

ATTACHMENT B



October 20, 2022

Mr. Jose R. Gonzalez, P.E.
City of Miami Beach
Department of Transportation
1700 Convention Center Drive, 3rd Floor
Miami Beach, FL 33139

***Subject: Lincoln Road Vehicle Closure
Preliminary Traffic Feasibility Assessment***

Dear Mr. Gonzalez:

The purpose of this correspondence is to summarize the preliminary traffic feasibility for the Lincoln Road closure between Washington Avenue and Collins Avenue/SR A1A to vehicular traffic in Miami Beach, Florida. The roadway segment proposed for vehicular closure is located just east of a one-half mile long pedestrian mall promenade that is already closed to vehicular traffic. Currently, the roadway segment proposed for closure consists of a four (4) lane divided road with wide sidewalks and on-street parking between James Avenue and Collins Avenue/SR A1A. A project location map is provided in Attachment A. The following sections summarize data collection, traffic diversions, and transit implications for the proposed vehicular closure.

DATA COLLECTION

In order to determine the peak traffic periods for analysis, 72-hour continuous counts were collected at the following two (2) locations from Thursday, June 16, 2022, through Saturday, June 18, 2022, and evaluated:

- Collins Avenue/SR A1A, north of Lincoln Road
- Lincoln Road, east of Collins Avenue/SR A1A

The peak period was determined to occur on Friday from 3:30 P.M. to 5:30 P.M. Therefore, turning movement counts (TMC's) were collected during peak conditions on Friday, August 12, 2022, from 3:30 P.M. to 5:30 P.M to capture peak traffic volumes at the following intersections:

- Washington Avenue and 17th Street
- James Avenue and 17th Street
- Collins Avenue/SR A1A and 17th Street
- James Avenue and 1675 James Avenue Parking Lot Driveway
- Washington Avenue and BA Caputo Way
- James Avenue and BA Caputo Way
- Washington Avenue and Lincoln Road
- James Avenue and Lincoln Road
- Washington Avenue and 16th Street
- Collins Avenue/SR A1A and 16th Street

- Collins Avenue/SR A1A and Lincoln Road

All volumes were collected in 15-minute intervals and adjusted to peak season conditions. Turning movement counts also included pedestrian and bicycle data. The traffic counts were adjusted to peak season conditions using the appropriate FDOT peak season category factors. The 72-hour continuous counts, turning movement counts, and FDOT peak season factor category report excerpts are included in Attachment B. Figure presenting existing vehicular and pedestrian volumes are included in Attachment C.

TRAFFIC DIVERSIONS

Lincoln Road between Washington Avenue and Collins Avenue/ SR A1A is proposed to be vacated and converted to a non-vehicular, pedestrian-only facility. The closure is anticipated to reduce vehicle and pedestrian conflicts. All traffic volumes utilizing Lincoln Road will be diverted to Washington Avenue and Collins Avenue/SR A1A between 17th Street and 16th Street. The following traffic diversions are expected as part of the analysis:

- The westbound left-turn volumes (105) at the intersection of Washington Avenue and Lincoln Road will be proportionally diverted to the southbound right-turn and westbound through movements at the intersection of Collins Avenue/SR A1A and 17th Street followed by a westbound left-turn at the intersection of Washington Avenue and 17th Street and the southbound right-turn movement at the intersection of Collins Avenue/SR A1A and 16th Street followed by a westbound left-turn at the intersection of Washington Avenue and 16th Street. The westbound left-turn movement at Washington Avenue and 17th Street is currently 43 and the westbound left-turn movement at Washington Avenue and 16th Street is currently 56. Pedestrian conflicts are expected to be reduced from 717 pedestrians to between 90 and 114 pedestrians.
- The westbound right-turn volumes (95) at the intersection of Washington Avenue and Lincoln Road will be proportionally diverted to the northbound left-turn movement at the intersections of Collins Avenue/SR A1A and 17th Street followed by a westbound right-turn at the intersection of Washington Avenue and 17th Street and the northbound left-turn and westbound through movement at the intersection of Collins Avenue/SR A1A and 16th Street followed by a westbound right-turn at the intersection of Washington Avenue and 16th Street. The westbound right-turn movement at Washington Avenue and 17th Street is currently 41 and the westbound right-turn movement at Washington Avenue and 16th Street is currently 102. Pedestrian conflicts are expected to be reduced from 567 pedestrians to between 95 and 127.
- The northbound right-turn volumes (132) at the intersection of Washington Avenue and Lincoln Road will be proportionally diverted to the northbound right-turn movements at the intersections of Washington Avenue and 17th Street and Washington Avenue and 16th Street. The northbound right-turn volume at the intersection of Washington Avenue and 17th Street is currently 33 and the northbound right-turn volume at the intersection of Washington Avenue and 16th Street is currently 97. Pedestrian conflicts are expected to be generally reduced from 160 pedestrians to between 33 and 202.
- The southbound left-turn volumes (90) at the intersection of Washington Avenue and Lincoln Road will be proportionally diverted to the southbound left-turn movements at the intersection of Washington Avenue and 17th Street and Washington Avenue and 16th Street. The

southbound left-turn volume at the intersection of Washington Avenue and 17th Street is currently 21 and the southbound left-turn volume at the intersection of Washington Avenue and 16th Street is currently 77. Pedestrian conflicts are expected to be reduced from 160 pedestrians to between 33 and 202.

- The eastbound left-turn volumes (68) at the intersection of Collins Avenue/SR A1A and Lincoln Road will be proportionally diverted to the northbound right-turn movement at the intersections of Washington Avenue and 17th Street followed by an eastbound left-turn at the intersection of Collins Avenue/SR A1A and 17th Street and the northbound right-turn and eastbound through movements at the intersection of Washington Avenue and 16th Street followed by an eastbound left-turn movement at Collins Avenue/SR A1A and 16th Street. The eastbound left-turn volumes at Collins Avenue/SR A1A and 17th Street is currently 98 and the eastbound left-turn volumes at Collins Avenue/SR A1A and 16th Street is 151. Pedestrian conflicts are expected to be reduced from 429 pedestrians to between 185 and 206.
- The eastbound through volumes (45) at the intersection of Collins Avenue/SR A1A and Lincoln Road will be proportionally diverted to the eastbound through movements at the intersections of Washington Avenue and 17th Street followed by a southbound left-turn movement at the intersection of Collins Avenue/SR A1A and Lincoln Road and Washington Avenue and 16th Street followed by a northbound right at the intersection of Collins Avenue/SR A1A and Lincoln Road.
- The eastbound right-turn volumes (73) at the intersection of Collins Avenue/SR A1A and Lincoln Road will be proportionally diverted to the southbound left-turn and eastbound through movements at the intersections of Washington Avenue and 17th Street followed by an eastbound right-turn movement at the intersection of Collins Avenue/SR A1A and 17th Street and the southbound left-turn movement at the intersection of Washington Avenue and 16th Street followed by an eastbound right-turn movement at the intersection of Collins Avenue/SR A1A and 16th Street. The eastbound right-turn volumes at Collins Avenue/SR A1A and 17th Street is currently 91 and the eastbound right-turn volumes at Collins Avenue/SR A1A and 16th Street is 71. Pedestrian conflicts are expected to be reduced from 433 pedestrians to between 165 and 197.
- The northbound left-turn volumes (43) at the intersection of Collins Avenue/SR A1A and Lincoln Road will be proportionally diverted to the northbound left-turn movements at the intersections of Collins Avenue/SR A1A and 17th Street and Collins Avenue/A1A and 16th Street. The northbound left-turn volumes at the intersection of Collins Avenue/A1A and 17th Street is currently 85 and the northbound left-turn volumes at the intersection of Collins Avenue/A1A and 16th Street is currently 40. Pedestrian conflicts are expected to be reduced from 476 pedestrians to between 401 and 458.
- The southbound right-turn volumes (99) at the intersection of Collins Avenue/A1A and Lincoln Road will be proportionally diverted to the southbound right-turn movements at the intersection of Collins Avenue/SR A1A and 17th Street Collins Avenue/SR A1A and 16th Street. The southbound right-turn volumes at the intersection of Collins Avenue/SR A1A and 17th Street is currently 114 and the southbound right-turn volumes at the intersection of Collins Avenue/SR A1A and 16th Street is currently 122. Pedestrian conflicts are expected to be reduced from 476 pedestrians to between 401 and 458.

Based on a review of the traffic volumes, it is expected that the intersections of 17th Street and Collins Avenue/SR A1A, 17th Street and Washington Avenue, 16th Street and Collins Avenue/SR A1A, and 16th Street and Washington Avenue have available capacity for accommodate the diverted traffic as a result of the proposed closure. Note that the intersection of 16th Street and Collins Avenue/SR A1A may require improvements to the eastbound left-turn movement as approximately 200 left-turn movements are expected during the peak hour with the Lincoln Road Pedestrian Mall extension. However, the conflicting pedestrian volume is significantly less at this intersection than at Lincoln Road and Collins Avenue/SR A1A.

TRANSIT ROUTE EVALUATION

Miami-Dade Transit (MDT) bus and Miami Beach trolley routes were evaluated in order to determine necessary changes to the routes as a result of the proposed vehicular closure. Three (3) City of Miami Beach Trolley routes and six (6) MDT routes currently operate in close proximity (within ½ mile) to the site during the A.M. and P.M. peak hours. Note that according to the MDT website, Route 103/C is not currently in operation due to the COVID-19 pandemic. Therefore, it was not included in this section. Transit route alignment and schedule information is provided in Attachment D.

- **City of Miami Beach Trolley South Beach Route** operates along Washington Avenue in the vicinity of the project site with the nearest stop located just north of Lincoln Road. This route operates with approximately 30-minute headways in the northbound and southbound directions during the A.M and P.M. peak hours. Note that this route's alignment is not on Lincoln Road. However, it will need to be accommodated for at the Washington Avenue transit stops.
- **City of Miami Beach Trolley Middle Beach Route** operates along Collins Avenue in the vicinity of the project site with one (1) stop located along Lincoln Road, west of Collins Avenue. This route operates with approximately 30-minute headways in the northbound and southbound directions during the A.M and P.M. peak hours.
- **City of Miami Beach Trolley Collins Express Route** operates along Collins Avenue in the vicinity of the project site with one (1) stop located along Lincoln Road, west of Collins Avenue. This route operates with approximately 30-minute headways in the northbound and southbound directions during the A.M and P.M. peak hours.
- **MDT Route 112/L** operates along Collins Avenue in the vicinity of the project site with one (1) stop located along Lincoln Road, west of Collins Avenue. This route operates with approximately 15-minute headways in the northbound and southbound directions during the A.M and P.M. peak hours.
- **MDT Route 113/M** operates along Collins Avenue in the vicinity of the project site with two (2) stops located along Lincoln Road, west of Collins Avenue. This route operates with approximately 40 to 60-minute headways in the northbound and southbound directions during the A.M and P.M. peak hours.
- **MDT Route 115** operates along 17th Street in the vicinity of the project site with one (1) stop located along Lincoln Road, west of Collins Avenue. This route operates with approximately 40 to 60-minute headways minute headways in the northbound and southbound directions during the A.M and P.M. peak hours.
- **MDT Route 119/S** operates along Collins Avenue in the vicinity of the project site with two (2) stops located along Lincoln Road, west of Collins Avenue. This route operates with

approximately 15-minute headways in the eastbound and westbound directions during the A.M and P.M. peak hours.

- **MDT Route 120** operates along Collins Avenue in the vicinity of the project site with the nearest stop located on Lincoln Road, west of Collins Avenue. This route operates with approximately 15-minute headways in the northbound and southbound directions during the A.M and P.M. peak hours. Note that this route's alignment is not on Lincoln Road. However, it will need to be accommodated for at the Washington Avenue transit stops.
- **MDT Route 150** operates along Collins Avenue in the vicinity of the project site with one (1) stop located along Lincoln Road west of Collins Avenue. This route operates with approximately 20-minute headways in the northbound and southbound directions during the A.M and P.M. peak hours.

TRANSIT ROUTE ALIGNMENT MODIFICATIONS

Miami Beach Trolley routes and MDT routes have been evaluated in order to determine necessary changes to the routes as a result of the proposed vehicular closure of Lincoln Road between Washington Avenue and Collins Avenue. Note that two (2) City of Miami Beach Trolley routes and six (6) MDT will be directly impacted due to the proposed vehicular closure. The following routes were impacted due to the proposed vehicular closure:

- City of Miami Beach Trolley Middle Beach Route
- City of Miami Beach Trolley Collins Express Route
- MDT Route 112/L
- MDT Route 113/M
- MDT Route 115
- MDT Route 119/S
- MDT Route 120
- MDT Route 150

These route alignments will need to be rerouted from Lincoln Road to 16th Street and utilize either the existing southbound or northbound transit stops at the intersection of Washington and Lincoln Road to account of the Lincoln Road closure. Figures summarizing recommended transit route alignments are included in Attachment D.

TRANSIT ROUTE SCHEDULE ANALYSIS

A detailed schedule analysis was prepared for the northbound and southbound transit stops at the intersection of Washington Avenue and Lincoln Road with the bus routes realigned to determine the maximum expected number of buses to use the transit stops simultaneously without modifying the existing route schedules. The schedule analysis was based on weekday and weekend route schedules obtained from MDT and City of Miami Beach Trolley.

The analysis results of the Washington Avenue northbound transit stop indicate that it is expected a maximum of three (3) buses would utilize the stop simultaneously for both the weekday and weekend day, assuming a 60 second dwell time for passenger boarding and alighting. Currently, the stop can accommodate one (1) bus within a bus bay. The bus bay will need to be modified to accommodate an additional bus. Based on a review of aerial photography it appears that two (2) buses could be

accommodated by modifying the existing bus stop. To accommodate all bus routes, it is recommended to relocate Route 120 to the bus stop further south on Washington Avenue north of 16th Street as that stop is only served by the City of Miami Beach Trolley South Beach Loop route and can accommodate two (2) buses simultaneously for both the weekday and weekend day. Relocating Route 120 from the northbound bus stop at the intersection of Washington Avenue and Lincoln Road will result in a maximum of two (2) buses dwelling simultaneously at this bus stop.

The analysis results of the Washington Avenue southbound transit stop indicate that it is expected a maximum of four (4) buses would utilize the stop simultaneously for the weekday and three (3) buses would utilize the stop simultaneously on a weekend day, assuming a 60 second dwell time. Note the maximum of four (4) buses utilize are expected to utilize the stop for only one (1) minute out of the entire weekday. Note that the typical maximum is three (3) buses which is the maximum number of buses dwelling at the stop under existing conditions, assuming a 60 second dwell time. The bus stop has a wide approximately 20-foot wide sidewalk and buses dwell for boarding and alighting within the curb travel lane with approximately two (2) bus lengths of storage without blocking the on-street parking. Therefore, it is expected that two (2) of the on-street parking spaces may be blocked from time to time to accommodate the maximum of three (3) to four (4) buses dwelling simultaneously as under existing and future conditions.

CONCLUSION

The preliminary traffic feasibility assessment indicates that the Lincoln Road Pedestrian Mall extension is expected to reduce pedestrian and vehicle conflicts in a range of 50 to 90 percent for the influenced area. The Lincoln Road vehicular traffic is expected to be diverted to 16th and 17th Streets with the closure in place. Based on a review of the traffic volumes, it is expected that the intersections of 17th Street and Collins Avenue/SR A1A, 17th Street and Washington Avenue, 16th Street and Collins Avenue/SR A1A, and 16th Street and Washington Avenue have available capacity for accommodate the diverted traffic as a result of the proposed closure. Note that the intersection of 16th Street and Collins Avenue/SR A1A may require improvements to the eastbound left-turn movement as approximately 200 left-turn movements are expected during the peak hour with the Lincoln Road Pedestrian Mall extension.

The closure of Lincoln Road will also require that the transit routes currently on Lincoln Road to be rerouted and utilize the northbound and southbound stops at the intersection of Washington Avenue and Lincoln Road. A bus stop schedule analysis was prepared to determine the maximum number of buses dwelling simultaneously.

The bus stop schedule analysis results for the Washington Avenue northbound transit stop indicate that it is expected a maximum of three (3) buses would utilize the stop simultaneously for both the weekday and weekend day, assuming a 60 second dwell time for passenger boarding and alighting. Currently, the stop can accommodate one (1) bus within a bus bay. The bus bay will need to be modified to accommodate an additional bus. Based on a review of aerial photography it appears that two (2) buses could be accommodated by modifying the existing bus stop. To accommodate all bus routes, it is recommended to relocate Route 120 to the bus stop further south on Washington Avenue north of 16th Street as that stop is only served by the City of Miami Beach Trolley South Beach Loop route and can accommodate two (2) buses simultaneously for both the weekday and weekend day. Relocating

Route 120 from the northbound bus stop at the intersection of Washington Avenue and Lincoln Road will result in a maximum of two (2) buses dwelling simultaneously at this bus stop.

The analysis results of the Washington Avenue southbound transit stop indicate that it is expected a maximum of four (4) buses would utilize the stop simultaneously for the weekday and three (3) buses would utilize the stop simultaneously on a weekend day, assuming a 60 second dwell time. Note the maximum of four (4) buses utilize are expected to utilize the stop for only one (1) minute out of the entire weekday. Further note that the typical maximum is three (3) simultaneous buses which is the current maximum number of buses dwelling at the stop under existing conditions, assuming a 60 second dwell time. Buses dwell for boarding and alighting within the curb travel lane with approximately two (2) bus lengths of storage without blocking the on-street parking. Therefore, it is expected that two (2) of the on-street parking spaces may be blocked from time to time to accommodate the maximum of three (3) to four (4) buses dwelling simultaneously.

Sincerely,

KIMLEY-HORN AND ASSOCIATES, INC.



Adrian K. Dabkowski, P.E., PTOE
Vice President

Attachments