

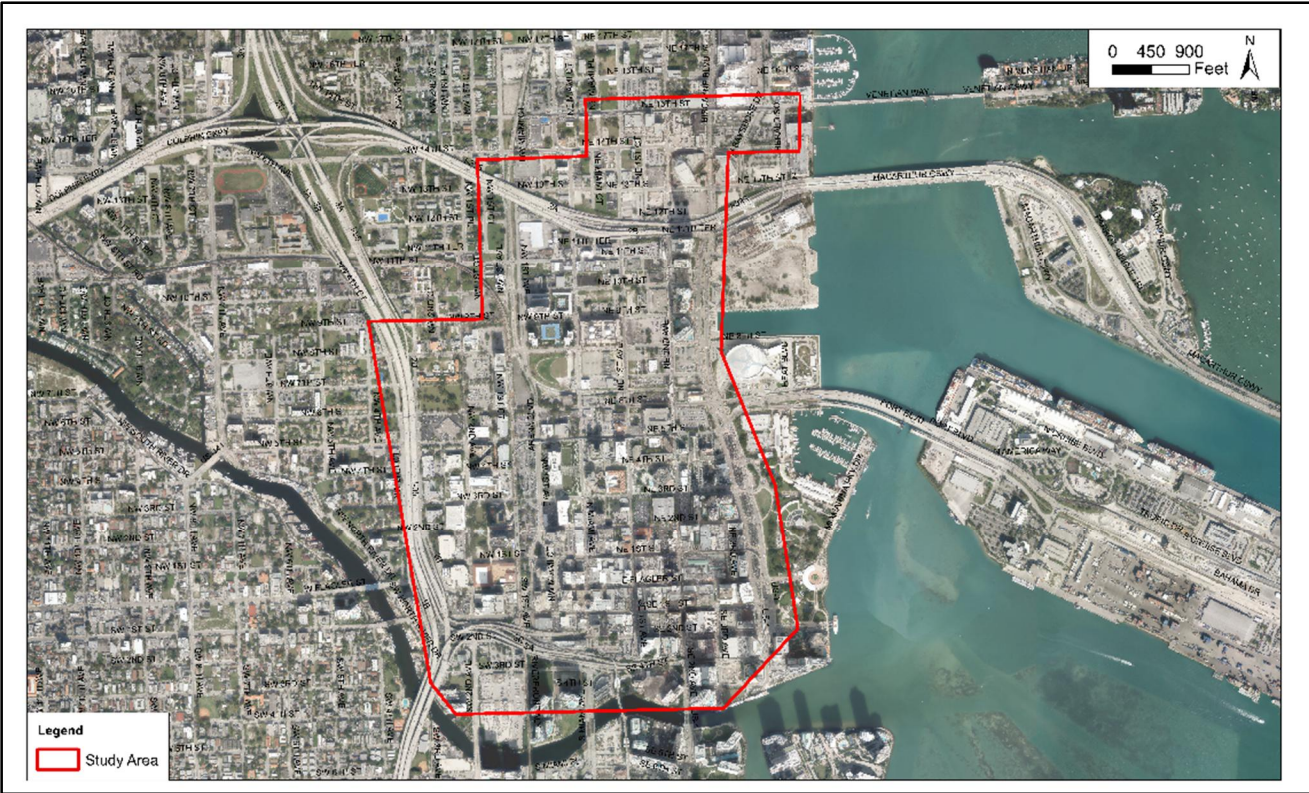
EXECUTIVE SUMMARY

STUDY PURPOSE

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 will 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 examined existing and future year 2035 traffic conditions, identified constrained locations and congestion deficiencies in Downtown Miami, and proposed specific improvements to accommodate existing and future development and forecasted freight growth.



Downtown Miami Study Area

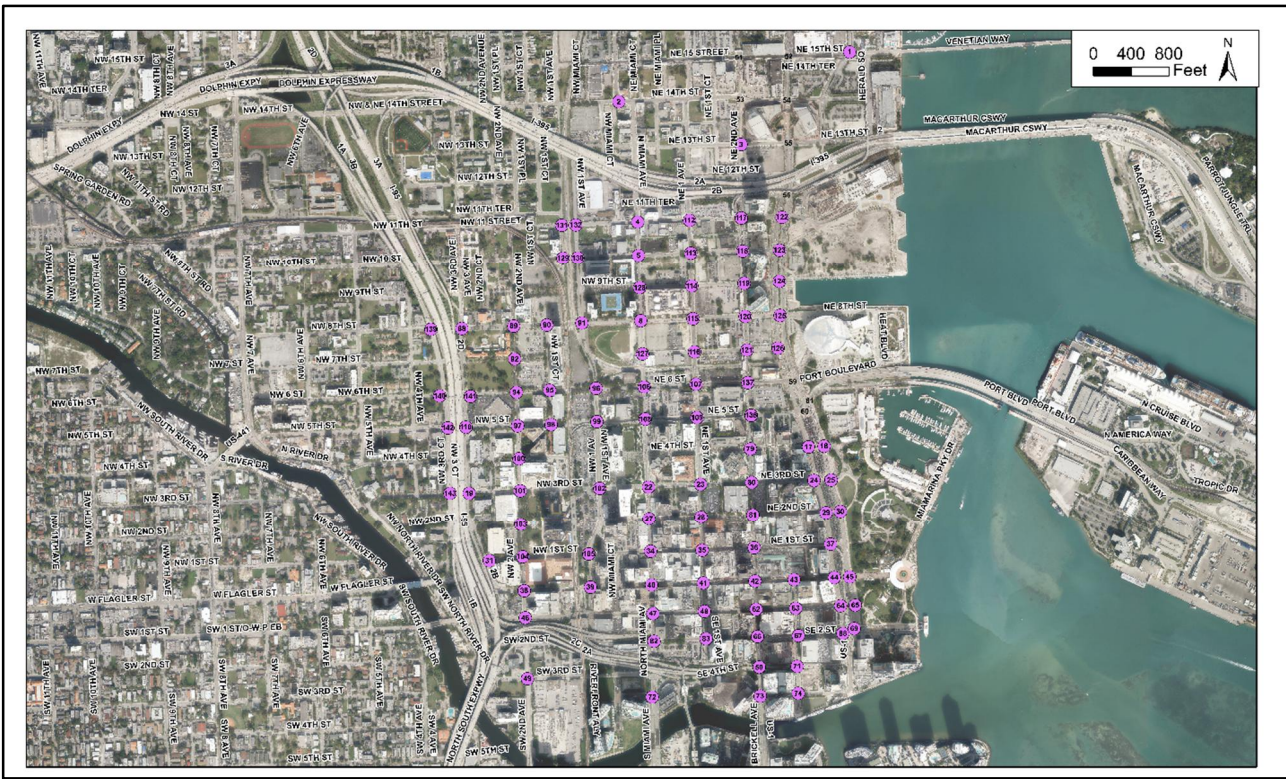
DATA COLLECTION AND ANALYSIS

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

- Traffic data gathering and collection
 - City of Miami’s Downtown Miami Transportation Analysis
 - All Aboard Florida – Miami Station Traffic Study
 - Miami Worldcenter Traffic Study
 - New intersection turning movement counts (13 total)
- Existing year 2015 traffic volume development and analysis of over 111 intersections
- Future year 2035 traffic volume development and analysis of over 111 intersections

The future analysis accounts for committed developments and improvement projects including the following:

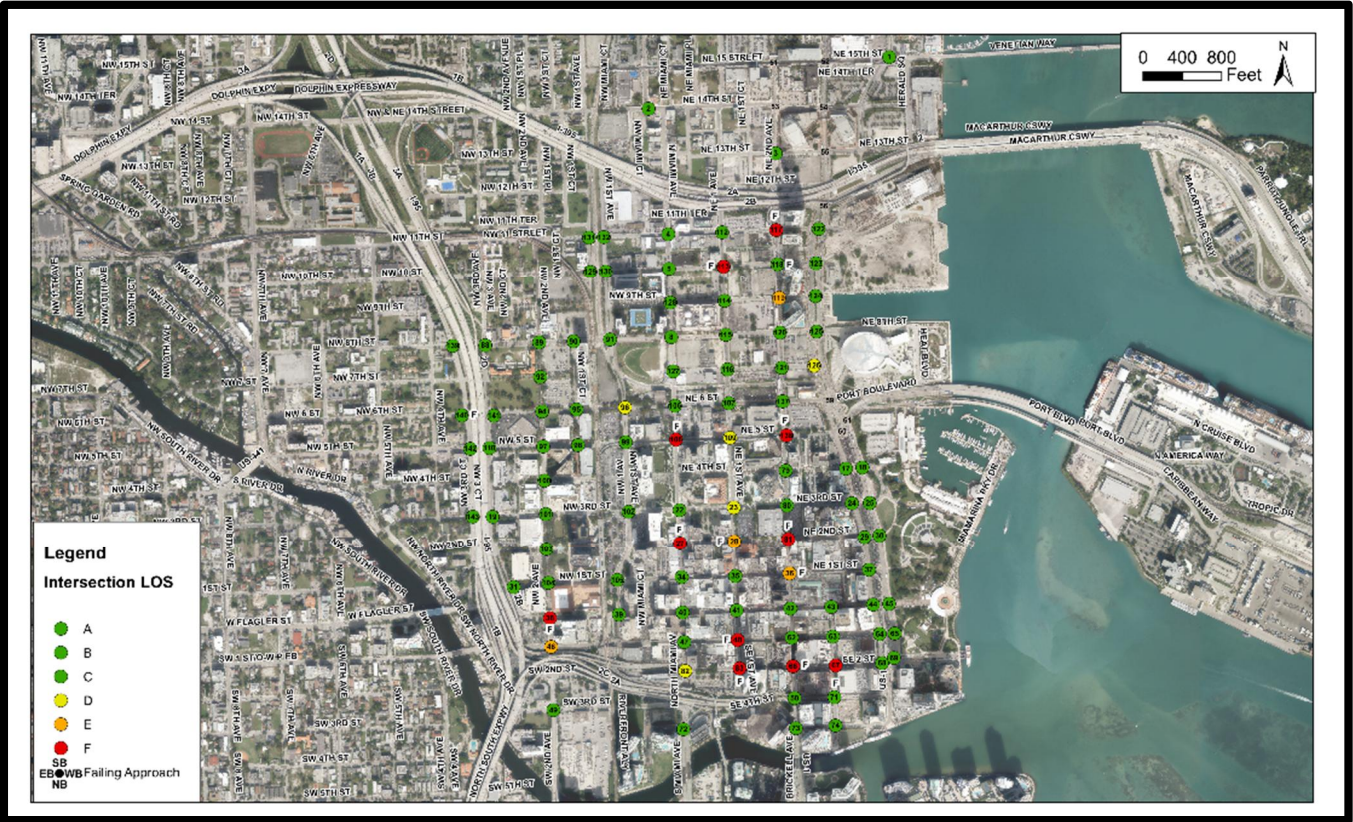
- All Aboard Florida – Miami Station
 - Miami Worldcenter – 7th Street Closure
 - Miami River Development SAP
 - I-395 Reconstruction
 - Children’s Courthouse
 - All Aboard Florida – Miami Station
 - Brickell CitiCentre/Brickell CitiCentre North 2
 - Miami Science Museum
- Element
 - 700 Biscayne Boulevard
 - 800 Biscayne Boulevard
 - 1400 Biscayne Boulevard
 - 1700 Biscayne Boulevard
 - Riverside Tower
 - The Chelsea



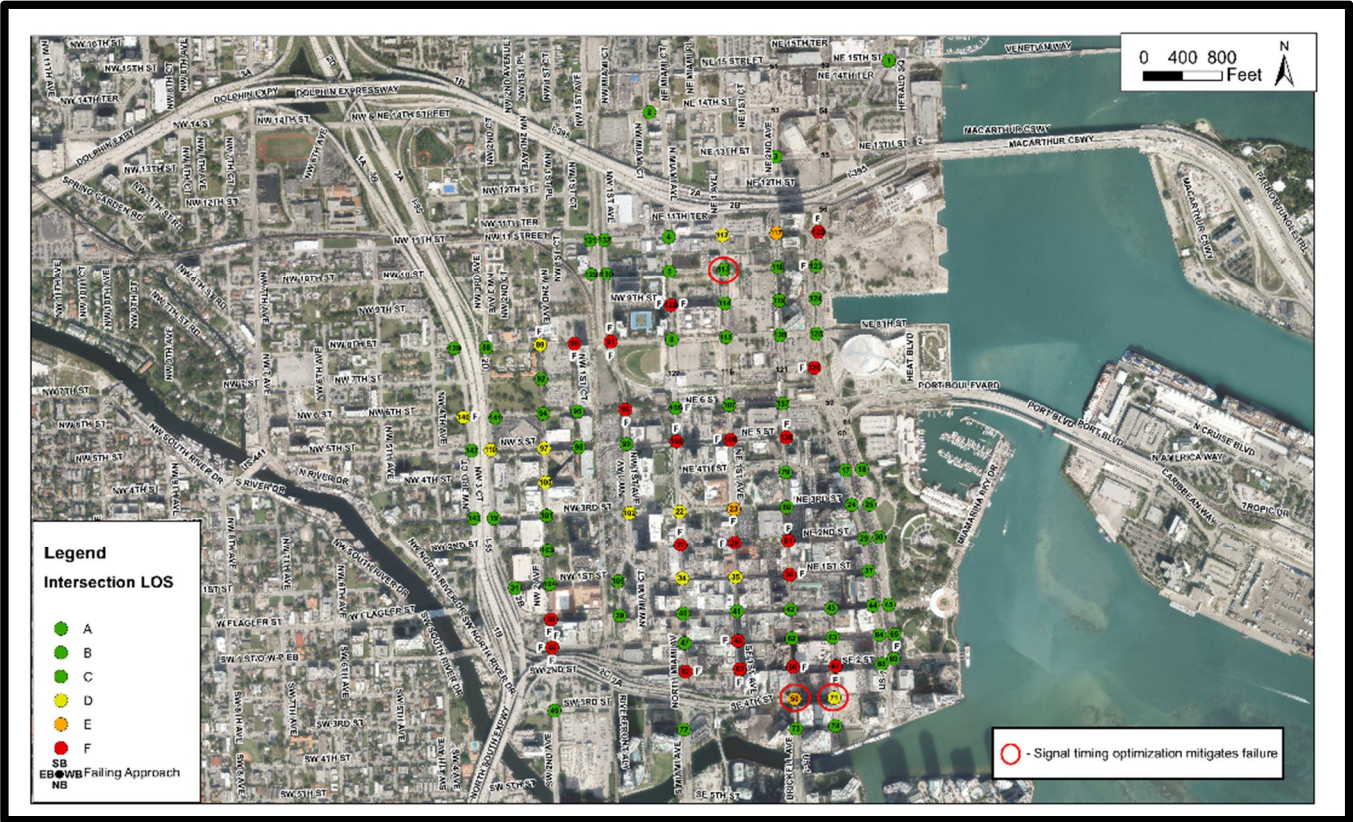
Downtown Miami Study Area Intersections

EVALUATION OF CONGESTION DEFICIENCIES

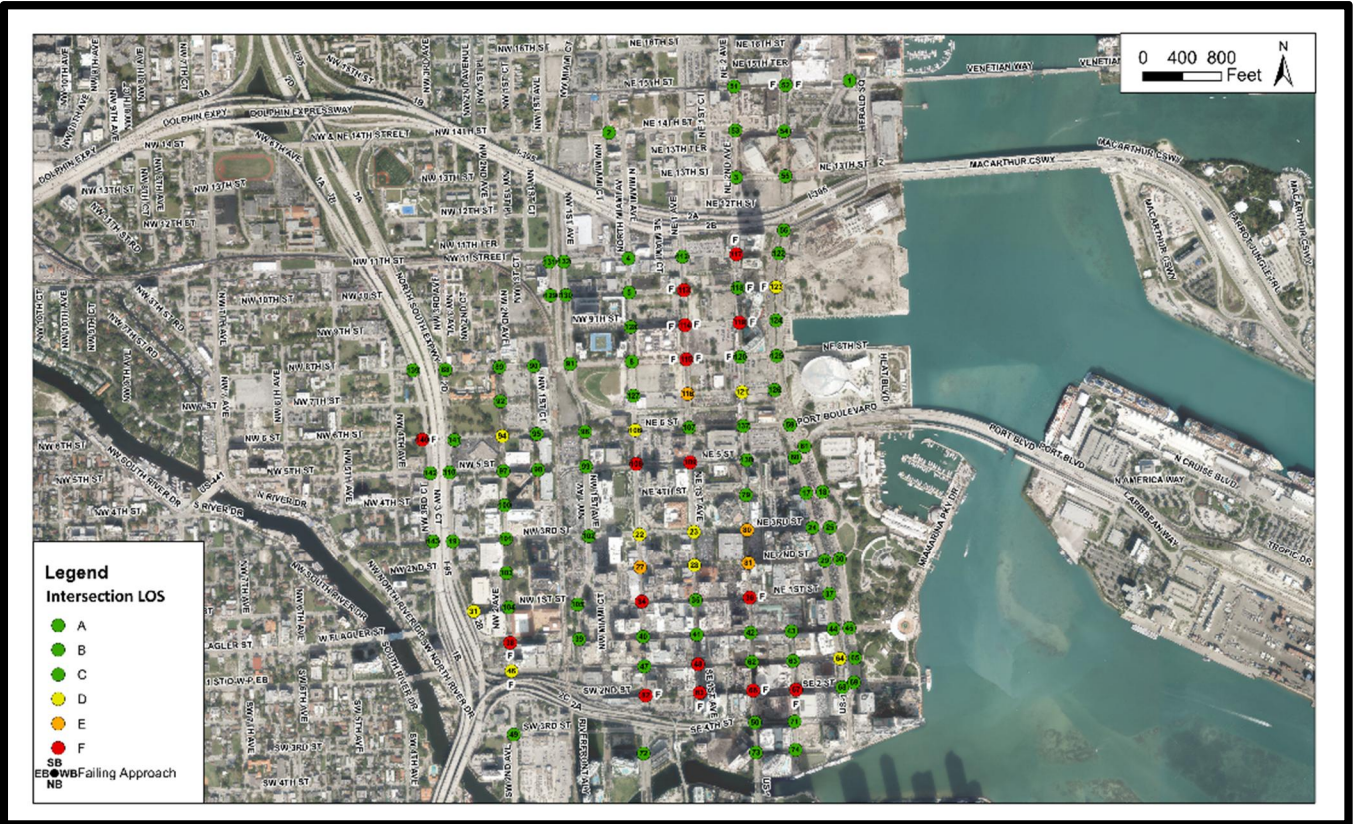
The results of the existing and future year analyses are graphically represented below.



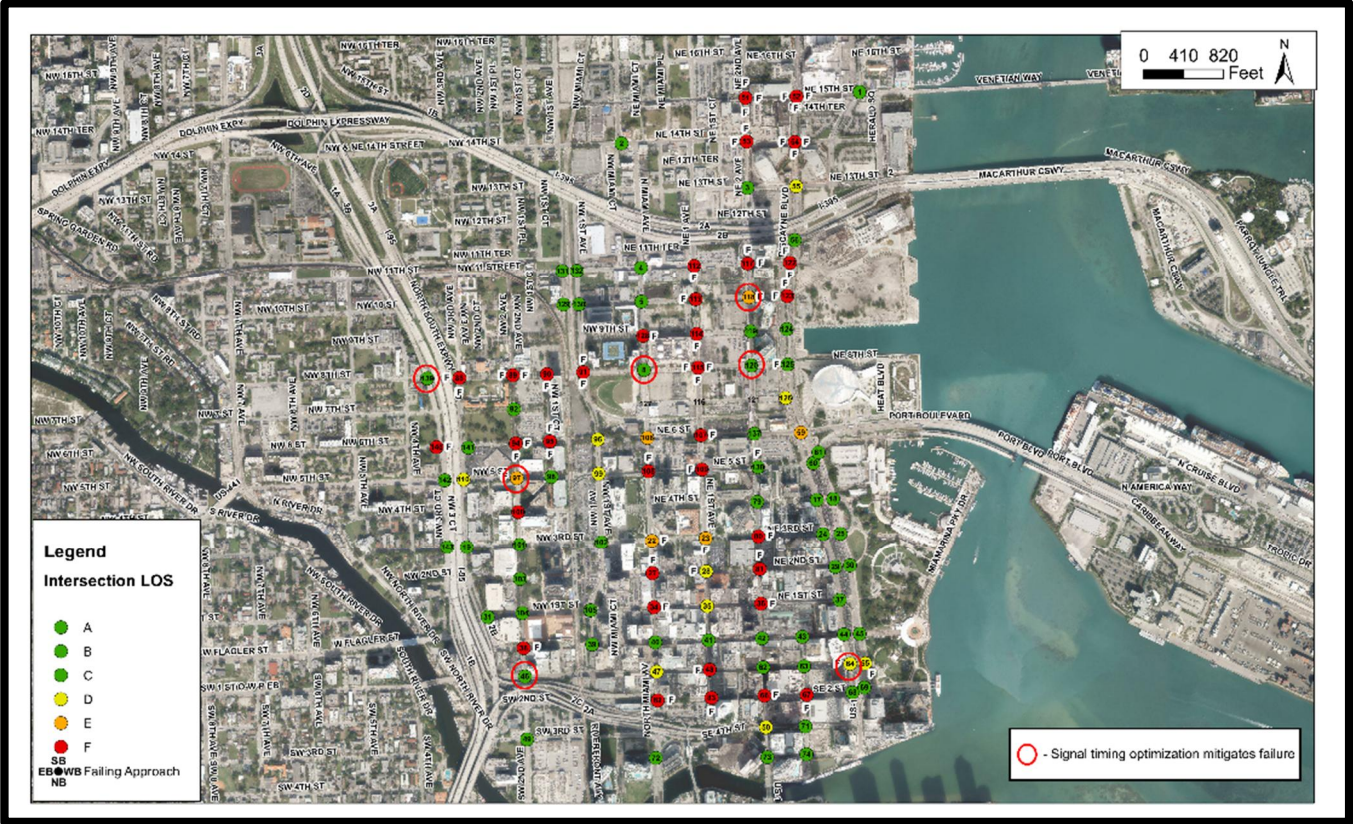
2015 AM Intersection Level of Service



2035 Optimized AM Intersection Level of Service



2015 PM Intersection Level of Service



2035 Optimized PM Intersection Level of Service

CONSTRAINED LOCATIONS AND CORRIDORS

Improvements at twenty-four (24) individual constrained areas were identified within Downtown Miami. Three (3) constrained corridors were identified for additional study and an elevated pedestrian corridor is also recommended for further analysis.

Constrained Locations and Corridors

Location 3: North side of SE 1st Street between SE 3rd Avenue and SE 2nd Avenue
 Location 4: West side of SE 3rd Avenue between E Flagler Street and SE 1st Street
 Location 5: South side of E Flagler Street between SE 3rd Avenue and SE 2nd Avenue
 Location 6: North side of E Flagler Street between NE 1st Avenue and NE 2nd Avenue
 Location 7: North side of SE 2nd Street between SE 1st Avenue and SE 2nd Avenue
 Location 8: North side of SE 1st Street between SE 1st Avenue and S Miami Avenue
 Location 9: West side of SE 2nd Avenue between SE 1st Street and SE 2nd Street
 Location 10: South side of SE 1st Street between SE 3rd Avenue and Biscayne Boulevard
 Location 11: North side of SE 2nd Street between Biscayne Boulevard and SE 3rd Avenue
 Location 12: West side of Biscayne Boulevard between NE 2nd Street and NE 1st Street
 Location 13: North and south sides of NE 1st Street between Biscayne Boulevard and NE 2nd Avenue
 Location 14: North side of NE 3rd Street between Biscayne Boulevard and NE 2nd Avenue

Location 17: NW 8th Street and NW 3rd Avenue/I-95 on-ramp and NW 8th Street and NW 3rd Court/I-95 off-ramp
 Location 18: I-395 on and off ramps at NE 11th Street and NE 2nd Avenue between NE 1st Avenue and Biscayne Boulevard
 Location 19: Downtown Distributor Ramp at SE 3rd Street/SE 2nd Street and SE 2nd Avenue/SE 3rd Avenue
 Location 20: North side of SE 2nd Street between Biscayne Boulevard and SE 3rd Avenue
 Location 21: South side of SE 4th Street/Biscayne Boulevard Way at SE 2nd Avenue
 Location 22: SE 3rd Street east of SE 3rd Avenue
 Location 23: East side of NE 2nd Avenue north of NE 1st Street
 Location 24: East side of S Miami Avenue north of SE 2nd Street
 Corridor 1: Biscayne Boulevard from NE 10th Street to NE 15th Street
 Corridor 2: NE 1st Avenue from NE 5th Street to NE 11th Street
 Corridor 3: NW 8th Street from NW 2nd Avenue to NW 1st Avenue
 Additional Considerations: Freedom Tower Metromover station to American Airlines Arena elevated pedestrian corridor



Detailed analysis worksheets were developed for each of the constrained locations and corridors.

WORK ORDER
GPC V-28

MPO

MIAMI-DADE
METROPOLITAN
PLANNING
ORGANIZATION

IMPACT OF

PortMiami Tunnel

ON DOWNTOWN TRAFFIC CONGESTION

Constrained Location 2

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	<ul style="list-style-type: none">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

Sample Constrained Location Analysis Worksheet

DEVELOPMENT OF DOWNTOWN CONGESTION IMPROVEMENT SCENARIOS

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

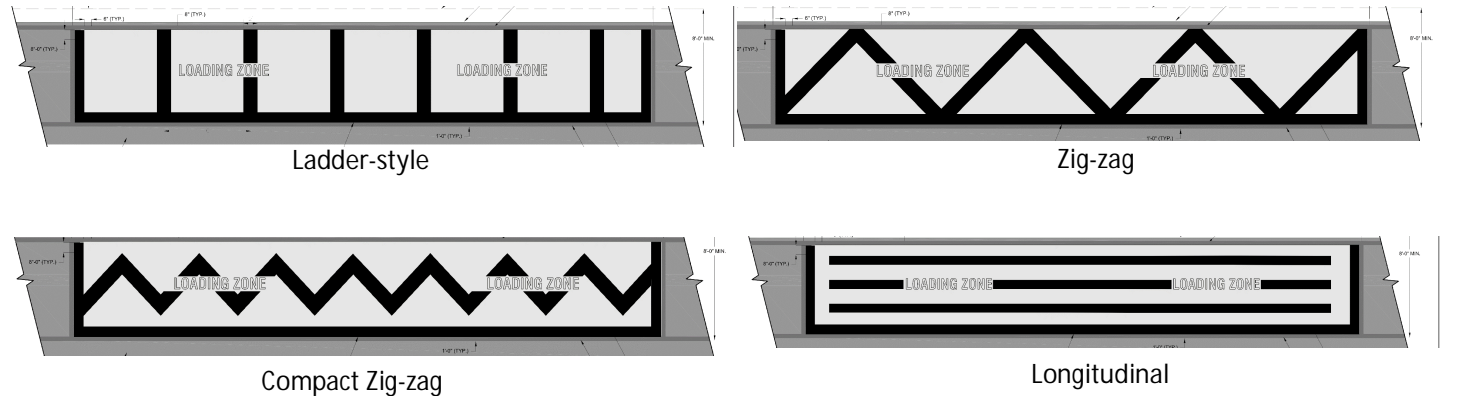
- Programmed Improvements
 - FDOT I-395 Reconstruction
 - FDOT Downtown Distributor
- Contemplated Improvements
 - City of Miami Improvements on SE 3rd Avenue
- Proposed Improvements
 - I-95 Ramps at NW 8th Street and NW 3rd Court/NW 3rd Avenue
- Constrained Location Improvements
- Loading Zone Improvements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

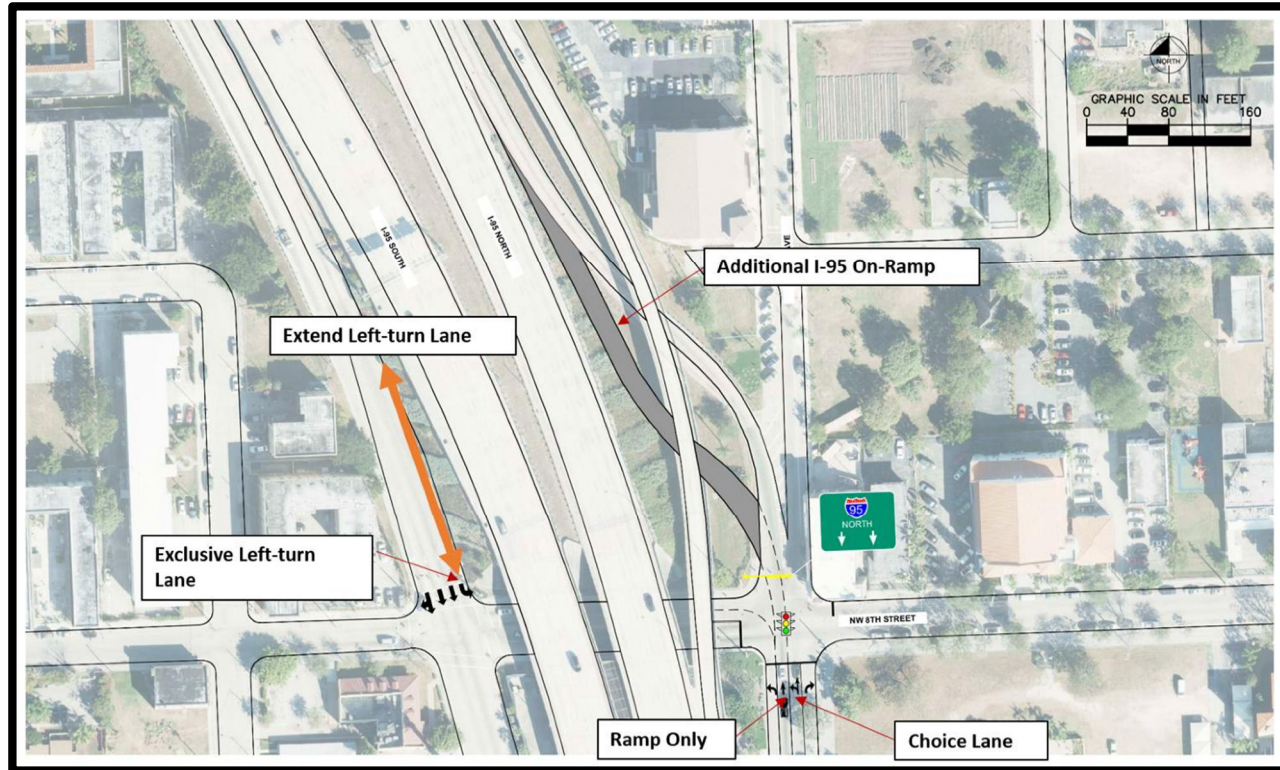
Loading Zone Improvements

Proposed loading zone improvements consist of recommended policies and engineering improvements, 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.

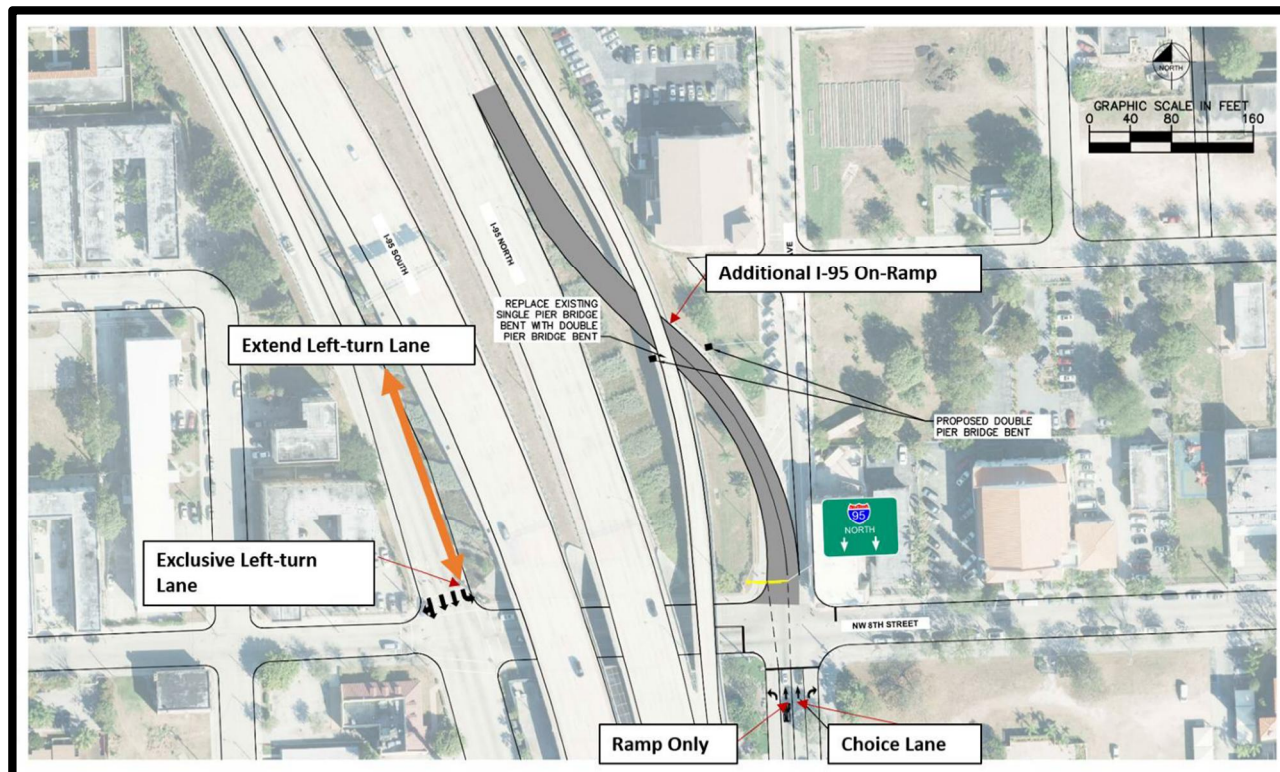
High-emphasis Loading Zones

To prevent passenger vehicles from parking in designated truck loading zones, four (4) high-emphasis loading zone design alternatives were developed. High-emphasis loading zones are expected to deter passenger vehicles from parking in 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 Federal Highway Administration's (FHWA's), *Manual on Uniform Traffic Control Devices* (MUTCD) standards as they do not reflect existing pavement marking standards nor designs.





I-95 at NW 8th Street and NW 3rd Court/NW 3rd Avenue Improvement Option 1



I-95 at NW 8th Street and NW 3rd Court/NW 3rd Avenue Improvement Option 2

Loading Zone Maneuverability

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's), *A Policy on Geometric Design of Highways and Streets*, 2004/2011.

Truck Type	Truck Length	Required Loading Zone Length
Single-unit truck (SU-30)	30 feet	60 feet
Single-unit dual-rear axle truck (SU-40)	40 feet	72 feet
Intermediate semitrailer truck (WB-50)	55 feet	110 feet
Interstate semitrailer truck (WB-62)	69 feet	127 feet

Loading Zone Length

Loading Zone Policy

A loading policy was 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.

Permit Program

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" program for purveyors with ten (10) or more delivery vehicles.

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.

Time-of-day loading will be implemented at Downtown Miami areas that do not have loading zones and can only accommodate loading within travel lanes to facilitate off-peak hour loading. Time-of-day loading will facilitate off-peak loading at constrained locations with inadequate loading zones. Time-of-day loading will occur between 10:00 A.M. and 3:30 P.M. Additionally, maximum loading time periods no greater than 30 or 60 minutes should be instituted to promote efficient use of loading zones.

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

Other Municipalities Loading Zone Requirements

Loading Zone Enforcement

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 citations for obstructing traffic (double parking) issued by the City of Miami Police Department 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 permittees will be tied to higher permit renewal fees or potential loading zone permit revocation creating an incentive to comply with adopted loading zone policies.

The City of Miami Code Compliance Department and MPA should be the primary enforcement agency with a freight loading zone ordinance adopted by the City with support from the City of Miami Police Department.

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 include:

- City of Miami Capital Improvements & Transportation Department
 - Responsible for planning, coordination, implementation, and monitoring of all construction related physical improvements, Downtown Miami high-emphasis loading zones, and public outreach.
- City of Miami Code Compliance Department
 - Responsible for upholding enacted City code and policies and assist the City of Miami Capital Improvements & Transportation Department with public outreach.
- City of Miami Police Department
 - Responsible for upholding the implemented fine schedules for violations of loading zone policy and issuing moving citations for obstructing traffic (double parking).
- Miami Parking Authority
 - Responsible for facilitating continued enforcement of loading hours, maximum loading time periods, and/or permit validation.
- City of Miami Fire Department
 - Responsible for the review of all plans for new construction throughout Downtown Miami.
- Delivery Purveyors
 - Ensures 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
 - Ensures efficient loading and unloading to facilitate quick turnover for delivery vehicles and as a result a reduced impact to traffic.

CONCLUSION

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

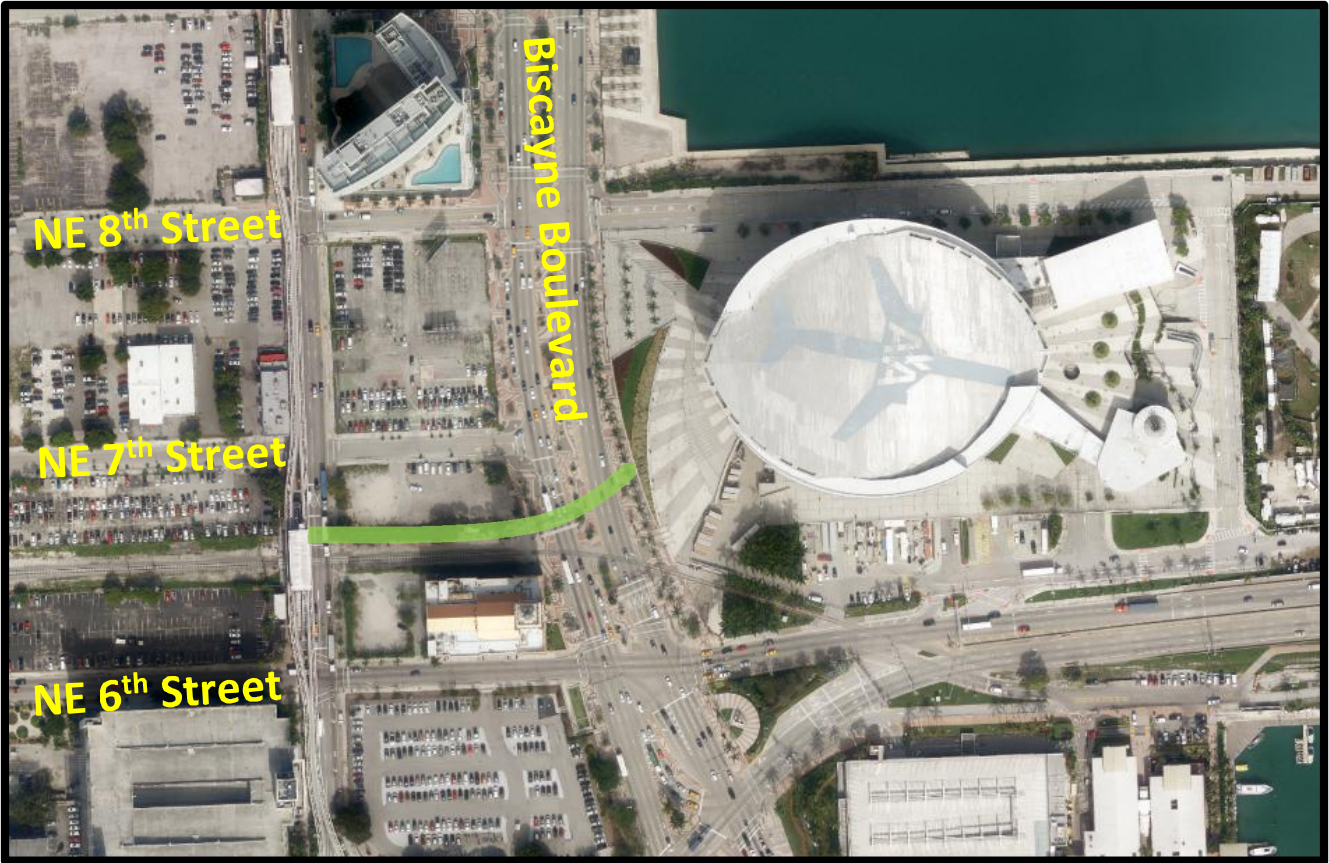
All-weather elevated pedestrian corridors providing interconnectivity between mixed-use developments within Downtown Miami should be considered for further study as the City continues to develop it's skyline and increase density. The increased density will create increased pedestrian activity which will 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 pedestrian corridor