

S.1 INTRODUCTION

The Metropolitan Transportation Authority (MTA), in cooperation with MTA New York City Transit, is proposing to modify the locations of the station entrances at the northern end of the 72nd Street and 86th Street Stations. This *Supplemental Environmental Assessment to the Second Avenue Subway Final Environmental Impact Statement: 72nd and 86th Street Station Entrance Alternatives* (EA) has been prepared in accordance with the National Environmental Policy Act (NEPA) for the Federal Transit Administration (FTA) as lead federal agency, to provide environmental analyses of the proposed entrance modifications and presents all modifications currently proposed to the Second Avenue Subway project to date.

S.1.1 BACKGROUND AND DESIGN HISTORY

FTA issued a Record of Decision (ROD) for the Second Avenue Subway project on July 8, 2004. The ROD was issued based on the findings presented in the *Second Avenue Subway Final Environmental Impact Statement and Final Section 4(f) and 6(f) Evaluation* (FEIS; April 2004), which examined the potential impacts of the 8.5-mile-long Second Avenue Subway from East 125th Street in Harlem to Hanover Square in Lower Manhattan. The FEIS identified the environmental impacts of the Second Avenue Subway during its construction and the permanent impacts once the subway is operational. It also identified mitigation measures to alleviate the identified impacts. The assessment of the Second Avenue Subway's proposed alignment, ancillary facilities, stations, and station entrances presented in the FEIS was based on conceptual and preliminary engineering.

As noted in the Foreword, four technical memoranda were prepared to assess the effects from changes to the design of the Second Avenue Subway project following the FEIS. The design modifications proposed in these previous technical memoranda were reviewed and accepted by the FTA and incorporated into the Second Avenue Subway project. Therefore, the FEIS and the technical memoranda form the basis for the "No Action" Alternative, which is the baseline for analysis in this EA. Please refer to Chapter 1, "Purpose and Need," for details on the technical memoranda.

S.1.2 CURRENT PROPOSAL

Following completion of the FEIS and Technical Memoranda Nos. 1 through 4 for the Second Avenue Subway project, MTA New York City Transit has identified unanticipated difficulties in the implementation of the design for the "northern" entrances at the 72nd Street and 86th Street Stations. **Figures S-1 and S-2** provide context maps for these locations. At 72nd Street, the difficulties to implement the entrance within 305 East 72nd Street and the south sidewalk include complex property acquisition and utility relocation. At 86th Street, major structural modifications would be needed at 305 East 86th Street to construct an entrance at that location, which would result in substantial disruption of the residential portion of the building and may

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require full acquisition of commercial space (Food Emporium supermarket) on that property. These are significant difficulties that would increase the risk to the overall Second Avenue Subway project's schedule and budget. Therefore, MTA New York City Transit is exploring alternatives for these entrances.

Pursuant to 23 CFR §771.130, the proposed changes described in this document have been evaluated in accordance with NEPA to determine if they would alter the conclusions of the FEIS. FTA, in consultation with MTA New York City Transit, determined that these design alternatives should be evaluated in a Supplemental EA.

This EA analyzes alternative designs for the northern entrances to the 72nd Street Station and the 86th Street Station. These alternative designs propose relocating station entrances at the north end of the 72nd Street Station and at the north end of the 86th Street Station, as follows:

- ***The 72nd Street Station:*** At Second Avenue and 72nd Street, relocation of the entrance from within the building at 305 East 72nd Street, and relocation of the elevator entrance from the sidewalk on the south side of 72nd Street east of Second Avenue. Three “Build” entrance alternatives for the 72nd Street Station are considered in the EA. As discussed in more detail below, the Preferred Alternative for the 72nd Street Station would provide an entrance with five elevators in a new building at the southeast corner of Second Avenue and 72nd Street.
- ***The 86th Street Station:*** At Second Avenue and 86th Street, relocation of the entrance from within the building at 305 East 86th Street. Three “Build” entrance alternatives for the 86th Street Station are considered in the EA. One of the alternatives considered also involves relocation of the elevator entrance from the sidewalk on the south side of 86th Street east of Second Avenue; another requires a shift to the sidewalk location planned for the elevator. As discussed in more detail below, the Preferred Alternative for the 86th Street Station would provide two escalator entrances in a widened sidewalk on the north side of 86th Street east of Second Avenue. It would also provide an elevator in a widened sidewalk on the south side of 86th Street east of Second Avenue that is also part of the approved design for the station.

This EA evaluates each of the environmental impact areas considered in the FEIS to determine whether the station entrance alternatives would change the conclusions of the FEIS. For each issue, the effects of each of the “Build” alternatives for the station entrances at the 72nd Street and 86th Street Stations are compared to the effects of the approved design, which is the “No Action Alternative” in this EA, and to the impacts described in the FEIS to determine whether the entrance alternatives would result in any significant adverse impacts not disclosed in the FEIS or require any mitigation measures not identified in the FEIS.

S.1.3 CONCLUSION

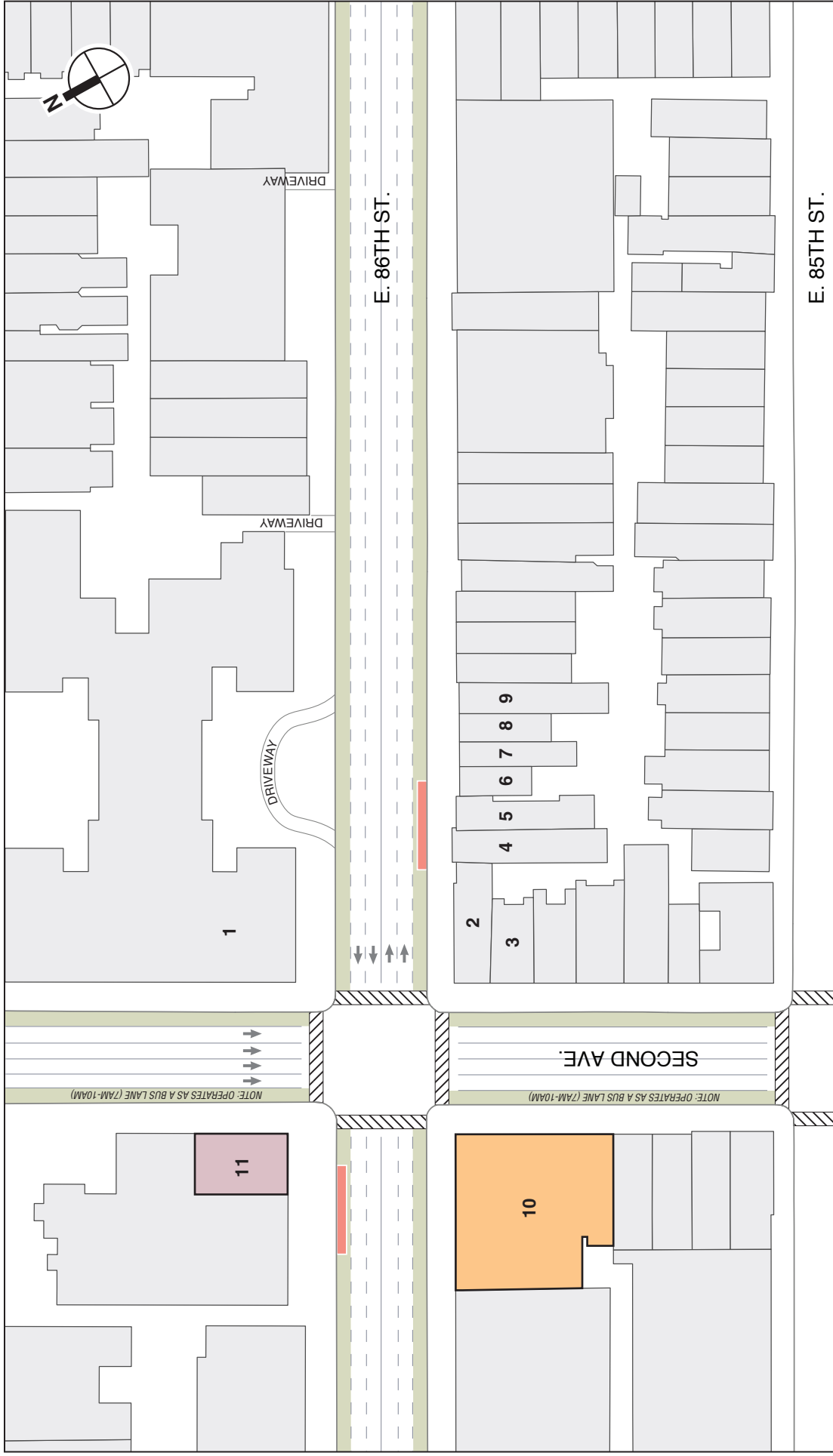
Based on this environmental analysis presented in this EA, none of the Build Alternatives analyzed would result in significant adverse impacts not already disclosed in the FEIS or require any mitigation measures not identified in the FEIS. After careful review of this environmental analysis, evaluation of which Build Alternative would best meet the purpose and need as well as the goals and objectives of the proposed design modifications, and consideration of public input during the development of the Build Alternatives, MTA New York City Transit has selected a Preferred Alternative for the northern station entrances at the 72nd and 86th Street Stations.












	Historic Building		Traffic Direction		7	253-259 East 72nd Street
	Building to be Replaced by Subway Ancillary Facility/Entrance		Parking Lane		8	252-254 East 72nd Street (Church of St. John the Martyr)
			Bus Stop		9	1341-1347 Second Avenue
					1	305 East 72nd Street
					2	311 East 72nd Street
					3	315 East 72nd Street
					4	325 East 72nd Street
					5	300 East 72nd Street
					6	302 East 72nd Street

SCALE
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72nd Street Station Context Map
Figure S-1



	Historic Building		Traffic Direction		1 305 East 86th Street		6 308 East 86th Street
	Building to be Replaced by Subway Ancillary Facility		Parking Lane		2 1656 East 86th Street		7 310 East 86th Street
			Bus Stop		3 1654 East 86th Street		8 312 East 86th Street
					4 304 East 86th Street		9 314 East 86th Street
					5 306 East 86th Street		10 1649-1657 Second Avenue
							11 250 East 87th Street

86th Street Station Context Map
Figure S-2

S.2 PURPOSE AND NEED FOR THE 72ND STREET AND 86TH STREET STATION ENTRANCES

S.2.1 72ND STREET STATION OVERVIEW

The 72nd Street Station of the Second Avenue Subway will be located beneath Second Avenue between 69th and 72nd Streets. Entrances will be located at the north end (at 72nd Street) and the south end (at 69th Street) of the station. **Figure S-3** illustrates the No Action Alternative for the 72nd Street Station.

Ridership forecasts for the Second Avenue Subway indicate that approximately 63 percent of the passengers at the 72nd Street Station will use the entrances at the north end of the station during the AM peak hour (3,600 passengers will enter and approximately 3,300 passengers will exit). Of the passengers who enter or exit at the north end of the station, 40 percent will come to/from the northeast of the intersection of Second Avenue and 72nd Street and 14 percent to/from the southeast of that intersection, with the remaining 46 percent to/from west of Second Avenue.

S.2.2 86TH STREET STATION OVERVIEW

The 86th Street Station of the Second Avenue Subway will be located beneath Second Avenue between approximately 83rd Street and midway between 86th and 87th Streets. Entrances will be provided at the north end (at 86th Street) and the south end (at 83rd Street) of the station. **Figure S-4** illustrates the No Action Alternative for the 86th Street Station.

Ridership forecasts for the Second Avenue Subway indicate that approximately 40 percent of the passengers at the 86th Street Station will use the entrances at the north end of the station during the AM peak hour (2,900 passengers will enter and approximately 700 passengers will exit). Of the passengers who enter or exit at the north end of the station, 68 percent will come to/from the northeast of the intersection of Second Avenue and 86th Street and 8 percent to/from the southeast of that intersection, with the remaining 24 percent to/from west of Second Avenue.

S.2.3 REASONS FOR THE 72ND STREET STATION ENTRANCE MODIFICATIONS

The No Action Alternative for the 72nd Street Station includes one entrance at the south end of the station (northeast corner of 69th Street and Second Avenue) and three entrances at the north end of the 72nd Street Station: 1) an off-street entrance in a new building to be constructed for the Second Avenue Subway at the northwest corner of Second Avenue and 72nd Street; 2) an off-street entrance within a portion of the ground-floor retail space (CVS pharmacy) and below-ground basement space of the existing condominium apartment building on the northeast corner of Second Avenue and 72nd Street (305 East 72nd Street); and 3) an elevator entrance in the sidewalk on the south side of 72nd Street east of Second Avenue. As engineering has advanced, it has become evident that the designs for the two entrances on the east side of Second Avenue at 72nd Street in the No Action Alternative—the entrance within 305 East 72nd Street and the elevator entrance in the sidewalk on the south side of 72nd Street—would require complex property acquisition and substantial building utility relocations, and present construction difficulties and associated risk to the overall Second Avenue Subway schedule and budget. Therefore design modifications have been explored.

Upon visual inspection and survey of the basement at 305 East 72nd Street, MTA New York City Transit learned that the location of the subway entrance houses the building's laundry room

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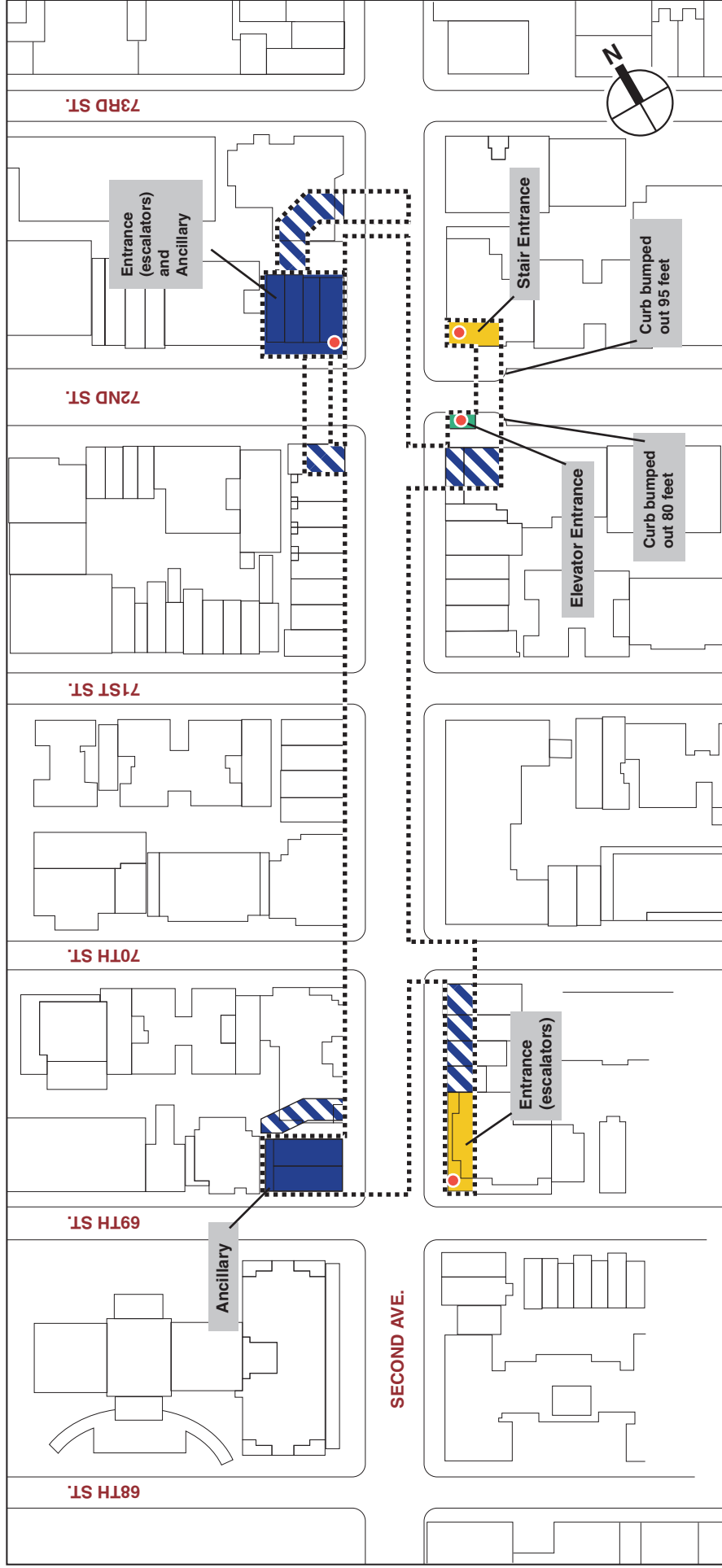
and main service utility entrance and distribution for the building, including the electrical distribution panel, electrical meters, gas meter, sewer connection, and steam for the building's heating system. To accommodate the subway entrance, this laundry room and mechanical space serving the residential condominium units would have to be relocated into a portion of the basement that is owned by the commercial use (CVS pharmacy), which would have to be acquired by MTA New York City Transit for that purpose. However, MTA New York City Transit believes it will not have full cooperation of the affected private property interests, and the relocation of privately owned and operated mechanical equipment would be difficult or impossible to undertake without the full cooperation of all affected parties. Therefore, because of the complexity of the required property acquisition and construction and the associated risks to the overall Second Avenue Subway's construction schedule and budget, design modifications are being sought to avoid an entrance at this location within the building at 305 East 72nd Street.

A 48-inch high-pressure steam main that serves a large area of the East Side of Manhattan is located beneath the sidewalk on the south side of East 72nd Street, close to the location planned for an elevator entrance in the No Action Alternative. When this location was incorporated into the project in 2006, MTA New York City Transit, based on criteria set forth by Consolidated Edison, identified sufficient lateral distance between the proposed elevator shaft and the steam main such that the main would not need to be relocated. However, following the steam main explosion at the intersection of Lexington Avenue and 41st Street in summer 2007, Consolidated Edison revised its criteria for lateral clear distance around its high-pressure steam mains, and as a result, the proposed elevator entrance would be too close. Therefore, either the steam main or the elevator entrance would need to be relocated. If the elevators were shifted to provide the distance required to avoid relocation of the high-pressure transmission steam main, the elevators would be in the center of the sidewalk, where they would impede pedestrian sight lines and block primary pedestrian view corridors. Therefore, shifting the elevators is not practical or desirable. If the steam main were relocated, cut and cover construction work would be extensive and complex. Therefore, to avoid the complexity of utility relocation, a new location not within the sidewalk is being sought for the elevators.

S.2.4 REASONS FOR THE 86TH STREET STATION ENTRANCE MODIFICATIONS

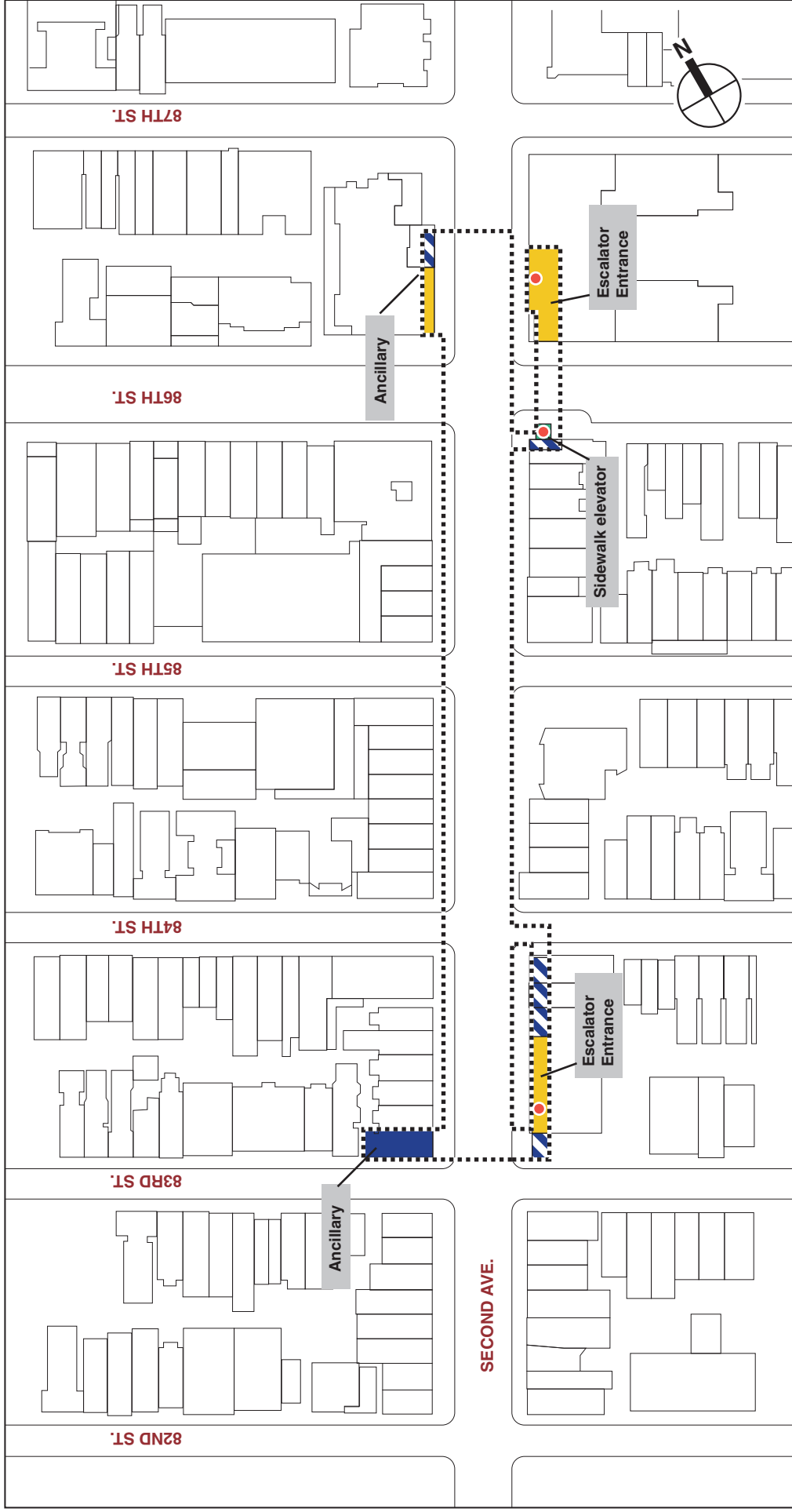
The No Action Alternative for the 86th Street Station includes three entrances, one at 83rd Street and Second Avenue and two at 86th Street and Second Avenue: 1) an off-street entrance within a portion of the ground-floor and basement-level space used by Food Emporium supermarket in the existing apartment building on the northeast corner of Second Avenue and 86th Street (305 East 86th Street); and 2) an elevator entrance in the sidewalk on the south side of 86th Street east of Second Avenue. As engineering has advanced, it has become evident that the design for the entrance in 305 East 86th Street would present substantial difficulties during construction, and therefore, an alternative design for the entrance at the northeast corner of 86th Street and Second Avenue must be identified.

Following completion of the FEIS, MTA New York City Transit determined through additional investigations within the building at 305 East 86th Street that the design for the entrance in that building would require major structural modifications to the building that would substantially increase the Second Avenue Subway's overall construction cost and schedule. In addition, residential apartments in 305 East 86th Street would also be impacted by the construction and the Food Emporium supermarket in that building would likely close because of the amount of space required for temporary construction easements and for permanent subway structures.



- Properties Planned for Full Acquisition
- Properties Planned for Partial Acquisition
- Entrance Location
- Subsurface Easement - No Displacement
- Underground Station
- Above-Ground Elevator Entrance in Sidewalk

72nd Street Station No Action Alternative Design
Figure S-3



Properties Planned for Full Acquisition

Properties Planned for Partial Acquisition

Entrance Location

Subsurface Easement - No Displacement

Underground Station

Above-Ground Elevator Entrance in Sidewalk

86th Street Station No Action Alternative Design
Figure S-4

Therefore, an alternative design is now being sought for the north-end access to the 86th Street Station to relocate the entrance from within the building at 305 East 86th Street.

S.2.5 LOCATIONAL REQUIREMENTS AND GOALS AND OBJECTIVES FOR STATION ENTRANCES

S.2.5.1 GENERAL SITE SELECTION PROCESS FOR ENTRANCES DESCRIBED IN THE FEIS

Station entrances will be provided at locations where the largest numbers of passengers are expected, based on ridership modeling information; at or close to major cross streets and destinations; and to facilitate transfers to other subway lines and bus routes. The number of entrances and general locations of entrances to the Second Avenue Subway's stations are influenced by a number of factors, including:

- ***Anticipated passenger volumes:*** For each station, the anticipated ridership affects the number of entrances and/or size of entrances.
- ***Anticipated passenger origin/destination:*** Where possible, MTA New York City Transit seeks to provide entrances at the intersection corner that best meets the projected demand, so that passengers do not have to cross streets to enter the station.
- ***Geographic distribution:*** To expand the geographic reach of the stations and therefore of the subway line, particularly at stations with the highest anticipated passenger demand, where practicable MTA New York City Transit has sought to site entrances at each end of the station to minimize the distance that passengers coming from each end of those stations will have to walk. The 72nd Street and 86th Street Stations are stations where entrances will be placed at each end of the station.

The FEIS set forth the process used to identify preliminary station locations. As described in the FEIS, at each station entrance location, locational constraints were identified, such as major utilities that might interfere with station elements, and vertical and horizontal alignment constraints governing the location of the station. Possible entrance locations were then ranked in descending order of priority as follows:

- Special Transit Land Use District (STLUD) easements as designated in the New York City Zoning Resolution, if available and of suitable size, shape, volume, and location for the required entrance.
- Vacant lots and buildings.
- Plazas and arcades.
- Possibilities for joint developments (i.e., new construction accommodating an entrance within a larger building developed for some non-transit use).
- Open spaces such as parks, where no other feasible and prudent alternative is available, and using all practicable measures to minimize harm to the open spaces.

Where no such sites were available, the use of portions of existing structures with street-level retail facilities was next considered. As described in the FEIS, any such properties were examined to determine whether portions of the retail spaces could be used without requiring relocation of the entire business. If the dimensions of the space were such that the entire use, and potentially any uses above the retail space, would have to be displaced (typically in older, less

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structurally solid buildings), acquisition of the entire building and relocation of its occupants was assumed. Acquisition and relocation of buildings containing residential occupants was only considered after all other possibilities were exhausted. Use of historic resources, parks, or community resources was avoided unless no feasible or prudent alternatives were available.

When acquisition of residential or commercial properties was required because of the absence of other suitable sites, MTA New York City Transit generally sought first to identify large, modern buildings where construction could occur in the buildings' lobbies, basements, or storefronts without requiring displacement of the residents or workers above. If such structures were not available, the smallest buildings (typically five stories or smaller) were then identified. Because of the smaller lot size (typically 25 feet wide), age, and structural condition of these buildings, generally it is not possible to use only a portion of the structure while leaving other existing uses in place. Therefore, when sites on small lots have been identified, the entire building would need to be acquired and removed.

*S.2.5.2 SELECTION PROCESS FOR ALTERNATIVE ENTRANCE LOCATIONS FOR THE
72ND STREET AND 86TH STREET ENTRANCE ALTERNATIVES*

In addition to the selection process for station entrance locations described in the FEIS, the following specific requirements and goals and objectives for the entrance alternatives were followed.

S.2.5.2.1 Specific Entrance Siting Requirements

The entrances at the north end of the 72nd Street and 86th Street Stations must meet minimum criteria to be acceptable locations:

- ***Entrances must be large enough to accommodate the projected ridership anticipated at the north end of each station.***
- ***The entrances must be located at the north end of the 72nd Street and the 86th Street Stations at locations that allow for a connection to the stations' mezzanines without major redesign of the stations.*** At this point in the Second Avenue Subway's design, major redesign of the stations would in turn require major redesign of ancillary facilities, other entrances, and potentially the entire alignment, which would jeopardize the construction schedule and could greatly increase costs of the Second Avenue Subway.
- ***Entrance locations should be sited as to be constructible in accordance with good engineering practice.*** Entrances should be sited to ensure the structural integrity of the Second Avenue Subway cavern, to avoid changes in the current design of the station mezzanine and platform, and to maintain current above-grade and sub-grade access to surrounding buildings.
- ***Maintain overall Second Avenue Subway project construction schedule.*** Entrance locations should be sited so that their construction can occur within the overall Second Avenue Subway project's construction schedule.

S.2.5.2.2 Goals and Objectives

Given these basic requirements, a number of goals and objectives were also used to guide the development of new entrance alternatives and the selection of alternatives for more detailed evaluation. These were as follows:

Goal 1: Improve Mobility

- At street-level, entrances should be sited so as to best serve the projected ridership demand, if possible given other goals and objectives.
- Passenger convenience: Provide clear sightlines and straight passages. In subway stations, straight passages with clear sightlines from areas where people congregate and/or areas where station personnel are present are preferred by passengers. In addition, street-level components of the entrances should be in close enough proximity to avoid long underground passageways to reach the mezzanine.

Goal 2: Improve, Maintain or Minimize Impacts to Environmental Conditions

- Maintain adequate pedestrian flows on adjacent sidewalks, crosswalks, corners.
- Maintain traffic flows on roadway network. The new entrances should not require permanent closure of moving traffic lanes on Second Avenue or on 72nd or 86th Street.
- Minimize displacement of occupied residential units or active commercial space, when other alternatives are available. Consistent with the siting procedure described in the FEIS, acquisition and relocation of buildings containing residential occupants was only considered after all other possibilities were exhausted.
- Consistent with the requirements of NEPA, Section 106 of the National Historic Preservation Act, and Section 4(f) of the U.S. Department of Transportation Act, avoid adverse impacts to historic resources unless no feasible and prudent alternative is available.
- Minimize construction impacts, to the extent practicable.

Goal 3: Minimize Cost and Time to Implement

- Alternatives that minimize construction cost and the time required to complete construction, including time to implement construction through property acquisition, relocation of occupants, utility relocation, and site preparation, are preferred.

S.3 ENTRANCE ALTERNATIVES EVALUATED IN EA

S.3.1 72ND STREET STATION ENTRANCE ALTERNATIVES

Eight new alternatives were developed for the northern entrances at the 72nd Street Station, based on the site selection process described above. These alternatives were also developed with input from the community. Based on a review of the alternatives' ability to meet the purpose and need (siting requirements) and their ability to best meet the goals and objectives in comparison to other alternatives, five alternatives were eliminated (these are described in Appendix A of this EA. The three remaining Build alternatives, Alternatives 1, 3, and 4, are evaluated in detail in the EA, in comparison to the No Action Alternative.

Alternatives 1, 3, and 4 at the 72nd Street Station would all eliminate the subway entrance from within 305 East 72nd Street and relocate the station's elevator entrance from the sidewalk on the south side of 72nd Street east of Second Avenue to a location within a new building at the southeast corner (300 East 72nd Street). At that location, the existing four-story building with ground-floor commercial space and residential space above would be acquired and replaced with a new building that would house the elevators. The No Action Alternative and three Build entrance alternatives for the 72nd Street Station are illustrated in **Figure S-5** and summarized below.

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S.3.1.1 72ND STREET STATION NO ACTION ENTRANCE ALTERNATIVE

The 72nd Street Station will include an entrance on the northeast corner of East 69th Street and Second Avenue, an ancillary building on the northwest corner of East 69th Street and Second Avenue, and an entrance and ancillary building on the northwest corner of East 72nd Street and Second Avenue. The location and design of these structures would not be changed by the Build alternatives for the 72nd Street Station described below.

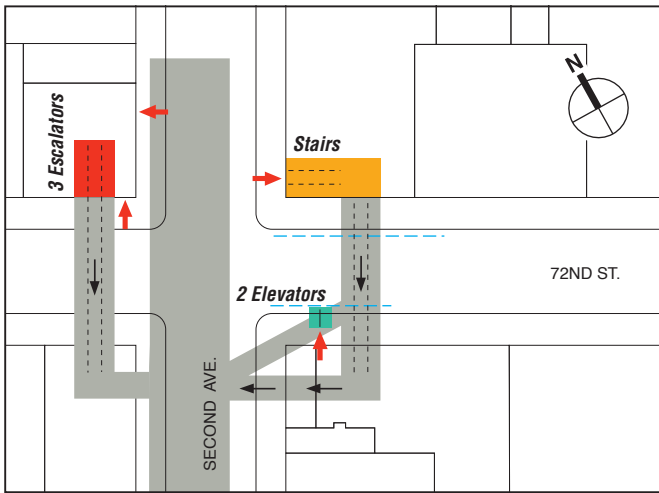
In the No Action Alternative, the 72nd Street Station would have three entrances at the north end of the station, one on the west side of Second Avenue and two on the east side of Second Avenue. On the northeast corner of 72nd Street and Second Avenue, the entrance would occupy what is now ground-floor commercial space (a portion of a CVS pharmacy) and basement space of the existing 17-story condominium apartment building on the northeast corner of Second Avenue and 72nd Street (305 East 72nd Street). The entrance would have stairs from street level to an upper level, where a bank of escalators would pass beneath 72nd Street to connect to the station mezzanine, and stairs, escalators, and an elevator to access the platform. To allow enough headroom for the upper-level landing and top of the escalator, the existing sidewalk along the north side of 72nd Street would be widened, or “bumped out,” by approximately 6 feet into the parking lane for a length of approximately 95 feet from the Second Avenue curblin. On the south side of 72nd Street, the No Action Alternative would have two elevators in the sidewalk that would provide access to the 72nd Street Station in compliance with the Americans with Disabilities Act (ADA). The existing sidewalk would be widened in this area by approximately 6 feet, for a length of 80 feet from the Second Avenue curblin. On the northwest corner, the No Action Alternative would have an entrance with three escalators.

*S.3.1.2 PREFERRED ALTERNATIVE—72ND STREET STATION ENTRANCE
ALTERNATIVE 1: ELEVATORS AT THE SOUTHEAST CORNER*

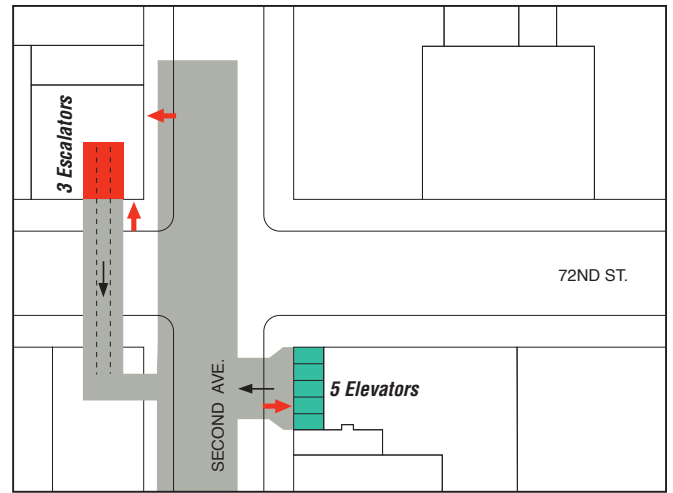
The Preferred Alternative (Alternative 1) would eliminate the subway entrance from within 305 East 72nd Street and relocate the station’s elevator entrance from the sidewalk on the south side of 72nd Street east of Second Avenue. In this alternative, five elevators that would comply with ADA requirements would be provided in a new building at the southeast corner of the intersection, at 300 East 72nd Street. The elevators would connect directly to the station mezzanine below and stairs, escalators, and an elevator to connect to the platform. The new elevator building would be open onto Second Avenue, with a canopy over the sidewalk beyond the building line. Within the building, space would be provided for passengers waiting for the elevators. No bump-outs would be required along the Second Avenue or 72nd Street sidewalks for the elevator building. There would be no change to the entrance on the northwest corner. Therefore, Alternative 1 would have two entrances at the northern end of the 72nd Street Station, one on the northwest corner and one on the southeast corner of 72nd Street and Second Avenue.

*S.3.1.3 72ND STREET STATION ENTRANCE ALTERNATIVE 3: ESCALATORS ON THE
NORTH SIDE OF 72ND STREET EAST OF SECOND AVENUE*

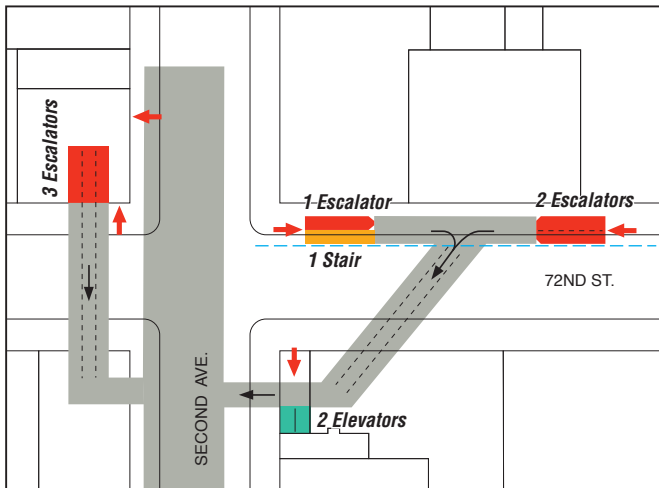
Alternative 3 would eliminate the subway entrance from within 305 East 72nd Street. Instead, two entrances would be provided in a widened sidewalk on the north side of 72nd Street east of Second Avenue. One, with a stair and an escalator, would be located in front of 305 East 72nd Street and the other, with two escalators, would be located in front of the apartment buildings at 311 and 315 East 72nd Street. These are large apartment buildings, ranging from 17 to 20 stories



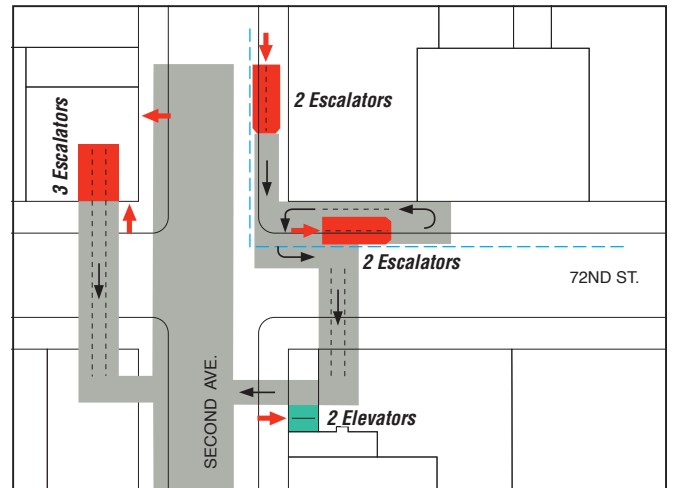
No Action Alternative



Alternative 1 - Preferred Alternative



Alternative 3



Alternative 4

- - - - Curb Bump Out
- Below-Grade Portion of Station
- Escalator to/from Street Level
- Elevator to/from Street Level
- Stairs to/from Street Level
- Below-Grade Escalator Bank
- ➔ Direction of Passenger Flow Entering Station (at street level)
- ➔ Direction of Passenger Flow Entering Station (below grade)

tall. As required by code, each pair of escalators or stairs and escalator would be covered by a canopy located on the public sidewalk to protect the mechanical equipment.¹ These entrances would converge at a common upper-level landing that would connect to a bank of escalators crossing beneath 72nd Street to connect to the station mezzanine, from which stairs, escalators, and an elevator would connect to the platform. The sidewalk along the north side of 72nd Street would be widened by approximately 6 feet for a distance of 270 feet east of the Second Avenue curbline. At the southeast corner, no elevators would be constructed in the sidewalk on the south side of 72nd Street; instead, the building at 300 East 72nd Street would be acquired and replaced with a new subway entrance building housing two ADA-compliant elevators. The entrance on the northwest corner would not be changed as compared to the No Action Alternative. Thus, Alternative 3 would have four street-level entrances at the north end of the 72nd Street Station.

S.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.

Alternative 4 would also eliminate the subway entrance from within 305 East 72nd Street. Instead, two escalator entrances would be provided in widened sidewalks alongside 305 East 72nd Street. One would be located in the sidewalk on the east side of Second Avenue north of 72nd Street, and the other would be in the sidewalk on the north side of 72nd Street east of Second Avenue. As required by code, each pair of escalators or stairs and escalator would be covered by a canopy located on the public sidewalk. These entrances would converge at a common upper-level landing that would connect to a bank of escalators crossing beneath 72nd Street to connect to the station mezzanine. The sidewalk along the east side of Second Avenue would be widened by approximately 6 feet extending approximately 100 feet north of 72nd Street, while the sidewalk on the north side of 72nd Street would be widened by approximately 6 feet for approximately 150 feet east of Second Avenue. At the southeast corner of the intersection, no elevators would be constructed in the sidewalk on the south side of 72nd Street; instead, the building at 300 East 72nd Street would be acquired and replaced with a new subway entrance building housing two ADA-compliant elevators. The entrance on the northwest corner would not be changed as compared to the No Action Alternative. Thus, Alternative 4 would have four street-level entrances at the north end of the 72nd Street Station.

S.3.2 86TH STREET STATION ENTRANCE ALTERNATIVES

For the 86th Street Station, seven alternatives to the No Action Alternative were developed for the entrances at the north end of the 86th Street Station, based on the site selection process for entrances described above. These alternatives were also developed with input from the community. Based on a review of the alternatives' ability to meet the purpose and need (siting requirements) and their ability to best meet the goals and objectives in comparison to other alternatives, four alternatives were eliminated (these are described in Appendix A of this EA). The three remaining Build alternatives, Alternatives 2, 5, and 7, are evaluated in detail in the EA, in comparison to the No Action Alternative. Alternatives 2, 5, and 7 would all eliminate the subway entrance from within 305 East 86th Street. The No Action Alternative and Build

¹ American Society of Mechanical Engineers (ASME) Elevator and Escalator Code, ASME A17.1 – 2004 Section 6.1.8 Outdoor Escalators.

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entrance alternatives for the 86th Street Station are illustrated in **Figure S-6** and summarized below.

S.3.2.1 86TH STREET STATION NO ACTION ENTRANCE ALTERNATIVE

The 86th Street Station will include an entrance on the northeast corner of East 83rd Street and Second Avenue, an ancillary building on the northwest corner of East 83rd Street and Second Avenue, and an ancillary building on the northwest corner of East 86th Street and Second Avenue.

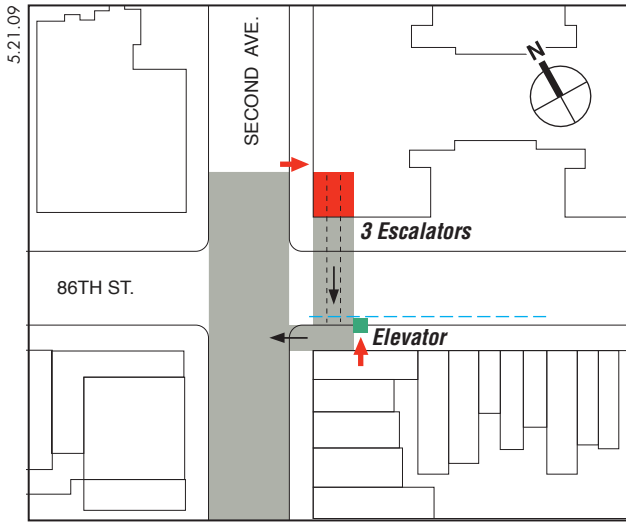
In the No Action Alternative, the 86th Street Station would have two entrances at the north end of the station, both on the east side of Second Avenue. On the north side of 86th Street, the entrance would occupy what is now ground-floor and basement-level commercial space (a portion of a Food Emporium supermarket) in an existing apartment building on the northeast corner of Second Avenue and 86th Street (305 East 86th Street). Escalators in this entrance would lead from Second Avenue directly to the station mezzanine, and stairs, escalators, and an elevator would lead to the platform. On the south side of 86th Street, the No Action Alternative would have one elevator in the sidewalk that would provide ADA-compliant access to the 86th Street Station. The existing sidewalk would be widened with a bump out in this area by approximately 6 feet, for a length of 150 feet from the Second Avenue curbline.

*S.3.2.2 PREFERRED ALTERNATIVE—86TH STREET STATION ENTRANCE
ALTERNATIVE 7: ESCALATORS ON THE NORTH SIDE OF 86TH STREET EAST
OF SECOND AVENUE*

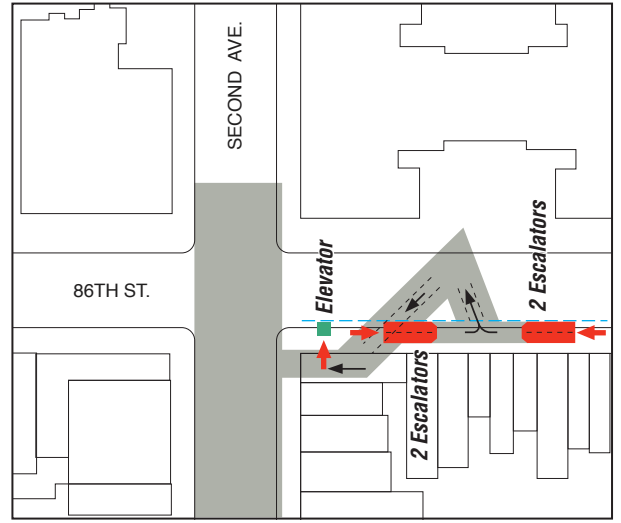
Alternative 7 would eliminate the subway entrance from within 305 East 86th Street. Instead, two entrances would be provided in a widened sidewalk on the north side of 86th Street east of Second Avenue. These entrances, both with two escalators, would flank the curved driveway in front of the building at 305 East 86th Street, which is a large 21-story 695-unit apartment building that occupies approximately one-third of the block. As required by code, each pair of escalators or stairs and escalator would be covered by a canopy located on the public sidewalk. These entrances would converge at a common upper-level landing that would connect to a bank of escalators crossing beneath 86th Street to connect to the station mezzanine, from which stairs, escalators, and an elevator would lead to the platform. The sidewalk along the north side of 86th Street would be widened by approximately 6 feet for a distance of 270 feet east of the Second Avenue curbline. The elevator entrance in the widened sidewalk on the south side of 86th Street east of Second Avenue would not be changed from the No Action Alternative. As with the No Action Alternative, the south sidewalk would be widened with a bump-out extending 150 feet east of the Second Avenue curbline. Overall, Alternative 7 would include three street-level entrances at the north end of the 86th Street Station.

*S.3.2.3 86TH STREET STATION ENTRANCE ALTERNATIVE 2: ESCALATORS ON THE
SOUTH SIDE OF 86TH STREET EAST OF SECOND AVENUE*

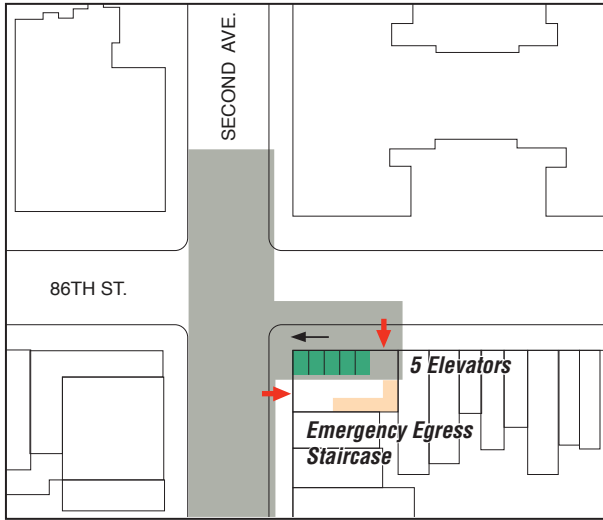
Alternative 2 would eliminate the subway entrance from within 305 East 86th Street. Instead, two entrances (each with two escalators) would be provided in a widened sidewalk on the south side of 86th Street east of Second Avenue. One entrance would be located in front of 300-302, 304, and 306 East 86th Street and the other would be located in front of 316, 320, 322, and 324 East 86th Street. These are four- and five-story buildings with narrow frontage (15.5 to 22 feet wide)



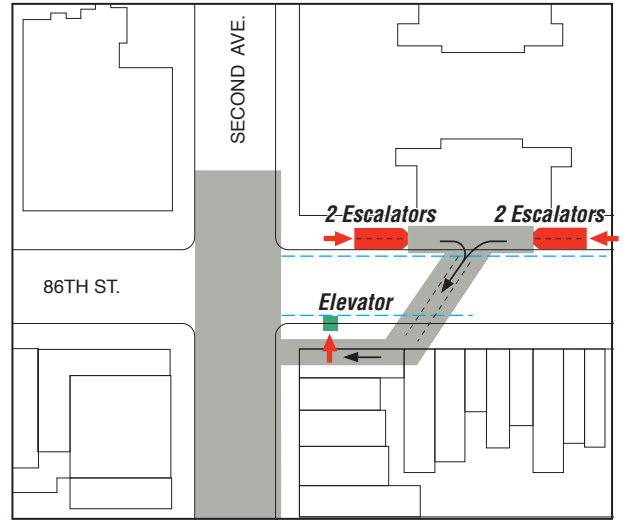
No Action Alternative











Alternative 2



Alternative 5



Alternative 7 - Preferred Alternative

-  Curb Bump Out
-  Below-Grade Portion of Station
-  Escalator to/from Street Level
-  Elevator to/from Street Level
-  Stairs to/from Street Level
-  Below-Grade Escalator Bank
-  Direction of Passenger Flow Entering Station (at street level)
-  Direction of Passenger Flow Entering Station (below grade)

on 86th Street and ground-floor retail space on 86th Street. As required by code, each pair of escalators or stairs and escalator would be covered by a canopy located on the public sidewalk. These entrances would converge at a common upper-level landing that would connect to a bank of escalators crossing northward beneath 86th Street and then doubling back to connect to the station mezzanine. The sidewalk on the south side of 86th Street would be widened by approximately 6 feet extending approximately 330 feet east of the Second Avenue curblin. In addition to the escalators, the elevator in the south sidewalk of 86th Street east of Second Avenue (included as part of the No Action Alternative) would remain in this alternative, but would be moved slightly to the west to accommodate the escalators in the sidewalk in this alternative. . With Alternative 2, no entrance to the 86th Street Station would be provided on the north side of 86th Street. Overall, Alternative 2 would include three street-level entrances at the north end of the 86th Street Station.

S.3.2.4 86TH STREET STATION ENTRANCE ALTERNATIVE 5: ELEVATORS AT SOUTHEAST CORNER

Alternative 5 would eliminate the subway entrance from within 305 East 86th Street and relocate the station's elevator entrance from the sidewalk on the south side of 86th Street east of Second Avenue. In this alternative, the four-story buildings at 1654 and 1656 Second Avenue, on the southeast corner of the intersection, would be acquired and demolished. These buildings are currently occupied by ground-floor retail space with residential space above. In their place, a new building housing five ADA-compliant elevators would be provided. The elevators would connect directly to the station mezzanine below. The new elevator building would be open onto Second Avenue and 86th Street, with a canopy over the sidewalk beyond the building line. Within the building, space would be provided for passengers waiting for the elevators. No bump-outs would be required along the Second Avenue or 86th Street sidewalks for the elevator building. This alternative provides adequate access and egress to the station. In this alternative, no escalators would be provided for access to and from the north end of the station; escalators would be provided at the station's 83rd Street entrance. Overall, Alternative 5 would include one street-level entrance at the north end of the 86th Street Station.

S.4 CONSTRUCTION ACTIVITIES

S.4.1 CONSTRUCTION FOR THE 72ND STREET AND 86TH STREET STATIONS

The 72nd Street and 86th Street Stations will be constructed primarily by mining underground in the rock. After the TBMs have bored the tunnels for the northbound and southbound trains, controlled drilling and blasting will be used to excavate the station caverns and adjacent interlocking caverns. Construction shafts will be created at the north and south ends of both stations, for use in bringing construction materials to the work area and to remove excavated rock from the caverns below. Cut-and-cover construction activities will be required for the construction shafts and for the station entrances. In these areas, a Maintenance and Protection of Traffic Plan (MPT Plan) will be implemented to keep vehicular and pedestrian traffic flowing past the construction zone. On both 72nd Street and 86th Streets, the MPT Plan may affect an area extending up to 500 feet east of Second Avenue. The MPT Plan may involve use of a portion of the sidewalk for vehicular traffic, to route traffic around other construction activities. The overall duration of construction activities is currently anticipated at both stations to be approximately five years.

S.4.2 CONSTRUCTION FOR THE 72ND STREET STATION ENTRANCE ALTERNATIVES

In general, the No Action Alternative and three Build alternatives for the 72nd Street Station would all require heavy construction activities that include cut-and-cover construction, excavation, and removal of spoils. The key differences between the alternatives and the No Action Alternative are as follows (see also **Table S-1** at the end of section S.5):

- **No Action Alternative.** Construction activities would occur within the building at 305 East 72nd Street and on the south side of 72nd Street east of Second Avenue, as well as partially across 72nd Street. The cut-and-cover zone would extend 150 feet east of Second Avenue. This alternative would also require relocation of a 48-inch high pressure steam main, which would likely require extensive disruption in an area beyond the subway construction zone.
- **Alternative 1: Elevators at the Southeast Corner (Preferred Alternative).** This alternative would involve demolition of the four-story building at 300 East 72nd Street. Activities would occur on the lot at 300 East 72nd Street with cut-and-cover construction extended into the sidewalk on the east side of Second Avenue. The zone of cut-and-cover construction for Alternative 1 would be less extensive than identified in the FEIS as well as the No Action Alternative. Alternative 1 would require removal of a total of 4,450 cubic yards less, or 445 fewer truck loads, of excavated materials (“spoils”) than the No Action Alternative, which would reduce the number of days for spoils removal by 6 days. Permanent displacement of residents and businesses at 300 East 72nd Street would be required.
- **Alternative 3: Escalators on the North Side of 72nd Street.** This alternative would involve demolition of the four-story building at 300 East 72nd Street. Cut-and-cover construction would be required along the north side of 72nd Street for a distance of 270 feet east of Second Avenue, and extending partially across 72nd Street. Cut-and-cover construction would also be required on the lot at 300 East 72nd Street, extending into the sidewalk on the east side of Second Avenue. The zone of cut-and-cover construction for Alternative 3 would be more extensive than identified in the FEIS as well as the No Action Alternative. Alternative 3 would increase the amount of spoils to be removed by 11,890 cubic yards, or 1,189 additional truck loads, compared to the No Action Alternative, which would result in an additional 19 days of spoils removal. Permanent displacement of residents and businesses at 300 East 72nd Street would be required.
- **Alternative 4: Escalators on the North Side of 72nd Street and East Side of Second Avenue.** This alternative would involve demolition of the four-story building at 300 East 72nd Street. Cut-and-cover construction would be required on the north side of 72nd Street for a distance of 150 feet east of Second Avenue, extending partially across 72nd Street. Cut-and-cover construction would also be required on the lot at 300 East 72nd Street, extending into the sidewalk on the east side of Second Avenue. Cut-and-cover activities for the station entrance within the east sidewalk of Second Avenue north of 72nd Street would be undertaken with other station construction activities. This alternative would increase the amount of spoils to be removed by a total of 2,510 cubic yards, or 251 additional truck loads over the No Action Alternative, requiring four additional days for spoils removal. Permanent displacement of residents and businesses at 300 East 72nd Street would be required.

S.4.3 CONSTRUCTION FOR THE 86TH STREET STATION ENTRANCE ALTERNATIVES

In general, the No Action Alternative and three Build alternatives for the 86th Street Station would all require heavy construction activities that include cut-and-cover construction, excavation, and removal of spoils. The key differences between the alternatives and the No Action Alternative are as follows (see also **Table S-2** at the end of section S.5):

- **No Action Alternative.** Construction activities would occur within the building at 305 East 86th Street and on the south side of 86th Street east of Second Avenue, as well as partially across 86th Street. This would affect the area extending 50 feet east of Second Avenue. This alternative would also require major structural modifications to 305 East 86th Street, which would affect residential apartments as well as the commercial space in the building.
- **Alternative 7: Escalators on the North Side of 86th Street (Preferred Alternative).** Cut and cover construction would be required for the escalator entrances on the north side of 86th Street and for the elevator entrance on the south side of 86th Street. The maximum length of the cut-and-cover zone for this alternative would be 270 feet east from the corner of Second Avenue on the north side of 86th Street and 50 feet on the south side of 86th Street, which is more extensive than for the No Action Alternative. Alternative 7 would increase the amount of spoils to be removed by 16,080 cubic yards, or 1,608 additional truck loads, compared to the No Action Alternative, which would result in an additional 25 days of spoils removal. No temporary or permanent displacement would be required.
- **Alternative 2: Escalators on the South Side of 86th Street.** Cut and cover construction would be required for the escalator entrances and the elevator entrance on the south side of 86th Street for a distance of 330 feet east from the corner of Second Avenue, and extending the whole way across 86th Street, which is more extensive than for the No Action Alternative. Alternative 2 would increase the amount of spoils to be removed by 21,500 cubic yards, resulting in 2,150 additional truck loads, compared to the No Action Alternative, which would result in an additional 33 days of spoils removal. During construction, access to three buildings on the south side of 86th Street (310, 312, and 314 East 86th Street) would not be available for up to eight months, requiring temporary displacement of occupants. Alternative 2 would also involve permanent modifications to the buildings at 300-302, 304, 306, 308, and 322 East 86th Street, where cellar doors in the sidewalk would have to be permanently closed.
- **Alternative 5: Elevators at the Southeast Corner.** This alternative would involve demolition of the two four-story buildings at 1654 and 1656 Second Avenue. Construction would occur on the lots at 1654 and 1656 Second Avenue and cut-and-cover construction would also be required in the south sidewalk on 86th Street for a distance of approximately 80 feet east of Second Avenue, which is slightly longer (30 feet) than the No Action Alternative. This would require the removal of 1,560 cubic yards more, or 156 additional truck loads, of spoils than the No Action Alternative, resulting in an additional three days of spoils removal.

S.5 POTENTIAL IMPACTS OF THE ENTRANCE ALTERNATIVES

The following discussion summarizes the potential impacts of the Build entrance alternatives for the 72nd Street and 86th Street Stations, in comparison to the impacts of the No Action Alternative. It considers impacts temporary impacts during construction and permanent impacts

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once the subway is operational. In addition, the comparison of impacts is also summarized in **Table S-1** and **Table S-2** at the end of this section.

S.5.1 TRANSPORTATION

S.5.1.1 72ND STREET STATION ENTRANCE ALTERNATIVES

S.5.1.1.1 Temporary Impacts During Construction

At the 72nd Street Station, 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 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. 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.

S.5.1.1.2 Permanent Impacts During Operation

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 entrances on three corners of the intersection and with straight passages and good sightlines, similar to the No Action Alternative. 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. The loss of the small number of parking spaces in the bump-outs, which was anticipated for the No Action Alternative, would not result in a significant adverse impact on parking conditions.

S.5.1.2 86TH STREET STATION ENTRANCE ALTERNATIVES

S.5.1.2.1 Temporary Impacts During Construction

At the 86th Street Station, 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. 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. 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.

S.5.1.2.2 Permanent Impacts During Operation

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 identified for the No Action Alternative.

S.5.2 SOCIAL AND ECONOMIC CONDITIONS

S.5.2.1 72ND STREET STATION ENTRANCE ALTERNATIVES

The three 72nd Street Build entrance alternatives—Alternatives 1, 3, and 4—would all result in similar impacts during construction and operation to the No Action Alternative.

S.5.2.1.1 Temporary Impacts During Construction

During construction, like the No Action Alternative, all 72nd Street Build entrance alternatives would result in temporary but significant adverse impacts during construction related to disruptions to access and travel patterns; increases in noise, vibration, and dust; temporary visual effects from barriers and construction equipment (including nighttime lighting); and removal of street trees. With Alternative 1, these impacts would be reduced from those of the No Action Alternative, because Alternative 1 would have the least amount of cut-and-cover excavation or need for on-street staging and traffic diversion. Alternatives 3 and 4 would result in similar

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construction impacts to those of the No Action Alternative, except that they, like Alternative 1, would eliminate the need for relocation of a major steam main that runs beneath 72nd Street.

S.5.2.1.2 Permanent Impacts During Operation

Once the Second Avenue Subway is completed, like the No Action Alternative, all three of the 72nd Street Station Build entrance alternatives would be consistent with the land use, zoning, neighborhood character, and other social and economic conditions of the surrounding area and would not result in significant adverse impacts. The No Action Alternative and the 72nd Street Station entrance alternatives would all add subway station entrances on a wide crosstown street with a bus route and large apartment buildings, which would not result in conflicts with land use or neighborhood character. All three Build alternatives, like the No Action Alternative, would also be consistent with the intent of the Special Transit Land Use District, a zoning district mapped along Second Avenue in support of placement of entrances for the new subway. All alternatives would require some displacement (at 305 East 72nd Street for the No Action Alternative and at 300 East 72nd Street for the other station entrance alternatives), but this displacement and the associated change in use to transportation-related use would not adversely affect the overall character of the surrounding area.

S.5.2.2 86TH STREET STATION ENTRANCE ALTERNATIVES

The three 86th Street Build entrance alternatives—Alternatives 2, 5, and 7—would all result in similar impacts to the No Action Alternative during construction and operation, and would not change the conclusions of the FEIS with respect to land use, zoning, neighborhood character, or other social and economic conditions.

S.5.2.2.1 Temporary Impacts During Construction

During construction, like the No Action Alternative, all 86th Street Build entrance alternatives would result in temporary but significant adverse impacts during construction related to disruptions to access and travel patterns; increases in noise, vibration, and dust; temporary visual effects from barriers and construction equipment (including nighttime lighting); and removal of street trees. Alternative 7 would require less disruption to existing businesses and residents than the No Action Alternative, since it would not require permanent displacement of any businesses or significant disruption during construction of residents in 305 East 86th Street. In contrast, Alternatives 2 and 5 would be more disruptive to businesses and residents during construction than the No Action Alternative. Alternative 2 would temporarily (up to eight months) eliminate access to three buildings on the south side of 86th Street during construction, which would require temporary displacement of businesses and residents from those buildings, and Alternative 5 would require permanent displacement of businesses and residents from two buildings at the southeast corner of Second Avenue and 86th Street.

S.5.2.2.2 Permanent Impacts During Operation

Once the Second Avenue Subway is completed, like the No Action Alternative, all three of the 86th Street Station Build entrance alternatives would be consistent with the land use, zoning, neighborhood character, and other social and economic conditions of the surrounding area. The No Action Alternative and the 86th Street Station entrance alternatives would all add subway station entrances on a wide crosstown street with a bus route and large apartment buildings, which would not result in conflicts with land use or neighborhood character. All three Build

alternatives, like the No Action Alternative, would also be consistent with the intent of the Special Transit Land Use District, a zoning district mapped along Second Avenue in support of placement of entrances for the new subway. Unlike the No Action Alternative, Alternative 2 has the potential to adversely affect adjacent retail businesses, because of the narrow sidewalk that would separate the subway entrances from the businesses and because of the need to permanently close cellar doors serving these buildings. Alternative 5 would require displacement of residents and active businesses, including Schaller and Weber, a long-time tenant of the area that is reminiscent of the community's former character as a prominent German neighborhood and is considered an important business by local residents. Only Alternative 7 would avoid the need for displacement or disruption of existing residents or businesses once the subway is operational, which is an improvement over the No Action Alternative.

S.5.3 DISPLACEMENT AND RELOCATION

S.5.3.1 72ND STREET STATION ENTRANCE ALTERNATIVES

S.5.3.1.1 Temporary Impacts During Construction

Like the No Action Alternative, none of the Build entrance alternatives for the 72nd Street Station would require temporary displacement of businesses or residents to accommodate construction activities.

S.5.3.1.2 Permanent Impacts During Operation

All three Build entrance alternatives for the 72nd Street Station would eliminate the need to displace a portion of the CVS at 305 East 72nd Street (1,260 square feet, 3 full-time-equivalent employees) that is required for the No Action Alternative. Alternatives 1, 3, and 4 would instead require full acquisition of the property at 300 East 72nd Street with the potential to displace approximately 1,100 square feet of commercial space (a ground-floor restaurant and a cellular phone store with an estimated four employees) and three apartments, occupied by an estimated six residents, which is not required for the No Action Alternative. Overall, Alternatives 1, 3, and 4 would result in the displacement of a similar number of employees and approximately six additional residents as compared to the No Action Alternative. Property acquisition and relocation of residents or businesses would take place in accordance with applicable federal and state regulations and would not result in significant adverse impacts.

S.5.3.2 86TH STREET STATION ENTRANCE ALTERNATIVES

S.5.3.2.1 Temporary Impacts During Construction

Unlike the No Action Alternative, Alternative 2 would require displacement of an estimated 21 employees and 15 residents for up to eight months during construction. The No Action Alternative and Alternatives 5 and 7 would not require temporary displacement of businesses or residents to accommodate construction activities.

S.5.3.2.2 Permanent Impacts During Operation

All three Build entrance alternatives for the 86th Street Station would eliminate the need to displace a portion of the Food Emporium at 305 East 86th Street (2,800 square feet, 7 full-time-equivalent employees) that is required for the No Action Alternative. One alternative, Alternative 5, would require full acquisition of two private properties, with the potential to

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displace approximately 3,200 square feet of commercial space (eight full-time equivalent employees) and 15 residential units (23 residents). Alternative 2 would not require permanent displacement, but would permanently affect three adjacent buildings by requiring their cellar access doors in the sidewalk to be permanently closed. Alternative 7 would eliminate the need for permanent displacement of commercial or residential space. Property acquisition and relocation of residents or businesses would take place in accordance with applicable federal and state regulations and would not result in significant adverse impacts.

S.5.4 HISTORIC RESOURCES

The Second Avenue Subway project's Programmatic Agreement (PA), prepared pursuant to Section 106 of the National Historic Preservation Act, among FTA, MTA New York City Transit, and the New York State Historic Preservation Officer (SHPO), executed April 8, 2004, sets forth the steps to be followed for any changes to the project that would expand the project's Area of Potential Effect (APE) for historic resources. As set forth in the PA and consistent with Section 106 of the National Historic Preservation Act, as the project design proceeds, if additional APEs are identified, surveys are to be conducted to identify any potential historic resources in those APEs, and the potential historic resources will then be evaluated in consultation with the SHPO to determine whether they are eligible for the State and National Registers of Historic Places.

The station entrance alternatives at the 72nd Street and 86th Street Stations would expand the APEs for the two stations beyond what was analyzed in the FEIS. Therefore, consistent with the procedures set forth in the PA, the buildings located within 200 feet of the station entrance alternative locations were evaluated by professional architectural historians to determine whether they appear to meet the eligibility criteria for the S/NR.

The FTA has determined and SHPO has concurred that the alternatives would result in No Adverse Effect to historic properties (SHPO letter dated March 12, 2009). The New York City Landmarks Preservation Commission (LPC) also concluded that no adverse effect would occur in a letter dated February 13, 2009. This correspondence is provided in Appendix C.

S.5.4.1 72ND STREET STATION ENTRANCE ALTERNATIVES

S.5.4.1.1 Temporary Impacts During Construction

The No Action Alternative and 72nd Street Alternative 1 would not have construction activities related to the station entrances within 200 feet of the historic building at 325 East 72nd Street. Unlike the No Action Alternative, Alternatives 3 and 4 would involve cut-and-cover excavation and controlled drilling and blasting within 200 feet of that building, and therefore the building would be included in the Second Avenue Subway project's Construction Protection Plan for those alternatives, which would not be needed for the No Action Alternative. For all three Build alternatives, like the No Action Alternative, no significant adverse effect to historic resources would occur during construction.

S.5.4.1.2 Permanent Impacts During Operation

Once completed, the No Action Alternative and Alternatives 1, 3, and 4 for the 72nd Street Station would all have station entrances on the east side of Second Avenue within visual proximity of 325 East 72nd Street. For all Build alternatives, as for the No Action Alternative, the design of these entrances would be provided to SHPO and LPC for review and comment.

This is consistent with the requirements of the Second Avenue Subway project's PA. Therefore, for all station entrance alternatives, no significant adverse effect to historic resources would occur when the Second Avenue Subway is completed.

S.5.4.2 86TH STREET STATION ENTRANCE ALTERNATIVES

S.5.4.2.1 Temporary Impacts During Construction

Regardless of the entrance alternative selected, the cavern for the 86th Street Station will be in close proximity to the Manhattan Apartments. The No Action Alternative and all Build entrance alternatives for the 86th Street Station would also have construction activities within 200 feet of the Manhattan Apartments. This building will be included in the Second Avenue Subway project's Construction Protection Plan to protect it from accidental damage during construction. For all three Build alternatives, like the No Action Alternative, no significant adverse effect to historic resources would occur during construction.

S.5.4.2.2 Permanent Impacts During Operation

Once completed, the No Action Alternative and Alternatives 2, 5, and 7 for the 86th Street Station would all have station entrances on the east side of Second Avenue within visual proximity of the Manhattan Apartments. For all alternatives, the design of these entrances would be provided to SHPO and LPC for review and comment in accordance with the Second Avenue Subway project's PA. Therefore, for all Build alternatives, like the No Action Alternative, no significant adverse effect to historic resources would occur when the Second Avenue Subway is completed.

S.5.5 ARCHAEOLOGICAL RESOURCES

The Second Avenue Subway project's PA also sets forth procedures to be followed for any project changes that could affect new Areas of Potential Effect (APEs) for archaeological resources. The station entrance alternatives at the 72nd Street and 86th Street Stations would expand the APEs for the two stations beyond what was analyzed in the FEIS. Therefore, consistent with the procedures set forth in the PA, these areas were evaluated by professional archaeologists to identify whether they have the potential to contain archaeological resources.

The FTA has concluded and the SHPO has concurred that there are no archaeological concerns for the locations of the proposed 72nd Street and 86th Street Station entrances in letters dated February 4, 2008, June 20, 2008, and March 12, 2009. The LPC also concluded that no adverse effect would occur to archaeological resources in a letter dated February 18, 2009. This correspondence is provided in Appendix C.

S.5.5.1 72ND STREET STATION ENTRANCE ALTERNATIVES

All three Build entrance alternatives for the 72nd Street Station, like the No Action Alternative, would involve subsurface disturbance in areas that have been determined to not have potential archaeological concerns. Therefore, all alternatives would result in no significant adverse effect on archaeological resources.

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S.5.5.2 86TH STREET STATION ENTRANCE ALTERNATIVES

All three Build entrance alternatives for the 86th Street Station, like the No Action Alternative, would involve subsurface disturbance in areas that have been determined to not have potential archaeological concerns. Therefore, all alternatives would result in no significant adverse effect on archaeological resources.

S.5.6 AIR QUALITY

S.5.6.1 72ND STREET STATION ENTRANCE ALTERNATIVES

S.5.6.1.1 Temporary Impacts During Construction

During construction, like the No Action Alternative, the three 72nd Street Build station entrance alternatives—Alternatives 1, 3, and 4—all have the potential to result in significant adverse impacts on air quality during construction, and the comprehensive mitigation measures outlined in the FEIS would be used for to mitigate the potential impacts. This potential impact would be less with Alternative 1, since it would generate less spoils than the No Action Alternative, and therefore, would result in fewer truck loads of spoils removal.

S.5.6.1.2 Permanent Impacts During Operation

Like the No Action Alternative, the three Build station entrance alternatives would not adversely affect traffic flow once completed and therefore would not result in significant adverse impacts once construction is completed.

S.5.6.2 86TH STREET STATION ENTRANCE ALTERNATIVES

S.5.6.2.1 Temporary Impacts During Construction

During construction, like the No Action Alternative, the 86th Street Build station entrance alternatives—Alternatives 2, 5, and 7—all have the potential to result in significant adverse impacts on air quality during construction, and the comprehensive mitigation measures outlined in the FEIS would be used for to mitigate the potential impacts.

S.5.6.2.2 Permanent Impacts During Operation

Like the No Action Alternative, the three Build station entrance alternatives would not adversely affect traffic flow once completed and therefore would not result in significant adverse impacts once construction is completed.

S.5.7 NOISE AND VIBRATION

S.5.7.1 72ND STREET STATION ENTRANCE ALTERNATIVES

S.5.7.1.1 Temporary Impacts During Construction

As in the No Action Alternative, construction activities required for Alternatives 1, 3, and 4 would result in significant adverse noise impacts that cannot be fully mitigated because of the proximity of residences and other sensitive uses to construction. Alternative 1 would result in similar noise and vibration impacts as the No Action Alternative. Alternative 3 would potentially result in perceptible noise levels for a greater distance east along 72nd Street than the No Action

Alternative. With respect to vibration, Alternatives 3 and 4 would incorporate the historic building at 325 East 72nd Street into the Second Avenue Subway project's Construction Protection Plan so that accidental damage to the building does not occur, which would not be required for the No Action Alternative.

S.5.7.1.2 Permanent Impacts During Operation

Once the subway is completed, neither the No Action Alternative nor Alternative 1, 3, or 4 would result in significant adverse noise or vibration impacts.

S.5.7.2 86TH STREET STATION ENTRANCE ALTERNATIVES

S.5.7.2.1 Temporary Impacts During Construction

As with the No Action Alternative, construction activities required for the Alternatives 2, 5, and 7 would result in significant adverse noise impacts that cannot be fully mitigated because of the proximity of residences and other sensitive uses to construction. Construction of Alternatives 2 and 7 would potentially result in perceptible noise levels for a greater distance east along 86th Street than would result from the No Action Alternative. With respect to vibration, all three Build alternatives, like the No Action Alternative, would incorporate the historic Manhattan Apartments into the Second Avenue Subway project's Construction Protection Plan so that accidental damage to the building does not occur.

S.5.7.2.2 Permanent Impacts During Operation

Once the subway is completed, neither the No Action Alternative nor Alternatives 2, 5, or 7 would result in significant adverse noise or vibration impacts.

S.5.8 ENVIRONMENTAL SCREENING ANALYSES

The screening analyses in the EA demonstrate that the Build entrance alternatives for the 72nd and 86th Street Stations would have no potential to change the conclusions of the FEIS for the following environmental issues: public open space, infrastructure and energy, contaminated materials, natural resources, coastal zone consistency, safety, environmental justice, and indirect and cumulative impacts.

**Supplemental EA to the Second Avenue Subway FEIS:
72nd and 86th Street Stations Entrance Alternatives**

Table S-1

**72nd Street Station Entrance Alternatives:
Summary of Environmental Impacts Comparing the No Action Alternative with the Build Alternatives**

Issue / Environmental Effect	72nd Street No Action Entrance Alternative	72nd Street Alternative 1: Elevators at Southeast Corner (Preferred Alternative)	72nd Street Alternative 3: Escalators on North Side of 72nd St	72nd Street Alternative 4: Escalators on North Side of 72nd St and East Side of Second Ave
Construction Activities				
Duration of Station Construction	5 years	5 years	5 years	5 years
Cut-and-Cover Construction Zone on 72nd Street east of Second Avenue	150 feet east of Second Avenue; extending across 72nd Street	None	270 feet east of Second Avenue; extending across 72nd Street	150 feet east of Second Avenue; extending across 72nd Street
Length of MPT Construction Zone on 72nd Street east of Second Avenue	500 feet	Small zone for pedestrians	500 feet	500 feet
Total Spoils Excavation for Station Entrance	14,980 loose cubic yards	10,530 loose cubic yards	26,870 loose cubic yards	17,490 loose cubic yards
Total Truck Loads of Spoils Removal for Station Entrance (assumes 10 cubic yards per truck)	1,498 trucks	1,053 trucks	2,687 trucks	1,749 trucks
Duration of Spoils Removal for Station Entrance (assumes 65 truck loads per day)	23 days	17 days	42 days	27 days
Street Trees to be Removed	29 trees	3 trees	29 trees	29 trees
Transportation				
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 Alternative.	Same as No Action Alternative.	Same as No Action Alternative.
Pedestrians	Temporary impacts during construction; building access maintained.	Same as No Action Alternative.	Same as No Action Alternative.	Same as No Action Alternative.
Permanent Effects During Operation				
Ridership	No impact.	Same as No Action Alternative.	Same as No Action Alternative.	Same as No Action Alternative.

Table S-1

72nd Street Station Entrance Alternatives:
Summary of Environmental Impacts Comparing the No Action Alternative with the Build Alternatives

Issue / Environmental Effect	72nd Street No Action Entrance Alternative	72nd Street Alternative 1: Elevators at Southeast Corner (Preferred Alternative)	72nd Street Alternative 3: Escalators on North Side of 72nd St	72nd Street Alternative 4: Escalators on North Side of 72nd St and East Side of Second Ave
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 southeast corners) serves passengers well; Interior station access good (straight passages and clear sightlines).	Street level access (entrances at northeast, southeast, and northwest corners) serves passengers well; Interior station access less convenient (switchbacks, intermediate 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 Alternative.	Same as No Action Alternative.	Same as No Action Alternative.
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.
Social and Economic Conditions				
Temporary Effects During Construction	Temporary significant adverse impacts during construction. Need to relocate steam main.	Temporary significant adverse impacts during construction. Would eliminate need to relocate steam main under 72nd Street, which would reduce impact.	Temporary significant adverse impacts during construction. Would eliminate need to relocate steam main under 72nd Street, which would reduce impact.	Temporary significant adverse impacts during construction. Would eliminate need to relocate steam main under 72nd Street, which would reduce impact.
Permanent Effects During Operation	Beneficial effect on East Side from new subway service; no significant adverse effects.	Same as No Action Alternative.	Same as No Action Alternative.	Same as No Action Alternative.
Displacement and Relocation				
Temporary Effects During Construction	No temporary displacement.	Same as No Action Alternative.	Same as No Action Alternative.	Same as No Action Alternative.

**Supplemental EA to the Second Avenue Subway FEIS:
72nd and 86th Street Stations Entrance Alternatives**

Table S-1

**72nd Street Station Entrance Alternatives:
Summary of Environmental Impacts Comparing the No Action Alternative with the Build Alternatives**

Issue / Environmental Effect	72nd Street No Action Entrance Alternative	72nd Street Alternative 1: Elevators at Southeast Corner (Preferred Alternative)	72nd Street Alternative 3: Escalators on North Side of 72nd St	72nd Street Alternative 4: Escalators on North Side of 72nd St and East Side of Second Ave
Permanent Effects During Operation	Permanent displacement of space at 305 East 72nd St (CVS): 3 estimated employees.	Permanent displacement of 300 East 72nd St: ground-floor retail (5 estimated employees) and three apartments (6 estimated residents).	Permanent displacement of 300 East 72nd St: ground-floor retail (5 estimated employees) and three apartments (6 estimated residents).	Permanent displacement of 300 East 72nd St: ground-floor retail (5 estimated employees) and three apartments (6 estimated residents).
Historic Resources				
Temporary Effects During Construction	No entrance construction within 200 feet of a historic resource.	Same as No Action Alternative.	Entrance construction within 200 feet of historic resource (325 East 72nd Street). Building would be included in Second Avenue Subway project's Construction Protection Plan. No significant adverse impact.	Entrance construction within 200 feet of historic resource (325 East 72nd Street). Building would be included in Second Avenue Subway project's Construction Protection Plan. No significant adverse impact.
Permanent Effects During Operation	Entrances within visual proximity of historic resource (325 East 72nd Street); design to be coordinated with SHPO and LPC in accordance with project's Programmatic Agreement. No significant adverse impacts.	Same as No Action Alternative.	Same as No Action Alternative.	Same as No Action Alternative.
Archaeological Resources				
Temporary Effects During Construction	No significant adverse impacts.	Same as No Action Alternative.	Same as No Action Alternative.	Same as No Action Alternative.
Permanent Effects During Operation	No significant adverse impacts.	Same as No Action Alternative.	Same as No Action Alternative.	Same as No Action Alternative.
Air Quality				
Temporary Effects During Construction	Potential to result in temporary significant adverse air quality impacts during construction; project's comprehensive mitigation measures to be used to address impacts.	Same as No Action Alternative.	Same as No Action Alternative.	Same as No Action Alternative.
Permanent Effects During Operation	No significant adverse impacts; operating subway will provide air quality benefits.	Same as No Action Alternative.	Same as No Action Alternative.	Same as No Action Alternative.

Table S-1

72nd Street Station Entrance Alternatives:
Summary of Environmental Impacts Comparing the No Action Alternative with the Build Alternatives

Issue / Environmental Effect	72nd Street No Action Entrance Alternative	72nd Street Alternative 1: Elevators at Southeast Corner (Preferred Alternative)	72nd Street Alternative 3: Escalators on North Side of 72nd St	72nd Street Alternative 4: Escalators on North Side of 72nd St and East Side of Second Ave
Noise and Vibration				
Temporary Effects During Construction	Temporary significant adverse noise impacts that cannot be fully mitigated during construction.	Temporary significant adverse noise impacts that cannot be fully mitigated during construction, which would be the same as in the No Action Alternative.	Temporary significant adverse noise impacts that cannot be fully mitigated during construction; impacts may extend greater distance on 72nd Street than with No Action Alternative. Potential vibration impacts on historic resource to be addressed with project's Construction Protection Plan.	Temporary significant adverse noise impacts that cannot be fully mitigated during construction. Potential vibration impacts on historic resource to be addressed with project's Construction Protection Plan.
Permanent Effects During Operation	No significant adverse noise or vibration impacts.	Same as No Action Alternative.	Same as No Action Alternative.	Same as No Action Alternative.

**Supplemental EA to the Second Avenue Subway FEIS:
72nd and 86th Street Stations Entrance Alternatives**

Table S-2

**86th Street Station Entrance Alternatives:
Summary of Environmental Impacts Comparing the No Action Alternative with the Build Alternatives**

Issue / Environmental Effect	86th Street No Action Entrance Alternative	86th Street Alternative 2: Escalators on South Side of 86th St	86th Street Alternative 5: Elevators at Southeast Corner	86th Street Alternative 7: Escalators on North Side of 86th St (Preferred Alternative)
Construction Required				
Duration of Station Construction	5 years	5 years	5 years	5 years
Cut-and-Cover Construction Zone on 72nd Street east of Second Avenue	50 feet east of Second Avenue; extending across 86th Street	330 feet east of Second Avenue; extending across 86th Street	80 feet east of Second Avenue; extending across 86th Street	270 feet east of Second Avenue; extending across 86th Street
Length of MPT Construction Zone on 72nd Street east of Second Avenue	500 feet	500 feet	150 feet	500 feet
Total Spoils Excavation for Station Entrance	14,900 loose cubic yards	36,400 loose cubic yards	16,460 loose cubic yards	30,980 loose cubic yards
Total Truck Loads of Spoils Removal for Station Entrance (assumes 10 cubic yards per truck)	1,490 trucks	3,640 trucks	1,646 trucks	3,098 trucks
Duration of Spoils Removal for Station Entrance (assumes 65 truck loads per day)	23 days	56 days	26 days	48 days
Street Trees to be Removed	19 trees	19 trees	3 trees	19 trees
Transportation				
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 Alternative.	Same as No Action Alternative.	Same as No Action Alternative.
Pedestrians	Temporary impacts during construction; building access maintained.	Temporary impacts during construction; loss of access for about 8 months for buildings on south side of 86th Street.	Same as No Action Alternative.	Same as No Action Alternative.
Permanent Effects During Operation				
Ridership	No impact	Same as No Action Alternative.	Same as No Action Alternative.	Same as No Action Alternative.

Table S-2

86th Street Station Entrance Alternatives:
Summary of Environmental Impacts Comparing the No Action Alternative with the Build Alternatives

Issue / Environmental Effect	86th Street No Action Entrance Alternative	86th Street Alternative 2: Escalators on South Side of 86th St	86th Street Alternative 5: Elevators at Southeast Corner	86th Street Alternative 7: Escalators on North Side of 86th St (Preferred Alternative)
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.	Same as No Action Alternative.	No bus stop relocation; no significant adverse impact.	Same as No Action Alternative.
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.
Social and Economic Conditions				
Temporary Effects During Construction	Temporary significant adverse impacts during construction. Requires major structural modifications to 305 East 86th Street.	Temporary significant adverse impacts during construction. Would eliminate need for major disruption to 305 East 86th Street. Temporary significant adverse effects during construction related to loss of access to south side of 86th Street.	Temporary significant adverse impacts during construction. Would eliminate need for major disruption to 305 East 86th Street.	Temporary significant adverse impacts during construction. Would eliminate need for major disruption to 305 East 86th Street.
Permanent Effects During Operation	Beneficial effect on East Side from new subway service; no significant adverse effects.	Same as No Action Alternative.	Same as No Action Alternative.	Same as No Action Alternative.

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Table S-2

**86th Street Station Entrance Alternatives:
Summary of Environmental Impacts Comparing the No Action Alternative with the Build Alternatives**

Issue / Environmental Effect	86th Street No Action Entrance Alternative	86th Street Alternative 2: Escalators on South Side of 86th St	86th Street Alternative 5: Elevators at Southeast Corner	86th Street Alternative 7: Escalators on North Side of 86th St (Preferred Alternative)
Displacement and Relocation				
Temporary Effects During Construction	No temporary displacement.	Temporary displacement (up to 8 months) of four businesses (8 estimated employees) and eight apartments (15 estimated residents) during construction	No temporary displacement.	No temporary displacement.
Permanent Effects During Operation	Permanent displacement of space at 305 East 86th St (Food Emporium): 7 estimated employees affected; could potentially require closing entire store.	Permanent effects to businesses on south side of 86th Street related to closing cellar access and potential impacts from proximity of subway canopies to building entrances.	Permanent displacement of two buildings (1654 & 1656 Second Avenue) with ground-floor retail (coffee shop and Schaller & Weber), with 8 estimated employees; 15 apartments (23 estimated residents).	No permanent displacement.
Historic Resources				
Temporary Effects During Construction	Station cavern construction and entrance construction within 300 feet of historic resource (Manhattan Apartments). Building to be included in Second Avenue Subway project's Construction Protection Plan. No significant adverse impacts.	Same as No Action Alternative.	Same as No Action Alternative.	Same as No Action Alternative.
Permanent Effects During Operation	Entrances within visual proximity of historic resource (Manhattan Apartments); design to be coordinated with SHPO and LPC in accordance with project's Programmatic Agreement. No significant adverse impacts.	Same as No Action Alternative.	Same as No Action Alternative.	Same as No Action Alternative.
Archaeological Resources				
Temporary Effects During Construction	No significant adverse impacts.	Same as No Action Alternative.	Same as No Action Alternative.	Same as No Action Alternative.
Permanent Effects During Operation	No significant adverse impacts.	Same as No Action Alternative.	Same as No Action Alternative.	Same as No Action Alternative.

Table S-2

86th Street Station Entrance Alternatives:
Summary of Environmental Impacts Comparing the No Action Alternative with the Build Alternatives

Issue / Environmental Effect	86th Street No Action Entrance Alternative	86th Street Alternative 2: Escalators on South Side of 86th St	86th Street Alternative 5: Elevators at Southeast Corner	86th Street Alternative 7: Escalators on North Side of 86th St (Preferred Alternative)
Air Quality				
Temporary Effects During Construction	Potential to result in temporary significant adverse air quality impacts during construction; project's comprehensive mitigation measures to be used to address impacts.	Same as No Action Alternative.	Same as No Action Alternative.	Same as No Action Alternative.
Permanent Effects During Operation	No significant adverse impacts; operating subway will provide air quality benefits.	Same as No Action Alternative.	Same as No Action Alternative.	Same as No Action Alternative.
Noise and Vibration				
Temporary Effects During Construction	Temporary significant adverse noise impacts that cannot be fully mitigated during construction. Potential vibration impacts on historic resource to be addressed with project's Construction Protection Plan.	Temporary significant adverse noise impacts that cannot be fully mitigated during construction; impacts may extend greater distance on 86th Street than with No Action Alternative. Potential vibration impacts on historic resource to be addressed with project's Construction Protection Plan.	Temporary significant adverse noise impacts that cannot be fully mitigated during construction. Potential vibration impacts on historic resource to be addressed with project's Construction Protection Plan.	Temporary significant adverse noise impacts that cannot be fully mitigated during construction; impacts may extend greater distance on 86th Street than with No Action Alternative. Potential vibration impacts on historic resource to be addressed with project's Construction Protection Plan.
Permanent Effects During Operation	No significant adverse noise or vibration impacts.	Same as No Action Alternative.	Same as No Action Alternative.	Same as No Action Alternative.

S.6 RECOMMENDATION OF THE PREFERRED ALTERNATIVE

After careful consideration of the goals and objectives for the entrance alternatives, cost and schedule considerations, and engineering, construction, operational, and environmental benefits and disadvantages of the three Build entrance alternatives for the 72nd Street Station and the three Build alternatives for the 86th Street Station, MTA New York City Transit has identified 72nd Street Station Alternative 1 (Elevators at the Southeast Corner at 300 East 72nd Street) and 86th Street Station Alternative 7 (Escalators on the North Side of 86th Street) as the Preferred Alternative.

The basis for that recommendation, comparing the benefits and disadvantages of the three Build entrance alternatives evaluated for each station in this EA, is described below.

S.6.1 RECOMMENDATION OF THE PREFERRED ALTERNATIVE FOR THE 72ND STREET STATION

At the 72nd Street Station, Alternative 1 would meet more of the project's goals and objectives than Alternatives 3 and 4 (see also **Table S-3**). It would also be the best alternative in terms of cost and construction schedule.

Construction of Alternative 1 would be less disruptive to the community than Alternatives 3 and 4, because it would involve construction in a less extensive area. All Build entrance alternatives for the 72nd Street Station would involve construction activity for a new elevator building on the site of 300 East 72nd Street (including demolition of the existing building and construction of a new subway entrance building at that location). Alternative 1 would require less construction activity and would disturb a smaller area than Alternatives 3 or 4 because Alternatives 3 and 4 would also involve construction of new escalator entrances at sidewalk locations on the north side of 72nd Street, as well as construction of an escalator bank beneath 72nd Street.

In addition, although Alternative 1 would be marginally less convenient at street level for passengers than Alternatives 3 and 4, it still would provide adequate access and egress to the station. This is because it would provide two different entrance options, so that the majority of passengers (those arriving from or traveling to the northeast of the intersection) would not have to wait for a walk signal at that intersection. Within the station, Alternative 1, like Alternative 3, would be more convenient than Alternative 4.

None of the Build Alternatives for the 72nd Street Station entrance would result in significant adverse impacts not already presented in the FEIS, and all of the alternatives would provide adequate access and egress. All of the Build Alternatives would require acquisition of the building at 300 East 72nd Street. Whereas Alternative 1 would maximize the use of the footprint of 300 East 72nd Street for the new entrance, Alternatives 3 and 4 would use the property at 300 East 72nd Street and also require additional construction within the north sidewalk of and below 72nd Street. The property acquisition costs of the Build Alternatives would be the same, however, Alternatives 3 and 4 require more cut-and-cover construction and utility relocation, resulting in higher construction costs. Therefore, Alternative 1 would best meet the purpose and need for the design modifications and more of the goals and objectives (see **Table S-3**). For these reasons, MTA New York City Transit is recommending Alternative 1 as the Preferred Alternative for the 72nd Street entrance design modification.

Table S-3
Comparison of 72nd Street Station Entrance Alternatives’
Ability to Meet Goals and Objectives

Project Goal / Objective	72nd Street Alternative 1: Elevators at Southeast Corner (Preferred Alternative)	72nd Street Alternative 3: Escalators on North Side of 72nd St	72nd Street Alternative 4: Escalators on North Side of 72nd St and East Side of Second Ave
Improve Mobility			
Street Level Entrance at Location that Best Serves Passengers	Less convenient for ridership coming from northeast; however, remains convenient because passengers would not have to wait for a light at intersection because entrances available at northwest and southeast corners	Most convenient for substantial ridership coming from northeast. Allows passengers from the east to descend directly into the subway on 72nd Street.	Convenient for substantial ridership coming from northeast; however, passengers from the east must double-back to enter the subway since entrance faces Second Avenue.
Passenger Convenience: Provide Clear Sightlines and Straight Passageways	Straight passages and clear sightlines.	Straight passages and clear sightlines.	Switchbacks, intermediate landings, and turns less convenient.
Improve, Maintain, or Minimize Impacts to Environmental Conditions			
Maintain Pedestrian Flows	No change from No Action Alternative.	No change from No Action Alternative.	No change from No Action Alternative.
Maintain Traffic Flows	No change from No Action Alternative.	No change from No Action Alternative.	No change from No Action Alternative.
Minimize Required Displacement	300 East 72nd St: ground-floor retail and three apartments	300 East 72nd St: ground-floor retail and three apartments	300 East 72nd St: ground-floor retail and three apartments
Avoid Significant Adverse Impacts to Historic Properties	No significant adverse impacts.	No significant adverse impacts.	No significant adverse impacts.
Minimize Construction Impact	Heavy construction and related disruption at intersection; but no cut and cover across 72nd Street. Smallest amount of spoils to be removed; smallest construction and MPT zone; smallest number of spoils removal trucks.	Heavy construction and related disruption at intersection; cut and cover across 72nd Street. Largest amount of spoils to be removed; largest number of spoils removal trucks. Greatest extent of noise impact during construction.	Heavy construction and related disruption at intersection; cut and cover across 72nd Street.
Minimize Cost and Time to Implement			
Minimize Cost	Least costly alternative because it has the least amount of cut and cover construction and utility relocations.	More costly than Alternative 1 due to more cut and cover construction and utility relocations.	More costly than Alternative 1 due to more cut and cover construction and utility relocations..
Minimize Time to Implement	Similar for all alternatives.	Similar for all alternatives.	Similar for all alternatives.

S.6.2 RECOMMENDATION OF THE PREFERRED ALTERNATIVE FOR THE 86TH STREET STATION

At the 86th Street Station, Alternative 7 would meet more of the project’s goals and objectives than Alternatives 2 and 5, as discussed below (see also **Table S-4**). It would also be the best alternative in terms of cost and construction schedule.

Temporary construction activities associated with Alternative 7 would be less disruptive than those of Alternative 2. Construction of Alternative 2 would be most disruptive to the community, since it would require temporary displacement of three businesses and eight residential units, and access to other buildings on the south side of 86th Street would be

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substantially impaired during an eight-month period of construction. In addition, unlike Alternative 5, construction of Alternative 7 would not require demolition of two occupied buildings (see discussion below of permanent impacts).

Alternative 7 could be implemented without temporary or permanent displacement of business and residents or long-term effects on the operation of ground-level retail businesses on East 86th Street. This is not true for Alternative 2 or 5. As a result, the cost and the time to implement Alternative 7 is less than the other Build Alternatives. As noted in the discussion of the project's goals and objectives (section S.2.6.2.2), consistent with the siting procedure described in the FEIS, acquisition and relocation of buildings containing residential occupants was only considered after all other possibilities were exhausted. Alternative 2 would require the permanent alteration of buildings on the south side of 86th Street to seal their cellar doors, and once operational would have the potential to restrict use of the sidewalk for sidewalk cafes and building canopies. While the sidewalks would not be adversely impacted, pedestrian circulation area would be more constrained than with Alternatives 2 and 7. Alternative 5 would require the permanent displacement of businesses and residents from 1654 and 1656 Second Avenue. The buildings are occupied by a coffee shop, Schaller and Weber, and 15 residential units. Schaller and Weber, a German specialty food store, has been a long-time tenant of the area. It is reminiscent of the community's former character as a prominent German neighborhood and is considered an important business by local residents.

Moreover, in terms of access to the subway station, Alternative 7, with an entrance on the north side of 86th Street, would be more convenient for the majority of the riders (68 percent of the passengers entering from or exiting to the northeast) than Alternatives 2 and 5, which would require those passengers to cross 86th Street. Alternatives 5 and 7 would provide more direct access between street level and the mezzanine and better sight lines within the station than Alternative 2.

Therefore, while none of the alternatives would result in significant adverse impacts not already presented in the FEIS and all alternatives would be able to provide adequate access and egress, Alternative 7 would best meet the purpose and need for the design modifications as well as the goals and objectives (see **Table S-4**). For these reasons, MTA New York City Transit is recommending Alternative 7 as the Preferred Alternative for the entrance at the 86th Street Station.

Table S-4
Comparison of 86th Street Station Entrance Alternatives'
Ability to Meet Goals and Objectives

Project Goal / Objective	86th Street Alternative 2: Escalators on South Side of 86th St	86th Street Alternative 5: Elevators at Southeast Corner	86th Street Alternative 7: Escalators on North Side of 86th St (Preferred Alternative)
Improve Mobility			
Street Level Entrance at Location that Best Serves Passengers	Less convenient for ridership coming from northeast.	Less convenient for ridership coming from northeast.	Most convenient for substantial ridership coming from northeast
Passenger Convenience: Provide Clear Sightlines and Straight Passageways	Switchbacks and intermediate landing less convenient and would limit visibility.	Straight passages and clear sightlines.	Straight passages and clear sightlines.
Improve, Maintain, or Minimize Impacts to Environmental Conditions			
Maintain Pedestrian Flows	Greater pedestrian flows on south sidewalk but no significant change from No Action Alternative.	Greater pedestrian flows on south sidewalk but no significant change from No Action Alternative.	No significant change from No Action Alternative.
Maintain Traffic Flows	No significant change from No Action Alternative	No significant change from No Action Alternative	No significant change from No Action Alternative
Minimize Required Displacement	Temporary displacement (up to 8 months) of four businesses and eight apartments during construction; permanent effects to businesses on south side of 86th Street related to closing cellar access and stoops.	Permanent displacement of two buildings (1654 & 1656 Second Avenue) with ground-floor retail (coffee shop and Schaller & Weber); 15 apartments.	No temporary or permanent displacement.
Avoid Significant Adverse Impacts to Historic Properties	No significant adverse impacts.	No significant adverse impacts.	No significant adverse impacts.
Minimize Construction Impact	Heavy construction and related disruption at intersection; Cut and cover across 86th Street for passageway; Largest amount of spoils to be removed; largest number of spoils removal trucks; Greatest extent of noise impact during construction. Temporary displacement (up to 8 months) of four businesses and eight apartments during construction.	Heavy construction and related disruption at intersection; no cut and cover across 86th Street for passageway; least excavation and amount of spoils removal.	Heavy construction and related disruption at intersection; cut and cover across 86th Street for passageway.
Minimize Cost and Time to Implement			
Minimize Costs	More costly than Alternative 7, because it requires the temporary displacement (up to 8 months) of four business and eight apartments during construction and requires the greatest amount of excavations.	More costly than Alternative 7 because it requires the permanent acquisitions of two buildings with ground floor retail and 15 apartments.	Least costly alternative. It does not require displacement, unlike Alternatives 2 and 5, and requires less excavation than Alternative 2.
Minimize Time to Implement	Additional lead time would be required to temporarily relocate commercial and residential tenants.	Additional lead time would be required to relocate commercial and residential tenants.	No additional lead time would be required to relocate displaced tenants.

S.7 SECTION 4(f) AND SECTION 6(f) EVALUATION

Section 4(f) of the U.S. Department of Transportation prohibits the Secretary of Transportation from approving any program or project that requires the “use” of 1) any publicly owned land in a public park, recreation area, or wildlife and waterfowl refuge of national state, or local significance, or 2) any land from a historic site of national, state, or local significance (collectively “Section 4(f) resources”), unless there is no feasible and prudent alternative to the use of such land and the project includes all possible planning to minimize harm to the resource. Similarly, the Land & Water Conservation Fund Act (LWCFA), commonly referred to as Section 6(f), and the Urban Park and Recreation Recovery Act (UPARRA) restrict the future use of parklands or open spaces that have been improved with funds received through the LWCFA and the UPARRA. The FEIS included a Section 4(f) and Section 6(f) Evaluation for the potential use of the certain Section 4(f) resources and Section 6(f) resources located along the 8.5-mile alignment of the Second Avenue Subway:

The No Action Alternative and the station entrance alternatives for the 72nd Street and 86th Street Stations would not alter the conclusions of the FEIS with respect to the Section 4(f) and Section 6(f) properties identified in the Final Section 4(f) and Section 6(f) Evaluation. None of the Section 4(f) or Section 6(f) resources identified in the FEIS would be affected by any of the Build entrance alternatives for the 72nd Street and 86th Street Stations. Moreover, the Build station entrance alternatives for the 72nd Street and 86th Street Stations would not result in impacts on parklands or historic and archaeological resources. Therefore, the No Action Alternative and the station entrance alternatives for the 72nd Street and 86th Street Stations would not result in a use of Section 4(f) or Section 6(f) properties other than those previously identified in the FEIS.

S.8 PUBLIC OUTREACH AND REVIEW PROCESS

MTA New York City Transit has been conducting ongoing public outreach related to the Second Avenue Subway project, including design changes, expected construction schedule, and upcoming property acquisitions.

Public outreach for the modifications to the entrances at the 72nd Street and 86th Street Stations began in 2007 with community and stakeholder meetings to present the engineering constraints of the No Action Alternative and the alternatives being considered for the modification of the station entrances. This process continued through the spring of 2008, and the public input that was received helped MTA New York City Transit develop the Build entrance alternatives evaluated in the EA for the 72nd Street Station and the 86th Street Station. The alternatives were formally presented to the public at a public information session with Community Board 8 and other interested members of the public on July 29, 2008. Public comments raised before, during, and after the public information session included concerns regarding pedestrian safety at vehicle driveways, jaywalking, community impacts of midblock entrances, and the aesthetic character of station canopies. These comments have been addressed in the EA.

This EA has been made available for public review. Copies of the EA are available for public review on MTA’s website and at the offices of MTA, FTA, and Community Board 8 (see the following discussion for details).

A public hearing will be held on June 18, 2009 to solicit public comments on this EA. The hearing will be held within the 30-day public comment period for the EA. The hearing will be promoted through a newspaper announcement, advertisements, and the MTA’s web site. The

public will be invited to make oral comments at the hearing or submit written comments, including at the hearing and by letter, fax, or e-mail during the 30-day comment period. After considering public comments, FTA's findings under NEPA will be issued and made available to the public.

Based on the analyses presented in the EA and after considering public comments, FTA will determine whether or not the Preferred Alternative would result in any significant adverse environmental impacts not already identified in the FEIS or ROD or require changes to mitigation measures. FTA will issue a Finding of No Significant Adverse Impact (FONSI) if there are no significant environmental impacts not already identified in the FEIS or ROD or changes in mitigation measures. As a result of the proposed modifications, if there are any new significant adverse impacts or any significant changes to mitigation measures, FTA and MTA New York City Transit will prepare a Supplemental Environmental Impact Statement (EIS) to evaluate those impacts. *