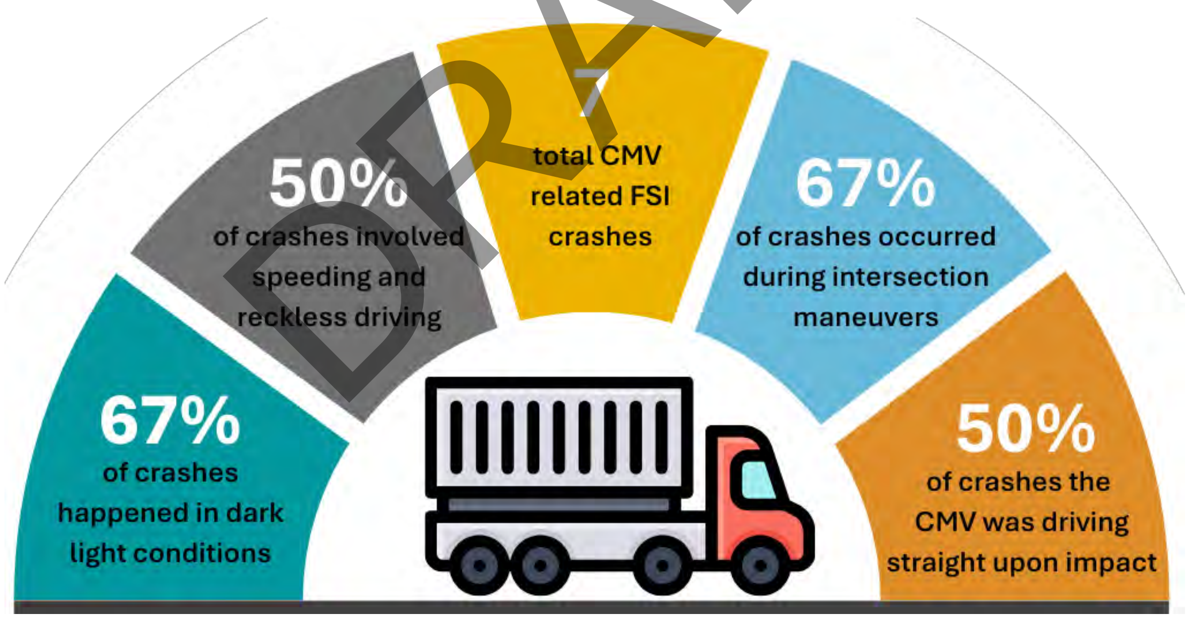


Source: Florida Traffic Online

- **Infrastructure and Road Design:** Roads designed primarily for motor vehicles may lack adequate infrastructure for cyclists and pedestrians, increasing the likelihood of conflicts between different modes of transportation. In areas with heavy truck traffic, inadequate infrastructure for cyclists and pedestrians can exacerbate the risks of accidents involving trucks.
- **Intersection Congestion:** Intersections, especially those with heavy truck traffic, can be particularly dangerous for cyclists and pedestrians. Trucks making turns or navigating intersections may pose significant risks to cyclists and pedestrians if proper precautions are not taken.

According to the National Highway Traffic Safety Administration's Traffic Safety Facts[26], nationwide, pedalcyclist and motorcyclist fatalities in large truck related crashes increased by 4% and 2%, respectively, from 2022 to 2023. In Opa-locka, FSI crashes are prevalent in roads that have high truck traffic volumes, as shown in **Map 3-16.** In addition, **Figure 3-20** highlights the trends identified from the data. Among all the FSI crashes, 67% occurred during intersection maneuvers, such as making left or right turns, and the same percentage applies to crashes that happened in low-light conditions (e.g., evening or early morning). Additionally, 50% of the crashes were due to speeding or reckless driving by passenger cars, resulting in rear-end, sideswipe, or left-entering collisions. The crash locations are shown in **Map 3-17**, which illustrates the truck-associated crashes on each of the primary corridors throughout the city.

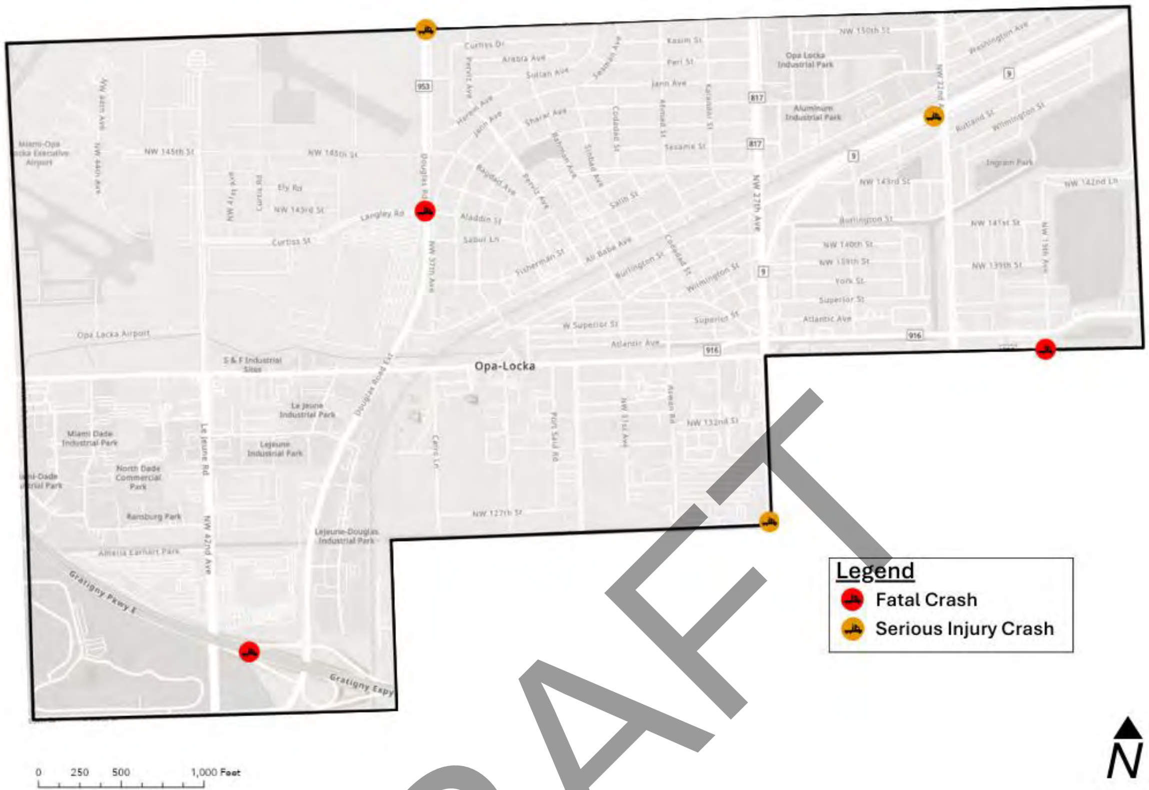
Figure 3-20: Commercial Vehicle Fatal and Serious Injury Statistics



Source: Signal Four Analytics

[26] CrashStats: Early Estimates of Motor Vehicle Traffic Fatalities and Fatality Rate by Sub-Categories in 2023 (dot.gov)

Map 3-17: Commercial Vehicle Related FSI Crashes



Source: Signal Four Analytics

As part of the efforts to address the City's commercial vehicle safety concerns, a truck maneuverability study was developed and it is saved on **Appendix A** of this report. This Truck Maneuverability Analysis in Opa-locka's main purpose is to assess freight vehicles' ability to navigate intersections safely and efficiently. The following items were address as part of the study:

Freight Maneuverability Analysis: The analysis focuses on evaluating how well freight vehicles, particularly large trucks, can navigate intersections, driveways, loading docks, and streets in Opa-locka. Key elements include turning radii, lane widths, clearances, intersection geometry, loading zones, traffic conditions, and safety.

Design Vehicle: The WB-67 truck-trailer combination was used as the design vehicle for the analysis. This vehicle's dimensions and turning characteristics were considered to ensure intersections could accommodate large freight vehicles without encroaching on curbs or adjacent lanes.

Key Intersections: The analysis identified specific intersections with high freight traffic that required design modifications to safely accommodate large trucks. These intersections include SR-9 and NW 22 Avenue, NW 135 Street and LeJeune Road, NW 135 Street and Douglas Road, NW 135 Street and NW 27 Avenue, and NW 132 Street and NW 27 Avenue.

Maneuverability Findings: The findings highlighted geometric constraints at several intersections, causing trucks to clip curbs, cross medians, or enter opposing traffic lanes. These constraints pose safety risks for pedestrians, cyclists, and other road users.

Safety and Infrastructure Improvements: Addressing the identified constraints is crucial for enhancing road safety and maintaining Opa-locka's role as a critical logistics hub. Improvements aim to reduce potential conflicts between freight vehicles and other road users, aligning with the City's Vision Zero goal to eliminate traffic-related fatalities and serious injuries.

3.3.12 Infrastructure Gaps and Severity of Crashes

3.3.12.1 Bicycle Infrastructure Gaps

Bicycle infrastructure gaps arise when there is a break in the continuity of network bicycle facilities, such as bicycle lanes or shared use pathways. In these instances, cyclists are often forced onto adjacent roadways or sidewalks, increasing conflicts with vehicles and pedestrians. This can elevate a cyclist's Level of Traffic Stress (LTS) due to minimal buffering, speed differentials, and reduced room for error while riding. Identifying locations with a high incidence of fatal and severe injury crashes in correlation to bicycle infrastructure gaps allows for targeted interventions to improve safety, such as adding dedicated bike lanes, traffic calming measures, or better signage.

Ensuring a continuous network of bicycle facilities encourages more people to cycle by providing a safer and more convenient route. Gaps can deter potential cyclists who perceive the route as unsafe. Additionally, well-connected bicycle networks facilitate easier access to key destinations like schools, workplaces, shopping areas, and transit hubs, promoting cycling as a viable mode of transportation. Consequently, by identifying and addressing bicycle infrastructure gaps and high-risk areas for crashes, Opa-locka can create safer, more efficient, and more attractive environments for cyclists, leading to numerous social, economic, and environmental benefits.

Map 3-18 illustrates the existing bicycle network in the city, which was verified through a field visit conducted in early July 2024. This network comprises only 5.4% of the total roadway network, including on-street conventional bicycle lanes without green pavement markings on corridors such as SR 9, Perviz Avenue, and Ali Baba Avenue. Additionally, there are on-street bicycle lanes with green pavement markings at conflict spots on corridors such as NW 22 Avenue. This limited network highlights the need for significant improvements to make cycling a safer and more viable mode of transportation. On-street conventional bicycle lanes, while providing some dedicated space for cyclists, do not offer the same level of visibility and safety as lanes with green pavement markings, especially at intersections and areas with heavy traffic. The green pavement markings at conflict spots on NW 22 Avenue are a step in the right direction, as they enhance visibility and alert both drivers and cyclists to potential danger zones.

Map 3-18: Existing Bicycle Network

Source: Miami Dade County Open Data Hub and field visit on July 5, 2024

The most significant gaps were identified on NW 22 Street between Ali Baba Avenue, and on SR 9 and Perviz Avenue between Dunad Avenue and Ali Baba Avenue. According to S4 data, most crashes have occurred on roads without cycling infrastructure or at the endpoints of existing infrastructure, such as NW 151 Street and NW 27 Avenue. It is worth noting that on NW 151 Street, shared lanes exist between NW 37 Avenue and NW 22 Avenue. These shared lanes, often marked by "sharrows" (shared lane markings), are not considered true cycling infrastructure. They simply indicate that both bicycles and motor vehicles share the same road space without providing any physical separation or dedicated space for cyclists. This can lead to various safety concerns. Shared lanes do not offer the same level of protection or comfort for cyclists, often placing them near fast-moving traffic. This increases the likelihood of collisions and discourages less confident cyclists from using the road. Furthermore, shared lanes can contribute to conflicts between cyclists and drivers, as both groups navigate the same space with differing speeds and vulnerabilities.

Based on the data collected, one (1) bicycle-related FSI crashes occurred on roads outside the designated bicycle network, while three (3) bicycle-related FSI crashes occurred on roads that have bicycle network. Two (2) of the three (3) occurred in NW 151 Street, where there are marked sharrows on the road. Additionally, there was one (1) bicycle-related fatality on SR-9, which is part of the existing bicycle network in Opa-locka. The bicycle lane on SR-9 features conventional on-street markings and begins at the intersection of Burlington Street. Less than 900 feet from this intersection, SR-9/NW 27 Avenue is bifurcated by a two-lane roadway as seen in **Figure 3-21**. To the south lies a popular grocery store and a shopping plaza, while several warehouses are situated to the east.

The bicycle lane at this intersection poses significant risks due to its narrow width, high truck volume (9.1%[27]), a posted speed of 45 mph, on a facility with a Context Classification C3R – Suburban Residential[28], which comprises mostly of residential uses within large blocks and a disconnected or sparse roadway network. Field visits observations indicate that the lane appears narrower than 3 feet, a subpar condition, as seen in **Figure 3-22**.

Figure 3-21: Intersection of SR-9 and Burlington Street/NW 26 Avenue

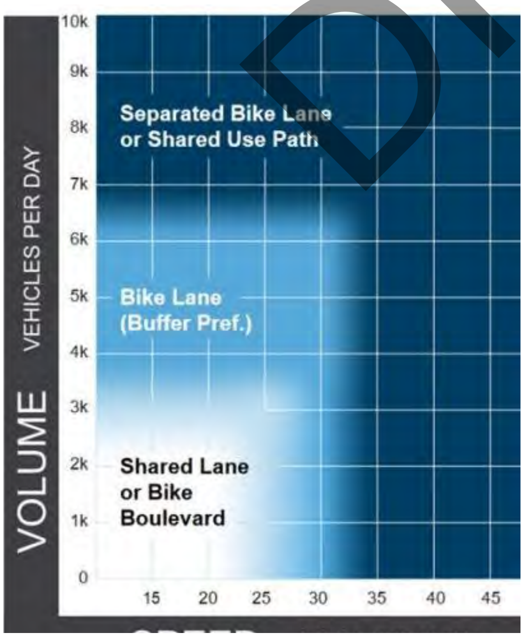
Source: EXP, taken on July 5, 2024

[27] Florida Traffic Online (2023)
[28] FDOT Preliminary Context Classification TDA

Figure 3-22: Bicycle Lane on SR-9

Source: EXP, taken on July 5, 2024

Figure 3-23: Preferred Bikeway Type for Urban and Rural Context



Source: 2019 Bikeway Selection Guide

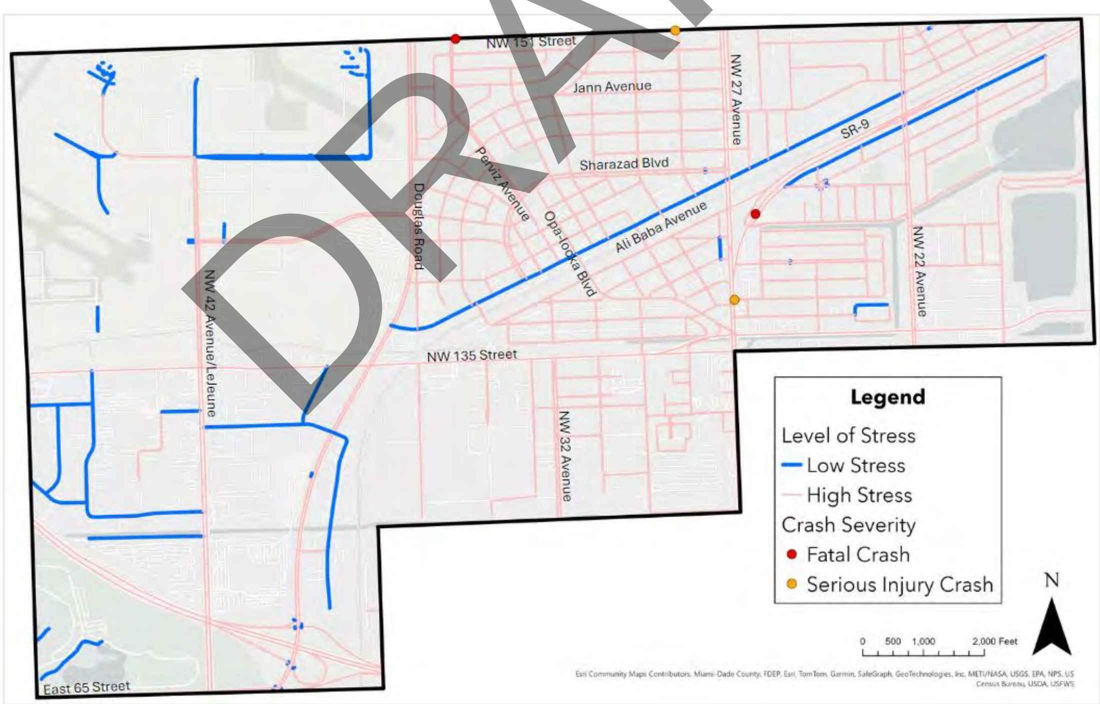
According to the 2019 USDOT Federal Highway Administration (FHWA) Bikeway Selection Guide, it is recommended to install separated bicycle lanes or shared-use paths on roads with a design speed of 35 mph or higher and a volume of 7,000 VPD or more, as depicted in **Figure 3-23**. This highlights a strong correlation between car volume and speed: the higher the traffic volume and speed, the more protective the recommended bikeway should be. Urgent changes or updates to this road are necessary to enhance safety and prevent further fatalities and severe injuries by following similar guidelines or as required in the latest FDOT Florida Design Manual.

Further, organizations such as PeopleForBikes have conducted a Bicycle Network Analysis (BNA) to assess how effectively the bike network in Opa-locka connects people to desired destinations. The BNA provides detailed network analysis results for each census block in Opa-locka, along with an overall score for the area. Using data on bike infrastructure, street and intersection characteristics, and the location of common destinations from OpenStreetMap[29], the BNA clips the information to match the city's boundaries, including a buffer distance that corresponds to a typical trip distance of slightly more than 1½ miles—about the distance a person can bike in 10 minutes at a speed of 10 mph.

After preparing the data, the BNA evaluates each road or path segment within the city boundary and buffer area to determine if it is high or low stress for bicycling, conducting a comprehensive traffic stress analysis. This analysis illustrates the stress rating of every street and path segment within the city. Based on this network stress evaluation, the BNA calculates whether city residents can access nearby destinations by bicycle. If a person can cycle from their home census block to a census block with a common destination, such as a grocery store, using only low-stress routes, that destination is considered accessible, and points are awarded. Any high-stress street segment or intersection along the route disqualifies that route as a feasible option, and no points are awarded.

Map 3-19 displays the stress network in Opa-locka in relation to citywide FSI crashes, illustrating that most of these crashes happen on corridors considered high street such as NW 27 Avenue, NW 22 Avenue, NW 135 Street, NW 151 Street, or SR 9. Four (4) bicycle type FSI crashes were reported in roads that are considered "high stress." Of those four FSI crashes, two (2) of them were fatalities and the other two (2) were serious injury crashes.

Map 3-19: Opa-locka's PeopleForBikes BNA



Source: PeopleForBikes

peopleforbikes

[29] OpenStreetMap

3.3.12.2 Sidewalk Gaps

Sidewalk infrastructure gaps arise when there is a break in the continuity of pedestrian facilities such as sidewalks or shared-use paths. When these connectivity gaps exist, pedestrians are often forced onto the adjacent shoulder or travel lanes, leading to increased conflicts with vehicles. This can elevate stress levels or diminish comfort due to minimal buffering from vehicular traffic.

Ensuring continuous and safe sidewalks is a matter of equity, as it provides safe and accessible transportation options for all community members, including those who may not have access to a vehicle. By identifying and addressing sidewalk gaps and high-risk areas for crashes, Opa-locka can create safer, more inclusive, and more efficient environments for pedestrians, making public spaces accessible even to those with mobility impairments.

Understanding where sidewalk gaps exist helps pinpoint areas where pedestrians are forced into more dangerous situations. An analysis of State and County roads[30] within the network identified sidewalk infrastructure gaps, with the findings shown in **Map 3-20**. The network was field verified during a field visit in July 2024, where infrastructure on local roads was inventoried since data was not available to evaluate gaps or lack of infrastructure. During the field visit, significant discrepancies in pedestrian infrastructure were observed. While residential areas had some pedestrian facilities, areas with predominant industrial land use lacked proper sidewalks. This deficiency was particularly noticeable in areas south of the Opa-locka Airport, between NW 135 Street and SR 924/Gratigny Parkway, and within the Opa-locka Innovation District.

In contrast, residential streets surrounding City Hall, between Sharazad Boulevard and Ali Baba Avenue, have a relatively decent sidewalk network, especially near Robert Ingram Elementary. However, significant gaps were identified on Perviz Avenue, between Fisherman Street and Ali Baba Avenue, and on the streets between Bahman Avenue and Ahmad Street, and between Sharazad Boulevard and Jann Avenue. Additionally, entire residential areas southwest of Opa-locka Boulevard, south of the CSX/SFRC railroad tracks, also lack pedestrian infrastructure. This is especially problematic on streets that cross the railroad tracks, creating a disconnect between the north and south sides of the tracks. This disconnection not only affects the accessibility and safety of pedestrians but also limits the overall connectivity within the city, making it challenging for residents to navigate their neighborhoods on foot. This disconnection is also evident in residential areas divided by major thoroughfares such as NW 27 Avenue, NW 22 Avenue, and SR 9. The absence of a direct, safe, and cohesive sidewalk network connecting the east and west sides of the city creates isolation between communities, significantly limiting the city's overall walkability.

Moreover, sidewalk width is crucial for accommodating bi-directional flow, ensuring ADA accessibility, placing infrastructure such as lighting, and providing pedestrian comfort. In addition to identifying sidewalk gaps, the associated sidewalk widths throughout the network were analyzed and are depicted in **Map 3-20** as well. Widths varied from five feet on most of the network to eight feet on NW 32 Avenue.

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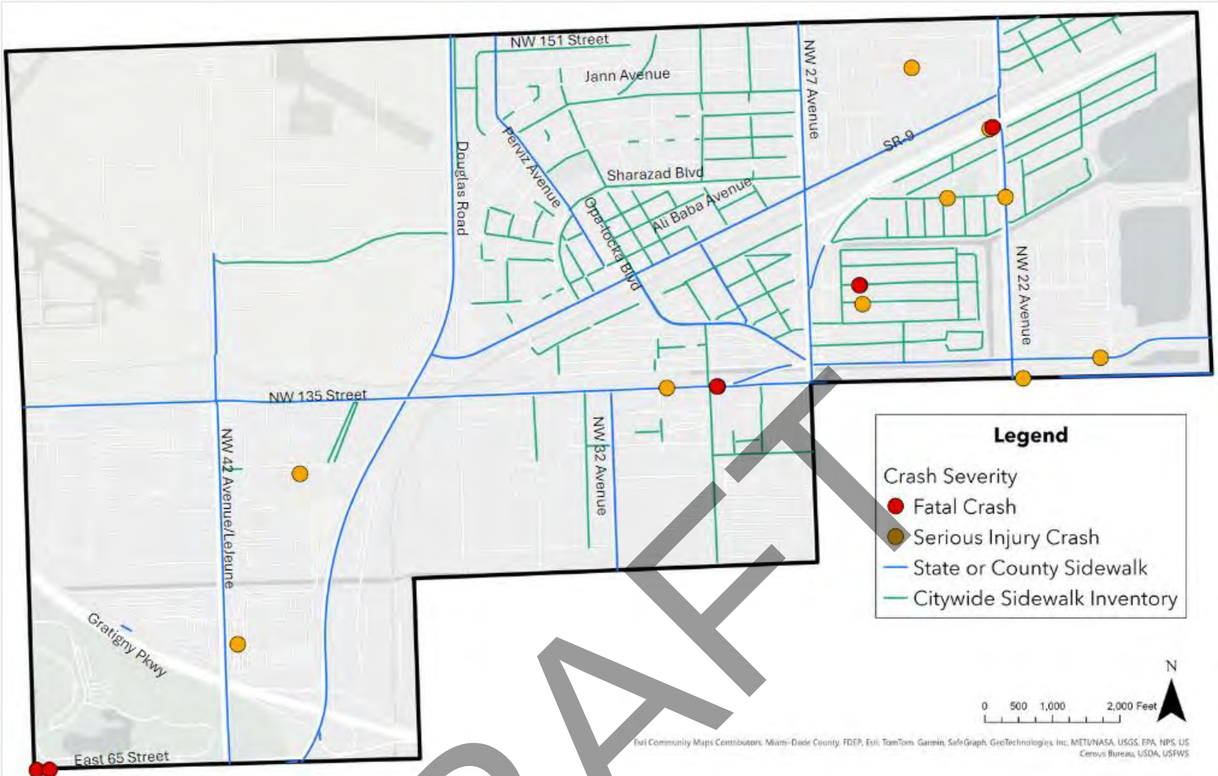
[30] As of June 2024, the only data available was from the Florida Department of Transportation and Miami-Dade Open Data Source. Data regarding sidewalks on local roads was available. Hence, a field visit was performed on July 5, 2024, to conduct additional examination to determine its accuracy.

Map 3- 20: Existing Sidewalk Connectivity and Width on State and County Roads



Source: FDOT District Six Open Data Hub and field visit on July 5, 2024

There were 68 reported FSI crashes on State or County roads with sidewalks, compared to only 18 on City roads with sidewalks. Conversely, 34 crashes were reported on roads without sidewalks. Among these crashes, 25 involved pedestrians, six (6) of which occurred on roads with sidewalk gaps. The following local roads without sidewalks have reported FSI crashes:

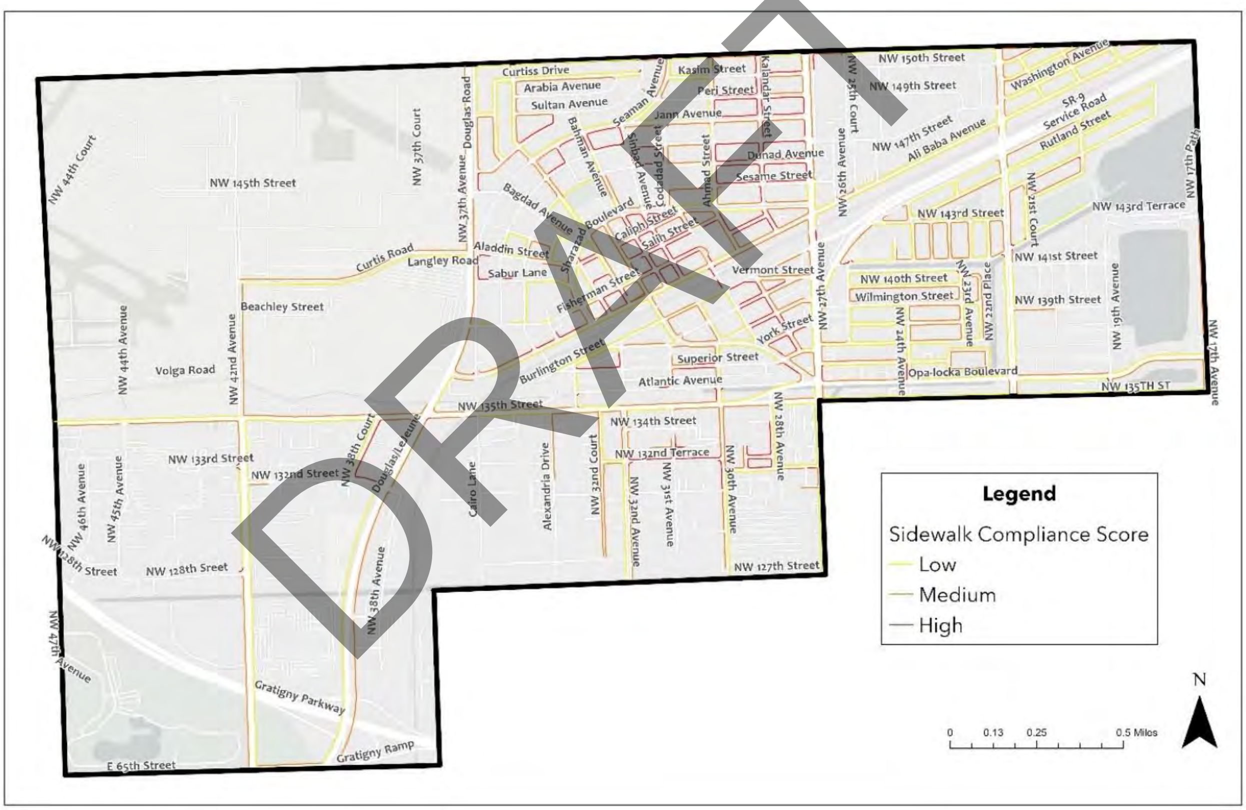
- Cairo Lane
- Bagdad Avenue
- NW 149 Street
- NW 132 Street

Addressing these gaps in pedestrian infrastructure is crucial for improving safety and mobility for all residents. Prioritizing sidewalk construction and maintenance in industrial areas, as well as enhancing connectivity across the railroad tracks, will create a more inclusive and accessible urban environment. These improvements will also promote safe walking as a viable mode of transportation, contributing to healthier and more sustainable communities in Opa-locka.

Sidewalk and Ramps ADA Assessment

The City of Opa-locka is currently undertaking a comprehensive ADA (Americans with Disabilities Act) Assessment focused on the sidewalks and ramps situated along local roads. This detailed evaluation aims to ensure accessibility and safety for all residents. The assessment process involves meticulously measuring the width of the sidewalks, examining the cross slope to ensure it meets ADA standards, identifying any obstructions that could impede mobility, and noting any instances where grass overlaps onto the sidewalk, potentially creating hazards. The overall sidewalk compliance score is illustrated in **Map 3-21**, which provides a visual representation of the assessment results. These scores were derived from a comprehensive evaluation process that considered various criteria established specifically for this assessment. The majority of sidewalks in Opa-locka fall into the low and medium compliance categories, indicating areas that may require significant improvements to meet ADA standards. High compliance scores, which signify sidewalks that are fully accessible and meet all necessary guidelines, are predominantly found in the Downtown area. In contrast, sidewalks with low compliance scores are primarily located in industrial zones, where there are notable gaps in sidewalk infrastructure, posing challenges for accessibility and connectivity. This disparity highlights the need for targeted improvements in these industrial areas to ensure a more inclusive and accessible environment throughout the city.

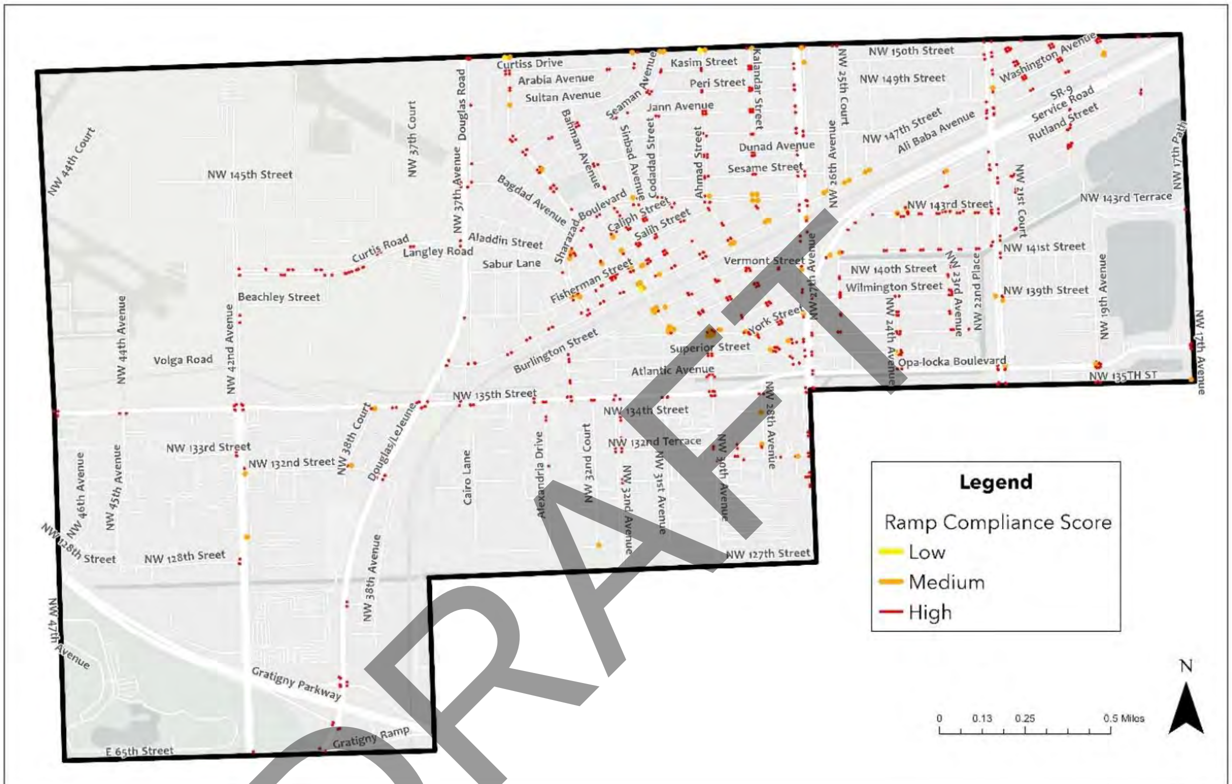
Map 3-21: City of Opa-locka Sidewalk Compliance



Source: City of Opa-locka

The ramp ADA assessment involved a thorough examination of several critical factors to ensure accessibility and safety. This detailed evaluation included checking for the presence of detectable warning surfaces, which are essential for alerting visually impaired individuals to the transition between the sidewalk and the street. Additionally, the assessment measured the slope of the gutter to ensure it meets ADA standards, evaluated the dimensions and slope of the landing area to guarantee it provides a stable and accessible surface, and assessed the width of the ramp to confirm it is sufficient for wheelchair access. The inspection also identified any obstructions that could hinder mobility. Overall, the majority of ramps received high compliance scores, indicating that they meet or exceed ADA requirements. This positive outcome is visually represented in **Map 3-22**, which highlights the areas where ramps are fully accessible and compliant with ADA standards.

Map 3-22: City of Opa-locka Ramp Compliance



Source: City of Opa-locka

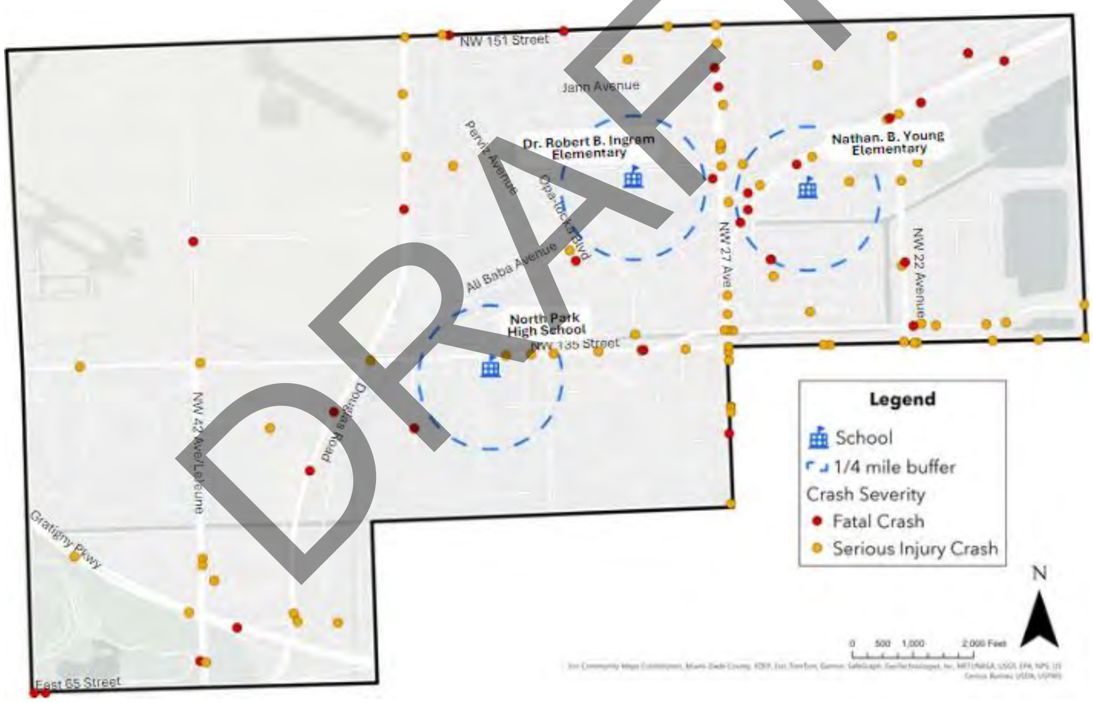
3.3.13 Proximity of Schools and Severity of Crashes

Schools are bustling hubs of activity, with young students often walking, biking, or being driven to and from school. Identifying FSI crash hotspots near schools helps ensure that children can walk or bike safely from their homes to their schools. During drop-off and pick-up times, the volume of traffic surrounding schools increases significantly. The high concentration of vehicles can lead to congestion and increase the likelihood of accidents. Further, while speed limits near schools are lower than 15 miles per hour, not all drivers adhere to these regulations, increasing the risk of collisions.

As depicted in **Map 3-23**, two (2) public schools are within the city boundaries and one (1) charter high school. The two (2) public schools are Nathan B. Young Elementary and Dr. Robert B. Ingram Elementary and are located within half a mile of NW 27 Avenue and SR-9, two (2) of the main roads which have the highest number of FSI crashes. Within a ¼ of a mile, FSI crashes have been identified near both Nathan B. Young Elementary School and the North Park High School. Three (3) serious injury crashes have been reported within a ¼ of a mile of North Park High School, while five (5) fatalities and four (4) serious injuries have been reported within a ¼ of a mile of Nathan B. Young Elementary.

The number of serious injuries and fatalities in a close proximity to these elementary schools is alarming. According to Miami-Dade County Public Schools (MDCPS), the Robert B. Ingram Elementary School has approximately 30 walkers and 3 bicycle riders, while the Nathan B. Young Elementary School has approximately 93 walkers and 3 bicycle riders. A detailed analysis was conducted to identify crashes within a ¼ mile radius of three schools in Opa-locka. Crashes were examined specifically during school drop-off (7:00 a.m. - 9:00 a.m.) and pick-up (2:00 p.m. - 4:00 p.m.) times to account for both elementary and high school schedules. The data was further refined to include only weekdays within the school calendar year. Under these defined criteria, two (2) fatal or serious injury crashes occurred, representing 1.68% of the total FSI crashes citywide. Considering all crashes, regardless of severity, a total of 538 crashes occurred within a ¼ mile of a school, with 95 of these (or 17.66%) occurring during school pick-up and drop-off hours.

Map 3-23: Schools and FSI Crashes Within a ¼ -Mile



Source: Signal 4 Analytics and Miami-Dade County Community Services

Identifying FSI crashes is also crucial for developing Safe Routes to School (SRTS)[31] initiatives. SRTS programs aim to make walking and biking to school safer and more accessible for students.

[31] Safe Routes to School is a growing movement gaining traction in communities across the United States. The initiative aims to increase the number of children who walk or bicycle to school by funding projects that eliminate existing barriers. These barriers include inadequate infrastructure, unsafe pathways, and the absence of programs that promote walking and bicycling through education and encouragement for children, parents, and the community. Florida's Safe Routes to School (SRTS) program, led by FDOT, can

By pinpointing these areas where FSI crashes occur, Opa-locka and MDCPS can prioritize resources and interventions to create safer routes for students attending Nathan B. Young Elementary and North Park High School, where FSI crashes have been recorded happening. This may involve implementing infrastructure improvements such as crosswalks, sidewalks, bike lanes, traffic calming measures, and improved signage. Ultimately, the goal is to enhance the safety and well-being of students as they travel to and from school, promoting active transportation and healthier communities.

Since the 1970s, the Miami-Dade County Department of Transportation and Public Works (DTPW) has maintained a program to build Safe Routes to School (SRTS). With the introduction of the federal SRTS funding program, the scope has expanded to include educational components alongside infrastructure improvements. Federal grants and Transportation Alternatives Program (TAP) funding from the Miami-Dade Transportation Planning Organization (TPO) also support Miami-Dade County Public Schools (MDCPS) in providing WalkSafe[32] and BikeSafe[33] education. Notably, Nathan B. Young Elementary was selected for SRTS program improvements in FY 2013. Improvements included establishing school speed zones, new sidewalks, new crosswalks or upgrades to existing ones, new signs or upgrades to existing ones, as well as ADA facility upgrades for a total budget of $82,000.00.

3.3.14 Proximity of Storm Surge Planning Zones and Evacuation Routes

Evacuation routes are essential pathways designed to facilitate the mass movement of people away from impending natural disasters, particularly hurricanes in the State of Florida. These routes, often marked by designated signage, aim to provide a safe and efficient escape path to minimize loss of life and injuries. However, the stress and urgency associated with evacuations can lead to an increased risk of traffic accidents, especially if these routes do not accommodate those who cannot rely on private motor vehicles. A sudden surge in the number of vehicles during evacuations can cause road congestion, and high traffic volume increases the likelihood of collisions, particularly in areas not designed to handle such capacity regularly. This is often reflected in a higher incidence of rear-end collisions due to stop-and-go traffic.

Miami-Dade County has established Storm Surge Planning Zones to address the threat of storm surges during hurricanes. These zones are based on projected storm surge heights, independent of the hurricane's category. There are five zones (A through E), each representing different levels of risk. Zone A faces the highest risk from Category 1 storms and above, while Zone E is at risk from storm surges associated with Category 5 storms. As shown in **Map 3-22**, the city itself does not fall within any storm surge zone, but Zone E extends within a half-mile radius. For evacuation, two

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help communities address their school transportation needs and encourage more students to walk or cycle to school.

[32] The University of Miami's WalkSafe program is a pediatric injury prevention initiative that partners directly with public schools, offering a free 3-day educational curriculum and safety resources. WalkSafe promotes physical activity by encouraging walking to school and advocates for improved facilities and infrastructure in school environments. The program collaborates with local governments, traffic planners, school districts, and the community to achieve these goals.

[33] The University of Miami's BikeSafe program is an evidence-based injury prevention initiative focused on bicycle safety for children. BikeSafe's core missions focus on reducing pediatric injuries, increasing physical activity, and enhancing the bikeability of the built environment.

primary routes—SR 924/Gratigny Parkway, a limited access facility, and NW 27 Avenue/SR 9—serve the city.

According to data from S4, there have been 32 reported FSI crashes along these evacuation routes as illustrated in **Map 3-24**. Although this data is not correlated to any specific natural disaster, it suggests that even under normal traffic conditions, road users with mobility needs are vulnerable along these roads. It is worth noting that both designated evacuation routes are part of the State Highway System, with one of them, SR 924/Gratigny Parkway, maintained by the Greater Miami Expressway Agency (GMX).

Map 3-24: Storm Surge Planning Areas Within a ½ mile and Evacuation Routes

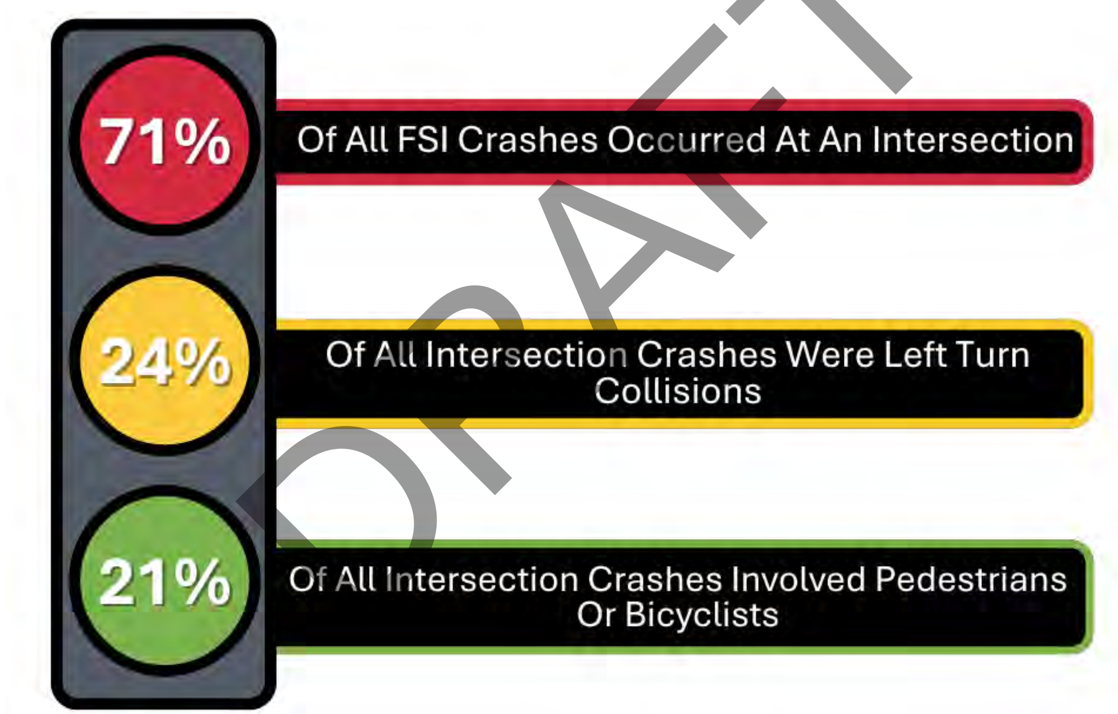
Source: Miami-Dade County Storm Surge Planning Zones and Miami-Dade County Primary Evacuation Route

3.3.15 Proximity of Crashes to Signalized Intersections

Analyzing signalized intersection crashes is crucial for enhancing traffic safety in the City of Opa-locka. These intersections are often high-risk areas due to the convergence of multiple traffic streams and numerous conflict points. The analysis involved examining crash data to identify underlying causes, such as visibility problems, signal timing issues, or driver behavior. Problematic intersections can be pinpointed by scrutinizing factors like the frequency, severity, and types of fatal and serious injury crashes, as well as the time of day and specific locations.

Of the 119 total FSI crashes that occurred on Opa-locka streets during the study period, 85 happened within 200 feet of an intersection. As detailed in **Figure 3-24**, 71% of all FSI crashes occurred near an intersection, with 24% involving left turn maneuvers. Notably, 21% of all intersection crashes involved pedestrians or bicyclists, accounting for the majority of pedestrian and bicycle fatalities and serious injuries in the city.

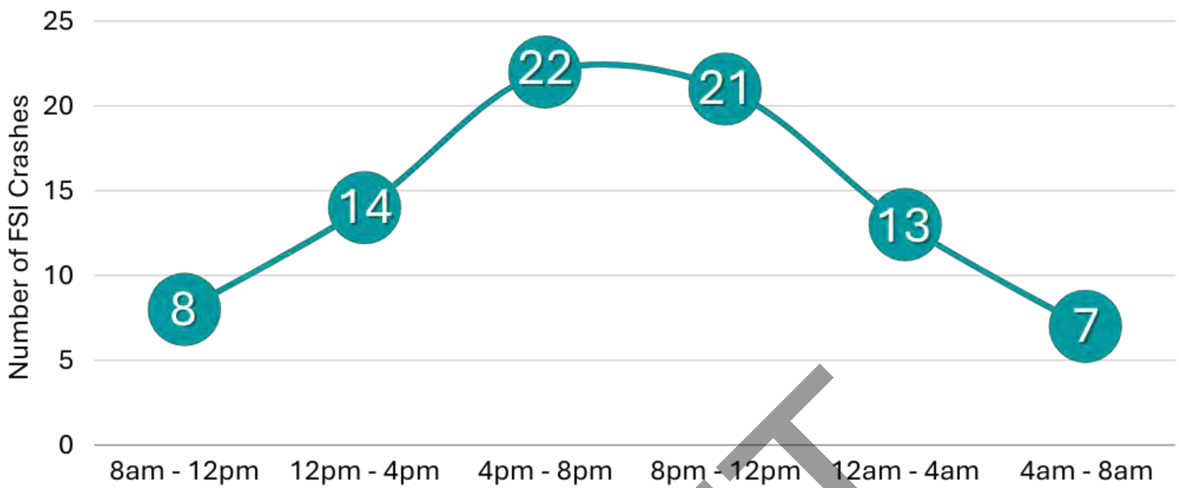
Figure 3-24 Signalized Intersection FSI Details



Source: Signal Four Analytics

Figure 3-25 illustrates patterns in peak times of risk. Understanding these temporal trends can aid in implementing targeted interventions and adjusting lighting conditions around intersections accordingly. While the data shows an even split between daytime and nighttime crashes, there is a notable concentration of crashes between 4 p.m. and midnight.

Figure 3-25: Time of Day for Signalized Intersection FSI Crashes



Source: Signal Four Analytics

Table 3-3 specifies the top five most dangerous intersections during the study period. **Map 3-25** shows all crashes that occurred within 200 feet of an intersection and the concentrations. It is worth noting that all the intersections identified in **Table 3-4** are located on roads that are maintained by Miami-Dade County and Florida Department of Transportation.

Table 3-3: Top Five Signalized Intersection FSI Crashes

Crash Ranking	Signalized Intersection	Total FSI Crashes	% of All FSI Intersection Crashes	Mode of Transportation Involved in Crashes			
				Pedestrian	Bicycle	Motorcycle	Automobile
1	NW 135 Street and NW 22 Avenue	7	14%	1	0	1	5
2	NW 22 Avenue and SR-9	5	10%	3	0	0	2
3	NW 135 Street and NW 30 Avenue	4	8%	3	0	0	1
4	Opa locka Boulevard and NW 27 Avenue	3	6%	0	0	1	2
5	NW 27 Avenue and NW 132 Street	3	6%	0	0	0	3

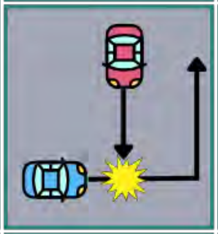
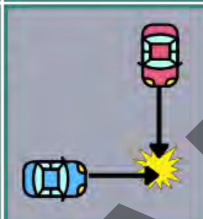
Source: Signal Four Analytics

Map 3-25: Signalized Intersections and FSI Crashes in Opa-locka

Source: Signal Four Analytics and Miami-Dade County Open Data Hub

Table 3-4 also lists the types of crashes that occurred in the top FSI crashes at signalized intersections. These include left turn crashes, right angle crashes, head-on collisions, pedestrian crashes, and motorcycle crashes. Among these, left turn collisions are the most frequent, involving a vehicle making a left turn colliding with an oncoming vehicle proceeding straight through the intersection. Such collisions often result from misjudging the gap in traffic, failure to yield, or obstructed visibility. The second most common type involves pedestrian crashes, which can occur due to driver inattention, reckless driving, or the pedestrian failing to yield to the traffic signal.

Table 3-4: Top Five Signalized Intersections by Crash Type

Top 5 Signalized Intersection FSI Crashes	Crash Types Occurred At These Signalized Intersections				
	Left Turn	Right Angle	Head-On	Pedestrian	Motorcycle
					
NW 135 Street and NW 22 Avenue	4	2			1
NW 22 Avenue and SR-9	1	1		3	
NW 135 Street and NW 30 Avenue			1	3	
Opa locka Boulevard and NW 27 Avenue	1	1			1
NW 27 Avenue and NW 132 Street	2	1			

Source: Signal Four Analytics

3.3.16 Crashes and the Streetlight Inventory

Lighting is a fundamental safety measure crucial for ensuring safe travel on roads and highways. Effective street lighting enhances road safety by providing uniform illumination, significantly improving nighttime visibility for both drivers and non-motorized users such as pedestrians and cyclists. Proper lighting helps in identifying potential hazards, navigating turns, and detecting pedestrians and other vehicles, thereby reducing the risk of accidents and collisions.

According to the Miami-Dade County Streetlight Inventory, approximately 440 light poles are situated along State or County roads[34] in Opa-locka, as shown in **Map 3-26**. Further, a total of 898 light poles are situated along local roads and operated and managed by the city. 396 out of the total of light poles are in good condition. However, 177 have been reported as either in fair or poor condition. In addition, the majority of the light poles maintained by the city are made of wood, which means that they can easily be susceptible to wood rot, which is triggered by moisture intrusion and they can be more prone to decay since they are not made of concrete.

Despite the high concentration of light poles, street lighting is not evenly and adequately distributed across all areas. This disparity is particularly evident on roads adjacent to industrial areas. The lack of sufficient lighting poses a serious safety risk. Poor illumination makes it difficult for drivers to see pedestrians and other road users, increasing the likelihood of accidents, especially during nighttime and early morning hours. Additionally, poorly lit areas can create a sense of insecurity for pedestrians and cyclists, discouraging them from using these routes and potentially leading them to take longer, less direct paths to their destinations.

Map 3-26: Streetlight Inventory and Night-Time FSI Crashes in Opa-locka

Sources: Miami-Dade Open Data Hub – Streetlight Inventory and City of Opa-locka

[34] As of June 2024, the only data available was from the Florida Department of Transportation and Miami-Dade Open Data Source. Data regarding sidewalks on local roads was available.

During a field visit in July 2024, it was observed that NW 135 Street has an unusual lighting arrangement. Unlike other corridors citywide, light poles on this street are installed exclusively on either the eastbound or westbound side of the corridor rather than on both sides. This inconsistent lighting pattern has significant implications for road safety, particularly for pedestrians. As a result, a total of nine (9) FSI crashes that happened during dark conditions have been reported.

A specific segment of NW 135 Street, between NW 31 Avenue and NW 28 Avenue, was identified as having a high incidence of pedestrian FSI crashes, as detailed in **Sub-Section 3.3.3.1**[35]. In this segment, only one side of the road is illuminated, creating a stark contrast in visibility between the two sides of the street. Three (3) FSI crashes were identified during "Dark," "Dusk," or Dawn lighting conditions. Consequently, this uneven lighting distribution is problematic for several reasons:

- **Reduced Visibility for Drivers**: With light poles only on one side, the opposite side of the road remains poorly lit, making it difficult for drivers to see pedestrians crossing from the dark side. This reduced visibility can delay reaction times, increasing the risk of accidents.
- **Increased Risk for Pedestrians**: Pedestrians walking on or crossing from the darker side are less visible to drivers, especially at night. This significantly raises the likelihood of pedestrian-related crashes. Additionally, pedestrians may feel less safe and secure walking in poorly lit areas, which can affect their decision-making and increase their vulnerability.
- **Imbalanced Lighting**: The presence of light on only one side creates an imbalanced lighting environment, which can cause glare and shadows that further impair visibility. Drivers may struggle to adjust their vision between the brightly lit and dark sections of the road, exacerbating the risk of accidents.
- **Disorientation**: The lack of consistent lighting can also lead to disorientation for both drivers and pedestrians. Drivers might have difficulty gauging distances and speeds accurately, while pedestrians may misjudge the speed and proximity of oncoming vehicles when attempting to cross the street.

The uneven distribution of street lighting is a critical issue that needs addressing to enhance overall road safety. Roads adjacent to industrial areas often have high traffic volumes, including large trucks and commercial vehicles, which can further complicate navigation in low-light conditions. Ensuring that these areas are adequately lit can significantly reduce the risk of accidents and improve the safety and accessibility of the road network for all users.

3.4 Railroad Crossing Analysis

Opa-locka is intersected by the South Florida Regional Corridor (SFRC), an active railroad line used by both passenger (Tri-Rail[36]) and freight (CSX) services. There are eight (8) railroad crossings throughout the city, varying based on the specific road intersected by the rail line. These crossings

[35] A comprehensive citywide streetlight inventory is needed to further assess its impact on FSI crashes. Data is only available for roads that are owned and managed by FDOT and Miami-Dade County.
[36] At the end of FY 2023, ridership reported by the South Florida Regional Transportation Authority (SFRTA) totaled 3,735,897 passengers, with the Opa-locka Tri-Rail Station observing 105,458 boardings and 102,850 alightings.

can be particularly hazardous for pedestrians and bicyclists due to several factors. For instance, limited visibility of approaching trains, especially at crossings around curves or obstructed by buildings and vegetation, poses significant risks. Trains often seem to be moving slower than they are, causing pedestrians and cyclists to misjudge the time available to cross safely. Additionally, many railroad crossings lack proper infrastructure for non-motorized users, including missing or poorly maintained pathways, insufficient signage, and inadequate protective barriers.

Barriers like gates or fencing intended to keep people off the tracks might be absent, damaged, or easily bypassed. Cyclists can also struggle with the physical layout of crossings, especially where tracks intersect the road at sharp angles, increasing the risk of falls. These factors contribute to various types of crashes involving pedestrians and bicyclists, which are described as follows.

- **Collisions at Active Crossings:** Despite active warning systems (lights, bells, gates), crashes can occur when pedestrians or cyclists ignore or misinterpret these signals, attempt to beat the train, or cross after barriers have lowered.
- **Incidents on the Tracks:** Sometimes pedestrians or cyclists may use railroad tracks as a path or shortcut, not realizing a train is approaching. This risky behavior, which is often witnessed by the northbound platform at the Opa-locka Tri-Rail Station, can lead to fatal accidents.

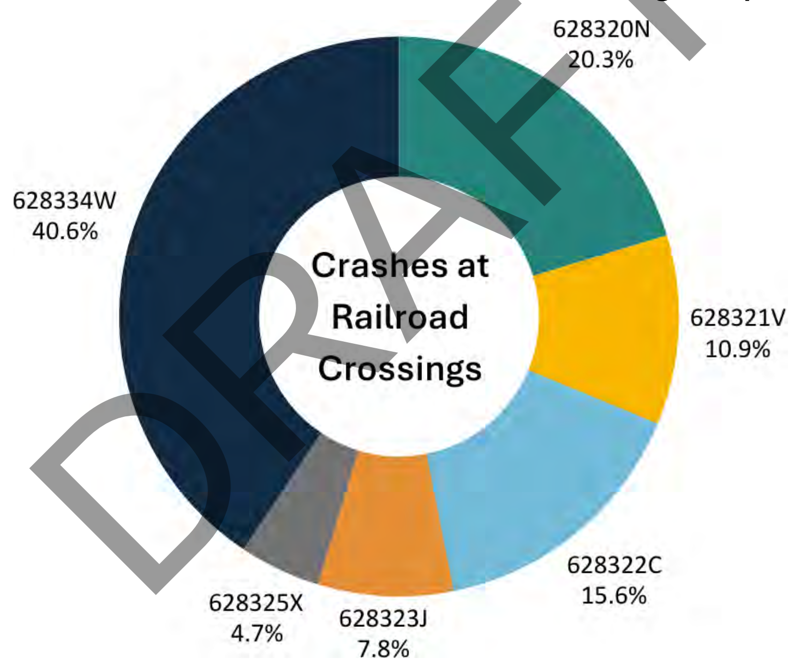
Data typically indicates that crashes involving trains result in more severe injuries or fatalities compared to those involving only motor vehicles, due to the significant speed and mass of trains. Although the number of incidents at railroad crossings may be lower compared to other traffic intersections, their severity is much higher. Highway-Rail Grade Crossing Accident/Incident Reports[37], which can be found in **Appendix B**, ranging from 1975 until as recent as 2024 were reviewed for all six (6) at-grade crossings in Opa-locka. Reports found that there have been at least 26 crashes reported at Crossing No. 628334W (NW 135 Street), a significant number compared to other crossings such as Crossing No. 628325X (Dunad Avenue), where only three (3) were reported. The distribution of crashes citywide at railroad tracks can be seen in **Figure 3-26** and summarized in **Table 3-5**.

[37] A Highway-Rail Grade Crossing Accident/Incident Report is a formal documentation used to record the details of accidents or incidents that occur at the intersections where a highway or road crosses railroad tracks at the same level, known as grade crossings. This report typically includes comprehensive information to help in understanding the circumstances of the event and in preventing future occurrences.

Table 3-5: Crashes at railroad crossings in Opa-locka from 1975-2024

Street Name	DOT No.	Number of Crashes
NW 22 Avenue	628320N	13
NW 27 Avenue	628321V	7
Codadad Street	628322C	10
Opa-locka Boulevard	628323J	5
Dunad Avenue	628325X	3
NW 135 Street	628334W	26

Figure 3-26: Distribution of crashes at railroad crossings in Opa-locka



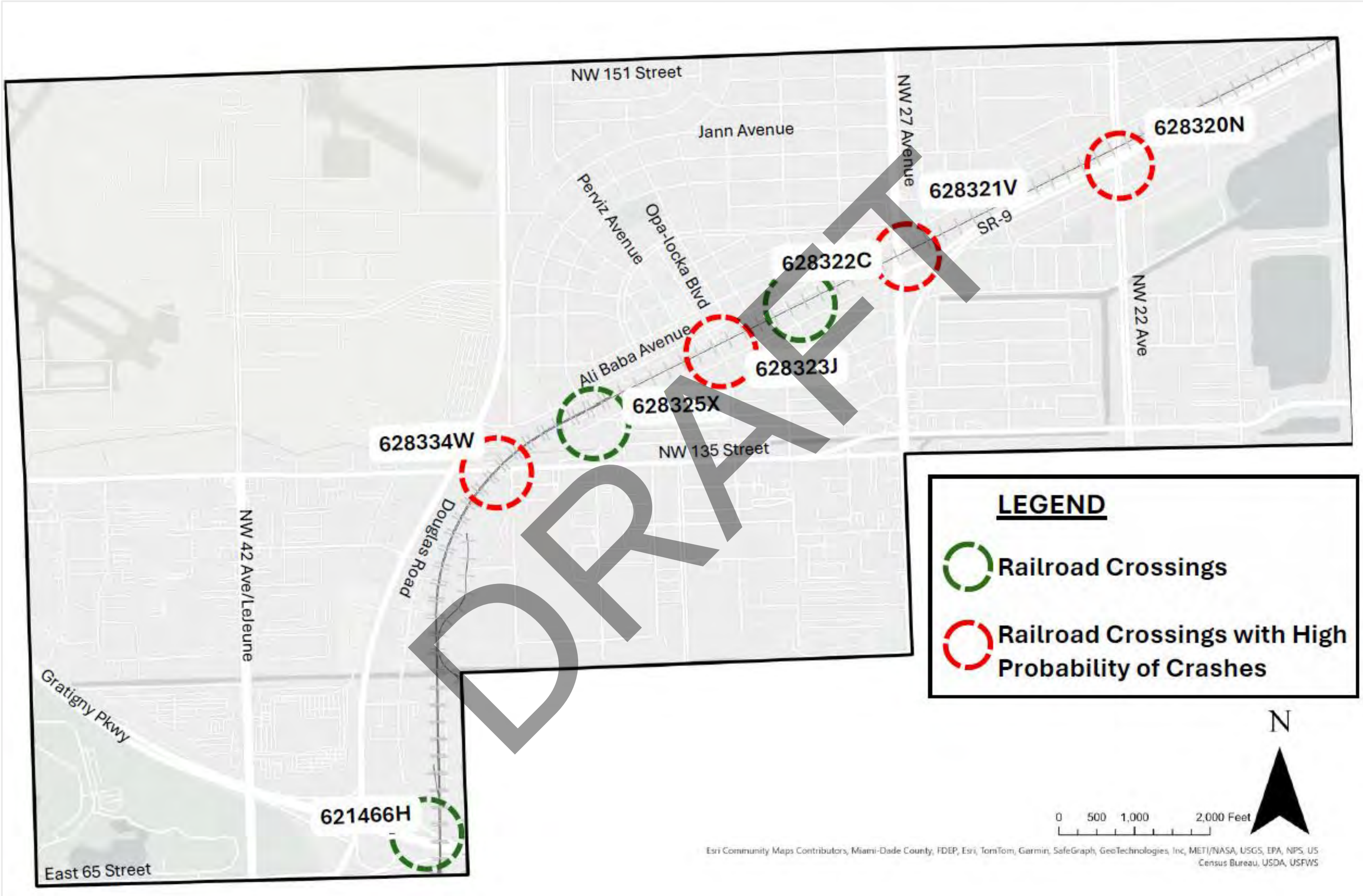
Since some of the crash data may be outdated due to the fact that it goes as far back as 1975, to evaluate the risks that train traffic poses on vulnerable road users in Opa-locka, an additional assessment of all crossings within the city was conducted based on their predicted crash risk, drawing from the total accident history of the past five years. This assessment relies on the USDOT Federal Railroad Administration (FRA) Highway-Rail Grade Crossing Accident Prediction System. **Table 3-6** summarizes the analysis results, highlighting the four (4) crossings with the highest likelihood of crashes based on historical data as follows.

- 628321V (on NW 27 Avenue)
- 628320N (on NW 22 Avenue)
- 628323J (on Opa-locka Boulevard)
- 628334W (on NW 135 Street)

In addition to historic crash data, the analysis considers frequency of train crossings, number of facility lanes, annual average daily traffic (AADT), and available speed data. An exhibit detailing the crossing locations is provided in **Map 3-25**. The railroad crossing with the highest probability number is Crossing No. 628321V, which has an accident probability of 31.72%. The railroad crossing is located in one of the roads with the highest congestion, NW 27 Avenue, which has the highest number of highway lanes and an average annual daily traffic (AADT) volume of 41,500. Notably, out of the 105,458 train boardings reported at the Opa-locka Tri-Rail Station in FY 2023, with approximately 7.3% of passengers accessing the station by bicycle, and 1.8% by scooter per data provided by SFRTA. Further, the Florida Department of Transportation (FDOT) Non-Motorized Traffic Monitoring Program collected data at the Opa-locka Tri-Rail station

As a result, the crossings adjacent to the commuter train facility (Crossing Nos. 628325X and 628323J) may experience higher multimodal traffic compared to other crossings due to their proximity to the boarding platforms.

Map 3-27: Priority Rail Crossings and Crashes



Source: USDOT Federal Railroad Administration

Table 3-6: Highway-Rail Grade Crossing Accident Prediction Summary[38 39 40 41]

Rank No.	Average Predicted Accidents	Crossing ID	RR Code	Street	Year	Warning Device	Total Trains	Total Tracks	Speed	Hwy Lanes	AADT
1	0.317246	628321V	SFRV	NW 27 Avenue	2020	Gate	61	2	45	6	40,000
2	0.187022	628320N	SFRV	NW 22 Avenue	2020	Gate	61	2	79	5	18,200
3	0.170047	628334W	SFRV	NW 135 Street	2019	Gate	61	3	45	4	21,000
4	0.151667	628323J	SFRV	Opa-locka Boulevard	2020	Four Quad Gate	61	2	45	2	794

Source: USDOT Federal Railroad Administration

[38] Ranked Public Highway-Rail Crossings
[39] Yearly Accident Count: Most recent year is partial year (data is not for the complete calendar year) unless Accidents Per Year is “as of Dec 31.”
[40] Five Year Total Accident History
[41] Data generated on May 10, 2024.

3.4.1 Existing Conditions Inventory

The Opa-locka railroad safety site analysis examined six crossings along the South Florida Rail Corridor (SFRC). These crossings are summarized in **Table 3-7** and **Table 3-8**, illustrated in **Map 3-25** above, and documented in **Appendix B**. The corridor, jointly operated by Tri-Rail, CSX, and Amtrak, experiences significant rail traffic with 40 daytime-through trains, 17 nighttime trains, and 4 switching trains daily.

Table 3-7: Highway-Rail Grade Crossing Details

Item	Street Name	Mile Post	DOT #	Owner
1	NW 22 Avenue	1028.85	628320N	Miami-Dade County
2	NW 27 Avenue	1029.40	628321V	FDOT
3	Codadad Street	1029.75	628322C	City of Opa-locka
4	Opa-locka Boulevard	1029.88	628323J	City of Opa-locka
5	Dunad Avenue	1030.18	628325X	City of Opa-locka
6	NW 135 Street	1030.50	628334W	FDOT

Table 3-8: Crossing Streets Traffic Volume

Item	Street Name	AADT (year)	Roadway Classification
1	NW 22 Avenue	20,700 (2023)	Urban Minor Arterial
2	NW 27 Avenue	41,500 (2023)	Urban Arterial
3	Codadad Street	1907 (2011)	Urban Local
4	Opa-locka Boulevard	794 (2011)	Urban Local
5	Duna Avenuet	565 (2011)	Urban Local
6	NW 135 Street	22,500 (2023)	Urban Minor Arterial

Based on a site visit in July of 2024 and desktop analysis, it was confirmed that the City of Opa-locka does not have designated Quiet Zones[42], and most crossings lack adequate Supplementary

[42] A quiet zone is a section of a railroad line that is at least half a mile long and has one or more consecutive public highway-rail grade crossings. In quiet zones, train horns aren't routinely sounded when trains approach crossings, but they can still be used in emergencies or to comply with other regulations.

Safety Measures (SSM)[43]. A review of existing traffic volume, derived from the crossing inventory form and data from the FDOT Traffic online portal, reveals significant variation, ranging from NW 27th Avenue experiences a high volume of 41,500 VPD (2023) as an Urban Arterial, while Dunad Street sees a low volume of 565 AADT (2011) as an Urban Local Road. The roadway classifications range from Urban Local to Urban Arterial, including two Urban Minor Arterials. It is essential to note that traffic data for some streets dates to 2011, indicating a need for updated counts.

Findings gathered during this site visit underscore the need for comprehensive improvements to enhance safety and compliance at these railroad crossings. These are summarized below:

3.4.1.1 NW 22 Avenue Railroad Crossing

The NW 22 Avenue railroad crossing is a multi-lane roadway, illustrated in **Figure 3-27** and featuring exit gates and four pedestrian gates, with medians on both sides of the tracks. There are no immediate driveways adjacent to this crossing, and local businesses nearby are bordered by walls and fences with zero setbacks from the property, except for the northwest corner. Both the crossing panels and roadway asphalt are in good condition, and adequate lighting is provided on both the west and east sides of the crossing.

Northbound Analysis:

a) **Signage:**

- **R8-8 "*Do Not Stop on Tracks*" Signs:** Two signs are installed far from the crossing. The median sign is in poor condition, and both signs (one on the median and another one on the sidewalk) are improperly oriented, not facing traffic.
- **R15-1 Crossbucks with R15-2P "*2 tracks*" Signs:** Three sets are present and in good condition.
- **W10-1 Advance Warning Signs:** Two signs are present—one on the median and one on the sidewalk. The sidewalk sign is slightly obstructed by a pedestrian signal, but both signs are in good condition, nonetheless.

b) **Pavement Markings:** All pavement markings, including the dynamic envelope[44], stop bar, and grade crossing markings, are in good to excellent condition. The dedicated right-turn lane also features a grade crossing pavement marking. However, the W10-1 sign is not present at the grade crossing marking location per Manual of Uniform Traffic Control Devices (MUTCD) standards.

c) **Sidewalks:** The sidewalks are not ADA compliant, lacking proper surfaces at the grade crossing. They are insufficiently wide where obstructions are present and are generally in poor condition.

[43] SSMs are engineering improvements that can be installed at highway-rail grade crossings to reduce the risk of collisions. SSMs can also be safety systems or procedures that are considered effective alternatives to locomotive horns in preventing highway-rail casualties.

[44] A dynamic envelope is known as the area near railroad crossings designed to keep motorists out of the danger zone. White connecting X's are used to visually highlight the zone at railroad crossings that drivers, bicyclists, and pedestrians should not stop to increase safety for motorists.

Figure 3-27: Aerial view of NW 22 Avenue Railroad Crossing

Southbound Analysis:

a) **Signage:**
- **R8-8 "*Do Not Stop on Tracks*" Signs:** Two signs are present, both on the sidewalks obstructing pedestrian paths.
- **R15-1 Crossbucks with R15-2P "*2 tracks*" Signs:** Four sets are present, all in good condition.
- **W10-1 Advance Warning Sign:** One sign in good condition but incorrectly installed. It should be relocated to match the grade crossing pavement marking.

b) **Pavement Markings:** As with the northbound side, all pavement markings are in good to excellent condition, including those on the dedicated right-turn lane. The W10-1 sign is absent from the grade crossing marking location.
c) **Sidewalks:** The sidewalks are not ADA compliant, missing proper detectable warning surfaces at the grade crossing.

Nearby Intersections:

a) **North:** The intersection of Ali Baba Avenue is beyond 100 feet from the railroad crossing. It is signalized and equipped with light signals to stop turning movements for both westbound and eastbound traffic. Per MUTCD 11th Edition Part 8 – *Traffic Control for Railroad and Light Rail Transit Grade Crossings*, no advanced warning signage is needed.
b) **South:** The intersection of SR 9 is within 100 feet of the railroad crossing.

- **Westbound Approach:**
  - Features a W-4 sign on the right-turn lane, in good condition but slightly misplaced.
  - Grade crossing pavement marking is in good condition.
  - The intersection is signalized but lacks a light signal to stop turning movements.

- **Eastbound Approach:**
  - W-4 sign on the median for left-turn lanes is in good condition but incorrectly located.
  - Grade crossing pavement marking is in good condition.
  - Signalized with an R10-6 "*Stop Here on Red*" sign present.

The NW 22 Avenue Railroad Crossing is photographically documented in **Figure 3-28** and **Figure 3-29**.

3.4.1.2 NW 27 Avenue Railroad Crossing

The NW 27 Avenue railroad crossing, illustrated in **Figure 3-30**, is a multi-lane roadway with medians on both sides of the railroad tracks. The crossing configuration differs between the northbound and southbound directions, as follows:

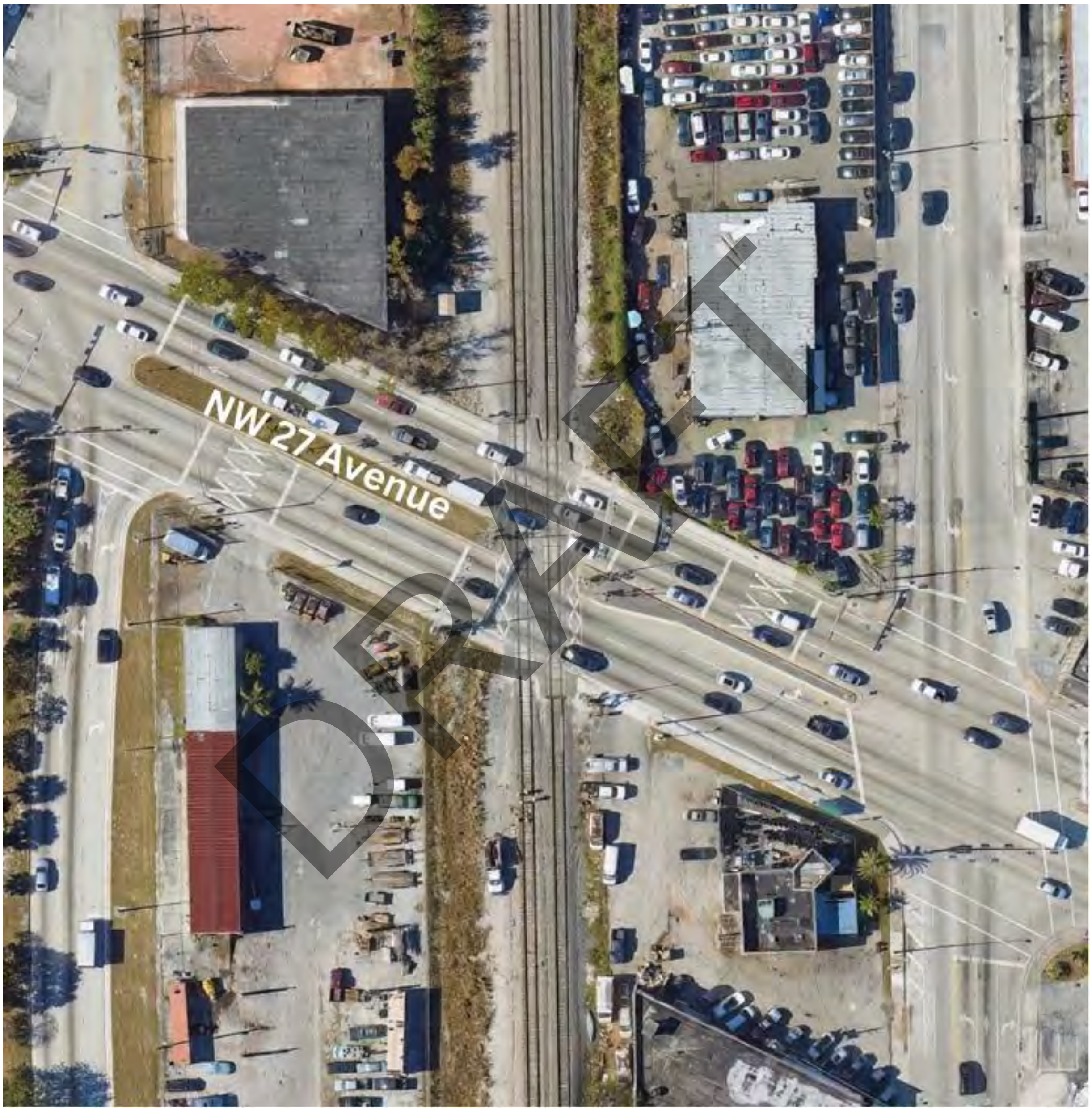
a) **Southbound:** Gate arms block traffic from both the north and south sides, with nearby driveways.
b) **Northbound:** There are no nearby driveways, and gate arms only block approaching traffic. Both directions have pedestrian gates on the far side. Local businesses with walls and fences border the area with zero setback from the property line.

Figure 3-28: NW 22 Avenue Railroad Crossing

Figure 3-29: NW 22 Avenue Railroad Crossing

The asphalt is in great condition, but the panels show some chipping and areas of poor condition. Adequate lighting is present on both the west and east sides. A bus stop is located on the northbound side, north of the railroad.

Figure 3-30: Aerial View of NW 27 Avenue Railroad Crossing



Northbound Analysis

a) **Signage:**

- **R8-8 "*Do Not Stop on Tracks*" Signs:** Four signs are present, all in great condition.
- **R15-1 Crossbucks with R15-2P "*2 tracks*" Signs:** Four sets are present and in good condition.

- **W10-1 Advance Warning Signs:** Two signs are present, both in good condition

b) **Pavement Markings:** All pavement markings, including the dynamic envelope, stop bar, and grade crossing markings, are in good to great condition.
c) **Sidewalks:** The sidewalks are not ADA compliant, lacking proper surfaces at the grade crossing. They are insufficiently wide where obstructions are present but are generally in good condition.

Southbound Analysis

a) **Signage:**

- **R8-8 "*Do Not Stop on Tracks*" Signs:** Three signs are present (two near the tracks, one far from the crossing), with two on sidewalks. All are in good condition.
- **R15-1 Crossbucks with R15-2P "*2 tracks*" Signs:** Three sets are present, all in good condition.
- **W10-1 Advance Warning Sign:** One sign is in poor condition and incorrectly installed. It should be relocated to match the grade crossing pavement marking.

b) **Pavement Markings**: All pavement markings, including those on the dedicated right-turn lane, are in good to great condition.

Nearby Intersections:

a) **North:** The intersection of Ali Baba Avenue is more than 100 feet from the railroad crossing. It is signalized but lacks light signals to stop turning movements for both westbound and eastbound traffic. According to the MUTCD 11th Edition Part 8 – *Traffic Control for Railroad and Light Rail Transit Grade Crossings*, no advanced warning signage is needed.
b) **South**: The intersection of SR 9 is also more than 100 feet from the railroad crossing. It is signalized but lacks a light signal to stop westbound turning movements. Left turns are not permitted for eastbound traffic. According to the MUTCD 11th Edition Part 8 – *Traffic Control for Railroad and Light Rail Transit Grade Crossings*, no advanced warning signage is needed.

The NW 27 Avenue Railroad Crossing is photographically documented in **Figure 3-31** and **Figure 3-32**.

3.4.1.3 Codadad Street Railroad Crossing

The Codadad Street railroad crossing, illustrated in **Figure 3-33**, is a two-lane roadway equipped with exit gates. The southbound approach features pedestrian gates on both the near and far sides. There are driveways on the north side of the railroad tracks on both the west and east sides. Local businesses have fenced property lines, except for the northwest corner, where vehicles park very close to the railroad without fencing. A median exists on the south side of the railroad. The asphalt is generally in good condition, though some areas are chipped and in poor shape, and there are no railroad panels. Lighting is only present on the southbound side.

Figure 3-31: NW 27 Avenue Railroad Crossing

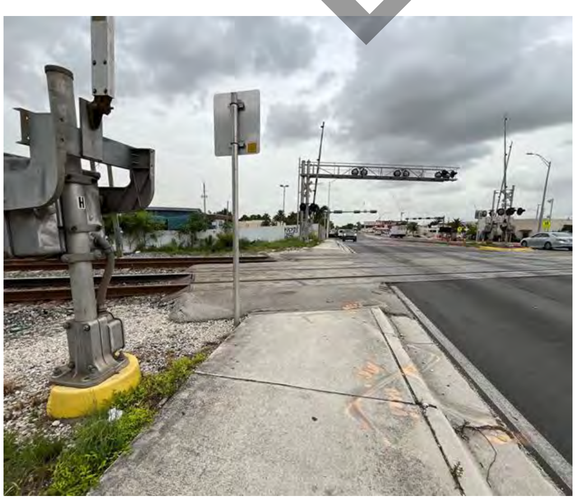


Figure 3-32: NW 27 Avenue Railroad Crossing

Northbound Analysis

a) Signage:

- **R8-8 "*Do Not Stop on Tracks*" Signs:** Two signs are present on sidewalks (one near the tracks, one far from the crossing), both in good condition.
- **R15-1 Crossbucks with R15-2P "*2 tracks*" Signs:** Two crossbucks with one "*2 tracks*" sign, all in good condition.
- **W10-1 Advance Warning Sign:** One sign is present, in poor condition and tilted.

Figure 3-33: Aerial View of Codadad Street Railroad Crossing

b) **Pavement Markings:** The dynamic envelope, stop bar, and grade crossing markings are in good to great condition. However, other pavement markings are in poor condition.
c) **Sidewalks:** No sidewalks are available on the northbound approach.

Southbound Analysis:

a) **Signage:**

- **R8-8 "*Do Not Stop on Tracks*" Sign:** One sign near the tracks and in good condition.
- **R15-1 Crossbucks with R15-2P "*2 tracks*" Signs:** One set present, in good condition.
- **W10-1 Advance Warning Sign:** One sign is in poor condition and tilted. Vehicles parking next to the sign create a visibility issue.

b) **Pavement Markings:** The dynamic envelope is in great condition, while the stop bar and grade crossing markings are in good condition within the railroad right of way. Other pavement markings are in poor condition.
c) **Sidewalks:** Sidewalks have detectable warning surfaces but are not ADA compliant on the south side due to encroachment by grass, trees, and shrubs.

Nearby Intersections:

a) **North:** The intersection of Ali Baba Avenue is beyond 100 feet from the railroad crossing and is not signalized. According to the MUTCD 11th Edition Part 8 – *Traffic Control for Railroad and Light Rail Transit Grade Crossings*, no advanced warning signage is needed.
b) **South:** The intersection of Burlington Street is beyond 100 feet from the railroad crossing and is not signalized. According to the MUTCD 11th Edition Part 8 – *Traffic Control for Railroad and Light Rail Transit Grade Crossings*, no advanced warning signage is needed.

The Codadad Street Railroad Crossing is photographically documented in **Figure 3-34** and **Figure 3-35**.

3.4.1.4 Opa-locka Boulevard Railroad Crossing

The Opa-locka Boulevard railroad crossing, illustrated in **Figure 3-36**, is a two-lane roadway equipped with quad gates and three pedestrian gates (two on the northbound side and one on the far side of the southbound side). Driveways are present on all corners of the railroad crossing, except for the northwest corner. Only local businesses on the north side have fences on their property lines. Medians are present on both sides of the railroad. The asphalt is generally in good condition, but the surrounding areas of asphalt are in poor condition despite the panels being in good shape. Lighting is only present on the southbound side. Bus stops are located on both the northbound and southbound approaches on the north side of the railroad.

Northbound Analysis:

a) **Signage:**
- **R8-8 "*Do Not Stop on Tracks*" Signs:** Two signs are present on sidewalks (one near the tracks, one far from the crossing), both in great condition.
- **R15-1 Crossbucks with R15-2P "*2 tracks*" Signs:** Three crossbucks with one "*2 tracks*" sign, all in good condition.

Figure 3-34: Codadad Street Railroad Crossing

Figure 3-35: Codadad Street Railroad Crossing

- **W10-1 Advance Warning Sign:** One sign is in good condition but incorrectly installed. It should be relocated to the grade crossing pavement marking.

b) **Pavement Markings:** The dynamic envelope, stop bar, and grade crossing markings are in good to great condition. However, other pavement markings are in poor condition.
c) **Sidewalks:** The sidewalks are in poor condition, lacking detectable warning surfaces, and not ADA compliant.

Figure 3-36: Aerial view of Opa-locka Boulevard Railroad Crossing

Southbound Analysis:

a) **Signage:**

- **R8-8 "*Do Not Stop on Tracks*" Sign:** One sign is near the tracks and in good condition.
- **R15-1 Crossbucks with R15-2P "*2 tracks*" Signs:** Three crossbucks with one "*2 tracks*" sign, all in good condition.
- **W10-1 Advance Warning Sign:** One sign is in good condition but incorrectly installed. It should be relocated to match the grade crossing pavement marking.

b) **Pavement Markings:** The dynamic envelope is in great condition, while the stop bar and grade crossing markings are in good condition within the railroad right of way. Other pavement markings are in poor condition.
c) **Sidewalks:** The sidewalks are in poor condition, lacking detectable warning surfaces, and not ADA compliant.

Nearby Intersections:

a) **North:** The intersection of Ali Baba Avenue is beyond 100 feet from the railroad crossing and is not signalized. According to the MUTCD 11th Edition Part 8 – *Traffic Control for Railroad and Light Rail Transit Grade Crossings*, no advanced warning signage is needed.
b) **South:** The intersection of Burlington Street is beyond 100 feet from the railroad crossing and is not signalized. According to the MUTCD 11th Edition Part 8 – *Traffic Control for Railroad and Light Rail Transit Grade Crossings*, no advanced warning signage is needed.

The Opa-locka Boulevard Railroad Crossing is photographically documented in **Figures 3-37 to 3-38.**

3.4.1.5 Dunad Avenue Railroad Crossing

The Dunad Avenue railroad crossing, illustrated in **Figure 3-39**, is a two-lane roadway equipped with exit gates. Driveways are present on all corners of the railroad crossing, with local businesses on all corners except for the southeast section of the crossing, with only on the northeast corner having fences on the property lines. Vehicles are parked very close to the railroad tracks, and there are no medians or channelizing devices present. The asphalt is generally in good condition, but there are no railroad panels, and some areas are chipped and in poor condition. Lighting is only present on the southwest corner.

Northbound Analysis:

a) **Signage:**

- **R8-8 "*Do Not Stop on Tracks*" Signs:** Two signs are present (one near the tracks, one far from the crossing), both in great condition.
- **R15-1 Crossbucks with R15-2P "*2 tracks*" Signs:** Two crossbucks with one "*2 tracks*" sign, all in good condition.
- **W10-1 Advance Warning Sign:** One sign in good condition but incorrectly installed. It should be relocated to match the grade crossing pavement marking.

b) **Pavement Markings:** The dynamic envelope and stop bar are in great condition. The grade crossing marking is in good condition, but other pavement markings are in poor condition.

Figure 3-37: Opa-locka Boulevard Railroad Crossing

Figure 3-38: Opa-locka Boulevard Railroad Crossing

c) **Sidewalks:** No sidewalks are present.

Figure 3-39: Aerial View of Dunad Avenue Railroad Crossing

Southbound Analysis:

a) **Signage:**

- **R8-8 "*Do Not Stop on Tracks*" Signs:** Two signs are present (one near the tracks, one far from the crossing), both in great condition.
- **R15-1 Crossbucks with R15-2P "*2 tracks*" Signs:** Two crossbucks with one "*2 tracks*" sign, all in good condition.

- **W10-1 Advance Warning Sign:** One sign in good condition but incorrectly installed. It should be relocated to the grade crossing pavement marking.

b) **Pavement Markings:** The dynamic envelope and stop bar are in great condition. The grade crossing marking is in good condition, but other pavement markings are in poor condition.
c) **Sidewalks:** No sidewalks are present.

Nearby Intersections:

a) **North:** The intersection of Ali Baba Avenue is beyond 100 feet from the railroad crossing and is not signalized. According to the MUTCD 11th Edition Part 8 – *Traffic Control for Railroad and Light Rail Transit Grade Crossings*, no advanced warning signage is needed.

The Dunad Avenue Railroad Crossing is photographically documented in **Figure 3-40** and **Figure 3-41**.

3.4.1.6 NW 135 Street Railroad Crossing

The NW 135 Street railroad crossing, illustrated in **Figure 3-42**, is a multi-lane roadway equipped with exit gates. The eastbound approach has gate arms on both sides of the railroad. Driveways are present on both sides of the railroad on the eastbound approach. Medians with crash cushions are installed on both sides of the railroad. Only local businesses on the northwest corner have fences on their property lines. Vehicles are observed parking close to the railroad tracks. The asphalt is in good condition overall, but while the panels are in good condition, some areas of asphalt are chipped and in poor condition. Lighting is only present on the westbound side.

Westbound Analysis:

a) **Signage:**

- **R8-8 "*Do Not Stop on Tracks*" Signs:** Three signs are present (one near the tracks, two far from the crossing with one having flashers), all on sidewalks and in great condition.
- **R15-1 Crossbucks with R15-2P "*2 tracks*" Signs:** Three crossbucks with two "2 tracks" signs, all in good condition.
- **W10-1 Advance Warning Sign:** One sign in good condition but incorrectly installed. It should be relocated to the grade crossing pavement marking.

b) **Pavement Markings:** All pavement markings, including dynamic envelope, stop bar, grade crossing, and others, are in good condition.
c) **Sidewalks:** The sidewalks are not ADA compliant and are in poor condition. Detectable warning surfaces are missing on the east side of the crossing.

Eastbound Analysis:

a) **Signage:**
- **R8-8 "*Do Not Stop on Tracks*" Signs:** Two signs are present (one near the cracks, one far from the crossing), both on sidewalks and in great condition.
- **R15-1 Crossbucks with R15-2P "*2 tracks*" Signs:** Four crossbucks with two "2 tracks" signs, all in good condition.
- **W10-1 Advance Warning Sign:** One sign is present and in great condition.

Figure 3-40:Dunad Avenue Railroad Crossing

Figure 3-41: Dunad Avenue Railroad Crossing

d) **Pavement Markings:** All pavement markings, including dynamic envelope, stop bar, grade crossing, and others, are in good condition.
e) **Sidewalks:** The sidewalks are not ADA compliant and are in poor condition.

Figure 3-42: Aerial View of NW 135 Street Railroad Crossing

Nearby Intersection:

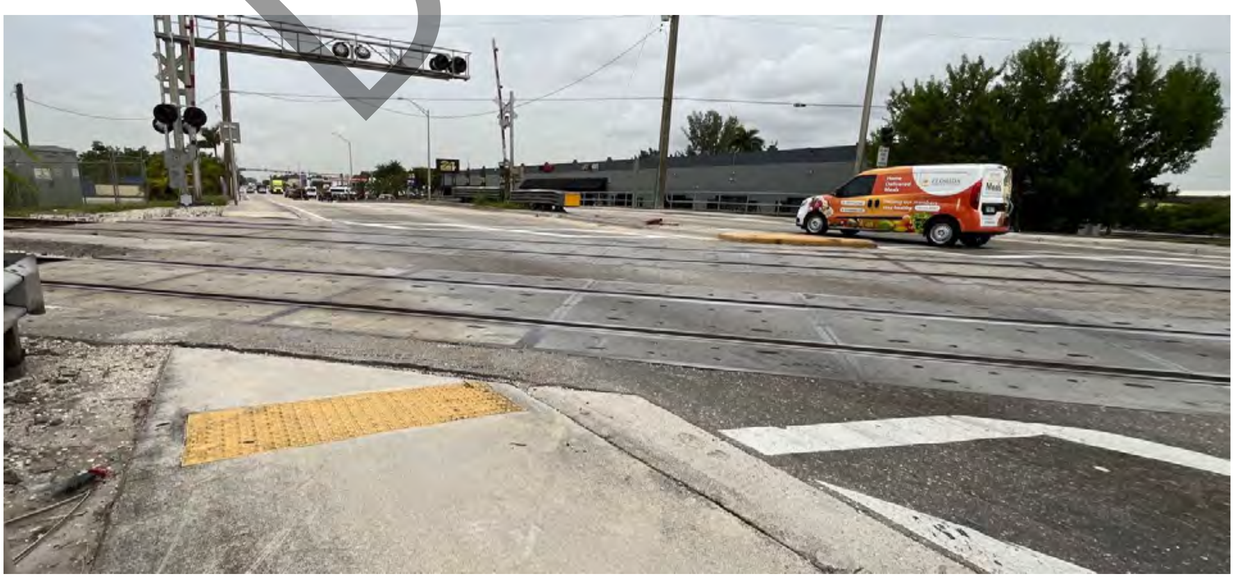
a) **West:** The intersection of NW 37 Avenue/Douglas Road is beyond 100 feet from the railroad crossing and is signalized, but there is no signal to prevent turning movements. Per the MUTCD 11th Edition Part 8 – *Traffic Control for Railroad and Light Rail Transit Grade Crossings*, no advanced warning signage is needed.

b) **East:** The intersection of Cairo Lane is beyond 100 feet from the railroad crossing and is not signalized. Per the MUTCD 11th Edition Part 8 – *Traffic Control for Railroad and Light Rail Transit Grade Crossings*, no advanced warning signage is needed.

The NW 135 Street Railroad Crossing is photographically documented in **Figure 3-43** and **Figure 3-44**.

Figure 3-43: NW 135 Street Railroad Crossing

Figure 3-44: NW 135 Street Railroad Crossing



3.4.2 Key Findings

Based on the site observations, the railroad crossings in Opa-locka exhibit several consistent issues across the six examined locations. Most crossings lack proper ADA compliance, with missing or inadequate sidewalk surfaces and insufficient widths. Signage placement is frequently incorrect, especially for advance warning signs, which are often misaligned with grade crossing pavement markings. Pavement conditions vary, with some locations showing poor asphalt quality and chipping around crossing panels. Additionally, several crossings have nearby driveways and parking areas that are too close to the active railroad. Many nearby intersections also lack proper signage and pavement markings for managing turning movements near the railroad crossings.

3.5 Public Health Approach

In the past, police crash reports have been the primary source of data for examining accidents resulting in severe injuries and fatalities. While these reports offer valuable insights into incidents involving bicyclists and pedestrians, they do not offer a comprehensive view. Several factors contribute to some incidents not being reported to the police, such as whether the crash occurred on a roadside or private property like driveways and parking lots, or if no vehicles were involved. For this reason, and to better understand the conditions of severe injuries and fatalities among bicyclists and pedestrians in the City of Opa-locka, this analysis also considers hospitalization data from the Florida Department of Health's (FDOH) Florida Injury Surveillance Data System.

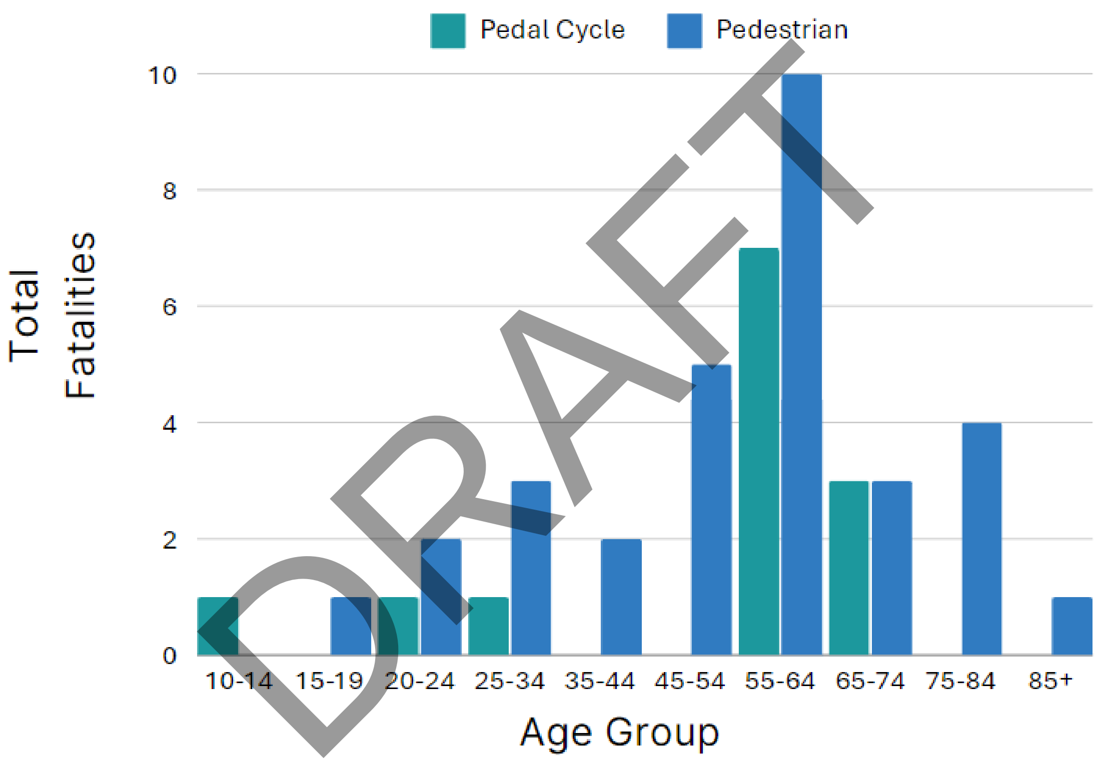
This tool is used to monitor the frequency of fatal and non-fatal injuries, determine the risk factors for fatal and non-fatal injuries, and evaluate the completeness, timeliness, and quality of data sources. This tool also provides information to Florida's injury prevention communities for program planning and evaluation[45]. The Injury Surveillance System gathers data from various sources, including death certificates, hospital discharge records, and emergency department data. It offers filtering options based on motor vehicle involvement, county, year of occurrence, age of individuals involved, and other variables. These filtering capabilities are valuable for analyzing trends in bicyclist and pedestrian accidents within the county, examining changes over

[45] The Florida's Violence and Injury Prevention Section (VIPS) addresses statewide injury prevention priorities by providing technical assistance, information, and resources to community partners.

time, comparing incidents involving pedestrians with those involving cyclists, and understanding the impact of these incidents on different age groups.

The latest Annual Report (2022) from the Florida Highway Safety and Motor Vehicles (FHSM) was examined as part of this effort to identify trends in pedestrian, cyclist, and motorist crashes. The report compares crash data spanning from 2020 to 2022, revealing that Miami-Dade County recorded fourteen (14) fatalities involving pedal cyclists[46] and thirty-four (34) pedestrian fatalities. Notably, the age group of fifty-five (55) to sixty-four (64) experienced the highest fatalities, with seven (7) pedal cyclist deaths and ten (10) pedestrian fatalities within the 2020-22 study period. This data is represented in **Figure 3-45**.

Figure 3-45: Miami-Dade Total Fatalities by Age Group (2020-2022)



Source: Florida Department of Health - FL Health Charts

3.6 Traffic-calmed Neighborhoods

Traffic-calmed neighborhoods are areas designed to reduce vehicle speed and volume to improve safety and quality of life for residents and visitors. These areas employ various physical and regulatory measures to control traffic flow and create a more pedestrian-friendly environment. During a field visit in July 2024, traffic calming features were spotted in residential areas in Opa-

[46] Pedal cyclist is defined as bicyclist and other cyclists including riders of two-wheel, non-motorized vehicles, tricycles, and unicycles powered solely by pedals.

locka east of NW 27 Avenue, especially in the vicinity of Nathan B Young Elementary School. These features include:

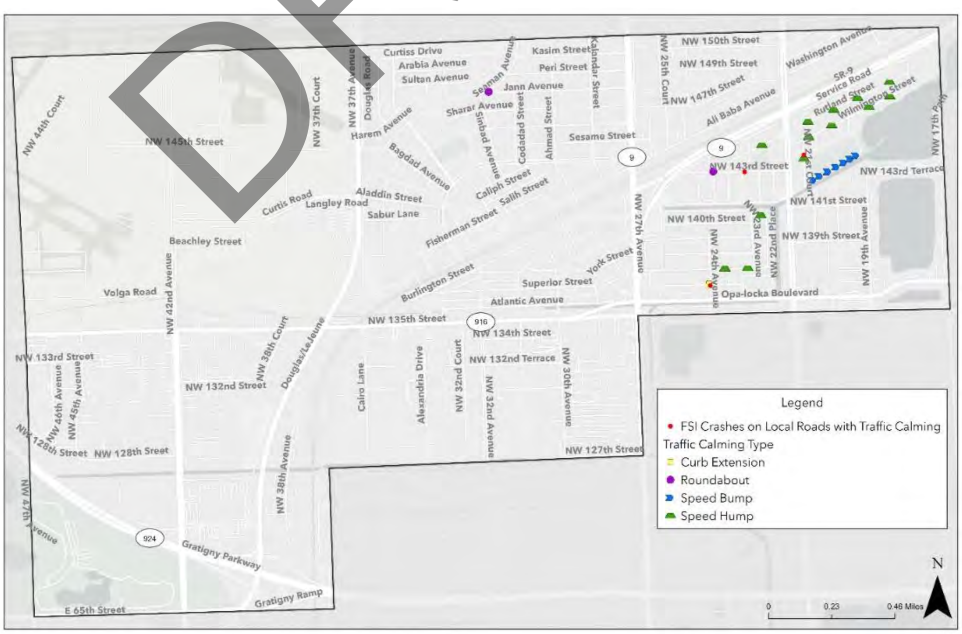
a) **Speed Humps and Tables:** Raised sections of the roadway that encourage drivers to slow down. These traffic calming features are effective in reducing vehicle speeds to about 15-20 mph, are relatively inexpensive to install and maintain, and reduce the risk and severity of accidents in residential areas. Speed humps were spotted on Superior Street, NW 140 Street, Rutland Street, Wilmington Street, among others.
b) **Roundabouts**: Circular intersections that slow traffic and improve flow. They are an alternative to traditional traffic signals and stop signs, aiming to improve traffic efficiency and safety. The circular design slows down vehicles, reducing the severity of collisions, with fewer conflict points than traditional intersections, lowering the risk of accidents. This traffic calming feature was spotted at the intersection of NW 143 Street, NW 24 Avenue, and Rutland Street.
c) **Pedestrian Crossings:** Enhanced crosswalks are designed with better visibility and are sometimes raised to act as speed tables. Bright, reflective paint is used to mark these crosswalks, making them easily noticeable to drivers. Pedestrian crossings have been installed near Nathan B. Young Elementary School on Burlington Street and on NW 141 Street, providing a safe passage between residential areas on both sides of the Burlington Canal, as illustrated in **Figure 3-46**.

Figure 3-46: Pedestrian Passage between Burlington Street and NW 141 Street by Nathan B Young Elementary School

Based on data from S4, five (5) FSI crashes were recorded on local roads in the neighborhoods east of NW 27 Avenue in the southeast corner of the city. However, Opa-locka lacks a comprehensive inventory of its traffic calming infrastructure. Conducting a thorough citywide inventory of existing traffic calming facilities is necessary to assess whether these measures have had a significant impact on reducing FSI crashes. By gathering complete and accurate data, the city can better understand the effectiveness of these interventions and make informed decisions to enhance road safety.

On Wednesday, September 6, 2024, between 10:00 a.m. and 12:00 p.m. traffic calming data was collected using an ArcGIS Survey123, a specialized tool designed for efficient field data collection. The tool was used to systematically gather information directly from various locations. This approach ensured that the data collected was both accurate and up-to-date, which will play a key role in refining the city's traffic calming and overall safety strategies. In the city, several streets have been equipped with traffic calming devices such as speed bumps, speed humps, and roundabouts. A recent survey identified 24 traffic calming installations throughout the city, with the majority concentrated on the northeast side, as shown in **Map 3-28** below. Despite their intended purpose, the overall condition of these traffic calming devices ranges from fair to poor. Many of them require significant maintenance and upgrades. Specifically, there is a pressing need to incorporate speed tables and improve the visibility of markings to ensure they effectively serve their purpose. Notably, three (3) fatalities and severe injury crashes were reported in the past 6 years on local roads that have traffic calming devices installed as observed in the map below. For a detailed account of the existing traffic calming devices within the city, please refer to the report found in **Appendix C**.

Map 3-28: Map of Existing Traffic Calming Inventory



Equity Review and Analysis

4

4. Equity Review and Analysis

For the equity review and analysis, data collection concentrated on capturing the general characteristics of the population in Opa-locka. This involved gathering detailed demographic and socio-economic data from the United States Census Bureau. Additionally, data from the United States Department of Transportation (USDOT) Equitable Transportation Community Explorer was utilized to assess transportation equity and identify communities with transportation disadvantages. The Transportation Insecurity Analysis Tool was also employed to evaluate the extent and nature of transportation insecurity within the community. This comprehensive approach ensured a thorough understanding of the population's needs and the transportation challenges they face.

4.1 Federally Defined Equity Areas

Federally available tools helped identify the locations of disadvantaged communities. These tools include the USDOT Equitable Transportation Community (ETC) Disadvantaged Areas dataset, the Council on Environmental Quality's Climate and Economic Justice Screening Tool (CEJST), USDOT's Screening Tool for Equity Analysis of Projects (STEAP), USDOT's Areas of Persistent Poverty and Historically Disadvantaged Communities Lists, Environmental Protection Agency (EPA)'s Environmental Justice (EJ) Screening, the United States Department of Agriculture (USDA) Social Vulnerability Assessment, and the USDOT Smart Location Mapping. A summary of the data gathering conducted is depicted below.

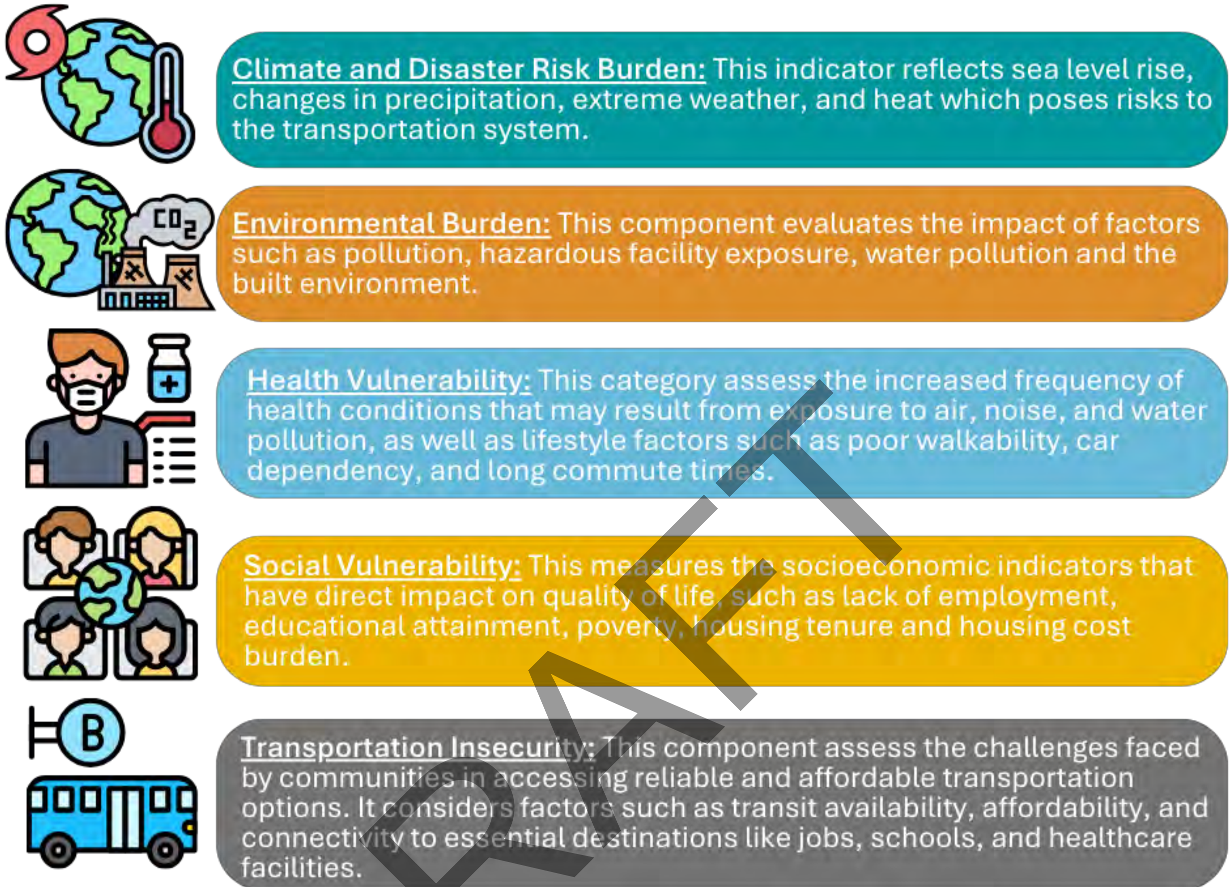
4.1.1 USDOT's Equitable Transportation Community (ETC) Explorer

The ETC is a dynamic web application developed by the USDOT to promote fair and inclusive transportation planning. This tool complements the Climate and Economic Justice Screening Tool (CEJST) by offering users detailed insights into transportation disadvantages through its Transportation Insecurity component. Using census tract data, the ETC highlights communities facing transportation insecurity and other related challenges, thus advancing the goals of equitable transportation planning.

The platform enables users to visualize and explore transportation equity data, helping stakeholders identify areas where transportation investments are most needed to improve mobility and connectivity. The ETC Explorer evaluates various socio-economic and demographic factors, integrating data on income levels, racial and ethnic demographics, and accessibility to public transit and transportation infrastructure. Using data from the 2020 Census, the tool assesses the community burden resulting from underinvestment in transportation. **Figure 4-1** illustrates the indicators used to create the index in the dataset.

The ETC data utilizes census tracts to identify communities facing transportation disadvantages. Managed by the USDOT, this tool sheds light on how transportation insecurity impacts marginalized communities, highlighting disparities in access to transportation resources. This information supports equitable decision-making. As part of the Justice40 Initiative, the dataset uses 2020 Census data to evaluate community burdens resulting from transportation underinvestment.

Figure 4-1: ETC Explorer's Five Components of Disadvantage



Source: [USDOT ETC Explorer Indicators]

By evaluating these indicators, the equity index offers a comprehensive view of the challenges faced by disadvantaged communities. It guides policymakers and planners in making informed, equitable decisions. Communities are ranked based on percentile thresholds, with those at or above the 65th percentile for low-income status being highlighted. By synthesizing this data into a composite index, the tool provides an in-depth understanding of a community's level of disadvantage.

Figure 4-2 provides a detailed breakdown of how the ETC Explorer assigns a disadvantaged score to each census tract within the City of Opa-locka for the five key components. The figure focuses specifically on transportation disadvantage scores within the city limits. The shaded areas represent census tracts at the 65th percentile and above, indicating areas of significant disadvantage. Within these tracts, several critical factors converge such as high climate and disaster risk burden (70%), environmental burden (86%), and social vulnerability (75%). Additionally, health vulnerability remains a concern, with a risk score of 61%. Despite the proximity to the Opa-locka Tri-Rail commuter station and substantial bus transit services, transportation insecurity stands at 22%. Moreover, the community faces a substantial transportation cost burden of 82%.

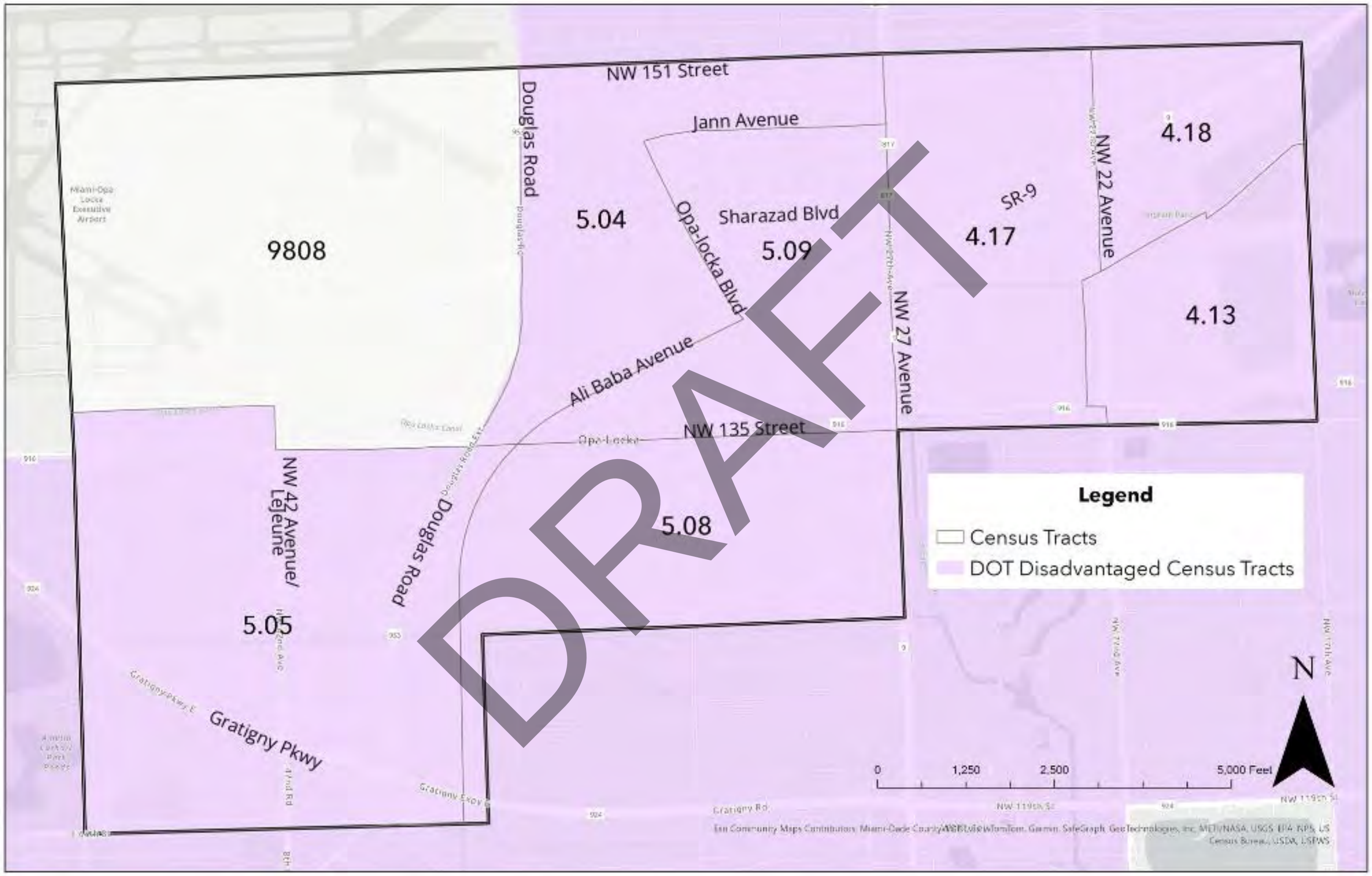
This visual representation serves as a valuable tool for stakeholders, pinpointing areas that require targeted interventions and resources. It underscores the importance of prioritizing equity in transportation planning and investment decisions, ensuring that the most vulnerable communities receive the support they need.

Figure 4-2: Overall Disadvantaged Component Scores – Percentile Ranked

Source: [USDOT Equitable Transportation Community (ETC) Explorer]

Map 4-1 illustrates the USDOT disadvantaged census tracts within the City of Opa-locka. According to 2020 US Census Bureau data, 45,300 people live in these tracts, which include parts of adjacent communities. These tracts are analyzed using various indicators to assess transportation equity and related demographic and economic factors. Key indicators include demographic information, economic status, housing characteristics, transportation access, and social and environmental factors. The only census tract not classified as disadvantaged is 9808, which covers the area around the Miami/Opa-locka Executive Airport.

Map 4-1: Disadvantaged Census Tracts Within the City of Opa-locka



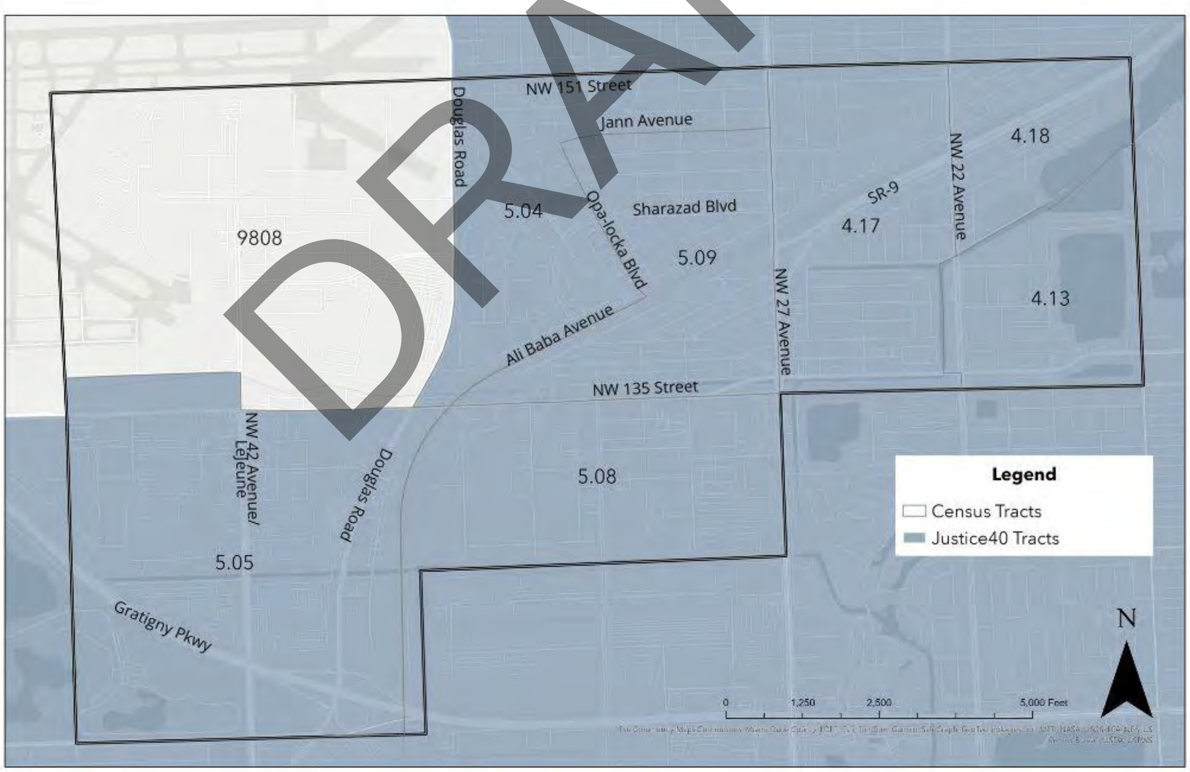
Source: [USDOT Equitable Transportation Community (ETC) Explorer]

4.1.2 Council on Environmental Quality's Climate and Economic Justice Screening Tool (CEJST)

The CEJST is a comprehensive analytical framework designed to address and mitigate the impacts of climate change and economic disparities on vulnerable communities. Developed as part of the Biden Administration's Justice40 initiative, the CEJST aims to identify communities overburdened by pollution and lacking in infrastructure, economic opportunities, and environmental protections. Using census tracts and data from the 2020 Census, the CEJST identifies disadvantaged communities, including those on Federally Recognized Tribal Lands or those meeting at least one burden category. These categories include climate change, energy, health, housing legacy, pollution, transportation, water, wastewater, and workforce development.

As illustrated in **Map 4-2**, and similar to the USDOT ETC map, most census tracts within the City of Opa-locka are categorized as disadvantaged and are considered Justice40 tracts. This comprehensive identification of disadvantaged areas highlights the critical need for targeted interventions to improve the lives of those most affected by environmental and economic injustices

Map 4-2: Climate and Economic Justice Screening Tracts Within the City of Opa-locka

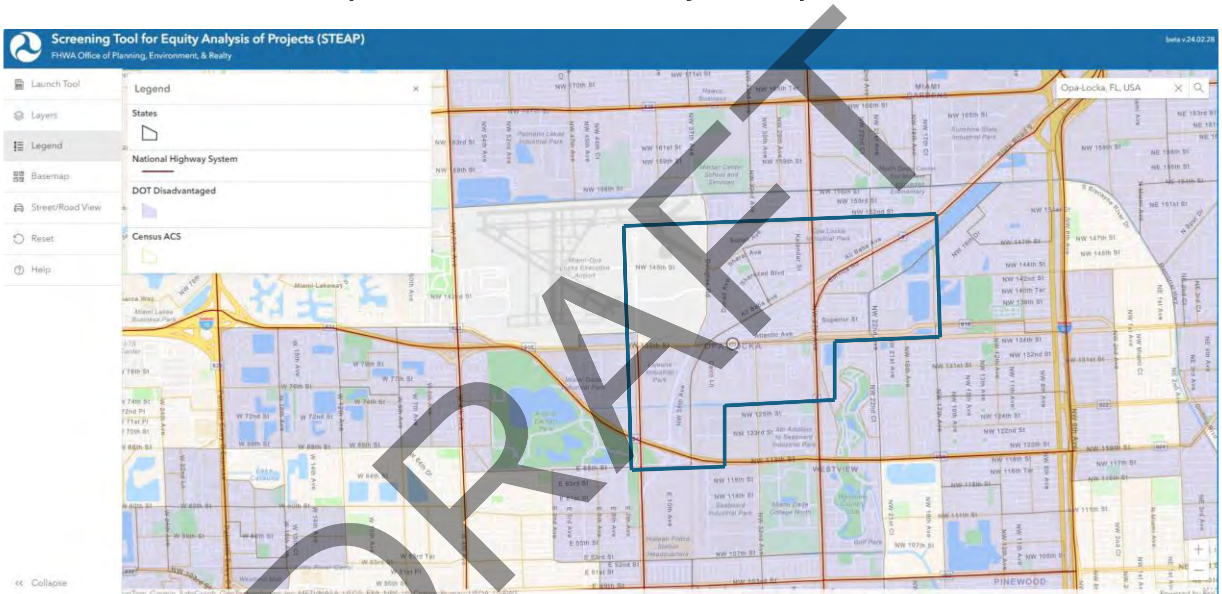


Source: [Climate and Economic Justice Screening Tool]

4.1.3 USDOT's Screening Tool for Equity Analysis of Projects (STEAP)

The STEAP is an extension of Federal Highway Administration (FHWA)'s HEPGIS[47] web application[48], providing rapid screening capabilities for potential project locations across the United States. Its primary purpose is to facilitate analyses related to Title VI[49], Environmental Justice (EJ)[50], and other socioeconomic factors. Through STEAP, users can quickly obtain estimates of the socioeconomic characteristics of the resident population surrounding a project location. This functionality supports informed decision-making and comprehensive assessments of project impacts on surrounding communities. As shown in **Map 4-3**, the STEAP tool identifies Opa-locka as a DOT Disadvantaged Community, underscoring the need for targeted interventions in this area.

Map 4- 3: USDOT STEAP Analysis of Opa-locka



Source: [USDOT Screening Tool for Equity Analysis of Projects (STEAP)]

This categorization refers to the fact that Opa-locka faces significant barriers in transportation access and infrastructure. DOT Disadvantage Communities These communities are often

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[47] HEPGIS is the FHWA Office of Planning, Environment, and Realty's platform for exploring web-based applications, maps, and data that support its various programs.
[48] The HEPGIS website is an interactive, web-based geographic map server that enables users to navigate, view, and print geospatial maps using only their web browser.
[49] The USDOT and its operating administrations enforce Title VI of the Civil Rights Act of 1964 and its implementing regulations (collectively called Title VI), which prohibits discrimination based on race, color, and national origin (including limited English proficiency) in any program or activity receiving Federal financial assistance.
[50] EJ at FHWA means identifying and addressing disproportionately high and adverse effects of the agency's programs, policies, and activities on minority populations and low-income populations to achieve an equitable distribution of benefits and burdens.

characterized by a combination of economic, social, and environmental challenges, which can include:

- **Low-income levels:** Households and individuals with limited financial resources.
- **Racial and ethnic minority populations:** Communities with a high percentage of residents from historically marginalized racial and ethnic groups.
- **Poor transportation access:** Limited availability of public transit, safe and well-maintained roads, and other transportation infrastructure.
- **Environmental burdens:** Higher exposure to pollution and other environmental hazards.
- **Health disparities:** Greater incidence of health problems linked to poor transportation options and environmental conditions.
- **Social vulnerability:** Higher levels of social and economic vulnerability, such as unemployment, lack of education, and inadequate housing.

Identifying these disadvantages helps ensure that transportation planning and investment decisions prioritize equity and address the specific needs of these areas, improving overall quality of life and access to opportunities.

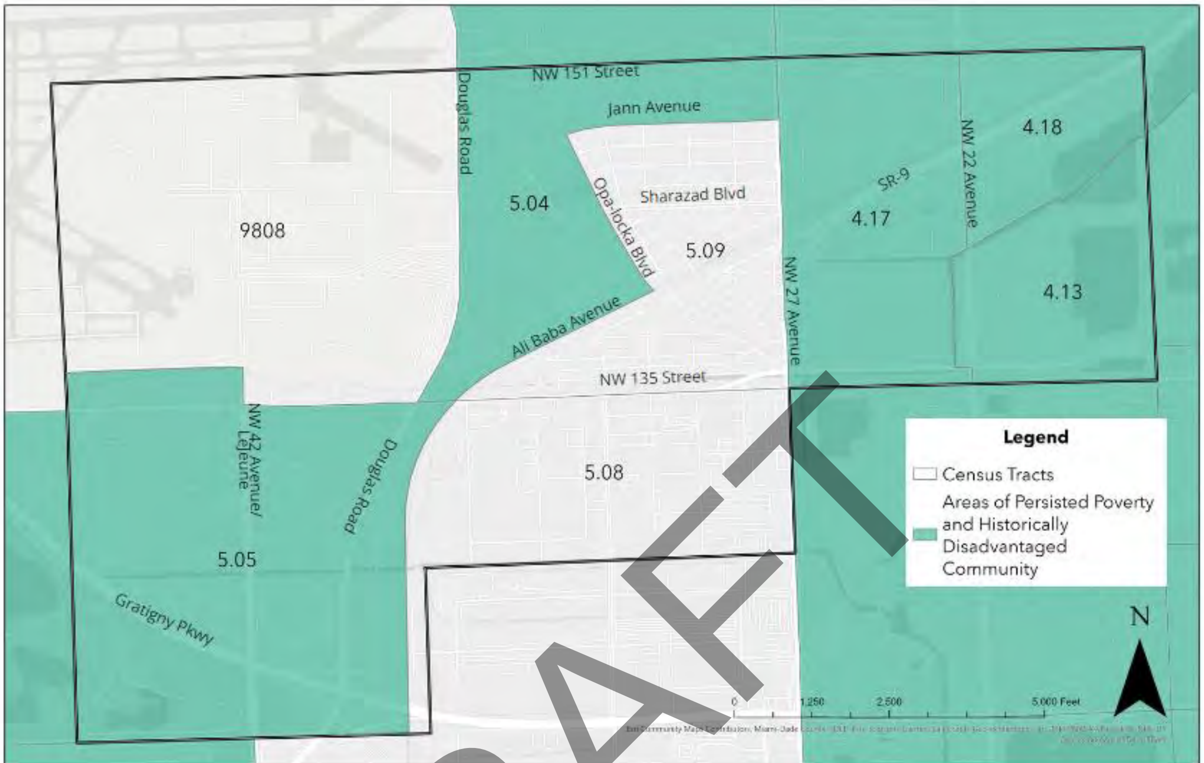
4.1.4 USDOT's Areas of Persistent Poverty and Historically Disadvantaged Communities Lists

The USDOT's Areas of Persistent Poverty and Historically Disadvantaged Communities List is a vital tool used to address longstanding economic and social inequities in transportation planning and investment. This list identifies specific geographic areas that have experienced consistent economic hardship and social disadvantages, often reflected in high poverty rates, limited access to essential services, and inadequate infrastructure. By highlighting these areas, the list helps to ensure that federal transportation resources are directed towards communities that need them the most, fostering greater equity and inclusiveness in transportation projects.

This list is used in several ways to promote equitable transportation planning. Firstly, it informs funding decision, ensuring that federal grants and other financial resources are prioritized for projects that will benefit these disadvantaged areas. Secondly, it serves as a benchmark for assessing the impact of transportation policies and projects, helping to ensure that they do not exacerbate existing inequalities. Lastly, the list guides the development of targeted outreach and community engagement strategies, ensuring that the voices and needs of historically marginalized communities are heard and addressed in the planning process.

As illustrated in **Map 4-4**, census tracts 5.04, 5.05, 4.13, 4.17, and 4.18 have been identified as areas of persistent poverty and disadvantaged communities, characterized by enduring economic challenges that impact residents' access to essential transportation infrastructure and services. Notably, census tracts 4.13, 4.17, and 4.18 are located east of major roads known for a high incidence of traffic crashes, including NW 27 Avenue, NW 22 Avenue, and SR 9. Analysis from the USDOT ETC tool reveals that these tracts exhibit elevated transportation insecurity scores, underscoring substantial challenges in mobility and safety. Residents in these areas face heightened risks due to traffic accidents, which can exacerbate existing economic and social vulnerabilities.

Map 4-4: Areas of Persistent Poverty and Historically Disadvantaged Communities



Source: [Areas of Persistent Poverty and Historically Disadvantaged Communities Census Tracts]

The elevated transportation insecurity scores emphasize the urgent need for targeted interventions aimed at enhancing road safety, improving public transit accessibility, and addressing infrastructure gaps. These efforts should prioritize community-based strategies and targeted investments to create safer and more equitable transportation systems. It is crucial to focus on meeting the needs of residents in those census tracts identified as historically underserved and disadvantaged communities, ensuring that they have access to reliable transportation options and enhanced safety measures.

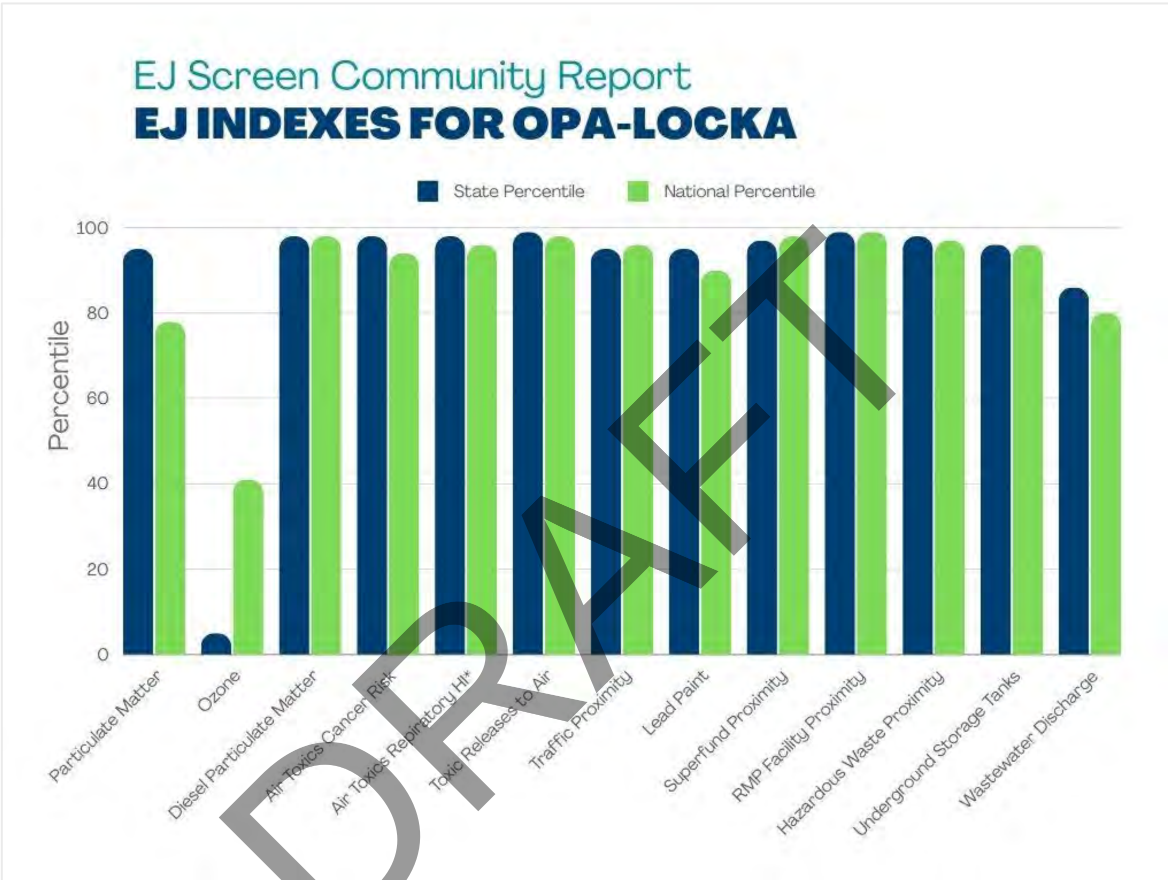
4.1.5 Environmental Protection Agency (EPA)'s Environmental Justice (EJ) Screening

The EPA has launched EJScreen, an advanced EJ mapping and screening tool designed to reinforce the agency's dedication to protecting public health and the environment. EJScreen leverages nationally consistent data and a comprehensive methodology to integrate environmental and demographic indicators, producing detailed maps and reports. The tool features 13 environmental indicators and seven (7) socioeconomic indicators, along with corresponding EJ indexes and supplemental indexes. Each index combines socioeconomic factors with a specific environmental indicator, providing a holistic view of environmental justice concerns. The tool's key capabilities also include color-coded mapping, standardized report generation, and the ability to compare local data with state or national benchmarks.

Figure 4-3 illustrates that the city of Opa-locka has notably high concentrations of EJ indexes, signaling significant environmental and public health concerns. Among these, Diesel Particulate

Matter and Particulate Matter 2.5 are particularly prevalent, indicating a high level of air pollution that can lead to respiratory and cardiovascular issues for residents. Air Toxins, another critical indicator, points to the presence of harmful chemicals in the atmosphere that can have long-term health effects.

Figure 4-3: EJ Screen Community Report – Indexes for Opa-locka



Source: Environmental Protection Agency (EPA) Environmental Justice Screening and Mapping Tool (EJScreen)

Traffic-related pollution is also a significant concern in Opa-locka, contributing to the elevated levels of air toxins and particulate matter. This is often a result of heavy vehicular activity, which not only increases emissions but also impacts the overall quality of life due to noise and congestion. Furthermore, the presence of Superfund sites in Opa-locka highlights areas contaminated with hazardous waste, posing serious risks to both the environment and human health. These sites require extensive cleanup and monitoring to prevent further harm.

Overall, the high concentrations of these EJ indexes in Opa-locka underscore the need for targeted interventions and policies to address the environmental and health disparities faced by the community.

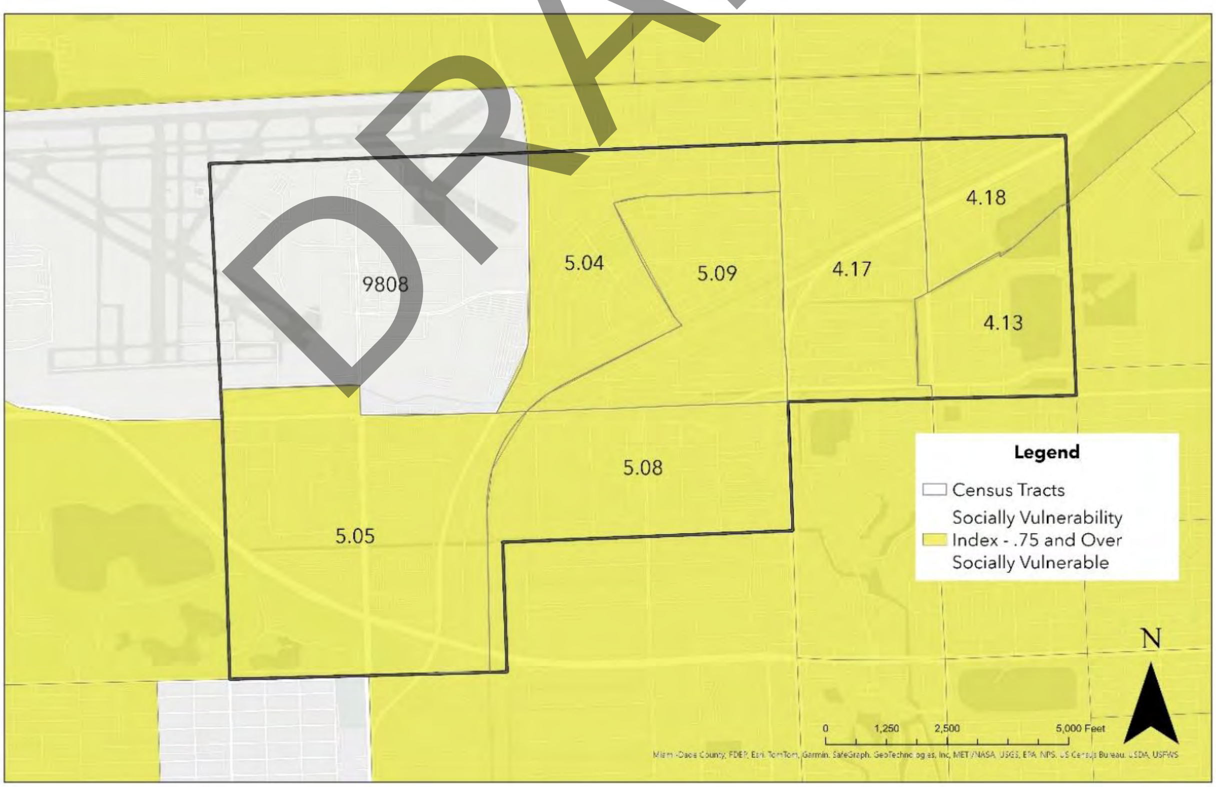
4.1.6 United States Department of Agriculture (USDA) Social Vulnerability Assessment

The USDA Social Vulnerability Assessment is a tool to identify and evaluate the social vulnerabilities of urban and rural communities. It aims to provide insights into how certain populations might be disproportionately affected by adverse events, such as natural disasters, economic downturns, or health crises. Key features of the USDA Social Vulnerability Assessment include:

- A variety of socio-economic and demographic data, including income levels, employment status, education attainment, age, race, and housing conditions.
- Specific indicators to measure social vulnerability, such as poverty rates, access to healthcare, population density, and prevalence of disabilities.
- A focus on rural areas, recognizing that these communities often face unique challenges compared to urban areas.

Overall, the USDA Social Vulnerability Assessment serves as a critical resource for enhancing the resilience and well-being of communities in the face of various social and environmental challenges. As shown in **Map 4-5**, social vulnerability in all census tracts within the City of Opa-locka have an index of 0.75 and over, denoting that most of the city is socially vulnerable.

Map 4-5: Social Vulnerability Assessment within the City of Opa-locka



Source: USDA Social Vulnerability Assessment

Socially vulnerable communities, like those in Opa-locka, often grapple with a mix of economic, social, and environmental challenges that heighten their risk factors and diminish their resilience. These populations struggle to withstand the adverse impacts of environmental hazards due to factors such as poverty, limited access to education, inadequate housing, insufficient healthcare, and a lack of social capital.

In Opa-locka, economic instability is prevalent, with low-income levels restricting residents' ability to access essential resources, such as healthcare, nutritious food, and safe housing. This economic hardship increases their vulnerability to environmental health risks. To effectively address the needs of socially vulnerable communities citywide, comprehensive policies are required. These policies must tackle both the social determinants of health and the environmental injustices these communities face, improving economic opportunities to enhance their overall resilience and well-being.

4.1.7 USDOT Transportation for Social Equity (TransportSE)

The USDOT TransportSE tool is an innovative prototype designed to visualize and analyze national percentile rankings for every US census block group. This tool not only displays these percentile ranks but also integrates a composite social vulnerability metric. This metric allows users to investigate the interplay between various indicators of transportation challenges, demographic data from the census, and social vulnerability.

The tool is highly customizable, allowing for the inclusion of additional equity factors and transportation indicators as required. This adaptability enables users to tailor the analysis to specific needs or contexts. Moreover, the TransportSE tool can also be scaled and adjusted to different geographical areas, making it a versatile resource for a wide range of analytical applications. By providing detailed insights into how transportation burdens and social vulnerabilities intersect, the TransportSE tool helps stakeholders and policymakers better understand and address the complex issues faced by different communities. Its ability to incorporate additional data and adapt to various contexts enhances its utility for addressing localized transportation and social equity challenges.

In **Table 4-1**, nine (9) out of twelve (12) census groups within the city display a high TransportSE index, surpassing a value of 70. This means that these groups rank in the 70th percentile or higher nationally for transportation burdens and social vulnerability. Compared to other census block groups across the United States, these areas face greater transportation-related challenges and social vulnerabilities. These issues may include insufficient transportation infrastructure, higher transportation costs, longer commute times, and limited access to public transit.

Additionally, the social vulnerability component highlights demographic factors such as economic instability, lower educational attainment, and inadequate access to healthcare, which can intensify transportation burdens. Essentially, a high TransportSE index indicates that these census block groups encounter significant obstacles that can adversely affect residents' quality of life and overall well-being.

Table 4-1: Census Groups Within the City of Opa-locka that have a high TransportSE Index

Census Group	TransportSE Index
120860005043	98.96
120860005031	37.10
120860005041	89.56
120860005042	30.91
120860004032	90.40
120860004033	90.79
120860005032	77.32
120860004133	48.68
120860004041	85.78
120860005034	87.39
120860005033	94.27
120860005052	96.32

Source: [TransportSE Tool: Transportation for Social Equity]

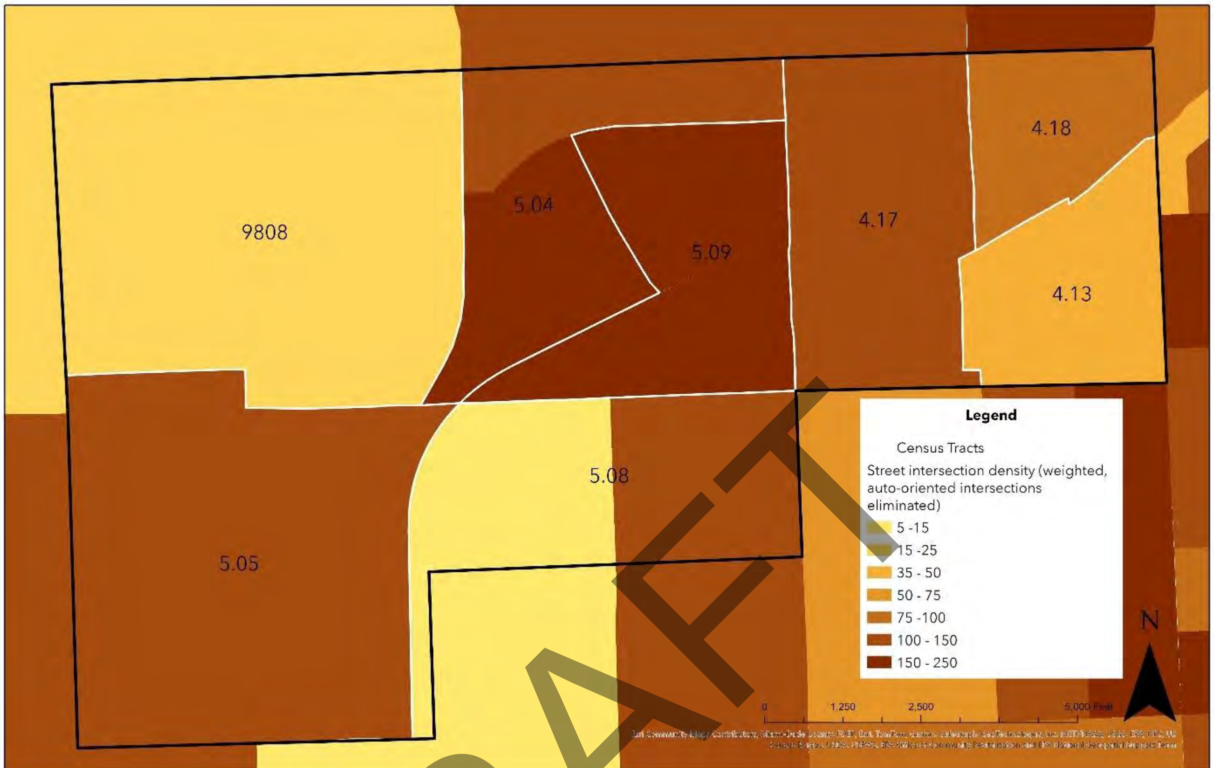
4.1.8 USDOT Smart and Walkable Locations

The Smart Location Database, developed by the EPA, is a tool designed to analyze how workplace locations impact employee commute patterns. This open data resource provides a comprehensive national map that includes key variables affecting walkability, such as residential and employment density, land use diversity, the design of the built environment, access to destinations, and proximity to transit.

One important metric available through the database is street intersection density, which measures the number of intersections adjusted to reflect their connectivity for pedestrian and bicycle travel. While higher intersection density is generally associated with more walkable urban designs, it's important to note that this data does not account for the presence or quality of sidewalks.

Map 4-6 illustrates that census tracts 5.04 and 5.09 have higher street intersection density indices relative to other tracts in the city. This indicates improved connectivity for walking and biking, particularly given that the Opa-locka Tri-Rail Station is situated in these areas. Proximity to transit enhances mobility and reduces reliance on personal vehicles, with better access to destinations.

Map 4- 6: Smart Location Database Within the City of Opa-locka



Source: [Smart Location Database]

In contrast, census tracts 4.13 and 4.18 exhibit lower intersection densities, with scores of 22 and 35, respectively, indicating less connectivity and potentially reduced walkability within those areas.

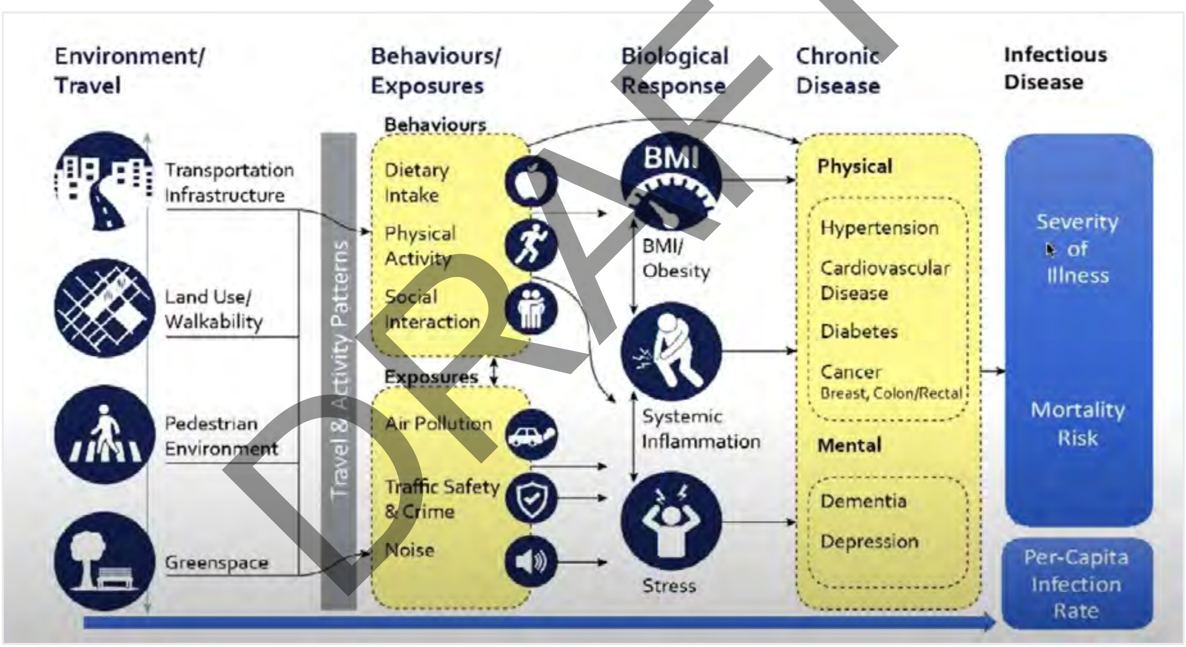
4.2 Emphasis Areas and Equity Considerations

4.2.1 Health and Disability

Physical activity is essential for cancer prevention and control, lowering the risk of several common cancers by 20% to 30%. These include colon, breast, kidney, endometrial, bladder, esophageal, stomach, lung, and liver cancers, according to the National Cancer Institute (2019). To support health through regular exercise, the Physical Activity Guidelines for Americans offer valuable recommendations. In urban settings, walkability indices are linked to increased walking, especially for transportation purposes.

The US National EPA Walkability Index (Watson et al., 2020) underscores the significance of creating walkable environments. Researchers Frank et al. have developed a model illustrating how the built environment and transportation choices affect health outcomes through six distinct pathways, which are depicted in **Figure 4-4**.

Figure 4-4: Travel Environment and Linkage to Infectious Disease



Source: Journal of Transport and Health – Frank et al (2019)

These pathways are divided into two main groups: behaviors and exposures.

Behaviors: This group emphasizes promoting or discouraging certain actions that impact health. It includes:

- **Dietary Intake:** The influence of food choices on health.
- **Physical Activity:** The role of exercise and movement in maintaining well-being.
- **Social Interaction:** The impact of social connections on health.

Exposures: This group focuses on human exposure to harmful substances and stressors, including:

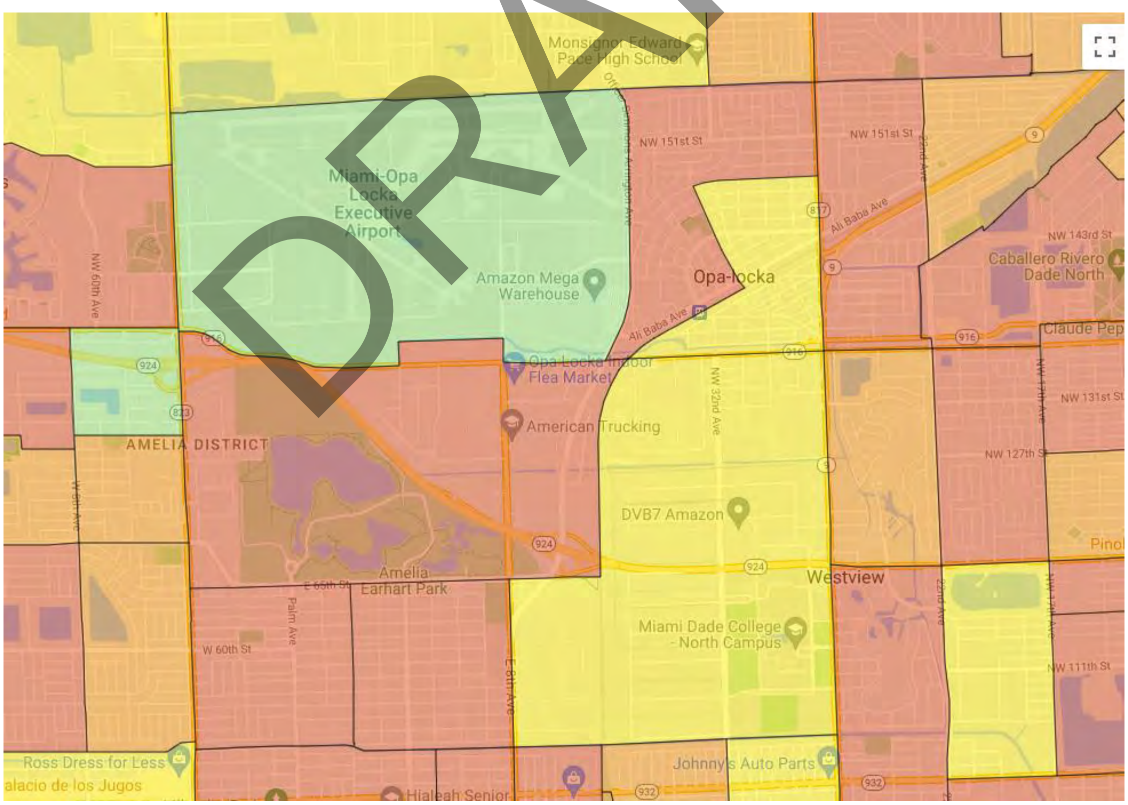
- **Air Pollution:** The health effects of polluted air.
- **Traffic Safety and Crime:** How transportation safety and crime affect well-being.
- **Noise:** The impact of noise pollution on overall health.

These pathways lead to biological responses such as changes in body mass index, systemic inflammation, and stress, which in turn result in chronic physical and mental diseases, increasing healthcare utilization and costs. The research highlights that land use, the built environment, transportation infrastructure, mode of transport choice, and emerging technologies all shape transportation systems and patterns in urban areas.

4.2.2 Chronic and cardiovascular disease

Cardiovascular disease is the leading cause of death in the United States. A study by the CDC highlights the importance of walking as a preventive measure against these diseases. Regular walking not only reduces inactivity but also promotes an active lifestyle, which is essential for managing cardiovascular health. Notably, an increase in daily steps correlates with a decreased risk of cardiovascular-related mortality. In Florida, data from the Florida Department of Health (FDOH) Community Health Assessment Resource Tool Set Community Dashboard shows that from 2018 to 2022, around 502 residents of census tracts within the City of Opa-locka died from cardiovascular diseases, as detailed in **Table 4-2** and depicted in **Map 4-7**.

Map 4-7: Census Tracts and Cardiovascular Deaths Within Opa-locka



Source: [Community Health Assessment Resource Tool Set - Community Dashboard]()

In census tract 5.05, the highest number of deaths stands significantly above the Miami-Dade County's average[51]. This tract encompasses areas within both the City of Opa-locka and the City of Hialeah. Notably, the Opa-locka portion of this tract is heavily industrialized, hosting numerous businesses, warehouses, and storage facilities. Another area warranting special attention is census tract 5.04, situated on the east side of NW 37 Avenue/Douglas Road and partially comprising the Downtown neighborhood. Here, 77 cardiovascular deaths were reported, again exceeding Miami-Dade County's average. In contrast, census tracts 5.08 and 5.09 exhibit the lowest cardiovascular mortality rates within the city, with 47 and 48 deaths, respectively.

Table 4-2: Number of cardiovascular deaths in Census Tracts within Opa-locka

Census Tract	No. of Cardiovascular Deaths
5.04	77
5.05	109
5.08	47
5.09	48
4.17	86
4.13	72
4.18	63
TOTAL	502

Source: Community Health Assessment Resource Tool Set - Community Dashboard

4.2.3 Disability Rate Status

People with disabilities encounter distinct transportation challenges due to mobility limitations. These obstacles include physical barriers, a lack of accessible multimodal transportation, and insufficient public transit options. According to the FDOH Community Health Assessment Resource Tool Set Community Dashboard, the rate of people with disabilities in Opa-locka varies across different census tracts between 2018 and 2022. As shown in **Table 4-3**, the census tract with the highest disability rate is 5.05, where 19.4% of the population lives with a disability. This tract spans areas within both the City of Opa-locka and the City of Hialeah. The Opa-locka section of this tract is notably industrialized, with many businesses, warehouses, and storage facilities as mentioned previously. Another significant census tract is 5.09, where 15.1% of the population has a disability. In contrast, census tracts 4.13 and 4.18 have the lowest disability rates, with 7.6% and 8.2%, respectively.

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[51] Shown in the Community Health Assessment Resource Tool Set - Community Dashboard

Table 4-3: Disability Status Rate by Census Tract

Census Tract	Disability Rate
5.04	11.8%
5.05	19.4%
5.08	13.2%
5.09	15.1%
4.17	9.9%
4.13	7.6%
4.18	8.2%

Source: Community Health Assessment Resource Tool Set - Community Dashboard

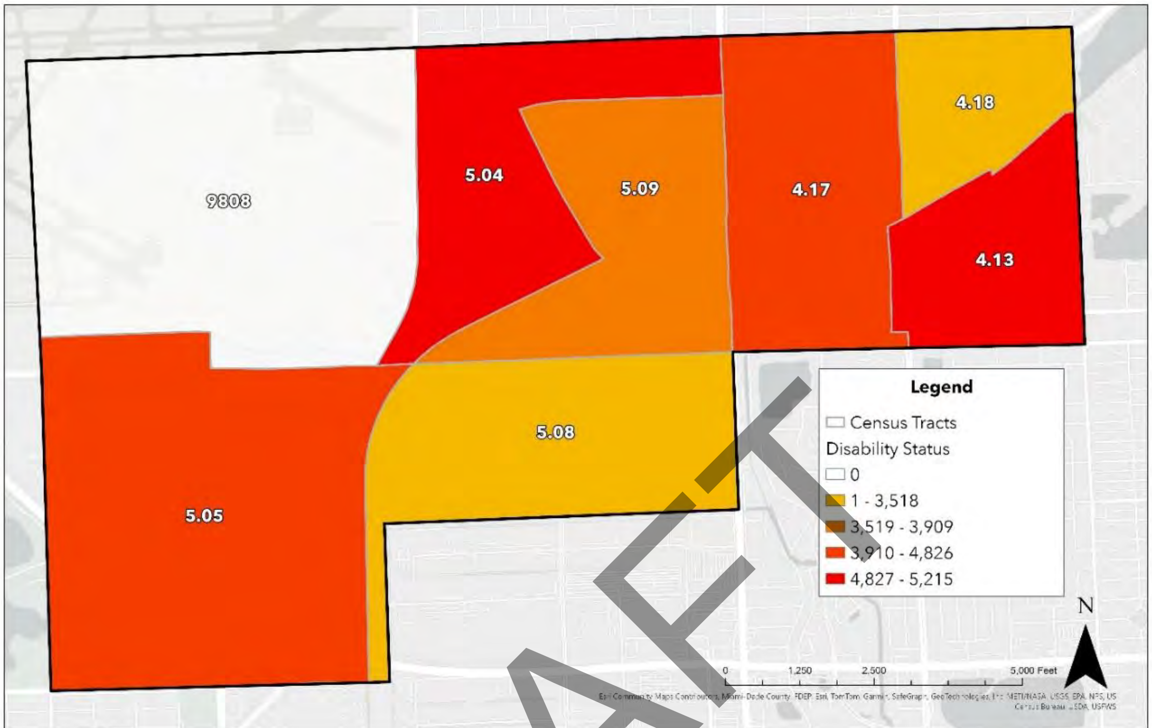
Data from the TIGER/Line[52] with Selected Demographic and Economic Data of the U.S. Census Bureau was extracted for years between 2017 and 2021 but the information was presented as a count rather than a rate. As illustrated in **Map 4-8**, the census tract with the highest number of individuals with disabilities is 5.04, followed by 4.13. Conversely, census tracts 4.18 and 5.08 have the lowest number of individuals with disabilities.

Addressing these diverse challenges faced by various populations is crucial for fostering healthier and more inclusive communities. Physical activity plays a vital role in reducing the risk of cancer and cardiovascular diseases, and creating walkable environments can significantly enhance public health. However, people with disabilities continue to face significant transportation barriers that require targeted interventions.

In Florida, particularly in the City of Opa-locka, understanding the specific needs and conditions of different census tracts, as highlighted by data gathered, helps assign priorities to implement more effective transportation policies and strategies. Ultimately, promoting physical activity, ensuring accessible transportation, and addressing health disparities can lead to more equitable health outcomes and a better quality of life for all residents.

[52] TIGER/Line Geodatabases are spatial extracts from the Census Bureau's Master Address File/Topologically Integrated Geographic Encoding and Referencing (MAF/TIGER) System for use with geographic information systems (GIS) software.

Map 4-8: Disability Status Per Census Tracts Within Opa-locka



Source: United States Census Bureau's 2022 Demographic Data

4.2.4 Race and Origin

Communities of color frequently encounter significant transportation challenges that impede their access to essential services and opportunities. Unreliable mass transit is a common issue, resulting in long wait times, inconsistent service, and limited routes that fail to connect these communities to key destinations efficiently. This unreliability can lead to missed appointments, tardiness at work, and difficulties in maintaining regular schedules, further exacerbating socio-economic disparities.

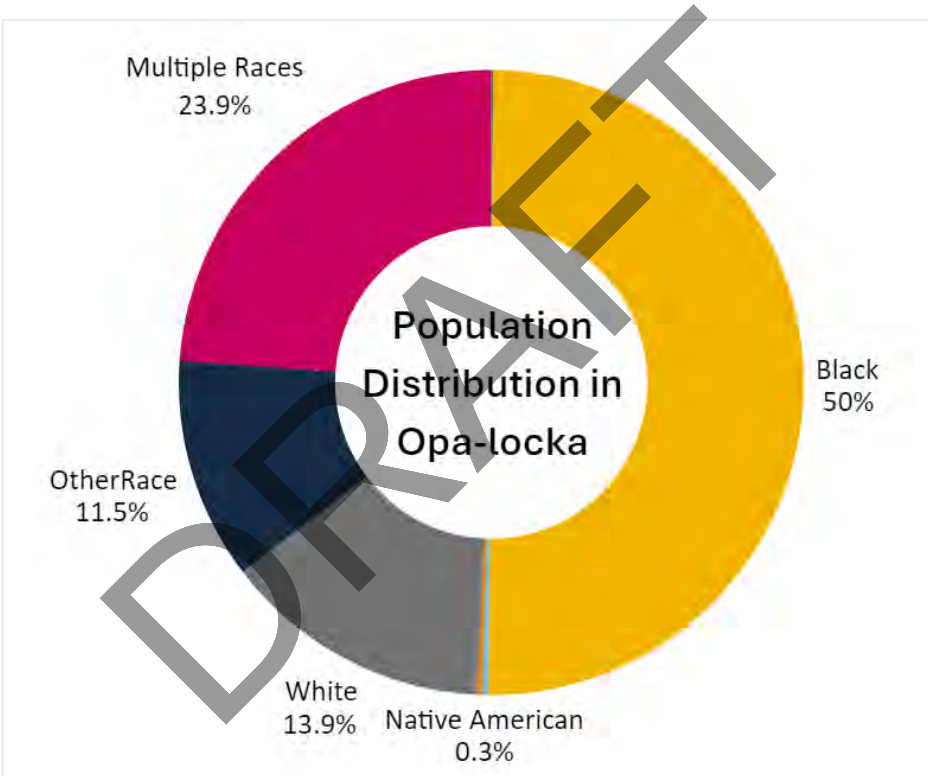
High transportation costs also disproportionately affect communities of color. The expense of commuting can consume a significant portion of their income, leaving less available for other necessities such as housing, food, and healthcare. For those who own vehicles, the costs of fuel, maintenance, insurance, and parking add up quickly. Meanwhile, those relying on public transportation often face steep fares and additional expenses like rideshares or taxis when transit options fall short.

Moreover, unequal access to jobs, healthcare, and education is also a critical issue in communities of color, which tend to be located in areas with fewer job opportunities, forcing residents to commute long distances to employment centers. This not only increases travel time and costs but also limits their ability to find and retain stable employment. Healthcare access is similarly affected, with fewer hospitals, clinics, and healthcare providers located in or easily accessible from these communities. This can result in delayed medical care, poorer health outcomes, and increased reliance on emergency services.

Educational opportunities are also compromised by transportation inequities. Students from communities of color may face long, arduous commutes to schools that offer quality education, limiting their academic performance and extracurricular participation. Additionally, the lack of reliable transportation can hinder access to after-school programs, tutoring, and other educational resources that are critical for academic success.

In Opa-locka, the diversity index[53] is 82.9[54], which is higher than the County's overall diversity index at 82.5[55]. Fifty percent of the population in the city is Black/African American, as shown in **Figure 4-5**. Additionally, 23.9 percent of residents identifies themselves as belonging to "multiple races." With regards to Hispanic origin, according to the Census Bureau, a significant number of the population that resides in Opa-locka has a Hispanic or Latino origin, as shown in **Map 4-9**.

Figure 4-5: Population Distribution in Opa-locka



Source: ESRI Business Analyst - 2024

The census tracts with the highest number of Hispanic/Latino populations are census tracts 5.05 and 5.04. On the contrary, the census tracts with the lowest number of Hispanics/Latinos are 4.13 and 4.18, respectively.

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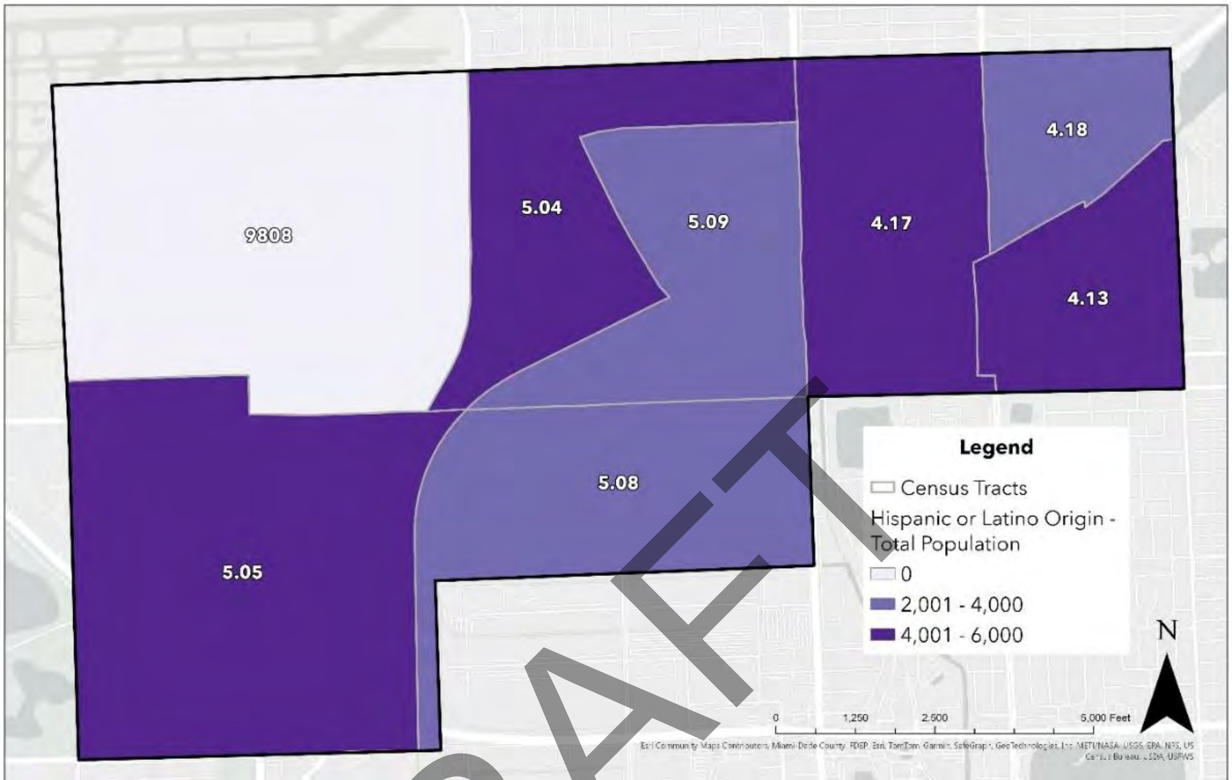
[53] The diversity index is a measure of the racial/ethnic diversity of residents based on seven major racial/ethnic groups (Asian American, Black, Latino/Hispanic, Pacific Islander, Mixed/Mixed/another race, Native American, and white) identified by the census.
[54] Esri (2024)
[55] Esri (2024)

Map 4-9: Census Tracts with Hispanic Population Within Opa-locka

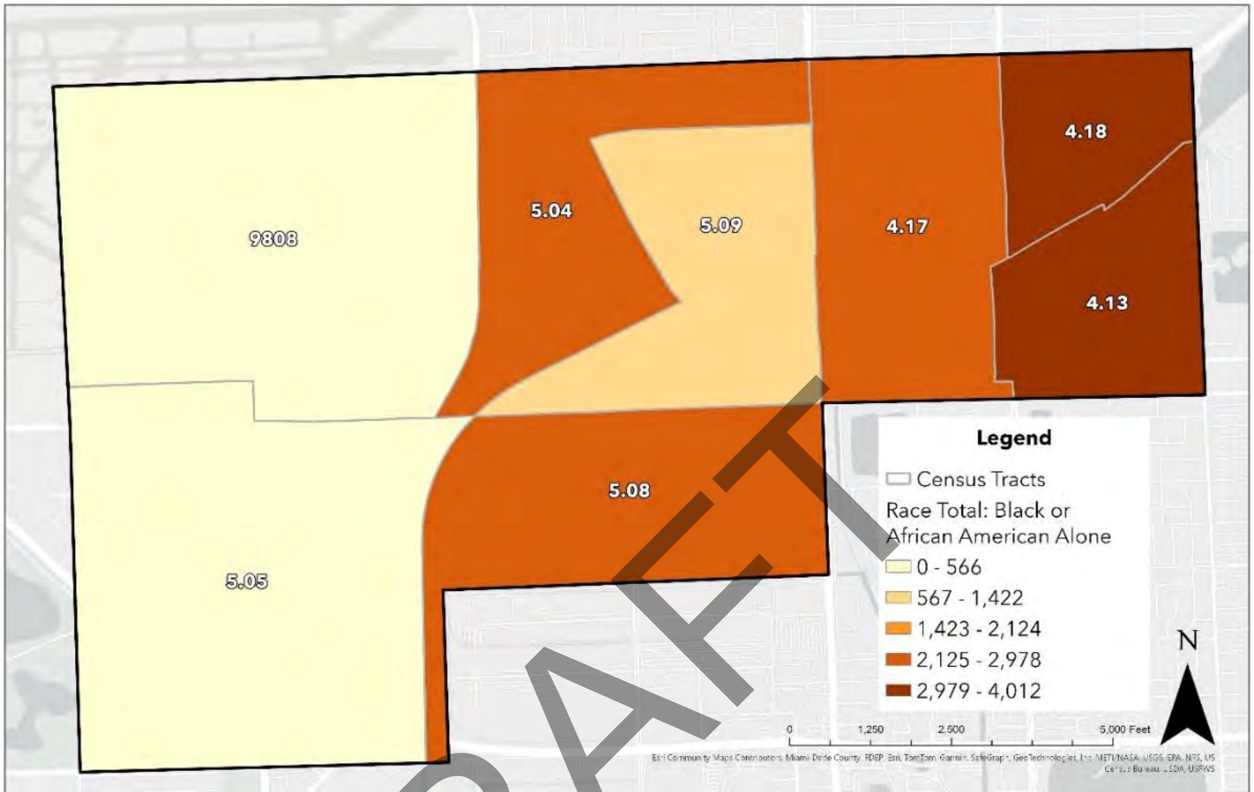


Source: United States Census Bureau's 2022 Demographic Data

As previously mentioned, the Black/African American population constitutes the majority of the population, as indicated by ESRI's 2024 Demographics report. This finding is further corroborated by the American Community Services (ACS) 5-Year Estimates from the 2022 Census Bureau. Notably, census tracts 4.13 and 4.18 exhibit the highest concentration of Black/African American residents, as depicted in **Map 4-10**. Interestingly, there has been a remarkable 254% increase in Black Americans identifying with another race in addition to Black since 2000, reflecting broader national trends in multiracial identification[56]. Conversely, census tract 5.05 has the lowest Black/African American population, with most residents identifying as Hispanic/Latino.

[56] Key facts about Black Americans | Pew Research Center

Map 4-10: Census Tracts with Black/African American Population Within Opa-locka



Source: United States Census Bureau's 2022 Demographic Data

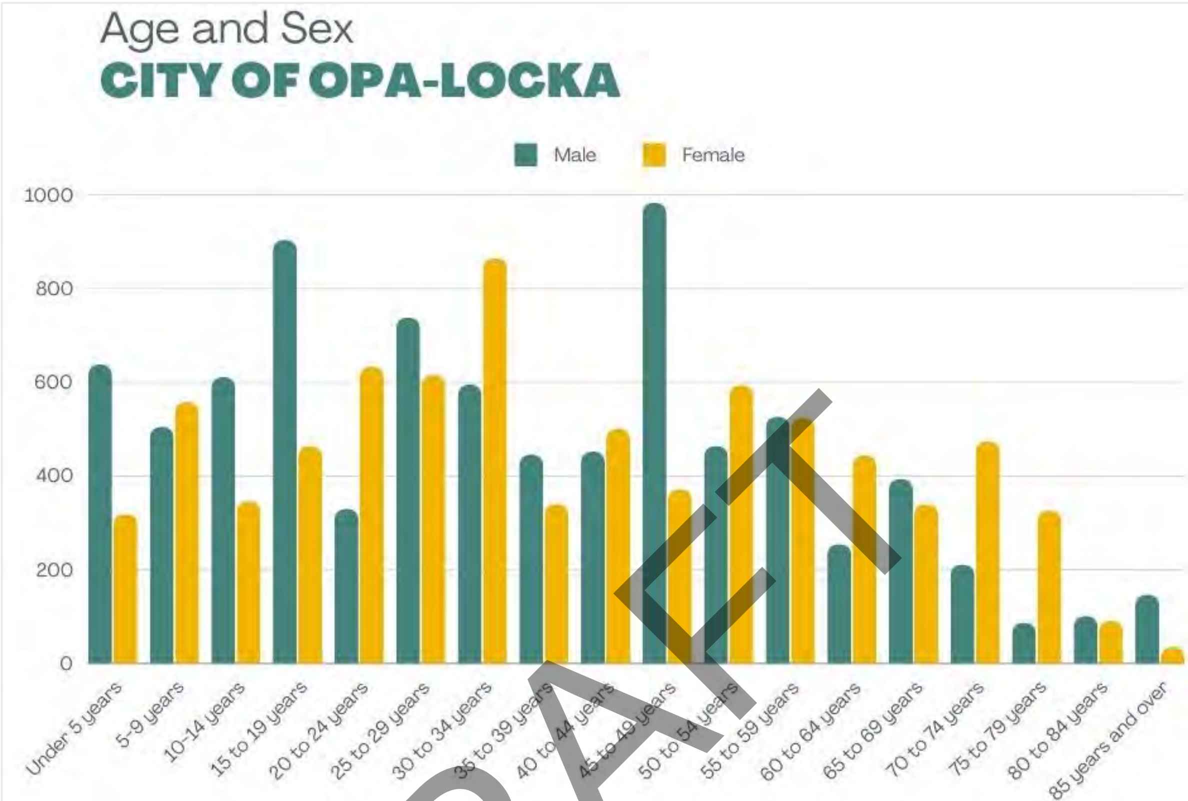
4.2.5 Age

Understanding the age and gender distribution in Opa-locka is crucial for equity analysis, particularly in relation to "*transport dependency*[57]" and the types of transportation used on roads that may be considered hazardous or more prone to fatalities and severe injury crashes. According to the 2022 American Community Survey 5-Year Estimates by the U.S. Census Bureau, the median age in Opa-locka is 35 years old. Notably, Opa-locka's population skews younger compared to the county's average of 40.9[58] years. Specifically, the age bracket with the highest number of residents falls within the 30 to 34 years range, comprising 595 men and 865 women, for a total of 1,460 individuals, as depicted in **Figure 4-6**. Conversely, the age bracket with the fewest residents is 85 years and older, accounting for 182 individuals.

[57] Transport dependency refers to the reliance of individuals on transportation services to meet their mobility needs

[58] U.S. Census Bureau – Miami-Dade County Profile

Figure 4-6: Age and Sex in Opa-locka

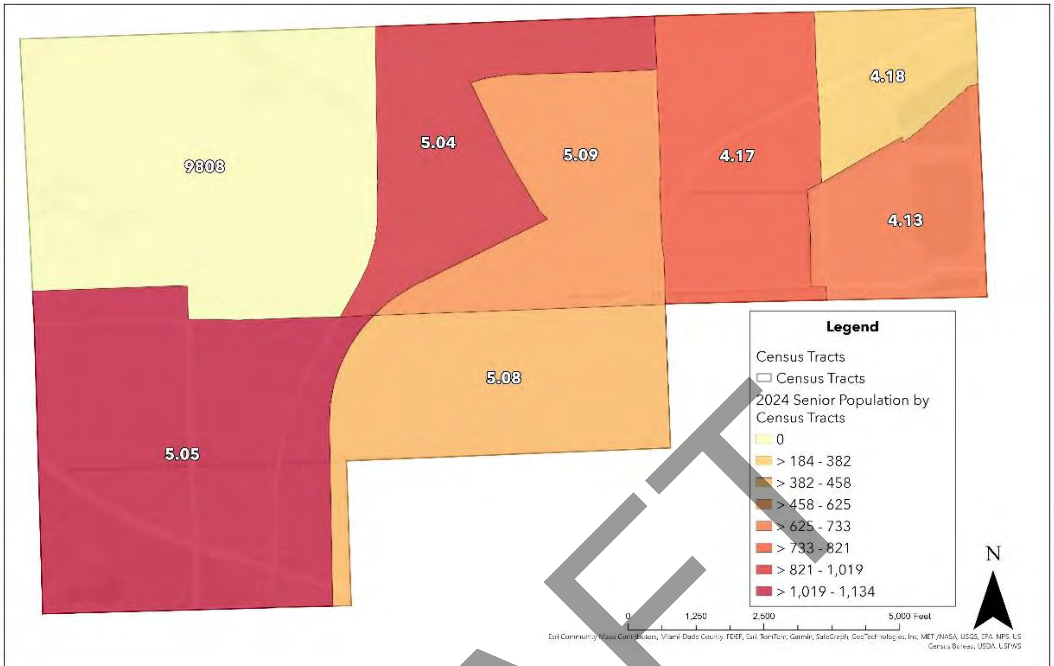


Source: United States Census Bureau's 2022 Demographic Data

Population under 16 years old and over 65 years old were included in the analysis as they may experience "*transport dependency*" as depicted in **Map 4-11** and **Map 4-12**. Moreover, the population that are over 65 years old are considered "at-risk population," representing a total of 15.2% of the total population. To their needs, potential countermeasures should consider "*aging in place*[59]" policies allowing at-risk population to move comfortably within the community. **Map 4-11** highlights census tracts 5.04 and 5.05 as having the highest number of senior populations, while census tract 4.18 has the lowest. Regarding population under 16 years of age, census tracts 5.08 and 4.13 have the highest number of younger populations, as shown in **Map 4-12**, while census tract 5.09 has the lowest youth population.

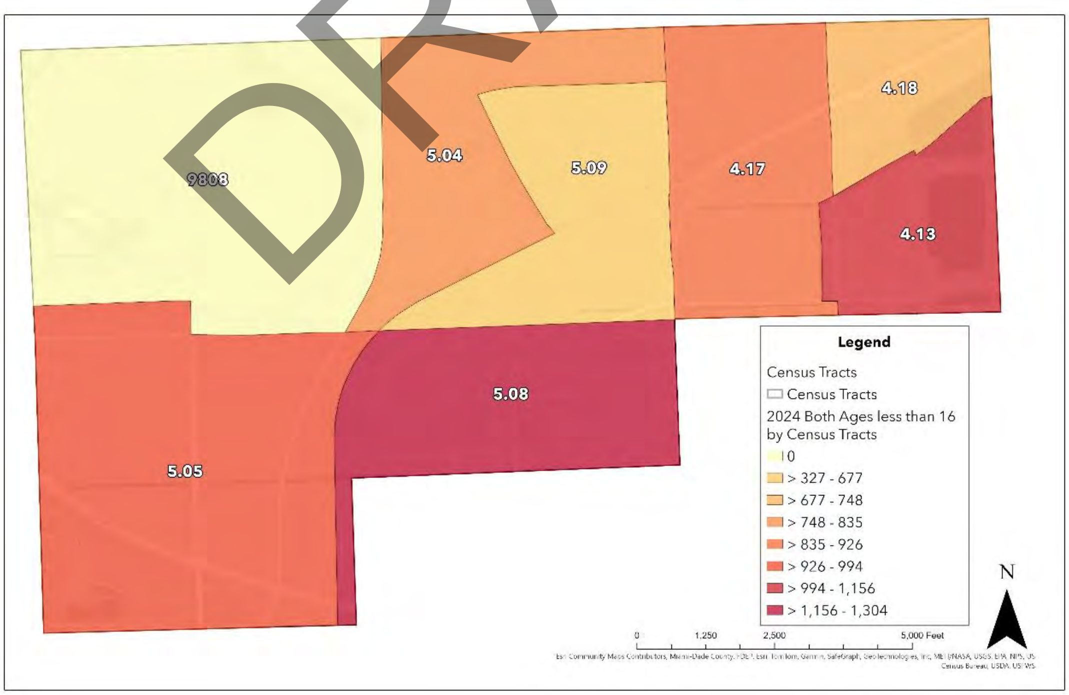
[59] Aging in place refers to the ability to live independently, comfortably, and safely in one's own home or community as they age. It allows seniors to maintain control over their living arrangements while receiving support from family, friends, or the community. Rather than moving to a residential facility designed for long-term care, such as an assisted living facility, individuals choose to stay in their homes with familiar surroundings and connections.

Map 4-11 Census Tracts with Senior Population Within the City of Opa-locka



Source: ESRI Business Analyst – Extracted on July 22, 2024

Map 4-12: Census Tracts with Population Under 16 Years Within the City of Opa-locka

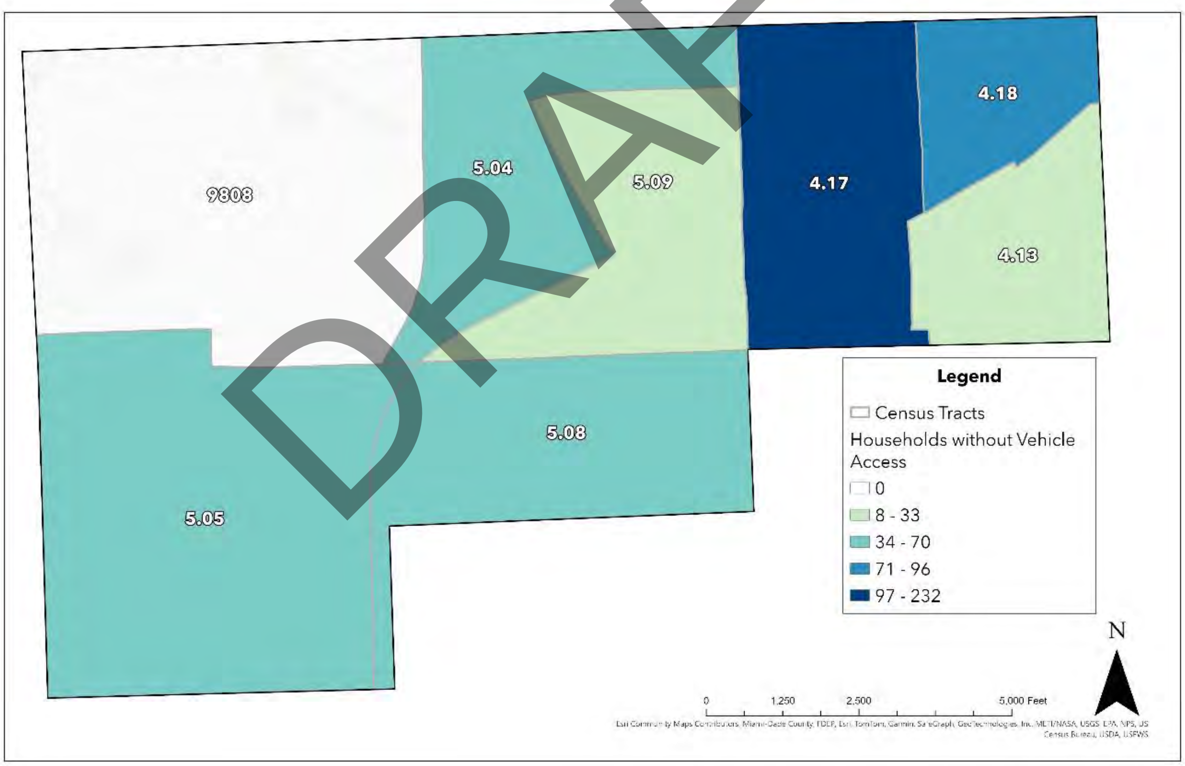


Source: ESRI Business Analyst – Extracted on July 22, 2024

4.2.6 Transportation Access

Most commuters around the country and in Florida rely heavily on vehicles to go to work. In Miami-Dade County, 67.4%of workers 16 years and over drive to work alone[60], while in Opa-locka, this rate is higher with 73.5% of workers driving alone to work[61]. However, access to vehicles is not always feasible to households, and relying on other means of non-motorized transportation is often the only option. According to the U.S. Census Bureau, approximately 22.4% of Opa-locka's population relies on non-motorized transportation for their daily commute. **Map 4-13** illustrates households without vehicle access. Interestingly, the census tract with the highest number of households without vehicle access is 4.17. This tract is bifurcated by SR-9/NW 27 Avenue, a road notorious for its high number of fatalities and severe injury (FSI) crashes, based in the city's High Injury Network (HIN). Unfortunately, residents in zero-car households face significant challenges accessing grocery stores, hospitals, and commuting to work due to sidewalk gaps, unsafe railroad crossings, and other hazardous conditions. **Map 4-14** shows households that have "*walking*" as a means of transportation in Opa-locka. The Census tract that "*walks*" the most is 5.08, followed by 4.17 and 5.05.

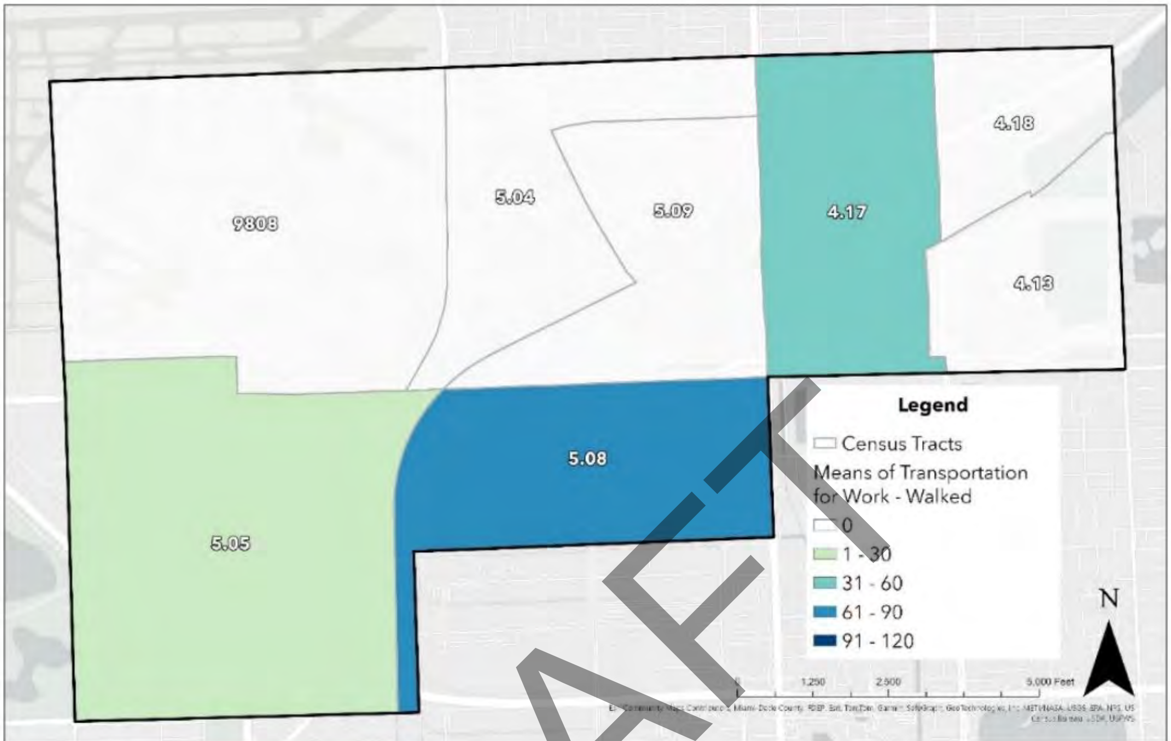
Map 4-13: Zero Car Household by Census Tracts



Source: United States Census Bureau's 2022 Demographic Data

[60] U.S. Census Bureau – Miami-Dade County Profile
[61] U.S. Census Bureau – City of Opa-locka Profile

Map 4-14: Census Tracts With a "*Walking*" As Mean of Transportation Within Opa-locka



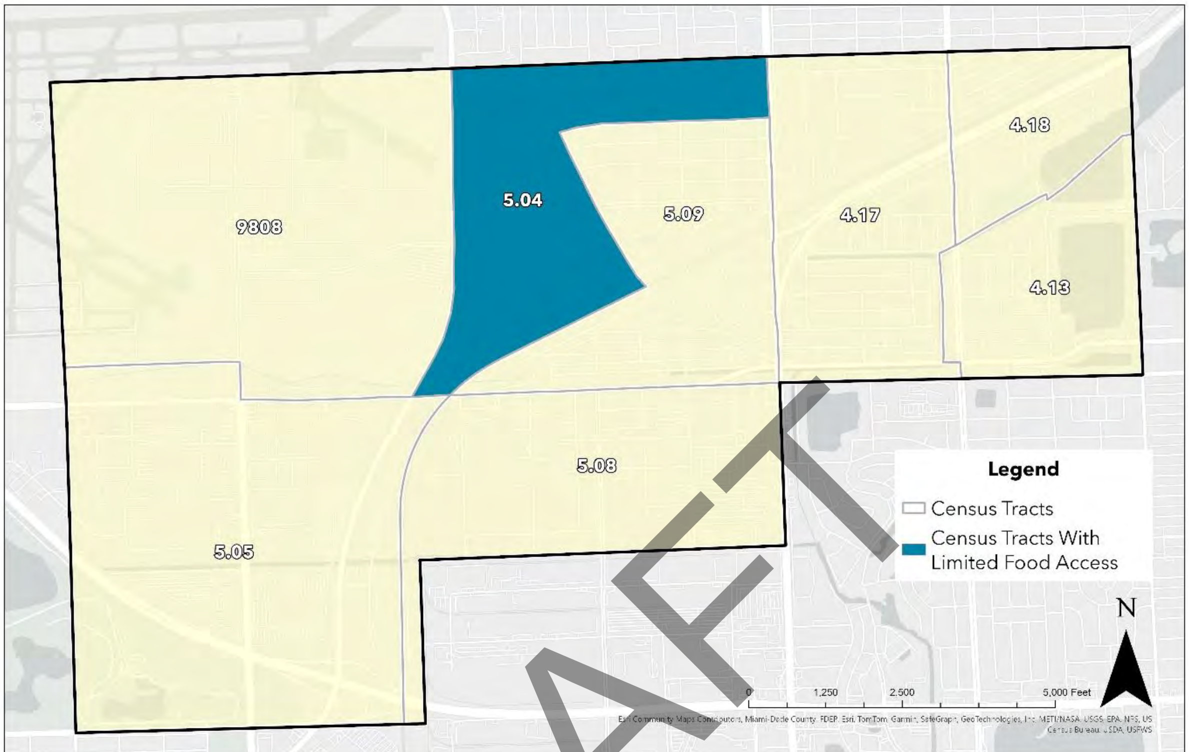
Source: United States Census Bureau's 2022 Demographic Data

4.2.7 Food Access

A food desert refers to an area where people have limited access to a variety of healthy foods. This scarcity may result from low income or living far away from sources of healthful and affordable food. The USDA defines a food desert based on criteria such as poverty rates, median family income, and proximity to large grocery stores[62]. According to the USDA Food Access Research Atlas, census tract 5.04 stands out as the sole tract in Opa-locka identified with restricted food access, as illustrated in **Map 4-15**. This Research Atlas provides an overview of food access indicators for low-income areas, including measures of supermarket accessibility, based on 2019 data[63].

[62] USDA Characteristics and Influential Factors of Food Deserts (2012)
[63] USDA ERS - Food Access Research Atlas

Map 4-15: Census Tracts with Limited or Not Access to Food Within Opa-locka

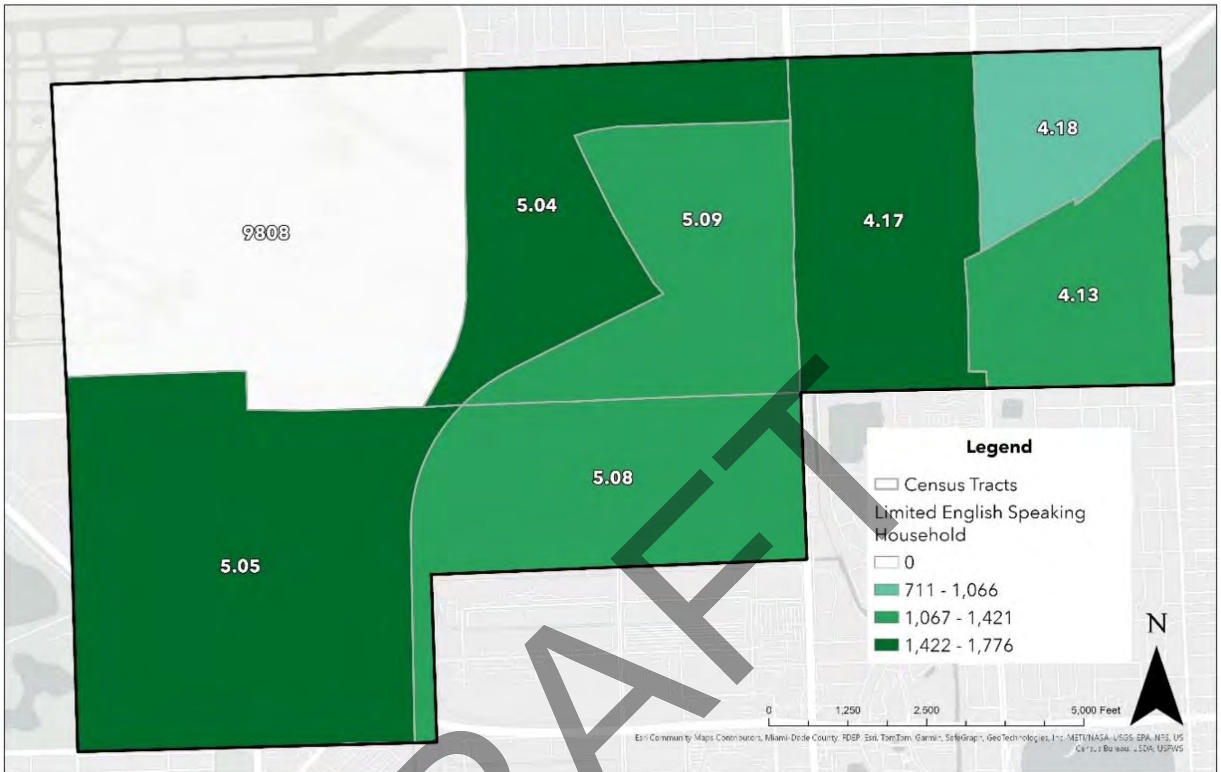


Source: United States Census Bureau's 2022 Demographic Data

4.2.8 Limited English-Speaking

Residents that have limited English speaking skills cannot access to high-paying jobs and can face countless barriers to various aspects of life, from healthcare access and transportation amenities to social integration. The census tract with the highest number of households that have limited English speaking in Opa-locka is 5.05, followed by 5.04 and 4.17, as illustrated in **Map 4-16**. People that have limited English proficiency typically cannot access to better work and other educational opportunities.

Map 4-16: Census Tracts with Limited English-Speaking Household Within Opa-locka



Source: United States Census Bureau's 2022 Demographic Data

4.2.9 Economic Vitality

Regarding economic vitality, the city's median household is significantly lower than the State of Florida[64] and Miami-Dade County[65], with $29,685[66] in 2024. Some census tracts within the city have a lower median household income than the city itself. For example, census tract 5.08 has a median household income of $22,606.00, which is almost a third of the County's median household income, as depicted in **Map 4-17**. Census tract 4.13 has the highest median household income with $57,744.00. Further, regarding unemployment, the city has an unemployment rate of 3.4% and a household spending average of $44,350, according to Esri 2024[67].

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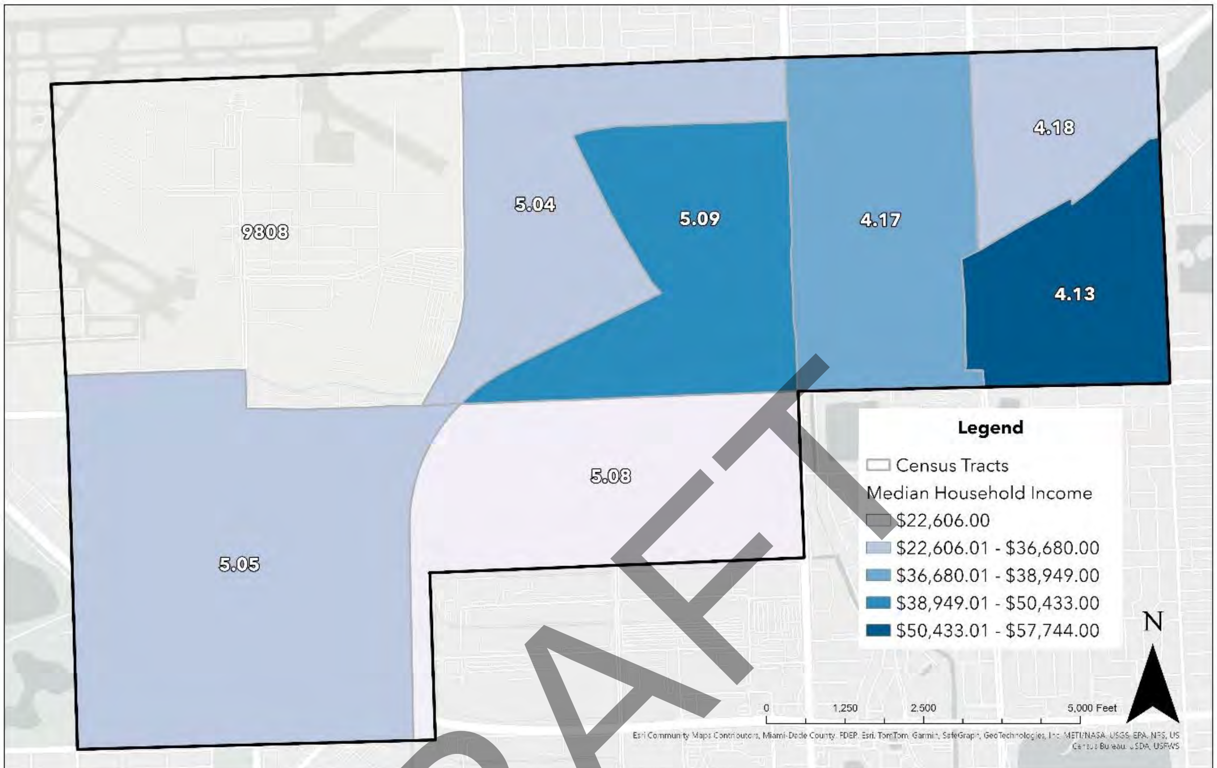
[64] The state of Florida's median household according to the U.S. Census Bureau is $69,303
[65] The Miami-Dade County's median household according to the U.S. Census Bureau is $67,263
[66] ESRI Business Analyst (2024)
[67] Data was extracted specifically for the City of Opa-locka through Esri Business Analyst on July 24, 2024

Map 4-17: Median Household Income by Census Tracts Within Opa-locka



Source: United States Census Bureau's 2022 Demographic Data

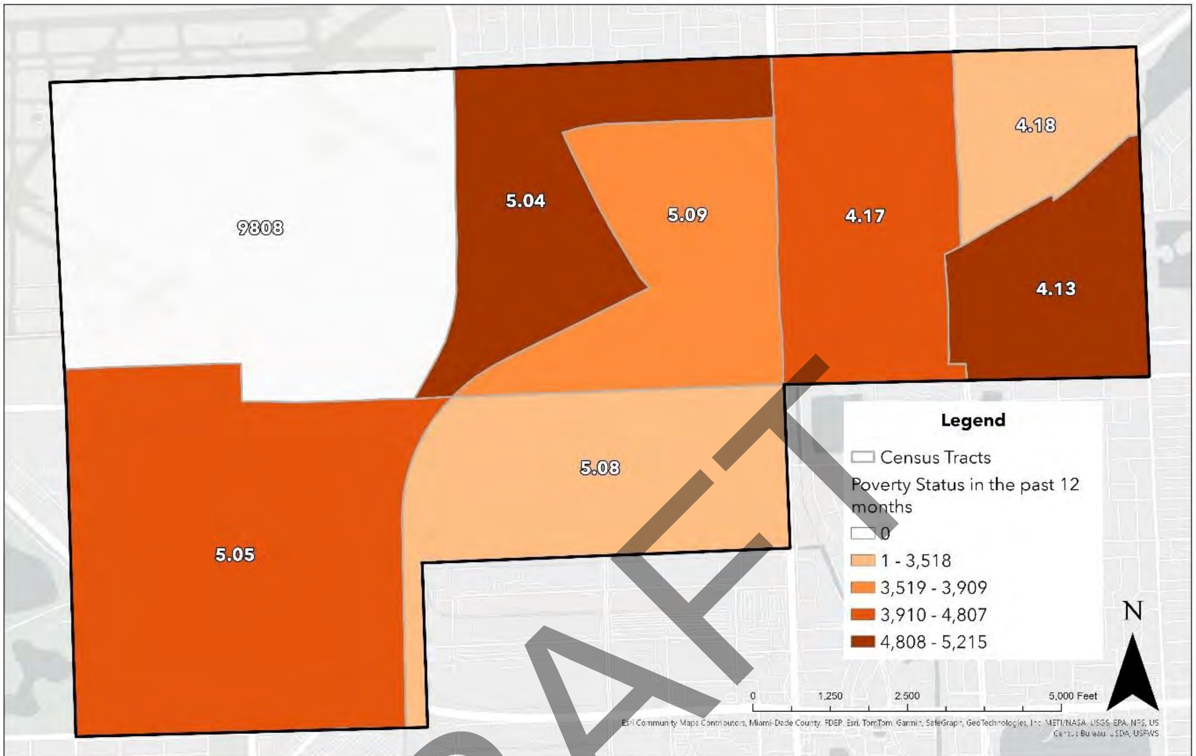
4.2.10 Concentrated Poverty

The City of Opa-locka is making strides toward prosperity by investing in capital improvements to enhance residents' quality of life. However, several challenges persist, including concentrated poverty and limited access to essential services. In Opa-locka, nearly half of the households rely on food stamps/SNAP programs[68], while 20.7% lack Internet access. Opa-locka's poverty rate based on the 2022 American Community Survey 5-year Estimates stands 28.0%[69], more than twice the state average at 12.7%.

Map 4-18 illustrates poverty status by census tracts. Notably, tract 4.13 has the highest population experiencing poverty in the past 12 months, followed closely by 5.04. In addition, census tracts 5.08 and 4.18 have residents that have experienced poverty in the past 12 months, although their numbers are significantly lower. Efforts to address these disparities are crucial for Opa-locka's continued progress.

[68] ESRI Business Analyst – City of Opa-locka State of Community Report (2024)
[69] U.S. Census Bureau – City of Opa-locka Profile

Map 4-18: Poverty Status in the Past 12 Months Within Opa-locka



Source: United States Census Bureau's 2022 Demographic Data

4.3 Opa-locka's Equity Index

To identify equity priority census tracts within Opa-locka, a locally defined priority index was developed. This index not only reveals the presence of transportation-disadvantaged individuals but also assesses the severity of their transportation challenges. The equity index will be used as part of prioritization of improvements and development of countermeasures, which is expected to be implemented in the short-, mid-, and long-term timeframe.

4.3.1 Methodology

The locally defined equity index of transportation disadvantaged populations was calculated for each tract. The index was formulated by aggregating the populations within the following categories:

- Health and Disability
- Race and Origin
- Age and Transport Dependency
- Transportation Access
- Food Access
- Limited English-Speaking
- Concentrated Poverty

Based on those factors, variables were used to each segmented census tract. The formula used to develop the segmented local equity priority index is defined as follows:

$$Index = \frac{CDV\ + DIS + YTH + SEN + (HH + VEH) + NWH + LEP + W:L + POV}{COP} + FD$$

These variables represent:

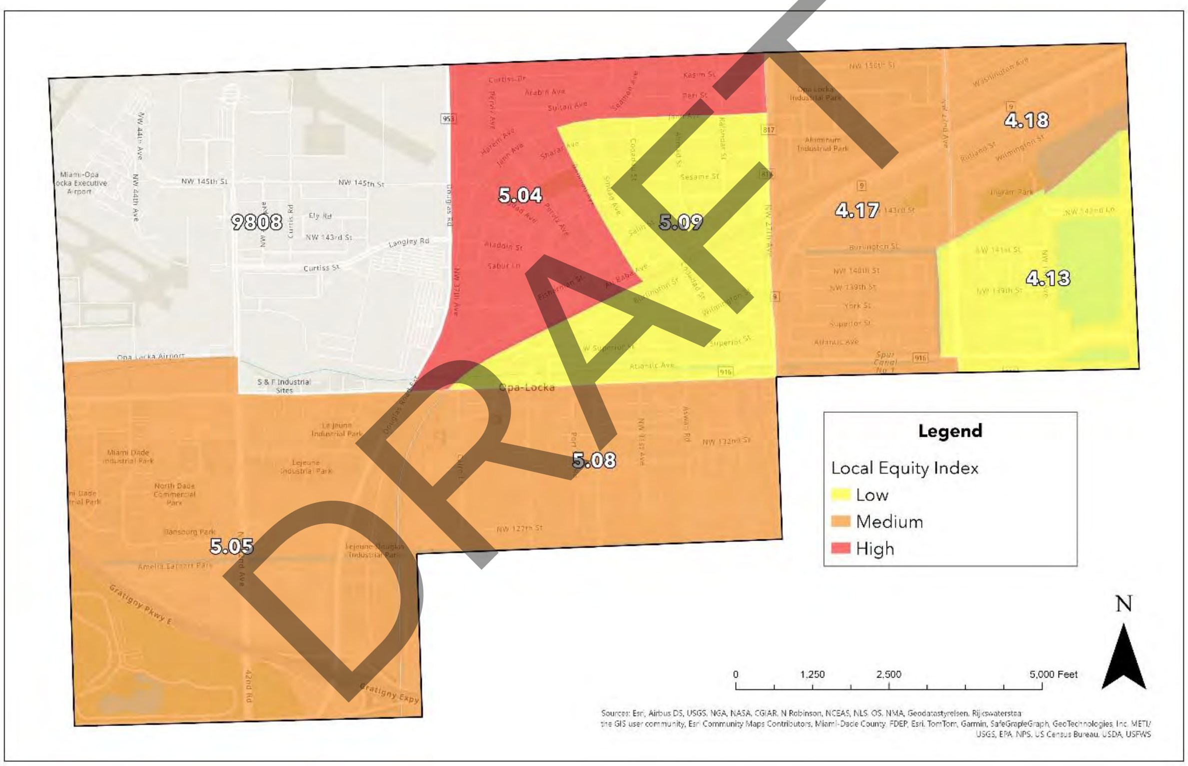
- Number of cardiovascular deaths (CDV)
- Number of people with a disability status (DIS)
- Number of people under 16 years of age (YTH)
- Number of people over 65 years of age (SEN)
- Number of households without vehicle access (VEH)
- Number of non-white or Hispanic residents (NWH)
- Population with Limited English Proficiency (LEP)
- Population that "*walk*" as a mean of transportation (WLK)
- Population experiencing poverty in the past 12 months (POV)
- Average Household (HH)[70]
- Total population per census tract (CPOP)
- Access to food (FD) - Criteria[71]

[70] The City of Opa-locka's average household unit according to the U.S. Census Bureau is 2.60
[71] Census tracts with restricted food access, as identified by the USDA Food Access Research Atlas, receive an additional point.

4.3.2 Results

Utilizing the outlined methodology and formula, census tract 5.04 emerged as the area with the most significant need for local equity, as depicted in **Map 4-19**. Consequently, this tract is assigned a heightened score and prioritization for the assessment and implementation of improvement measures and counteractive strategies. These interventions are slated for phased execution across immediate, intermediate, and extended timelines. By integrating this equity index with the local High-Injury Network, identified corridors will be identified where enhancements would substantially aid those facing severe transportation challenges. Prioritizing projects within these high-equity zones will address the most acute transportation issues, delivering substantial benefits to the communities most affected.

Map 4-19: City of Opa-locka Local Equity Index



Cost to Society Analysis

5

5. Cost to Society Analysis

According to the 2024 Florida Department of Transportation (FDOT) Design Manual, conducting a time value analysis is essential to compare the benefits and costs to society for areas with crash histories. This analysis quantifies the benefits in terms of dollars saved from the projected reduction in crashes and compares them to the costs associated with construction, operation, maintenance, and other expenses over a roadway project's lifespan.

It is crucial to carry out this analysis early in the planning or design process to ensure informed decision-making. Both historical methods (HCMs) and predictive methods such as the Roadside Safety Analysis Program (RSAP) and the Highway Safety Manual (HSM) are acceptable for performing a benefit/cost analysis. This analysis will evaluate the financial viability of the proposed road safety improvements at the city's most accident-prone locations. Utilizing HCMs, a comprehensive overview of the societal costs of unaddressed road safety issues is hereby offered. This strategic approach aims to optimize resource allocation, enhance road safety, and significantly reduce the social and economic burdens caused by road crashes in Opa-locka. Overall, implementing these improvements will result in safer roads and substantial long-term savings for the community.

5.1 Historical Crash Method (HCM)

This method is applicable for sites with a documented crash history. It involves a comprehensive review of all available crash data, encompassing all severity levels and location verification statuses (both verified and preliminary) from the Signal Four Analytics (S4) system database. The benefit/cost (B/C) ratio is determined by comparing the estimated annual reduction in crash costs to the estimated annual increase in combined construction and maintenance costs. This annualized conversion helps to evaluate whether the projected expenditure on crash reduction benefits will justify the direct costs of the improvements.

5.1.1 HCM based on Facility Type

HCMs employ the Highway Safety Improvement Program Guideline (HSIPG) to estimate the societal benefits of crash reduction. Specifically, it uses the cost per crash by facility type, identified by number of lanes and roadway division, as detailed in **Table 5-1**, to calculate these benefits. On the other hand, the cost to society is assessed by considering the anticipated expenses related to right-of-way acquisition, construction, and ongoing maintenance.

Table 5-1: FDOT Average Crash Costs by Facility Type (FY2019)[72][73][74]

Type / Facility	Divided Roadway			Undivided Roadway		
	Urban	Suburban	Rural	Urban	Suburban	Rural
2-3 Lanes	$107,732	$201,527	$355,183	$124,618	$267,397	$523,727
4-5 Lanes	$123,406	$225,315	$473,637	$112,896	$190,276	n/a
6+ Lanes	$123,598	$166,258	$451,492	$41,650	n/a	n/a
Interstate	$153,130	n/a	$327,385	n/a	n/a	n/a
Turnpike	$139,221	n/a	$304,397	n/a	n/a	n/a

Using a benefit/cost (B/C) analysis provides a clear and quantifiable method to evaluate the financial feasibility and effectiveness of proposed safety improvements. The B/C ratio becomes a critical metric to determine whether the anticipated reduction in crash costs justifies the expenses of implementing and maintaining the safety measures. By analyzing crash data from the S4A system from 2018-2023, we identified crashes by facility type in Opa-locka, as summarized in **Table 5-2**. These crashes were then converted into societal costs to assess the impact of unaddressed road safety issues citywide, with the results presented in **Table 5-3**. Throughout Opa-locka during the study period, the0 total crashes calculated by facility amount to an immense cost to society in the order of $762 million (FY2019).

Table 5-2: Crashes per Type of Facility in Opa-locka

Type / Facility	Divided Roadway			Undivided Roadway		
	Urban	Suburban	Rural	Urban	Suburban	Rural
2-3 Lanes	906	0	14	1,889	0	24
4-5 Lanes	1,724	0	8	799	0	1
6+ Lanes	810	0	1	98	0	0
Interstate	0	0	0	0	0	0
Turnpike	0	0	0	0	0	0

Source: Signal Four Analytics

[72] 2024 FDOT Design Manual, Section 122 – Design Exceptions and Design Variations

[73] The average cost per crash for FY 2019 is $159,093

[74] The above values were derived from 2015 through 2019 traffic crash and injury severity data for crashes on state roads in Florida using the formulation described in FHWA Technical Advisory "Motor Vehicle Accident Costs", T7570.2, dated October 31, 1994. Base costs derived from a memorandum from USDOT: "Guidance on Treatment of the Economic Value of a Statistical Life (VSL) in the U.S. Department of Transportation Analyses", dated August 8, 2016, updating the value of life saved from $9.4 million to $9.6 million for 2015 data with a growth factor applied to increase the base cost to $9.7 million in the current analyses. Costs are computed for the actively state-maintained State Highway System (SHS) only.

Table 5-3: Crashes Cost per Type of Facility

Type Facility	Divided Roadway			Undivided Roadway		
	Urban	Suburban	Rural	Urban	Suburban	Rural
2-3 Lanes	$97,605,192		$4,972,562	$235,403,402	-	$12,569,448
4-5 Lanes	$212,751,944		$3,789,096	$90,203,904	-	-
6+ Lanes	$100,114,380		$451,492	$4,081,700	-	-
Interstate	-		-	-	-	-
Turnpike	-		-	-	-	-

Source: Signal Four Analytics

As part of the comprehensive safety analysis, Opa-locka's High Injury Network (HIN) was established to pinpoint the most perilous streets for serious traffic injuries and fatalities. This initiative aims to prioritize safety improvements by focusing on areas with the most frequent severe incidents. The goal of the HIN is to develop a network of road segments that represent 40% or more percent of fatal and serious injury (FSI) crashes on 5-20% of the total road miles within the city limits. The methodology included extensive data analysis, literature review, and evaluation of factors such as proximity to public transportation, critical freight intersections, railroad crossings, and areas around schools and educational institutions.

Table 5-4 illustrates the citywide HIN for State Highway System (SHS) facilities only, highlighting the top five high injury corridors all of which fall under the jurisdiction of FDOT. Urban divided roadways with 4-5 lanes experience the highest number of crashes, which correlates with the high societal costs in **Table 5-5**. The total cost to society for all crashes resulting in fatalities and severe injuries within this HIN sums to a total of approximately $7.6 million (FY2019) along five of the most dangerous corridors, all of which are a half-mile distance from each other. **Figure 5-1** identifies the key FSI crashes for SHS facilities and their corresponding costs by corridor. This figure highlights SR 9 being the costliest accounting for 25% of all the SHS facilities part of the HIN, suggesting that focused interventions at these locations could yield significant societal cost savings.

Table 5-4: Crashes per Type of Facility in Opa-locka HIN for SHS Facilities Only

Type Facility	Divided Roadway			Undivided Roadway		
	Urban	Suburban	Rural	Urban	Suburban	Rural
2-3 Lanes	10	0	0	16	0	0
4-5 Lanes	15	0	1	7	0	0
6+ Lanes	11	0	0	0	0	0
Interstate	0	0	0	0	0	0
Turnpike	0	0	0	0	0	0

Source: Signal Four Analytics

Table 5-5: Societal Cost of Crashes in Opa-locka HIN for SHS Facilities Only (FY2019)

	Location	From	To	Cost
1	SR 9	Burlington Street	NW 22 Avenue	$1,884,472
2	NW 27 Avenue	S of NW 132 Street	Superior Street	$1,460,496
3	NW 27 Avenue	NW 151 Street	Ali Baba Avenue	$1,329,118
4	NW 135 Street	NW 24 Avenue	NW 19 Avenue	$1,232,226
5	NW 135 Street	Sesame Street	E of NW 28 Avenue	$1,176,346

Source: Signal Four Analytics

Improvements on these facilities will need to be coordinated with FDOT as part of "*Target Zero*," the agency's statewide initiative aimed at reducing transportation-related serious injuries and deaths across Florida to zero[75].

[75] Target Zero

Additionally, approximately 33% of FSI crashes in Opa-locka occur on Miami-Dade County and local roads. Consequently, the top five segments of the lesser-hierarchy road network were also prioritized based on the frequency, severity, and specific characteristics of traffic crashes. **Table 5-6** summarizes these corridors by facility type, and shows that crashes on County roads, while fewer than on SHS facilities, also contribute significantly to societal costs, especially on urban divided roadways with 4-5 lanes. **Table 5-7** correlate the costs related to these crashes, with a total of approximately $2.6 million (FY2019) and indicate a similar need for safety measures as seen with SHS facilities part of the HIN.

Figure 5-2 breaks down each of the five identified HIN corridors under Miami-Dade County jurisdiction and their respective crash costs. As indicated in the figure, NW 151 Street from NW 27 Avenue to Perviz Avenue yields a cost to society of $729,926 (FY2019), which represents 29% of societal costs of all Miami-Dade County roads part of the HIN.

Table 5-6: Crashes per Type of Facility in Opa-locka HIN for County Roads Only

Type Facility	Divided Roadway			Undivided Roadway		
	Urban	Suburban	Rural	Urban	Suburban	Rural
2-3 Lanes	0	0	0	0	0	0
4-5 Lanes	18	0	0	3	0	0
6+ Lanes	0	0	0	0	0	0
Interstate	0	0	0	0	0	0
Turnpike	0	0	0	0	0	0

Source: Signal Four Analytics

Type Facility	Divided Roadway			Undivided Roadway		
	Urban	Suburban	Rural	Urban	Suburban	Rural
2-3 Lanes	$97,605,192	-	$4,972,562	$235,403,402	-	$12,569,448
4-5 Lanes	$212,751,944	-	$3,789,096	$90,203,904	-	-
6+ Lanes	$100,114,380	-	$451,492	$4,081,700	-	-
Interstate	-	-	-	-	-	-
Turnpike	-	-	-	-	-	-

Source: Signal Four Analytics

Improvements to these facilities will need to be coordinated with the Miami-Dade County Department of Transportation and Public Works (DTPW) as part of the "*Vision Zero Framework*," a countywide safety initiative aimed at eliminating all traffic fatalities and severe injuries by 2040, while enhancing the safety, mobility, and health of all Miami-Dade County residents.

Table 5-7: Societal Cost of Crashes in Opa-locka HIN for County Roads Only (FY2019)

	Location	From	To	Cost
1	NW 151 Street	NW 27 Avenue	Perviz Avenue	$729,926
2	NW 22 Avenue	NW 139 Street	NW 151 Street	$606,520
3	NW 37 Avenue	NW 135 Street	Langley Road	$493,624
4	NW 37 Avenue	NW 135 Street	Gratigny Parkway	$483,114
5	E 65 Street	E 4 Street	NW 42 Avenue	$246,812

Source: Signal Four Analytics

Although the frequency and number of FSI crashes are significantly lower on local roads compared to those on the SHS facilities or roads under Miami-Dade County jurisdiction, and despite the absence of a clear pattern or localized occurrence, a "*local road*" HIN was developed. **Table 5-8** lists the FSI crashes by facility, surmounting a total of 7 crashes within the study period, and **Table 5-9** provides the corresponding societal costs, which total $820,456 (FY2019). **Figure 5-3** details each of the top three local roads part of the HIN, with Ali Baba Avenue from Kalander Street to NW 151 Street being the costliest and most dangerous local road within Opa-loc

Table 5-8: Crashes per Type of Facility in Opa-locka HIN for Local Roads Only

Type Facility	Divided Roadway			Undivided Roadway		
	Urban	Suburban	Rural	Urban	Suburban	Rural
2-3 Lanes	3	0	0	3	0	0
4-5 Lanes	1	0	0	0	0	0
6+ Lanes	0	0	0	0	0	0
Interstate	0	0	0	0	0	0
Turnpike	0	0	0	0	0	0

Source: Signal Four Analytics

Type Facility	Divided Roadway			Undivided Roadway		
	Urban	Suburban	Rural	Urban	Suburban	Rural
2-3 Lanes	$97,605,192	-	$4,972,562	$235,403,402	-	$12,569,448
4-5 Lanes	$212,751,944	-	$3,789,096	$90,203,904	-	-
6+ Lanes	$100,114,380	-	$451,492	$4,081,700	-	-
Interstate	-	-	-	-	-	-
Turnpike	-	-	-	-	-	-

Source: Signal Four Analytics

Table 5-9: Societal Cost of Crashes in Opa-locka HIN for Local Roads Only (FY2019)

	Location	From	To	Cost
1	Ali Baba Avenue	Kalandar Street	NW 151 Street	$356,968
2	Opa Locka Boulevard	Fisherman Street	Burlington Street	$215,464
3	Bagdad Avenue	Dunad Street	NW 37 Avenue	$232,350

Source: Signal Four Analytics

Table 5-10 specifies the total crashes on all local roads under jurisdiction of the City of Opa-locka. Within the study period, there were 836 crashes, with 89% of those occurring on 2 or 3 lane facilities. **Table 5-11** provides the societal costs of these crashes, which surmount to almost a staggering $102 million (FY2019).

Table 5-10: Crashes per Type of Facility in Opa-locka for All Local Roads

Type Facility	Divided Roadway			Undivided Roadway		
	Urban	Suburban	Rural	Urban	Suburban	Rural
2-3 Lanes	150	0	1	596	0	0
4-5 Lanes	65	0	0	24	0	0
6+ Lanes	0	0	0	0	0	0
Interstate	0	0	0	0	0	0
Turnpike	0	0	0	0	0	0

Source: Signal Four Analytics

Type Facility	Divided Roadway			Undivided Roadway		
	Urban	Suburban	Rural	Urban	Suburban	Rural
2-3 Lanes	$97,605,192	-	$4,972,562	$235,403,402	-	$12,569,448
4-5 Lanes	$212,751,944	-	$3,789,096	$90,203,904	-	-
6+ Lanes	$100,114,380	-	$451,492	$4,081,700	-	-
Interstate	-	-	-	-	-	-
Turnpike	-	-	-	-	-	-

Source: Signal Four Analytics

Several notable locations within the city where crashes occurred include Jann Avenue, Ahmad Street, the intersection of Rutland Street and NW 22 Avenue and Cairo Lane. Within the analysis period, there was a total of 139 crashes regardless of severity. **Table 5-12** shows the corresponding facilities in which these crashes took place, and **Table 5-13** provides the representative costs, which total to approximately $16.6 million (FY2019). **Figure 5-4** shows the differences in costs on each of these locations, where Jann Avenue incurs the most societal costs due to it having the most crashes, with the intersection of Rutland Street and NW 22 Avenue following closely.

Table 5-11: Crashes per Type of Facility in Opa-locka for Jann Avenue, Ahmad Street, Cairo Lane and the Intersection of Rutland Street and NW 22 Avenue

Type Facility	Divided Roadway			Undivided Roadway		
	Urban	Suburban	Rural	Urban	Suburban	Rural
2-3 Lanes	24	0	0	77	0	0
4-5 Lanes	44	0	0	10	0	0
6+ Lanes	0	0	0	0	0	0
Interstate	0	0	0	0	0	0
Turnpike	0	0	0	0	0	0

Source: Signal Four Analytics

Type Facility	Divided Roadway			Undivided Roadway		
	Urban	Suburban	Rural	Urban	Suburban	Rural
2-3 Lanes	$97,605,192	-	$4,972,562	$235,403,402	-	$12,569,448
4-5 Lanes	$212,751,944	-	$3,789,096	$90,203,904	-	-
6+ Lanes	$100,114,380	-	$451,492	$4,081,700	-	-
Interstate	-	-	-	-	-	-
Turnpike	-	-	-	-	-	-

Source: Signal Four Analytics

To integrate Vision Zero principles into the Capital Improvements Plans (CIPs) for local roads under the jurisdiction of the City of Opa-locka, it is essential to pinpoint where enhancements in road safety and infrastructure are needed. Potential measures include traffic calming techniques, bicycle and pedestrian safety improvements, intersection upgrades, and enhancements in lighting and visibility. These can be incorporated into the city's CIP to achieve the goal of reducing fatalities and severe injuries on roads managed by the municipality.

Table 5-12: Societal Cost of Crashes in Opa-locka for Jann Avenue, Ahmad Street, the Intersection of Rutland Street and NW 22 Avenue, and Cairo Lane (FY2019)

	Location	Cost
1	Jann Avenue	$6,957,668
2	Ahmad Street	$4,532,852
3	Rutland and NW 22 Avenue	$6,558,824
4	Cairo Lane	$2,118,506

Source: Signal Four Analytics

These findings underscore the importance of applying the HCM method to assess and mitigate crash costs effectively. The HCM method's use of average crash costs can help in quantifying the economic impact of crashes, aiding in the prioritization of tactful safety interventions. Focusing on high-cost, high-frequency crash locations and facility types as identified in the tables, strategic resources can be deployed to enhance road safety and reduce overall societal costs associated with traffic crashes.

5.1.2 HCM based on Crash Severity

The FDOT Design Manual also provides a complementary analysis to identify crash severity distributions and their associated crash severity level costs. **Table 7-14** details the FDOT "*KABCO Crash Costs*" which provides estimated societal costs associated with different crash severity levels, categorized by the KABCO scale as follows:

- K - Killed
- A - Severe Injury
- B - Moderate Injury
- C - Minor Injury
- O - Property Damage Only

Each severity level has an associated average cost, encompassing medical) expenses, property damage, emergency services, legal costs, and other related expenses. These costs quantify the economic burden of crashes. Using the HCM method based on crash severity, these crash cost estimates can assist with prioritizing safety improvements and allocate resources effectively to reduce the societal costs of traffic crashes, especially those resulting in fatalities and severe injuries.

Table 5-13: FDOT KABCO Crash Costs (FY2019)[76][77]

Crash Severity	Comprehensive Crash Cost
Fatal (K)	$10,890,000
Severe Injury (A)	$888,030
Moderate Injury (B)	$180,180
Minor Injury (C)	$103,950
Property Damage Only (O)	$7,700

Throughout the study period, Opa-locka experienced over 6,000 crashes of varying crash severities. **Table 5-15** describes each severity, where 85% of all crashes resulted in property damage only. However, **Table 5-16** breaks down the costs associated with each severity level, and although fatal crashes accounted for half a percent of all crashes, these 32 fatal crashes resulted in a societal cost of approximately more than $348 million (FY2019), costing society approximately $309 million (FY2019) more than all 5,163 crashes that resulted in property damage only. Collectively, the cost to society during the analyzed period (2018-2023) was approximately a resounding $585 million (FY2019).

Table 5-14: Crashes per Type of Severity in Opa-locka

Crash Severity	Crash Total
Fatal (K)	32
Severe Injury (A)	87
Moderate Injury (B)	26
Minor Injury (C)	776
Property Damage Only (O)	5163

Source: Signal Four Analytics

[76] 2024 FDOT Design Manual, Section 122 – Design Exceptions and Design Variations
[77] Source: Florida Department of Transportation State Safety Office's Crash Analysis Reporting (CAR) System, analysis years 2015 through 2019. Published by FDOT State Safety Office on February 23, 2022.

Table 5-15: Societal Cost of Crashes in Opa-locka per Crash Severity (FY2019)

Crash Severity	Crash Total
Fatal (K)	$348,480,000
Severe Injury (A)	$77,258,610
Moderate Injury (B)	$40,720,680
Minor Injury (C)	$79,625,700
Property Damage Only (O)	$39,755,100

Source: Signal Four Analytics

The HIN for SHS facilities was established to target locations with a disproportionate risk of fatal and serious injuries throughout the city of Opa-locka. **Table 5-17** identifies the total crashes by fatality or severe injury, and **Table 5-18** provides the total costs associated with those crashes, which resulted in a total of approximately $192 million (FY2019). **Figure 5-5** shows each of the five identified half mile HIN locations, with SR-9 amounting to approximately a staggering $94 million (FY2019), which is almost two times greater than the second highest location.

Table 5-16: Crashes per Type of Severity in Opa-locka HIN for SHS Facilities Only

Crash Severity	Crash Total
Fatal (K)	14
Severe Injury (A)	45
Moderate Injury (B)	0
Minor Injury (C)	0
Property Damage Only (O)	0

Source: Signal Four Analytics

Table 5-17: Societal Cost of Crashes in Opa-locka HIN for SHS Facilities Only by Severity (FY2019)

Crash Severity	Crash Total
Fatal (K)	$152,460,000
Severe Injury (A)	$39,961,350
Moderate Injury (B)	$0.00
Minor Injury (C)	$0.00
Property Damage Only (O)	$0.00

Source: Signal Four Analytics

Table 5-18: Societal Cost of Crashes in Opa-locka HIN for SHS Facilities Only by Severity

	Location	From	To	Cost
1	SR 9	Burlington Street	NW 22 Avenue	$94,224,240
2	NW 27 Avenue	S of NW 132 Street	Superior Street	$10,656,360
3	NW 27 Avenue	NW 151 Street	Ali Baba Avenue	$48,888,180
4	NW 135 Street	NW 24 Avenue	NW 19 Avenue	$19,770,300
5	NW 135 Street	Sesame Street	E of NW 28 Avenue	$18,882,270

Source: Signal Four Analytics

Table 5-19 provides the HIN crash severities for Miami-Dade County roads only, with a total of 21 fatal and severe injuries, and **Table 5-20** provides their accompanying costs which amount to approximately $109 million (FY2019). The societal cost at several locations within the HIN highlighting Miami-Dade County roads surpasses the $20-million mark (FY2019), as seen in **Figure 5-6.**

Table 5-19: Crashes per Type of Severity in Opa-locka HIN for County Roads Only

Crash Severity	Crash Total
Fatal (K)	9
Severe Injury (A)	12
Moderate Injury (B)	0
Minor Injury (C)	0
Property Damage Only (O)	0

Source: Signal Four Analytics

Table 5-20: Societal Cost of Crashes in Opa-locka HIN for County Roads Only by Severity (FY2019)

Crash Severity	Crash Total
Fatal (K)	$98,010,000
Severe Injury (A)	$10,656,360
Moderate Injury (B)	$0.00
Minor Injury (C)	$0.00
Property Damage Only (O)	$0.00

Source: Signal Four Analytics

Table 5-21: Societal Cost of Crashes in Opa-locka HIN for County Roads Only by Severity (FY2019)

	Location	From	To	Cost
1	NW 151 Street	NW 27 Avenue	Perviz Avenue	$25,332,120
2	NW 22 Avenue	NW 139 Street	NW 151 Street	$24,444,090
3	NW 37 Avenue	NW 135 Street	Langley Road	$13,554,090
4	NW 37 Avenue	NW 135 Street	Gratigny Parkway	$23,556,060
5	E 65 Street	E 4 Street	NW 42 Avenue	$21,780,000

Source: Signal Four Analytics

Although the total number of crashes along the HIN with local roads was lower those roads or facilities in the SHS and/or under the jurisdiction of Miami-Dade County, as seen in **Table 5-21**, crashes on those roads still represented a big cost to society. **Table 5-22** shows that the total societal costs for those seven crashes amount to approximately more than $26 million (FY2019), with Ali Baba Avenue and Opa-locka Boulevard above the $10-million mark (FY2019), as outlined in **Figure 5-7**.

Table 5-22: Crashes per Type of Severity in Opa-locka HIN for Local Roads Only

Crash Severity	Crash Total
Fatal (K)	2
Severe Injury (A)	5
Moderate Injury (B)	0
Minor Injury (C)	0
Property Damage Only (O)	0

Source: Signal Four Analytics

Table 5-23: Societal Cost of Crashes in Opa-locka HIN Local Roads by Severity (FY2019)

Crash Severity	Crash Total
Fatal (K)	$21,780,000
Severe Injury (A)	$4,440,150
Moderate Injury (B)	$0.00
Minor Injury (C)	$0.00
Property Damage Only (O)	$0.00

Source: Signal Four Analytics

Table 5-24: Societal Cost of Crashes in Opa-locka HIN for Local Roads Only by Severity (FY2019)

	Location	From	To	Cost
1	Ali Baba Avenue	Kalandar Street	NW 151 Street	$12,666,060
2	Opa Locka Boulevard	Fisherman Street	Burlington Street	$11,778,030
3	Bagdad Avenue	Dunad Street	NW 37 Avenue	$1,776,060

Source: Signal Four Analytics

Throughout the study period, there were over 800 crashes on roads under the City of Opa-locka's jurisdiction, with each severity illustrated in **Table 5-23**. Of the five fatalities reported during the study period, costs to society represented approximately more than $54 million (FY2019), with the total societal cost of all crashes around approximately $102 million (FY2019), as described in **Table 5-24**.

Table 5-25: Crashes per Type of Severity in Opa-locka All Local Roads Only

Crash Severity	Crash Total
Fatal (K)	5
Severe Injury (A)	9
Moderate Injury (B)	27
Minor Injury (C)	92
Property Damage Only (O)	703

Source: Signal Four Analytics

Table 5-26: Societal Cost of Crashes in Opa-locka for All Local Roads by Severity (FY2019)

Crash Severity	Crash Total
Fatal (K)	$54,450,000
Severe Injury (A)	$7,992,270
Moderate Injury (B)	$4,864,860
Minor Injury (C)	$9,563,400
Property Damage Only (O)	$5,413,100

Source: Signal Four Analytics

Table 5-25 shows the crash severities of notable dangerous roads on Opa-locka's network, surmounting to a total of 138 crashes. Of these 138 crashes, the cost to society was approximately $4.1 million (FY2019), with a vast majority of these crashes attributed to minor injuries, as shown in **Table 5-26**. **Figure 5-8** outlines the total cost by severity per location, with each of these locations well above the $1-million mark (FY2019) each.

Table 5-27: Crashes per Type of Severity in Opa-locka for Jann Avenue, Ahmad Street, the Intersection of Rutland Street and NW 22 Avenue, and Cairo Lane

Crash Severity	Crash Total
Fatal (K)	1
Severe Injury (A)	1
Moderate Injury (B)	2
Minor Injury (C)	20
Property Damage Only (O)	131

Source: Signal Four Analytics

Table 5-28: Societal Cost of Crashes by Severity in Opa-locka for Jann Avenue, Ahmad Street, the Intersection of Rutland Street and NW 22 Avenue, and Cairo Lane (FY 2019)

Crash Severity	Crash Total
Fatal (K)	$10,890,000
Severe Injury (A)	$888,030
Moderate Injury (B)	$360,360
Minor Injury (C)	$2,079,000
Property Damage Only (O)	$1,008,700

Source: Signal Four Analytics

Table 5-29: Societal Cost of Crashes in Opa-locka for Jann Avenue, Ahmad Street, the Intersection of Rutland Street & NW 22 Avenue, and Cairo Lane by Severity (FY2019)

	Location	Cost
1	Jann Avenue	$1,485,530
2	Ahmad Street	$1,942,930
3	Rutland and NW 22 Avenue	$1,069,530
4	Cairo Lane	$11,109,450

Source: Signal Four Analytics

Peer City Review

6

VISION ZERO

6. Peer City Review

The "*Peer City Review*" consisted of describing and analyzing the different strategies that other cities have used to address safety and have adopted a Comprehensive Safety Action Plan or a Vision Zero Plan. These identified had evidence of measurable success and an assessment of the most effective and efficient methods used to achieve outcomes. This "*Peer City Review*" also compared the Safety Analysis methodology used by similar-sized municipality with existing CSAP or Vision Zero programs.

This review included a comparison based on crashes per vehicle miles traveled (VMT) or crashes per capita, and/or other measures of crash risks. The "*Peer City Review*" also compared the Vision Zero and Complete Streets policies of similar-sized municipalities to understand best practices for recommending new or revised policies, ordinances, or resolutions to the municipality. Three (3) municipalities were selected from the list of cities shown in **Table 8-1** to be compared in the Peer City Review. The threshold for this peer review included cities with a population of less than 80,000 that have implemented a safety action plan.

Table 6-1: Communities with Adopted Vision Zero Action Plan[78]

State	Community	Original Action Plan	Population
CA	Alameda	2021	78,780
MD	Rockville	2020	67,117
NC	Apex	2022	58,780
NC	Burlington-Graham MPO	2022	57,300
NC	Chapel Hill	2019	61,960
NC	Davidson	2022	15,106
NJ	Hoboken	2021	60,419
PA	Bethlehem	2022	75,781
PA	Harrisburg	2019	50,099
PA	Lancaster	2020	58,039

Source: FHWA Highway Safety Program Vision Zero Action Plans

6.1 Town of Davidson[79]

In 2021, the Town of Davidson in North Carolina developed its CSAP, which was adopted in 2023. With a population of 15,106, Davidson is a small municipality similar to Opa-locka. Small towns like Davidson and Opa-locka face challenges in obtaining certain traffic safety data due to limited sample sizes, making it difficult to use this data to improve traffic safety. Nonetheless, the CSAP for Davidson identified 680 crashes between 2017 and 2021, averaging 136 crashes per year. Among these incidents, there was one fatal crash and two serious injury crashes. In comparison, Opa-locka experienced an average of 1,046 crashes over six years, resulting in 32 fatalities and 87 severe injuries. Like Opa-locka, most crashes in Davidson were managed by the State, in this case

[78] The highlighted cities were selected for peer review
[79] Davidson-Vision-Zero-Action-Plan

the North Carolina Department of Transportation. Analysis showed that all fatal and serious injury (FSI) crashes in Davidson occurred at intersections, with 33% involving younger or older drivers.

Davidson categorized its area into different context zones—Downtown, Commercial/Campus, Residential/Neighborhood, and Rural—to map the High Injury Network. Recommendations and countermeasures were tailored to the unique characteristics of each zone. This approach is noteworthy as Opa-locka's zoning areas, as outlined in the City's Comprehensive Plan and Downtown Master Plan, also have distinct characteristics.

The Town of Davidson identified six main "*Emphasis Areas*" to focus its Vision Zero efforts, based on analysis and stakeholder input. The implemented policies and countermeasures have shown potential for significant improvements in reducing FSI crashes. These improvements include midblock crossings, ongoing education and enforcement, pedestrian safety zones, LED messaging boards in Downtown indicating "*No Right on Red*" for right-turn lanes, additional stop signs, High Intensity Activated Crosswalk (HAWK) signals, and other pedestrian safety enhancements.

6.2 City of Harrisburg[80]

In 2018, the City of Harrisburg in Pennsylvania, launched its Vision Zero initiative by committing to the principles of safe, healthy, and equitable mobility for everyone. The Vision Zero Plan is being implemented in various phases and will continue through 2028, with the ambitious goal of achieving zero traffic fatalities and serious injuries on city streets by 2030.

To support this goal, the city developed a High Injury Network (HIN), which identifies street corridors and intersections with the highest number of fatalities or serious injuries while walking, biking, or riding a motorcycle, based on data from 2014-2018. Although the aim of Vision Zero is to eliminate fatalities and serious injuries, the city included all street corridors and intersections with the highest number of crashes in the network, regardless of severity. Notably, 66% of all traffic-related deaths and severe injuries involving pedestrians, cyclists, and motorcyclists in Harrisburg occur on just 4% of the city's street miles. The HIN highlighted five roads that each had over 12 FSI crashes. The city also identified specific intersections where most FSI crashes occurred. To better understand the distribution of traffic deaths, each corridor was ranked based on the combined FSI per mile, with the highest density at the top. This analysis allowed the city to pinpoint the main roads requiring improvements. The Vision Zero Plan includes an implementation strategy to optimize and coordinate efforts across various city departments.

The City of Harrisburg then identified the top five locations with the highest FSI crash rates and began evaluating them to implement improvements. These improvements are being carried out through construction projects, quick-build solutions, operational changes, community education, enforcement by the police department and city staff, and ongoing evaluation to monitor the performance of these efforts. By focusing on these high-priority areas, the city aims to significantly reduce traffic-related deaths and serious injuries, moving closer to the Vision Zero goal.

[80] City of Harrisburg Vision Zero Action Plan

6.3 City of Lancaster[81]

The City of Lancaster in Pennsylvania is committed to eliminating traffic-related deaths and serious injuries by 2030. By adopting its Vision Zero Plan in 2020, the city is dedicated to working collaboratively with community members and partners to implement this plan, phase by phase. Crash data from 2014-2018 revealed a total of 3,462 crashes within the city, with an average of 15 people per year either dying or suffering a severe injury. These numbers are significantly lower than those in the City of Opa-locka, which has an average of 19 people per year dying or suffering severe injuries.

Severe and fatal crashes involving motor vehicles account for 38% of the total in the city, while pedestrian-related crashes make up 25%. In contrast, in Opa-locka, motor vehicle crashes represent 59.7% of FSI crashes, and pedestrian-related crashes account for 21.8% of FSI crashes. Similar to Opa-locka, speeding and aggressive driving are two of the five main risky behaviors contributing to more serious crashes in Lancaster.

The city's HIN is a crucial element in identifying areas for improvement. Despite comprising only 6% of the city's streets, the HIN accounts for 77% of serious and fatal crashes. Additionally, the HIN is the location of 66% of all bicycle and pedestrian crashes, regardless of severity. Using GIS mapping and manual review, 19 streets with segments on the HIN were identified. These findings were thoroughly vetted by city staff and members of the Steering Committee.

To address these issues, Lancaster's Vision Zero Plan outlines a comprehensive strategy that includes infrastructure improvements, policy changes, and community engagement. The plan aims to reduce speeding and aggressive driving through measures such as traffic calming, enhanced enforcement, and public awareness campaigns. By focusing on the HIN, the city intends to prioritize investments in the most dangerous areas, thereby maximizing the impact of its efforts to improve safety for all road users.

6.4 Lessons Learned from Peer Review

These three plans underscore the critical importance of data-driven strategies, targeted interventions, and collaborative efforts in enhancing traffic safety. Opa-locka faces a significantly higher incidence of crashes and fatal or serious injury (FSI) crashes. Despite these challenges, the methods employed by each city to create their HIN and identify high-risk intersections and corridors for pedestrians, cyclists, and motorcyclists are both relevant and valuable. These strategies are shaped by comprehensive feedback from diverse stakeholders. Notably, both Harrisburg and Lancaster have requested revisions of their HINs based on thorough data analysis. The recommendations from all three cities include a series of actionable steps designed for implementation across short, mid, and long-term timelines. This structured approach ensures that immediate needs are addressed while also laying the groundwork for sustained improvements in traffic safety over time and accomplishing their Vision Zero goal.

[81] City of Lancaster Vision Zero Action Plan

High Injury Network

7

7. High Injury Network

One of the primary reasons to perform the crash data analysis is to understand where to prioritize safety improvements. Signal 4 crash data was used to identify the high fatality and severe injury locations to develop a High-Injury Network (HIN), as described in **Section 3** of this report. The goal of the HIN is to develop a network of road segments that represent 40% or more percent of fatal and incapacitating crashes on 5-20% of the total road miles within the city limits. It identifies the highest concentration of FSI crashes within a half-mile distance. Over the last six years, crash data across Opa-locka was scrutinized to pinpoint areas with either frequent or severe crashes. The HIN was devised, encompassing all roads irrespective of ownership following the methodology described below.

7.1 Methodology Used to Establish the High Injury Network

The establishment of Opa-locka's HIN was a comprehensive, data-driven, and context-specific initiative designed to pinpoint the most perilous streets for traffic injuries and fatalities, particularly impacting vulnerable road users like pedestrians and cyclists. This meticulous process involved several critical steps and multifaceted analyses to ensure a thorough understanding of the unique traffic safety challenges within the city.

After performing an extensive literature review in **Section 2**, the analysis process involved the collection and integration of extensive data sets. This included detailed crash data encompassing various factors such as the locations of incidents, severity, types of road users involved, and temporal patterns. Roadway geometry characteristics, such as lane widths, intersection types, and presence of pedestrian and bicycle facilities, were meticulously analyzed. Additionally, to ensure the HIN was tailored to Opa-locka's unique context, several specific analyses were conducted:

- **Proximity to Public Transportation**: Crashes near bus stops, transit stations, and other public transportation hubs were closely examined to identify hotspots where high pedestrian traffic intersected with vehicular traffic.
- **Critical Freight Intersections:** Intersections and corridors frequently used by freight vehicles were analyzed to understand their impact on road safety and the potential conflicts with other road users.
- **Railroad Crossings:** The safety of railroad crossings was evaluated, given their potential as high-risk areas for severe crashes.
- **Schools and Educational Institutions:** The areas surrounding schools were scrutinized to identify risks to schoolchildren and propose measures to enhance their safety.

Traffic volume data was also integrated to assess the correlation between traffic density and crash occurrences. Areas with high traffic volumes were flagged for further scrutiny. Additionally, gaps in existing road facilities, such as missing sidewalks and the absence of bike lanes, were identified as critical factors contributing to road safety issues. **Table 7-1** describes the scoring used to evaluate each criterion accounted for during the analysis[82].

[82] Lighting was not used as a criterion for scoring due to incomplete data. A comprehensive inventory of existing facilities across the city is needed to further assess its impact on FSI crashes.

Table 7-1: HIN Development Criteria and Scoring

Criterion	Scoring
Functional Classification	Expressway – 5 Principal Arterial – 4 Minor Arterial – 3 Major Collector – 2 Local – 1
Roadway Jurisdiction	FDOT – 3 Miami-Dade County – 2 City of Opa-locka – 1
Speed Limit	50 mph or more – 5 45 mph – 4 40 mph – 3 35 mph – 2 30 mph or less– 1
AADT	50,000 VPD or more – 5 40,000 VPD to 50,000 VPD – 4 30,000 VPD to 40,0000 VPD – 3 20,000 VPD to 30,000 VPD – 2 20,000 VPD or less – 1
Number of Lanes on each Direction	3 lanes or more -3 2 lanes – 2 1 lane – 1
Road Division	Divided – 3 Undivided – 2 One way – 1
Near a Critical Freight Intersection	Yes – 1 No - 0
Within a ¼-mile from a School	Yes – 1 No - 0
Near a Bus Stop	Yes – 1 No – 0
Existing Cycling Facility	No – 1 Yes - 0
Near a RR Crossing	Yes – 1 No - 0
Existing Sidewalk	No – 1 Yes -0
Cycling LTS	Stressful – 1 Low Stress - 0

By following this detailed and systematic scoring approach, Opa-locka's HIN was effectively established through the ranking of different high injury corridors pre-selected based on crashworthiness scores, detailed in **Table 7-2**, resulting from a weighted sum based on:

- **Fatality Rate:** The number of fatalities per corridor.
- **Severe Injury Rate:** The number of severe injuries per corridor.
- **Mode Rate:** The number of crashes per mode of transportation per corridor.
- **Crash Risk Rate:** The number of FSI crashes per corridor.

Table 7-2: Crashworthiness Criteria and Scoring

Criterion	Scoring Weight per Crash
Fatality Rate	Fatality – 2
Severe Injury Rate	Severe Injury – 1
Mode Rate	Pedestrian – 4 Bicyclist – 3 Motorcycle – 2 Automobile – 1
Crash Risk Rate	FSI Crash – 1

The crashworthiness scores or effective crash value will represent the total scoring weights placed on a crash event, giving particular emphasis to the safety of vulnerable users, such as pedestrians and cyclists. This means that the scoring system will prioritize the protection of these at-risk groups in its assessment criteria. By doing so, the framework aims to ensure that vehicle designs, road layouts, and traffic regulations are evaluated and improved with a focus on minimizing harm to those who are most susceptible to injury or fatality in the event of a collision. This approach recognizes the higher risks faced by pedestrians and cyclists and seeks to enhance their safety through more rigorous and targeted safety measures.

7.2 Analysis of Citywide High Injury Corridors to Establish the High Injury Network

Ranking high injury corridors was a critical step in establishing a HIN. This process involved prioritizing segments of the road network based on the frequency, severity, and specific characteristics of traffic crashes. The objective was to identify and rank corridors where interventions will have the greatest impact on reducing injuries and fatalities.

High crash density corridors were identified through spatial analysis by dividing the road network into manageable segments based on logical boundaries such as intersections, changes in road characteristics, or administrative boundaries. The five high injury corridors summarized in **Table 7-3** collectively represent 41% of all fatal and severe injury (FSI) crashes, and 37% of all pedestrian and cyclist FSI crashes in Opa-locka. The crashworthiness scores or effective crash values of these corridors were calculated to evaluate their overall risk as summarized in **Table 7-4**. Composite scores for each corridor were also developed as a weighted sum based on the previously described multifactor criteria. These scores were used to rank the corridors from highest to lowest risk. **Table 7-5** summarizes the results of the analysis, and **Table 7-6** illustrates the scoring matrix comparing all five high injury corridors identified.

Table 7-3: Crash Details of High Injury Corridors Citywide per Crash Numbers – SHS Facilities only

Location	From	To	Serious Injury	Fatal	% of All FSI Crashes	Mode of Transportation Involved in Crashes			
						Pedestrian	Bicycle	Motorcycle	Automobile
NW 27 Avenue	S of NW 132 Street	Superior Street	12	0	10%	1	1	4	6
SR 9	Burlington Street	NW 22 Street	6	6	10%	1	1	2	8
NW 135 Street	NW 24 Avenue	NW 19 Avenue	10	1	9%	1	0	2	8
NW 27 Avenue	NW 151 Street	Ali Baba Avenue	4	3	8%	4	0	2	3
NW 135 Street	Sesame Street	E of NW 28 Avenue	8	1	8%	2	0	4	3

Source: Signal Four Analytics

Table 7-4: Crashworthiness Scoring of High Injury Corridors Citywide – SHS Facilities only

Location	From	To	Crash Risk Rate	Severe Injury Rate	Fatality Rate	Mode Rate	Crashworthiness	Ranking
SR 9	Burlington Street	NW 22 Street	12	6	12	19	49	1
NW 27 Avenue	S of NW 132 Street	Superior Street	12	12	0	21	45	2
NW 27 Avenue	NW 151 Street	Ali Baba Avenue	9	4	6	23	42	3
NW 135 Street	NW 24 Avenue	NW 19 Avenue	11	10	2	16	39	4
NW 135 Street	Sesame Street	East of NW 28 Avenue	9	8	2	19	38	5

Source: Signal Four Analytics

Table 7-5: Summary of Criteria Analysis of High Injury Corridors Ranked by Crashes – SHS Facilities only

	1	2	3	4	5
Functional Classification	Principal Arterial	Principal Arterial	Principal Arterial	Minor Arterial	Minor Arterial
Roadway Jurisdiction	State Road	State Road	State Road	State Road	State Road
Speed Limit	45 MPH	45 MPH	35 MPH	40 MPH	40 MPH
AADT	29,450	52,000	41,500	15,000	22,500
Number of Lanes in Each Direction	2	3	3	3	2
Road Division	Divided	Divided	Divided	One-way	Undivided
Near a Critical Freight Intersection	Yes	Yes	Yes	No	No
Within 1/4-mile from a school	Yes	Yes	No	Yes	Yes
Near a Bus Stop	Yes	Yes	Yes	Yes	Yes
Cycling Facility	Yes	No	No	No	No
Near a RR Crossing	Yes	No	Yes	No	No
Existing Sidewalk	No	Yes	Yes	Yes	Yes
Cycling LTS	Stressful	Stressful	Stressful	Stressful	Stressful

Source: Miami-Dade County Open Data Hub

Table 7-6: Scoring Matrix of Opa-locka's Top 5 High Injury Corridors – SHS Facilities only

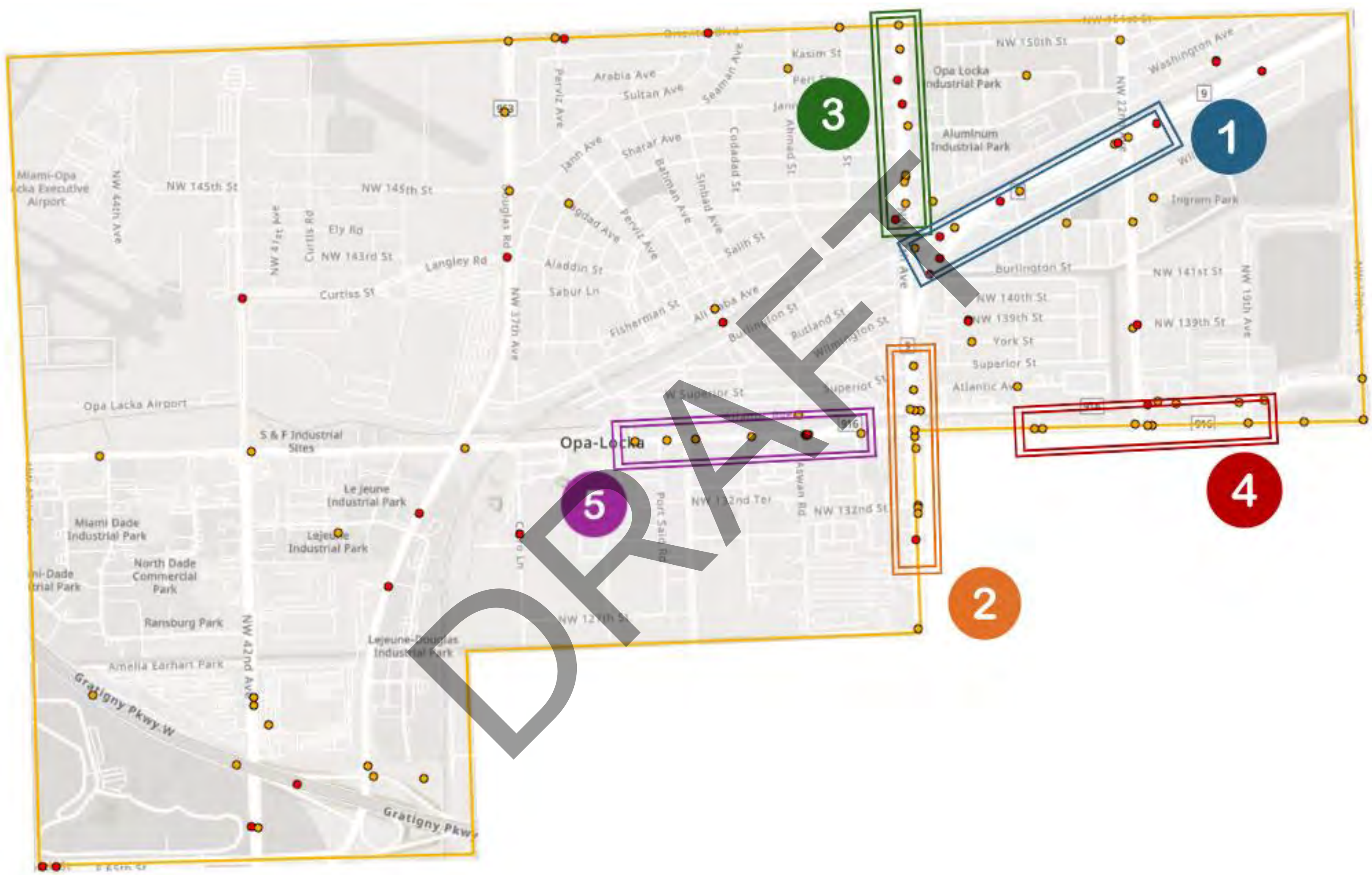
Criterion	Ranked Corridors Based On Crashes				
	1	2	3	4	5
	SR 9	NW 27 Avenue	NW 27 Avenue	NW 135 Street	NW 135 Street
Functional Classification	4	4	4	3	3
Roadway Jurisdiction	3	3	3	3	3
Speed Limit	4	4	2	3	3
AADT	3	4	4	1	2
Number of Lanes in Each Direction	2	3	3	2	2
Road Division	3	3	3	2	2
Near a Critical Freight Intersection	1	1	1	0	0
Within a 1/4-mile from a School	1	0	0	1	0
Near a Bus Stop	1	1	1	1	1
Existing Cycling Facility	1	0	0	0	0
Near a RR Crossing	1	0	1	0	0
Existing Sidewalk	0	1	1	1	1
Cycling LTS	1	1	1	1	1
Crashworthiness	49	45	42	39	38
TOTAL	**74**	**70**	**66**	**57**	**56**
FINAL RANK:	**1**	**2**	**3**	**4**	**5**

Source: Miami-Dade County Open Data Hub

Map 7-1 illustrates the citywide High Injury Network, highlighting the top five high injury corridors, all of which fall under the jurisdiction of FDOT. This is consistent with the statistic that 67% of FSI crashes occur on facilities that are part of the State Highway System (SHS). These corridors and intersections were identified based on crash types to prioritize enhanced safety measures for the most vulnerable road users. Improvements on these facilities will need to be coordinated with FDOT as part of "*Target Zero*," the agency's statewide initiative aimed at reducing transportation-related serious injuries and deaths across Florida to zero[83].

83 Target Zero

Map 7-1: Citywide High Injury Network – SHS Facilities only



Source: Signal 4 Analytics

7.3 Lesser-Hierarchy High Injury Corridors as part of the High Injury Network

Approximately 33% of FSI crashes in Opa-locka occur on County and local roads. Consequently, the top five segments of the lesser-hierarchy road network were prioritized based on the frequency, severity, and specific characteristics of traffic crashes. These identified facilities also include segments of SHS facilities transitioning jurisdiction into County roads. **Table 9-5** summarizes these corridors' statistics, which combined represent around 15% of the total FSI crashes taking place citywide, with NW 151 Street between Perviz Avenue and NW 27 Avenue registering approximately 4% of all crashes in Opa-locka. Similar to the approach for SHS facilities, composite scores for each corridor were developed for County and local roads. These scores, calculated as a weighted sum based on the previously described multifactor criteria, were then used to rank the corridors from highest to lowest risk.

Map 7-2 depicts the citywide High Injury Network for County roads, emphasizing the top five high injury County corridors or segments of SHS facilities transitioning into County roads. Improvements on these facilities will need to be coordinated with the Miami-Dade County DTPW as part of the "*Vision Zero Framework*," a countywide safety initiative aimed at eliminating all traffic fatalities and severe injuries by 2040, while enhancing the safety, mobility, and health of all Miami-Dade County residents. Notably, NW 22 Avenue from NW 135 Street to NW 151 Street, and NW 37 Avenue from Ali Baba Avenue to NW 151 Street, have already been identified in the Miami-Dade County Action Plan Update (2023) as part of the countywide HIN[84]. In the updated plan, NW 37 Avenue from Ali Baba Avenue to NW 151 Street is ranked number 33 in the total countywide ranking for safety concerns and improvements. Additionally, the plan identified a total of FSI crashes that occurred within the city over a five-year period, from 2018 to 2022. A significant contributing factor to these crashes was aggressive driving. The data revealed that aggressive driving was the leading cause, accounting for 28.6% of such incidents across the entire Miami-Dade County. This highlights the urgent need for targeted interventions to address aggressive driving and enhance overall road safety in the area.

The five (5) high injury County corridors summarized in **Table 7-7**, collectively representing more than 15% of all fatal and severe injury (FSI) crashes in Opa-locka. The crashworthiness scores or effective crash values of these corridors are summarized in **Table 7-8**, calculated to evaluate their overall risk. **Table 7-9** summarizes the results of the analysis per corridor, and **Table 7-10** illustrates the scoring matrix comparing all five high injury corridors identified under Miami-Dade County jurisdiction.

[84] Miami-Dade County DTPW Vision Zero Map – 2023 Action Plan Update HIN

Table 7-7: Top 5 High Injury County or SHS-Transitioning Corridors Crash Details

Location	From	To	Serious Injury	Fatal	% of All FSI Crashes	Mode of Transportation Involved in Crashes			
						Pedestrian	Bicycle	Motorcycle	Automobile
NW 151 Street	NW 27 Avenue	Perviz Avenue	3	2	4.2%	0	2	2	1
NW 22 Avenue	NW 139 Street	NW 151 Street	3	1	3.4%	1	0	1	2
NW 37 Avenue	NW 135 Street	Langley Road	2	1	3.4%	0	0	1	3
NW 37 Avenue	NW 135 Street	Gratigny Parkway	1	2	2.5%	0	0	0	3
E 65 Street	E 4 Street	NW 42 Avenue	0	2	1.7%	2	0	0	0

Source: Signal Four Analytics

Table 7-8: Crashworthiness Scoring of High Injury County or SHS-Transitioning Corridors

Location	From	To	Crash Risk Rate	Severe Injury Rate	Fatality Rate	Mode Rate	Crashworthiness	Ranking
NW 151 Street	NW 27 Avenue	Perviz Avenue	5	3	4	11	23	1
NW 22 Avenue	NW 139 Street	NW 151 Street	4	3	2	7	16	2
E 65 Street	E 4 Street	NW 42 Avenue	2	0	4	8	14	3
NW 37 Avenue	NW 135 Street	Langley Road	3	2	2	5	12	4
NW 37 Avenue	NW 135 Street	Gratigny Parkway	3	1	4	3	11	5

Source: Signal Four Analytics

Table 7-9 Summary of Criteria Analysis of County Roads Ranked by Crashes

	1	2	3	4	5
Functional Classification	Major Collector	Minor Arterial	Minor Arterial	Minor Arterial	Minor Arterial
Roadway Jurisdiction	County Road	County Road	County Road	County Road	County Road
Speed Limit	35 MPH	40 MPH	40 MPH	40 MPH	40 MPH
AADT	9,700	20,700	25,500	26,000	23,000
Number of Lanes in Each Direction	2	2	2	2	2
Road Division	Undivided	Divided	Divided	Divided	Divided
Near a Critical Freight Intersection	No	Yes	No	No	No
Within 1/4-mile from a school	No	No	No	No	No
Near a Bus Stop	Yes	Yes	Yes	Yes	Yes
Cycling Facility	Yes	Yes	No	No	No
Near a RR Crossing	No	Yes	No	No	No
Existing Sidewalk	Yes	Yes	Yes	Yes	Yes
Cycling LTS	Stressful	Stressful	Stressful	Stressful	Stressful

Source: Miami-Dade County Open Data Hub

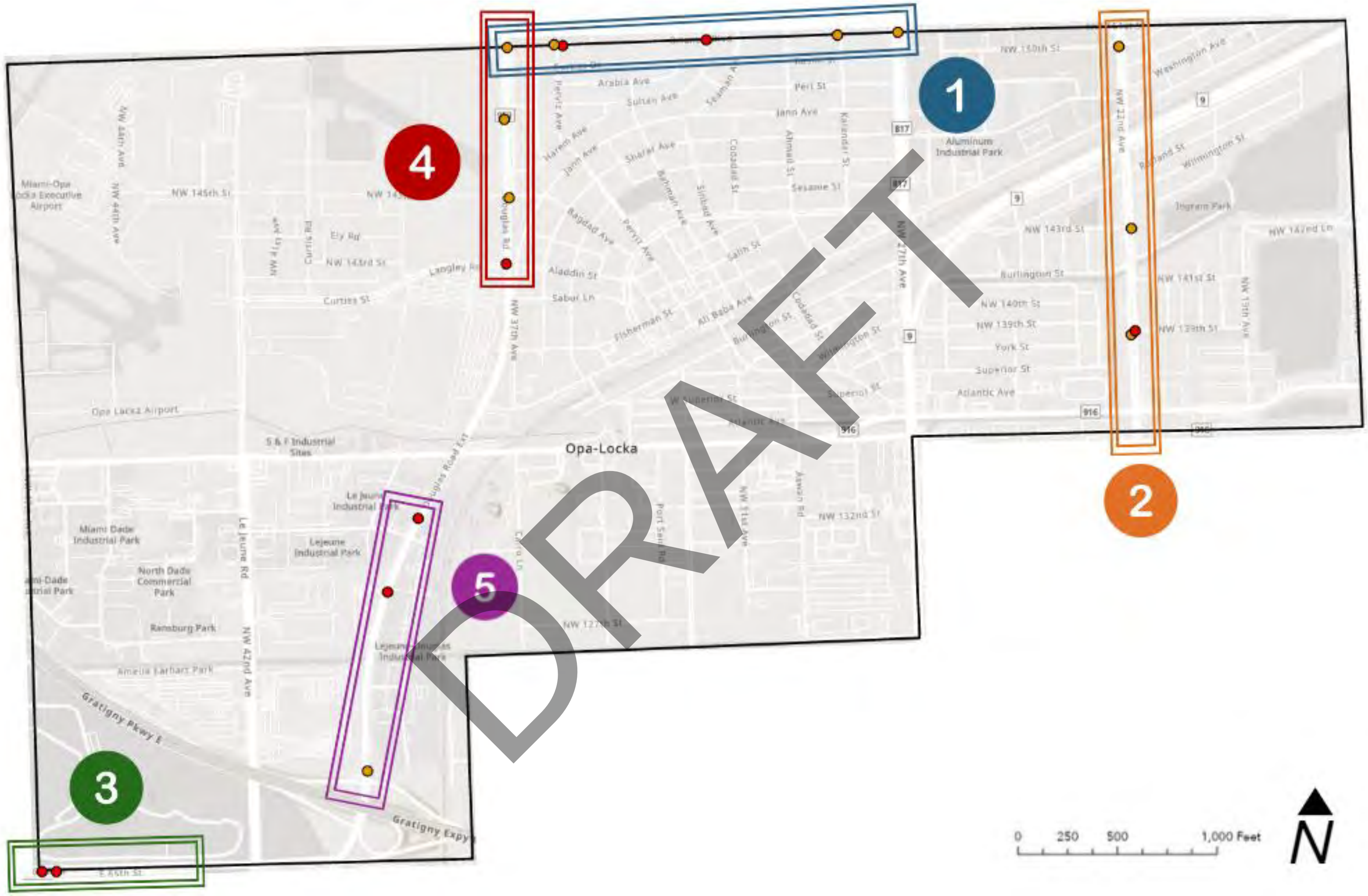
Table 7-10: Scoring Matrix of Opa-locka's Top 5 High Injury County Roads

Criterion	Ranked Corridors Based On Crashes				
	1	2	3	4	5
	NW 151 Street	NW 22 Avenue	E 65 Street	NW 37 Avenue	NW 37 Street
Functional Classification	2	3	3	3	3
Roadway Jurisdiction	2	2	2	2	2
Speed Limit	2	3	3	3	3
AADT	2	1	1	2	2
Number of Lanes in Each Direction	2	2	2	2	2
Road Division	3	2	3	3	3
Near a Critical Freight Intersection	0	1	0	0	0
Within a 1/4-mile from a School	0	0	0	0	0
Near a Bus Stop	1	1	1	1	0
Existing Cycling Facility	1	0	0	0	0
Near a RR Crossing	0	0	0	0	0
Existing Sidewalk	1	1	1	0	1
Cycling LTS	1	1	1	1	1
Crashworthiness	23	16	14	12	11
TOTAL	40	33	31	29	28

FINAL RANK: 1 2 3 4 5

Source: Miami-Dade County Open Data Hub

Map 7-2: High Injury Network for Lesser-Hierarchy Roads – County Roads



Source: Signal Four Analytics

To integrate Vision Zero principles into the Capital Improvements Plans (CIPs) for local roads under the jurisdiction of the City of Opa-locka, it is essential to pinpoint where enhancements in road safety and infrastructure are needed. Potential measures include traffic calming techniques, bicycle and pedestrian safety improvements, intersection upgrades, and enhancements in lighting and visibility. These can be incorporated into the city's CIP to achieve the goal of reducing fatalities and severe injuries on roads managed by the municipality.

Several notable locations within the city where crashes occurred include Jann Avenue, Ahmad Street, and the intersection of Rutland Street and NW 22 Avenue. Within the analysis period between 2018 and 2023, there was a total of 139 crashes regardless of crash severity[85]. The data indicates that 71% of crashes occurred during daytime hours, and about 50% of the crashes were the result of drivers running a stop sign or a rear end collision. These two types of collisions collectively account for half of crashes on these roadways, highlighting the need for increased awareness and preventative measures to address these specific behaviors. Failing to yield to stop signs leads to unsafe intersection collisions, while rear end crashes are frequently caused by following too closely or not paying attention to the traffic flow ahead.

Although the frequency and number of FSI crashes are significantly lower on city roads compared to those on the SHS or roads under County jurisdiction, and despite the absence of a clear pattern or localized occurrence, a "*local road*" HIN was developed. The three (3) high injury local roads corridors summarized in **Table 7-11**, collectively representing almost 6% of all FSI crashes in Opa-locka. The crashworthiness scores or effective crash values of these corridors are summarized in **Table 7-12**, calculated to evaluate their overall risk. **Table 7-13** summarizes the results of the analysis per corridor, and **Table 7-14** illustrates the scoring matrix comparing all five high injury corridors identified under the City of Opa-locka's jurisdiction. **Map 7-3** depicts the citywide HIN for local roads, identifying high crash corridors outside the SHS and County-maintained roads.

[85] This includes crashes outside of reported fatal and serious injuries

Table 7-11: Top 3 High Injury Locations on Local Road Crash Details

Location	From	To	Serious Injury	Fatal	% of All FSI Crashes	Mode of Transportation Involved in Crashes			
						Pedestrian	Bicycle	Motorcycle	Automobile
Ali Baba Avenue	Kalandar Street	NW 151 Street	2	2	2.5%	1	0	2	1
Opa locka Boulevard	Fisherman Street	Burlington Street	1	1	1.7%	0	0	0	2
Bagdad Avenue	Dunad Street	NW 37 Avenue	2	0	1.7%	0	0	0	2

Source: Signal Four Analytics

Table 7-12: Crashworthiness Scoring of High Injury Local Corridors

Location	From	To	Crash Risk Rate	Severe Injury Rate	Fatality Rate	Mode Rate	Crashworthiness	Ranking
Ali Baba Avenue	Kalandar Street	NW 151 Street	4	2	4	9	19	1
Opa-locka Boulevard	Fisherman Street	Burlington Street	2	1	2	2	7	2
Bagdad Avenue	Dunad Street	NW 37 Avenue	2	2	0	2	6	3

Source: Signal Four Analytics

Table 7- 13: Summary of Criteria Analysis of Local Roads Ranked by Crashes

	1	2	3
Classification	Major Collector	Local Road	Local Road
Roadway Jurisdiction	Local Road	Local Road	Local Road
Speed Limit	30 MPH	30 MPH	30 MPH
AADT	7,100	Not Available	Not Available
Number of Lanes in Each Direction	1	1	1
Road Division	Undivided	Undivided	Undivided
Near a Critical Freight Intersection	No	Yes	No
Within 1/4-mile from a school	Yes	No	No
Near a Bus Stop	Yes	Yes	Yes
Cycling Facility	No	No	No
Near a RR Crossing	No	Yes	No
Existing Sidewalk	Yes	Yes	No
Cycling LTS	Stressful	Stressful	Stressful

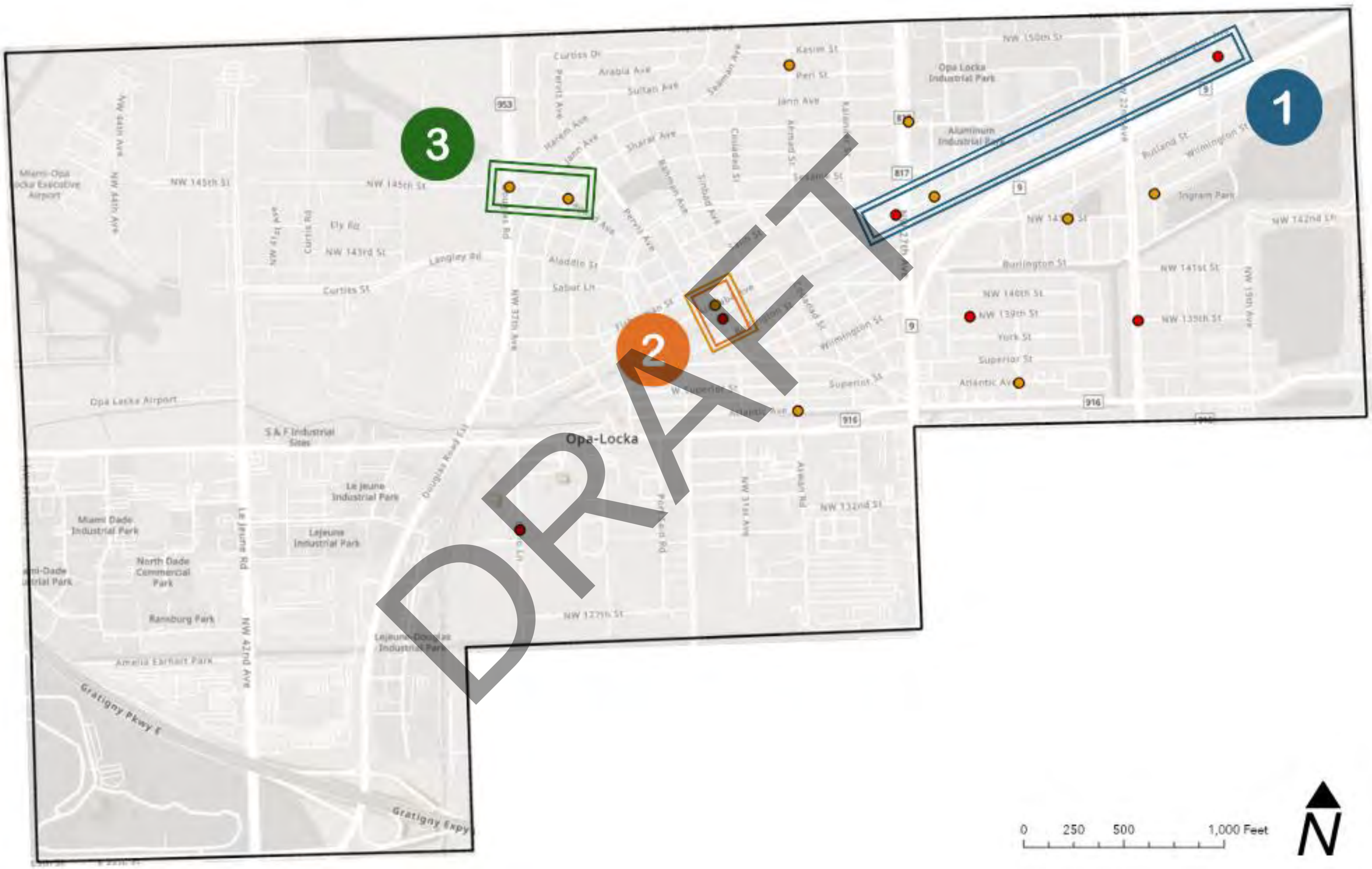
Source: Miami-Dade County Open Data Hub

Table 7-14: Scoring Matrix of Opa-locka's Top 3 High Injury Local Roads

Criterion	Ranked Corridors Based On Crashes		
	1	2	3
	Ali Baba Avenue	Opa locka Boulevard	Bagdad Avenue
Functional Classification	2	1	1
Roadway Jurisdiction	1	1	1
Speed Limit	1	1	1
AADT	1	0	0
Number of Lanes in Each Direction	1	1	1
Road Division	2	2	2
Near a Critical Freight Intersection	0	1	0
Within a 1/4-mile from a School	1	0	0
Near a Bus Stop	1	1	1
Existing Cycling Facility	0	0	0
Near a RR Crossing	0	1	0
Existing Sidewalk	1	1	0
Cycling LTS	1	1	0
Crashworthiness	19	7	6
TOTAL	31	18	13
FINAL RANK:	1	2	3

Source: Miami-Dade County Open Data Hub

Table 7-15: High Injury Network for Lesser-Hierarchy Roads – Local Roads



Source: Signal Four Analytics

Policy Review

8

8. Policy Review

8.1 Existing Policies

Upon reviewing the existing policies, a significant opportunity to develop new guidelines focused on enhancing road safety and encouraging multimodal transportation was identified. This review process is a key component of the City of Opa-locka's CSAP. It involves an in-depth analysis of the existing policies and procedures that the City has implemented or adopted to keep the streets safe and in good condition.

The Sustainable Opa-locka 20/30 Comprehensive Plan's[86] Transportation Element, includes four (4) critical areas that align with Vision Zero principles, as outlined in **Table 10-1**: the Transportation Master Plan, Bicycle and Pedestrian Master Plan, Level of Service (LOS) Standardization, and Complete Streets.

Table 8-1: City of Opa-locka Existing Policy Matrix

Policy	Comprehensive Plan Reference	Summary
Transportation Master Plan	Policy T-3.3 (page 79)	Implement priority intersection and roadway improvements as outlined in its Transportation Master Plan. The city's Transportation Master Plan was adopted by the City Commission and implemented to a minimum extent.
Bicycle and Pedestrian Master Plan	Policy T-4.1	The City of Opa-locka shall adopt a Bicycle and Pedestrian Master Plan by 2020. The city has not developed nor adopted this Bicycle and Pedestrian Master Plan as of September 2024.
LOS Standardization	Objective T-1, Policies T-1.1, T-1.2, T-1.3 (page 75)	Safe and efficient transportation system through maintaining and surpassing level of service (LOS) standards. LOS standards for state roadways, all roadways, bicycle and pedestrian facilities have been defined in the Transportation Element.
Complete Streets	Policy T-3.4 (page 79)	The policy states that in coordination with other agencies, potential corridors will be identified to transform its arterial roads into "*Complete Streets*" to accommodate all modes of travel.

Source: Sustainable Opa-locka 20/30 Comprehensive Plan

[86] The City of Opa-locka adopted the Sustainable Opa-locka 20/30 Comprehensive Plan through Ordinance 15-20, which outlines the city's vision for its growth and development through 2030.

8.1.1 Vision Zero

Vision Zero is a comprehensive strategy designed to eliminate all traffic fatalities and severe injuries, while fostering safe, healthy, and equitable mobility. This approach is based on the principle that no loss of life due to traffic incidents is acceptable, and that most crashes can be prevented through a combination of planning, enforcement, education, and engineering. Vision Zero places a high priority on human life and health in the design of transportation systems, recognizing that while human error is inevitable, fatal crashes are not. The strategy focuses on making systemic changes rather than solely addressing individual behaviors. A compelling example of its effectiveness can be seen in Fremont, CA, where a population of around 230,000 saw a 45% reduction in traffic fatalities over three years through the implementation of Vision Zero principles[87].

The implementation of Vision Zero typically involves several key strategies, including lowering speed limits in residential areas, redesigning high-crash intersections, improving pedestrian and bicycle infrastructure, targeting enforcement of dangerous driving behaviors, and running public awareness campaigns about road safety. In December 2022, the City of Opa-locka's City Commission passed and adopted Resolution No. 22-066[88] to ratify the SS4A grant application and consequently, develop a comprehensive safety action plan, as part of the Opa-locka 2030 Comprehensive Plan, adopted by the City Commission in 2021. Through this Action Plan, the city aims to achieve its Vision Zero goal of eliminating fatalities and reducing serious injuries by 2030. By embracing Vision Zero, Opa-locka could not only enhance safety but also improve the overall quality of life, create more equitable transportation options, and encourage higher rates of walking and cycling.

Yet, implementing Vision Zero comes with challenges, including securing adequate funding, updating outdated transportation policies, and gaining public support for measures that may initially reduce traffic speeds. Despite these hurdles, New York City has successfully reduced traffic fatalities by 29% since adopting Vision Zero in 2014. The city has undertaken Street Improvement Projects, which incorporate safety-focused engineering solutions like street redesigns and optimized traffic signals. These initiatives aim to not only organize traffic flow and improve travel times but also create safer pedestrian crossings and dedicated bicycle routes. Importantly, the city's approach includes an equity component, ensuring that neighborhoods with higher non-white populations benefit from more street redesign miles. Similarly, the City of Opa-locka will integrate this equity focus into its recommendations for short-, mid-, and long-term improvements. By committing to a sustained, strategic effort through its Action Plan, Opa-locka has the potential to achieve significant road safety improvements, enhancing livability and accessibility for all its residents.

8.1.2 Other Initiatives

The City of Opa-locka has implemented various initiatives to ensure its roads are safe and well-maintained for all residents. One of the most recent efforts is a sidewalk and curb assessment currently underway. Preliminary data reveals that only 25% of sidewalks meet compliance

[87] City of Freemont Safety and Vision Zero
[88] Resolution No. 22-066 – City of Opa-locka

standards, scoring 80 or above. Additionally, curbs require significant upgrades, as only 40% are compliant according to the same early findings.

To address these issues and enhance road safety, the City is taking proactive steps through several key programs. Two notable efforts include the "*Pothole Repairs*[89]" program and the "*Build Better Opa-locka*[90]" initiative, which encourage residents to participate in road maintenance by reporting issues and requesting repairs. This collaborative approach not only empowers the community but also ensures that the city's streets are consistently kept in good condition.

The impact of these initiatives is already visible, as they have played a crucial role in minimizing potholes and maintaining the overall quality of the roads. Additionally, the city has implemented a comprehensive street maintenance schedule, which ensures regular cleaning, debris removal, and landscape upkeep, including the care of trees, shrubs, and other greenery along the roads. These efforts not only improve the city's visual appeal but also make travel safer and more pleasant for pedestrians, cyclists, and motorists alike.

Despite these substantial initiatives, Opa-locka faces an urgent need for more targeted, city-specific transportation plans and policies. Historically, the city has relied heavily on broader programs managed by Miami-Dade County or the Florida Department of Transportation (FDOT), leaving certain local needs unmet. To address these gaps, the city must incorporate tailored transportation strategies into its Capital Improvements Program (CIP) and execute them as part of a cohesive, long-term vision.

In response to this challenge, a series of carefully crafted policy recommendations has been developed, drawing on best practices from peer cities and agencies, as outlined in **Section 6** of this report. These recommendations aim to improve safety and accessibility for all users, whether they are pedestrians, cyclists, motorists, or public transit riders. The ultimate objective is to create a more sustainable, efficient, and inclusive transportation network that meets the diverse needs of Opa-locka's community, ensuring the city is well-equipped for future growth and development.

[89] Pothole Repairs
[90] Build Better Opa-locka

8.2 Summary of Best Practices Policies

The preliminary assessment highlighted eight key policy areas that have the potential to significantly improve transportation safety and accessibility in Opa-locka. These policy areas, outlined in **Table 8-1** and elaborated on in this section, have been successfully implemented in several cities across Florida, serving as proven models for enhancing transportation systems. By adopting these policies, Opa-locka can establish a solid foundation for its own transportation improvements, ensuring safer and more accessible travel for all residents and visitors.

Table 8-2: City of Opa-locka Policy Best Practices Matrix

Policy	Description
Complete Streets	Complete Streets design ensures safe access for all users, including pedestrians, cyclists, motorists, and transit riders.
Traffic Calming	Traffic calming measures like speed bumps and narrowed lanes can reduce vehicle speeds in residential areas.
ADA Transition Plan	ADA transition plans make sure infrastructure complies with accessibility standards.
Speed Management	Implementing strategies to control vehicle speeds, reducing the risk of crashes.
Multi-modal Mobility Plan	Multi-modal mobility plans integrate various transportation modes into a cohesive network.
Quality of Service Policy	Quality of Service policies address issues like congestion, road maintenance, and service levels.
Traffic Enforcement Policy	Guidelines and procedures for enforcing traffic laws to ensure compliance, and fair treatment of all road users.

8.2.1 Complete Streets

A "*Complete Streets*" policy is a cornerstone of a modern transportation network, essential for creating a safe and accessible environment for all users, regardless of their mode of transportation or individual abilities. Complete Streets are designed to accommodate everyone—whether driving, walking, cycling, or using public transit—by focusing on mobility for people of all ages and abilities.

These policies not only enhance safety but also foster community engagement, instill civic pride, and improve the overall quality of life for residents. They are typically supported by roadway design guidelines that set specific standards and best practices for implementation. For example, the City of Orlando's adoption of a Complete Streets policy has had a profound impact on pedestrian safety, resulting in a 40% reduction in pedestrian fatalities since its implementation in 2015[91]. This

[91] Champion Spotlight: Orlando, Florida – Smart Growth America (2024)

policy marked a significant shift in how the city approached urban planning and transportation infrastructure, prioritizing the safety and accessibility of all road users—pedestrians, cyclists, and motorists alike—over the traditional focus on maximizing vehicle throughput.

By embracing the principles of Complete Streets, Orlando undertook a comprehensive re-evaluation of its streetscape design. The city implemented a variety of safety enhancements as seen in **Table 11-2**, including the installation of wider and improved crosswalks, pedestrian refuge islands, and dedicated bike lanes. Traffic calming measures, such as lower speed limits, narrowed traffic lanes, and the addition of roundabouts, were also introduced to reduce vehicle speeds and minimize the likelihood and severity of collisions. In addition to physical infrastructure changes, the Complete Streets policy in Orlando was supported by targeted public awareness campaigns and enhanced enforcement of traffic laws, further contributing to the reduction in pedestrian fatalities. The city's commitment to creating safer, more livable streets has not only saved lives but also encouraged more people to walk and bike, promoting healthier and more sustainable transportation options.

Orlando's success in reducing pedestrian fatalities through its Complete Streets policy offers a compelling model for other cities seeking to enhance road safety and create a more inclusive and equitable transportation network. The strength of a Complete Streets approach lies in its flexibility, as it can be tailored to meet the specific needs of each community. This strategy incorporates a diverse array of elements, including sidewalks, bike lanes, bus lanes, transit stops, crosswalks, curb extensions, and streetscaping.

For Opa-locka, adopting a Complete Streets policy would involve making significant changes not only to major thoroughfares but also to residential streets. Many neighborhoods in the city currently lack sidewalks on one or both sides, creating substantial safety hazards for pedestrians. Furthermore, key connecting roads like Sharazad Boulevard, which circles the Downtown area, often lack dedicated bike lanes, forcing cyclists to share the road with vehicles, which increases the risk of accidents. Consequently, implementing a Complete Streets policy in Opa-locka would address these critical issues, ensuring safer, more accessible streets for all users, whether they are walking, cycling, driving, or using public transit.

By following Orlando's lead, Opa-locka can develop a transportation network that better meets the needs of its residents, reduces the risk of fatalities, and strengthens community connections. Complete Streets are designed to minimize the likelihood of collisions between motor vehicles, pedestrians, and cyclists by providing dedicated infrastructure for each mode of transportation. These improvements not only make walking and cycling safer but also encourage more residents to engage in active transportation, integrating physical activity into their daily lives.

In summary, adopting a Complete Streets policy in Opa-locka would bring about substantial safety enhancements, foster a stronger sense of community, and elevate the quality of life for all residents. Such a policy would ensure that the city's transportation network is not only inclusive but also sustainable, paving the way for a healthier and more connected future.

Examples of Complete Streets in Orlando, Florida

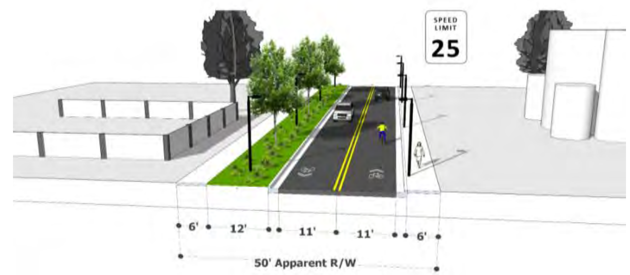
Princeton Street[92]

Corrine Drive[93]

Orange Blossom Trail (U.S. 441) [92]

Silver Star Road[94]

Taylor Street[94]



Bowness Avenue[94]

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[92] Princeton Street and Orange Blossom Trail Complete Streets Improvements
[93] Corrine Drive Final Report and Recommended Design
[94] Silver Star Road Complete Streets & Concept Development

8.2.2 Traffic Calming

Traffic calming involves the strategic design and implementation of physical modifications to roadways with the goal of reducing vehicle speeds and enhancing safety. These measures typically include elements such as speed bumps, roundabouts, chicanes, and narrower lanes. By altering the physical layout of a road, these devices change how drivers perceive the roadway, encouraging more cautious and slower driving. For instance, speed bumps can be used in residential neighborhoods to discourage speeding, while roundabouts at busy intersections help manage traffic flow and reduce the likelihood of crashes.

Currently, the streets of Opa-locka lack effective traffic calming measures. Although some areas feature median separation between lanes, the lanes themselves are generally wide, and the city's residential roads are mostly devoid of speed bumps or other traffic-calming devices. This absence allows for unchecked speeding and reckless driving, particularly in residential areas where Complete Streets measures have not been implemented. For example, the City of West Palm Beach has adopted a Traffic Calming Policy[95] that includes the use of speed humps on residential streets with documented speeding issues, requiring the approval of 75% of affected residents before installation.

FDOT offers guidance on implementing traffic calming measures through its 2018 *Florida Manual of Uniform Minimum Standards for Design, Construction, and Maintenance for Streets and Highways—Chapter 15*[96], which focuses specifically on traffic calming. This manual provides detailed recommendations on when and where to implement these measures, as well as the most appropriate types of interventions for various contexts. However, it also cautions against overuse, particularly on major arterial roads, where traffic calming could lead to congestion or obstruct emergency vehicles.

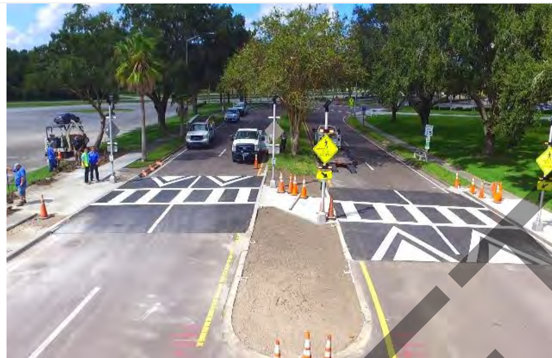
Integrating traffic calming measures aligns perfectly with the Vision Zero initiative, which aims to eliminate traffic fatalities and severe injuries. These measures are crucial as they address the root causes of collisions. By reducing vehicle speeds and enhancing road conditions, traffic calming not only prevents accidents but also creates safer streets for everyone—whether they are walking, biking, or driving. Additionally, there is increasing evidence that residents in neighborhoods with slower traffic are more likely to take ownership of their streets, thereby enhancing community surveillance and deterring crime[101]. Motorists traveling at reduced speeds are more aware of their surroundings, further contributing to crime prevention.

In the past, the east side of Opa-locka, particularly the area south of SR 9, struggled with significant issues related to speeding and aggressive driving. This neighborhood, which is divided by a canal, is home to Nathan B. Young Elementary School and the Helen L. Miller community center, where safety concerns have been particularly acute. In response, local elected officials advocated for the installation of traffic calming devices, such as speed humps, which are exemplified in the images below. Additionally, the city took the initiative to lower the speed limit in the area to 15 mph. However, although crashes have occurred in this vicinity, I t is noteworthy that

[95] City of West Palm Beach – Traffic Calming Policy (2023)
[96] 2018 Florida Manual of Uniform Minimum Standards for Design, Construction and Maintenance for Streets and Highways – Chapet15 – Traffic Calming

Examples of Traffic Calming Measures in Florida

Speed Humps in Superior Street, Opa-locka, Florida[97]



Speed Humps in Lakeland, Florida[98]

Speed Cushions in Parkland, Florida[99]

Median/Center Island with Crosswalk[100]

Roundabout in West Palm Beach, Florida[101]

Speed Bumps in Atlantic Beach, Florida

[97] Retrieved from Google Maps on August 28, 2024
[98] City of Lakeland Neighborhood Traffic Calming Program
[99] National Association of City Transportation Officials (NACTO) Urban Street Design Guide
[100] U.S. Department of Transportation Federal Highway Administration Traffic Calming ePrimer – Module 3
[101] Pedestrian and Bicycle Information Center – Traffic Calming and Crime Prevention

there have been no reported fatalities or severe injuries, indicating the effectiveness of these interventions in enhancing safety. For Opa-locka, adopting a comprehensive traffic calming strategy would significantly improve road safety, particularly in residential neighborhoods. It would complement other safety initiatives and contribute to creating a more secure and livable community.

8.2.3 ADA Transition Plan

An ADA Transition Plan is a crucial document that details how a municipality will make its public facilities and services compliant with the Americans with Disabilities Act (ADA). The goal of this plan is to ensure equal access to public spaces and services for everyone, regardless of disability. The most recent Public Rights-of-Way Accessibility Guidelines (PROWAG)[102] specify accessibility requirements, including curb ramps with a maximum slope of 1:12, sidewalks with a minimum clear width of 4 feet, and accessible pedestrian signals at intersections.

To create an effective ADA Transition Plan, Opa-locka should start with a comprehensive assessment of its existing infrastructure. This assessment should include a detailed inventory of all pedestrian facilities, an evaluation of each facility's adherence to current accessibility standards, and the identification of barriers to access. The plan should also prioritize needed improvements, provide cost estimates, and outline a timeline for implementation. Opa-locka faces notable challenges in meeting ADA standards, including steep sidewalk grades and a lack of sidewalks in many residential areas. These deficiencies not only breach ADA requirements but also pose safety hazards to all pedestrians, especially those with disabilities.

Developing a robust ADA Transition Plan following FHWA guidelines[103], will enable Opa-locka to systematically address these accessibility issues, thereby enhancing safety and inclusivity for all residents. Integrating this plan with Complete Streets and Vision Zero initiatives will provide a unified approach to creating inclusive and safe transportation infrastructure. As emphasized by the Department of Justice[104], an effective transition plan is essential for ensuring ADA compliance, helping to avoid costly litigation, and guaranteeing equal access for every member of the community.

The FHWA has a library inventory of ADA Transition Plans throughout all the nation. FDOT's ADA Transition Plan is from 2018 and provides general guidelines for local governments to implement accessibility improvements. In addition, the Plan provides a report of accomplishments and goals. The City of Gainesville recently updated its ADA Transition plan, which established a goal of providing safe and accessible paths of travel within the public right-of-way for people with disabilities. The Plan is outlined in the Transportation Mobility Element of the City's Comprehensive Plan. Some of the main objectives of said plan are the installation of sidewalks where none are present, installation of compliant curb ramps, as well as retrofitting existing non-compliant curb ramps and bus stops to enhance access and mobility.

The City of Opa-locka too has embarked on a comprehensive initiative to assess the condition of its sidewalks and pavements. In January 2023, the City Commission approved a contract to

[102] Proposed Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way – US Access Board
[103] Federal Highway Administration. (2009). ADA Transition Plans: A Guide to Best Management Practices.
[104] US Department of Justice – ADA Best Practices Tool Kit for State and Local Governments (2007)

evaluate and ensure ADA compliance for sidewalks and curbs. Although the assessment is still underway, its completion will mark a significant milestone in identifying and improving pedestrian facilities that require attention.

Ultimately, developing and implementing an ADA Transition Plan is not just a regulatory requirement but a fundamental step towards ensuring that all members of the Opa-locka community can safely and easily navigate public spaces. As the city continues its ongoing assessment of facilities, the findings will provide valuable insights into the areas that need immediate attention. By aligning this plan with broader initiatives like Complete Streets and Vision Zero, Opa-locka can create a more inclusive and safer environment for everyone, regardless of their physical abilities.

The completion of this effort will not only address existing deficiencies but will also pave the way for a more connected and accessible Opa-locka. It represents a critical investment in the city's future, ensuring that all residents, including those with disabilities, can enjoy equal access to public facilities and services. As the city's ADA Transition Plan moves forward, it will be essential to maintain momentum, secure necessary funding, and involve the community in the process to create a city that is truly inclusive and welcoming for all.

8.2.4 Speed Management

Speed Management encompasses a range of measures aimed at controlling vehicle speeds to improve road safety. Effective strategies include setting appropriate speed limits, deploying speed cameras and radar signs, designing roadways to naturally encourage slower driving, and launching public awareness campaigns about the risks of speeding. As a subset of Traffic Calming, Speed Management often involves similar tactics such as narrowing lane widths, installing speed bumps, and creating roundabouts. Opa-locka adheres to Miami-Dade guidelines for speed limits, which generally set speeds at 30 mph and above in residential and urban areas. However, these speeds can be hazardous for pedestrians and cyclists. Research indicates that collisions at higher speeds significantly increase the risk of severe injury or death; even a difference of 10 mph can reduce survival rates by nearly 40%[105].

In the context of Vision Zero, which aims to eradicate all traffic fatalities and severe injuries, Speed Management is essential. Speed Management is linked to the Safe System Approach and a framework was developed by the USDOT Federal Highway Administration. As depicted in **Figure 8-1**, the framework encompassed five (5) steps to implement speed management. These steps are:

- Establish a vision and building consensus for speed management
- Collect and analyze speed and safety data
- Prioritize locations for speed management proactively
- Select Speed Management Countermeasures
- On-going monitoring, evaluation, and adjustment

[105] World Health Organization (2023). Speed management: a road safety manual for decision-makers and practitioners, 2nd edition

It is worthwhile noting the framework is intended to encompass actions taken by both State and local agencies, but the specific countermeasures and coalition building jurisdictions use to achieve target speeds may vary[106].

Figure 8-1: Safe System Approach for Speed Management Framework

Source: [Safe System Approach for Speed Management]

With regards to speed management examples, international cases have had transformational impacts. An analysis of 20 mph zones in London found a 46% reduction in fatal and serious injury crashes overall[107]. After the implementation of 19 mph zones in 1,110 towns in Japan, it was found that many of these zones have gone an entire year without a single fatality[108]. Further, speed limit reduction to 19 mph on urban roads in South Korea resulted in a 19% reduction in fatalities and 9.2% reduction in injuries.

Speed is a critical factor influencing both the likelihood of crashes and their severity. Higher speeds diminish the time drivers must react to sudden hazards and amplify the impact force during a collision, making severe injuries and fatalities more probable. By effectively managing vehicle speeds, especially in high-traffic areas frequented by pedestrians and cyclists, Speed Management helps lower the risk of crashes and reduce the severity of those that do occur. Thus, controlling speed is a fundamental aspect of creating safer streets and advancing the Vision Zero objective of eliminating traffic-related deaths and serious injuries.

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[106] USDOT FHWA Safe System Approach for Speed Management (2023)
[107] Sharpin, A. B., Adriazola-Steil, C., Luke, N., Job, S., Obelheiro, M., Bhatt, A., Lleras, N. (2021). Low-Speed Zone Guide. World Resources Institute
[108] ITF. (2016). Zero Deaths and Serious Injuries: Leading a Paradigm Shift to a Safe System. Paris: OECD Publishing

8.2.5 Multimodal Mobility Plan

A multimodal mobility plan is a comprehensive transportation strategy that integrates various modes of travel—including walking, cycling, public transit, and driving—into a unified network. This approach is designed to create a balanced transportation system that caters to the diverse needs of all users, enhancing connectivity, accessibility, and overall convenience. By coordinating different travel options, a multimodal plan offers people multiple ways to reach their destinations, reducing dependency on single-occupancy vehicles and promoting more sustainable modes of transportation.

The significance of a multimodal mobility plan lies in its ability to address the pressing challenges of urbanization, traffic congestion, and environmental sustainability. As cities grow and populations increase, an over-reliance on cars can lead to traffic gridlock, increased air pollution, and limited mobility options for those without access to private vehicles. A well-designed multimodal plan encourages the use of public transit, walking, and cycling, which helps to ease congestion, lower greenhouse gas emissions, and improve public health. Furthermore, it ensures that transportation infrastructure is equitable and inclusive, providing safe and accessible options for everyone, regardless of age, ability, or economic status.

Numerous cities across the country have developed comprehensive multimodal mobility plans to enhance transportation options for all users. For example, in Carlsbad, California[109], the "*Sustainable Mobility Plan*" outlines the city's strategy to improve conditions for pedestrians, cyclists, and transit users. The plan identifies current travel conditions, levels of comfort, and gaps within the transportation network, providing a clear roadmap for future improvements.

In Florida, the City of Dunedin received a community grant from the Florida Department of Economic Opportunity to develop a Multimodal Transportation Master Plan[110]. This plan was adopted to establish a framework for prioritizing safety enhancements, improving connectivity throughout the city, and fostering seamless travel between destinations.

Other cities in Florida, such as Longwood, Port Saint Lucie, and Palm Beach Gardens, have also implemented mobility and multimodal plans to address similar goals, demonstrating a growing commitment across the state to creating more accessible and integrated transportation networks. These initiatives serve as significant examples of how cities are working to improve mobility and safety for all residents.

For a city like Opa-locka, where the poverty rate is approximately 28% according to Census data[111]., a multimodal mobility plan is especially critical. Many residents do not have access to private vehicles, making the availability of alternative transportation options, such as buses and the Tri-Rail commuter train services, crucial for daily commutes and overall mobility. By investing in a multimodal transportation network, Opa-locka can significantly enhance the quality of life for its residents, particularly those in disadvantaged communities, while also contributing to a more sustainable and resilient urban environment.

[109] Carlsbad Sustainable Mobility Plan
[110] City of Dunedin Multimodal Transportation Master Plan
[111] Opa-locka city, Florida - Census Bureau Profile

8.2.6 Quality of Service Policy

A Quality of Service (QoS) system in transportation is a critical tool for evaluating how well a network meets the needs of its users. It measures key factors such as travel time, congestion, safety, and accessibility to assess the overall efficiency and effectiveness of roadways. By providing a comprehensive analysis, QoS helps planners and engineers identify areas needing improvement, ensuring smoother operations and a more satisfactory experience for all users.

Implementing QoS often involves the use of intelligent transportation systems (ITS), which include technologies like real-time traffic monitoring and adaptive signal control. For instance, adaptive signals can adjust their timing in response to current traffic conditions, reducing delays during peak hours and improving flow. QoS systems may also incorporate dedicated lanes for buses or high-occupancy vehicles, as well as evaluate pedestrian and cyclist facilities to ensure they are safe and accessible.

In Florida, several cities have successfully adopted QoS approaches:

- The City of Longwood[112] integrated QoS metrics into its Mobility Plan, with a focus on enhancing multimodal transportation options. Street QoS standards are based on posted speed limits and are recommended for adoption in the Comprehensive Plan in recognition that slower speeds create a safer transportation system for all modes of travel. QoS standards for people walking, biking, or using micromobility or micro-transit were based on:
  - ✓ The width of the facility (i.e., bike lane, path, sidewalk),
  - ✓ The type of physical separation between multimodal facilities and travel lanes for cars, SUVs, and other motor vehicles, and
  - ✓ The posted speed limit.
- Port Saint Lucie[113] uses QoS standards within its Mobility Fee Program, which funds transportation infrastructure based on the impact of new developments. The analysis was calculated by evaluating road capacity on a segment-by-segment basis, using a metric known as volume-to-capacity (V/C) ratio. The V/C ratio measures p.m. Peak Hour or daily traffic divided by the capacity of a given road based on an adopted level of service (LOS) standard.
- Palm Beach Gardens[114] included QoS in its Mobility Plan and Fee Study, emphasizing a balanced approach to mobility for all travel modes. The study provides a more detailed standard for each of the modal uses such as people walking, biking, and people riding trolley transit. The multimodal QoS standards are set lower initially for the period between 2020 and 2030 but are proposed to increase to a higher standard from 2031 to 2040. For people walking and biking, the QoS is based on the level of physical separation from motor vehicles. The QoS standard for people riding trolley transit is based on headways of time during a.m. and p.m. peak times. The City Council approved and adopted the Mobility Plan and Fee in September of 2019.

For Opa-locka, implementing a QoS system is particularly relevant due to the varying conditions of roads and sidewalks, especially in residential areas where issues like debris, cracks, and

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[112] City of Longwood Mobility Plan, Study, and Fee
[113] City of Port Saint Lucie – Mobility Plan
[114] Mobility in the Gardens

overgrown vegetation are common. Addressing these challenges through a QoS framework would directly enhance safety, efficiency, and the overall user experience.

8.2.7 Traffic Enforcement Policy

A traffic enforcement policy establishes guidelines and procedures for monitoring and enforcing traffic laws to ensure safety and compliance on the roads. This policy defines the roles and responsibilities of law enforcement officers, outlines the use of technology such as speed and red-light cameras, and details the specific actions to be taken against individuals who violate traffic regulations. The primary objective of a traffic enforcement policy is to deter dangerous driving behaviors, reduce the occurrence of crashes, and protect all road users—including drivers, pedestrians, and cyclists.

In Miami-Dade County, which encompasses Opa-locka, traffic enforcement is governed by Chapter 30 of the County Code and various Florida Statutes[115]. The Miami-Dade Police Department (MDPD) enforces these regulations through targeted enforcement programs and educational initiatives aimed at improving road safety. Implementation of a traffic enforcement policy can involve regular patrols, checkpoints to monitor speeding or impaired driving, and the use of automated enforcement technologies. For example, Miami-Dade has installed red-light cameras at select intersections, although their use has sparked controversy and faced legal challenges. In Opa-locka, enforcement efforts might focus on high-risk areas like NW 27 Avenue and Opa-locka Boulevard, where crash rates are elevated.

Traffic enforcement policies are essential for maintaining road safety and order. By holding drivers accountable for their actions, these policies help to mitigate dangerous behaviors that often lead to crashes and injuries. Effective enforcement also strengthens the credibility of traffic laws, ensuring that drivers understand the seriousness of these regulations and the consequences of violating them. In regions where traffic enforcement is rigorous and consistent, there is typically a significant reduction in crashes and traffic-related fatalities, resulting in safer roadways for all users. For Opa-locka, a well-implemented traffic enforcement policy could serve as a cornerstone in its broader transportation safety strategy, contributing to a safer, more secure environment for the entire community.

In Opa-locka, the Police Department is collaborating closely with FDOT and other agencies to enhance traffic safety through the installation of red-light cameras, particularly in areas near schools such as Robert B. Ingram Elementary, Bethesda Christian School, and Nathan B. Young Elementary. The City of Opa-locka Police Department has been an active participant in this initiative for the past two fiscal years (2022-23 and 2023-24) and has secured funding to continue the program into fiscal year 2024-25. Key locations targeted for these installations include NW 27 Avenue, Ali Baba Avenue, Opa-locka Boulevard, SR-9, and LeJeune Road/NW 42 Avenue. These locations were selected based on their proximity to schools and high traffic volume, which increases the risk of accidents.

[115] Miami-Dade County Code of Ordinances – Chapter 30 - Traffic and Motor Vehicles

8.3 Proposed Recommended Policies

Establishing the right policies is a first step for the city to achieve its Vision Zero goal. The city has already committed to a Vision Zero Policy, aiming for zero traffic deaths by 2030. To further this initiative, the city plans to adopt several key recommendations: a Complete Streets Policy, a Residential Traffic Calming Program, and Quality of Service (QOS) Standards.

The Complete Streets Policy ensures that streets are designed and operated to provide safe, convenient, and accessible travel for all users, including pedestrians, bicyclists, motorists, and public transit users. This approach promotes safer and more equitable transportation options. The Residential Traffic Calming Program focuses on implementing measures such as speed bumps, roundabouts, and narrowed roads to reduce vehicle speeds in residential areas, enhancing safety for pedestrians and cyclists. Lastly, Quality of Service (QOS) Standards will establish benchmarks for transportation services, ensuring they are safe, efficient, and reliable. These standards will guide the continuous improvement of the city's transportation network.

8.3.1 Adopt a Complete Streets Policy

8.3.1.1 Background

The City of Opa-locka should adopt a comprehensive Complete Streets Policy to improve the livability, walkability, and accessibility of its communities. Historically, many streets were designed primarily with cars in mind, leading to environments that were unsafe or inhospitable for pedestrians, cyclists, and public transit users. This approach contributed to higher crash rates, increased traffic congestion, and limited mobility options, particularly for those without access to a car, such as children, the elderly, and people with disabilities. These design ques are present in Opa-locka with many roads throughout residential neighborhood lacking sidewalks requiring pedestrians to walk in the street or on the shoulder.

Overall, by implementing a comprehensive Complete Streets Policy, Opa-locka will create a safer, more inclusive, and more accessible transportation network. This initiative will not only enhance mobility for all residents but also contribute to a stronger sense of community and a higher quality of life.

8.3.1.2 ADA Compliance

Adopting a citywide Complete Streets approach would yield numerous benefits for Opa-locka, creating a transportation network that serves all citizens equitably. To reach this equitability all citizens must be considered, particularly vulnerable road users such as Americans with Disabilities. The FHWA and USDOT recommend the inclusion of ADA transition strategies as part of any complete streets program as a key factor in the accessibility component seen in their 2022 report to congress[116]. The adoption of a Complete Streets approach will greatly aid in the ADA compliance of Opa-locka's transportation network as many of the design measures associated with Complete Streets align with ADA requirements, such as the filling of sidewalk gaps, curb ramps, and crosswalk design. For this FHWA provides guidance on "*Treatment Options*" to help add pedestrian and cyclist features to existing infrastructure in Chapter 2 of their February

[116] Moving to a Complete Streets Design Model: A Report to Congress on Opportunities and Challenge

Complete Streets Safety Analysis[117], including examples of how ADA compliant features were present in surveyed infrastructure.

8.3.1.3 Guidance for Implementation

To develop a comprehensive Complete Streets policy, the following key steps should be taken:

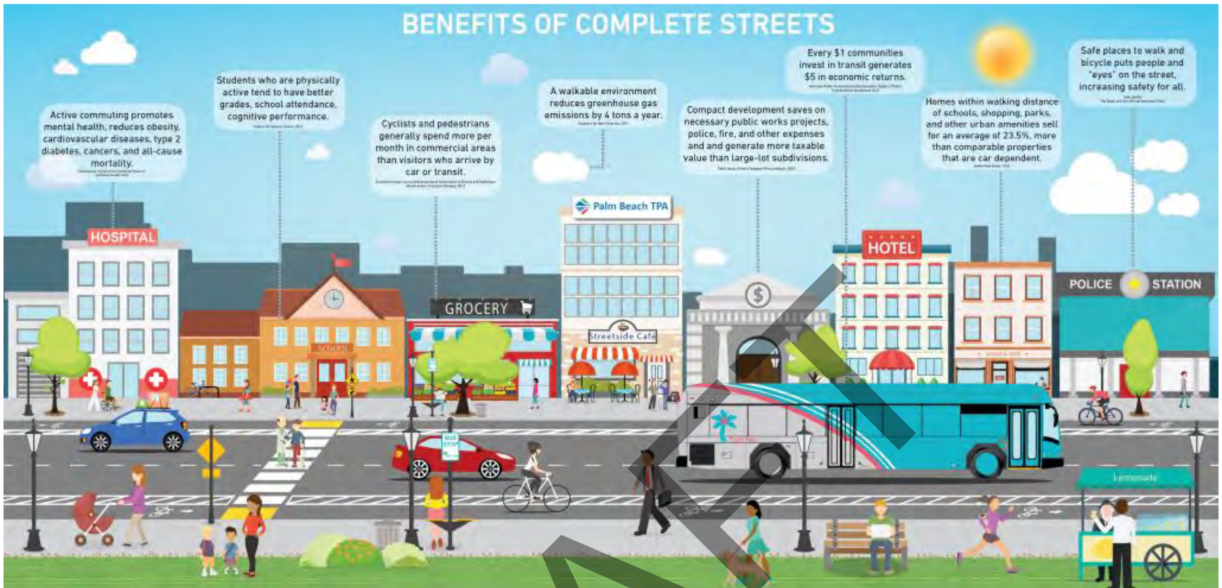
1. **Build Support and Establish a Vision:**
    a. **Engage Stakeholders:** Involve community members, elected officials, advocacy groups, and other stakeholders to build consensus on the need for Complete Streets.
    b. **Develop a Vision Statement:** Create a vision statement that clearly articulates the goals and benefits of the Complete Streets policy, emphasizing safety, accessibility, and improved quality of life.
2. **Form an Interdisciplinary Team:**
    a. **Include Diverse Representatives:** Assemble a team with representatives from planning, transportation, public works, parks, disability rights groups, and other relevant fields.
    b. **Leverage Different Perspectives:** Utilize the diverse expertise of the team to address various aspects of policy development.
3. **Review Existing Policies and Practices:**
    a. **Analyze Current Standards:** Examine existing street design standards, codes, and plans to identify barriers to implementing Complete Streets.
    b. **Research Best Practices:** Study peer cities with successful Complete Streets policies to learn from their experiences and integrate best practices.
4. **Draft a Policy Framework:**
    a. **Define Scope and Compliance:** Specify the scope of the policy, detailing which projects must comply.
    b. **Set Performance Measures:** Establish clear performance measures to ensure the policy accommodates all users effectively.
    c. **Determine Exceptions:** Outline any exceptions and the approval processes for these exceptions.
5. **Develop Implementation Strategies:**
    a. **Update Design Guidance:** Revise design standards, guidance, and plans to align with the Complete Streets policy.
    b. **Identify Funding and Maintenance:** Outline potential funding sources, maintenance procedures, and staff training requirements.
    c. **Establish Metrics:** Develop performance metrics to regularly evaluate the policy's effectiveness.
6. **Formally Adopt the Policy:**
    a. **Navigate Legislative Processes:** Pass the policy through the necessary legislative and administrative processes.
    b. **Engage the Community:** Solicit feedback from the community before finalizing the policy to ensure it meets the needs and expectations of residents.

By following these steps, the City of Opa-locka can effectively develop and implement a comprehensive Complete Streets policy that creates a safer, more inclusive, and more accessible

[117] Complete Streets—Safety Analysis – PUBLICATION NO. FHWA-HRT-24-074 (2024)

transportation network. Municipalities in Palm Beach County have already completed this process as per the Palm Beach Transportation Planning Agency (TPA),[118] enjoying a full list of benefits as summarized in **Figure 8-2**.

Figure 8-2: Benefits of Complete Streets



Source: Palm Beach TPA

Cities like Boca Raton and Lake Worth Beach have undergone extensive processes, including commission reviews and public feedback sessions, to develop strong Complete Streets policies. These policies are essential for creating safer, more accessible roadways that accommodate all users, regardless of their mode of transportation. Lake Worth Beach, for instance, has not only developed a policy but also laid out a clear implementation strategy. Their ongoing approach focuses on updating design standards for new projects, ensuring that all construction or renovation of existing facilities and roadways aligns with Complete Streets principles[119].

For Opa-locka, a similar approach with gradual implementation is recommended. This would involve integrating Complete Streets design standards into new projects and gradually applying them to existing infrastructure as opportunities arise. In addition to this phased approach, the city should prioritize specialized Complete Streets projects in key areas that are unlikely to undergo development soon. This strategy would allow Opa-locka to make meaningful progress towards its Complete Streets and Vision Zero goals without overwhelming city resources.

By adopting a measured and strategic approach, Opa-locka can steadily work towards creating safer, more inclusive streets for all residents. This method not only conserves resources but also builds momentum, setting the stage for long-term improvements that align with the city's broader transportation and safety objectives. Ultimately, the gradual but focused implementation of

[118] Complete Streets – Palm Beach Transportation Planning Agency
[119] Resolution No. 62-2022 – City Of Lake Worth Beach

Complete Streets will contribute to a safer, more connected community, supporting the city's vision for a more accessible and sustainable future.

8.4 Develop and Implement Residential Traffic Calming Program

8.4.1 Background

The city should take the next step in enhancing community safety by developing a Residential Traffic Calming Program and Ordinance. This program should be implemented citywide, focusing on residential areas to ensure safer and more efficient movement for pedestrians, cyclists, and transit users by reducing motor vehicle speeds. Traffic calming is a proven, low-cost solution that aligns with the principles of Complete Streets, aiming to create a safer and more accessible roadway network. Its primary goals are to:

- Reduce vehicle traffic and speeds on local roads,
- Enhance the quality of life for residents and visitors, and
- Reduce crashes and improve overall safety.

The Residential Traffic-Calming Program will incorporate a variety of horizontal and vertical elements to achieve these objectives. Potential horizontal elements include street murals, pavement markings, on-street bike lanes, and other features that effectively narrow travel lanes. Vertical elements may involve divided medians, chicanes, speed bumps or tables, raised intersections, and curb extensions. Intersection treatments like roundabouts or traffic circles, can effectively maintain residential access, minimize cut-through traffic, and reduce vehicle speeds. Automated speed enforcement is a well-tested and proven strategy to encourage safe speeds. Cities such as Washington D.C.[120], and many others across the World have effectively discourage speeding via the use of safety cameras specially at intersections, where their usage is more effective.

In Opa-locka, the Police Department is collaborating closely with FDOT and other agencies to enhance traffic safety through the installation of red-light cameras, particularly in areas near schools such as Robert B. Ingram Elementary, Bethesda Christian School, and Nathan B. Young Elementary. The City of Opa-locka Police Department has been an active participant in this initiative for the past two fiscal years (2022-23 and 2023-24) and has secured funding to continue the program into fiscal year 2024-25.

Key locations targeted for these installations include NW 27 Avenue, Ali Baba Avenue, Opa-locka Boulevard, SR-9, and LeJeune Road/NW 42 Avenue. These locations were selected based on their proximity to schools and high traffic volume, which increases the risk of accidents. Additionally, the Florida Pedestrian and Bicycle Focused Initiative's Communications and High Visibility Enforcement (HVE) Program has played a crucial role in enhancing road safety in high-crash areas within the city. This program has provided essential resources for the installation of visibility elements designed to make enforcement efforts more apparent to the public, thereby contributing to a safer environment for pedestrians and cyclists.

[120] D.C. traffic cameras have led to sharp decline in speeding, data shows – The Washington Post (2024)

These examples demonstrate that embracing traffic-calming measures will lead to safer neighborhoods, creating a community where everyone can feel secure while walking, cycling, or using public transit.

8.4.2 Guidance for Implementation

The Residential Traffic-Calming Program follows a structured four-step process to ensure thorough evaluation and effective implementation. These steps include:

- **Petition and Preliminary Evaluation:** Residents submit a petition, which undergoes an initial review.
- **Traffic Study:** A detailed analysis of traffic patterns and volumes is conducted.
- **Public Meeting:** Community members are engaged in discussions about the proposed measures.
- **Final Evaluation and Implementation:** The feasibility and impact of the measures are assessed before final implementation.

The optimal spacing between traffic-calming devices is between 300 and 500 feet, avoiding placing devices closer than 150 feet from intersections or bridges. To meet the minimum requirements and adhere to best practices, the following criteria should be considered:

- Traffic calming measures must account for public safety and emergency response times, adhering to program-defined thresholds.
- The street must have an average daily traffic volume of less than 5,000 vehicles.
- Traffic calming measures must not negatively impact transit services, as defined by the program's thresholds.
- The street must not serve as a primary route for emergency vehicles.
- The street must be free of physical constraints that could impede the installation of traffic calming measures, such as drainage ditches, narrow rights-of-way, or overhead utilities.
- The measures must have the support of most affected property owners.
- The feasibility of the measures must be confirmed by the City's traffic engineering staff.
- The measures must be cost-effective and sustainable.
- The measures must comply with all applicable design standards and guidelines.

To formalize its Traffic-Calming Program, Opa-locka should take several key steps. First, the city should adopt a Traffic-Calming Ordinance, similar to Vision Zero or Target Zero initiatives, which would provide a clear framework for addressing traffic safety. Establishing a Traffic Calming Advisory Committee, composed of both technical experts and public stakeholders, would ensure that diverse perspectives are considered in the decision-making process. Additionally, allocating dedicated funding to the program would provide the necessary resources for implementation and maintenance.

Residents would be provided with clear, step-by-step instructions on how to submit petitions to Opa-locka's Public Works Department, making the process accessible and straightforward. This approach is critical because communities will not significantly advance Vision Zero goals unless they directly and assertively address the most pressing issues on their roads. Ignoring these problems undermines the effectiveness of Vision Zero, leaving its potential unfulfilled.

By adopting these elements—an ordinance, an advisory committee, and dedicated funding—Opa-locka would create a formalized process for evaluating community requests, determining the technical feasibility of proposed measures, and developing traffic-calming solutions. For example, the City of Lake Worth Beach has implemented a Traffic Calming Policy based on these principles, which has effectively served their community[121]. Notably, their policy includes an annual review to assess new requests for traffic calming from residents and city agencies, ensuring that the program remains responsive and up to date.

By taking these steps, Opa-locka can build a structured, effective traffic-calming program that not only addresses current concerns but also supports the city's broader Vision Zero goals. This approach would enable the city to make meaningful progress toward safer streets, ultimately enhancing the quality of life for all residents.

8.5 Adopt Quality of Service (QoS) Standards

8.5.1 Background

The city should establish Quality of Service (QoS) standards to create a policy framework aimed at achieving Vision Zero and Safer Streets for All. These QoS standards should be integrated into the Comprehensive Plan, recognizing that slower speeds contribute to a safer transportation system for all travel modes. QoS standards focus on the following aspects:

- **Facility Width:** The dimensions of bike lanes, paths, and sidewalks.
- **Physical Separation:** The type of barriers between multi-modal facilities and lanes for motor vehicles.
- **Posted Speed Limits:** Ensuring speed limits are conducive to safety for all users.

These standards can serve as an alternative or complement to traditional roadway Level of Service (LOS) standards. Similar to LOS standards, QoS standards provide a methodology to evaluate and address deficiencies in the transportation system. However, QoS standards offer a more flexible and innovative approach, endorsed by FDOT[122], allowing cities to reconsider who the transportation system serves and how streets are designed and assessed.

8.5.2 Guidance for Implementation

QoS standards should be utilized for various planning and design activities and incorporated into the Capital Improvement Program (CIP) and Land Development Regulations (LDRs), including:

- Identifying mobility needs and proposing multi-modal projects to meet those needs.
- Establishing performance measures to evaluate changes in service and mobility over time.
- Prioritizing multi-modal projects for annual capital improvement programs.
- Developing Complete Streets design standards for new and retrofitted streets within the LDRs.
- Implementing FDOT's Context Classifications for Complete Streets.
- Crafting mobility strategies in the Comprehensive Plan and LDRs for new developments.

[121] Traffic Calming Policy
[122] Evolving Use of Level of Service Metrics in Transportation Analysis - Introduction

- Creating a multi-modal site access analysis methodology and internal street evaluation requirements.
- Establishing multi-modal criteria to review Comprehensive Plan Amendments and Planned Unit Developments.

By adopting QoS standards, Opa-locka can systematically address public facility deficiencies and identify transportation system needs, ensuring a consistent and effective implementation of the Capital Improvement Program. This approach not only enhances road safety but also creates a more inclusive and efficient transportation network. The City of Palm Beach Gardens for example has integrated QoS into their Comprehensive Plan for Transportation particularly in relation to their plans to adopt a Multimodal Transportation Plan Policies 2.1.1.16 and 2.1.1.17[123]. The adoption of QoS standards will ultimately lead to safer, more accessible streets for everyone, aligning with the city's commitment to Vision Zero and Safer Streets and Roads for All.

8.6 Develop and Adopt a Pedestrian/Bicycle Master Plan

The City of Opa-locka should prioritize the development and adoption of a Pedestrian and Bicycle Master Plan. This plan would establish a clear roadmap for enhancing pedestrian and bicycle infrastructure, marking a critical first step toward meeting the city’s active transportation goals. By providing a guiding framework, the master plan would offer detailed recommendations and identify specific projects and programs to be implemented across short-, mid-, and long-term timeframes.

Currently, pedestrian and bicycle facilities in Opa-locka are limited, as highlighted by Safety Analysis Review. A well-designed master plan would not only address these gaps but also introduce the concept of low-stress bikeway networks. These could include multi-use paths, protected and buffered bike lanes, neighborhood byways, and bicycle boulevards—routes specifically designed to appeal to individuals who are “*interested but concerned*” about biking. These potential cyclists would likely ride more if safer, more comfortable routes were available, making the creation of a low-stress bikeway network a key component of the plan.

In addition to infrastructure improvements, the master plan should propose various multimodal programs that benefit a range of user groups, including pedestrians, cyclists, transit riders, and drivers. Programs such as “*walking school buses*” for children, targeted crosswalk enforcement, bicycle route mapping, bicycle social rides, and regular bicycle counts can all contribute to a more vibrant, safe, and interconnected community. These initiatives would not only encourage active transportation but also foster a culture of safety and accessibility throughout the city.

Investing in walking and bicycling infrastructure is especially important for Opa-locka, given that the city has one of the lowest car ownership rates in the region, with an average of just one (1) vehicle per household[124]. Encouraging more residents to travel by foot or bicycle would have wide-ranging benefits: it would improve public health, enhance air quality, support local businesses, and create a more attractive environment for potential employers to relocate. A comprehensive

[123] City of Palm Beach Gardens Comprehensive Plan – Transportation Element
[124] U.S. Census Bureau – City of Opa-locka

Pedestrian and Bicycle Master Plan, therefore, would be a transformative tool for Opa-locka's future, helping to create a more sustainable, connected, and prosperous community.

Proposed Safety Countermeasures

9

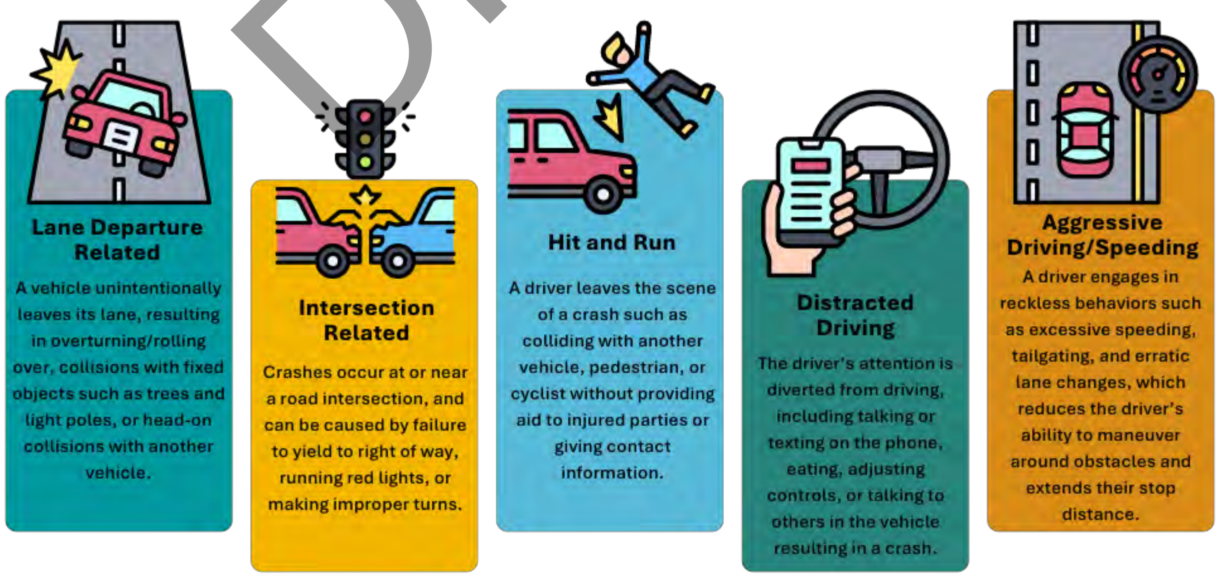
9. Proposed Safety Countermeasures

This CSAP offers a forward-thinking approach to enhancing transportation safety in the City of Opa-locka, with a special focus on protecting vulnerable road users, including pedestrians, cyclists, and transit riders. It supports broader goals such as Vision Zero, Complete Streets, Safe Routes to School, and Safe Routes to Parks, working to reduce fatalities and serious injuries on streets and roadways, regardless of whether they are managed by the city, Miami-Dade County, or FDOT.

Grounded in thorough data analysis and shaped by community input, the recommendations in this plan aim to tackle the city's unique safety challenges with precision. The plan is structured to provide solutions that can be implemented in the short-, mid-, or long-term, depending on the complexity of each project, the permitting and engineering requirements, and the level of interagency coordination needed. By working together along with several stakeholders on these targeted interventions, the City of Opa-locka can create a safer, more connected community, where everyone can move about freely and confidently, whether on foot, by bike, or using public transit.

The safety analysis, along with public survey results and comments, revealed that certain locations within the city are more prone to crashes. These locations include roadways maintained by Miami-Dade County and FDOT. Additionally, bicycle and pedestrian crash data were reviewed to identify patterns or unique characteristics related to each roadway. Field evaluations were conducted to better understand the specific conditions of each site, such as neighborhood entry access and areas near railroad intersections. Traffic patterns were observed, site-specific challenges noted, and various safety countermeasures considered. Overall, the safety analysis identified the five main dangerous contributing factors to crashes in Opa-locka, as illustrated in **Figure 9-1**. A high-level discussion of the evaluation is included below.

Figure 9-1: Top Five Dangerous Contributing Factors of all Crashes in Opa-locka



Crash Patterns, Field Observations, Countermeasures

During the evaluation of bicycle and pedestrian crash data, it was found that crashes frequently involved pedestrians or bicyclists not yielding to vehicles, as well as approach turn crashes. On segments such as NW 27 Avenue, SR-9, Opa-locka Boulevard, NW 135 Street, and NW 22 Avenue, many incidents involved pedestrians crossing mid-block at undesignated locations. Understanding the root cause of these crashes was crucial to ensure that the proposed improvements effectively address the issues. While reviewing the crash data, all available information was considered, though some data was limited. Consequently, the recommended countermeasures were based on best practices from the FHWA, field knowledge, and discussions with stakeholders and the Task Force members. Additionally, policies from the Miami-Dade County Vision Zero Plan and the Miami-Dade Transportation Planning Organization (TPO) Strategic Miami Area Rapid Transit (SMART) Street Transportation Enhancement Program (STEP) Tri-Rail Bicycle and Pedestrian Needs Study were incorporated into this effort.

In summary, countermeasures were developed taking into consideration the following:

- High-volume, high-speed intersections contribute to lengthy crossing distances for bicyclists and pedestrians, often limiting attention to the needs of these vulnerable users.
- Obstructive landscaping, traffic controller boxes, and fencing near intersections reduce visibility for both bicyclists and pedestrians, creating safety concerns, especially along corridors like NW 135 Street and NW 27 Avenue, where significant upgrades are currently in progress.
- At several intersections, negative left turn offsets force drivers to concentrate more on approaching traffic, making it challenging to spot pedestrians and bicyclists crossing the street.
- The intersections of NW 27 Avenue and NW 135 Street feature wide outside vehicle lanes and numerous access points, which can further complicate safe navigation for non-motorized users.
- Illumination at many intersections is insufficient, particularly near industrial warehouse zones, where better lighting is essential for safe night-time use.
- Numerous existing traffic signals are outdated, limiting the ability to incorporate modern lighting, signage, or upgraded signal heads to enhance intersection safety.
- General maintenance is needed across several locations to elevate infrastructure to current safety standards.

Potential countermeasures have been identified for each site based on a thorough review of available data, including crash patterns, field observations, and documented public feedback. These are described as follows.

9.1 Neighborhood Traffic Calming

Description: A wide range of strategies is employed to reduce vehicle speeds and manage traffic volumes on residential streets, typically involving physical alterations to the roadway. These strategies include measures such as speed humps, chicanes, lane narrowing, raised crosswalks, curb extensions, and traffic circles. Each of these modifications is carefully designed to slow down vehicles, making drivers more aware of their surroundings and encouraging them to proceed with caution.

Speed humps, for example, are raised sections of pavement that require drivers to reduce speed to maintain comfort and control. Chicanes, by introducing gentle curves, force drivers to slow down and steer carefully, while lane narrowing reduces the space available for vehicles, naturally encouraging slower speeds. Raised crosswalks improve pedestrian visibility and safety by elevating crossing points, and curb extensions shorten crossing distances for pedestrians while physically narrowing the roadway, further reducing speeds. These traffic calming measures serve multiple purposes. By discouraging cut-through traffic, they reduce the volume of non-local vehicles on residential streets, creating a quieter, more peaceful environment. Slower driving speeds not only minimize the risk of accidents but also reduce the severity of collisions when they occur, particularly benefiting vulnerable road users like pedestrians and cyclists.

Beyond safety, traffic calming enhances the overall quality of life in neighborhoods. Streets become more walkable and bike-friendly, encouraging outdoor activity, and fostering a sense of community. Children can play more safely, residents feel more secure, and the streetscape becomes more welcoming. Ultimately, traffic calming measures transform residential streets into safer, more livable spaces that prioritize the well-being of everyone who uses them. These traffic calming measures will be installed only in local residential streets.

Cost Estimate: The estimated cost for implementing the recommended improvements is approximately $3.3 million. A detailed breakdown of projects by location is provided in **Table 9-1**, and their geographic distribution is visually represented on **Map 9-1**. These resources outline where and how the investments will be made, ensuring a clear understanding of the scope and impact of each proposed improvement.

Assumptions: The traffic calming measures will include the installation of speed humps, as shown in **Figure 9-2**, spaced between 350 and 500 feet apart to adhere to best practices. Each speed hump, constructed from asphalt, will be marked with two Manual of Uniform Traffic Control Devices (MUTCD) W17-1 warning signs—one for each direction—and clearly indicated with thermoplastic pavement markings for visibility. The installation process will involve milling and asphalt paving, with the necessary Maintenance of Traffic (MOT) to ensure safety. This will include detours, temporary signage, and flaggers as needed to guide traffic during construction. The estimated cost is $50,000 per mile, covering the installation of up to 15 speed humps for 1-mile-long street segments, signage, markings, and MOT. These measures will comply with FDOT and MUTCD standards to ensure safe and effective implementation. In addition, the cost includes mobilization, labor and material costs for the removal and improvement of existing calming measures in the northeast side of the city, the installation of signage, as well as the placement of thermoplastic pavement markings.

Crash Contributing Factor Addressed: Aggressive driving/speeding, bicycle and pedestrian related crashes, and speed management.

Implementation Timeframe: Mid-term

Figure 9-2: Example of a Speed Hump

Source: Urban Street Design Guide – National Association of City Transportation Officials (NACTO)

Table 9-1: Proposed Neighborhood Traffic Calming Projects

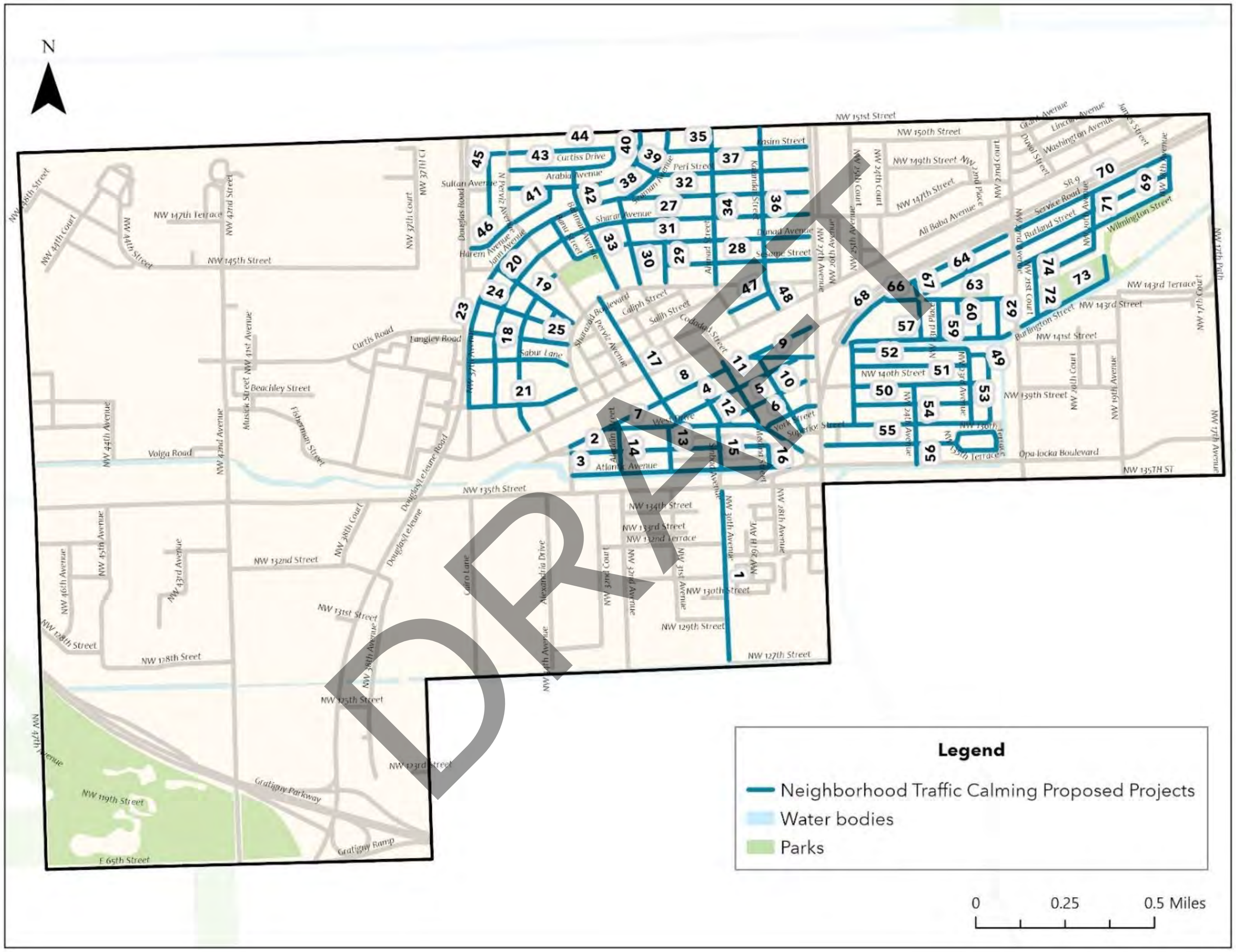
Project / Map ID	Facility Name	From	To	Length (miles)	Cost Per Mile	Cost per Project	Planning and Engineering (15%)	Construction, Engineering, Inspection (12%)	Utility Relocation (15%)	Landscape (10%)	Hardscape / Streetscape (10%)	Contingency (20%)	Total Cost
1	Aswan Road	NW 135 Street	NW 127 Street	0.46	$50,000.00	$23,000.00	$3,450.00	$2,760.00	$7,500.00	$5,000.00	$5,000.00	$10,000.00	$56,710.00
2	W Superior Street	Medina Street	Sesame Street	0.49	$50,000.00	$24,500.00	$3,675.00	$2,940.00	$7,500.00	$5,000.00	$5,000.00	$10,000.00	$58,615.00
3	Atlantic Avenue	Medina Street	Sesame Street	0.54	$50,000.00	$27,000.00	$4,050.00	$3,240.00	$7,500.00	$5,000.00	$5,000.00	$10,000.00	$61,790.00
4	Rutland Street	Vermont Street	Opa-locka Boulevard	0.33	$50,000.00	$16,500.00	$2,475.00	$1,980.00	$7,500.00	$5,000.00	$5,000.00	$10,000.00	$48,455.00
5	Wilmington Street	NW 27 Avenue	Opa-locka Boulevard	0.22	$50,000.00	$11,000.00	$1,650.00	$1,320.00	$7,500.00	$5,000.00	$5,000.00	$10,000.00	$41,470.00
6	York Street	NW 27 Avenue	Opa-locka Boulevard	0.13	$50,000.00	$6,500.00	$975.00	$780.00	$7,500.00	$5,000.00	$5,000.00	$10,000.00	$35,755.00
7	West Drive	Burlington Street	Opa-locka Boulevard	0.18	$50,000.00	$8,850.00	$1,327.50	$1,062.00	$7,500.00	$5,000.00	$5,000.00	$10,000.00	$38,739.50
8	Burlington Street	NW 27 Avenue	Sesame Street	0.68	$50,000.00	$34,000.00	$5,100.00	$4,080.00	$7,500.00	$5,000.00	$5,000.00	$10,000.00	$70,680.00
9	Vermont Street	NW 27th Ave	Burlington Street	0.14	$50,000.00	$7,000.00	$1,050.00	$840.00	$7,500.00	$5,000.00	$5,000.00	$10,000.00	$36,390.00
10	Ahmad Street	Superior Street	Vermont Street	0.23	$50,000.00	$11,500.00	$1,725.00	$1,380.00	$7,500.00	$5,000.00	$5,000.00	$10,000.00	$42,105.00
9.111	Codadad Street	Ali Baba Avenue	Opa-locka Boulevard	0.19	$50,000.00	$9,500.00	$1,425.00	$1,140.00	$7,500.00	$5,000.00	$5,000.00	$10,000.00	$39,565.00
12	Sinbad Avenue	Opa-locka Boulevard	Burlington Street	0.12	$50,000.00	$6,000.00	$900.00	$720.00	$7,500.00	$5,000.00	$5,000.00	$10,000.00	$35,120.00
13	S Pervis Avenue	Atlantic Avenue	West Drive	0.12	$50,000.00	$6,000.00	$900.00	$720.00	$7,500.00	$5,000.00	$5,000.00	$10,000.00	$35,120.00
14	Aladin Street	Atlantic Avenue	Burlington Street	0.14	$50,000.00	$7,000.00	$1,050.00	$840.00	$7,500.00	$5,000.00	$5,000.00	$10,000.00	$36,390.00
15	Sinbad Avenue	Atlantic Avenue	Opa-locka Boulevard	0.11	$50,000.00	$5,500.00	$825.00	$660.00	$7,500.00	$5,000.00	$5,000.00	$10,000.00	$34,485.00
16	Medina Street	Atlantic Avenue	Superior Street	0.05	$50,000.00	$2,500.00	$375.00	$300.00	$7,500.00	$5,000.00	$5,000.00	$10,000.00	$30,675.00
17	Opa-locka Boulevard	Sharazad Boulevard	NW 136 Street	0.73	$50,000.00	$36,500.00	$5,475.00	$4,380.00	$7,500.00	$5,000.00	$5,000.00	$10,000.00	$73,855.00
18	Dunad Avenue	Perviz Avenue	Ali Baba Avenue	0.45	$50,000.00	$22,500.00	$3,375.00	$2,700.00	$7,500.00	$5,000.00	$5,000.00	$10,000.00	$56,075.00
19	Bagdad Avenue	Jann Avenue	Sharazad Boulevard	0.24	$50,000.00	$12,000.00	$1,800.00	$1,440.00	$7,500.00	$5,000.00	$5,000.00	$10,000.00	$42,740.00
20	Sharar Avenue	Perviz Avenue	Fisherman Street	0.44	$50,000.00	$22,000.00	$3,300.00	$2,640.00	$7,500.00	$5,000.00	$5,000.00	$10,000.00	$55,440.00

Project / Map ID	Facility Name	From	To	Length (miles)	Cost Per Mile	Cost per Project	Planning and Engineering (15%)	Construction, Engineering, Inspection (12%)	Utility Relocation (15%)	Landscape (10%)	Hardscape / Streetscape (10%)	Contingency (20%)	Total Cost
21	Fisherman Street	NW 37 Avenue	Sharazad Boulevard	0.27	$50,000.00	$13,500.00	$2,025.00	$1,620.00	$7,500.00	$5,000.00	$5,000.00	$10,000.00	$44,645.00
22	Sabur Lane	Sharazad Boulevard	NW 37 Avenue	0.24	$50,000.00	$12,000.00	$1,800.00	$1,440.00	$7,500.00	$5,000.00	$5,000.00	$10,000.00	$42,740.00
23	Jann Avenue	Perviz Avenue	Fisherman Street	0.51	$50,000.00	$25,500.00	$3,825.00	$3,060.00	$7,500.00	$5,000.00	$5,000.00	$10,000.00	$59,885.00
24	Beder Street	Sesame Street	NW 37 Avenue	0.22	$50,000.00	$11,000.00	$1,650.00	$1,320.00	$7,500.00	$5,000.00	$5,000.00	$10,000.00	$41,470.00
25	Aladdin Street	Sharazad Boulevard	NW 37 Avenue	0.24	$50,000.00	$12,000.00	$1,800.00	$1,440.00	$7,500.00	$5,000.00	$5,000.00	$10,000.00	$42,740.00
26	Sesame Street	Aladdin Street	Beder Street	0.05	$50,000.00	$2,500.00	$375.00	$300.00	$7,500.00	$5,000.00	$5,000.00	$10,000.00	$30,675.00
27	Sharar Avenue	NW 27 Avenue	Perviz Avenue	0.70	$50,000.00	$35,000.00	$5,250.00	$4,200.00	$7,500.00	$5,000.00	$5,000.00	$10,000.00	$71,950.00
28	Sesame Street	NW 27 Avenue	Codadad Street	0.35	$50,000.00	$17,500.00	$2,625.00	$2,100.00	$7,500.00	$5,000.00	$5,000.00	$10,000.00	$49,725.00
29	Codadad Street	Jann Avenue	Sharazad Boulevard	0.23	$50,000.00	$11,500.00	$1,725.00	$1,380.00	$7,500.00	$5,000.00	$5,000.00	$10,000.00	$42,105.00
30	Sinbad Avenue	Jann Avenue	Sharazad Boulevard	0.24	$50,000.00	$12,000.00	$1,800.00	$1,440.00	$7,500.00	$5,000.00	$5,000.00	$10,000.00	$42,740.00
31	Dunad Avenue	Jann Avenue	NW 27 Avenue	0.71	$50,000.00	$35,500.00	$5,325.00	$4,260.00	$7,500.00	$5,000.00	$5,000.00	$10,000.00	$72,585.00
32	Jann Avenue	Perviz Avenue	NW 27 Avenue	0.73	$50,000.00	$36,500.00	$5,475.00	$4,380.00	$7,500.00	$5,000.00	$5,000.00	$10,000.00	$73,855.00
33	Bahman Avenue	Jann Avenue	Sharazad Boulevard	0.24	$50,000.00	$12,000.00	$1,800.00	$1,440.00	$7,500.00	$5,000.00	$5,000.00	$10,000.00	$42,740.00
34	Ahmad Street	Oriental Boulevard	Sharazad Boulevard	0.42	$50,000.00	$21,000.00	$3,150.00	$2,520.00	$7,500.00	$5,000.00	$5,000.00	$10,000.00	$54,170.00
35	Kasim Street	Seaman Avenue	NW 27 Avenue	0.35	$50,000.00	$17,500.00	$2,625.00	$2,100.00	$7,500.00	$5,000.00	$5,000.00	$10,000.00	$49,725.00
36	Kalandar Street	Oriental Boulevard	Sharazad Boulevard	0.42	$50,000.00	$21,000.00	$3,150.00	$2,520.00	$7,500.00	$5,000.00	$5,000.00	$10,000.00	$54,170.00
37	Peri Street	Seaman Avenue	NW 27 Avenue	0.38	$50,000.00	$18,935.50	$2,840.33	$2,272.26	$7,500.00	$5,000.00	$5,000.00	$10,000.00	$51,548.09
38	Seaman Avenue	Oriental Boulevard	Jann Avenue	0.22	$50,000.00	$11,000.00	$1,650.00	$1,320.00	$7,500.00	$5,000.00	$5,000.00	$10,000.00	$41,470.00
39	Julnar Avenue	Sultan Avenue	Peri Street	0.06	$50,000.00	$3,074.75	$461.21	$368.97	$7,500.00	$5,000.00	$5,000.00	$10,000.00	$31,404.93
40	Sultan Avenue	Perviz Avenue	Oriental Boulevard	0.42	$50,000.00	$21,116.30	$3,167.45	$2,533.96	$7,500.00	$5,000.00	$5,000.00	$10,000.00	$54,317.70
41	Harem Avenue	Perviz Avenue	Sultan Avenue	0.14	$50,000.00	$7,000.00	$1,050.00	$840.00	$7,500.00	$5,000.00	$5,000.00	$10,000.00	$36,390.00

Project / Map ID	Facility Name	From	To	Length (miles)	Cost Per Mile	Cost per Project	Planning and Engineering (15%)	Construction, Engineering, Inspection (12%)	Utility Relocation (15%)	Landscape (10%)	Hardscape / Streetscape (10%)	Contingency (20%)	Total Cost
42	Bahman Avenue	Arabia Avenue	Jann Avenue	0.11	$50,000.00	$5,673.65	$851.05	$680.84	$7,500.00	$5,000.00	$5,000.00	$10,000.00	$34,705.54
43	Arabia Avenue	Perviz Avenue	Curtiss Drive	0.30	$50,000.00	$14,899.60	$2,234.94	$1,787.95	$7,500.00	$5,000.00	$5,000.00	$10,000.00	$46,422.49
44	Curtiss Drive	Perviz Avenue	Sultan Avenue	0.33	$50,000.00	$16,415.00	$2,462.25	$1,969.80	$7,500.00	$5,000.00	$5,000.00	$10,000.00	$48,347.05
45	Curtiss Drive	Perviz Avenue	Harem Avenue	0.27	$50,000.00	$13,585.00	$2,037.75	$1,630.20	$7,500.00	$5,000.00	$5,000.00	$10,000.00	$44,752.95
46	Harem Avenue	Douglas Road	Perviz Avenue	0.12	$50,000.00	$6,000.00	$900.00	$720.00	$7,500.00	$5,000.00	$5,000.00	$10,000.00	$35,120.00
47	Fisherman Street	Ahmad Street	Sharazad Boulevard	0.15	$50,000.00	$7,500.00	$1,125.00	$900.00	$7,500.00	$5,000.00	$5,000.00	$10,000.00	$37,025.00
48	Kalandar Street	Ali Baba Avenue	Sharazad Boulevard	0.04	$50,000.00	$2,000.00	$300.00	$240.00	$7,500.00	$5,000.00	$5,000.00	$10,000.00	$30,040.00
49	NW 27 Avenue	Superior Street	NW 26 Avenue	1.14	$50,000.00	$57,000.00	$8,550.00	$6,840.00	$7,500.00	$5,000.00	$5,000.00	$10,000.00	$99,890.00
50	York Street	NW 26 Avenue	NW 23 Avenue	0.29	$50,000.00	$14,500.00	$2,175.00	$1,740.00	$7,500.00	$5,000.00	$5,000.00	$10,000.00	$45,915.00
51	NW 139 Street	NW 26 Avenue	NW 23 Avenue	0.34	$50,000.00	$17,000.00	$2,550.00	$2,040.00	$7,500.00	$5,000.00	$5,000.00	$10,000.00	$49,090.00
52	NW 140 Street	NW 26 Avenue	NW 23 Avenue	0.29	$50,000.00	$14,500.00	$2,175.00	$1,740.00	$7,500.00	$5,000.00	$5,000.00	$10,000.00	$45,915.00
53	NW 23 Avenue	Superior Street	NW 141 Street	0.19	$50,000.00	$9,491.10	$1,423.67	$1,138.93	$7,500.00	$5,000.00	$5,000.00	$10,000.00	$39,553.70
54	NW 24 Avenue	NW 139 Street	Superior Street	0.34	$50,000.00	$17,000.00	$2,550.00	$2,040.00	$7,500.00	$5,000.00	$5,000.00	$10,000.00	$49,090.00
55	Atlantic Avenue	NW 27 Avenue	NW 135 Terrace	0.60	$50,000.00	$30,000.00	$4,500.00	$3,600.00	$7,500.00	$5,000.00	$5,000.00	$6,000.00	$61,600.00
56	NW 23 Avenue	NW 136 Street	Superior Street	0.11	$50,000.00	$5,500.00	$825.00	$660.00	$7,500.00	$5,000.00	$5,000.00	$1,100.00	$25,585.00
57	Burlington Street	NW 26 Avenue	NW 22 Avenue	0.42	$50,000.00	$21,000.00	$3,150.00	$2,520.00	$7,500.00	$5,000.00	$5,000.00	$4,200.00	$48,370.00
58	NW 24 Avenue	Burlington Street	NW 143 Street	0.11	$50,000.00	$5,250.00	$787.50	$630.00	$7,500.00	$5,000.00	$5,000.00	$1,050.00	$25,217.50
59	NW 23 Place	Burlington Street	NW 143 Street	0.11	$50,000.00	$5,500.00	$825.00	$660.00	$7,500.00	$5,000.00	$5,000.00	$1,100.00	$25,585.00
60	NW 23 Court	Burlington Street	NW 143 Street	0.10	$50,000.00	$5,000.00	$750.00	$600.00	$7,500.00	$5,000.00	$5,000.00	$1,000.00	$24,850.00
61	NW 22 Place	Burlington Street	NW 143 Street	0.10	$50,000.00	$5,000.00	$750.00	$600.00	$7,500.00	$5,000.00	$5,000.00	$1,000.00	$24,850.00
62	NW 22 Court	Burlington Street	NW 143 Street	0.10	$50,000.00	$5,000.00	$750.00	$600.00	$7,500.00	$5,000.00	$5,000.00	$1,000.00	$24,850.00

Project / Map ID	Facility Name	From	To	Length (miles)	Cost Per Mile	Cost per Project	Planning and Engineering (15%)	Construction, Engineering, Inspection (12%)	Utility Relocation (15%)	Landscape (10%)	Hardscape / Streetscape (10%)	Contingency (20%)	Total Cost
63	NW 143 Street	NW 143 Street	NW 22 Avenue	0.21	$50,000.00	$10,500.00	$1,575.00	$1,260.00	$7,500.00	$5,000.00	$5,000.00	$2,100.00	$32,935.00
64	Rutland Street	Rutland Street	NW 22 Avenue	0.23	$50,000.00	$11,500.00	$1,725.00	$1,380.00	$7,500.00	$5,000.00	$5,000.00	$2,300.00	$34,405.00
65	NW 23 Avenue	Service Road	Rutland Street	0.08	$50,000.00	$4,046.70	$607.01	$485.60	$7,500.00	$5,000.00	$5,000.00	$809.34	$23,448.65
66	NW 143 Street	Service Road	NW 143 Street	0.07	$50,000.00	$3,500.00	$525.00	$420.00	$7,500.00	$5,000.00	$5,000.00	$700.00	$22,645.00
67	NW 24 Avenue	Service Road	NW 143 Street	0.04	$50,000.00	$2,025.95	$303.89	$243.11	$7,500.00	$5,000.00	$5,000.00	$405.19	$20,478.15
68	Service Road	Burlington Street	NW 22 Avenue	0.51	$50,000.00	$25,500.00	$3,825.00	$3,060.00	$7,500.00	$5,000.00	$5,000.00	$5,100.00	$54,985.00
69	Wilmington Street	NW 22 Avenue	NW 22 Avenue	0.91	$50,000.00	$45,500.00	$6,825.00	$5,460.00	$7,500.00	$5,000.00	$5,000.00	$9,100.00	$84,385.00
70	Service Road	NW 18 Avenue	NW 22 Avenue	0.48	$50,000.00	$24,000.00	$3,600.00	$2,880.00	$7,500.00	$5,000.00	$5,000.00	$4,800.00	$52,780.00
71	NW 20 Avenue	York Street	Service Road	0.15	$50,000.00	$7,500.00	$1,125.00	$900.00	$7,500.00	$5,000.00	$5,000.00	$1,500.00	$28,525.00
72	York Street	NW 22 Avenue	NW 20 Avenue	0.32	$50,000.00	$16,000.00	$2,400.00	$1,920.00	$7,500.00	$5,000.00	$5,000.00	$3,200.00	$41,020.00
73	Burlington Street	NW 22 Avenue	SW 19 Court	0.27	$50,000.00	$13,500.00	$2,025.00	$1,620.00	$7,500.00	$5,000.00	$5,000.00	$2,700.00	$37,345.00
74	NW 21 Court	York Street	Wilmington Street	0.05	$50,000.00	$2,558.25	$383.74	$306.99	$7,500.00	$5,000.00	$5,000.00	$511.65	$21,260.63
												Total:	$3,282,211.87

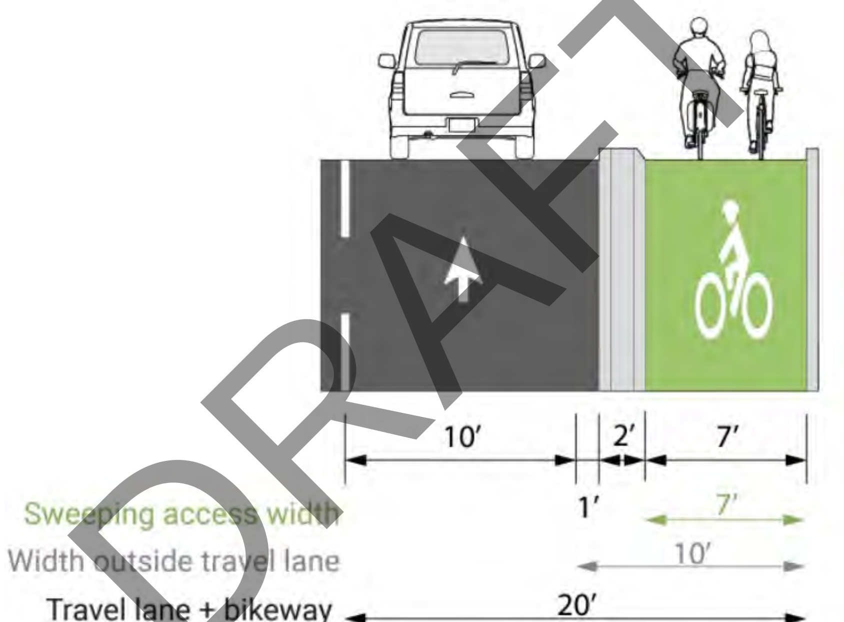
Map 9-1: Proposed Neighborhood Traffic Calming Projects



9.2 Separated Bike Lanes

Description: Often referred to as protected bike lanes or cycle tracks, this type of bicycle facility represents a key innovation in urban design, offering a dedicated space for cyclists that is physically separated from motor vehicle traffic as seen in **Figure 9-3**. Barriers such as planters, bollards, raised curbs, or even parked cars create a buffer between cyclists and vehicles, ensuring a higher level of safety than traditional bike lanes, which only use paint to distinguish the cycling path from traffic lanes. This separation provides a sense of security and comfort, especially for more vulnerable riders like children, seniors, or those new to cycling. By creating a distinct and protected space, these lanes reduce the risk of accidents, such as dooring (where cyclists collide with the doors of parked cars) or conflicts with turning vehicles. This leads to a safer and more predictable experience for everyone on the road.

Figure 9- 3: Example of a Concrete Island Protected Lane



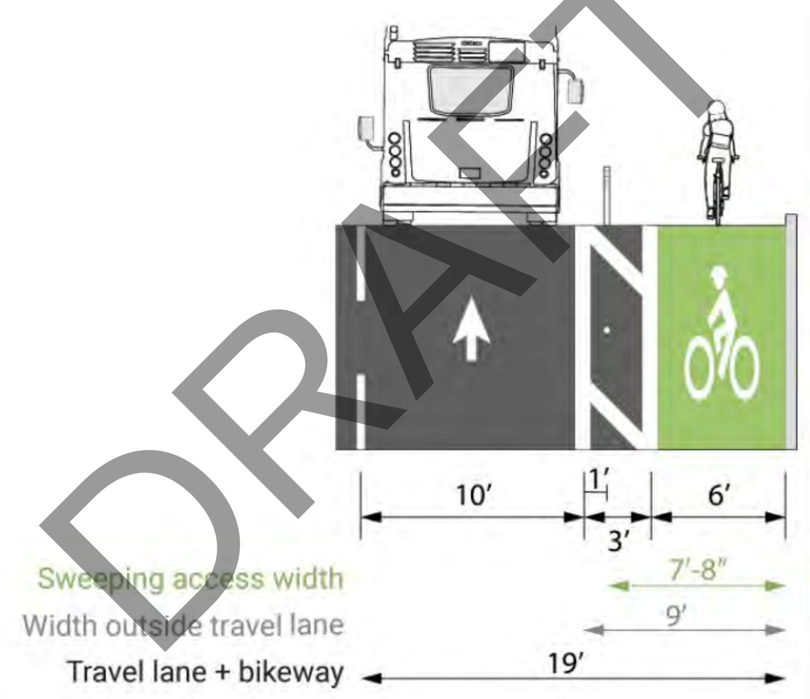
Source: [Portland Protected Bicycle Lane Planning and Design Guide]

Beyond enhancing safety, protected bike lanes have the power to transform the way people think about urban mobility. With a clear, visible space for cycling, they encourage more people to consider biking for everyday trips—whether commuting to work, running errands, or enjoying recreational rides. Cities that have invested in protected bike lanes often see an increase in cycling as more residents feel confident and comfortable riding in a protected environment. These lanes contribute to a broader vision of sustainable and livable cities by promoting active transportation, reducing car dependency, and improving air quality. Protected bike lanes can also revitalize neighborhoods by making streets more attractive and inviting, encouraging foot traffic, and supporting local businesses. When cyclists feel safe, streets become more vibrant and accessible to everyone—leading to healthier, more connected communities.

Estimate: The estimated cost for implementing the recommended improvements is approximately $7.1 million. A detailed breakdown of projects by location is provided in **Table 9-2**, and their geographic distribution is visually represented on **Map 9-2**. These resources outline where and how the investments will be made, ensuring a clear understanding of the scope and impact of each proposed improvement.

Assumptions: The construction of separated bike lanes will involve installing physical barriers, such as a concrete median, to provide clear and safe separation from vehicle traffic. In areas where space is limited, bollards will be placed roughly every 10 feet to define the bike lane effectively as illustrated in **Figure 9-4**. Adjustments to drainage systems may also be necessary to ensure proper water flow. To clearly mark the lanes, MUTCD-compliant R3-17 (Bike Lane) signs will be installed at regular intervals, and thermoplastic pavement markings—including directional arrows and bike symbols—will be applied to guide cyclists.

Figure 9-4: Example of a Delineator Post Protected Lane



Source: [Portland Protected Bicycle Lane Planning and Design Guide]

Each mile of bike lane is expected to require approximately 25 bollards and associated pavement striping. To ensure safety during construction, MOT plans will be implemented, including lane closures, temporary signage, and the use of flaggers to direct traffic. The total estimated cost for each mile of separated bike lane is $1.1 million, covering mobilization, material cost, labor costs associated with the construction of separated bike lane and the installation of signage, MOT, and the placement of thermoplastic pavement markings. These efforts will pave the way for safer, more accessible cycling routes, fostering a more bike-friendly environment for everyone.

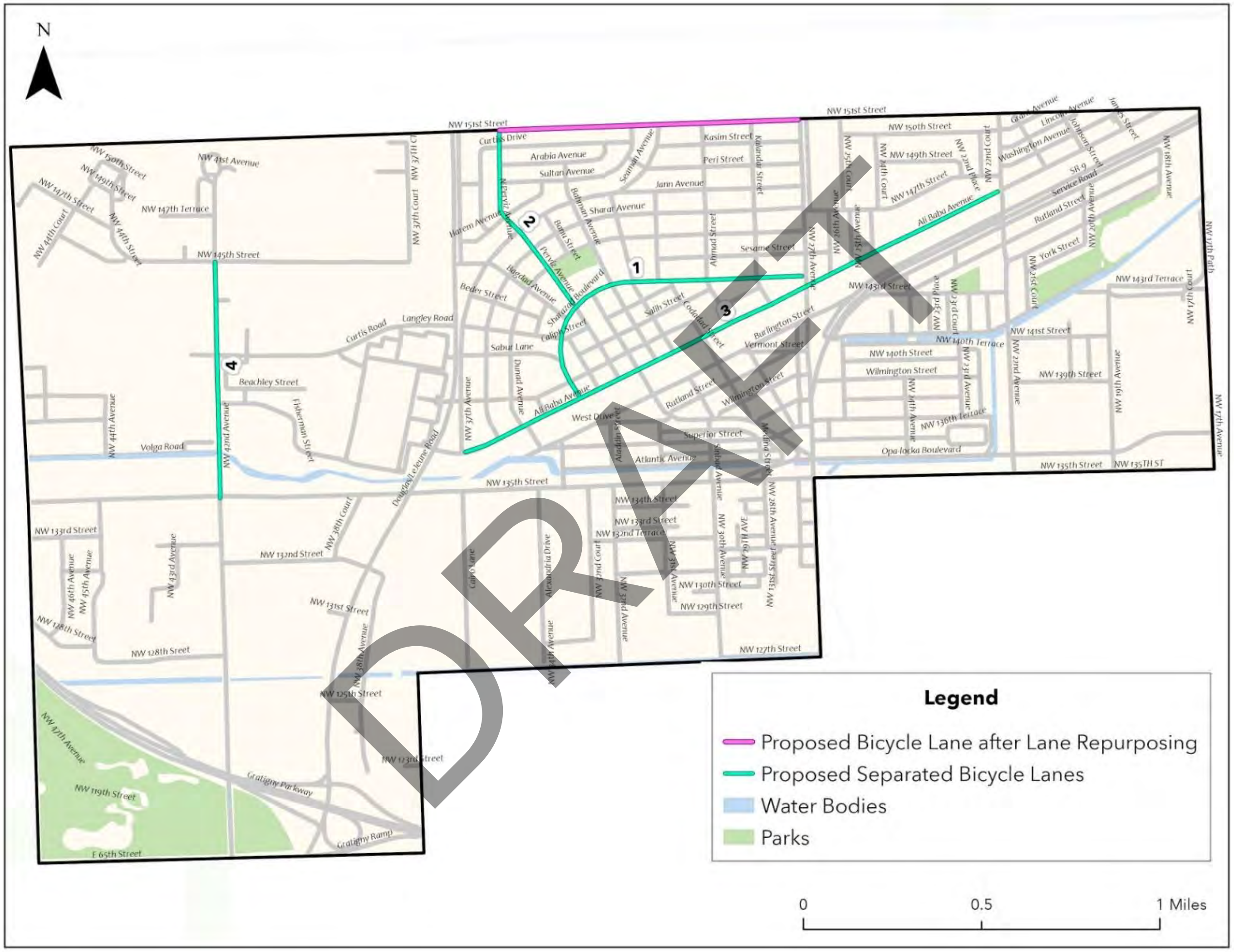
Crash Contributing Factor Addressed: Bicycle and pedestrian related crashes.

Implementation Timeframe: Long-term

Table 9- 2: Proposed Separated Bicycle Lanes

Project / Map ID	Facility Name	From	To	Length (miles)	Cost per Project	Planning & Engineering (15%)	Construction, Engineering, Inspection (12%)	Utility Relocation (15%)	Landscape (10%)	Hardscape/ Streetscape (10%)	Contingency (20%)	Total Cost
1	Sharazad Boulevard	Ali Baba Avenue	SR 9/NW 27 Avenue	0.85	$935,000	$140,250	$112,200	$140,250	$93,500	$93,500	$187,000	$1,701,700
2	Perviz Avenue	Oriental Boulevard	Sharazad Boulevard	0.53	$583,000	$87,450	$69,960	$87,450	$58,300	$58,300	$116,600	$1,061,060
3	Ali Baba Avenue	NW 37 Avenue	Sharazad Boulevard	1.52	$1,672,000	$250,800	$200,640	$250,800	$167,200	$167,200	$334,400	$3,043,040
4	NW 42 Avenue	NW 42nd Avenue	NW 22 Avenue	0.65	$715,000	$107,250	$85,800	$107,250	$71,500	$71,500	$143,000	$1,301,300
5	NW 151 Street	Perviz Avenue	NW 27 Avenue	0.75	$1,100,000	$825,000	$123,750	$99,000	$123,750	$82,500	$82,500	$165,000
											Total	$8,628,620.00

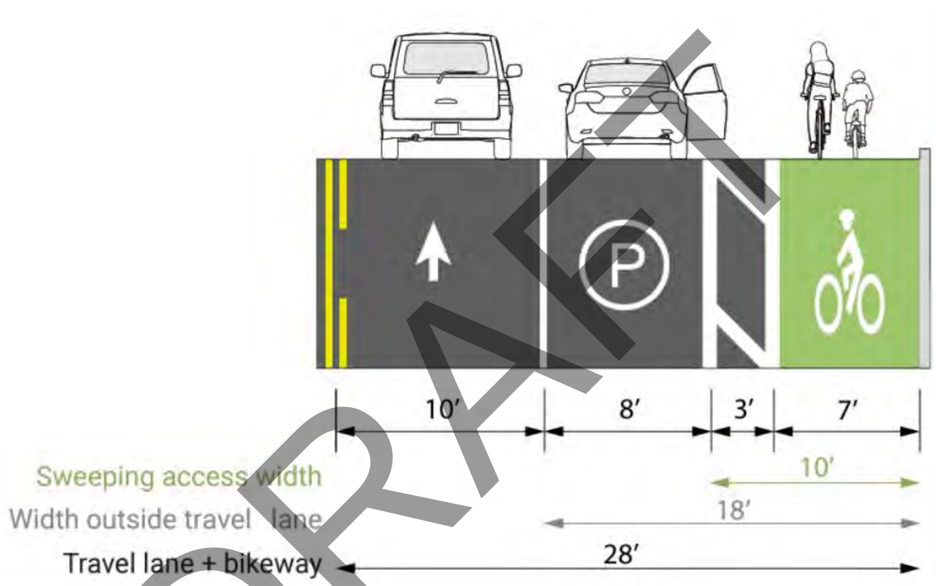
Map 9-2: Proposed Separated Bicycle Lanes



9.3 Bike Lane Striping

Description: Painting dedicated bike lanes on the roadway involves creating a clear, visible separation between cyclists and motor vehicle traffic by marking a solid white line along the road as illustrated in **Figure 9-5**. Within the bike lane, bicycle symbols and directional arrows are added to guide cyclists and promote smooth traffic flow. These lanes are typically between 5 feet and 7 feet wide, offering ample space for cyclists to ride safely while maintaining a distinct separation from cars. This simple yet effective approach ensures that cyclists have a designated, protected space on the road, enhancing both their safety and visibility, and fostering a more harmonious interaction between all road users.

Figure 9- 5: Example of a Parking Protected Lane



Source: [Portland Protected Bicycle Lane Planning and Design Guide]

Estimate: The estimated cost for implementing the recommended improvements is approximately $354,000. A detailed breakdown of projects by location is provided in **Table 9-3**, and their geographic distribution is visually represented in **Map 9-3**.

Assumptions: Bike lane striping is a crucial process that includes the application of durable thermoplastic markings along designated lanes. This will feature bicycle lane symbols arranged in accordance with MUTCD standards to ensure clarity and consistency. To further enhance safety and visibility, signs will be installed at regular intervals, guiding cyclists along their path. MOT plans will be implemented to oversee lane closures and provide temporary signage, ensuring a secure installation process. The total estimated cost for these enhancements is $50,000 per mile, which includes mobilization costs, all necessary materials, signage, and MOT efforts, as well as labor costs for the installation of thermoplastic pavement markings.

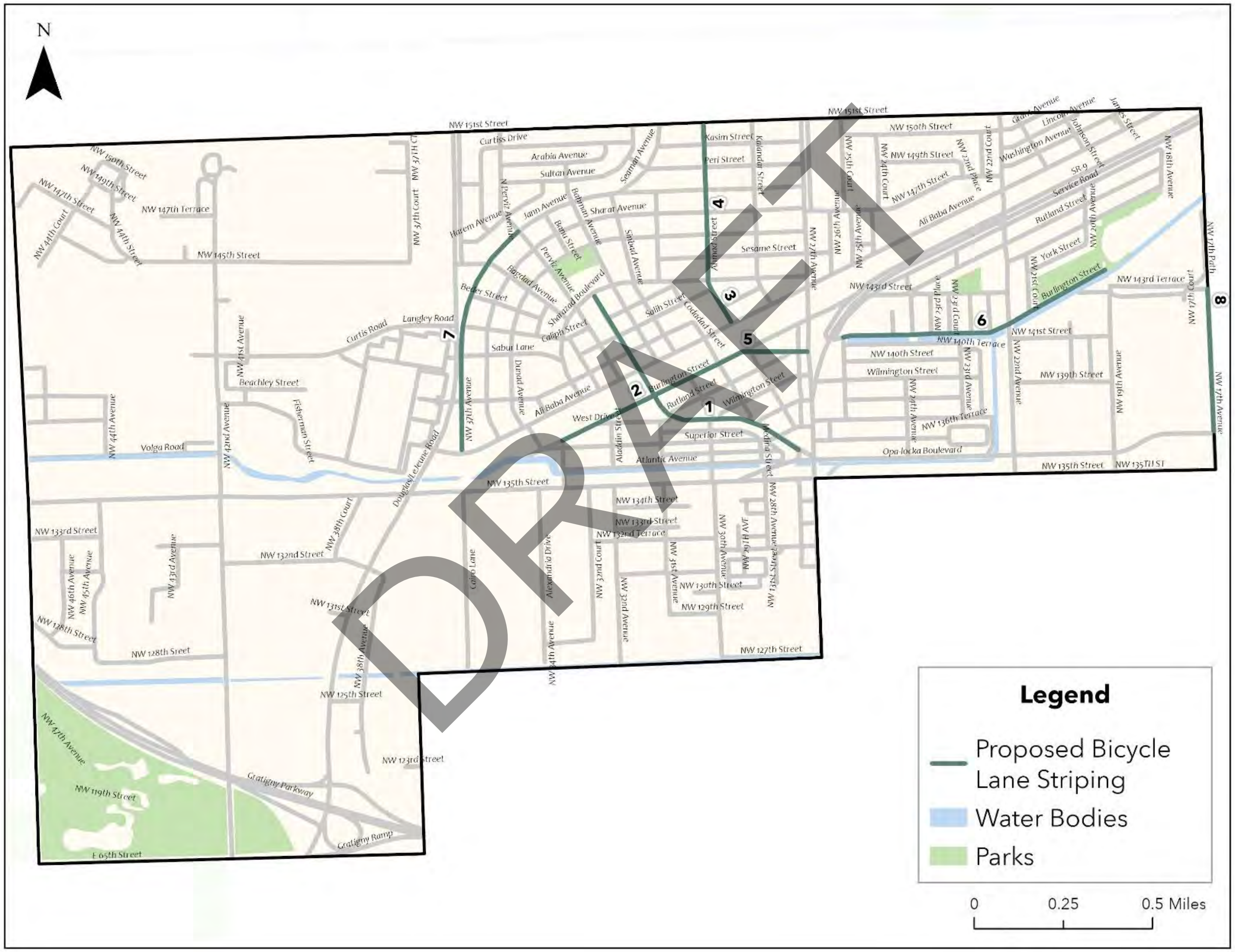
Crash Contributing Factor Addressed: Bicycle and pedestrian related crashes.

Implementation Timeframe: Short-term

Table 9- 3: Proposed Bicycle Lane Striping

Project / Map ID	Facility Name	From	To	Length (miles)	Cost Per Mile	Cost per Project	Planning and Engineering (15%)	Right-of-Way (20%)	Construction, Engineering, Inspection (12%)	Contingency (20%)	Total Cost
1	Opa-locka Boulevard	Sharazad Boulevard	NW 27 Avenue	0.72	$50,000.00	$37,000.00	$5,550.00	$7,400.00	$4,440.00	$10,000.00	$64,390.00
2	Burlington Street	Sesame Street	Vermont Street	0.52	$50,000.00	$26,000.00	$3,900.00	$5,200.00	$3,120.00	$10,000.00	$48,220.00
3	Ahmad Street	Sharazad Boulevard	Ali Baba Avenue	0.12	$50,000.00	$6,000.00	$900.00	$1,200.00	$720.00	$10,000.00	$18,820.00
4	Ahmad Street	Sharazad Boulevard	Oriental Boulevard	0.43	$50,000.00	$22,000.00	$3,300.00	$4,400.00	$2,640.00	$10,000.00	$42,340.00
5	Vermont Street	Burlington Street	SR 9/NW 27 Avenue	0.16	$50,000.00	$1,200.00	$1,600.00	$960.00	$10,000.00	$21,760.00	$8,000.00
6	Burlington Street	NW 26 Avenue	Ingram Park	0.71	$50,000.00	$35,500.00	$5,325.00	$7,100.00	$4,260.00	$10,000.00	$62,185.00
7	Douglas Road/Jann Avenue	Ali Baba Avenue	Perviz Avenue	0.65	$50,000.00	$32,500.00	$4,875.00	$6,500.00	$3,900.00	$10,000.00	$57,775.00
8	NW 17 Avenue	NW 143 Street	Opa-locka Boulevard	0.39	$50,000.00	$19,500.00	$2,925.00	$3,900.00	$2,340.00	$10,000.00	$38,665.00
										Total	$354,155.00

Map 9-3: Proposed Bicycle Lanes Striping



9.4 Wider Edge Lines

Description: Wider edge lines, as outlined in the MUTCD, are specifically designed to improve the visibility of travel lane boundaries beyond what traditional edge lines offer as illustrated in **Figure 9-6**. These enhanced markings are classified as "wider" when the width is increased from the standard 4 inches to 8 inches. This simple adjustment can significantly boost safety by making lane boundaries more noticeable to drivers, ultimately contributing to a more secure driving environment for everyone on the road.

Figure 9-6: Example of Wider Edge Line

Source: Texas Transportation Institute

Estimate: The estimated cost for implementing the recommended improvements is approximately $322,410.00. A detailed breakdown of projects by location is provided in **Table 9-4**, and their geographic distribution is visually represented on **Map 9-4**.

Assumptions: Wider edge lanes entail expanding the current paved shoulder and applying suitable thermoplastic striping to enhance safety and visibility. Each mile of shoulder widening will feature edge line markings, directional arrows, and essential signage, such as the W5-1 (lane reduction) sign, to guide drivers effectively. To ensure safety during the construction process, MOT will implement temporary lane closures, signage, and safety barriers. The estimated cost for this project is $150,000 per mile, which encompasses mobilization, paving, the placement of thermoplastic markings, signage, and MOT measures, which may require the use of traffic control officers. By investing in these improvements, we can create a safer and more navigable road environment for all users, fostering a sense of security on our streets.

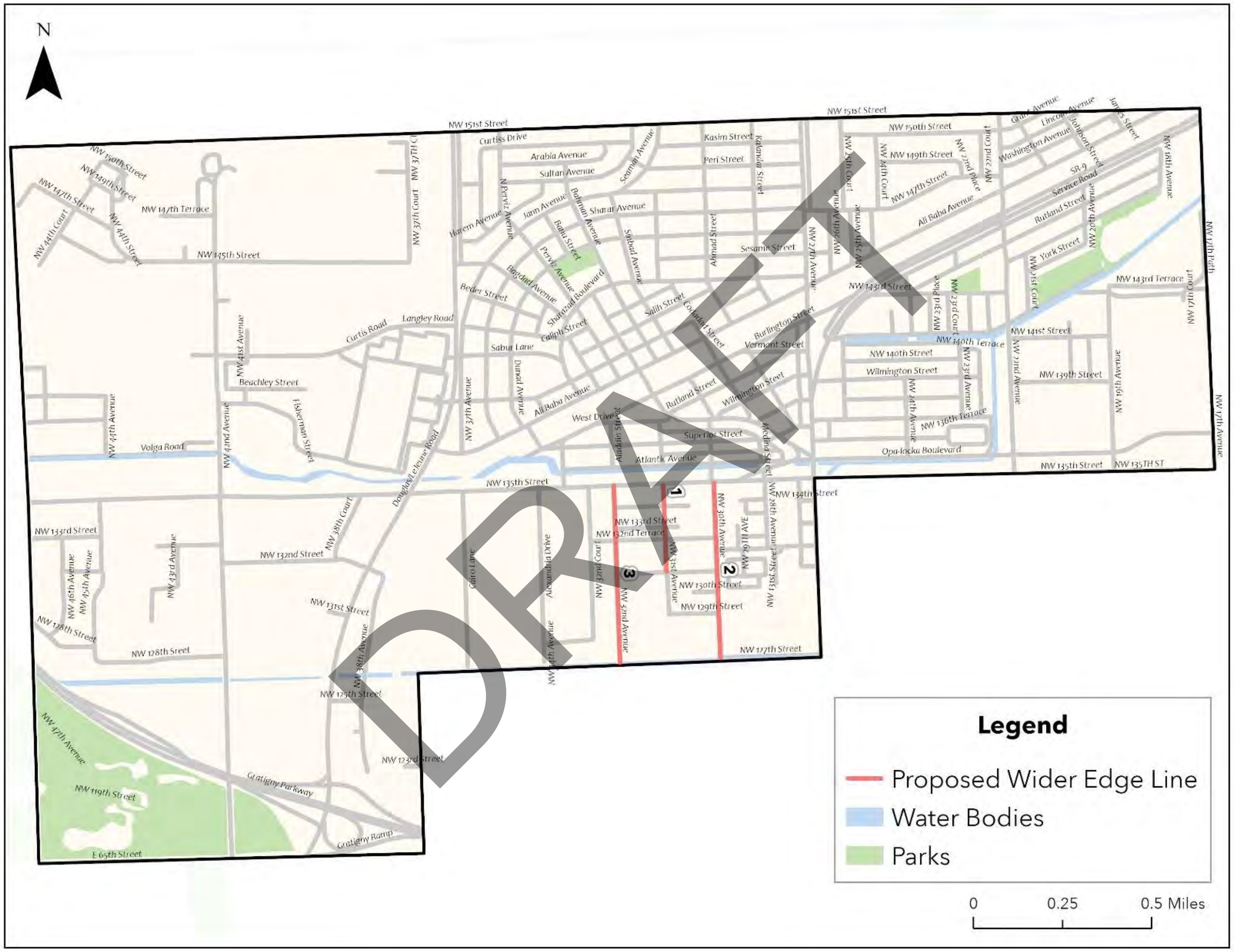
Crash Contributing Factor Addressed: Lane departure.

Implementation Timeframe: Short-term

Table 9-4: Proposed Wider Edge Lanes

Project / Map ID	Facility Name	From	To	Length (miles)	Cost Per Mile	Cost per Project	Planning and Engineering (15%)	Construction, Engineering, Inspection (12%)	Contingency (20%)	Total Cost
1	NW 31st Avenue	NW 135 Street	City Boundary	0.25	$150,000.00	$37,500.00	$5,625.00	$4,500.00	$30,000.00	$77,625.00
2	NW 30 Avenue	NW 135 Street	City Boundary	0.48	$150,000.00	$72,000.00	$10,800.00	$8,640.00	$30,000.00	$121,440.00
3	NW 32 Avenue	NW 135 Street	City Boundary	0.49	$150,000.00	$73,500.00	$11,025.00	$8,820.00	$30,000.00	$123,345.00
									Total:	**$322,410.00**

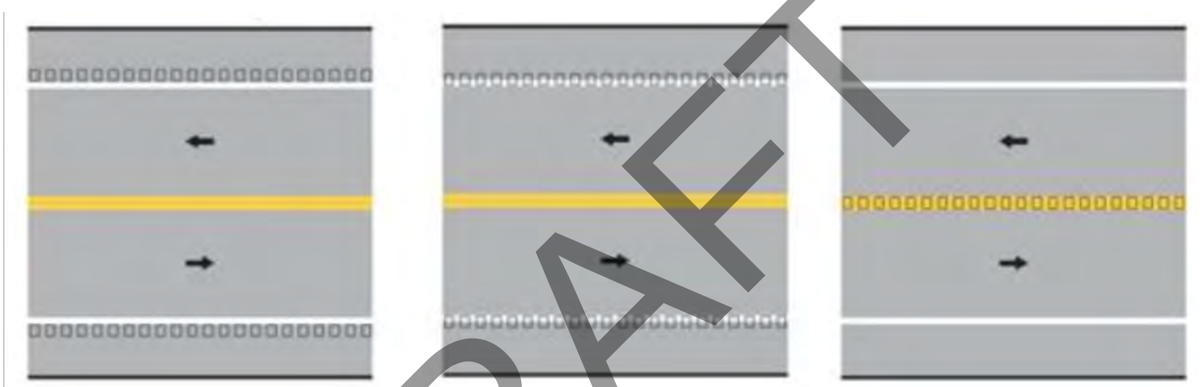
Map 9-4: Proposed Wider Edge Lanes



9.5 Longitudinal Rumble Strip

Description: Rumble strips consist of a series of milled or raised elements incorporated into the pavement, designed to produce noise and vibrations when vehicles pass over them. When strategically placed along the edge of the roadway as illustrated in **Figure 9-7**, these strips alert drivers who may be unintentionally drifting from their lanes, thereby helping to reduce the occurrence of run-off-road accidents. Additionally, when installed along the centerline of undivided highways, rumble strips play a vital role in preventing head-on collisions by notifying drivers who may inadvertently veer into oncoming traffic. These safety features are widely implemented to enhance driver awareness and mitigate crash risks, ultimately contributing to a safer and more secure driving experience for everyone on the road. Engineering and coordination must be coordinated closely with FDOT.

Figure 9-7: Examples of Longitudinal Rumble Strips



Edge line not on rumble strip **Edge line on rumble strip** **Center line on rumble strip**

Source: FHWA

Estimate: The estimated cost for implementing the recommended improvements is approximately $250,000.00. A detailed breakdown of projects by location is provided in **Table 9-5**, and their geographic distribution is visually represented in **Map 9-5**.

Assumptions: Raised rumble strips, commonly used in construction zones to regulate traffic flow, are strategically installed along road shoulders or centerlines to provide drivers with both auditory and vibrational feedback. This feedback plays a critical role in preventing lane departures and enhancing roadway safety. Typically, each strip measures 12 inches in width and 1 inch in height, with sets of 50 per mile at evenly spaced intervals to ensure consistent effectiveness. The installation process will require temporary lane closures, supported by a comprehensive MOT plan to prioritize safety. This plan includes the use of temporary signage, cones, and flaggers to direct vehicles safely through the work zone. The project, which needs to be coordinated with FDOT, is estimated to cost $75,000 per mile, covering mobilization, materials, labor for installing the rumble strips and signage, and all MOT-related efforts.

Crash Contributing Factor Addressed: Lane departure.

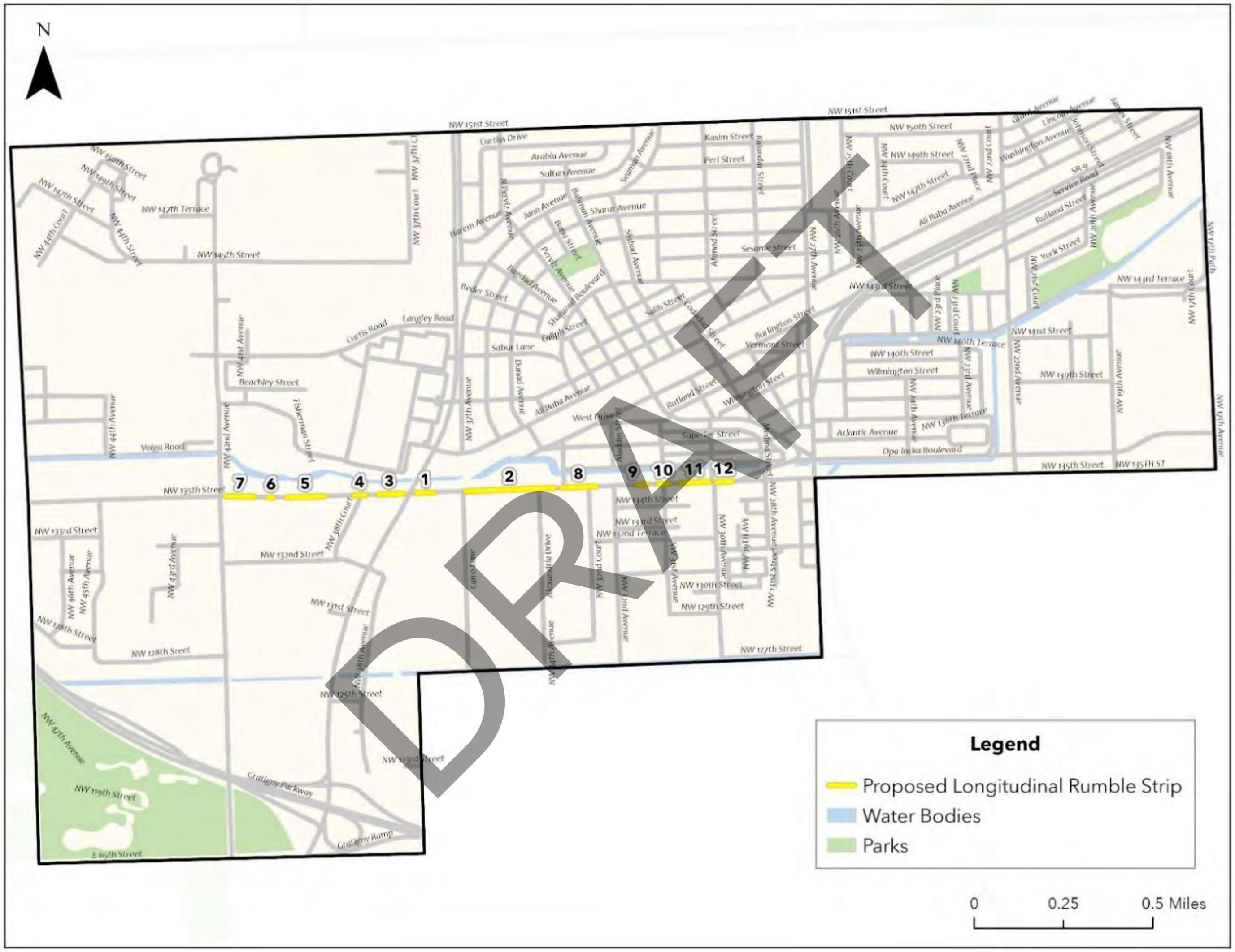
Implementation Timeframe: Short-term

Table 9-5: Proposed Longitudinal Rumble Strips

Project / Map ID	Facility Name	From	To	Length (miles)	Cost Per Mile	Cost per Project	Planning and Engineering (15%)	Construction, Engineering, Inspection (12%)	Contingency (20%)	Total Cost
1	NW 135 Street	Douglas Road	West Railroad Tracks	0.04	$75,000.00	$3,000.00	$450.00	$360.00	$15,000.00	$18,810.00
2	NW 135 Street	Sesame Street	Cairo Lane	0.22	$75,000.00	$16,500.00	$2,475.00	$1,980.00	$15,000.00	$35,955.00
3	NW 135 Street	NW 38 Court	Douglas Road	0.06	$75,000.00	$4,500.00	$675.00	$540.00	$15,000.00	$20,715.00
4	NW 135 Street	NW 38 Court	Douglas Road	0.02	$75,000.00	$1,500.00	$225.00	$180.00	$15,000.00	$16,905.00
5	NW 135 Street	NW 42 Avenue	NW 38 Court	0.09	$75,000.00	$6,750.00	$1,012.50	$810.00	$15,000.00	$23,572.50
6	NW 135 Street	NW 42 Avenue	NW 38 Court	0.01	$75,000.00	$750.00	$112.50	$90.00	$15,000.00	$15,952.50
7	NW 135 Street	NW 42 Avenue	NW 38 Court	0.07	$75,000.00	$5,250.00	$787.50	$630.00	$15,000.00	$21,667.50
8	NW 135 Street	NW 32 Avenue	Alexandria Drive	0.08	$75,000.00	$6,000.00	$900.00	$720.00	$15,000.00	$22,620.00
9	NW 135 Street	NW 32 Avenue	NW 31 Avenue	0.02	$75,000.00	$1,500.00	$225.00	$180.00	$15,000.00	$16,905.00
10	NW 135 Street	NW 32 Avenue	NW 31 Avenue	0.02	$75,000.00	$1,500.00	$225.00	$180.00	$15,000.00	$16,905.00

Project / Map ID	Facility Name	From	To	Length (miles)	Cost Per Mile	Cost per Project	Planning and Engineering (15%)	Construction, Engineering, Inspection (12%)	Contingency (20%)	Total Cost
11	NW 135 Street	Aswan Road	NW 31 Avenue	0.07	$75,000.00	$5,250.00	$787.50	$630.00	$15,000.00	$21,667.50
12	NW 135 Street	NW 28 Avenue	Aswan Road	0.03	$75,000.00	$2,250.00	$337.50	$270.00	$15,000.00	$17,857.50
									Total	$249,532.50

Map 9-5: Proposed Longitudinal Rumble Strips



9.6 Variable Speed Limit Signs

Description: An electronic sign designed to display varying speed limits as seen in **Figure 9-8**, based on real-time traffic, weather, and road conditions enhances safety on our roadways. These signs are typically linked to a traffic management system, allowing them to dynamically adjust speed limits according to the current circumstances. By providing timely information to drivers, these signs help ensure safer driving experiences and encourage compliance with speed regulations, ultimately fostering a more secure environment for all road users.

Figure 9-8: Example of a Variable Speed Limit Sign

Source: [Sunrise SESA]

Estimate: The estimated cost for implementing the recommended improvements is approximately $918,750.00. A detailed breakdown of projects by location is provided in **Table 9-6**, and their geographic distribution is visually represented in **Map 9-6**.

Assumptions: Variable speed limit signs consist of digital, programmable displays that can modify the speed limit in response to changing traffic conditions. Each installation will feature one electronic sign, a control unit, and connections for either solar or electrical power, ensuring reliable operation. To complement the digital display, additional signs will be positioned nearby for clarity and reinforcement. During the installation process, MOT will implement lane closures and deploy safety flaggers to ensure a secure environment for both workers and drivers. The estimated cost for each sign is $25,000, which includes mobilization, material costs, labor costs associated with the construction of the sign's foundation and electrical work, as well as MOT.

Crash Contributing Factor Addressed: Aggressive driving/speeding, as well as bicycle and pedestrian related crashes.

Implementation Timeframe: Short-term

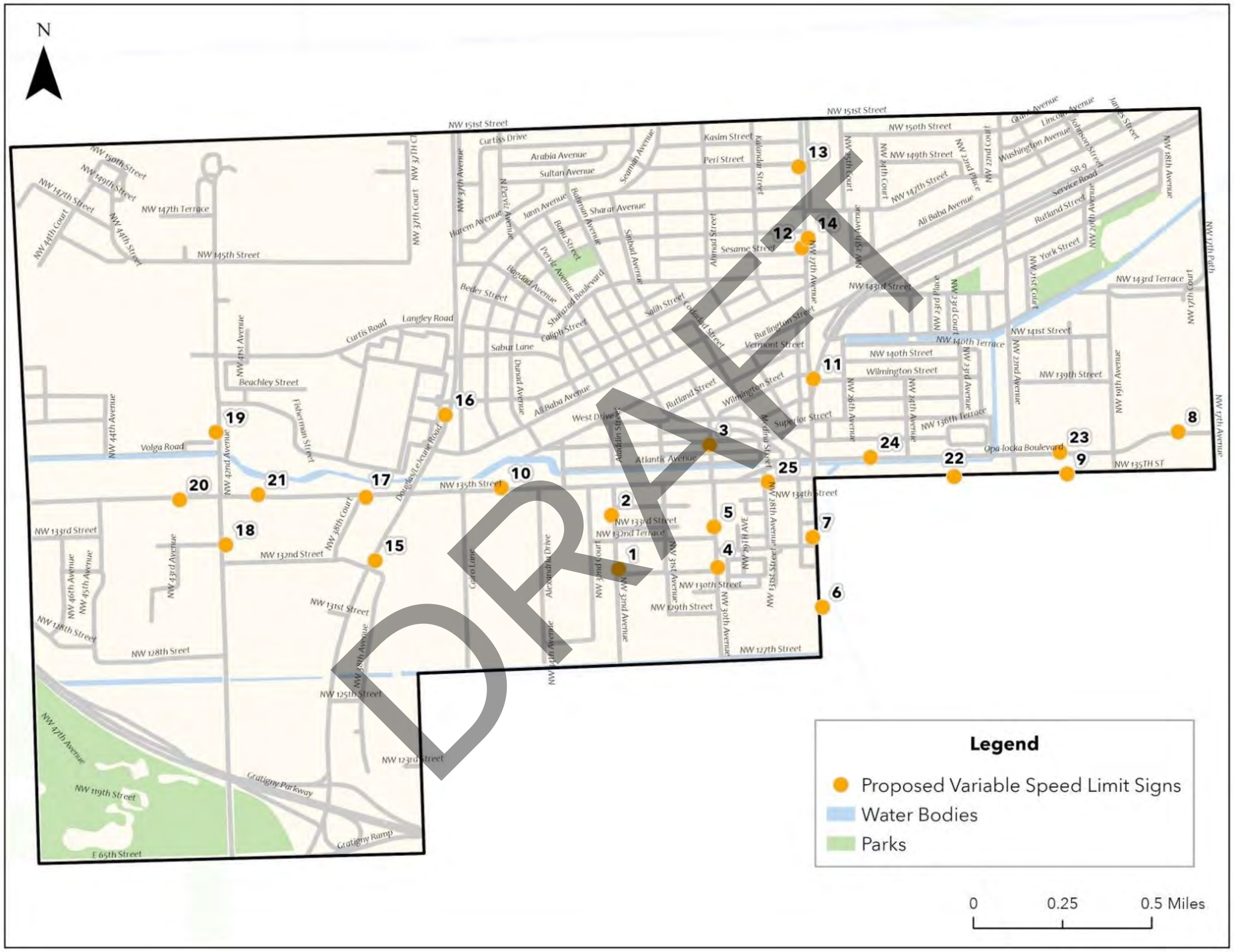
Table 9-6: Proposed Variable Speed Signal

Project / Map ID	Facility Name	From	To	Each Cost	Planning and Engineering (15%)	Construction, Engineering, Inspection (12%)	Contingency (20%)	Total Cost
1	NW 32nd Ave	NW 131 Street	NW 132nd Ter	$25,000.00	$3,750.00	$3,000.00	$5,000.00	$36,750.00
2	NW 32 Avenue	NW 134 Street	NW 133 Street	$25,000.00	$3,750.00	$3,000.00	$5,000.00	$36,750.00
3	Sinbad Avenue	Superior Street	Atlantic Avenue	$25,000.00	$3,750.00	$3,000.00	$5,000.00	$36,750.00
4	Aswan Road	NW 131 Street	NW 132 Street	$25,000.00	$3,750.00	$3,000.00	$5,000.00	$36,750.00
5	Aswan Road	NW 132 Terrace	NW 135 Street	$25,000.00	$3,750.00	$3,000.00	$5,000.00	$36,750.00
6	NW 27 Avenue	NW 131 Street	NW 127 Street	$25,000.00	$3,750.00	$3,000.00	$5,000.00	$36,750.00
7	NW 27 Avenue	NW 132 Street	NW 133 Street	$25,000.00	$3,750.00	$3,000.00	$5,000.00	$36,750.00
8	Opa-locka Boulevard	NW 19 Avenue	NW 17 Avenue	$25,000.00	$3,750.00	$3,000.00	$5,000.00	$36,750.00
9	NW 135 Street	NW 21 Avenue	NW 19 Avenue	$25,000.00	$3,750.00	$3,000.00	$5,000.00	$36,750.00
10	NW 135 Street	Cairo Lane	Alexandria Drive	$25,000.00	$3,750.00	$3,000.00	$5,000.00	$36,750.00
11	NW 27 Avenue	Wilmington Street	NW 139 Street	$25,000.00	$3,750.00	$3,000.00	$5,000.00	$36,750.00
12	NW 27 Avenue (SB)	Dunad Avenue	Sesame Street	$25,000.00	$3,750.00	$3,000.00	$5,000.00	$36,750.00

Project / Map ID	Facility Name	From	To	Each Cost	Planning and Engineering (15%)	Construction, Engineering, Inspection (12%)	Contingency (20%)	Total Cost
13	NW 27 Avenue	Peri Street	Jann Avenue	$25,000.00	$3,750.00	$3,000.00	$5,000.00	$36,750.00
14	NW 27 Avenue (NB)	Dunad Avenue	Sesame Street	$25,000.00	$3,750.00	$3,000.00	$5,000.00	$36,750.00
15	Douglas Road Extension	NW 135 Street	NW 132 Street	$25,000.00	$3,750.00	$3,000.00	$5,000.00	$36,750.00
16	Douglas Road	Fisherman Street	Ali Baba Avenue	$25,000.00	$3,750.00	$3,000.00	$5,000.00	$36,750.00
17	NW 135 Street	NW 38 Court	Douglas Road	$25,000.00	$3,750.00	$3,000.00	$5,000.00	$36,750.00
18	Douglas/LeJeune Road	NW 135 Street	NW 132 Street	$25,000.00	$3,750.00	$3,000.00	$5,000.00	$36,750.00
19	NW 42 Avenue	Curtiss Street	Volga Road	$25,000.00	$3,750.00	$3,000.00	$5,000.00	$36,750.00
20	NW 135 Street	NW 45 Avenue	LeJeune Road / NW 42 Avenue	$25,000.00	$3,750.00	$3,000.00	$5,000.00	$36,750.00
21	NW 135 Street	LeJeune Road/NW 42 Avenue	NW 38 Court	$25,000.00	$3,750.00	$3,000.00	$5,000.00	$36,750.00
22	NW 135 Street	NW 24 Avenue	NW 22 Avenue	$25,000.00	$3,750.00	$3,000.00	$5,000.00	$36,750.00
23	Opa-locka Boulevard	NW 22 Avenue	NW 19 Avenue	$25,000.00	$3,750.00	$3,000.00	$5,000.00	$36,750.00

Project / Map ID	Facility Name	From	To	Each Cost	Planning and Engineering (15%)	Construction, Engineering, Inspection (12%)	Contingency (20%)	Total Cost
24	Opa-locka Boulevard	Service Road	NW 24 Avenue	$25,000.00	$3,750.00	$3,000.00	$5,000.00	$36,750.00
25	NW 135 street	NW 27 Avenue	NW 28 Avenue	$25,000.00	$3,750.00	$3,000.00	$5,000.00	$36,750.00
							Total:	$918,750.00

Map 9-6: Proposed Variable Speed Signal



9.7 Raised Intersections

Description: A raised intersection elevates the entire roadway to the same level as the adjacent sidewalks, creating a seamless, flat surface that naturally compels drivers to reduce their speed as they approach, as illustrated in **Figure 9-9**. This design significantly enhances pedestrian visibility, ensuring that people crossing the street are more easily seen by motorists. By slowing down vehicles, the raised intersection reduces the likelihood of accidents and promotes a safer environment for all road users. This type of intersection is especially valuable in areas with heavy pedestrian traffic, such as downtown districts, school zones, and residential neighborhoods, where ensuring the safety of those on foot is critical. The design gives pedestrians clear priority by creating a visually distinct and accessible crossing area, making it easier for people of all ages and abilities to navigate.

Figure 9-9: Example of a Raised Intersection

Source: [Urban Street Design Guide – National Association of City Transportation Officials (NACTO)]

The gradual elevation of the roadway functions as a highly effective traffic-calming measure. It not only slows vehicles but also encourages drivers to be more cautious and aware of their surroundings, contributing to an overall reduction in speed. Raised intersections are particularly well-suited for both urban and residential settings, where walkability and community livability are key goals. By integrating this design feature into the roadway, cities and neighborhoods can foster more pedestrian-friendly spaces, enhancing quality of life while supporting safer and more vibrant streetscapes.

In addition, raised intersections often incorporate aesthetic elements such as patterned crosswalks or decorative paving materials, further enhancing their appeal and blending them into the surrounding area. This combination of safety, functionality, and design can transform an intersection into a focal point that strengthens the character of the neighborhood while supporting safer, more enjoyable streets for everyone.

Estimate: The estimated cost for implementing the recommended improvements is approximately $1.9 million. A detailed breakdown of projects by location is provided in **Table 9-7**, and their geographic distribution is visually represented on **Map 9-7**.

Implementation Timeframe: Mid-term

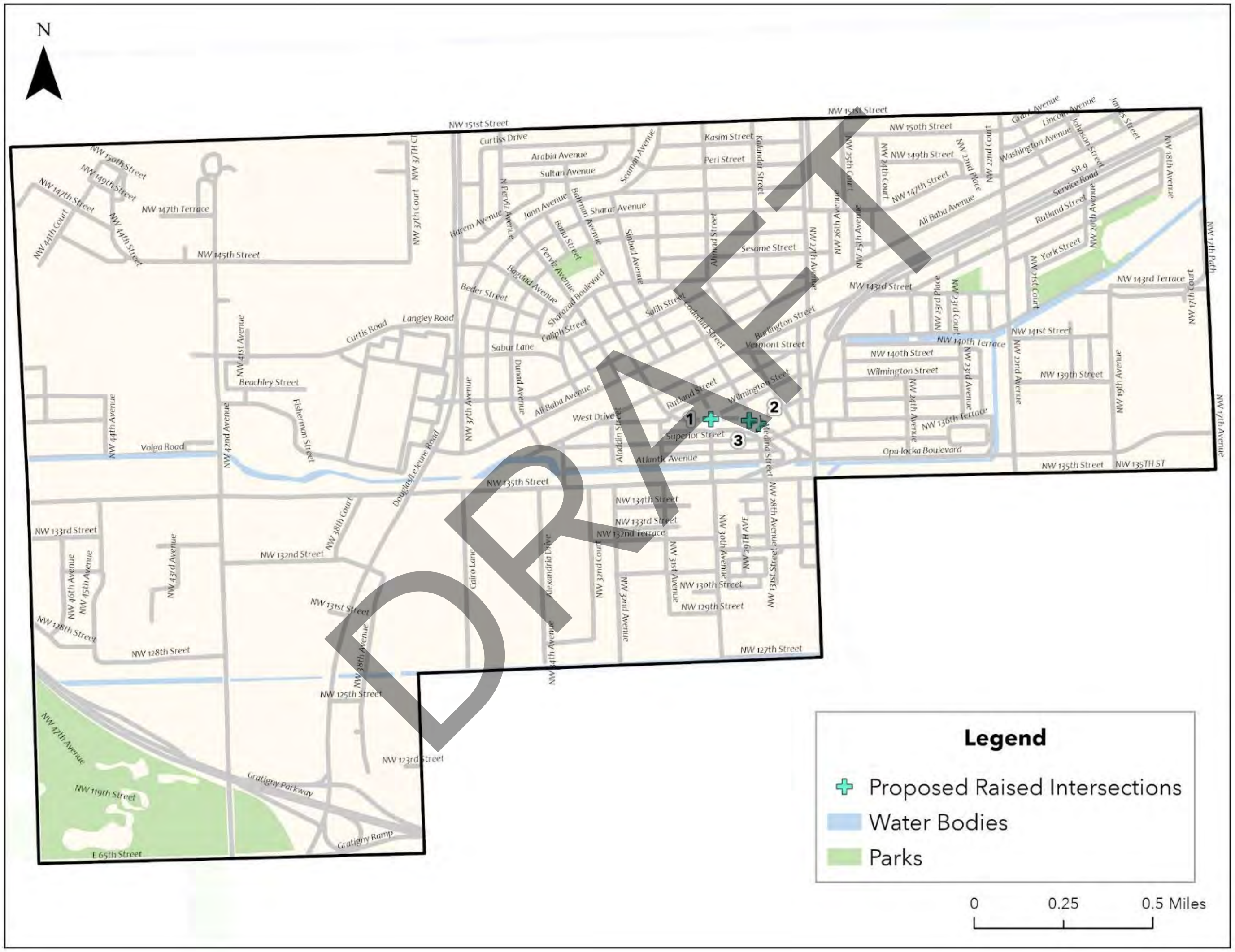
Crash Contributing Factor Addressed: Intersection related, aggressive driving, and speeding

Assumptions: A raised intersection enhances pedestrian safety and reduces vehicle speeds by elevating the entire intersection. The process involves milling the existing pavement, adjusting drainage and utilities, grading swales, and installing new header curbs along the corner radii. In addition, ADA-compliant ramps will be reconstructed, and high-visibility thermoplastic markings will be applied to the crosswalks for improved clarity. Each raised intersection will also feature MUTCD-compliant advance warning signage, such as W11-2 (pedestrian crossing) and W17-1 (speed hump) signs. MOT will ensure safe construction with intersection closures, detour signage, and other safety precautions. The estimated cost will vary per intersection, depending on specific drainage and utility adjustments, but includes all materials, signage, and MOT provisions. This effort creates a more pedestrian-friendly environment, supporting safer, calmer streets.

Table 9-7: Proposed Raised Intersections

Project / Map ID	Facility Name	Cost Per Project	Planning and Engineering (15%)	Right-of-Way (20%)	Construction, Engineering, Inspection (12%)	Utility Relocation (15%)	Landscape (10%)	Hardscape / Streetscape (10%)	Contingency (20%)	Total Cost
1	Sinbad Avenue / Opa-locka Boulevard	$350,000.00	$52,500.00	$70,000.00	$42,000.00	$52,500.00	$35,000.00	$35,000.00	$70,000.00	$707,000.00
2	York Street / Opa-locka Boulevard	$350,000.00	$52,500.00	$70,000.00	$42,000.00	$52,500.00	$35,000.00	$35,000.00	$70,000.00	$707,000.00
3	Codadad Street / Opa-locka Boulevard	$250,000.00	$37,500.00	$50,000.00	$30,000.00	$37,500.00	$25,000.00	$25,000.00	$50,000.00	$505,000.00
									Total Cost:	**$1,919,000.00**

Map 9-7: Proposed Raised Intersections



9.8 Roundabouts

Description: This category encompasses a wide range of improvements aimed at boosting safety and efficiency at intersections, particularly through the implementation of roundabouts. Roundabouts, as seen in **Figure 9-10**, are a proven safety intervention that can significantly reduce the likelihood and severity of crashes by eliminating head-on and T-bone collisions. By redesigning the intersection's geometry, roundabouts force traffic to slow down while maintaining continuous movement, which decreases congestion and improves overall traffic flow.

Roundabouts also offer benefits for all users, including pedestrians and cyclists, as they tend to reduce vehicle speeds, making crossings safer and more predictable. Dedicated bike lanes or shared-use paths can be incorporated to accommodate cyclists, while refuge islands can be added to assist pedestrians in crossing one direction of traffic at a time. In addition to roundabouts, other intersection upgrades such as adding dedicated turn lanes, improving signage and pavement markings, enhancing lighting for better visibility, or adjusting signal timing can be implemented. These enhancements work in tandem with roundabout designs to create safer, more efficient intersections that are easier to navigate for all road users. By reducing conflict points and improving clarity for drivers and pedestrians, these modifications help minimize accidents, ease congestion, and contribute to a more predictable, user-friendly experience.

Figure 9-10: Example of an Intersection Improvement

Source: [Urban Street Design Guide – National Association of City Transportation Officials (NACTO)]

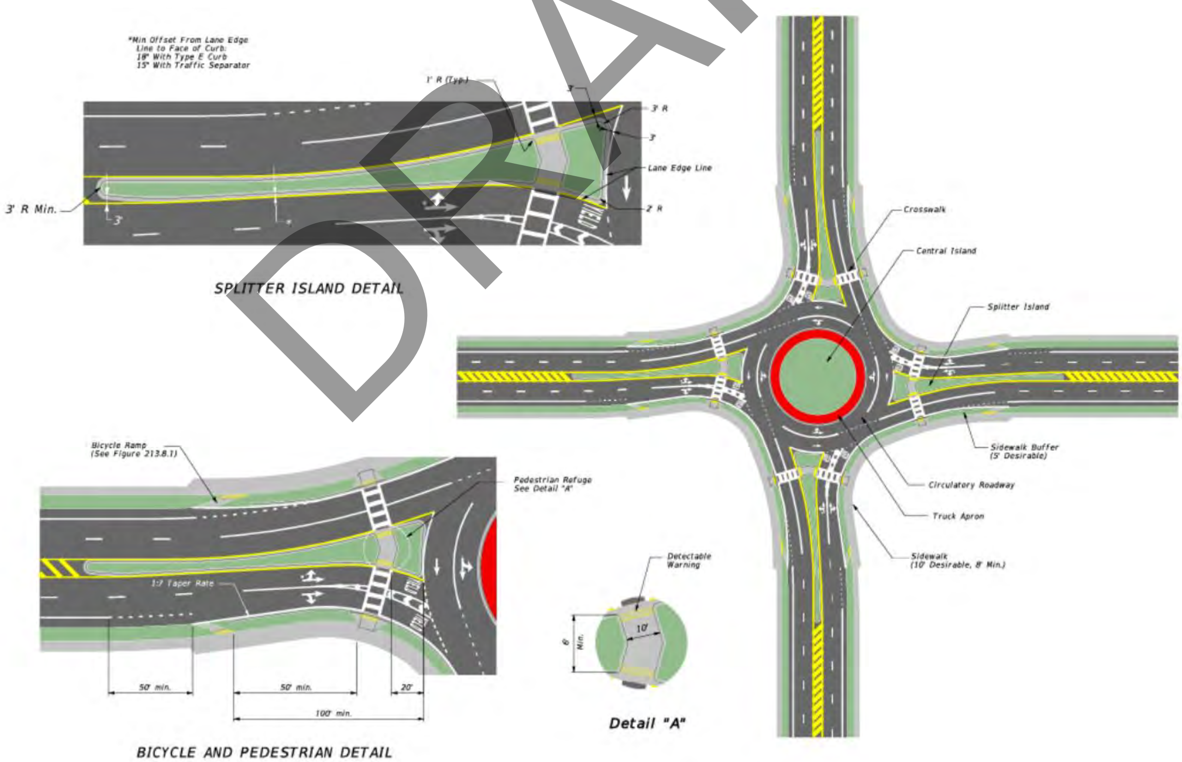
Estimate: The estimated cost for implementing the recommended improvements is approximately $4.1 million. A detailed breakdown of projects by location is provided in **Table 9-8**, and their geographic distribution is visually represented on **Map 9-8**.

Implementation Timeframe: Long-term

Crash Contributing Factor Addressed: Aggressive driving, speeding, and intersection related crashes.

Assumptions: Building a roundabout involves comprehensive pavement reconstruction, along with widening the roadway and constructing a stable base. The project also includes adjusting drainage and utilities, installing curbs, and placing MUTCD-compliant R6-3 signage to guide traffic through the roundabout. Raised concrete medians will be constructed, and high-visibility pavement markings applied to enhance clarity and safety for drivers. Additionally, lighting and landscaping elements will be integrated to improve visibility and aesthetics. MOT will involve road closures and detours, requiring thorough planning to ensure traffic safety during construction. The estimated cost of each roundabout will vary based on specific site conditions, including the extent of utilities and drainage adjustments. However, these investments will ultimately create safer, more efficient intersections while enhancing the surrounding environment. Characteristics of a modern roundabout are depicted in **Figure 9-11**.

Figure 9-11: Characteristics of a Modern Roundabout

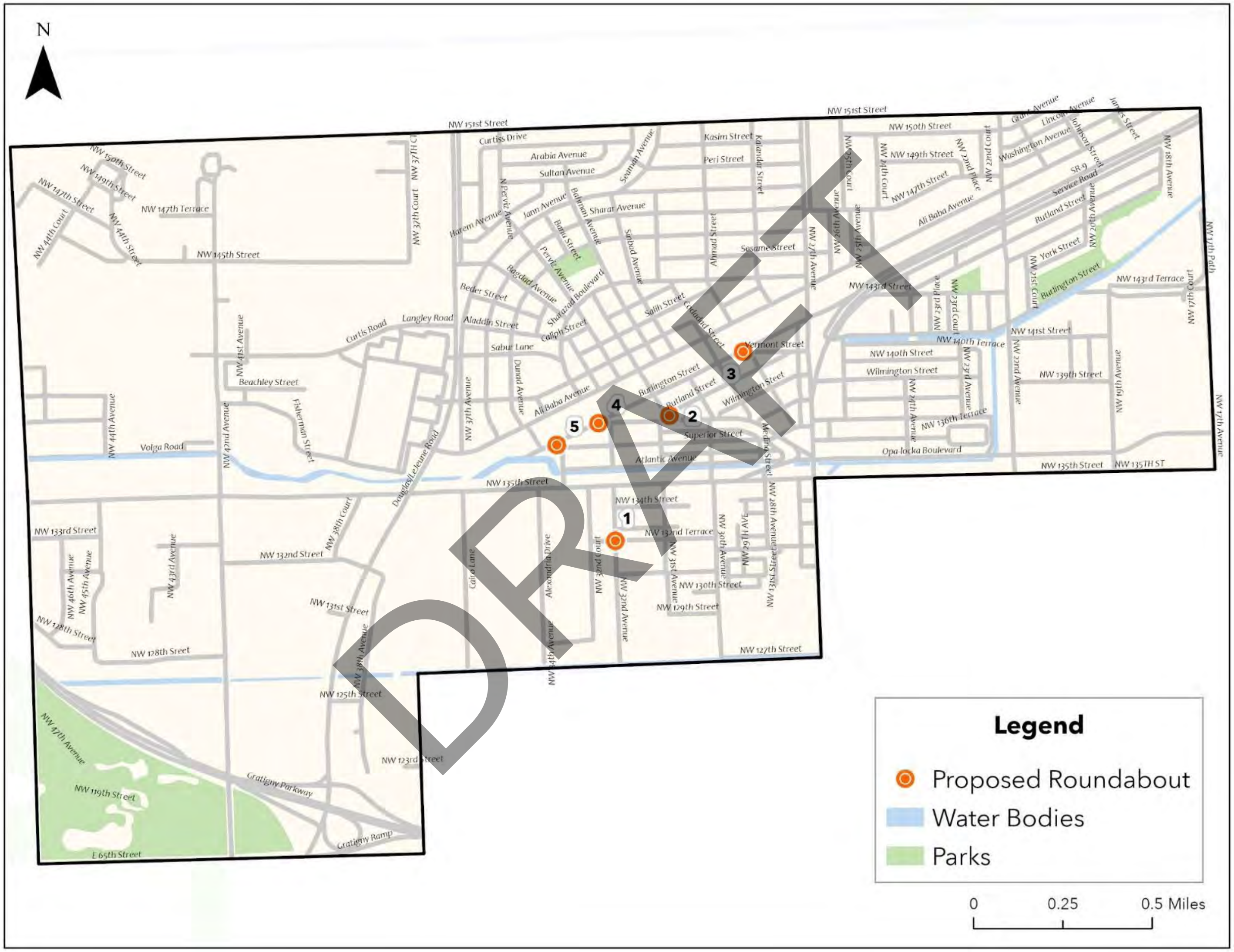


Source: 2024 Florida Design Manual - 213 Modern Roundabouts

Table 9-8: Proposed Roundabouts

Project /Map ID	Street	Cost per Project	Planning and Engineering (15%)	Right-of-Way (20%)	Construction, Engineering, Inspection (12%)	Utility Relocation (15%)	Landscape (10%)	Hardscape / Streetscape (10%)	Contingency (20%)	Total Cost
1	NW 32Avenue / NW 32 Terrace	$400,000.00	$60,000.00	$80,000.00	$48,000.00	$60,000.00	$40,000.00	$40,000.00	$80,000.00	$808,000.00
2	Rutland Street / Opa-locka Boulevard	$400,000.00	$60,000.00	$80,000.00	$48,000.00	$60,000.00	$40,000.00	$40,000.00	$80,000.00	$808,000.00
3	Burlington Sreet / Vermont Street	$400,000.00	$60,000.00	$80,000.00	$48,000.00	$60,000.00	$40,000.00	$40,000.00	$80,000.00	$808,000.00
4	West Drive / Burlington Street	$400,000.00	$60,000.00	$80,000.00	$48,000.00	$60,000.00	$40,000.00	$40,000.00	$80,000.00	$808,000.00
5	Sesame Street / Superior Street	$400,000.00	$60,000.00	$80,000.00	$48,000.00	$60,000.00	$40,000.00	$40,000.00	$80,000.00	$808,000.00
									Total:	**$4,040,000.0**

Map 9-8: Proposed Roundabouts



9.9 Long-Term Intersection Improvements

Description: Intersection improvements cover a wide array of modifications aimed at creating safer, more efficient, and user-friendly intersections. These upgrades can involve reconfiguring the intersection layout to improve sightlines and reduce conflict points, adding dedicated turn lanes to ease congestion, and updating signage and pavement markings to increase visibility and guide drivers effectively. Enhanced lighting can improve night-time safety, while adjustments to signal timing can help reduce delays and prevent collisions. By addressing each of these elements, these improvements promote smoother traffic flow and a safer, more accessible experience for all road users, including drivers, pedestrians, and cyclists. Some examples can be seen in **Figure 9-12** through **Figure 9-14**.

Estimate: The estimated cost for implementing the recommended improvements is approximately $3.3 million. A detailed breakdown of projects by location is provided in **Table 9-9**, and their geographic distribution is visually represented in **Map 9-9**.

Implementation Timeframe: Long-term

Crash Contributing Factor Addressed: Intersection related crashes and aggressive and speeding.

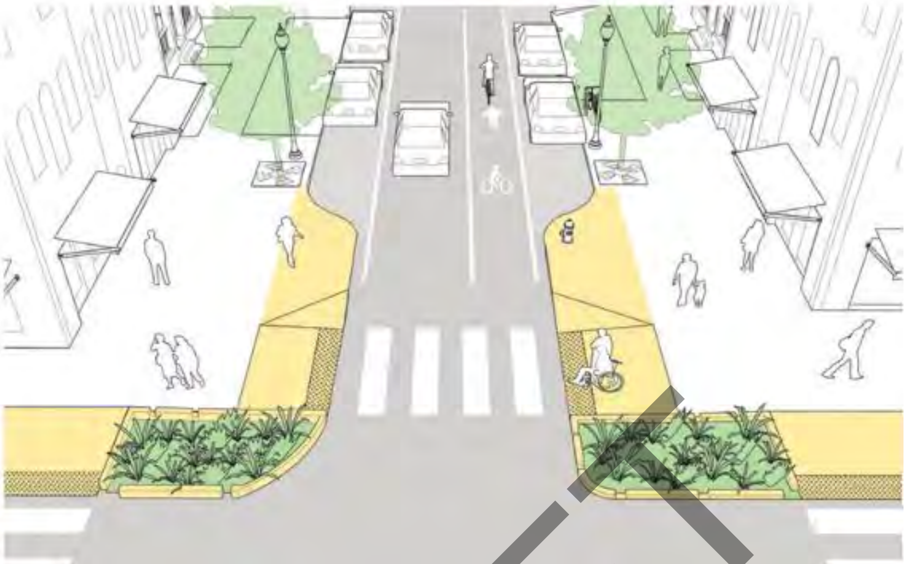
Figure 9-12: Example of Curb Extensions

Source: Urban Street Design Guide – National Association of City Transportation Officials (NACTO)

Figure 9-13: Example of Complex Intersection

Source: Urban Street Design Guide – National Association of City Transportation Officials (NACTO)

Figure 9-14: Example of a Gateway



Source: [Urban Street Design Guide – National Association of City Transportation Officials (NACTO)]

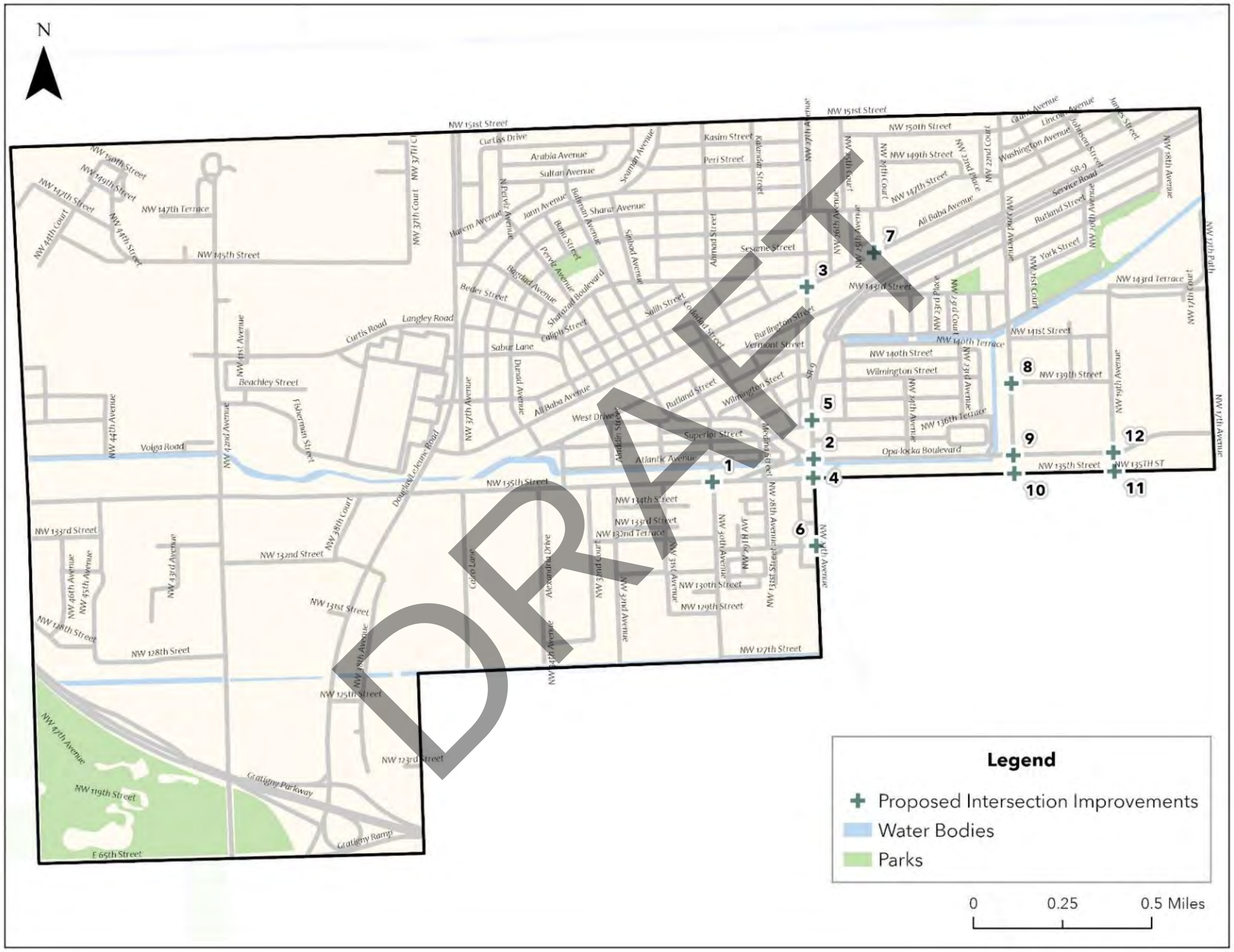
Assumptions: Intersection improvements can span a wide range of upgrades, from minor adjustments to full-scale redesigns, each aimed at creating safer, smoother, and more accessible routes for all travelers. These enhancements might include upgrading traffic signals to more responsive systems, fine-tuning signal timing to reduce congestion, adding dedicated turn lanes to manage traffic flow, and creating safer connections for pedestrians and cyclists with well-defined pathways and crossings. In some cases, an intersection may even be fully reconstructed to better align with local needs and ensure optimal traffic control.

To safely complete these projects, traffic control measures—like lane closures, detours, and clear signage—will be in place to guide road users through the work zone and minimize disruptions. The project will require materials such as durable asphalt, sturdy concrete, updated signage, state-of-the-art signal equipment, and landscaping to ensure a welcoming and visually appealing environment. Behind the scenes, meticulous engineering design and consistent construction inspection will play key roles in bringing these improvements to fruition. Through careful planning and community-centered design, these efforts promise to enhance connectivity, safety, and the overall travel experience for drivers, cyclists, and pedestrians alike.

Table 9-9: Proposed Intersection Improvements

Project / Map ID	Facility Name	Street	Cross street	Cost per Project	Planning and Engineering (15%)	Right-of-Way (20%)	Construction, Engineering, Inspection (12%)	Utility Relocation (15%)	Landscape (10%)	Hardscape / Streetscape (10%)	Contingency (20%)	Total Cost
1	Aswan Road / NW 135 Street	Aswan Road	NW 135 Street	$1,500,000.00	$225,000.00	$300,000.00	$180,000.00	$225,000.00	$150,000.00	$150,000.00	$300,000.00	$3,030,000.00
2	NW 27 Avenue / Opa-locka Boulevard	NW 27 Avenue	Opa-locka Boulevard	$1,500,000.00	$225,000.00	$300,000.00	$180,000.00	$225,000.00	$150,000.00	$150,000.00	$300,000.00	$3,030,000.00
3	NW 27 Avenue / Ali Baba Avenue	NW 27 Avenue	Ali Baba Avenue	$1,500,000.00	$225,000.00	$300,000.00	$180,000.00	$225,000.00	$150,000.00	$150,000.00	$300,000.00	$3,030,000.00
4	NW 27 Avenue / NW 135 Street	NW 27 Avenue	NW 135 Street	$1,500,000.00	$225,000.00	$300,000.00	$180,000.00	$225,000.00	$150,000.00	$150,000.00	$300,000.00	$3,030,000.00
5	NW 27 Avenue / Superior Street	NW 27 Avenue	Superior Street	$1,500,000.00	$225,000.00	$300,000.00	$180,000.00	$225,000.00	$150,000.00	$150,000.00	$300,000.00	$3,030,000.00
7	NW 24 Court / Ali Baba Avenue	NW 24 Court	Ali Baba Avenue	$1,500,000.00	$225,000.00	$300,000.00	$180,000.00	$225,000.00	$150,000.00	$150,000.00	$300,000.00	$3,030,000.00
8	NW 22 Avenue / NW 139 Street	NW 22 Avenue	NW 139 Street	$1,500,000.00	$225,000.00	$300,000.00	$180,000.00	$225,000.00	$150,000.00	$150,000.00	$300,000.00	$3,030,000.00
9	NW 22 Avenue / Opa-locka Boulevard	NW 22 Avenue	Opa-locka Boulevard	$1,500,000.00	$225,000.00	$300,000.00	$180,000.00	$225,000.00	$150,000.00	$150,000.00	$300,000.00	$3,030,000.00
10	NW 22 Avenue / NW 135 Street	NW 22 Avenue	NW 135 Street	$1,500,000.00	$225,000.00	$300,000.00	$180,000.00	$225,000.00	$150,000.00	$150,000.00	$300,000.00	$3,030,000.00
11	NW 19 Avenue / NW 135 Street	NW 19 Avenue	NW 135 Street	$1,500,000.00	$225,000.00	$300,000.00	$180,000.00	$225,000.00	$150,000.00	$150,000.00	$300,000.00	$3,030,000.00
12	NW 19 Avenue / Opa-locka Boulevard	NW 19 Avenue	Opa-locka Boulevard	$1,500,000.00	$225,000.00	$300,000.00	$180,000.00	$225,000.00	$150,000.00	$150,000.00	$300,000.00	$3,030,000.00
											Total:	$33,330,000.00

Map 9-9: Proposed Intersection Improvements

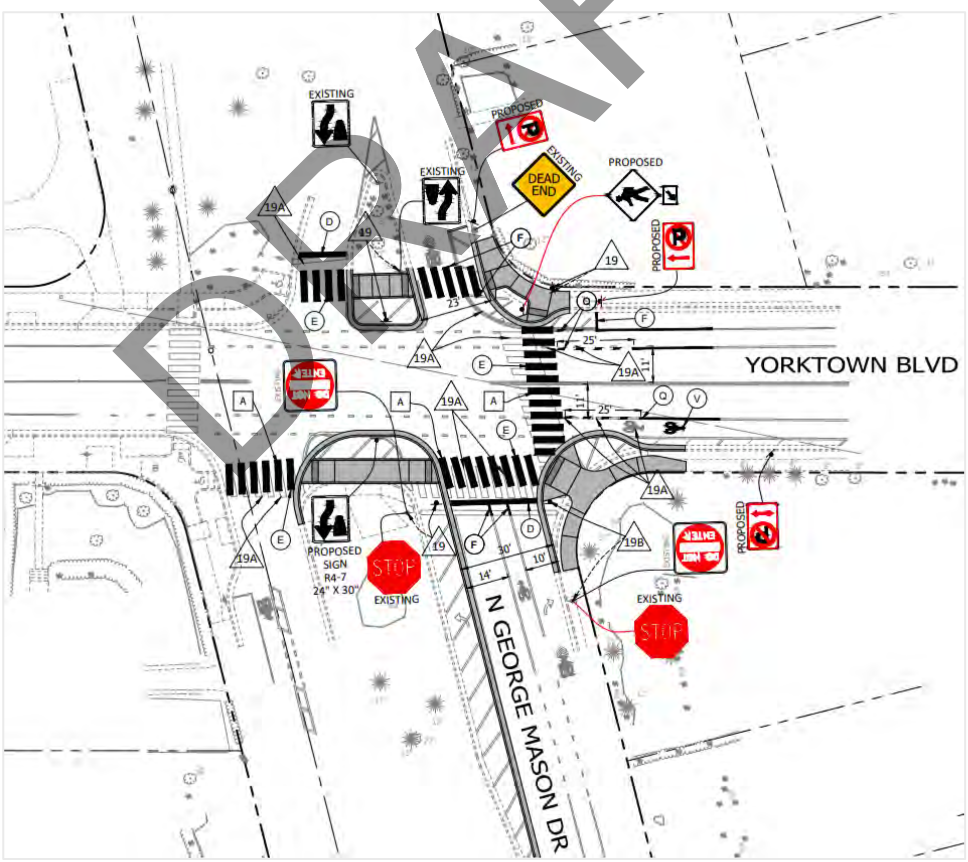


9.10 Quick-Build Intersection Improvements

Description: Quick build is an innovative approach designed to reconfigure streets efficiently and economically, allowing for significant changes without the need for expensive alterations to the existing hardscape. This method is particularly valuable in urban environments, where budgets and timelines can be constrained. Quick-build intersection improvements utilize low-cost materials, making it feasible to implement enhancements swiftly and with minimal disruption.

Key elements of quick-build improvements include using paint for new lane markings, restriping existing roadways to clarify traffic patterns, and adding new signage to better inform drivers and pedestrians alike. Relocating stop bars is another essential aspect, as it can help optimize visibility and improve traffic flow at intersections. These interventions are designed to be easily reversible or adjustable, allowing for real-time assessments of their effectiveness. An example of quick-build intersection improvements can be seen in **Figure 9-15,** illustrating how these strategies can transform a standard intersection into a more organized and safer space for all users. This visual representation highlights the potential impact of quick-build strategies, demonstrating their effectiveness in promoting a more inclusive and efficient transportation system. A complete toolkit of Quick build strategies can be found in **Appendix D.**

Figure 9-15: Quick Build Intersection Example



Source: [Quick-Build Safety Project in Arlington, Virginia]

Estimate: The estimated cost for implementing the recommended improvements is approximately $806,000. A detailed breakdown of projects by location and the specific description is provided in **Table 9-10**, and their geographic distribution is visually represented in **Map 9-10**.

Implementation Timeframe: Short-term

Crash Contributing Factor Addressed: Intersection related crashes, aggressive and speeding.

Assumption: Depending on the level of complexity, each recommendation has an its own set of assumptions.

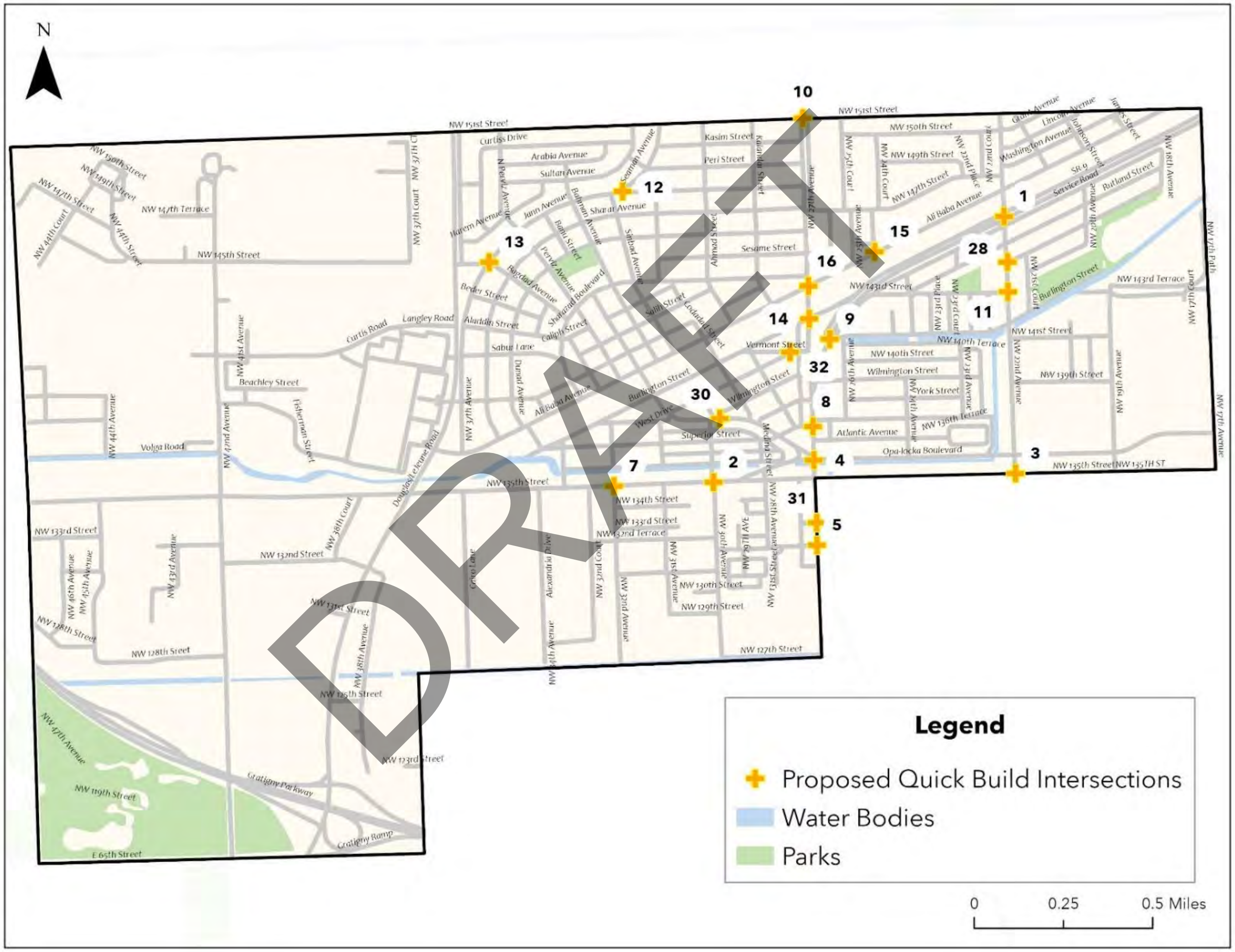
Table 9-10:Quick build Intersection Improvements

Project/ Map ID	Intersection/Segment	Recommendation	Total Cost
1	SR-9 and NW 22 Avenue	Adjust the eastbound and westbound stop bars to align perpendicularly, matching the alignment of the dual left-turn lane stop bar. This will enhance the sight distance and provide additional buffering for the crosswalk.	$10,690.67
2	Opa-locka Boulevard and NW 30 Avenue	Install a crosswalk on the western side, refresh the existing crosswalk striping, add extension striping for the north-south crossing, and include a distance plaque on the "*signal ahead*" warning signs for the westbound approach.	$75,811.50
3	NW 132 Street and NW 27 Avenue	Remove the shrubbery located northwest that currently obstructs the view northward for eastbound right turns, improving overall sight distance at the intersection. Additionally, a recommended study is included to assess the feasibility of implementing protected-only left turns during regular daylight hours.	$1,750.00
4	Opa-locka Boulevard and NW 27 Avenue	Install an east-west crosswalk on the north leg with a Leading Pedestrian Interval (LPI) and upgrade the existing crosswalk to special emphasis for improved visibility. Add flexible retroreflective backplates (FRBs) to the signal heads. Additionally, a recommended study is included to assess the feasibility of retiming for protected left turns and extending the "*all-red clearance*" time for southbound traffic.	$108,655.55
5	Opa-locka Boulevard and NW 22 Avenue	Implement protected left turns or remove obstructive signage and shrubbery to improve visibility for left-turning vehicles. A suggested study is included to further analyze this intersection and assess the feasibility of adding protected left-turn phases.	$23,947.88
6	NW 133 Street and NW 27 Avenue	Install a directional median.	$64,255.36

Project/ Map ID	Intersection/Segment	Recommendation	Total Cost
7	NW 27 Avenue and Superior Street	Install an east-west crosswalk, improve the existing crosswalk striping for better visibility, and add turning movement extension striping to enhance overall safety and guide pedestrians more effectively.	$50,357.36
8	SR-9 and Burlington Street	Set up an RRFB crossing, complete with a receiving sidewalk and advance warning signs to enhance safety and visibility for pedestrians approaching the intersection.	$91,676.19
9	NW 151 Street and NW 27 Avenue	Incorporate backplates into the traffic signals and extend the "*all-red clearance*" time to improve safety and visibility at the intersection.	$10,775.49
10	NW 22 Avenue and NW 143 Street	Enhance the crosswalks by replacing them with special emphasis designs and installing an RRFB. Additionally, consider adding a new signal and mast arm on the west leg of the intersection, which requires to be further evaluated. If desired, a pedestrian refuge can also be incorporated to further improve safety and accessibility.	$27,627.38
11	Ali Baba Avenue and NW 27 Avenue	Upgrade the crosswalks to include special emphasis markings and install a rectangular rapid flashing beacon (RFB) to enhance visibility. There is also an opportunity to consider adding a pedestrian refuge and a new mast arm on the west leg, which will require further evaluation to determine feasibility.	$43,420.38
12	Ali Baba Avenue and NW 24 Court	Enhance the existing crosswalk by upgrading it to special emphasis markings and adding a north-south crosswalk. This will include pedestrian crossing signs and pedestrian crossing ahead warning signs for both directions. Additionally, there is the possibility of incorporating a pedestrian refuge if needed.	$23,378.64
13	Jann Avenue and Seaman Avenue	Realign the west crosswalk and shift the north crosswalk for improved access. Additionally, a new north-south crosswalk will be added at the southeast corner, along with enhanced sidewalk connections. This plan will include pedestrian crossing signs and advanced warning signage for	$58,405.91

Project/ Map ID	Intersection/Segment	Recommendation	Total Cost
		pedestrian crossings. It will also include restriping the roundabout and incorporating yield signs and yield markings to improve safety. There is an option to include a pedestrian refuge if needed.	
14	Jann Avenue and Bagdad Avenue	Restructure the stripping of minor approaches to ensure they align perpendicularly with the mainline. This adjustment will enhance visibility and improve overall traffic flow.	$4,809.76
15	Burlington Street and NW 27 Avenue	Upgrade the crosswalks to include special emphasis and install an RRFB to enhance pedestrian safety and visibility.	$95,448.62
16	NW 22 Avenue and Wilmington Street	Enhance pedestrian safety by upgrading the existing crosswalks to feature special emphasis and adding an east-west crosswalk equipped with an RRFB.	$58,791.82
17	Opa-locka Boulevard and Wilmington Street	Initiate a pilot project for a peanut roundabout to explore its effectiveness and benefits for improving traffic flow and safety in the area.	$39,211.49
18	Vermont Street and Rutland Street	Offer striping guidance that designates Rutland Street as the primary thoroughfare, while positioning Vermont Street as a secondary approach with limited connectivity. Additionally, wherever possible, incorporate special emphasis crosswalks to enhance pedestrian safety and visibility.	$16,402.86
		Total:	**$ 805,416.86**

Map 9-10: Proposed Quick-Build Intersections



9.11 Traffic Signals Improvements

Description: Traffic signals are electrically operated devices designed to manage the movement of vehicles and pedestrians by clearly indicating when they should stop, go, or proceed with caution. These signals play a vital role in regulating traffic at intersections, ensuring the safety of all road users while also helping to alleviate congestion. The installation of a new set of traffic lights at an intersection represents a significant improvement to roadways. This process goes beyond simply adding the visible signal heads; it also includes the installation of a controller cabinet, detection systems such as loop detectors or cameras, and often necessitate improvements to the intersection's geometry and pedestrian facilities.

For instance, Cairo Lane sees a significant amount of truck traffic, largely due to its proximity to industrial and warehouse facilities. Unfortunately, this road has a history of fatal and serious injury crashes, highlighting the need for enhanced safety measures. To address these concerns, the proposed installation of a traffic signal could greatly improve traffic flow and circulation in the area. By implementing a traffic signal on Cairo Lane, we can create a safer environment that accommodates the heavy truck traffic and protects pedestrians. However, this proposed recommendation needs to be vetted by the Traffic Signals and Signs Division of Miami-Dade DTPW to ensure feasibility.

Estimate: The cost of installing a traffic signal varies greatly depending on the intersection's complexity and the equipment required. For the proposed improvements, the estimated cost is approximately $1.6 million. This budget accounts for mobilization, material costs, and labor involved in installing foundations for signal arm structures, electrical components, signal and pedestrian luminaires, traffic control cabinets, sidewalk work, thermoplastic pavement markings, and additional signage. The estimate also includes expenses related to MOT measures, which may involve deploying traffic control officers to ensure safety during construction. These investments aim to create a safer and more efficient intersection for all road users. A detailed breakdown of projects by location is provided in **Table 9-11**, and their geographic distribution is visually represented in **Map 9-11**.

Implementation Timeframe: Short-term

Crash Contributing Factor Addressed: Intersection related crashes, aggressive driving, and speeding.

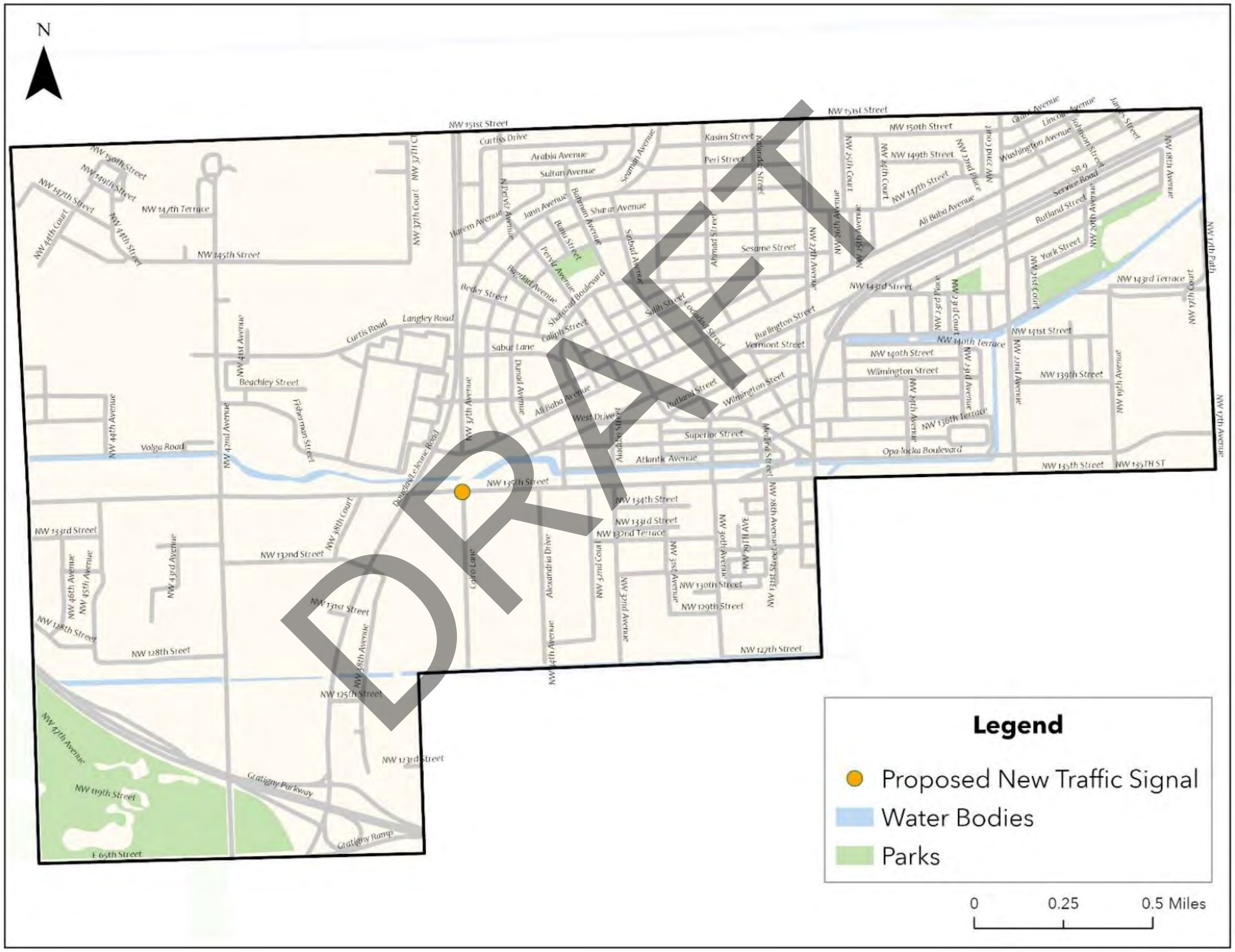
Assumptions: The installation of a new traffic signal encompasses several essential components, including signal poles, pedestrian pushbuttons, signal heads, and ADA-compliant curb ramps. Additionally, we will install MUTCD-compliant signage, such as the W3-3 Signal Ahead sign, to enhance safety and awareness for drivers and pedestrians alike.

During the installation process, MOT measures will be implemented, which may involve temporary lane closures and detours at the intersection to ensure the safety of both workers and road users. The overall cost estimate for this project is approximately $1 million per intersection, which covers all materials, labor, and necessary MOT efforts. This investment aims to create a safer, more efficient traffic environment for our community.

Table 9-11: Proposed Traffic Signal

Street	Cost per Project	Planning and Engineering (15%)	Construction, Engineering, Inspection (12%)	Utility Relocation (15%)	Contingency (20%)	Total Cost
Cairo Lane	$1,000,000.00	$150,000.00	$120,000.00	$150,000.00	$200,000.00	$1,620,000.00
					Total Cost	**$1,620,000.00**

Map 9-11: Proposed Traffic Signal



9.12 Protected Left-Turn Phase Study

Description: Reduced left-turn conflict intersections are designed to reshape the way left turns are made, creating a safer and more intuitive driving experience. By streamlining these turns, these intersections reduce the risk of severe crashes like head-on and angle collisions, which can be particularly dangerous. Two highly effective intersection types that use U-turns for certain left-turn maneuvers are the Restricted Crossing U-turn (RCUT) and the Median U-turn (MUT). Additionally, a dedicated traffic signal phase that provides an exclusive green arrow for left-turning vehicles, while holding all conflicting movements (such as opposing through traffic) with a red light, can greatly reduce the likelihood of left-turn crashes. Through these innovative designs and signal strategies, intersections become safer and easier to navigate for all road users.

Estimate: Evaluating the installation of traffic signals across the city can vary significantly in cost, largely depending on the complexity of each intersection. For the four recommended locations, however, the estimated cost for assessment is around $200,000. **Table 9-12** offers a detailed cost breakdown by location, while **Map 9-12** visually presents their geographic distribution across the city.

Implementation Timeframe: Long-term

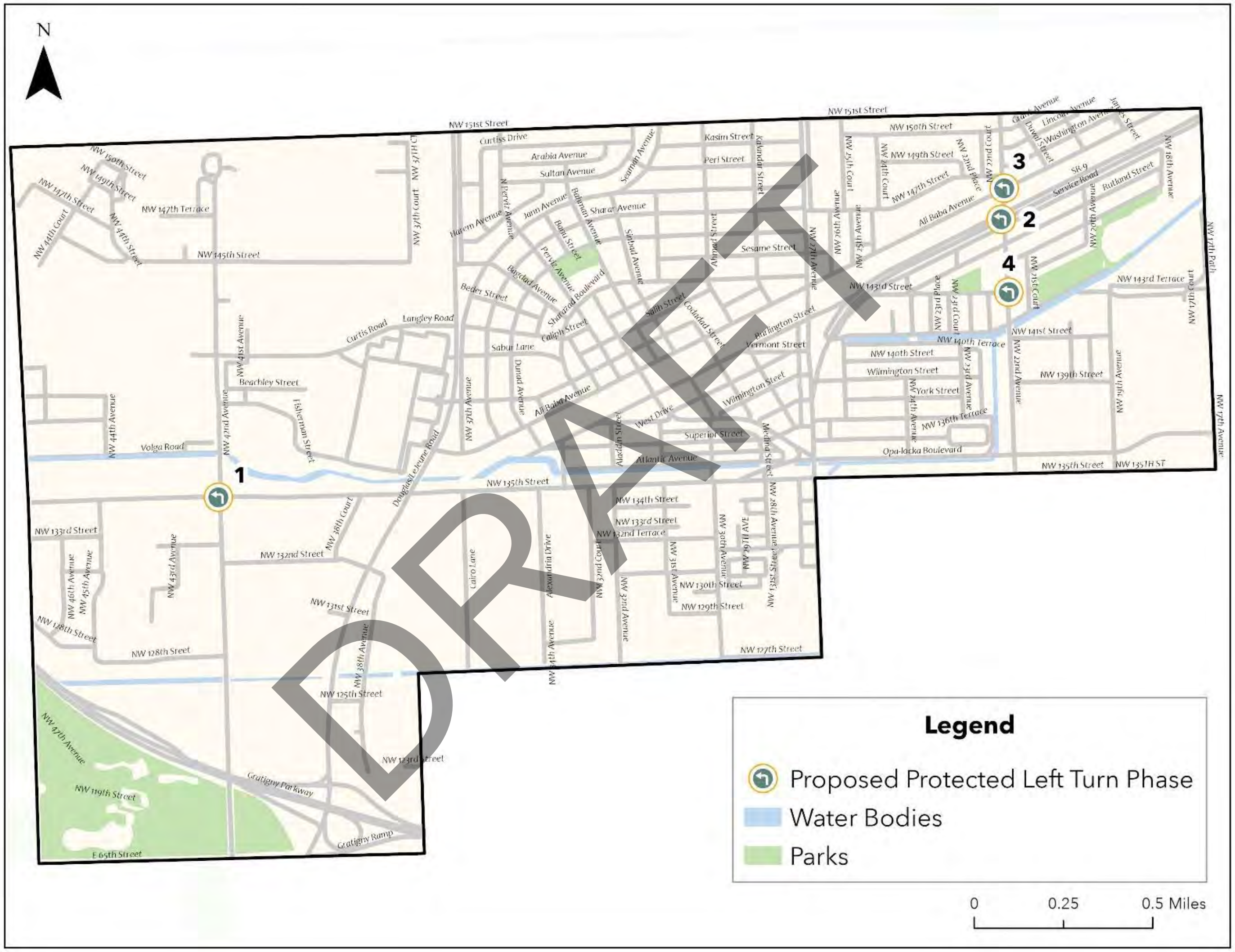
Crash Contributing Factor Addressed: Intersection related crashes, aggressive driving, and speeding.

Assumption: Implementing protected left-turn phases involves conducting a traffic study of the current signal operations, potentially adding arrow signals specifically for left turns. This may require new signal heads, reprogramming the signal controller, and adding pavement markings to guide drivers safely. Each modification must be carefully coordinated and reviewed with the Miami-Dade DTPW's TSS Division to ensure a smooth and effective transition.

Table 9-12: Proposed Left-Turn Phases

Project / Map ID	Facility Name	Street	Cross street	Cost per Study	Total Cost
1	NW 42 Avenue / NW 135 Street	NW 42 Avenue	NW 135 Street	$50,000.00	$50,000.00
2	NW 22 Avenue / SR 9	NW 22 Avenue	SR 9	$50,000.00	$50,000.00
3	NW 22 Avenue / Ali Baba Avenue	NW 22 Avenue	Ali Baba Avenue	$50,000.00	$50,000.00
4	NW 22 Avenue / NW 143 Street	NW 22 Avenue	NW 143 Street	$50,000.00	$50,000.00
				Total:	$200,000.00

Map 9-12: Proposed Left -Turn Phases



9.13 Non-Traversable Medians

Description: Physical barriers in the center of a roadway serve as critical safety features by separating opposing lanes of traffic, reducing the likelihood of head-on collisions. These barriers can take various forms, such as concrete dividers, landscaped medians with trees or shrubs, or flexible posts designed to prevent vehicles from crossing into oncoming lanes. Not only do these barriers improve overall safety by minimizing crossover accidents, but they can also enhance the roadway's appearance and contribute to a more organized flow of traffic. In addition, landscaped barriers provide environmental benefits by reducing heat, improving air quality, and offering aesthetic value that can increase driver satisfaction and community appeal.

Estimate: The cost of installing non-traversable medians can vary widely depending on landscape features used. The estimated cost for implementing the recommended improvements is approximately $583,000. A detailed breakdown of projects by location is provided in **Table 9-13**, and their geographic distribution is visually represented on **Map 9-13**.

Implementation Timeframe: Short-term

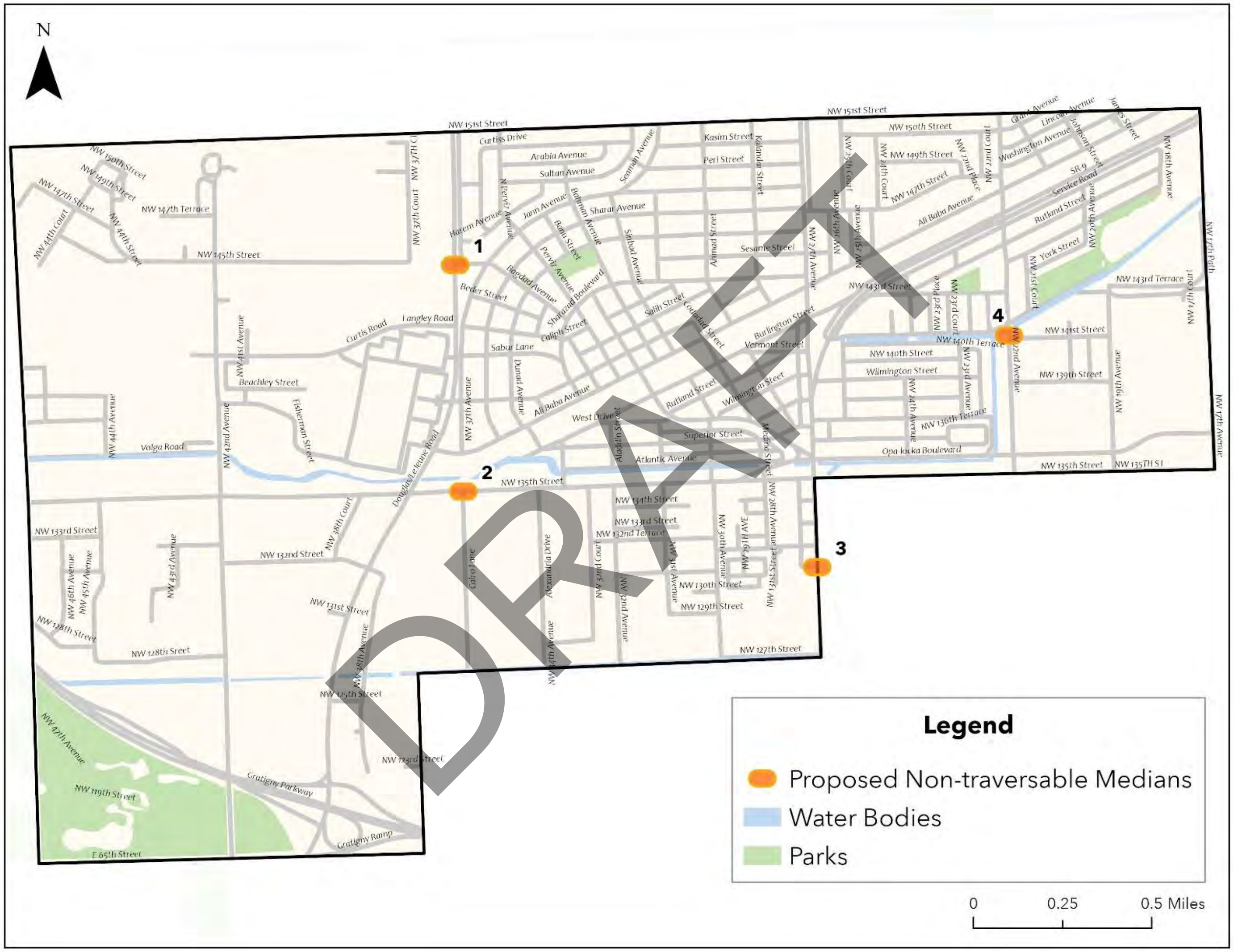
Crash Contributing Factor Addressed: Aggressive driving, speeding, head-on collisions, and pedestrian crashes.

Assumptions: Installing non-traversable medians is an effective way to enhance road safety by preventing vehicle crossings and reducing the likelihood of head-on collisions. This process involves constructing durable concrete barriers or adding landscaping features that discourage vehicles from entering oncoming lanes. To ensure visibility, reflective pavement markers and the appropriate signage will be installed, helping drivers navigate these changes safely, especially at night or in low-visibility conditions. During construction, an MOT plan will be implemented, which includes necessary lane closures and detours to guide traffic safely around the work zones. Each installation is estimated to cost approximately $80,000 per location, covering all required materials, labor, and MOT services. Through these installations, roads become safer, contributing to a more predictable and organized flow of traffic for all road users.

Table 9-13: Proposed Non-Traversable Medians

Project / Map ID	Facility Name	Street	Cross street	Cost per Project	Planning and Engineering (15%)	Right-of-Way (20%)	Construction, Engineering, Inspection (12%)	Utility Relocation (15%)	Contingency (20%)	Total Cost
1	NW 37 Avenue / Bagdad Ave	NW 37 Avenue	Bagdad Avenue	$80,000.00	$12,000.00	$16,000.00	$9,600.00	$12,000.00	$16,000.00	$145,600.00
2	Cairo Lane / NW 135 Street	Cairo Lane	NW 135 Street	$80,000.00	$12,000.00	$16,000.00	$9,600.00	$12,000.00	$16,000.00	$145,600.00
3	NW 27 Avenue / NW 131 Street	NW 27 Avenue	NW 131 Street	$80,000.00	$12,000.00	$16,000.00	$9,600.00	$12,000.00	$16,000.00	$145,600.00
4	NW 22 Avenue / NW 141 Street	NW 22 Avenue	NW 141 Street	$80,000.00	$12,000.00	$16,000.00	$9,600.00	$12,000.00	$16,000.00	$145,600.00
									Total:	$582,400.00

Map 9-13: Proposed Non-Traversable Median



9.14 Medians

Description: A median is a designated area that separates opposing lanes of traffic, excluding turn lanes. In urban and suburban settings, medians can be identified by various features such as pavement markings, raised medians, or islands. These central reservation areas serve to divide motorized and non-motorized road users, enhancing the organization and flow of traffic. Medians come in different forms. Some are non-traversable, meaning vehicles cannot cross them, while others are designed to allow left turns at specific points. This flexibility can help manage traffic flow and reduce congestion. One of the primary benefits of medians is their role in improving road safety. By physically separating opposing lanes of traffic, medians significantly reduce the risk of head-on collisions. Additionally, they provide a safe refuge for pedestrians attempting to cross wide streets, making it easier and safer for them to navigate busy roads.

Estimate: The cost of installing non-traversable medians can vary widely depending on landscape features used. The estimated cost for implementing the recommended improvements is approximately $1.3 million. A detailed breakdown of projects by location is provided in **Table 9-14**, and their geographic distribution is visually represented in **Map 9-14**.

Implementation Timeframe: Mid-term

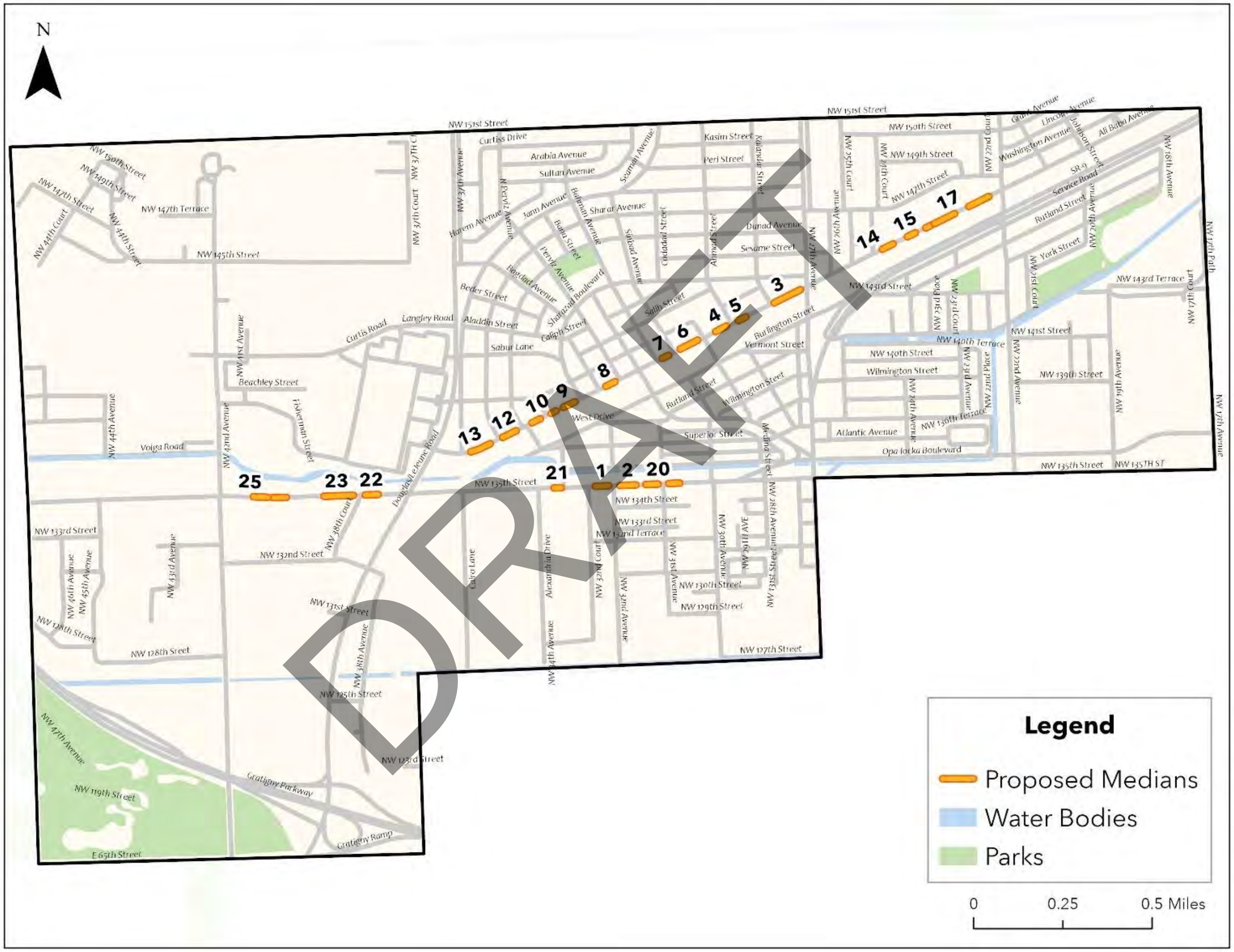
Crash Contributing Factor Addressed: Aggressive driving, speeding, head-on collisions, and pedestrian crashes.

Assumptions: Constructing medians without landscaping typically costs around $750,000 per mile. This cost encompasses several key components, including the construction of curbs, installation of landscaping and irrigation systems, planting of vegetation, and the addition of lighting and reflective pavement markers to enhance visibility and safety. To ensure compliance with the MUTCD, appropriate signage, such as R4-7 signs, will be installed. These signs are crucial for guiding and informing drivers about the median and any associated traffic regulations. During the construction phase, MOT plans will be implemented, which will involve lane closures to facilitate the safe and efficient completion of the work. These closures are necessary to protect both the construction workers and the traveling public, minimizing disruptions and ensuring a smooth construction process. Overall, the investment in median construction is a comprehensive effort to improve road safety and traffic management, while adhering to regulatory standards and minimizing inconvenience to road users.

Table 9-14: Proposed Medians

Project / Map ID	Facility Name	From	To	Length (Miles)	Cost Per Mile	Cost per Project	Planning & Engineering (15%)	Right-of-Way (20%)	Construction, Engineering, Inspection (12%)	Utility Relocation (15%)	Landscape/Sod (10%)	Contingency (20%)	Total Cost
1	NW 135 Street	NW 32 Court	NW 32 Avenue	0.03	$750,000.00	$25,303.41	$3,795.51	$5,060.68	$3,036.41	$3,795.51	$2,530.34	$5,060.68	$48,582.55
2	NW 135 Street	NW 32 Avenue	NW 35 Avenue	0.04	$750,000.00	$31,027.63	$4,654.14	$6,205.53	$3,723.32	$4,654.14	$3,102.76	$6,205.53	$59,573.05
3	Ali Baba Avenue	Kalandar Street	NW 27 Avenue	0.08	$750,000.00	$57,116.32	$8,567.45	$11,423.26	$6,853.96	$8,567.45	$5,711.63	$11,423.26	$109,663.34
4	Ali Baba Avenue	Codadad Street	Ahmad Street	0.03	$750,000.00	$24,402.71	$3,660.41	$4,880.54	$2,928.33	$3,660.41	$2,440.27	$4,880.54	$46,853.21
5	Ali Baba Avenue	Ahmad Street	Kalander Street	0.02	$750,000.00	$16,480.99	$2,472.15	$3,296.20	$1,977.72	$2,472.15	$1,648.10	$3,296.20	$31,643.51
6	Ali Baba Avenue	Sinbad Avenue	Codadad Street	0.05	$750,000.00	$38,123.21	$5,718.48	$7,624.64	$4,574.78	$5,718.48	$3,812.32	$7,624.64	$73,196.56
7	Ali Baba Avenue	Bahman Avenue	Sinbad Avenue	0.02	$750,000.00	$13,692.56	$2,053.88	$2,738.51	$1,643.11	$2,053.88	$1,369.26	$2,738.51	$26,289.72
8	Ali Baba Avenue	Aladdin Street	Perviz Avenue	0.03	$750,000.00	$20,124.38	$3,018.66	$4,024.88	$2,414.93	$3,018.66	$2,012.44	$4,024.88	$38,638.82
9	Ali Baba Avenue	Sesame Street	Sharazad Boulevard	0.03	$750,000.00	$24,637.68	$3,695.65	$4,927.54	$2,956.52	$3,695.65	$2,463.77	$4,927.54	$47,304.35
10	Ali Baba Avenue	Dunad Avenue	Sesame Street	0.02	$750,000.00	$18,113.05	$2,716.96	$3,622.61	$2,173.57	$2,716.96	$1,811.30	$3,622.61	$34,777.05
11	Ali Baba Avenue	Sesame Street	Sharazad Boulevard	0.01	$750,000.00	$10,820.65	$1,623.10	$2,164.13	$1,298.48	$1,623.10	$1,082.07	$2,164.13	$20,775.66
12	Ali Baba Avenue	Sharar Avenue	Dunad Avenue	0.04	$750,000.00	$29,454.65	$4,418.20	$5,890.93	$3,534.56	$4,418.20	$2,945.47	$5,890.93	$56,552.94
13	Ali Baba Avenue	Douglas Road	Sharar Avenue	0.05	$750,000.00	$40,370.05	$6,055.51	$8,074.01	$4,844.41	$6,055.51	$4,037.01	$8,074.01	$77,510.50
14	Ali Baba Avenue	NW 24 Court	NW 22 Avenue	0.03	$750,000.00	$23,360.67	$3,504.10	$4,672.13	$2,803.28	$3,504.10	$2,336.07	$4,672.13	$44,852.48
15	Ali Baba Avenue	NW 24 Court	NW 22 Avenue	0.02	$750,000.00	$17,195.57	$2,579.33	$3,439.11	$2,063.47	$2,579.33	$1,719.56	$3,439.11	$33,015.49
16	Ali Baba Avenue	NW 24 Court	NW 22 Avenue	0.02	$750,000.00	$12,565.64	$1,884.85	$2,513.13	$1,507.88	$1,884.85	$1,256.56	$2,513.13	$24,126.03
17	Ali Baba Avenue	NW 24 Court	NW 22 Avenue	0.06	$750,000.00	$43,960.68	$6,594.10	$8,792.14	$5,275.28	$6,594.10	$4,396.07	$8,792.14	$84,404.50
18	Ali Baba Avenue	NW 24 Court	NW 22 Avenue	0.06	$750,000.00	$43,375.55	$6,506.33	$8,675.11	$5,205.07	$6,506.33	$4,337.56	$8,675.11	$83,281.06
19	NW 135 Street	NW 31 Avenue	NW 31 Avenue	0.03	$750,000.00	$20,867.03	$3,130.06	$4,173.41	$2,504.04	$3,130.06	$2,086.70	$4,173.41	$40,064.70
20	NW 135 Street	NW 31 Avenue	NW 32 Avenue	0.03	$750,000.00	$23,188.13	$3,478.22	$4,637.63	$2,782.58	$3,478.22	$2,318.81	$4,637.63	$44,521.21
21	NW 135 Street	Sesame Street	Alexandria Drive	0.02	$750,000.00	$14,288.35	$2,143.25	$2,857.67	$1,714.60	$2,143.25	$1,428.84	$2,857.67	$27,433.63
22	NW 135 Street	NW 38 Court	Douglas Road Extension	0.03	$750,000.00	$24,493.11	$3,673.97	$4,898.62	$2,939.17	$3,673.97	$2,449.31	$4,898.62	$47,026.76
23	NW 135 Street	LeJeune Road/NW 42 Avenue	NW 38 Court	0.07	$750,000.00	$56,227.15	$8,434.07	$11,245.43	$6,747.26	$8,434.07	$5,622.72	$11,245.43	$107,956.14
24	NW 135 Street	LeJeune Road/NW 42 Avenue	NW 38 Court	0.04	$750,000.00	$26,258.30	$3,938.75	$5,251.66	$3,151.00	$3,938.75	$2,625.83	$5,251.66	$50,415.94
25	NW 135 Street	LeJeune Road/NW 42 Avenue	NW 38 Court	0.04	$750,000.00	$27,401.87	$4,110.28	$5,480.37	$3,288.22	$4,110.28	$2,740.19	$5,480.37	$52,611.60
												Total Cost:	$1,311,070.79

Map 9-14: Proposed Medians



9.15 Roadway Lightning

Description: Installing or upgrading streetlights along roadways is an essential investment in public safety that benefits all users of the road, from drivers to pedestrians. Streetlighting plays a fundamental role in improving visibility, giving drivers a clearer view of the road, helping them recognize potential hazards sooner, and enabling faster responses to sudden or unexpected events. This becomes even more critical during nighttime hours, when limited visibility heightens the risk of accidents.

Properly lit roads are particularly effective in reducing the potential for accidents at key locations where different modes of travel intersect, such as at intersections, crosswalks, and other high-traffic areas. By illuminating these spaces, streetlights create a safer environment, guiding pedestrians, cyclists, and motorists toward a shared, visible path that minimizes the chance of conflict. In addition, lighting not only helps to lower the incidence of vehicle-related accidents but also contributes to an increased sense of safety for pedestrians and cyclists, who might otherwise feel vulnerable on darker roadways. Well-lit streets invite more foot and bike traffic, encouraging healthier and more sustainable transportation choices and promoting a greater sense of community.

As shown in **Figure 9-16**, well-placed lighting at intersections and pedestrian crossings is critical for creating safer, more connected streetscapes. This simple but impactful infrastructure upgrade is a key part of building streets that serve all users and make travel more secure and accessible, day or night.

Figure 9-16: Example of a Well-Lit Intersection

Source: Urban Street Design Guide – National Association of City Transportation Officials (NACTO)

In addition to improving safety, effective roadway lighting also contributes to a sense of security for pedestrians and cyclists. When streets are well-lit, people feel more comfortable walking or biking at night, which can encourage more active transportation and reduce reliance on motor vehicles. This not only benefits individual health but also helps to decrease traffic congestion and environmental impact. Overall, investing in proper street lighting is a vital step towards creating safer, more accessible, and more sustainable urban environments.

Estimate: The cost of installing non-traversable medians can vary widely depending on landscape features used. The estimated cost for implementing the recommended improvements is approximately $4.2 million. A detailed breakdown of projects by location is provided in **Table 9-15**, and their geographic distribution is visually represented on **Map 9-15**.

Implementation Timeframe: Mid-term

Crash Contributing Factor Addressed: Dark or unlighted related crashes as well as bicycle and pedestrian crashes.

Assumptions: The installation of roadway lighting involves strategically placing light poles equipped with energy-efficient LED fixtures along the length of a roadway to ensure optimal illumination. Each section of the roadway to be lit requires careful planning and coordination, beginning with the installation of underground electrical wiring to support consistent power distribution across the lighting system. The light poles are positioned at intervals based on roadway design standards and lighting requirements, ensuring that every part of the roadway—including intersections, crosswalks, and other critical areas—is adequately lit.

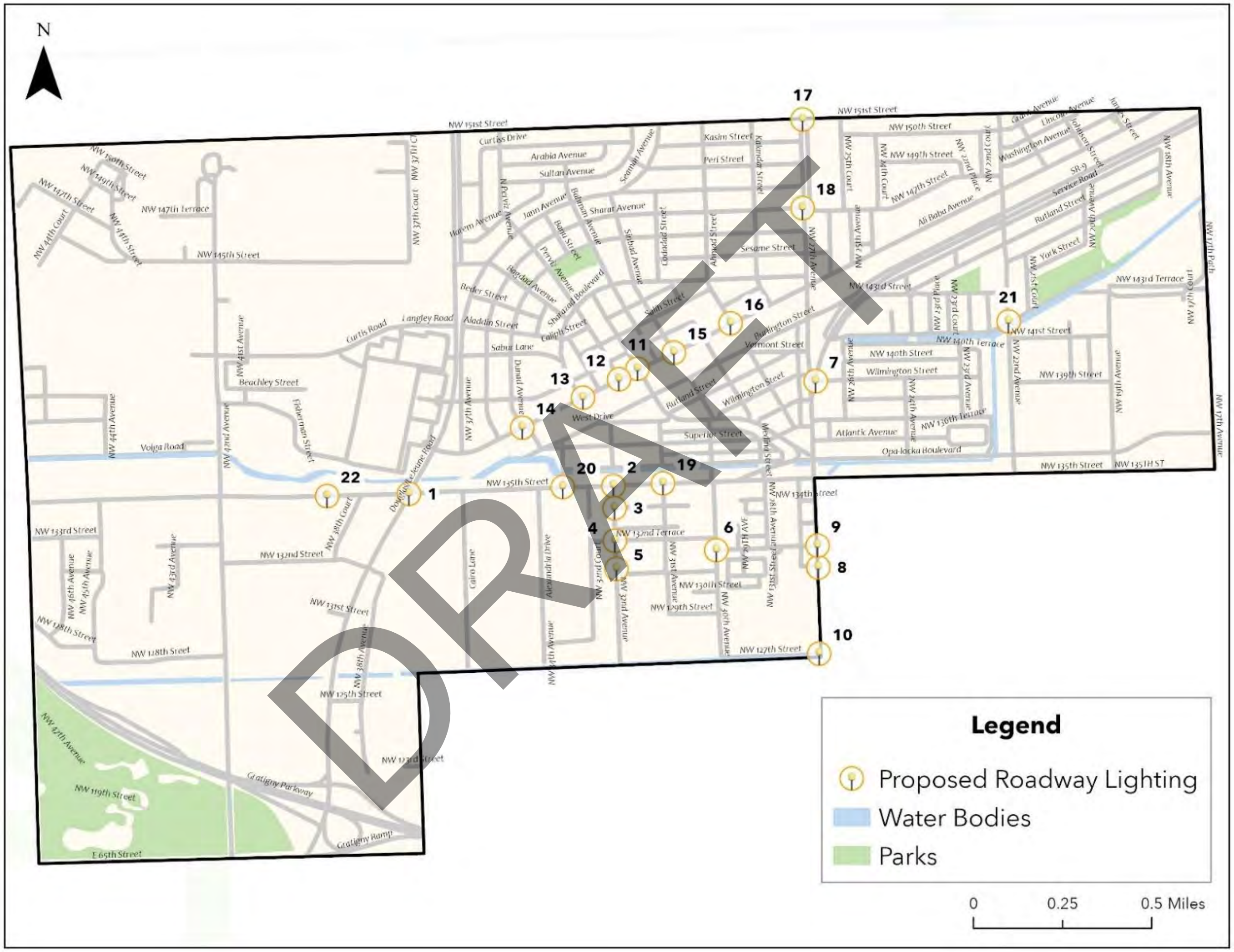
For each mile of lighting installation, several key components are necessary: underground electrical wiring, durable light poles, and high-quality LED fixtures designed to withstand outdoor conditions and minimize maintenance needs. In addition, maintenance of traffic (MOT) is essential throughout the installation process to ensure the safety of both workers and road users. Lane closures are strategically implemented and managed to minimize disruption to traffic flow, with MOT measures tailored to each section of the roadway as work progresses.

The estimated cost for lighting installation is approximately $100,000 per intersection, a figure that includes the expenses associated with all necessary materials, labor, equipment, and MOT. LED fixtures, while initially more costly than traditional lighting, offer long-term savings by reducing energy costs and extending the service life of the lighting system.

Table 9-15: Proposed Roadway Lightning Improvements

Project / Map ID	Street	Cross street	Cost per Project	Planning & Engineering (15%)	Right-of-Way (20%)	Construction, Engineering, Inspection (12%)	Utility Relocation (15%)	Contingency (20%)	Total Cost
1	NW 37 Avenue	NW 135 Street	$25,303.41	$3,795.51	$5,060.68	$3,036.41	$3,795.51	$5,060.68	$48,582.55
2	NW 32 Avenue	NW 135 Street	$31,027.63	$4,654.14	$6,205.53	4 $3,723.32	$4,654.14	$6,205.53	$59,573.05
3	NW 32 Avenue	NW 134 Street	$57,116.32	$8,567.45	$11,423.26	$6,853.96	$8,567.45	$11,423.26	$109,663.34
4	NW 32 Avenue	NW 132 Terrace	$24,402.71	$3,660.41	$4,880.54	$2,928.33	$3,660.41	$4,880.54	$46,853.21
5	NW 32 Avenue	NW 131 Street	$16,480.99	$2,472.15	$3,296.20	$1,977.72	$2,472.15	$3,296.20	$31,643.51
6	Aswan Road	NW 132 Street	$38,123.21	$5,718.48	$7,624.64	$4,574.78	$5,718.48	$7,624.64	$73,196.56
7	SR 9	NW 139 Street	$13,692.56	$2,053.88	$2,738.51	$1,643.11	$2,053.88	$2,738.51	$26,289.72
8	NW 27 Avenue	NW 131 Street	$20,124.38	$3,018.66	$4,024.88	$2,414.93	$3,018.66	$4,024.88	$38,638.82
9	NW 27 Avenue	NW 132 Street	$24,637.68	$3,695.65	$4,927.54	$2,956.52	$3,695.65	$4,927.54	$47,304.35
10	NW 27 Avenue	NW 127 Street	$18,113.05	$2,716.96	$3,622.61	$2,173.57	$2,716.96	$3,622.61	$34,777.05
11	Opa-locka Boulevard	Ali Baba Avenue	$10,820.65	$1,623.10	$2,164.13	$1,298.48	$1,623.10	$2,164.13	$20,775.66
12	Perviz Avenue	Ali Baba Avenue	$29,454.65	$4,418.20	$5,890.93	$3,534.56	$4,418.20	$5,890.93	$56,552.94
13	Sharazad Boulevard	Ali Baba Avenue	$40,370.05	$6,055.51	$8,074.01	$4,844.41	$6,055.51	$8,074.01	$77,510.50
14	Dunad Avenue	Ali Baba Avenue	$23,360.67	$3,504.10	$4,672.13	$2,803.28	$3,504.10	$4,672.13	$44,852.48
15	Sinbad Avenue	Ali Baba Avenue	$17,195.57	$2,579.33	$3,439.11	$2,063.47	$2,579.33	$3,439.11	$33,015.49
16	Ahmad Street	Ali Baba Avenue	$12,565.64	$1,884.85	$2,513.13	$1,507.88	$1,884.85	$2,513.13	$24,126.03
17	NW 27 Avenue	NW 151 Street	$43,960.68	$6,594.10	$8,792.14	$5,275.28	$6,594.10	$8,792.14	$84,404.50
18	NW 27 Avenue	Sharar Avenue	$43,375.55	$6,506.33	$8,675.11	$5,205.07	$6,506.33	$8,675.11	$83,281.06
19	NW 31 Avenue	NW 135 Street	$20,867.03	$3,130.06	$4,173.41	$2,504.04	$3,130.06	$4,173.41	$40,064.70
20	Sesame Street	NW 135 Street	$23,188.13	$3,478.22	$4,637.63	$2,782.58	$3,478.22	$4,637.63	$44,521.21
21	NW 22 Avenue	Burlington Street	$14,288.35	$2,143.25	$2,857.67	$1,714.60	$2,143.25	$2,857.67	$27,433.63
22	NW 135 Street	NW 38 Court	$24,493.11	$3,673.97	$4,898.62	$2,939.17	$3,673.97	$4,898.62	$47,026.76
23	NW 135 Street	NW 30 Avenue	$56,227.15	$8,434.07	$11,245.43	$6,747.26	$8,434.07	$11,245.43	$107,956.14
								Total Cost:	**$4,186,000.00**

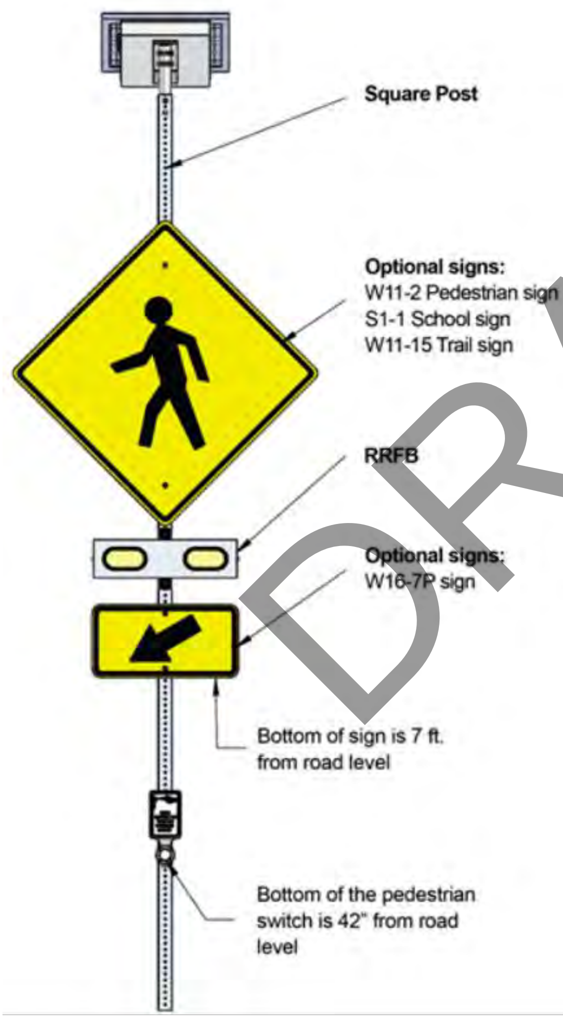
Map 9-15: Proposed Lightning Improvements



9.16 Rectangular Rapid Flashing Beacon

Description: Rectangular Rapid Flashing Beacons (RRFBs) are active safety devices designed to enhance pedestrian crossings, featuring amber lights that flash rapidly when triggered by a pedestrian as illustrated in **Figure 9-17**. These beacons are crafted for high visibility, ensuring drivers can see them well in advance. The distinct, rapid flashing pattern effectively captures drivers' attention, signaling the presence of pedestrians and encouraging them to slow down and yield at the crosswalk. This enhanced visibility is particularly valuable in areas with frequent pedestrian activity or during low-light conditions, offering critical safety improvements for those crossing the street.

Figure 9-17: Example of a RRFB Ensemble



Source: RRFB Operating Manual – K&K Systems, Inc.

The impact of RRFBs on increasing driver yielding at crosswalks is substantial. By providing a bright and unmistakable alert, they foster safer interactions between drivers and pedestrians. When drivers encounter flashing amber lights, they are more likely to follow traffic laws, yield to the right-of-way, and reduce the risk of accidents. Beyond improving compliance, RRFBs also promote a smoother traffic flow as drivers respond more predictably to these signals.

As a cornerstone of modern pedestrian safety measures, RRFBs contribute significantly to building safer, more pedestrian-friendly communities. These active warning devices are invaluable in urban settings, helping to create roadways where pedestrians can move with greater confidence and security.

Estimate: The cost of installing a Rectangular Rapid Flashing Beacon (RRFB) can vary widely depending on site conditions and the specific type of RRFB used. On average, the cost for a complete RRFB system, including installation, labor, and materials, is approximately $22,250[1]. However, this cost can range from as low as $4,500 to as high as $52,000[2]. Several factors contribute to the cost of RRFBs.

These include the complexity of the installation site, the need for additional infrastructure such as poles and power sources, and the type of activation mechanism (e.g., pushbutton or passive detection). Additionally, the use of high-intensity LED lights and the need for compliance with safety standards and regulations can also influence the overall cost. The estimated cost for implementing the recommended improvements is approximately $455,000.00. A detailed breakdown of projects by location is provided in **Table 9-16**, and their geographic distribution is visually represented on **Map 9-16**.

Implementation Timeframe: Mid-term

Crash Contributing Factor Addressed: Speeding, dark or unlighted related crashes, pedestrian crashes.

Assumptions: Each installation of an RRFB system includes several key components designed to enhance pedestrian safety. The system features solar-powered flashing beacons, which are activated by pedestrian push buttons. This activation mechanism ensures that the beacons only flash when needed, conserving energy and reducing unnecessary flashing. The beacons are highly visible and provide a clear signal to drivers that pedestrians are present and intending to cross.

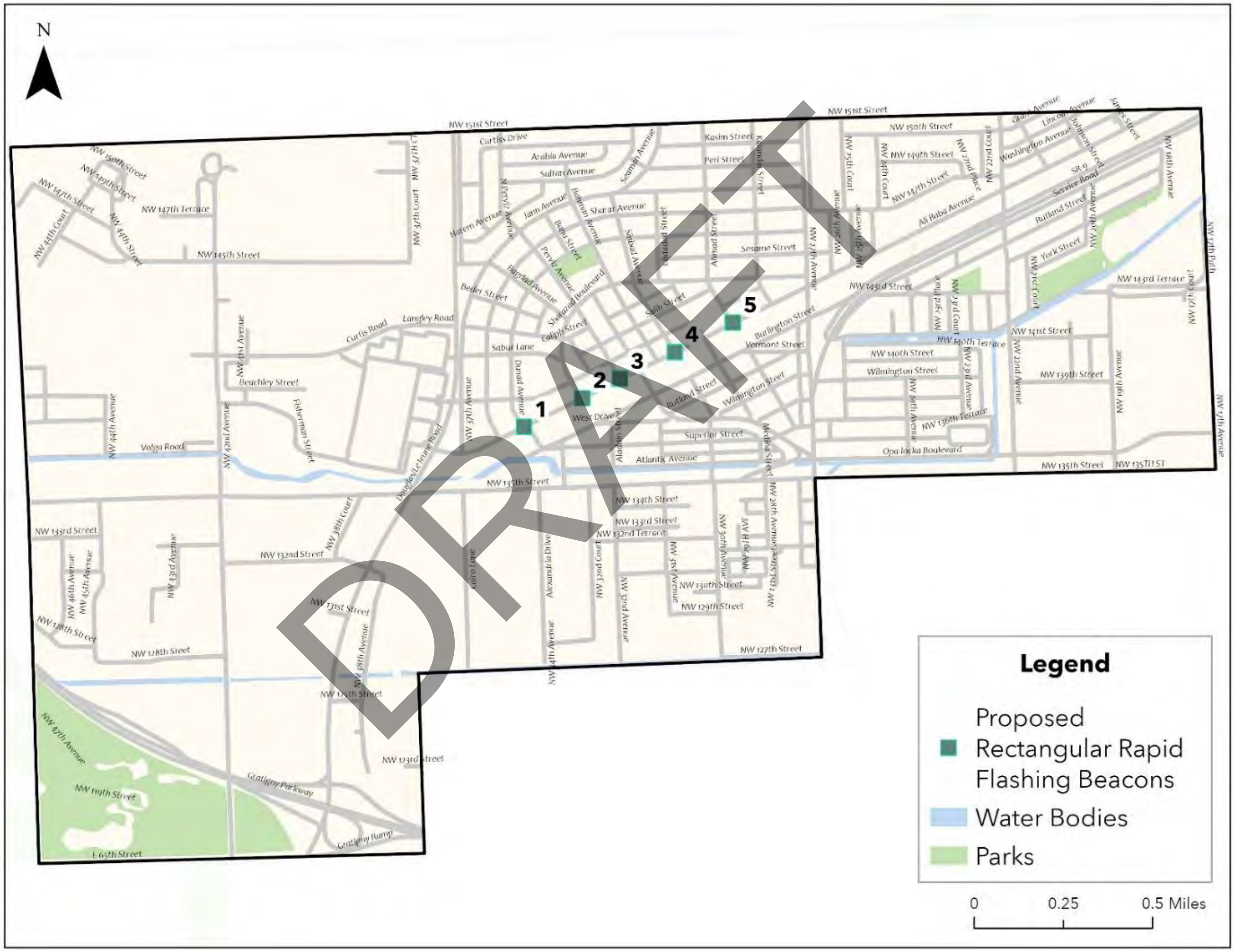
In addition to the flashing beacons, each installation includes MUTCD R10-25 signage, which clearly indicates a pedestrian crossing. This signage is crucial for informing drivers of the crossing and reinforcing the need to yield to pedestrians. The installation process also involves MOT plans, which will include lane closures to ensure the safety of both the workers and the traveling public during the installation. These lane closures are carefully planned to minimize disruption and maintain traffic flow as much as possible.

The estimated cost for installing an RRFB system is approximately $50,000 per crossing, assuming two beacons per location. This cost covers all necessary components, including the beacons, signage, and installation labor. The use of solar power helps to reduce long-term operational costs, making RRFBs a cost-effective solution for improving pedestrian safety at crossings.

Table 9-16: Proposed Rectangular Rapid Flashing Beacon

Project / Map ID	Facility Name	Cost per Project	Planning & Engineering (15%)	Right-of-Way (20%)	Construction, Engineering, Inspection (12%)	Utility Relocation (15%)	Contingency (20%)	Total Cost
1	Dunad Avenue / Ali Baba Avenue	$50,000.00	$7,500.00	$10,000.00	$6,000.00	$7,500.00	$10,000.00	$91,000.00
2	Sharazad Boulevard / Ali Baba Avenue	$50,000.00	$7,500.00	$10,000.00	$6,000.00	$7,500.00	$10,000.00	$91,000.00
3	Perviz Avenue / Ali Baba Avenue	$50,000.00	$7,500.00	$10,000.00	$6,000.00	$7,500.00	$10,000.00	$91,000.00
4	Sinbad Avenue / Ali Baba Avenue	$50,000.00	$7,500.00	$10,000.00	$6,000.00	$7,500.00	$10,000.00	$91,000.00
5	Ahmad Street / Ali Baba Avenue	$50,000.00	$7,500.00	$10,000.00	$6,000.00	$7,500.00	$10,000.00	$91,000.00
							Total Cost:	**$455,000.00**

Map 9-16: Proposed Rectangular Rapid Flashing Beacons



9.17 High Intensity Crosswalk Striping

Description: The implementation of highly reflective and durable materials for crosswalk markings significantly enhances their visibility and longevity. These materials, such as thermoplastic markings, are designed to withstand heavy traffic and harsh weather conditions. Additionally, other high-visibility treatments, like glass beads or reflective tapes, are often incorporated to ensure that crosswalks stand out to drivers. This is particularly crucial in low-light conditions, where the enhanced reflectivity can make crosswalks much more noticeable, thereby improving pedestrian safety.

Estimate: The cost estimate for implementing high intensity crosswalk striping involves several key components. The primary expense is the use of preformed thermoplastic materials, known for their durability and high reflectivity, which ensure long-lasting and highly visible crosswalk markings. Additionally, the installation process includes the placement of MUTCD-compliant signage (W11-2) to alert drivers to pedestrian crossings, and the implementation of MOT measures to ensure safety during installation. Factoring in these elements, the estimated cost for each high-intensity crosswalk is approximately $25,050.00, which includes the removal of old pavement markings. A detailed breakdown of projects by location is provided in **Table 9-17**, and their geographic distribution is visually represented on **Map 9-17**.

Implementation Timeframe: Short-term

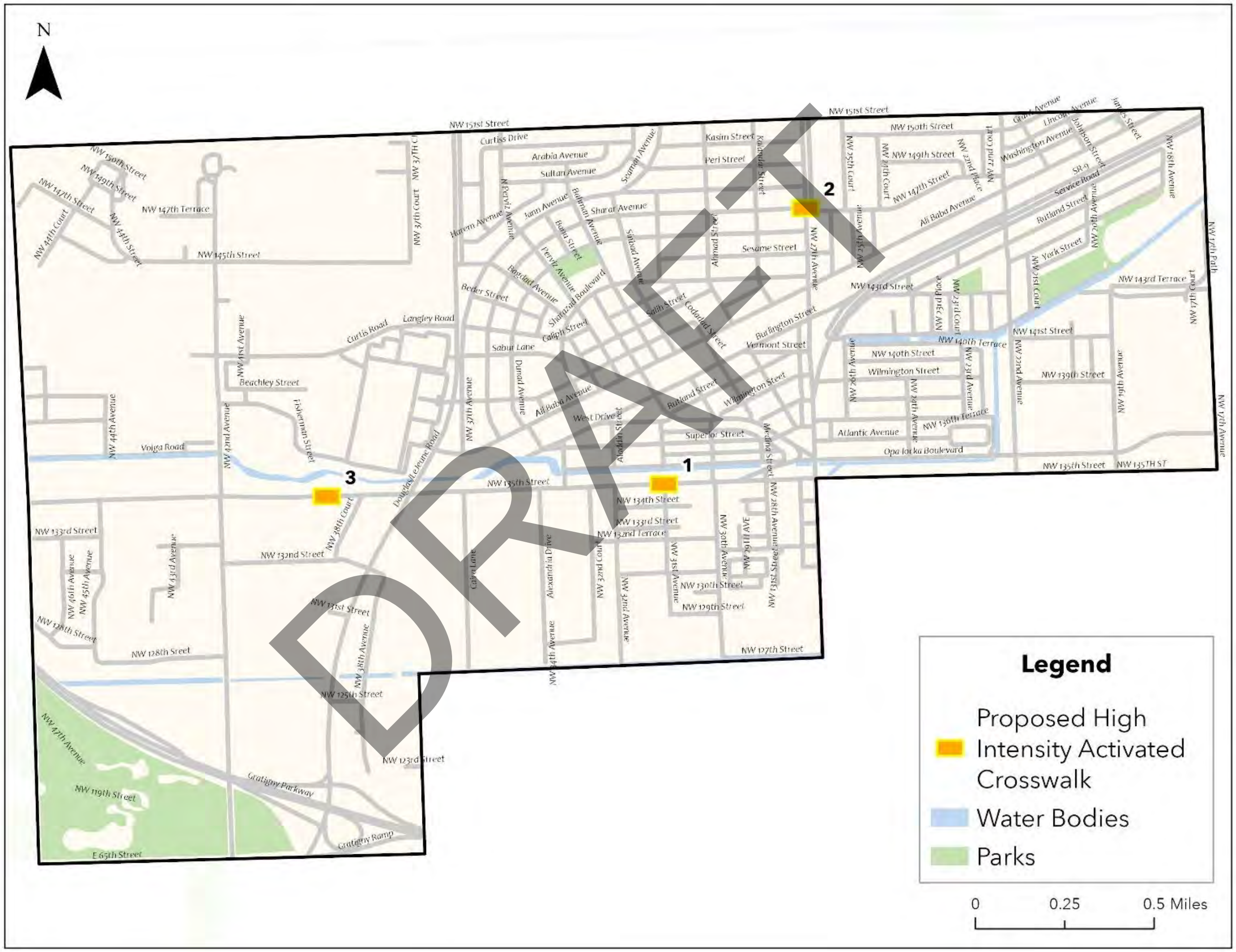
Crash Contributing Factor Addressed: Aggressive driving, speeding, and pedestrian related crashes.

Assumptions: High-visibility crosswalks are constructed using preformed thermoplastic materials, which provide both durability and exceptional reflectivity. These materials ensure that the markings remain visible and intact even under heavy traffic and adverse weather conditions. Each crosswalk will be equipped with MUTCD-compliant signage (W11-2), which alerts drivers to pedestrian crossings, and will include MOT measures during installation to ensure safety and minimal disruption. The estimated cost for implementing these high-visibility crosswalks is approximately $5,000 per crossing, reflecting the investment in both materials and safety features.

Table 9-17: Proposed High Intensity Crosswalk Striping

Project / Map ID	Facility Name	Cost per Project	Planning & Engineering (15%)	Right-of-Way (20%)	Construction, Engineering, Inspection (12%)	Contingency (20%)	Total Cost
1	NW 31 Avenue / NW 135 Street	$5,000.00	$ 750.00	$1,000.00	$600.00	$1,000.00	$8,350.00
2	NW 27 Avenue / Sharar Avenue	$5,000.00	$750.00	$1,000.00	$600.00	$1,000.00	$8,350.00
3	NW 135 Street / NW 38 Court	$5,000.00	$750.00	$1,000.00	$600.00	$1,000.00	$8,350.00
						Total Cost:	**$25,050.00**

Map 9-17: Proposed High Intensity Activated Crosswalk



9.18 Pedestrian Refuge Island

Description: A pedestrian refuge island is a designated, protected area situated in the middle of a street, providing a safe haven for pedestrians who are unable to cross the entire roadway in a single signal phase. These islands are especially beneficial on wide streets or at complex intersections, where crossing in one go can be challenging. Equipped with safety features such as raised curbs, reflective markings, and sometimes even small barriers or landscaping, these islands offer a secure spot for pedestrians to wait until it is safe to continue crossing. By breaking up the crossing into more manageable segments, pedestrian refuge islands enhance safety and accessibility for all street users as illustrated in **Figure 9-18**.

Estimate: The cost estimate for implementing pedestrian refuge islands at various locations citywide is approximately $864,000.00 A detailed breakdown of projects by location is provided in **Table 9-18**, and their geographic distribution is visually represented in **Map 9-18**.

Implementation Timeframe: Short-term

Crash Contributing Factor Addressed: Aggressive driving, speeding, and pedestrian related crashes.

Assumptions: A pedestrian refuge island is a thoughtfully designed safety feature that includes substantial concrete work and curb ramps, creating a secure space for pedestrians in the middle of a crosswalk. These islands are equipped with R1-6 signage per the MUTCD, which clearly indicates pedestrian crossing areas to drivers, enhancing overall safety. During the installation process, MOT measures will be necessary to manage lane closures and ensure the safety of both workers and road users. The comprehensive cost estimate for constructing each pedestrian refuge island is approximately $75,000, reflecting the investment in materials, labor, and safety measures to provide a reliable and safe crossing point for pedestrians.

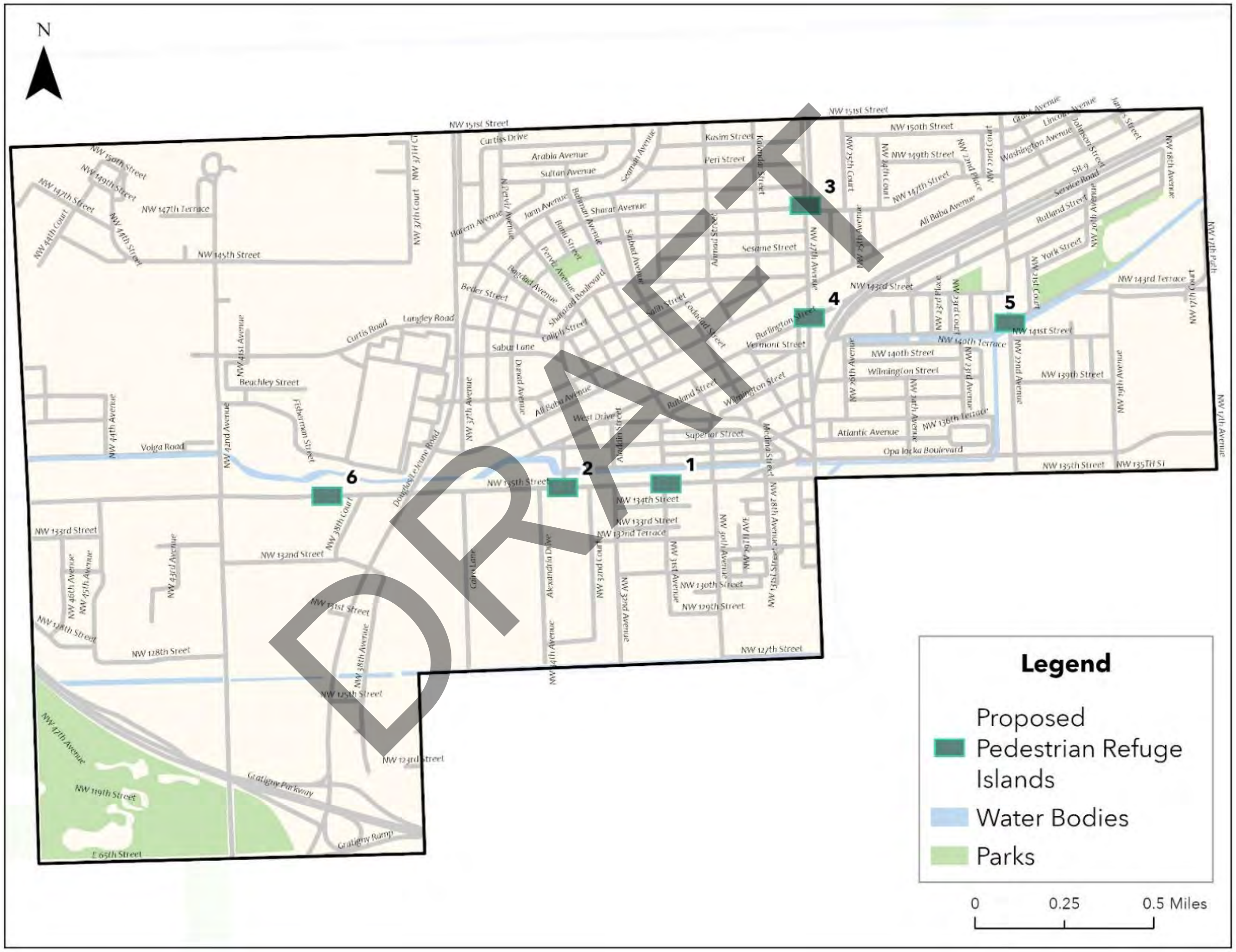
Figure 9-18: Example of Pedestrian Refuge Island

Source: [Medians and Pedestrian Refuge Islands in Urban and Suburban Areas]

Table 9-18: Proposed Pedestrian Refuge Island

Project / Map ID	Facility Name	Cost per Project	Planning & Engineering (15%)	Right-of-Way (20%)	Construction, Engineering, Inspection (12%)	Utility Relocation (15%)	Landscape (10%)	Contingency (20%)	Total Cost
1	NW 22 Avenue / Burlington Street	$75,000.00	$11,250.00	$15,000.00	$9,000.00	$11,250.00	$7,500.00	$15,000.00	$144,000.00
2	NW 27 Avenue / Sharar Avenue	$75,000.00	$11,250.00	$15,000.00	$9,000.00	$11,250.00	$7,500.00	$15,000.00	$144,000.00
3	NW 27 Avenue / Burlington Avenue	$75,000.00	$11,250.00	$15,000.00	$9,000.00	$11,250.00	$7,500.00	$15,000.00	$144,000.00
4	NW 31 Avenue / NW 135 Street	$75,000.00	$11,250.00	$15,000.00	$9,000.00	$11,250.00	$7,500.00	$15,000.00	$144,000.00
5	Sesame Street / NW 135 Street	$75,000.00	$11,250.00	$15,000.00	$9,000.00	$11,250.00	$7,500.00	$15,000.00	$144,000.00
6	NW 135th Street / NW 38 Court	$75,000.00	$11,250.00	$15,000.00	$9,000.00	$11,250.00	$7,500.00	$15,000.00	$144,000.00
								Total Cost:	**$864,000.00**

Map 9-18: Proposed Pedestrian Refuge Island



9.19 Crosswalk Visibility Enhancement

Description: Additional treatments to increase the visibility of crosswalks are crucial for pedestrian safety. One effective measure is the use of advance stop lines, which require vehicles to stop further back from the crosswalk, giving pedestrians more space and making them more visible to drivers. High-visibility crosswalk patterns, such as continental or ladder designs, also play a significant role. These patterns use bold, wide stripes that are easily seen by drivers, even from a distance, enhancing the overall visibility of the crosswalk.

Enhanced signage and pavement markings are also important components of improving crosswalk visibility. Installing signs that alert drivers to the presence of a crosswalk ahead can reduce the likelihood of crashes. Additionally, using reflective or brightly colored paint for crosswalk markings can make them more noticeable, especially in low-lit conditions. By combining these treatments, cities can create safer environments for pedestrians, as illustrated in **Figure 13-19**.

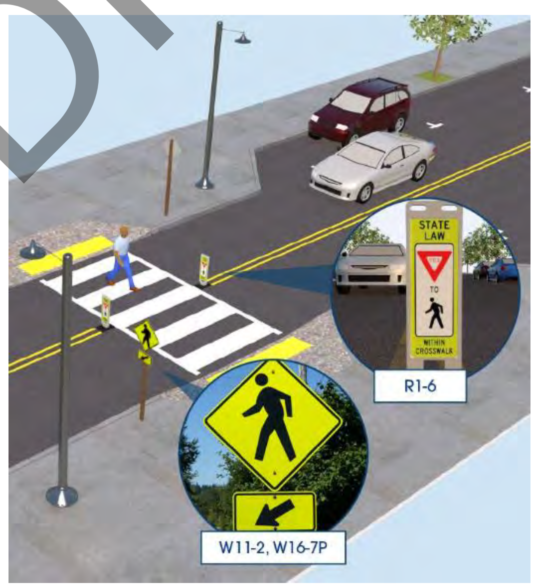
Estimate: The cost estimate for implementing crosswalk visibility enhancements is approximately $206,000. A detailed breakdown of projects by location is provided in **Table 13-19**, and their geographic distribution is visually represented in **Map 13-19**.

Implementation Timeframe: Short-term

Crash Contributing Factor Addressed: Pedestrian related crashes.

Assumptions: To enhance crosswalk visibility, high-contrast thermoplastic pavement markings and additional signage (W11-2) will be applied per the MUTCD. The MOT plan will include lane closures during the pavement marking installation process, with an estimated cost of $10,000 per intersection.

Figure 9-19: Example of Crosswalk Visibility Enhancement



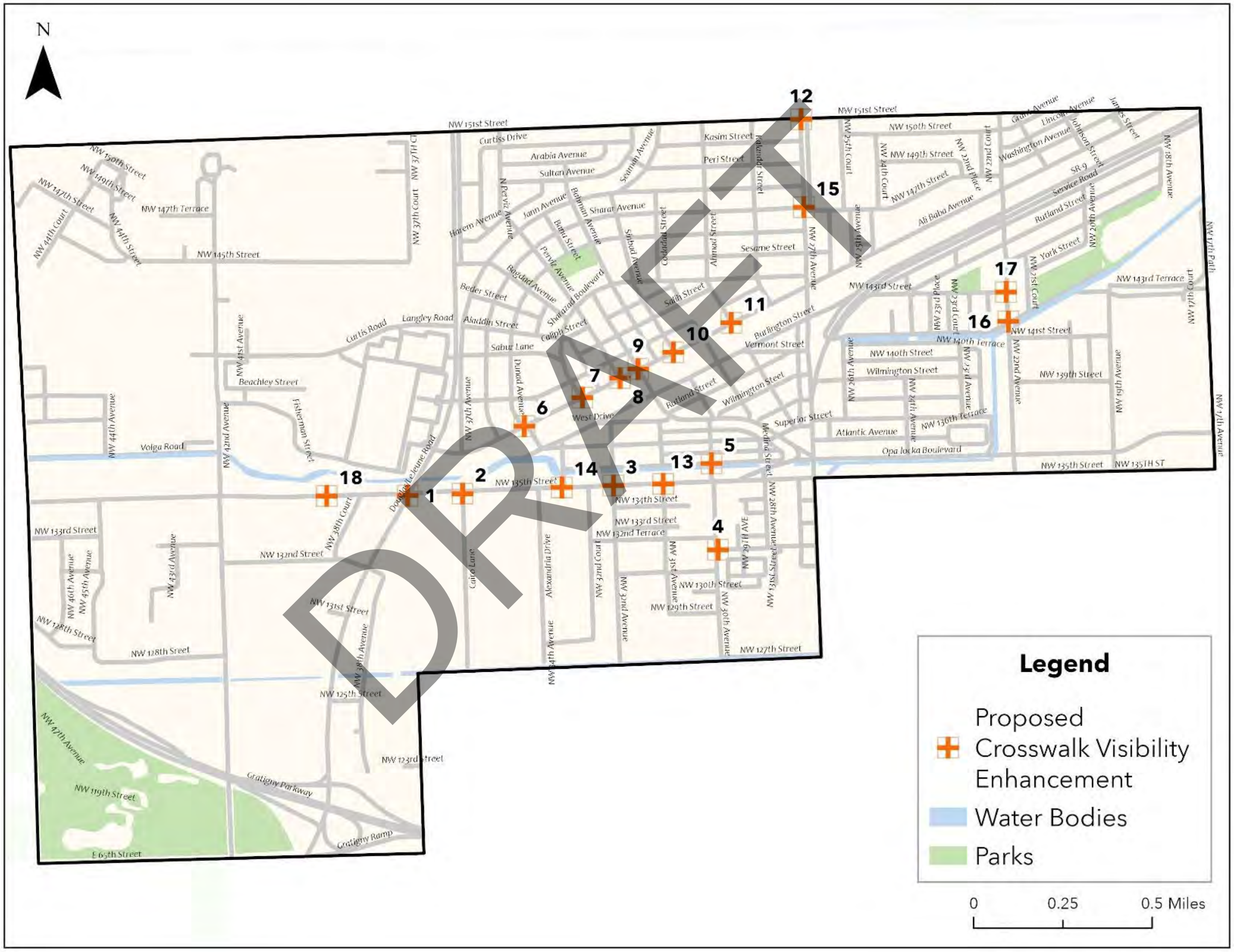
Source: USDOT Federal Highway Administration

Table 9-19: Proposed Crosswalk Visibility Enhancement

Project / Map ID	Street Name	Cross Street	Cost per Project	Planning & Engineering (15%)	Construction, Engineering, Inspection (12%)	Contingency (20%)	Total Cost
1	Douglas/LeJeune Road Connection	NW 135 Street	$10,000.00	$1,500.00	$1,200.00	$1,000.00	$13,700.00
2	Cairo Lane	NW 135 Street	$10,000.00	$1,500.00	$1,200.00	$1,000.00	$13,700.00
3	NW 32 Avenue	NW 135 Street	$10,000.00	$1,500.00	$1,200.00	$1,000.00	$13,700.00
4	NW 132 Street	NW 30 Avenue	$10,000.00	$1,500.00	$1,200.00	$1,000.00	$13,700.00
5	Atlantic Avenue	Sinbad Avenue/NW 30 Avenue	$10,000.00	$1,500.00	$1,200.00	$1,000.00	$13,700.00
6	Dunad Avenue	Ali Baba Avenue	$10,000.00	$1,500.00	$1,200.00	$1,000.00	$13,700.00
7	Sharazad Boulevard	Ali Baba Avenue	$10,000.00	$1,500.00	$1,200.00	$1,000.00	$13,700.00
8	Perviz Avenue	Ali Baba Avenue	$10,000.00	$1,500.00	$1,200.00	$1,000.00	$13,700.00
9	Opa-locka Boulevard	Ali Baba Avenue	$10,000.00	$1,500.00	$1,200.00	$1,000.00	$13,700.00

Project / Map ID	Street Name	Cross Street	Cost per Project	Planning & Engineering (15%)	Construction, Engineering, Inspection (12%)	Contingency (20%)	Total Cost
10	Sinbad Avenue	Ali Baba Avenue	$10,000.00	$1,500.00	$1,200.00	$1,000.00	$13,700.00
11	Ahmad Street	Ali Baba Avenue	$10,000.00	$1,500.00	$1,200.00	$1,000.00	$13,700.00
12	NW 151 Street/Oriental Boulevard	NW 27 Avenue	$10,000.00	$1,500.00	$1,200.00	$1,000.00	$13,700.00
13	NW 31 Avenue	NW 135 Street	$10,000.00	$1,500.00	$1,200.00	$1,000.00	$13,700.00
14	NW 135 Street	Sesame Street	$10,000.00	$1,500.00	$1,200.00	$1,000.00	$13,700.00
15	NW 27 Avenue	Sharar Avenue	$10,000.00	$1,500.00	$1,200.00	$1,000.00	$13,700.00
16	NW 22 Avenue	Burlington Street	$10,000.00	$1,500.00	$1,200.00	$1,000.00	$13,700.00
17	NW 22 Avenue	NW 143 Street	$10,000.00	$1,500.00	$1,200.00	$1,000.00	$13,700.00
18	NW 135 Street	NW 38 Court	$10,000.00	$1,500.00	$1,200.00	$1,000.00	$13,700.00
						Total Cost:	**$205,500.00**

Map 9-19: Proposed Crosswalk Visibility Enhancement



9.20 Reduced Left-Turn Conflict Intersection

Description: Strategies to minimize conflicts between left-turning vehicles and other road users are essential for improving road safety and traffic flow. One effective approach is implementing protected left-turn phases, which provide dedicated signal phases for left-turning vehicles, reducing their interaction with oncoming traffic and pedestrians. Additionally, redesigning intersections to eliminate certain turning movements can significantly reduce conflict points. For instance, prohibiting left turns at high-risk intersections and providing alternative routes can enhance safety.

Another strategy involves using alternative intersection designs. Roundabouts, for example, can reduce conflict points and improve traffic flow by forcing vehicles to slow down and yield. Diverging Diamond Interchanges (DDIs) and Continuous Flow Intersections (CFIs) are other innovative designs that can minimize left-turn conflicts. These designs allow vehicles to cross over to the opposite side of the road or pre-position left-turning vehicles, respectively, reducing the potential for collisions with oncoming traffic

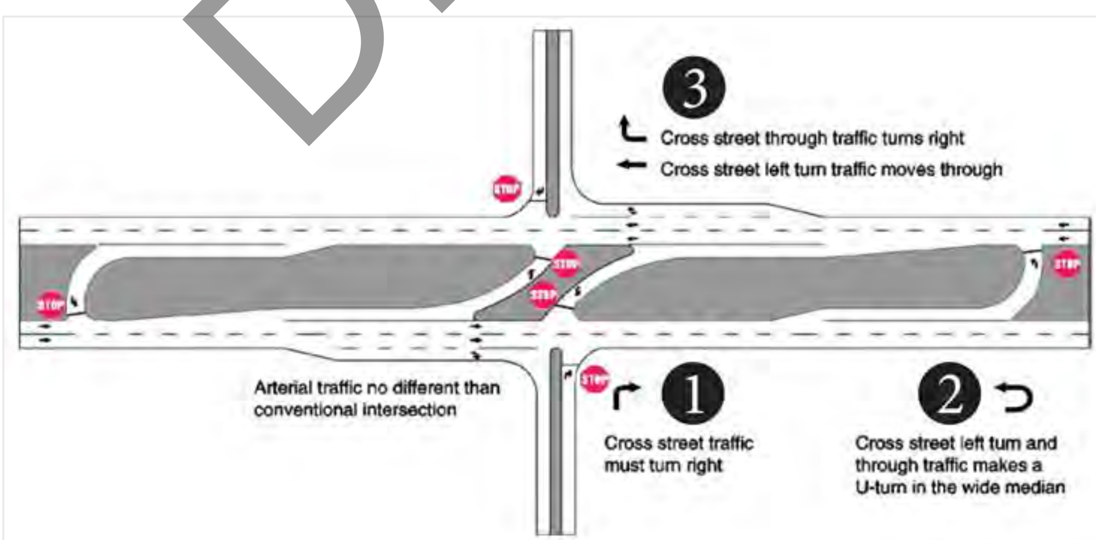
Estimate: The cost estimate for implementing one (1) reduced left-turn conflict intersection is approximately $97,200.00 A detailed breakdown of projects by location is provided in **Table 9-20**, and their geographic distribution is visually represented in **Map 9-20**.

Implementation Timeframe: Mid-term

Crash Contributing Factor Addressed: Intersection related crashes.

Assumptions: To reduce left-turn conflicts, signal adjustments, lane reconfiguration, and pavement markings will be applied, with the MOT plan including lane closures and signage. The cost estimate for these measures is $60,000, depending on the scope of reconfiguration. These improvements need to be coordinated with Miami-Dade County DTPW's TS&S Division.

Figure 9-20: Example of a type of Reduced Left-Turn Conflict Intersection

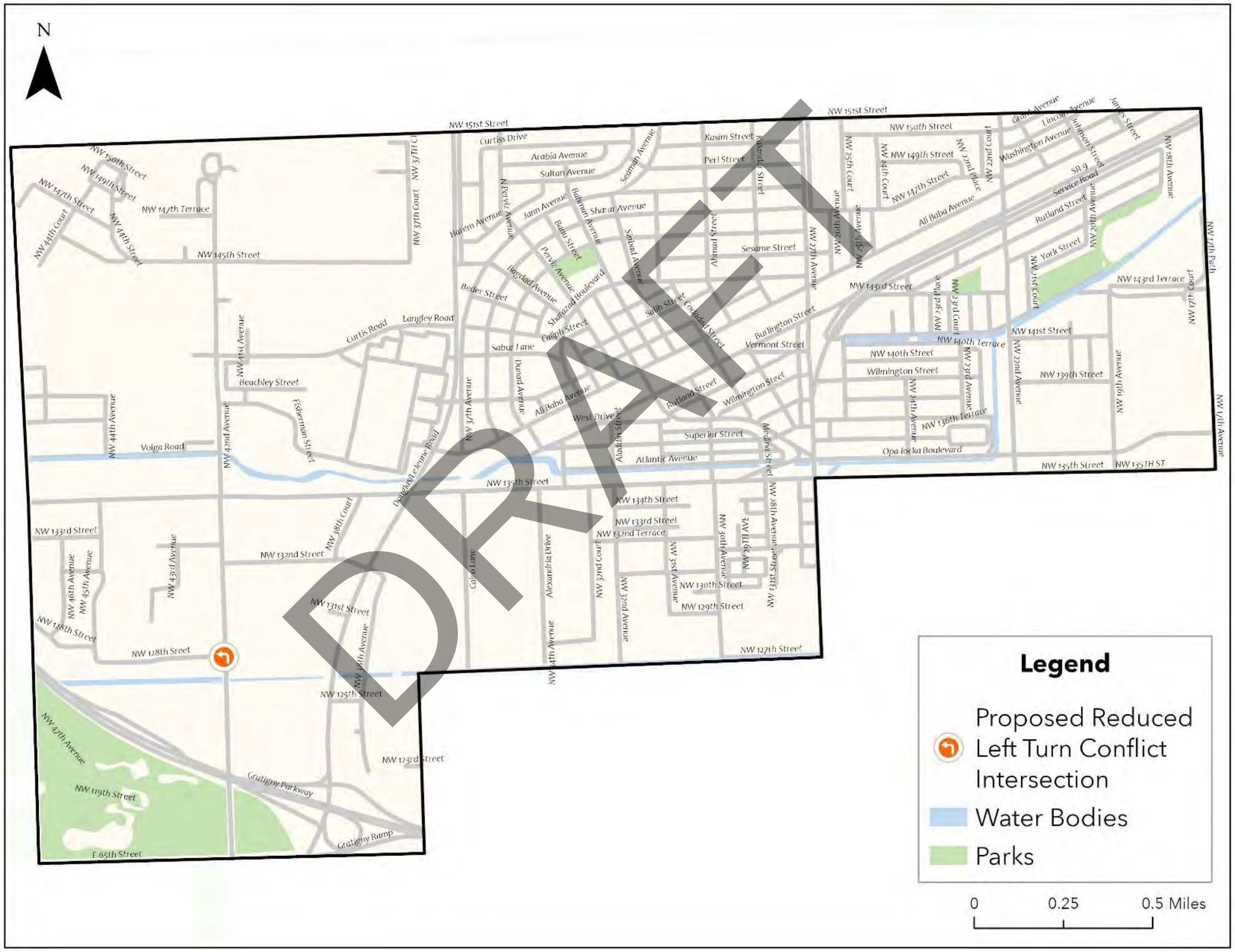


Source: FHWA

Table 9-20: Proposed Reduced Left-Turn Conflict Intersection

Project / Map ID	Facility Name	Cost per Project	Planning & Engineering (15%)	Construction, Engineering, Inspection (12%)	Utility Relocation (15%)	Contingency (20%)	Total Cost
1	NW 42 Avenue / NW 128 Street	$60,000.00	$9,000.00	$7,200.00	$9,000.00	$12,000.00	$97,200.00
						Total Cost:	**$97,200.00**

Map 9-20: Proposed Reduced Left-Turn Conflict Intersection



9.21 Backplate Retro Reflection

Description: The addition of backplates with retroreflective borders to traffic signal heads significantly enhances signal visibility. The backplates provide a consistent dark background, making the signal lights stand out more clearly, as illustrated in **Figure 9-21**. This improvement is particularly beneficial in various lighting conditions, ensuring that the signals are easily seen by drivers.

The retroreflective borders further enhance visibility, especially in low-light conditions or during power outages, by reflecting headlights and other light sources. Implementing these changes requires an engineering study and coordination with Miami Dade DTPW's TS&S Division to ensure proper installation and integration into the existing traffic management system.

Estimate: The cost estimate for implementing backplate retro-reflection is approximately $16,000.00. A detailed breakdown of projects by location is provided in **Table 9-21**, and their geographic distribution is visually represented in **Map 9-21**.

Implementation Timeframe: Short-term

Crash Contributing Factor Addressed: Dark/unlighted related crashes.

Assumptions: A traffic engineering study and coordination with Miami-Dade DTPW's TS&S Division are required to install retroreflective backplates on traffic signal heads, which significantly improve visibility during low-light conditions. An interlocal agreement should be established to initiate this work, with each backplate estimated to cost approximately $1,500, excluding labor and materials. The MOT plan will include temporary lane closures during installation.

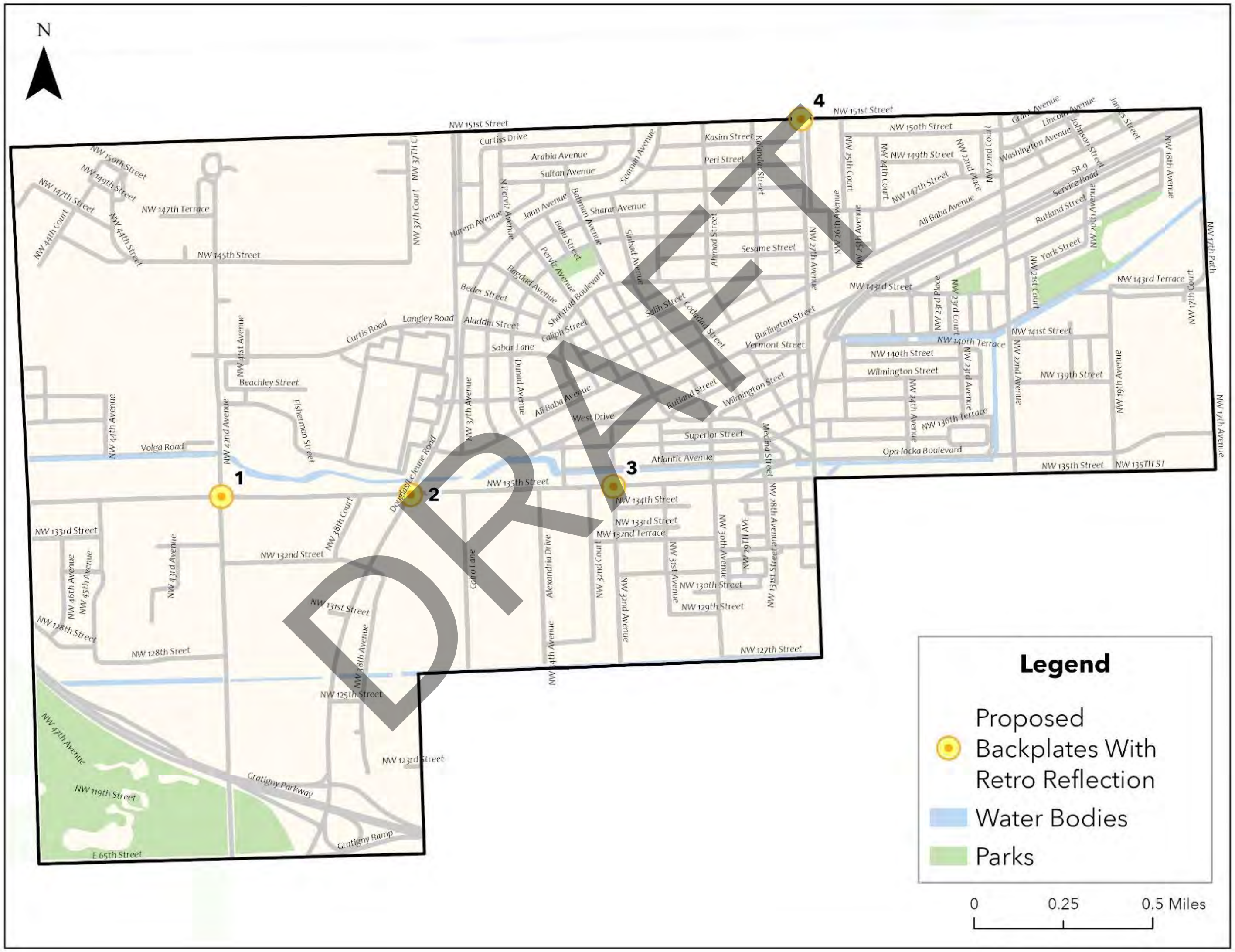
Figure 9-21: Example of Backplate Retro Reflection

Source: : USDOT Federal Highway Administration

Table 9-21: Proposed Backplate Retro Reflection

Project / Map ID	Facility Name	Cost per Project	Planning & Engineering	Contingency (20%)	Total Cost
1	NW 42 Avenue / NW 135 Street	$2,500.00	$1,000.00	$500.00	$4,000.00
2	Douglas/LeJeune Road Connection / NW 135 Street	$2,500.00	$1,000.00	$500.00	$4,000.00
3	NW 32 Avenue / NW 135 Street	$2,500.00	$1,000.00	$500.00	$4,000.00
4	NW 27 Avenue / NW 151 Street	$2,500.00	$1,000.00	$500.00	$4,000.00
				Total Cost:	**$16,000.00**

Map 9-21: Proposed Backplates with Retro Reflection



9.22 Leading Pedestrian Interval Study

Description: A timing strategy used at signalized intersections involves giving pedestrians a "*walk*" signal a few seconds before vehicles receive a green light. This head start significantly increases pedestrian visibility, allowing them to establish their presence in the crosswalk before vehicles begin to move. As a result, it reduces conflicts with turning vehicles, enhancing overall safety for pedestrians.

Implementing this strategy requires an engineering study and coordination with Miami Dade DTPW's TS&S Division. The study ensures that the timing adjustments are feasible and effective, while coordination with the county ensures that the changes are integrated smoothly into the existing traffic management system.

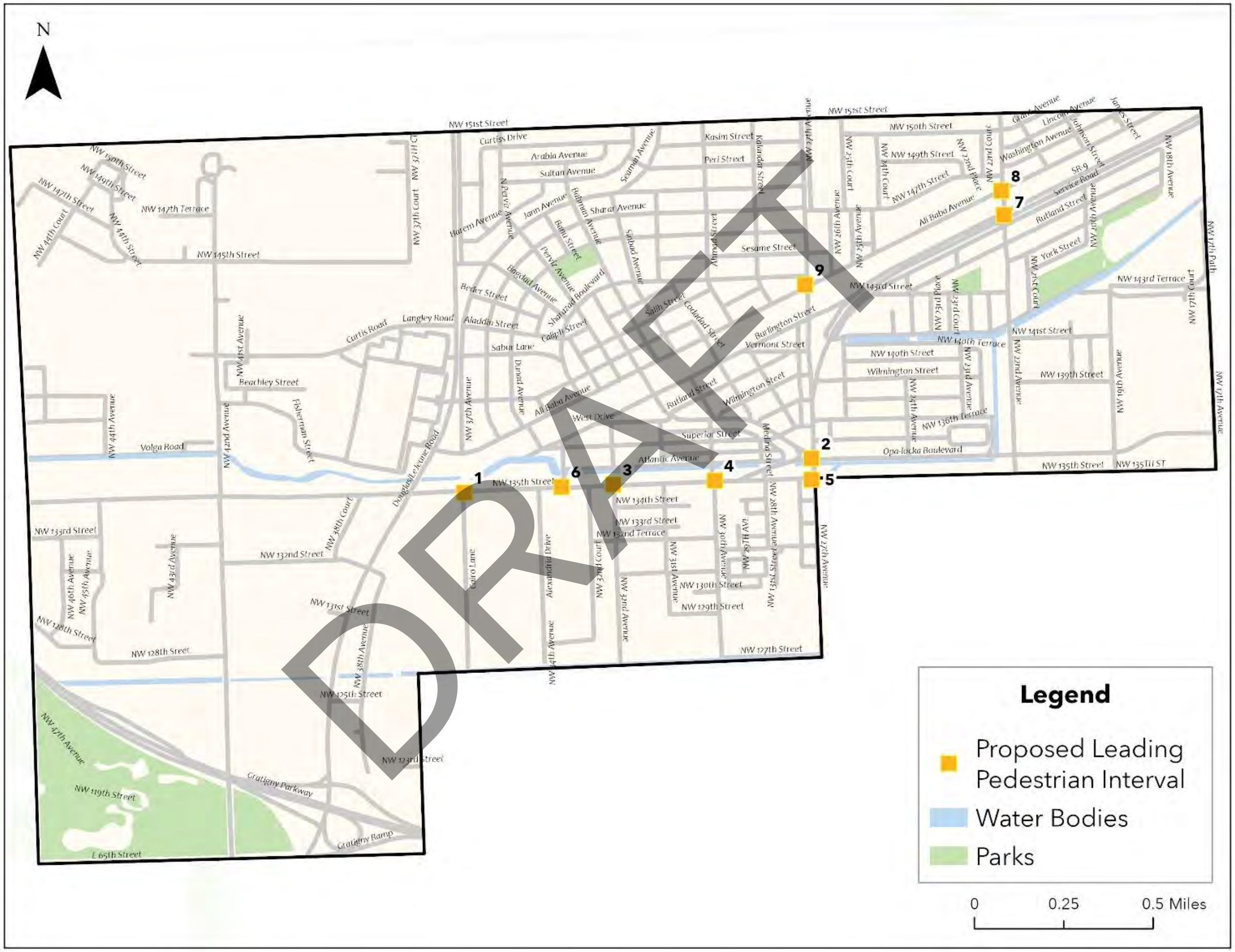
Assumption: Implementing a Leading Pedestrian Interval (LPI) at an intersection involves reprogramming the traffic signal to give pedestrians a head-start in crossing before vehicles receive a green light. This adjustment enhances pedestrian safety by increasing their visibility and reducing conflicts with turning vehicles. The process requires precise signal timing adjustments and the installation of additional signage to inform road users of the new timing.

Estimated Cost for Leding Pedestrian Interval Study: The cost estimate for implementing backplate retro-reflection is approximately $135,000.00. A detailed breakdown of projects by location is provided in **Table 9-22**, and their location is visually represented in **Map 9-22**.

Table 9-22: Proposed Estimated Cost for the Leading Pedestrian Interval Study

Project / Map ID	Street	Cross Street	Cost per Project	Total Cost
1	Cairo Lane	NW 135 Street	$15,000.00	$15,000.00
2	Sesame Street	NW 135 Street	$15,000.00	$15,000.00
3	NW 32 Avenue	NW 135 Street	$15,000.00	$15,000.00
4	Aswan Road	NW 135t Street	$15,000.00	$15,000.00
5	NW 27 Avenue	NW 136 Street	$15,000.00	$15,000.00
6	NW 27 Avenue	NW 135 Street	$15,000.00	$15,000.00
7	NW 27 Avenue	Ali Baba Avenue	$15,000.00	$15,000.00
8	NW 22 Avenue	Ali Baba Avenue	$15,000.00	$15,000.00
9	NW 22 Avenue	SR 9	$15,000.00	$15,000.00
			Total Cost:	**$135,000.00**

Map 9-22: Proposed Additional Studies



9.23 Bus Stops and Transit Improvements

The Safety Analysis conducted revealed that 25% of fatal and severe injury (FSI) crashes are related to transit and 13% of them are related to mid-block bus stops. Crashes are also influenced by:

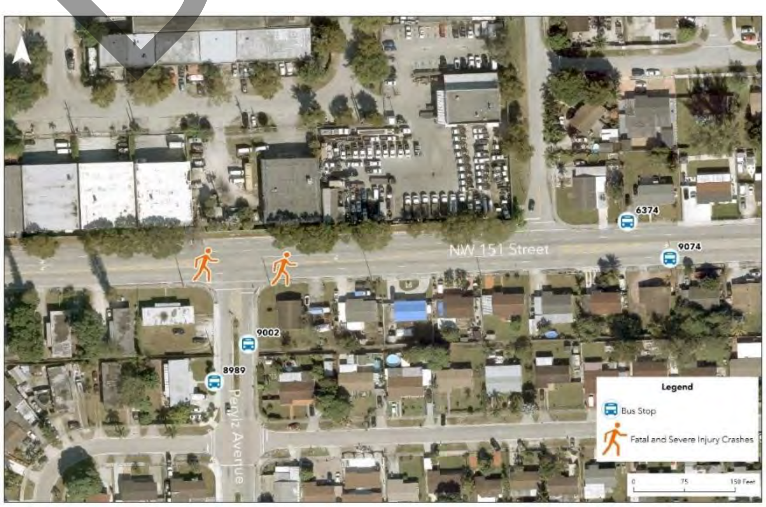
- **High Pedestrian Activity**: Bus stops attract many pedestrians, increasing the risk of collisions as they cross streets.
- **Bus Stop Design and Location**: Mid-block stops can lead to unsafe crossings, while intersection stops can cause congestion and visibility issues.
- **Visibility and Obstruction**: Stopped buses can block drivers' views of pedestrians and cyclists, increasing collision risks.
- **Infrastructure and Safety Measures**: Lack of sidewalks, crosswalks, and bike lanes near bus stops raises the likelihood of accidents.

Based on these key findings, several recommendations have been proposed to mitigate fatal and severe injury crashes near bus stops. These recommendations aim to address the various factors contributing to these incidents, such as pedestrian activity, bus stop design, and visibility issues. Additionally, the proposed measures also target reducing other types of crashes in these areas. By improving infrastructure and implementing safety measures, the overall safety around bus stops can be significantly enhanced.

9.23.1 NW 151 Street and Perviz Avenue

Crash Incidents: Bicycle and aggressive related crashes
Bus Stop Id No.: 6374, 9074, 9002, 8989
Routes: 32 and Opa-locka Express Circulator
Recommended Improvements: The addition of pedestrian refuges, high-visibility crosswalks, and pedestrian hybrid beacons on NW 151 Street/Oriental Boulevard is strongly recommended to enhance safety and accessibility for all users. These improvements are illustrated in detail on **Map 9-23**.

Map 9-23: FSI Crashes and Bus Stops Near NW 151 Street and Perviz Avenue



9.23.2 Opa-locka Boulevard and Ali Baba Avenue

Crash Incidents: Rain (wet) and distracted (night) crashes
Bus Stop Id No.: 8997 and 8994
Bus Routes: 22 and 135
Recommended Improvements: Given the current proximity of bus stops #8997 and #8994 to the nearby railroad tracks, relocating these stops is essential to ensure passenger safety and convenience. New locations should be selected with careful attention to minimize potential hazards associated with the crossing. Additionally, enhanced illumination and street lighting are needed to improve visibility and safety, particularly during evening and night hours. These improvements will help prevent accidents and create a more secure environment for commuters. Moreover, equipping both bus stops with adequate shelters and benches is crucial, as these amenities provide passengers with protection from adverse weather conditions and a comfortable waiting area.

Map 9-24: FSI Crashes and Bus Stops Near Ali Baba Avenue and Opa-locka Boulevard

9.23.3 Ali Baba Avenue and Sharazad Boulevard

Crash Incidents: Not available within a 200-foot radius. However, it is less than 1,000 feet of FSI crashes located in Opa-locka Boulevard.
Tri-Rail Station: Opa-locka Station
Bus Stop Id No.: 234
Route No.: 32, 135, and Opa-locka Express Circulator
Recommended Improvements: The intermodal center at the Opa-locka Tri-Rail Station is the City's primary multimodal hub, providing vital connections for both pedestrians and cyclists accessing regional commuter train services. Given the high level of activity in this area, substantial safety improvements are warranted. According to data from FDOT's Non-Motorized Traffic Monitoring Program, between January 29 and February 11, 2020, 3,824 pedestrians and cyclists crossed Ali Baba Avenue to access Sharazad Boulevard[125], highlighting the need for

[125] Source: Florida Department of Transportation Non-Motorized Traffic Monitoring Program – Opa-locka Tri-Rail Station

focused enhancements on this well-traveled corridor, which has an Average Annual Daily Traffic (AADT) count of 7,100 vehicles/day and a Truck Traffic Volume of 7.2%. Given Ali Baba Avenue's proximity to residential neighborhoods and the Amazon Warehouse, implementing pedestrian and bicycle safety improvements is essential. Key recommendations include adding pedestrian refuge islands, high-visibility crosswalks, and Rectangular Rapid Flashing Beacons (RRFBs) to enhance safety for all users accessing the intermodal center. These measures align with proposals in the Miami-Dade TPO's SMART STEP Tri-Rail Bicycle and Pedestrian Needs Study, which advocates for similar improvements at all Tri-Rail stations across Miami-Dade County, including Opa-locka's.

Map 9-25: FSI Crashes and Bus Stops Near Ali Baba Avenue and Sharazad Boulevard

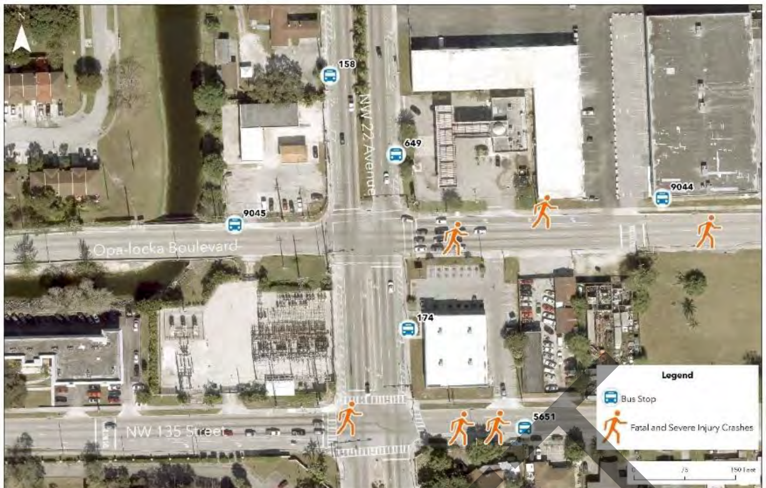
9.23.4 NW 22 Avenue and Opa-locka Boulevard/ NW 135 Street

Crash Incidents: Aggressive and distracted driving, Intersection issues, and pedestrian related FSI crashes

Bus Stop Id No. 158, 649, 174, 9045, 9044, 5651**Bus Routes:** 135, 17, and 401 (night service only)

Recommended Improvements: Opa-locka Boulevard and NW 135th Street are both heavily trafficked, 4-lane one-way roads, with bus stops located only on the north side of Opa-locka Boulevard and the south side of NW 135th Street. This layout creates a disjointed transit experience, as the stops do not directly face each other, making transfers between them inconvenient and unsafe. Given the high traffic volume and speed in the area, it is crucial to prioritize safety and accessibility improvements at these bus stops. Recommended enhancements include the creation of safer boarding and alighting zones along Opa-locka Boulevard, NW 135th Street, and NW 22 Avenue. Coordination with FDOT and Miami-Dade County DTPW for engineering and maintenance efforts will be vital to ensuring the successful implementation of these improvements.

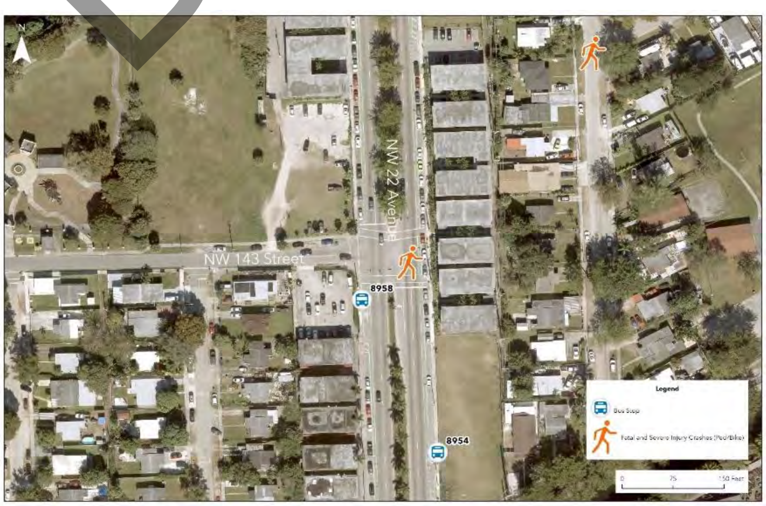
Map 9-26: FSI Crashes and Bus Stops Near NW 22 Avenue and Opa-locka Boulevard/ NW 135 Street



9.23.5 NW 22 Avenue and NW 143 Street

Crash Incidents: Pedestrian and Bicycle Crashes
Bus Stop Id No. 8962
Bus Routes: Opa-locka Trolley and 27
Recommended Improvements: Proposed short-term improvements for this intersection focus on enhancing the crosswalk with added emphasis to improve pedestrian safety. Coordination with Miami-Dade County DTPW's TS&S Division will be necessary to install backplates on the traffic lights for better visibility and clarity. Bus stop No. 8958 currently lacks essential amenities, such as a shelter and bench, and requires improved lighting and landscape maintenance to enhance safety and comfort for passengers. Similarly, bus stop No. 8954 also needs upgraded amenities and ongoing maintenance to provide a more welcoming and functional transit stop.

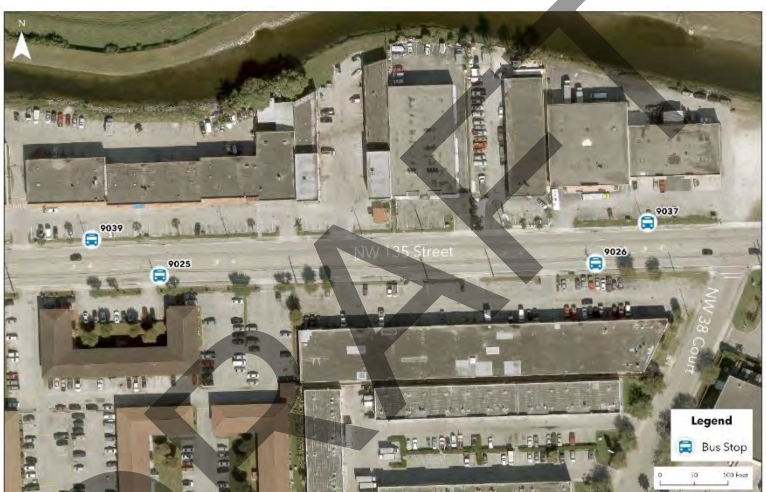
Map 9-27: FSI Crashes and Bus Stops Near NW 22 Avenue and NW 143 Street



9.23.6 NW 135 Street and NW 38 Court

Crash Incidents: Not available within a 500-foot radius
Bus Stop Id No. 158, 649, 174, 9045, 9044, 5651
Bus Routes: 135, 17, and 401 (night service only)
Recommended Improvements: A pedestrian refuge island is recommended between these bus stops to improve safety and reduce the need for unauthorized crossings. The nearest intersection, located over 1,500 feet away on Douglas Road Extension, forces pedestrians to cross the road without designated crossing points, increasing risk. Additionally, all bus stops in this area are currently lacking essential amenities such as shelters, benches, and adequate lighting, which would significantly enhance the comfort and safety of passengers. Implementing these improvements would promote safer and more accessible transit options for the community.

Map 9-28: FSI Crashes and Bus Stops Near NW 135 Street and NW 38 Court



9.23.7 NW 135 Street and NW 30 Avenue

Crash Incidents: Hit and Run, Lane Departure, Pedestrian related crashes were
Bus Stop Id No.: 8985 and 9033
Bus Routes: Opa-locka Express Circulator, 22, and 135
Recommended Improvements: Bus Stop No. 8985 needs to be relocated due to its unsafe proximity to a grocery store's driveway and the narrow turning radii on NW 30 Avenue, which create potential hazards for both passengers and motorists. To address these safety concerns, significant improvements are required at this intersection to improve both safety and traffic flow. Notably, several upgrades are already underway along SR 916/NW 135 Street as of November 2024, aimed at addressing these issues and improving the overall functionality of the area. These ongoing improvements will contribute to a safer and more efficient environment for all road users[126].

[126] Source: SR 916/NW 135 Street/NW 136 Street from west of NW 30 Avenue to east of NW 27 Avenue Roadway Project

Map 9-29: FSI Crashes and Bus Stops Near NW 135 Street and NW 30 Avenue

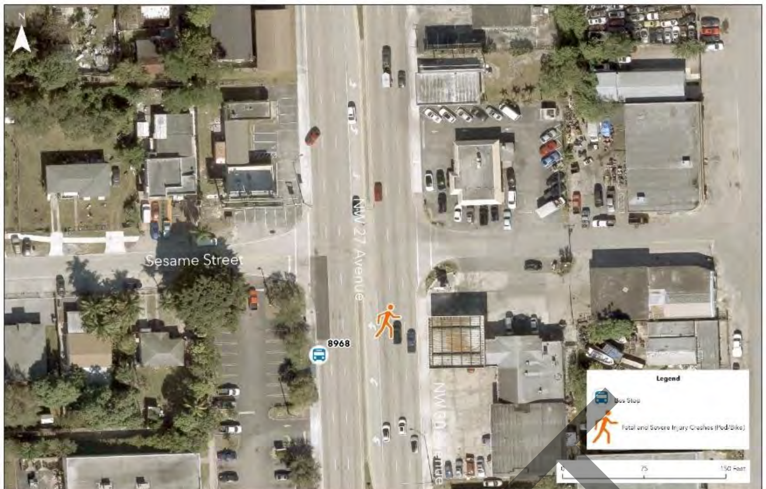
9.23.8 NW 27 Avenue and Sesame Street

Crash Incidents: Pedestrian and Bicycle Crashes
Bus Stop Id No. 8968
Bus Route: 27
Recommended Improvements: NW 27 Avenue, maintained and operated by FDOT, experiences a significant number of fatal and serious injury (FSI) crashes and is part of the city's High Injury Network (HIN), as detailed in the Safety Analysis section of this plan. Given this, it is essential to carefully evaluate and address any pedestrian or bicycle activity along this corridor.

Bus Stop No. 8968 is equipped with essential amenities such as a shelter for shade, a bench, and a trash can. However, due to the high volume of vehicle and truck traffic, transit riders are required to walk to the intersection with Ali Baba Avenue to access the opposite side. Although a pedestrian count is necessary to confirm this, many transit riders often engage in unauthorized crossings at this intersection to reach the other side of the road.

To improve safety and reduce risks, it is highly recommended to install a pedestrian refuge island and ensure high visibility of crosswalks at this intersection. These measures will provide a safer and more convenient environment for pedestrians and transit users while mitigating the potential hazards associated with crossing this high-traffic corridor.

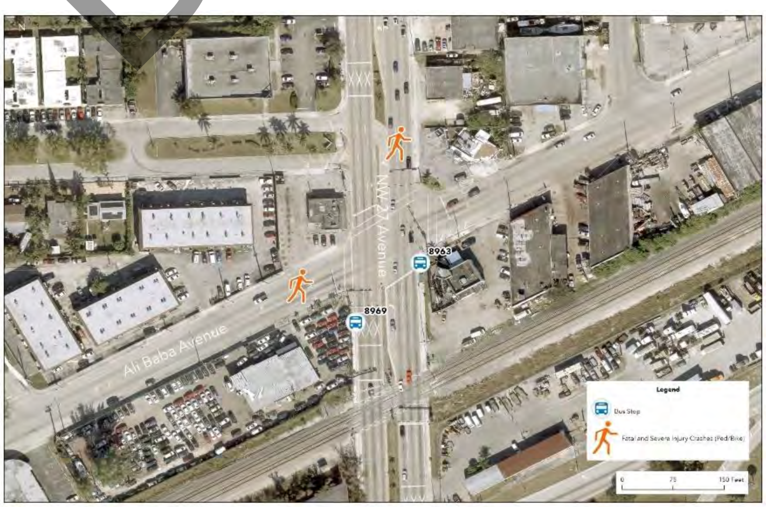
Map 9-30: FSI Crashes and Bus Stops Near NW 27 Avenue and Sesame Street



9.23.9 NW 27 Avenue and Ali Baba Avenue

Crash Incidents: Pedestrian and Bicycle Crashes
Bus Stop Id No. 8969 and 8963
Bus Routes: Opa-locka Express Circulator and 27
Recommended Improvements: The intersection of Ali Baba Avenue and NW 27 Avenue presents significant safety risks for pedestrians, cyclists, and transit riders, making it hazardous to cross. The high volume of traffic and lack of proper infrastructure exacerbate these challenges. To enhance safety, a reconfiguration of this intersection is essential. Improving pedestrian and cyclist facilities, along with addressing the needs of transit riders, will ensure safer crossings and smoother traffic flow. Coordinating engineering and maintenance efforts with FDOT and Miami-Dade County DTPW is crucial to effectively resolve these issues and create a safer environment for all road users.

Map 9-31: FSI Crashes and Bus Stops Near NW 27 Avenue and Ali Baba Avenue



9.23.10 NW 27 Avenue and Superior Street

Crash Incidents: Pedestrian and Bicycle Crashes
Bus Stop Id No. 8962
Bus Routes: Opa-locka Express Circulator and 27
Recommended Improvements: Quick-build recommendations for NW 27 Avenue include installing countdown timers at crosswalks to improve pedestrian safety, relocating the bus stop currently positioned near a restaurant's driveway to avoid potential conflicts, and enhancing crosswalk markings to increase visibility. Additionally, Bus Stop No. 8962 would benefit from improved maintenance and the addition of amenities such as a shelter and seating to enhance the experience for transit riders. Effective coordination of engineering and maintenance efforts with FDOT and Miami-Dade County DTPW is essential to address these issues and create safer, more accessible spaces for all users.

Map 9-32: FSI Crashes and Bus Stops Near NW 27 Avenue and Superior Street

9.24 Recommended Additional Studies

9.24.1 Pedestrian and Bicycle Master Plan

The City of Opa-locka should place high priority on developing and adopting a Pedestrian and Bicycle Master Plan, which will serve as a foundational framework for enhancing non-motorized infrastructure citywide. With a strategic focus on safety, accessibility, and connectivity, this plan would provide a detailed blueprint for implementing infrastructure improvements, identifying specific projects, funding opportunities, and programmatic goals that align with the city's broader transportation objectives. Currently, pedestrian and bicycle facilities are limited in Opa-locka, as highlighted in the recent Safety Analysis Review, leaving critical gaps in safe, accessible routes for non-motorized travel.

A master plan would help the city address these infrastructure gaps by establishing a cohesive network of low-stress bikeways designed to meet the needs of all users. By prioritizing infrastructure that is safe and accessible to cyclists and pedestrians alike, the plan would contribute to a more inclusive and resilient transportation system. This network could include a range of facility types—such as multi-use paths, protected bike lanes, neighborhood byways, and bicycle boulevards—that offer varying levels of protection and cater to different user groups, from casual pedestrians to daily bike commuters.

Multi-use paths, for instance, would provide wide, shared spaces for walkers and cyclists along main corridors, connecting key destinations like schools, parks, and transit hubs. Protected bike lanes would offer cyclists dedicated space on busier roads, separated from vehicle traffic by barriers or buffers to ensure a safe riding experience. Neighborhood byways and bicycle boulevards, meanwhile, would transform lower-traffic streets into safe, inviting routes for cyclists and pedestrians, equipped with features such as traffic-calming measures, signage, and designated crossings.

By establishing a clear vision for pedestrian and bicycle infrastructure, the master plan would not only improve safety but also encourage more people to choose walking and cycling as viable transportation options. This shift could lead to numerous community benefits, including reduced traffic congestion, lower emissions, improved public health, and increased neighborhood vibrancy.

Several preliminary recommendations from recent studies support this approach, including:

- Addressing sidewalk gaps identified in the city-led ADA and Sidewalk Study, which is already in progress.
- Developing a Shared Use Pathway to improve connectivity to the Opa-locka Tri-Rail Station, as outlined in the Miami-Dade TPO SMART STEP Tri-Rail Bicycle and Pedestrian Needs Study (2023). This pathway, adjacent to the station's northbound platform (track #2), is shown in **Figure 9-22 and Figure 9-23**, would connect Dunad Avenue with nearby residential areas and North Park High School on the city's south side.
- The proposed pathway would include pedestrian lighting, wayfinding signs, landscaping, and street furniture, making it a welcoming and well-utilized route for residents and visitors alike.

Figure 9-22: Proposed Path Location at the Opa-locka Tri-Rail Station

Source: Miami-Dade TPO SMART STEP Bicycle and Pedestrian Needs Study (2023)

- Creating and implementing separated bicycle lanes, along with adding dedicated lane pavement markings, as referenced in **Map 9-2** and **Map 9-3**, would lay the groundwork for a safer, more navigable environment for cyclists. These dedicated lanes can encourage more residents to consider biking as a viable mode of transportation, knowing they have a designated, protected space on the road. By focusing on separation, the city can promote a safe, accessible biking network that reduces interactions with motor vehicles, minimizing potential conflicts and fostering a safer urban setting for cyclists.
- Connectivity and accessibility are fundamental to establishing a comprehensive and effective bicycle and pedestrian network. Throughout public engagement sessions, community members repeatedly voiced concerns about difficulties navigating key corridors, specifically NW 27 Avenue, SR-9, and NW 22 Avenue. Residents cited these areas as challenging for both walking and biking, pointing to high vehicle traffic, limited crossing opportunities, and a lack of pedestrian and cycling infrastructure. Responding to these issues is crucial for the City's planning efforts, and as such, the proposed study should prioritize these corridors for detailed analysis and improvement.

Figure 9-23: Rendering of Potential Pedestrian and Bicycle Pathway at the Opa-Locka Tri-Rail Station

Source: Miami-Dade TPO SMART STEP Bicycle and Pedestrian Needs Study (2023)

- A significant part of addressing these connectivity challenges involves exploring the feasibility of constructing a pedestrian and bicycle bridge over NW 27 Avenue. Such a bridge, maintained and operated by FDOT, could provide a safe, dedicated crossing for non-motorized users. Given that NW 27 Avenue is part of the SMART Plan's North Corridor network and holds potential for future rapid transit development, this corridor is poised to become a central transit hub. However, the high volume of truck traffic (9%) along NW 27 Avenue poses serious risks to pedestrians and cyclists. Implementing a pedestrian and bicycle overpass here would offer a much-needed solution to reduce conflicts between vehicles and non-motorized users, lowering the likelihood of severe injuries and fatalities in Opa-locka.
- In addition to providing a safe crossing, this bridge would enhance the overall network connectivity, linking nearby neighborhoods, schools, and commercial areas to the transit corridor. Such infrastructure would enable more efficient, safer travel options for residents, aligning with the city's goals of fostering a connected, active transportation network. An example is shown in **Figure 9-24**.

Figure 9-24: Example of a Pedestrian and Bicycle Overpass Bridge

Source: Colonial Bridge bike/pedestrian overpass in Orlando – [PeopleForBikes]

- A key recommendation for enhancing connectivity and accessibility within Opa-locka is the proposed development of a wooden trail bridge at Ingram Park to link Burlington Street with NW 142 Lane, as illustrated in **Figure 13-25**. At present, residents in the "*Mirage at Sailboat Cove*" neighborhood have limited access to Ingram Park's amenities. Establishing this connection, in partnership with the Parks Department, would give neighborhood residents direct, easy access to the park's facilities, fostering a stronger sense of community and promoting outdoor recreation.
- To bring this vision to life, the Public Works Department could conduct a feasibility study on implementing a wooden trail bridge that links the neighborhood to Ingram Park. Additionally, the introduction of bicycle lane pavement markings along Burlington Street and NW 17 Avenue, as depicted in **Map 9-3**, would create a continuous corridor, effectively linking Opa-locka from east to west. This enhanced route would not only improve accessibility for cyclists and pedestrians but also strengthen neighborhood connectivity and expand residents' access to local green spaces, supporting a healthier, more connected community.

By prioritizing these improvements, Opa-locka can work toward creating a resilient, multimodal system that supports active transportation, enhances access to key destinations, and improves safety for all road users.

Figure 9-25: Proposed Location of Wooden Trail

9.24.2 Traffic Circulation Plan

Developing a traffic circulation plan requires a thorough assessment of the existing transportation network to pinpoint areas that need improvement. This process begins with collecting and reviewing data on roadway classifications, network design, and traffic volumes across local, county, and state roads. By analyzing this data, planners gain insights into current traffic patterns, potential bottlenecks, and priority areas for enhancement, laying the groundwork for a well-informed strategy to improve traffic flow.

As part of the CSAP initiative, the city has conducted a detailed mapping and identification of key neighborhood entry and access points along its boundaries, with findings outlined in **Appendix E**. This inventory provides a comprehensive look at access locations from major roads and arterials within the city, offering valuable insights into the traffic patterns at these points. This assessment lays a strong foundation for upcoming traffic calming and safety improvements and marks an essential early step in developing an effective traffic circulation plan. By pinpointing areas where current turning movements and congestion pose safety challenges, this inventory initiates a strategic approach to easing traffic flow and enhancing road safety throughout the city.

With this foundational understanding, the next phase involves proposing targeted improvements to optimize the road network. Suggested upgrades may include roadway system enhancements, such as widening lanes or adding new routes to reduce congestion. Intersection upgrades are also essential, as they can streamline traffic flow, reduce delays, and enhance safety at key junctions.

Additionally, bridge improvements might be recommended to ensure that all parts of the network remain accessible and can accommodate future traffic demands. Together, these improvements contribute to building a safer and more efficient transportation system. A well-designed traffic circulation plan provides a clear path for future infrastructure development, supporting community growth, enhancing connectivity, and ultimately improving residents' quality of life.

9.24.3 Freight Circulation Plan and Parking Study

As a key freight hub in Miami-Dade County per FDOT's City of Opa-locka Freight Implementation Plan (2017)[127], Opa-locka's strategic location, with its proximity to the Miami Opa-locka Executive Airport and numerous industrial warehouses, necessitates the development of a comprehensive Freight Circulation Plan to effectively manage freight traffic. This plan should provide clear guidelines for freight vehicle types, designated routes, and loading/unloading areas to ensure the smooth flow of commercial traffic while minimizing impacts on residential neighborhoods. Key elements of the plan should include recommendations for truck size, weight, and height restrictions, along with measures to limit freight activity in residential zones.

Critical intersections for freight activity in Opa-locka include those along NW 27 Avenue, such as NW 27 Avenue and NE 132 Street, NW 27 Avenue and Opa-locka Boulevard, NW 27 Avenue and Atlantic Avenue, and NW 27 Avenue and Burlington Street, as well as the intersection of SR 9 and NW 22 Avenue. These intersections are key nodes in heavily trafficked freight corridors like the Gratigny Parkway, NW 42 Avenue/LeJeune Road, NW 27 Avenue, SR-9, and NW 135 Street, which play a vital role in freight movement throughout the city. These corridors are highlighted in the Safety Analysis section for their significant freight activity and need for focused attention.

The Circulation Plan should align with the Freight Implementation Plan's overall goal, which focuses on improving freight mobility in the city. Short-term improvement projects could include addressing capacity and operational issues near the Miami Opa-locka Executive Airport, particularly due to the traffic generated by the Amazon Warehouse. Other short-term initiatives might focus on corridor-level operational improvements. Mid-term improvement projects should include access management along NW 42 Avenue, Douglas Road, and NW 135 Street near the Amazon facility, as well as enhancing access to the Gratigny Parkway and improvements to Cairo Lane and NW 127 Street.

To support this effort, the Freight Circulation Plan should also guide updates to local development codes to better manage heavy vehicle traffic and enhance freight routes. The plan will also assess access restrictions for sensitive areas, ensuring that freight operations remain efficient without compromising safety or the quality of life for Opa-locka residents. By defining clear freight routes and operational standards, this plan will help balance the needs of the freight industry with the well-being of the community, fostering an environment where both commerce and residents can thrive.

[127] Source: FDOT's City of Opa-locka Freight Implementation Plan (2017)

Summary of Countermeasures

10

10. Summary of Proposed Countermeasures and Emphasis Areas

The Implementation Plan presents a series of traffic improvement projects designed to enhance road safety and optimize traffic flow. Among these initiatives are neighborhood traffic calming measures, such as speed humps and lane narrowing, aimed at reducing vehicle speeds and minimizing traffic volumes on residential streets. Additionally, the plan highlights the creation of separated bike lanes, offering cyclists a protected space, as well as the clear marking of bike lanes to ensure safer travel for cyclists on the road.

Other key improvements include the addition of wider edge lines to increase lane visibility, the installation of longitudinal rumble strips to alert drivers when they drift out of their lanes, and the introduction of variable speed limit signs that adjust based on real-time conditions. To further improve safety, the plan recommends constructing raised intersections and roundabouts. Raised intersections slow down vehicles while enhancing pedestrian visibility, while roundabouts reduce conflict points and help control vehicle speeds. Intersection improvements, such as redesigning roadway geometry, adding turn lanes, and modifying signal timing, will also contribute to safer and more efficient traffic flow. Additionally, quick-build intersection enhancements are suggested as an affordable and minimally disruptive way to reconfigure streets.

The plan also proposes the installation of new traffic signals, protected left-turn phases, and non-traversable medians to prevent vehicles from crossing into opposing lanes. It further suggests adding roadway lighting to boost visibility, rectangular rapid flashing beacons for safer pedestrian crossings, and high-intensity crosswalk striping to improve pedestrian visibility. Enhancements like pedestrian refuge islands, improved crosswalk visibility, and retroreflective backplates for traffic signals will also be incorporated. The total estimated cost for these projects is approximately $64.5 million.

Finally, the plan recommends conducting additional studies to address specific safety concerns. These studies should include a comprehensive pedestrian and bicycle master plan, a detailed traffic circulation plan, and an in-depth freight circulation and parking plan. It also suggests further analysis of bus stops with high FSI crash rates, which were previously identified in the Safety Analysis section. The recommended countermeasures for these issues are detailed in specific sub-emphasis areas, with a summary provided in **Table 10-1** below.

Emphasis Area 1: Residential Neighborhoods

Description: The strategies and countermeasures are specifically targeted towards making residential neighborhoods safer and more pedestrian and bicycle friendly.
Goal: Eliminate aggressive driving and speeding related crashes in residential neighborhoods.

Strategies for Emphasis Area 1:

Strategies and Countermeasures: Neighborhood traffic calming, raised intersections, roundabouts, bicycle lane striping, and intersection improvements
Strategy Champion: City of Opa-locka
Potential Funding Sources: City of Opa-locka Capital Improvement Program (CIP) and Federal funding.

Emphasis Area 2: Commercial Corridors

Description: The strategies and countermeasures are designed to enhance safety for pedestrians, cyclists, transit users, and motorists along key commercial corridors, including NW 27 Avenue, Ali Baba Avenue, NW 135 Street, NW 22 Avenue, and NW 151 Street.
Goal: Eliminate aggressive driving, speeding, lane departure, and bicycle and pedestrian related crashes in commercial corridors.

Strategies for Emphasis Area 2:

Strategies and Countermeasures: Intersection improvements, separated bicycle lanes, non-traversable medians, left-turn phase, pedestrian refuge islands, backplates with retro reflection, RRFBs, variable speed limit signs, medians, and longitudinal rumble strip.
Strategy Champion: City of Opa-locka, FDOT, and Miami-Dade County
Potential Funding Sources: Miami-Dade County's Long-Range Transportation Plan (LRTP) and Transportation Improvement Plans (TIPs), FDOT Five Year Work Program, Federal funding, and the City of Opa-locka's CIP.

Emphasis Area 3: Industrial Parks and Freight Hubs

Description: Improve pedestrian, bicycle, and commercial vehicle safety by implementing streetlights, completing sidewalk gaps, improving roadway conditions, and restriping roadways. In addition, a comprehensive freight parking strategy is needed to provide specific code enforcement recommendations.
Goal: Eliminate commercial vehicle crashes and improve overall safety for pedestrians and vehicle passengers

Strategies for Emphasis Area 3:

Strategies and Countermeasures: Roadway lightning, wider edge line, variable speed limit signs, separated bicycle lanes, and reduced left turn conflict intersection.
Strategy Champion: City of Opa-locka, FDOT, and Miami-Dade County
Potential Funding Sources: Miami-Dade County's Long-Range Transportation Plan (LRTP) and Transportation Improvement Plans (TIPs), FDOT Five Year Work Program, Federal funding, and the City of Opa-locka's CIP, Public Private Partnership, or Miami-Opa-locka Executive Airport's CIP.

Table 10-1: Summary of Safety Countermeasures in Opa-locka

No.	Project Name	Timeframe	Programming	Description	Program Estimate	Estimate Assumption
1	Neighborhood Traffic Calming	Medium	CIP	To reduce vehicle speeds and traffic volumes on residential streets, strategies like speed humps, chicanes, and lane narrowing can be used. These measures create a safer environment for pedestrians, cyclists, and residents by discouraging cut-through traffic and promoting slower driving speeds	$3,282,211.87	Traffic calming measures will include installing speed humps spaced 350 to 500 feet apart, each with two MUTCD W17-1 warning signs and thermoplastic pavement markings. Installation involves milling, asphalt paving, and maintenance of traffic (MOT) for safety, including detours, signage, and flaggers. The estimated cost is $50,000 per mile, covering about 15 speed humps, signage, markings, and MOT, ensuring compliance with FDOT and MUTCD standards.
2	Separated Bike Lane	Long	CIP, Miami-Dade County	A protected bike lane, or cycle track, is a bicycle facility physically separated from motor vehicle traffic by barriers like planters, bollards, or raised curbs. It enhances cyclists' safety and comfort by creating a distinct, protected space, reducing the risk of conflicts with vehicles.	$8,628,620.00	Constructing separated bike lanes involves installing physical barriers like concrete medians and bollards spaced every 10 feet in constrained areas. Drainage adjustments may be needed. MUTCD-compliant R3-17 signs and thermoplastic pavement markings, including directional arrows and bike symbols, will be applied. Each mile requires about 25 bollards and associated striping. MOT will include lane closures, temporary signage, and safety flaggers. The estimated cost is $1.1 million per mile, covering materials, signage, MOT, and striping
3	Bike Lane Striping	Short	CIP	Painting dedicated bike lanes involves marking a solid white line to separate them from motor vehicle traffic. Bicycle symbols and directional arrows guide cyclists within the lanes, which are typically 5 to 7 feet wide. This process provides a clear, designated area for cyclists, enhancing visibility and safety for all road users.	$ 315,490.00	Bike lane striping involves applying thermoplastic markings, including arrows and bicycle icons, spaced per MUTCD standards. Each sharrow symbol costs over $600. W11-1 (Bike Route) signage will be installed at intervals. MOT will manage lane closures and temporary signage. The estimated cost is $50,000 per mile, covering materials, signage, and MOT.
4	Wider Edge Lane	Short	CIP	Wider edge lines, as defined by the MUTCD, enhance the visibility of travel lane boundaries by increasing the marking width from the standard 4 inches to 6 inches.	$322,410.00	Wider edge lanes involve extending the paved shoulder and applying thermoplastic striping. Each mile will include edge line markings, directional arrows, and signage like W5-1 (lane reduction). MOT will manage lane closures, signage, and safety barriers. The estimated cost is $150,000 per mile, covering paving, markings, signage, and MOT.
5	Longitudinal Rumble Strip	Short	FDOT	Rumble strips are milled or raised elements in the pavement that generate noise and vibration when driven over. Positioned along the roadway's edge, they alert drivers drifting out of their lane, reducing run-off-road accidents. When installed along the centerline of undivided highways, they help prevent head-on collisions by alerting drivers veering into oncoming traffic. These features improve driver awareness and reduce crash risks. Coordination with FDOT is essential to implement this improvement.	$249,532.50	Raised rumble strips are installed along road shoulders or centerlines to provide drivers with auditory and vibrational feedback, preventing lane departures. Each 12-inch strip is placed in sets of 50 per mile, evenly spaced. Each box of 50 strips costs about $800. Installation requires lane closures, with MOT including temporary signage, cones, and flagging. The estimated total cost is $50,000 per mile, covering materials, installation, signage, and MOT.

No.	Project Name	Timeframe	Programming	Description	Program Estimate	Estimate Assumption
6	Variable Speed Limit Sign	Short	CIP	An electronic sign that adjusts speed limits based on real-time traffic, weather, or road conditions. Connected to a traffic management system, these signs enhance safety by adapting speed limits to current conditions.	$918,750.00	Variable speed limit signs are digital, programmable signs that adjust speed limits based on traffic conditions. Each installation includes one electronic sign, a control unit, and power connections. Additional MUTCD R2-1 signs will be placed nearby. MOT will involve lane closures and safety flaggers. The estimated cost is $25,000 per sign
7	Raised Intersection	Medium	CIP	A raised intersection elevates the entire intersection to sidewalk level, creating a flat surface that slows down approaching vehicles. This design improves pedestrian visibility and safety by reducing vehicle speeds. It's especially effective in areas with heavy foot traffic, giving pedestrians priority and making crossings more accessible. The gradual elevation also acts as a traffic-calming measure, promoting safer, more walkable urban and residential environments.	$2,121,000.00	A raised intersection involves elevating the entire intersection to enhance pedestrian safety and slow vehicle speeds. The process includes milling the existing pavement, adjusting drainage and utilities, grading swales, and installing new header curbs along corner radii. Additionally, ADA-compliant ramps will be reconstructed, and high-visibility thermoplastic markings will be applied to crosswalks. Each raised intersection will also require MUTCD-compliant advance warning signage (W11-2 for pedestrian crossings and W17-1 for speed humps). MOT will cover intersection closures, detour signage, and necessary safety measures. The cost estimate for each intersection will vary based on specific drainage and utility adjustments, including materials, signage, and MOT.
8	Roundabout	Long	CIP	A roundabout is a circular intersection with one-way traffic around a central island, improving safety and traffic flow by reducing conflict points and vehicle speeds.	$4,040,000.00	Roundabout construction involves full pavement reconstruction, roadway widening, drainage and utility adjustments, curb installation, and signage. Raised medians, high-visibility markings, lighting, and landscaping are included. Road closures and detours require advanced planning. The estimated cost for each roundabout varies.
9	Intersection Improvements	Long	CIP	A broad category of modifications to enhance intersection safety and efficiency, including redesigning geometry, adding turn lanes, improving signage and markings, enhancing lighting, and modifying signal timing.	$33,330,000.00	Intersection improvements can range from signal upgrades and timing modifications to adding turn lanes, enhancing pedestrian and cyclist connectivity, and full reconstruction. These projects require lane closures and detours, using materials like asphalt, concrete, signage, and signal equipment. Engineering design and construction inspection are also needed.
10	Intersection Quick build	Short	CIP, Miami Dade County, State	Quick build is an innovative approach designed to reconfigure streets efficiently and economically, allowing for significant changes without the need for expensive alterations to the existing hardscape. This method is particularly valuable in urban environments, where budgets and timelines can be constrained. Quick-build intersection improvements utilize low-cost materials, making it feasible to implement enhancements swiftly and with minimal disruption	$805,416.86	Specific recommendations were provided for each of the issues that have been identified. Each cost estimate varies depending on the level of intervention.

No.	Project Name	Timeframe	Programming	Description	Program Estimate	Estimate Assumption
11	New Traffic Signal	Long	CIP	Installing new traffic lights includes signal heads, a controller cabinet, detection systems (like loop detectors or cameras), and often intersection geometry and pedestrian facility improvements	$1,620,000.00	Installing a new traffic signal involves signal poles, pedestrian pushbuttons, signal heads, ADA-compliant curb ramps, and MUTCD-compliant signage. Lane closures and detours are required during installation. The estimated cost is $1M per intersection.
12	Protected Left Turn Phase	Short	Studies/ Engineering	A traffic signal phase with an exclusive green arrow for left turns, while all conflicting movements have red lights, significantly reducing left-turn crashes. Requires an engineering study and coordination with Miami Dade County.	$200,000.00	Protected left-turn phases require a traffic study and may include new arrow signals, signal head upgrades, controller reprogramming, and pavement markings. Lane closures and safety measures are needed during installation. Estimated cost: $50,000 per signal.
13	Non-traversable Medians	Short	CIP, Miami Dade County, FDOT	Physical barriers in the center of a roadway separate opposing traffic lanes, preventing crossovers. They can be concrete, landscaped, or other designs	$582,400.00	Installing non-traversable medians involves concrete barriers or landscaping to prevent vehicle crossings, with reflective markers and signage. Lane closures and detours are required. Estimated cost: $80,000 per location.
14	Medians	Short	CIP, FDOT	Central reservations separate opposing traffic lanes and may allow left turns at certain points. They improve safety by reducing head-on collisions and providing pedestrian refuge.	$1,584,670.79	Medians without landscaping cost about $750,000 per mile, including curb construction, irrigation, planting, lighting, reflective markers, and MUTCD-compliant signage. Lane closures are required during construction.
15	Roadway lighting	Medium	CIP, Miami-Dade County, FDOT	Installing or improving streetlights enhances safety by increasing visibility, especially at night.	$4,186,000.00	Installing roadway lighting involves placing LED light poles, underground wiring, and fixtures. Lane closures are required. Estimated cost: $100,000 per intersection
16	Rectangular Rapid Flashing Beacon (RRFB)	Short	CIP, FDOT	A pedestrian crossing warning device with flashing amber lights that increase driver yielding behavior	$546,000.00	Each RRFB installation includes solar-powered beacons activated by pedestrian push buttons and MUTCD R10-25 signage. Lane closures are required. Estimated cost: $50,000 per crossing.
17	High Intensity Crosswalk Striping	Short	FDOT, CIP	Using highly reflective, durable materials like thermoplastic for crosswalk markings makes them more noticeable to drivers, especially in low-light conditions	$25,050.00	High-visibility crosswalks use preformed thermoplastic materials to create durable and reflective markings. Each crosswalk will include MUTCD-compliant signage (W11-2) and MOT during installation. The estimated cost is $5,000 per crossing.
18	Pedestrian Refuge Island	Short	FDOT, CIP	A protected area in the middle of a street where pedestrians can safely wait, especially useful on wide streets or at complex intersections. Engineering and coordination are needed with FDOT.	$1,296,000.00	A pedestrian refuge island includes concrete work, curb ramps, MUTCD R1-6 signage, and requires lane closures during installation. Estimated cost: $75,000 per island.
19	Crosswalk Visibility Enhancement Striping	Short	CIP	Additional treatments to increase crosswalk visibility include advance stop lines, high-visibility patterns, and enhanced signage and markings	$219,200.00	Enhancing crosswalk visibility involves high-contrast thermoplastic markings, MUTCD W11-2 signage, and lane closures during striping. Estimated cost: $10,000 per intersection.

No.	Project Name	Timeframe	Programming	Description	Program Estimate	Estimate Assumption
20	Reduce Left-Turn Conflict Intersection	Medium	CIP	Strategies to minimize left-turn conflicts include protected left-turn phases, intersection redesigns to eliminate certain turns, and alternative intersection designs.	$97,200.00	To reduce left-turn conflicts, signal adjustments, lane reconfiguration, and pavement markings will be applied. Lane closures and signage are required. Estimated cost: $60,000.
21	Backplates Retro Reflection	Short	County	Adding backplates with retroreflective borders to traffic signals improves visibility, especially in low-light conditions or power outages. Requires an engineering study and coordination with Miami Dade County.	$16,000.00	A traffic engineering study and County coordination are needed to install retroreflective backplates on traffic signals, improving visibility in low-light conditions. An interlocal agreement is required. Each backplate costs about $1,500, excluding labor and materials. Lane closures are needed during installation.
22	Leading Pedestrian Interval	Short	Studies/ Engineering	A timing strategy used at signalized intersections where pedestrians are given a walk signal a few seconds before vehicles get a green light. This head start increases pedestrian visibility and reduces conflicts with turning vehicles. Engineering study and coordination with Miami Dade County	$135,000.00	Implementing an LPI at an intersection involves reprogramming the signal to give pedestrians a head-start in crossing before vehicles. This requires signal timing adjustments and additional signage. The estimated cost is $15,000 per intersection.
				Total Program	**$64,520,952.02**	

Public Engagement Summary

11

11. City of Opa-locka Vision Zero Public Engagement Summary

The City of Opa-locka's Comprehensive Safety Action Plan (CSAP) Stakeholder and Public Engagement Plan (Plan) was developed and approved to guide outreach efforts throughout the duration of the project. The Plan outlined the participation methods and identified key stakeholders who played a critical role in the initiative. Its primary goal was to reach out to various stakeholders, inform them about the CSAP, and encourage active dialogue and engagement. Continuous collaboration with city staff was essential to coordinate meetings, organize events, and ensure the involvement of all stakeholders.

From the outset, the public engagement campaign focused on interacting with city staff, stakeholders, elected officials, and the general public. A Task Force was formed as a requirement of the Safe Streets for All Grant application, and three (3) Task Force meetings were held throughout the project. Additional initiatives included the creation of a project website to highlight key milestones and events, the distribution of a public survey (both online and printed), and the development of a public comments map. In total, forty (40) events were hosted in coordination with the city.

The following Public Engagement Events included:

11.1 Menafest

Meeting Day and Time:	April 13, 2024, at 12:00 p.m.
Meeting Format:	In-person
Meeting Location:	151 Perviz Avenue, Opa-locka

The City of Opa-locka hosted the Menafest event, a vibrant celebration of the city's rich history and culture that actively engaged the community. This event provided an opportunity for meaningful discussions about creating safer streets for pedestrians and cyclists, while introducing the Vision Zero concept to local residents. In addition, the event helped promote the upcoming Community Workshop and Bike Ride scheduled for May 2, 2024, encouraging further participation and engagement in these important initiatives.

11.2 City of Opa-locka Police Department Car and Motorcycle Showcase

Meeting Day and Time: April 20, 2024, at 12:00 p.m.
Meeting Format: In-person
Meeting Location: Ingram Park- 2100 Burlington Street, Opa-locka

The City of Opa-locka partnered with the Opa-locka Police Department to host a community event at Ingram Park, where road safety and the improvement of pedestrian and bicycle mobility were key topics of discussion. Community members were encouraged to attend and share their opinions about the City of Opa-locka's Safety Action Plan and its Vision Zero goal. The event fostered a comprehensive dialogue that amplified residents' voices and highlighted how safer streets and roads would benefit everyone in Opa-locka. The community was also invited to participate in the upcoming Community Workshop and Bike Ride, featuring the Dutch Cycling Embassy, on May 2, 2024.

11.3 Community Workshop and Bike Ride

Meeting Day and Time:	May 2, 2024, at 4:00 p.m.
Meeting Format:	In-person
Meeting Location:	City of Opa-locka Government Center- 800 Fisherman Street, Opa-locka

The City of Opa-locka invited community members to join a bike ride alongside notable organizations, including the Dutch Cycling Embassy, the Florida Department of Transportation, the Miami-Dade Transportation Planning Organization, Transit Alliance Miami, the City of Hialeah, the City of Miami Beach, the Broward Metropolitan Planning Organization (MPO), and local civil groups such as Seniors on the Move and the TenNorth Group. This bicycle ride offered participants the opportunity to experience Opa-locka firsthand on two wheels while sparking discussions on topics such as bicycle lanes, traffic signals, and road safety. The ride also served as a precursor to the workshop that followed.

The workshop featured two guest lecturers from the Dutch Cycling Embassy: Teije Gorris and Richard ter Avest. Mr. Gorris shared the five key design principles that make streets welcoming for all modes of transportation: cohesion, directness, safety, comfort, and attractiveness. He also discussed safety-enhancing design features from the Netherlands, as well as policies and features that are already being adopted in the United States. Additionally, Mr. Avest highlighted the synergy between cycling and public transportation, emphasizing the importance of improving first and last mile connectivity.

The event proved to be a valuable learning experience for all participants, fostering a sense of community and collaboration around the shared goal of creating safer, more accessible streets in Opa-locka. The discussions not only provided an opportunity for community members to voice their concerns and ideas but also helped to shape the ongoing planning efforts for the city's transportation infrastructure. By engaging local residents, city officials, and experts, the event contributed to a deeper understanding of how integrated and well-designed active transportation systems can benefit everyone in the community. The collaboration reinforced the city's commitment to improving mobility and safety for pedestrians, cyclists, and transit users alike.

11.4 2024 NACTO Conference Workshop: NACTOfy Your City's Guides

Meeting Day and Time: May 7, 2024, at 9:00 a.m.
Meeting Format: In-person
Meeting Location: Intercontinental Hotel - 100 Chopin Plaza, Miami, FL 33131

During the 2024 National Association of City Transportation Officials (NACTO) Conference in Miami, NACTO Technical Leads hosted a session titled "*NACTOfy Your City's Design Guides: Applying Engineering Judgment to Design Standards*" on May 7, 2024. This session provided conference attendees with the opportunity to explore the principles of street design and intersection safety. One of the highlights of the session was a focused discussion on the intersection of NW 27 Avenue/SR-9 and Opa-locka Boulevard, where best-practice street designs were demonstrated.

The session also covered actionable insights on how cities can adopt NACTO or similar design standards through funding opportunities under the Infrastructure Investment and Jobs Act (IIJA)/Bipartisan Infrastructure Law. Emphasis was placed on using design flexibility and engineering judgment to create projects that are not only safer and more sustainable but also easier to maintain in the long term. By showcasing real-world examples and discussing the application of these standards, the session aimed to equip attendees with the tools needed to implement effective and innovative street designs in their own communities.

11.5 City of Opa-locka Vision Zero: Task Force Meeting #1

Meeting Day and Time: June 6, 2024, at 10:00 a.m.
Meeting Format: Virtual
Meeting Location: Microsoft Teams

A presentation was delivered on the Vision Zero Project being developed for the City of Opa-locka, highlighting key milestones, crash analysis data, and the next steps toward achieving Vision Zero. Critical findings from the analysis revealed that 21.8% of fatal and severe injury crashes (FSI) between 2018 and 2023 involved pedestrians, with 67% of these crashes occurring on roads under state jurisdiction. Additionally, 44% of FSI crashes took place on minor arterial roadways. Contributing factors included aggressive driving, speeding, distracted driving, and intersection-related issues. Correlations were also identified between roads with higher speed limits and a greater number of lanes, which contributed to the severity of crashes.

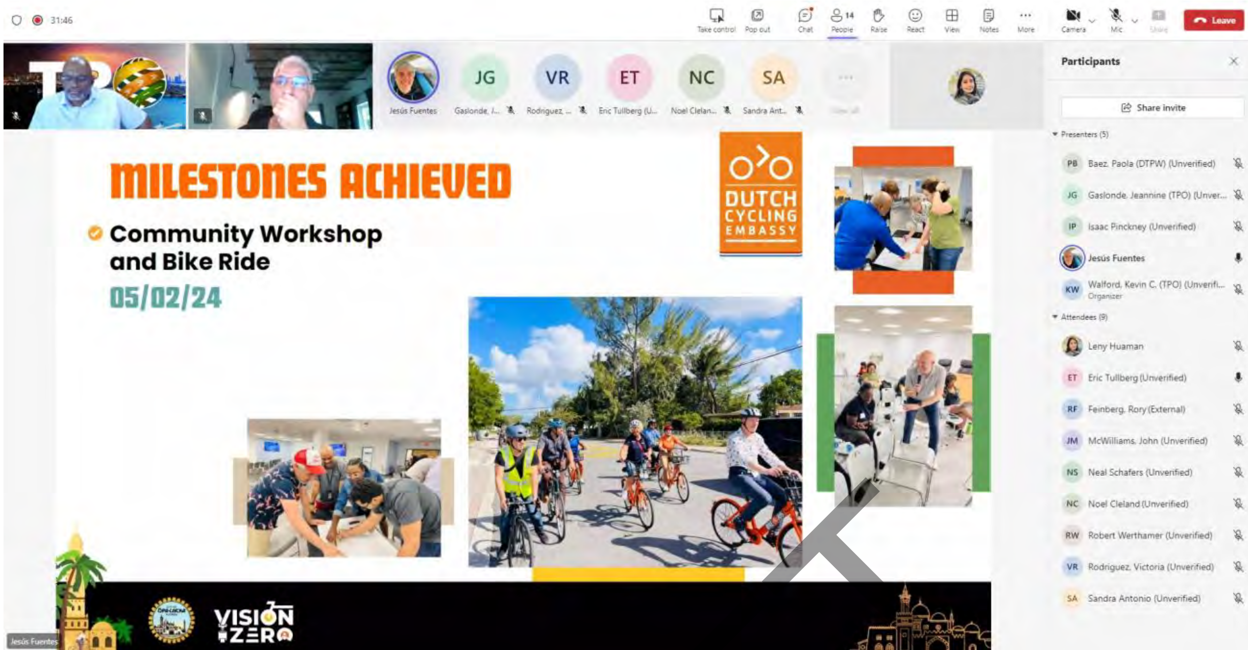
A significant focus of the presentation was the introduction of the High Injury Network (HIN), a mapping tool designed to identify high-risk corridors where concentrations of FSI crashes occur in Opa-locka. This network will help target improvements in the city's most dangerous areas. Following the presentation, a discussion highlighted the importance of community outreach and public engagement, with an emphasis on opportunities for local businesses and residents to participate. The conversation underscored the need for ongoing collaboration and creative strategies to involve the community in the Vision Zero initiative, ensuring its success in reducing traffic-related fatalities and injuries.

11.6 Bicycle Pedestrian Advisory Committee (BPAC) Meeting #1

Meeting Day and Time: June 11, 2024, at 5:30 p.m.
Meeting Format: Virtual
Meeting Location: Microsoft Teams

During the first BPAC meeting, a presentation was delivered on the City of Opa-locka's Vision Zero Plan, with a focus on the Comprehensive Safety Action Plan (CSAP). The presentation covered key aspects such as the background, purpose, goals, timeline, milestones achieved, crash analysis, and the next steps. The background of the Safe Streets and Roads for All (SS4A) initiative was introduced, with Opa-locka's goal to eliminate all traffic fatalities by 2030 highlighted, along with the federal government's $200,000 grant as part of the SS4A infrastructure law. A detailed crash analysis from 2018-2023 was also discussed, interpreting data and trends related to injuries and fatalities by mode, transit facilities, jurisdictions, functional road classifications, and the distribution of crashes across various roads.

After the presentation, the floor was opened for questions, comments, and concerns from attendees, which were addressed during the discussion. Topics included the analysis of lane miles rather than route miles, the use of non-motorized Annual Average Daily Traffic (AADT) data and bike/pedestrian counts, the exploration of alternate routes for cyclists, and the consideration of e-scooters in the safety analysis. The dialogue fostered an interactive exchange of ideas and insights, reinforcing the collaborative approach to improving traffic safety in Opa-locka.



11.7 Opa-locka's Vision Zero Talks - Safe Kids Injury Prevention Coalition

Meeting Day and Time: June 11, 2024, at 10:00 a.m.
Meeting Format: Virtual
Meeting Location: Microsoft Teams

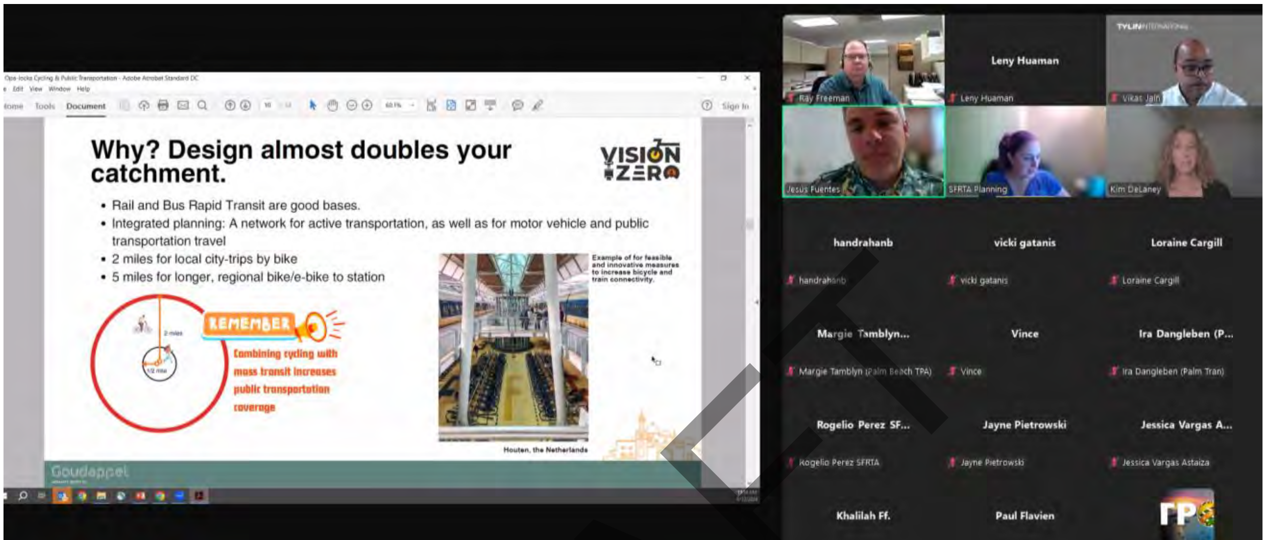
During this meeting, a discussion took place with Malvina Dunkin, Safe Kids Miami Representative, and Luis DeRosa, Clinical Outreach and Prevention Coordinator at the University of Miami Jackson Hospital Ryder Trauma Center. The purpose was to gather feedback and explore potential collaboration opportunities with these key stakeholders. Luis DeRosa provided valuable insights into injury and crash data, highlighting potential crash prevention initiatives tailored to Opa-locka and emphasizing the need for educational outreach campaigns. Malvina Dunkin contributed by discussing data analysis methods and potential outreach programs. Both DeRosa and Dunkin expressed strong interest in partnering with Opa-locka's Vision Zero Initiative, with a focus on involving hospital staff in public education classes, injury and crash prevention campaigns, and data collection efforts to help improve traffic safety in the community.

11.8 South Florida Regional Transportation Authority (SFRTA) and Planning Technical Advisory Committee (PTAC) Meeting

Meeting Day and Time: June 12, 2024, at 10:00 a.m.
Meeting Format: Virtual
Meeting Location: Zoom

A presentation was delivered to the South Florida Regional Transportation Authority (SFRTA) and the Public Transportation Advisory Committee (PTAC) regarding the potential transformation of the Opa-locka Tri-Rail Station. The presentation highlighted critical ridership metrics at the station, with a particular focus on the station's unique bicycle ridership, which underscored the potential for the Opa-locka Tri-Rail Station to evolve into a multi-modal transportation hub. The vision centered on transforming the station into a more appealing, efficient, and comfortable space for all users.

Drawing inspiration from the Netherlands, the presentation emphasized design principles that promote seamless integration between various modes of transportation, particularly the connection between bicycles and trains, which enhances accessibility and user experience. The PTAC expressed strong interest in collaborating with the Miami-Dade Department of Transportation and Public Works (DTPW) to support Opa-locka's Vision Zero goal, aligning efforts to improve safety and connectivity within the community.



11.9 Opa-locka's Vision Zero Talks - Discover Opa-locka

Meeting Day and Time: June 14, 2024, at 2:00 p.m.
Meeting Format: Virtual
Meeting Location: Microsoft Teams

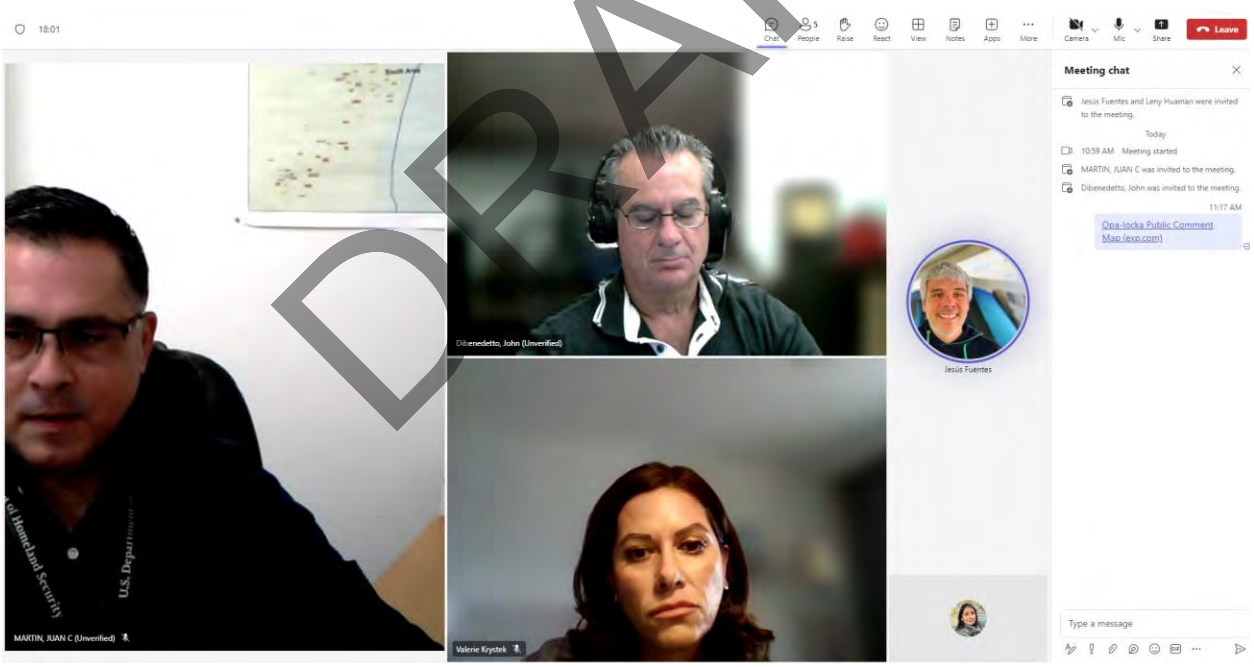
During the meeting, discussions were held with Alex Van Mecl to address areas of concern in Opa-locka. One significant focus was Jann Avenue, which has experienced safety issues despite its historical role as a pedestrian connector between NW 37 Avenue and NW 27 Avenue. Recent trends, including speeding, aggressive driving, and a lack of adequate traffic calming measures, were identified as contributing factors, as reflected in the Fatal and Serious Injury (FSI) statistics from the crash study. Potential solutions were explored, including the introduction of radar speed monitoring, enhancing the roundabout at Seaman Avenue and Jann Avenue, and implementing stop signs at every intersection along Jann Avenue to improve safety. Additionally, the idea of organizing a bike ride with the Opa-locka Police Department was proposed as a way to engage the community and raise awareness about road safety.

11.10 Opa-locka's Vision Zero Talks - Miami-Dade County Public Schools

Meeting Day and Time:	June 17, 2024, at 11:00 a.m.
Meeting Format:	Virtual
Meeting Location:	Microsoft Teams

The purpose of this meeting was to gather feedback from Miami-Dade County Public Schools (MDCPS) regarding the Vision Zero Project in Opa-locka. Two schools, Robert Ingram Elementary and Nathan B. Young Elementary, were identified as key locations for the discussion. The main topics of conversation included the Traffic Operations Plan, potential meetings with school principals, community outreach opportunities, student walking and biking data, and flooding issues along pedestrian routes.

The Traffic Operations Plan featured a map highlighting drop-off points and designated walking/biking routes, which were being reviewed by parents to ensure accuracy and effective planning. A potential meeting with school principals was also considered to foster community engagement and ensure transparency regarding students' walking and biking habits. Additionally, the possibility of accessing student walking and biking data was discussed, with the intent to request this information through the school district. Finally, flooding issues along pedestrian routes to these schools were addressed. These concerns had been previously raised through walking events and studies, and the Department of Transportation and Public Works (DTPW) had been working on resolving them.

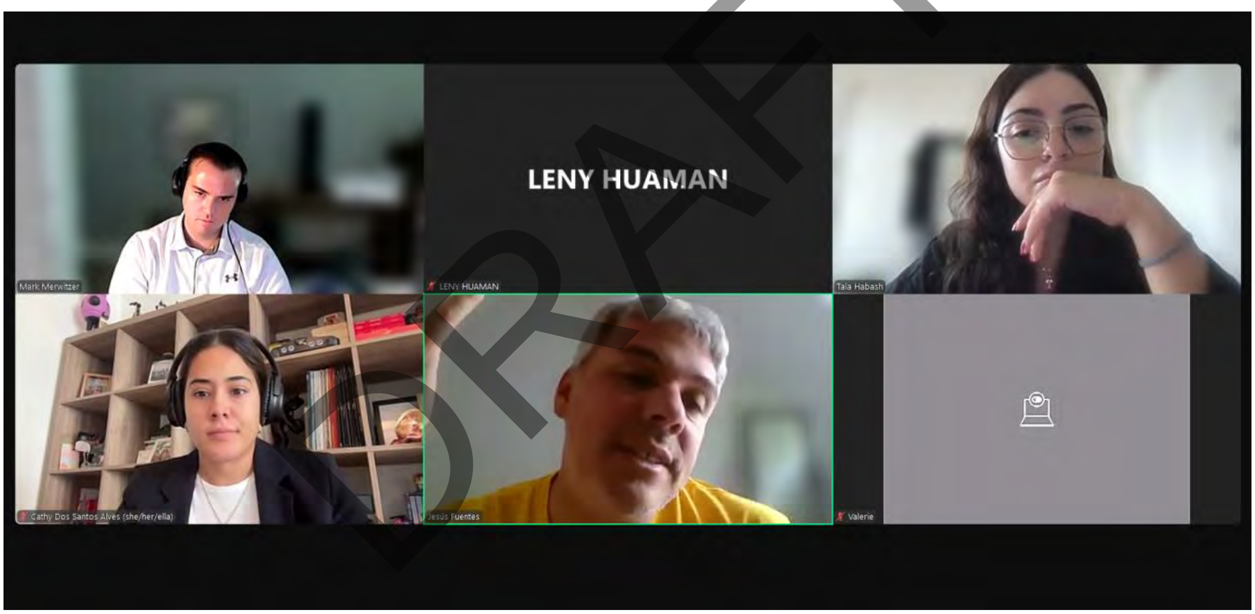


11.11 Opa-locka's Vision Zero Talks – Transit Alliance Miami

Meeting Day and Time: June 17, 2024, at 12:00 p.m.
Meeting Format: Virtual
Meeting Location: Zoom

The representatives from the Vision Zero initiative met with Transit Alliance Miami to discuss the CSAP and explore opportunities for collaboration. During the meeting, the team presented an overview of the Vision Zero goals and proposed working together to assess transit access and safety across Opa-locka. A key point of discussion was the strong correlation between fatal and serious injury (FSI) crashes and their proximity to transit stops, underscoring the importance of evaluating the existing transit facilities.

This collaboration resulted in the creation of the "*Let's Take the Bus, Opa-locka*" event, where participants would ride the bus and assess the safety and accessibility of bus stops in the area. Transit Alliance Miami expressed enthusiasm about the initiative and suggested rehearsing the program a day before the official event. The meeting concluded with a finalized action plan for the event, and the team thanked everyone for their contributions before adjourning.



11.12 Opa-locka's Vision Zero Talks – Commissioner Dr. Sherelean Bass

Meeting Day and Time: June 20, 2024, at 11:00 a.m.
Meeting Format: Virtual
Meeting Location: Zoom

The meeting was held with Dr. Sherelean Bass, a community liaison specialist with Miami-Dade County Public Schools (MDCPS). Dr. Bass played a key role in supporting Opa-locka's Vision Zero initiative by facilitating outreach to a wide range of community stakeholders, including local churches and pastors, residents, commissioners, constituents, school principals, and parents.

Through her extensive network, Dr. Bass helped identify and address critical issues such as missing signs around schools, flooding along pedestrian routes to schools, and unsafe streets lacking crosswalks. Additionally, she contributed to planning a public education campaign focused on pedestrian safety, aiming to raise awareness and promote safer walking environments in the community.

11.13 Community Outreach at the Opa-locka Tri Rail Station

Meeting Day and Time:	June 22, 2024, at 11:00 a.m.
Meeting Format:	In-person
Meeting Location:	480 Ali Baba Avenue, Opa-locka

At the Opa-locka Tri-Rail Station, an awareness campaign was held to promote road safety, the Vision Zero Project, and the upcoming Bike Tune-Up event on June 27, 2024. This initiative, part of the city's CSAP, targeted both residents and commuters. The campaign emphasized the shared commitment to making Opa-locka a safer place to live, strengthening community engagement and encouraging active participation in creating a safer and more sustainable transportation environment.

11.14 Opa-locka's Vision Zero Talks – Miami-Dade Department of Transportation and Public Works (DTPW)

Meeting Day and Time:	June 24, 2024, at 3:00 p.m.
Meeting Format:	Virtual

Meeting Location: Microsoft Teams

A meeting was held with representatives from the Miami-Dade DTPW, where the City of Opa-locka's CSAP was briefly presented. The discussion focused on fatal and serious injury (FSI) crash statistics in Opa-locka, providing a deep dive into key data and trends. Following this, Ms. Karen Gonzalez from DTPW presented crash statistics from the broader Miami-Dade County Vision Zero Project, offering valuable context and insight into the city's crash analysis. The DTPW expressed strong support for Opa-locka's Vision Zero efforts and committed to actively participating in achieving the goal of eliminating traffic-related fatalities and serious injuries.

11.15 Opa-locka's Vision Zero Talks – Florida Department of Transportation (FDOT)

Meeting Day and Time: June 24, 2024, at 4:00 p.m.
Meeting Format: Virtual
Meeting Location: Microsoft Teams

During this stakeholder meeting, FDOT was briefed on key findings from the crash analysis conducted as part of the CSAP. Opa-locka's Vision Zero initiative was presented with an emphasis on crash data from roads under FDOT's jurisdiction. FDOT highlighted ongoing projects aimed at improving corridors such as NW 27 Avenue and enhancing critical intersections to reduce the risk of crashes, particularly those involving freight activities. The meeting concluded with a thank-you to FDOT for its commitment to supporting Opa-locka's Vision Zero goal.

11.16 Opa-locka's Vision Zero Talks – Miami-Dade Transportation Planning Organization (TPO)

Meeting Day and Time: June 26, 2024, at 11:00 a.m.
Meeting Format: Virtual
Meeting Location: Microsoft Teams

During this meeting, Malcom Moyse Jr. of the Miami-Dade TPO shared key strategies for securing community outreach and engagement in Opa-locka. Recommended strategies included leveraging the football and track seasons, taking advantage of the Juneteenth celebration, diversifying outreach locations, and prioritizing schools for engagement. Although the first three strategies faced challenges in implementation, alternatives such as bike tune-up events and bus rides were suggested. Mr. Moyse emphasized the difficulty of bridging communication between transportation planners and the local community, underscoring the importance of effective communication and outreach to ensure successful community involvement.

11.17 Opa-locka's Vision Zero Talks – Broward Metropolitan Planning Organization (MPO)

Meeting Day and Time: June 26, 2024, at 10:00 a.m.
Meeting Format: Virtual
Meeting Location: Microsoft Teams

The meeting with Fazal Qureshi and James Cromar, representatives from the Broward Metropolitan Planning Organization, provided valuable insight into how the MPO approached Vision Zero, specifically in analyzing and addressing FSI crashes within their policy recommendations. Key topics of discussion included data collection, the importance of constructing a thorough narrative for pedestrian fatalities, and the development of the HIN. The meeting offered a perspective from a neighboring county, highlighting how both regions aimed to achieve Vision Zero through similar measures while addressing unique challenges within their municipalities.

11.18 Opa-locka's Vision Zero Talks – City of Miami Beach

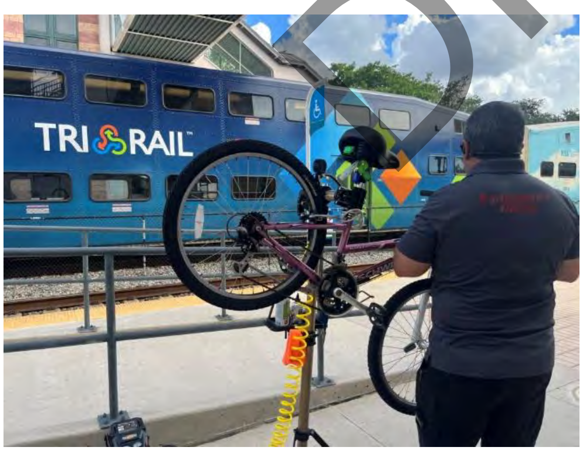
Meeting Day and Time:	June 26, 2024, at 11:00 a.m.
Meeting Format:	Virtual
Meeting Location:	Microsoft Teams

A meeting was held with Paola Leon Alburjas of the City of Miami Beach to discuss the municipality's approach to achieving Vision Zero. The conversation focused on strategies to address FSI crashes around schools and the promotion of micromobility in the city. Additionally, they engaged in a thought-provoking discussion about the freight activity in Opa-locka, ensuring that the necessary considerations and measures could be incorporated to support Opa-locka's Vision Zero goal.

11.19 City of Opa-locka Vision Zero: First Bike Tune-Up Event

Meeting Day and Time:	June 27, 2024, at 5:00 p.m.
Meeting Format:	In-person
Meeting Location:	Opa-locka Tri-Rail Station – 480 Ali Baba Avenue, Opa-locka

The City of Opa-locka, in collaboration with the Miami-Dade DTPW and the South Florida Regional Transportation Authority (SFRTA), hosted the inaugural pop-up bicycle repair station at the Opa-locka Tri-Rail Station. The event saw the completion of twenty (20) surveys, the distribution of sixteen (16) helmets, and the repair of twelve (12) bicycles. It was a resounding success, garnering much praise from the community. Key outcomes included promoting sustainable transportation options, emphasizing safety practices for bicycling, and enhancing community engagement through direct outreach efforts.



11.20 Opa-locka's Vision Zero Talks – City of Opa-locka Commissioner Williams

Meeting Day and Time:	July 8, 2024, at 2:00 p.m.
Meeting Format:	Virtual
Meeting Location:	Zoom

A meeting was held with the City of Opa-locka's Commissioner Williams to inform her about ongoing efforts towards achieving the Vision Zero goal. The presentation outlined the CSAP, including the timeline, milestones, and key areas in Opa-locka that required attention and revision. The main areas of concern discussed were Jann Avenue, Seaman Avenue, and NW 27 Avenue. Proposed solutions included traffic-calming measures such as speed humps, designating pedestrian crosswalks due to insufficient pedestrian facilities, and identifying suitable streets for bicycle lanes. Commissioner Williams expressed her interest in gathering community feedback to support the CSAP and the city's progress toward Vision Zero.

11.21 Opa-locka's Vision Zero Talks – South Florida Regional Transportation Authority (SFRTA)

Meeting Day and Time:	July 9, 2024, at 1:00 p.m.
Meeting Format:	Virtual
Meeting Location:	Microsoft Teams

During this meeting with the South Florida Regional Transportation Authority (SFRTA), appreciation was extended for their collaboration with the City of Opa-locka in hosting the first bike tune-up event in June 2024. The primary goal was to present and discuss the key findings from the CSAP. A significant portion of the discussion focused on locations of crashes involving railroad crossings, with factors such as road jurisdiction, limited pedestrian facility accessibility, and the expansion of rail access for workers in the logistics industry (e.g., Amazon) being key considerations. The meeting concluded with discussions about future improvements planned for the Tri-Rail infrastructure.

11.22 Opa-locka's Vision Zero Talks – Freight Technical Advisory Committee (FTAC)

Meeting Day and Time:	July 10, 2024, at 2:00 p.m.
Meeting Format:	In-Person
Meeting Location:	Miami Association of Realtors Global Headquarters - 1800 Oakwood Drive, Miami Springs

During the presentation to the Miami-Dade Transportation TPO Freight Transportation Advisory Committee (FTAC), key points related to the City of Opa-locka's CSAP were highlighted. A crash and safety analysis were presented, with particular emphasis on freight and commercial vehicle traffic. The project schedule and next steps were also outlined. Following the presentation, FTAC members engaged in a robust discussion, covering topics such as potential safety improvements at critical freight intersections, enhancing participation from industrial partners, and strategies for improving rail safety in cargo transportation. The meeting concluded with a consensus on the importance of continued collaboration and proactive measures to ensure the safety of freight operations in the region.

11.23 Vision Zero Door-to-Door

Meeting Day and Time:	July 11, 2024, at 12:00 p.m.
Meeting Format:	In-Person
Meeting Location:	City of Opa-locka

Community engagement efforts were carried out to promote the Vision Zero initiative, focusing on distributing flyers to businesses along NW 27 Avenue. These efforts informed businesses about upcoming events, the survey, and the key objectives of the city's CSAP. Approximately 20 businesses were contacted, and flyers were distributed while completed surveys were collected. The outreach concluded at the popular Price Choice Food Market, where surveys continued to be distributed, and local residents were engaged to gather additional feedback and encourage participation in the initiative.

11.24 Vision Zero Talks - City of Opa-locka Police Department

Meeting Day and Time:	July 11, 2024, at 2:00 p.m.
Meeting Format:	Virtual
Meeting Location:	Microsoft Teams

The meeting began with an introduction to the City's CSAP, highlighting concentrations of crashes along NW 27 Avenue, NW 22 Avenue, NW 135 Street, NW 37 Street, and Douglas Road/NW 42 Avenue. Chief Ottley confirmed the high number of crashes in these areas. Additionally, bicycle-related crashes on NW 151 Street, where shared bicycle markings are present, were discussed. Chief Ottley noted that some of these incidents may have occurred in Miami Gardens.

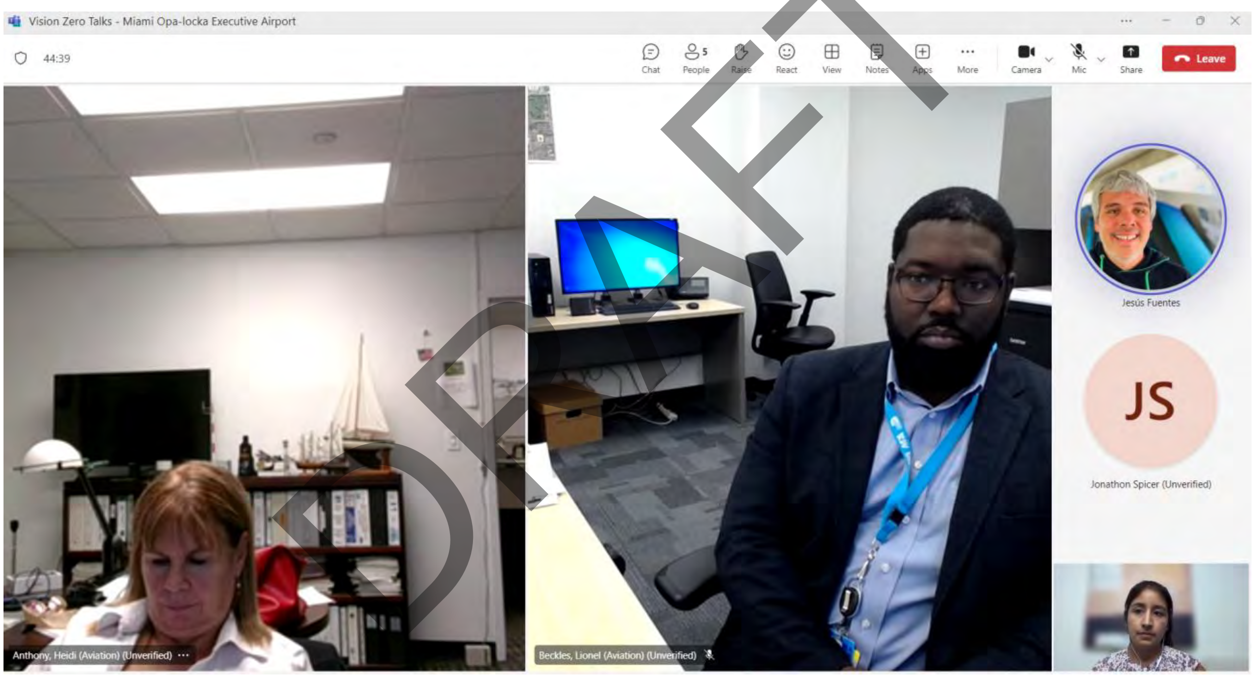
During the Miami-Dade County Vision Zero Plan update, it was pointed out that aggressive driving is a leading cause of crashes in Opa-locka, accounting for 28.6% of fatalities and severe injuries, compared to 7.6% countywide. However, Chief Ottley contested these statistics, stating that the actual numbers are lower, and requested the County's presentation materials for further clarification. It was also requested for additional police data to improve safety analysis, which Chief Ottley agreed to provide through email. Finally, the group thanked everyone for their support and engagement in achieving the Vision Zero goal, with a promise to send a follow-up email with further updates.

11.25 Vision Zero Talks – Miami-Dade Aviation Department

Meeting Day and Time: July 11, 2024, at 3:30 p.m.
Meeting Format: Virtual
Meeting Location: Microsoft Teams

The discussion focused on Opa-locka's CSAP and airport passenger volumes, with Mr. Beckles noting that the airport is busiest during special events. Key issues included increased traffic due to Amazon distribution centers and ongoing construction projects that disrupt roadways. The city also faces challenges with FPL infrastructure and maintenance of traffic during construction, which can cause delays. Traffic management during large events remains a significant challenge, requiring strategic planning.

A request was made for a list of ongoing projects, and Mr. Jonathon Spicer agreed to provide a tenant contact list and facilitate introductions. The meeting concluded with thanks for the participants' support in achieving the Vision Zero goal.



11.26 Vision Zero Talks – Commissioner Kelley

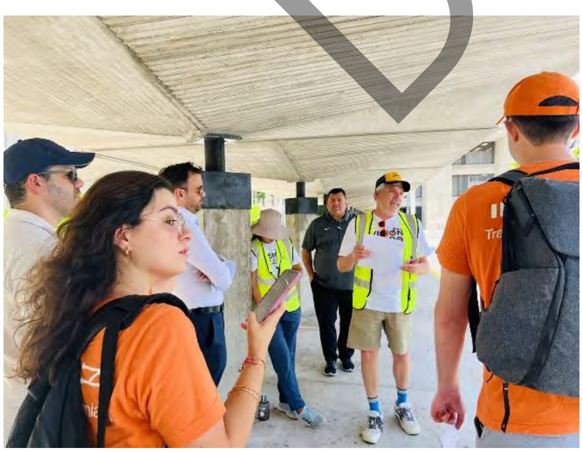
Meeting Day and Time: July 18, 2024, at 10:30 a.m.
Meeting Format: Virtual
Meeting Location: Zoom

This virtual meeting with Commissioner Kelley of the City of Opa-locka focused on the CSAP, with a special emphasis on corridors like Jann Avenue, Ahmad Street, and Rutland Street. The presentation highlighted key findings from the city's crash analysis, including aggressive driving as the leading contributing factor to FSI crashes. Recommendations for improving safety along these roads were also shared. Commissioner Kelley provided valuable insight, particularly noting issues with unsynchronized traffic lights along SR 9, Rutland Street, and Wellington Avenue.

11.27 "Let's take the bus, Opa-locka" - A Vision Zero Exercise

Meeting Day and Time: July 25, 2024, at 1:30 p.m.
Meeting Format: In-person
Meeting Location: Miami Dade College North Campus - 11380 NW 27th Ave, Miami

Transit Alliance Miami partnered with the City of Opa-locka for an event to survey conditions at transit stops throughout Opa-locka, focusing on bus stops along the HIN. This network was developed based on concentrations of FSI crashes along key corridors in the city. The NW 27 Avenue corridor was specifically surveyed due to extensive reports of fatalities and serious injuries. Hazardous factors were identified, and potential solutions to improve safety were discussed.



11.28 City of Opa-locka Vision Zero - Second Bike Tune-Up Event

Meeting Day and Time:	July 25, 2024, at 5:00 p.m.
Meeting Format:	In-person
Meeting Location:	Opa-locka Tri-Rail Station – 480 Ali Baba Avenue, Opa-locka

Following the "*Let's take the bus, Opa-locka*" event, the second bike tune-up event was hosted at the Opa-locka Tri Rail Station in partnership with Transit Alliance Miami, Miami-Dade DTPW, and SFRTA. Several helmets were distributed, numerous bicycles were repaired, and community engagement was enhanced through insightful discussions and surveys. Additionally, Vision Zero was prominently promoted during the event.

11.29 Vision Zero Talks – South Florida Regional Planning Council

Meeting Day and Time:	July 29, 2024, at 2:00 p.m.
Meeting Format:	Virtual
Meeting Location:	Microsoft Teams

During a Vision Zero talk with the South Florida Regional Planning Council (SFRPC), City staff learned about the key outcomes of the city's CSAP efforts. The discussion also highlighted the SFRPC's Brownfields Revolving Loan Fund Program, which provides funding for site remediation and redevelopment. City staff expressed interest in learning more about this program and agreed to schedule a follow-up meeting to explore potential opportunities further.

11.30 City of Opa-locka Monthly Food Distribution

Meeting Day and Time:	August 7, 2024, at 10:00 a.m.
Meeting Format:	In-person
Meeting Location:	Sherbondy Village Community Center - 215 N Perviz Ave, Opa-locka

As part of the public engagement efforts, surveys were distributed at the monthly food distribution which took place at the parking lot adjacent to the Sherbondy Village Community Center. In addition, flyers for the second Bike Tune-Up Event were distributed and staff spoke with community members about the main goals and efforts achieved of the CSAP.

11.31 City of Opa-locka Vision Zero: Task Force Meeting #2

Meeting Day and Time: August 15, 2024, at 10:00 a.m.
Meeting Format: Virtual
Meeting Location: Microsoft Teams

A virtual presentation on the Vision Zero project was led, addressing key milestones, crash analysis, equity and cost-to-society assessments, and next steps. Critical findings highlighted included that 49% of FSI crashes occurred near bus stops, 71% at intersections, and 67% involved commercial vehicles at intersections. The total cost to society in 2019 was $343 million, not adjusted for inflation. During the discussion, concerns were raised about traffic management policies, railroad infrastructure, and specific street challenges like Cairo Lane, with plans for further improvements and addressing data updates confirmed.

11.32 2024 Miami-Dade County / Safe Kids Injury Prevention Coalition September Meeting

Meeting Day and Time: September 17, 2024, at 10:00 a.m.
Meeting Format: Hybrid
Meeting Location: Opa-locka Government Center - 780 Fisherman St, Opa-Locka

Zoom

During this event, the Safe Kids Injury Prevention Coalition met with stakeholders from the University of Miami Hospital Ryder Trauma Center to discuss critical findings from the CSAP. A presentation was delivered regarding the CSAP and ongoing progress with the Vision Zero project. Key findings included insights into vehicle mass and the likelihood of serious injury, preexisting street conditions that exacerbate potential crashes, and a comprehensive list of solutions to mitigate FSI crashes involving motorists and non-motorists. Following the presentation, a thoughtful discussion allowed stakeholders to voice questions, comments, and concerns, which were significantly helpful in the development of the Vision Zero project.

11.33 Regular Commission Meeting

Meeting Day and Time: September 25, 2024, at 10:00 a.m.
Meeting Format: Hybrid
Meeting Location: Opa-locka Government Center - 780 Fisherman Street, Opa-Locka

Zoom

An update on the CSAP was presented to the City Commission, covering the project's timeline, public engagement efforts, crash statistics, and safety analyses. The presentation highlighted key areas such as high-injury networks and locations needing traffic-calming measures. Feedback from the Commission emphasized the need for improved public engagement and the maintenance of traffic-calming devices. The Mayor encouraged further outreach about the Vision Zero initiative. The discussion reinforced the importance of community involvement and maintaining safety improvements as the project moves toward finalizing the CSAP.

11.34 Park(ing) Day/Rail Safety Month/Third Bicycle Tune-up

Meeting Day and Time: October 3, 2024, at 3:30 p.m.
Meeting Format: In-person
Meeting Location: Opa-locka Tri-Rail Station – 480 Ali Baba Avenue, Opa-locka

The third Bike Tune-Up event coincided with Rail Safety Week and Park(ing) Day, with a central focus on increasing rail safety awareness and promoting safe transportation practices. The event exceeded expectations, with over 50 rail safety backpacks distributed and numerous bicycles repaired. SFRTA and Miami-Dade DTPW engaged actively with commuters, promoting sustainable transportation. Safety gadgets, water, and other amenities were provided to commuters as they headed home, serving as a token of appreciation from the City of Opa-locka and Miami-Dade County.

11.35 Bicycle Pedestrian Advisory Committee (BPAC) Meeting

Meeting Day and Time: October 8, 2024, at 2:00 p.m.
Meeting Format: Virtual
Meeting Location: Microsoft Teams

During the Bicycle Pedestrian Advisory Committee (BPAC) meeting, an update on the Opa-locka Vision Zero project was provided, focusing on the Comprehensive Safety Action Plan (CSAP). Key milestones were highlighted, including community events and the completion of the crash and equity analyses. The crash analysis revealed concerning trends, such as high rates of hit-and-run pedestrian and bicycle crashes, along with a significant correlation between fatal crashes and bus routes. The equity analysis indicated that much of Opa-locka is classified as a historically disadvantaged area. After addressing questions about funding and data sources, the ongoing planning process was emphasized, along with the potential for future federal funding.

11.36 City of Opa-locka Vision Zero: Task Force Meeting #3

Meeting Day and Time: October 22, 2024, at 4:00 p.m.
Meeting Format: Virtual
Meeting Location: Microsoft Teams

An overview of the Vision Zero initiative in Opa-locka was presented, covering key tasks like sidewalk compliance, lighting evaluation, and truck maneuverability challenges. Proposed improvements to enhance walkability and bikeability were highlighted, including the creation of pocket parks and traffic-calming measures. During the discussion, attendees raised questions about project timelines, funding sources, and performance tracking. The session emphasized the city's commitment to reducing fatalities and injuries by implementing targeted safety improvements, with Vision Zero integrated into broader planning efforts.

11.37 Planning Technical Advisory Committee (PTAC) Meeting

Meeting Day and Time: November 13, 2024, at 10:00 a.m.
Meeting Format: Virtual
Meeting Location: Zoom

In this virtual meeting, it was noted that the City of Opa-locka had experienced the highest increase in passengers for Tri Rail based on the 2024 SFRTA Passenger Survey. This increase was attributed to the Amazon warehouse activity and the employment opportunities around the station. The SFRTA had previously partnered with Amazon to offer employer discount programs for passengers working in the freight and logistics industries in Opa-locka. Increased ridership was expected to lead to improvements in service and reliability for Tri Rail. The growth of the SFRTA and its station could reduce dependence on cars in Opa-locka, supporting the implementation of Vision Zero.

11.38 Freight Technical Advisory Committee (FTAC) Meeting

Meeting Day and Time: November 13, 2024, at 2:00 p.m.
Meeting Format: In-person

Meeting Location:	PortMiami - 1007 North America Way, 2nd Floor Central Conference Room, Miami

During the FTAC at PortMiami, key findings concerning truck maneuverability were presented. The agenda included the timeline of Opa-locka's Vision Zero Project, the HIN, the special case of Cairo Lane concerning truck traffic, and a Truck Maneuverability Assessment completed as part of the CSAP effort. The presentation concluded with an acknowledgment of the audience's participation and noted that this was the final update to the FTAC regarding Opa-locka's Vision Zero Project.

11.39 City of Opa-locka Regular Commission Meeting

Meeting Day and Time:	December 11, 2024, at 7:00 p.m.
Meeting Format:	In-person
Meeting Location:	City of Opa-locka Government Center, 800 Fisherman Street, Opa-locka

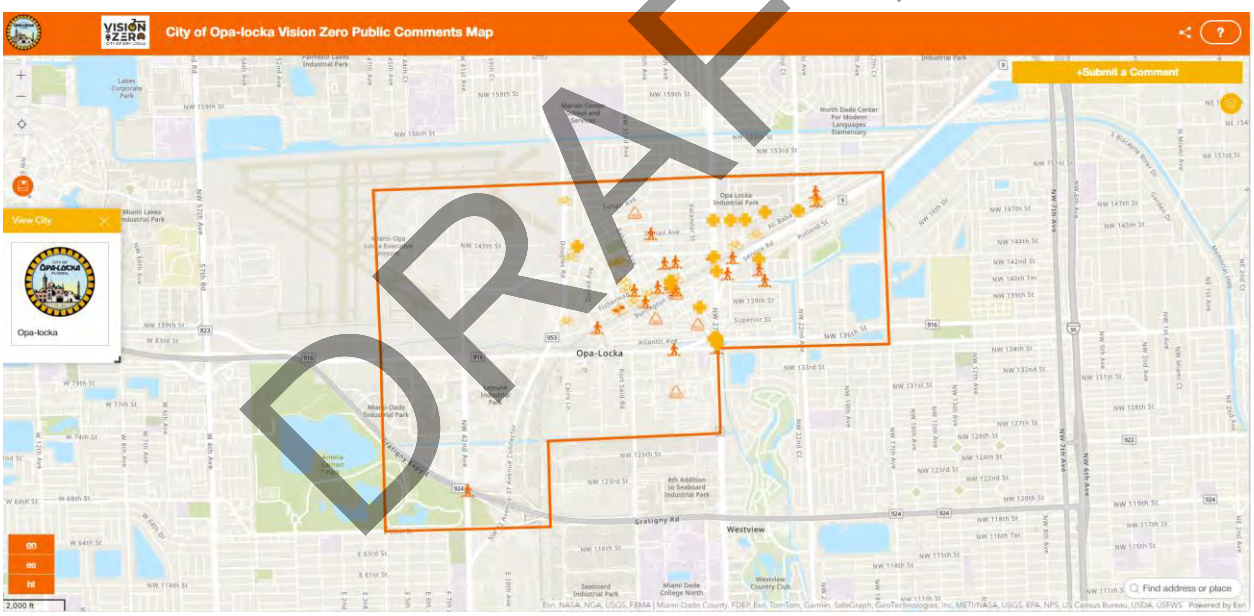
During this regular commission meeting, a presentation summarized the milestones and achievements of Opa-locka's Vision Zero project. The timeline was reviewed, confirming that the project was on track and nearing finalization by year-end. The presentation highlighted the final steps required before implementing policies and showcased examples of planning and project developments applicable throughout Opa-locka, categorized by their effectiveness over time (short-term and long-term) and nominal costs. Following the presentation, the city commission voiced their final concerns and comments regarding community outreach and involvement, while also expressing gratitude to the team for their efforts.

11.40 Surveys and Public Information Collected

A multilingual public survey was conducted over approximately five months as part of the Vision Zero public engagement process. Available in English, Spanish, and Créole, the survey was accessible online via the project's website and distributed as hard copies for those with limited internet access. Dissemination methods included social media, postcards with QR codes, and in-person outreach at community events and at the Opa-locka Tri-Rail Station. Dedicated booths at these events provided participants with the opportunity to complete surveys, learn about the initiative, and engage with project representatives.

The survey platform featured an engaging design with interactive elements, encouraging greater participation. Participants were also able to submit questions and sign up for email notifications to stay informed about upcoming meetings and public involvement opportunities. The platform's data analytics capabilities generated infographics and insights, which were compiled into a comprehensive report following the survey period. This process ensured a broad and inclusive approach to gathering community feedback and fostering active participation in the Vision Zero planning efforts.

In addition to the online and hard copy community survey, residents were able to express their opinions and provide feedback using the interactive public comments map. This map, illustrated in the map below was included on the City's Vision Zero website, offering an additional platform for community members to engage with the project and share their insights.



A total of 95 survey responses and 58 map comments were collected, providing valuable insights into community concerns and priorities for improving safety in Opa-locka. Among the survey findings, 57% of respondents indicated that they would walk more often if pedestrian crossings were made safer, highlighting the need for enhanced crosswalk visibility, signal timing adjustments, and other pedestrian-friendly improvements. Similarly, 58% of respondents shared that they would bike more frequently if driver behavior, such as yielding and speed compliance, improved.

Key feedback identified NW 27 Avenue, Ali Baba Avenue, and NW 135 Street as the most dangerous corridors in the city, with intersections along these streets posing significant safety risks. Respondents also raised concerns about transit facilities, reporting that bus stops along

NW 27 Avenue, NW 22 Avenue, and NW 135 Street were among the most hazardous in the area. These findings underscore the importance of addressing both roadway and transit-related safety issues as part of Opa-locka's Vision Zero initiatives. Further details and supporting data are presented in **Appendix F**, providing a comprehensive overview of community feedback to guide future safety improvements.

11.41 Final Remarks

The public engagement process effectively involved stakeholders, community leaders, and professionals in creating a comprehensive CSAP for Opa-locka. Over the course of 39 events, 95 surveys and 58 mapped comments were collected, while 50 bicycle helmets were distributed during bike tune-up events. This extensive engagement was vital to the project's success, ensuring that community voices and needs shaped the development of a meaningful plan to enhance safety and transportation within the city.

VISION ZERO

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