

A. INTRODUCTION

This chapter examines the project alternatives for their effects on utilities and other subsurface structures. The potential for the need to relocate or protect significant utilities is also assessed and described.

B. EXISTING CONDITIONS

A number of subsurface utility lines and subsurface structures, both public and private, are located beneath the streets throughout Manhattan and Queens near the project sites, including in the Sunnyside Yard/Yard A area. These include sewer and water mains, telephone cables, electric lines, gas mains, and steam lines. On average, the majority of utilities are located close to the street or yard surface. These utilities provide essential services to the properties surrounding the project sites.

C. PROBABLE IMPACTS OF THE PROJECT ALTERNATIVES

This section describes potential impacts on public utilities for each alternative. Impacts are considered significant if the relocation of the utility would result in a service disruption or if the adjacent environment would be endangered.

NO ACTION ALTERNATIVE

This alternative would not involve construction either above- or below-ground and would, therefore, have no impact on subsurface utilities in the study area. *(This alternative would, however, require a new nighttime storage yard for electric trainsets on the Port Jefferson Branch.* Connections to local power and utility systems would be required.)*

TRANSPORTATION SYSTEMS MANAGEMENT (TSM) ALTERNATIVE

This alternative would involve some subsurface construction in Queens. Since elements of the TSM Alternative have not undergone any design, the need to relocate any utilities is unknown at this time. However, any utilities that would be *affected* by subsurface excavation would either be relocated before disruption or maintained and protected during construction. *In addition, like the No Action Alternative, this alternative would require a new storage yard on the Port Jefferson Branch. Connections to local power and utility systems would be required.*

* See page S-6 of the Executive Summary or pages 2-1 through 2-5 of Chapter 2, "Project Alternatives," for a discussion of the No Action Alternative.

PREFERRED ALTERNATIVE

Operation of the Preferred Alternative would not generate a significant demand on the area's water supply or sewage system. Nor would it interfere with the city's ability to provide these services in the study area. The energy required to operate the project would be provided by the existing Con Edison network and would not result in a significant increase in the amount of energy consumed within the study area.

The greatest potential for project-related impacts on utilities would be during construction, when significant excavation is required at several locations in Manhattan and Queens. Due to the number of utilities typically located in New York City streets, construction of the Preferred Alternative, similar to many other construction projects in the city, could potentially affect these buried utilities. While many of the affected utilities would be smaller lines providing street connections to buildings in the area, some major utilities may be encountered. The engineering studies to date have focused on the project's efforts on the major utilities and the measures required to ensure that service is maintained. As discussed below, further investigation and engineering design is required to determine all of the utilities that could be affected by project construction.

MANHATTAN ALIGNMENT

Northern Portion

As described in Chapter 2, "Project Alternatives," in Manhattan, the Preferred Alternative's track alignment would begin at the west end of the existing 63rd Street Tunnel, approximately 140 feet below the surface of 63rd Street and Second Avenue. From there it would traverse south and west to Park Avenue at approximately 60th Street, where it would pass beneath MNR's tunnel structure. This section of the alignment would be well below any existing utilities.

Grand Central Terminal and Approach Structures

During the construction of Grand Central Terminal (GCT) and the approach structures in the early 1900's, utilities were rebuilt or relocated along Park Avenue. Intercepting sewers were constructed within the terminal and in subsurface easements within the GCT approach tunnels, as well as in the adjacent sidewalk area along Park Avenue. Utilities that cross Park Avenue, including water, steam, gas and electric, were rerouted above the approach structure. At several locations within GCT, existing street utilities were suspended from and routed within the GCT structure.

North of 56th Street beneath Park Avenue, the alignment for Option 1 of the Preferred Alternative would be below the MNR approach structure, and there would be no interference with the utilities above or within that structure. South of 56th Street, the track alignment under Option 1 would begin to widen beneath the tracks of MNR. Between approximately 55th and 52nd Streets, the alignment would pass beneath buildings on the west side of Park Avenue, until it entered the existing GCT structure south of 52nd Street. Between 56th and 52nd Streets, the greatest potential for utility impacts would exist. Between 52nd and 54th Streets, an interceptor sewer, approximately 4 feet by 2 feet wide, is located under the west sidewalk area of Park Avenue. In addition, there are two 18-inch sewer lines at 54th Street that could be affected by the project. The alignment would also conflict with an existing siphon structure in the bed of 54th Street; however, the siphon structure appears to be filled in and abandoned. The sewers within

the west sidewalk of Park Avenue between 52nd and 54th Streets, based on record drawings, appear to be at a higher elevation than the structure proposed for the Preferred Alternative. Therefore, relocation of these sewers would not be necessary if they could be maintained during the construction of the new structure. *As noted in Chapter 2, Option 2 has been selected as the preferred engineering option for East Side Access.*

Under Option 2, in which the alignment would be deeper than Option 1, potential utility impacts are limited to two areas: an existing 6-foot by 3-foot sewer at 46th Street, and a pipe tunnel beneath the lower track level of GCT from 48th Street to 43rd Street.

Construction of the ventilation plants and substations for the Preferred Alternative would also require new utility connections, and the existing utilities in the area of excavation would need to be protected and maintained. Construction of these facilities would affect 44th and 45th Streets from Madison Avenue to GCT (Options 1 and 2), 53rd Street west of Park Avenue (Option 1), 54th Street both east and west of Park Avenue (Option 1), Park Avenue between 51st and 52nd Streets (Option 1), and 55th Street between Madison and Park Avenues (Option 2).

One of the project's new off-street entrances, on 45th Street between Madison and Vanderbilt Avenues, would entail construction in the bed of the street. The new entrance at 347 Madison Avenue would require construction on 45th Street, and the utilities present would need to be maintained and protected. The other new entrances would be located within the easement area of buildings above the GCT trainshed, and therefore, would not affect the utilities within the streets. When utility service connections to these buildings are affected by construction, revised connections would be provided to avoid disruption of service.

QUEENS ALIGNMENT

In Queens, the Preferred Alternative's alignment would be approximately 70 feet deep when it exited the east end of the existing bellmouth of the 63rd Street Tunnel near Northern Boulevard. From this point the alignment would pass beneath Northern Boulevard, and the subway line under the street, into Yard A. At this depth, the new structure would be well below any subsurface utilities. However, the proposed cut-and-cover construction method in this area (described in Chapter 17, "Construction and Construction Impacts") would interfere with the existing utilities in the roadbed. The underpinning of the subway line beneath Northern Boulevard would require the excavation of the earth cover down to the roof of the existing structure. During this phase of the work, the existing street utilities would be protected and maintained.

As discussed previously, existing utilities are present in Sunnyside Yard and Yard A. Within these properties, construction of the project would result in probable interference with one 48-inch sewer, two 42-inch sewers, and a 12-inch water line. The new ventilation plant in Yard A would be located on top of the new train tunnel structure and would be in close proximity to the 48-inch sewer. This utility would be maintained and protected during construction. Near the Honeywell Street bridge, where the project's new tracks would rise from tunnel depth to yard level, they would cross the current location of a 42-inch sewer, *which Amtrak uses for a vacuum sewer system for train maintenance (waste disposal)*. A new sewer tunnel is proposed to cross under the tracks, replacing the existing sewer. *This sewer—as well as all other utilities affected by the project—would be protected and maintained while new connections are made.* The other two sewer crossings in Sunnyside Yard—another 42-inch sewer and a 48-inch sewer—would be protected and maintained in their current locations.

All of the required substations in Queens and the substation on Roosevelt Island would be located in and adjacent to existing structures and would have no long-term impact on any utilities. Any existing utilities within the construction area would be protected and maintained while new connections are made to Con Edison's existing power grid.

YARD LOCATIONS

As discussed in Chapter 15, "Natural Resources," a new separate stormwater and sanitary sewer system would be created at Highbridge Yard. Utility connections to the existing system would be required at Fresh Pond for the New York & Atlantic Railway (NYAR) maintenance facility, while Blissville or Maspeth may only require connections for power. At all Long Island storage yards, connections to local power and utility systems would be required.

D. FURTHER INVESTIGATIONS AND MITIGATION MEASURES

At this stage in the project design, it is not possible to determine every utility that may need to be relocated or protected due to the construction of the Preferred Alternative. However, as discussed above, several major utility conflicts have been identified as part of the project's conceptual design. While further study is required, the conceptual report identified several major utilities that would need to be relocated or maintained and protected during construction.

In Manhattan, the sewers within the west sidewalk of Park Avenue between 52nd and 54th Streets appear to be at a higher elevation than the structure proposed under the Preferred Alternative and therefore relocation of these sewers would not be necessary if they could be maintained during the construction of the new structure. Further analysis of the exact construction method to be used at this location would determine whether to relocate the sewer or incorporate it into the permanent structure.

The ventilation structures, substations, and off-street entrances may interfere with local utilities during their construction. Physical conflicts between these new facilities and existing utilities would be determined at a later date when the design of these facilities is further advanced.

Similarly, the decision to relocate the existing utilities in Northern Boulevard would be made as the design in this area proceeds.

One utility that would have to be relocated is the 42-inch sewer near the Honeywell Street bridge in Sunnyside Yard; a new 42-inch sewer would be provided, crossing under the proposed tracks. Based on the current track profiles of the Preferred Alternative, it is expected that the other two sewers (42- and 48-inch) discussed above could remain in place. However, they would require protection during construction.

To ensure that no significant adverse impacts occur to the existing utility infrastructure in the area of project construction, a utility relocation report is being prepared by the project designers. A detailed field survey is being conducted along the entire alignment of the Preferred Alternative. The purpose of this survey is to locate all visible utility street appurtenances (e.g., manholes, hydrants, etc.) and related features, and to document topographic features of the alignment. In addition, various public agencies, property owners, and private utilities are being contacted in an effort to collect and map all existing and planned utilities in the project area. As the survey maps are prepared, the utility information would be added and cross-checked with utility records. Where significant discrepancies are encountered, they would be resolved to the extent possible with field visits. Finally, the critical areas that are identified would require further investigation, which would be performed during final design. ❖