

Final Section 4(f) Evaluation and Section 6(f) Evaluation

A. INTRODUCTION

This document is the Final Section 4(f) Evaluation and Section 6(f) Evaluation for the Second Avenue Subway project. This evaluation is being circulated as part of the Second Avenue Subway Final Environmental Impact Statement (FEIS) to satisfy the requirements of Section 4(f) of the U.S. Department of Transportation (USDOT) Act of 1966.

This document has also been written to satisfy the requirements of two additional federal statutes that authorize the provision of federal funding for the acquisition and improvement of parkland and open space resources: Land & Water Conservation Fund Act (LWCFA), 16 U.S.C. §§ 460/-4 to 460/-11 (commonly referred to as Section 6(f), as the provision was originally contained in Section 6(f)(3) of the LWCFA, Public Law 88-578 of 1962, before codification); and the Urban Park and Recreation Recovery Act (UPARRA), 16 U.S.C. §§ 2501 to 2514. These statutes restrict the future use of parklands or open spaces that have been improved with funds received through LWCFA and UPARRA funds.

B. APPLICABILITY OF SECTION 4(f), 6(f), AND UPARRA

SECTION 4(f)

Section 4(f) of the U.S. Department of Transportation Act of 1966 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 such program or project includes all possible planning to minimize harm to the park, recreation area, wildlife refuge, or historic resource. (In 1983, Section 4(f) of the USDOT Act was codified as 49 USC §303(c), but this law is still commonly referred to as Section 4(f).)

A project “uses” a Section 4(f) resource when: (1) it permanently incorporates land from the resource into a transportation facility; (2) it temporarily but adversely occupies land that is part of the resource; or (3) it “constructively” uses the resource.¹ A “constructive” use occurs “when the transportation project does not incorporate land from a Section 4(f) resource, but the proximity impacts are so severe that the protected activities, features, or attributes that qualify a resource for protection under Section 4(f) are substantially impaired.”² Whenever a Section 4(f)

¹ 23 C.F.R. § 771.135(p)(1). Regulations regarding the preparation of Section 4(f) Evaluations and governing use of Section 4(f) resources is published in 23 C.F.R. Part 771.135 by the U.S. Department of Transportation (USDOT) (herein Section 4(f) regulations). Additionally, the USDOT has issued a Section 4(f) guidance document entitled: Section 4(f) Policy Paper, September 24, 1987, revised June 7, 1989 (herein USDOT guidance).

² 23 C.F.R. § 771.135 (p) (2).

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resource would be used for a transportation project, documentation must be prepared to demonstrate that: (1) no feasible and prudent alternative exists to the use of the 4(f) resource; and (2) the project includes all possible planning to minimize harm to the resource.¹

After public comment on the draft Section 4(f) statement is received, a final Section 4(f) statement is drafted. The final Section 4(f) statement must contain the conclusions of the Section 4(f) evaluation, encompassing: 1) a description of the basis for concluding that there are no prudent and feasible alternatives to the use of the Section 4(f) property, including a demonstration that there are unique problems or unusual factors involved in the use of alternatives that avoid these properties, or that the cost, social, economic, and environmental impacts or community disruption resulting from the alternatives reach extraordinary magnitudes; 2) a description of the basis for concluding that the proposed action includes all possible planning to minimize harm; and 3) a summary of appropriate formal coordination with the U.S. Department of the Interior (DOI). All formal comments and a summary of comments received on the SDEIS Section 4(f) Statement are included in Chapter 23, "Response to Comments on the SDEIS." The FTA will make its final Section 4(f) Finding when it issues its Record of Decision.

This Final Section 4(f) Evaluation has been prepared for parks, historic resources, and possible archaeological resources that would be "used" by the Second Avenue Subway, based on the design developed to date. It incorporates refinements to the project that have occurred since completion of the SDEIS, and identifies the 4(f) resources affected by the project. In the future, an additional Section 4(f) analysis would have to be conducted if, as a result of design refinements, subway construction or operations would affect any parks or historic properties not identified in this analysis.

SECTION 6(f) AND UPARRA ACT

As described below, two other federal statutes designed to protect public investments in parklands are or may be applicable to the Second Avenue Subway project.

SECTION 6(f)

The United States Department of the Interior (DOI) provides funding under the LWCFR for state and local efforts to plan, acquire, or develop land to advance outdoor recreational activities. Using LWCFR funds, however, creates certain limitations on future changes to LWCFR-funded projects. Once LWCFR funds are utilized for a particular recreation project, conversion of that park facility for any non-recreational purpose is prohibited unless alternatives are assessed and steps are taken to identify, evaluate, and supply replacement parkland. In addition, DOI must grant prior approval for the conversion and replacement parkland.

Under the LWCFR, approval for a conversion of parkland (generally for a period greater than 6 months) can be issued if the Regional Director of the National Park Service (NPS) finds that: 1) all practical alternatives to the proposed conversion have been evaluated; 2) the fair market value of the park property to be converted has been established and that the property proposed for substitution is of at least equal fair market value, as established by an approved appraisal, excluding the value of structures or facilities that will not serve recreational purposes; 3) the proposed replacement property is of reasonably equivalent usefulness and location as the converted property; and 4) the proposed conversion and substitution are in accordance with the

¹ 49 U.S.C. § 303(c); 23 C.F.R. § 771.135(a)(1).

applicable statewide comprehensive outdoor recreation plan (SCORP). The LWCFA regulations further require that the necessary environmental evaluations and coordination with other federal agencies be accomplished prior to the NPS’s approval of the conversion and that NPS consider the environmental evaluations in its review.

For the Second Avenue Subway project, the appropriate environmental analyses are provided throughout this FEIS, but particularly in Chapter 7, “Public Open Space.” Similarly, the alternatives analysis required under the LWCFA—which requires that all practical alternatives to the use of an affected resource be considered—has been provided under the analysis of prudent and feasible alternatives conducted for the Section 4(f) analysis. To meet requirements for Section 6(f), a replacement property of at least equal fair market value and/or purchase of wetlands will be provided prior to any conversion of the only Section 6(f) property that would be affected by the project (St. Vartan Park).¹ MTA’s compliance with the requirements of Section 6(f) is described below under the section entitled “Identification of Section 4(f) and Section 6(f) Resources.”

UPARRA

UPARRA was created in 1978 by Congress to “assist physically and economically distressed urban jurisdictions to revitalize their recreation systems, and to enhance overall recreation opportunities through the use of existing and potential recreation resources.” Under UPARRA, conversion of existing parkland that has received UPARRA funding to a non-park use can be granted by DOI through NPS if: 1) all practical alternatives have been evaluated, 2) the proposed replacement property is of reasonably equivalent usefulness and location, 3) it is located in the same political jurisdiction as the affected park, and 4) the conversion and substitution are consistent with the current applicable Recovery Action Program and/or equivalent recreation plan.

At this time, no parks proposed for use by the Second Avenue Subway project have been identified as receiving UPARRA funding. In the future, if the NPS were to determine that any such funding has been provided to parks proposed for use by the Second Avenue Subway, NYCT would prepare the appropriate analyses for submission to and approval by the DOI.

C. IDENTIFICATION OF SECTION 4(f) AND SECTION 6(f) RESOURCES

SECTION 4(f) RESOURCES

Based on current project plans, the Second Avenue Subway would require the “use” of all or part of 14 Section 4(f) resources.² Those resources include four different categories of resources: (A) parks that would be permanently incorporated into a transportation facility or temporarily

¹ As described throughout this FEIS, Crack is Wack Playground, which was originally proposed to be used for park construction in the Second Avenue Subway SDEIS, has since been eliminated as a potential construction site. Therefore, even though this park has also received funding under the LWCFA, no Section 6(f) analysis is required for this resource.

² The number of Section 4(f) resources that would be used has been reduced from the 16 identified in the SDEIS. As a result of project refinements, Crack is Wack Playground, Triboro Plaza, and the Triborough Bridge Ramps would no longer be used, but a potential new resource—possible burials associated with the former First Baptist Church Site—has now been identified as described in this evaluation.

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but adversely used during construction, (B) parks that would be used constructively during construction, (C) historic resources that would be permanently incorporated into a transportation facility or temporarily but adversely used during construction, and (D) possible archaeological resources that would be permanently incorporated into a transportation facility or temporarily but adversely used during construction.

The Annual Report on New Starts¹ notes that, “Given the Second Avenue Subway project’s total capital cost and requested New Starts share, FTA notified MTA that a minimum operable segment (MOS) will be required before the project is permitted to advance into final design. The MOS must be fully operable, with access to maintenance and storage facilities, so that it offers transportation benefits even if no further federal investment in the larger project is made.” In order to comply with this, construction of the Second Avenue Subway must be phased. The phasing plan described in the FEIS incorporates information obtained through ongoing engineering and achieves the best balance between constructability, operability, and the availability of funding. In addition, the phasing plan responds to public comments on construction scheduling and sequencing. The four phases, which could partially overlap, are as follows:

- Phase 1: 105th Street to 62nd Street, including the tunnel connection to the 63rd Street/Broadway Line;
- Phase 2: 125th Street to 105th Street;
- Phase 3: 62nd Street to Houston Street, including the 63rd Street tunnel connection to Queens for non-passenger services; and
- Phase 4: Houston Street to Hanover Square tail tracks.

Parks that would be used directly or constructively during construction would only be affected during the phase in which construction is occurring in the vicinity. As described below, the parks that would be directly used would be reconstructed after use of the resource is complete. Historic resources used directly during construction would be permanently affected beginning in the phase in which construction is occurring in the area in which the resource is located. Measures to minimize harm would be implemented during construction. Potential archaeological resources used directly during construction would be encountered beginning in the phase in which construction is occurring in the area in which the resource is located. As described below, a Programmatic Agreement would be used to avoid or mitigate impacts to such resources.

The 14 Section 4(f) resources are as follows (see also Figures 1 and 2):

- **Category A: Parks Used Directly During Construction**
 1. Playground 96 (western portion only, during Phase 1)
 2. St. Vartan Park (western portion only, during Phase 3)
 3. Sara D. Roosevelt Park (various portions during Phase 4)
 4. Kimlau Square (during Phase 4)

¹ U.S. Department of Transportation, Federal Transit Administration, Annual Report on New Starts, Proposed Allocation of Funds for Fiscal Year 2005, Report of the Secretary of Transportation to the United States Congress Pursuant to 49 USC 5309(o)(1), Report No. FTA-TBP10-2004-1, 2004.

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- **Category B: Parks Used Constructively During Construction**
 5. St. James Square (during Phase 4)
 6. Pearl Street Playground¹ (during Phase 4)
 7. Fulton Street Plaza¹ (during Phase 4)
 8. Vietnam Veterans Plaza (during Phase 4)
 9. Coenties Slip¹ (during Phase 4)

- **Category C: Historic Resources Used Directly During Construction**
 10. Metro-North Harlem-125th Street Station and Comfort Station (beginning in Phase 2)

- **Category D: Potential Archaeological Resources Used Directly During Construction**
 11. Possible Burials Associated with Former Methodist Episcopal Church Cemetery (during Phase 4)
 12. Possible Burials Associated with Former First Baptist Church Site (during Phase 4)
 13. Possible Burials Associated with Former St. Stephen's Episcopal Church Cemetery (during Phase 4)
 14. Possible Burials Associated with a Former Portion of Shearith Israel Cemetery (during Phase 4)

For each of the 14 resources in Categories A through D, a Section 4(f) Evaluation has been prepared in accordance with the Section 4(f) regulations and USDOT guidance. The Federal Transit Administration (FTA) will issue its Findings regarding Section 4(f) resources simultaneously with the Record of Decision (ROD) for the Second Avenue Subway.

In addition, as described in the FEIS, engineering for the Second Avenue Subway is still ongoing, and final decisions about where to locate certain elements of the project (such as ventilation facilities and station entrances) have not yet been made. In most cases, it is not expected that parklands or historic resources protected under Section 4(f) would be affected by such elements. It is possible, however, that some parks and historic structures may be affected by permanent subway features. If the ongoing design work indicates that additional effects to 4(f) resources would occur that are not evaluated in this document, new Section 4(f) Evaluations will be conducted for those resources and FTA will issue separate Findings for the use of those 4(f) resources.

¹ As described in Chapter 7, "Public Open Space" and Chapter 8, "Displacement and Relocation" of this FEIS, entrance and ancillary facility locations are still under consideration along the alignment. Based on conceptual and ongoing engineering completed to date, Pearl Street Playground, Fulton Street Plaza, Wall Street Triangle (an area of streetbed planned to be converted to a Greenstreet under NYCDPR's jurisdiction) and Coenties Slip have been identified as possible locations for subway entrances serving the Seaport and Hanover Square Stations. Additionally, an emergency egress facility may be needed in Sara D. Roosevelt Park. Further engineering along with continued discussions with the local Community Board, property owners, and the New York City Department of Parks and Recreation need to occur before final decisions about whether or not to use these public open spaces as entrances or ancillary facilities can be made. An additional Section 4(f) analysis would have to be conducted in the future if an entrance or other use were to be formally proposed at any of these locations. Other Section 4(f) analyses would be conducted in the future pursuant to all applicable regulations if any other Section 4(f) open space resources would be used for entrances or other subway elements.

SECTION 6(f) RESOURCES

DOI has provided a written comment stating that two parks along the alignment have received funding under Section 6(f): Crack is Wack Playground and St. Vartan Park. As described throughout this FEIS, as a result of further engineering and project refinements since publication of the SDEIS, Crack is Wack Playground would no longer be directly affected by the project's construction or operations; therefore, no Section 6(f) analysis is required for that park even though Section 6(f) funding was provided for it. However, St. Vartan Park would be affected. Accordingly, the appropriate Section 6(f) analyses are provided under the St. Vartan Park section found below under "Category A—Parks That Would Be Directly Used During Construction."

OTHER PARKS NEAR THE ALIGNMENT THAT ARE NOT SECTION 4(f) OR SECTION 6(f) RESOURCES

Chapter 7 of this FEIS ("Public Open Space") provides a list of all the parks located along the project alignment. Other than the nine parks listed above, based on current planning, NYCT has concluded that no other parks would be permanently incorporated into a transportation facility, temporarily and adversely occupied, or substantially impaired by construction of the project, and therefore they are not evaluated in this Section 4(f) Evaluation and Section 6(f) Evaluation.

Of the parks near the alignment that are not evaluated in this Section 4(f) Evaluation and Section 6(f) Evaluation, one (James Madison Plaza), is currently not in use as parkland, although it is mapped park, and so construction activities associated with the project would not adversely affect park use there. (James Madison Plaza is used as a parking lot by the New York City Police Department.) Eight of the parks would not be near or adjacent to surface construction activities associated with the subway, and therefore they would not be adversely affected by construction. Those eight parks are Blake Hobbs Park, Ruppert Park, Tramway Plaza, Dag Hammarskjold Plaza, Vincent Albano Playground, Peter's Field, St. Gaudens Playground, and Abe Lebewohl Park.

The remaining parks would be near or adjacent to above-ground construction activities, but they would not be substantially impaired by nearby construction activities. At each of these parks, noise levels and dust would increase, although NYCT would employ mitigation measures to reduce noise and limit dust (see Chapters 11 and 12 of the FEIS for more information). However, even with these increases, people would continue to use these parks, and recreational opportunities would still be available within each. In some locations, the parks are separated from the construction area by a wide sidewalk and fence, and thus would be buffered from construction activities. In other locations, the parks are intended for active uses, such as baseball or basketball, that would not be substantially impaired by noise. Consequently, construction of the Second Avenue Subway would not result in constructive use of these parks, as described below:

- Crack is Wack Playground: Under current plans, this park would not be directly used for park construction activities as a result of the decision between the SDEIS and this FEIS to make the potential underground storage yard in this vicinity substantially smaller. This park consists of basketball and handball courts, which do not depend on a quiet setting, and benches in good condition, along with paved walkways, bleachers, and a fountain. It also includes 20 to 25 mature trees. A mural by artist Keith Haring on the handball court gives the playground its name. No substantial impairment of the activities in the park or

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constructive use would occur during Phase 2, when construction would occur adjacent to the park. Consequently, Section 4(f) or Section 6(f) Evaluations are no longer necessary.

- *Harlem River Drive Park (portion at 128th Street and Third Avenue):* This park consists of active uses (baseball diamonds) rather than activities that are enhanced by or dependent on a quiet setting. Further, this park is already located in an area with high noise levels because of the nearby highway. The project's construction activities would occur near this park during Phase 2 only if an off-street staging area is used on the west side of Second Avenue at 128th Street. No substantial impairment of the activities in the park or constructive use would occur.
- *Triboro Plaza:* As a result of ongoing engineering conducted since the SDEIS, the size of the potential storage tracks north of 125th Street has been substantially reduced and surface construction would no longer be needed in the plaza. In addition, the Second Avenue Subway tunnel in this area would now be constructed by TBM, rather than the combination of mining techniques and cut-and-cover construction described in the SDEIS, which could have resulted in surface construction in the park. Triboro Plaza consists of two landscaped traffic islands adjacent to the Triborough Bridge ramps just east of Second Avenue. It is not an inviting space for park users because of the absence of amenities and its proximity to a heavily used traffic corridor. Therefore, no substantial impairment of the activities in the park or constructive use would occur during Phase 2, when the tunnel would be constructed beneath the plaza and when possible cut-and-cover construction would occur adjacent to the plaza. Thus, a Section 4(f) Evaluation is not necessary.
- *Wagner Pool:* This park would be set back from the construction activity occurring in Phase 2; therefore, that no significant adverse noise impacts or increases in dust would occur. In addition, no substantial impairment of the activities in the park or constructive use would occur.
- *Wagner Houses Playground:* This park would be set back from the construction activity occurring in Phase 2, so no significant adverse noise impacts or increases in dust would occur. No substantial impairment of the activities in the park or constructive use would occur.
- *Playground 96 (eastern portion):* This park would be adjacent to the construction activities occurring at the Playground 96 staging site to the west during Phase 1. However, as described later in the discussion of Playground 96, noise barriers would be erected around the staging site to reduce the noise and dust emanating from the staging area. With this barrier, the active uses (playing fields) on the eastern portion of Playground 96 would not be substantially impaired. (Further, active recreation such as at playing fields is generally less dependent on a quiet setting.) No substantial impairment of the activities in the park or constructive use would occur.
- *St. Vartan Park (eastern portion):* This park would be adjacent to the staging and construction activities occurring on the western portion of St. Vartan Park during Phase 3. However, as described later, noise barriers would be erected around the staging and construction site to limit the noise or dust emanating from the staging site. The construction activities' effects on the eastern portion of St. Vartan Park would be further limited because the two park segments are separated by a road, Tunnel Access Road. Moreover, the area of St. Vartan Park's eastern portion that is closest to the proposed staging area is designed for active play that is less dependent on a quiet setting. Benches and passive uses are at the other

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side of the park, close to First Avenue. No substantial impairment of the activities in the park or constructive use would occur.

- *Stuyvesant Square*: Although Stuyvesant Square is bisected by Second Avenue, the proposed subway has been designed with the goal of limiting adverse effects to the Stuyvesant Square to the greatest extent practicable while still providing a station at 14th Street, a block away. Surface construction would not occur in the portion of Second Avenue that passes through Stuyvesant Square. Where practicable, screening would be erected to buffer the south end of the park from the north end of the construction work occurring during Phase 3. Overall, visitors to Stuyvesant Square could use portions of the park farther from the construction site if they sought to avoid noisy activities. No entrances, vents, or other ancillary facilities would be located within Stuyvesant Square, and no substantial impairment of the activities in the park or constructive use would occur.
- *First Park*: Because First Park's recreational facilities are located along its First Avenue frontage, they would not be affected by construction activities on Second Avenue during Phase 3. The western portion of First Park that would be close to Second Avenue Subway construction activities is entirely fenced, not accessible to the public, and not in use as a park. Therefore no substantial impairment of recreational activities in the park or constructive use would occur.¹
- *Fishbridge Garden*: This dog run is set back from the construction zone. Further, it does not include any passive activities that depend on a quiet setting. No substantial impairment of the activities in the park or constructive use would occur during Phase 4, when construction activity would occur in the vicinity.
- *Peter Minuit Plaza*: This park is currently being used as a staging area for the Whitehall Ferry Terminal project (not under NYCT's planning jurisdiction), and no access is provided to the public. This park is slated to be totally reconstructed pending the ferry terminal's completion, and this work is expected to be concluded prior to any Second Avenue Subway construction in the vicinity, which would occur in Phase 4 of the project. Although construction related to the Hanover Square tail tracks would occur adjacent to Peter Minuit Plaza, the park is already surrounded by heavily trafficked roads on its three sides, effectively making it a traffic island with some seating. As with Stuyvesant Square, screening would be erected, where practicable, to buffer the park from noise and other disturbances. Overall, no substantial impairment of the activities in the park or constructive use would occur.

IDENTIFICATION OF SECTION 6(f) RESOURCES

DOI has informed the FTA and NYCT that St. Vartan Park has received funding under the LWCFR (see Attachment A for map of area improved with LWCFR funds). (Crack is Wack Playground has also received LWCFR funding, but, as a result of project modifications made since the SDEIS, this park would no longer be used by the project, as described in the FEIS.)

¹ In addition, as described in Chapter 7, an ancillary facility could be located on private property adjacent to the western section of First Park, on a site where a building collapsed several years ago. The use of this property for an ancillary facility is not yet final. If this site is selected, construction activities could potentially require excavation of a small section of First Park and removal of approximately seven trees. However, no final decisions regarding this facility have yet been made. An additional Section 4(f) analysis would have to be conducted in the future if an ancillary facility requiring use of the mapped parkland at First Park is formally proposed.

APPROACH

This Section 4(f) Evaluation and Section 6(f) Evaluation provides the following to assess the project's use of Section 4(f) and 6(f) resources:

1. A description of the Section 4(f) and/or 6(f) resource.
2. A description of the Second Avenue Subway's use of the Section 4(f) and/or 6(f) resource.
3. An evaluation of alternatives to use of the Section 4(f) resource, to determine whether any feasible and prudent alternatives to its use exist. If multiple adverse factors, such as environmental impacts, increased costs, and decreased traffic conditions, together create unique problems, these resulting unique problems can mean an alternative is not prudent. An alternative that fails to serve the project's purpose also is not prudent. An alternative is not feasible if it cannot be built as a matter of sound engineering practice. As Section 6(f) requires an analysis of all practical alternatives, the analysis of prudent and feasible alternatives conducted for Section 4(f) resources also satisfies this Section 6(f) requirement.
4. A discussion of measures to minimize harm to the Section 4(f) resource. When a Section 4(f) resource must be used, all planning to minimize harm, including development of mitigation measures, must be undertaken in coordination with the agency owning or administering the resource. For St. Vartan Park, which is the only 6(f) resource that would be affected by the project, a discussion of the proposed replacement property and an assessment of the consistency of the proposed substitution with the SCORP is also provided.

This evaluation is provided for each of the 14 Section 4(f) resources that would be used by the project. Parks in Category A and then Category B are evaluated, followed by historic resources (Category C) and then potential archaeological resources (Category D). The evaluation summarizes relevant project information, or references other sections of the FEIS for more information, where appropriate. Following the evaluation of individual Section 4(f) resources, the coordination conducted to date with agencies that have jurisdiction over the Section 4(f) properties is described.

D. CATEGORY A (PARKS THAT WOULD BE USED DIRECTLY DURING CONSTRUCTION)

OVERVIEW: DIRECT USE OF PARKS

The Second Avenue Subway would affect an 8.5-mile-long corridor extending for the length of Manhattan. Along this route, many parks are located on or close to the alignment. Although the project's construction techniques have been developed to avoid use of most parks along the alignment, the project would require the direct use of portions of four parks for construction activities. Though use of these parks would be temporary, in most cases, their use would also be for a relatively long term (up to 8 years in some instances).

With the exception of Sara D. Roosevelt Park, the parks that would be directly used for construction consist primarily of paved areas. All the parks are located in highly trafficked, densely developed areas in Manhattan. None of these parks are large, secluded enclaves where people can "escape" from the city, as one might do in Central Park, for example. Instead, each park is set within the urban context amidst pedestrian and vehicular traffic.

CORRIDOR-LONG ALTERNATIVES TO DIRECT USE OF PARKS

Construction of the Second Avenue Subway would require use of four parks specifically because of the need for staging and shaft sites in or near some of the parks. The first alternative to the use of these parks would be not to proceed with the project, or the No Build Alternative. This alternative would not meet the goals and objectives of the Second Avenue Subway Project.

Another alternative that would avoid the use of these four parks would be an alternative alignment for the project, away from Second Avenue. However, alternative alignments (such as along Third or First Avenue rather than Second Avenue) would not meet the goals and objectives for the project. The Second Avenue Subway alignment was identified as the preferred alternative after an extensive process of developing and evaluating alternatives. This process included development of a Major Investment Study (MIS), described in Appendix B of this FEIS, and refinements to the design of the project following completion of the MIS are also described in Appendix B. Further, if an alternative alignment were selected for the project, given the length of its route, that alignment would be very likely to require the use of parks as well, although these would be different parks than those affected by the project with a Second Avenue alignment. Consequently, an alternative alignment would neither meet the goals and objectives of the project nor avoid Section 4(f) resources.

A third alternative to the use of parks along the project corridor would be to use an alternative construction technique. As described in more detail in Chapter 3, “Description of Construction Methods and Activities,” the project’s construction techniques were developed through a long planning and design process, and this work is still under way. The basic tunnel construction techniques are dictated primarily by geology (rock vs. soil), the proposed location of stations, and the presence of existing tunnel segments. Construction, staging, and spoil removal activities are integral to the station and tunnel construction processes, and the Second Avenue Subway could not be constructed unless these activities can occur somewhere along the alignment. However, because of the disruptive nature of the activities that would occur on such sites, the entire alignment and its surroundings were examined to identify sites that would create the least disruption to the surrounding communities while maintaining efficiency and flexibility for construction operations.

In seeking sites, several critical factors were considered:

- *Size and location:* Staging sites must be a minimum of 40,000 square feet in size and they must be located at or near critical project elements, including locations where the tunnel would transition from rock to soil or vice versa. (For more information on requirements for staging sites, see Chapter 3).
- *Potential adverse environmental and community impacts:* At all locations, potential sites were evaluated for the potential to create adverse impacts during construction, and locations along the alignment that minimized disruption and impact to the environment and community were selected.

Given the potential for adverse environmental and community impacts at shaft sites and staging areas, identifying sites removed from residences, businesses, and community facilities was a key initial priority. Because of Manhattan’s overall density, finding sites that would not create any environmental impacts or neighborhood disturbance proved to be impossible, despite extensive research. No vacant lots were located anywhere along the alignment that were large enough, dimensioned appropriately (i.e., with enough Second Avenue frontage to support required operations) *and* located away from occupied buildings or other sensitive uses. Consequently, the

site investigation focused on finding sites that would create the least disruptive environmental impacts and then explored construction methodologies that would take advantage of the various sites. In some cases, using a park during construction could result in substantially fewer or less severe environmental impacts (such as improving the prospects for successfully mitigating noise impacts in residential areas or reducing the extent of traffic impacts in already congested neighborhoods). In such cases, if the alternative to using the park resulted in severe impacts, the tradeoff might be worthwhile—particularly since the park could be fully restored following construction. The park-specific evaluations of alternatives below provide more information on specific issues at particular parks. (For more information on the overall site selection process, see Chapter 3.)

In addition to these corridor-long alternatives, site-specific alternatives to the direct use of specific parks were also considered. Those are described below in the park-specific Section 4(f) analyses that follow.

Where the disturbance to a park would be due to construction of a station entrance, ancillary facilities, or to accommodate the alignment itself, avoidance alternatives consider eliminating or moving the station and/or ancillary facility and moving the alignment, respectively. The site-specific avoidance alternatives considered are included in the Section 4(f) Evaluation of each park presented below, and in the Section 6(f) Evaluation for St. Vartan Park.

OVERVIEW OF MEASURES TO MINIMIZE HARM FOR PARKLANDS

For each park, the measures to minimize harm provided for each site-specific analysis below describe generally the mitigative approaches that could be taken to minimize harm to Section 4(f) resources. The evaluation of measures to minimize harm is ongoing, and will be refined based on review and coordination with the New York City Department of Parks and Recreation (NYCDPR), the State Historic Preservation Office (SHPO) at the New York State Office of Parks, Recreation and Historic Preservation, and other involved agencies. (As described below and in Chapter 4 of the FEIS, NYCT has already met several times with the NYCDPR and the SHPO to discuss project impacts and potential use of Section 4(f) resources and to begin considering mitigation.)

One possible mitigation measure would be to provide a temporary replacement site for the park during construction. To date, except for St. Vartan Park, no specific replacement sites have been identified for parks that would be affected during construction. Such decisions will ultimately be made in consultation with NYCDPR, which acknowledged in its comment letter on the SDEIS that “[It] may not be feasible or advisable in some areas to convert nearby spaces to temporary replacement facilities.” Therefore, in those cases and at NYCDPR’s request, NYCT will work with NYCDPR to identify other mitigation solutions.

Several standard measures will be implemented during construction to limit impacts to parks adjacent to construction, as described below for specific parks. These will include erecting screens to limit light emitted from work sites, implementing best management practices to control dust, and using specially quieted construction equipment. As described below, in certain locations, another measure being explored is placing some equipment or operations below grade, in shielded locations.

During continued engineering, NYCT will seek additional means to protect trees within or adjacent to each park that would be affected. Protection plans would consist of delineating all trees within or bordering the affected areas, marking the trees in the field, and building a

barricade around the area of each tree that requires protection in an effort to save the tree. Where practicable, trees would be pruned in consultation with NYCDPR to avoid conflicts with construction equipment without removing the trees. As requested by NYCDPR, NYCT will also develop a forestry plan covering all affected parks, which will be subject to NYCDPR review and approval. The plan must follow NYCDPR specifications for tree protection and replacement according to the Basal Area Replacement Formula, which requires that in cases of removal of trees larger than 4 inches in diameter at breast height (dbh), NYCDPR will require that NYCT, through its contractors, plant multiple smaller trees, the basal areas of which must add up to the basal area of the original tree. All such measures would be included in relevant contract specifications, and in the project's Construction Environmental Protection Program (CEPP)—a document that assembles all project commitments and conditions, and from which NYCT will incorporate relevant portions into its construction contracts that contractors will be obligated to follow. NYCT would work with NYCDPR to design and fully restore all affected parks after subway construction in the area of each Section 4(f) resource is complete. Any trees that would need to be removed would be identified in consultation with NYCDPR. NYCT would also consult with NYCDPR regarding identifying tree replacement species, with consideration of whether maturation height would be affected by subway construction. However, NYCT will also make every practicable effort to ensure that future tree replacement would not be constrained by subsurface or surface subway elements or activities.

**1. SECTION 4(f) EVALUATION FOR PLAYGROUND 96 (WESTERN PORTION)
(DIRECT USE)**

LOCATION OF SECTION 4(f) PARK RESOURCE: PLAYGROUND 96

Playground 96 is a 1.5-acre mapped New York City park on the east side of Second Avenue between 97th and 96th Streets on the Upper East Side (see Figures 3 and 4). This park was previously referred to as Manhattan Vocational Playground. A fence divides the park into two sections. The 1.0-acre eastern portion is adjacent to the School of Cooperative Technical Education. The western portion, which would be used by the proposed project, is 0.5 acres.

RESOURCE DESCRIPTION: PLAYGROUND 96

The eastern portion of Playground 96, which is adjacent to the School of Cooperative Technical Education at the eastern end of the block, consists of approximately 1 acre of newly renovated ballfields and soccer fields that are actively used as the athletic facilities for the adjacent high school. As described above, this portion of the park would not be used by the Second Avenue Subway project. The 0.5-acre western portion, the subject of this Section 4(f) Evaluation, contains a younger children's play area, consisting primarily of an open, concrete-paved space, swings, recently installed play equipment surrounded by seven trees, and a comfort station. Twelve trees surround the perimeter outside the fence. Approximately 30 percent of the area is for active recreational uses; the remainder is for passive uses. Observations in spring 2002 found moderate use on weekdays (approximately 20 people) and high use on the weekend (approximately 50 people).

DESCRIPTION OF SECOND AVENUE SUBWAY USE AND IMPACTS: PLAYGROUND 96

As described in Chapter 3, the area between 99th Street and approximately 91st Street would be a center of construction activity during Phase 1. In all of the construction options being considered, a significant volume of soil and rock would be removed from the Second Avenue

Subway alignment in the vicinity of 99th Street to 92nd Street. There are three main reasons for this:

1. First, the area between 99th and 98th Streets would need to be constructed by cut-and-cover construction under any scenario, because of the need to connect to the existing shallow tunnel in soil that begins at 99th Street.
2. Second, between 99th Street and 92nd Street, the tunnel alignment would be in soil, rather than rock; consequently, the tunnel and 96th Street Station would need to be constructed by cut-and-cover construction under all cases.
3. Finally, from approximately 92nd Street southward, the tunnel would be built through hard rock, making use of a TBM appropriate. The northernmost point where the rock profile is close enough to the street surface to facilitate the start of the project's TBM operation to mine rock to the south is in the vicinity of 92nd Street. Consequently, some kind of shaft to launch the TBM operation is required at or near 92nd Street. This shaft site would need to be between two and three blocks long to launch the TBM (more information on construction techniques is provided in Chapter 3 of the FEIS).

Consequently, two different construction operations would occur in the 96th Street vicinity: launch of the TBM at approximately 92nd Street (the northernmost location where a TBM could be launched) along with corresponding removal of tunnel spoils; and construction of the 96th Street station and connection to the existing 99th Street tunnel. For both of these activities, a large staging area would be needed near the alignment to manage the construction activities. This staging area would support a large variety of equipment and materials needed to build the 96th Street Station and tunnels to the immediate north and south, including bulldozers, hoists, a substation, generators, silos or other types of storage bins to store materials, a maintenance shop for storing tools and machinery, a "hog house" (area where tunnel workers can shower), and compressors and water treatment areas. Some of these operations could last up to 8 years (a reduction from the 10 years identified in the SDEIS and Draft Section 4(f) Evaluation), and would be quite disruptive despite all of the measures that would be implemented to minimize adverse impacts. As described in Chapter 12 of the FEIS, "Noise and Vibration," significant adverse noise impacts from construction noise are expected to occur at all locations where spoils would be removed during both the tunneling and station excavation phases. Increased dust, visual intrusions, and other associated disruptions would also occur.

The adverse impacts associated with the construction activities in the vicinity of 99th to 91st Street would be substantial, so measures to reduce impacts would be employed whenever practicable. The most effective mitigation measure for this disruption would be use of an off-street staging site, instead of staging construction activities from Second Avenue. Using an off-street area would remove construction activities from close proximity to nearby buildings as much as possible, and would allow the staging site to be enclosed with barriers to block noise and visual impacts. Overall, impacts could be minimized if some of the more disruptive activities could be located as far from occupied buildings as possible. Near 96th Street, there are no suitably sized vacant lots; the only suitably sized, off-road staging site not already occupied by residential buildings, a hospital, or active businesses is Playground 96, a public park under the jurisdiction of NYCDPR. Therefore, NYCT is proposing to use the western portion of Playground 96 as a staging site, in order to minimize impacts to the surrounding neighborhood. Under any scenario, the entire western portion of the Playground 96 could be used either as a staging area or shaft site for spoils removal for up to 8 years. The Second Avenue Subway would not use the eastern portion of the park.

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During this time, the park would not be available for public use and many, if not all, of its surface features could be removed, including three mature trees near the play equipment and eight of the trees outside its perimeter fence. Removal of the trees would provide approximately 27,000 square feet of space from which contractors could operate the construction site. If some trees within the park along its northern and eastern borders need to be removed, the size of the staging area would increase slightly. As a result of ongoing engineering, the possibility of an entrance within Playground 96, which was described in the SDEIS, has been eliminated, so no permanent effects on this park would result.

AVOIDANCE ALTERNATIVES: PLAYGROUND 96

The need for use of Playground 96 stems from the amount of construction required between 99th and 91st Streets: this includes construction of the station itself and providing an entry for the TBM in the vicinity of 92nd Street along with a way to remove the spoils from the tunnel as the TBM makes its way southward. Key criteria for providing adequate space for the full range of construction activities slated for this location include:

- The minimum area required for the most disruptive construction activities that are best located away from residential buildings (a total of 15,000 square feet for the slurry plant plus an additional 24,000 square feet for the muck storage bin needed to allow the excavated material to dry out before it is trucked from the project);
- The maximum distance for certain activities (i.e., 700 feet for pumping slurry from the slurry plant to the location of the future slurry wall); and
- Avoidance of the most sensitive land uses in the area, including Metropolitan Hospital, the Islamic Cultural Center of New York (which comprises a mosque, school, and meeting place), a public school, and local residences.

A number of construction options were examined before use of the Playground 96 was considered. In looking for areas to provide access, to remove spoils, or to stage equipment, project planners first tried to limit all work to within the Second Avenue right-of-way. Once it was clear (as discussed below) that this option would be extremely disruptive to the surrounding community, an investigation for vacant or underutilized sites that could offer a work area not in the bed of Second Avenue began. Some 10 sites were examined in the vicinity, but none met the criteria for size, proximity to the slurry operation, proximity to the TBM start location between 92nd and 91st Streets, and avoidance of community disruption and sensitive uses.

Without satisfactory sites near the work area, other than the playground, planners identified the following four alternatives to avoid staging any construction work in Playground 96 or constructive use of the park through activities on Second Avenue: 1) use additional portions of the roadway at Second Avenue near 96th Street, 2) use alternative locations near the playground for the 96th Street staging area site, 3) build a tunnel under 96th Street to the East River for spoils removal by barge, and 4) eliminate use of a staging area in the area between 96th and 92nd Streets altogether by transporting tunnel spoils through the tunnel to the north in East Harlem. These are discussed below.

Playground 96 Avoidance Alternative 1: Use Additional Roadway Area

An avoidance alternative to using Playground 96 as a staging area would be to use additional lanes of Second Avenue or to extend the staging area on half of the roadway north or south for additional blocks.

As described in Chapter 3 of this FEIS, the project currently proposes to use half of the Second Avenue right-of-way near 96th Street for staging and construction activities, with the remainder of the staging in the park. With the proposed reduction in road width for traffic, traffic congestion at the intersection at 96th Street and Second Avenue would increase, resulting in a significant adverse traffic impact (as described in Chapter 5D, “Transportation—Vehicular Traffic,” the intersection would deteriorate from Level of Service [LOS] E to LOS F). The impact could be mitigated, however, with standard improvement measures, such as signal timing adjustments, pavement marking changes, and bus stop relocations on Second Avenue and 96th Street. In contrast, in Avoidance Alternative 1, Playground 96 would not be used, and more of the Second Avenue roadway would be used instead. This alternative could use either a wider portion of Second Avenue, or an area of the same width as proposed, but for a longer area.

If a wider area of Second Avenue were used in this alternative, Second Avenue would be narrowed to just two travel lanes. As a result, traffic conditions on southbound Second Avenue would further deteriorate to LOS F, but the significant adverse traffic impacts to Second Avenue could not be mitigated with standard traffic engineering improvement measures as they could with the project.

Instead of widening the construction zone, if the construction zone were lengthened farther north or south for several blocks, potential traffic impacts might be mitigated with standard traffic improvement measures. However, the staging area would be farther from the spoils removal areas, significantly increasing the difficulty of constructing the tunnel in this area. Construction machinery would have to move within a long and narrow area, affecting more blocks on Second Avenue and increasing the extent of the noise impacts and community disruption, because more construction activities would be located in close proximity to more people.

Although there are some residential buildings in the vicinity of Playground 96, including those opposite the park on the west side of Second Avenue between 97th and 96th Streets, overall, many fewer residential units would experience high and intrusive noise levels if more construction operations could be concentrated in the park than if they were dispersed along a longer stretch of Second Avenue. Similarly, fewer patients, workers, or visitors at the Metropolitan Hospital Center would feel the effects of construction if the majority of construction activity could be concentrated south of 97th Street as opposed to extending activities farther north along Second Avenue to 99th Street or beyond.

The following overview of land uses on each of the blocks between 100th Street and 90th Street on Second Avenue demonstrates the sensitivity of the surrounding community to construction noise, traffic, dust, access restrictions, and other potential disruption from construction. The uses on these blocks are as follows (also see the land use maps for the 96th Street area included in Chapter 6, “Social and Economic Conditions,” and the photos of the area in Appendix E.2):

- 100th to 99th Street: dense six-story tenement buildings on the east side of Second Avenue and 14-story public housing buildings on the west side of Second Avenue.
- 99th to 97th Street: Metropolitan Hospital Center on the east side of Second Avenue, and 14-story public housing buildings on the west side of Second Avenue.
- 97th to 96th Street: Playground 96 on the east side of Second Avenue, and a lumber yard surrounded by residential tenement buildings on the west side of Second Avenue. Additionally, the Islamic Center of New York, a mosque and weekend school, is located just west of the residential buildings on this block.

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- 96th to 95th Street: six-story residential tenement buildings surround a parking garage on the east side of Second Avenue and high-rise apartment buildings on the west side of Second Avenue.
- 95th to 94th Street: a mix of five-story tenement buildings and mid-rise apartment buildings on the east side of Second Avenue and dense five-story tenement buildings on the west side of Second Avenue.
- 94th to 93rd Street: dense five-story tenement buildings on the east side of Second Avenue and high-rise residential buildings on the west side of Second Avenue.
- 93rd to 92nd Street: mix of tenement buildings and a high-rise residential building on the east side of Second Avenue and public high-rise residential buildings on the west side of Second Avenue.
- 92nd to 91st Street: mix of tenement buildings and a high-rise apartment building on the east side of Second Avenue and a high-rise apartment complex on the west side of Second Avenue.
- 91st to 90th Street: dense tenement buildings on the east side of Second Avenue and a high-rise apartment complex on the west side of Second Avenue.

Given the density of the land uses in the blocks surrounding the TBM launch site and the proposed 96th Street Station, extending the on-road construction activities along Second Avenue to avoid the park would clearly affect more residents than if the park were used for some of the most concentrated construction activities. With respect to noise, NYCT is committed to mitigating noise impacts, using enclosures where feasible. However, such enclosures would be the least visually intrusive if they could be constructed on large parcels removed from sensitive uses, where contractors could retain some flexibility to perform needed construction activities. In addition, since these enclosures would require a considerable amount of area, they may be infeasible unless additional space outside of the right-of-way is provided.

In summary, this avoidance alternative would extend the area of construction. This would worsen community disruption from excess noise, dust, access interference, and additional significant adverse traffic impacts. For these reasons, while this alternative is feasible, it is not considered prudent.

Playground 96 Avoidance Alternative 2: Use Vacant or Underutilized Sites Instead of Playground 96

Another alternative to use of Playground 96 would be to locate an off-site staging area elsewhere in the vicinity of the construction activities, but not on Second Avenue. As noted above, however, the area between 100th and 90th Streets near Second Avenue is densely developed with occupied buildings, so identifying vacant or underutilized properties was difficult. Sites large enough to serve as a staging site that are fully developed with occupied buildings were not considered prudent alternatives to long-term but temporary use of Playground 96, because of the substantial impact to the community that would result from their acquisition, displacement of existing uses, and demolition of the structures.

As described in Chapter 3, many vacant or underutilized properties were considered as alternatives to using any portion of Playground 96. These sites were located along Second Avenue and on the waterfront. Each site and the reasons why it is no longer under consideration as part of the Second Avenue Subway are described below.

- *Northeast corner of 99th Street and Second Avenue.* This area is currently used as a private parking lot and it abuts a parking lot used by the Department of Sanitation (DOS) to the east. The site's narrow configuration and minimal Second Avenue frontage would make accessing it difficult during its use as a construction site. To increase the lot's size would require either use of the DOS lot or the acquisition and demolition of fully occupied residential buildings. If the DOS lot were to be used, alternative lots for its trucks would need to be identified, spreading the noise from the trucks throughout the neighborhood and making the department's operations less efficient.

The site is also located seven blocks (approximately 1,400 feet) north of the rock face at 92nd Street where TBM tunneling would need to begin, and is thus too far away to pump slurry to the TBM launch site at the 92nd Street rock face. (As noted above, the maximum reasonable distance for pumping slurry is approximately 700 feet.) Thus, this option is not feasible. In addition, to convey slurry material, several pipes (approximately 12 inches in diameter) would need to be installed between the slurry plant and the slurry wall construction site. These operations would require that a larger area be excavated, thus defeating the purpose of moving the operation off-site. In addition, spoils would either have to be trucked or conveyed to the site from the 92nd Street shaft, exacerbating traffic congestion and introducing new noise impacts across a more extended, residential area.

Because the lot is directly opposite the Metropolitan Hospital Center and adjacent to residential buildings, noise impacts from its use would be particularly disruptive. Locating the staging activities in this lot would exacerbate the significant noise impacts that would occur because they would take place even closer to the hospital and to more residential uses than if Playground 96 were to be used. Because of the distance from the 92nd Street TBM shaft site and the proximity to multiple sensitive uses, this site is not considered feasible or prudent.

- *West side of Second Avenue between 97th and 96th Streets.* In this alternative, the project would have to acquire a privately owned building supply and lumber store at the corner of 97th Street and Second Avenue, three four-story residential buildings fronting on Second Avenue, and a commercial parking lot fronting on 97th Street. The businesses and residents would have to be relocated, and the buildings demolished. Relocating numerous residents and active businesses would result in substantial disruption to the immediate area. In addition, the site is located next to a mosque and its affiliated school, two sensitive environmental uses that would be especially affected by the noisy activities that would occur at any construction staging area located here. For these reasons, while use of the site would be feasible, it is not considered prudent.
- *Metropolitan Hospital parking areas at FDR Drive and 97th to 98th Street.* Use of these sites as spoils removal or staging areas would either require trucking spoils from a shaft on Second Avenue or constructing a conveyor to bring spoils to this site. The distance to Second Avenue is approximately 780 feet, which is beyond the reasonable distance that slurry material could be effectively pumped (i.e., approximately 700 feet). Thus, this alternative is not feasible. In addition, if barging at the East River were pursued, trucks or another conveyor would be needed to transport spoils from the 92nd Street shaft above or below the FDR Drive and the East River Esplanade to get to a barge site in the river, further increasing impacts. Also, this alternative would take hospital employee parking lots required for doctors and staff, and would locate noisy, disruptive uses next to sensitive hospital buildings. The northern parking lot is also located in close proximity to a school, another use

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that is particularly sensitive to noise. Because of the distance and added adverse environmental impacts that would result, use of this site is not considered feasible or prudent.

- *North or south sides of 96th Street, under the elevated FDR structure.* As with the option above, this site is too far away (approximately 1,400 feet to Second Avenue and 92nd Street) for a slurry pump to be feasible. In addition, use of this site for spoils removal or construction staging would require substantial trucking to and from Second Avenue along a very heavily trafficked area, or constructing a complicated conveyance system to transport materials east towards the riverfront in this area. The relatively low elevation of FDR Drive would make it difficult and expensive to construct an appropriate conveyance system, and this alternative would also exacerbate traffic congestion on 96th Street at the FDR Drive entrance and exit ramps. Also, several pipes would need to be installed to convey slurry material to the slurry wall construction site. Because of these serious operational constraints and increases in adverse environmental impacts, this site is neither feasible nor prudent.
- *96th Street and the East River.* Because of the elevation of the FDR Drive in this area, to access a barge here, it would be necessary to create a conveyance system (likely in a tunnel) from Second Avenue connecting to a caisson in the East River to receive the spur tunnel. Constructing such a caisson could be both extraordinarily expensive and difficult. Dredging or a pier development would also be needed to use a barge in this area because this area of the East River has not been used in the recent past for any commercial marine operations. Since this site has no upland land attached to it (aside from the East River Esplanade, a public park that runs along the East River in this area), it would not be suitable as a laydown area unless more barges or a pier area were constructed here in addition to the other barge site proposed for construction at Pier 6. In addition, it would be necessary to locate any in-water operations well out into the river to avoid a constructive use on the East River Esplanade. Moving any such extension well into the East River would further increase the aquatic impacts of the project, as well as the difficulty of operating a construction site here. This site would also not be able to accommodate the slurry plant, which would then have to be located on Second Avenue, increasing the amount of roadway needed for construction and creating the problems described above under Avoidance Alternative 1 (which was determined not prudent). For these reasons, while this site could conceivably be feasible, it is not considered prudent.
- *DOS Marine Transfer Station and Municipal Asphalt Plant.* The site is located 1,800 feet from the Second Avenue Subway alignment. Given its distance from Second Avenue, the slurry plant would most likely be located on Second Avenue, increasing the amount of roadway needed for construction. This alternative would require use of the DOS access road that connects First Avenue with DOS's marine transfer station pier; it would also require the use of the former Municipal Asphalt Plant, now a recreation center at the Asphalt Green recreational complex. The Municipal Asphalt Plant—the first successful use of the parabolic arch form in reinforced concrete in the United States—is on the State and National Registers of Historic Places and is a designated New York City Landmark. This historic resource would need to be demolished and relocated so that the spoils could be brought up from a new spur tunnel that would need to be constructed, and barging operations would have to be coordinated with the DOS to avoid creating negative impacts to their essential operations. Demolishing this building would be a significant adverse historic impact as well as a significant adverse community facility impact, and would require its own Section 4(f) Evaluation. In addition, coordination of the barging and spoils operations would likely result

in time constraints limiting when Second Avenue Subway spoils removal could occur—an expensive additional operational hurdle. Using the DOS pier would also require trucking or building a conveyor system through a very dense residential community along York Avenue, creating significant community impacts. This alternative, while feasible, is not prudent, because of its impact on the Asphalt Green building and recreational facility and its many significant construction and operational issues.

- *Private gas station on the southwest corner of 96th Street and First Avenue.* This site is not on Second Avenue and is too far away (approximately 1,400 feet to Second Avenue and 92nd Street) to pump slurry to the TBM launch site effectively; as described above, 700 feet is the longest reasonable distance that slurry can be pumped. Several pipes (approximately 12 inches in diameter) would also need to be installed between the slurry plant and the slurry wall construction site, increasing the construction duration. This site's chief advantage is its proximity to the East River, which could make it useful in conjunction with a barge operation. However, getting to and from the river would require construction of a spur tunnel or similar structure from Second Avenue along 96th Street and over or under the FDR to a barge operation. Otherwise, spoils would have to be transported to and from this site by truck, effectively doubling the construction activities in this area. This would involve overly complex operational requirements and would exacerbate traffic that is already very congested during the evening peak period along 96th Street. Dredging or a pier development in the East River would be required to locate a barge operation here as well, and the adjacent East River Esplanade, which is itself a public park, would be adversely affected by such operations. For these reasons, this site is not considered feasible and prudent.

Playground 96 Avoidance Alternative 3: Build a Spur Tunnel Eastward on 96th Street to a Barge Site in the East River

This avoidance alternative would require construction of a 1,100- to 1,300-foot tunnel beneath 96th Street to a newly constructed barge operation at approximately 96th Street and the East River. This tunnel length would be quite long (approximately 10 city north-south blocks), and its construction would take approximately 24 months, delaying excavation of the Second Avenue Subway tunnels for an equivalent time. In addition, as noted earlier, the river at this location has never been used for barge operations and is quite shallow. Therefore, an extensive dredging program or pier development would be required. Also, as described above, this site has no upland land attached to it aside from the East River Esplanade, which is itself a public park. Therefore, it would not be suitable as a laydown area unless extra barges were installed or new piers were constructed here. In addition, the site would most likely not be able to accommodate a slurry plant, resulting in it being located on Second Avenue and increasing the roadway space needed for construction. It would also be necessary to locate any in-water operations well out into the river to avoid a constructive use on the adjacent East River Esplanade. The extraordinary effort of constructing a spur of nearly a quarter-mile, delaying the excavation for the subway, and developing marine facilities, along with the impacts of this construction on the length of 96th Street and on the river, clearly render this alternative not feasible or prudent.

Playground 96 Avoidance Alternative 4: Eliminate Use of a Spoils Removal Site Near 96th Street

In this avoidance alternative, spoils from the rock tunnel would be conveyed underground through a tunnel and removed in the 129th Street vicinity by truck. This option would only shorten the need to use the park by 1½ to 2 years. (Use of the park would still be required for the

other staging in this area not associated with the TBM activities.) This would also require completion of the entire tunnel from 129th to at least 62nd Street before any station construction could begin. In this alternative, the tunnel from the 90s vicinity north to 129th Street would be constructed first and a staging area would be created near 129th Street. This would take approximately 3 to 5 years. The TBM would then be launched from a shaft in the 90s, and tunnel spoils would be conveyed north to the 129th Street staging area. The construction period for Phase 1 of the project would therefore be extended by 3 to 5 years, resulting in an overall construction schedule of 10 to 12 years for the first operational phase (Phase 1) (as opposed to 7 years). The elimination of spoils removal operations in this area would not eliminate the need to use the park as a staging area for the cut-and-cover construction activities needed to launch the TBM and then to construct the 96th Street Station. Assuming the park would not be restored between the TBM launching and the construction of the station, this alternative would extend the period of time that the park would be affected by construction staging. Even if the planned 96th Street Station were eliminated (which would not be consistent with the project's goals), and if launching the TBM machine were to move farther south, it would be impossible to avoid a constructive use of the park from adjacent cut-and-cover construction between 92nd and 99th Streets for the tunnel. This avoidance alternative is inconsistent with the project's purpose and is not feasible or prudent for the reasons described above.

MEASURES TO MINIMIZE HARM: PLAYGROUND 96

An attractive sound and safety barrier would be erected to separate the 0.5-acre western portion of Playground 96 from the approximately 1-acre eastern portion that would remain for public use. This barrier would be installed along the north, east and potentially southern edges of the site, and would be of appropriate height to help mitigate noise impacts to the hospital to the north, the balance of the playground and school to the east, and to the residential uses to the south. This barrier would be expensive to construct, may restrict construction operations, and may also result in some visual impacts. However, it is probably the most effective means of reducing noise.

NYCT would work with NYCDPR to design appropriate security measures, such as lighting, to ensure safety surrounding any noise and construction fences. In addition, protective construction measures would be employed, screens would be used to limit light emitted from work sites, best management practices would be implemented to control dust, and specially quieted construction equipment would be used to minimize noise to the extent practicable. All construction equipment, including construction vehicles, would be contained within the designated staging area to avoid affecting the remaining portion of Playground 96 to the degree practicable.

At this time, it is estimated that 11 trees would need to be removed; doing so would provide approximately 27,000 square feet of space from which contractors could operate the construction site, though as described above, more trees could be affected once a final construction staging plan is identified. Trees within Playground 96 affected by Second Avenue Subway construction would be replaced according to NYCDPR's Basal Area Replacement Formula. Several replacement trees would be planted prior to the start of construction, in the vicinity of the trees to be removed, in order to replicate some of the functions performed by the trees to be removed. These tree replacement and protection measures would be included in relevant contract specifications, and in the project's CEPP.

Extensive efforts would be made to ensure that the remaining park trees are protected from damage during construction. Protection plans would entail delineating all trees, marking the trees

in the field, and building a barricade around each tree that requires protection. Any trees removed during construction or destroyed by adjacent construction would be replaced after construction in accordance with a tree replacement plan developed in coordination with NYCDPR. NYCT would also work with NYCDPR to develop a park restoration plan for this resource following construction.

Additionally, NYCT would work with NYCDPR prior to any construction to ensure that construction activities within the park area are designed to identify the locations of all park utilities and avoid impacts to park utilities wherever practicable. Any utilities that are affected by construction would be fully restored in consultation with NYCDPR, and any utilities serving the adjacent portion of the park that would remain open to the public will be maintained in service throughout the project.

NYCDPR has commented that temporary replacement parkland may not be the most advisable mitigation for Playground 96, and has requested that the FEIS state that NYCDPR will work with NYCT to identify the mitigation plan that is most compatible with the neighborhood's parks and open spaces. In accordance with this request, NYCT will continue its ongoing coordination with NYCDPR to develop such plans.

CONCLUSION: PLAYGROUND 96

Significant adverse impacts from noise and other construction disturbances would be worse (either more intense or distributed over a larger area) if this Section 4(f) property were not used during the construction period. After construction, park facilities would be restored, replaced, or repaired in accordance with agreements reached between the MTA and NYCDPR.

2. SECTION 4(f) AND SECTION 6(f) EVALUATION FOR ST. VARTAN PARK (WESTERN PORTION) (DIRECT USE)

As described above, in addition to satisfying the requirements of Section 4(f) with respect to any potential use of St. Vartan Park, NYCT must also satisfy the requirements of Section 6(f) of the LWCFA. For the Second Avenue Subway project, the alternatives analysis required under the LWCFA—which requires that all practical alternatives to use of an affected resource be considered—is satisfied under the analysis of prudent and feasible alternatives conducted for the Section 4(f) analysis and provided below. To meet the other DOI requirements for Section 6(f), an appraisal of the fair market value of both the portion of St. Vartan Park that would be used by the project, as well as that of the property proposed for substitution, will be conducted in the future as part of the formal conversion proposal. The required analysis of the proposed temporary replacement park's consistency with the SCORP is provided later in this section.

LOCATION OF SECTION 4(f) AND SECTION 6(f) PARK RESOURCE: ST. VARTAN PARK

This 2.8-acre mapped New York City park in East Midtown occupies the entire block between 36th and 35th Streets and First and Second Avenues (see Figures 5 and 6). The park is divided by Tunnel Entrance Street, an approach road for the Queens-Midtown Tunnel, with 2.2 acres of the park to the east and 0.6 acres to the west. The 0.6-acre western portion is the subject of this Section 4(f) Evaluation and Section 6(f) Evaluation.

RESOURCE DESCRIPTION: ST. VARTAN PARK

St. Vartan Park's eastern section, which was recently renovated, contains an active, open play space, benches, new play equipment, a sunken seating area, picnic tables, and swings among 68 trees. This area would not be directly affected by Second Avenue Subway construction. The park's western section, which is the subject of this Section 4(f) Evaluation and Section 6(f) Evaluation, is occupied by handball and basketball courts. Its borders are landscaped and contain 15 mature trees within the park fence and 12 street trees. The park, and particularly the active recreational facilities on the western portion, is heavily used; observations in spring 2002 found moderate use during the week and very high use (100 people) on the weekends.

The New York State Office of Parks, Recreation and Historic Preservation (OPRHP) has provided documentation regarding use of Section 6(f) funding at St. Vartan Park. OPRHP serves as the New York State agency that administers LWCFAs funds received from DOI.

That documentation shows that St. Vartan Park received LWCFAs funds under project No. 36-00617. The funding for St. Vartan Park was used to purchase a variety of facilities, including asphalt paving, concrete curbs and pavements, utilities, fencing, and recreational equipment throughout the park. A map that indicates the type and location of the LWCFAs-funded facilities at St. Vartan Park is included in Attachment A provided at the end of this chapter. This map shows that the basketball and handball courts that would be affected by the project received LWCFAs funding. A horseshoe pit is also noted, but that element no longer appears to be located within this portion of St. Vartan Park.

DESCRIPTION OF SECOND AVENUE SUBWAY USE AND IMPACTS: ST. VARTAN PARK

The western portion of the park (approximately 34,000 square feet including surrounding sidewalks) could be used as a spoils removal site or staging area for station construction and spoils removal; together these activities could take up to 8 years. As described in Chapter 5D of this FEIS ("Vehicular Traffic"), the project's standard construction approach of narrowing Second Avenue to enable the station construction by using three of the six moving and parking lanes on the street is particularly problematic in this location. Specifically, taking three lanes would cause significant traffic impacts from 36th Street to 31st Street during the AM peak hour and at 34th Street in the PM peak hour; these impacts could not be mitigated with standard traffic engineering improvements, and consequently, a significant adverse impact would occur. An enhanced mitigation measure would be to provide four travel lanes southbound on Second Avenue through this construction zone during the AM peak traffic period and between 35th and 34th Streets during the PM peak period. This measure would only be feasible if the sidewalks were narrowed to 5 feet, and if an extra lay down or work space area could be made available adjacent to the construction area. Thus the construction scenario in the area of the 34th Street station requires use of an area not within the street. As noted in Chapter 5D, even with this fourth tunnel lane, the traffic impacts may not be fully mitigated. The impacts may occur despite the use of two off-site workspaces: the western part of St. Vartan Park and a portion of the right-of-way and service road/parking lanes on the east side of Second Avenue between 32nd and 31st Streets. However, the availability of off-site workspaces would help to minimize those impacts.

During construction, the public would not have access to the western portion of St. Vartan Park, and many of its surface features would be removed including, potentially, approximately four of the 14 trees in the western portion of the park and seven of the 12 surrounding street trees. The handball and basketball courts at St. Vartan Park are heavily used. In this case, a temporary replacement space would be identified in coordination with NYCDPR. The space would be near

the existing park and could be opened to the public before the start of construction activities. Following construction, the handball and basketball courts at St. Vartan Park would be restored and reopened for public use.

AVOIDANCE ALTERNATIVES FOR SECTION 4(f) AND SECTION 6(f): ST. VARTAN PARK

Following is an assessment of five alternatives that avoid use of St. Vartan Park. As at other locations along the alignment, any consideration of proposed construction activities for the Second Avenue Subway requires consideration of several important issues. In this case, the close proximity of the construction activities (the proposed 34th Street Station and TBM launch site) to the Queens-Midtown Tunnel would be both an opportunity and a constraint. While the tunnel's existence concentrates traffic in this area, it would also permit Second Avenue Subway construction vehicles to move in and out of Manhattan with minimal circulation on local streets. Given the pressure to maintain traffic on Second Avenue—particularly in this highly congested area—it is especially important to secure work sites with adequately size and configuration to permit the station construction and spoils removal activities to occur. As described below, consideration was again given to locating some construction activities on or near the East River instead of near the park site; however, this alternative would result in increased construction impacts at multiple sites, and would also lengthen project duration because of the need to construct a separate conveyance system to the East River. Even if this were to occur, it would be extremely difficult to establish construction-related operations close to the water-dependent maritime and recreational activities that currently exist on the waterfront in the vicinity of 34th Street.

St. Vartan Park Avoidance Alternative 1: Use Additional Roadway Area

In this alternative, the western section of St. Vartan Park would not be used and additional roadway area would be used for staging instead. This staging area in the roadway could occupy a wider portion of Second Avenue, or an area of the same width as proposed, but longer.

If a wider area were used for staging in this alternative, traffic would be confined to three southbound travel lanes, and Second Avenue would experience significant traffic impacts that could not be mitigated with standard traffic engineering improvement measures. An aggressive traffic diversion plan from Second Avenue would be needed to mitigate the impacts, but as described in detail in Chapter 5D of the FEIS, it is unlikely that such a diversion plan would alleviate all adverse traffic impacts in this area. The alternative southbound routes (e.g., Lexington, Park, and Fifth Avenues) are closer to the core of the East Midtown CBD, are also congested and are not able to accommodate the additional traffic. Because of these significant traffic impacts, this avoidance approach is not considered prudent.

If the construction zone were to extend farther north for several blocks instead of narrowing Second Avenue, unmitigated traffic impacts would still be expected. Second Avenue north of 36th Street is heavily congested during the peak traffic periods as it serves as an approach route to the Queens-Midtown Tunnel. If the construction zone were to extend farther south, potential traffic impacts might be mitigated with standard traffic improvement measures. However, the staging area would be too far from the spoils removal areas, which would significantly increase the difficulty of constructing the tunnel in this area. Construction machinery would have to move within a long and narrow area, increasing the extent of the neighborhood impacts, including the same significant noise impacts that would occur near the Playground 96 described above, and putting more trucks on local streets because they would be farther away from the tunnel access roads.

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Although there are some residential buildings in the vicinity of St. Vartan Park, including opposite the park on the west side of Second Avenue between 36th and 35th Streets, overall, many fewer residential units would be adversely affected by noise if more construction operations could be concentrated in the park than if they were dispersed along a longer stretch of Second Avenue. Following is an overview of land uses on each of the blocks between 40th Street and 30th Street on Second Avenue (also see the land use maps for the 34th Street area included in Chapter 6 and the photos of the area in Appendix E.2):

- *40th to 39th Street:* high-rise buildings on the east side of Second Avenue, and a mix of high-rise apartment buildings, tenements, and a 1-story commercial building on the west side of Second Avenue. (As described below, the one-story commercial building was considered and rejected as a possible staging site.)
- *39th to 38th Street:* a mix of tenement buildings and high-rise residential buildings on the east and west sides of Second Avenue
- *38th to 37th Street:* a mix of 6- and 4-story tenement buildings on the east side of Second Avenue, and a large 6-story apartment building on the west side of Second Avenue.
- *37th to 36th Street:* elevated bridge structure over the access road for the Queens-Midtown Tunnel on both the east and west sides of Second Avenue; access to the tunnel is also provided here.
- *36th to 35th Street:* St. Vartan Park on the east side of Second Avenue and five- to seven-story tenement buildings on the west side of Second Avenue.
- *35th to 34th Street:* St. Vartan Cathedral of the Armenian Orthodox Church on the east side of Second Avenue and dense four-story tenement buildings on the west side of Second Avenue.
- *34th to 33rd Street:* high-rise apartment building and a two-story commercial building and a bonus plaza on the east side of Second Avenue and dense 4-story tenement buildings on the west side of Second Avenue. (The commercial building was considered and rejected as a possible staging site, as described below.)
- *33rd to 32nd Street:* high-rise residential building and service road for a shopping mall located just south on the east side of Second Avenue and a mix of a high-rise apartment building and tenement buildings on the west side of Second Avenue. (The service road is intended for use as part of the construction staging area in this vicinity.)
- *32nd to 31st Street:* service road and shopping mall on the east side of Second Avenue and 4- to 6-story tenement buildings on the west side of Second Avenue. (As described above, the service road is intended for use as part of the construction staging area in this vicinity.)
- *31st to 30th Street:* service road and shopping mall on the east side of Second Avenue and a mix of 4- to 8-story residential buildings on the west side of Second Avenue.

Given the density of the land uses in the blocks surrounding the possible TBM launch site, spoils removal area, and the proposed 34th Street Station, extending the on-road construction activities to affect a longer area of Second Avenue but avoid the park would clearly affect more residents than if the park were used for some of the most concentrated construction activities. Siting more disruptive activities in the roadway instead of in the park would adversely affect more residents because construction would be closer to their windows. In addition, although it is anticipated that

many impacts would be successfully mitigated by enclosing some construction activities that must occur in the 34th Street vicinity, such enclosures would be least visually intrusive if they could be constructed on large parcels removed from sensitive uses, where contractors could retain some flexibility to perform needed construction activities. Since these enclosures would require a considerable amount of area, they may be infeasible unless a large, off-road area such as St. Vartan Park and the service road for the Kips Bay shopping center can be used.

If the park cannot be used, the area of construction disturbances would be increased. This avoidance approach would increase the extent of community disruption, and would not eliminate the unmitigated significant traffic impacts. For these reasons, this alternative is not considered prudent.

St. Vartan Park Avoidance Alternative 2: Use Vacant or Underutilized Sites Near St. Vartan Park

Another alternative to use of St. Vartan Park would be to locate an off-site staging area elsewhere in the vicinity of the construction activities, but not on Second Avenue. As noted above, however, the area between 40th and 30th Streets near Second Avenue is densely developed with occupied buildings or tunnel entrance structures, so identifying vacant or underutilized properties was difficult. Sites large enough to serve as a staging site that are fully developed with occupied buildings were not considered prudent alternatives to long-term but temporary use of St. Vartan Park, because of the substantial impact to the community that would result from their acquisition, displacement of the existing uses, and demolition of the structures.

During development of the Second Avenue Subway, several potential staging areas/shaft sites were identified near 34th Street, along both Second Avenue and the waterfront. Given that East Midtown is densely developed, the search was limited to the few underutilized or vacant parcels in the area. Alternative sites along Second Avenue were rejected for a variety of reasons, including inadequate size and difficulty of access. All sites along the waterfront were eliminated because of the uncertainty of acquiring the waterfront properties, and the difficulty and increased disruptions involved in building a spur tunnel or conveyance system to connect with Second Avenue (see additional discussion under Avoidance Alternative 3, below). These disadvantages were weighed against the benefits that would result from identifying a site on Second Avenue that would provide direct access to the Queens-Midtown Tunnel, thereby minimizing the amount of truck traffic that would be needed on local streets. Nevertheless, using any of these sites would avoid construction impacts on St. Vartan Park. However, as either the park or street would still be needed for staging activities related to station construction, these avoidance alternatives would still require either elimination of the station at this location or avoidance via Avoidance Alternative 1 described above.

The off-street staging/shaft sites considered are listed below. As in the 96th Street area, any off-street staging area would have to measure 40,000 square feet to be used productively.

- *One-story liquor store on the southeast corner of Second Avenue and 41st Street.* This site is too small (3,000 square feet) to be used effectively on its own for spoils removal or construction staging. As a result, it is not feasible. Using it would also add to the already congested traffic conditions north of 36th Street. Second Avenue is normally heavily congested between 42nd Street and the Queens-Midtown Tunnel access points at 36th Street during the AM and PM commuter peak periods, and spoils removal via trucks from this site to the Queens-Midtown Tunnel would exacerbate traffic impacts. For these reasons, use of this site is not considered feasible and prudent.

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- *One-story McDonald's located at the northwest corner of Second Avenue and 39th Street.* The site is too small (3,200 square feet) to be used effectively for construction staging or spoils removal unless the adjacent residential buildings were demolished, resulting in displacement of both residents and retail uses. Consequently, it is not feasible. It would also adversely affect traffic conditions by requiring trucks removing tunnel spoils to cross to and from the west side of Second Avenue to the east side of the roadway within a span of three blocks through congested conditions on the Queens-Midtown Tunnel approach. For these reasons, use of the site is considered not feasible or prudent.
- *Vacant lot located adjacent to the depressed Queens-Midtown Tunnel access road on 37th Street, east of Second Avenue.* The site is too small for spoils removal unless the adjacent 5-story residential buildings are demolished, resulting in residential displacement. As a result, it is not feasible. Also, constructing a spoils removal site above the retaining wall supporting the Queens-Midtown Tunnel access roads would be difficult. Finally, the site's location on the approach road for the 36th Street entrance to the tunnel would make accessing the site difficult, and would exacerbate traffic impacts in this congested area. For these reasons, use of the site is considered not feasible or prudent.
- *Two-story commercial building at the northeast corner of Second Avenue and 33rd Street.* The site is too small (5,100 square feet) for its intended construction use, and is consequently not feasible. In addition to necessitate the demolition and displacement of a private medical center and another business, use of the site for spoils removal would require use of a bonus plaza, a publicly accessible open space for the surrounding area. Finally, construction activities would occur adjacent to numerous residential apartments that would be adversely affected by construction noise. For these reasons, use of the site is considered not feasible or prudent.
- *A portion of the right-of-way and service road/parking lanes on the east side of Second Avenue between 32nd and 31st Streets.* This site is proposed in conjunction with St. Vartan Park as workspace areas during construction of the Second Avenue Subway. However, it is not large enough to serve as the sole spoils removal/staging area in this location.
- *Pinkerton Garden, a private open space at the northeast corner of Second Avenue and 29th Street.* At only approximately 4,900 square feet, this site is also too small to be used effectively on its own for spoils removal; hence, it is not feasible. In addition, this garden is open to the public; accordingly, its use would result in a loss of open space. However, as the site is not a publicly owned park, its use would meet Section 4(f) requirements as an avoidance alternative. Nevertheless, the garden is immediately adjacent to the Churchill School, a sensitive land use serving special needs populations; it is likely that the school and its students would be disrupted by the adjacent construction activity, particularly from the anticipated intensive construction noise. For these reasons, use of the site is considered not feasible or prudent.
- *Con Edison's Waterside Steam Generation Plant.* The site extends from 38th Street to 40th Street between First Avenue and the FDR Drive and is large enough (194,721 square feet) so that not all of it would have to be occupied with construction activities. It is fully developed with power generating and related facilities. Con Edison is under a Consent Order with the New York State Department of Environmental Conservation to clean up the buildings and the land beneath. Moreover, Con Edison has proposed selling the property and three other parcels to a private developer, subject to approval by the Public Service Commission. It is

possible that Con Edison may not have vacated the site before construction of the Second Avenue Subway begins, because of the time required for its remediation and the potential for delays in transferring power generation capacity to another plant before Waterside's demolition—i.e., decommissioning and demolition must wait for the repowering of the East River Plant at 14th Street to be completed and operational. This site is also too far (at least 1,000 feet) to pump slurry to the subway construction area, and the truck routes between the two areas cross all access routes to the Queens-Midtown Tunnel, and are routinely congested. The construction of a connecting spur tunnel for spoils removal is not considered prudent, as discussed under Alternative 3 below. In summary, because the schedule of site availability is unclear and the distant location would require expansion of the impact area into very congested locations, use of the site would not be prudent; because of the difficulty in getting from this site to the subway work area, use of this site is not feasible.

- *685 First Avenue.* This site is a 32,365-square-foot parcel located between 39th and 40th Streets on the west side of First Avenue. It is part of a larger, 80,677-square-foot lot that includes a Con Edison substation and an open area used by Con Edison in servicing the substation. Like the Waterside plant site, this property is far from the Second Avenue work area, would require substantial trucking activity through a neighborhood already beset by traffic congestion, and is not likely to be available, since it is one of the sites that Con Edison intends to sell for development. Its use would not be prudent or feasible.
- *Parking area along the East River used by Con Edison, located from approximately 38th to 39th Streets.* This site is even farther from the work area than the steam generation plant described above, and its use would require constructing a long (approximately 1,200-foot) spur tunnel from Second Avenue to the East River for removal of spoils. This construction would require some cut-and-cover, thus spreading project construction impacts into a larger and congested area. Moreover, the irregularly shaped site (approximately 22,250 square feet) is not large enough to accommodate both spoils removal and a slurry plant, so yet another site would have to be identified. It would also be necessary to find an alternative location for the Con Edison trucks currently stored here. Construction of the spur tunnel would interfere with a steam tunnel currently being constructed by Con Edison, resulting in potentially dangerous operating conditions. Taken all together, the construction required to get to this site from the Second Avenue work area and the limitations of the site that require additional space elsewhere for the slurry plant render this alternative not prudent and not feasible.
- *Former Con Edison fuel pier on the East River between 35th and 36th Streets.* Although it is slightly closer to the Second Avenue work area, this 4,200-square-foot site has the same problems as the Con Edison parking area described above—it is too far and too small (i.e., requires construction of a spur tunnel for spoils removal and cannot also accommodate a slurry plant.) Moreover, the site is very constrained; service road runs alongside the FDR Drive west of the pier, a ferry terminal is located immediately to its south and a fully constructed portion of the East River Esplanade is located immediately to its north. If a spur tunnel could be constructed connecting Second Avenue with the waterfront at this location, its construction and operation would occur directly adjacent to a park and an active ferry pier. Landside operations would require use of either the park or the ferry terminal area. In addition, building the spur tunnel would cause major impacts itself from required cut-and-cover construction near an FDR Drive exit and entrance, major residential uses and New York University Medical Center. Thus, this site was not considered prudent.

- *Parking area located along the East River between 34th and 35th Streets.* As above, constructing a spur tunnel from Second Avenue to this site would require some cut-and-cover construction, and it would be overly disruptive both to traffic and the sensitive hospital use. Using the site would necessitate displacing the cars, requiring the identification of replacement parking. The biggest problem with using the site, however, is its proximity to New York University Hospital (a use that is especially sensitive to noise impacts). To build the spur tunnel, it would be necessary to tunnel beneath or alongside this hospital for a distance of approximately 640 feet. In addition, 34th Street (a major thoroughfare) provides access to the FDR Drive, and the New York Waterway ferry is also located here. Because of its potential for traffic disruption and its potential for noise, dust, access limitations, and other impacts on an important noise-sensitive community facility and on the ferry operations, this site is not considered prudent or feasible.
- *616 First Avenue, site of the former Con Edison Kips Bay Steam Generating Station.* This full-block site between 35th and 36th Streets, First Avenue and the FDR Drive, has an area of approximately 68,770 square feet. 616 First Avenue was, until 1978, the site of the Kips Bay Steam Generating Station. In the early 1990s, the above-ground structures associated with the plant were demolished. Until recently, the site contained a facility that stored fuel oil for the Waterside steam generating plants. It is currently undergoing environmental remediation. Although this site is large enough to accommodate requirements for off-site construction areas, it is not available, since it one of the four sites that Con Edison proposes to sell for development, but even if it were available, it is still not suitable. First, it lies between two large residential buildings and would subject both to the noise, dust, and disruption of construction for a number of years. It is more than 700 feet from the work area, and thus too far for feasible use as a slurry plant; it is also inconvenient as a laydown area, since this location would require a substantial number of truck trips to haul equipment to and from the work site. Again, these trips would be added to a congested area containing a number of sensitive uses and thus widening the area of project impacts. Although this site is relatively convenient to the Queens-Midtown Tunnel, the trucks would be routed past the eastern portion of St. Vartan Park, which contains a number of passive sitting areas, some actually outside the fence on the sidewalk facing the street, and children's play area. This site is therefore considered not prudent or feasible as an avoidance alternative.

St. Vartan Park Avoidance Alternative 3: Build a Spur Tunnel Eastward in the Vicinity of 34th Street to a Barge Site in the East River

This avoidance alternative would require construction of a 2,100- to 2,300-foot-long tunnel beneath approximately 35th Street to a newly constructed or a reconstructed barge operation somewhere between 39th and 34th Streets along the East River. In some instances, cut-and-cover construction might be required. The required tunnel distance is quite long (approximately 10 city north-south blocks), and its construction would take approximately 24 months, delaying excavation of the Second Avenue Subway tunnels for an equivalent time. Depending on the location on the river, the barge operations might require use of a park or ferry terminal. This possibility and the extraordinary effort of constructing a spur of nearly a half-mile and delaying the excavation for the subway, along with the impacts of this construction on the length of one of several East Midtown streets, on New York University Hospital, and on the river, and the potential for increased community disruption from cut-and-cover construction render this alternative not feasible or prudent.

St. Vartan Park Avoidance Alternative 4: Eliminate the 34th Street Staging Area/Shaft Site

Another avoidance alternative for St. Vartan Park is to avoid installing a staging area or shaft site near 34th Street altogether. Several combinations of staging areas and shaft sites could be used to remove spoils from the southern segment with varying impacts on construction time. Two different avoidance alternatives were evaluated to eliminate a shaft site/staging area from St. Vartan Park. Both would use the Houston Street shaft site for launching the TBM; one would remove spoils at Houston Street and the other would remove spoils in Lower Manhattan. These alternatives are as follows.

- *Use the Houston Street Shaft Site to Launch the TBM and Remove Spoils.* This option would be to insert a TBM at Houston Street to bore a tunnel north to 62nd Street (the southernmost part of Phase 1). All spoils from this tunnel would be removed at the Houston Street Station or shaft site. Adverse environmental impacts from construction at Houston Street would increase in intensity and duration. In addition, at Houston Street, the nearest river crossing for trucks carrying away spoils would be the Williamsburg Bridge, which is approximately two-thirds of a mile away. Eliminating the spoils removal option at St. Vartan Park in favor of the Houston Street option would significantly increase the amount of trucking that would occur at and from Houston Street, thereby increasing the number of trucks moving within this largely residential neighborhood. In contrast, if spoils were to be removed in the 34th Street vicinity, impacts related to trucks traversing residential streets would be minimized because of this site's immediate proximity to the Queens-Midtown Tunnel. Moreover, this avoidance alternative would ameliorate impacts in East Midtown, while placing the impact burden disproportionately onto the East Village and the Lower East Side neighborhoods.

Because this alternative would merely transfer impacts from one location to another and raise issues of environmental justice, it is not considered to be prudent or feasible.

- *Use the Houston Street Shaft Site to Launch the TBM and Lower Manhattan to Remove the Spoils.* Another form of this avoidance option would first use cut-and-cover construction and a TBM to build a tunnel from Lower Manhattan to Houston Street. Spoils from the TBM would be removed in Lower Manhattan. Once this tunnel was complete, a TBM would be launched at Houston Street moving north to 62nd Street. Spoils from this operation would travel the length of both tunnels for removal in Lower Manhattan, where they would be removed by truck or barge. The entire tunnel south of Houston Street would have to be completed, before station work between Houston and 62nd Streets could begin. No stations could be built or subway service operated south of 62nd Street until all spoils removal was complete from 62nd Street to Lower Manhattan. Although this option would avoid intensive construction disruption at Houston Street, it would concentrate all spoils removal activities south of 62nd Street in Lower Manhattan, intensifying impacts in that neighborhood.

This alternative would compress construction into three phases, combining the activities described in Chapter 3 for Phases 3 and 4 into one phase. The development of the proposed phasing plan accounted for geological changes that occur south of approximately 4th Street. These differences require the use of different types of TBMs to bore the tunnels north and south of this location. (Rock TBMs would likely be used to excavate all the tunnels between approximately 92nd Street to about 4th Street, since bedrock is relatively close to the surface in this area. For the section of the route between the Houston Street Station and the Hanover Square Tail Tracks in Lower Manhattan, a TBM designed to bore through soil would be required for most of this tunnel length.) Combining the hard and soft ground tunneling operations into one construction phase would not be efficient. In addition, compression of

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these two phases into one phase would lengthen the construction period—delaying the operation of the phase between 62nd and Houston Streets (Phase 3) until completion of the entire section south of Houston Street. Accordingly, the approximately 148,000 additional riders per day that are projected to be served by Phase 3 would not benefit from Second Avenue Subway service until the entire line is completed.

Because of its potential to delay the beginning of new subway service between 63rd and Houston Streets, and combine into one construction phase construction activities that would require the use of different tunneling equipment, as well as its concentration of impacts in one area, this alternative is not considered to be prudent or feasible.

St. Vartan Park Avoidance Alternative 5: Eliminate the 34th Street Station

If the 34th Street Station were eliminated, a substantial amount of construction on Second Avenue in the area would not have to take place. A shaft site to install the TBM and remove spoils could be established within Second Avenue, but it would still be necessary to site a slurry plant and build slurry walls within the vicinity. Therefore, even though the area of disturbance would be smaller, it would still be necessary to use the park to avoid operating this disruptive operation in closer proximity to residential uses. In addition, the trucking of spoils through the Queens-Midtown Tunnel would still be required. Most important, 34th Street is a major crosstown street, serving very dense residential, institutional and commercial development. Without the station, the project would not meet its goals for East Midtown. This alternative, although potentially feasible, would not be prudent.

MEASURES TO MINIMIZE HARM: ST. VARTAN PARK

In addition to the physical separation that would be provided by the existing Tunnel Access Road to the west, a sound and safety barrier that is attractive would be erected to separate the 2.2-acre section to the east that would not be used by the Second Avenue Subway project from the 0.6-acre section to the west that would be used to support construction activities. An opening may need to be provided to allow trucks to enter and exit the site. It is expected that two rows of trees on the northern edge of the park and one row of trees on the eastern edge (approximately 14 trees in total) would be preserved. Any trees that can be preserved would be protected using barriers and other appropriate measures. The total area of the affected portion of the park, including surrounding sidewalks, would be approximately 25,000 square feet. If all 26 trees were removed from this area to support construction activities, this would result in a slightly larger staging area. In either case, an attractive sound barrier would also be provided near the southern curb to screen sound at the residential buildings to the south.

As described above for Playground 96, appropriate security measures would be provided near the construction area, including safety lighting and fencing, and all construction activity would be contained within the designated staging area and would not be allowed in the adjacent portion of St. Vartan Park. Other protective measures (such as screens to limit light and best management practices to control dust) would also be implemented.

As part of the mitigation process, if necessary, NYCT would also coordinate with any other projects being undertaken nearby. (These include the United Nations proposal described in Chapter 7 and New York City Department of Environmental Protection water tunnel project described in Chapter 19, “Indirect and Cumulative Effects” that would also occur in the area. However, as described in Chapter 19, it is expected that these other projects will be completed prior to commencement of Phase 3 of Second Avenue Subway construction in the area). The

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goal of such coordination would be to seek ways to mitigate public open space impacts in an effort to develop a coordinated strategy. After construction, the park would be fully restored and reopened for public use, including the replacement of any destroyed or removed trees in consultation with NYCDPR and in accordance with the Basal Area Replacement Formula.

As at all parks where construction would occur, extensive efforts would be made to ensure that the park trees that are not removed are protected from damage during construction. Protection plans would entail delineating all trees, marking the trees in the field, and building a barricade around each tree that requires protection. Any trees removed during construction or destroyed by adjacent construction would be replaced after construction in accordance with a tree replacement plan developed in coordination with NYCDPR. NYCT would also work with NYCDPR to develop a park restoration plan for this resource following construction.

Provision of Substitute Open Space in Accordance with Section 6(f)

Because some LWCFA funds were used to finance certain improvements to St. Vartan Park in the past, the requirements of Section 6(f) must be satisfied before any portion of the park is used for Second Avenue Subway construction activities. Specifically, the temporary loss of this park space must be mitigated by either the creation of replacement park space or purchase of wetlands. MTA has committed that it will fully comply with Section 6(f) requirements. If replacing these uses is not possible, wetlands would be purchased to augment these efforts in accordance with Section 6(f).

MTA has committed to taking all steps required to comply with Section 6(f), and the New York State Office of Parks, Recreation and Historic Preservation and NYCDPR have agreed to the steps to be taken (see Attachment C to this Final Section 4(f) Evaluation and Section 6(f) Evaluation, which contains a letter agreement among MTA, OPRHP, and NYCDPR). In consultation with OPRHP and NYCDPR, MTA will identify and pursue opportunities for providing replacement facilities; develop programming of recreational facilities for such replacement property; and provide improvements to existing recreational resources as necessary to mitigate the impacts of the temporary conversion of St. Vartan Park, taking into account the substitute resources provided by the replacement properties. At this time, MTA has identified two properties that could satisfy the Section 6(f) requirements for replacement space. These two properties are immediately to the north of St. Vartan Park, adjacent to the entrance to the Queens-Midtown Tunnel. The southern parcel fronts on First Avenue and contains mature trees; the northern parcel fronts on East 37th Street. Using these two parcels would potentially allow replacement of the current recreational uses in the portion of St. Vartan Park to be affected by subway construction, while retaining the mature trees on the southern parcel. In addition, other candidate locations for replacement facilities will be explored prior to the use of St. Vartan Park. In the event that no better options can be identified for replacing the park space at St. Vartan Park, MTA will provide the entire southern parcel and those areas of the northern parcel that will not interfere with operations of the Queens-Midtown Tunnel. See Attachment C for additional information on Section 6(f) compliance.

Consistency of the Proposed Conversion and Substitution with the SCORP

The proposed use of a portion of St. Vartan Park and its substitution with provision of a temporary substitution park area and facilities described immediately above has been reviewed for consistency with the “Final Statewide Comprehensive Outdoor Recreation Plan and Final Environmental Impact Statement for New York State 2003.” This document was prepared by OPRHP and identifies a number of programs and initiatives that address recreation and open

space needs. Numerous programs and agency initiatives are identified with varying open space goals ranging from preserving and protecting wetlands and other water bodies, to creating trails pursuant to the New York State Heritage Program, to hosting a number of sports and athletic competitions. Ongoing commitments to the over 300,000 acres of recreation and open space managed by OPRHP, and the over 3 million acres managed by the New York State Department of Environmental Conservation (NYSDEC) are also noted as open space priorities. The SCORP notes that the greatest level of need for recreation facilities within the state exists within its metropolitan areas, especially in the New York City area. Rehabilitation of existing facilities and the acquisition of new facilities is required to satisfy this demand.

The proposed use of a portion of St. Vartan Park would be consistent with the SCORP in that it is MTA's intention that recreational resources providing services to the affected area's urban population be maintained throughout the duration of the project in this location. MTA is committed to constructing replacement park facilities of equal value in close proximity to the existing facilities that would be affected or acquiring wetlands resources at a reasonably equivalent location. These facilities would be opened and/or acquired prior to any construction within the existing park. Subsequent to project construction activities within the affected portion of St. Vartan Park, the affected portion of the park would be totally reconstructed and would be replaced with recreational facilities as agreed to by NYCDPR and MTA. The replacement facilities at St. Vartan Park would be designed and sited in consultation with NYCDPR in order to maximize their usefulness and attractiveness.

Planning processes have been developed by both the OPRHP and NYSDEC to respond to public needs and involve public input throughout the planning and implementation process. The SCORP is intended to provide an overall framework for making decisions regarding the protection, management, and development of the State's natural, cultural, and recreation resources.

The SCORP does not provide any specific commentary on St. Vartan Park. Instead, among other things, it identifies goals and actions designed to meet a range of objectives. Among the goals articulated in the SCORP are to improve delivery of recreation services to particular subpopulations of New York, including urban residents, to provide additional programs and resources for them, and to preserve and protect wetland areas.

SECTION 4(f) AND SECTION 6(f) CONCLUSIONS: ST. VARTAN PARK

Significant adverse impacts from noise and other construction disturbances would be worse (either more intense or distributed over a larger area) if this Section 4(f) property were not used during the construction period. After construction, park facilities would be restored, replaced, or repaired in accordance with agreements reached between the MTA and NYCDPR. With respect to Section 6(f), all practical alternatives to the use of St. Vartan Park's use have been identified, and MTA has committed to: 1) providing a proposed replacement property (either two parcels directly north of St. Vartan Park or other replacement properties identified in the future) that is of equivalent fair market value and of reasonably equivalent usefulness and location as the converted property; and/or 2) substituting wetlands areas at a reasonably equivalent location.

3. SECTION 4(f) EVALUATION FOR SARA D. ROOSEVELT PARK (DIRECT USE)

LOCATION OF SECTION 4(F) PARK RESOURCE: SARA D. ROOSEVELT PARK

The 7.9-acre Sara Delano Roosevelt Park, between Chrystie and Forsyth Streets from Houston to Canal Street, is a prominent feature of the Lower East Side (see Figures 7 to 12). This mapped New York City park is seven blocks long and is divided into three sections: Houston to Delancey Street (3.8 acres), Delancey to Grand Street (1.7 acres), and Grand to Canal Street (2.4 acres).

RESOURCE DESCRIPTION: SARA D. ROOSEVELT PARK

The land that is currently Sara D. Roosevelt Park was acquired in 1929 for the purpose of building low-cost housing and was later set aside as a playground. The park was reconstructed in the 1960s after portions were disturbed for construction of adjacent subway lines. Altogether, the park provides a mix of active and recreational spaces in nearly 8 acres. Between Houston and Stanton Streets, the park contains benches, basketball courts, and a closed comfort station. The block between Stanton and Rivington Streets contains additional basketball courts as well as children's play equipment and swings. The block south to Delancey Street contains a community garden, seniors center, operational comfort station, and a fenced area where the lawn is being restored. The portion between Delancey and Grand Streets contains a bird garden, a depressed active space, a building used by NYCDPR's Central Communications unit, and a new artificial grass playing field. The section between Grand and Canal Streets contains handball and basketball courts, a playground, and a landscaped open space. Two rows of mature London plane trees line each side of the park. In all, some 376 mature trees stand in the park. The park is well used by residents from the surrounding neighborhood among others. Observations made in spring 2002 found moderate to high use on weekdays (140 people across all three sections) and high to very high use on weekends (475 people across all three sections).

DESCRIPTION OF SECOND AVENUE SUBWAY USE AND IMPACTS: SARA D. ROOSEVELT PARK

As described in Chapter 2 of the FEIS, the Deep Chrystie Option was selected as the preferred option for the alignment south of Houston Street. Construction disturbance from the Deep Chrystie Option at Sara D. Roosevelt Park would result in the removal of many of the mature trees currently planted along the park's western perimeter and interior areas. This tree removal is needed to permit construction of the alignment and Grand Street Station, and, as described below, is the only alternative to demolishing a significant number of adjacent residential and commercial buildings. The removal of the trees and the required closure of large portions of the park during construction would result in a significant adverse impact. Tunneling would also be required beneath the park to the north of the proposed Grand Street Station and under the western border of the park to the south of the station. The tunneling itself would not adversely affect the park. Moreover, tunneling beneath parkland is not subject to Section 4(f) if it would not cause disruption that would harm the purposes for which the park was established.

Construction within the park is expected to last 4 to 5 years. However, park construction activities are expected to be staged to limit the amount of park that would be under construction at any one time. With the Deep Chrystie Option, above-ground construction would be needed on the western side of the park between Delancey and Hester Streets and would extend approximately 60 feet into the interior of the park. Construction would be required at this

location because of the need to rebuild the existing Grand Street Station serving the B and D Lines. The eastern wall of this existing station abuts the line of trees at the park's western edge. In order to expand the platform to accommodate the substantial increase in the number of passengers transferring to and from the new Second Avenue Subway service, the platform would need to be extended eastward, beneath the trees. Approximately 75 trees along Chrystie and Grand Streets would need to be removed as a result. As the construction areas would have to be used for both excavation and staging activities, the entire width of the park could be closed within the area being constructed during any particular period, but the remaining portions of Sara D. Roosevelt Park would be open to both the north and south. Construction would also extend to the eastern border of the park between Rivington and Delancey Streets within an area occupied by a community garden. As described in Chapter 3, in this location, construction would be needed to remove underground obstructions that would interfere with the TBM. Construction in this area would be scheduled to occur during the fall, winter, and early spring when the garden is less heavily used. However, construction would require the removal of up to 13 trees in the garden area.

With the Deep Chrystie Option, park construction activities would be staged so that only a portion of the construction zone would be used at any one time. As the construction areas would be used for excavation and staging activities, the entire width of the park could be closed within each active construction zone, but the remaining portions of Sara D. Roosevelt Park would be open to both the north and south. Upon completion of each construction phase, the adjacent portion of the park would be reopened, and another section closed until the entire alignment is completed in this area.

With the Deep Chrystie Option, it is possible that entrances to the new Grand Street Station could be located adjacent to (but not within) Sara D. Roosevelt Park on Grand Street between Chrystie and Forsyth Streets. These entrances have not yet been designed, but could interfere with the existing park entrance. NYCT would work with NYCDPR to ensure that the design of the entrance is compatible with the existing park. Additionally, it may be necessary to locate emergency egresses in this vicinity, potentially within the park. (The vents, identified in the Draft Section 4(f) Evaluation as potentially being located in this park are no longer being considered for placement within the open space.) As described in Chapter 2 and Chapter 8, "Displacement and Relocation," emergency egresses and other ancillary facilities must be sited within fairly precise areas to meet fire and safety code requirements; if emergency egress facilities must be located within the park, this would also constitute a permanent loss of parkland. The exact location of such facilities has yet to be determined; therefore, this Section 4(f) Evaluation for Sara D. Roosevelt Park does not analyze these potential project elements.¹

AVOIDANCE ALTERNATIVES: SARA D. ROOSEVELT PARK

Four alternatives were considered to avoid using Sara D. Roosevelt Park. All were alternative alignments. At the start of project planning, several alignments that would completely avoid the park or use a smaller portion of the park were considered. All of these would have resulted in greater significant adverse impacts to the surrounding neighborhood.

¹ An additional Section 4(f) analysis would have to be conducted in the future if an emergency entrance within the park were to be formally proposed.

Sara D. Roosevelt Park Avoidance Alternative 1: Use the Shallow Chrystie Option

As discussed in Chapter 2 and Appendix B of the FEIS, an option originally considered for the alignment south of Houston Street was the Shallow Chrystie Option. The Shallow Chrystie Option was eliminated before the publication of the SDEIS because, among other reasons, it would have created more severe impacts to Section 4(f) resources. For example, the Shallow Chrystie Option would have had more severe impacts to Sara D. Roosevelt Park, including the removal of approximately 40 more mature trees than with the Deep Chrystie Option. In addition, as a result of information gained through the analyses conducted for the SDEIS, it was also determined that the Shallow Chrystie Option would have: 1) resulted in more displacement of residential and commercial uses, 2) required more underpinning of adjacent properties, 3) generated more dust and noise because cut-and-cover construction would have been required along a longer segment of the proposed alignment, and 4) potentially affected possible burial remains at five former cemeteries. Therefore, this alternative is not prudent and feasible.

Sara D. Roosevelt Park Avoidance Alternative 2: Use the Forsyth Street Option

Another alignment, known as the Forsyth Street Option, was also identified and assessed throughout the SDEIS. Under this avoidance alternative, the Grand Street Station would be constructed under Forsyth Street, requiring a shift in the alignment eastward. To provide a safe transfer between this new station and the existing Grand Street Station, the existing station would have needed to be reconstructed, requiring some surface disruption of the park.

With the Forsyth Street Option, the impacts to Sara D. Roosevelt Park would have been similar to those with the selected Deep Chrystie Option. Tunneling beneath the park would have been required, necessitating cut-and-cover construction to remove the same underground obstructions that would interfere with the TBM used for the Deep Chrystie Option. As with the Deep Chrystie Option, construction would have required the removal of up to 13 trees in the garden area. Other aspects of cut-and-cover construction with this option would have focused on the area where both the existing and proposed Grand Street Stations would be located, generally between Delancey and Hester Streets. Thus, with the Forsyth Street Option, above-ground construction would have been needed on both the eastern and western sides of the park between Delancey and Hester Streets, extending into the park for 30 to 40 feet. Over 120 trees could have been removed along the edges of the park, with additional trees removed in places where construction extends into the interior of the park. As with the Deep Chrystie Option, the entire width of the park could have been closed within that area, but the remaining portions of Sara D. Roosevelt Park would have been open. The Forsyth Street Option would have also required tunneling beneath the park, but like the Deep Chrystie Option, this would not have adversely affected the park. To avoid use of the park entirely, it would have been necessary to not build the connection. This would have dramatically reduced passenger convenience, would have deterred riders from making use of this transfer, and thereby would not have accomplished a key component of the Second Avenue Subway project.

Since completion of the SDEIS, and upon completion of further engineering studies in the area south of Houston Street, a decision was also made to eliminate the Forsyth Street Option from further consideration and instead to select a refined version of the Deep Chrystie Option for the alignment in this area. The Forsyth Street Option is no longer being considered because it would have created street-level construction disturbance in a wider area than the Deep Chrystie Option. The Forsyth Street Option would have also attracted fewer transfers between the new Second Avenue Line and the existing **B** **D** service at the Grand Street Station. Most importantly for this

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Section 4(f) Evaluation, the Forsyth Street Option would not have avoided or minimized use of Sara D. Roosevelt Park. Therefore, this alternative while feasible, is not prudent.

Sara D. Roosevelt Park Avoidance Alternative 3: Move Alignment One Block West to the Bowery

As planning continued, an alternative alignment along the Bowery was developed and considered. The Bowery Option would have located the subway beneath the Bowery, one block west of Chrystie and Forsyth Streets. The alignment would have run beneath six two- to nine-story private properties, requiring underpinning and potential acquisition of these structures. Residents and businesses would have been displaced during the construction period. In addition, the new Grand Street Station on the Second Avenue Line would have been located on the Bowery, parallel to the existing Grand Street Station on Chrystie Street that serves the **B D** lines. By shifting the alignment to the Bowery, the transfer times required for passengers to move from the Second Avenue Subway to the existing **B D** line would have increased, from 1.0 minute with the Deep Chrystie Option, or 2.5 minutes with the Forsyth Street Option, to 3.0 minutes with the Bowery Option. Increasing the transfer distance would have resulted in fewer passengers using this connection. The reduced transfer volumes would have been a significant drawback to the Bowery alternative and would not have achieved a fundamental project purpose—improving accessibility to the Lower East Side. Finally, the Bowery alignment would have also bypassed the existing tunnel structure at Confucius Plaza. While this alternative would have minimized impacts to Sara D. Roosevelt Park, construction in the park would have still been required near the Grand Street Station in order to widen the existing platforms to accommodate the additional passengers transferring from the station on Bowery Street.

The extensive transfer distance at Grand Street would have greatly decreased the transfer service that NYCT could offer in this location and thus would not have fulfilled one of the project's objectives to relieve crowding on the Lexington Avenue Line. In addition, it would not have eliminated impacts to the park, but simply reduced them. Finally, it would also have required construction through an area where burials from the 18th and 19th century Negro Burying Ground/African Protestant Episcopal, St. Philip's Cemetery (located between Stanton, Rivington, and Chrystie Streets and the Bowery) may be present. Therefore, this alternative is considered feasible but not prudent.

Sara D. Roosevelt Park Avoidance Alternative 4: Use the Nassau Street Alignment Option

As described in Appendix B of the FEIS, "Development of Alternatives," an alternative to the Second Avenue Subway's proposed alignment was considered and rejected for the area south of Houston Street because it would not have met the project's overall objectives as well as the Water Street alignment assessed in the FEIS. This alignment option, referred to as the Nassau Street Alignment Option, would have required connecting the Second Avenue Subway to the existing Nassau Street Line (**J M Z** service) at Kenmare Street, immediately south of Houston Street. With some limited new tunnel construction, reconfiguration of tracks, lengthening of platforms in existing stations by approximately 120 feet to a length of 615 feet, increasing the passenger circulation capacity at some of the existing stations, and reducing **J M Z** service south of Chambers Street, the existing Nassau Street Line could provide some capacity to accommodate the additional trains that Second Avenue Subway service would require.

Four Nassau Street options were developed during preliminary planning. To avoid use of, and impacts to, Sara D. Roosevelt Park, all those options would have created increased property impacts, especially in the area where the Second Avenue and Nassau Street Lines would have

been linked. Depending on the option, between five and 15 buildings would have been demolished, and the residents and businesses within them would have been displaced. To avoid such demolition, NYCT conducted further study of the potential Nassau Street alignment connections, and eventually selected a Nassau alignment, which is similar to the Forsyth Street Option for the proposed Water Street alignment discussed above, for comparison against the Second Avenue Subway's Water Street Option. This alignment would have avoided surface disruption of Sara D. Roosevelt Park, but as described in Appendix B of the FEIS, the Nassau Street alignment was eventually rejected—primarily because it would not have met the goals and objectives of the Second Avenue Subway project. Nevertheless, the Nassau Street alignment was analyzed as an avoidance alternative for Section 4(f) purposes.

Aside from the displacement impacts described above, the Nassau Street Option would have required extensive rehabilitative work to the existing tracks, tunnels, and support systems, and extensive reconstruction of four existing subway stations; this work would have been very difficult, disruptive, and expensive, as it would have required avoiding damaging existing and particularly historic buildings, as well as the existing Nassau Street Line. With the Nassau Street Option, the existing stations would not have been renovated to the same standards as the new Second Avenue Subway stations. For example, while they would have been ADA-compliant for altered stations, they would not have met accessibility standards for new construction as would the new Water Street Stations. In order to renovate the stations on the Nassau Street Line to this higher standard, significant additional surface and underground construction would have been required, resulting in additional impacts and disturbance of another park, Foley Square, which was recently renovated by the NYCDPR. Physical improvements at the Chambers Street Station around and beneath Foley Square could have also impacted the sensitive, subterranean portions of this historic station. Furthermore, this construction zone would have been within the boundaries of the African Burial Ground and The Commons Historic District, and could have permanently impacted potential below-grade resources in this area. If any such disturbance were to occur, the Nassau Street Option would no longer be considered an avoidance alternative for Section 4(f) purposes.

With the Nassau Street Option, potential physical impacts to historic resources from ground-borne construction vibration, changes in ground or groundwater conditions, or damage by heavy machinery are a significant consideration, as is potential residential and business displacement in the areas of Kenmare, Delancey, and Centre Streets. Construction required for the Nassau Street Option would have been adjacent to a greater number of historic and visual resources that significantly contribute to the character of Lower Manhattan. The four buildings at the intersection of Wall and Nassau Streets—the New York Stock Exchange, the Bankers Trust Building, the J.P. Morgan & Company Building, and Federal Hall National Memorial—are significant historic and visual resources that would have been visually and, potentially, structurally affected by the reconstruction of the Broad Street Station with the Nassau Street Option. Federal Hall National Memorial in particular would have required special protection, as it has recently been identified by the National Parks Conservation Association as one of “America’s 10 Most Endangered National Parks.” If any visual or historic impacts were to occur on any of the historic buildings along the alignment, the Nassau Street Option would again no longer be considered an avoidance alternative for Section 4(f) purposes.

Overall, the Nassau Street Alignment Option is not considered to be a prudent or feasible alternative to the proposed Water Street alignment options because of the number of adverse impacts that it would have created and because it would not have met the goals and objectives of the project as well as the Water Street alignment. In addition, the likelihood that the use of

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historic properties and an archaeological resource protected under Section 4(f) would occur is substantial if any additional construction were to be required at the existing stations. If so, the alignment would not be an acceptable avoidance alternative.

MEASURES TO MINIMIZE HARM: SARA D. ROOSEVELT PARK

The removal of the trees and the required closure of large portions of the park during construction would result in a significant adverse impact. The remaining trees near the construction activities would be protected using appropriate measures; however, some settlement could still occur. Replacement trees would be planted following construction in accordance with the tree replacement plan developed in consultation with NYCDPR, and the Basal Area Replacement Formula would be used. Extensive efforts would again be made to ensure that the remaining park trees are protected from damage during construction. Protection plans would entail delineating all trees, marking the trees in the field, and building a barricade around each tree that requires protection. Any trees removed during construction or destroyed by adjacent construction would be replanted after construction in accordance with a tree replacement plan developed in coordination with NYCDPR.

With the Deep Chrystie Option, park construction activities would be staged so that no more than five blocks would be under construction at any one time. In addition, as noted above, construction occurring within and immediately adjacent to the community garden would be scheduled to occur during the fall, winter, or early spring when the garden is less heavily used.

Other measures would be taken to minimize adverse effects from construction on the portions of the park still open to the public during the construction period. Temporary, attractive construction barriers to ensure public safety and to muffle noise would be erected north, south and west of the construction areas. NYCT will work with NYCDPR to design appropriate security measures, such as lighting, to ensure safety surrounding any noise and construction fences. In addition, protective construction measures would be employed: screens would be used to limit light emitted from work sites, best management practices would be implemented to control dust, and specially quieted construction equipment would be used to minimize noise to the extent practicable. All construction equipment, including construction vehicles, would be contained within the designated staging area to avoid affecting the remaining portions of Sara D. Roosevelt Park still open to public access to the degree practicable.

Because of the long-term visual and neighborhood character impacts that would result from the loss of many mature trees in the various construction options, NYCT would work with NYCDPR to identify the mitigation plan that is most compatible with the neighborhood's parks and open spaces. Upon completion of the various construction phases, the portions of the park disturbed by surface construction would be reconstructed and reopened in consultation with NYCDPR. In addition, where practicable, NYCT would redesign and reconstruct facilities on the portions of the park that remain open to the public, in consultation with the community, in order to provide some replacement facilities on site. As engineering continues, a phasing plan for Sara D. Roosevelt Park construction work will be developed. This process will involve meeting with NYCDPR and Community Board 3 regarding the design of replacement spaces within the park. Although the SDEIS indicated that such design plans would be included in the FEIS, this information cannot yet be provided, as project designs in this area are not yet sufficiently advanced. However, meetings with NYCDPR and Community Board 3 are underway.

CONCLUSION: SARA D. ROOSEVELT PARK

Even though significant adverse impacts to visual and neighborhood character would result from loss of many mature trees, more severe significant adverse impacts from displacement, noise and other construction disturbances would occur if this Section 4(f) property were not used during the construction period. After construction, park facilities would be restored, replaced, or repaired in accordance with agreements between the MTA and NYCDPR.

4. SECTION 4(f) EVALUATION FOR KIMLAU SQUARE (DIRECT USE)

LOCATION OF SECTION 4(f) PARK RESOURCE: KIMLAU SQUARE

This 0.1-acre square is located in the busy intersection at the heart of Chatham Square in Chinatown's commercial district (see Figures 13 and 14). Kimlau Square is a mapped New York City park.

RESOURCE DESCRIPTION: KIMLAU SQUARE

Kimlau Square was named after a Chinese-American bomber pilot killed in action in World War II. The paved area has five trees, benches, and a commemorative arch for Americans of Chinese ancestry who lost their lives in defense of the United States. The park also contains a statue of Lin Ze Xu, a pioneer of the war against drugs. The arch, 18 feet 9 inches high, was restored in 1999. It and the statue occupy approximately 10 percent of the park area; the remainder is used as a sitting area and as a passageway to nearby stores. Observations in spring 2002 found 10 weekday park users and 18 park users on the weekend. For its size, this park is moderately well used.

DESCRIPTION OF SECOND AVENUE SUBWAY USE AND IMPACTS: KIMLAU SQUARE

To construct the Chatham Square Station, cut-and-cover construction would be required on Kimlau Square. Park users would be displaced during the construction period. The five trees in the park would be removed and the arch and statue would be carefully removed and reinstalled after construction. To protect the arch and statue during removal and reinstallation, a structural analysis would be undertaken in coordination with the New York City Department of Transportation (NYCDOT), which has jurisdiction over the park's monuments, prior to commencing any construction activity.

In addition, an ancillary facility may be needed within Kimlau Square. The need for that use has not yet been determined; therefore, this Section 4(f) Evaluation for Kimlau Square does not analyze permanent structures in the park. (No station entrance would be located in the park; this possibility was considered previously in the project assessed in the Draft Section 4(f) Evaluation.)

AVOIDANCE ALTERNATIVES: KIMLAU SQUARE

Use of Kimlau Square could be avoided by eliminating the station at this location. This would increase the distance between stations, lengthening the time it would take for passengers to access the Second Avenue Subway within that area. Shifting the station far enough south to avoid the park would not permit a feasible geometric configuration of the tracks in this area and would also require construction under private property with impacts to those structures and the residents located within them. This avoidance approach would decrease the effectiveness of the

new subway service, would reduce access in Chinatown, a densely populated neighborhood, and would not fulfill the project's objective to offer new transit access to underserved areas. It is not considered feasible or prudent.

MEASURES TO MINIMIZE HARM: KIMLAU SQUARE

During construction, all of the features in this 0.1-acre park—five trees, benches, a commemorative arch, and a statue—would need to be removed. To protect the arch and statue during removal and reinstallation, a structural analysis would be completed and the work would be coordinated with NYCDOT prior to commencing any construction activity. All pieces of the arch and statue would be catalogued and stored appropriately until the park could be rebuilt following construction. At such time, a preservation architect would be retained to ensure the features' safe and appropriate reinstallation. Following construction, trees would also be replanted in accordance with the Basal Replacement Formula in consultation with NYCDPR. Should any ancillary facilities be located within the square, NYCT would work with NYCDPR to design the facility so that it is consistent with the park's character.

CONCLUSION: KIMLAU SQUARE

Because avoiding use of this Section 4(f) resource would not provide sufficient Second Avenue Subway service to the Chinatown community, this option does not meet project goals and is therefore not feasible or prudent. After construction, park facilities would be restored, replaced, or repaired in accordance with agreements reached between the MTA, NYCDOT, and NYCDPR.

**E. CATEGORY B (PARKS THAT WOULD BE USED
CONSTRUCTIVELY DURING CONSTRUCTION)**

OVERVIEW OF CONSTRUCTIVE USE OF PARKS

The Second Avenue Subway would affect an 8.5-mile-long corridor extending for the length of Manhattan. Along this route, many parks are located on or close to the alignment. Consequently, construction activities associated with the project have the potential to occur in close proximity to many different parks. Some of the project's construction activities would be very disruptive, and would substantially impair use of any parks nearby. As mentioned earlier, at some parks, this activity would not result in an inability to use the parks; those parks would not be substantially impaired. However, at parks with passive spaces where quiet is an important element of the park experience, and those with play spaces for young children, substantial impairment is more likely. At five parks along the alignment, disruptive construction activities would result in such impairment, causing a constructive use of those parks. Though the use of these parks would be temporary and would not physically affect the parks in any way, in most cases, the use would also be for a relatively long term (generally up to 3 years).

The parks that would be substantially impaired by construction consist primarily of paved areas located in highly trafficked, densely developed areas in Manhattan. None of these parks are large, secluded enclaves where natural features predominate.

Construction of the Second Avenue Subway would substantially impair the use of five parks because of their proximity to construction activities. One alternative to avoid the constructive

use of these parks would be the No Build Alternative, in which no new subway is constructed. This alternative would not meet the goals and objectives of the project.

Another alternative to avoid the constructive use of those five parks would be to select an alternative alignment for the project. However, as noted earlier in the discussion of Category A, alternative alignments would not meet the goals and objectives for the project. The Second Avenue Subway alignment was identified as the preferred alternative after an extensive process of developing and evaluating alternatives. Further, if an alternative alignment were selected for the project, given the length of its route, that alignment would be very likely to require the use of parks as well, although these would be different parks than those affected by the project with a Second Avenue alignment. Consequently, an alternative alignment would neither meet the goals and objectives of the project nor avoid Section 4(f) resources.

As described in the park-specific Section 4(f) Evaluations that follow, the only other alternative to constructive use of the five parks close to disruptive construction activities would be to move those activities farther from the parks. However, in each case, the constraints of surrounding buildings, the geological conditions, and the need for stations at critical locations to meet the project's purpose and need mean that this alternative is not feasible or prudent.

5. SECTION 4(f) EVALUATION FOR ST. JAMES SQUARE (CONSTRUCTIVE USE)

LOCATION OF SECTION 4(f) PARK RESOURCE: ST. JAMES SQUARE

The very small, 0.05-acre St. James Square is located on St. James Place between Oliver and James Streets (see Figure 15). St. James Square is a mapped New York City park.

RESOURCE DESCRIPTION: ST. JAMES SQUARE

The park was created in 1961 and is adjacent to the Shearith Israel Graveyard, a burial ground of the oldest Jewish congregation in North America. It contains paths and landscaping behind a wrought iron fence and a bench in front of the fence, facing the street. The park was renovated in 2000 with a repaved sidewalk.

DESCRIPTION OF SECOND AVENUE SUBWAY USE AND IMPACTS: ST. JAMES SQUARE

Construction of the Chatham Square Station would involve cut-and-cover activities on St. James Place in front of St. James Square. Construction activities would last for 3 years. It is unlikely that the single bench in front of the fence would be used during that time.

AVOIDANCE ALTERNATIVES: ST. JAMES SQUARE

There is no feasible and prudent avoidance alternative for the use of St. James Square. The choices are to tunnel beneath private property in this very old section of Manhattan, which would likely require underpinning of buildings, or to take a longer and more circuitous route around Chatham Green houses. Both would add substantially to the amount of construction disturbance, and would also decrease operational productivity. The more circuitous route would require a semicircular route around the triangle-shaped block, which would be virtually impossible to achieve except with a substandard curve and extremely low speed limits on the trains. Given the small impact associated with the constructive use of this park and the availability of benches at the nearby Alfred E. Smith Houses, specific mitigation would not be required in this instance.

MEASURES TO MINIMIZE HARM: ST. JAMES SQUARE

This very small (0.05-acre) open space contains one bench, paths, landscaping, and a decorative iron fence. Fencing would be used to separate the construction activities from this seating area.

CONCLUSION: ST. JAMES SQUARE

Construction impacts and duration would be worsened substantially if the alignment were rerouted to avoid traveling beneath this small park.

6. AND 7. SECTION 4(f) EVALUATION FOR PEARL STREET PLAYGROUND AND FULTON STREET PLAZA (CONSTRUCTIVE USE)

LOCATION OF SECTION 4(f) PARK RESOURCES: PEARL STREET PLAYGROUND AND FULTON STREET PLAZA

Pearl Street Playground is a 0.2-acre park located in a traffic triangle at Fulton, Pearl, and Water Streets (see Figure 16). Fulton Street Plaza is a 0.2-acre plaza located across from Pearl Street Playground on the eastern side of Water Street (see Figure 17). Both of these open spaces are located on city property; Pearl Street Playground is in the process of being mapped as New York City parkland, while Fulton Street Plaza is not designated as parkland.

RESOURCE DESCRIPTION: PEARL STREET PLAYGROUND AND FULTON STREET PLAZA

Pearl Street Playground offers brightly colored children's play equipment and benches surrounded by a tall fence. Outside the fence, a landscaped area with benches is located at the eastern edge of the park and a seat wall located at the northern border of the park. NYCDPR is currently in the process of mapping this playground as a city park. Fulton Street Plaza is located on city-owned property. While not mapped as parkland, the plaza provides passive open space in the form of benches and trees. A memorial to the Titanic is located at the southern end of the plaza.

DESCRIPTION OF SECOND AVENUE SUBWAY USE AND IMPACTS: PEARL STREET PLAYGROUND AND FULTON STREET PLAZA

During construction of the Seaport Station near Fulton Street, cut-and-cover construction adjacent to the playground and plaza would be required for up to 4 to 5 years. Shielding would be provided to mitigate the effects of adjacent construction on the play area within Pearl Street Playground and Fulton Street Plaza. Nevertheless, it is likely that users would be discouraged from using these recreation areas, resulting in a constructive use at both the park and plaza. The landscaped area and seating outside the Pearl Street Playground's fence could probably not be fully buffered and would also be rendered effectively unusable for the 4 to 5 years that the station was under construction.

Identifying potential locations for entrances and ancillary facilities in the Seaport Station vicinity is challenging because of the presence of the Brooklyn Bridge (a National Historic Landmark), the southbound **A** tunnels, the Seaport Historic District along the entire east side of the station area, and several parks and other public open spaces. Consequently, as described in Chapter 8, it may be necessary to provide a subway entrance in Pearl Street Playground. However, because the required analyses to determine final entrance locations have not yet been completed, this

Section 4(f) Evaluation for Fulton Street Plaza does not analyze permanent structures in this park.

Similarly, at Fulton Street Plaza, it may be necessary to provide a subway entrance to serve the South Street Seaport, an important business center and local land use. During construction of an entrance here, the entire plaza would be closed to public use (a period of 4 to 5 years). In addition, construction would require the removal of approximately four trees in the plaza. The Titanic memorial would not be affected by construction here. However, because the need for an entrance at this location has also not been determined, this Section 4(f) Evaluation for Fulton Street Plaza does not analyze permanent structures in that park either.

AVOIDANCE ALTERNATIVE: PEARL STREET PLAYGROUND AND FULTON STREET PLAZA

Shifting the alignment somewhat east or west to avoid this area would either require underpinning and tunneling beneath large buildings, or taking a longer, circuitous route around existing buildings. As with St. James Triangle, this would result in a substandard track curve and extremely low speed limits on trains. The only other avoidance alternative available in this area is to eliminate or move the Seaport Station. This would eliminate the enhanced transit access from Southbridge Towers and the South Street Seaport, two extremely important land uses in this area. Thus, this avoidance approach would not fulfill a major objective of the project. Nevertheless, if the station were not constructed, it would be possible to tunnel through this area using a TBM, which would not require surface construction in this area.

MEASURES TO MINIMIZE HARM: PEARL STREET PLAYGROUND AND FULTON STREET PLAZA

To limit visual impacts from cut-and-cover construction on Pearl Street Playground and Fulton Street Plaza construction activities would be separated from the park by construction fencing. In addition, screens would be used to limit light emitted from work sites, best management practices would be implemented to control dust, and specially quieted construction equipment would be used to further minimize construction impacts. Some equipment or operations could also be placed below grade, in shielded locations to further minimize visual and noise impacts on parks from construction activities.

To allow Pearl Street Playground to continue to be used during adjacent construction activities, the entire park would be screened using brightly colored barriers appropriate for use at a children's facility. These barriers would be designed to minimize effects from construction noise, and would be attractively designed. Following construction, the landscaping and seating area outside of the Pearl Street Playground fence and within Fulton Street Plaza fence would be restored in consultation with NYCDPR and relevant city agencies.

Nevertheless, many parents may choose not to bring their children to this park during the construction period because of safety and other concerns. Consequently, NYCT will work with NYCDPR to identify a temporary replacement site. In addition, NYCT will ensure that safe crossings to and from the playground will be maintained.

If Pearl Street Playground were to be used for a station entrance, approximately six trees within the playground would need to be removed. These would be replaced according to NYCDPR's Basal Replacement Formula. If any subway facilities were to be placed above-ground in this park, NYCT would compensate for the loss of parkland by enlarging the park following

construction to ensure no net loss of park area. NYCT would also work with NYCDPR and the surrounding community to design the entrance so that it is compatible with the surrounding park. For example, the entrance could be incorporated into an active recreational facility or even designed to appear as a playful sculptural element.

Similarly, should an entrance be located within Fulton Street Plaza, NYCT would work with the relevant city agencies to design the facility, so as to be consistent with the park's character.

CONCLUSION: PEARL STREET PLAYGROUND AND FULTON STREET PLAZA

Construction impacts and duration would be worsened substantially if the alignment were rerouted to avoid traveling beneath these parks. Alternatively, because avoiding use of this Section 4(f) resource would not provide sufficient Second Avenue Subway service to the South Street Seaport community, this option does not meet project goals and is therefore not feasible or prudent. Moreover, after construction, both public open spaces would be restored, replaced, or repaired in accordance with agreements reached between the MTA and relevant city agencies.

8 AND 9. SECTION 4(f) EVALUATION FOR VIETNAM VETERANS PLAZA AND COENTIES SLIP (CONSTRUCTIVE USE)

LOCATION OF SECTION 4(f) PARK RESOURCES: VIETNAM VETERANS PLAZA AND COENTIES SLIP

Vietnam Veterans Plaza is located south of the office tower at 55 Water Street. Half of the 1.4-acre plaza is city-owned, mapped parkland and the remainder is private property (see Figure 18). The 0.06-acre Coenties Slip is located on the west side of Water Street across from Vietnam Veterans Plaza. Coenties Slip is located on city property but is not mapped as parkland.

RESOURCE DESCRIPTION: VIETNAM VETERANS PLAZA AND COENTIES SLIP

A park at the site of Vietnam Veterans Plaza dates back to 1884 when Coenties Slip was filled, as the Manhattan shoreline expanded eastward. The original park, Jeanette Park, was redesigned by Robert Moses as an active recreational space. The park was enlarged in 1967 and four years later was redesigned with an amphitheater fountain. In the early 1980s, the plaza was dedicated to Vietnam Veterans, and it was restored once again in 2001 with improvements to the memorial, a ceremonial entrance, new plantings, and black granite fountain that forms a curtain of water. The "Walk of Honor," a series of granite pylons, lists the names of the New Yorkers who died as a result of their service in the war. The plaza is the city's sole monument to veterans of the Vietnam conflict.

Coenties Slip is currently a paved section of roadway with seating and planters that is separated from traffic. It is not currently mapped as parkland. However, in the future, it is expected to become a permanent park as a result of a federal grant for improvements to Lower Manhattan.

DESCRIPTION OF SECOND AVENUE SUBWAY USE AND IMPACTS: VIETNAM VETERANS PLAZA AND COENTIES SLIP

Cut-and-cover construction associated with the Hanover Square Station would occur adjacent to Vietnam Veterans Plaza and Coenties Slip. The increased noise and dirt from the adjacent construction could deter many park users from utilizing these passive open spaces, resulting in a constructive use of the parks (see Figure 19).

In addition, at Coenties Slip, an entrance may be needed to serve the large office buildings located on the west side of Water Street at the Hanover Square Station. The need for that use has not yet been determined, so this Section 4(f) Evaluation for Coenties Slip does not analyze permanent structures in the park.

AVOIDANCE ALTERNATIVES: VIETNAM VETERANS PLAZA AND COENTIES SLIP

In order to avoid a constructive use of the park from adjacent cut-and-cover construction the Hanover Square Station would have to be eliminated. Should this occur, the Second Avenue Subway would terminate at the Seaport Station. The elimination of the station near Wall Street, would not serve the project goal of providing a full-length Subway, because the terminus would be north of the major commercial center at Wall Street, the destination for many Second Avenue Subway riders. This avoidance alternative is thus not considered feasible or prudent.

MEASURES TO MINIMIZE HARM: VIETNAM VETERANS PLAZA AND COENTIES SLIP

Construction activities adjacent to Vietnam Veterans Plaza and Coenties Slip would be separated from the parks by construction fencing, in order to minimize visual impacts. In addition, screens will be used to limit light emitted from work sites, best management practices will be implemented to control dust, and specially quieted construction equipment would be used to further minimize construction impacts. Some equipment or operations could also be placed below grade, in shielded locations to further minimize visual and noise impacts on parks from construction activities.

In order to maintain the contemplative nature of Vietnam Veterans Plaza, additional screening could be used to separate the memorial within the plaza from the construction activities on Water Street. This screening would be designed to be compatible with the park design while minimizing effects from construction noise.

CONCLUSION: VIETNAM VETERANS PLAZA AND COENTIES SLIP

Because avoiding use of these Section 4(f) resources would not provide sufficient Second Avenue Subway service to the Lower Manhattan community, this option does not meet project goals and is therefore not prudent or feasible.

F. CATEGORY C (HISTORIC RESOURCES THAT WOULD BE USED DIRECTLY DURING CONSTRUCTION)

OVERVIEW OF SECTION 4(f) EVALUATION FOR HISTORIC RESOURCES

As discussed in Chapter 9, “Historic Resources,” 87 known historic resources were identified in the project’s area of potential effect (APE). Each of these resources was assessed to identify the potential effects of the project’s construction or operations on the resources. In all but two cases, the resources would either not be directly affected by construction or could be protected to avoid an impact or constructive use. Therefore, only one of the historic resources—the Metro-North Railroad Harlem-125th Street Station and associated Comfort Station is considered to be a Section 4(f) resource. The connection between the Second Avenue Subway and the Metro-North Railroad station would require alteration to the railroad station and Comfort Station, which together are eligible for listing on the State and National Registers. Therefore, a Section 4(f) Evaluation has been prepared for this resource. As a result of continued engineering since

publication of the SDEIS, the width of the potential storage tracks north of 125th Street has been substantially narrowed to within the Second Avenue streetbed, and the curve connecting Second Avenue to 125th Street would be constructed primarily by TBM. As a result, the project's construction activities would no longer directly affect the Triborough Bridge exit and entrance ramps, as was described in the Draft Section 4(f) Evaluation.

Future planning work may also determine the need for permanent subway structures in or adjacent to historic resources. Such planning could potentially add other historic resources to the list of Section 4(f) resources that could be affected by the Second Avenue Subway. For example, a subway entrance will be required at the intersection of 42nd Street and Second Avenue given passenger demand at this major thoroughfare. Because of existing land use patterns in this area, the location with the highest projected Second Avenue Subway ridership demand is likely to be located at the northwest corner of this intersection. The passageway leading to an entrance at this corner could extend beneath the Daily News Building property, a National Historic Landmark. Similarly, any entrance on the east side of the Seaport Station would be located within the South Street Seaport Historic District, which abuts the east side of Water Street alongside the entire length of the proposed station site. The South Street Seaport Historic District is a New York City Landmark and is listed on the State and National Registers of Historic Places. An entrance at this location would be desirable as a means of providing access to the District and shopping area. An additional Section 4(f) analysis would have to be conducted in the future if an entrance were to be formally proposed at either of these locations. Other Section 4(f) analyses would be conducted in the future pursuant to all applicable regulations if any other Section 4(f) historic resources would be used for entrances or other subway elements.

10. SECTION 4(f) EVALUATION FOR METRO-NORTH RAILROAD HARLEM-125TH STREET STATION AND COMFORT STATION (DIRECT USE)

RESOURCE DESCRIPTION: METRO-NORTH RAILROAD HARLEM-125TH STREET STATION AND COMFORT STATION

The railroad station was built between 1896 and 1897 and designed by Morgan O'Brien, the New York Central and Hudson River Railroad's principal architect. The MTA restored the viaduct, passenger platform, and the passenger station north of 125th Street in 2000. The platform was also renovated, with new platform shelters designed to reflect the original. Historic sources indicate that the present station is built above the former Harlem Station of the New York Central and Hudson River Railroad, built in 1873-74, and that the present station's basement level contains some of the 1873-74 station's original platforms and other architectural elements. In addition, an associated Classical Revival structure built in 1896-97 and known as the "125th Street Comfort Station" located on the south side of 125th Street opposite the passenger station has also been determined to be a historical component of the station complex. The one-story brick structure features classical elements, including pedimented door surrounds and a dentil cornice. The Metro-North Railroad Harlem-125th Street Station and Comfort Station have been determined eligible for listing on the State and National Registers of Historic Places.

DESCRIPTION OF SECOND AVENUE SUBWAY USE AND IMPACTS: METRO-NORTH RAILROAD HARLEM-125TH STREET STATION AND COMFORT STATION

Potential cut-and-cover and below-grade construction would be needed to build the new Second Avenue Subway station at 125th Street and create a passenger connection between the new

subway and the Metro-North station. The connection could necessitate the removal of potentially significant architectural or historical features from the subterranean storage area at the station, which was part of the earlier 125th Street Station located on the site. Construction of the station might also require the removal and or alteration of any retaining walls of the 1874 railroad cut on Park Avenue. Construction could also involve alterations to the above-ground portions of the Metro-North Harlem-125th Street Station and the Comfort Station. Therefore, a design for the Second Avenue Subway station would be developed in consultation with the SHPO to minimize or avoid adverse effects on the station to the extent practicable.

As mandated by Section 106 of the NHPA of 1966, the project is involved in ongoing consultation with the SHPO at the New York State Office of Parks, Recreation and Historic Preservation with respect to potential impacts on historic resources. As part of this consultation, measures will be developed to avoid or minimize to the extent practicable any significant adverse impacts to this and other historic resources, both in construction and permanent impacts from operation of the project. The framework for this ongoing consultation and development of these mitigation measures is set forth in a Programmatic Agreement, executed by the SHPO, the Federal Transit Administration, and NYCT. The Programmatic Agreement is included as part of the FEIS.

The Programmatic Agreement also describes the consultation procedures to be followed to develop the project's construction protection plan. The construction protection plan would be developed in consultation with the SHPO and FTA and implemented, as set forth by the Programmatic Agreement, before commencement of any excavation or construction, and would also be memorialized in the project's CEPP. The construction protection plan would consist of an overall plan of protection and avoidance of damage to historic resources, as well as specific protection measures to be developed specifically for the Harlem-125th Street Station and Comfort Station. This plan would be based on resource type as well as potential construction impacts (e.g., underpinning, damage from heavy machinery, and ground-borne vibration). Once developed, that plan would be implemented to minimize the potential for adverse impacts to the Metro-North Harlem-125th Street Station and Comfort Station during construction. Design plans for the 125th Street Station on the Second Avenue Subway could incorporate the historic features, such as the columns, of the Metro-North station. In addition, where the retaining wall of the 1874 cut is encountered during construction and would require removal, it would be documented via photographs. It is also possible that development of the new Second Avenue Subway could make some of the now inaccessible resources visible to the public, which would be an enhancement to this station complex.

AVOIDANCE ALTERNATIVES: METRO-NORTH RAILROAD HARLEM-125TH STREET STATION AND COMFORT STATION

The first alternative to avoid adverse impacts to the Metro-North Harlem-125th Street Station would be the No Build Alternative, in which no new subway is built. This alternative would not meet the goals and objectives of the project. A related alternative would be not to build a 125th Street Station for the project, which also would not meet the goals and objectives of the project by failing to provide new service on a main thoroughfare in East Harlem and to provide a major transfer to the Lexington Avenue Line. In addition to those two No Build Alternatives, three alternatives to avoid alterations to the historic Metro-North station at Park Avenue were examined, as follows:

- Shifting the project alignment to the east to attempt to avoid the Metro-North station;

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- Shifting the subway mezzanine to the south; and
- Use of a previously proposed alignment, different from that proposed for the Second Avenue Subway, which was reconsidered for its ability to avoid an impact on the Metro-North station, as described below.

Metro-North Harlem-125th Street Station Avoidance Alternative 1: Shift the Project Alignment to the East

In an attempt to avoid the Metro-North station, the first alternative would involve shifting the alignment further to the east, so that the station could terminate east of the Metro-North Station. However, it was determined that this would not be feasible because of track alignment constraints resulting from both the 500-foot alignment curve and the need to provide crossovers prior to the 125th Street Station. Hence, this alignment is neither prudent nor feasible because it would still terminate beneath the Metro-North station.

Metro-North Harlem-125th Street Station Avoidance Alternative 2: Shift the Subway Mezzanine to the South

With this alternative, the 125th Street Station's mezzanine would be constructed beneath 124th Street. Doing so would avoid the Metro-North station, but passengers would have to exit the subway across the street from the Metro-North station. This would lengthen connection times, making the service less beneficial for passengers. Hence, this alternative, while feasible, would not be prudent.

Metro-North Harlem-125th Street Station Avoidance Alternative 3: Reconfigure the 125th Street Station and Related Alignment as Proposed Previously

In addition to these alternatives, another alternative was considered—the 125th Street Station configuration with the S-curve alignment presented in the space 1999 Manhattan East Side Alternatives (MESA) Major Investments Study (MIS)/Draft Environmental Impact Statement (DEIS). During the MESA MIS/DEIS analysis process, several versions of the S-curve alignment were developed. With the S-curve alternative, the 125th Street Station would be located parallel to the existing 125th Street Station on the Lexington Avenue Line, just east of Lexington Avenue, and it would have no physical effect on the Metro-North station. From 125th Street, the alignment would curve south and east under private property in an S-curve that would reach Second Avenue at 115th Street. No new station would be provided at 116th Street with this alternative; as described in Appendix B of the FEIS, “Development of Alternatives,” the absence of a 116th Street Station was a major point of concern for elected officials and community residents when the project's DEIS was released. To address this concern, NYCT prepared numerous alternative S-curve alignments, but determined that only the currently proposed alignment would allow for a station to be located at 116th Street and Second Avenue.

Another problem with the S-curve alignment is that this avoidance alternative also would also have greater effects on private property than the Second Avenue Subway alternative, because the proposed alignment would be predominantly beneath private property between 129th and 115th Streets (as opposed to beneath the right-of-way, as is mostly the case with the proposed alignment). Consequently, this alternative would require dozens of easements to underpin or otherwise structurally support the foundations of existing buildings, and it would not allow for any internal passenger connection to Metro-North Railroad. These problems and the loss of the 116th Street Station render this alternative not prudent.

MEASURES TO MINIMIZE HARM: METRO-NORTH RAILROAD HARLEM 125TH STREET STATION AND COMFORT STATION

A design would be developed in consultation with the SHPO to minimize or avoid to the extent practicable adverse effects on the Metro-North Railroad Harlem-125th Street Station. A construction environmental protection program to minimize the effects of construction on the historic features of the station would be implemented so that construction does not result in any structural or architectural impacts to these features. Other mitigation measures include retention of some of the historic features and their incorporation into the design plans.

CONCLUSION: METRO-NORTH RAILROAD HARLEM 125TH STREET STATION AND COMFORT STATION

Either because the environmental impacts to the surrounding community would be worse or because passengers would be substantially inconvenienced, none of the avoidance alternatives would meet the project's goals and objectives.

G. CATEGORY D (POTENTIAL ARCHAEOLOGICAL RESOURCES THAT WOULD BE USED DIRECTLY DURING CONSTRUCTION)

Section 4(f) regulations apply to archaeological sites (including those discovered during construction) if their value derives from their preservation in place. If present, most of the potential archaeological resources identified for the project and described in Chapter 10, "Archaeological Resources," would be important for the information they might yield; these resources are not protected in Section 4(f) regulations. The only Section 4(f) archaeological resources that could be potentially affected by the Second Avenue Subway are four former cemeteries shown in Figure 2 (see also Chapter 10). In all cases, the potential Section 4(f) issue is the possibility that subway construction may encounter graves that were located outside known former cemetery boundaries or were accidentally left behind when burials were moved to allow street construction, and now lie beneath the street. Therefore, the following Section 4(f) Evaluation considers these resources as a group.

LOCATION OF SECTION 4(f) RESOURCES: ARCHAEOLOGICAL RESOURCES 11, 12, 13, AND 14

South of 2nd Street, the area is sensitive for potential burials because graveyards once existed in this area. Although records indicate that marked graves from these cemeteries were moved when the cemeteries were closed (before the existing roads or parks were constructed across the area), it is possible that unmarked interments or burials were missed during the moving process; if so, they would still be present in their original locations. At other cemeteries, it is possible that burials may have extended outside of their established boundaries, into areas that are now sidewalks.

The four former cemeteries of concern that could be affected by the Deep Chrystie Option are all located in the southern portion of the alignment, as follows:

- The 19th century Methodist Episcopal Church, with a cemetery on the west side of Second Avenue between 2nd and 1st Streets. Although the boundaries of this cemetery are known, the practice of interring burials outside cemetery boundaries, usually when the capacity of the cemetery in question had been reached, has been documented in other locations and may be the case here. It is estimated that human remains could lie beneath the west Second

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Avenue sidewalk and western 25 feet of Second Avenue from the southwest corner of Second Avenue and 1st Street to a point midway between 1st and 2nd Streets to a depth of 13 feet.

- The burial grounds of the First Baptist Church, circa 1815-1851, within the block bounded by Second and First Avenues, Houston and 1st Streets (Block 442, Lot 6), where a vent plant for the Houston Street Station may be built. However, as described in Chapter 8, the final locations of this and all other ancillary facilities for the Second Avenue Subway have not yet been determined so it is possible that no construction at all would occur at this site.
- The early 19th century St. Stephen's Episcopal Church had burying vaults beneath the church that were reportedly removed, but may have conducted burials on the church grounds. If so, there is the possibility that burials may be present in Sara D. Roosevelt Park in the area that was formerly the southeast corner of Chrystie Street and Broome Street and the adjacent east Chrystie Street sidewalk and roadbed, when Broome Street was a through-street between Chrystie and Forsyth Streets prior to the construction of Sara D. Roosevelt Park.
- The 17th to 19th century Shearith Israel cemetery, in the area on the northern half of St. James Place between Oliver and James Streets. Most of this cemetery was relocated when St. James Place was constructed through the cemetery, leaving a small piece of the cemetery on the east side of the street, but it is possible that some burials may have been missed beneath the street, because this cemetery also predates the city's 1823 ban on burials beneath sidewalks. The remaining existing cemetery would not be affected.

DESCRIPTION OF SECOND AVENUE SUBWAY USE AND IMPACTS: ARCHAEOLOGICAL RESOURCES 11, 12, 13, AND 14

Construction of the Houston Street Station with the Deep Chrystie Option could adversely affect Methodist Cemetery burials potentially located beneath the west Second Avenue sidewalk and western 25 feet of Second Avenue from the southwest corner of Second Avenue and 1st Street to a point midway between 2nd and 1st Streets at a depth of up to 13 feet below grade. Construction of the potential vent site on the east side of Second Avenue between 1st and Houston Streets (Block 442, Lot 6) could result in potential impacts to burials at the First Baptist Church with the Deep Chrystie Option at an estimated depth of up to 36 feet. Similarly, construction of the Chatham Square Station could affect burials relating to the 17th- to 19th-century Shearith Israel Graveyard in the area on the northern half of St. James Place between Oliver and James Streets at an estimated depth of up to 8 feet below grade.

The Deep Chrystie Option is generally proposed to be built by boring or mining through soils at a depth of approximately 80 to 85 feet below the surface between Houston and Canal Streets (with the exception of the reconstruction of the existing Grand Street Station). Cut-and-cover construction to reconstruct the existing Grand Street Station from Delancey to Hester Streets could adversely affect potential St. Stephen's Church historical burials, which could extend from the street level to an estimated depth of up to 20 feet below the surface at the former southeast corner of Chrystie and Broome Streets.

AVOIDANCE AND MITIGATION: ARCHAEOLOGICAL RESOURCES 11, 12, 13, AND 14

ELIMINATION OF SHALLOW CHRYSTIE OPTION

As described in Chapter 2 and Appendix B of the FEIS, an alignment option referred to as the Shallow Chrystie Option was once considered for the area between Houston and Canal Streets. Because it would have resulted in more significant adverse environmental impacts to this area than the Deep Chrystie Option (including, for example, impacts to additional Section 4(f) resources), this alignment alternative is no longer under consideration by NYCT. Elimination of the Shallow Chrystie Option resulted in a reduction to impacts to Sara D. Roosevelt Park, as described above in the discussion of that park (Section 4(f) Resource 3). In addition, elimination of the Shallow Chrystie Option reduced the project's impacts to areas that may contain Section 4(f) archaeological resources.

Eliminating the Shallow Chrystie Option from consideration avoids that option's potential impacts to four areas identified as potentially sensitive for human remains. The Shallow Chrystie Option would have affected the same four possible burial areas discussed above for the project (Section 4(f) resources 11, 12, 13, and 14), but would also have affected three additional areas:

- An area adjacent to the former location of the African Burying Ground on the west side of Chrystie Street between Stanton and Rivington Streets at an estimated depth of up to 14 feet below the surface. The 18th- and 19th-century Negro Burying Ground/African Protestant Episcopal, St. Philip's Cemetery, was located between Stanton, Rivington, and Chrystie Streets, and the Bowery. As noted above, burials sometimes occurred outside of the designated boundaries of a burial ground.
- The former location of the Presbyterian Cemetery below the sidewalk adjacent to the northern end of Sara D. Roosevelt Park, as well as in the park itself, at an estimated depth of up to 12 feet below the surface. The 19th-century Presbyterian Cemetery was once located in the block that became the northernmost portion of Sara D. Roosevelt Park.
- The former location of the Bethel Baptist Church Cemetery at the northeast corner of Chrystie and Delancey Streets and the adjacent east Chrystie Street sidewalk, as well as in Sara D. Roosevelt Park, at an estimated depth of up to 36 feet.

These possible burial locations would have been adversely affected by cut-and-cover construction activities in those locations. (Cut-and-cover construction would not be necessary in those two locations with the Deep Chrystie Option.)

Because the Shallow Chrystie Option would have adversely affected a greater number of Section 4(f) archaeological resources than the Deep Chrystie Option (seven instead of four), this alternative is no longer under consideration. As mentioned earlier, the Forsyth Street Option, which would have affected the same Section 4(f) archaeological resources as the Deep Chrystie Option, is also no longer being considered because of the greater street-level construction disturbance it would have had created and other impacts, compared with the Deep Chrystie Option. Table 4(f)-1 below provides a summary of how the Deep Chrystie Option would affect Section 4(f) archaeological resources. For comparative purposes, potential impacts from the Shallow Chrystie and Forsyth Street Options are also presented.

Table 4(f)-1
Areas Potentially Sensitive for Human Remains in the APE
and Potential Project Effects

Potential Areas Sensitive for Human Remains			Potential Project Effects?		
Former Cemetery	Potential Location within Second Ave Subway Area of Potential Effect	Potential Depths of Burials	Deep Chrystie Option	Shallow Chrystie Option ¹	Forsyth Street Option ¹
Methodist Cemetery	West sidewalk <u>and western portion of Second Ave</u> between 2nd and 1st Sts	0-13 feet	Yes	Yes	Yes
<u>First Baptist Church</u> ²	<u>Block 442, Lot 6 (potential vent site on east side of Second Avenue between 1st and Houston Sts)</u>	<u>0-36 feet</u>	<u>Yes</u>	<u>Yes</u>	<u>Yes</u>
<u>First Baptist Cemetery</u> ²	<u>Block 442, north side of Houston St (former Lots 53-59)</u>	<u>0-36 feet</u>	<u>No</u> ³	<u>No</u>	<u>No</u>
<u>St. Stephen's Cemetery</u> ²	<u>Block 442, south side of First St (former Lots 12-15)</u>	<u>0-36 feet</u>	<u>No</u>	<u>Yes</u>	<u>No</u>
Presbyterian Cemetery	SDR Park, northern end and adjacent sidewalks	0-12 feet	No ³	Yes	No ⁴
<u>Stanton Street Baptist Church</u> ²	<u>SDR Park, former north side of Stanton Street and adjacent east Chrystie Street sidewalk</u>	<u>0-16 feet</u>	<u>No</u>	<u>No</u>	<u>No</u>
Dutch Mission Cemetery	East sidewalk of Forsyth St between Houston and Stanton Sts	0-12 feet	No	No	No
African Burying Ground	West sidewalk of Chrystie St between Stanton and Rivington Sts	0-14 feet	No	Yes	No
<u>Bethel Baptist Church Cemetery</u>	<u>SDR Park, northeast corner of Chrystie and Delancey Sts and adjacent east Chrystie St sidewalk and roadbed not disturbed by construction of the existing subway beneath Chrystie St</u>	<u>0-36 feet</u>	<u>No</u>	<u>Yes</u>	<u>No</u>
St. Stephen's Church	SDR Park, former southeast corner of Chrystie and Broome Sts <u>and adjacent east Chrystie Street sidewalk and roadbed not disturbed by construction of the existing subway beneath Chrystie Street</u>	0-20 feet	Yes	Yes	Yes
Shearith Israel Graveyard	St. James Place, Oliver to James Sts	0-8 feet	Yes	Yes	Yes
Notes:					
¹ The Shallow Chrystie <u>and Forsyth Street</u> Options are no longer under consideration.					
² <u>Area of sensitivity not presented in the SDEIS.</u>					
³ <u>The removal of soldier piles would be required to construct the Houston Street Station within the Chrystie Street and Second Avenue roadbeds at the intersection with Houston Street. Current plans for this work do not call for construction in any areas sensitive for burials, e.g., the north side of Houston Street within Block 442 (potential First Baptist Cemetery burials) and south Houston Street sidewalk between Chrystie and Forsyth Streets (potential Presbyterian burials).</u>					
⁴ While the Forsyth Street Option would <u>have passed</u> under this area, it would <u>have been</u> far deeper than any potential burials, so there would not <u>have been</u> an impact.					

OTHER MEASURES TO AVOID OR MITIGATE IMPACTS

As project plans continue through ongoing engineering, consultation will continue with the SHPO regarding locations where human burials are possible. These future steps are set forth in a Programmatic Agreement to be executed by the SHPO, FTA, and NYCT. The Programmatic Agreement is included in the main volume of the FEIS. As set forth in the Programmatic Agreement, wherever possible, locations identified as possibly containing burials will be avoided. Where avoidance is not possible, to avoid any insensitive disturbance to human remains, NYCT will follow the procedures identified in the project's Programmatic Agreement concerning testing and excavation.

As set forth in the Programmatic Agreement, measures to be taken in areas where burials are possible include the following:

- The continuing work will consist first of outreach to and consultation with the descendent community prior to any archaeological testing or construction. This outreach is already under way, as discussed in more detail in Chapter 10 (“Archaeological Resources”). Additional research will also be conducted to further define the filling and grading that have occurred at the potential grave-site locations in the areas that would be affected by project construction, as well as to document any additional information on interments, reinterments, and cemetery boundaries.
- If the additional research continues to indicate the potential presence of human remains, mitigative measures will be developed. These may include subsurface archaeological testing to locate these remains. Testing is typically designed to give a representative sampling of the presence or absence of archaeological resources, and sites are usually not tested in their entirety. However, the consultation with SHPO may determine that burial sites should be tested thoroughly to conclusively determine presence or absence of human remains. In the locations of potential burials, the presence of a physical anthropologist/forensic archaeologist would be required during testing, so that any human remains that may be uncovered may be properly identified and treated.
- If the investigation shows that it is likely that the cemeteries or associated gravesites are still present in the right-of-way or construction area, and if human remains would be disturbed by the Second Avenue Subway, all efforts to modify the vertical or horizontal profile of the subway alignment or area of excavation would be undertaken to avoid impacts to these resources. If it proves to be impossible to avoid disturbing human remains, consultation with the SHPO and descendant communities will define appropriate measures to take, including suitable cemeteries for reburial, should human remains be encountered during construction. Construction work in these areas would then be monitored by a physical anthropologist/forensic archaeologist so that burials could be identified during construction and handled appropriately.

In addition to these measures, the project’s Programmatic Agreement sets forth measures to be followed should any unexpected burials be encountered during construction.

H. COORDINATION

The Second Avenue Subway project will involve federal, state, and city agencies. The FTA is the lead agency for the EIS process, and the MTA, in cooperation with NYCT, is responsible for implementation of the project. As described in Chapter 4, permits and approvals may be required from a number of agencies, including the U.S. Coast Guard, the U.S. Army Corps of Engineers, the New York State Department of State, the New York State Department of Environmental Conservation, the New York State Office of General Services, and the New York State Office of Parks, Recreation and Historic Preservation. Legislative approval will be required from the New York State Legislature for alienation of parkland. The New York City Landmarks Preservation Commission is also involved in the project. The effects of the preferred alternative, the Second Avenue Subway, were comprehensively assessed in the project’s SDEIS. As described in Chapter 4, “Public Outreach and Review Process,” the SDEIS and the Section 4(f) Statement were broadly circulated to allow for significant public input. A summary of comments related to Section 4(f) is provided below.

Review of the Section 4(f) Evaluation and Section 6(f) Evaluation includes FTA, MTA, NYCT, the SHPO (for effects on historic and archaeological resources), the DOI, OPRHP (for effects on parkland), and NYCDPR (for effects on parkland). MTA/NYCT have been meeting with NYCDPR, the SHPO and LPC regarding the respective resources under their jurisdictions. At these meetings, NYCT has provided materials on the proposed alignments, and has discussed how the project would affect the various resources. Discussions with NYCDPR have included review of avoidance alternatives, preliminary discussions on mitigation, and discussions on future compliance with Section 6(f) requirements for the one Section 6(f) resource that would be affected by the project—St. Vartan Park. Discussions with OPRHP and DOI have also taken place with respect to this Section 6(f) resource and the issues raised in the Section 4(f) Evaluation. Attachment C to this Section 4(f) Evaluation and Section 6(f) Evaluation contains a letter agreement among MTA, OPRHP, and NYCDPR related to future coordination to be conducted with respect to Section 6(f).

Discussions with SHPO and LPC have focused on how the project could affect both historic and archaeological resources; both agencies have also participated actively in review of preliminary drafts of the Programmatic Agreement governing treatment of these resources. As described in Chapters 9 (“Historic Resources”) and 10 (“Archaeological Resources”), the Programmatic Agreement has since been finalized and has been executed by FTA, MTA, and the SHPO. LPC is also a consulting party to the agreement. The project’s Programmatic Agreement is included at the end of the main volume of this FEIS. It has undergone public review and comment as required by Section 106 through its inclusion in the SDEIS, and will govern the treatment of all historic properties—including any not yet identified—throughout the project’s duration.

As described in Chapter 4, NYCT has initiated an extensive public outreach program, including coordination with local and state agencies and potentially effected parties. As part of this outreach, FTA has initiated contact with Federally- and State-recognized Native American tribes and groups who may attach religious and cultural significance to sites within the APE. In addition, NYCT has identified and begun meeting with descendant groups associated with the areas potentially sensitive for human remains that may be affected by the project.

I. RESPONSE TO SDEIS/DRAFT SECTION 4(f) EVALUATION

In response to the circulation of the Section 4(f) Evaluation in the SDEIS, the DOI issued a July 24, 2003 comment letter to the FTA (see correspondence following Chapter 23, “Response to Comments on the SDEIS,” of this FEIS). In that letter, DOI concurs that there are no prudent and feasible alternatives to the alignments of the subway project as presented in the Draft Section 4(f) Evaluation. DOI also notes with approval the efforts to continue consultations with the SHPO, and to develop the commitments to the preservation of cultural resources values listed or eligible for listing on the National Register of Historic Places. The Programmatic Agreement was also noted for providing stipulations to avoid or mitigate impacts to resource values.

The DOI letter also notes that planning and design of the Second Avenue Subway have been sensitive to and considerate of the temporary short-term loss of numerous public recreational areas that will be temporarily impacted during the project’s lengthy construction period. It states that the measures to minimize harm identified in the Draft Section 4(f) Evaluation, including the commitment to complete restoration of affected resources by the time the project is completed, would seem to satisfy the National Environmental Policy Act (NEPA) and Section 4(f). The DOI letter indicates that the final Section 4(f) documentation should include a discussion of

consideration given to Section 6(f) to show how the project would minimize harm to cultural and recreational resources.

This Final Section 4(f) Evaluation and Section 6(f) Evaluation describes the project's conformance with Section 6(f) and MTA's commitment to comply with Section 6(f). The New York State Office of Parks, Recreation and Historic Preservation and NYCDPR have agreed to the steps to be taken (see the letter agreement in Attachment C to this document).

NYCDPR has also provided written comments on the various other aspects of the Section 4(f) evaluation. Certain members of the public have also raised comments about use of the proposed parks. These comments and responses are summarized in Chapter 23 of this FEIS.

J. CONCLUSION

Based upon the above considerations, there is no feasible and prudent alternative to the direct and constructive use of land from Playground 96 (western portion), St. Vartan Park (western portion), Sara D. Roosevelt Park, Kimlau Square, St. James Square, Pearl Street Playground, Fulton Street Plaza, Vietnam Veterans Plaza, Coenties Slip, Metro-North Harlem-125th Street Station, and possible burials associated with the former Methodist Episcopal Church Cemetery, the former First Baptist Church, the former St. Stephen's Episcopal Church Cemetery, and the former Shearith Israel Cemetery. Furthermore, the proposed action includes all possible planning to minimize harm to Playground 96 (western portion), St. Vartan Park (western portion), Sara D. Roosevelt Park, Kimlau Square, St. James Square, Pearl Street Playground, Fulton Street Plaza, Vietnam Veterans Plaza, Coenties Slip, Metro-North Harlem-125th Street Station and Comfort Station, and possible burials associated with the former Methodist Episcopal Church Cemetery, the former First Baptist Church, the former St. Stephen's Episcopal Church Cemetery, and the former Shearith Israel Cemetery resulting from such use. *

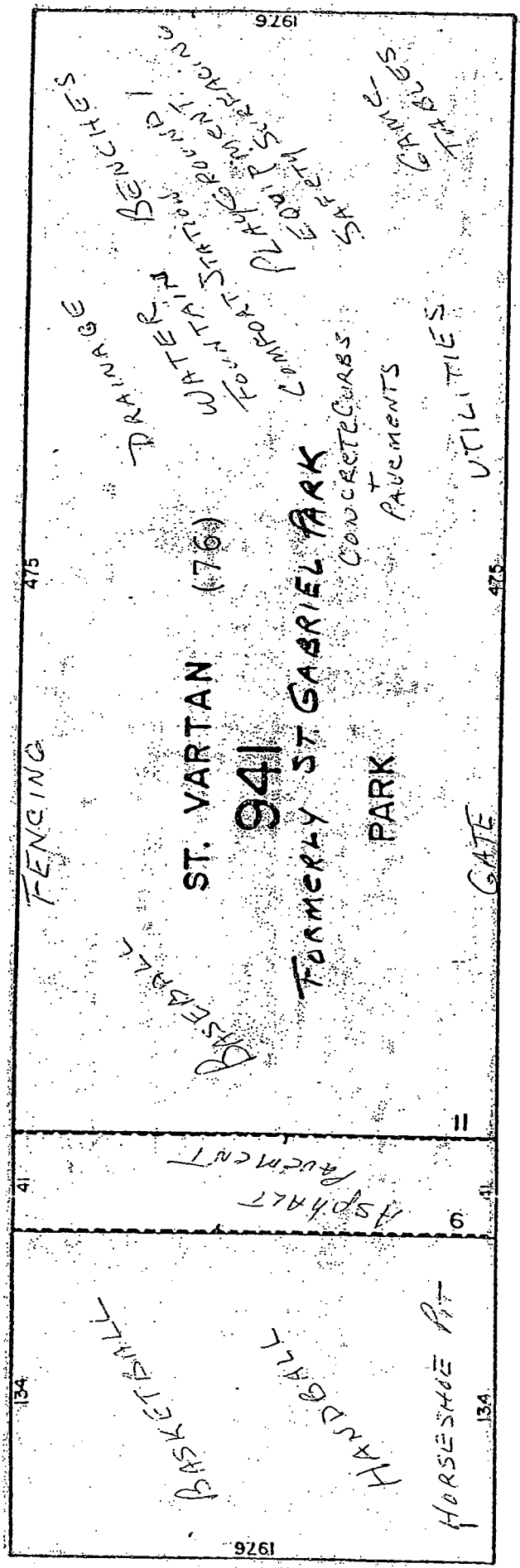
Maps of St. Vartan Park
provided by
New York State Office of Parks, Recreation and Historic Preservation

Attachment A

7-26-79
BLOCK LOT AFFECTED DROP LOT
940 38 41

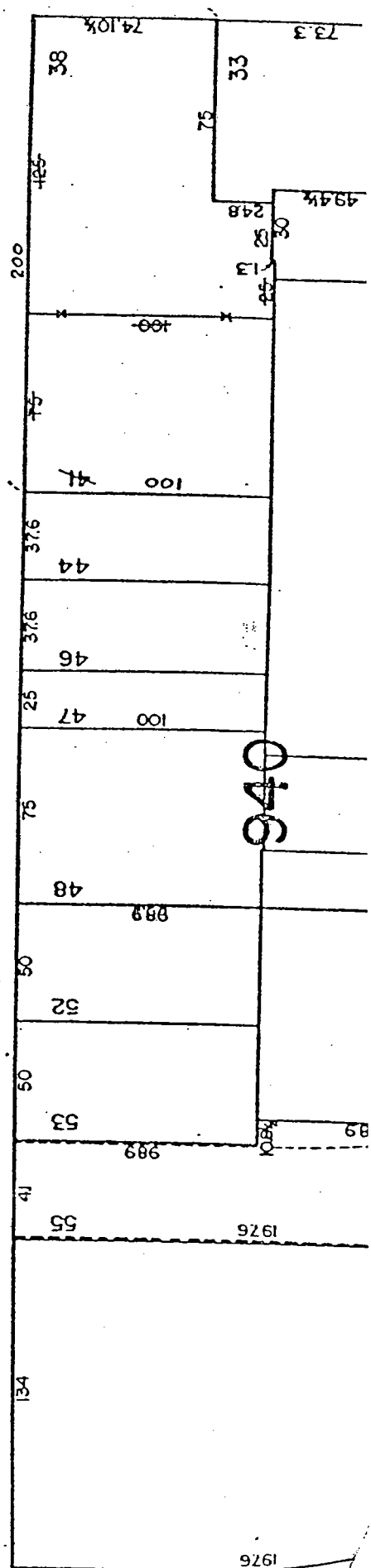
SEE PAGE 13

E. 36TH ST. ST.

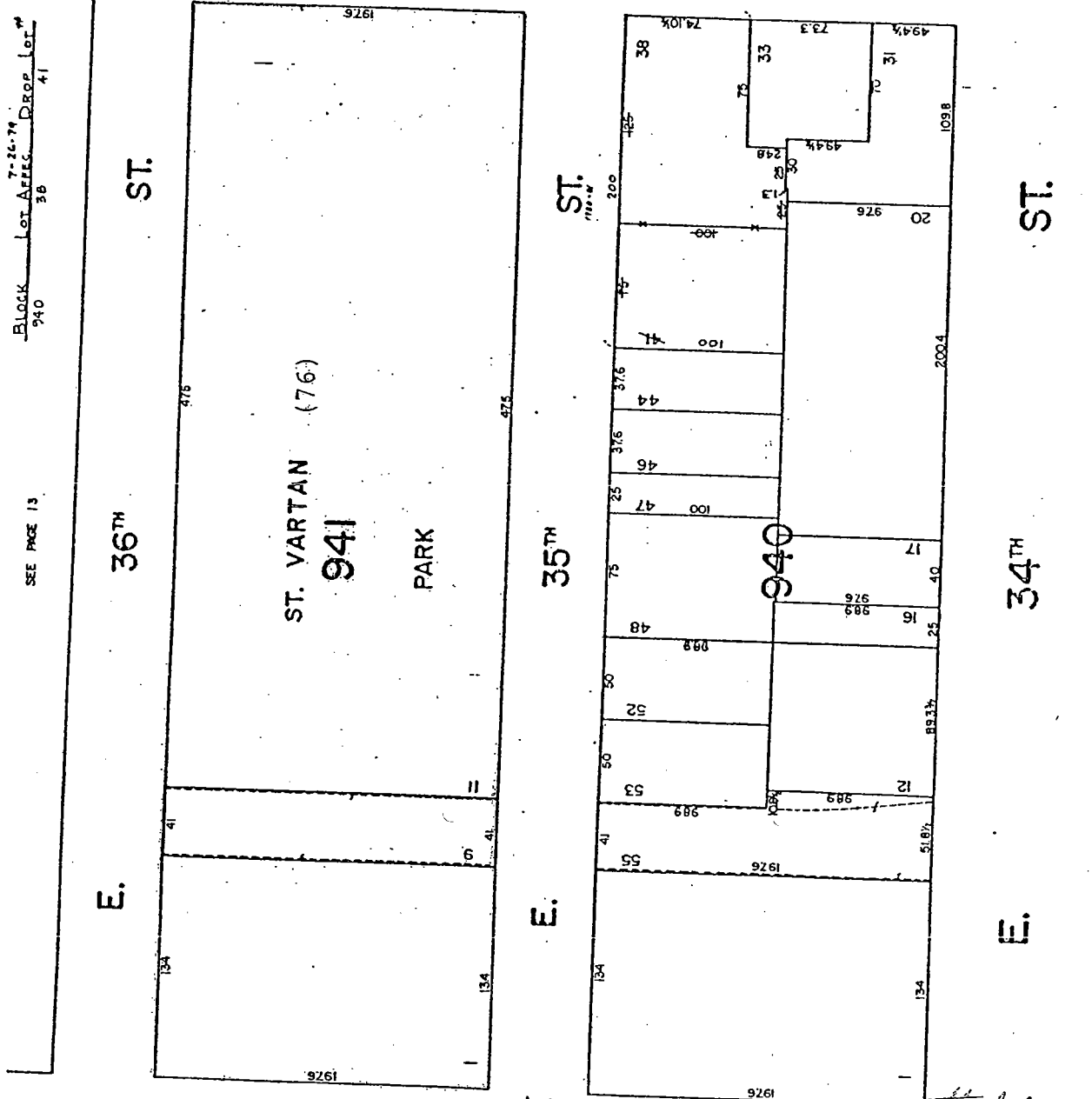


E. 35TH ST. ST.

36-00617
"As Built"



6f map - Park at East 35th to East 36th Streets between First and Second Avenues



SEE PAGE 17

12
1/2" M

This map was submitted by the Sponsor as a 6f map in Project 36-006 at St Vartan Park formerly St Gabriel with VC Decker 3/2/00 Park Rec. Dist. V

Correspondence

Attachment B

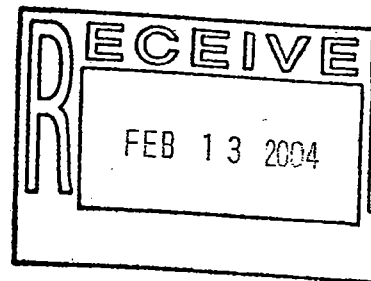


IN REPLY REFER TO:

NPS/NERO/P&P/RCGA

United States Department of the Interior

NATIONAL PARK SERVICE
Northeast Region
United States Custom House
200 Chestnut Street
Philadelphia, PA 19106



FEB 11 2004

Ms. Nancy Danzig
Federal Transit Authority
One Bowling Green
Room 429
New York, NY 10004-1415

Dear Ms. Danzig:

In reference to our recent telephone conversation about 4(f) requirements being completed before the Land and Water Conservation Fund's (LWCF) 6(f)(3) Conversion documentation can be reviewed, below is an excerpt from our LWCF Manual, Chapter 675.9.3.B(7), Prerequisites to Consideration of Conversions:

(5): "The guidelines for environmental evaluation have been satisfactorily completed and considered by NPS during its review of the proposed 6(f)(3) action. In cases where the proposed conversion arises from another Federal action, final review of the State's proposal shall not occur until the Region is assured that all environmental review requirements related to that other action have been met."

The LWCF Manual can be accessed on the Internet at <http://www.nps.gov/ncrc/programs/lwcf/index.html>.

The National Park Service has had a working understanding that decisions based on Section 6(f)(3) of the LWCF Act will only be made after the completion of the analysis called for in Section 4(f) of the Transportation Act. I am not aware of any change in this procedure.

I hope that this information has answered your question.

Sincerely,

Jean E. Sokolowski
Outdoor Recreation Planner

Section 6(f) Letter Agreement

Attachment C

March 23, 2004

SECTION 6(f) LETTER AGREEMENT

**Between the New York State Office of Parks, Recreation and Historic Preservation,
the New York City Department of Parks and Recreation and
the Metropolitan Transportation Authority**

MB
PK
The Metropolitan Transportation Authority ("MTA"), in cooperation with the Federal Transit Administration ("FTA"), has proposed to construct the Second Avenue Subway (the "Project") to provide much-needed transit access along Manhattan's East Side. In order to allow construction of the Project, beginning in approximately 2010 a portion of St. Vartan Park would have to be used ~~on a temporary basis~~ for approximately eight years. Thereafter, the park property would be restored and reopened to the public.

Because Land and Water Conservation Fund Act ("LWCFA") funds were used to finance certain improvements to St. Vartan Park in the past, the requirements of 16 U.S.C. 460l-8(f), commonly known as "Section 6(f)", must be satisfied before St. Vartan can be temporarily used by the Project. In particular, because the Project will require the use of St. Vartan for more than six months (resulting in a "conversion"), Section 6(f) requires the National Park Service ("NPS") to approve the conversion and the substitution of replacement parkland meeting certain criteria.

The New York State Office of Parks, Recreation and Historic Preservation ("OPRHP") is serving as the liaison with the NPS with respect to MTA's compliance with Section 6(f), as those requirements relate to the construction of the Second Avenue Subway. St. Vartan is the only known Section 6(f) park that will be needed in connection with the construction of the Project.

MTA is entering into this letter agreement with both OPRHP and the New York City Department of Parks and Recreation ("City Parks") in order to meet the Section 6(f) requirements as they relate to the proposed St. Vartan Park conversion, and to provide FTA with reasonable assurances that the requirements of Section 6(f) will be satisfied before any conversion of St. Vartan Park occurs. As a federal agency responsible for compliance with the National Environmental Policy Act ("NEPA") for the Second Avenue Subway Project, FTA requires those reasonable assurances prior to completion of its environmental review of the Project.

This agreement (and the Final Environmental Impact Statement ("FEIS")) for the Project include as much detail as is currently known about the proposed replacement property for St. Vartan Park at this stage of the Project, and also establishes a process for ongoing consultation between OPRHP, City Parks and MTA, in order to provide the flexibility needed to respond to future developments and opportunities as they arise in the five or more years before the conversion is to occur.

Proposed Conversion of St. Vartan Park

St. Vartan Park, which is located in the East Midtown area of Manhattan, is comprised of two parcels of land separated by an active roadway. The area of St. Vartan Park that would be converted is approximately 26,500 square feet in area and currently supports two (2)

shuffleboard courts, four (4) handball courts and one and one-half (1½) basketball courts, as well as benches.

MTA's current construction plans for the Project call for the temporary, long-term use of the western parcel of St. Vartan Park, bordered by Second Avenue, Tunnel Access Road, East 35th Street and East 36th Street. The Supplemental Draft Environmental Impact Statement ("SDEIS") for the Second Avenue Subway Project, which was issued in March 2003, considered all practical alternatives to the use of the park for construction activities, and examined in detail the environmental impacts that would result from the proposed use.

APB RK
KB

As indicated in the FEIS, MTA anticipates that the use of the western parcel of St. Vartan Park would be required for approximately eight years, after which time it will be restored and reopened for public use immediately upon completion of the construction activities requiring the use of this parcel.

A phasing plan for the Project described in the FEIS calls for the incremental construction and operation of the Second Avenue Subway. Construction of the second segment which requires use of the St. Vartan parcel, will not commence until 2010.

Section 6(f) Compliance and the NEPA Process

The regulations promulgated by NPS under Section 6(f) require the completion of the NEPA environmental review process for a federal action affecting a Section 6(f) resource before NPS review of the proposed conversion under Section 6(f) can commence. See 36 C.F.R. § 59.3(b)(7). FTA's environmental regulations indicate that an FEIS should document compliance with all applicable environmental laws (including Section 6(f)) or if full compliance is not possible, the FEIS "should reflect consultation with the appropriate agencies and provide reasonable assurance that the requirements will be met." See 23 C.F.R. § 771.133. Because compliance with the Section 6(f) requirements cannot be completed until the FEIS is accepted, and because the conversion contemplated will take place more than 5 years in the future, it is this reasonable assurance standard that MTA is seeking to satisfy at this point in the process.

MTA is required to meet the requirements of the NPS Section 6(f) regulations before parkland purchased or developed with LWCFR funds are converted to non-recreation use. See 36 C.F.R. § 59.3. In particular, under the regulations, replacement property proposed as a substitute for converted property must meet the following criteria:

1. the fair market value of the property to be converted must be established, and the property proposed for substitution must be of at least equal fair market value as established by an approved appraisal; and
2. the property proposed for replacement must be of reasonably equivalent usefulness and location as that being converted unless such replacement property is an identified wetland area.

Id. at § 59.3(b)(2)-(4).

Included in the FEIS and in this letter agreement is a proposal for replacement property, and an assessment of the park/open space functions and recreational activities that are served by St. Vartan Park, and the potential of the proposed replacement property to serve those functions and accommodate those activities. City Parks and OPRHP have been provided with the opportunity to comment on and concur in the suitability and acceptability of the proposed replacement property for purposes of compliance with the terms of Section 6(f) as outlined in this letter.

Description of Proposed Replacement Property and Other Replacement Opportunities

Both MTA and City Parks have undertaken surveys for replacement parkland in the areas around St. Vartan Park. Replacement property that is currently owned by MTA's subsidiary, the Triborough Bridge and Tunnel Authority ("B&T"), in the area of St. Vartan Park could provide adequate replacement parkland. Two parcels of land owned by B&T immediately to the north of St. Vartan Park could serve as potential replacement parkland ~~for the duration of the use of the~~ western parcel of St. Vartan Park. MTA and City Parks have concluded that there are no other currently available sites that could provide replacement parkland with reasonably equivalent usefulness and location due to the extremely built up nature of the surrounding area. RK
AB
KB

The two parcels are formed by the entrance to the Queens-Midtown Tunnel ("QMT"). The first parcel (the "Southern Parcel") is approximately 16,000 square feet in area, and is bordered by East 36th Street to the south, First Avenue to the east and the QMT entrance to the north/northwest. The second parcel (the "Northern Parcel"), consists of approximately 19,000 square feet and is bordered by East 37th Street to the north and the QMT entrance on the west, south and east. See Attachment 1 (attached). The Southern Parcel contains mature trees. The Northern Parcel also contains mature trees, and, in addition, overlies infrastructure for the QMT.

If no better candidate sites are identified, MTA is prepared to commit to offering the entire Southern Parcel as a partial replacement for the area of St. Vartan Park that will be temporarily occupied. Given the close proximity of the two properties, it is likely that the value of the Southern Parcel would be appraised at a similar value per square foot as the western parcel of St. Vartan Park. Accordingly, this replacement would provide approximately 60% of the appraised value of the property to be converted. Preliminary designs have indicated that the Southern Parcel could accommodate the full basket ball court, two handball courts and benches, providing approximately 57% of the current uses on the western parcel of St. Vartan. See Attachment 2 (attached). MTA would seek to construct these recreational improvements without damaging the existing mature trees, which are valued as a passive recreation resource in the heavily built-up, urbanized neighborhood that surrounds them.

Due to the presence of extensive QMT infrastructure, there are limitations to the use of the Northern Parcel as parkland. MTA is currently engaged in detailed discussions with QMT operations staff and City Parks representatives to determine whether the portion of the Northern Parcel and recreational uses thereon depicted in the preliminary design in Attachment 2 could be accommodated on that parcel without unduly interfering with tunnel operations. At this point, it appears that an additional 8,000 to 10,500 square feet of replacement parkland could be located on the Northern Parcel during the period of the conversion. Given its close proximity to St. Vartan Park, it is likely that this parcel would also be appraised at a similar value per square foot and could therefore provide up to 40% of the appraised value of the property to be converted. Moreover, potentially available land on the Northern Parcel could accommodate two handball

courts and the half basketball court along with benches and paths for passive recreational opportunities. See Attachment 2. These improvements could collectively provide approximately 43% of the current uses on the western parcel of St. Vartan. Preliminary analysis indicates that all mature trees on the Northern Parcel would be protected. In light of the approximations discussed above, it appears that 100% of the appraised value and square footage of the western parcel of St. Vartan could be replaced by the B&T parcels. In addition, all of the current recreational uses could similarly be replaced within both parcels, adjacent to where such uses are currently provided at St. Vartan.

MTA is also discussing with City Parks other improvements that could be made at nearby parks and recreation centers, such as park staffing and infrastructure improvements, as further mitigation for the ~~temporary~~ losses at St. Vartan Park. These improvements, together with the resources offered at the B&T parcels should no better replacement sites be found, would provide substitute recreational opportunities that are reasonably equivalent in terms of magnitude and impact to the user community as those currently provided by the area of St. Vartan Park that is to be ~~temporarily~~ converted.

MTA and City Parks note that State alienation legislation will be required to allow MTA to use St. Vartan Park. The legislation, which will not be drafted for several years at a minimum, will include all mitigation measures required under Section 6(f).

Finally, MTA notes that both Section 6(f) and the NPS Section 6(f) regulations allow the use of wetlands as a replacement to converted parkland, without consideration of reasonably equivalent usefulness. If Section 6(f) cannot be fully satisfied through the acquisition of nearby replacement parkland, MTA would seek to augment this effort with the purchase of wetlands in accordance with the provisions of Section 6(f).

Basis for Letter Agreement

MTA recognizes that the proposed use of the western parcel of St. Vartan Park would constitute a conversion for purposes of Section 6(f) and is committed to adhering to Section 6(f) requirements before any portion of this park is converted from outdoor recreation space by construction-related activities. MTA intends to work closely with OPRHP and City Parks in order to achieve this goal. FTA will monitor compliance with 6(f).

The two parcels of land owned by B&T could serve as potential replacement parkland for the ~~duration of the use of the~~ western parcel of St. Vartan Park. Because MTA and City Parks have concluded that there are no other currently available sites that could provide replacement parkland, MTA is committed to the use of these sites at this time. However, City Parks and MTA believe the B&T parcels provide greater community and recreational value as open green space and will therefore, continue to seek out more suitable options in the approximately five year period prior to the time the conversion would occur.

Summary

MTA has identified at least two properties that could satisfy Section 6(f) conversion requirements for the period of time parkland would be converted by the Project. The B&T parcels do provide adequate square footage to replace the affected recreational facilities, and

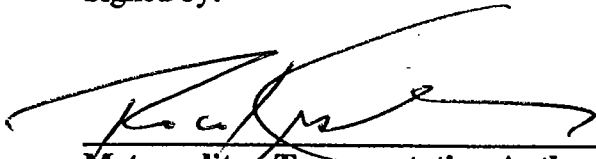
even as a less preferable option, would fulfill the programmatic requirements of Section 6(f). While the MTA is committed to using these properties as a replacement for the St. Vartan Park parcel at this time, City Parks and MTA agree to continue to look for other options for replacement property identified during the five-or-more year period between now and the conversion of the St. Vartan parcel.

Given the dynamic nature of the Midtown Manhattan real estate market it is highly likely that parcels of land that are not currently available in this neighborhood will either come onto the market or otherwise emerge as candidate locations in this time period. This agreement therefore establishes a consultation process for tracking and exploring these candidate locations so that MTA and City Parks can continue to monitor the market and the neighborhood to identify candidate replacement parcels. MTA will continue to search diligently for optimum replacement land to meet both the appraisal value and programmatic requirements of Section 6(f), and will work with OPRHP, City Parks, and private sponsors of nearby development projects to identify and pursue such opportunities.

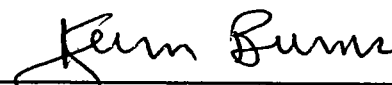
MTA is committed to: (i) taking all steps required under NPS regulations to comply with Section 6(f) prior to the conversion; (ii) consulting closely with OPRHP and City Parks to identify and pursue other opportunities for providing replacement resources as they arise in the coming years, which could be offered in addition to or instead of the measures described above, upon the agreement of MTA, City Parks and OPRHP; (iii) consulting with City Parks and OPRHP as to the programming of recreational facilities for such replacement property; (iv) providing improvements to existing recreational resources, in consultation with City Parks and OPRHP, as necessary to mitigate the impacts of the ~~temporary~~ conversion of St. Vartan Park, taking into account the substitute resources provided by the replacement properties; (v) and, if no better options can be identified, and upon the agreement of City Parks, providing the entire Southern Parcel as replacement property for the western parcel of St. Vartan Park ~~for the period of the conversion~~; and (vi) if no better options can be identified, and upon the agreement of City Parks, providing those areas of the Northern Parcel for such purposes and for such period as will not, in the judgment of the B&T operating staff, interfere with QMT operations;

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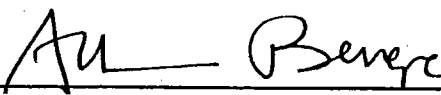
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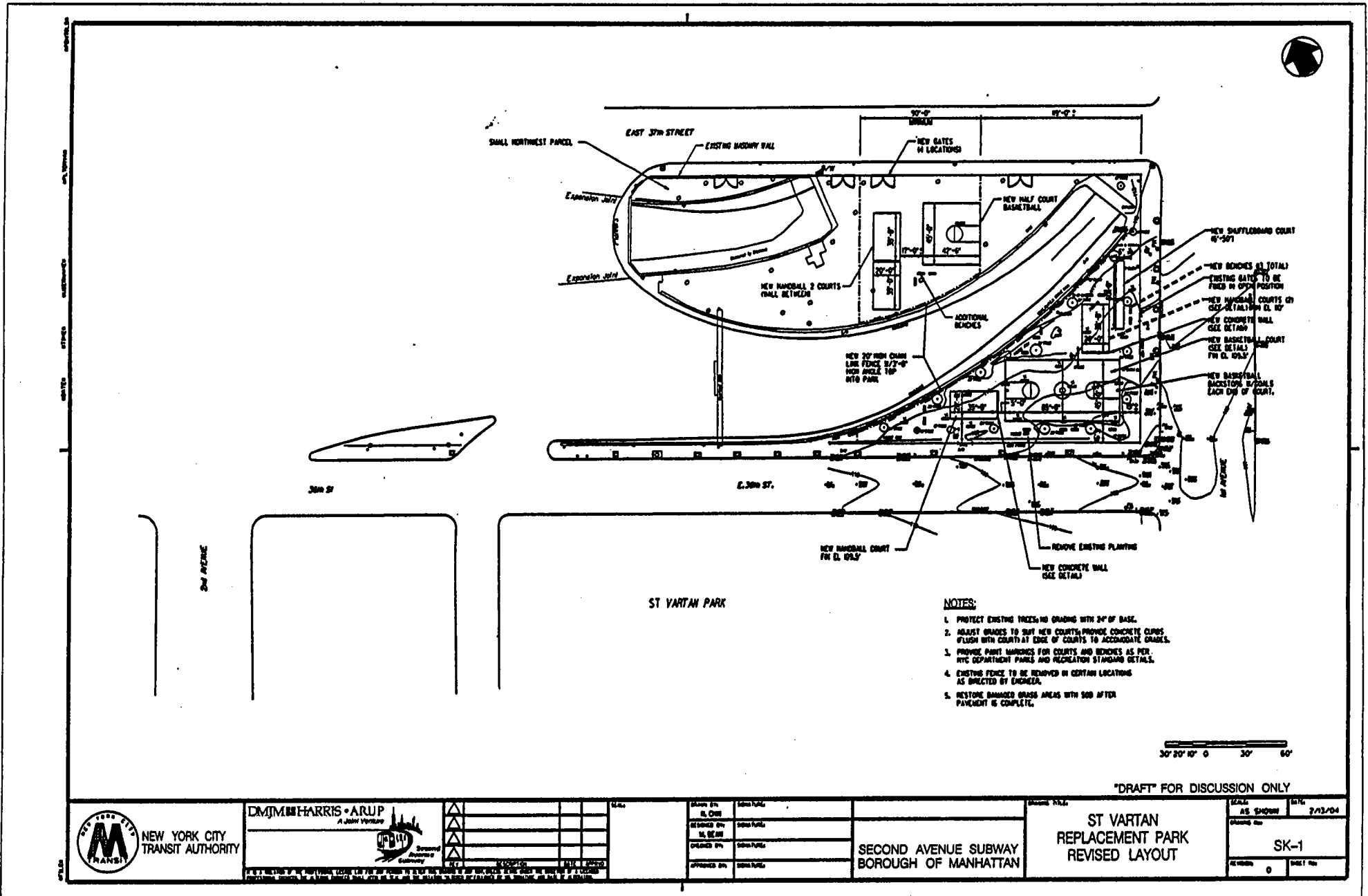
Metropolitan Transportation Authority 4/5/04



New York State Office of Parks, Recreation and Historic Preservation 3/31/04



New York City Department of Parks and Recreation 4/5/04



NOTES:

1. PROTECT EXISTING TREES; NO GRADING WITHIN 2'-0" OF BASE.
2. ADJUST GRADES TO SUIT NEW COURTS; PROVIDE CONCRETE CURBS FLUSH WITH COURTS AT EDGE OF COURTS TO ACCOMMODATE GRADES.
3. PROVIDE PAINT MARKINGS FOR COURTS AND BENCHES AS PER NYC DEPARTMENT PARKS AND RECREATION STANDARD DETAILS.
4. EXISTING FENCE TO BE REMOVED IN CERTAIN LOCATIONS AS INDICATED BY ENGINEER.
5. RESTORE DAMAGED GRASS AREAS WITH SOB AFTER PAVEMENT IS COMPLETE.



"DRAFT" FOR DISCUSSION ONLY



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DATE	DESCRIPTION	BY	CHECKED

DESIGNED BY	DATE
CHECKED BY	DATE
APPROVED BY	DATE

SECOND AVENUE SUBWAY
BOROUGH OF MANHATTAN

ST VARTAN
REPLACEMENT PARK
REVISED LAYOUT

DATE	BY
AS SHOWN	7/12/04
SK-1	
REVISION	SHEET NO.
0	