

### **4.12.1 INTRODUCTION**

This chapter describes the construction activities required for the Preferred Alternative and the potential for those construction activities to result in adverse environmental impacts. Whereas the analyses in Chapters 4.1 through 4.11 of this EA examined the potential for the operation of the Preferred Alternative to result in adverse environmental impacts, this analysis focuses on the potential for adverse environmental impacts in relevant impact categories (e.g., historic resources, transportation) during the construction period. The duration and intensity of construction activities were considered in evaluating the potential for adverse environmental impacts.

Construction activities for the Project would primarily be confined to the Farley Complex and largely in the building interior or underground on the block between Eighth and Ninth Avenues and West 31st and West 33rd Streets. It would also include an area under Eighth Avenue for reconstruction of the 33rd Street connector. As a result, the Project will require close construction coordination with MSDC and the operating railroads and other key stakeholders to safely and efficiently accommodate construction of the Preferred Alternative with railroad operations in and around Penn Station, including the potential to bring Metro-North Hudson Line Service to the Penn Station Complex (although that project is expected to be implemented after the proposed Project). MSDC will coordinate with the operating railroads to establish a comprehensive construction management plan, including the coordination of construction schedules, and overall access to, and circulation within, the Penn Station Complex.

Construction activities for the Project would take place concurrently with the construction of the ARC project. However, potential impacts associated with lane closures and staging areas required for these two projects would have minimal overlap. Whereas the Farley Complex construction may involve partial or temporary closures along West 31st and West 33rd Streets between Eighth and Ninth Avenues, much of the construction work for the ARC project (as presented in the ARC FEIS) will occur in a tunnel and caverns under Manhattan and a majority of the staging for the Manhattan construction efforts will be to the west of the Farley Complex at Twelfth Avenue and West 28th Street. More limited site-specific construction activities related to the ARC project will be conducted along West 34th Street (for an entrance and ventilation facility) and on West 33rd Street at Sixth Avenue to the east of the Farley Complex.

Construction of both the Development Transfer Site building and the ARC project—which will have connections between its West 34th Street station and Penn Station and new street entrances on West 34th Street—would involve lane closures on West 33rd Street east of Eighth Avenue and potential temporary closures along Eighth Avenue. The ARC project will also have some construction activities at and below West 34th Street. The combined construction efforts would be coordinated between NJT and MSDC to the extent practicable, since there may be common or overlapping construction elements within or under the Development Transfer Site. As the expected construction schedule for the demolition, foundation, and core and shell work for the

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Development Transfer Site building would be about 2 to 3 years, construction efforts would overlap with the ARC project construction efforts on the Development Transfer Site for a relatively short-term period.

With regard to construction truck traffic, the 2006 FEIS projected that up to 50 truck deliveries a day could occur during peak construction. These deliveries would be distributed throughout the day with more occurring during the early morning hours (approximately 15 deliveries taking place prior to the morning commuter peak hour and fewer deliveries per hour thereafter). The deliveries would also be dispersed onto various travel routes and block-fronts surrounding the Farley Complex and the Development Transfer Site. Within the immediate area, construction of the ARC project would generate up to 5 to 7 truck deliveries during peak hours on West 33rd Street, according to the ARC FEIS, October 2008. The greatest overlap in truck deliveries for the two projects is expected to occur during the early morning hours when background traffic would be comparatively light. Overall, construction truck activities for the two projects throughout the day would represent a small percentage of background traffic levels, such that a perceptible increase in truck traffic or the potential for increased congestion due to construction truck traffic would be unlikely.

### **4.12.2 CONSTRUCTION SEQUENCING AND SCHEDULE**

#### **OVERVIEW**

Throughout construction, USPS retail uses would continue in the Farley Building. It is expected that USPS administrative functions would be temporarily relocated within the Farley Complex itself in order to implement work for Moynihan Station. A detailed relocation plan for USPS functions is under development (in consultation with USPS representatives) that would provide appropriate space for USPS needs throughout the duration of construction activities expected to occur in the Farley Complex. After the construction of Moynihan Station is completed, these relocated functions would be accommodated in USPS space within the Farley Complex. NJT, LIRR, and Amtrak would coordinate any required track outages with the construction managers, to allow for continued rail operations within Penn Station. In addition, the Eighth Avenue subway lines would remain in operation throughout the construction period.

Whenever possible, the bulk of the Moynihan Station construction activities would take place during the normal permitted working hours, Monday through Friday. However, there would be exceptions to normal permitted hours, such as track level work (which typically occurs at night), or where the delivery or installation of certain critical or oversized equipment could occur on weekends. The permitted hours of construction in New York City are established by the New York City Noise Code. In the event that overtime work on the buildings is required, appropriate approvals would be obtained. In general, work would begin at 7 AM on weekdays, with some workers arriving to prepare work areas between 6 AM and 7 AM. Normally, work would end at 3:30 PM, unless overtime is required. Work would not continue after 6:00 PM or take place on Saturday or Sunday, unless appropriate approvals are obtained. It is expected that weekend and overnight work will be required for Train Shed work, asbestos abatement, deliveries and other critical time-sensitive areas adjacent to USPS occupied areas in the Farley Complex. Weekend and overnight work may also be needed for other construction tasks over the course of the Project.

Track level work is expected to involve the relocation of telecommunications and existing infrastructure to accommodate some of the Project's vertical transportation elements and the

extension and widening of the West End Concourse, as well as some of the work that would be undertaken to renovate and activate the former diagonal mail platform (Platform 12), and its associated tracks for passenger service, as well as the construction of the newly proposed baggage handling and emergency egress concourse at the far west end of the station. A detailed plan for coordinating the necessary construction period track outages would be developed in coordination with the various railroads. Track level work would generally be done at off-peak periods. Typically, track level work is performed in 55-hour weekend outages from 10 PM Friday to 5AM Monday. The installation of the vertical transportation elements from Moynihan Station to the existing train platforms would generally be conducted within temporary enclosures to ensure public safety. Extension of the LIRR West End Concourse and the rehabilitation of the Eighth Avenue subway corridors and stairways would also generally be separated from publicly accessible areas. Work on the superstructure and the installation of work platforms and barriers would be performed after regular working hours. Once these spaces have been segregated from public access, the balance of construction would be performed during normal working hours with the potential for some restrictions on construction activities at peak commuting hours.

Construction of the building on the Development Transfer Site would involve several stages, some of which would overlap: demolition of the existing buildings and structures; excavation, foundation, and below-grade construction; building structure construction; and interior construction and finishing.

### **CONSTRUCTION SEQUENCING AND SCHEDULE**

Construction of Moynihan Station would be staged over a period of about five years to minimize disruption and inconvenience to subway and train patrons and to allow for an orderly transition of USPS operations. Work that may affect train operations would be scheduled for off-peak hours. Typically, track level work is performed in 55-hour weekend outages from 10 PM Friday to 5AM Monday. With the exception of new vehicular and pedestrian entrances and exits, major new roofs for the Intermodal Hall and Train Hall, and roof renovations to the Farley Complex (inclusive of mechanical, electrical, and plumbing infrastructure work), the majority of the construction activities would involve work in the interior of the Farley Complex. Construction activities at the Farley Complex are expected to start in 2010 and be completed by mid-2015. Construction of the building on the Development Transfer Site is expected to last approximately 30 months.

#### *FARLEY COMPLEX*

##### *General Construction Activities*

In general, construction activities for each of the facilities would include abatement of potentially hazardous or dangerous materials (such as asbestos); construction of special and temporary protection for rail operations; demolition; construction of structural elements; mechanical, electrical and plumbing installations; and finishing activities.

Three main construction activities would take place at or within the Farley Complex:

- historic exterior restoration of the Farley Complex;
- construction of Moynihan Station; and
- construction of new commercial and retail uses within the Farley Complex.

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### *Demolition and Abatement*

Demolition and abatement are among the earliest on-site construction activities. Because some USPS operations are expected to continue during construction of the Project, demolition is expected to occur over a period of time. When one area is demolished and readied for construction, the demolition crew would move onto a new area within the Farley Complex.

The first phase of demolition is asbestos abatement and lead-based paint removal at those areas affected by construction activities. These are specialty tasks that are strictly regulated to protect the health and safety of the construction workers and nearby residents and workers. Depending on the extent of the presence of these materials, areas would be isolated for the rest of the building with a containment system and a decontamination system. Specially trained workers in protective clothing would use hand tools to remove these materials, which would be subsequently sealed in bags and taken to licensed landfills for disposal. After a New York City inspector certifies that the areas to be affected in the building are free of asbestos, general demolition can begin. Lead-based paint abatement would be performed similarly, with appropriate containment systems, high efficiency particulate air (HEPA) filter-equipped vacuums, and lead-specific detergents. Depending on the amount of asbestos and lead-based paint to be removed, up to 50 workers could be on site, and about one or two truckloads of materials could be removed per day. These abatement activities, if implemented in a progressive manner, could last approximately one year. However, given the relocation phasing of USPS occupancies, abatement would likely extend over an 18 to 24-month period.

The next step in general demolition is to remove any economically salvageable materials. Much of the reclaiming of salvageable materials is done on-site and the materials are transported to salvage dealers. Typical demolition requires solid temporary walls around the work area to prevent accidental dispersal of building materials into areas accessible to the general public. After the walls and other elements are collapsed, small machines would be used to move the materials to enclosed chutes. The chutes lead to dumpsters, which when filled, are loaded onto trucks. The demolition debris would be taken to appropriate landfills for disposal. Depending on the size of the area being demolished, about 20 to 30 workers could be on site, and two to four truckloads of debris could be removed per day.

### *Rail Access and Operations*

Two main activities would affect railroad operations. The first is the installation of vertical transportation elements, such as stairs, escalators and elevators at the western end of the platforms. Under current operations, the western end of the platforms is the least used. Generally, temporary enclosures would be used to separate the construction work for the vertical transportation elements from the public using the platforms.

The second activity at the track level would involve interim measures to avoid impacts to existing rail power and signal systems. Protection of existing signal systems in proximity to Project work zones would be implemented. Temporary re-hanging of the various railroad electrical catenary system components would be necessary for extending the West End Concourse. These activities would require track outages during off-peak hours so that workers would have access to the track areas. Certain work may be performed during normal work hours, only after areas have been segregated from public access, with work platform barriers.

### *Historic Preservation*

A comprehensive and detailed exterior restoration program for the Farley Complex would be undertaken. In general, the restoration program would include:

- cleaning and re-pointing the granite façades;
- restoring the terra cotta cresting (ornamental ridge on the roof line) and replacing it where it is missing or heavily damaged;
- replacing the existing copper roof in kind;
- restoring the existing wood window sashes on the Farley Building or replacing them as needed;
- replacing the fifth floor aluminum windows with new aluminum sash;
- replacing louvers with new windows designed to match original windows;
- installing new granite where missing or damaged, or where required at new openings;
- using salvaged granite from other parts of the building when possible;
- replacing the existing cobra-head light fixtures with more appropriate lighting; and
- removing the existing non-original bulkheads on the Farley Complex.

### *Moynihan Station*

Once hazardous material abatement has been completed within the Train Shed, work on vertical penetrations and the extension of the West End Concourse would commence. One of the early activities within the Farley Complex would be the preparation of temporary space for USPS. The area for USPS operations would be abated of hazardous materials, and the interior walls demolished. New walls would be constructed in the space, and then utilities added. The specifics of the temporary relocation plans for USPS are discussed below.

After USPS is relocated, general demolition within previously occupied areas of the Farley Complex could take place. This work is expected to take place at about the same time as the restoration of the exterior of the Farley Building. During the demolition, it is expected that West 31st and West 33rd Streets would be used for removal of the refuse.

At this point, construction of both the Moynihan Station and the new non-station uses within the Farley Complex would commence. Steel columns and beams would be erected within existing interior spaces. Because of the large area covered by the Farley Complex, one stiff-leg crane could not service the site and it is likely that four or five cranes would be used to move large and heavy materials into place. It is expected that up to 50 deliveries per day could be made to the site during peak periods, but there would be fewer average daily deliveries. The deliveries would generally occur on West 31st and West 33rd Streets.

Because of the large amount of construction to be completed in a short period of time, it is expected that a number of construction crews would be used simultaneously to build Moynihan Station and the commercial/retail space in the other areas of the Farley Complex. It is expected that between 750 and 1,000 workers could be on-site during peak construction periods at the Farley Complex; but on average approximately 400 workers would be on-site. When the structural components of an area are completed, the finishing would begin, as discussed below. Therefore, the erection of the structure and finishing work would occur at the same time in different parts of the Farley Complex.

### *Interior Construction and Finishing*

This stage of construction would include the construction of interior walls, installation of lighting fixtures and interior finishes (flooring, painting, etc.), as well as mechanical and

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electrical work (such as the installation of elevators). This activity would employ about 250 to 300 workers and could involve as many as 750 to 1,000 workers during peak periods. Equipment used during interior construction would include exterior hoists, pneumatic equipment, delivery trucks, and a variety of small hand-held tools.

### *Construction Staging and Deliveries*

Because the Western Annex is a largely vacant space that has been set up for USPS deliveries, it is well suited for use as a construction delivery and staging area. It is expected that, to the extent possible, the existing Ninth Avenue truck entrance would be maintained for deliveries and that portions of the Western Annex and some of the sidewalks surrounding the Farley Complex and adjacent parking lanes would be used as staging areas. However, because the building will be largely vacant during construction, it is envisioned that most staging will be accommodated on-site. Construction staging and deliveries would be addressed as part of a plan that would be developed in cooperation with the Mayor's Office of Construction to minimize disruptions to traffic and pedestrian flows during the construction period.

### *DEVELOPMENT TRANSFER SITE*

The Preferred Alternative would include the construction of a new building on the Development Transfer Site. One Penn Plaza occupies the largest part of this block, and two small retail buildings are located on the area of the proposed building. The two retail structures would be demolished, and some limited portions of the below-grade parking garage would also be demolished. It is expected that the parking garage would be closed throughout the construction of the foundation for the tower, to ensure public safety. Foundation work would include the use of bobcats, rockbreakers, loaders, pumps, motorized concrete buggies, concrete pumps, jack hammers, pneumatic compressors, pile drivers, a variety of small (mostly hand-held) tools, as well as dump trucks and concrete trucks. It is estimated that foundations and below-grade construction would last for approximately 7 to 12 months. During this phase of construction, it is estimated that there would be between 75 and 100 construction workers, on average, on the site. Core and shell construction, which would last approximately 12 to 18 months, would require about 150 to 200 construction workers. Construction and finishing work, which would overlap with the core and shell construction, would take approximately 12 to 18 months, and would employ about 250 to 300 workers on average; and employ as many as 750 workers during peak periods.

## **4.12.3 POTENTIAL SOCIAL, ENVIRONMENTAL, AND ECONOMIC IMPACTS**

### **UNITED STATES POSTAL SERVICE**

Most USPS operations would be relocated during the construction period, but would continue to function within the Farley Complex. Although they could also be relocated temporarily to adjacent sites, the relocation plan under development in consultation with USPS keeps all of the USPS functions within the Farley Complex during construction. The USPS retail operations would be maintained at the Farley Building and open to the public throughout the construction period. Provisions would be made for delivery, sorting and exporting of mail. Trucks would have access to a portion of the existing loading docks off of Ninth Avenue on a temporary basis until completion of the new West 31st Street loading dock at-grade. Administrative offices would be provided. Upon turnover of core and shell spaces to USPS, USPS would perform an interior fit-out project, thereby achieving upgraded facilities within the redeveloped Farley

Complex. Therefore, the proposed Project would not have a significant adverse impact on the USPS.

**HISTORIC RESOURCES**

As described in Chapter 4.2, “Historic Properties,” construction of the Preferred Alternative could have potential adverse effects on three historic properties—the Farley Complex, the former J.C. Penney Company building at 331-343 West 33rd Street, and the former William F. Sloan Memorial YMCA at 360 West 34th Street.

To avoid any adverse construction-related effects on the Farley Complex exterior and interior spaces to be preserved as part of the proposed Project, a Construction Protection Plan (CPP) would be developed and implemented in consultation with SHPO. The former J.C. Penney Company building and the former William F. Sloan Memorial YMCA are located close enough to the Farley Complex (within 90 feet) to potentially experience adverse construction-related effects. Therefore, consistent with the applicable policies of the SHPO to avoid inadvertent construction damage from ground-borne vibrations, falling debris, collapse, or subsidence, a CPP for those resources would also be developed and implemented in consultation with SHPO. The plans would follow the recommendations of the New York City Department of Building’s *Technical Policy and Procedure Notice #10/88*, which includes “a monitoring program to reduce the likelihood of construction damage to adjacent historic structures and to detect at an early stage the beginnings of damage so that construction procedures can be changed.” With implementation of the CPPs for the Farley Complex and the two adjacent historic properties, no adverse effects are expected in connection with the construction of the Preferred Alternative.

Certain construction activities may produce vibration levels that could affect the Farley Complex, the former J.C. Penney Company building, and the former William F. Sloan Memorial YMCA, older buildings of historical significance. As a result, special measures would be implemented to avoid potential damage. However, these levels would likely not result in architectural or structural damage to other nearby buildings. Table 4.12-1 shows typical construction equipment and vibration levels at various distances. The FTA noise assessment manual, which is also used for guidance by the FRA, uses the term “fragile” to define vibration-sensitive buildings that may be subject to architectural and/or structural damage due to construction activities. That manual recommends that the vibration damage threshold criterion for fragile buildings exposed to construction vibration should be no more than 0.20 inches per second. As shown in the table, a number of pieces of equipment may cause vibration levels that would exceed 0.20 inches per second, the vibration damage threshold criterion for fragile buildings.

**Table 4.12-1  
Vibration Levels Due to Construction Equipment at Various Distances**

Equipment	Peak Particle Velocity (inches per second) at Various Distances					
	5 feet	10 feet	20 feet	30 feet	40 feet	50 feet
Pile driver (typical impact)	7.20	2.55	0.90	0.49	0.32	0.23
Hoe Ram	1.00	0.35	0.12	0.07	0.04	0.03
Loaded trucks	0.86	0.30	0.11	0.06	0.04	0.03
Jackhammer	0.39	0.14	0.05	0.03	0.02	0.01
Small bulldozer	0.03	0.01	0.00	0.00	0.00	0.00

**Note:** Based on data in softer rock than present in New York City. Levels may be higher.

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The Farley Complex, the former J.C. Penney Company building, and the former William F. Sloan Memorial YMCA would receive careful consideration to determine appropriate vibration thresholds and what measures would need to be taken to avoid damaging fragile structures. As part of this work, a preconstruction survey of any structures that may be adversely affected by the construction activities would be performed, and threshold or limiting values would be established that take into account each structure's ability to withstand the loads and displacements due to construction vibrations. Detailed construction specifications would be included in construction contracts to implement the required CPPs.

As part of the CPPs for the Farley Complex and the former J.C. Penney Company building and the former William F. Sloan Memorial YMCA, a vibration monitoring program would be developed and implemented to monitor and measure vibration levels from construction activities at or adjacent to historic resources, the subway, and the commuter rail lines. If the established peak particle velocity is exceeded, the activity causing the exceedance would be suspended, and mitigation measures would be implemented before the activity is resumed. A licensed surveyor would measure both horizontal and vertical movements in the historic resources at least twice a week. Crack monitors would be used to monitor existing cracks in the historic resources.

### **CONTAMINATED MATERIALS**

The construction activities necessary to implement the proposed Project would incorporate protective measures to prevent workers and others from coming into contact with hazardous or contaminated materials associated with normal rail operations. This is especially relevant to older facilities (such as the existing Farley Complex) that were built before restrictions were placed on the use of materials containing asbestos or paint containing lead. Potential contaminants of concern in the building or subsurface include the following:

- Lead-based paints;
- Polychlorinated biphenyls—from transformers and hydraulic elevators;
- Polycyclic aromatic hydrocarbons and metals—primarily from oils used to lubricate engines and other equipment; and
- A range of volatile organic compounds—from solvents and other cleaning materials.

These materials could be exposed through renovation activities in the Farley Complex. Soil/ballast sampling would need to be conducted in any areas where excavation or disturbance would be required. Potential environmental hazards associated with these activities would then be avoided by some combination of: a Health and Safety Plan (including air monitoring to protect both workers and other users of the facility), a Soil Management Plan (to address appropriate handling, storage, transportation and disposal or reuse of excavated materials), a Soil Gas Management Plan, if necessary (to detect and respond to any subsurface gases or odors), and a Groundwater Management Plan (to handle and dispose of any liquids generated during dewatering). These plans would likely mirror equivalent procedures currently used by Amtrak (and approved by NYSDEC) when performing subsurface work in railyards.

As discussed in Chapter 4.11, “Contaminated Materials,” certain building materials used in the construction of the Farley Complex contain asbestos.

To the extent that existing data are not available, a field sampling program would be undertaken for areas likely to be disturbed by demolition or construction activities that are potential locations where contaminated materials could be present. These potential locations of

contaminated materials would also include the buildings on the Development Transfer Site. Potential sampling locations in the Farley Complex could include the following areas: transformers and the areas around them, hydraulic elevator units, oil, solvent, unidentified waste storage areas, paint chips, and the flooring and soil/ballast beneath the tracks. Based on the sampling results, remediation would be undertaken as necessary. A health and safety plan devised to protect workers and others (e.g., postal employees, postal customers, other office workers, visitors, etc.) would be developed and instituted throughout the field sampling program and during the Project's construction. Typical remediation would include the removal of any contaminated materials for off-site treatment and disposal at an appropriate site, or encapsulation.

A Construction Health and Safety Plan would be developed to assign responsibilities, establish personnel protection standards and mandatory safety practices and procedures, and provide for contingencies that may arise during construction at the Farley Complex and at the Development Transfer Site. The plan is intended to minimize health and safety risks resulting from known and potential hazardous materials encountered during construction. The Health and Safety Plan would address various construction activities associated with the Project (pile and footing placement/drilling, soil removal, interior demolition of walls and floors, etc.) and would be developed in accordance with OSHA requirements.

## **TRANSPORTATION**

### *STREET AND SIDEWALK CLOSURES*

- Construction activities at the Farley Complex would require the closing of curbside traffic lanes immediately adjacent to the site on the north side of West 31st Street and the south side of West 33rd Street between Eighth and Ninth Avenues, as well as the eastern-most lane on Ninth Avenue between West 31st and West 33rd Streets. In addition, construction activities may require the closing and/or relocation of pedestrian sidewalk paths at these same locations. It is expected that these closings or relocations would occur over a period of approximately three years.
- Construction activities related to the stairways and entrances to the Eighth Avenue subway may require some re-routing of pedestrian flows both above and below grade. In addition, construction activities may affect some subway station movements during stairway construction. It is intended that construction would be performed during normal hours by segregating pedestrian flows with barriers. While measures would be taken, in coordination with NYCT, to minimize inconveniences to subway and commuter rail patrons (including scheduling construction activities during off-peak periods to the extent possible), construction activities may result in some temporary disruptions to pedestrian circulation.
- Construction activities related to utility upgrading and relocations may require some partial closing of additional traffic lanes for short periods of time on the streets adjacent to the Farley Complex and for feeder services along West 31st and West 33rd Streets and Eighth Avenue.
- Construction activities related to new pedestrian entrances and loading docks may require some partial closing of traffic lanes for extended periods of time on the streets adjacent to the Farley Complex.
- Construction of the Development Transfer Site would involve a temporary lane closure on West 33rd Street east of Eighth Avenue and could involve a lane closure on Eighth Avenue.

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NYCDOT would have to approve any lane closures and would do so only if the lane closure would not unduly interfere with traffic flow. To the extent possible, pedestrian traffic would be maintained via covered pedestrian walkways to ensure public safety. However, during some construction activities, it may be necessary to close sidewalks adjacent to the construction sites and temporarily re-route pedestrian traffic.

### *TRAFFIC*

Construction activities at the Farley Complex are expected to generate an average of approximately 400 workers on-site. During peak construction periods a maximum of between 750 and 1,000 workers would be expected on-site. The availability of public transit and the limited availability of low-priced parking at the Project site can be expected to result in a significant number of construction workers using public transportation rather than automobiles to commute to work. It is conservatively expected that on an average day, construction activities would generate approximately 80 worker automobiles; on a peak day, construction activities may generate between 180 and 240 worker automobiles. Construction workers typically arrive on-site between 6:30 and 7:30 AM and depart between 3:30 and 4:30 PM. Therefore, construction worker trips tend to occur before the AM and PM peak hours (when traffic volumes and transit ridership are at their highest levels). While extended shift construction worker site traffic during various phases of construction is expected, these vehicular and transit trips would be expected to represent a small fraction of the daily construction total.

In addition, construction activities are expected to generate approximately 20 to 30 truck and delivery vehicle trips on an average day, and approximately 50 truck and delivery vehicle trips on peak construction days. The days with the higher deliveries are expected to occur when structural work and finishing are occurring simultaneously. These trucks and delivery vehicles, when spread over the day, would not be expected to result in any significant adverse impacts. Trucks and delivery vehicles would be expected to access/egress the construction sites from the major adjacent north-south avenues (e.g., Eighth Avenue, Ninth Avenue, etc.), which are truck routes. Where feasible, the delivery of equipment and materials would take place directly on-site (rather than on-street) to minimize any traffic and/or pedestrian flow obstructions. However, lifting equipment would have to be located either in parking lanes or on sidewalks, and the delivery of equipment and supplies (primarily such structural elements as steel) would necessitate utilizing some street and/or sidewalk space. While these activities are generally expected to occur during regular construction work hours, whenever feasible, these activities would be scheduled to take place during off-peak periods to minimize any disruptions of traffic and/or pedestrian flows.

As discussed above, construction activities would require the closing of portions of one traffic lane on the streets rather than the avenues immediately adjacent to the construction sites, and would also require the closing and/or relocation of pedestrian sidewalk paths at some locations for extended periods of time. A plan would be developed in coordination with the Mayor's Office of Construction to minimize disruptions to traffic and pedestrian flows during the construction period. At all locations where either curbside or moving lanes of traffic are closed, measures would be taken to provide the maximum number of moving lanes to maintain traffic flows.

*PEDESTRIANS*

Pedestrian traffic would experience some inconvenience during construction, especially along West 31st and West 33rd Streets between Eighth and Ninth Avenues. Use of the sidewalks and adjacent parking lanes on the north side of West 31st Street and the south side of West 33rd Street between Eighth and Ninth Avenues by construction equipment is expected to last about 3 years. During this time, covered pedestrian walkways would be provided to ensure public safety. For varying periods of time, pedestrian traffic along the eastern side of Ninth Avenue adjacent to the Farley Complex, and the existing contra-flow truck access could be affected. It is not expected that pedestrian traffic along Eighth Avenue would be detoured, except for the periods of time involving work at the Farley Complex entrances, and around the new or relocated subway entrances. However, during some construction activities, it may be necessary to close sidewalks adjacent to the construction sites and temporarily re-route pedestrian traffic.

Construction of the building at the Development Transfer Site would affect pedestrian traffic on West 33rd Street east of Eighth Avenue along the frontage of the Development Transfer Site and along the east side of Eighth Avenue between West 33rd and West 34th Streets. Because of their proximity to Penn Station and subway entrances, these sidewalks are more heavily used than those around the Farley Complex and therefore, to the extent feasible, covered pedestrian walkways would be provided to ensure public safety and minimize disruption of pedestrian traffic. However, during some construction activities, it may be necessary to close sidewalks adjacent to the construction sites and temporarily re-route pedestrian traffic.

During the construction work to widen and extend the existing LIRR concourse at the west end of Penn Station (the West End Concourse), some inconvenience to LIRR riders using the platforms serviced by this concourse may occur. The inconvenience is expected to be for a short period of time, primarily while the extended concourse is opened and connected to the existing concourse. In addition, at the far western end of the railroad platforms, new vertical transportation elements would be added to allow access from Moynihan Station. During construction of the escalators, elevators, and stairways, temporary enclosures would separate the construction work from the general public. Therefore, the main effect would be narrowing of the platforms for a period of time at their western ends. In addition, users of the Eighth Avenue subway may experience some inconvenience while certain stairways and corridors are widened as part of the construction of Moynihan Station. These construction efforts would be undertaken in coordination with NYCT.

*TRANSIT AND RAIL*

There would be minimal disruptions to subways, or to Amtrak, LIRR and NJT trains during the construction period. The track level work that could interfere with subway and train schedules would be carefully coordinated with the four operating railroads. The work would be scheduled for off-peak hours, and not during peak commuting times. The stair to the Eighth Avenue subway at the southwest corner of Eighth Avenue and 33rd Street would be closed during its relocation and reconstruction. In addition, prior to construction on any LIRR or NYCT controlled or shared areas within Penn Station, ESDC would develop a construction agreement with MTA and its constituent agencies, which would include measures to minimize, to the extent practicable, temporary disruptions to transit and railroad operations—including bathrooms, red cap services, and ticket sales facilities—and pedestrian circulation during the course of construction. For the Development Transfer Site building, new subway entrances would be constructed within the building line and some closures of the existing stairs on the east side of Eighth Avenue between West 33rd and West 34th Streets are likely while these new connections

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are constructed and the existing stairs are removed. The construction of these connections would be undertaken in coordination with NYCT, NJT, and the ARC project. These minor disruptions during off-peak hours are not considered to be significant adverse impacts.

### **AIR QUALITY**

Possible impacts on local air quality during construction of the proposed Project include:

- fugitive dust (particulate matter) emissions from demolition and construction; and
- engine emissions, including emissions from on-road and nonroad construction engines.

### *FUGITIVE EMISSIONS*

The most likely source of fugitive dust emissions from construction operations associated with the Project would come from demolition and construction activities. Most demolition activities would occur inside the Farley Complex or below it. No heavy earth moving equipment is expected to be used during construction at the Farley Complex, and limited use of such heavy equipment is expected for construction at the Development Transfer Site, as the existing garage foundations are already deep. Fugitive dust emissions would also be associated with demolition of the structures on the Development Transfer Site, and with various other construction activities such as material transfers, site clean-up, and concrete grinding or drilling.

Actual quantities of emissions depend on the type of equipment employed, the physical characteristics of the underlying soil, the speed at which construction vehicles are operated, and the type of fugitive dust control methods employed. Much of the fugitive dust generated by construction activities consists of relatively large-size particles, which are expected to settle within a short distance from the construction site and not significantly affect the buildings or people nearby. Almost all demolition activities would occur inside the Farley Complex or below-grade for the Project; therefore, most of the fugitive dust from these activities would not escape to the surface.

As discussed in Chapter 4.11, “Contaminated Materials,” the existing Farley Complex is likely to contain asbestos and lead paint. Asbestos are present in a variety of building materials, including pipe insulation, floor tiles, transite panels, and roofing materials. Since the Farley Complex was constructed when the use of paint containing lead was common, it is probable that many painted surfaces in the building contain lead. Asbestos-containing materials in the buildings would be abated prior to any renovation activities. City, state, and federal requirements specify abatement procedures that prevent dispersal of asbestos into the air. These include the use of containment barriers, keeping work areas under negative air pressure, and monitoring for the presence of airborne asbestos before, during, and after abatement work. OSHA regulations require precautions to minimize exposure to lead during demolition activities such as demolition of interior walls painted with lead-based paint. For this project, demolition, excavation, and construction would be conducted with the care mandated by the site's proximity to active uses. All appropriate fugitive dust control measures—including watering of exposed areas and dust covers for trucks—would be employed. Any other hazardous materials that may be disturbed by renovation work would be identified during the final design stage and removed prior to construction following proper handling and disposal procedures. In addition, all necessary measures would be implemented to ensure that the substantive standards set out in the New York City Air Pollution Control Code regulating construction-related dust emissions have been met. As a result, no significant air quality impacts from fugitive dust emissions would be expected.

*ENGINE EMISSIONS*

During construction, engine emissions may result from trucks delivering construction materials and removing debris, workers' private vehicles, disruptions in traffic near the construction site, and construction equipment.

Local increases in mobile source emissions would be minimized by incorporating traffic maintenance requirements into the construction contract documents to ensure that:

- construction requiring temporary street closings for the relocation of utilities and for other purposes in heavily traveled areas would be performed, to the maximum extent possible, during off-peak hours;
- existing number of traffic lanes would be maintained to the maximum extent possible;
- idling of delivery trucks or other equipment would not be permitted during periods when they are being unloaded or are not in active use; and
- there would be engine emissions controls for controlled fleets, as outlined below.

All construction activities would be undertaken in accordance with strict emissions controls and construction practices outlined below, which would be part of any construction contracts for the proposed Project, including for the Development Transfer Site. The emissions controls would substantially reduce diesel particulate matter emissions from construction engines, by:

- using electrical grid power to power electric engines in lieu of diesel engines, and minimizing the use of generators to the extent practicable;
- the use of ultra low sulfur diesel exclusively for all nonroad diesel powered engines;
- the exclusive use of nonroad engines certified by EPA as Tier 2 or higher (engines with higher 'Tier' certification have lower emissions);
- using diesel engines equipped with diesel particle filters (DPF) for all nonroad diesel engine applications with a power output rating of 50 horsepower (hp) or greater (either retrofit with or manufacturer-installed DPF), and for controlled truck fleets, i.e., concrete delivery and concrete pumping trucks;
- limiting unnecessary engine idling, both on-site and on-street, to three minutes; and
- the exclusive use of solar powered or electrical grid powered illuminated traffic control signals and signs.

The use of DPFs for all construction engines with an engine output rating of 50 hp or greater is expected to reduce particulate matter emissions from those engines by more than 90 percent.

Since incremental thresholds for  $PM_{2.5}$  in New York are low,  $PM_{2.5}$  is considered to represent the criteria pollutant of highest concern from nonroad engines, and if no significant impact is predicted for  $PM_{2.5}$ , no impacts would occur for other pollutants. Construction related emissions were estimated, as presented in Chapter 4.6, "Air Quality" under *General Conformity*, and detailed in Appendix 3. The highest predicted running annual average  $PM_{2.5}$  emission rate was 0.16 pounds per day (lb/day), and the highest predicted peak day emission rate was 0.41 lb/day for the entire site. During much of the construction, emissions would be significantly lower. These levels are low, when compared with typical construction activity, and when compared with large

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construction projects that apply similar emissions controls and which were determined not to result in significant adverse construction-related air quality impacts.<sup>1</sup>

The state-of-the-art construction emissions reduction program for the proposed Project, committed to by the Project and enforced through construction contracts, would ensure the lowest practicable on-site emissions from construction engines, and as a result, no significant adverse impacts on air quality would occur during construction.

### NOISE AND VIBRATION

Impacts on community noise levels during construction of the proposed Project could include noise and vibration from construction equipment operation, and noise from construction vehicles and delivery vehicles traveling to and from the site. The level of impact of these noise sources depends on the noise characteristics of the equipment and activities involved, the construction schedule, and the location of potentially sensitive noise receptors.

Noise and vibration levels at a given location depend on the kind and number of pieces of construction equipment being operated, as well as the distance from the construction site. Typical noise levels of construction equipment that may be employed during the construction process are given in Table 4.12-2. Noise levels caused by construction activities would vary, depending on the phase and location of construction. Table 4.12-1 above shows typical construction equipment and vibration levels at various distances.

Construction noise is regulated by the New York City Noise Control Code and by EPA noise emission standards for construction equipment. These local and federal requirements mandate that certain classifications of construction equipment and motor vehicles meet specified noise emissions standards, including, except under exceptional circumstances, the requirement that construction activities be limited to weekdays between the hours of 7 AM and 6 PM, unless otherwise approved, and that construction material be handled and transported in such a manner as not to create unnecessary noise. Construction equipment and procedures would be carefully chosen to ensure that the substantive standards set out in these laws are met, although nighttime and weekend construction work would occur for certain construction activities, to minimize any potential disruption to rail and subway service, as noted above, and as may be required for other construction work. Compliance with noise control measures would be committed to by the Project and ensured by including them in the contract documents as material specifications and by directives to the construction contractor. Based on the information presented above, construction activities for the proposed Project are not expected to result in any significant adverse noise or vibration impacts.

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<sup>1</sup> See Columbia Manhattanville FEIS ([http://www.nyc.gov/html/dcp/html/env\\_review/manhattanville.shtml](http://www.nyc.gov/html/dcp/html/env_review/manhattanville.shtml)) and Atlantic Yards FEIS (<http://www.empire.state.ny.us/AtlanticYards/FEIS.asp>)

**Table 4.12-2  
Construction Equipment Noise Emission Levels (in dBA)**

Equipment	Typical Noise Level (dBA) 50 feet from source
Air compressor	81
Backhoe	80
Ballast Equalizer	82
Ballast Tamper	83
Bulldozer	85
Compactor	82
Concrete Mixer	85
Concrete Pump	82
Concrete Vibrator	76
Crane, Derrick	88
Crane, Mobile	83
Generator	81
Grader	85
Impact Wrench	85
Jack Hammer	88
Loader	85
Paver	89
Pile Driver (Impact)	101
Pile Driver (Sonic)	96
Pneumatic Tool	85
Pump	76
Rail Saw	90
Rock Drill	98
Roller	74
Saw	76
Scarifier	83
Scraper	89
Shovel	82
Spike Driver	77
Tie Cutter	84
Tie Handler	80
Tie Inserter	85
Truck	88
<b>Source:</b> Transit Noise and Vibration Impact Assessment, FTA, May 2006.	

As mentioned above in the discussion of potential construction impacts on historic properties, construction activities have the potential to result in vibration levels that may in turn result in structural or architectural damage, and/or annoyance or interference with vibration-sensitive activities. In general, vibratory levels at a receiver are a function of the source strength (which in turn is dependent upon the construction equipment and methods utilized), the distance between the equipment and the receiver, the characteristics of the transmitting medium, and the receiver's structure and type of construction. Construction equipment operation causes ground vibrations which spread through the ground and decrease in strength with distance. Vehicular traffic, even in locations close to major roadways, typically does not result in perceptible vibration levels unless there are discontinuities in the roadway surface. With the exception of the case of fragile and possibly historically significant structures or buildings, generally construction activities do not reach the levels that can cause architectural or structural damage, but can achieve levels that may be perceptible and annoying in buildings close to a construction site. Therefore, prior to determining the appropriate requirements for the proposed Project's CPPs, an assessment to quantify the potential vibration impacts of construction activities on structures and residences

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near the project site would be prepared. The CPPs would be prepared and implemented as necessary to avoid damage to any identified fragile buildings in the area.

Further, a complaint response procedure would be implemented to promptly address community concerns and implement additional control methods where necessary. In addition, in advance of certain activities that are likely to result in vibrations, outreach to those in the surrounding blocks that could be affected would be conducted. Further, best management practices, such as low-impact machines and ground improvement to limit vibration, would be employed. With these measures in place, construction of the Preferred Alternative is not expected to have adverse noise or vibration effects during construction.

### **4.12.4 CONCLUSIONS**

In summary, it is assumed that throughout construction, USPS retail uses and Penn Station operations would continue in the Farley Building. Some USPS administrative functions would also remain, but these functions would be relocated within the Farley Complex. NJT, LIRR, and Amtrak would continue their operations uninterrupted within Penn Station. In addition, the Eighth Avenue subway lines would remain in operation throughout the construction period. With the implementation of applicable controls and measures, no significant adverse impacts in the area of historic resources, hazardous materials, transportation, air quality, and noise are expected during the construction period. In connection with the construction of the Preferred Alternative, MSDC and ESDC will:

- Prepare a plan, in consultation with MTA and its constituent agencies, Amtrak, and NJT that would include measures to minimize, to the extent practicable, temporary disruptions to transit and railroad operations;
- Coordinate construction activities with other large-scale transportation projects under construction in the vicinity of the Project, including the ARC project;
- Require the development of and adherence to measures designed to avoid impacts on the exterior and interior portions of the Farley Complex to be preserved as part of the Project;
- Require the development of and adherence to measures designed to avoid damage to historic resources that are located within 90 feet of proposed construction activities (namely, the former J.C. Penney Company building at 331-343 West 33rd Street and former William F. Sloan Memorial YMCA at 360 West 34th Street);
- Require that construction activities be performed in accordance with the substantive requirements of the New York City Air Pollution Control Code applicable to the control of fugitive dust emissions;
- Require that construction activities with the potential to generate dust be conducted using measures that will include wetting of exposed areas and the utilization of dust covers on trucks, as needed to minimize dust emissions;
- Require the implementation of measures to minimize vehicle and equipment-related emissions, including limiting unnecessary engine idling, both on-site and on-street, to three minutes; using electrical grid power to power electric engines in lieu of diesel engines where practicable; minimizing the use of generators to the extent practicable; using ultra low sulfur diesel fuel exclusively for all nonroad diesel powered engines; using exclusively nonroad engines certified by EPA as Tier 2 or higher; and using diesel engines equipped with diesel particle filters or equivalently effective controls for all nonroad diesel engine applications with a power output rating of 50 horsepower or greater;

- To the extent necessary, require that additional environmental investigations be conducted to determine the potential for contamination at locations where excavation or soil disturbance will take place;
- Where contamination has been or is identified, require that appropriate measures be taken to remove or otherwise address such conditions in accordance with the regulations, practices and protocols identified in this Environmental Assessment, including, as appropriate, preparation of and adherence to proper Health and Safety Plans, Soil Management Plans, Soil Gas Management Plans and Groundwater Management Plans;
- Require that ACM, lead based paint, PCB-containing equipment, and electrical switching devices containing mercury are properly removed, handled, disposed of and otherwise managed in accordance with the regulations, practices and protocols described in this Environmental Assessment, including, as appropriate, preparation and adherence to proper ACM Material Management Plans, Lead Based Paint Management Plans and PCB-Containing Equipment Management Plans;
- Require development of and adherence to a plan, prepared in coordination with the Mayor's Office of Construction, to minimize disruptions to traffic and pedestrian flows during the construction period;
- Require adherence to standard practices for the protection of pedestrians during construction, including but not limited to providing covered temporary pedestrian walkways, as appropriate; and
- Require compliance with the substantive provisions of the New York City Noise Control Code relating to construction-related noise and U.S. EPA noise emission standards for construction equipment, and the employment of best management practices, such as low-impact machines and ground improvement to limit vibration.

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