

IMPACT OF **PORTAINING TUNNEL** ON DOWNTOWN TRAFFIC CONGESTION





Impact of PortMiami Tunnel on Downtown Traffic Congestion

Prepared for:



Miami-Dade County Metropolitan Planning Organization (Miami-Dade MPO)

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INTRODUCTION

Truck traffic has been reduced significantly in Downtown Miami with the opening of the PortMiami Tunnel in August 2014. However, PortMiami forecasted growth, for both freight and cruise passengers, and Downtown development is expected to increase Downtown truck traffic significantly by 2035. The on-street loading activities associated with new Downtown development exacerbate existing congestion in Downtown Miami. Transportation improvements must be examined from a multimodal perspective as right-of-way is limited and vacant property is selling at a premium in the area.

Major development projects approved but not yet constructed such as Miami Worldcenter, All Aboard Florida – Miami Station, and Bayside Skyrise will further impact the existing Downtown multimodal transportation network. The existing roadway network does not adequately support current conditions, approved planned projects, or future development potential of the Downtown area. Accommodating Downtown Miami's recent growth and properly preparing for additional projected commercial and residential growth are all elements of the economic health and vitality of Miami that need to be addressed.

The purpose of this study was to evaluate multimodal congestion of vehicles, service and deliveries, and freight as well as develop Downtown congestion improvement scenarios. This report examines existing and future year 2035 traffic conditions, identifies constrained locations and congestion deficiencies in Downtown Miami, and proposes specific improvements to accommodate existing and future development and forecasted freight growth.



Location Map of Downtown Miami Study Area

DATA COLLECTION AND ANALYSIS

The data collection and analysis task consisted of the following subtasks.

- Traffic data gathering and collection
- Existing year 2015 traffic volume development and analysis
- Future year 2035 traffic volume development and analysis

Traffic Data Gathering and Collection

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Intersection turning movement traffic data was gathered from previously prepared studies within the past three (3) years from 2013 through 2015. Traffic data was gathered from the following studies:

- City of Miami's Downtown Miami Transportation Analysis
- All Aboard Florida Miami Station
- Miami Worldcenter

New intersection turning movement data was collected for this study at a total of 13 intersections during the A.M. (7:30 to 9:30 A.M.) and P.M. (4:00 to 6:00 P.M.) peak periods. Based on characteristics of the general area as well as input from City of Miami Transportation Staff, it was determined that the A.M. peak period occurs at a later time period than the traditional 7:00 to 9:00 A.M. peak period. Therefore, turning movement counts for the A.M. peak period were collected from 7:30 A.M. to 9:30 A.M. Eight (8) of the count locations were previously collected prior to the opening of the PortMiami Tunnel. New counts were collected at these intersections and compared to the previous counts to determine if the opening of the PortMiami Tunnel increased or decreased the percentage of trucks within the downtown area. The intersections included:

- 1. NE 10th Street and NE 2nd Avenue
- 2. NE 8th Street and NE 2nd Avenue
- 3. NW 6th Street and NW 2nd Avenue
- 4. NE 8th Street and NE 1st Avenue
- 5. NE 6th Street and NE 1st Avenue
- 6. North Miami Avenue and NE/NW 6th Street
- 7. NW 2nd Avenue and NW 5th Street
- 8. North Miami Avenue and NE/NW 5th Street

Additional intersection data was collected at intersections that serve as a gateway for Downtown Miami. These intersections include:

1. NW 8th Street and NW 3rd Court



- 2. NW 6th Street and NW 3rd Court
- 3. NW 6th Street and NW 3rd Avenue
- 4. NW 5th Street and NW 3rd Court
- 5. NW 3rd Street and NW 3rd Court

A total of 111 intersections were analyzed during the A.M. and P.M. peak hours. Traffic count data is provided in Appendix A.



Downtown Miami Study Area Intersections

Existing Year 2015 Traffic Volumes

Gathered Intersection Turning Movement Counts

An area-wide growth rate was developed based on forecasts from the Southeast Florida Regional Planning Model (SERPM) for intersection turning movement counts gathered from previous studies. Traffic volumes were compared from 2005 to 2035 SERPM networks and an annual growth rate was determined for the study area. A 1.86 percent (1.86%) annual growth rate was applied to the gathered turning movement counts collected in 2013 and 2014, to estimate 2015 volumes based on this analysis. SERPM model volume plots and growth trend calculations are included in Appendix B. As peak season peak hour volumes were obtained from previous studies, a peak season conversion factor (PSCF) was not applied again. Intersection volume development worksheets are contained in Appendix C.

Collected Intersection Turning Movement Counts

A Florida Department of Transportation (FDOT) PSCF was applied to new traffic counts collected for this study to adjust the counts to peak season volumes. The appropriate PSCF for the weeks when the traffic counts were collected is 0.99. However, to provide a conservative analysis, a conversion factor of 1.00 was used. The FDOT PSCF category report is included in Appendix A.

Downtown Truck Percentages

As per the City of Miami's Downtown Miami Transportation Network Analysis, a heavy vehicle percentage of 5.0 percent (5.0%) was applied to the Downtown roadway network. Several corridors with heavy vehicle percentages greater than 5.0 percent (5.0%) include:

- NE/NW 5th Street 6.0 percent (6.0%) heavy vehicles factor
- NE/NW 6th Street 8.0 percent (8.0%) heavy vehicles factor
- NE 2nd Avenue 7.0 percent (7.0%) heavy vehicles factor

Please note that these truck percentages reflect conditions prior to the opening of the PortMiami Tunnel. Based on data collected after the PortMiami Tunnel was opened the following truck percentages are noted on the following corridors:



- NE/NW 5th Street 3.0 percent (3.0%) heavy vehicles factor
- NE/NW 6th Street 4.0 percent (4.0%) heavy vehicles factor
- NE 2nd Avenue 2.0 percent (2.0%) heavy vehicles factor

After the opening of the PortMiami Tunnel, truck percentages decreased on each of the identified heavy vehicle percentage corridors. Detailed calculations are included in Appendix A.

FDOT Tunnel Analysis

FDOT conducted traffic count analyses for the PortMiami Tunnel dated November 2014 and January 2015. The analyses examined truck percentages on Port Boulevard before and after the opening of the tunnel. The analyses determined that the overall weekly traffic volume on Port Boulevard east of Biscayne Boulevard was reduced by 35 percent, while the average weekly truck volume on Port Boulevard west of Biscayne Boulevard was reduced by 77 percent. The FDOT analyses are contained in Appendix A.



FDOT PortMiami Traffic Data Collection

Future Year 2035 Traffic Volumes

The area-wide growth rate previously developed to establish 2015 existing conditions was also applied to 2015 volumes to develop 2035 volumes. The growth rate was based on comparing 2005 and 2035 forecasts from the SERPM. A 1.86 percent (1.86%) annual growth rate was applied to estimate 2035 volumes. Growth rate calculations are provided in Appendix B.

The 2035 conditions also account for several committed developments in Downtown Miami. This analysis accounts for committed developments and improvement projects including the following:

- All Aboard Florida Miami Station
- Miami Worldcenter and Associated Street Closures
- Miami River Development SAP
- I-395 Reconstruction
- Children's Courthouse
- Brickell CitiCentre/Brickell CitiCentre North 2
- Miami Science Museum
- Element
- 700 Biscayne Boulevard
- 800 Biscayne Boulevard
- 1400 Biscayne Boulevard
- 1700 Biscayne Boulevard
- Riverside Tower
- The Chelsea

Intersection volume development worksheets are contained in Appendix C.

EVALUATION OF CONGESTION DEFICIENCIES

The existing and future year operating conditions for the study intersections were analyzed using Trafficware's *SYNCHRO 8.0* software, which applies methodologies outlined in the Transportation Research Board's (TRB's) *Highway Capacity Manual* (HCM), 2000/2010 Edition. Synchro worksheets for the study intersections are included in Appendix D. A summary of the intersection level of service (LOS) analyses are shown in Figures 1 through 6 for existing and future total peak hour conditions. The purpose of the analysis was to assist in identifying constrained areas within Downtown Miami. The results of the analysis were used in the field review as a guide to constrained locations in Downtown Miami.

Existing Conditions

Figures 1 and 2 illustrate LOS for the study intersections under existing conditions. The following signalized intersections are expected to operate at LOS F during the A.M. and/or P.M. peak hours:

A.M. Peak Hour

- N Miami Avenue and N 2nd Street
- W 2nd Avenue and W Flagler Street
- SE 1st Avenue and SE 1st Street
- SE 2nd Avenue and SE 2nd Street
- SE 3rd Avenue and SE 2nd Street
- NE 2nd Avenue and NE 2nd Street
- SE 1st Avenue and SE 2nd Street
- N Miami Avenue and N 5th Street
- NE 1st Avenue and NE 10th Street
- NE 2nd Avenue and NE 11th Street
- NE 2nd Avenue and NE 5th Street

P.M. Peak Hour

- N Miami Avenue and N 1st Street
- NE 2nd Avenue and NE 1st Street
- S Miami Avenue and S 2nd Street
- NE 1st Avenue and NE 5th Street
- NE 1st Avenue and NE 8th Street
- NW 3rd Court and NW 6th Street
- W 2nd Avenue and W Flagler Street
- SE 1st Avenue and SE 1st Street
- SE 2nd Avenue and SE 2nd Street
- SE 3rd Avenue and SE 2nd Street
- SE 1st Avenue and SE 2nd Street
- N Miami Avenue and N 5th Street
- NE 1st Avenue and NE 10th Street
- NE 2nd Avenue and NE 11th Street

Future Year 2035 Conditions

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Figures 3 and 4 illustrate LOS for the study intersections under future year 2035 conditions. The following signalized intersections are expected to operate at LOS E or better under existing conditions but are expected to operate at LOS F during the A.M. and/or P.M. peak hours under future year 2035 conditions:

A.M. Peak Hour

- NW 1st Court and NW 8th Street
- NW 1st Avenue and NW 8th Street
- NW 1st Avenue and NW 6th Street
- N Miami Avenue and N 9th Street
- S Miami Avenue and S 2nd Street
- SW 2nd Avenue and SW 1st Street
- NE 1st Avenue and NE 5th Street
- NE 1st Avenue and NE 2nd Street
- NE 2nd Avenue and NE 1st Street
- SE 2nd Avenue and SE 3rd Street
- SE 3rd Avenue and SE 3rd Street
- Biscayne Boulevard and NE 11th Street
- Biscayne Boulevard and NE 7th Street

P.M. Peak Hour

- NW 3rd Avenue and NW 8th Street
- NW 2nd Avenue and NW 8th Street
- NW 2nd Avenue and NW 6th Street
- NW 2nd Avenue and NW 5th Street
- NW 2nd Avenue and NW 4th Street
- NW 1st Court and NW 8th Street
- NW 1st Court and NW 6th Street
- NW 1st Avenue and NW 8th Street
- N Miami Avenue and N 9th Street
- N Miami Avenue and N 8th Street
- S Miami Avenue and S 2nd Street
- NE 1st Avenue and NE 11th Street
- NE 1st Avenue and NE 6th Street
- NE 2nd Avenue and NE 15th Street
- NE 2nd Avenue and NE 14th Street
- NE 2nd Avenue and NE 10th Street
- NE 2nd Avenue and NE 8th Street
- NE 2nd Avenue and NE 3rd Street
- NE 2nd Avenue and NE 2nd Street
- SE 1st Avenue and SE 2nd Street
- SW 2nd Avenue and SW 1st Street
- Biscayne Boulevard and NE 15th Street
- Biscayne Boulevard and NE 14th Street
- Biscayne Boulevard and NE 11th Street
- Biscayne Boulevard and NE 10th Street
- Biscayne Boulevard and SE 1st Street

Future Year 2035 Optimized Conditions

Figures 5 and 6 illustrate LOS for the study intersections under future year 2035 optimized conditions. The following signalized intersections are expected to operate at LOS F under future year 2035 conditions, however, signal timing optimization is expected to improve the operating conditions at these intersections to LOS E or better:

A.M. Peak Hour

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- NE 1st Avenue and NE 10th Street
- SE 2nd Avenue and SE 3rd Street
- SE 3rd Avenue and SE 3rd Street

P.M. Peak Hour

- NW 3rd Court and NW 8th Street
- NW 2nd Avenue and NW 5th Street
- SW 2nd Avenue and SW 1st Street
- NE 2nd Avenue and NE 10th Street
- N Miami Avenue and N 8th Street
- Biscayne Boulevard and SE 1st Street





Figure 1 - Downtown 2015 AM Intersection Level of Service



Figure 2 - Downtown 2015 PM Intersection Level of Service

MIAMI-DADE

METROPOLITAN PLANNING ORGANIZATION



MIAMI-DADE METROPOLITAN PLANNING ORGANIZATION

Figure 3 - Future Year 2035 AM Intersection Level of Service



MIAWI-DADE METROPOLITAN Planning Organization

Figure 4 - Future Year 2035 PM Intersection Level of Service



M I A M I - D A D E M ET R O P O L I T A N PLANNING ORGANIZATION

Figure 5 - Future Year 2035 Optimized AM Intersection Level of Service



Figure 6 - Future Year 2035 Optimized PM Intersection Level of Service

PLANNING ORGANIZATION

Field Observations

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Constrained areas within the Downtown area were identified based on information provided by the Miami Downtown Development Authority (DDA) and the existing and future year conditions analyses. Field observations were conducted at these locations and throughout Downtown Miami to observe truck loading/delivery operations.

Constrained Field Observations

Field observations were conducted from 7:30 A.M. to 9:30 A.M. and 4:00 P.M. to 6:00 P.M. on February 26, 2015 (Thursday) at three (3) constrained locations coinciding with gateways into Downtown Miami:

- I-95 on/off ramps and NW 3rd Avenue/NW 3rd Court
- I-395 on/off ramps and NE 11th Street and NE 2nd Avenue
- Downtown Distributor and SE 2nd Street/SE 3rd Avenue

Truck Loading/Delivery Field Observations

Field observations were conducted throughout the Downtown area to identify and determine the impact of truck deliveries on travel lanes. Field observations were conducted from 7:00 A.M. to 6:00 P.M. on February 3, 2015 (Tuesday). The boundaries of the field observations consisted of NW/NE 9th Street to the north, Miami River to the south, Biscayne Boulevard to the east, and NW/SW 3rd Avenue to the west. A photo log of truck loading field observations is included in Appendix E. The following observations were made regarding truck loading and delivery:

- Large trucks (tractor trailers) perform significant loading operations during the A.M. period.
- Small trucks (single-unit) perform significant loading operations during the P.M. period.
- The majority of truck loading activity occurs in the area that is generally bounded by NE/NW 2nd Street to the north, SE/SW 2nd Street to the south, Biscayne Boulevard to the east, and NW/SW 2nd Avenue to the west.
- Many trucks utilize designated truck loading zones. However, modifications should be considered to lengthen loading zones to accommodate trucks currently blocking travel lanes.
- In some locations, delivery vehicles partially or fully block sidewalks to avoid blocking travel lanes.

Individual constrained areas were identified within Downtown Miami for further analysis. Three (3) constrained corridors were also recommended for additional study were identified. An all-weather elevated pedestrian corridor is also recommended for analysis as part of additional considerations. Figure 7 provides an overview of the loading and congestion areas based on information provided by the Miami DDA. Figure 8 identifies the constrained locations and corridors based on Miami DDA information, field observations, and intersection capacity analyses. A total of 24 locations were identified and include the following:

Constrained Locations

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- 1. West side of SE 3rd Avenue between SE 1st Street and SE 2nd Street
- 2. South side of SE 1st Street between SE 3rd Avenue and SE 2nd Avenue
- 3. North side of SE 1st Street between SE 3rd Avenue and SE 2nd Avenue
- 4. West side of SE 3rd Avenue between E Flagler Street and SE 1st Street
- 5. South side of E Flagler Street between SE 3rd Avenue and SE 2nd Avenue
- 6. North side of E Flagler Street between NE 1st Avenue and NE 2nd Avenue
- 7. North side of SE 2nd Street between SE 1st Avenue and SE 2nd Avenue
- 8. North side of SE 1st Street between SE 1st Avenue and S Miami Avenue
- 9. West side of SE 2nd Avenue between SE 1st Street and SE 2nd Street
- 10. South side of SE 1st Street between SE 3rd Avenue and Biscayne Boulevard
- 11. North side of SE 2nd Street between Biscayne Boulevard and SE 3rd Avenue
- 12. West side of Biscayne Boulevard between NE 2nd Street and NE 1st Street
- 13. North and south sides of NE 1st Street between Biscayne Boulevard and NE 2nd Avenue
- 14. North side of NE 3rd Street between Biscayne Boulevard and NE 2nd Avenue
- 15. North side of SW 1st Street between SW 2nd Avenue and SW 1st Avenue
- 16. South side of NE 5th Street between NE 1st Avenue and N Miami Avenue
- 17. NW 8th Street and NW 3rd Avenue/I-95 on-ramp and NW 8th Street and NW 3rd Court/I-95 off-ramp
- 18. I-395 on and off ramps at NE 11th Street and NE 2nd Avenue between NE 1st Avenue and Biscayne Boulevard
- 19. Downtown Distributor Ramp at SE 3rd Street/SE 2nd Street and SE 2nd Avenue/SE 3rd Avenue
- 20. North side of SE 2nd Street between Biscayne Boulevard and SE 3rd Avenue
- 21. South side of SE 4th Street/Biscayne Boulevard Way at SE 2nd Avenue
- 22. SE 3rd Street east of SE 3rd Avenue
- 23. East side of NE 2nd Avenue north of NE 1st Street
- 24. East side of S Miami Avenue north of SE 2nd Street

Constrained Corridors

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- 1. Biscayne Boulevard from NE 10th Street to NE 15th Street
- 2. NE 1st Avenue from NE 5th Street to NE 11th Street
- 3. NW 8th Street from NW 2nd Avenue to NW 1st Avenue

Additional Considerations

1. All-weather elevated pedestrian corridor

Figure 7 - Downtown Loading Zones and Miami DDA Congestion Locations





Figure 8 - Downtown Constrained Locations

DEVELOPMENT OF DOWNTOWN CONGESTION IMPROVEMENT SCENARIOS

The development of improvements to address Downtown congestion include system-wide improvements and specific congestion locations associated with loading zones. Downtown system-wide improvements were developed to enhance truck access to PortMiami and reduce truck-related congestion. Additionally, loading zone improvements were developed to address passenger vehicle usage of designated truck loading zones to reduce additional congestion from truck loading in adjacent travel lanes. Loading zones were also evaluated to determine the appropriate loading zone length to accommodate various trucks.

Programmed improvements, contemplated improvements, and proposed improvements were identified and developed as part of the evaluation of congestion deficiencies. These improvements include the following:

- Programmed Improvements
 - FDOT I-395 Reconstruction
 - o FDOT Downtown Distributor
- Contemplated Improvements
 - o City of Miami Improvements on SE 3rd Avenue
- Proposed Improvements
 - o I-95 Ramps at NW 8th Street and NW 3rd Court/NW 3rd Avenue
- Loading Zone Improvements
 - o Policy
 - o High-emphasis loading zones
 - o Time-of-day loading for both general purposes and location specific

Programmed Improvements

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FDOT District 6 has programmed reconstruction plans for I-395 to improve local access to and from I-395 at North Miami Avenue and NE 2nd Avenue and addresses geometric deficiencies. The improvement is expected to reduce weaving along the I-395 mainline for northbound and southbound I-95 and increase capacity to prevent future traffic congestion. Improvement plans are included in Appendix G as Constrained Location 18. Additionally, FDOT District 6 has programmed improvements at the Downtown Distributor along SE 2nd Avenue, SE 3rd Avenue, SE 2nd Street, and SE 3rd Street. The improvements will construct an additional I-95 on-ramp lane from southbound SE 2nd Avenue and is expected to increase capacity and reduce future traffic congestion. Improvement plans are included as Figures II-A and II-B in Appendix G as Constrained Location 19.

Contemplated Improvements

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City of Miami has developed conceptual plans for improvements to the downtown core along SE 2nd Avenue, SE 3rd Avenue, Biscayne Boulevard, SE 2nd Street, SE 3rd Street, and SE 4th Street. Three (3) conceptual designs were developed to reduce downtown congestion and improve traffic flow. Conceptual improvement plans are included as sheet numbers EX-1, EX-2, and EX-3 in Appendix G as Constrained Location 19.

Proposed Improvements

I-95 at NW 8th Street

Based on field observations and future year capacity analyses, potential improvements were developed for the I-95 ramps at NW 8th Street and NW 3rd Court/NW 3rd Avenue. The improvements propose to construct an additional lane for the I-95 northbound on-ramp as well as converting the I-95 southbound off-ramp shared through/left-turn lane to an exclusive left-turn lane. The proposed exclusive left-turn lane will be extended as part of the improvement. These improvements are expected to improve congestion and queue lengths. Potential improvement plans are included in Appendix G as Constrained Location 17.

Loading Zone Improvements

Proposed loading zone improvements consist of recommended policies and engineering improvement, including high-emphasis loading zones. Additionally, a maneuverability analysis was performed to determine the appropriate loading zone sizes required to accommodate various design truck vehicles.

High-emphasis Loading Zones

To prevent passenger vehicles from parking in designated truck loading zones, four (4) highemphasis loading zone design alternatives were developed. High-emphasis loading zones are expected to deter passenger vehicles' use of loading zones and allow trucks to perform loading operations without adversely affecting adjacent travel lanes. The proposed high-emphasis loading zones do not conflict with the American Association of State Highway and Transportation Officials' (AASHTO's), *Manual on Uniform Traffic Control Devices* (MUTCD) standards as they do not reflect existing pavement marking standards nor designs. These high-emphasis markings consist of the following:



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Ladder-style pavement markings



Zig-zag pavement markings



Compact zig-zag (lightning bolt) pavement marking

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Longitudinal pavement markings

Loading Zone Maneuverability

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A maneuverability analysis was prepared for on-street loading zones to determine the required length of loading bays to accommodate various delivery vehicles. The maneuverability analysis utilized AutoTURN 9.0 software which applies vehicle turning templates consistent with the American Association of State Highway and Transportation Officials' (AASHTO), A Policy on Geometric Design of Highways and Streets, 2004/2011. The maneuverability analysis was prepared for two (2) methods, 1) assumed that delivery vehicles enter the loading zone head-in and then complete with a back-in maneuver, potentially blocking the adjacent travel lane during the process and 2) assumed that delivery vehicles access the loading zones head-in without backing in or blocking the adjacent travel lane. The second analysis method results in loading zones with longer lengths than what is typically provided for single-unit trucks. Note that for larger semi-trailer trucks, the first analysis method requires a longer length due to the pivot point between the truck cab and trailer. Maneuverability analyses were prepared for various loading vehicles including a single-unit truck (SU-30), dual-rear axle single-unit truck (SU-40), intermediate semitrailer (WB-50) truck, and an interstate semitrailer (WB-62) truck. Table 2 summarizes the maneuverability results for both scenarios.

Truck Type	Truck Length	Method 1: Required Loading Zone Length for Head-in with back-in Maneuver	Method 2: Required Loading Zone Length for Head-in Only Maneuver
Single-unit truck (SU-30)	30 feet	45 feet	60 feet
Single-unit dual-rear axle truck (SU-40)	40 feet	60 feet	72 feet
Intermediate semitrailer truck (WB-50)	55 feet	110 feet	108 feet
Interstate semitrailer truck (WB-62)	69 feet	180 feet	127 feet

Table 1: Loading	Zone Lengths fo	r Head-in	Truck Maneuve	ers

Based on the results of the maneuverability analysis it is recommended that loading zones in the City of Miami be designed as follows to adequately accommodate trucks:

- 60 feet for SU-30: 30-foot long vehicle
- 72 feet for SU-40: 40-foot long vehicle
- 110 feet for WB-50: 55-foot long vehicle
- 127 feet for WB-62: 69-foot long vehicle
- 25 feet (minimum) for vans

Detailed maneuverability plots and loading zone designs are contained in Appendix F.

Loading Zone Alignment

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Commercial vehicles parked within identified high-emphasis loading zones are expected to align the vehicle parallel with the curb to prevent disruption of traffic flow in the adjacent travel lane. All axles of the vehicle should be contained within the loading zone. Angled staging of commercial vehicles is prohibited and is subject to citation. Please note that loading zones must be designed in a manner to accommodate loading vehicles parallel to the curb.

Constrained Locations – Detailed Analyses

Detailed analyses for each constrained location were developed. The analysis includes a description of the constrained location, political jurisdiction, identified deficiency, notes about the deficiency, proposed improvement(s), agency in charge of implementing improvement(s), construction cost of improvement(s), impact of improvement(s) on parking revenue, funding source from improvement(s), and implementation timeframe. The identified constrained locations are identified below. Detailed cost estimates associated with each constrained location are included in Appendix G.

For implementation timeframe, three (3) periods were used including short-term (0-5 years), mid-term (6-10 years), and long-term (>10 years). Detailed improvement plans for constrained locations 10, 17, 18, 19, and 24 are included in Appendix G.

On-going MPO Projects

Bus-only lanes were considered and noted at specific constrained locations where they could impact proposed loading zone improvements for roads that are heavily utilized by bus transit routes as a part of MPO's GPC V-29 scope of work.

Constrained Location 1
West side of SE 3 rd Avenue between SE 1 st Street and SE 2 nd Street

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Constrained Location	West side of SE 3 rd Avenue between SE 1 st Street and SE 2 nd Street
Political Jurisdiction	City of Miami
Deficiency Identification	West side loading zone is insufficiently sized (approximately 40 feet) to accommodate large commercial trucks and vans which creates congestion. Passenger vehicles occupy loading zone due to lack of enforcement.
Notes	 West side loading zone improvement will require the removal of approximately two (2) parking spaces. Capacity analysis results indicate a LOS B during the A.M. and P.M. peak hours with a single northbound right-turn lane in year 2035 optimized conditions at the intersection of SE 3rd Avenue and SE 2nd Street. Furthermore, vehicle queues are expected to be accommodated with this condition. No MDT bus routes along this section of SE 3rd Avenue and no bus stops impacted by the proposed improvements.
Improvement Tasks	 Increase west side loading zone area by approximately 32 feet to accommodate SU-40s (72 feet), designate loading zone with high-emphasis loading zone marking, and implement policies to increase enforcement. Remove the northbound right-turn curb lane (east side) to accommodate a 72-foot loading zone and 138 feet of on-street parking (six [6] parking spaces] on the east side of SE 3rd Avenue between SE 1st Street and SE 2nd Street.
Lead Agencies	City of Miami and MPA
Construction Cost	\$6,700
Gained Parking Revenue	\$124,080
Funding	City of Miami Operating Budget
Implementation Timeframe	Short-term



Constrained Location	South side of SE 1 st Street between SE 3 rd Avenue and SE 2 nd Avenue
Political Jurisdiction	City of Miami
Deficiency Identification	Loading zone is insufficiently sized (approximately 40 feet) to accommodate large commercial trucks and vans, which creates congestion. Passenger vehicles occupy the loading zones due to lack of enforcement.
Notes	 Improvement will require the removal of approximately four (4) parking spaces. MDT Routes 11, 77, 93, 95 Express, 103, and 119 currently have stops along this corridor. The nearest MDT bus stop is located approximately 700 feet west of the loading zone. Therefore, the extended loading zone is not expected to have an impact on the bus stop.
Improvement Tasks	Increase loading zone area by approximately 80 feet to accommodate two (2) SU- 30s (120 feet), designate loading zone with high-emphasis loading zone marking, and implement policies to increase enforcement.
Lead Agencies	City of Miami and MPA
Construction Cost	\$3,000
Lost Parking Revenue	\$111,360
Funding	City of Miami Operating Budget
Implementation Timeframe	Short-term

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Constrained Location	North side of SE 1 st Street between SE 3 rd Avenue and SE 2 nd Avenue
Political Jurisdiction	City of Miami
Deficiency Identification	Loading zone insufficiently sized (approximately 20 feet) or marked to accommodate large commercial trucks and vans which creates congestion.
Notes	 Improvement will require the removal of approximately two (2) parking spaces. MDT bus routes 11, 77, 93, 95 Express, 103, and 109 currently have stops along this corridor. The nearest MDT bus stop is located approximately 550 feet west of the loading zone. Therefore, the extended loading zone is not expected to have an impact on the bus stop.
Improvement Tasks	Increase loading zone area by approximately 40 feet to accommodate SU-30s (60 feet). Designate loading zone with high-emphasis loading zone marking.
Lead Agencies	City of Miami and MPA
Construction Cost	\$2,400
Lost Parking Revenue	\$55,680
Funding	City of Miami Operating Budget
Implementation Timeframe	Short-term



Constrained Location	West side of SE 3 rd Avenue between E Flagler Street and SE 1 st Street	
Political Jurisdiction	City of Miami	
Deficiency Identification	Loading zone insufficiently sized (approximately 33 feet) to accommodate large commercial trucks and vans which creates congestion. Passenger vehicles occupy loading zone due to lack of enforcement.	
Notes	 Improvement will require the removal of approximately two (2) parking spaces. No MDT bus routes along this section of SE 3rd Avenue and no bus stops impacted by the proposed improvement. The MPA and City are coordinating to install a shorter Citi Bike rack to provide additional on-street parking. 	
Improvement Tasks	Increase loading zone area by approximately 27 feet to accommodate SU-30s (60 feet), designate loading zone with high-emphasis loading zone marking, and implement policies to increase enforcement.	
Lead Agencies	City of Miami and MPA	
Construction Cost	\$2,400	
Lost Parking Revenue	\$62,040	
Funding	City of Miami Operating Budget	
Implementation Timeframe	Short-term	



Constrained Location	South side of E Flagler Street between SE 3 rd Avenue and SE 2 nd Avenue		
Political Jurisdiction	City of Miami		
Deficiency	Passenger vehicles occupy loading zone due to lack of enforcement. Loading zone		
Identification	approximately 35 feet in length accommodates smaller delivery vehicles.		
Notes	 E Flagler Street reconstruction project may incorporate loading zones in design. No MDT bus routes along this section of E Flagler Street and no bus stops impacted by the proposed improvement. Potentially incorporate loading zones into valet locations as part of the E Flagler Street reconstruction. 		
Improvement Tasks	Designate with high emphasis loading zone marking and implement policies to		
ппрочениент тазкз	increase enforcement.		
Lead Agencies	City of Miami		
Construction Cost	\$2,100		
Funding	City of Miami Operating Budget		
Implementation Timeframe	Mid-term (due to E Flagler Street reconstruction)		



Constrained Location	North side of E Flagler Street between NE 1 st Avenue and NE 2 nd Avenue
Political Jurisdiction	City of Miami
Deficiency Identification	Loading zone insufficiently sized (approximately 25 feet) to accommodate commercial trucks and vans which creates congestion. Passenger vehicles occupy loading zone due to lack of enforcement.
Notes	 Improvement will require the removal of approximately two (2) parking spaces. E Flagler Street reconstruction project may incorporate loading zones in design. No MDT bus routes along this section of E Flagler Street and no bus stops impacted by the proposed improvement. Potentially incorporate loading zones into valet area as part of the E Flagler Street reconstruction.
Improvement Tasks	 Increase loading zone area by approximately 35 feet (60 feet total) to accommodate an SU-30, designate loading zone with high emphasis loading zone marking, and implement policies to increase enforcement.
Lead Agencies	City of Miami and MPA
Construction Cost	\$2,400
Lost Parking Revenue	\$58,080
Funding	City of Miami Operating Budget
Implementation Timeframe	Mid-term (due to E Flagler Street reconstruction)


Constrained Location	North side of SE 2 nd Street between SE 1 st Avenue and SE 2 nd Avenue
Political Jurisdiction	City of Miami
Deficiency Identification	Loading occurs in travel lane since no designated loading zone exists.
Notes	No MDT bus routes along this segment of SE 2 nd Street.
Improvement Tasks	Limit loading to time-of-day, install signage for time-of-day loading, and
improvement tasks	implement policies to increase enforcement.
Lead Agencies	City of Miami and MPA
Construction Cost	\$1,100
Funding	City of Miami Operating Budget
Implementation	Short-term
Timeframe	

WORK ORDER



Constrained Location	North side of SE 1 st Street between SE 1 st Avenue and SE 2 nd Avenue
Political Jurisdiction	City of Miami
Deficiency Identification	Delivery trucks double parked, blocking a travel lane.
Notes	 MDT bus routes 3, 11, 77, 93, 95 Express, 103, and 119 operate on this section of SE 1st Street. BCT bus route 95 Express operates on this section of SE 1st Street.
Improvement Tasks	Implement policies to increase enforcement.
Lead Agencies	City of Miami and MPA
Cost	N/A
Funding	N/A
Implementation Timeframe	Short-term

WORK ORDER



Constrained Location	West side of SE 2 nd Avenue between SE 1 st Street and SE 2 nd Street
Political Jurisdiction	City of Miami
Deficiency Identification	Passenger vehicles park in loading area creating congestion.
Notes	No MDT bus routes are along this section of SE 2 nd Street.
Improvement Tasks	Designate with high emphasis loading zone marking and implement enforcement
	policies.
Lead Agencies	City of Miami and MPA
Construction Cost	\$2,400
Funding	City of Miami Operating Budget
Implementation Timeframe	Short-term

WORK ORDER



Constrained Location	South side of SE 1 st Street between SE 3 rd Avenue and Biscayne Boulevard
Political Jurisdiction	City of Miami
Deficiency Identification	Trucks occupy the eastbound right-turn lane creating congestion.
Notes	 Capacity analysis results in a LOS B during the A.M. peak hour and LOS D during the P.M. peak hour under year 2035 optimized conditions. Removing the eastbound right-turn lane in order to accommodate an additional loading bay was examined. Removing the eastbound right-turn lane results in a LOS C during the A.M. peak hour and LOS F during the P.M. peak hour. Removing the eastbound right-turn lane results in queues extending through the adjacent intersection at SE 3rd Avenue. An MDT bus stop is located along the south side of SE 1st Street at SE 3rd Avenue. The bus stop serves MDT routes 3, 11, 77, 93, 95 Express, 103, and 119. The bus stop will remain.
Improvement Tasks	 Provide loading zones on the north and south sides of SE 1st Street. This is accomplished by reducing sidewalk width and relocating light poles. Sidewalk will remain a minimum of 8 feet wide on both sides. See attached improvement plan. *Note that based on Project Advisory Team (PAT) input, these improvements are not recommended as Miami Downtown Development Authority (DDA) is proposing a complete-streets project along SE 1st Street.
Lead Agencies	City of Miami
Construction Cost	\$127,300 *Not recommended by PAT
Funding	City of Miami Operating Budget
Implementation Timeframe	Mid-term

WORK ORDER



Constrained Location	North side of SE 2 nd Street between Biscayne Boulevard and SE 3 rd Avenue
Political Jurisdiction	City of Miami
Deficiency	Trucks occupy outer lane and block westbound traffic as no loading zones are
Identification	present.
Notes	No MDT routes along SE 2 nd Street.
Improvement Tasks	Implement time-of-day loading zone restrictions, install signage for time-of-day
	loading, and implement policies to increase enforcement.
Lead Agencies	City of Miami and MPA
Construction Cost	\$1,100
Funding	City of Miami Operating Budget
Implementation	Short-term
Timeframe	

WORK ORDER



Constrained Location	West side of Biscayne Boulevard between NE 2 nd Street and NE 1 st Street
Political Jurisdiction	City of Miami
Deficiency	Trucks occupy outer lane and block southbound traffic as no loading zones are
Identification	present.
Notes	No MDT routes operate in the southbound direction of this section of Biscayne Boulevard.
Improvement Tasks	 Implement time-of-day loading zone restrictions, install signage for time-of-day loading, and implement policies to increase enforcement. Note that based on PAT input, loading zones along Biscayne Boulevard are not recommended as Biscayne Boulevard is under Florida Department of Transportation (FDOT) jurisdiction and as the Miami Downtown Development Authority (DDA) is proposing the Biscayne Green Project along Biscayne Boulevard.
Lead Agencies	City of Miami and MPA
Construction Cost	\$1,100 *Not recommended by PAT
Funding	City of Miami Operating Budget
Implementation Timeframe	Short-term

WORK ORDER



WORK ORDER

Constrained	North and south sides of NE 1 st Street between Biscayne Boulevard and NE 2 nd
Location	Avenue
Political Jurisdiction	City of Miami
Deficiency	Trucks load outside of designated loading zones and block outer westbound lane
Identification	due to lack of enforcement.
Notos	MDT bus routes 11, 75, and 95 Express operate on this section of NE 1 st Street. An
Notes	MDT bus stop is located on the north side of NE 1 st Street at NE 2 nd Avenue.
Improvement Teals	Implement time-of-day loading zone restrictions, install signage for time-of-day
Improvement Tasks	loading, and implement policies to increase enforcement.
Lead Agencies	City of Miami and MPA
Construction Cost	\$1,100
Funding	City of Miami Operating Budget
Implementation	Short-term
Timeframe	





Constrained Location	North side of NE 3 rd Street between Biscayne Boulevard and NE 2 nd Avenue
Political Jurisdiction	City of Miami
Deficiency	Trucks occupy outer lane blocking westbound traffic due to lack of designated
Identification	loading zones and enforcement.
Notes	 MDT bus routes 95 Express and 103 operate along NE 3rd Street and a bus stop is located just east of the proposed loading area. The loading area is expected to enhance transit operations as a dedicated
	loading zone will prevent trucks from blocking travel lanes or using the bus stop for loading activities.
Improvement Tasks	Remove three (3) on-street parking spaces to designate SU-30 (60-foot) loading zone with high-emphasis loading zone marking and implement policies to increase enforcement.
Lead Agencies	City of Miami and MPA
Construction Cost	\$2,400
Lost Parking Revenue	\$106,920
Funding	City of Miami Operating Budget
Implementation Timeframe	Short-term

WORK ORDER



Constrained Location	North side of SW 1 st Street between SW 2 nd Avenue and SW 1 st Avenue
Political Jurisdiction	City of Miami
Deficiency	Trucks occupy inner lane and block eastbound traffic due to lack of designated
Identification	loading zones and enforcement.
Notes	 MDT routes 2, 7, 11, 21, 51, 77, 95 Express, 103, 119, 277, and 500 have stops along SW 1st Street. BCT route 95 Express has stops along SW 1st Street. A bus bay is located along the south side of SW 1st Street across from the proposed loading zone. Bus-only lanes are contemplated along NE 2nd Avenue as part of Miami-Dade MPO's GPC V-29 Downtown Miami Bus Lanes Study.
Improvement Tasks	Designate WB-62 (127-foot) loading zone with high-emphasis loading zone marking and implement policies to increase enforcement.
Lead Agencies	City of Miami and MPA
Construction Cost	\$3,000
Funding	City of Miami Operating Budget
Implementation Timeframe	Short-term

WORK ORDER



Constrained Location	South side of NE 5 th Street between NE 1 st Avenue and N Miami Avenue
Political Jurisdiction	City of Miami
Deficiency	Trucks occupy the inner lane blocking eastbound traffic due to lack of designated
Identification	loading zones and enforcement.
Notes	No MDT routes along this section of NE 5 th Street.
Improvement Tasks	 Implement time-of-day loading zone, install signage for time-of-day loading, and implement policies to increase enforcement. Note that based on PAT input, due to the proximity of the Federal Courthouse to the proposed improvement, coordination with the Federal Courthouse is recommended.
Lead Agencies	City of Miami and MPA
Cost	\$1,100
Funding	City of Miami Operating Budget
Implementation Timeframe	Short-term

WORK ORDER



Constrained	NW 8 th Street and NW 3 rd Court/I-95 off-ramp	
Location	NW 8 th Street and NW 3 rd Avenue/I-95 on-ramp	
Political Jurisdiction	FDOT, Miami-Dade County, City of Miami	
	Significant northbound queues create congestion at I-95 on-ramp and NW 3rd	
Deficiency	Avenue during the P.M. peak hour.	
Identification	Southbound I-95 off-ramp shared left-turn/through lane operates as de-facto left-	
	turn lane with only 115 feet of storage length.	
	MDT bus route 95 Express and BCT bus route 95 Express operate along this section	
Notes	of NW 8 th Street. The nearest bus stop is located approximately 1,000 feet away	
	from the interchange.	
	Re-designate southbound shared left-turn/through lane as left-turn lane. Extend	
	left-turn lane. Provide an additional lane on the I-95 northbound on-ramp based	
Improvement Teals	on two (2) alternatives. Alternative 1 proposes to construct an additional lane	
improvement tasks	that maintains the I-395 bridge structure. Alternative 2 proposes to construct an	
	additional lane that requires modification to I-395 bridge. A Project Development	
	and Environmental (PD&E) study will be required for these improvements.	
Lead Agencies	FDOT	
Construction Cost	\$964,000 ⁽¹⁾	
Funding	FDOT – State Transportation Improvement Plan	
Implementation Timeframe	Mid-term/Long-term	
(1) Cost of Alternative 1 (maintaining 1-395 bridge) provided Alternative 2 (modifying 1-395 bridge) cost to be determined		

WORK ORDER

Cost of Alternative 1 (maintaining I-395 bridge) provided. Alternative 2 (modifying I-395 bridge) cost to be determined through PD&E.



Constrained Location	I-395 on-ramp and off-ramps at NE 11 th Street and NE 2 nd Avenue
Political Jurisdiction	FDOT
Deficiency Identification	Significant queues extending onto the I-395 off-ramp.
Notes	MDT bus routes 9 and 120 operate along NE 2 nd Avenue and routes 6, 9, and 120 operate along NE 1 st Avenue.
Improvement Tasks	To be reconstructed as part of FDOT programmed project.
Lead Agencies	FDOT
Construction Cost	\$616,058,790 ⁽¹⁾
Funding	FDOT – State Transportation Improvement Plan
Implementation Timeframe	Mid-term

WORK ORDER

⁽¹⁾ Cost represents Florida Department of Transportation's (FDOT's) Five-Year Work Plan improvement.



Constrained	Downtown Distributor Ramp at SE 3 rd Street/SE 2 nd Street and SE 2 nd Avenue/SE				
Location	3 rd Avenue				
Political Jurisdiction	FDOT, City of Miami				
Deficiency	Significant westbound queues block the intersection creating congestion. City of				
Identification	Miami currently working on conceptual improvements with FDOT.				
Notes	MDT bus route 95 Express operates along SE 2 nd Avenue.				
Improvement Tasks	 To be reconstructed as part of FDOT programmed project. An immediate improvement that should be implemented is installing improved I-95 signage on SE 2nd Street to direct northbound I-95 traffic to SE 2nd Street ramp. City of Miami is examining a sub-area Greenway bounded by SE 2nd Street to the north, Biscayne Boulevard Way to the south, Biscayne Boulevard to the east, and SE 2nd Avenue to the west. 				
Lead Agencies	FDOT and City of Miami				
Construction Cost	TBD				
Funding	FDOT Safety Funding, City of Miami Operating Budget, and potentially included in Long Range Transportation Plan.				
Implementation Timeframe	Short-term/Mid-term				

WORK ORDER



Constrained Location	North side of NE 2 nd Street between Biscayne Boulevard and SE 3 rd Avenue			
Political Jurisdiction	City of Miami			
Deficiency Identification Trucks occupy the inner eastbound lane creating congestion.				
Notes	No MDT bus routes operate along NE 2 nd Street.			
Improvement Tasks	 Provide a WB-62 loading zone (127-feet in length) on the north side of NE 2nd Street within travel lane, implement time-of-day loading restrictions, and install signage for time-of-day loading. Implement policies to increase enforcement. 			
Lead Agencies	City of Miami and MPA			
Construction Cost	\$1,100			
Funding	City of Miami Operating Budget			
Implementation Timeframe	Short-term			

WORK ORDER



Constrained Location	South side of SE 4 th Street/Biscayne Boulevard Way at SE 2 nd Avenue			
Political Jurisdiction	City of Miami			
Deficiency	Trucks occupy the outside eastbound lane causing vehicles to take a wider, more			
Identification	dangerous turn onto SE 4 th Street.			
Notes	MDT bus route 95 Express operates along SE 4 th Street/Biscayne Boulevard Way.			
Improvement Tasks	Implement policies to increase enforcement.			
Lead Agencies	City of Miami and MPA			
Construction Cost	N/A			
Funding	N/A			
Implementation	Short-term			
Timeframe				



WORK ORDER



Constrained Location	SE 3 rd Street east of SE 3 rd Avenue		
Political Jurisdiction	City of Miami		
Deficiency	Vans park and load on top of sidewalk inhibiting the path of pedestrians and		
Identification	bicycles.		
Notes Loading zone would need to be coordinated with MDT right-of-way division			
Improvement Tasks	 Implement loading zone between Metromover columns (remove curb/median). *Note that based on PAT input, improvements are not recommended as Miami DDA is proposing landscaping improvements that will prevent onstreet parking and loading zones at this location. 		
Lead Agencies	City of Miami and MDT		
Construction Cost	\$11,100 *Not recommended by PAT		
Funding	City of Miami Operating Budget		
Implementation Timeframe	Short-term		

WORK ORDER



Constrained Location	East side of NE 2 nd Avenue north of NE 1 st Street				
Political Jurisdiction	City of Miami				
Deficiency Identification	Trucks occupy the inner southbound lane causing congestion.				
Notes	 Repurposing lanes at the southbound approach to accommodate a loading zone would involve eliminating a southbound through lane. The intersection is expected to operate at LOS F under year 2035 optimized conditions during the A.M. and P.M. peak hours. Eliminating a southbound through lane is also expected to result in a LOS F for the intersection. Please note that the P.M. peak hour queue is expected to extend beyond NE 2nd Street with the repurposing. Therefore, repurposing lanes is not recommended. MDT bus routes 9, 95 Express, 103, 119, and 120 operate along this section of NE 2nd Avenue. Bus-only lanes are contemplated along NE 2nd Avenue as part of Miami-Dade MPO's GPC V-29 Downtown Miami Bus Lanes Study. 				
Improvement Tasks	Implement tiContrained tions, install signage for time-of-day loading, and impleme				
Lead Agencies	City of Miam				
Construction Cost	\$1,100				
Funding	City of Miam				
Implementation Timeframe	Short-term				

WORK ORDER



Constrained Location	East side of South Miami Avenue north of SE 2 nd Street				
Political Jurisdiction	City of Miami				
Deficiency Identification	Trucks load in striped out area since no designated loading zone exists.				
Notes	MDT bus routes 6, 8, 51, and 277 operate along this section of South Miami Avenue.				
Improvement Tasks	 Bulb-out/curb extension at the southbound approach to be coordinated with City of Miami. Designate a SU-30 loading zone (60-feet in length) with high-emphasis loading zone marking. 				
Lead Agencies	City of Miami				
Construction Cost\$34,700FundingCity of Miami Operating BudgetImplementation TimeframeShort-term ⁽¹⁾					

WORK ORDER

Implementation agency to determine if improvement will provide on-street parking or a loading zone.



Constrained Corridor	Biscayne Boulevard from NE 10 th Street to NE 15 th Street				
Political Jurisdiction	Florida Department of Transportation				
Deficiency Identification	Intersections along corridor are overcapacity under future year 2035 conditions.				
Notes	MDT bus routes 3, 93, 95 Express, S, and C operate along this section of Biscayne Boulevard.				
Improvement Tasks	 Reconstruction/closure of the Venetian Causeway at NE 15th Street has temporarily changed local traffic patterns. Therefore, it is recommended that the additional analysis be conducted once the Venetian Causeway is reopened. Construction on the Venetian Causeway is expected to be completed by the end of February 2016. Corridor is programmed for further study as part of the City of Miami's Transportation Program Support Services Task Order No. 16: Biscayne Boulevard Lane Reduction Analysis. 				
Lead Agencies	Florida Department of Transportation and City of Miami				
Construction Cost	N/A				
Funding	Further study will be funded by the City of Miami's Transportation Program Support Services.				
Implementation Timeframe Short-term					

Constrained Corridor 1

WORK ORDER



Constrained Corridor	NE 1 st Avenue from NE 5 th Street to NE 11 th Street			
Political Jurisdiction	Miami-Dade County			
Deficiency Identification	Intersections along corridor are overcapacity under future year 2035 conditions.			
Netec	MDT bus routes 2, 6, 7, 8, 9, 120, and 211 operate along this section of NE 1 st			
notes	Avenue.			
Improvement Tasks	Corridor is recommended for additional analysis to study future operations in			
	greater detail.			
Lead Agencies	Miami-Dade County			
Construction Cost	N/A			
Funding	N/A			
Implementation	Short-term			
Timeframe				



WORK ORDER



Constrained Corridor	NW 8 th Street from NW 2 nd Avenue to NW 1 st Avenue				
Political Jurisdiction	City of Miami				
Deficiency Identification	Intersections along corridor are overcapacity under future year 2035 conditions.				
Notes	 MDT bus route 95 Express operates along this section of NW 8th Street. Please note the intersection improvement at NW 3rd Avenue at NW 8th Street and NW 3rd Court at NW 8th Street are identified as Constrained Location 17. 				
Improvement Tasks	Corridor is recommended for additional analysis to study future operations in greater detail.				
Lead Agencies	City of Miami				
Construction Cost	N/A				
Funding	N/A				
Implementation Timeframe Short-term					

Constrained Corridor 3

WORK ORDER



Loading Zone Policy

#GPC V-28

A loading policy has been developed to help minimize the impact of on-street loading activities on the transportation network. The policy provides the framework for developing a loading permit program, loading hours and maximum loading time periods, loading zone enforcement, and public outreach. These sections and the literature review are contained below.

Municipal Loading Zone Requirements

A literature review was conducted to determine if loading zone policies and restrictions exist nationwide. A total of ten (10) municipalities were examined. It was found that eight (8) out of ten (10) of the metropolitan areas examined have implemented ordinances for loading restriction policies that include variations on commercial permitting, freight loading zones with permit fees, restricted loading hours, and maximum loading time limits. Table 2 provides a summary of various City loading zone regulations throughout the country.

	City	Loading Zone Regulation Loading Zone Operational Hours		Vehicle Type Allowed in Loading Zone	
	Miami Beach	Permit Required	30 and 60 minute maximum	Commercial and non-commercial vehicles	
	Chicago	Permit Required	30 minute maximum	Commercial and non-commercial vehicles	
	Houston	Permit Required	30 minute to 2 hour maximum	Commercial vehicles	
	New York	Posted Sign	3 hour maximum	Commercial vehicles	
	Orlando	Permit Required	30 minute maximum	Commercial and non-commercial vehicles	
	Pensacola	Commercial Loading Zone/General Loading Zone	Commercial Loading Zone no time limit General Loading Zone 15 minute maximum	Commercial and non-commercial vehicles	
	Portland	Permit Required	30 minute maximum	Commercial vehicles	
	Salt Lake City	Permit Required	30 minute maximum	Commercial and non-commercial vehicles	
	San Jose	Permit Required	1 hour maximum	Commercial and non-commercial vehicles	
	Seattle	Permit Required	30 minute maximum	Commercial and non-commercial vehicles	

Table 2: Nationwide City Loading Zone Regulations

Commercial and Non-Commercial Vehicles Definitions

The City of Miami Code of Ordinances defines commercial vehicles as a vehicle that is owned or used by a business corporation, association, partnership, or sole proprietorship, or any other entity conducting business for a commercial purpose. The City of Miami's zoning code, Miami 21, defines a commercial vehicle as any vehicle designed, intended, or used for transportation of people, goods, or things, not including private passenger vehicles and trailers for private non-profit transport of goods or boats.

As the City of Miami's Code of Ordinances broadly interprets the definition of a commercial vehicle, the loading zone permitting program should allow for both commercial and non-commercial vehicles to be registered. Please note that seven (7) out of the ten (10) metropolitan areas included in the literature review allow for both commercial and non-commercial vehicles to utilize loading zones, as shown in Table 2.

Permit Program

#GPC V-28

Permits will be issued to persons or businesses with a need to engage in the loading and unloading of freight and goods within a specified zone. Vehicles expecting to make deliveries regardless of frequency in Downtown Miami must obtain a Designated Freight Loading Zone (DFLZ) permit to conduct delivery operations. The City of Miami may issue permits on an annual or semi-annual basis. Permits could be issued by the City of Miami or Miami Parking Authority (MPA) once a permit application is received from the applicant. A permit will not be issued if it is determined that the application is deficient or if the applicant has any unreconciled debts or citations. Permit fees will be established by the City of Miami and/or MPA. A "Fleet Permit" should be an option for purveyors with an established number of delivery vehicles. The City of Miami Beach has a "Fleet Permit" is available for purchase for up to five (5) vehicles. Table 3 provides a summary of the permit fees various cities have implemented.

City	Permit Fees			
	\$364 per vehicle annually			
Miami Beach	Fleet permit for five (5) vehicles \$1,500 annually			
	Fleet permit for five (5) vehicles \$750 semi-annually			
	Commercial vehicles are free			
Chicago	\$250 annually for non-commercial vehicles			
	\$125 semi-annually for non-commercial vehicles			
	\$150 annually for 30 minute loading period			
Houston	\$300 annually for one (1) hour loading period			
	\$1,200 annually for two (2) hour loading period			
New York	Metered parking payment			
Orlando	\$70 for first permit, \$30 for additional permit			
Pensacola	N/A			
Portland	\$600 per vehicle annually			
Salt Lake City	\$35 per vehicle annually			
San Jose	\$17 per vehicle annually			
Seattle	\$98 per vehicle annually			

Table 3: Nationwide Loading Zone Permit Fees

Loading Hours and Maximum Loading Time Periods

The City of Miami and/or MPA should adopt official loading zone hours. Loading zone operational hours are typically between 7:00 A.M. to 6:00 P.M. Monday through Friday and/or Monday through Saturday. Please note that the City of Miami Beach has adopted loading zone hours from 7:00 A.M. to 8:00 P.M. Monday through Saturday.

Time-of-day loading will be implemented at many core Downtown Miami loading zone locations to facilitate off-peak hour loading. Time-of-day loading will facilitate off-peak loading at constrained locations with inadequate loading zone size. Time-of-day loading will occur between 10:00 A.M. and 3:30 P.M.

Maximum loading time periods no greater than 30 or 60 minutes should be instituted to promote efficient use of loading zones. Limitations on loading time periods will help facilitate a more rapid truck loading zone turnover and prevent trucks from double parking at loading zones or blocking adjacent travel lanes. Furthermore, commercial vehicles should not be able to return to a previously occupied loading zone within 30 minutes of leaving the zone.

Loading Zone Enforcement

#GPC V-28

The major enforcement challenge with loading zone policy implementation is the accountability of delivery vehicle operators violating loading zone restrictions. When citations are levied during business hours, the delivery vehicle owner is responsible for paying the violation fee rather than the delivery vehicle operator. In many instances, the delivery vehicle operator is not the owner of the vehicle such as a FedEx, UPS, or a larger semi-trailer vehicle.

As a result, there is no incentive for delivery vehicle operators to comply with existing parking and loading policy as violation citations are only \$18 for overtime parking and \$23 for improper parking. These low citation fees are often viewed by many purveyors as a cost of doing business.

The permit program adopted as a City Ordinance will allow for significant fines, permit revocation, and/or vehicle towing. Additionally, enforcement measures will prevent passenger vehicles from occupying designated freight loading zones during the posted loading zone hours by issuing moving violations assessed to the driver rather than the vehicle, which result in higher fines, points on a driver's license, and higher insurance costs. Fines for freight loading zone permitees will be tied to higher permit renewal fees or potential loading zone permit revocation.

The City of Miami Code Compliance Department should be the primary enforcement agency with a freight loading zone ordinance adopted by the City. Agency enforcement partners include the Miami Parking Authority and City of Miami Police Department. Each agency's role is summarized below.

Miami Parking Authority

The MPA currently enforces parking regulations and will cite commercial vehicles in violation of loading hours, maximum loading time periods, and/or permit validation. MPA will also determine whether delivery trucks are registered in the loading zone permit program.

City of Miami Code Compliance Department

If this loading policy is adopted as a City of Miami Ordinance, the City of Miami Code Compliance Department is expected to be granted the authority to enforce freight loading zone regulations by citing and towing vehicles in violation of the policy. Enforcement will include loading hours, maximum loading time periods, and provisions of the freight loading zone policy. An adopted freight loading zone ordinance will allow higher fines to be implemented. Involvement of the Department is critical to ensure quick truck loading turnover and to prevent delivery vehicles from double parking when a loading zone is occupied for extended periods of time.

City of Miami Police Department

Involvement of the City of Miami Police Department (MPD) is critical to freight loading zone enforcement as MPD can issue moving citations for obstructing traffic (double parking). Moving citations will be issued to vehicle operators rather than vehicle owners. It is assumed that dedicated City of Miami police staff will be required to ticket delivery vehicle operators directly on-site and citations can be issued to the operator's commercial driver's license. This creates an incentive to comply with truck loading policies.

Enforcement Operating Procedure

#GPC V-28

The following procedures will be enacted in order to enforce the freight loading zone policy. It is assumed that these policies will be primarily enforced by City of Miami Code Compliance Department and/or Miami Parking Authority.

- A warning period will be established prior to enforcement of fines and penalties and will be communicated to delivery vehicle operators and purveyors.
 - When the established warning period expires, enforcement fine schedules will take effect.
- Compliance officers will determine vehicle compliance and if a vehicle is not authorized to park in a designated freight loading zone, a citation will be issued.
- To enforce time limit restrictions, compliance officers will determine if a delivery vehicle that exceeds the posted maximum time limit is engaged in active loading activities.
- If it is determined that a delivery vehicle is engaged in active loading activities, the compliance officer will attempt to locate the vehicle operator and establish a timeframe for the vehicle's departure.
 - The driver will be cited should they exceed the agreed upon departure timeframe.
- If it is determined that a delivery vehicle is not engaged in active loading activities and exceeds the posted maximum time limit, the vehicle will be cited and towed.

Enforcement Fine Schedules

The current fine schedule (\$18/\$23) for illegal loading activities fails to deter commercial vehicle operators from loading/unloading unlawfully. Partnering increased loading zone enforcement with higher fines would serve as a further deterrent to loading zone violators. To provide a better transition to new policies, warnings should be given initially for an established grace period once the new loading zone policy is implemented. Enforcement will gradually increase by an established date and fine schedules would intensify for repeat offenders.

The City of Miami Beach has implemented a zero tolerance for delivery trucks obstructing traffic and creating traffic congestion. The City of Miami Beach has established citation fees of \$129. The City of Miami should consider a similar fee or higher fee. Revenue from increased fines will be allocated to the enforcement agency to offset administrative costs.

Public Outreach Program

Public outreach is an important component of a successful loading zone policy. It is critical to include all the stakeholders in coordination efforts so that implementation of the loading zone policy is non-controversial. Stakeholders include both the private sector and public entities. Communication with local businesses, residents, and owners of delivery vehicle fleets to

inform them of the updated policies, enforcement, and citation processes is necessary. Workshops should be held with stakeholders prior to the implementation of the loading zone policy.

Agency Coordination

Proposed agency partners for implementation and their roles include:

City of Miami Capital Improvements & Transportation Department

The Department is responsible for the planning, coordination, implementation, and monitoring of all construction related physical improvements to Downtown Miami highemphasis loading zones. The Department will lead the new loading policy public outreach and education with Downtown Miami residents and businesses.

City of Miami Code Compliance Department

The Department is responsible for upholding enacted City code and policies and assist the City of Miami Capital Improvements & Transportation Department with public outreach. The Department's coordination with both private and public entities regarding updated loading zone policies, enforcement, and citation processes is critical to the successful implementation of loading zone policy.

City of Miami Police Department

The Department is responsible for upholding the implemented fine schedules for violations of loading zone policy and issuing moving citations for obstructing traffic (double parking). It is assumed that dedicated City of Miami police staff will be required to ticket delivery vehicle operators directly on-site and citations can be issued to the operator's commercial driver's license, which may help deter parking violations and congestion.

Miami Parking Authority

The MPA is responsible for facilitating continued enforcement of loading hours, maximum loading time periods, and/or permit validation. MPA manages and develops on- and off-street parking in the City of Miami and will assist in improvements which include the reduction and modifications of on-street parking spaces for accommodation of additional designated high-emphasis loading zones.

City of Miami Fire Department

The Department is responsible for the review of all plans for new construction throughout Downtown Miami. The Department's involvement will ensure all modifications to loading zones, curbs, and laneage meet the required Fire and Life Safety Codes.

Delivery Purveyors

Coordination with delivery purveyors is imperative to ensure that both the owners and operators of commercial delivery vehicles are informed of the new loading zone policies, time-of-day loading restrictions, and potential penalties for violations.

Businesses

Coordination with businesses for deliveries will help ensure efficient loading and unloading. Businesses will be informed of updated loading hours and maximum loading time periods to facilitate quick turnover for delivery vehicles and as a result a reduced impact to traffic.

DEVELOPMENT OF RECOMMENDATIONS FOR IMPLEMENTATION AND FURTHER STUDY

An implementation plan was developed based on project improvement time horizons. The figure below provides a simplified summary of the implementation tasks involved from project conception through the construction of the improvements.



Implementation Flow Chart

Project Implementation Plan

Project Conception

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During the project conception stage the purpose and needs or goals of a project/objective are developed and stated.

Project Feasibility

Once project conception is established, the next state is assessing a project's feasibility. This step includes assessing fatal flaws of a project, preliminary alternatives screening, and elimination of unreasonable improvements/alternatives.

Operations and Maintenance Projects

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Intersection improvements, pavement/marking modifications, turn lane improvements, and other non-major infrastructure improvements will seek funding within the City's operating and maintenance budgets.

Inclusion in Long Range Transportation Plan (LRTP)

If a project is deemed feasible, the project is eligible for inclusion into the LRTP. The objective is to develop a program of cost feasible transportation improvements for planning horizon year. During this stage, public input is garnered through public meetings and outreach. Additionally, a Project Development & Environment (PD&E) study or inclusion in State Transportation Improvement Plans (STIPs) may be considered for projects on state roadways seeking Federal funds.

Project Development & Environment (PD&E)

If a project advances to the development stage, a PD&E study is conducted. Proposed changes are evaluated and environmental impacts examined to determine the projects long-term feasibility and impact.

Transportation Improvement Plan (TIP)

Following the inclusion into the LRTP and identification of funding sources, the project becomes eligible to be designed, permitted, and constructed.

Project Improvement Time Horizons

Time horizons defined for this study were short-term (0-5 years), mid-term (6-10 years), and long-term (>10 years). Table 4 summarizes the implementation time horizons for each of the identified constrained locations.

Constrained Location		Short-term (0-5 years)	Mid-term (6-10 years)	Long-term (<10 years)	Further Study
Location 1	West side of SE 3 rd Avenue between SE 1 st Street and SE 2 nd Street	x			
Location 2	South side of SE 1 st Street between SE 3 rd Avenue and SE 2 nd Avenue	х			
Location 3	North side of SE 1 st Street between SE 3 rd Avenue and SE 2 nd Avenue	Х			
Location 4	West side of SE 3rd Avenue between E Flagler Street and SE 1st Street	х			
Location 5	South side of E Flagler Street between SE 3 rd Avenue and SE 2 nd Avenue		X		
Location 6	North side of E Flagler Street between NE 1 st Avenue and NE 2 nd Avenue		Х		
Location 7	North side of SE 2 nd Street between SE 1 st Avenue and SE 2 nd Avenue	х			
Location 8	North side of SE 1st Street between SE 1st Avenue and SE 2 nd Avenue	х			
Location 9	West side of SE 2 nd Avenue between SE 1 st Street and SE 2 nd Street	х			
Location 10 ⁽¹⁾	South side of SE 1st Street between SE 3rd Avenue and Biscayne Boulevard		(1)		(1)
Location 11	North side of SE 2 nd Street between Biscayne Boulevard and SE 3 rd Avenue	Х			
Location 12 ⁽¹⁾	West side of Biscayne Boulevard between NE 2 nd Street and NE 1 st Street	(1)			(1)
Location 13	North and south sides of NE 1 st Street between Biscayne Boulevard and NE 2 nd Avenue	Х			
Location 14	North side of NE 3 rd Street between Biscayne Boulevard and NE 2 nd Avenue	Х			
Location 15	North side of SW 1 st Street between SW 2 nd Avenue and SW 1 st Avenue	х			
Location 16	South side of NE 5 th Street between NE 1 st Avenue and N Miami Avenue	х			Х
Location 17	NW 8 th Street and NW 3 rd Avenue/I-95 on-ramp NW 8 th Street and NW 3 rd Court/I-95 off-ramp		X	Х	Х
Location 18	I-395 on-ramp and off- ramps at NE 11 th Street and NE 2 nd Avenue		х		
Location 19	Downtown Distributor Ramp at SE 3 rd Street/SE 2 nd Street and SE 2 nd Avenue/SE 3 rd Avenue		X		
Location 20	North side of NE 2 nd Street between Biscayne Boulevard and SE 3 rd Avenue	Х			
Location 21	South side of SE 4 th Street/Biscayne Boulevard Way at SE 2 nd Avenue	х			
Location 22 ⁽¹⁾	SE 3 rd Street east of SE 3 rd Avenue	(1)			(1)
Location 23	East side of NE 2 nd Avenue north of NE 1 st Street	X			х
Location 24	East side of South Miami Avenue north of SE 2 nd Street	Х			
Corridor 1	Biscayne Boulevard from NE 10 th Street to NE 15 th Street				Х
Corridor 2	NE 1 st Avenue from NE 5 th Street to NE 11 th Street				Х
Corridor 3	NW 8 th Street from NW 2 nd Avenue to NW 1 st Avenue				Х

Table 4: Constrained Location Implementation Time Horizons

Note: ⁽¹⁾ Improvements not recommended for implementation by PAT.

Table 5 summarizes the implementation time horizons for the components of the proposed loading zone policy.

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Loading Zone Policy Component	Short-term (0-5 years)	Mid-term (6-10 years)	Long-term (>10 years)
Legislation	Х		
Public Outreach	Х		
Agency Coordination	Х		

Table 5: Loading Zone Policy Implementation Time Horizons

RECOMMENDATIONS

Development of improvement scenarios for the mitigation of downtown congestion include system-wide improvements and loading zone improvements. Downtown system-wide improvements were developed to enhance truck access to PortMiami and reduce truck-related congestion. Additionally, loading zone improvements were developed to reduce passenger vehicle usage of designated truck loading zones which results in additional congestion from truck loading in adjacent travel lanes. Loading zones were also evaluated to determine the appropriate loading zone length to accommodate various trucks.

Programmed improvements, contemplated improvements, proposed improvements, and additional considerations were identified. These improvements include the following:

• Programmed Improvements

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- o FDOT I-395 Reconstruction
- o FDOT Downtown Distributor On-Ramp Lane Addition
- Contemplated Improvements
 - o City of Miami Improvements on SE 3rd Avenue
- Proposed Improvements
 - o I-95 Ramps at NW 8th Street and NW 3rd Court/NW 3rd Avenue
- Loading Zone Improvements
 - o Policy
 - o High-emphasis loading zones
 - Time-of-day loading restrictions for both general and location specific purposes

Unregulated on-street loading activities tend to exacerbate congestion in Downtown Miami. Therefore, a loading policy has been developed to help minimize the impact of on-street loading activities on the transportation network. As part of the proposed loading policy, permits would be issued to persons or businesses with a need to engage in the loading and unloading of freight and goods. Specific loading hours and maximum loading time periods are also recommended.

The major enforcement challenge with loading operations involves the accountability of delivery vehicle operators violating loading zone restrictions. The permit program will allow for significant fines, permit revocation, and/or vehicle towing. Additionally, enforcement measures will prevent passenger vehicles from occupying designated freight loading zones by levying citations for drivers parked during the posted hours for the loading zone.

Public outreach is a critical component to a successful loading zone policy. It is critical to include all the stakeholders in coordination efforts so that implementation of the loading zone policy can be as seamless as possible. Coordination should be made with the following entities:

- City of Miami Capital Improvements & Transportation Department
- City of Miami Police Department
- City of Miami Code Enforcement Department
- Miami Parking Authority
- City of Miami Fire Department
- Delivery Purveyors
- Businesses

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The specific improvements identified at constrained locations as well as successful implementation of the proposed loading zone policy is expected to reduce congestion deficiencies in Downtown Miami under existing and future year conditions. These improvements are expected to help accommodate Downtown Miami's recent growth, prepare for additional projected commercial and residential growth, and improve the economic health and vitality of the City of Miami.

ADDITIONAL CONSIDERATIONS

All-weather elevated pedestrian corridors providing interconnectivity between mixed-use developments within Downtown Miami should be considered for further study as the City continues to develop it's skyline and increase density. The increased density will create increased pedestrian activity which will create the need for all-weather pedestrian interconnectivity. Examples of an existing network of interconnected elevated pedestrian corridors are the Central Elevated Walkway located in Hong Kong, China and the Skyway System located in Minneapolis, Minnesota. These extensive networks of grade-separated pedestrian walkways provide pedestrian connectivity to mixed-use land uses throughout Hong Kong, which is one of the world's most densely and urban cities, and Minneapolis. A potential location for implementation of an all-weather pedestrian corridor would be a grade-separated walkway from the Freedom Tower Metromover station located along NE 2nd Avenue between NE 6th Street and NE 7th Street to the American Airlines Arena located between NE 6th Street and NE 8th Street. This above-grade pedestrian corridor would facilitate a significant amount of pedestrian activity, particularly for guests at the Arena.



Central Elevated Walkway located in Hong Kong, China



Skyway System located in Minneapolis, Minnesota





Proposed all-weather elevated pedestrian corridor