

# FINAL REPORT

July 2025



Miami-Dade Transportation  
Planning Organization



## DOWNTOWN MIAMI TRANSPORTATION MASTER PLAN





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The preparation of this document has been financed in part from the U.S. Department of Transportation (U.S. DOT) through the Federal Highway Administration (FHWA) and/or the Federal Transit Administration (FTA), the State Planning and Research Program (Title 23, U.S. Code §505), and Miami-Dade County, Florida. The contents of this document do not necessarily reflect the official views or policy of U.S. DOT.



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# INTRODUCTION



The Miami Downtown Transportation Master Plan (MDTMP), initiated in 2003 by the Miami-Dade Transportation Planning Organization (MDTPO), aimed to transform Downtown Miami into a vibrant, 24-hour urban center by 2020. By fostering a multimodal transportation system, the plan sought to enhance public transit, improve walkability, manage traffic congestion, and support sustainable growth. This report provides an updated overview of the 2003 MDTMP, assessing the progress made, evaluating the current status of various recommendations, and outlining the framework for a multimodal transportation system to ensure Downtown Miami remains a dynamic and accessible hub for residents, workers, and visitors.

Key achievements from the 2003 plan include the expansion of the Metrorail and tri-rail system, significant investments in bicycle and alternative transportation modes and infrastructures, and a host of new transit-

oriented developments supporting the existing transportation facilities and networks in the area. However, challenges such as rising traffic congestion and evolving urban development patterns necessitate ongoing adjustments and strategic investments. The challenge is now working with the existing conditions of the study area, considering that land is limited, and reimagining mobility through the use of emerging technology and the successful implementation observed in cities around the world.

To develop the new paradigm for the study area, stakeholder engagement, technological innovation, and sustainable planning were essential. To maintain Downtown Miami's momentum as a global urban center, the recommendations presented encourage the implementation of technologies and features developed over the past 20 years that have proven to enhance mobility.

*A sweeping view of the Everglades and turquoise waters of Biscayne Bay with Downtown Miami rising in the background.*





## HISTORY

Miami-Dade County, Florida, lies between two ecologically significant areas: the Everglades and the waters of Biscayne Bay, which is part of the Atlantic Ocean. For centuries, these natural areas have served many purposes, including providing building materials and food and serving as natural barriers for protection. Most critically, they have functioned as transportation corridors to facilitate access to the region’s “dry” lands. The Seminole and Tequesta peoples originally utilized these waterways; the Tequesta, for instance, thrived along the shores of the Miami River and established the capital of their civilization near the mouth of the river where it opens to Biscayne Bay. As depicted in historical photographs, the Miami River’s waters once featured rapids, and the river served as a natural highway, helping to connect people to the interior Everglades and the coastal waters of Biscayne Bay.



*An early photograph of the Miami River, once a natural highway with flowing rapids connecting to Biscayne Bay.*

*Source: Florida Memory*

*An early aerial view of Downtown Miami, revealing a much smaller skyline and reflecting the city's modest beginnings.*

*Source: Florida Memory*



In 1836, the County was officially established and named after Major Francis L. Dade, who died in battle during the Seminole War just a year earlier. The original county area stretched from Indian Key (near Islamorada) north to Jupiter Inlet in what is now Palm Beach County. The initial county seat was located at Indian Key—conveniently near its southern boundary, closer to the more established area that was to become the city of Key West. Thanks to its deep harbor waters, Key West quickly grew into a significant economic center driven by shipping and trade.

By 1844, the county seat had moved to the banks of the Miami River near the Fort Dallas property. This area remained largely undeveloped, operating as plantations and mostly for agricultural purposes. In contrast, areas to the north, like Palm Beach and Broward counties, grew faster and became more densely populated. The county seat followed population growth north to Juno for about a decade, observing the transformation of Fort Dallas and the surrounding Miami River lands into a thriving local hub. In 1899, with fewer than 1,000 residents, the seat was moved to Miami. Today, less than 150 years later, the area formerly known as Dade County—and now comprising Miami-Dade, Broward, and Palm Beach—boasts a combined population of over six million people. The rapid growth and

transformation, particularly during that early period, owed much to a single critical factor: transportation.

For many years, navigable waterways were the only source available in South Florida's transportation network. Water routes from Key West supplied delivered mail and goods, and the occasional visitor was by boat. But, early settlers, who were truly visionaries seeing past the mosquitoes and mangroves, saw greater things for the area's future.

Often told as a kind of fairy tale, the story of how "The Magic City" emerged from "deluged plains" through the revolutionary railroad can be credited to one central figure, Julia Tuttle. Dubbed the "Mother of Miami," she envisioned the city transforming into a modern metropolis. But only one thing was missing: a modern transportation network.

In the late 19th century, Julia Tuttle purchased Fort Dallas and adjacent lands with the vision of developing Miami into a gateway city. As the story goes, during a cold spell that froze much of Florida's citrus crop, Tuttle famously sent Henry Flagler an orange blossom to illustrate Miami's milder climate, convincing him to extend his railway south past Miami to Key West and the rest is history.



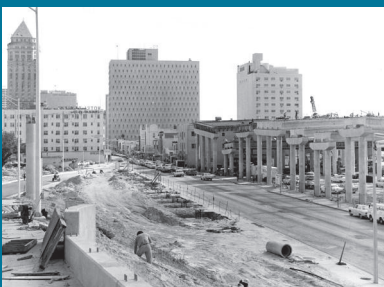
In reality, Tuttle convinced Flagler to extend his Florida East Coast Railway from Palm Beach down to Miami in exchange for land. And when the railway arrived in 1896, Miami’s transformation accelerated. The city was incorporated that year in July, signaling the start of its emergence as an economic center and transportation hub. By the early 20th century, aviation further cemented Miami’s growth as a “Gateway to the Americas,” with Pan American Airways operating seaplane routes from Dinner Key and then the development of Miami’s international airport. Modern highways, including U.S. Route 1 and I-95, also allowed for expansion north and enabled suburban expansion to the west. One by one, the transportation modes strengthened Miami’s economic ties to the rest of Florida, the nation, and the world. From canoes to sailboats, cruise ships to seaplanes, and railroads to highways, transportation has been the backbone of Miami’s growth and linking it to the world.

Today, Miami-Dade County is the third-largest of Florida’s 67 counties by land area and the most populous, covering approximately 2,431 square miles, including 1,900 square miles of land and about 500 square miles of water.



*A historic electric trolley in Downtown Miami, illustrating the city’s early embrace of technological innovation in public transportation.*

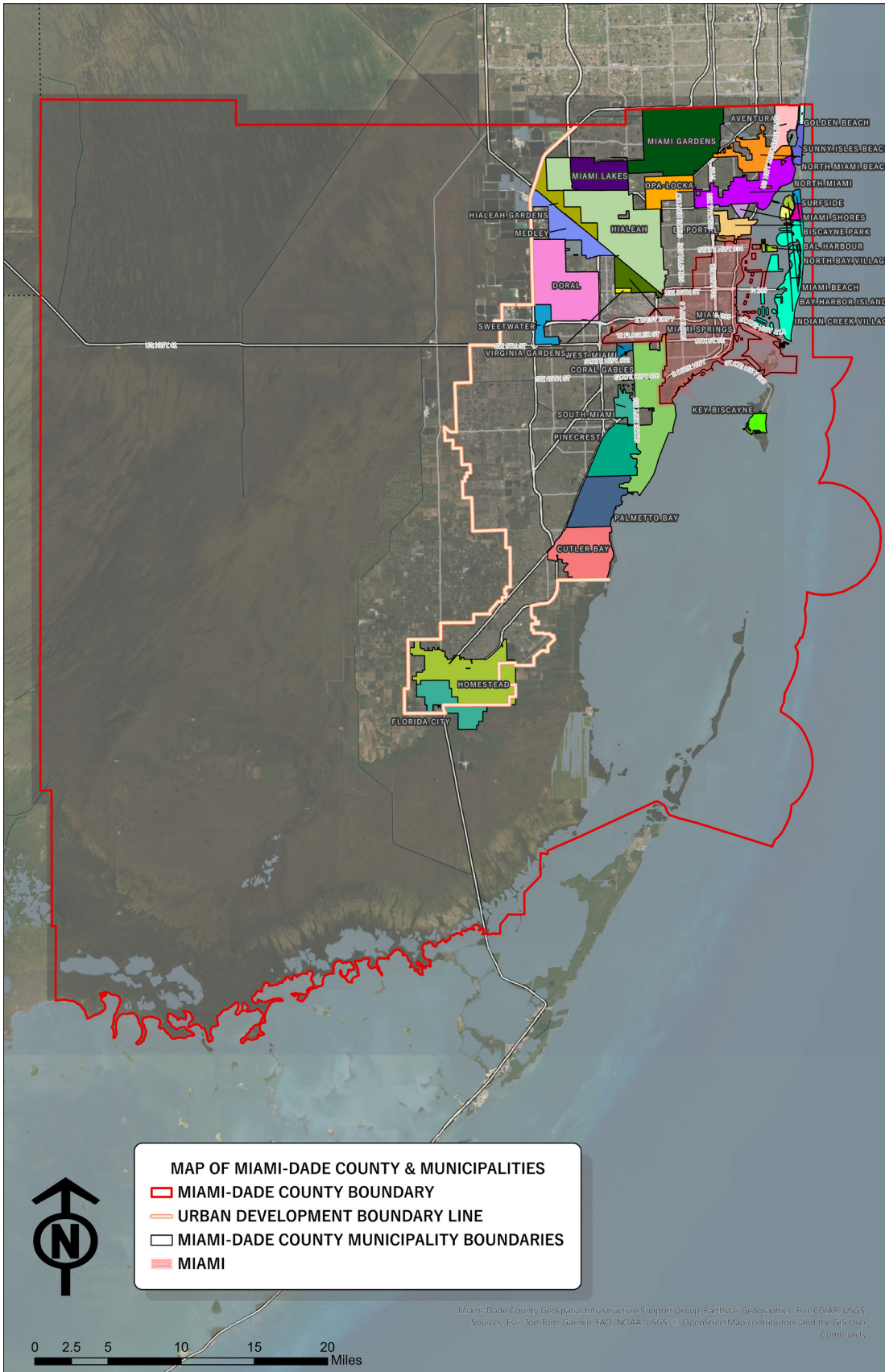
*Source: Florida Memory*



*A photograph capturing I-95 under construction, with the historic Miami-Dade County Courthouse standing in the background*

*Source: Florida Memory*

With nearly three million permanent residents—more than the population of 16 U.S. states—Miami-Dade maintains an Urban Development Boundary (UDB) to manage its ever-growing population, which is used to separate developed areas from protected lands like the Everglades. Currently, established through 2030, the UDB is based on level-of-service standards for essential public facilities (like roadways, potable water, and sewer infrastructure) and can only be changed through a county amendment process if population growth is determined to necessitate increased density or additional land.



*A map of Miami-Dade County highlighting the urban development line and its 34 municipalities, each with its distinct communities and local governance.*

Miami-Dade County Geospatial Infrastructure Support Group, Earthstar Geographics, Esri, CGIAR, USGS, Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

Meanwhile, developments closer to the urban development boundary feature less density. Northern, central, and eastern sections of the County are densely urbanized, featuring high-rise developments and concentrated centers of commerce and employment. Historically more rural, the southern part of the County hosts most of its agricultural land. It has been predominantly suburban, though with the increase in housing demand throughout the County, the existing 1.1 million housing units continue to expand.

Every day, thousands of Miami-Dade residents—including those commuting from neighboring counties—travel by various means. Single-occupancy vehicles remain the most common mode of transport, fueling the congestion seen on local roadways and highways, especially for commuters heading to major employment centers like Brickell and Downtown Miami. Others rely on public transit options such as Metrorail, Tri-Rail, and Metrobus, and those in closer proximity to urban centers can use municipal trolleys or the Metromover. Meanwhile, walking, biking, and micromobility devices (e-bikes and e-scooters) are

becoming increasingly popular for shorter trips, boosted by the addition of new protected facilities and shared-use paths throughout the County.



**ACCORDING TO THE DATA FLASH 2024 REPORT, MUNICIPAL POPULATION ESTIMATES, MIAMI-DADE COUNTY OVERALL SAW A SLIGHT POPULATION DECLINE BETWEEN 2020 AND 2023, INCLUDING A DECREASE OF MORE THAN 13,000 RESIDENTS IN UNINCORPORATED AREAS. HOWEVER, THE CITY OF MIAMI SAW ROUGHLY THE SAME MAGNITUDE OF POPULATION INCREASE, SUGGESTING A SHIFT TOWARD URBAN CENTERS.**



The City of Miami, encompassing about 36 square miles, registered 442,241 residents in the 2020 U.S. Census. Between 2010 and 2020, the city's population grew by nearly 11%, while housing units rose by about 15% to an estimated 212,000. About 16% of Miami's residents are under 18, and another 16% are 65 or older, meaning 32% of the population falls outside the working-age group of 18-64. This working-age demographic, which constitutes the remaining 68%, gives Miami a median age of 39.3 years.



*An aerial view juxtaposing Miami's higher-density urban core compared to the more suburban, lower-density areas surrounding it*



Single-occupancy vehicles account for nearly 60% of commutes among the city’s workforce, based on census responses. Nevertheless, public transit, ridesharing, and a growing micromobility network are expanding transportation options.

In a collective effort, the City of Miami, Miami-Dade County, and the Florida Department of Transportation (FDOT) District 6 have collaborated to enhance and expand the region’s transportation system. Miami-Dade County’s Department of Transportation and Public Works recently added 75 fully electric buses, making it one of the largest electric bus fleets in the nation. In November, local officials introduced the Better Bus Network (BBN), the most significant overhaul of Miami-Dade’s transit system in nearly four decades. The County also continues to implement the Strategic Miami Area Rapid Transit (SMART) Plan, with the South-Dade Transitway Corridor beginning service in fall 2025 to deliver a rail-like Bus Rapid Transit experience for local commuters.

Anticipating all of the future growth being observed today, the Miami-Dade Transportation Planning Organization



*A view from a Metromover station showing the I-95 distributor ramp leading into Downtown Miami.*

(MDTPO) initiated the Miami Downtown Transportation Master Plan (MDTMP) in 2003 to establish a framework for transportation system improvements in Downtown Miami and surrounding neighborhoods through the year 2020. Its vision was to transform Downtown—then primarily a daytime, business-focused area—into a 24-hour urban center supported by nearby communities. Key objectives included:

- Balancing transportation improvements with neighborhood preservation
- Protecting the environment
- Enhancing community quality of life



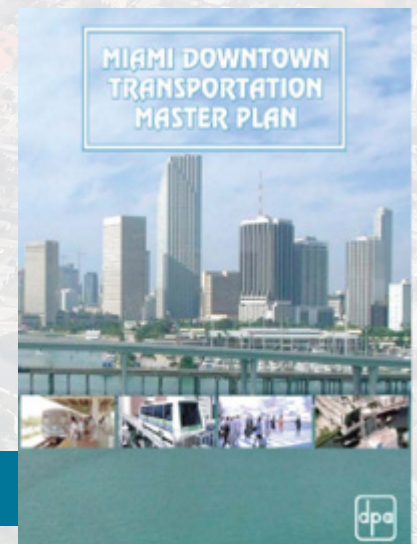
*A view from the Miami River, looking east toward Brickell, illustrating the river’s diverse commercial and recreational activities.*



# 2003 MIAMI DOWNTOWN TRANSPORTATION MASTER PLAN (MDTMP)

In 2003, the Miami-Dade Transportation Planning Organization (MDTPO) prepared the Miami Downtown Transportation Master Plan (MDTMP) to guide transportation enhancements in Downtown Miami through the year 2020. The MDTMP sought to transform a primarily daytime, business-focused district into a vibrant, 24-hour urban center by introducing a mix of policies, projects, and plans focused on biking, walking, mass transit, and roadway improvements that facilitated the movement of people in and through the area. The underlining theme was to create a unique, energetic, and progressive Downtown Miami by developing a balanced transportation system that supports neighborhood preservation, environmental protection, and overall quality of life.

The MDTMP recognized the importance of emphasizing public transit use and improving the pedestrian environment within the urban core as part of the growth and transformation of the area. To achieve sustainable mobility, it recommended various transportation improvements aimed at encouraging Downtown Miami's growth in ways that reduce automobile reliance and foster a more walkable, transit-oriented community.



Cover of 2003 DTMP

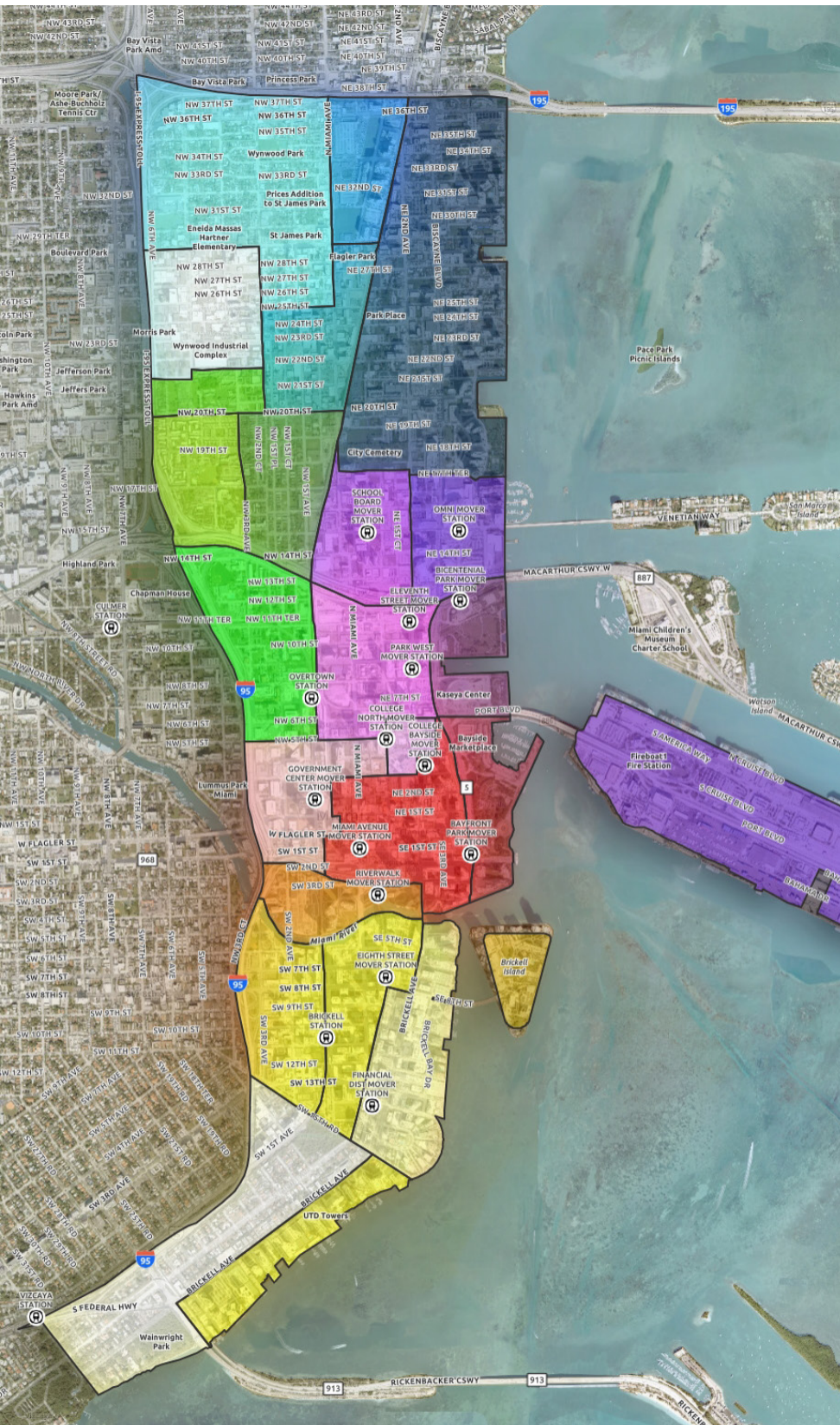


## Study Area

While this area covers just 4.3 square miles—or about 12% of the City of Miami’s total land area—it holds approximately 60% of the city’s jobs and a significant portion of its housing stock. By focusing on these core neighborhoods, the plan aims to address key mobility concerns and lay the groundwork for a more efficient and equitable transportation system.

Downtown Miami’s current traffic congestion is a direct result of its development successes. To support high-density development and prevent worsening congestion, city and community leaders recognized the necessity of a multifaceted, multimodal transportation master plan. Downtown Miami’s transportation system now sits at a critical juncture, requiring strategic investments to support long-term growth and development. Without such investments, worsening traffic congestion could discourage new business and residential investments, forcing existing businesses to relocate elsewhere in the region or beyond.

For Downtown Miami to evolve into a global center of commerce akin to cities like New York, Chicago, or London, it must become a 24-hour, sustainable urban center that attracts residents. Historically, suburban living has dominated due to amenities like good schools, affordable housing, and access to open spaces—all enabled by automobile reliance. However, Downtown Miami’s recent resurgence in residential development demonstrates a growing desire for urban living, particularly for those seeking proximity to work and relief from suburban commuting congestion.



To sustain and expand residential development, Downtown must offer suburban-like amenities, including high-quality schools, cultural activities, entertainment centers, restaurants, and essential services. The City of Miami projects that between 15,000 and 34,000 additional dwelling units could be built downtown over the next 20 years, potentially generating \$15–34 million annually in additional tax revenues. Investments in transportation infrastructure will, therefore, yield significant economic returns through job creation, urban residential growth, and an expanded tax base.

In 2003, MDTPO reaffirmed its commitment to building a “unique, progressive, and vibrant Downtown Miami” by balancing transportation improvements with neighborhood preservation, environmental protections, and enhancements to community quality of life. This updated master plan serves as both a strategic framework for future transportation planning and a foundation for specific project recommendations through 2020.

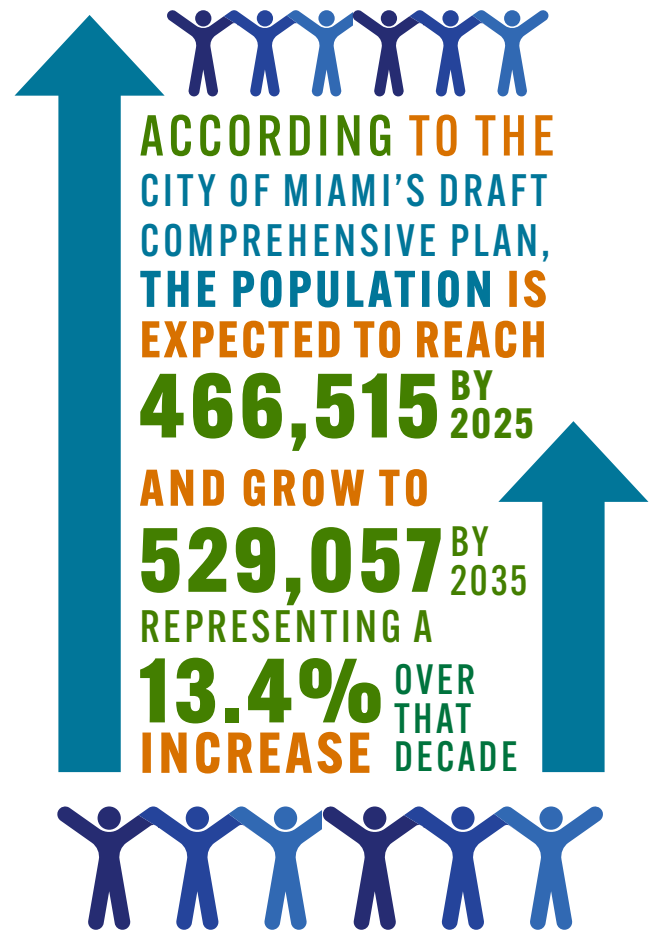
The plan was shaped by extensive research, community feedback, and technical analyses, including the use of Paramics micro-simulation modeling. Three key development scenarios were devised to explore different growth trajectories for Downtown Miami: 2020 Baseline Projection: Based on Miami-Dade County demographic trends.

- **2020 Enhanced Projection:** Assumes more aggressive growth, reflecting recent development patterns.
- **2020 Visionary Projection:** Envisions the most ambitious growth, forecasting 48,000 additional employees and 34,000 new dwelling units compared to 1999 levels.

Achieving the projected growth levels requires a strong emphasis on transit (e.g., Metrorail, Metromover, and shuttles) and improvements to pedestrian infrastructure. Reducing automobile reliance among employees, residents, and visitors is critical to maintaining mobility and livability.

The MDTMP proposed a blend of transit enhancements, congestion management strategies, and pedestrian-friendly initiatives, complemented by facilities for alternative modes such as bicycles and water-borne transportation. These measures are designed to create a truly multimodal transportation system, supporting Downtown Miami’s growth as a global urban hub.

The MDTMP reflected the collective vision of hundreds of stakeholders, laying the groundwork for a future transportation system that supports Downtown Miami’s continued growth and evolution. Its recommendations emphasize a balanced approach: enhancing transit, fostering pedestrian-friendly environments, and ensuring efficient mobility while addressing traditional traffic congestion challenges.





**HOUSING**

DEVELOPMENT SCENARIOS	TOTAL HOUSING (UNITS)	DIFFERENCE FROM 1999
1999	8,200	62,605
2020 Baseline	23,200	47,605
2020 Enhanced	31,200	39,605
2020 Visionary	41,800	29,005
2020 Census	70,805	-

Source: 2003 Miami Downtown Transportation Master Plan, and the U.S. Census Bureau. 2023. LEHD Origin-Destination Employment Statistics (2002-2021) [computer file]. Washington, DC: U.S. Census Bureau, Longitudinal-Employer Household Dynamics Program [distributor], accessed at <https://onthemap.ces.census.gov>. LODES 8.1 [version]



**EMPLOYMENT**

DEVELOPMENT SCENARIOS	TOTAL EMPLOYMENT	DIFFERENCE FROM 1999
1999	116,000	73,165
2020 Baseline	134,000	55,165
2020 Enhanced	146,000	43,165
2020 Visionary	164,000	25,165
2020 Census	189,165	-

Source: 2003 Miami Downtown Transportation Master Plan, and the U.S. Census Bureau. 2023. LEHD Origin-Destination Employment Statistics (2002-2021) [computer file]. Washington, DC: U.S. Census Bureau, Longitudinal-Employer Household Dynamics Program [distributor], accessed at <https://onthemap.ces.census.gov>. LODES 8.1 [version]



**MIAMI POPULATION PROJECTIONS (PERMANENT + INSTITUTIONAL)**

YEAR	TOTAL POPULATION
2010	399,457
2020	442,241
2022	459,225
2025	476,478
2030	502,522
2035	525,251
2040	544,909
2045	562,963
2050	580,603

### COMPARISON OF 2003 PROJECTIONS & 2020 SERPM MODEL

To update the Master Plan, the study team assessed 2020 traffic volumes on 40 key roadway segments originally identified in the 2003 MDTMP. This evaluation compared the original 2020 projections to revised 2020 volumes and then developed updated projections. Particular attention was paid to NW 2nd Avenue and NE 2nd Avenue due to notable differences between the current 2020 projections and those from the 2003 MDTMP.

**FOR EXAMPLE:**

NW 2nd Avenue traffic volumes have increased more than anticipated, partly due to ongoing development.

N Miami Avenue and NE 2nd Avenue showed both increases and decreases, highlighting the complex changes in Downtown Miami's traffic patterns over time.

### COMPARISON OF 2003 PROJECTIONS & SERPM 8 AND SERPM 9 MODELS

ENTRY/EXIT STATION	2003 MDTMP FSUTMS RUNS				VOLUME LOCATION	SERPM9 2019		SERPM8 2015		2020 PROJECTION
	1999 MIJATS	2020 BASELINE	2020 ENHANCED	2020 VISIONARY		2019 VOLUMES	2019 COUNT	2015 VOLUMES	2015 COUNT	
<b>NW 2<sup>ND</sup> AVENUE</b>	28,077	35,895	41,772	55,539	<b>NW 8<sup>TH</sup> STREET</b>	3,556	7,100	8,163	7,200	7,100
<b>N MIAMI AVENUE</b>	11,643	20,650	18,151	25,831	<b>NW 20<sup>TH</sup> STREET</b>	21,925	17,200	16,114	32,000	17,200
<b>NE 2<sup>ND</sup> AVENUE</b>	29,991	36,800	39,307	46,859	<b>NE 10<sup>TH</sup> STREET</b>	16,769	14,500	21,719	16,530	14,500

Long-range transportation planning for Miami-Dade County and surrounding areas often relies on models like the 2045 Southeast Regional Planning Model (SERPM). SERPM analyzes projected population growth, travel demand, and land-use changes, offering guidance on where improvements or expansions to the road network could alleviate congestion or enhance safety. One example is the model, which includes a proposed fiber-optic communications upgrade along US 1—extending from SW 72 Street (Sunset Drive) to SE 13 Street—to enhance traffic surveillance and manage congestion more effectively.

## 2003 Report Recommendations

The 2003 Miami Downtown Transportation Master Plan (MDTMP) set forth forty-three specific recommendations to address transportation challenges and enhance mobility in Downtown Miami. These recommendations were organized into three phases based on their targeted implementation timelines: Phase 1 (completion by 2010), Phase 2 (completion by 2015), and Phase 3 (completion by 2020). The plan's phased approach reflected the recognition that detailed studies, design processes, and construction timelines would require careful planning and execution.

As part of an ongoing evaluation, the recommendations were analyzed to assess their current status. Seventeen of the policies have either been completed or are actively in progress, showcasing significant progress toward improving the transportation system. Eleven recommendations have been programmed into the 2045 Long-Range Transportation Plan (LRTP), ensuring their future implementation. However, 15 recommendations remain under consideration for further analysis. Some of these may no longer be suitable due to shifts in demographics and the physical layout of the downtown area since the original study.

The implementation schedule developed by the MDTMP's Technical Evaluation Committee provided a structured timeline for advancing each recommendation. Phase 1 improvements were prioritized for completion by 2010, while Phase 2 and Phase 3 improvements were scheduled for 2011–2015 and 2016–2020, respectively. To guide these efforts, the committee recognized the need for additional studies, conceptual and final designs, and timeframes to address construction complexities. Detailed exhibits accompanying the plan outlined the anticipated phase for each specific improvement, providing a roadmap for progress.

The recommendations themselves were evaluated and prioritized based on their alignment with the goals and objectives of the MDTMP. Some improvements, like enhancing transit service with better frequency, reliability, and user-information systems, were applicable across the

entire downtown area. Others, like developing a network of pedestrian-friendly corridors and converting confusing one-way streets to two-way streets, aimed to create a more navigable and accessible urban environment. In contrast, certain recommendations were more localized, such as the removal of I-395 or the reconfiguration of I-95 Distributor Ramps to foster a more connected downtown core.

The process of developing these recommendations followed a structured, three-tiered approach. The first tier relied heavily on public input, addressing issues such as confusing street layouts. For example, public comments about getting lost in the downtown area led to proposals for converting one-way streets to two-way streets to simplify navigation. The second tier incorporated recommendations from prior studies, such as creating a grand boulevard entrance to Downtown Miami and removing the I-95 Distributor Ramps. The third tier introduced technical improvements proposed by the MDTMP's Technical Advisory Committee, such as the implementation of Intelligent Transportation Systems (ITS) to alert motorists to Brickell Bridge openings and other real-time traffic conditions.

In total, the MDTMP developed over 40 improvement strategies to address a wide range of transportation needs and modes tailored to the specific challenges of various sub-areas within Downtown Miami. These strategies were designed to align with the overarching vision of creating a vibrant, multimodal urban center where residents, workers, and visitors could seamlessly move between neighborhoods and destinations.

While much progress has been made, the ongoing evaluation of the MDTMP's recommendations highlights the need for continued adaptation. Downtown Miami's transformation into a 24-hour urban hub depends not only on the completion of these initiatives but also on their alignment with the city's evolving landscape and demographics. The MDTMP's structured approach ensures that this transformation remains guided by a balance of thoughtful planning, community input, and technical innovation.

The 2003 MDTMP included 43 specific recommendations to address transportation challenges in Downtown Miami. They were divided into three phases—Phase 1 (by 2010), Phase 2 (by 2015), and Phase 3 (by 2020)—acknowledging the time needed for studies, designs, and construction.

**Fifteen recommendations remain under consideration, and their evaluation is provided below:**

**1. Free-Fare Transit in Downtown Miami (Rec. 7.2.1)**

**1** Is partially complete, and it is recommended that it continues. The 2003 plan proposed creating free-fare transit zones to simplify travel, reduce operating costs, and extend benefits to students, low-income households, and daily commuters. Metromover and the City of Miami Trolley already offer fare-free rides within Downtown, and brief fare suspensions on Metrobus in late 2023 increased ridership by 14%. Despite a subsequent drop when fares resumed, data shows the potential value of permanent free-fare policies in specific zones.

Moving forward, the recommendation is to maintain fare-free travel within Downtown Miami for workers and students. Services like Brightline, Tri-Rail, and Metrorail would continue charging fares, except for those traveling to work or school within the study area. During major events such as festivals or sports games, suspending fares could further reduce congestion.

**2. Reconfigure Metromover in the DuPont Plaza Area (Rec. 7.2.11)**

**2** Originally intended to address traffic disruptions caused by Metromover’s concrete pillars, this recommendation relied on redevelopment plans for DuPont Plaza that ultimately did not materialize. The site was redeveloped for EPIC Miami Residences and Hotel, as well as the Aston Martin Residences, with no significant Metromover realignment. Given the extent of nearby residential and commercial construction—and the severe disruption a reconfiguration

A review of the recommendations shows:

- 17 policies have been completed or are currently in progress.
- 11 recommendations have been programmed into the 2045 Long-Range Transportation Plan (LRTP).

would entail—this recommendation is no longer considered feasible and should be abandoned.

**3. Improve NE 1 and NE 2 Avenues for Truck Traffic (Rec. 7.2.17)**

**3** In 2003, significant truck traffic passed through Downtown en route to PortMiami, which then lacked a direct tunnel connection. With the opening of the PortMiami Tunnel in 2014, truck volumes on NE 1 and NE 2 Avenues have diminished. The remaining recommendation to convert NE 2nd Avenue into a two-way roadway has lost relevance, as the one-way design no longer creates a pressing issue. Instead, minor intersection improvements—particularly at NW 6 Street and NW 3 Avenue—are recommended for better truck access to I-95.

**4. Widen and Extend NW 1 Avenue (Rec. 7.2.20)**

**4** Previously, NW 1 Avenue was to be widened to four lanes and extended between NW 10 and NW 14 Streets, contingent on removing certain I-95 ramps. Over time, new buildings have blocked the corridor, and the proposed Miami River tunnel has not materialized. In light of ongoing development and evolving transportation priorities, the recommendation now shifts toward transforming NW 1 Avenue into a bike- and pedestrian-friendly corridor. This revised proposal aligns with the Underdeck project and aims to integrate NW 1 Avenue into the area’s broader network of multimodal trails. This recommendation was not implemented and is not programmed in the 2045 LRTP. The roadway segment on

NW 1 Avenue from NW 10 Street to NW 14 Street remains a two-lane street providing north and south access within the study area. Improvements require further analysis for future implementation.

**5. Extend SE 1 Avenue from SE 8 Street to SE 5 Street (Rec. 7.2.21)**

**5** This extension was originally intended to improve circulation in the Brickell area, but the corridor is now part of the Miami River Greenway project, which prioritizes pedestrians and cyclists. As a result, adding a vehicular road in this location would conflict with the established greenway design. The recommendation is therefore abandoned in favor of supporting expanded bike and pedestrian infrastructure and identifying alternate traffic routes to ease congestion on Brickell Avenue. The proposal recommended extending SE 1 Avenue from SE 8th Street to SE 5 Street in the Brickell area. Circulation between and within city blocks in the area was noted to be challenging at the time of the original study, and the recommended extension would enhance street continuity north of SE 8 Street, offering an alternate route for several buildings to the south. This extension would also help alleviate traffic congestion on Brickell Avenue (SR 5/US-1) and simplify circulation for buildings both to the north and south of SE 8 Street. The extension was proposed to be installed within the Metromover rights-of-way, under the guideway, between SE 5 Street and SE 8 Street, with additional right-of-way required at the southern end of the extension where it would connect to SE 8 Street.

**6. Remove I-95 Distributor Ramps and Provide a “Grand Boulevard” on South 3 Street (Rec. 7.2.24)**

**6** Once envisioned as a dramatic entrance to Downtown Miami, the project involved eliminating I-95 distributor ramps and creating a grand thoroughfare near the Miami River. Although feasible in earlier studies, subsequent residential and commercial growth makes full ramp removal disruptive. A more practical approach would enhance the existing

ramps with improved signage, branding, landscaping, and pedestrian/cyclist protections—rather than pursuing a large-scale demolition and reconstruction project.

**7. Implement Flagler Shuttle (Rec. 7.2.29)**

**7** The 2003 plan called for an electric shuttle system running along Flagler Street to serve employees, tourists, and residents. While the City of Miami Trolley partially meets this need, the Trolley’s long headways and broader route limit its utility. A dedicated shuttle on Flagler Street remains relevant and could be tested with smaller vehicles—or even an autonomous pilot program—once the current improvements in Flagler Street pedestrians are complete.

**8. Provide a Port Boulevard U-Turn (Rec. 7.2.30)**

**8** A proposed U-turn connection under the Port Boulevard Bridge would have facilitated vehicular movement between the Kaseya Center and Bayside Marketplace. However, recent pedestrian improvements make auto-centric infrastructure less desirable. Rather than building a U-turn, the emphasis now shifts to enhancing signal priority for freight vehicles and supporting the area’s walkable environment. This portion of the original recommendation is thus abandoned.

**9. Provide a Transit Greenway (Rec. 7.2.32)**

**9** Envisioned for NE 4 Street, a low-speed “transit greenway” was once intended to serve Miami-Dade College Wolfson Campus and connect to Bayside Marketplace. NE 4 Street has since become partly vision zero strategies, and a full transit corridor no longer fits. Instead, expanding pedestrian space and establishing slow-street or low-emission zones east of Biscayne Boulevard can better balance local needs, reinforcing Miami-Dade College’s walkable setting and the area’s pedestrian orientation.

**10. Extend Metromover into Wynwood (Rec. 7.2.34)**

10

Given Wynwood’s explosive growth, the original study saw a shuttle system as a precursor to a future Metromover extension. While an unfunded LRTP project proposes extending Metromover into the Omni neighborhood,

the idea of eventually reaching Wynwood remains valid for long-range planning. In the near term, local circulators or shuttles can improve accessibility, with Metromover serving as a strategic future goal.

**11. Extend Metromover to SE/SW 26th Road (Rec. 7.2.35)**

11

Brickell’s soaring population has led to significant congestion, prompting the 2003 study to propose a Metromover service south of SE/SW 14 Street. Today, thousands of residents and visitors rely on personal vehicles.

A Metromover extension could reduce auto reliance and alleviate traffic. Retaining this recommendation for further study is advised, provided a thorough feasibility analysis and strong community engagement precede any major construction.

**12. Build a Northbound I-95 On-Ramp at NW 6 Street (Rec. 7.2.36)**

12

This on-ramp was once intended to ease westward travel to SR 836 (Dolphin Expressway). However, FDOT’s Signature Bridge project currently reconfigures the entire I-95/I-395/SR 836 interchange, making the original plan outdated. As new overpasses and ramps take shape,

there is no remaining need for a left-ramp entrance from NW 6 Street. Consequently, this recommendation has been removed from further consideration.

**13. Improve NE/NW 14 Street from I-95 to Biscayne Boulevard (Rec. 7.2.37)**

13

Originally intended to become a four-lane roadway facilitating east-west travel, NE/NW 14 Street has since gained painted bike lanes. With the Underdeck project transforming adjacent corridors, shifting to a more bicycle-focused

design aligns with current trends. A reimaged corridor would include protected bike lanes, traffic signal coordination, and other amenities, allowing NE/NW 14 Street to function as a safer link to the Venetian Causeway.

**14. Provide a Partial I-95 Interchange at NW 29 Street (Rec. 7.2.41)**

14

To address limited access to I-195 from Wynwood and the Design District, the 2003 plan proposed a new interchange near NW 29 Street. FDOT’s interchange-spacing requirements make such an addition unfeasible.

Meanwhile, an ongoing FDOT Project Development and Environment (PD&E) study may identify other viable access solutions. For now, the recommendation remains on hold until the study concludes.

**15. Depress I-95 (Rec. 7.2.43)**

15

Lowering I-95 through Downtown Miami was intended to improve aesthetics, reduce noise, and reconnect neighborhoods. While this approach could provide additional ramp access and help knit the urban grid back together,

the extensive disruption and astronomical cost make it implausible without FDOT support. More incremental improvements—like enhanced overpasses, landscaping, and pedestrian-friendly connections—represent a more realistic approach for the foreseeable future.

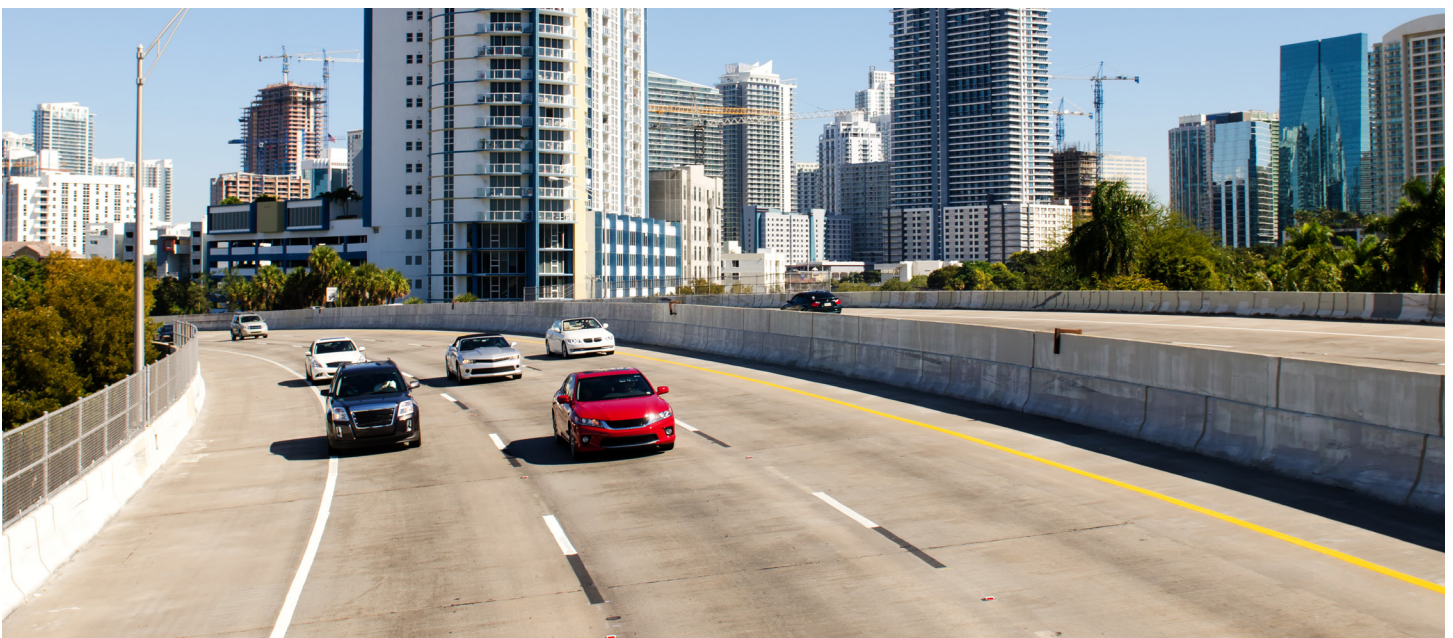
## Updated Scope

In April 2023, the Miami-Dade Transportation Planning Organization (TPO) Governing Board adopted Resolution TPO 18-2023, authorizing the development of a new scope of services and budget to re-evaluate the Miami Downtown Transportation Master Plan (MDTMP). This initiative builds upon the original 2003 plan but focuses more intensively on pedestrian safety, innovative mobility solutions, and updated regional needs. By extending its planning horizon to the year 2045, the TPO aims to create a forward-looking vision capable of guiding future development in Downtown Miami and its surrounding neighborhoods.

The original MDTMP produced forty-three specific recommendations, many of which have been implemented or incorporated into the 2045 Long-Range Transportation Plan (LRTP). However, fifteen remain uncompleted or are not currently programmed in the LRTP. In light of evolving conditions—ranging from the completion of the PortMiami Tunnel to rapid population growth in areas like Brickell and Wynwood—each of these fifteen recommendations has been revisited to determine their feasibility. The following highlights the key findings and updated guidance.

As Miami continues to grow, the 2024 Master Plan update will emphasize innovative strategies for improving mobility, safety, and accessibility, especially for pedestrians. From AI-driven traffic signal systems and autonomous shuttle pilots to advanced data-collection tools that guide network decisions, the effort will explore cutting-edge solutions that put people first. The new plan—renamed the Miami Downtown Transportation and Pedestrian Safety Master Plan (MDTPSMP)—revisits the core goals of the original 2003 study while incorporating lessons learned from completed projects, newly emerging technologies, and shifting urban priorities.

By focusing on the horizon year of 2045, Miami-Dade County aims to ensure that the region’s transportation infrastructure remains sustainable, equitable, and adaptable. Ongoing stakeholder engagement and careful analysis of current and future conditions will shape a clear, updated project list that addresses the region’s evolving needs—ultimately reinforcing Downtown Miami’s place as a vibrant, connected, and forward-thinking urban center.





# RETHINKING MOBILITY

## Summary of Literature Review and Technology Documents

As part of efforts to update, a comprehensive literature review and assessment of completed studies since the 2003 Miami Downtown Transportation Master Plan was conducted. This review included pivotal documents

- 2024 Transportation Improvement Program (TIP)
- 2045 Long Range Transportation Plan (LRTP)
- FDOT – D6 Five-Year Work Program
- 2023 – 2032 DTPW Transit Development Plan (TDP)
- 2021 Miami-Dade County Vision Zero Framework Plan
- 2045 Miami-Dade County Downtown Bike Master Plan
- 2025 Downtown Miami Masterplan
- Commodore Trail Master Plan
- 2015 The Underline Master Plan
- 1989 City of Miami Comprehensive Neighborhood Master Plan (amended through Oct. 2019)
- FDOT District 6 Bike Network Plan
- Better Bus Project

By reviewing both transportation-specific and broader urban-planning studies completed for projects within the study area, the planning effort identified how shifting policy goals—such as increased walkability, enhanced cycling infrastructure, and planned network connections—can inform practical improvements in Downtown Miami. Emerging and future transportation technologies were also examined, laying a foundation for more innovative, people-first solutions.

### THE UNDERLINE MASTER PLAN

Among the reviewed documents, The Underline Master Plan features prominently as it transforms the M-Path beneath the Metrorail line into a signature linear park, urban trail, and living art destination. Envisioned as a space that promotes mobility, recreation, and community engagement, The Underline captures Miami’s character and demonstrates how creative open-space planning can coexist with modern transportation.

In 2019, the Miami DDA (Downtown Development Authority) expanded its boundaries to include The Underline, recognizing the park’s potential to enhance connectivity within Downtown and to neighboring areas. The Master Plan divides the project into three phases:

- **Phase 1 (Completed):** A 0.5-mile stretch from the Miami River to SW 13 Street opened in February 2021.
- **Phase 2 (Completed):** Spanning over two miles from SW 13 Street to SW 19 Avenue, opened in April 2024.
- **Phase 3 (Under Construction):** Covering approximately seven miles from SW 19 Avenue to the Dadeland South Metrorail Station. Construction began in October 2023, aiming for completion in 2026.

By the end of Phase 3, The Underline will total around 10 miles, connecting some of Miami-Dade’s busiest neighborhoods and setting a precedent for integrated public space and transit corridors.

### DOWNTOWN MIAMI MASTER PLAN

Another cornerstone of the literature review is the Downtown Miami Master Plan, which aspires to seamlessly link the Central Business District (CBD), Arts & Entertainment (A+E) District, Brickell, and the city’s waterfront. The plan’s overarching vision is structured around several key objectives:

- Strengthening Downtown’s role as the business and cultural hub of the Americas.
- Leveraging Biscayne Bay and the Miami River for both tranquil and commercial uses, complemented by waterfront parks and pathways.
- Elevating iconic streets—Biscayne Boulevard (SR 5/US-1) and Brickell Avenue (SR 5/US-1)—to international prominence.
- Fostering vibrant community spaces that focus on the pedestrian experience.
- Improving transit and regional connectivity to support business, shopping, tourism, and residential needs.

In practical terms, the Master Plan calls for transforming Flagler Street into a pedestrian-oriented corridor, enhancing connectivity with surrounding neighborhoods, and implementing streetscape guidelines. It highlights the necessity of balancing roadways among transit, cars, cyclists, and pedestrians, as well as embracing neighborhood-level transit and innovative mobility solutions like bike rentals, pedicabs, and car-sharing.

### MIAMI-DADE COUNTY LONG-RANGE TRANSPORTATION PLAN (LRTP)

On a countywide scale, the Miami-Dade LRTP is updated every five years per federal and state mandates. The 2045 LRTP, adopted by the Miami-Dade TPO Governing Board in September 2019, organizes major transportation projects into four planning periods spanning from 2020 to 2045. It addresses both funded and unfunded initiatives, including private-sector and developer contributions.

Within the Downtown study area, one notable LRTP project is fiber optic communications for traffic surveillance and control systems along SR 5/US-1, from SW 72 Street to SE 13 Street. This endeavor highlights the county’s growing focus on using smart infrastructure to improve traffic safety and efficiency.

## Stakeholder Feedback and Existing Conditions

Early in the planning update process and throughout, stakeholders contributed valuable insights that shaped the eventual recommendations. The comprehensive overview of existing conditions in Downtown—comprising multiple neighborhoods with distinct transportation challenges—guided the creation of targeted strategies. By balancing technical feasibility with local priorities, planners developed a more holistic approach to urban mobility.

Through stakeholder workshops, the study identified 12 “improvement categories” that capture the essential needs and aspirations for Downtown mobility:

- **Car Lite:** In pursuit of lower vehicle dependency, Car Lite’s strategies focus on promoting transit and implementing eco-friendly distribution systems. Low-emission zones, electric vertical takeoff and landing (eVTOL) aircraft, and automated delivery robots exemplify how technology can reduce cars on the road and cut emissions.
- **Curb Management:** Managing curb space is vital in congested areas, where pedestrians, cyclists, transit vehicles, ride-hailing services, and loading zones compete for limited real estate. Smart parking systems, in-ground parking sensors, and organizing loading areas can diminish conflicts and streamline flow.
- **Active Mobility Network:** Walking and cycling remain crucial to a people-centric cityscape. Programs such as automated bike/ped counters and sidewalk riding detection measure active travel accurately, while amenities like the Portland Loo enhance the walking experience.
- **Integrated Mobility Hub:** By uniting various travel modes—public transit, ride-hailing, and bike-sharing—in one location, these hubs simplify transfers and broaden mobility options. Real-time transit arrival displays, air-conditioned bus shelters, and autonomous ride-hail vehicles can heighten efficiency.
- **Event Management for Entertainment Centers:** Major events can create bottlenecks. Interactive kiosks, parking guidance systems, and combined event-transit ticketing help spread out traffic, ensuring smoother experiences for both drivers and pedestrians.
- **Water Taxi:** With its expansive waterways, Miami has an opportunity to relieve road congestion using e-flying passenger ships, seaglidars, and other advanced marine vessels. Water-based travel could become a scenic and efficient mode, especially where land corridors are crowded.
- **Micromobility:** Lightweight, electric devices—e-scooters, e-bikes, cargo bikes—prove especially helpful for short “last-mile” trips. Adaptive micromobility addresses users with varying abilities while geofencing and wireless charging keep operations orderly and efficient.
- **Resilience and Adaptability:** Miami’s susceptibility to hurricanes and sea-level rise demands robust infrastructure. Digital twin technology, solar roads, and universal charging stations offer ways to safeguard the transportation network against extreme weather and enable quicker post-event recovery.
- **Walkability:** Well-lit, visually appealing, and safe sidewalks encourage people to walk. Automated pedestrian detection, interactive crosswalks, and sheltered skyways all enhance the pedestrian environment.
- **Pedestrian and Bicycle Safety:** A myriad of cutting-edge measures—from AI enforcement to thermal crosswalk visibility—can reduce collisions and enhance comfort for non-motorized users.
- **Bicycle Network:** Fully realized bike lanes, bicycle traffic signals, and illuminated paths make cycling more appealing for both daily commuters and occasional riders. Integrating these facilities with local transit can further reduce car reliance.

- **Freight Management:** As e-commerce expands, so does the volume of deliveries. Freight signal priority, drone deliveries, and autonomous rail can help manage increased freight traffic without exacerbating congestion or pollution.

Each category carries a host of potential options for improvements, technologies, and policies. Introducing new signage, traffic flow modifications, or experimental devices typically requires formal approval from Miami-Dade County. Gaining early conceptual endorsement can help minimize bureaucratic hurdles.

A preliminary timeline in Chapter 5 delineated short-term (1–5 years), mid-term (6–10 years), and long-term (10+ years) strategies. This phased approach accommodates immediate, high-impact projects (like quick curb or sidewalk fixes) and more extensive undertakings (such as large-scale infrastructure or policy changes).

## Looking Ahead

The updated recommendations emerging from this literature review and stakeholder engagement show a strong emphasis on increasing transit capacity, improving pedestrian corridors, and adopting modern mobility tools to improve existing facilities. Merging the insights from recent plans with best practices, the report update aims to foster a safer, more walkable, and resilient Downtown Miami.

Ultimately, this forward-looking approach balances immediate reforms (e.g., quick curb fixes, intersection improvements) with visionary projects (e.g., eVTOL aircraft, sea gliders), reflecting Miami’s dual need for short-term solutions and long-term sustainability. With a stronger framework for rethinking mobility, Miami-Dade County can advance its goal of building a world-class urban center that benefits residents, businesses, and visitors alike.

## Existing Conditions

### ROADWAYS

Roads in the Miami area fall under different jurisdictions, including the City of Miami, Miami-Dade County, and the State of Florida through the Florida Department of Transportation (FDOT). These agencies oversee everything from setting and enforcing speed limits to installing and maintaining signs, striping, streetlights, and parking regulations. Jurisdictional boundaries can sometimes result in different approaches to design and upkeep, which underscores the necessity for coordination among city, county, and state entities.

Long-range transportation planning for Miami-Dade County and surrounding areas often relies on models like the 2045 Southeast Regional Planning Model (SERPM). SERPM analyzes projected population growth, travel demand, and land-use changes, offering guidance on where improvements or expansions to the road network could alleviate congestion or enhance safety. One example is the model, which includes a proposed fiber-optic communications upgrade along US 1—extending from SW 72 Street (Sunset Drive) to SE 13 Street—to enhance traffic surveillance and manage congestion more effectively.

Street direction is another factor analyzed. One-way streets, designed to facilitate quick vehicular movement, often compromise pedestrian safety due to their speed-oriented design. In contrast, two-way streets offer a safer, simpler environment for all road users, particularly pedestrians.

- **Increased Safety:** Two-way streets slow down traffic, reducing both the number and severity of crashes.
- **Improved Circulation:** They promote efficient circulation, providing more direct routes to destinations.
- **Enhanced Business Visibility:** Increased foot traffic on two-way streets boosts business visibility and accessibility.
- **Greater Mobility:** Easier navigation reduces driver confusion and walking distances from parking facilities and bus stops.

A comprehensive evaluation is crucial when considering converting one-way streets to two-way operations. This should account for the roadway's specific characteristics and local stakeholders' goals. Historically, downtown areas adopted one-way streets to streamline traffic flow. However, with urban revitalization and rising pedestrian and bicycle traffic, many communities are rethinking this approach since restoring two-way operations can help to enhance local access and circulation.



- **Access and Convenience:** One-way streets can complicate access to specific locations, requiring vehicles to circulate blocks, reducing business exposure, and increasing driver confusion. Conversely, two-way streets may challenge truck delivery access due to double-parking restrictions.
- **Traffic Flow and Safety:** While one-way streets reduce intersection conflict points and simplify pedestrian crossings by directing traffic in one direction, two-way streets slow down travel speeds, making crossings safer and reducing crash severity.
- **Complex Intersections:** Converting one-way couplets with complex intersections may require innovative solutions.
- **On-Street Parking:** Adjustments near intersections might be necessary to accommodate turn lanes, potentially increasing parking if reserve capacity is available.

Public involvement is crucial in deciding on street configuration changes. Understanding public priorities helps evaluate potential impacts appropriately. For instance, if converting to two-way flow is chosen, new signage and pavement markings must be designed, and the implementation must be clearly communicated to users. On the other hand, Converting a one-way street to a two-way street can manage traffic patterns, improve access, and transform a neighborhood from a “pass-through” to a “destination” for motorists. It can help reduce vehicle speeds and travel distances, benefiting both motorists and bicyclists. However, this decision is context-sensitive, requiring thorough analysis and public engagement. With a well-conducted study, the city of Miami can reconfigure local roads to enhance downtown and identify roads to pass through and roads that serve to reach destinations.

In addition to physical roadways, the county maintains a complex system of traffic signals. The Advanced Traffic Management System (ATMS) study represents a significant modernization effort to improve traffic flow and safety. By upgrading central software, replacing outdated signal

controllers, and adding detection devices at intersections, ATMS helps manage congestion, reduce travel times, and respond more quickly to unforeseen incidents.

Road construction and improvements are common in a fast-growing city like Miami. Lane closures, detours, and noise can affect driving and walking conditions, so both city and county officials have established procedures to oversee construction sites and minimize disruptions. These policies typically include requiring clear signage, safe detours for pedestrians, and time limits on lane closures to preserve traffic flow whenever possible.

Within the study area, the City of Miami and Miami-Dade County are responsible for a vast network of roads and sidewalks that serve residents, commuters, and visitors every day. This network encompasses local streets and arterial highways, traffic signals, signage, parking zones, and construction management processes—all of which work together to keep people moving safely and efficiently.

Sidewalks play a critical role in supporting mobility, especially for individuals who rely on walking or require assistive devices. Though sidewalks are typically maintained at the local level, ongoing countywide initiatives aim to fill in gaps, widen narrow walkways, and improve pavement conditions. During roadway construction, the city requires contractors to provide safe and clearly marked detours to keep sidewalks accessible. These steps are essential for seniors, people with disabilities, and anyone choosing to walk instead of drive.

Parking availability and regulations significantly influence whether people choose to drive or walk downtown. Several key concerns presented include:

**Limited Parking for Residents of Downtown:** Many existing condominiums offer reduced on-site parking, increasing competition for spaces.

**Large Parking Garages in New Developments:** Alternatively, new projects often include sizable garages, encouraging automobile use and hindering shifts toward transit and other modes.

**Rapid Transit Zones (RTZs):** Without targeted incentives, many residents and workers continue to rely on private vehicles to commute, maintaining a high demand for parking. A potential solution is encouraging the coordination of garages with RTZs outside the urban core to help with parking congestion in the study area.

**Aging Garage Infrastructure:** Some garages may require retrofitting to handle heavier electric vehicles and meet modern safety standards.

The City of Miami and DTPW are exploring enhanced enforcement tools—potentially through Smart Automated Operational Infrastructure (SAOI)—to ensure adherence to parking and curb regulations. These measures aim to maintain smoother traffic flow and support more sustainable mobility in the downtown area.

To address the identified gaps and improve overall mobility, the following initiatives can be prioritized:

**Quick Curb and Sidewalk Fixes:** Immediate actions such as repairing damaged sidewalks, adding curb ramps, and installing temporary signage to enhance safety and accessibility.

**Extensive Infrastructure Overhauls:** Large-scale projects, including the installation of new traffic signals, widening roads, building pedestrian bridges, and integrating smart technologies to optimize traffic flow and enhance safety.

**Policy Changes:** Implementing new regulations and incentives to promote sustainable transportation modes, such as car-sharing, bike rentals, and increased transit usage.



## CONGESTION AND SPECIAL EVENTS

Downtown Miami hosts over 1,000 events each year, including large-scale gatherings at venues like the Adrienne Arsht Center, Pérez Art Museum Miami (PAMM), Kaseya Center (formerly the FTX Arena), and Bayfront Park. High-profile events such as the Ultra Music Festival and Miami Heat games can generate severe congestion as vehicles descend from I-95 and I-395 onto Biscayne Boulevard, spilling into local streets. Frustrated drivers sometimes take unsafe actions—driving in the wrong lanes or encroaching on pedestrian spaces—particularly when traffic signals cannot adapt to real-time conditions.

A trombone analysis, as part of efforts to establish ATMS technology throughout the City, is underway to explore potential improvements. Through the literature review, a popular method was noted to include transit costs in the ticket price and allow for use to access the event and then back home, reducing the surge of cars from events. Other options include.

- **Adaptive Traffic Signals:** Upgrading lights to detection-based systems that respond to actual traffic flow can ease congestion at critical intersections like Flagler Street and NE/NW 2 Avenue.
- **Increased Law Enforcement Presence:** Deploying additional officers during peak events can discourage dangerous driving and improve overall safety.
- **Long-Term Solutions:** Considering underground tunnels for I-95 off-ramps and modifying feeder ramps may help alleviate congestion caused by bridge delays. Encouraging telecommuting or flexible work schedules during high-traffic events can also reduce vehicle volume.





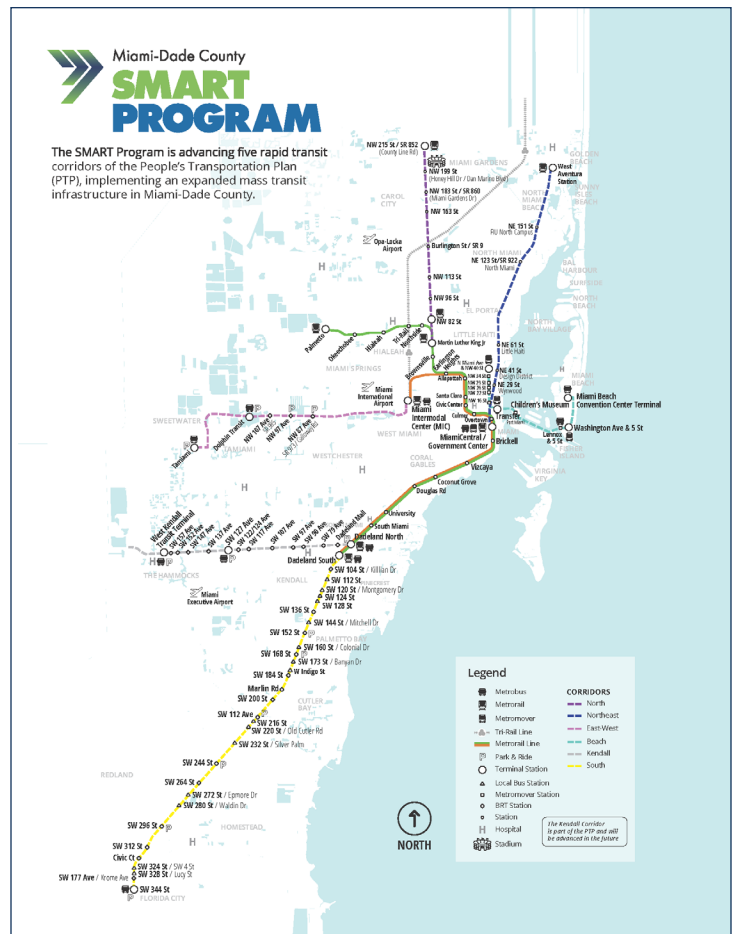
## MOBILITY HUBS AND PUBLIC TRANSPORTATION

The Strategic Miami Area Rapid Transit (SMART) Program represents a bold vision for the future of Miami-Dade County’s transportation network. Intended to be both strategic and far-reaching, the plan aims to establish a multimodal public transportation system along the county’s major corridors. By leveraging existing infrastructure and integrating state-of-the-art technology, the SMART Program aims to give residents and visitors efficient, reliable, and sustainable transit options.

Central to the program’s vision is the development of five rapid transit corridors. These corridors involve extending Metrorail and Metromover systems and introducing innovative solutions such as Bus Rapid Transit (BRT). Each corridor is tailored to meet the region’s diverse transportation needs, connecting key areas and fostering economic growth throughout the county.

One notable component is the South-Dade Transitway, which extends the Metrorail system southward from Dadeland South Metrorail station into South Dade communities. Employing Bus Rapid Transit, this corridor offers a rail-like experience through center platform boarding, air-conditioned waiting areas, all-door and level boarding, and real-time bus arrival displays. Efficiency and safety will be enhanced through signal preemption and level crossing gates at critical intersections. The Transitway also features 60-foot battery-electric buses, underscoring the county’s commitment to sustainability, with a scheduled completion date of 2025.

- Another significant project is the North Corridor, which is focused on extending the Metrorail system along NW 27 Avenue from the Dr. Martin Luther King Jr. Plaza station to Miami-Dade’s northern boundary. This endeavor proceeds in two phases: first, a station at Hard Rock Stadium with an intermediate stop at Miami-Dade College North Campus, followed by eight additional stations completing the route.
- The Northeast Corridor introduces commuter rail service between MiamiCentral and the Aventura

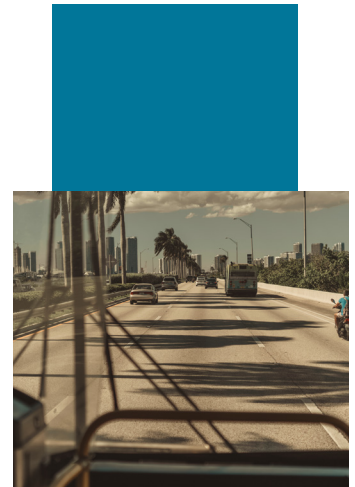
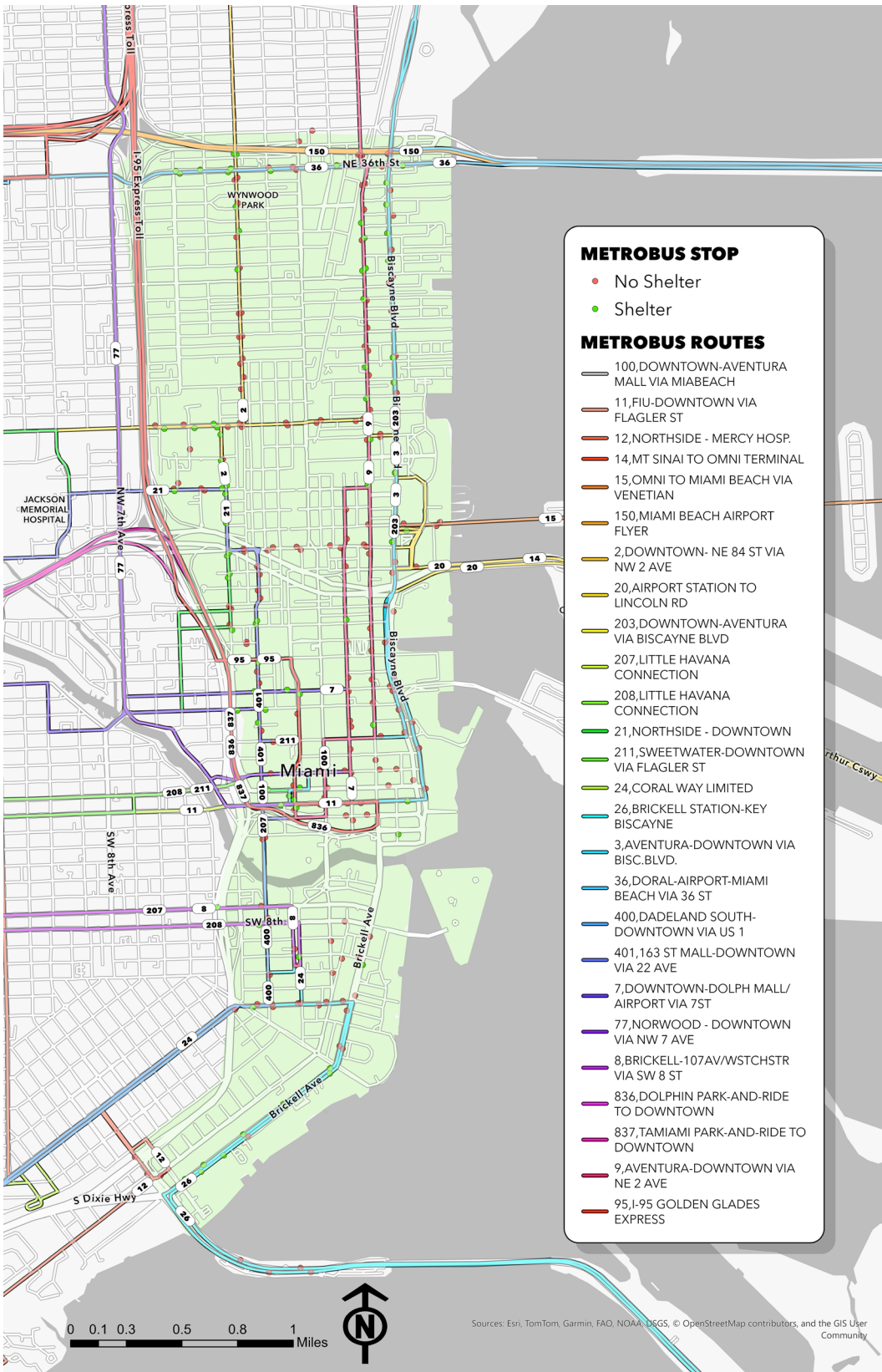




station along existing Florida East Coast Railway tracks. Featuring seven planned stations and connections to Brightline at both terminal points, the corridor will offer a seamless commuting experience once it begins operation, projected for 2032.

- In the East-West Corridor, the SMART Program initially proposed three BRT routes linking the Tamiami Terminal, the Miami Intermodal Center, and the Government Center stations. However, in 2023, the Miami-Dade Transportation Planning Organization (TPO) reassessed the plan, finding commuter rail on the CSX Lehigh Spur to be more cost-effective than BRT for the route from Downtown Miami to West Dade, and has been put aside as officials explore new strategies to connect Florida International University. The two alternatives under consideration are a rail line or an elevated Metromover system along Flagler Street. Plans were also introduced for a possible Metromover extension along Flagler Street as a viable alternative.
- The Beach Corridor aims to enhance connectivity between Miami and Miami Beach. This multifaceted effort includes extending the Metromover along Miami Avenue and undertaking the BayLink project, which will connect the southern portion of the MacArthur Causeway to Miami Beach with dedicated bus or trolley lanes on Washington Avenue. BayLink is expected to launch operations as early as 2028, creating a transformative link between these two major areas.

Under the broader SMART Plan, major corridor developments are slated for completion in the near future. The South-Dade Transitway, featuring rail-like BRT, should be operational by 2025; the North Corridor Metrorail extension will serve Hard Rock Stadium and Miami-Dade College North; and a new commuter rail in the Northeast Corridor should connect MiamiCentral and Aventura by 2032. Meanwhile, the East-West Corridor plans are pivoting toward commuter rail, and the Beach Corridor’s BayLink project hopes to provide a Miami–Miami Beach connection by 2028.



## METROBUS

The Miami-Dade Metrobus network runs 93 routes, including the South Dade Transitway. Major hubs include the Government Center in Downtown Miami and the Miami Intermodal Center in Grapeland Heights near Miami International Airport. With 8,896 stops, Metrobus spans the county and beyond, ensuring wide coverage for commuters.

Some routes run 24/7, notably Routes 3, 11, 27, 38, 77, and S. Route L offers limited overnight service, terminating early at Northside Station. Additional overnight routes include the privately operated 246 Night Owl (LSF) and the county-operated 500 Midnight Owl. Most other routes run from 4:30 AM to 1:30 AM, sufficient for the majority of daily commuters. The system adheres to the Americans with Disabilities Act (ADA), featuring wheelchair-accessible vehicles and bicycle racks on most county-operated buses. Privatized routes are incrementally adding bike racks, though availability remains limited.

Geographically, the Metrobus network extends well beyond the county line: Route 301 (Dade-Monroe Express) reaches Monroe County's Marathon, allowing transfers to Key

West Transit for further travel into the Florida Keys. With the correct connections, travelers can go from Key West to Jupiter entirely by public buses.

## BETTER BUS NETWORK & BUS PASSENGER SHELTER PROGRAM

Another transformative initiative is the Better Bus Network, aimed at making the county's bus system more equitable, efficient, and accessible. This undertaking emerged from extensive community engagement and a commitment to data-driven planning. It seeks to provide frequent service, ensure seamless connections, and enhance coverage during evenings and weekends. Notably, the Better Bus Network marks the first major overhaul of the county's bus system since the inception of Metrorail in 1986.

Planning for the redesign began in 2019, with an emphasis on ensuring the network can serve a greater number of residents effectively. The redesign focuses on expanding access to frequent routes, speeding up journeys, and improving off-peak service. By targeting these facets, the Better Bus Network addresses longstanding inequities and endeavors to meet the needs of Miami-Dade's diverse communities.



## MIAMI-DADE COUNTY METROBUS SYSTEM

SISTEMA DEL METROBÚS • SISTÈM METROBUS

NOVEMBER 2023 • NOVIEMBRE 2023 • NOVEMBER 2023

### Metrobus routes • Rutas de Metrobús • Wout Metrobus

During weekdays at midday, the bus comes every...  
Los días laborables durante el horario del mediodía, el autobús pasa cada...  
Pendant les après-midi, les autobus passent à la même fréquence...

- 10 minutes or less • minutos o menos • minit oswa mwenys
- 15 minutes • minutos • minit
- 20 minutes • minutos • minit
- 30 minutes • minutos • minit
- 60 minutes • minutos • minit
- Peak-Only or Limited Service  
Servicio limitado o solamente en horas pico  
Ekipwenti sèlman oswa sèvis limite

### Other transit services

Otros servicios de transporte público • Lòt sèvis transpò piblik

- MetroConnect Zone  
Zona de servicio de MetroConnect  
Zòn MetroConnect
- Metrorail and Station  
Metrorail y estasyon  
Metrorail ak estasyon
- Metromover and Station  
Metromover y estasyon  
Metromover ak estasyon
- South Dade TransitWay Stations  
Estaciones de transporte rápido de South Dade TransitWay  
Estasyon TransitWay South Dade
- Tri-Rail
- Brightline

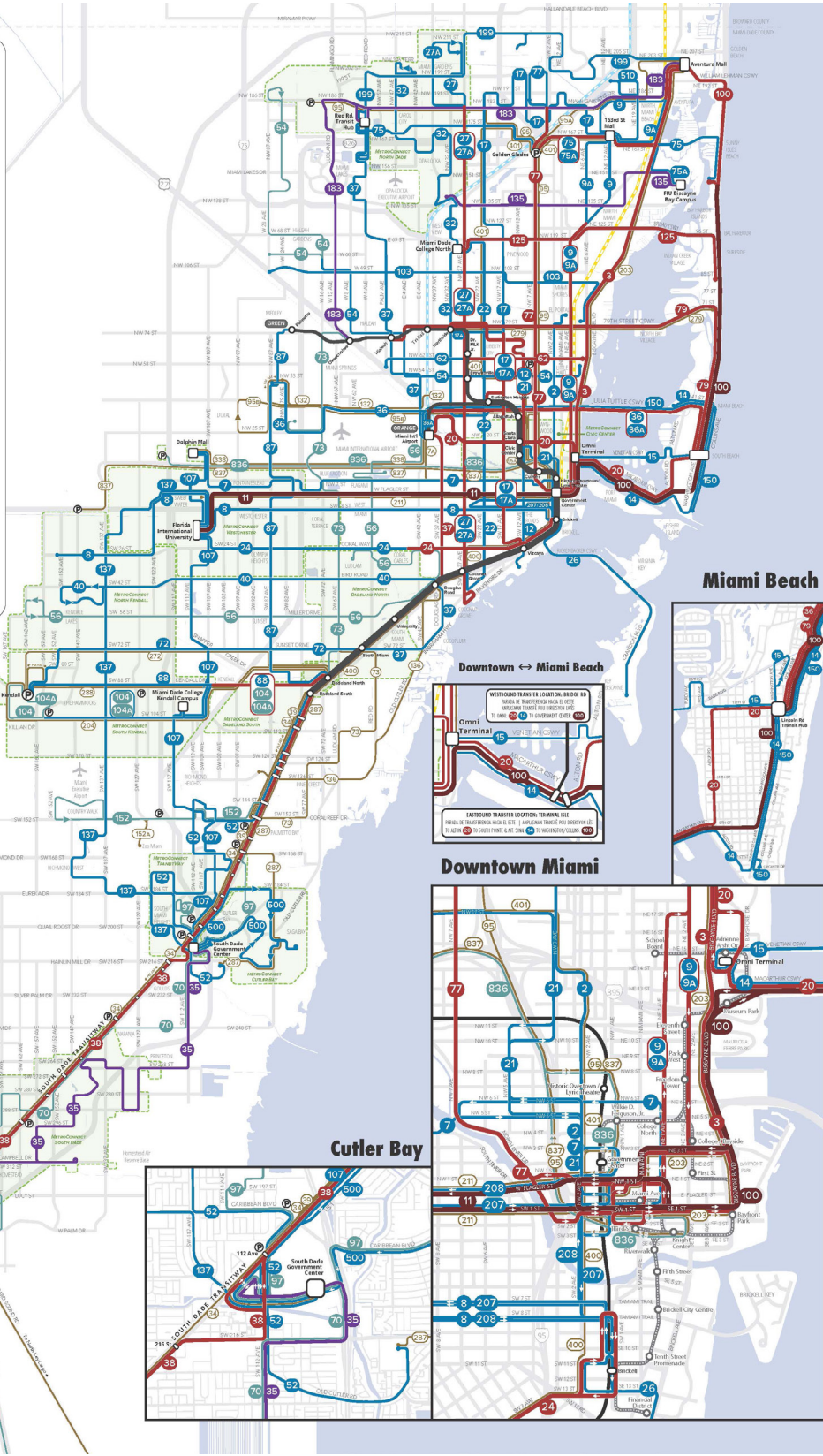
This is a general reference map. Consult individual route maps for details.  
Use this map as a general reference. For more details, consult a map specific to each route.  
Sa se yon mapa referans jeneral. Konsulte kat map espesifik pou chak wout.

Some routes combine to provide higher frequency on a single route.  
Algunas rutas se unen para proveer servicio más frecuente en una sola ruta.  
Kèyen kèl wout ki kombine pou ofri plis frekans sou yon sèl wout.



Route branches  
Rutas ramales  
Atranchman palyos

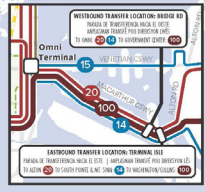
Combined on a single route  
Combinado en una sola ruta  
Kombine sou yon sèl wout



### Miami Beach



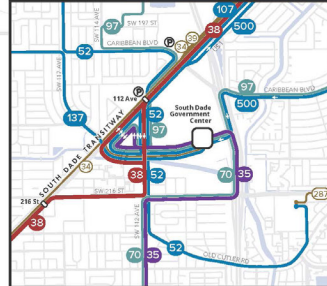
### Downtown ↔ Miami Beach



### Downtown Miami



### Cutler Bay



In October 2021, the Miami-Dade Board of County Commissioners unanimously approved this redesigned bus network. The approval included a nearly 10% increase in service hours, representing an annual cost of about \$27 million. A core element of the plan is establishing all-day, high-frequency service in denser, lower-income, and minority areas, as well as along all county causeways. This reconfiguration consolidates routes to eliminate duplication, streamlines the network for riders, and consolidates bus stops to reduce travel delays. Passengers can now anticipate more frequent buses operating later into the evening, better accessibility, and improved travel times to key destinations.

Addressing the need for improved transit amenities, the Bus Passenger Shelter Program aims to upgrade the county's bus stops, 71% of which currently lack any shelter. By installing new shelters and enhancing existing ones, this program provides a more comfortable, weather-protected waiting environment for passengers.

Different shelter designs vary based on the available right of way. Cantilever shelters fit on sidewalks with five to six feet of right of way, while slim shelters require at least eight feet. Full-size shelters, with or without advertising panels, need eleven feet. The program also introduces trash containers, bike racks, and improved lighting, ensuring that each shelter is accessible, safe, and well-maintained.

By August 2024, 360 new bus passenger shelters had been installed—including cantilever, slim, and those with or without advertising panels—along with 360 new trash containers, 330 upgraded lighting systems, and 776 bicycle racks. Simultaneously, the existing 1,031 shelters are being refurbished to align with the new design standards. The installation of an additional 350 shelters began in mid-July 2024.

Notably, the Metrobus system now provides 24-hour coverage on critical routes (3, 11, and 27), features specialized night services via Routes 246 and 500, and extends to the Florida Keys through Route 301. With both the Better Bus Network and the Bus Passenger Shelter Program, Miami-Dade continues its efforts to build a more accessible, sustainable, and comfortable transit system for

the entire community—fulfilling the overarching goal of a modern, user-friendly transportation network.

## METRORAIL

Today, the Metrorail system is a 25-mile dual-track rapid transit network that serves as a vital transportation link for connecting the communities further out from the urban core. Connecting key locations through 23 stations, it provides service to Miami International Airport (MIA) and extends from Kendall through South Miami, Coral Gables, and downtown Miami. While the current system plays an essential role in regional transit, its original vision was far more ambitious.

Initially conceived as a rapid transit system with 45 stations spanning 48 miles, Metrorail was designed to stretch from its southern terminus in Cutler Ridge to Opa-Locka at NW 135 Street and from Miami International Airport eastward to Washington Avenue on Miami Beach. Each station was intended to integrate seamlessly into the surrounding neighborhoods, offering amenities such as park-and-ride facilities, "kiss-and-ride" drop-off zones, and recreational spaces. Beneath the elevated tracks, cycling and pedestrian paths were envisioned to encourage active transportation and community engagement. Moreover, thoughtful station design aimed to protect users from sun and rain while fostering a sense of safety and accessibility.

In downtown Miami, the Metrorail was expected to catalyze redevelopment, particularly around station areas, aligning with the urban renewal goals of the time. However, the east-west corridor of the proposed system faced challenges, including the necessity to remove buildings along NE 1 Street and several structures along NE 2 Avenue. At the time, the city was studying a new zoning plan to accommodate the anticipated growth and development spurred by the transit expansion.

In Little Havana, plans for the western leg of the system met resistance. Some residents expressed a preference for an enhanced bus system over the elevated train proposed along SW 1 Street, which would have then shifted north to Douglas Road before branching into north and south routes.



While this route minimized disruption to residential areas, it had a significant impact on local businesses, leading to concerns about displacement.

Public safety was a significant concern during the planning process. Residents emphasized the importance of incorporating security measures into the system’s design. In response, several features were proposed:

- Stations would have an attendant to maintain communication with law enforcement.
- One-person restrooms would be implemented to control access and enhance safety.
- Closed-circuit television (CCTV) surveillance systems would be installed to monitor station activity.



**METROMOVER**

Rounding out the rapid transit system developed in 1986 is the Metromover, a free elevated, automated mass transit people mover connecting downtown to Brickell. Spans about 4.4 miles over three loops (Downtown Inner Loop, Brickell Loop, and Omni Loop) and features 22 open-air elevated stations. It has been demonstrated to be a popular and convenient, no-fare way for residents and visitors to move around Miami's central business districts, cultural venues, and residential high-rises. In fiscal year 2023, the MetroMover had a total monthly ridership of 614,479, which is an increase of 19.5% from the October 2022 ridership count. It was remarkably lower than the ridership counts from 2019 to 2020.



## TRI-RAIL AND BRIGHTLINE

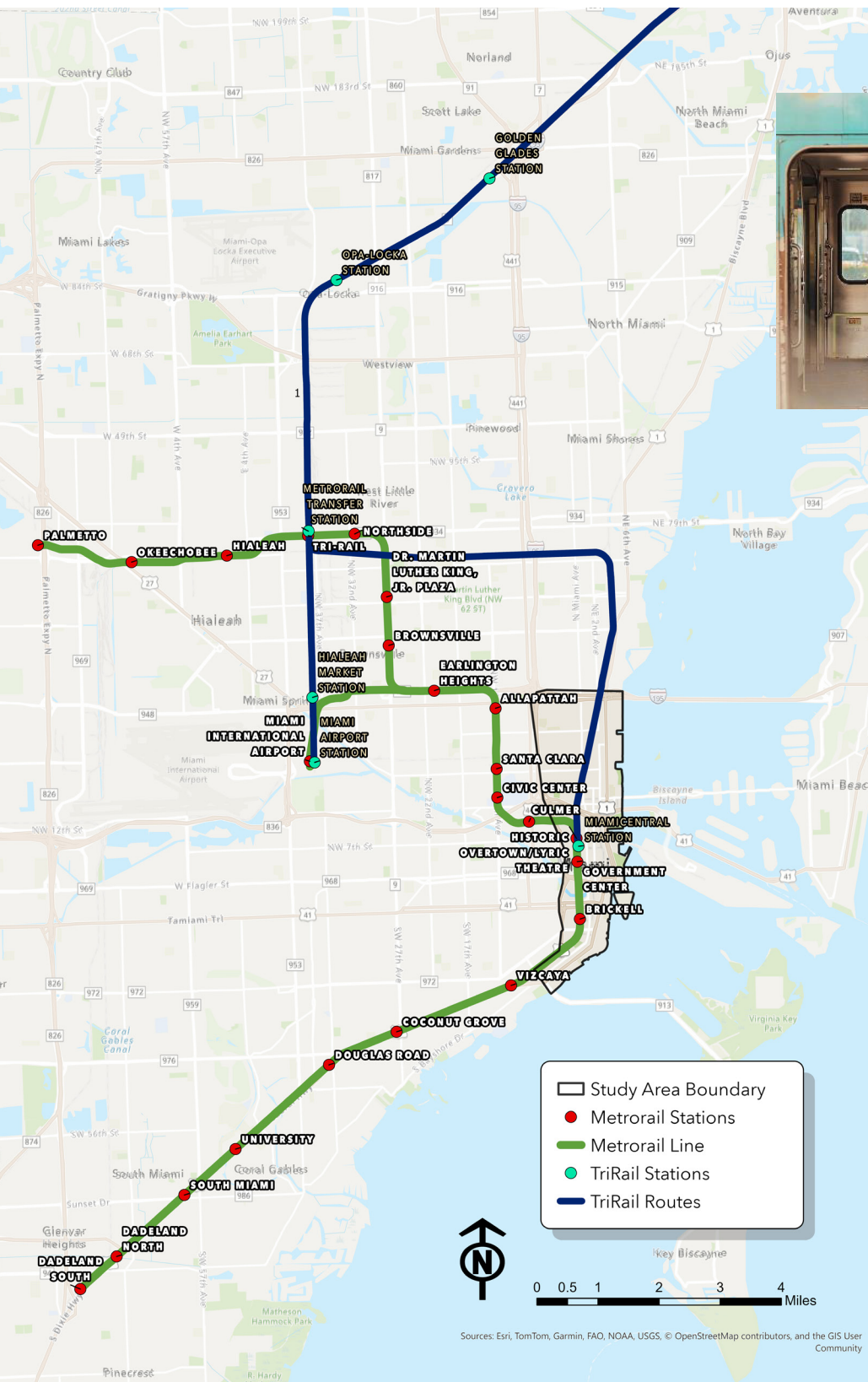


In addition to local buses and trains, Miami-Dade County is connected regionally through Tri-Rail, a commuter rail system serving Miami, Fort Lauderdale, and West Palm Beach. Established in 1989 to mitigate highway congestion, Tri-Rail has

since become a permanent fixture for regional travel, offering connections to Amtrak, Metrorail, and Brightline. Recent expansions, like the Downtown Miami Link and the proposed Coastal Link, are expected to boost ridership significantly by reaching deeper into dense urban cores.

Brightline, a privately owned higher-speed rail network, complements Tri-Rail by linking Miami and Orlando with intermediate stops in Aventura, Boca Raton, and West Palm Beach. Operating at speeds up to 125 mph, Brightline has made a notable investment in safety enhancements, upgrading crossings to prevent collisions and rolling out bilingual messaging systems to warn drivers and pedestrians of oncoming trains.

While these major rail and bus services form the backbone of Miami-Dade’s public transportation, local circulators and on-demand options fill essential gaps, helping riders reach final destinations without relying on personal vehicles.





demand services collectively improving how people move around the region. Although challenges remain, current efforts—ranging from the Better Bus Network to broader investments under the SMART Plan—demonstrate a strong commitment to cultivating a dynamic, efficient, and equitable transportation system that can keep pace with the region’s ongoing growth.

**Last-mile connections:** On-demand services like MetroConnect and Freebee circulate within defined zones and link riders to major transit hubs. In contrast, specialized paratransit services assist older adults and people with disabilities.

**MetroConnect:** Formerly GOConnect, it now operates in 11 zones with free, on-demand rides that link passengers to major transit points. Wheelchair-accessible vehicles and real-time tracking via a mobile app make it an increasingly popular choice.

**Freebee:** Another on-demand, electric vehicle-based service operating within certain neighborhoods.

**MetroLink:** A newly introduced service running along specific corridors, using smaller vehicles to fill transit gaps and connect neighborhoods to key destinations.

**Paratransit (STS):** Specialized door-to-door service for individuals with disabilities, ensuring compliance with the Americans with Disabilities Act (ADA).

Issues also noted with transit,

**Stop and Station Accessibility:** Some bus stops and rail stations still lack proper sidewalks, shade, or ramps suitable for seniors and people with disabilities.

**Network Fragmentation:** Different modes sometimes operate in silos, making it tougher for riders to navigate between systems.

**Modernization of Services:** The City of Miami Trolley and other on-demand options need updated routes and technology to remain reliable.







volumes of travelers and cargo while enhancing accessibility. In 2023, the Airports Council International recognized MIA with its Accessibility Enhancement Accreditation (AEA) for efforts to create a more inclusive passenger experience.

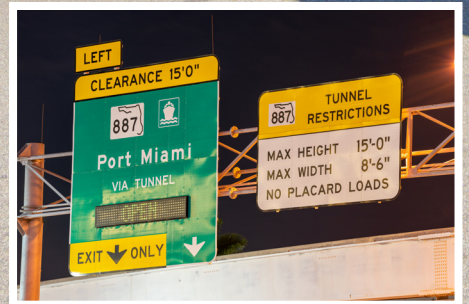
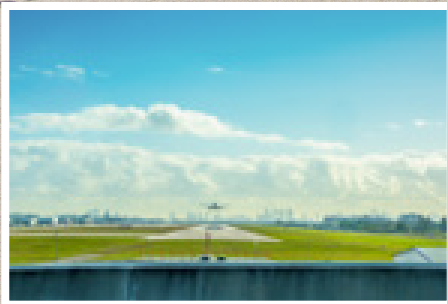
Finally, water mobility adds another dimension to Miami’s overall infrastructure. Beyond cruise and cargo shipping at PortMiami, smaller ferry or water-taxi operations provide local transit options in Biscayne Bay and along intercoastal waterways. However, the city’s major maritime focus remains on the port, with its high-capacity terminals and specialized facilities for containerized, breakbulk, and roll-on/roll-off cargo.

Protected bike lanes along NE 5 and NE 6 streets have improved safety for cyclists. Still, it has been noted that cyclists, while traveling within protected bike lanes, are still traveling next to large cargo trucks with maximum roadway speeds of 30 mph. They also limit curb space for loading and deliveries. To address this, the Miami-Dade Department of Transportation and Public Works (DTPW) obtained \$1.98 million from the U.S. Department of Transportation’s SMART grant program to develop the Microfreight Commons Platform, which uses digital tools to streamline curb use and lower emissions.

Utilizing data to set rules for parking zones, delivery areas, and idle time limits ensures that curb space is used efficiently. At transfer hubs, large trucks offload shipments to smaller, more eco-friendly vehicles—such as e-cargo bikes and trikes—for short-range delivery. This helps reduce congestion, cut emissions, and can even create local jobs.

In downtown, roughly 3.5 miles of protected bike lanes provide safe pathways for micro-freight vehicles while improving connectivity for cyclists, which has been piloted in the area since 2003. Slowly becoming more popular, the delivery robots are spotted throughout the study area.







## Urban Development

From affordable housing development and transit-oriented communities to enhanced bicycle lanes and micromobility networks, Miami-Dade County continues to evolve in ways that address housing affordability, equity, and mobility needs. Ongoing investments in infrastructure—such as protected bike lanes, improved public transit, and strategic initiatives like Vision Zero—hold promise for creating a safer, more inclusive community. By encouraging thoughtful, equitable development and maintaining a focus on both connectivity and quality of life, Miami can ensure that its growth benefits residents across all neighborhoods.

With the population of South Florida projected to grow by over a million to 7 million in 2025, Miami-Dade County continues to face a precarious housing situation. One proposed solution is to increase the supply of workforce housing, defined in the county’s Workforce Housing Development Program as housing that is affordable for families with incomes between 60% and 140% of the area median income (AMI). For a family of four, that income range falls between \$42,600 and \$99,400, according to U.S. Department of Housing and Urban Development guidelines. Under this voluntary program, developers may receive density bonuses and other incentives in exchange for building more workforce housing units.

Another strategy to address both housing and mobility needs is through Transit-Oriented Communities—mixed-use developments that cluster housing, offices, retail, and other amenities within a half-mile of major public transportation. These projects promote walkability and reduce reliance on cars. Miami-Dade County is currently partnering on several TOC projects to encourage more efficient land use around transit stations.

Atlantic Station, located next to the Historic Overtown/Lyric Theater Metrorail Station, exemplifies the county’s approach to TOCs. Once complete, it will include 616 apartments, with 360 designated as workforce housing, making it the largest single-phase, mixed-income development of its kind in Miami-Dade. The project features:

- 25,000 square feet of ground-floor retail and dining
- Quick access to the Brightline/Tri-Rail, Metrorail, and Metromover
- Amenities such as a recreation deck with two pools, a dog park, a fitness center, a club lounge, and a work-from-home center
- An interior courtyard lined with retail and restaurant space

Other examples include:

**Stephen P. Clark Government Center:** A 27-story building completed in 1984 that houses Miami-Dade County’s main government offices.

**Overtown Transit Village North (2006):** A 17-story, 309,900-square-foot office building with a 950-space parking garage and 4,000 square feet of ground-floor retail.

**Overtown Transit Village South (2010):** A 21-story, 300,000-square-foot office building with a 334-space parking garage and a 7,152-square-foot ground-floor lobby.

The development of employee housing in the Gallery development in west Brickell remains a poignant project and consideration for the county, ensuring that workforce members have access to affordable and convenient living options near their places of employment.

While development is welcomed, ongoing development in Miami’s urban core continues to pose construction management challenges. While the resulting economic growth is positive, long-term lane closures—like the four-year closure on SE 3 Street near the Aston Martin building—can create bottlenecks along major corridors, including SE 3 Street and Biscayne Boulevard. Commuters crossing the Brickell Avenue Bridge to reach Biscayne Boulevard often face sudden lane reductions, slowing traffic flow and causing frustration.

Construction activity also affects pedestrians and cyclists. Sidewalks and bike lanes are often shut down and merged into work sites, making it harder for people to travel safely on foot or by bike. Although both FDOT and the City of Miami require detailed roadway management plans, residents have noted that detours and closures sometimes lack clear signage, creating uncertainty and unsafe conditions for all street users.

## POTENTIAL SOLUTIONS

### SIDEWALK AND BIKE LANE REDIRECTION

Provide well-marked detours with protective barriers or scaffolding to ensure safety for pedestrians and cyclists.

### STRICTER TIMELINES AND OVERSIGHT

Set firm deadlines for construction phases and improve monitoring to keep lane and sidewalk closures as brief as possible.

Rapid development across Miami's urban core continues to introduce challenges related to construction management. While growth is economically beneficial, prolonged lane closures—such as the four-year closure on SE 3 Street near the Aston Martin building—create bottlenecks and exacerbate congestion, particularly along SE 3 Street and Biscayne Boulevard. Commuters heading from the Brickell Avenue Bridge to Biscayne Boulevard often encounter lane reductions that slow overall traffic flow and frustrate drivers.

Construction zones also affect pedestrians and cyclists, as sidewalks or bike lanes are frequently closed and merged into work sites. Although both the Florida Department of Transportation (FDOT) and the City of Miami mandate comprehensive roadway management plans, residents report that daily closures and detours are not always clearly marked, resulting in unsafe conditions for all travelers.

### SIDEWALK AND BIKE LANE REDIRECTION

Provide safe and well-marked detours, potentially using scaffolding or protective barriers to shield pedestrians and cyclists.

### STRICTER TIMELINES AND OVERSIGHT

Enforce firm deadlines and enhance oversight for construction phases to minimize long-term lane or sidewalk closures.

### IMPROVED COMMUNICATION

Maintain transparent coordination among developers, local authorities, and the public, using clear signage, regular updates, and tools such as QR codes for real-time closure information.

### CONTEXT-SPECIFIC MEASURES

Adapt construction management strategies to local conditions. Examples include shaded walkways in areas with limited tree canopy or enhanced signage and audio alerts in neighborhoods with older adults and families.

## Communities

The legacy of the 1930s, the Home Owners' Loan Corporation maps grading neighborhoods, has impacted those designated communities to today. They were graded from "A" (most desirable) to "D" (least desirable). Areas with "A" grades—often wealthier and predominantly white—had no difficulty securing home loans. In contrast, areas labeled "D" (often with large minority or low-income populations) were denied mortgage lending. In Miami, this led to stark racial and economic divides; a "D" grade typically indicated poor sanitation, industrial land uses, and environmental hazards. Although these policies were enacted nearly a century ago, their effects still influence housing, health, and environmental outcomes in Miami-Dade County today.

During the 1950s and 1960s, large-scale highway projects—including I-95, I-395, and SR 836—carved through many parts of the county and devastated many communities, most notably, the historically Black enclave of Overtown. The neighborhood's population fell from approximately 50,000 to 10,000 as the neighborhood was physically divided by the construction of I-95 in 1957, affecting mobility and community cohesion. It remained economically distressed through the

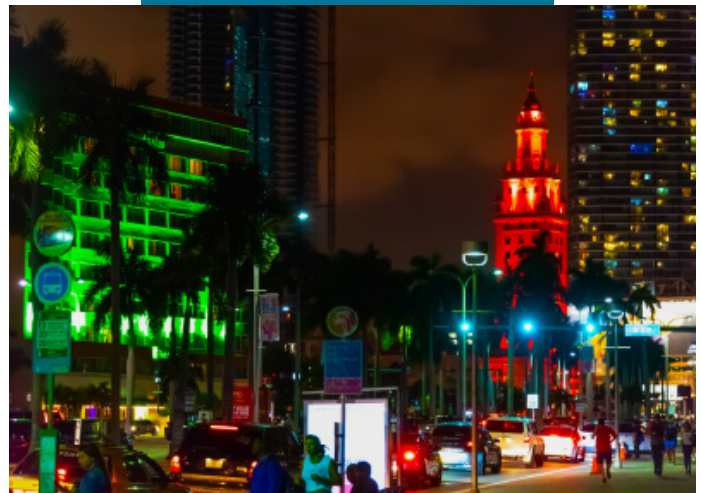
1980s; however, subsequent redevelopment and gentrification brought new investments. Today, concerns persist about rising costs and the displacement of long-time residents. Many locals rely on transit, walking, or biking, while new arrivals also appreciate the proximity to public transportation but often have the means to own a car. Stakeholders cite sidewalk maintenance, curb extensions, low-speed street designs, and improved wayfinding as critical for pedestrian safety and to improve the quality of life for residents. Past studies of Overtown and Wynwood pinpoint specific intersections needing signalization, curb ramps, and crosswalks (e.g., NW 29 Street at NW 1 Avenue). Local support also exists to convert certain streets into one-way pairs to streamline traffic flow.

Additionally, other communities in the study area, like Brickell, have rapidly evolved into one of Miami’s most walkable neighborhoods. Mixed-use developments and upgraded streetscapes—featuring wider, shaded sidewalks along Brickell Avenue and South Miami Avenue—support a high volume of pedestrians and cyclists. Despite these improvements, congestion remains significant due to the influx of commuters and active mobility users. Brickell also intersects with major non-motorized trails, including the Rickenbacker, Commodore, and The Underline, underscoring its importance as a multimodal hub.

Today, Downtown Miami functions as the city’s primary urban core, where more than 220,000 people live, work, study, or visit each day, in addition to 2 million annual visitors. Downtown generates nearly 40% of the city’s total tax revenue and hosts over 1,000 events each year. Between Overtown and Downtown, neighborhoods like Park West are embracing transit-oriented development, taking advantage of proximity to MiamiCentral and Government Center stations.

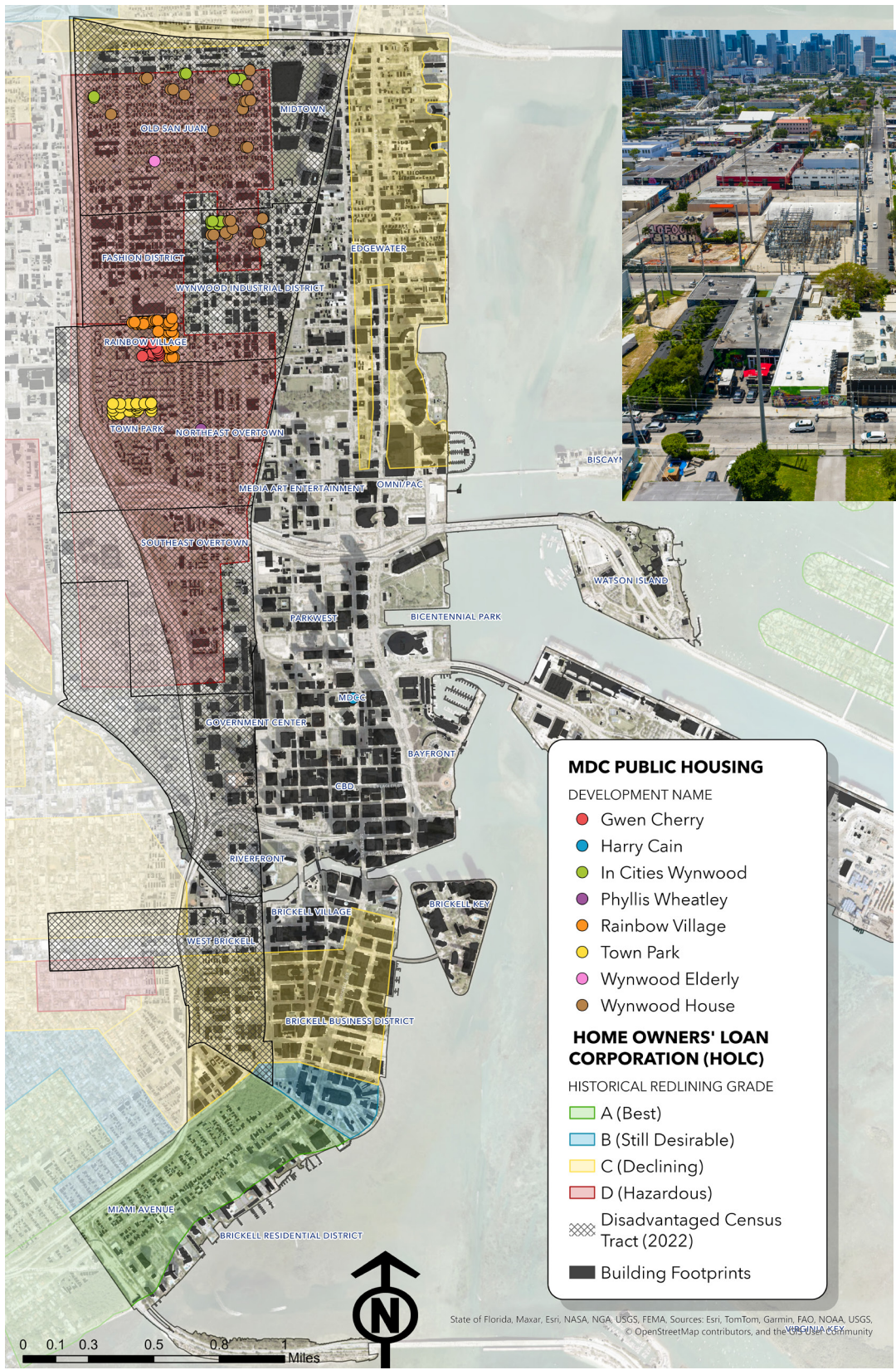
The Miami Downtown Development Authority (DDA) heads the planning efforts and coordination of agencies and their implementation of programs for the efforts in the area. It is guided by the 2025 Downtown Masterplan, which aims to:

- Develop attractive streets and public spaces
- Reconfigure roadways to calm traffic and improve pedestrian/bicycle safety



- Encourage a “park-once” environment, reducing reliance on cars

Edgewater and Omni are also undergoing significant redevelopment, with older multifamily properties making way for higher-density housing. While this helps satisfy housing demands through the replacement of older and smaller structures, it also contributes to congestion. It poses challenges for stormwater and flood management—



particularly given these neighborhoods’ coastal location and limited green space. As a result, resilient infrastructure solutions are key to balancing growth with environmental constraints.

Wynwood’s real-time transformation from a warehouse district to a vibrant mixed-use area has seen significantly increased foot traffic, especially around galleries, restaurants, and cultural venues, as well as more traffic congestion. Designed primarily for goods movement, many streets feature few stop signs, limited crossing opportunities, and speed limits of around 30 mph., all factors that are the antithesis of the pedestrian environment. This layout can create conflicts between drivers and pedestrians, particularly given the area’s limited parking and dependence on the City of Miami Trolley for transit. Additional pedestrian infrastructure, traffic-calming measures, and enhanced transit services could help Wynwood better accommodate the shifting demands of its growing population.

Local communities, mostly located to the west of the study area, were classified as disadvantaged census tracts for the Justice 40 federal initiatives. Factors like health, age, housing quality, exposure to traffic noise and emissions, or access to food are considered. For communities at the periphery of the study area:

- Extend MetroConnect services and consider launching a Liberty City Trolley to improve neighborhood connectivity.
- Support Local Hiring: Provide incentives for construction companies to hire residents, possibly through job-training programs.
- Enhance Urban Forestry: Plant more trees and greenery to improve Overtown’s streetscape and combat urban heat islands.
- Preserve and Empower: Implement policies that help older adults “age in place” and promote financial stability through mixed-income housing.
- Neighborhood Identity and Safety: Strengthen Overtown’s brand by celebrating its history and heritage

and introducing design elements—like better lighting and clear signage—to improve street-level safety.

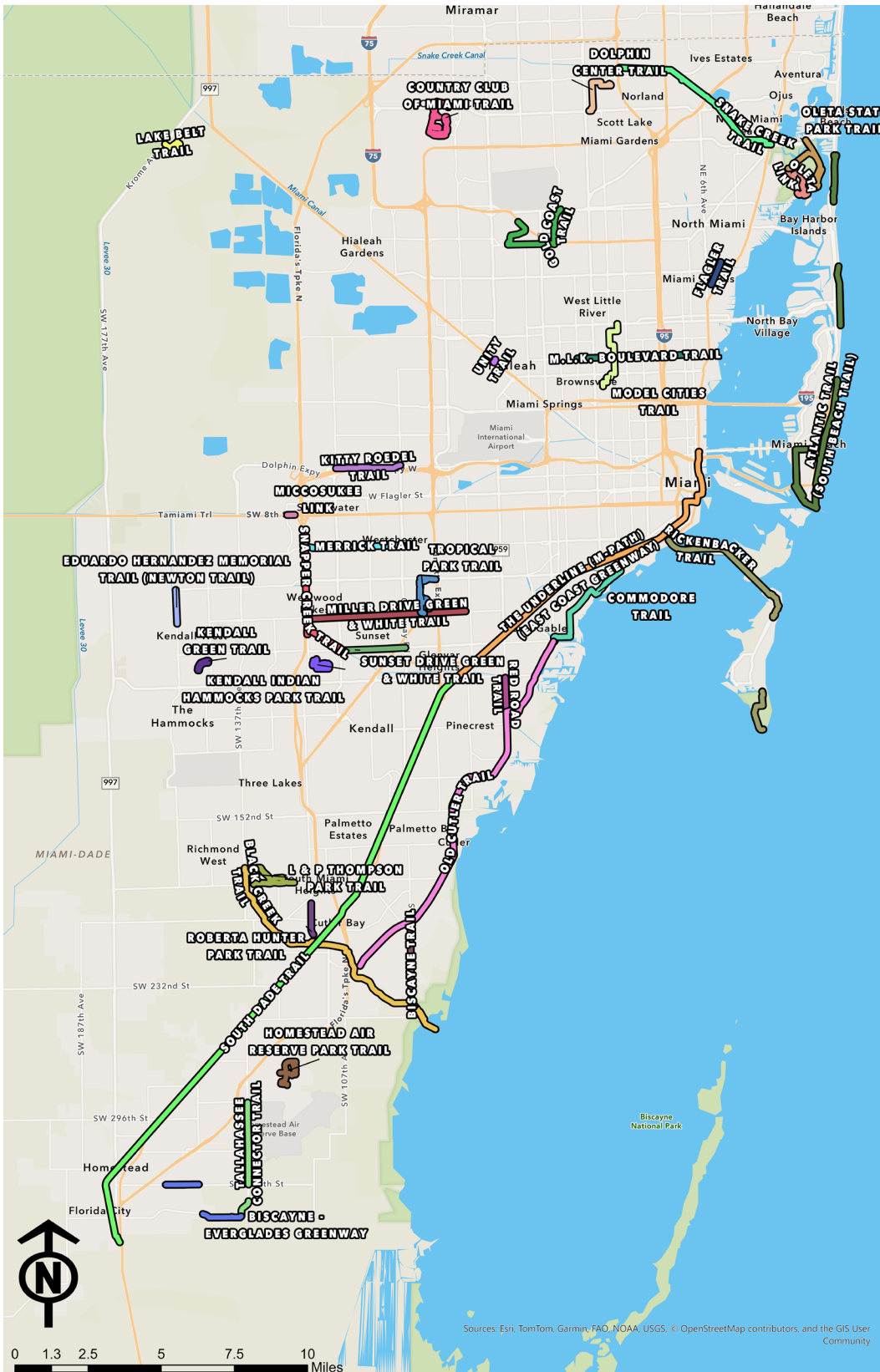
Ensuring that all communities share in Miami’s growth is critical. Addressing equity is essential, as lessons from past development efforts have shown. Many communities, such as Overtown and Allapattah, rely heavily on cycling for daily travel. However, limited bicycle infrastructure often forces cyclists onto sidewalks, creating safety risks. Beyond the lack of protected infrastructure, some major development projects have included minimal representation from local communities, highlighting the need for more inclusive housing policies.

A key issue is that as new housing developments are built, they often fail to provide enough affordable units for existing residents, leaving long-time families of the community unable to benefit from revitalization. To enhance equity, support a high quality of life, and improve transportation options, the County and City can collaborate to expand the MetroConnect service and consider introducing a Liberty City Trolley to enhance connectivity.

Additionally, as part of ongoing development and construction, local hiring initiatives can be strengthened. Construction companies can be incentivized to employ residents through job training programs and tax incentives, ensuring that economic opportunities benefit the community.

Public spaces should also be enhanced with more greenery and tree canopy coverage. Data indicates that communities to the west and northeast of the study area experience temperature anomalies of up to two degrees Fahrenheit warmer than other census tracts. To address this, an urban forestry initiative can be launched to plant more trees and flowers in Overtown, improving both livability and neighborhood identity.

Supporting aging in place is also crucial. Policies should be implemented to help seniors remain in their homes and communities, fostering stability and continuity. Alternatively, mixed-income housing strategies can be encouraged to promote financial stability and prevent displacement.



## Active Mobility Networks

The County features a vast system of trail networks that facilitate the connection from Biscayne Bay out west to the Everglades. One of the most critical of these routes is TheUnderline.

### THE UNDERLINE

Envisioned as the spine of Miami’s trail network, The Underline repurposes land beneath the Metrorail tracks into a linear park with pedestrian and cycling paths. When complete, it will stretch from the Miami River in the Brickell area to the Dadeland South Metrorail Station. The Underline has the potential to extend to the northern to fully cover the 48-mile span that makes up the M-Path or the paved path below the Metrorail online.

### VENETIAN CAUSEWAY

Built in 1927, the almost 1.5-mile Venetian Causeway is a vital link for cyclists between Miami and Miami Beach, safely accommodating over 1,500 bicycle crossings daily. However, its 12 bridges—10 fixed and 2 bascule— were originally designed for a 50-year lifespan. The bridges

currently show moderate to severe deterioration. Programed upgrades in the Transportation Improvement Plan include bridge replacements, potential speed-limit reductions to 25 mph, and better bike lane protection to enhance safety.

### COMMODORE TRAIL

The Commodore Trail is a 3.77-mile shared-use path running through Coconut Grove and parts of Coral Gables. While it serves as a key corridor for cyclists and pedestrians, several segments require resurfacing and clearer signage to function as a continuous route.

The trail stretches from its eastern terminus at the Rickenbacker Causeway, passing through the City of Miami and extending into Coral Gables. A master plan for the trail is currently underway, emphasizing context-sensitive improvements along its nearly four-mile length. The route follows South Miami Avenue and South Bayshore Drive, passing a hospital campus, major parks, and several commercial and entertainment areas.

A critical section of the trail, from McFarlane Road to SW 32nd Road, consists of a mix of separated paths and sidewalks. However, this segment requires reconstruction, as it lacks clear markings and is not consistently maintained as a shared-use path.

### BAYWALK / RIVERWALK / MIAMI RIVER GREENWAY

Though not exclusively designated for bicycles, these mixed-use waterfront paths provide scenic routes and help connect various waterfront areas in Miami. While the development of the trail depends on the progression of individual parcels, it traverses, the trail currently spans 3.24 miles with minor yet significant missing segments that could strengthen overall connectivity.

The City of Miami’s Comprehensive Plan requires that developments along the greenway provide 50 feet of right-of-way to facilitate the completion of the trail. A key area

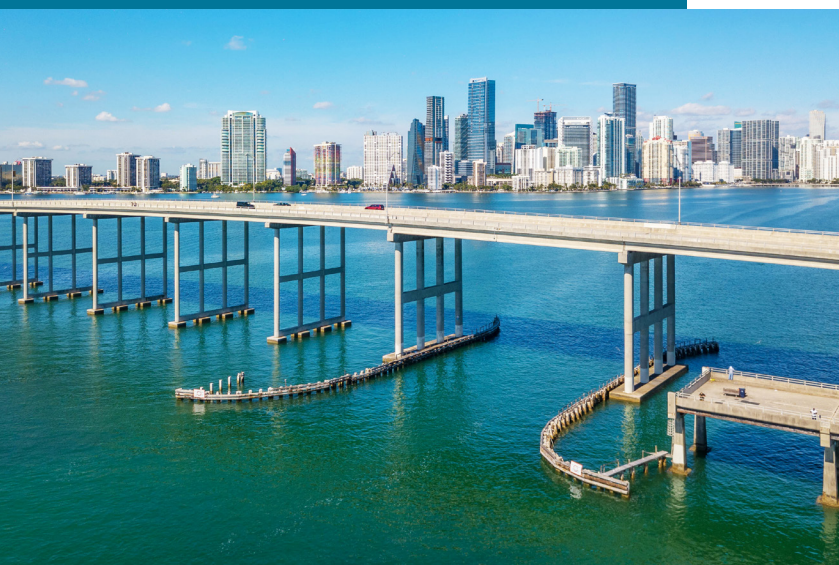




of concern is the connection near the Brickell Avenue Bridge, where trail users must navigate back to Brickell Avenue, cross at SE 5 Street, and then continue their journey. Addressing these gaps would improve safety and ensure a more seamless experience for pedestrians and cyclists alike.

## RICKENBACKER CAUSEWAY

Spanning over three miles from the toll facility near Brickell Avenue on the mainland to its eastern terminus at the end of Bear Cut Bridge—where the road transitions into Crandon Boulevard—the Rickenbacker Causeway serves as a major corridor for drivers, cyclists, and runners.



Due to the corridor's heavy use, Miami-Dade County is developing a master plan to standardize speed limits and enhance safety. It includes improving roadways leading to the Rickenbacker Causeway Trail, updating pavement markings, and potentially introducing physically separated bike lanes along SW 26 Road. Coordination between city, county, and state agencies is crucial in regulating access to the Causeway and the surrounding roadways.

One of the key recommendations is adjusting the speed limit from the toll plaza to Calusa Circle, lowering it from 40 mph to improve safety for all users. A pilot study is already informing safety enhancements, with plans to implement a consistent speed limit throughout the Causeway.



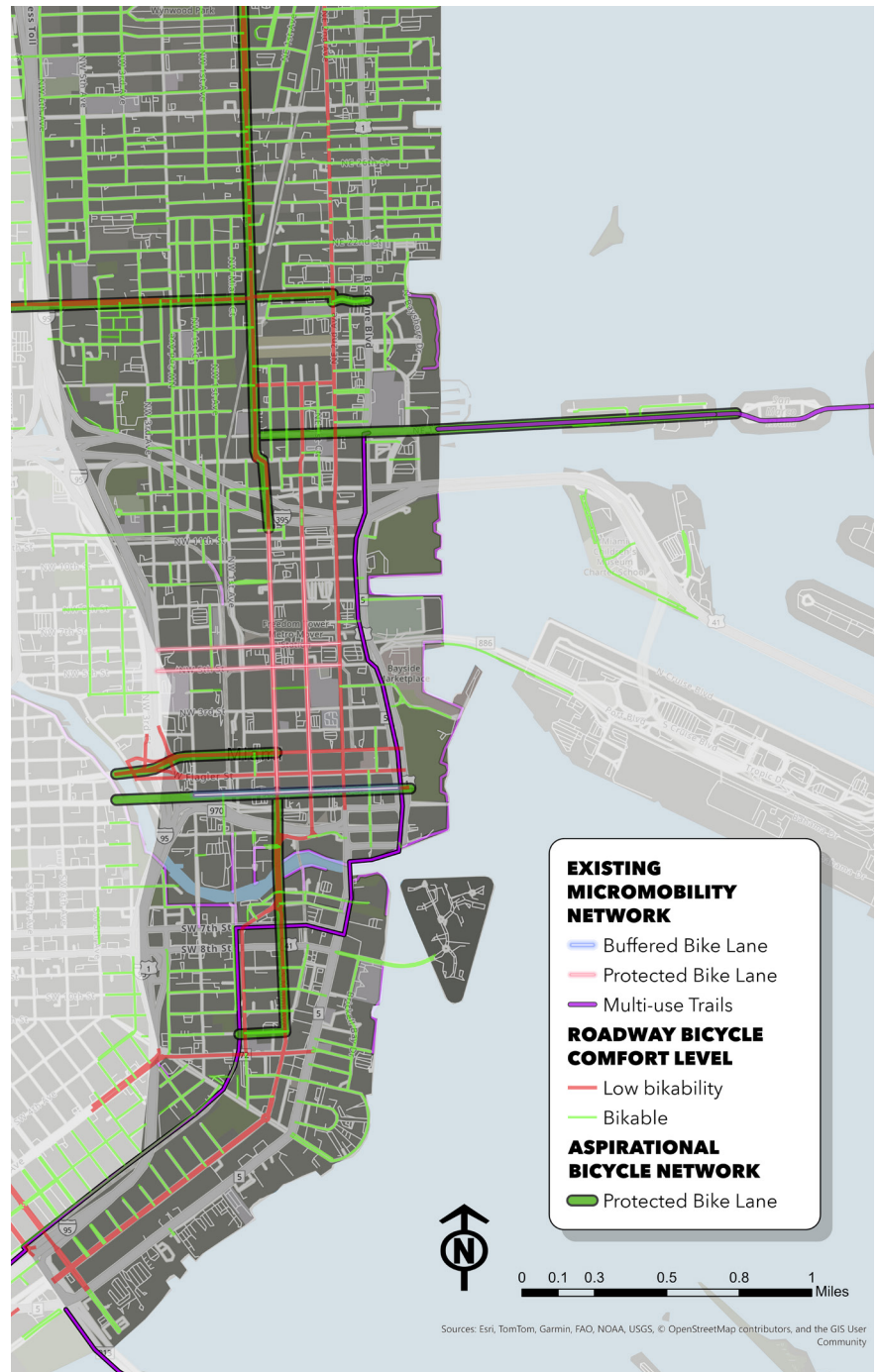
Additionally, Miami-Dade County's Department of Transportation and Public Works (DTPW) is preparing a comprehensive Master Plan for the Causeway, collaborating with partner agencies, stakeholders, and municipalities. Meanwhile, the Florida Department of Transportation (FDOT) is analyzing the feasibility of constructing physically separated bicycle and pedestrian facilities along SW 26 Road. This initiative (Project ID: 421053-4-12-02) aims to create a safe link from The Underline to the Rickenbacker Causeway, improving accessibility for non-motorized users.

# Bicycle

Miami-Dade County’s bicycle facilities are expansive. However, connections between dedicated or protected lanes are fragmented or may lack the protective features that riders need to feel safe to travel through. Data shows that local crashes involving cyclists result from speeding, distracted driving, failing to yield, and dangerous road conditions. During construction or road maintenance, sidewalks and bike lanes are sometimes blocked off without adequate detours, posing additional risks—particularly for wheelchair users. Some roads are also “underutilized” or poorly designed, creating friction among cyclists, pedestrians, and motorists. Adverse weather conditions further complicate matters, reducing the practicality of biking for many people.

The current bicycle network in the study area is composed of buffered and protected lanes. Existing unprotected lanes account for the majority of network facilities, but these are no longer supported, and the preferred facilities for local roads are protected lanes.

The data shows that protected facilities tend to be closer to recreation facilities, suggesting the facilities are used for leisure or recreational use rather than utilitarian use. Most of the protected facilities are south of I-395.



FACILITY TYPE	MILES	PERCENT	AVERAGE OF AADT (2022)
Buffered Bike Lane	0.6	3%	4,100
Protected Bike Lane	2.7	12%	8,675
Unprotected Bike Lane	9.0	41%	16,736



10 Street  
Barbara Lippman Way

10 Street



EQUIFOX

## Pedestrian Infrastructure

Complementing Miami’s bicycle network is an extensive pedestrian network made up of shared-use paths and sidewalks. While Downtown Miami features a strong and connected sidewalk system, users often find themselves competing for space with parked cars, delivery trucks, rideshare pickups, and food delivery services. This congestion creates friction among users and reduces the efficiency of pedestrian and cycling infrastructure.

A common issue is the frequent blockage of sidewalks and bike lanes by rideshare vehicles, delivery trucks, and service vehicles. Enforcement remains minimal, as drivers often move their vehicles when approached by police. Additionally, the lack of designated drop-off and pick-up zones contributes to ongoing conflicts. Public engagement efforts have highlighted specific problem areas, such as NE/NW 5 and NE/NW 6 Streets, which are underutilized due to heavy cargo traffic, making cycling less appealing and potentially unsafe.

Another significant concern for both pedestrians and cyclists is the weather. Miami’s extreme heat, heavy rainfall, and storm conditions can make bicycling an unappealing or unsafe choice at times. Vision Zero represents Miami-Dade County’s commitment to reducing all traffic fatalities and severe injuries to zero while increasing safe, equitable, and healthy mobility options for everyone. The plan calls for systematic safety countermeasures and policies to eliminate fatalities and serious injuries by 2040.

To improve these facilities, the following is recommended:

- **Protected Bike Lanes:** Establishing protected lanes along key routes will improve safety and encourage cycling, even during inclement weather.
- **Stronger Enforcement:** Enhancing barricades and using technology—such as cameras and AI—to deter vehicles from encroaching on bike lanes
- **Vision Zero Initiative:** Miami-Dade County’s Vision Zero plan aims to eliminate traffic fatalities and serious injuries by 2040 through infrastructure upgrades, public education, and stricter enforcement.
- **Educational Outreach and Signage:** Although Downtown Miami reports relatively few bicycle accidents due to lower speed limits, most serious or fatal crashes result from pedestrian or cyclist errors. Improving signage, road design, and public awareness campaigns can help reduce these incidents and enhance overall safety.

Limited connectivity between key areas remains a challenge in Miami’s transportation network. One potential solution is converting certain streets into trail-like paths that accommodate both pedestrians and cyclists, fostering a cohesive, active transportation

system. South Miami Avenue is an ideal candidate, as it has available right-of-way, including existing unprotected lanes that could be upgraded.

A crucial element of the network's success is the inclusion of alternative transportation modes. Allowing e-scooters, e-bikes, and cargo bikes to share bike lanes could increase usage and alleviate congestion caused by delivery vehicles.

### INFRASTRUCTURE NEEDS AND THE COUNTYWIDE TRANSPORTATION MASTER PLAN (CTMP)

An analysis of road comfort levels in the study area highlights that many roads provide a low comfort level for cyclists, emphasizing the need for significant infrastructure improvements. These concerns are being evaluated as part of Miami-Dade County's first-ever Countywide Transportation Master Plan (CTMP)—a 20-year plan developed by the Department of Transportation and Public Works (DTPW).

This plan will outline capital investments and improvement initiatives across transit, pedestrian infrastructure, bicycle networks, roadways, and freight, with the goal of making Miami-Dade's transportation network safer, more connected, and truly multimodal.

Key Improvements for a Safer, More Connected Bicycle and Pedestrian Network:

- **Stricter Enforcement:** Use cameras and AI technology to issue citations for vehicles blocking bike lanes or sidewalks.
- **Network Expansion:** Improve connectivity between Downtown, Brickell, and Wynwood by transforming key streets into trail-like corridors, making cycling safer and more accessible.
- **E-Bikes and Microdelivery:** Allow e-bikes, e-scooters, and cargo bikes to share bike lanes, reducing delivery truck congestion and improving urban mobility.

While Downtown Miami experiences relatively few bicycle accidents, largely due to lower roadway speeds, most fatalities are linked to cyclist or pedestrian errors. Education, awareness campaigns, and targeted interventions are essential to curbing these dangerous behaviors.

A notable safety hazard exists at NW 19 Street and N Miami Avenue, near Miami City Cemetery, where bike tires can get stuck in FEC RR tracks, posing a serious risk to cyclists. Addressing this hazard should be a priority in improving cyclist safety.



## Micromobility

Micromobility solutions—such as bikes, e-bikes, and scooters—are designed for short trips and help reduce traffic congestion. Miami-Dade County has established the foundation of a micromobility network in Downtown Miami, which includes connected, protected lanes along NE 5 and 6 Streets and N. Miami Avenue NE 1 Street.

A pilot program in Miami recorded over one million scooter rides in four months. Under Florida Statute Title XXIII, Chapter 316, Section 2128, scooters are classified as bikes and can operate in bicycle lanes. However, because scooters can reach speeds of up to 15 mph, their presence on sidewalks can impede pedestrian flow, raising concerns about pedestrian safety and the need for careful regulation. Moreover, it's common to observe couples or parents with younger children standing together on the e-scooter, only adding to the danger of their use.

Many major cities worldwide are redesigning their streets to meet Complete Streets standards by adding protected bike lanes and developing connected micromobility networks as updates are made. The Downtown Miami Micromobility Network will include five miles of new separated bicycle lanes once complete.

CitiBike is a popular private micromobility provider that offers a dock-based bike-sharing system across Miami and Miami Beach, with year-round rentals via membership passes or hourly fees. Of the 160 total stations, 39 are located in the downtown study area. From January through July 2023, there were 75,692 total rentals at the stations within the study area. The most used rental sites were at N. Bayshore Drive near SW 17–18 Street (6,055 rides), NE 1 Street and Herald Plaza (5,610 rides), and Biscayne Boulevard and NE 15 Street (4,424 rides)

These locations are near the Venetian Causeway, which aligns with Strava's self-reported user data, showing it to be a well-traveled route between Miami and Miami Beach. The leisure use stations with rentals during the same time were located in Miami River Side Center at 444 SW 2 Avenue (285 rides), SE 14 Street and South Miami Avenue (545 rides), SW 13 Street, and SW 2 Avenue (641 rides).

Alternatively, these stations are concentrated near the Brickell area, suggesting a need to analyze how surrounding land uses and trip patterns may affect bike-share demand.





## Infrastructure Hardening

Miami’s subtropical climate, characterized by an average annual temperature near 76°F and roughly 58 inches of rain a year, shapes every facet of its built environment. Over 70% of the year is likely to be sunny, which underscores why the region’s earliest inhabitants and settlers took advantage of natural breezes and shade to manage heat.

Historically, homes in South Florida were designed with deep porches, tall ceilings, and cross-ventilation, allowing the prevailing southeasterly wind to circulate through interiors. Examples of this vernacular approach can still be seen in structures, such as the city’s oldest residences like the kampong or the porch-shaded Pérez Art Museum Miami. By insulating exterior walls from direct sunlight and maximizing airflow, these traditional methods minimized the use of artificial cooling—a critical aspect of resilience, especially for lower-income residents who struggle to afford air conditioning.

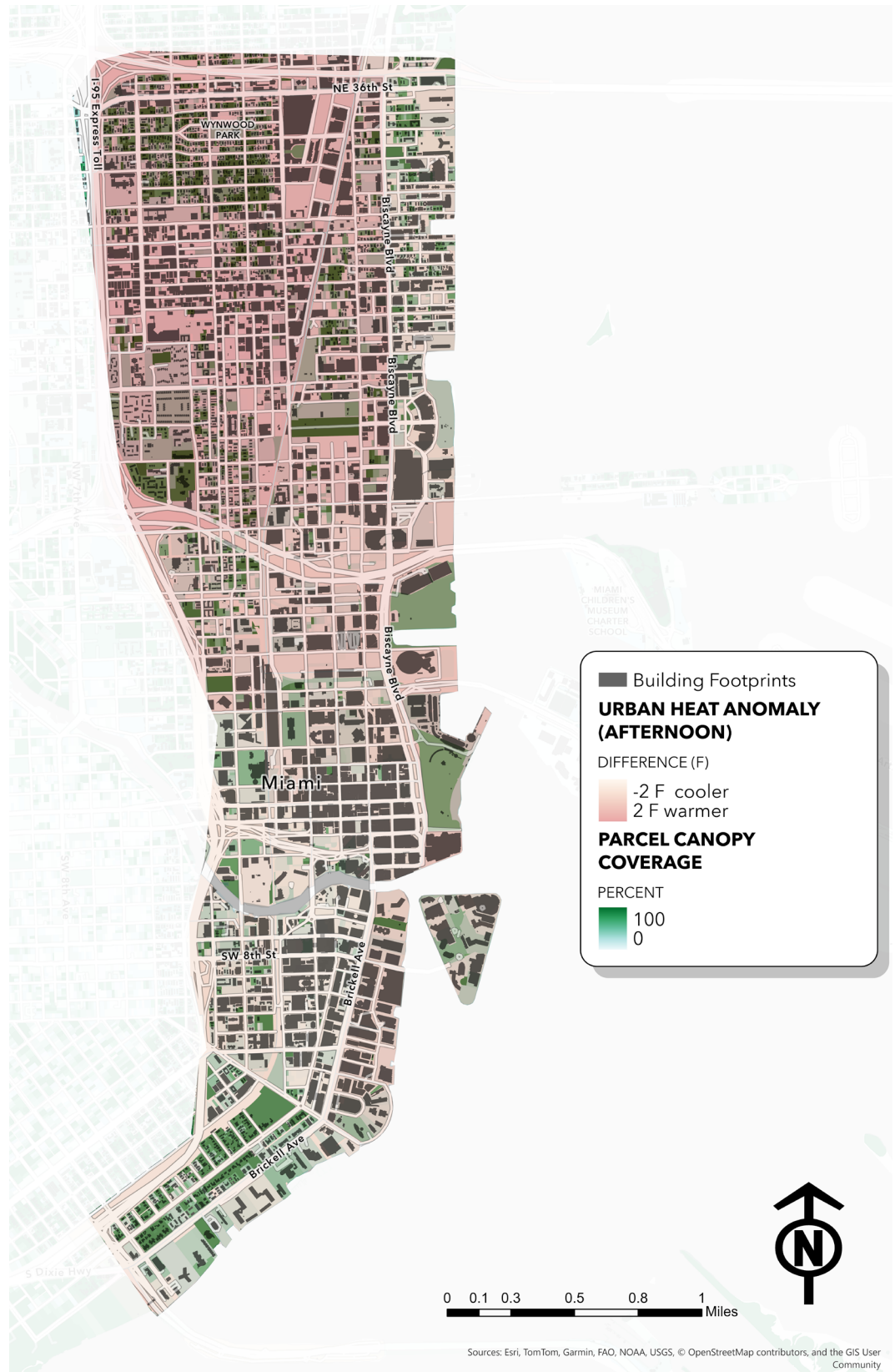
Much of modern Miami, however, diverged from these earlier building practices. After the 1970s and the commercialization of air conditioning, development

avored sealed windows, flat roofs, and limited shade trees, leading to higher electricity use for cooling and exacerbating the urban heat island effect.

Research reveals that some densely built neighborhoods, like Brickell and Edgewater, experience up to 12 more degrees of heat than leafier suburbs, such as Coral Gables or Pinecrest. This disproportionate impact falls hardest on communities that have historically seen disinvestment, reflecting a national trend in which redlined and lower-income neighborhoods endure hotter temperatures and poorer housing insulation.

Miami ranks among the top three U.S. cities with the greatest difference in temperature between urbanized cores and surrounding areas, prompting local authorities to explore building design measures like reflective roofs, lighter pavement materials, and expanding tree cover to cool overheated streets.

Improving and preserving Miami-Dade County’s urban tree canopy has become an



urgent priority. Despite a longstanding goal of reaching 30% canopy cover, the county remains at about 20%, with hurricane damage, inconsistent planting efforts, and rapid development competing for green space.

The result is striking disparities: higher-income neighborhoods often maintain more greenery and enjoy reduced energy costs, whereas heavily paved, lower-income areas contend with higher utility bills and heightened health risks from the heat.

The county features programs like Adopt-A-Tree and Neat Streets, which continue to invest in new plantings—particularly around bus stops and in historically underserved areas. Nevertheless, Miami-Dade remains committed to creative urban forestry approaches, including meandering shared-use paths to preserve existing trees, relocating valuable specimens onto private land or public parks, and contributing to the Tree Trust Fund to encourage continued reforestation.

Miami’s low elevation—just 12 feet above sea level in many areas—makes it highly vulnerable to sea-level rise and storm surge. Within the study area, these challenges are particularly evident in Brickell and Edgewater, where frequent flooding and drainage issues have prompted multiple resilience initiatives.

One such project is the Mary Brickell Village roadway and drainage improvements, which incorporate new sidewalks, ADA-compliant ramps, and upgraded storm sewers to better manage heavy rainfall. On Hobie Island Beach, a shoreline stabilization effort replaced invasive Australian pines with over 290 native trees, palms, and shrubs, improving ecological balance and increasing wind buffering.

Larger-scale projects, such as raising sea walls along Brickell Bay Drive and installing pump stations beneath city streets, aim to protect waterfront neighborhoods from tidal flooding

while expanding passive recreational spaces. These efforts are paired with environmental stewardship programs, such as the county’s Manatee Protection Program, ensuring that critical marine habitats remain intact even as infrastructure is reinforced against stronger storms and rising tides.

Alongside these resilience measures, Miami is embracing “adaptive and resilient design” in urban projects, recognizing the ongoing threats of rising seas and increasing heat. The city is maintaining its waterfront connectivity, open spaces, and natural buffers while also exploring innovative strategies to:

- Channel breezes through tall buildings to reduce urban heat.
- Integrate swales for better water absorption and flood control.
- Expand previous infrastructure in highly paved areas to improve stormwater management.

As Miami accelerates long-range climate adaptation efforts, key priorities include:

- Replanting thousands of trees to enhance shade and reduce heat exposure.
- Integrating flood-conscious design into public projects.
- Remodeling major corridors with cooling features such as shade structures and reflective materials.

The city’s challenge lies in balancing climate-smart strategies with the rapid demands of urban development. Even as new high-rises continue to reshape the skyline, an increasing emphasis on building stability, cooling strategies, and tree conservation is taking hold. This shift reflects a shared vision: ensuring a sustainable, resilient, and livable Miami for future generations.



## Meeting with Stakeholders

A stakeholder engagement process was undertaken to consult with individuals and organizations involved in transportation and mobility efforts or who live or work in Downtown Miami and the broader study area. Representatives from various sectors, including transportation agencies, community groups, businesses, and residents, participated in these interviews. Throughout these discussions, several recurring issues were identified, underscoring both the community’s aspirations and immediate needs.

While the overarching vision for Downtown Miami is ambitious, aiming to position the city as a 24-hour, globally competitive urban center, some stakeholders expressed concerns that this long-term vision might overshadow more pressing, immediate transportation needs. The community emphasized the importance of addressing current congestion issues, improving safety, and ensuring equitable access to transportation resources.

To facilitate a balanced approach integrating technical and community perspectives, Project Working Group Meetings were also held. These three meetings brought together residents, engineers, transportation planners, and other experts to guide the research and planning process collaboratively. The group identified several key focus areas critical to the success of the transportation master plan:

- **Expand Transit:** Enhancing transit services in the north and west areas to improve accessibility and reduce reliance on personal vehicles.
- **Deliveries and Rideshare:** Implementing regulations and enforcement measures to manage deliveries and rideshare operations, minimizing traffic disruptions and enhancing safety.
- **Bicycle and Pedestrian Infrastructure:** Developing a safe and connected network for cyclists

### STAKEHOLDER ENGAGEMENT



#### P.W.G Meetings

April 11, 2024

May 15, 2024

June 13, 2024





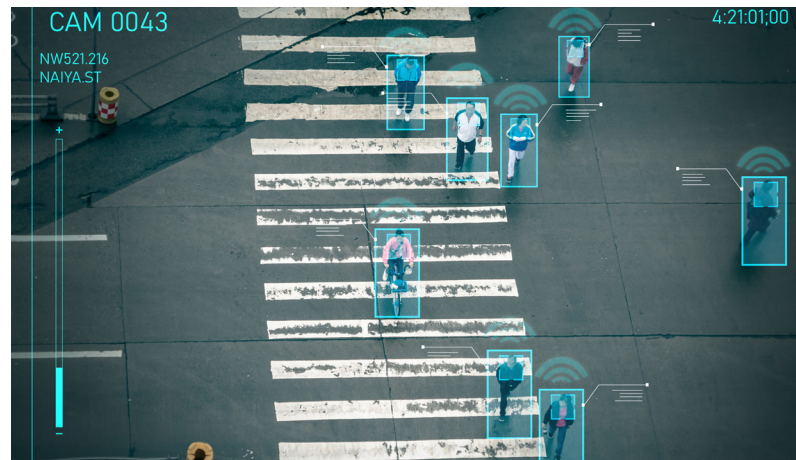
# DEVELOPING A NEW VISION



As part of the plan's update, the study included research into emerging technology and best practices and evaluated its implementation in the national and international arena. Numerous technologies and practices related to the following improvement categories were considered.

Car Lite technologies aim to reduce reliance on personal vehicles by promoting alternative modes of transportation and improving public transit. It focuses on creating a more sustainable, efficient, and less congested urban environment.

- **Low-emission zones**, or designated areas where access to vehicles with higher emissions is restricted or prohibited, reducing air pollution and improving urban air quality.
- **Micro-delivery** vehicles are compact, lightweight modes of transportation, typically electric, designed for short-distance travel, such as e-scooters, e-bikes, and electric skateboards.
- **Curb Management**: involves optimizing the use of curb space to balance the needs of various users, such as pedestrians, cyclists, public transit, delivery



vehicles, and parked cars, with the aim to enhance urban mobility and reduce congestion.

- **Smart Parking** sensors and cameras for real-time monitoring and managing street parking availability, optimizing space usage, and enhancing urban parking solutions.
- **Road Defect Detection System**: AI-powered road defect detection system scans motorways to identify defects and prioritize repairs, promptly alerting maintenance teams to take action.

Active Mobility Networks prioritize non-motorized transportation, such as walking and cycling, and prioritize creating interconnected pathways that encourage physical activity and reduce car dependency.

- **Scooter Sidewalk Riding Detection technology** uses sensor, GPS, and computer vision technologies to discern instances of electric scooter operation on pedestrian sidewalks. Its function involves alerting riders or autonomously modifying scooter behavior to ensure adherence to local regulations.
- **Modified hydrants** use fire hydrants to improve access to drinking water.

Integrated mobility hubs serve as centralized points where multiple modes of transportation converge, including public transit, bike-sharing, car-sharing, and pedestrian pathways. Government Center Station and MiamiCentral are two mobility hubs in the study area that facilitate seamless transitions between different forms of transport.

**Sustainable Design Bus shelters and transit stops** are evolving with innovative designs and sustainable technologies for a more comfortable and environmentally friendly commuting experience.

**Autonomous Shuttle/Taxi Ride-Hail Networks use** self-driving electric vehicle networks addressing first-mile/last-mile challenges, leveraging technology to optimize services and reshape urban transportation.

Events and Congestion management, or technology related to planning and transportation logistics for planned ad hoc events to ensure smooth traffic flow at all times, adequate parking, and efficient movement of people.

- **Parking Guidance System**, like those seen in Singapore, delivers real-time information through roadside electronic information panels and mobile devices so drivers can view parking availability even while driving.



- **Combining Event and Transit Tickets is facilitated with mobile apps** and allows ticket purchase price to include a transit or pass to access public transit.

Waterborne Technology or technologies that enhance the transport of passengers across water bodies in urban areas as an alternative to land-based transportation to reduce travel time and congestion.

- **E-Flying Passenger Ships**, used in Sweden since 2023, are electric vessels capable of gliding at speeds of up to 30 knots (35 mph) and covering distances of up to 50 nautical miles (57.5 miles) on a single charge. In Sweden, these ships are exempt from speed limits due to their minimized wake disturbance while navigating the water.



Micromobility encompasses small, lightweight vehicles operated by individuals, such as e-scooters, e-bikes, and other personal transport devices that are ideal for short-distance travel and often can complement public transportation.

- Adaptive Micromobility includes micro-mobility solutions that offer accessible alternatives for individuals regardless of age, disability, or impairment, thereby facilitating mobility and participation.
- Geofencing is a location-based technology that sets virtual boundaries. It is typically used in micromobility to regulate parking, restrict certain zones, and enhance urban mobility management, thereby encouraging responsible rider behavior.

Resilience and Adaptability technologies focus on creating transportation systems that can withstand and quickly recover from disruptions, whether natural or manmade, ensuring continuous mobility.

- Solar panels can be integrated into walkways, parking surfaces, and roadways to generate energy for critical roadway infrastructure and public services.
- Solar Umbrella Canopies and Solar-powered furniture integrate built-in solar panels into outdoor fixtures that can improve the pedestrian experience—such as benches, tables, and shelters—to capture and store renewable energy. This energy can be used to power features like USB charging ports, Wi-Fi hotspots, or LED lighting.

Pedestrian and Bicycle Safety technology solutions to leverage pedestrian and bicycle safety in the study area through technological enhancements coupled with policies aimed at reducing accidents and improving the overall travel experience. It will also enhance sidewalks and design urban spaces to be more pedestrian-friendly, with safe, attractive, and accessible covered pathways that facilitate walking as a primary mode of transport in all weather and times of the day.

- Sheltered Skyways are covered sidewalks that connect pedestrians to transit stations, major commercial employment centers, and community facilities through a network of pathways offering protection from the sun and rain.
- Slow Streets are safe, comfortable, and low-traffic routes that prioritize active transportation and community connection.

Bicycle technology designed to enhance bike paths, lanes, and routes to facilitate safe and efficient cycling throughout a city or region was also evaluated, in addition to those improvements listed above that both peds and cyclists can use.

- Dedicated and Protected Bike Lanes are Separate lanes for cyclists that are safeguarded from vehicular traffic, fostering safe and efficient cycling infrastructure.
- Bicycle Traffic Signals are dedicated to cyclists, ensuring safer intersection crossings and smoother traffic flow. Sensors can be installed to work with detection systems, and the signals can also be equipped to capture ridership data at intersections.

Freight management technology looked into optimizing the movement of vehicles carrying people or goods through the study's urban area to minimize congestion, reduce emissions, improve delivery efficiency, and maintain designated uses like bike lanes and sidewalks clear from obstructions.

- Freight Signal Priority uses technology that prioritizes traffic signals for freight, commercial, and emergency vehicles traveling within a signalized network.
- Drones or Uncrewed Aerial Vehicles can deliver lightweight packages to homes and businesses, or they can be used for passenger travel, reducing traffic volume and vehicle miles traveled (VMT). The list of technologies was used to refine the





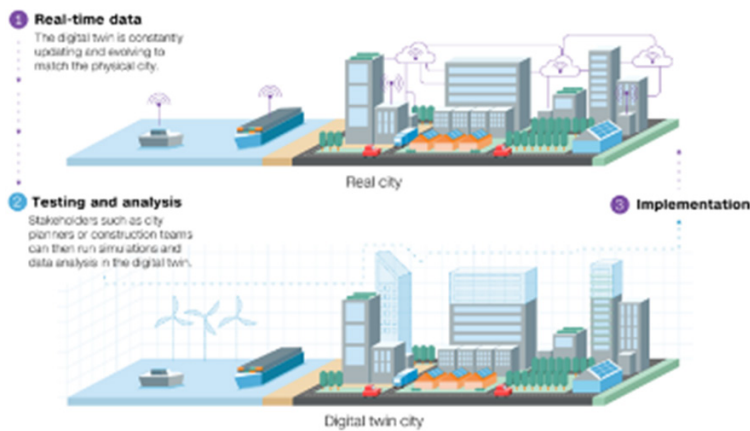
recommendations. A scoring matrix was employed, where each technology resulted in a score between 100 (lowest) and 500 (highest) based on its potential impact and alignment with the plan’s key improvement criteria. These evaluation criteria were weighted with input from the Project Working Group, which identified the priorities for the recommendations and proposed timelines.

The matrix criteria included:

- **Connection to Transit:** Enhancing integration with existing and planned transit systems.
- **Complete Streets and Networks:** Supporting the design of streets that accommodate all users—pedestrians, cyclists, transit riders, and motorists.
- **Safety:** Improving safety for all road users, particularly pedestrians and cyclists.
- **First and Last Mile Connectivity:** Facilitating seamless transitions between different modes of transportation.
- **Integration into Existing Systems:** Ensuring new technologies can be effectively incorporated into the current transportation infrastructure.

Technologies that rated high scores (closer to 500) demonstrated strong potential to meet multiple improvement criteria effectively. The top-scoring technologies include:

Digital Twin Cities use technology to create virtual representations of physical assets, such as buildings, roads, waterways, and green spaces. These digital models mirror reality by integrating connected digital information that reflects current physical conditions, enabling the testing of new technology without the need for physical construction. This approach facilitates evidence-based planning by incorporating comprehensive, real-time data—including traffic flow, pedestrian movement, and infrastructure performance—into the model, which allows for testing or piloting technologies to determine the most appropriate solutions based on actual conditions.



Source: Digital Twin Cities Centre  
Graphic: Woojin Lee, CNN

The second highest score went to Smart Bicycle Parking solutions, which incorporate technologies such as automated locking systems, real-time availability tracking, and integrated bike-sharing services. Secure and easily accessible parking for cyclists was identified during stakeholder engagement as a factor that could encourage more people to choose biking over driving. These solutions also facilitate first/last mile connections, ensuring seamless transitions between biking and public transit, and offer insights into cycling patterns and peak usage times to aid further infrastructure planning.

Following bicycle storage, Accessible Pedestrian Signals (APS) ranked as the third-highest technology. APS provides auditory and tactile features at pedestrian crossings, aiding visually impaired individuals in safely navigating intersections. These amenities foster inclusivity, enhance safety for all users, and ensure compliance with local and federal guidelines.

On the other hand, technologies that ranked to lower scores (closer to 100) were recognized for their innovation but scored lower on the primary improvement criteria in the matrix. These include:

High-Definition Lighting Systems provide enhanced illumination on streets and public spaces. These systems improve nighttime visibility through LED technology and consume less energy; however, they have a limited impact on transit connectivity and complete street initiatives compared to higher-scoring technologies.

- Drones, or Uncrewed Aerial Vehicles (UAVs), scored below 200 when assessed through the matrix. Research shows that drones can be effectively utilized for traffic monitoring, delivery services, and emergency response. Despite these applications, they do not significantly enhance transit connections or pedestrian safety, resulting in lower overall scores.
- In-ground parking sensors embedded on the surface of parking spaces to detect availability and guide drivers to vacant spots, reduce time spent searching for parking, alleviate congestion, decrease vehicle miles





traveled, and lower pollution. They can be supported through apps or signage displaying real-time parking information to drivers.

- Other low-scoring technologies included autonomous equipment and systems that use advanced automation to allow autonomous vehicles to travel and operate on surface roadways safely. Although innovative, these technologies do not directly contribute to improvements in transit connectivity, complete streets, or pedestrian safety in the immediate term, resulting in lower scores.

The Technology Assessment and Scoring Matrix provided valuable insights into which transportation technologies and improvements will most effectively advance the goals of the Miami Downtown Transportation Master Plan.

The top priorities focus on integrating with transit options, creating comprehensive and well-connected street designs, and establishing safe, dedicated spaces for bicycles and pedestrians, along with first/last mile connections. In contrast, lower-scoring criteria related to location-specific improvements include making public transit more affordable, making connections to housing, and impacting road network congestion.

WEIGHTED MATRIX FOR RECOMMENDATIONS	
18	Connection to Transit
14	Complete Streets & Networks
11	Safety
8	First & Last Mile Connectivity
7	Connectivity to Existing System
7	Comfort
6	Origin-destination to Employment
5	Affordability
4	Policy Alignment
3	Accommodation and Accessibility
3	Ease of Implementation
3	Funding Opportunities
2	Location – Study-wide
2	Available Right-of-way
2	Maintenance
2	Origin-destination to Housing
1	Roadway Network Congestion Impact
1	Location– Specific
0.5	Improvement Type
0.5	Timing

The next section presents the final recommendations.

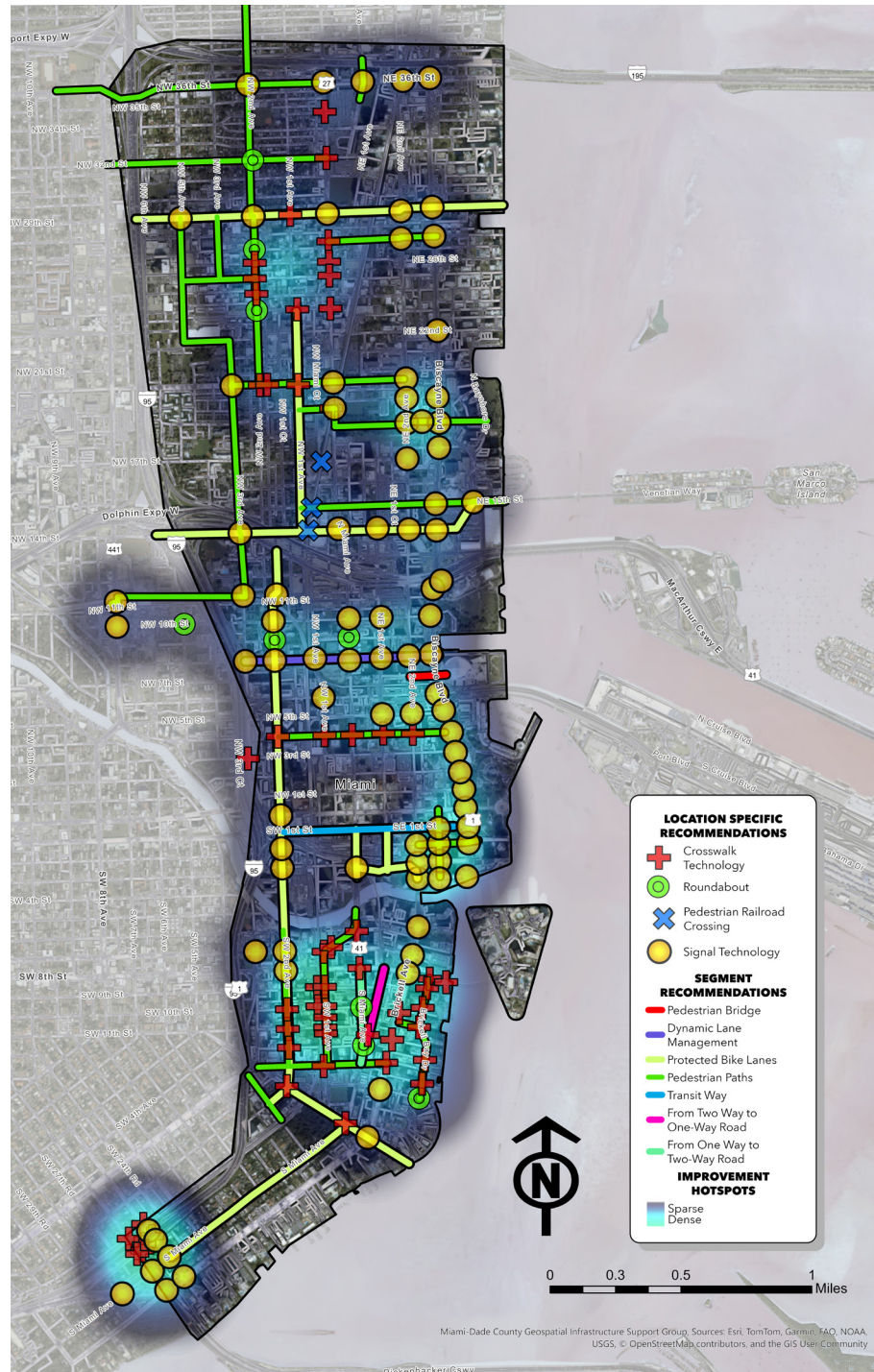
# RECOMMENDATIONS

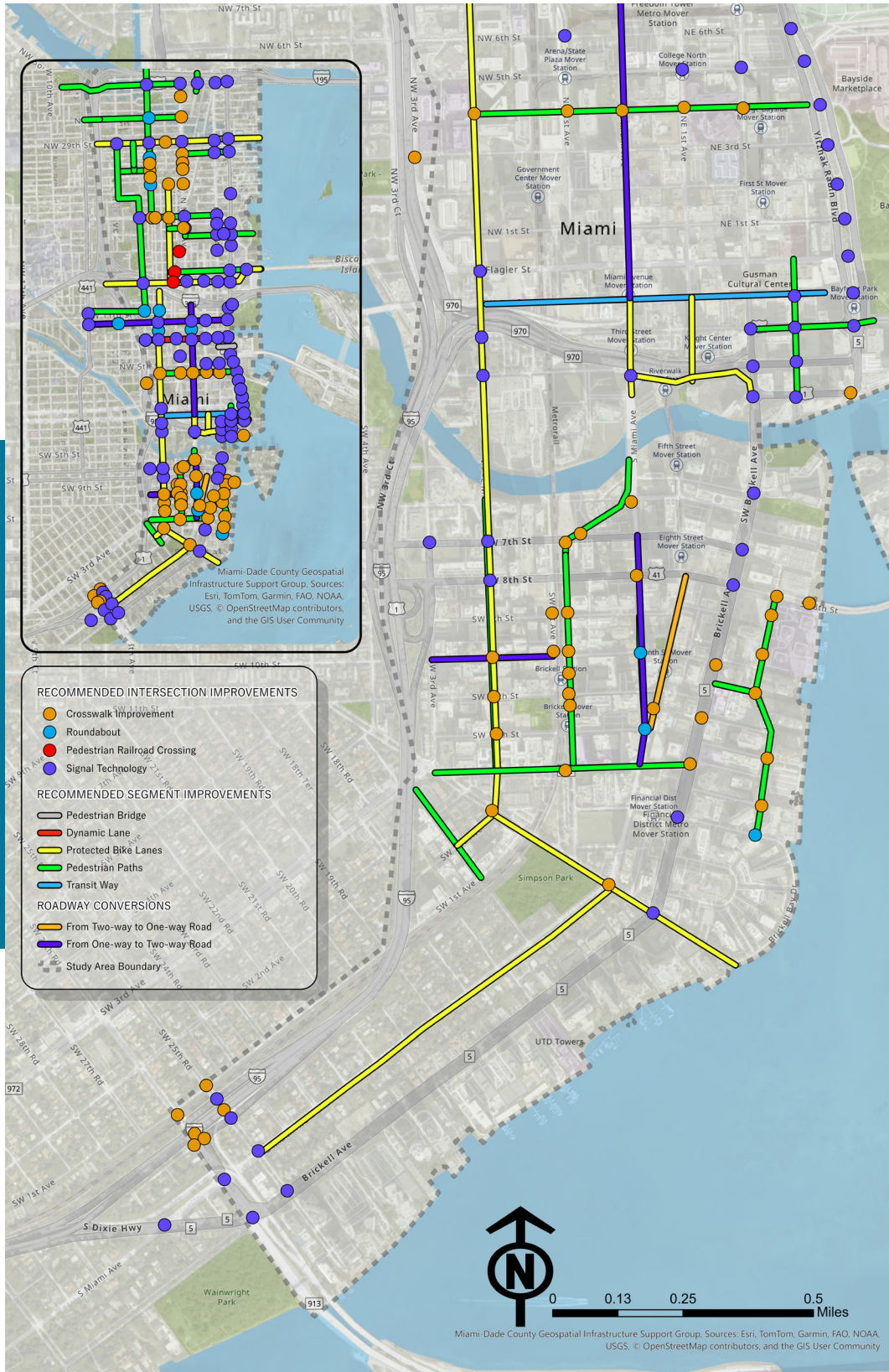
Miami-Dade County’s transportation and mobility initiatives reflect a comprehensive and adaptive approach to urban planning. By integrating stakeholder feedback, leveraging advanced technologies, and aligning with programmed efforts in local strategic plans, the update to the Miami Downtown Transportation Plan aims to create a transportation ecosystem that is safe, efficient, and inclusive.

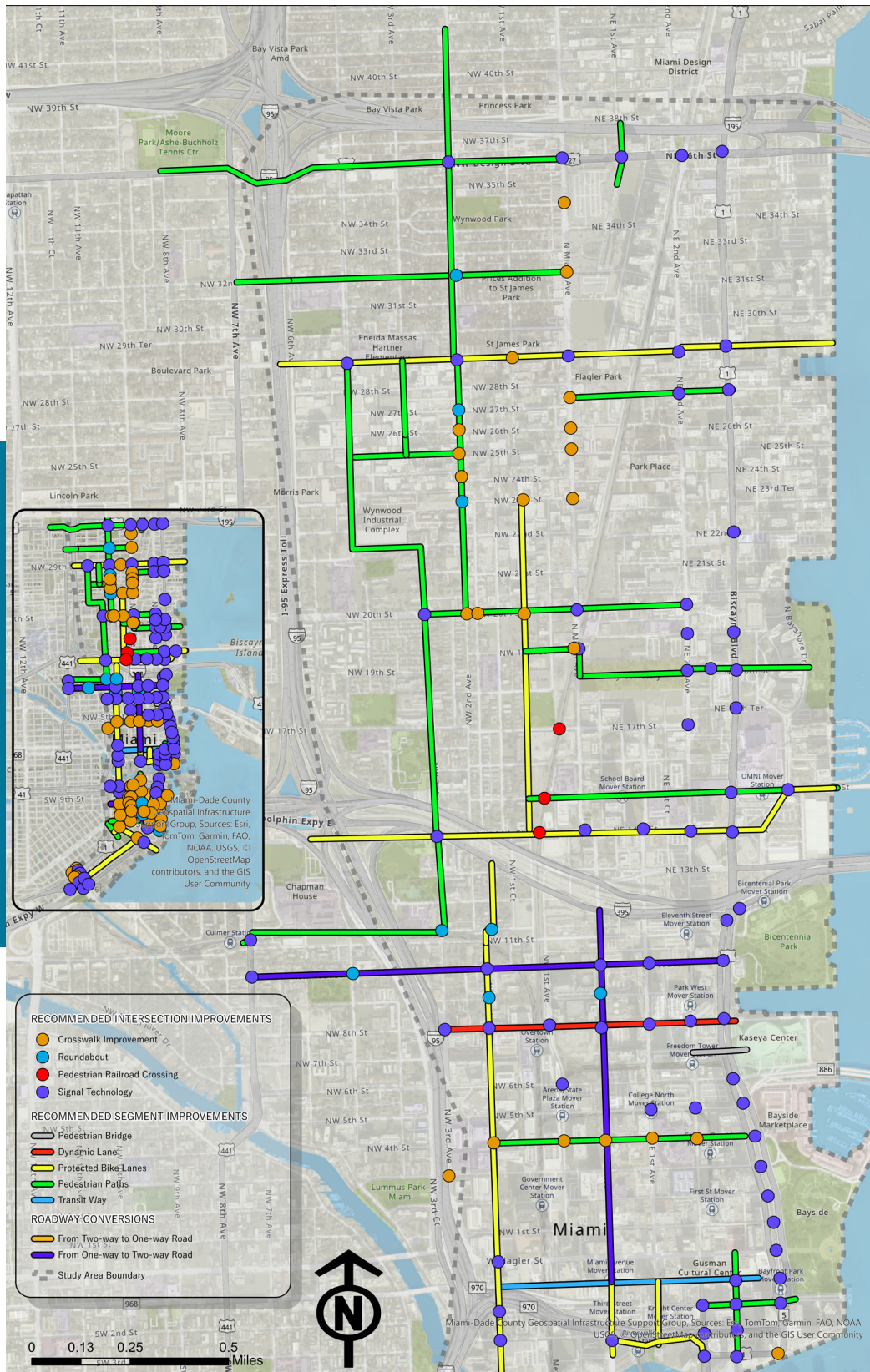
The emphasis on balancing immediate reforms with visionary projects ensures that Downtown Miami is well-equipped to meet current transportation challenges while paving the way for a sustainable and resilient future.

Through coordinated efforts among city, county, and state agencies and by embracing innovative solutions, Miami-Dade County is poised to build a world-class urban center that enhances the quality of life for all its residents and visitors. The following section provides the list of recommendations developed grouped by target improvement type:

- Pedestrian Safety Improvements
- Resilient and Adaptive Facilities
- Curbside Management
- Bicycle Network Recommends
- Transit
- Port, Bridge, and Railroads
- Traffic control for special events
- Roadway Recommendations





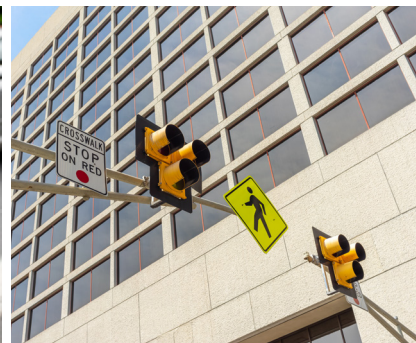


# Pedestrian Safety Improvements

## 1. ENHANCE SIDEWALKS AND CROSSWALKS ALONG KEY CORRIDORS

Improve pedestrian mobility by auditing sidewalks to remove physical barriers and upgrade crosswalks to reduce pedestrian-vehicle conflicts and create a safer, more accessible urban environment. Upgrades include:

- Raised Platforms and High Visibility Crosswalks
- Pedestrian Scrambles
- Curb Extensions
- Audio and Visual Alerts
- Advanced Signal Controllers-FDOT's Pedsafe System
- Smart Crosswalk Technology





## 2. RECONFIGURE BRICKELL BAY DRIVE'S PEDESTRIAN CROSSINGS

- Upgrade the SE 8 Street Crosswalk by converting the existing low-visibility crosswalk to a high-visibility crossing with automated pedestrian detection. Synchronize the crosswalk with the pedestrian crosswalk for the Miami River Greenway/Bay Walk Trail at the landing of Brickell Key Bridge.
- Relocate the Mid-Block high-visibility crosswalk so it functions more effectively, considering its proximity to the crosswalk at the intersection with SE 8 Street.
- Install a SE 14 Street high-visibility crosswalk to complete the safe crossing points along Brickell Bay Drive, north of SE 14 Street, and coordinate with improvements to Brickell Bay Drive being made south of SE 15 Street.

### 3. WAYFINDING

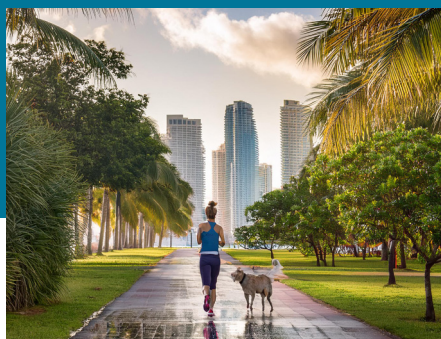
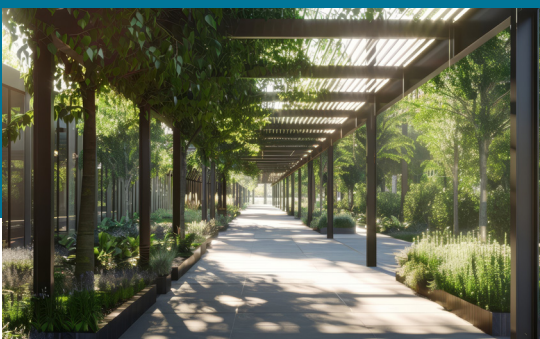
Design and implement a technology-driven, consistent wayfinding system around mobility hubs with supportive features throughout the city. Includes smart devices at significant venues, gathering sites, major generators, transit stations, and evacuation pick-up sites. Additional efforts, similar to The Underline, should be explored for implementation on columns supporting transportation infrastructure.



## 4. DEVELOP AN URBAN GREENWAY NETWORK

An urban greenway that travels through the study area and connects to existing and programmed bicycle and pedestrian amenities. The greenways feature shaded or covered multi-use paths and connect transit hubs, community facilities, major commercial areas, and employment centers. The greenways feature:

- Enhanced canopy or shade coverage (natural or man-made, covering or shading at least 60% of the path per block)
- Water stations and, when feasible, bathroom facilities
- Solar-powered furniture with charging points
- Dedicated emergency communication systems
- Bicycle repair amenities







## 5. VISION ZERO STRATEGIES STREETS

Transform specific roadways within the study area to prioritize non-vehicular activity, expand alternate modes of travel, and reduce car dependency by establishing vision zero strategies streets. Locations to pilot these roadways are:

- **Downtown Miami – North 4 Avenue**

Redesign NE 4 Avenue as the first vision zero strategies corridor, stretching from N Miami Avenue to west of Biscayne Boulevard. This corridor will feature enhanced crosswalks at every intersection to ensure safe and efficient pedestrian movement.

- **Wynwood – NW 25 Street**

Reconfigure NW 25 Street (linking NW 5 Avenue and NW 2 Avenue) and NW 3 Avenue (connecting NW 25 Street and NW 26 Street) to support a non-vehicular, vision zero strategies district. This redesign aims to create a vibrant, accessible urban environment.



- **Brickell– S. Miami Avenue**

In collaboration with the County, the City of Miami's South Miami Avenue segment, between SW 9 Street and SW 10 Street, to a roadway that favors pedestrians and cyclists. This can be achieved by implementing a complete two-way street design or by installing a vision zero strategies segment. Both options propose roundabouts at the intersection of SW 9 Street and SW 10 Street.

## 6. ADVANCED PEDESTRIAN SAFETY AMENITIES

Deploy an advanced audio-visual system and roadway design standards and strategies to improve pedestrian safety in high-traffic areas and standardize the roadways' featured elements near transit hubs and community facilities, particularly near those that offer direct public services (medical, recreational, educational, housing, etc.)

- Curb Extensions at crosswalks
- High Visibility Crosswalks
- Touch-Free/Auto-Detection Warning Signage
- Options for Extended Crossing Time
- Integrated Audio and Visual Alerts
- Lighting





## 7. REDEVELOPMENT OF PUBLIC PROPERTY

As aging public buildings and properties are redeveloped, new construction should be modernized to incorporate amenities that enhance the use of outdoor public areas. The installation

of fans, canopies, and shade structures projected over sidewalks, right-of-way areas, or incorporated in open spaces expands the opportunity for their use. New public development should also feature advanced roadway design elements, as well as amenities or connections to the greenway and existing active mobility network.



## 8. COVERED PEDESTRIAN NETWORK

A network of sky bridges connecting buildings, along with covered paths or walking tunnels, and integrated mobility in new public development can be developed to provide weather-protected routes within the study area. These connections can be expanded by incentivizing private development to create links connecting to mass transit systems and other mobility networks. Additionally, transit-oriented development can be designed so that mass

transit stations are built into building architecture (similar to MiamiCentral).

The area's roadway managing agencies should explore the installation of *pedestrian tunnels* within a ¼-mile of transit stations in the study area to create a covered 15-minute pedestrian path from transit stations to major employment, community centers, or community facilities. These tunnels may be developed using natural landscape materials or manufactured structures.



## Urban Development

### 1. PARKING ANALYSIS FOR MIAMI21 ZONING CODE

A parking study to assess the demand and need for space-per-use parking ratio defined in the City's land development ordinance, with the goal to balance automobile use and encourage alternative transportation modes (biking, walking, and public transit) without imposing undue burdens on those who may need or want to maintain a car. Key parking strategies include:

- Implementing parking design standards that support pedestrian-friendly environments and enhance the public realm;
- Requiring non-residential uses on the ground floor of mixed-use buildings to activate street life while allowing for additional floors above to increase density functionality; and
- Eliminating parking minimum requirements in favor of off-street parking maximum standards in zoning ordinances, thereby establishing upper limits on parking spaces to control land use, reduce parking lot sizes, and minimize impervious surfaces.



## 2. HOUSING FOR ESSENTIAL EMPLOYEES

Housing for essential workers—such as employees of Miami-Dade County Public Schools and Jackson Memorial Health System—can be expanded through combination with the Transit-oriented development (TOD) initiative and can be extended to serve workers from Jackson Memorial Health System, municipal police, and firefighters, DTPW, the Port, and other critical facilities. In addition, direct express transit routes linking TODs should be developed to create a seamless, connected network.



### 3. CURB MANAGEMENT

Develop a curb management plan to create a standard for curb spaces based on their intended use. Curb management plan development requires critical public input to identify the ends of the curb space by context and establish their intended uses.

- Pilot automated Curb enforcement, like video cameras equipped with artificial intelligence. To enforce and issue fees for violations, the City or managing agency will need to pass policy-adopting procedures. This approach replaces human enforcement with technology that provides consistent, efficient enforcement and does not use resources like police valuable time.
- Construction management and curbs: The City of Miami, FDOT District 6, and the County should collaborate to centralize and maintain an online platform that enables residents to track ongoing construction projects, road closures, and their impact on pedestrian pathways and bicycle lanes in real-time.
- With broader curb management policies, businesses should also explore micro-delivery systems to address challenges posed by smaller delivery trucks and Transportation Network Companies (TNCs), which often encroach on right-of-way areas in Downtown and the Brickell Business District. An analysis of the current micro-delivery pilot program is recommended before further expansion. Establishing centralized distribution facilities to serve a 1-2 mile radius can enable deliveries by bicycles or cargo bikes capable of hauling 500 to 1,000 pounds of freight, and privatizing micro-delivery equipment management (using models like Batteries as a Service (BaaS)) may improve regulation, maintenance, and operational efficiency.
- Integrated mobility can be expanded by installing CitiBike stations in Downtown and Brickell, with a focus on locations near transit hubs to enhance last-mile connectivity. To preserve the limited public right-of-way, installing bike-sharing stations on private property is advisable.





## Infrastructure Hardening

### 1. CANOPY TREES

The specimen trees with large shade and canopy covers should be prioritized over palms to improve overall tree canopy coverage. The minimum height requirement should be 16 feet, with newly planted trees at least 12 feet

tall, while considering increasing the minimum height for extra-large trees to 18 feet. Utilize Silva cell technology to encourage healthy tree growth and facilitate extensive canopy development in urban areas with limited soil. Prioritize tree planting efforts in Overtown, Wynwood, Midtown, and Edgewater



### 2.

Integrating green and gray infrastructure is essential to building resilient, sustainable, and functional urban spaces. By combining trees, plantings, and natural elements with stormwater management systems, the City can increase the coverage and quality of green areas, thereby enhancing environmental benefits and urban livability.

### 3.

Expanding electric vehicle (EV) infrastructure in the study area is another priority. Increasing the number of EV charging stations in parking garages and transit hubs will encourage the use of EVs over traditional cars.

## Bicycle

### 1. BIKE-FRIENDLY STREETScape IMPROVEMENTS

- Use cycle ways to provide key connection segments.
  - Implement road diets on three-lane east-west streets (e.g., SW 13 Street) and remove a parallel parking lane on SW 15 Road to create a bi-directional cycle track connecting to Brickell Bay Drive.
  - Bike lanes on NW/SW 6 Street and N Miami Ave into two-way cycle tracks, separated from traffic using vertical elements or on-street parking.
- Shared-Use Pathways: Modify lanes on NE 1 Avenue and N 5 Street to establish shared-use pathways for cyclists and pedestrians. Advanced bicycle signals, staging bike boxes, and clear signage will help reduce vehicle conflicts at intersections. Consider positioning cycle tracks on the left side of one-way streets to eliminate bus/bike conflicts and simplify intersections. A minimum width of 8 feet for two-way cycle tracks is required to ensure sufficient space for safe cycling.



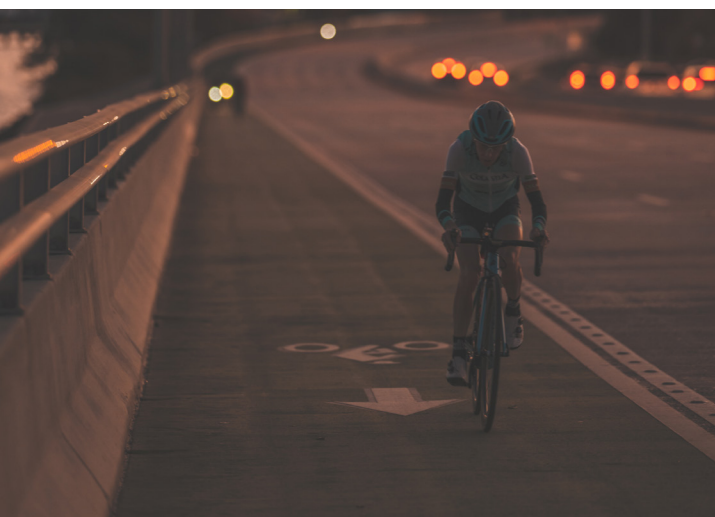


## 2. ENHANCING BIKE AMENITIES

- Install amenities such as air pumps, repair stations, and communication kiosks along the active mobility network or trails, as well as multi-use paths and transit hubs.
- ADA-compliant micromobility accommodations. Lighting along multiuse trails and shared paths—especially in parks and on streets with reduced visibility during fall evenings or time changes—is recommended. Use illuminated or reflective materials in roadways to ensure that bike lanes are well-lit for safer nighttime travel. This program can be piloted on bicycle facilities or shared paths near

schools along The Underline or NE 1 Avenue.

- Counters should be placed at intersections to collect data for future equipment installations or to secure public funding for program expansion.
- Bike-specific traffic signals or Bike Leading Intervals with dedicated phases for cyclists at key intersections can significantly enhance cyclist and vehicular safety. DTPW's TS&S Division should evaluate incorporating bicycle detection systems that enable traffic signals to respond dynamically to cyclists, thereby improving traffic flow and efficiency in high-ridership areas and intersections with heavy pedestrian and vehicle traffic.

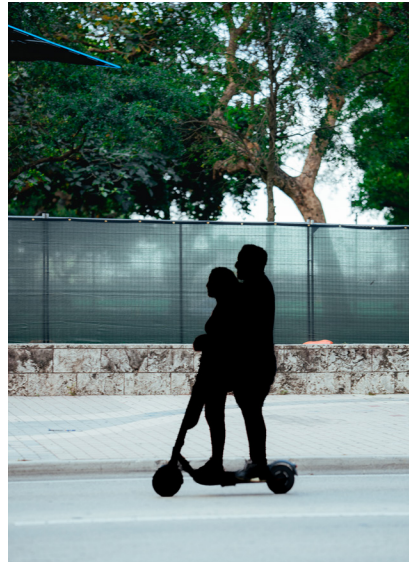




### 3. PROTECTED BICYCLE LANES

Install protected bike lanes on key routes using vertical demarcations to create clear physical separation. This is critical on high-speed roads—such as the MacArthur Causeway—where vehicles often exceed 50 mph, and mixing cyclists with traffic above 20 mph without separation presents significant safety risks.





#### 4. MICROMOBILITY SAFETY EDUCATION

Implement school-based campaigns to promote micromobility safety, focusing on high-traffic areas and dangerous intersections for K–12 students. These programs should teach safe practices for biking and e-scooter use, foster a culture of safety from an early age, and provide valuable information for parents.





### 5. GEOFENCING AND SIDEWALK DETECTION

Implement geofencing to regulate bikes and micromobility devices on sidewalks, reducing conflicts with pedestrians. Enhance monitoring and enforcement using IoT-enabled vehicles (e.g., e-scooters and e-bikes) and install detection equipment on public utilities or traffic mast arms.

## Public Transportation

### 1. TRANSIT FARE REDUCTION AND REGIONAL CONNECTIVITY

Explore alternative fare reduction initiatives—such as lower rail fares or designated no-fare days for Metrobus—to enhance transit accessibility for residents and employees and the study area. Introduce lower fares for rail transportation or designate no-fare days to promote regional connectivity. For Metrobus routes to promote regional connectivity and encourage increased transit use



### 2. TRANSIT STATION AND VEHICLE MODERNIZATION

Maintain transit stations and modernized vehicles to ensure they are clean and fully operational, with functional elevators, escalators, and restrooms. Enhance the aesthetics of transit spaces by incorporating local art and implementing a transit ambassador program to assist and guide passengers.

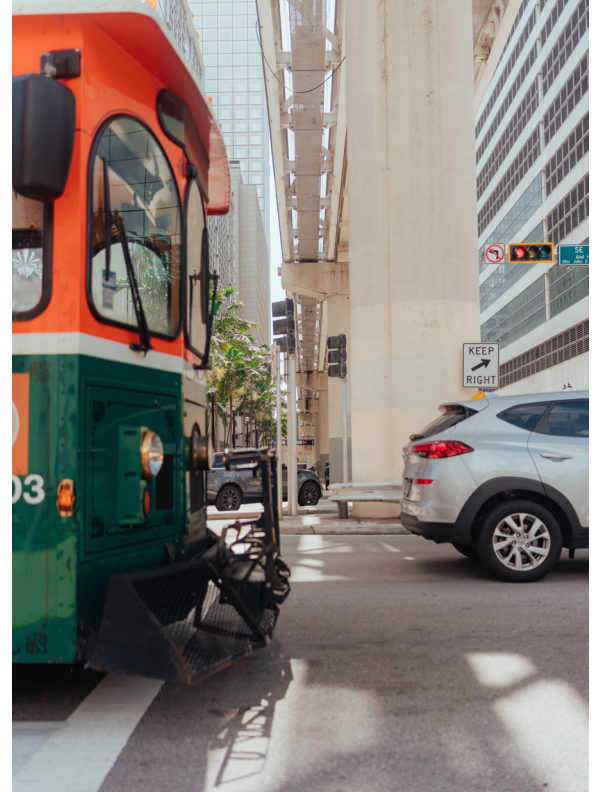


### 3. BICYCLE STORAGE ON TRANSIT VEHICLES

Equip fleet vehicles, buses, and trolleys with bicycle storage that accommodates at least five bicycles per vehicle. Align trolley routes to connect significant employment centers and transit stations along corridors such as Biscayne Boulevard, Brickell Avenue, and Coral Way.

### 4. TROLLEY TRANSIT ROUTE ALIGNMENT

Align trolley transit routes to connect significant employment centers and transit stations in the Downtown area, including corridors along Biscayne Boulevard, Brickell Avenue, and Coral Way.



### 5. TRANSIT SAFETY AND BICYCLE ACCESS ENHANCEMENTS

Improve mode integration near transit hubs by:

- Installing safety features such as rumble strips along bike lanes within ¼ mile of transit stations.
- Adding bike runnels on station stairs at Metrorail and Metromover stations with elevated platforms.
- Upgrading bicycle storage at mass transit stations (including charging options, enhanced security, and adaptable spaces).
- Introducing adaptive micromobility devices at transit stations to support users of all ages and abilities.



### 6. TRANSIT SIGNAL PRIORITY (TSP)

Implement TSP on key corridors (e.g., NE 1 Avenue, NE 2 Avenue, US-1/Brickell Avenue, US-1/Biscayne Boulevard) to reduce bus travel times, improve efficiency, and alleviate congestion by shortening red lights or extending green lights by 5–15 seconds. Consider both conditional and always-on configurations, ensuring bus stops are positioned on the far side of intersections.

## 7. TRANSIT GREENWAYS AND METROMOVER EXPANSION

Establish a viable east-west transit system by converting the dedicated bus lane on SW 1 Street into a transit greenway that connects civic, commercial, and entertainment districts. Expand the Metromover system to improve connections with surrounding neighborhoods (particularly Wynwood and Edgewater) and consider pilot programs such as a micro-autonomous shuttle linking key transit stations.



## 8. TECHNOLOGY INTEGRATION AND MOBILITY-AS-A-SERVICE (MAAS)

Upgrade the GO Miami-Dade Transit Mobile App to integrate a full range of transportation options, including MetroConnect, local trolley services, paratransit, and private services like CitiBike and Brightline. Expand the app to include car rentals and other Transportation-as-a-Service (TaaS) options; integrate FDOT's 511 or "Bridge the Gap" program, provide real-time weather updates, and enable user feedback and data sharing via QR codes at transit stops—prioritizing high-traffic and remote locations. Explore water travel as part of services.



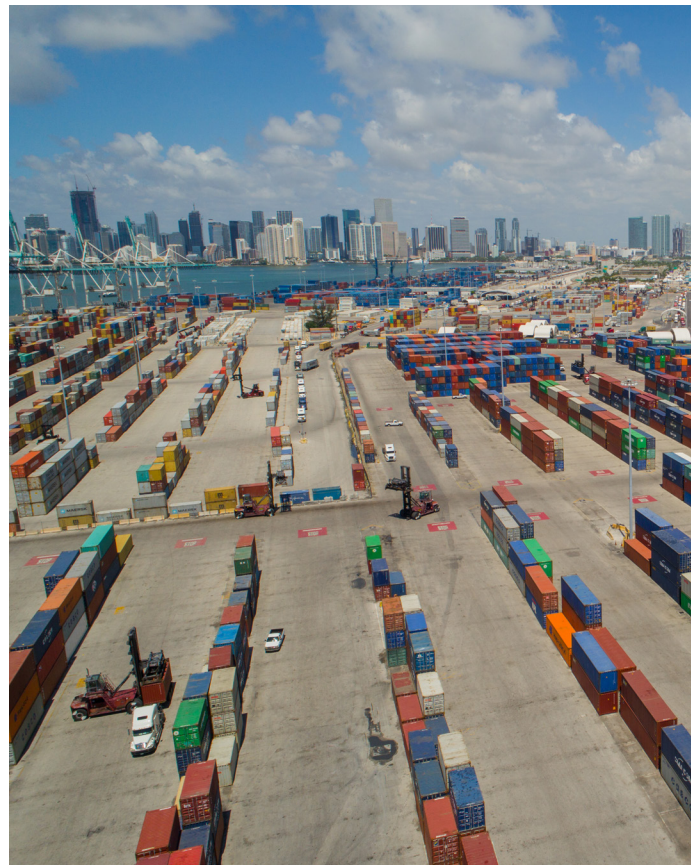
## Freight

### 1. PORTMIAMI OPTIMIZATION

Implement advanced software to optimize freight routing and delivery efficiency at PortMiami and explore innovative warehousing systems and inventory management tools. Consider using delivery drones, autonomous vehicles, and integrated electric vertical take-off and landing options—including establishing an air corridor from Miami International Airport to PortMiami—to expedite freight and cruise passenger movement.

### 2. INTERMODAL FREIGHT RAIL ENHANCEMENT

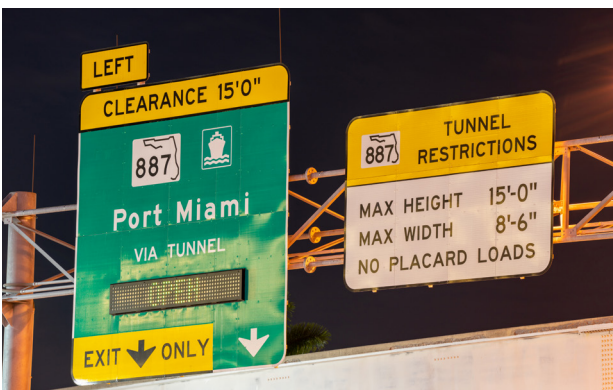
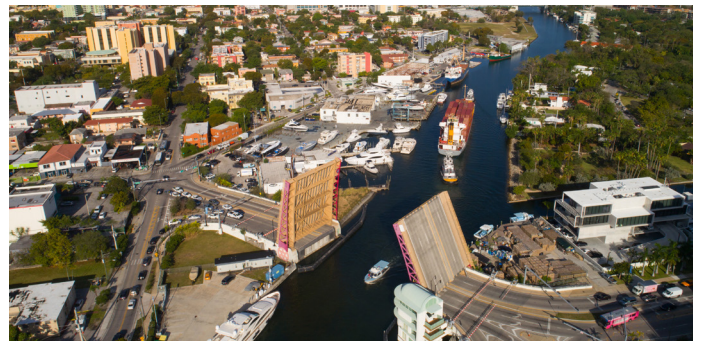
Enhance on-dock rail operations (such as double-stack container trains) at PortMiami to reduce cargo delivery times and lower carbon emissions. A public workshop in collaboration with FDOT District 6 and Florida East Coast Railway to address coordination challenges regarding modifications near rail lines is recommended.





### 3. PREDICTIVE TECHNOLOGY FOR BRIDGES AND TRAFFIC FLOW

Explore and adopt predictive technology for bridge closure alerts and coordinate traffic signals to implement a "green wave" traffic light coordination immediately after bridge openings to reduce congestion. Strengthen enforcement for pedestrian violations through automated citation systems and integrate FDOT's real-time traffic notification systems for seamless coordination. Work with DTPW's TS&S Division to replace and modernize traffic signals to allow this function at all traffic signals, which are used at 3- 4 intersections in each direction.

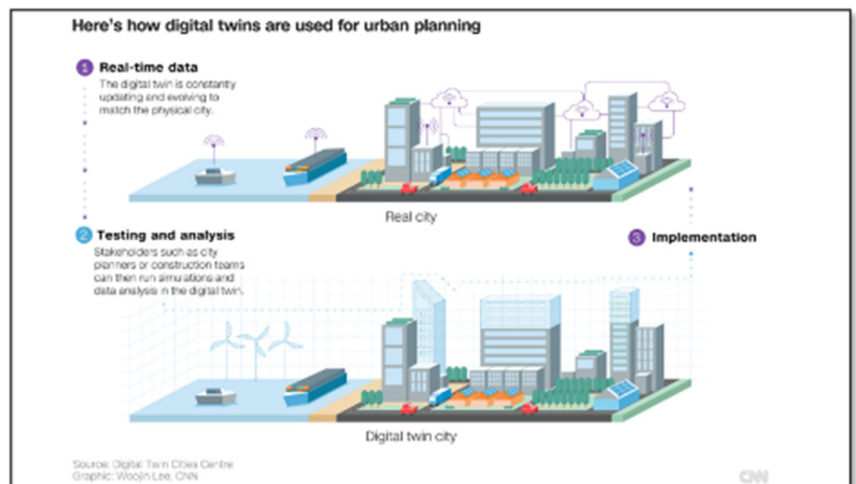


### 4. FREIGHT TUNNEL AND DEDICATED FREIGHT CORRIDOR

The tunnel has transformed freight transport in the area. However, since the tunnel cannot accommodate all cargo types, truck and traffic delays still occur. Dynamic signage to reroute freight and vehicular traffic when the tunnel is closed or near capacity can be installed, leading to mitigating congestion. Explore establishing a dedicated freight corridor connecting to I 95 via NE/NW 5 Street and NE/NW 6 Street. Use freight signal priority technology to improve truck movement efficiency while enhancing rail utilization.

### 5. DIGITAL TWIN CITY TECHNOLOGY

Acquire digital twin city software to simulate proposed projects and new technologies, allowing assessment of real-time impacts before implementation. Expand digital twin applications beyond traffic management to include health, social, and urban planning analyses.

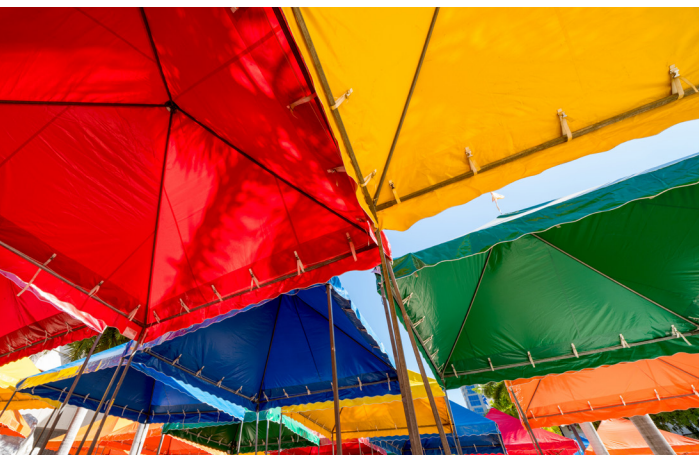




## Traffic Congestion Management and Special Events

### 1. TRAFFIC CONTROL FOR SPECIAL EVENTS

Implement Transportation Systems Management and Operations (TSM&O) strategies during large Downtown events to manage vehicular traffic. Utilize FDOT's SunGuide Software, expand V2X data platforms, and explore time-of-day tolling or dynamic pricing at key highway off-ramps (e.g., Exit 2A I 95, Exit 2C I 95, Exit 2B to NW 2 Avenue on I 395, and Exit 2 to FL A1A on I 395) to discourage single-occupancy vehicles. Use collected toll funds to support expanded transit services during events.



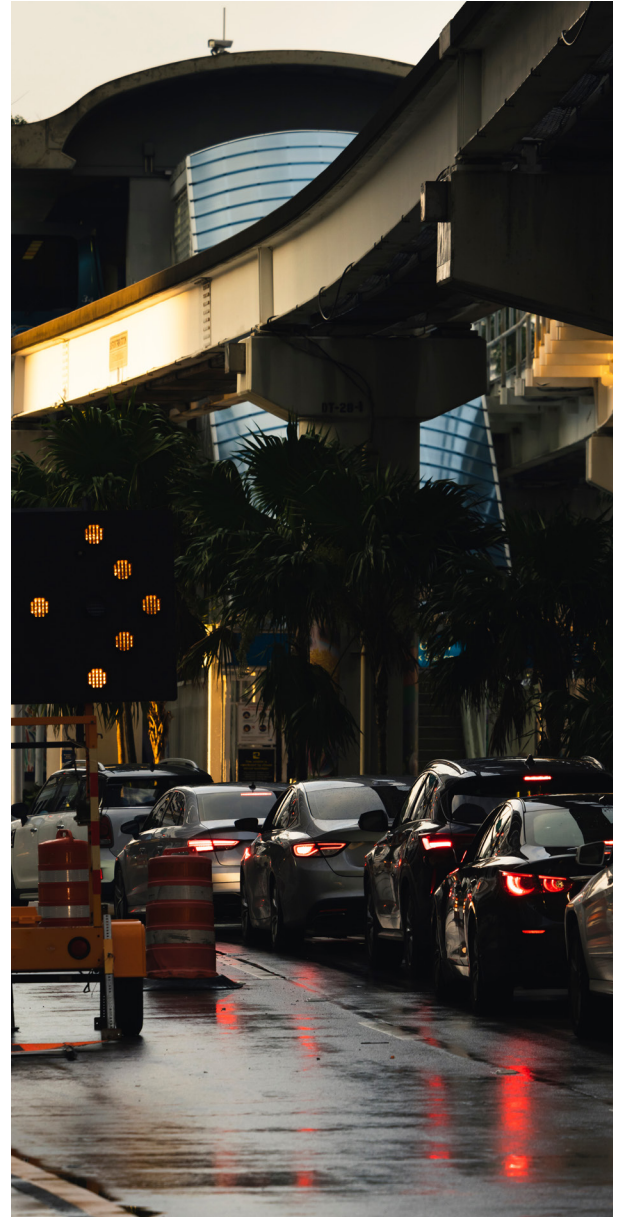
### 2. REAL-TIME PARKING GUIDANCE SYSTEM

Integrate MPA-managed parking data into FDOT's SunGuide system, the GO Miami-Dade Transit App, and the MetroConnect mobile application. Deploy dynamic messaging signs on I 95 and I 195 to direct drivers to available parking in Downtown.



### 3. TRANSIT FARE BUNDLING AND BICYCLE VALET SERVICES

Encourage high-capacity venues (e.g., Kaseya Center, Bayfront Park, Museum Park) to bundle transit fares with event ticket pricing. Expand group fare discount initiatives to include mass transit passes and implement bicycle valet services and bike-share docking facilities at major event venues.



### 4. DYNAMIC LANE MANAGEMENT FOR SPECIAL EVENTS

Convert NE 8 Street (between NW 3 Avenue and Biscayne Boulevard) into a dynamic lane that allows temporary one-way traffic flow for efficient event dispersal. Equip traffic signals with adaptive technology for real-time lane reconfiguration, piloting the system initially with police-controlled barriers and signage before transitioning to automated solutions.

## Roadway Improvements

### 1. ROADWAY CONDITION AND INTERSECTION SAFETY IMPROVEMENTS

Enhance lane visibility and road conditions through improved striping and regular maintenance. Combined with deploying AI-equipped government vehicles to detect roadway cracks, use autonomous street sweepers for cleanliness, and upgrade lane markings with durable, reflective materials, raised pavement markers, and solar-powered studs for enhanced nighttime visibility.

### 2. IMPROVED PEDESTRIAN SAFETY

Implement a No Turn on Red policy at intersections throughout the urban core.



### 3. NOISE ENFORCEMENT

Install noise-detecting cameras with automated ticketing systems to enforce noise limits. These measures should focus on high-priority areas such as Biscayne Boulevard (between NE 8 Street and NE 11 Street) and the Park West neighborhood near Museum Park and Kaseya Center.



#### 4. MODERNIZED TRAFFIC SIGNAL SYSTEMS

Upgrade traffic signals using detection-based systems and adaptive signal control to adjust in real-time based on traffic flow. Implement shorter cycle lengths (approximately 60 seconds) for smoother movement, as recommended by DTPW TS&S analyses.

#### 5. SOLAR-POWERED TRAFFIC SIGNALS

Replace frequently failing traffic signals with solar-powered systems that include backup battery storage. Prioritize high-outage locations such as Flagler Street and NW 2 Avenue, as well as complex intersections like NE 2 Avenue with NE 36 Street and Biscayne Boulevard/NE 36 Street.





## 6. MIAMI RIVER TUNNEL PROPOSAL

Explore constructing a vehicular tunnel under the Miami River to alleviate Brickell Bridge congestion, coordinating tunnel planning with the Hyatt Regency redevelopment to minimize disruption.

## 7. ONE-WAY AND TWO-WAY ROAD CONVERSIONS

Improve traffic flow by converting selected roadways as follows:

- a) Convert Miami Avenue (SW 13 Street to SW 8 Street) to one-way.
- b) Convert N. Miami Avenue (South 1 Street to I 395) to two-way.
- c) Convert SW 10 Street (I 95 to SW 1 Avenue) to two-way.
- d) Convert S. Miami Avenue (SW 12 Street to Miami River) to two-way.
- e) Convert NW 10 Street (NW 7 Avenue to Biscayne Boulevard) to two-way.

## 8. "DON'T BLOCK THE BOX" ENFORCEMENT

Enforce "Don't Block the Box" measures at congested intersections—using high-visibility markings, fines, and signage—to prevent gridlock at key intersections such as SE 1 Avenue and SE 7 Street and Brickell Avenue and SE 5 Street.



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