Chapter 5: Transportation

5.1 INTRODUCTION

This chapter evaluates the effects of the station entrance alternatives at the 72nd Street and 86th Street Stations on transportation, including subway station access, vehicular traffic and parking, surface transit, and pedestrian conditions. It begins with a summary of the conclusions of the Final Environmental Impact Statement (FEIS) regarding transportation, and then provides an analysis of the Build station entrance alternatives' effects during construction and operation, in comparison to the effects of the No Action Alternative.

5.2 FEIS FINDINGS

5.2.1 RIDERSHIP

The FEIS utilized two models to forecast the number of transit passengers that would use the various subway and bus routes in the 72nd Street Station and 86th Street Station study areas during the peak hour. The Transit Demand Forecasting Model (TDFM) was used to create ridership forecasts for the various FEIS alternatives and sub-alternatives. The Metropolitan Transportation Authority (MTA) Regional Transit Forecasting Model (RTFM) was used to provide forecasts of commuter rail and suburban transit trips that may include connections to MTA New York City Transit facilities and to study inter-modal trips. The results from these models were used as inputs for the design of the initial station concepts and to determine entrance locations. At the 72nd Street and 86th Street Stations, since the No Action Alternative, as well as all the other station entrance alternatives, would still provide an entrance at the north end of the stations, ridership is not projected to change.

5.2.2 SUBWAY AND COMMUTER RAIL

The FEIS described existing subway service to Manhattan's East Side, including information about ridership, equipment, and service characteristics. The existing conditions summary focused on the 456 subway line, currently the primary subway service for this area.

The FEIS concluded that the excavation of the tunnel for the Second Avenue Subway would affect existing transit service at 15 locations along the alignment; however, none of these included stations in the vicinity of the 72nd Street or 86th Street Station. Therefore, no existing transit services would be impacted by the construction or operation of the No Action Alternative or the station entrance alternatives for the 72nd Street or 86th Street Stations. Permanent improvements to existing subway service from the completion of the Second Avenue Subway included reductions in train, platform, and station crowding, running time savings, and increased access for persons with disabilities.

5.2.3 VEHICULAR TRAFFIC AND PARKING

The FEIS described the lane closures that would typically be required at each station during construction on Second Avenue, on major cross streets, and on minor cross streets. A detailed analysis of traffic impacts that would result from those lane closures in combination with the construction traffic expected at station sites was prepared (see Chapter 5D of the FEIS, "Transportation—Vehicular Traffic"). The FEIS described that adjacent to most construction zones, the width of Second Avenue would be reduced to three moving lanes for traffic. On major cross streets (like 72nd and 86th Streets), generally all travel lanes would remain open for traffic, but during specific short-term construction operations, lane closures would occur. However, a minimum of one lane in each direction would be open for traffic. As described on page 5C-2 of the FEIS, the analysis concluded that significant adverse traffic impacts would occur at station construction sites and that a comprehensive area-wide traffic management and mitigation plan, including a Maintenance and Protection of Traffic Plan, will be developed by MTA New York City Transit in coordination with the New York City Department of Transportation (NYCDOT).

MTA New York City Transit is working closely with NYCDOT and other City agencies to mitigate the construction-period impacts on vehicular traffic. These efforts include ongoing working meetings with affected City agencies, including NYCDOT. NYCDOT and MTA New York City Transit are also engaged in a monitoring program for the corridor that includes cameras and sensors connected to NYCDOT's traffic command center in Long Island City.

The FEIS also described the loss of parking that would occur at each station location during construction activities in Chapter 5E, "Transportation—Parking." As noted in that chapter (see page 5E-3 under section C, "Construction Impacts of the Project Alternatives"), curbside parking spaces would be lost during construction on Second Avenue and on side streets nearby. The FEIS analysis determined that available capacity exists throughout the area for displaced parkers in off-street parking garages and lots and that an adequate parking supply would remain to meet demand, although it might not be as convenient as curbside spaces.

5.2.4 SURFACE TRANSIT

The surface transit analysis in the FEIS (Chapter 5C, "Transportation—Surface Transit") focused on the extensive bus network that serves the East Side of Manhattan, including the areas in the vicinity of the 72nd Street and 86th Street Stations. The FEIS found that the construction activities for most of the Second Avenue Subway alignment and stations, including the 72nd Street and 86th Street Stations, could result in significant traffic impacts due to lane closures along the alignment. As described on page 5C-3 of the FEIS, throughout the entire alignment, up to half of the Second Avenue roadway width would be needed at most station construction and shaft/access site locations to accommodate construction activities. The construction zones would require that exclusive bus lanes be eliminated to provide sufficient roadway capacity and the M15 bus (which runs along Second Avenue) would have to share the same lanes as the general traffic during the construction phase. Buses on this route would no longer have the luxury of bypassing congested locations in their exclusive lanes. Furthermore, the roadway capacity reductions on Second Avenue through the construction zones would increase traffic delays and, consequently, further increase M15 bus travel times.

For some stations, including the 72nd and 86th Street Stations, construction would also take place at major cross streets. Access to bus stops within the construction zones may be restricted and riders transferring between crosstown buses and the M15 would have to walk several

additional blocks for a connection. As part of MTA New York City Transit's ongoing service planning, bus stops are evaluated on a regular basis and are subject to relocation at any time.

5.2.5 PEDESTRIANS

Chapter 5F of the FEIS, "Transportation—Pedestrians," included an evaluation of the impacts to pedestrian conditions during construction of the Second Avenue Subway. As discussed in that chapter (see page 5F-2, section C, "Construction Impacts of the Project Alternatives"), construction of the Second Avenue Subway would narrow sidewalks adjacent to construction zones along the alignment. Some sidewalks could also experience short-term complete closures. MPT plans would be implemented to preserve pedestrian flows through areas affected by construction zones, but at times, some temporary restrictions, sidewalk narrowing, and pedestrian detours will be needed.

Chapter 5F of the FEIS also included an evaluation of the effects of the completed subway on pedestrian flows near station entrances (see section D, "Permanent Impacts of the Project Alternatives"). The FEIS used the methodologies and impact criteria set forth in New York City's *City Environmental Quality Review Manual* for evaluating pedestrian conditions, and therefore considered that corner reservoirs and crosswalks operating at level of service (LOS) D or better were operating at acceptable levels of service, as is appropriate for intensely developed urban locations. Sidewalk analyses (i.e., for sidewalk locations not at corners or crosswalks) were not included in the FEIS because corners and crosswalks are more critical locations and generally show worse level-of-service results than sidewalk locations.

This analysis included consideration of the pedestrian conditions at corners and crosswalks of the intersections of Second Avenue and 72nd Street and Second Avenue and 86th Street, where new subway entrances will be located. The FEIS concluded that all corners and crosswalks at the 72nd Street and Second Avenue intersection will operate at acceptable LOS. At the 86th Street and Second Avenue intersection, the FEIS identified a significant adverse impact on the north crosswalk of the intersection (i.e., the crosswalk across Second Avenue on the north side of 86th Street). Since completion of the FEIS, the pedestrian analysis for the FEIS design has been updated to reflect refined pedestrian flow information (see the footnote in section 5.3.2.1.4 below for a discussion of the revisions made to the analysis since the FEIS; see the discussion of pedestrian impacts for each alternative for the results of the updated analysis). With the revised analysis for the 86th Street Station, this crosswalk would operate at LOS D for the FEIS design (see the discussion in section 5.4.2.1.4), and the impact at this location is no longer predicted.

5.3 POTENTIAL IMPACTS FROM THE 72ND STREET STATION ENTRANCE ALTERNATIVES

5.3.1 CONSTRUCTION IMPACTS OF THE 72ND STREET STATION ENTRANCE ALTERNATIVES

5.3.1.1 72ND STREET STATION NO ACTION ENTRANCE ALTERNATIVE

5.3.1.1.1 Vehicular Traffic and Parking

The No Action Alternative would maintain at least one or two moving lanes in each direction on crosstown streets and three on Second Avenue, as described in the FEIS. Therefore, the effects

on traffic operations with the No Action Alternative would be the same as those described in the FEIS. As described in the FEIS, the No Action Alternative has the potential to result in significant adverse impacts on traffic circulation during construction.

With the No Action Alternative, on an average day during the excavation of the 72nd Street Station, there would be between 60 and 70 trucks for spoils removal (see page 3-30 of the FEIS).Construction of the entrance within 305 East 72nd Street and the elevator on the south side of 72nd Street under the No Action Alternative would require that staging areas be provided within the parking lanes on both sides of the street. Thus, the No Action Alternative would temporarily eliminate curbside parking spaces.

5.3.1.1.2 Surface Transit

During the construction of No Action Alternative, curb lanes would be closed. As a result, it may be necessary to temporarily relocate or eliminate bus stops for the M30/M72 route during construction.

5.3.1.1.3 Pedestrians

As noted on page 3F-8 of the FEIS, temporary impacts to pedestrian conditions would occur during construction at locations where sidewalks are already congested and where such sidewalks would be substantially narrowed during construction. However, MTA New York City Transit would maintain access to buildings on the north and south sides of 72nd Street throughout construction of the No Action Alternative.

5.3.1.2 72ND STREET STATION ENTRANCE ALTERNATIVE 1 (ELEVATORS AT THE SOUTHEAST CORNER AT 300 EAST 72ND STREET)—PREFERRED ALTERNATIVE

5.3.1.2.1 Vehicular Traffic and Parking

Alternative 1 for the station entrance at 72nd Street would not create construction-related traffic or parking impacts beyond those identified for the No Action Alternative. At least one to two moving lanes would be maintained in each direction on 72nd Street, and at least three moving lanes would be maintained on Second Avenue. A construction staging area and excavation area would occupy portions of the parking and travel lane on the east side of Second Avenue next to the construction site; a staging area would also occupy a portion of the parking lane on the south side of 72nd Street for approximately 150 feet east of Second Avenue. Since the same number of moving lanes would be provided as with the No Action Alternative, the impacts of Alternative 1 on traffic conditions during construction would be the same as those of the No Action Alternative.

Alternative 1 would generate 10,530 cubic yards or 1,053 truck loads of spoils, assuming 10 cubic yards of spoils per truck. As compared to the No Action Alternative, the amount of spoils would be reduced by 4,450 cubic yards or 445 truck loads. Nonetheless, the estimate of 60 to 70 daily truck loads for the No Action Alternative would not change with Alternative 1, since those numbers represent the maximum anticipated excavation on a typical day. . As a result, the duration of excavation for Alternative 1 would be 6 days shorter than for the No Action Alternative (assuming an average of 65 truck loads of spoils removal per day).

Like the No Action Alternative, construction of Alternative 1 would require that staging areas be provided within the parking lane on the south side of East 72nd Street. Thus, like the No Action Alternative, Alternative 1 would temporarily eliminate curbside parking spaces,.

5.3.1.2.2 Surface Transit

Construction of Alternative 1would not create closures of 72nd Street or Second Avenue beyond those already required for the No Action Alternative. Therefore, Alternative 1 would not create additional impacts on surface transit.

5.3.1.2.3 Pedestrians

As with the No Action Alternative, in Alternative 1 MTA New York City Transit would maintain access to building on the north and south sides of 72nd Street throughout construction. Under the No Action Alternative and under Alternative 1, temporary impacts to pedestrian conditions would occur during construction at locations where sidewalks are already congested and where such sidewalks would be substantially narrowed during construction.

5.3.1.3 72ND STREET STATION ENTRANCE ALTERNATIVE 3 (ESCALATORS ON THE NORTH SIDE OF 72ND STREET EAST OF SECOND AVENUE)

5.3.1.3.1 Vehicular Traffic and Parking

Alternative 3, like the No Action Alternative, would maintain at least one to two moving lanes in each direction on 72nd Street and at least three moving lanes on Second Avenue during construction. During construction of Alternative 3, the curb lane and one adjacent travel lane on the north side of 72nd Street between Second and First Avenues would be closed; parking would be eliminated on the south side of the street to allow traffic to use that lane. Therefore, Alternative 3 would have the same effect on traffic conditions as the No Action Alternative.

Alternative 3 would generate a total of approximately 26,870 cubic yards (2,687 truck loads, assuming 10 cubic yards of spoils per truck) of spoils. This would represent an increase of 11,890 cubic yards or 1,189 truck loads of spoils more than the No Action Alternative. Since, as noted earlier, the number of trucks per day would not change as compared to the No Action Alternative, the duration of excavation for Alternative 3 would be 19 days longer (assuming an average of 65 truck loads of spoils removal per day). This would occur within the five-year construction period anticipated for the 72nd Street Station and is a nominal increase in the period of spoils excavation as compared to the No Action Alternative.

Like the No Action Alternative, construction of Alternative 3 would require that staging areas be provided within the parking lane on the north and south sides of East 72nd Street. Thus, like the No Action Alternative, Alternative 3 would temporarily eliminate curbside parking spaces.

5.3.1.3.2 Surface Transit

The lane closures and other changes to traffic patterns required for the MPT Plan during construction of Alternative 3 may require temporary relocation or elimination of bus stops for the M30/M72 routes, which is consistent with the No Action Alternative.

5.3.1.3.3 Pedestrians

Consistent with the No Action Alternative, impacts to pedestrian conditions would occur during construction of Alternative 3 at locations where sidewalks are already congested and where such

sidewalks would be substantially narrowed during construction. Although MTA New York City Transit would maintain access to buildings on the north and south sides of 72nd Street, it may be necessary to reduce or eliminate the south sidewalk adjacent to the elevator entrance at 300 East 72nd Street and the north sidewalk of 72nd Street adjacent to 305 East 72nd Street and 311 and 315 East 72nd Street during periods of the construction of Alternative 3. Therefore, like the No Action Alternative, construction of Alternative 3 may result in temporary impacts on pedestrian circulation.

5.3.1.4 72ND STREET STATION ENTRANCE ALTERNATIVE 4 (ESCALATORS ON THE EAST SIDE OF SECOND AVENUE NORTH OF 72ND STREET AND NORTH SIDE OF 72ND STREET EAST OF SECOND AVENUE)

5.3.1.4.1 Vehicular Traffic and Parking

During construction of Alternative 4, the north curb lane and one of the two westbound moving lanes of 72nd Street would be closed to traffic. However, at least one to two moving lanes would be maintained in each direction on 72nd Street by eliminating parking on both sides of the street during construction. The east curb lane of Second Avenue between 72nd and 73rd Streets would also be closed to construct the entrance and the permanent sidewalk bump-out. At least three moving lanes would be provided on Second Avenue during construction, the same as with the No Action Alternative. Therefore, Alternative 4 would maintain the same number of moving lanes on Second Avenue and 72nd Street as the No Action Alternative and the effects on traffic operations along East 72nd Street would be the same.

The construction of the sidewalk entrances and the new elevator at 300 East 72nd Street in Alternative 4 would produce an additional 2,510 loose cubic yards or 251 additional truckloads of soil (assuming 10-cubic-yard trucks) compared to the No Action Alternative. In total, Alternative 4 would generate 17,490 cubic yards (or 1,749 truck loads) of spoils. As noted earlier, the number of truck loads of spoils removed each day would not change from the No Action Alternative, since this amount is based on the anticipated maximum amount per typical day, and therefore this increase in spoils with Alternative 4 would increase the duration of excavation for the station entrance by four days (assuming an average of 65 truck loads of spoils removal per day). This is a nominal increase in the period of excavation that would not lengthen the estimated five-year schedule for construction of the 72nd Street Station.

Like the No Action Alternative, construction of Alternative 4 would require that staging areas be provided within the parking lane on the north and south sides of East 72nd Street. Thus, like the No Action Alternative, Alternative 4 would temporarily eliminate curbside parking spaces.

5.3.1.4.2 Surface Transit

The lane closures and other changes to traffic patterns required for the MPT Plan during construction of Alternative 4 may require temporary relocation or elimination of bus stops for the M30/M72 route during construction, which is consistent with the No Action Alternative.

5.3.1.4.3 Pedestrians

Although MTA New York City Transit would maintain access to buildings on the north and south sides of 72nd Street, it may be necessary to reduce or eliminate the south sidewalk adjacent to the elevator entrance at 300 East 72nd Street and the north sidewalk of 72nd Street and the east sidewalk of Second Avenue adjacent to 305 East 72nd Street during periods of the

construction of Alternative 4. Therefore, like the No Action Alternative, construction of Alternative 4 may result in temporary impacts on pedestrian circulation.

5.3.2 PERMANENT IMPACTS OF THE 72ND STREET STATION ENTRANCE ALTERNATIVES

5.3.2.1 72ND STREET STATION NO ACTION ENTRANCE ALTERNATIVE

5.3.2.1.1 Station Access

The No Action Alternative would provide entrances at the northeast, northwest, and southeast corners of 72nd Street and Second Avenue, all with direct access to the mezzanine level of the 72nd Street Station. All three entrances would have passageways with good sightlines from areas where people congregate and/or where station personnel are present. As noted in Chapter 1 of this EA, "Purpose and Need" (see section 1.3.1.2), 40 percent of the passengers who will use the north end of the station will come from/go to the northeast of the intersection of Second Avenue and 72nd Street, and 14 percent will come from/go to the southeast of the intersection. Therefore, with the No Action Alternative the majority of passengers who would use the entrances at the north end of the 72nd Street Station would not need to cross 72nd Street when entering or exiting the subway.

5.3.2.1.2 Vehicular Traffic and Parking

Following construction, the permanent sidewalk bump-outs on the north and south side of 72nd Street in the No Action Alternative would occupy the parking lane, which is not used for through traffic. Therefore, the No Action Alternative would not reduce the number of moving lanes on East 72nd Street or Second Avenue.

A total of seven curbside parking spaces on East 72nd Street would be permanently lost to the sidewalk bump-outs for the No Action Alternative—three spaces on the south side and four spaces on the north side. As noted in the FEIS, the Second Avenue Subway could require a loss of curb spaces immediately adjacent to the new subway station locations, but this loss of parking is not considered a significant adverse impact. Although the FEIS did not specifically study the loss of parking spaces in the 72nd Street area, it concluded more generally that the loss of parking spaces around newly constructed stations along the alignment would not significantly affect parking supply in the surrounding area since adequate parking supply would be available in the form of parking garages and lots.

Therefore, overall the No Action Alternative would not result in significant adverse impacts on vehicular traffic and parking once the Second Avenue Subway is operational.

5.3.2.1.3 Surface Transit

The M30/M72 bus operates crosstown along 72nd Street near Second Avenue with an eastbound stop on East 72nd Street just west of Second Avenue and a westbound stop on East 72nd Street just west of Second Avenue. Since the station entrances for the No Action Alternative would be located east of Second Avenue, their location would not impact the operation of the M30/M72 buses.

5.3.2.1.4 Pedestrians

As described above, Chapter 5F of the FEIS included an evaluation of the effects of the completed subway on pedestrian flows near station entrances. To consider the effects of the 72nd Street Station entrance alternatives on pedestrian conditions, a new analysis was conducted for this EA, which incorporates refined pedestrian flow information used for the design work completed since publication of the FEIS.[1] The detailed analysis tables are provided in Appendix B, "Transportation."

The No Action Alternative would introduce elevators in the south sidewalk of 72nd Street. The current sidewalk width on the south side of 72nd Street east of Second Avenue is approximately 22 feet 7 inches. In the No Action Alternative, the curb would be bumped out 6 feet, for a total sidewalk width of approximately 28 feet 7 inches. The elevators would be approximately 11 feet 8 inches wide, and would be set back from the curb. The width available for pedestrian circulation adjacent to the sidewalk elevators, after accounting for other sidewalk obstructions, would be approximately 14 feet 11 inches (or 13 feet 4 inches at the stoop of 300 East 72nd Street).

With implementation of the No Action Alternative, pedestrian elements would operate at LOS D or better in the AM and PM peak periods. Therefore, consistent with the conclusions of the FEIS, the No Action Alternative would not result in significant adverse pedestrian impacts at the intersection of 72nd Street and Second Avenue.

5.3.2.2 72ND STREET STATION ENTRANCE ALTERNATIVE 1 (ELEVATORS AT THE SOUTHEAST CORNER AT 300 EAST 72ND STREET)—PREFERRED ALTERNATIVE

5.3.2.2.1 Station Access

With Alternative 1, passengers coming from or going to the northeast of the 72nd Street Station would have to cross either 72nd Street or Second Avenue, but they would not have to wait long for a walk signal at the intersection, since a subway entrance would be located both across 72nd Street (the elevators at the southeast corner) and across Second Avenue (the escalators at the northwest corner). Therefore, Alternative 1 would not differ materially from the No Action Alternative with respect to the convenience of station entrances for pedestrians.

The travel time on the elevators between mezzanine and street level would be approximately 60 seconds (including time for passengers to board and disembark the elevator), compared with 105 seconds (1 minute, 45 seconds) on the escalators (assuming escalators operating at 100 feet per minute). However, the elevator queuing time is highly variable. If one elevator were out of service in the AM peak hour, the average wait time for the elevators would be approximately 19 seconds, making the total trip time 79 seconds, but it is possible that a few passengers could wait as much as 170 seconds for an elevator, making their total trip time 230 seconds. Since those arriving at the station from the northeast (40 percent of passengers) could use entrances at either

[1] When the FEIS pedestrian analyses were completed, station entrance locations were identified, but the entry point(s) to a particular station were not known, so riders accessing an entrance were conservatively assumed to flow around the corner in the corner analysis. Now that specific entrance points are known, the analysis has been revised. In addition, since the completion of the FEIS, existing and future land uses in the vicinity of the stations were reviewed to determine more specifically the direction of projected riders coming to/from a particular corner. This refinement is also incorporated in the revised analysis.

the northwest or the southeast corner in Alternative 1, these passengers would probably choose to divert to the escalators on the northwest corner if they saw a queue at the elevators.

Like the No Action Alternative, Alternative 1 would have good sightlines at both the street and mezzanine levels.

5.3.2.2.2 Vehicular Traffic and Parking

The entrance under Alternative 1 would be fully within the footprint of the building lot at 300 East 72nd Street, and sidewalk bump-outs would not be required. Alternative 1, therefore, would not reduce on-street parking or the number of travel lanes, nor would it result in impacts at new locations or of greater magnitude than for the No Action Alternative. Alternative 1 would not result in significant adverse impacts on vehicular traffic and parking.

5.3.2.2.3 Surface Transit

The entrance under Alternative 1 would be fully within the footprint of the building lot at 300 East 72nd Street, and sidewalk bump-outs would not be required. Therefore, it would not be necessary to relocate bus stops for the M30/M72 routes, and like the No Action Alternative, Alternative 1 would not result in significant adverse impacts on surface transit.

5.3.2.2.4 Pedestrians

With Alternative 1, the entrance would be located within the building lot of 300 East 72nd Street. Therefore, subway infrastructure would not be located within the public sidewalk, and the entrance would not reduce the circulation area of the sidewalk. The analysis of pedestrian conditions with Alternative 1 therefore considered conditions on the crosswalk and corners, since corners and crosswalks are more critical locations and generally show worse level-of-service results than sidewalk locations. **Table 5-1** compares the results of the level of service analyses for the No Action Alternative and Alternative 1. (The detailed analysis tables are provided in Appendix B, "Transportation.") As shown, the analysis concluded that the southeast corner would operate at LOS A in the AM peak period and at LOS B in the PM peak period. As compared to the No Action Alternative, the LOS would be improved in the AM peak but would decline in the PM peak. The crosswalks would operate at the same or improved LOS with Alternative 1 as compared to the No Action Alternative, and overall, all pedestrian circulation elements (corners, crosswalks, and sidewalks) would operate at LOS D or better for both options. Therefore, Alternative 1, like the No Action Alternative, would not result in significant adverse pedestrian impacts.

Table 5-1
Comparison of Pedestrian Level of Service Analysis Results for the No Action Alternative and 72nd Street Station Entrance Alternative 1

Pedestrian Element/Location	AM Peak Period Level of Service		PM Peak Period Level of Service	
	No Action Alternative	Alternative 1 (Preferred)	No Action Alternative	Alternative 1 (Preferred)
Crosswalks				
North	B	B	B	B
South	B	B	B	B
East	C	C	C	C
West	D	C	D	C
Corners				
Northwest	B	B	B	B
Southwest	B	B	B	B
Northeast	B	B	B	B
Southeast	A	B	A	B

5.3.2.3 72ND STREET STATION ENTRANCE ALTERNATIVE 3 (ESCALATORS ON THE NORTH SIDE OF 72ND STREET EAST OF SECOND AVENUE)

5.3.2.3.1 Station Access

Alternative 3 would have two street entrances on the north side of 72nd Street east of Second Avenue, as well as the ADA elevator entrance at the southeast corner and the escalator entrance on the northwest corner of the intersection. As described above, 40 percent of passengers who will use the north end access to the 72nd Street Station will arrive and depart to and from the northeast. Therefore, Alternative 3's entrances would serve these passengers well. As compared to the No Action Alternative, the easternmost entrance on the north side of 72nd Street under Alternative 3 would better serve passengers than the No Action Alternative's entrance within 305 East 72nd Street, as it would be closer to First Avenue and would allow passengers to enter the station earlier in their route to the station. However, because a substantial volume of passengers would use this entrance, there is potential for queuing at the base of the escalator during peak hours.

As with the No Action Alternative, the Alternative 3 elevator entrance on the southeast corner of 72nd Street and Second Avenue would primarily serve for Americans with Disabilities Act (ADA) access to the station.

5.3.2.3.2 Vehicular Traffic and Parking

The sidewalk entrances and required bump-out for Alternative 3 would not affect traffic operations on East 72nd Street. This is currently a wide, crosstown street with two travel lanes in each direction and a parking lane on each side. The widened sidewalk area would occupy the north curbside parking lane, which is not used for moving traffic. Therefore, like the No Action Alternative, there would be no adverse effect to traffic operations from the bump-out.

The curbside lane of East 72nd Street has metered parking during weekday and Saturday daytime hours, and free parking is permitted on Sundays and overnight. Alternative 3's

permanent sidewalk bump-out on the north side of 72nd Street would occupy a portion of the parking lane on westbound 72nd Street and would result in the permanent loss of curbside parking spaces. This bump-out would stretch for approximately 270 feet east of Second Avenue and would remove a total of 12 parking spaces, based on observed parking patterns on that block. The loss of on-street parking spaces to accommodate the new station is consistent with the No Action Alternative and is not considered a significant adverse impact.

Therefore, overall like the No Action Alternative, Alternative 2 would not result in significant adverse impacts on vehicular traffic and parking once the Second Avenue Subway is operational.

5.3.2.3.3 Surface Transit

The north sidewalk bump-out for Alternative 3 would not permanently affect traffic flow or bus operations on East 72nd Street, since only the north-side parking lane, not used for moving traffic, would be removed. The closest bus stop for the westbound M30/M72 bus is on the west side of the intersection, across Second Avenue, and would not be affected by this sidewalk bump-out, and like the No Action Alternative, Alternative 3 would not result in significant adverse impacts on surface transit.

5.3.2.3.4 Pedestrians

The current sidewalk width on the north side of 72nd Street east of Second Avenue is 22 feet 6 inches. With implementation of Alternative 3, the curb would be bumped out 6 feet, for a total sidewalk width of 28 feet 6 inches. The escalator entrances would be approximately 14 feet wide and would be 2 feet 4 inches from the curb. The station entrance canopies would be 12 feet 6 inches from the building line, and the width available for pedestrian circulation adjacent to the escalator entrances, after accounting for other sidewalk obstructions, would be approximately 9 feet 8 inches.

The pedestrian level of service analysis for Alternative 3 was prepared for the four corners and crosswalks of the intersection of East 72nd Street and Second Avenue as well as the sidewalks adjacent to the Alternative 3 entrances on the north side of 72nd Street. **Table 5-2** compares the results of the level of service analyses for the No Action Alternative and Alternative 3. As shown, the analyzed corners, crosswalks, and sidewalks would operate at LOS D or better in the AM and PM peak periods, and neither the No Action Alternative nor Alternative 3 would result in significant adverse pedestrian impacts once the subway is operational.

Concerns have been raised by community members that with a new station entrance in front of 311 and 315 East 72nd Street, approximately 240 feet east of the east curbline of Second Avenue, pedestrians bound for the station would cross 72nd Street in the midblock. It is anticipated that most riders would cross legally, since they would arrive from the corners of First and Second Avenues. Those entering or leaving the station from midblock locations on the south side of East 72nd Street might attempt to jaywalk. Jaywalking is illegal and dangerous, but some pedestrians may jaywalk.

Table 5-2
Comparison of Pedestrian Level of Service Analysis Results for the No Action Alternative and 72nd Street Station Entrance Alternative 3

Pedestrian Element/Location	AM Peak Period Level of Service		PM Peak Period Level of Service	
	No Action Alternative	Alternative 3	No Action Alternative	Alternative 3
Crosswalks				
North	B	B	B	B
South	B	B	B	B
East	C	C	C	C
West	D	D	D	D
Corners				
Northwest	B	B	B	B
Southwest	B	B	B	B
Northeast	B	B	B	A
Southeast	A	A	A	A
Sidewalks				
North sidewalk of 72nd Street between First and Second Avenues	B	B	B	B

5.3.2.4 72ND STREET STATION ENTRANCE ALTERNATIVE 4 (ESCALATORS ON THE EAST SIDE OF SECOND AVENUE NORTH OF 72ND STREET AND NORTH SIDE OF 72ND STREET EAST OF SECOND AVENUE)

5.3.2.4.1 Station Access

Alternative 4 would have one entrance on the north side of 72nd Street east of Second Avenue and another entrance on the east side of Second Avenue north of 72nd Street, as well as the ADA elevator entrance at the southeast corner and the escalator entrance on the northwest corner of the intersection. Like the No Action Alternative and Alternative 3, the presence of an escalator entrance on the northeast corner would serve passengers well who are going to/from the north and east. However, the entry path for passengers using the eastern of the two entrances under Alternative 4 would be circuitous, with a 180-degree turn at street level and another 180-turn at the base of the escalator. In addition, this entry path would have poor sight lines.

As with the No Action Alternative, the Alternative 4 elevator entrance on the southeast corner of 72nd Street and Second Avenue would primarily serve for ADA access to the station.

5.3.2.4.2 Vehicular Traffic and Parking

Following construction, the permanent sidewalk bump-outs on the north side of 72nd Street and east side of Second Avenue would occupy parking lanes, which are not used for through traffic. Therefore, Alternative 4 would not reduce the number of moving lanes on 72nd Street or Second Avenue.

A total of eight curbside parking spaces (four on Second Avenue and four on 72nd Street) would be permanently lost to the sidewalk bump-outs for Alternative 4. Consistent with the No Action Alternative, this loss of on-street parking spaces is not considered significant.

Therefore, overall like the No Action Alternative, Alternative 4 would not result in significant adverse impacts on vehicular traffic and parking once the Second Avenue Subway is operational.

5.3.2.4.3 Surface Transit

The northern sidewalk bump-out for Alternative 4 would not permanently affect the M30/M72 bus routes, since it would occupy a curbside lane used for parking and would not require relocation of a bus stop. The bump-out for the Second Avenue entrance on the northeast corner would not affect operation of the M15 since buses operate southbound on Second Avenue with stops along the west curbside. Therefore, like the No Action Alternative, Alternative 4 would not result in significant adverse impacts on surface transit.

5.3.2.4.4 Pedestrians

The current sidewalk width on the north side of 72nd Street east of Second Avenue is 22 feet 6 inches. With implementation of Alternative 4, the curb would be bumped out 6 feet, for a total sidewalk width of 28 feet 6 inches. On Second Avenue, the current width of the east sidewalk north of 72nd Street is 20 feet. Both escalator entrances would be approximately 14 feet wide and would be 2 feet 4 inches from the curb. The station entrance canopies would be 12 feet 6 inches from the building line on 72nd Street and 9 feet 6 inches from the building line.

The pedestrian level of service analysis for Alternative 4 was prepared for the four corners and crosswalks of the intersection of East 72nd Street and Second Avenue as well as the sidewalks adjacent to the Alternative 4 entrances on the north sidewalk of 72nd Street and the east sidewalk of Second Avenue. **Table 5-3** compares the results of the level of service analyses for the No Action Alternative and Alternative 4. As shown, the analyzed corners, crosswalks, and sidewalks would operate at LOS D or better in the AM and PM peak periods, and neither the No Action Alternative nor Alternative 4 would result in significant adverse pedestrian impacts at these locations once the subway is operational.

5.3.3 SUMMARY: THE 72ND STREET STATION ENTRANCE ALTERNATIVES

Table 5-4 summarizes the transportation effects of the 72nd Street Build entrance alternatives during construction and operation in comparison to those of the No Action Alternative. All three Build alternatives, like the No Action Alternative, have the potential to result in temporary significant adverse impacts during construction. An MPT plan will be implemented to manage traffic and pedestrian conditions during construction. With implementation of the MPT plan, all Build alternatives at the 72nd Street Station would maintain at least three moving lanes on Second Avenue and at least one to two lanes in each direction on 72nd Street, the same as the No Action Alternative. As shown in the table, Alternative 1 would require fewer construction diversions and a smaller zone used for the MPT plan than the No Action Alternative, while Alternatives 3 and 4 would affect the same area for the MPT plan as the No Action Alternative. Alternative 1 would also reduce the number of truck loads of spoils removed from the entrance construction site during construction in comparison to the No Action Alternative, while the other two Build alternatives would increase the number of truck loads. These changes in spoils volumes would result in changes to the schedule for this portion of the work, but would not change the number of truck loads per day of spoils removed for construction of the entrance.

Table 5-3
Comparison of Pedestrian Level of Service Analysis Results for the No Action Alternative and 72nd Street Station Entrance Alternative 4

Pedestrian Element/Location	AM Peak Period Level of Service		PM Peak Period Level of Service	
	No Action Alternative	Alternative 4	No Action Alternative	Alternative 4
Crosswalks				
North	B	B	B	B
South	B	B	B	B
East	C	C	C	C
West	D	D	D	D
Corners				
Northwest	B	B	B	B
Southwest	B	B	B	B
Northeast	B	A	B	A
Southeast	A	B	A	B
Sidewalks				
East sidewalk of Second Avenue between 72nd and 73rd Streets	C	B	B	B
North sidewalk of 72nd Street between First and Second Avenues	B	C	B	C

Once completed, Alternative 1 would have less convenient street-level access for passengers than the No Action Alternative, since it would no longer provide an entrance on the northeast corner of the intersection of Second Avenue and 72nd Street. However, since Alternative 1 would still provide two entrances at opposite corners (one on the northwest corner and the other on the southeast), passengers would continue to have entrance options on both sides of the street. Like the No Action Alternative, Alternative 1 would also have straight passages and good sightlines. Alternative 3 would provide the same level of access as the No Action Alternative, with entrances on three corners of the intersection and with straight passages and good sightlines. Alternative 4 would provide the same convenience for passengers at street level as the No Action Alternative, but it would be least convenient in terms of subway access in the station, since it would require passengers to use a circuitous route with a number of switchbacks.

None of the Build alternatives would result in significant adverse impacts to pedestrian conditions. Unlike the No Action Alternative, Alternative 1 would not require any sidewalk bump-outs. Alternatives 3 and 4, like the No Action Alternative, would require a bump-out on the north side of 72nd Street east of Second Avenue; Alternative 4 would also require a bump-out on the east side of Second Avenue north of 72nd Street. Neither Alternative 3 nor Alternative 4 would require a bump-out on the south sidewalk, as the No Action Alternative would. Since the bump-outs would be within the parking lane, not the moving lane, traffic conditions would not be adversely affected by the bump-outs in any alternative.

Overall, none of the alternatives would result in significant adverse transportation impacts during construction or operation of the Second Avenue Subway that were not previously identified for the No Action Alternative.

Table 5-4
72nd Street Station Entrance Alternatives'
Summary of Effects on Transportation

Transportation Effect	No Action Alternative	Alternative 1 (Preferred)	Alternative 3	Alternative 4
Temporary Effects During Construction				
Subway and Commuter Rail	No impact	No impact	No impact	No impact
Vehicular Traffic and Parking	Significant traffic impacts during construction; MPT Plan in place.	Significant traffic impacts during construction; MPT Plan in place. 445 fewer truck loads for spoils removal.	Significant traffic impacts during construction; MPT Plan in place. 1,189 additional truck loads of spoils removal.	Significant traffic impacts during construction; MPT Plan in place 251 additional truck loads for spoils removal.
Surface Transit	Potential for rerouting of buses or relocation of bus stops; no significant adverse impact	Same as No Action	Same as No Action	Same as No Action
Pedestrians	Temporary impacts during construction; building access maintained.	Temporary impacts during construction; building access maintained.	Temporary impacts during construction; building access maintained.	Temporary impacts during construction; building access maintained.
Permanent Effects During Operation				
Ridership	No impact	Same as No Action	Same as No Action	Same as No Action
Subway and Commuter Rail: New Station Access	Street level access (entrances at northeast, southeast, and northwest corners) serves passengers well; Interior station access good (good access and good sightlines)	Street level access (entrances on southeast and northwest corners) less convenient; Interior station access good (straight passages and clear sightlines).	Street level access (entrance on northeast, northwest, and south-east corners) serves passengers well; Interior station access good (straight passages and clear sightlines).	Street level access (entrances at northeast, southeast, and north-west corners) serves passengers well; Interior station access less convenient (switchbacks, interme-diate landings, and turns less convenient; poor sightlines
Vehicular Traffic and Parking	Total of 7 curbside parking spaces lost in bump-outs on north and south side of 72nd Street; no travel lanes lost. No significant adverse impact on traffic or parking.	No curbside parking spaces lost; no travel lanes lost. No significant adverse impact on traffic or parking.	Total of 12 curbside parking spaces lost in bump-out on north side of 72nd Street; no travel lanes lost. No significant adverse impact on traffic or parking.	Total of 8 curbside parking spaces lost in bump-outs on north side of 72nd Street and east side of Second Avenue; no travel lanes lost. No significant adverse impact on traffic or parking.
Surface Transit	No significant adverse impact	Same as No Action	Same as No Action	Same as No Action
Pedestrians	Sidewalk bump-outs on north and south sides of 72nd Street; no significant adverse impact.	No sidewalk bump-out; no significant adverse impact.	Sidewalk bump-out on north side of 72nd Street; no significant adverse impact.	Sidewalk bump-out on north side of 72nd Street and east side of Second Avenue; no significant adverse impact.

5.4 POTENTIAL IMPACTS FROM THE 86TH STREET STATION ENTRANCE ALTERNATIVES

5.4.1 CONSTRUCTION IMPACTS OF THE 86TH STREET STATION ENTRANCE ALTERNATIVES

5.4.1.1 86TH STREET STATION NO ACTION ENTRANCE ALTERNATIVE

5.4.1.1.1 Vehicular Traffic and Parking

The No Action Alternative would maintain at least one or two moving lanes in each direction on crosstown streets and three on Second Avenue, as described in the FEIS. Thus, the effects on traffic operations with the No Action Alternative would be the same as conditions identified in the FEIS. As described in the FEIS, the No Action Alternative has the potential to result in significant adverse impacts on traffic circulation during construction.

With the No Action Alternative, on an average day during the excavation of the 86th Street Station, there would be between 60 and 70 trucks for spoils removal (see page 3-30 of the FEIS). Construction of the entrance within 305 East 86th Street and the elevator on the south side of 86th Street under the No Action Alternative would require that staging areas be provided within the parking lanes on both sides of the street. Thus, the No Action Alternative would temporarily eliminate curbside parking spaces.

5.4.1.1.2 Surface Transit

During the construction of No Action Alternative, curb lanes would be closed. As a result, it may be necessary to temporarily relocate or eliminate bus stops for the M86 route during construction.

5.4.1.1.3 Pedestrians

MTA New York City Transit would maintain access to buildings on the north and south sides of 86th Street throughout construction of the No Action Alternative. As noted on page 3F-8 of the FEIS, temporary impacts to pedestrian conditions would occur during construction at locations where sidewalks are already congested and where such sidewalks would be substantially narrowed during construction.

5.4.1.2 86TH STREET STATION ENTRANCE ALTERNATIVE 2 (ESCALATORS ON THE SOUTH SIDE OF 86TH STREET EAST OF SECOND AVENUE)

5.4.1.2.1 Vehicular Traffic and Parking

Like the No Action Alternative, Alternative 2 would maintain at least one to two moving lanes in each direction on 86th Street and at least three moving lanes on Second Avenue during construction. During construction of Alternative 2, the south curb lane and one of the two eastbound moving lanes of 86th Street would be closed to traffic. To maintain traffic flow, the parking lane on the north side of 86th Street would be used for through traffic during construction. Since the same number of moving lanes would be provided, Alternative 2 would have the same effect on traffic conditions as the No Action Alternative.

In total, the construction of the new sidewalk entrance in Alternative 2 and the addition of a new elevator at the southeast corner would require the removal of approximately 36,400 cubic yards of spoils, which would equate to 3,640 truck loads of spoils assuming 10 cubic yards per truck. As compared to the No Action Alternative, Alternative 2 would generate 21,500 more cubic yards of spoils, resulting in 2,150 more truck loads of spoils removal. Since, as noted earlier, the number of trucks per day would not change regardless of the volume of spoils, the duration of excavation for Alternative 2 would be 33 days longer than for the No Action Alternative (assuming an average of 65 truck loads of spoils removal per day). This would occur within the five-year construction period for the 86th Street Station. Since the average volume of daily truck trips would be the same for the No Action Alternative and Alternative 2, the construction-period impacts and recommended mitigation measures would also be the same.

Like the No Action Alternative, construction of Alternative 2 would require that staging areas be provided within the parking lane on the south side of East 86th Street. Thus, like the No Action Alternative, Alternative 2 would temporarily eliminate curbside parking spaces.

5.4.1.2.2 Surface Transit

The lane closures and other changes to traffic patterns required for the MPT Plan during construction of Alternative 2 could require temporary relocation or elimination of bus stops on the M86 route, which is consistent with the No Action Alternative.

5.4.1.2.3 Pedestrians

Like the No Action Alternative, construction of Alternative 2 would result in temporary impacts to pedestrian conditions at locations where sidewalks are already congested and where they would be narrowed during construction. For Alternative 2, during a period of construction it would be necessary to fully close the south sidewalk of 86th Street and temporarily eliminate access to certain buildings (see Chapter 3 of this EA, "Construction Activities," section 3.4.2). A walkway would be provided north of the work zone. At other times, MTA New York City Transit would maintain access to buildings on the south side of 86th Street, but it may be necessary to reduce or eliminate the south sidewalk during periods of the construction of Alternative 2. Since building access would be fully or partially eliminated with construction of Alternative 2, the impacts of this alternative on pedestrian circulation would be greater in magnitude than those of the No Action Alternative.

5.4.1.3 86TH STREET STATION ENTRANCE ALTERNATIVE 5 (ELEVATORS AT SOUTHEAST CORNER)

5.4.1.3.1 Vehicular Traffic and Parking

Alternative 5 would have the same construction-related traffic and parking impacts as the No Action Alternative. At least two moving lanes would be maintained in each direction on 86th Street, and at least three moving lanes would be maintained on Second Avenue. For staging the construction and excavating the elevator shaft, the MPT Plan would eliminate the parking and travel lane on the east side of Second Avenue and a staging area would be provided within the parking lane along the south side of 86th Street for approximately 150 feet east of Second Avenue. Construction of the entrance itself would take place predominately within the building lots at 1656 Second Avenue (also known as 300-302 East 86th Street) and 1654 Second Avenue Street and its adjacent sidewalk. With the same number of moving lanes maintained, Alternative

5 would have the same effects on traffic operations along East 86th Street as the No Action Alternative.

Alternative 5 would generate approximately 16,460 cubic yards of spoils, which equates to 1,646 truck loads assuming 10 cubic yards per truck. As compared to the No Action Alternative, Alternative 5 would result in more spoils (1,560 cubic yards or 156 truck loads). Because the number of trucks per day would not change from the 60 to 70 truck loads of spoils removal predicted for the No Action Alternative, this increase in spoils with Alternative 5 would increase the duration of excavation for the station entrance by three days (assuming an average of 65 truck loads of spoils removal per day). This would occur within the five-year construction period for the 86th Street Station. Since the average volume of daily truck trips would be the same for the No Action Alternative and Alternative 5, the construction-period impacts and recommended mitigation measures would also be the same.

Like the No Action Alternative, construction of Alternative 5 would require that staging areas be provided within the parking lane on the south side of East 86th Street. Thus, like the No Action Alternative, Alternative 5 would temporarily eliminate curbside parking spaces.

5.4.1.3.2 Surface Transit

The lane closures and changes to traffic patterns required for the MPT Plan during construction of Alternative 5 could require temporary relocation or elimination of bus stops on the M86 route, which is consistent with the No Action Alternative.

5.4.1.3.3 Pedestrians

Construction of the entrance under Alternative 5 would take place predominantly on building lots rather than in the public sidewalk or street, but the sidewalk area adjacent to the affected building lots at 1656 Second Avenue (also known as 300-302 East 86th Street) and 1654 Second Avenue would be affected. Although MTA New York City Transit would maintain access to buildings on the south side of 86th Street and east side of Second Avenue, it would be necessary to reduce the sidewalks adjacent to 1654 and 1656 Second Avenue during periods of the construction of Alternative 5. Therefore, like the No Action Alternative, construction of Alternative 5 may result in temporary impacts on pedestrian circulation.

5.4.1.4 86TH STREET STATION ENTRANCE ALTERNATIVE 7 (TWO ESCALATOR BANKS ON THE NORTH SIDE OF 86TH STREET EAST OF SECOND AVENUE)—PREFERRED ALTERNATIVE

5.4.1.4.1 Vehicular Traffic and Parking

Alternative 7, like the No Action Alternative, would maintain at least one to two moving lanes in each direction on 86th Street and at least three moving lanes on Second Avenue during construction. During construction of Alternative 7, the north curb lane and one of the two westbound moving lanes of 86th Street would be closed to traffic. To maintain traffic flow, the parking lane on the south curbside of 86th Street would be used for through traffic during construction. Construction activities would affect vehicle access to the circular driveway of 305 East 86th Street. One of the two curb cuts for the circular driveway would remain open at all times. With the same number of moving lanes, the effects on traffic operations during construction of Alternative 7 would be the same as for the No Action Alternative.

In total, the construction of the new sidewalk entrance in Alternative 7 and the addition of a new elevator at the southeast corner would require 30,980 cubic yards of spoils removal, which equates to 3,098 truck loads assuming 10 cubic yards of spoils per truck. As compared to the No Action Alternative, Alternative 7 would result in 16,080 more cubic yards of spoils, which translates to 1,608 more truck loads of spoils removal. Because the number of trucks per day would not increase from the 60 to 70 truck loads of spoils removal as anticipated for the No Action Alternative, this increase in spoils with Alternative 7 would increase the duration of excavation for the station entrance by 25 days (assuming an average of 65 truck loads of spoils removal per day). This would occur within the five-year construction period for the 86th Street Station. Since the average volume of daily truck trips would be the same for the No Action Alternative and Alternative 7, the construction-period impacts and recommended mitigation measures would also be the same

Like the No Action Alternative, construction of Alternative 7 would require that staging areas be provided within the parking lane on the south side of East 86th Street. Thus, like the No Action Alternative, Alternative 7 would temporarily eliminate curbside parking spaces.

5.4.1.4.2 Surface Transit

The lane closures and other changes to traffic patterns required for the MPT Plan during construction of Alternative 7 may require temporary relocation or elimination of bus stops on the M86 route, which is consistent with the No Action Alternative.

5.4.1.4.3 Pedestrians

Although MTA New York City Transit would maintain access to buildings on the north and south sides of 86th Street, it would be necessary to reduce the south sidewalk adjacent to the elevator entrance and the north sidewalk adjacent to 305 East 86th Street during periods of the construction of Alternative 7. Therefore, like the No Action Alternative, construction of Alternative 7 may result in temporary impacts on pedestrian circulation.

5.4.2 PERMANENT IMPACTS OF THE 86TH STREET STATION ENTRANCE ALTERNATIVES

5.4.2.1 86TH STREET STATION NO ACTION ENTRANCE ALTERNATIVE

5.4.2.1.1 Station Access

The No Action Alternative would provide entrances on the northeast and southeast corners of 86th Street and Second Avenue, with direct access to the mezzanine from street level. These entrances would have good sightlines. Approximately 68 percent of passengers using the north end of the 86th Street Station will be going to/from the northeast, and an entrance at this location would best serve these passengers.

5.4.2.1.2 Vehicular Traffic and Parking

The No Action Alternative would require a permanent 6-foot bump-out of the south curb of 86th Street east of Second Avenue to accommodate the new elevator entrance. This bump-out would permanently eliminate four curbside parking spaces but would not alter the number of eastbound or westbound travel lanes on East 86th Street. Consistent with the No Action Alternative, the resultant loss in on-street parking is not considered significant.

Therefore, overall, the No Action Alternative would not result in significant adverse impacts on vehicular traffic and parking once the Second Avenue Subway is operational.

5.4.2.1.3 Surface Transit

The M86 operates crosstown along 86th Street near Second Avenue with an eastbound stop on East 86th Street just east of Second Avenue and a westbound stop on East 86th Street just west of Second Avenue. The elevator entrance for the No Action Alternative would occupy the location of the existing eastbound bus stop, and this stop would be relocated farther east in the bump-out. The westbound bus stop would not be impacted by the station entrances in the No Action Alternative.

5.4.2.1.4 Pedestrians

The No Action Alternative would introduce an elevator in the south sidewalk of 86th Street. The current sidewalk width on the south side of 86th Street east of Second Avenue is approximately 20 feet 5 inches wide. In the No Action Alternative, the curb would be bumped out 6 feet, for a total sidewalk width of approximately 26 feet 5 inches. The elevator would be approximately 11 feet 8 inches wide, and would be approximately 2 feet from the curb. The width available for pedestrian circulation adjacent to the sidewalk elevator would be approximately 12 feet 6 inches.

Chapter 5F of the FEIS included an evaluation of the effects of the completed subway on pedestrian flows near station entrances. As described earlier, this pedestrian analysis was revised for this EA (see the footnote in section 5.3.2.1.4 for a description of this revision). The detailed analysis tables are provided in Appendix B, "Transportation."

The FEIS identified a significant adverse impact on the north crosswalk at the intersection of East 86th Street and Second Avenue in the AM peak hour. With the revised analysis, this crosswalk would operate at LOS D for the FEIS design, and the impact at this location is no longer predicted. With implementation of the No Action Alternative, pedestrian elements would operate at LOS D or better in the AM and PM peak periods and no significant pedestrian impact would occur.

5.4.2.2 86TH STREET STATION ENTRANCE ALTERNATIVE 2 (ESCALATORS ON THE SOUTH SIDE OF 86TH STREET EAST OF SECOND AVENUE)

5.4.2.2.1 Station Access

In Alternative 2, three entrances would be provided to the north end of the 86th Street Station: two escalator entrances and an ADA elevator entrance on the south side of 86th Street east of Second Avenue. An estimated 68 percent of passengers using the north end access to the 86th Street Station will be going to/from the northeast. Unlike the No Action Alternative, which would provide for an entrance within 305 East 86th Street on the north side of 86th Street, in Alternative 2 all these passengers would need to cross 86th Street to use the station entrances, which would be on the south side of 86th Street. Furthermore, both of Alternative 2's escalator entrances would have poor sightlines and circuitous paths between the street and mezzanine.

5.4.2.2.2 Vehicular Traffic and Parking

In Alternative 2, the sidewalk on the south side of East 86th Street would be widened by 6 feet for a distance of 330 feet. This sidewalk bump-out would permanently eliminate 10 curbside

parking spaces. Consistent with the No Action Alternative, the loss of on-street parking spaces is not considered significant.

The sidewalk bump-out would not affect traffic operations on East 86th Street. The bump-out would take a portion of the southern parking lane, which is not used for moving traffic, and a total of four moving lanes would be maintained on East 86th Street.

Therefore, overall like the No Action Alternative, Alternative 2 would not result in significant adverse impacts on vehicular traffic and parking once the Second Avenue Subway is operational.

5.4.2.2.3 Surface Transit

The sidewalk bump-out would occupy the existing curbside lane on the south side of 86th Street, which includes a stop for the eastbound M86 route. Therefore, like the No Action Alternative, it may be necessary to permanently relocate this stop. However, the relocation of this bus stop would not result in a significant adverse impact on the operation of the M86 route.

5.4.2.2.4 Pedestrians

The current sidewalk width on the south side of 86th Street east of Second Avenue is approximately 20 feet 5 inches. The curb would be bumped out 6 feet, for a total sidewalk width of approximately 26 feet 5 inches under Alternative 2. The escalator entrances would be approximately 14 feet wide and would be 2 feet 4 inches from the curb. The width available for pedestrian circulation adjacent to the escalator entrances, after accounting for other sidewalk obstructions, would be approximately 9 feet 11 inches at the west entrance and 9 feet 6 inches at the east entrance.

The pedestrian level of service analysis for Alternative 2 was prepared for the four corners and crosswalks of the intersection of East 86th Street and Second Avenue as well as the sidewalk adjacent to the Alternative 2 entrances on the south side of 86th Street. **Table 5-5** compares the results of the level of service analyses for the No Action Alternative and Alternative 2. As shown, the analyzed corners, crosswalks, and sidewalks would operate at LOS D or better in the AM and PM peak periods. Neither the No Action Alternative nor Alternative 2 would result in significant adverse pedestrian impacts once the subway is operational.

Table 5-5
Comparison of Pedestrian Level of Service Analysis Results
for No Action Alternative and 86th Street Station Entrance Alternative 2

Pedestrian Element/Location	AM Peak Period Level of Service		PM Peak Period Level of Service	
	No Action Alternative	Alternative 2	No Action Alternative	Alternative 2
Crosswalks				
North	D	D	D	D
South	C	C	C	C
East	B	C	B	C
West	B	B	B	B
Corners				
Northwest	B	B	B	B
Southwest	B	B	B	B
Northeast	B	B	B	B
Southeast	B	B	B	C
Sidewalks				
South sidewalk of 86th Street between First and Second Avenues	B	B	B	C

5.4.2.3 86TH STREET STATION ENTRANCE ALTERNATIVE 5 (ELEVATORS AT SOUTHEAST CORNER)

5.4.2.3.1 Station Access

With Alternative 5, one entrance would be provided at the north end of the 86th Street Station, at the southeast corner of Second Avenue and 86th Street. Passengers using the north end access to the 86th Street Station would need to take elevators to access the station unless they want walk south three blocks to the 83rd Street entrance. The elevators would provide direct access and a relatively short trip between the street and mezzanine. Travel time on the elevators is estimated at 40 seconds (including time for passengers to board and disembark the elevator), whereas escalators from the mezzanine to street level would take longer (100 seconds). However, wait times for the elevators are highly variable. While the average wait time would be 4 seconds assuming one elevator is out of service, the maximum time a passenger could wait is 110 seconds.

An estimated 68 percent of passengers who will use the north end access to the 86th Street Station will be going to/from the northeast. With Alternative 5, all these passengers would need to cross 86th Street to reach the station entrance, which would be on the south side of 86th Street.

Like the No Action Alternative, Alternative 5 would have good sightlines at both the street and mezzanine levels.

5.4.2.3.2 Vehicular Traffic and Parking

When complete, the entrance in Alternative 5 would be fully within the building lot of 1654 and 1656 Second Avenue, and sidewalk bump-outs would not be required. Alternative 5, therefore

unlike the No Action Alternative, would not reduce on-street parking. Alternative 5 would also not result in a change in the number of travel lanes on Second Avenue or 86th Street, and therefore, it would not result in significant adverse impacts on traffic circulation.

5.4.2.3.3 Surface Transit

When complete, the entrance in Alternative 5 would be fully within the footprint of the building lot at1654 and 1656 Second Avenue, and sidewalk bump-outs would not be required. Therefore, unlike the No Action Alternative, it would not be necessary to relocate bus stops for the M86 route.

5.4.2.3.4 Pedestrians

With Alternative 5, the entrance would be located on the building lots of 1654 and 1656 Second Avenue and would not reduce the circulation area of the sidewalk. The analysis of pedestrian conditions with Alternative 5 therefore considered conditions on the crosswalk and corners, since corners and crosswalks are more critical locations and generally show worse level-of-service results than sidewalk locations. **Table 5-6** compares the results of the level of service analyses for the No Action Alternative and Alternative 5. As shown, the analyzed corners and crosswalks would operate at LOS D or better in the AM and PM peak periods. Therefore, consistent with the FEIS conclusions and like the No Action Alternative, Alternative 5 would not result in significant adverse impacts on pedestrian circulation.

Table 5-6
Comparison of Pedestrian Level of Service Analysis Results for No Action Alternative and 86th Street Station Entrance Alternative 5

	AM Peak Period Level of Service		PM Peak Period Level of Service	
Pedestrian Element/Location	**No Action Alternative**	**Alternative 5**	**No Action Alternative**	**Alternative 5**
Crosswalks				
North	D	D	D	D
South	C	C	C	C
East	B	D	B	C
West	B	B	B	B
Corners				
Northwest	B	B	B	B
Southwest	B	B	B	B
Northeast	B	B	B	B
Southeast	B	C	B	D

5.4.2.4 86TH STREET STATION ENTRANCE ALTERNATIVE 7 (ESCALATORS ON THE NORTH SIDE OF 86TH STREET EAST OF SECOND AVENUE)—PREFERRED ALTERNATIVE

5.4.2.4.1 Station Access

In Alternative 7, escalator entrances to the 86th Street Station would be located at the northeast corner of Second Avenue and 86th Street, with ADA elevator access at the southeast corner. As

described above, an estimated 68 percent of the passengers who will use the north end access to the 86th Street Station will be arriving from or departing to the northeast. Like the No Action Alternative, Alternative 7 would serve these passengers well, since it would locate entrances on the north side of 86th Street. However, instead of the No Action Alternative's entrance within 305 East 86th Street at the corner of Second Avenue, Alternative 7 would have an entrance farther east of Second Avenue. Therefore, Alternative 7 would better serve passengers arriving from or departing to points east of Second Avenue.

Like the No Action Alternative, Alternative 7 would have good sightlines at both the street and mezzanine levels.

5.4.2.4.2 Vehicular Traffic and Parking

The sidewalk on the north side of East 86th Street would be widened by 6 feet for a distance of 270 feet east of Second Avenue, which would permanently eliminate 11 curbside parking spaces. A bump-out would also be provided on the south side of East 86th Street for Alternative 7's elevator entrance, which would permanently eliminate four curbside parking spaces. Consistent with the No Action Alternative, this loss of curbside parking spaces is not considered significant.

Alternative 7's sidewalk bump-outs would not affect traffic operations on East 86th Street. The widened sidewalk areas would occupy the north and south curbside parking lanes, which are not currently used for moving traffic; therefore as with the No Action Alternative, four moving lanes of traffic would be maintained on East 86th Street. It is expected that sight distances for vehicles entering and exiting the circular driveway at 305 East 86th Street would actually improve with Alternative, 7 as compared to the No Action Alternative since there would no longer be the potential for blockage by parked vehicles.

Therefore, overall like the No Action Alternative, Alternative 7 would not result in significant adverse impacts on vehicular traffic and parking once the Second Avenue Subway is operational.

5.4.2.4.3 Surface Transit

The sidewalk bump-out for Alternative 7's elevator entrance would occupy the south curbside lane, which includes a stop for the eastbound M86 route. Therefore, as in the No Action Alternative, the bus stop would be relocated farther east along the bump-out. The relocation of this bus stop would not result in a significant adverse impact on the operation of the M86 route. The westbound bus stop would not be impacted by implementation of either the No Action Alternative or Alternative 7.

5.4.2.4.4 Pedestrians

The current sidewalk width on the north side of 86th Street east of Second Avenue is 20 feet. With implementation of Alternative 7, the curb would be bumped out 6 feet, for a total sidewalk width of 26 feet. The escalator entrances would be approximately 14 feet wide and would be 2 feet from the curb. The width available for pedestrian circulation adjacent to the escalator entrances, after accounting for other sidewalk obstructions (e.g., a planter alongside 305 East 86th Street), would be approximately 10 feet. As noted earlier in the discussion of the No Action Alternative, a total of approximately 12 feet 6 inches would be available for pedestrian

circulation adjacent to the elevator entrance on the south sidewalk of 86th Street (the same as in the No Action Alternative).

The pedestrian level of service analysis for Alternative 7 was prepared for the four corners and crosswalks of the intersection of East 86th Street and Second Avenue as well as the sidewalk on the north side of 86th Street adjacent to the Alternative 7 entrances. **Table 5-7** compares the results of the level of service analyses for the No Action Alternative and Alternative 7. As shown, the analyzed corners, crosswalks, and sidewalks would operate at LOS D or better in the AM and PM peak periods, and neither the No Action Alternative nor Alternative 7 would result in significant adverse pedestrian impacts at these locations once the subway is operational.

Table 5-7
Comparison of Pedestrian Level of Service Analysis Results for No Action Alternative and 86th Street Station Entrance Alternative 7

Pedestrian Element/Location	AM Peak Period Level of Service		PM Peak Period Level of Service	
	No Action Alternative	Alternative 7 (Preferred)	No Action Alternative	Alternative 7 (Preferred)
Crosswalks				
North	D	D	D	D
South	C	C	C	C
East	B	B	B	B
West	B	B	B	B
Corners				
Northwest	B	B	B	B
Southwest	B	B	B	B
Northeast	B	B	B	B
Southeast	B	B	B	B
Sidewalks				
North sidewalk of 86th Street between First and Second Avenues	C	C	B	C

As described in Chapter 1 of this EA, "Purpose and Need" (section 1.3.2.2), the largest proportion of riders who will use the north entrance to the 86th Street Station will arrive from the north and east. Alternative 7, with an entrance on the north side of 86th Street east of Second Avenue, would better serve these riders since they would not have to cross 86th Street or Second Avenue to access the subway. Not only would this alternative reduce the walking time to reach the station, but it would bring fewer pedestrians to the crosswalks of 86th Street and Second Avenue as compared to the other 86th Street entrance alternatives, which would have station entrances on the south side of 86th Street.

Concerns have been raised by community members that with a new station access point in front of 305 East 86th Street, approximately 270 feet east of the east curbline of Second Avenue, pedestrians bound for the station would jaywalk across 86th Street. It is anticipated that most riders would cross legally since they would arrive from the corners of First and Second Avenues; however, although jaywalking is illegal and dangerous, some pedestrians may jaywalk to reach the station entrance.

The completion of the Second Avenue Subway would increase east-west pedestrian volumes along the north sidewalk of 86th Street between First and Second Avenues. In the future, a total of approximately 1,100 pedestrians unrelated to the subway are expected to use this sidewalk in the AM peak hour and 1,330 in the PM peak hour. In the No Action Alternative, these volumes would increase, with 1,400 new subway-related pedestrian trips in the AM peak hour and 900 in the PM peak hour. With Alternative 7, there would be another 600 additional pedestrian trips in the AM peak hour and 400 additional pedestrian trips in the PM peak hour. A concern was raised by the community that there may be vehicle-pedestrian conflicts at the four residential driveways located on the north side of 86th Street between First and Second Avenues. East 86th Street is already a heavily traveled pedestrian route, and the Second Avenue Subway would not change the volume of vehicles entering or exiting these driveways. In the No Action Alternative, pedestrians would cross the driveways to access the station entrance at 305 East 86th Street, and Alternative 7 would actually improve pedestrian safety at its circular driveway as compared to the No Action Alternative since passengers arriving from the east would enter and exit the station without crossing the driveway (in contrast to the No Action Alternative, which would require them to cross the driveway en route to and from the station). Moreover, as noted earlier, Alternative 7 would eliminate parking along the north curb lane by creating a bump-out, and this would improve sightlines for drivers.

5.4.3 SUMMARY: THE 86TH STREET STATION ENTRANCE ALTERNATIVES

Table 5-8 summarizes the transportation effects of the 86th Street Build entrance alternatives during construction and operation, in comparison to those of the No Action Alternative. All three Build alternatives, like the No Action Alternative, have the potential to result in temporary significant adverse impacts during construction. An MPT plan will be implemented to manage traffic and pedestrian conditions during construction. With implementation of the MPT plan, all Build alternatives at the 86th Street Station would maintain at least three moving lanes on Second Avenue and at least one to two lanes in each direction on 86th Street, the same as the No Action Alternative. As shown in the table, Alternative 5 would require the fewest construction diversions and a smaller zone used for the MPT plan, while Alternatives 2 and 7 would affect the same area for the MPT plan as the No Action Alternative. As also shown in the table, all Build alternatives would increase the number of truck loads of spoils removed from the entrance construction site during construction in comparison to the No Action Alternative. Alternative 5 would have the smallest increase. Alternative 2 would result in greater adverse effects to pedestrian conditions than the No Action Alternative, since it would require a temporary loss (up to 8 months) of building access to three buildings on the south side of 86th Street during construction.

Table 5-8
86th Street Station Entrance Alternatives'
Summary of Effects on Transportation

Transportation Effect	No Action Alternative	Alternative 2	Alternative 5	Alternative 7
Temporary Effects During Construction				
Subway and Commuter Rail	No impact	No impact	No impact	No impact
Vehicular Traffic and Parking	Significant traffic impacts during construction; MPT Plan in place.	Significant traffic impacts during construction; MPT Plan in place. 2,150 additional truck loads for spoils removal.	Significant traffic impacts during construction; MPT Plan in place. 156 additional truck loads of spoils removal.	Significant traffic impacts during construction; MPT Plan in place 1,608 additional truck loads for spoils removal.
Surface Transit	Potential for rerouting of buses or relocation of bus stops; no significant adverse impact	Same as No Action	Same as No Action	Same as No Action
Pedestrians	Temporary impacts during construction; building access maintained.	Temporary impacts during construction; for about 8 months, building access on south side of 86th Street would not be maintained.	Temporary impacts during construction; building access maintained.	Temporary impacts during construction; building access maintained.
Permanent Effects During Operation				
Ridership	No impact	Same as No Action	Same as No Action	Same as No Action
Subway and Commuter Rail: New Station Access	Street level access (entrances on northeast and southeast corners) serves majority of ridership well; Interior station access good (good access and good sightlines).	Street level access (entrances on south side of 86th Street) less convenient for majority of riders; Interior station access less convenient (switchbacks and intermediate landing; poor sightlines).	Street level access (entrance on south side of 86th Street) less convenient for majority of riders; Interior station access good (straight passages and clear sightlines).	Street level access (entrances on north side of 86th Street and southeast corner) best serves majority of riders; Interior station access good (straight passages and clear sightlines).
Vehicular Traffic and Parking	Total of 4 curbside parking spaces lost in bump-out on south side of 86th Street; no travel lanes lost. No significant adverse impact on traffic or parking.	Total of 12 curbside parking spaces lost in bump-out on south side of 86th Street; no travel lanes lost. No significant adverse impact on traffic or parking.	No curbside parking spaces lost; no travel lanes lost. No significant adverse impact on traffic or parking.	Total of 15 curbside parking spaces lost in bump-outs on north and south sides of 86th Street; no travel lanes lost. No significant adverse impact on traffic or parking.
Surface Transit	Relocation of eastbound bus stop; no significant adverse impact	Relocation of eastbound bus stop; no significant adverse impact	No bus stop relocation; no significant adverse impact	No bus stop relocation; no significant adverse impact
Pedestrians	Sidewalk bump-out on south side of 86th Street; no significant adverse impact.	Sidewalk bump-out on south side of 86th Street; no significant adverse impact.	No sidewalk bump-out; no significant adverse impact.	Sidewalk bump-outs on north and south sides of 86th Street; no significant adverse impact.

Once completed, Alternatives 2 and 5 would have less convenient street-level access for passengers than the No Action Alternative, since they would no longer provide an entrance to the 86th Street Station on the north side of 86th Street. In addition, Alternative 2 would be less convenient within the station than the No Action Alternative, requiring passengers to traverse several switchbacks to enter the station. Alternative 7 would improve street-level access over that of the No Action Alternative, by providing two entrances on the north side of 86th Street, with one farther east and therefore more convenient for passengers coming from the east. In comparison to the other Build alternatives, Alternative 7 would be more convenient for the majority of passengers anticipated to use the station, since it would not require riders to cross 86th Street, would provide direct access for passengers coming from the east, and would have good sightlines in its entrances.

Overall, none of the alternatives would result in significant adverse transportation impacts during construction or operation that were not previously identified for the No Action Alternative. ✷