A. INTRODUCTION

As discussed in Chapter 1, "Project Description," the Proposed Project would include the following elements:

- Installation of a third Main Line track from Floral Park Station to Hicksville
- Elimination of seven existing grade crossings to provide grade-separated crossings (or ^ at two locations, full closures) to vehicular traffic
- Construction of retaining walls and sound attenuation walls along portions of the corridor
- Modifications to passenger rail stations and parking (e.g., modified and improved platforms, pedestrian overpasses, passenger shelters, Americans with Disabilities Act (ADA) enhancements, and parking modifications including new parking facilities at the New Hyde Park, Mineola, Westbury, and Hicksville stations)
- Modifications to railroad infrastructure including signal systems, substations, culverts, interlockings, crossovers, sidings, track bed, stormwater drainage, power systems, communications and signals
- Relocation of utilities along the Long Island Rail Road (LIRR) right-of-way (ROW) and at grade-separated crossings, including electric, signal, communications, gas, water, sewer, and storm sewer conveyances and drainage systems at the grade-separated crossings

Depending on the precise schedule and phasing agreed to with the design-build contractor, active construction of the Proposed Project is expected to take approximately three to four years. Although the goal of the Proposed Project is to complete construction as expeditiously as reasonably possible to minimize the duration of the construction period, to be conservative, the analysis presented in the ^ Environmental Impact Statement (^ EIS) assumes that active construction across the 9.8 mile corridor would last as long as four years (although construction in any one community would be active for only a portion of that time).

This chapter summarizes the construction plans for the Proposed Project and assesses the potential for significant adverse impacts during construction. The construction elements of the Proposed Project and the types and sequencing of activities likely to occur during construction are described. In addition, the types of equipment expected to be used during construction and potential construction staging areas are identified. Based on this information and a conservative preliminary construction schedule, an assessment is provided of the potential impacts from construction activities. Potential construction impacts reviewed focus on the projects effects on land use and community character, socioeconomic conditions, environmental justice, visual resources, historic and cultural resources, natural resources, hazardous and contaminated materials, transportation, air quality, and noise and vibration, and safety and security. Any specific measures that have been identified that would avoid, minimize, or mitigate potential

construction-period impacts would be included in the technical provisions of the design-build contract.

B. PRINCIPAL CONCLUSIONS AND IMPACTS

Construction of the Proposed Project—as is the case with any major construction project—would result in some temporary disruptions in the surrounding area. In order to minimize the duration of the construction period, the implementation of an expedited construction schedule by the design-build contractor will be emphasized and prioritized in the bid documents. To be conservative, this construction impact analysis assumes that active construction would last as long as four years; however the goal of the design-build contract bidding competition will be to reduce that period and the construction duration at any one location so as to minimize the effects of construction activities on nearby communities.

Construction of the Proposed Project would not result in significant adverse impacts with respect to land use and community character, environmental justice, visual resources, natural resources, and site safety. Construction of the Proposed Project would result in the temporary change of the use of a limited number of individual parcels to be used as staging areas but would not permanently change the patterns of land use and character of the communities within the Study Area; temporary construction impacts would be localized and would not result in disproportionate construction impacts to environmental justice communities; construction activities would be phased to minimize the duration of construction at any particular location so as to lessen overall effects of construction on the surrounding communities; with the implementation of a Stormwater Pollution Prevention Plan (SWPPP), a Remedial Action Plan (RAP) and a Construction Health and Safety Plan (CHASP), construction of the Proposed Project would not result in significant adverse impacts to groundwater, the Nassau/Suffolk Aquifer System, or wetlands^ . In addition, construction of the Proposed Project would not result in significant adverse impacts to ecological communities, wildlife or any habitat that is of value to wildlife^ . Construction would follow existing Metropolitan Transportation Authority (MTA) and LIRR operational safety and security programs and processes to provide the riding public and construction employees with a safe and secure environment. The Proposed Project would also implement a construction noise and vibration control plan as well an air quality control plan to minimize the effects of construction.

Additional information relating to the potential for significant adverse impacts during construction for key technical areas is summarized below.

SOCIOECONOMICS

Businesses would not be significantly affected by any temporary change in pedestrian and vehicular access that could occur as a result of construction activities. A ^ Work Zone Traffic ^ Control Plan (WZTCP) would be developed and implemented to ensure that access to existing business districts and individual businesses throughout the Project Corridor would be maintained throughout the construction period. In general, LIRR stations are located within or close to business districts. Projected construction durations for station improvements range from 4 to 6 months. However, construction activity associated with grade crossings or LIRR ROW improvements may be noticeable from within business districts during the time period that work is underway, which may partially or entirely occur before or after station improvements are constructed.

The construction of the Proposed Project would result in the investment of significant capital into the local and regional economy. The Proposed Project is expected to cost approximately $2 billion in 2019 dollars, which includes construction, design, contingency, force account, and agency cost. The Proposed Project would be constructed using State funds and MTA/LIRR Capital Funds. The total effect on the local economy, expressed as economic output or demand for local industries, is estimated at approximately $3.18 billion for Nassau County, $47.14 million for Suffolk County, and approximately $3.33 billion for the New York State economy overall.

HISTORIC AND CULTURAL RESOURCES

The LIRR ROW along the Project Corridor, the identified potential construction staging areas, the proposed grade crossing locations, and property takings locations have been determined to possess little to no archaeological potential. Therefore, construction of project components affecting these areas of the Project Corridor would have no adverse impact on archaeological resources. Should additional takings locations or staging areas be proposed as project design progresses, an assessment of archaeological potential for those locations would be undertaken in consultation with the New York State Office of Parks, Recreation, and Historic Preservation (OPRHP).

^ Construction of the Proposed Project would involve the demolition of two historic architectural resources—the Nassau Tower and the former Mineola LIRR Electrical Substation. No other historic architectural resources would be directly impacted by construction of the Proposed Project.

To ensure that construction activities associated with the Proposed Project that would be undertaken within 100 feet of architectural resources would not cause inadvertent physical impacts to historic architectural resources, LIRR would prepare and implement a Construction Protection Plan (CPP) in consultation with the New York State Office of Parks, Recreation and Historic Preservation (OPRHP) for any architectural resources located within 100 feet of the Proposed Project construction. The historic architectural resources that would be subject to the CPP are:

- Floral Park—the Floral Park Public Library, the commercial buildings on Tyson Avenue and South Tyson Avenue, and the commercial buildings on Tulip Avenue;
- Mineola—the commercial buildings at Station Plaza North;
- Westbury—the potential architectural resource at 164 Post Avenue; and
- Hicksville—Top Hat Uniform and the Hicksville USPS Main Post Office.

Measures to mitigate the adverse impact from the demolition of Nassau Tower and the former Mineola Electrical Substation—which is a Project-related impact not limited to construction activities—would be developed in consultation with OPRHP. These mitigation measures, along with the protective measures established in the CPP, would be set forth in a Letter of Resolution (LOR) to be executed among the involved parties.

HAZARDOUS MATERIALS

Construction of the Proposed Project would require subsurface disturbance along the alignment, at LIRR ^ Stations, at commercial properties that would be acquired as part of the Proposed Project, at parking garage locations, and within areas that would require alterations to grade

crossings. ^ A soil sampling program conducted within the LIRR ROW and at parking garage locations identified only one location in the LIRR ROW and one location at a parking garage location where contaminant levels exceeded applicable clean-up objectives. However, given the past land use history of this area, contaminated soil and/or groundwater may be encountered at other locations. The potential for adverse impacts would be avoided by ensuring that construction activities are performed in accordance with the following protocols (see Chapter 8, "Contaminated Materials," for details): ^ prepare a Remedial Action Plan (RAP) and a Construction Health and Safety Plan (CHASP) for implementation during project construction, remove asbestos containing materials (ACM), lead-based paint (LBP), mercury and polychlorinated ^ biphenyls (PCBs) in accordance with an approved CHASP; and perform off-site disposal and dewatering in accordance with applicable federal, state, and local requirements.

TRANSPORTATION

Pedestrian connectivity across the tracks would be maintained at each of the grade crossings during construction or would be diverted to nearby crossings; pedestrian access to the passenger rail stations and nearby businesses would also be maintained. During construction, LIRR would operate normal weekday commuter (i.e., peak) service, with periodic suspension of service on weekends to allow for construction activity that could not be performed with active train service. Due to access constraints for large construction equipment and materials, Carle Place ^ Station may be temporarily closed for approximately 12 months. If Carle Place ^ Station were to be temporarily closed, shuttles would be provided to take passengers utilizing the Carle Place ^ Station to and from the nearby Westbury ^ Station.

Construction of the Proposed Project would generate construction worker vehicle trips and construction truck trips. Satellite parking would be provided to keep personal construction worker vehicles out of residential streets and parking near the stations. In lieu of construction truck deliveries and to reduce the effects of construction truck traffic on local roadways, existing track would also be used to transport materials to and from the work sites to the extent practical. In addition, construction deliveries would be scheduled outside of the school and commuting traffic peak hours to the extent practicable while school is in session.

Grade crossing elimination activities would require temporary lane and roadway closures and has the potential for temporary adverse traffic impacts on nearby roadways during construction. Intersections that have the potential to experience adverse traffic impacts during construction and proposed improvement measures are summarized below in **Table 13-1.**

Given the temporary nature of such lane closures and diversions (targeting no longer than 6 to 9 months depending on location), such impacts could cause temporary inconvenience, but once construction ends would not have a continuing negative impact. In addition, as outlined above, measures can be implemented to reduce these temporary adverse impacts.

AIR QUALITY

Although construction activity in general has the potential to adversely affect air quality as a result of diesel emissions from construction equipment and trucks, construction of the Proposed Project would not result in significant adverse impacts on air quality. The need for an analysis pursuant to NYSDOT's *The Environmental Manual (TEM)* was considered for carbon monoxide (CO) and particles with an aerodynamic diameter of less than or equal to 10 micrometers (PM_{10}). Because the Proposed Project would maintain existing traffic flow routes without resulting in

Table 13-1
Construction Traffic Analysis Results Summary

Grade Crossing	Affected Intersections	Improvement Measure	Targeted Full or Partial Road Closure Duration	Anticipated Total Construction Duration
Covert Avenue	1. Covert Avenue at Stewart Avenue (northbound right-turn movement – AM and PM peak hours)	1. Lane restriping and signal timing modification	6 months	6 – 9 months
	2. Jericho Turnpike and South 12th Street (eastbound and northbound approaches – AM peak hour; westbound left-turn movement and northbound approach – PM peak hour)	2. Signal timing modification, parking restrictions, and lane restriping		
	3. Jericho Turnpike and New Hyde Park Road (northbound approach and westbound left-turn movement – AM peak hour; northbound shared through-right, southbound left-turn, and westbound left-turn movements – PM peak hour)	3. Signal timing modification, parking restrictions, and lane restriping		
	4. New Hyde Park Road and Stewart Avenue (eastbound left-turn movement and northbound and southbound approaches – AM peak hour; eastbound left-turn movement and southbound approach –PM peak hour)	4. Signal timing modification		
	5. South 12th Street and Stewart Avenue (northbound and southbound approaches – AM and PM peak hours)	5. Install temporary traffic signal		
New Hyde Park Road	1. New Hyde Park Road at the LIRR Grade Crossing (northbound approach – AM peak hour; southbound approach – PM peak hour)	1. No modification	9 months	9 – 12 months
	2. New Hyde Park Road and Stewart Avenue (northbound approach – AM peak hour; southbound approach – PM peak hour)	2. Signal timing modification		
South 12th Street	Similar to Build Option 2 in Chapter 10, "Transportation"	See Chapter 10, "Transportation"	6 months	6 – 9 months
Willis Avenue	1. Mineola Boulevard and Second Street (southbound shared through-right movement – AM and PM peak hours)	1. Signal modification, lane restriping, and parking restriction	6 months	6 – 9 months
	2. Mineola Boulevard and First Street (westbound approach – AM and PM peak hours)	2. Signal timing modification		
	3. Second Street and Willis Avenue (eastbound approach – PM Peak hour)	3. Signal timing modification		
	4. Roslyn Road and Second Street (southbound approach and eastbound through-right movement – AM and PM peak hours; northbound left-turn movement – AM peak hour)	4. Lane restriping and signal timing modification		
	5. Main Street and Second Street (northbound, southbound, and eastbound approaches – PM peak hour)	5. Temporary signal installation		
Main Street	1. Mineola Boulevard and Old Country Road (westbound through and right-turn movements – AM and PM peak hours; eastbound left-turn movement – PM peak hour)	1. Lane restriping and signal timing modification (except for westbound right-turn movement in the PM peak hour where no there would be no modification is proposed	6 months	6 – 9 months
	2. Mineola Boulevard and Second Street (southbound shared through-right movement – AM peak hour; westbound approach – PM peak hour)	2. Signal timing modification		
	3. Second Street and Willis Avenue (eastbound – PM peak hour)	3. Signal timing modification		
	4. Old Country Road and Roslyn Road (westbound movement – AM peak hour)	4. Signal timing modification		
	5. Roslyn Road and Second Street (southbound approach – PM peak hour)	5. Signal timing modification		
Urban Avenue	1.Post Avenue and Union Avenue (southbound shared left-through movement – AM and PM peak hours)	^ 1. Signal timing modification	6 months	6 – 9 months
	2. Old Country Road and School Street (eastbound left-turn movement – AM and PM peak hours)	2. Signal timing modification		
	3. Old Country Road and Belmont Place/Merillon Avenue (southbound left-turn movement – PM peak hour)	3. Signal timing modification		
School Street	1. Post Avenue and ^ Maple Avenue (northbound ^ left-^ turn and eastbound shared through-right movements – PM peak ^ hour)	1. ^ No modification	6 months	6 – 9 months
	2. Post Avenue and Union Avenue (southbound shared left-through movement – AM and PM peak hours)	2. Lane restriping		
	3. Post Avenue and Railroad Avenue	3. No modification		
	^ 4. Old Country Road and School Street (eastbound right-turn movement – PM peak hour)	^ 4. Signal timing modification		

continuous construction detour/diversions over more than two CO (winter) seasons along local routes, no microscale detour traffic CO impact analysis was required per NYSDOT's criteria. The annual particulate matter (PM) emissions from construction activity are estimated to be well below the 15-ton per year threshold contained in NYSDOT's *TEM* and thus would not result in significant air qualityimpacts during the construction period on a regional level. Similarly, the emissions for other criteria pollutants generated during construction of the Proposed Project would not result in significant adverse air quality impacts on a regional level.

In order to avoid potential temporary construction air quality impacts on a local level, LIRR is committed to implementing an air quality control plan during construction ^ that would include the following measures: dust control, ultra-low sulfur diesel fuel, the use of best available tailpipe technologies such as diesel particulate filters, and the utilization of equipment that meets stringent pollutant emission standards.

NOISE AND VIBRATION

Noise levels from construction activities along the Project Corridor, although temporary, could be a nuisance at nearby sensitive receptors such as residences, schools and other institutional land-uses. Although the overall construction period is expected to last approximately four years, most construction activities are generally expected to last less than two years at any one location, depending on the type of activity. During this time frame, noise and vibration impacts are expected along the Project Corridor, particularly at sensitive receptors adjacent to the rail alignment and facilities.

A detailed construction noise assessment was prepared representing the different construction scenarios anticipated, e.g., track construction, platform demolition, platform and canopy construction, retaining wall and sound attenuation wall construction, and/or grade crossing construction. For each scenario, assumptions were made based on the overall duration of construction activity, number and type of construction equipment likely to be used, percentage of time equipment would operate at maximum noise level (usage factor), percentage of time equipment would operate during a standard 8-hour work shift (load factor), and maximum noise and vibration levels from the equipment. Calculated sound pressure levels at 50 feet from the equipment exceeded 80 dBA in most instances. However, with implementation of sound reduction strategies, it is anticipated that a reduction in sound pressure levels of approximately 12 dBA can be achieved, thus bringing sound pressure levels below 70 dBA in most instances. While the absolute increase in sound pressure levels would be noticeable, and in some cases intrusive, the overall noise levels would be compatible with existing noise levels within the Project Corridor (see Table 12-4) which range from 66 dBA (L_{eq}) to 75 dBA (L_{eq}).[1] With implementation of noise control measures and implementation of a Construction Noise Control Plan the number of potentially affected properties in the Project Corridor would likely be reduced by approximately 85 percent.

Potential noise and vibration impacts expected during temporary construction activities would be ^ minimized or controlled to the extent practicable with Best Management Practices (BMPs). ^ The design-build contractor would be required by contract to use noise and vibration control measures (such as substituting equipment with lower noise levels, temporary barriers, exhaust

[1] One monitoring location had a baseline noise level of 62 dBA (Leq).

mufflers, etc.) ^ to minimize the impact on the surrounding community. ^ The MTA and LIRR ^ are exempt from the jurisdiction of municipalities pursuant to Section 1266(8) of the Public Authorities Law. However, to minimize the adverse effects of construction upon the surrounding community, the Proposed Project would nevertheless comply with the work ^ hour restriction within residential areas, except where not feasible to accommodate work affecting rail operations, such as work relating to ^ bridge replacement^ , construction of retaining walls, and grade alteration of track. In order to expedite construction to reduce road closures and diversions during the limited periods (6 to 9 months) of construction of the separations at five grade crossings, it is anticipated that work would take place outside specified local noise ordinance work hours. In cases where work is performed outside specified work hours in locations adjacent to residential neighborhoods, every effort will be made to keep intrusive noise to a minimum^ and the design-build contractor would be required by contract to meet strict performance standards detailed below. For any necessary night work, there would be extensive consultation with the community to minimize the effects of construction noise and vibration^ . LIRR is^ committed to implementing a community noise and vibration monitoring program, working with local schools and the affected communities and municipalities to schedule nearby construction activity as unobtrusively as practicable and feasible, and implementing a CPP to protect historic architectural resources from vibration impacts.

C. MEASURES TO MINIMIZE COMMUNITY IMPACTS

LIRR would require in its contract that the design-build contractor implement the following measures during construction to minimize potential impacts to nearby communities from ongoing construction:

1. COMMUNICATION WITH COMMUNITY

- Give advance notification of any disruptive work or work closures to residents, municipalities, school districts and first-responders
- Provide regular updates to the public in the form of email blasts and online postings
- Perform door-to-door outreach to residents in the affected areas
- Staff the project office with on-site supervision for rapid response to neighborhood concerns
- Maintain a 24/7 hotline assigned to a community outreach representative, to include direct communication with an on-site contractor/supervisor for real-time response
- Create and implement protocol for addressing community complaints
- Coordinate with local school districts to provide alternate transportation to schools where temporary or short-term road closures would either increase walking distance to schools or make on-foot travel to school problematic
- Work with local schools to schedule nearby construction activity as unobtrusively as practicable and feasible
- Coordinate with emergency service providers to ensure continuity of access to the community
- Establish regular meetings for LIRR, community representatives, and the contractor to discuss construction activities and community concerns

2. COMMUNITY SAFETY AND QUALITY OF LIFE

- Create an active program of construction security to ensure community safety
- Ensure the following are performed by the Contractor at construction sites:
  - Keep construction sites clean and orderly
  - Safely store construction materials in piles/not haphazardly
  - Ensure that construction fences are uniform and neat in material and appearance ^ (neatly clad chain-link fences in uniform green tennis mesh or printed mesh with approved enhancements, such as photos or artwork)
  - Entirely fence off all staging areas
  - Prohibit littering and dispersion of personal debris (e.g., cups, cans, cigarettes) on construction site
  - Provide covered trash receptacles that are emptied daily
- Perform street cleaning as appropriate to ensure construction debris and dirt will not affect the local community
- Install onsite/portable bathroom facilities that are unobtrusive to local communities
- Protect access to existing businesses
- Provide satellite parking for construction workers so as to keep personal construction worker vehicles off of residential streets
- Use existing track to transport materials to and from the work sites to the extent practical
- Schedule construction deliveries outside of school and commuter traffic peak hours to the extent practicable while school is in session

3. ENVIRONMENTAL PERFORMANCE

- Provide environmental monitoring consistent with a Construction Health and Safety Plan (CHASP)
- Implement a Stormwater Pollution Prevention Plan (SWPPP)
- Establish a Quality Control program to confirm compliance with environmental requirements
- Use directional lighting at night to protect residences from light pollution
- Implement Work Zone Traffic Control plans
- Implement an air quality control plan to include dust control measures, ultra-low sulfur diesel fuel, the use of best available tailpipe technologies such as diesel particulate filters, and the utilization of newer equipment.
- Conduct pre-construction home inspections
- Create and implement a community noise and vibration monitoring program
- Implement a Construction Protection Plan (CPP) to protect historic architectural resources within 100 feet of the construction activities for the Proposed Project
- In consultation with the community, employ rodent control measures
- Minimize noisy work during nighttime hours where practicable and feasible

D. CONSTRUCTION DESCRIPTION

CONSTRUCTION SCHEDULE

For the purposes of this analysis, it is conservatively assumed that construction of the Proposed Project would take approximately four years. The design-build contractor will be expected to prioritize an expedited schedule, and implementation of an expedited construction schedule of less than four years by the design-build contractor will be emphasized in the bid documents. Further, the assumed four year period is for overall active construction of the Proposed Project throughout the more than a dozen construction segments (see **Figure 13-1**).

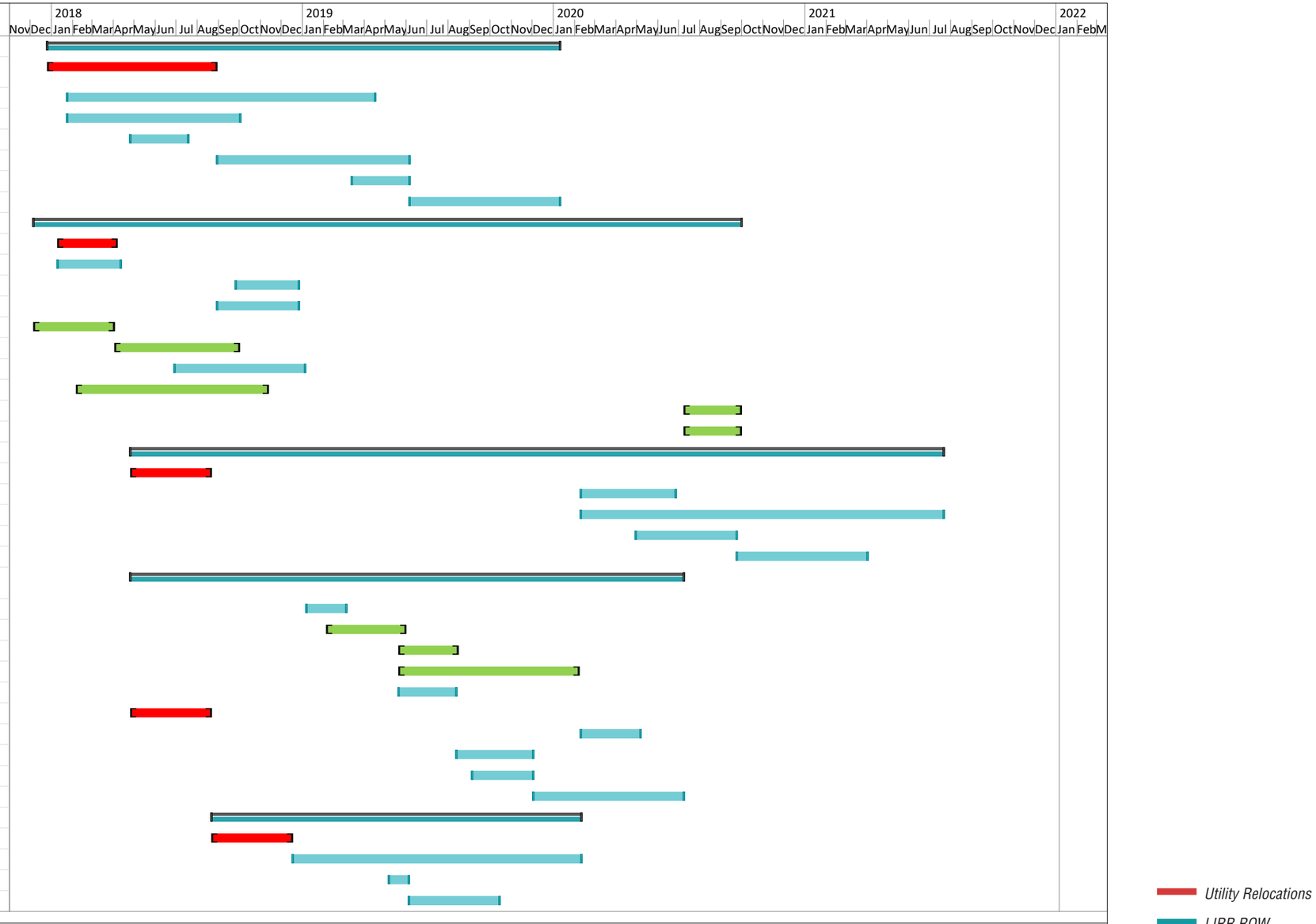
In any given segment, the overall construction duration will target to be shorter. Due to the need to sequence some aspects of the work, not all construction segments can proceed in parallel. Therefore, while the overall construction could take up to three to four years, no one location is expected to experience construction activities for that full duration. Furthermore, within each segment, with the exception of major bridge work, construction would proceed in a linear fashion as retaining walls, fill, and track and ballast are installed. For this work, major construction activities at any particular location may occur for several weeks to a few months before proceeding along the ROW.

For example, ^ New Hyde Park Road underpass activities, including utility relocation, would take place over approximately 9 to 12 months.^ [2] At other grade crossing ^ locations, construction is anticipated to take only 6 to 9 months. New Hyde Park ^ Station improvement activity is anticipated to take place over approximately 18 months and is typical of station improvement activities with the exception of Floral Park and Hicksville ^ Stations where no major station modifications are expected. Existing bridge structure modification activities would typically take approximately 4 to 10 months to complete. Some work would be longer because tracks and/or a portion of the affected roadway would need to be kept in service. Construction activities would be phased where logistically possible to minimize the duration at any location so as to lessen the effects of construction on the surrounding communities. Construction of the Proposed Project would entail temporary disruptions of varying duration to rail service, certain passenger rail stations, and local traffic operations. Expedited construction techniques for both the construction of the third track segments and the grade crossing eliminations such as temporary road closures, would result in shorter construction periods in general.

In general, LIRR stations are located within or close to business districts. Projected construction durations for station improvements range from 4 to 6 months. However, construction activity associated with grade crossings or LIRR ROW improvements may be noticeable from within business districts during the time period that work is underway, which may partially or entirely occur before or after station improvements are constructed.

[2] In the DEIS, Covert Avenue construction was proposed with partial-closure to allow traffic to flow through the construction zone. Construction was anticipated to take 9 to 12 months. Covert Avenue is now proposed to be conducted with full closure to traffic during construction. Thus, a 6 to 9 month construction period is anticipated at this location.

ID	Task Name	Duration
1	**Section 1A. Floral Park Station to South 5th Street**	**534 days**
2	Utility relocation (underground, PSEG Poles, Cablevision, LIRR, wires)	177 days
3	South Tyson Avenue Overpass	320 days
4	Plainfield Avenue Bridge	180 days
5	Drainage (North)	60 days
6	Retaining Wall	200 days
7	Drainage (South)	60 days
8	Track work	157 days
9	**Section 1B. South 5th Street to South 12th Street**	**736 days**
10	Utility relocation (PSEG Poles, Cablevision, LIRR, wires	63 days
11	Drainage (North)	66 days
12	Drainage (South)	66 days
13	Retaining Wall	85 days
14	Utility relocation (Covert Avenue Underpass)	84 days
15	Covert Avenue Underpass	130 days
16	Track work	136 days
17	Drainage (Covert Avenue Underpass)	200 days
18	South 12th Street Pedestrian Underpass	60 days
19	Drainage (South 12th Street underpass)	60 days
20	**Section 2A. New Hyde Park Station**	**845 days**
21	Utility relocation (PSEG Poles, Cablevision, LIRR, wires	84 days
22	Retaining Wall	100 days
23	New Hyde Park Station	378 days
24	Drainage (North and South)	105 days
25	Track work	136 days
26	**Section 2B. New Hyde Park Road to west of Merillon Station**	**575 days**
27	Demolition of 115 NHP Road	42 days
28	New Hyde Park Road Underpass utility relocation	84 days
29	Drainage (New Hyde Park Road underpass)	63 days
30	New Hyde Park Road underpass	189 days
31	Drainage (North)	60 days
32	Utility relocation (PSEG Poles, Cablevision, LIRR, wires	84 days
33	Denton Ave Bridge	63 days
34	Retaining Wall	80 days
35	Drainage (South)	63 days
36	Track work	157 days
37	**Section 3A. Merillon Avenue Station**	**384 days**
38	Utility relocation (PSEG Poles, Cablevision, LIRR, wires	84 days
39	Station demolition and reconstruction	300 days
40	Drainage	21 days
41	Track work	94 days



Utility Relocations
LIRR ROW
Grade Crossings

LIRR Expansion Project
Floral Park to Hicksville

Illustrative Construction Schedule
Figure 13-1a

ID	Task Name	Duration
42	**Section 3B. Nassau Boulevard to west of Mineola Stati**	**256 days**
43	Utility relocation (PSEG Poles, Cablevision, LIRR, wires	84 days
44	Retaining Wall	60 days
45	Drainage	20 days
46	Track work	115 days
47	**Section 4A. Mineola Station**	**494 days**
48	Utility relocation (PSEG Poles, Cablevision, LIRR, wires	84 days
49	Platform reconstruction (north and south)	147 days
50	Demolish structures	42 days
51	Drainage (North)	100 days
52	Retaining Wall	60 days
53	Relocate Railroad Employees	250 days
54	Pedestrian Bridge	63 days
55	Track work	190 days
56	**Section 4B. Main Street to Willis Avenue**	**1065 days**
57	Signal & Communication Relocation-Signal Tower	460 days
58	Build New Parking Garage	300 days
59	Utility relocation (PSEG Poles, Cablevision, LIRR, wires	84 days
60	Drainage (North and South)	180 days
61	Retaining Wall	180 days
62	Track work	199 days
63	Demolish Signal Tower	90 days
64	Utility relocation (Main Street Pedestrian Bridge)	84 days
65	Main Street Closure	126 days
66	Main Street Drainage	126 days
67	Main Street Pedestrian Bridge	60 days
68	**Section 4C. Willis Avenue to Roslyn Road**	**324 days**
69	Utility relocation (PSEG Poles, Cablevision, LIRR, wires	84 days
70	Utility Relocation (Willis Street Underpass)	84 days
71	Retaining Wall	20 days
72	Willis Avenue Underpass	126 days
73	Drainage (Willis Avenue Underpass)	126 days
74	Track work	220 days
75	**Section 4D. Roslyn Road to Glen Cove Road**	**580 days**
76	Utility relocation (PSEG Poles, Cablevision, LIRR, wires	120 days
77	Retaining Wall	240 days
78	Track work	295 days
79	**Section 4E. Glen Cove Road to Meadowbrook Parkway**	**347 days**
80	Replace Gen Cove Road Bridge	210 days
81	Utility relocation (PSEG Poles, Cablevision, LIRR, wires	84 days
82	Retaining Wall and Drainage	90 days
83	Drainage	90 days

Utility Relocations
LIRR ROW
Grade Crossings

LIRR Expansion Project
Floral Park to Hicksville

Illustrative Construction Schedule
Figure 13-1b

ID	Task Name	Duration
84	Track work	173 days
85	**Section 4F. Meadow Brook Parkway to west of Carle Place Station**	**374 days**
86	Construct new bay on Meadowbrook and Cherry Lane Bridges	100 days
87	Utility relocation (PSEG Poles, Cablevision, LIRR, wires	84 days
88	Retaining Wall	110 days
89	Track work	138 days
90	**Section 5A. Carle Place Station**	**447 days**
91	Utility relocation (PSEG Poles, Cablevision, LIRR, wires	84 days
92	South Platform	250 days
93	Retaining Wall	60 days
94	North Platform	200 days
95	Track work	163 days
96	**Section 5B. Carle Road to west of Westbury Station**	**290 days**
97	Utility relocation (PSEG Poles, Cablevision, LIRR, wires	84 days
98	Track work	220 days
99	Retaining walls	200 days
100	**Section 6A. Westbury Station**	**300 days**
101	Utility relocation (PSEG Poles, Cablevision, LIRR, wires	84 days
102	Construct 2 Parking Garages	300 days
103	Track work	136 days
104	Retaining Wall	80 days
105	New Platform	150 days
106	**Section 6B. East of Westbury Station to Urban Avenue**	**686 days**
107	Utility relocation (PSEG Poles, Cablevision, LIRR, wires	84 days
108	Utility Relocation (School Street underpass)	126 days
109	Drainage (School Street underpass)	126 days
110	School Street Underpass	150 days
111	Retaining Walls	130 days
112	Track work	136 days
113	**Section 6C. Urban Avenue to West of Hickville Station**	**340 days**
114	Utility Relocation (Urban Avenue underpass)	84 days
115	Utility relocation (PSEG Poles, Cablevision, LIRR, wires	90 days
116	Urban Ave underpass	126 days
117	Drainage (Urban Avenue underpass)	126 days
118	Retaining Wall	60 days
119	Track work	94 days
120	**Section 6D. Hicksville Station**	**400 days**
121	Install new double slip switch	90 days
122	Platform Work	45 days
123	Construct Parking Garage (2)	400 days

Utility Relocations
LIRR ROW
Grade Crossings

LIRR Expansion Project
Floral Park to Hicksville

Illustrative Construction Schedule
Figure 13-1c

CONSTRUCTION ELEMENTS AND PHASING

The main components of the Proposed Project and their proposed phasing are discussed in more detail below.

UTILITY RELOCATIONS

There are existing utilities that would need to be relocated to accommodate the new Main Line third track and the elimination of the existing grade crossings. Utilities located within the Project Corridor include: LIRR signals and communications; gas; electric; fiber optic; telephone; cable; water; sanitary sewer; and storm sewer. In general, electric transmission, LIRR signal and communications, Verizon, and Cablevision lines are located within the ROW. Utility relocation activities ^ within each segment of the Proposed Project must be conducted first before the installation of additional track, the elimination of grade crossings, and various station improvements and modifications could proceed.

For overhead utilities work, augured holes would be used to accommodate the installation of the new poles. The existing utility lines would be relocated from the old pole to the new pole. Flatbed delivery trucks and dump trucks would be used to transport materials and remove soils, respectively. Underground utilities work would typically involve a pavement cutter and a backhoe to excavate the trench, a mobile crane to relocate the utility lines and maintain service, and a compactor to place the backfill. Asphalt trucks and rollers would be used to install any temporary paving cover.

THIRD MAIN LINE TRACK

The Proposed Project includes the installation of additional track to complete a continuous third Main Line track. Between Floral Park and Roslyn Road in Mineola, the new track location is proposed south of the existing alignment. The alignment of the new track would shift to the north side of the existing tracks east of Roslyn Road in Mineola and continue to just east of Carle Place ^ Station near the western limit of the Village of Westbury. The entire alignment would gradually shift to the south between the Carle Place ^ Station and Westbury ^ Station, connecting to the existing tracks and providing a new track south of the existing alignment at Westbury ^ Station. East of Westbury ^ Station, the new third track would gradually shift to the north, crossing underneath the existing Grand Boulevard Bridge and tying into an existing siding track located west of Hicksville ^ Station. In some locations, the two existing Main Line tracks would be shifted slightly to the north or south to facilitate a more desirable alignment and avoid property impacts.

The construction of the third Main Line track would generally proceed in the following stages:

- **Site Preparation.** The first step in construction, general site preparation, involves site mobilization of trailers and equipment and the installation of public safety measures such as fencing and signs. Staging areas within the ROW and at nearby areas would also be established during this stage. Where needed, Work Zone Traffic Control Plans would be developed and implemented to ensure the safety of the construction workers and the public passing through the construction area.
- **Utility Relocations.** Existing utilities in the area of the third Main Line track would be relocated. As discussed above, the relocation of overhead utilities would typically involve an auger for drilling, a mobile crane for pole removal and installation, and a compactor for backfilling. The relocation of underground utilities work would typically involve a pavement

cutter and a backhoe to excavate the trench, relocate the utility lines and maintain service, and place the backfill.

- **Site Clearing.** Installation of the third track and retaining walls would require the clearing and grubbing of vegetation within the ROW. In addition, existing signal huts and electric boxes would be relocated and installed permanently in their new locations.
- **Retaining Wall Construction.** The installation of additional segments of track to complete a continuous third track through the Project Corridor would require the placement of additional structural soil subgrade and ballast within the ROW at the locations to achieve an appropriately level surface to place the tracks. In order to place the appropriate amount of subgrade and ballast without causing spill-over due to sloping onto properties outside of the ROW, construction of retaining walls and, where necessary, sound attenuation walls would be required. The retaining/sound attenuation wall locations and details are presented in ^ Chapter 1, "Project Description." Typically, to construct the wall, supporting piles would first be installed with pile auger rigs. Lagging structures would then be inserted between the piles to retain the soil, followed by installation of pre-cast concrete panels to form the wall structure.
- **Structure Modifications.** To accommodate the third track, seven existing bridge structures along the Project Corridor would be modified, including the South Tyson Avenue Bridge and the Plainfield Avenue Bridge in Floral Park, the Denton Avenue Bridge and the Nassau Boulevard Bridge in Garden City, and the Glen Cove Road Bridge, Meadowbrook State Parkway Bridge, and Cherry Lane Bridge in Carle Place. A new single track ^ would be ^ added to accommodate the new third track at the South Tyson Avenue, Plainfield Avenue, and Meadowbrook Parkway structures; the Denton Avenue, Nassau Boulevard, Glen Cove Road, and Cherry Lane structures would be modified to accommodate the third track. Modified bridge structure activities would require utility relocations to be performed before the commencement of abutment work. Temporary traffic and lane closures would be needed to stage the abutment work on both sides of the roadways. In addition, a weekend closure would be needed for the hoisting of bridge structure into place. Structure modifications would involve a variety of equipment including excavators, loaders, and dump trucks for earth moving activities, pile drivers for foundation activities, and a crane to hoist the bridge structures into place.
- **Track Work.** Existing tracks would be relocated, if necessary. After the soil is graded, stabilized, and backfilled, new tracks would be constructed adjacent to the existing main line tracks using track laying equipment. Where necessary, tracks would be raised to the new grade. Once the tracks are laid, ballast consisting of gravel or coarse stone would be placed to form the bed and stabilize the railroad track.
- **Railroad Infrastructure Modifications and Final Finishes.** The^ would include modifications to railroad infrastructure such as overpasses, signal systems, substations, culverts, sidings, interlockings, crossovers, track bed, power systems, communications, signals, third rail, and track drainage. This stage generally requires on-track equipment and hand-held tools. After railroad infrastructure modifications and station improvements are complete, the third track would be put into service.

GRADE CROSSING ELIMINATIONS

Along the LIRR Main Line segment between the Floral Park ^ Station and Hicksville ^ Station are seven locations where the rail line crosses a roadway. These locations are:

- New Hyde Park/Garden City
  - Covert Avenue
  - South 12th Street
  - New Hyde Park Road
- Mineola
  - Main Street
  - Willis Avenue
- Westbury/New Cassel
  - School Street
  - Urban Avenue

Grade crossing elimination activities would occur at no more than one location at a time within each of the three regions (New Hyde Park/Garden City, Mineola, Westbury/New Cassel) specified above. Only one road would be subject to closure at a time to allow for activity to occur simultaneously. Based on current plans, in the New Hyde Park/Garden City area, activities at the ^ Covert Avenue crossing would begin first, followed by the ^ New Hyde Park Road crossing once the ^ Covert Avenue grade-separated crossing is operational, and finally the South 12th Street crossing. In the Mineola area, activities at the Willis Avenue crossing would commence before those at the Main Street crossing. In the Westbury/New Cassel area, activities at the Urban Avenue crossing would occur before those at the School Street crossing.

These seven existing grade crossings would be eliminated to provide grade-separated crossings (e.g., underpasses) ^ at five locations, and, for the South 12th Street and Main Street crossings, full closures to vehicular traffic. Modification would be based on NYSDOT design criteria, consideration of construction impacts and duration, traffic impacts, and input from the community. A detailed description of the preferred grade crossing options^ is provided in Chapter 1, "Project Description."

Grade crossing elimination activities at each of the seven locations would generally proceed in the following stages:

- **Site Preparation.** The first step in construction is general site preparation and the implementation of the Work Zone Traffic Control Plan; this involves the installation of public safety measures such as fencing, signs, Jersey barriers, and temporary striping.
- **Utility Relocations.** Prior to excavation activities, existing utilities at the grade crossing would be relocated to ensure that grade crossing elimination activities could be conducted without impacting any existing service connections. This stage of work typically involves a pavement cutter and a backhoe to excavate the trench, relocate the utility lines and maintain service, and place the backfill. Flatbed delivery trucks and dump trucks would be used to transport materials and to remove soils, respectively. Asphalt trucks and rollers would be used to install any temporary paving cover.
- **Earthwork, Piers, and Abutments.** This stage requires the installation of shafts and precast cap beams, excavation or material fill for new embankments, and the construction of tunnel walls and bridge abutments. Jackhammers would also be used to remove any existing curbing and sidewalks. This stage of work typically involves an excavator, a loader, and dump trucks for earth moving activities, and vibratory pile drivers for sheeting and drilled piles for pile foundations.

- **Drainage Improvements.** A detailed description of the drainage improvements at the grade crossings is provided in Chapter 9, "Utilities and Related Infrastructure." Construction of the^ stormwater conveyance pipes would include support of excavation, excavation, chamber construction where needed, and the installation of precast pipes. Following installation of the conveyance ^ pipes, the excavated area would be backfilled and restored. In other locations, a trenchless technology form of construction might be pursued where open-trench construction is not desirable or feasible. This stage of work typically involves an excavator, a loader, and dump trucks for earth moving activities, concrete pumps and concrete trucks^ , and a mobile crane for the pipe installation.
- **Bridge Structure Construction.** Bridge structure installation would be conducted over a 48-hour weekend (7 total weekends over a three to four year construction period) with no train or roadway traffic at the location of the installation. During this time, sections of the bridge structure would be hoisted into place with the use of a mobile crane.
- **Final Roadway Finishes.** Final finish work would involve striping the streets and crosswalks and installation of new signals and signage (as necessary). Final finishes may also include any other proposed landscaping. This stage generally requires only light-duty equipment and hand-held tools.

STATION IMPROVEMENTS AND MODIFICATIONS

The Proposed Project would include improvements to several of the passenger rail stations within the Project Corridor—New Hyde Park Station, Merillon Avenue Station, Mineola Station, Carle Place Station, and Westbury Station. As part of the separate Hicksville Station and North Track Siding Improvements Project, station improvements at Hicksville Station are currently being implemented. As discussed in Chapter 1, "Project Description," the five modified stations would accommodate the new third track, enhance pedestrian access and ADA accessibility, improve platforms and passenger waiting areas, and meet the requirements of the LIRR ^ Station guidelines and applicable codes. In addition, LIRR will implement Enhanced Station Initiatives such as station art, WiFi, digital signage, and other amenities. At the Floral Park Station, ADA-compliant access would be provided with new elevators and sidewalk improvements.

Station improvements and modifications associated with the Proposed Project would generally proceed in the following stages:

- **Site Preparation.** The first step in construction, general site preparation, involves site mobilization of trailers and equipment and the installation of public safety measures such as fencing and signs and temporary stairs and ramps. Where needed, Work Zone Traffic Control Plan would be developed and implemented.
- **Utility Relocations.** Prior to platform construction activities, existing utilities in the area of the new platforms and/or the third track would be relocated. This stage of work would typically involve an auger for drilling, a mobile crane for pole removal and installation, and a compactor for backfilling.
- **Construct New Platform and Associated Access.** Platform construction would involve the installation of support columns and the platform structure itself as well as the associated pedestrian stairs, ramps, overpasses, and/or elevators. The new platforms would be constructed immediately south of the existing platforms at the New Hyde Park, Merillon Avenue, Mineola, Carle Place, and Westbury ^ Stations. The north platforms at these stations would also be demolished and replaced. Pedestrian access to the platform and train

service would be maintained during this stage of construction. Equipment used during this stage of construction would include pile rigs, mobile cranes, front end loaders, and concrete pumps.

- **Remove Existing Platform.** Once the new platform is constructed, the existing platform would be removed. The existing platform may be removed half at a time to ensure pedestrian access to the platform and train service. Provisions would be made through either temporary long bridge plates or temporary platforms to provide access from the new platform to train services on the existing Main Line tracks until the third track is laid and placed in service. Equipment used during this stage of construction would include excavators, front end loaders, and concrete saw cutters.
- **Final Finishes.** Final finish work would involve the removal of temporary stairs and ramps, and installation of benches, ticket machines, and new signage. Final finishes may also include any proposed landscaping. This stage generally requires only light-duty equipment and hand-held tools.

RAILROAD INFRASTRUCTURE MODIFICATIONS

The ^ Proposed Project would include modifications to railroad infrastructure such as overpasses, signal systems, culverts, sidings, track bed, power systems, communications, signals, third rail, and track drainage. In addition, the Proposed Project would include modifications to rail interlockings and installation of new crossovers. Furthermore, as described in Chapter 1, "Project Description," there are eight LIRR traction power stations within the project limits. With the exception of the Floral Park Substation, which was replaced in 2010, the substations are nearing the end of their operating service life and would be replaced in-kind at the same locations as part of the Proposed Project. Railroad infrastructure modifications would typically involve mobile cranes and hand-held tools and may also require on-track equipment. If earthmoving and foundation activities required, equipment such as excavators, backhoes, loaders, and pile rigs would be used.

CONSTRUCTION ELEMENTS IN SUBSECTIONS

For the purpose of describing the construction elements of the Proposed Project, the Project Corridor is broken down into subsections, from west to east. The following describes the anticipated construction work activities, potential truck access routes, and staging areas in each of the subsections. Actual sequence of construction is not proposed as west to east and will be established by LIRR and the selected design-build contractor.

LIRR may use the Belmont Yard or Ronkonkoma Yard to stage work trains that would transport construction equipment, materials, and/or works to work sites along the ROW. This would allow for a reduction in impacts to adjacent property owners and would facilitate work in certain areas of the ROW with constrained access.

SECTION 1 – FLORAL PARK STATION TO NEW HYDE PARK STATION

Section 1A. Floral Park Station to South 5th Street

Construction elements in this subsection would include:

- Relocate PSEG electric transmission, LIRR signal and communications, Verizon, and Cablevision lines from south to north of LIRR ROW
- Relocate utilities in South Tyson Avenue and Plainfield Avenues

- ^ Construct widened South Tyson Avenue Bridge span
- Construct new bay adjacent to Plainfield Avenue Bridge
- Construct retaining walls on the south side of LIRR ROW and sound attenuation walls on the north side of LIRR ROW working from Plainfield Avenue east and from Covert Avenue west
- Shave east end of platform by approximately seven inches for approximately 78 feet at Floral Park ^ Station
- Construct new ADA-compliant access to platforms
- Construct new Main Line third track (south side)
- Construct track drainage, ballast, switches, third rail, traction power, communications, and signals
- Construct new universal crossover on Hempstead Branch
-

The primary truck access route to construction areas in this subsection is anticipated to be from Jericho Turnpike to Plainfield Avenue.

Staging areas would generally include the LIRR ROW or ancillary property. In addition, the following areas have been identified as potential staging areas for activities in this subsection, though final decisions with regard to Project staging areas will be made by the construction contractor:

- LIRR substation west of Plainfield Avenue south of the tracks
- LIRR ROW adjacent to Terrace Avenue east of Plainfield Avenue

Section 1B. South 5th Street to South 12th Street

Construction elements in this subsection would include:

- Relocate PSEG electric transmission, LIRR signal and communications, Verizon, and Cablevision lines from south to north of LIRR ROW
- Relocate utilities in Covert Avenue, Second Avenue, and Third Avenue
- Construct retaining walls on the south side of LIRR ROW
- Elevate existing track level by up to 5 feet at Covert Avenue (average raise of one to two feet per weekend)
- Eliminate Covert Avenue Grade Crossing: Two lane Covert Avenue underpass (this activity would commence ^ before the New Hyde Park Road grade-separated crossing ^ construction commences)
- Eliminate South 12th Street Grade Crossing^ and construct pedestrian underpass ^ (if underpass is selected by the community)
- Construct new Main Line third track (south side)
- Construct track drainage
- Construct track, ballast, switches, third rail, traction power, communications, and signals

The primary truck access route to construction areas in this subsection is anticipated to be from Jericho Turnpike to New Hyde Park Road to 4th Avenue to Baer Place.

Staging areas would generally include the LIRR ROW or ancillary property. In addition, the following areas have been identified as potential staging areas for activities in this subsection, though final decisions with regard to Project staging areas will be made by the construction contractor:

- Western end of Third Avenue between Covert Avenue and Wayne Avenue
- Areas between Covert Avenue and South 12th Street that are proximate to the grade crossings and the LIRR ROW

SECTION 2 – NEW HYDE PARK STATION TO MERILLON AVENUE STATION

Section 2A. New Hyde Park Station

Construction elements in this subsection would include:

- Relocate PSEG electric transmission, LIRR signal and communications, Verizon, and Cablevision lines from south to north of LIRR ROW
- Relocate utilities in Second and Third Avenues
- Construct new 95-space surface parking ^ lot and kiss-and-ride at ^ New Hyde Park Road between Plaza Avenue ^ and Second Avenue
- Construct new south platform while maintaining pedestrian access to existing south platform
- Construct new north platform
- Renovate existing station building
- Construct new pedestrian overpass (if selected by the community) and ramps
- Demolish existing south platform; access to train service on existing Main Line track via temporary bridges
- Construct new Main Line third track (south side)
- Construct track drainage, ballast, switches, third rail, traction power, communications, and signals

The primary truck access route to construction areas in this subsection is anticipated to be from Jericho Turnpike to New Hyde Park Road, Stewart Avenue, Tanners Pond Road, and Nassau Boulevard. The current low clearances at Denton Avenue and Nassau Boulevard would restrict north-south truck traffic across the railroad tracks on those roads.

Staging areas would generally include the LIRR ROW or ancillary property. In addition, the following areas have been identified as potential staging areas for activities in this subsection, though final decisions with regard to Project staging areas will be made by the construction contractor:

- Areas between South 12th Street and New Hyde Park Road that are proximate to the LIRR ROW
- Portions of station parking on Third Avenue east of Baer Place
- Commercial property at 115 New Hyde Park Road which would require acquisition

Section 2B. New Hyde Park Road to west of Merillon Station

Construction elements in this subsection would include:

- Relocate PSEG electric transmission, LIRR signal and communications, Verizon, and Cablevision lines from south to north of LIRR ROW
- Relocate utilities in New Hyde Park Road and Denton Avenue
- Eliminate New Hyde Park Road Grade Crossing: ^ Five-lane New Hyde Park Road underpass
- Construct retaining walls on the south side of LIRR ROW
- Relocate LIRR signal hut at Denton Avenue
- Modify Denton Avenue Bridge to accommodate new Main Line third track
- Install new traffic signal heads at Denton Avenue/Railroad Avenue and Denton Avenue/Main Avenue (intersection operations to be coordinated with metering of traffic under LIRR overpass)
- Construct new Main Line third track (south side)
- Construct track drainage, ballast, switches, third rail, traction power, communications, and signals

The primary truck access route to construction areas in this subsection is anticipated to be from Jericho Turnpike to New Hyde Park Road.

Staging areas would generally include the LIRR ROW or ancillary property. In addition, the following areas have been identified as potential staging areas for activities in this subsection, though final decisions with regard to Project staging areas will be made by the construction contractor:

- Commercial property at 115 New Hyde Park Road which would require acquisition
- Portions of Railroad Avenue north of the LIRR ROW
- Portions of the LIRR ROW along Main Avenue

SECTION 3 – MERILLON AVENUE STATION TO MINEOLA STATION

Section 3A. Merillon Avenue Station

Construction elements in this subsection would include:

- Relocate PSEG electric transmission, LIRR signal and communications, Verizon, and Cablevision lines from south to north of LIRR ROW
- Construct new south platform while maintaining pedestrian access to existing south platform
- Construct ^ a combination of elevators and pedestrian ramps to obtain access from street level to the platforms
- Demolish existing south platform; access to train service on existing Main Line track via temporary bridges
- ^ Demolish existing station building and construct new north platform
- Construct new Main Line third track (south side)
- Construct new sound attenuation walls on south and north side of LIRR ROW
- Construct track drainage, ballast, switches, third rail, traction power, communications, and signals

The primary truck access route to construction areas in this subsection is anticipated to be from Hempstead Turnpike to Nassau Boulevard since the vertical clearance (11 feet 6 inches) under the existing Nassau Boulevard Bridge would not be able to accommodate construction trucks.

Staging areas would generally include the LIRR ROW or adjacent property. In addition, the following area has been identified as potential staging areas for activities in this subsection, though final decisions with regard to Project staging areas will be made by the construction contractor:

- LIRR ROW south of the existing station platform
- Portions of the LIRR-owned surface parking lot on the north side of the station

Section 3B. Nassau Boulevard to west of Mineola Station

Construction elements in this subsection would include:

- Relocate LIRR signal and communications, Verizon, and Cablevision lines from south to north of LIRR ROW
- Construct retaining walls on south side of LIRR ROW
- Modify Nassau Boulevard Bridge to accommodate new Main Line third track
- Elevate existing track level by up to 2 feet at Nassau Boulevard
- Construct new Main Line third track (south side)
- Construct track drainage, ballast, switches, third rail, traction power, communications, and signals

The primary truck access route to construction areas in this subsection is anticipated to be from Hempstead Turnpike to Nassau Boulevard.

The primary staging area would be the LIRR ROW or ancillary property (including portions of the access road south of the LIRR ROW west of Herricks Road), though final decisions with regard to Project staging areas will be made by the construction contractor.

SECTION 4 –MINEOLA STATION TO CARLE PLACE STATION

Section 4A. Mineola Station

Construction elements in this subsection would include:

- Relocate Verizon and Cablevision lines from south to north of LIRR ROW
- Demolish substation building at 57 Main Street and Nassau Tower ^
- Construct parking garage at ^ Second Street (parking garage construction should be conducted in advance of station platform construct to offset loss of parking during construction)
- Construct parking garage at Harrison Avenue
- Relocate “kiss-and-ride” parking area
- Remove south Mineola ^ Station waiting building on Station Road
- Remove pedestrian overpass between Third Avenue and Mineola Boulevard and replace with an updated overpass without elevators.
- Construct retaining walls on south side of LIRR ROW

- Construct new south platform while maintaining pedestrian access to existing south platform
- Construct new north platform
- Construct new pedestrian ramps, stairs, and elevators
- Renovate Mineola Station building adjacent to the north platform
- Demolish existing south platform; access to train service on existing Main Line track via temporary bridges
- Construct new Main Line third track (south side)
- Construct track drainage, ballast, switches, third rail, traction power, communications, and signals

The primary truck access route to construction areas in this subsection is anticipated to be from Jericho Turnpike to Mineola Boulevard.

Staging areas would generally include the LIRR ROW or ancillary property. In addition, the following areas have been identified as potential staging areas for activities in this subsection, though final decisions with regard to Project staging areas will be made by the construction contractor:

- Portions of station parking area between Fourth Avenue and Fifth Avenue south of the LIRR ROW

Section 4B. Main Street to Willis Avenue

Construction elements in this subsection would include:

- Relocate LIRR signal and communications, Verizon, and Cablevision lines from south to north of LIRR ROW
- Relocate triangle track worker area on Front Street between Main Street and Willis Avenue in the vicinity of Mineola
- Construct retaining walls on the south side of LIRR ROW
- Eliminate Main Street Grade Crossing^ and construct new pedestrian overpass
- Construct new traffic turn-around to the north of track and new surface parking and kiss-and-ride south of track at the former Main Street ^ crossing^
- Construct new Main Line third track (south side)
- Construct track drainage, ballast, switches, third rail, traction power, communications, and signals

The primary truck access route to construction areas in this subsection is anticipated to be from Jericho Turnpike to Main Street.

Staging areas would generally include the LIRR ROW or ancillary property. In addition, the following area has been identified as potential staging areas for activities in this subsection, though final decisions with regard to Project staging areas will be made by the construction contractor:

- LIRR ROW between Main Line and Oyster Bay Branch between Main Street and Willis Avenue

Section 4C. Willis Avenue to Roslyn Road

Construction elements in this subsection would include:

- Relocate LIRR signal and communications, Verizon, and Cablevision lines from south to north of LIRR ROW; utilities may need to be buried in this area
- Shift alignment of Main Track approximately 7 to 8 feet to the north to accommodate third track
- Potentially replace low height existing retaining wall on the north side of LIRR ROW
- Construct retaining walls on south side of LIRR ROW
- Eliminate Willis Avenue Grade Crossing: ^ Two-lane Willis Avenue underpass (Willis Avenue grade-separated crossing would be opened to traffic before ^ closure to vehicular traffic at Main Street grade crossing ^ commences)
- Construct new pedestrian overpass
- Construct new Main Line third track (south side)
- Construct track drainage, ballast, switches, third rail, traction power, communications, and signals

The primary truck access route to construction areas in this subsection is anticipated to be from Jericho Turnpike to Willis Avenue and/or Roslyn Road.

The primary staging areas would be within the LIRR ROW or adjacent property, though final decisions with regard to Project staging areas will be made by the construction contractor.

Section 4D. Roslyn Road to Glen Cove Road

Construction elements in this subsection would include:

- Relocate PSEG electric transmission, LIRR signal and communications, Verizon, and Cablevision lines
- Construct retaining walls on the south side of LIRR ROW near Roslyn Road and ^ on north side of LIRR ROW near Glen Cove Road
- Shift existing track to accommodate third track
- Construct new Main Line third track (the proposed track alignment would shift to the north side of the existing tracks east of Roslyn Road in Mineola, and would continue to just east of Carle Place Station near the western limit of the Village of Westbury)
- Construct track drainage, ballast, switches, third rail, traction power, communications, and signals

The primary truck access route to construction areas in this subsection is anticipated to be from Jericho Turnpike to Glen Cove Road to Voice Road.

Staging areas would generally include the LIRR ROW or ancillary property. In addition, the following area has been identified as potential staging areas for activities in this subsection, though final decisions with regard to Project staging areas will be made by the construction contractor:

- Commercial properties in the vicinity of East Second Street

Section 4E. Glen Cove Road to Meadowbrook Parkway

Construction elements in this subsection would include:

- Relocate PSEG electric transmission, LIRR signal and communications, Verizon, and Cablevision lines
- Construct retaining walls on the north side of LIRR ROW
- Modify Glen Cove Road Bridge to accommodate new Main Line third track
- Shift existing track to accommodate third track
- Construct new Main Line third track (north side)
- Construct track drainage, ballast, switches, third rail, traction power, communications, and signals

The primary truck access route to construction areas in this subsection is anticipated to be from Jericho Turnpike to Glen Cove Road.

Staging areas would generally include the LIRR ROW or ancillary property. In addition, the following area has been identified as potential staging areas for activities in this subsection, though final decisions with regard to Project staging areas will be made by the construction contractor:

- Macy's existing ramp south of existing tracks west of Meadowbrook State Parkway

Section 4F. Meadowbrook Parkway to west of Carle Place Station

Construction elements in this subsection would include:

- Relocate PSEG electric transmission, LIRR signal and communications, Verizon, and Cablevision lines
- Construct retaining walls on the north side of LIRR ROW
- Modify substation located east of Meadowbrook State Parkway south of existing tracks
- Modify Meadowbrook State Parkway Bridge to accommodate new Main Line third track
- Modify Cherry Lane Bridge to accommodate new Main Line third track
- Minor modification to Cherry Lane traffic profile to "harmonize" with Atlantic Avenue
- Shift existing track to accommodate third track
- Construct new Main Line third track (north side)
- Construct track drainage, ballast, switches, third rail, traction power, communications, and signals

The primary truck access route to construction areas in this subsection is anticipated to be from Jericho Turnpike to Glen Cove Road.

Staging areas would generally include the LIRR ROW or ancillary property. In addition, the following area has been identified as potential staging areas for activities in this subsection, though final decisions with regard to Project staging areas will be made by the construction contractor:

- Portions of Atlantic Avenue adjacent to the LIRR ROW near Meadowbrook State Parkway and Silver Lake Boulevard

SECTION 5 – CARLE PLACE STATION TO WESTBURY STATION

Section 5A. Carle Place Station

Due to access constraints for large construction equipment and materials, Carle Place ^ Station may be closed for approximately 12 months. If Carle Place ^ Station were to be temporarily closed, shuttles would be provided to take passengers utilizing the Carle Place ^ Station to the nearby Westbury ^ Station, approximately a five minute drive away.

Construction elements in this subsection would include:

- Relocate PSEG electric transmission, LIRR signal and communications, Verizon, and Cablevision lines
- Construct new north platform while maintaining pedestrian access to existing south platform
- Replace pedestrian overpass and construct new pedestrian ramps
- Demolish existing north platform; access to train service on existing Main Line track via temporary bridges
- Construct retaining walls on the north side of LIRR ROW
- Shift existing track to accommodate third track
- Construct new Main Line third track (north side)
- Construct track drainage, ballast, switches, third rail, traction power, communications, and signals

The primary truck access route to construction areas in this subsection is anticipated to be from Jericho Turnpike to Cherry Lane to Mineola Avenue to Stonehinge Lane.

Staging areas would generally include the LIRR ROW or ancillary property. In addition, the following area has been identified as potential staging areas for activities in this subsection, though final decisions with regard to Project staging areas will be made by the construction contractor:

- Station parking area north of existing station platform

Section 5B. Carle Road to west of Westbury Station

Construction elements in this subsection would include:

- Relocate PSEG electric transmission, LIRR signal and communications, Verizon, and Cablevision lines
- Construct retaining walls on the north side of LIRR ROW near Carle Road and on south side of LIRR ROW near Westbury Station
- Shift existing track to accommodate third track
- Construct new Main Line third track (the entire alignment would gradually shift to the south between Carle Place and Westbury ^ Stations, connecting to the existing tracks and providing a new track south of the existing alignment at Westbury Station)
- Construct track drainage, ballast, switches, third rail, traction power, communications, and signals

The primary truck access route to construction areas in this subsection is anticipated to be from Jericho Turnpike to Carle Road.

The primary staging area would be within the LIRR ROW west of Madison Avenue toward Ellison Avenue, though final decisions with regard to Project staging areas will be made by the construction contractor.

SECTION 6 – WESTBURY STATION TO HICKSVILLE STATION

Section 6A. Westbury Station

Construction elements in this subsection would include:

- Relocate PSEG electric transmission, LIRR signal and communications, Verizon, and Cablevision lines from south to north of LIRR ROW
- Construct new north platform
- Renovate existing station building
- Construct retaining walls on the south side of LIRR ROW
- ^ Construct a new parking garage at station parking area on Railroad Avenue
- Construct a new parking garage at Scally Place
- Construct new south platform while maintaining pedestrian access to existing south platform
- Construct new pedestrian ramps and elevator
- Demolish existing south platform; access to train service on existing Main Line track via temporary bridges
- Construct new pedestrian overpasses
- Construct new Main Line third track (south side)
- Construct track drainage, ballast, switches, third rail, traction power, communications, and signals
- Construct a new plaza area with stairway to the north platform at the corner of Post Avenue and Union Avenue

The primary truck access route to construction areas in this subsection is anticipated to be from Jericho Turnpike to Post Avenue to Railroad Avenue.

Staging areas would generally include the LIRR ROW or ancillary property. In addition, the following area has been identified as potential staging areas for activities in this subsection, though final decisions with regard to Project staging areas will be made by the construction contractor:

- Portions of the station parking area south of existing station platform

Section 6B. East of Westbury Station to Urban Avenue

Construction elements in this subsection would include:

- Relocate PSEG electric transmission, LIRR signal and communications, Verizon, and Cablevision lines form south to north of LIRR ROW east of Westbury ^ Station then from north to south east of Grand Boulevard
- ^ Construct retaining walls on the north and south sides of LIRR ROW near School Street
- Eliminate School Street Grade Crossing: Two lane School Street underpass (activities for the School Street grade crossing would commence after the Urban Avenue grade-separated crossing is open to traffic)

- Elevate existing track level by up to 3 feet at School Street
- Construct new Main Line third track (the new third track would gradually shift to the north, crossing underneath the existing Grand Boulevard bridge and tying into an existing siding track located west of Hicksville ^ Station)
- Construct track drainage, ballast, switches, third rail, traction power, communications, and signals

The primary truck access route to construction areas in this subsection is anticipated to be from Jericho Turnpike to School Street or Urban Avenue.

Staging areas would generally include the LIRR ROW or ancillary property. In addition, the following areas have been identified as potential staging areas for activities in this subsection, though final decisions with regard to Project staging areas will be made by the construction contractor:

- 167 School Street commercial building east of School Street (^ potential acquisition)
- LIRR area south of existing tracks east of School Street

Section 6C. Urban Avenue to West of Hicksville Station

Construction elements in this subsection would include:

- Relocate PSEG electric transmission, LIRR signal and communications, Verizon, and Cablevision lines form north to south of LIRR ROW from Urban Avenue to Wantagh State Parkway
- Construct retaining walls on the north side of LIRR ROW from Urban Avenue to Wantagh State Parkway
- Modify substation near Wantagh State Parkway
- Conduct minor rehabilitation activities between Wantagh State Parkway and Hicksville Station
- Eliminate Urban Avenue Grade Crossing: Two lane Urban Avenue underpass
- Elevate existing track level by up to 3 feet at Urban Avenue
- Construct new Main Line third track (north side) and tie new third track into existing track and "siding" track just west of Wantagh State Parkway
- Construct track drainage, ballast, switches, third rail, traction power, communications, and signals

The primary truck access route to construction areas in this subsection is anticipated to be from Jericho Turnpike to Urban Avenue.

The primary staging area would be within the LIRR ROW^ or may include 117 Urban Avenue (which would be acquired), though final decisions with regard to Project staging areas will be made by the construction contractor.

Section 6D. Hicksville Station

Construction elements in this subsection would include:

- Relocate PSEG electric transmission, LIRR signal and communications, Verizon, and Cablevision lines from south to north of LIRR ROW

- ^ Construct two new parking ^ garages near Hicksville ^ Station
- Install new double-slip switch east of Hicksville ^ Station platform near Jerusalem Avenue
- Shave east end of platform at Hicksville ^ Station
- Construct track drainage, ballast, switches, third rail, traction power, communications, and signals

The primary truck access route to construction areas in this subsection is anticipated to be from Jericho Turnpike to Newbridge Road.

Staging areas would generally include the LIRR ROW or ancillary property. In addition, the following area has been identified as potential staging areas for activities in this subsection, though final decisions with regard to Project staging areas will be made by the construction contractor:

- Station parking area north of existing station platforms east of Newbridge Road

CONSTRUCTION WORK HOURS AND TRACK OUTAGES

Although not applicable to New York State projects, construction of the track component of the Proposed Project would generally be carried out within the work hours specified in local noise ordinances except where not feasible. This is consistent with existing LIRR maintenance practices which include overnight work in the LIRR ROW to minimize disruption to LIRR customers^ . Accordingly, activities affecting rail operations, such as work relating to bridge replacement, construction of retaining and noise attenuation walls, and grade alteration of track, may be carried out on nights and weekends or other LIRR off-peak hours. Noisy activities adjacent to residential properties would be avoided in overnight hours to the maximum extent practicable. For any necessary night work, there would be extensive consultation with the community. LIRR would require the selected contractor to develop methods to expedite the construction schedule and to minimize the construction effects on the nearby community.

In order to expedite construction to reduce road closures and diversions during construction of the separations at grade crossings and to keep the work within the targeted 6 to 9 months (and 9 to 12 months for the ^ one longer grade crossing ^ elimination), it is anticipated that work at the grade crossings would take place outside specified local noise ordinance work hours.

During construction, LIRR may operate modified weekday service in off-peak hours, with periodic suspension of service on a limited number of weekends to allow for construction activity that could not be performed with active train service. Some construction activities would have an adverse impact on off peak and weekend service levels through the Project Corridor, which would temporarily impact LIRR ridership along some of the branches impacted by construction activities. For anticipated mid-day weekday outages, LIRR expects to be able to accommodate service to Oyster Bay, Huntington and Ronkonkoma with schedule adjustments and possible select train cancellations. However, there will be some instances when service to those branches would be impacted, and LIRR would provide advance notice when that occurs. On weekends, however, with the goal of shortening the project's construction duration and maximizing contact time to work along the tracks, service reductions are likely during the construction period. Weekend Huntington service would likely be reduced from half-hourly to hourly, Port Jefferson service levels would be reduced from 90 minutes to 120 minutes, and Ronkonkoma would remain with hourly service. There will also be some track work, including bridge and grade crossing work, which would require both tracks to be taken out of service on a

limited number of occasions. Advance notice would be provided on these limited occasions for these major track outages and customers would be provided with alternative transportation information, including bussing.

LIRR service during construction of the Proposed Project would require the following service modifications:

- Single track outages
  - Utility relocation, retaining wall/sound attenuation wall construction, station platforms, and viaduct work where fouling of tracks (i.e., work activities would occur in such proximity that could interfere with a moving train) would occur
  - Rail activities (i.e., shifting of existing rail)
- Weekend double track outages (on limited occasions)
  - Track shifts
  - Interlocking and special track work installation and demolition
  - Bridge installations at grade crossings and other locations
  - Elevation of existing track levels

E. METHODOLOGY

The analysis of significant adverse impacts during the construction period focuses on a variety of technical analysis areas, each with its own methodology. The geographic areas that would be most affected generally are those within or immediately adjacent to the construction activities. However, in some cases, the effects from construction could extend beyond the immediate areas surrounding the construction sites.

For each of the various technical areas presented in this chapter, appropriate construction analysis periods were selected to represent reasonable worst-case conditions relevant to that technical area, which can occur at different times for different analyses. For example, the noisiest part of the construction may not be at the same time as the heaviest construction traffic. Therefore, the analysis periods may differ for different technical analysis areas.

F. POTENTIAL IMPACTS OF THE PROPOSED PROJECT

Similar to many large construction projects, construction activities can be disruptive to the surrounding area for periods of time but such effects are temporary. The following analyses describe the potential impacts that could result from construction of the Proposed Project, with respect to land use and community character, socioeconomic conditions, environmental justice, visual resources, historic and cultural resources, natural resources, hazardous and contaminated materials, transportation, air quality, ^ noise and vibration, and safety and security.

LAND USE AND COMMUNITY CHARACTER

Construction activities related to the Proposed Project would result in the temporary change of the use of a limited number of individual parcels within the Study Area. These construction activities, however, being of limited duration, would not permanently change the use of these parcels and in any event would not change the patterns of land use in the Study Area. In terms of community character, construction activities would temporarily take place and impact the communities in terms of visual resources and traffic due to road closures and diversions, but

overall would not result in a permanent change of the character of the communities within the Study Area. As discussed above, throughout the construction period, LIRR would implement a number of measures to minimize the effects of construction and to control noise, vibration, and dust. Construction fencing would be erected to reduce potentially undesirable views of construction areas and buffer noise emitted from construction activities. A community noise and vibration monitoring program and an air quality control plan including dust control measures would be implemented during construction. In addition, to the extent practicable and feasible, noisy work would be minimized during evening hours. Therefore, no significant permanent adverse impacts to these communities in terms of land use and community character would result ^ from construction of the Proposed Project.

SOCIOECONOMIC CONDITIONS

This section describes the potential socioeconomic effects of construction activities associated with the Proposed Project from two perspectives: (1) it estimates the economic benefits generated by construction; and (2) it considers whether significant adverse socioeconomic effects would result from construction activities.

ECONOMIC AND FISCAL BENEFITS

Economic and fiscal benefits were estimated using IMPLAN (IMpact Analysis for PLANning), an economic input-output modeling system that uses the most recent economic data from sources such as the U.S. Bureau of Economic Analysis, the U.S. Bureau of Labor Statistics, and the U.S. Census Bureau to predict effects on the local economy from direct changes in spending. The IMPLAN model contains data on 536 economic sectors, showing for any given geography how each sector affects every other sector as a result of a change in the quantity of its product or service. This indirect economic activity that is generated through direct investment is often referred to as the "ripple," or multiplier effect. This analysis is based on 2013 IMPLAN models for Nassau County and New York State. Using the Nassau County and New York State models and the estimated construction cost of the Proposed Project, the total effect has been projected for both the County and State. A qualitative discussion of operational economic and fiscal benefits is also provided.

The construction of the Proposed Project would result in the investment of significant capital into the local and regional economy. The Proposed Project is expected to cost approximately $2 billion in 2019 dollars, which includes construction, design, contingency, force account, and agency cost. The construction benefits analysis was based on the IMPLAN input-output modeling system. The following benefits that would occur during the overall construction period in Nassau County, and Suffolk County, and New York State have been estimated. The following analysis examines this investment in the local economy in terms of employment (in full-time equivalents or FTE), wages and salaries, total economic output (or the total demand for goods and services created by construction of the Proposed Project), and tax revenues generated during the construction period.

The economic effects of construction projects are generally of two kinds: direct benefits, usually measured by specific construction-related expenditures for labor, services, and materials; and indirect benefits, representing expenditures made by material suppliers, construction workers, and other employees involved in the direct activity for the purchase of other goods and services within the region. The "secondary" expenditures support economic activity that, in turn, generates new employment within the region.

Construction of the project is estimated to create 1,297 FTE direct construction employment opportunities in Nassau County. In addition to direct employment, construction of the project would create additional jobs off-site in Nassau County (762 FTE) and Suffolk County (24 FTE) and the rest of the state (46 FTE). In the broader state economy, total employment from construction of the project would be 2,130 FTE.

Direct wages and salaries from constructing the project are estimated at about $637.07 million. In the broader New York State economy, total direct and indirect wages and salaries from constructing the project would be even greater (approximately $962.42 million, including $926.70 million in Nassau and $10.36 million in Suffolk).

The total effect on the local economy, expressed as economic output or demand for local industries, is estimated at approximately $3.18 billion for Nassau County, $47.14 million for Suffolk County, and approximately $3.33 billion for the New York State economy overall. This output includes indirect and induced employee compensation, taxes, profits, and intermediate goods, in addition to the $2 billion in direct construction costs.

Constructing the project would also create tax revenues for Nassau and Suffolk Counties and New York State. These taxes include sales tax, personal income tax, corporate and business taxes, and numerous miscellaneous taxes. Construction of the project is estimated to create approximately $85.20 million in direct non-property related taxes for Nassau County, the MTA, and New York State (this analysis accounts for the fact that LIRR would be exempt from paying sales tax on construction materials). Indirect taxes would amount to approximately $3.19 million.

POTENTIAL SIGNIFICANT ADVERSE SOCIOECONOMIC EFFECTS ASSESSMENT

Construction of the Proposed Project would require temporary easements for construction access on a number of parcels, some of which may have active businesses. However, such access would be of limited duration and would only be provided by willing property owners. The precise parcels would be selected by the design^ -build contractor. Construction activities at these locations could, at times, affect pedestrian and vehicular access in the immediate vicinity of the businesses but such effects would be temporary and limited to the construction period at any particular location with the Project Corridor. A plan would be developed and implemented to ensure that access to existing businesses throughout the Project Corridor would be maintained throughout the construction period. In addition, LIRR would ensure that lane and/or sidewalk closures would not obstruct entrances to any existing businesses. Therefore, businesses would not be significantly affected by any temporary change in pedestrian and vehicular access that could occur as a result of construction activities.

ENVIRONMENTAL JUSTICE

Construction of the Proposed Project would occur throughout the Project Corridor over a four-year period. However, temporary impacts associated with construction at localized segments would be of shorter duration, limiting construction impacts. These temporary impacts would be experienced broadly through the Study Area. The Proposed Project would not result in disproportionate construction impacts to environmental justice communities. Further information regarding the Proposed Project's effects on environmental justice communities can be found in Chapter 4 "Environmental Justice."

VISUAL RESOURCES

During construction, there would be an increase in activity within the Study Area, especially along the LIRR ROW and the grade crossings. As construction of the Proposed Project proceeds, large construction equipment such as cranes, excavators, trucks, would be utilized and visible to the public. Construction of the Proposed Project would require the removal of most vegetation within the LIRR ROW, which may cause the ROW to become more visible from adjoining land uses. There would be construction sites that would be visible to residents and businesses located within the Project Corridor.

Most of the activities and staging would be located within the LIRR ROW. In addition, areas near the Project Corridor would be used for construction staging. Staging areas would typically be surrounded by construction fences and barricades and covered from public view. Construction fences would be uniform and neat in material and appearance, i.e., neatly clad in green mesh or printed mesh with approved enhancements. The staging areas could have trailers and portable toilets and could be used to stockpile construction materials as well as equipment and truck staging. In addition, as discussed above, contractors are required to keep construction sites clean and orderly and would store construction materials in piles and not haphazardly. Construction staging would be temporary in nature and the areas would be restored as soon as they are no longer needed. Temporary lane and/or road closures would be needed during the construction of the Proposed Project. In such cases, the temporarily closed lanes could be used as staging where equipment and materials would be stored. LIRR is committed to using directional lighting at night to protect residences from light pollution and to avoid the potential for adverse visual impacts during construction. As discussed above, construction of the Proposed Project was conservatively assumed for the purpose of this study to take approximately four years. However, construction activities would be phased to minimize the duration of construction at any particular location so as to lessen the effects of construction on the surrounding communities. Once each phase is complete, the construction areas would be restored to an improved condition. Although the character and quality of views of the Project Corridor during construction of the Proposed Project would be modified, such effects would be temporary in any given location. Therefore, construction of the Proposed Project would not result in significant adverse impacts to visual and aesthetic resources.

HISTORIC AND ARCHAEOLOGICAL RESOURCES

ARCHAEOLOGICAL RESOURCES

The LIRR ROW along the 9.8-mile length of the Project Corridor ^ and the locations of the six parking garages have been determined to possess little to no precontact or historic period archaeological potential. Therefore, construction of the proposed track alignment^ , station modifications, and parking garages would have no adverse impact on archaeological resources. The seven proposed grade crossing locations have experienced extensive prior disturbance. Therefore, it is highly unlikely that construction at the proposed grade crossing locations would have the potential to impact any intact archaeological resources at these locations. In addition, none of the anticipated property taking locations possess archaeological potential. Should additional takings be proposed as project design progresses, an assessment of archaeological potential would be undertaken in consultation with OPRHP. The use of the staging areas during construction would have no effect on archaeological resources because all work would occur on the paved surfaces with no subsurface disturbance.

^ *ARCHITECTURAL RESOURCES*

The Proposed Project would involve the demolition of two historic architectural resources within the LIRR ROW, south of the tracks along the Project Corridor—the Nassau Tower (an LIRR signal house) and the former Mineola LIRR Electrical Substation. The demolition of these properties would constitute an Adverse Impact to historic resources under SEQRA and Section 14.09. No other historic architectural resources would be directly impacted by modifications to the track alignment.

The proposed modifications to the ^ Project Corridor train stations, construction-related activities at the preliminary construction staging areas, and demolition associated with property takings would not directly impact any historic architectural resources. Further, the proposed alterations to the grade crossings and bridges would not directly impact any historic architectural resources.

To ensure that construction activities associated with the Proposed Project that would be undertaken within 100 feet of architectural resources would not cause inadvertent physical impacts to historic architectural resources, LIRR would prepare and implement a CPP in consultation with the OPRHP for any architectural resources located within 100 feet of the Proposed Project construction. The CPP would set forth the specific measures to be implemented to protect historic architectural resources during construction of the Proposed Project. The historic architectural resources that would be subject to the CPP are:

- Floral Park—the Floral Park Public Library, the commercial buildings on Tyson Avenue and South Tyson Avenue, and the commercial buildings on Tulip Avenue;
- Mineola—the commercial buildings at Station Plaza North;
- Westbury-the potential architectural resource at 164 Post Avenue; and
- Hicksville—Top Hat Uniform and the Hicksville USPS Main Post Office.

Measures to mitigate the adverse impact from the demolition of Nassau Tower and the former Mineola Electrical Substation, which is a Project-related impact not limited to construction activity, would be developed in consultation with OPRHP. These mitigation measures, along with the protective measures established in the CPP, would be set forth in an LOR to be executed among the involved parties.

NATURAL RESOURCES

GROUNDWATER AND WETLANDS

Construction of the Proposed Project would require excavation and grading of the ground surface. Erosion and sediment control measures would be implemented during these soil disturbing activities in accordance with the 2016 New York State Standards and Specifications for Erosion and Sediment Control ("Blue Book") and the Stormwater Pollution Prevention Plan (SWPPP) prepared to meet the requirements of SPDES General Permit GP-0-15-002. Implementation of erosion and sediment control measures as outlined in the SWPPP would allow for groundwater recharge and minimize the potential for sediment discharges to existing infiltration basins. The SWPPP would include procedures for stormwater runoff and sediment control to prevent contaminated sediment runoff into groundwater and nearby wetlands.

As described in Chapter 8, "Contaminated Materials," hazardous materials encountered during construction would be managed to minimize the potential for adverse impacts to groundwater or

wetlands, in accordance with state and federal regulations. Based on the results of subsurface investigations, a RAP and CHASP would be prepared for implementation during project construction. These plans would address both known and potential environmental conditions that could be encountered during all subsurface disturbance associated with construction of the Proposed Project ^ including construction of ^ stormwater conveyance pipe from ^ grade ^ crossings to ^ Nassau County ^ recharge basins. The plans would present measures for management of contaminated soil, groundwater and underground storage tanks in accordance with applicable federal, state and local regulations. If dewatering is required for construction, testing would be performed to ensure compliance with applicable discharge regulatory requirements. If necessary, pre-treatment would be conducted prior to discharge. With these measures implemented, construction of the Proposed Project would not result in significant adverse impacts to groundwater, the Nassau/Suffolk Aquifer System, or wetlands.

ECOLOGICAL COMMUNITIES

Construction of the ^ Proposed Project would result in the removal of some trees, shrubs and herbaceous pioneer non-native species. ^ As discussed in Chapter 7, "Natural Resources," ecological communities within the Study Area are limited to railroad, paved road/path, and urban structure exterior communities. These communities are sparsely vegetated by ruderal species and have limited ecological value. Overall, construction of the Proposed Project would not result in significant adverse impacts to ecological communities. ^

WILDLIFE

Vegetation removal would be limited to trees and shrubby and herbaceous ruderal and non-native species that offer no habitat of value to native wildlife. The loss of these habitats would not result in significant adverse impacts to the urban-^ adapted species using these habitats. Disturbance during construction of the Proposed Project due to increased noise and human activity has the potential to temporarily displace wildlife, such as the non-native house sparrow (*Passer domesticus*) and the eastern gray squirrel (*Sciurus carolinensis*), within the vicinity of the construction. Suitable habitat for these urban-adapted generalist species would be available nearby for any displaced individuals. Individuals of these species would be expected to return to the Project Corridor after completion of the construction. Replacement trees would be planted ^ where feasible^ . Overall, construction of the Proposed Project would not result in significant adverse impacts to wildlife or any habitat that is of value to wildlife.

HAZARDOUS AND CONTAMINATED MATERIALS

The potential for significant adverse impacts depends on the extent and type of materials that are currently present in the subsurface in the Study Area and their location relative to or within the Study Area, their levels, and whether exposure to the contaminated materials would be associated with construction of the Proposed Project. Construction of the Proposed Project would require subsurface disturbance along the alignment, at LIRR ^ Stations, at properties that would be acquired as part of the Proposed Project, and within areas that would require alterations to grade crossings.

As presented in Chapter 8, "Hazardous and Contaminated Materials," subsurface soil sampling has been performed within the LIRR ROW and at locations of proposed parking garages where

preliminary assessments had determined that there was the potential for hazardous and contaminated materials to be present (Category B sites[3]). That sampling identified only one location within the LIRR ROW and one location at a parking garage location where one contaminant exceeded applicable soil clean-up objectives. However, given the previous land use history of the Project Corridor, additional areas of contamination may be identified during construction. In such an instance, the potential for adverse impacts would be avoided by ensuring that construction activities are performed in accordance with the following protocols:

⊥ ^ ^ A Remedial Action Plan (RAP) and a Construction Health and Safety Plan (CHASP) would be prepared for implementation during project construction. These plans would address both the remediation of known or potential environmental conditions that may be encountered during all subsurface disturbance associated with proposed construction and development activities. The purpose of the RAP is to present measures for handling and managing contaminated on-site soil, and removing any potentially unknown underground petroleum storage tanks in accordance with applicable federal, state, and local regulations. Contaminated soil management protocols will include guidelines for temporary on-site stockpiling such as stockpiles management to control run-off, and off-site transportation and disposal. The plans would incorporate safety and other measures to minimize the potential for impacts to the community and construction workers. The RAP would also specify the need for engineering controls as warranted based on the testing, such as the incorporation of vapor mitigation systems into the project design.

To minimize the potential for impacts on the community and construction workers, all demolition, excavation, and construction work involving soil disturbance would be performed under a site-specific environmental CHASP. The CHASP would also be based on the results of the Phase II study and would specify appropriate testing and/or monitoring, and detail appropriate measures to be implemented (including notification of regulatory agencies, dust suppression techniques, appropriate air monitoring action levels and responses, etc.) if underground storage tanks, soil and groundwater contamination, or other unforeseen environmental conditions are encountered. If dewatering is required for construction, testing would be performed to ensure compliance with applicable discharge regulatory requirements. If necessary, pre-treatment would be conducted prior to discharge.

- Removal and disposal of mercury- and/or PCB-containing electrical equipment would be performed in accordance with applicable federal, state and local regulations.
- Prior to any activities required as part of the Proposed Project that could disturb potential ACM, a comprehensive asbestos survey of areas (including underground utility vaults) to be

[3] A Category B site is defined as sites that had some reasonable potential to have been impacted by the presence of contaminated materials and thus additional analysis is prudent. The identification of a site as "Category B" does not necessarily indicate that the site is contaminated. Subsurface investigations, which would only be performed at the sites within or close to an area where subsurface disturbance would be required for the Proposed Project, would be required to determine that contamination actually exists.

^5 EPA required a major reduction in the sulfur content of diesel fuel intended for use in locomotive, marine, and non-road engines and equipment, including construction equipment. As of 2015, the diesel fuel produced by all large refiners, small refiners, and importers must be ULSD fuel sulfur levels in non-road diesel fuel are limited to a maximum of 15 parts per million.

disturbed by the Proposed Project would be conducted that included the sampling of all suspect materials to confirm the presence or absence of asbestos. All identified ACM would be removed and disposed of prior to construction in accordance with all federal, state, and local regulations. Asbestos abatement procedures and containment requirements will be based on the type and quantities of ACM to be removed.

- Any demolition activities with the potential to disturb LBP would be performed in accordance with applicable Occupational Safety and Health Administration regulations including OSHA 29 CFR 1926.62 - Lead Exposure in Construction Methods for lead abatement will comply with LIRR abatement procedures and containment requirements.
- All material that needed to be disposed of (e.g., miscellaneous debris, tires, contaminated soil and any excess fill) would be characterized and disposed of off-site in accordance with applicable federal, state, and local requirements. Transportation of all construction waste leaving the site would be in accordance with applicable requirements covering licensing of haulers and trucks, truck routes, manifesting, etc.

With the implementation of these protocols, no significant adverse impacts related to contaminated materials would result from demolition and/or construction activities related to the Proposed Project.

TRANSPORTATION

The Proposed Project would include construction along the length of the Project Corridor, including activities at each of the seven grade crossings that would be eliminated. Pedestrian connectivity across the tracks would be maintained at each of the grade crossings during construction or would be diverted to nearby crossings; pedestrian access to the passenger rail stations and nearby businesses would also be maintained.

During construction, LIRR would operate normal weekday commuter (i.e., peak) service, with periodic suspension of service on weekends to allow for construction activity that could not be performed with active train service. A list of construction activities that may require the LIRR service modifications is provided above under "Construction Work Hours and Track Outages." Due to access constraints for large construction equipment and materials, Carle Place ^ Station may be temporarily closed for approximately 12 months. If Carle Place ^ Station is temporarily closed, shuttles would be provided to take passengers utilizing the Carle Place ^ Station to the nearby Westbury ^ Station, approximately a 5 minute drive away.

Construction of the Proposed Project is anticipated to have approximately 15 construction workers on site per day for each of the grade crossings. There would be approximately 30 workers for improvement activities at each of the stations, and approximately 75 workers for bridge and viaduct elements work. In addition, at each of the subsections defined above, there would be approximately 20 workers for utility relocation, approximately 30 workers for retaining wall construction, and approximately 50 workers for track work. These workers would be spread out over specific construction areas that would be active for specific periods throughout the Project Corridor. As discussed above, satellite parking would be provided to keep personal construction worker vehicles out of residential streets and parking near the stations. In addition, construction worker trips would primarily occur outside of the typical commuter peak hours.

Construction of the Proposed Project would generate truck trips for the delivery of construction materials and hauling away excavated materials. It is anticipated that construction relating to the elimination of the grade crossings would require approximately three truck trips per hour per

site. For the various types of construction activities that occur at subsections including utility relocation, station improvement activities, bridge and viaduct elements work, retaining wall construction, and/or track work, a maximum of approximately 10 to 15 truck trips per day per subsection would be required. The time period needed for these peak activities could extend for a period of two to three months when multiple activities would occur simultaneously within the subsection. Trucks would primarily use truck routes discussed in Section C, "Construction Description," to access the construction areas along the Project Corridor. In lieu of construction truck deliveries and to reduce the effects of construction truck traffic on local roadways, existing track would also be used to transport materials to and from the work sites to the extent practical. In addition, construction deliveries would be scheduled outside of the school and commuting traffic peak hours to the extent practicable while school is in session.

The LIRR grade crossings at Covert Avenue and South 12th Street in New Hyde Park, Willis Avenue and Main Street in Mineola, and Urban Avenue and School Street in Westbury/New Cassel would be closed to traffic during construction for up to approximately 6 months^ of the overall 9 month construction schedule. Only one grade crossing in each community would be closed at the same time. At the LIRR grade crossing on New Hyde Park Road, two-way traffic would be maintained across the tracks with reduced capacity for up to approximately nine months. A maximum of one grade crossing in each of the three study areas would experience roadway closures at any given time to minimize impacts to traffic in each of the three study areas. Given the temporary roadway/lane closures and diversions during grade crossing activities, detailed traffic studies at each of the grade crossing locations, as well as proposed improvement measures, are provided below. Temporary lane closures may also be needed to stage the abutment work for the seven existing bridge structures along the Project Corridor.

GRADE CROSSING ELIMINATIONS

Employees would be expected to arrive at the site before the peak traffic impact analysis hour, when traffic volumes are typically lower than the peak hours and were not assigned to the roadway network for analysis. In the analysis presented below three trucks trips were assigned to and from the site during each of the AM and PM peak hours to account for deliveries of construction materials and hauling away excavated materials.

In the New Hyde Park area, the grade crossing of the LIRR Main Line tracks on Covert Avenue would be the first grade crossing to be eliminated. The DEIS had identified Covert Avenue as proceeding following construction of the underpass at New Hyde Park Road^ . This change was implemented due to scheduling coordination between station project elements, utility relocation, property acquisition, and traffic diversions. The grade crossing would be closed for the duration of construction and access to 2nd and 3rd Avenues from Covert Avenue would be restricted. Traffic would be diverted to parallel north-south routes, including New Hyde Park Road and South 12th Street, both of which would continue to have operational gates at their respective grade crossings of the LIRR Main Line.

The grade crossing at New Hyde Park Road would be the second grade crossing to be eliminated and the nine months of construction would be completed in two phases. During the first phase of construction, traffic would be shifted to the northbound side of the roadway and one lane of traffic in each direction would cross the existing tracks. Clinch Avenue at New Hyde Park Road would be closed. During the second phase of construction, one lane of traffic in each direction would pass under the tracks in the newly constructed underpass on the southbound side of the roadway; Clinch Avenue at New Hyde Park Road would be closed. For the impact assessment,

the first phase of construction at this location was analyzed due to the closure of one lane of traffic in each direction with the grade crossing still operational, which constitutes the worst-case construction impact condition.

^ In the Mineola area, Willis Avenue and Main Street would be closed for the duration of construction at each of their respective grade crossings and traffic would be diverted to parallel north-south routes. Construction at the Willis Avenue grade crossing would be performed first, and would be completed before construction on Main Street begins. The construction scenario with full closure of the Willis Avenue grade crossing was analyzed to assess the adverse impacts of the diversion of traffic from Willis Avenue to alternate routes.

The construction scenario of a one-way southbound Willis Avenue underpass (as analyzed in Build Option 2) combined with the full closure of Main Street constitutes the worst-case construction impact condition and was also analyzed since it assesses the diversions of both Main Street and northbound Willis Avenue traffic to alternate routes. The construction scenario of a two-way Willis Avenue underpass (as analyzed in Build Option 1) combined with full closure of Main Street was not analyzed since traffic diversions and levels of service would be comparable to those expected under Build Option 1.

In the Westbury area, each of the two grade crossings would be closed completely during construction of each of the underpasses, but Urban Avenue construction would be completed before construction on School Street begins so that Urban Avenue could be used in place of the closed crossing, as would other parallel crossings in the Westbury area. Traffic would be diverted to parallel routes during each of their respective construction stages. Both closures are analyzed in detail below.

A summary of the construction scenarios analyzed is presented below in **Table 13-2**.

ANALYSIS OF ADVERSE IMPACTS TO TRAFFIC AT GRADE CROSSINGS

A comparison of these proposed construction scenarios for 2020 conditions without the Proposed Project was done to assess adverse impacts to traffic during construction. Detailed traffic levels of service during grade-crossing construction are presented in Appendix ^ 13. A summary of the temporary (6 to 9 months) adverse traffic impacts during the construction scenarios analyzed in each of the three study areas is detailed below along with improvement measures.

New Hyde Park

Covert Avenue

Existing traffic on Covert Avenue was assumed to divert to New Hyde Park Road and South 12th Street primarily via Jericho Turnpike and secondarily via First Avenue on the north side of the tracks and via Stewart Avenue and secondarily via 6th Avenue on the south side of the tracks. Emergency vehicles that currently cross the LIRR tracks on Covert Avenue would divert to South 12th Street or New Hyde Park Road.

The northbound Covert Avenue right-turn movement at Stewart Avenue would be adversely impacted during the AM and PM peak hours and could be improved by restriping the northbound Covert Avenue approach as one 10 foot through lane and two 10 foot right-turn lanes and by modifying the signal timing plan.

At the intersection of Jericho Turnpike and South 12th Street, the northbound and eastbound approaches would be adversely impacted during the AM peak hour and the northbound approach

and westbound left-turn would be adversely impacted during the PM peak hour. These adverse impacts could be improved by prohibiting parking for 175 feet from the stopbar on the eastbound Jericho Turnpike approach and restriping the approach as two 10 foot through lanes and one 10 foot right-turn lane; prohibiting parking on the northbound South 12th Street approach for 75 feet from the stopbar and restriping the approach as one 13 foot left-turn lane and one 10 foot shared right-turn lane by shifting the centerline seven feet to the west and prohibiting parking on southbound South 12th Street for 100 feet from the intersection; and by modifying the traffic signal timing plan.

The northbound approach and westbound left-turn lane at the intersection of Jericho Turnpike and New Hyde Park Road would be adversely impacted during the AM peak hour and the northbound shared through-right, the southbound left-turn, and the westbound left-turn movements would be adversely impacted during the PM peak hour. Aside from the northbound shared through-right movement in the AM peak hour, the adverse impacts identified could be improved by prohibiting parking on the eastbound and westbound Jericho Turnpike approaches and restriping the existing parking lanes as one 8-foot right-turn lane on those two approaches; and by modifying the signal timing plan. The northbound shared through-right movement could only be partially improved in the AM peak hour.

The northbound New Hyde Park Road approach at Stewart Avenue would be adversely impacted during the AM peak hour and the southbound New Hyde Park Road approach at Stewart Avenue and eastbound Stewart Avenue left-turn at New Hyde Park Road would be adversely impacted during both AM and PM peak hours. The adverse impacts could be partially improved during the AM and PM peak hours by modifying the signal phasing and timing plan. The northbound New Hyde Park Road approach would be adversely impacted in the AM peak hour and would deteriorate from LOS E to LOS F, and would remain unimproved. The southbound New Hyde Park Road approach would be adversely impacted during the PM peak hour and deteriorate from LOS C to LOS E, and would remain unimproved.

The northbound and southbound South 12th Street approaches at Stewart Avenue would be adversely impacted during both AM and PM peak hours. These adverse impacts could be improved by installing a temporary traffic signal at the intersection for the duration of construction.

New Hyde Park Road

For the purposes of this analysis, it was assumed that northbound traffic on Clinch Avenue would divert to New Hyde Park Road primarily via Stewart Avenue and secondarily via Stratford Avenue. Southbound traffic on Clinch Avenue was assumed to divert to southbound New Hyde Park Road to eastbound Stewart Avenue or eastbound Stratford Avenue. Emergency vehicles that currently cross the LIRR tracks on New Hyde Park Road could be expected to continue using New Hyde Park Road since one lane of traffic would be maintained in each direction. Emergency vehicles that currently access Clinch Avenue would divert using the same routes as general traffic.

Table 13-2
Grade Crossing Construction Scenarios

Grade Crossing Constructed	Construction Condition Analyzed	Targeted Full or Partial Road Closure Durations	Anticipated Total Construction Duration
Covert Avenue^	1. ^ Full closure of Covert Avenue at LIRR ^ tracks ^ 2. Diversion of traffic to parallel north-south routes	^ 6 months^	6 – 9 ^ months
New Hyde Park Road	1. ^ One lane in each direction at LIRR grade-crossing 2. LIRR gates remain operational^ 3. ^ Clinch Avenue closed at New Hyde Park Road 4. Covert Avenue underpass ^ operational before ^ construction of New Hyde Park Road underpass	9 months (one-lane remains open in each direction)	9 – 12 months
South 12th Street	Similar to Build Option 2 in Chapter 10, "Transportation"	6 months*	6 – 9 months*
Willis Avenue	1. Full closure of Willis Avenue at LIRR tracks 2. Diversion of traffic to parallel north-south routes	6 months	6 – 9 months
Main Street	1. Full closure of Main Street at LIRR tracks 2. Diversion of traffic to parallel north-south routes 3. One-way SB Willis Avenue underpass operational before closure of Main Street grade crossing	6 months*	6 – 9 months*
Urban Avenue	1. Full closure of Urban Avenue at LIRR tracks 2. Diversion of traffic to parallel north-south routes	6 months	6 – 9 months
School Street	1. Full closure of School Street at LIRR tracks 2. Diversion of traffic to parallel north-south routes	6 months	6 – 9 months

Note: * ^ Since full closure ^ has been identified as the Preferred Option for^ these grade crossings, the construction duration would be significantly shorter than the six to nine months shown.

New Hyde Park Road at the LIRR grade crossing would be adversely impacted during the 9 to 12 months construction period and would deteriorate from LOS C to LOS F in the northbound direction during the AM peak hour and would deteriorate from LOS C to LOS E in the southbound direction during the PM peak hour, and would remain unimproved.

The northbound approach of New Hyde Park Road at Stewart Avenue would be adversely impacted during the AM peak hour and the southbound approach of New Hyde Park Road at Stewart Avenue would be adversely impacted during the PM peak hour. These adverse impacts could be improved in the AM peak hour by modifying the signal timing plan and would remain unimproved in the PM peak hour.

^ *South 12th Street*

South 12th Street would be closed during construction at that grade crossing; construction at South 12th Street would commence after completion of the underpasses at Covert Avenue and New Hyde Park Road. Adverse traffic impacts would be similar to those for Build Option 2 in the New Hyde Park Station area and can be found in Chapter 10, "Transportation." Emergency vehicles would be expected to divert to New Hyde Park Road and Covert Avenue.

Mineola

Willis Avenue

Willis Avenue would be closed to traffic in both directions near the LIRR grade crossing for the duration of construction at that crossing. The LIRR grade crossing at Main Street would remain operational in both directions. Existing traffic on Willis Avenue would be expected to divert to parallel north-south routes, including Mineola Boulevard, Main Street, and Roslyn Road. Emergency vehicles would similarly be expected to divert to these roads.

The southbound Mineola Boulevard shared through-right movement at Second Street would be adversely impacted during the AM and PM peak hours and could be improved by modifying the traffic signal timing plan and by prohibiting parking on the westbound Second Street approach and restriping it as one 10-foot left-turn lane and one 10-foot shared through-right lane.

At Mineola Boulevard and First Street, the westbound approach would be adversely impacted during both the AM and PM peak hours and could be improved by modifying the traffic signal timing plan.

The eastbound Second Street approach at Willis Avenue would be adversely impacted during the PM peak hour could be improved by modifying the traffic signal timing plan.

At the intersection of Roslyn Road and Second Street, the southbound approach and eastbound through-right movement would be adversely impacted during the AM and PM peak hours and the northbound left-turn movement would be adversely impacted during the AM peak hour. These impacts could be improved by restriping the eastbound approach as one 10-foot left-turn lane, one 10-foot through lane, and one 11-foot right-turn lane; and by modifying the traffic signal phasing and timing plan.

The northbound, southbound, and eastbound approaches at Main Street and Second Street would be adversely impacted during the PM peak hour and could be improved by installing a temporary traffic signal at the intersection for the duration of construction.

Main Street

Main Street would be closed to traffic in both directions during construction at the grade crossing; construction would commence after completion of the underpass at Willis Avenue. If the underpass at Willis Avenue is a two-way underpass (Option 1), the adverse impacts and potential improvement measures would be similar to those identified for Option 1. The construction scenario analyzed below encompasses either construction to close Main Street in both directions near the LIRR crossing, as well as construction to create an operational one-way southbound underpass that carries Willis Avenue underneath the LIRR tracks. Existing traffic on Main Street would be expected to divert to parallel north-south routes, including Mineola Boulevard, Willis Avenue, and Roslyn Road. Emergency vehicles would similarly be expected to divert to these roads.

At Mineola Boulevard and Old Country Road, the westbound through and right-turn movements would be adversely impacted during the AM and PM peak hours and the eastbound left-turn movement would be adversely impacted during the PM peak hour. Adverse impacts could be fully improved in the AM peak hour and partially improved in the PM peak hour by restriping the westbound Old Country Road approach as one 10-foot left-turn lane, two 10 foot through lanes, and one 14-foot right-turn lanes; and by modifying the traffic signal timing plan. The westbound right-turn movement would be adversely impacted and deteriorate from LOS D to

LOS F and would remain unimproved during the PM peak hour for the 6 to 9 months construction period.

At Mineola Boulevard and Second Street, the southbound Mineola Boulevard shared through-right movement would be adversely impacted in the AM peak hour and the westbound approach would be adversely impacted in the PM peak hour. These impacts could be improved by modifying the traffic signal timing plan.

The eastbound Second Street approach at Willis Avenue would be adversely impacted during the PM peak hour and could be improved by modifying the traffic signal timing plan.

At Old Country Road and Roslyn Road, the westbound Old Country Road movement would be adversely impacted during the AM peak hour and could be improved by modifying the traffic signal timing plan.

The southbound Roslyn Road approach at Second Street would be adversely impacted during the PM peak hour and could be improved by modifying the traffic signal timing plan.

Westbury

Urban Avenue

In Westbury, the underpass that would carry Urban Avenue under the LIRR tracks would be constructed before the underpass on School Street. Urban Avenue would be closed to traffic in both directions near the LIRR tracks during construction. Traffic would be expected to divert to nearby parallel north-south routes, including Grand Boulevard, School Street, and Post Avenue. Emergency vehicles would similarly be expected to divert to these roads.

The southbound Post Avenue shared left-through movement at Union Avenue would be adversely impacted during the AM and PM peak hours and could be improved by ^ modifying the traffic signal timing plan.

At Old Country Road and School Street, the eastbound left-turn movement would be adversely impacted during the AM and PM peak hours and could be improved by modifying the traffic signal timing plan.

At Old Country Road and Belmont Place/Merillon Avenue, the southbound left-turn movement would be adversely impacted during the PM peak hour and could be improved by modifying the traffic signal timing plan.

School Street

The underpass on School Street would be constructed after completion of construction on Urban Avenue and the opening of that underpass. School Street would be closed to traffic in both directions near the LIRR tracks during construction and traffic would be expected to divert to nearby parallel north-south routes, including Post Avenue, Grand Boulevard, and Urban Avenue. Emergency vehicles would similarly be expected to divert to these roads.

At Post Avenue and ^ Maple Avenue, the northbound ^ left-turn movement and eastbound shared through-right movement would be adversely impacted during the ^ PM peak hour and would remain unimproved.

At Post Avenue and Urban Avenue, the southbound Post Avenue shared left-through movement would be adversely impacted during the AM and PM peak hours. These impacts could be improved in the AM and PM peak hours by restriping the southbound approach as one 12-foot left-turn lane and one 12-foot through lane^ .

At Post Avenue and Railroad Avenue, the northbound shared through-right movement would be adversely impacted during the AM and PM peak hours and the southbound shared through-right movement would be adversely impacted during the PM peak hour. These adverse impacts would remain unimproved.

The eastbound Old Country Road right-turn movement at School Street would be adversely impacted during the PM peak hour and could be improved by modifying the traffic signal timing plan.

^ *TRAFFIC AND PARKING IMPACTS FROM THIRD MAIN LINE TRACK, PARKING GARAGE, AND STATION IMPROVEMENTS*

No extensive road and/or lane closures are anticipated during track alignment, parking garage construction, and station improvement activities. There would be intermittent lane and/or road closures for utility relocations, bridge abutment construction, and the setting of bridge elements, but such closures would be limited to weekends. As discussed above, track alignment and station improvement activities are estimated to attract approximately 20 to 75 construction employees per day for the different construction elements and a maximum of approximately 10 to 15 truck trips per day per subsection during peak construction activities would be required. The time period needed for these peak activities could extend for a period of two to three months when multiple activities would occur simultaneously within the subsection. These traffic volumes are typically much lower than the existing peak hour volumes at roadways near the Project Corridor. In addition, the construction work vehicle trips would primarily occur outside of the typical commuter peak hours. Construction activities within and adjacent to the LIRR ROW, near stations, and at parking garage locations may result in a temporary loss of short-term or long-term parking spaces. LIRR is committed to a number of measures to minimize the effects of construction, including providing satellite parking for construction worker vehicles and using of existing tracks to the extent practical to transport materials to and from the work sites. Therefore, track alignment, parking garage, and station improvement construction activities are not expected to result in significant adverse traffic ^ or parking impacts; however, some short-term parking impacts may occur.

AIR QUALITY

Chapter 11, "Air Quality," provides information on air pollutants and the relevant regulations. This section examines the potential air quality impacts from project construction.

It is expected that the Proposed Project would maintain existing traffic flow routes without resulting in continuous construction detour/diversions over more than two CO (winter) seasons along local routes. Therefore, in accordance with the NYSDOT's *TEM*, no microscale detour traffic CO impact analysis is warranted.

Although traffic disruption during the construction period at certain locations would likely occur, detours/diversions would not last more than five years along any routes. Therefore, in accordance with the NYSDOT's *TEM*, mesoscale emissions analysis for construction detour traffic is not required.

Since the Proposed Project has estimated construction periods of more than 3 years, a project-level non-road construction equipment exhaust PM analysis is conducted for both PM_{10} and $PM_{2.5}$. Construction-related PM emissions were estimated and compared with the 15 tons per year threshold for both PM_{10} and $PM_{2.5}$ established in the NYSDOT's final policy to determine potential construction emissions significance. Other criteria pollutant emissions and greenhouse

gas (GHG) emissions in terms of CO_2 levels were also estimated for construction activities for EIS disclosure purposes.

The type of equipment that would be used for station, bridge, parking garage, and grade crossing construction and demolition activities would include, but is not limited to:

- Loaders.
- Cherry pickers.
- Compressors.
- Cranes.
- Drill rig and augurs.
- Dump trucks.
- Excavators.
- Front end loaders.
- Portable generators.

According to an approximately four-year construction schedule that would span five calendar years, construction equipment and truck usage resource data (i.e., type, size, average daily operating hours for each equipment type, etc.) were developed for the entire construction period. Estimates of emissions from construction equipment operations were developed based on the estimated hours of equipment use associated with and the future year fleet-average emission factors for each type of equipment. Criteria pollutants and GHG emission factors for both equipment and trucks were forecasted using EPA's MOVES2014a emission factor model in association with the default model input parameters applicable for Nassau County.

Emission factors (in grams of pollutant per hour per horsepower) were multiplied by the estimated running time and equipment average horsepower to calculate the total grams of pollutant from each piece of equipment. Finally, the total grams of pollutant were converted to tons of pollutant.

Annual construction emissions associated with the construction activity only are presented in **Table 13-3**. The annual PM emissions from construction activity would be well below the 15-ton per year threshold and would result in no significant regional air quality impacts during the construction period. The construction period emissions for other criteria pollutants and GHG are also shown in Table 13-3 for the purpose of EIS disclosure. Given their temporary nature, these emissions would not be considered significant. Emissions would be even lower due to the air quality control plan that would be implemented during construction of the Proposed Project as described below.

Table 13-3
Emissions from Construction Activities (Tons)

Year	Pollutants						
	VOC	NOx	CO	PM_{10}	$PM_{2.5}$	SO_2	CO_2
2017	0.05	0.36	0.11	0.03	0.02	0.00	144.79
2018	2.48	18.72	5.68	1.28	0.99	0.04	6,914.01
2019	4.54	33.03	10.43	2.33	1.77	0.08	12,907.76
2020	2.63	19.68	5.92	1.44	1.07	0.05	7,402.03
2021	0.57	4.09	1.23	0.30	0.22	0.01	1,674.28

In order to minimize potential temporary construction air quality impacts to the nearby community, LIRR is committed to implementing an air quality control plan during construction and would include the following measures:

- *Dust Control.* To minimize fugitive dust emissions from construction activities, a fugitive dust control plan including a robust watering program would be required as part of contract specifications. For example, all trucks hauling loose material would be equipped with tight-fitting tailgates and their loads securely covered prior to leaving the construction area; and water sprays would be used for all demolition, excavation, and transfer of soils to ensure that materials would be dampened as necessary to avoid the suspension of dust into the air.
- *Clean Fuel*. ULSD[5] fuel will be used exclusively for all diesel engines used during construction.
- *Idling Restriction.* In addition to adhering to the local law restricting unnecessary idling on roadways, on-site vehicle idle time will be restricted to five minutes for all equipment and vehicles that are not using their engines to operate a loading, unloading, or processing device (e.g., concrete mixing trucks) or are otherwise required for the proper operation of the engine.
- *Best Available Tailpipe Reduction Technologies*. Non-road diesel engines with a power rating of 50 horsepower (hp) or greater and controlled truck fleets (i.e., truck fleets under long-term contract with the project) including but not limited to concrete mixing and pumping trucks would utilize the best available tailpipe (BAT) technology for reducing DPM emissions. Diesel particulate filters (DPFs) have been identified as being the tailpipe technology currently proven to have the highest reduction capability. Construction contracts would specify that all diesel nonroad engines rated at 50 hp or greater would utilize DPFs, either installed by the original equipment manufacturer (OEM) or retrofitted. Retrofitted DPFs must be verified by EPA or the California Air Resources Board (CARB). Active DPFs or other technologies proven to achieve an equivalent reduction may also be used.
- *Utilization of Newer Equipment.* EPA's Tier 1 through 4 standards for nonroad diesel engines regulate the emission of criteria pollutants from new engines, including PM, CO, NO_x, and hydrocarbons. All diesel-powered nonroad construction equipment with a power rating of 50 hp or greater would meet at least the Tier 3[6] emissions standard.
- *Diesel Equipment Reduction*. Electrically powered equipment would be preferred over diesel-powered and gasoline-powered versions of that equipment to the extent practicable.

[5] EPA required a major reduction in the sulfur content of diesel fuel intended for use in locomotive, marine, and non-road engines and equipment, including construction equipment. As of 2015, the diesel fuel produced by all large refiners, small refiners, and importers must be ULSD fuel sulfur levels in non-road diesel fuel are limited to a maximum of 15 parts per million.

[6] The first federal regulations for new nonroad diesel engines were adopted in 1994, and signed by EPA into regulation in a 1998 Final Rulemaking. The 1998 regulation introduces Tier 1 emissions standards for all equipment 50 hp and greater and phases in the increasingly stringent Tier 2 and Tier 3 standards for equipment manufactured in 2000 through 2008. In 2004, the EPA introduced Tier 4 emissions standards with a phased-in period of 2008 to 2015. The Tier 1 through 4 standards regulate the EPA criteria pollutants, including PM, hydrocarbons (HC), NO_x and carbon monoxide (CO. Prior to 1998, emissions from nonroad diesel engines were unregulated. These engines are typically referred to as Tier 0.

With these measures in place, and given the temporary nature of any impacts (no more than 2 years in any location), construction of the Proposed Project would not result in any adverse air quality impacts.

NOISE AND VIBRATION

Noise levels from construction activities along the Project Corridor, although temporary, could be a nuisance at nearby sensitive receptors such as residences, schools and other institutional land-uses. Similar to the air quality discussion above, potential noise and vibration levels during construction would be minimized to the maximum extent feasible by implementation of the project's Noise and Vibration Control Plan. Noise levels during construction would vary depending on the types of activity and equipment used for each stage of work. Heavy machinery, the major source of noise in construction, would be moving regularly from location to location. For example, construction activities would include laying new track, rehabilitating bridges, relocating utilities, reconstructing street intersections, grade crossing separation activities, rehabilitating passenger station platforms and other ancillary facilities (e.g., third rail contact system, traction power substations, etc.).

Based on the nature and duration of the construction of the Proposed Project, it is expected that temporary noise and vibration impacts would occur at some locations along the Project Corridor during construction of the project. In addition to noise and vibration impacts that would occur along the Project Corridor, impacts would also be expected occur at locations near staging and/or material lay-down areas. Temporary noise impacts may also occur along routes where traffic would be detoured during construction of the Proposed Project and/or along routes used by construction trucks traveling to and from the construction work areas. This analysis makes conservative assumptions regarding construction noise and vibration so that potential maximum impacts are analyzed and disclosed consistent with SEQRA requirements.

CONSTRUCTION NOISE AND VIBRATION FUNDAMENTALS

Chapter 12, "Noise," provides a detailed description on noise and vibration fundamentals and descriptors.

Various sound levels are used to quantify noise from transit sources, including a sound's loudness, duration, and tonal character. For example, the A-weighted decibel (dBA) is commonly used to describe the overall noise level because it more closely matches the human ear's response to audible frequencies. Since the A-weighted decibel scale is logarithmic, a 10 dBA increase in a noise level is generally perceived as a doubling of loudness, while a 3 dBA increase in a noise level is just barely perceptible to the human ear.

Several A-weighted noise descriptors are used to determine impacts from construction sources, including:

- **Maximum Noise Levels (Lmax):** represents the maximum noise level that occurs during an event
- **Average Hourly Equivalent Noise Level (Leq):** represents a level of constant noise with the same acoustical energy as the fluctuating noise levels observed during a given interval, such as one hour (Leq(h))
- **Average 24-hour Day-night Noise Level (Ldn):** includes a 10-decibel penalty for all nighttime activity between 10:00 p.m. and 7:00 a.m.

- **90th percentile Noise Level (L_{10})**: the sound level that is exceeded 10 percent of the time for the period under consideration

To describe the human response to vibration, the average vibration amplitude (called the root mean square [RMS] amplitude) is used to assess impacts. The RMS velocity level is expressed in inches per second (ips) or vibration velocity levels in decibels (VdB). All VdB vibration levels are referenced to one micro-inch per second.

CONSTRUCTION NOISE AND VIBRATION IMPACT CRITERIA

Construction Noise

Construction noise criteria from both the Federal Transit Administration (FTA) and the LIRR's Technical Provisions were evaluated. Criteria from the FTA are based on the guidelines for a Detailed Assessment provided in the ^ *Transit Noise and Vibration Impact Assessment* (2006^) guidance manual. These criteria, summarized in **Table 13-4** below, are based on land use and time of day, and are given in terms of the combined noise level over an 8-hour or 30-day period. In addition, local town and village ordinances provide for permissible hours of construction, as summarized in **Table 13-7** below. These ordinances do not provide for noise limits that apply to New York State projects, and applicable law permits the MTA/LIRR, as a state public authority, as well as NYSDOT as a state agency, to continue construction operation outside the permissible hours of operation provided by these local ordinances.[7]

Table 13-4
FTA Construction Noise Criteria for a Detailed Assessment (dBA)

Land Use	8-Hour L_{eq}		30-Day
	Daytime (7 AM – 10 PM)	Nighttime (10 PM – 7 AM)	Average
Residential	80	70	75 Ldn or Ambient + 10
Commercial	85	85	80 Leq
Industrial	90	90	85 Leq

Source: FTA 2006.

Construction Vibration

Similar to noise, construction vibration criteria are based on the guidelines provided in the FTA Guidance Manual. For potential damage effects, the FTA criteria shown in **Table 13-5** range from 0.5 inches per second (in/sec) for Category I buildings to 0.12 in/sec for more fragile Category IV buildings. For evaluating potential annoyance or interference with vibration-sensitive activities due to construction vibration, the criteria shown in **Table 13-5** were applied. These are the same criteria used to assess ground-borne vibration from trains.

[7] See N.Y. Pub. Auth. § Law 1266(8). "The local laws, resolutions, ordinances, rules and regulations of a municipality or political subdivision, heretofore or hereafter adopted, conflicting with this title or any rule or regulation of the authority or its subsidiaries, or New York city transit authority or its subsidiaries, shall not be applicable to the activities or operations of the authority and its subsidiaries . . . except such facilities that are devoted to purposes other than transportation or transit purposes."

Table 13-5
FTA Construction Vibration Damage Criteria

Building Category	PPV (in/sec)	Approximate Lv[1]
I. Reinforced concrete, steel or timber (no plaster)	0.5	102
II. Engineered concrete and masonry (no plaster)	0.3	98
III. Non-engineered timber and masonry building	0.2	94
IV. Buildings extremely susceptible to vibration damage	0.12	90

Note: [1] RMS velocity in decibels (VdB*) re 1 micro-inch/second.
Source: FTA 2006.

GENERAL CONSTRUCTION NOISE AND VIBRATION ANALYSIS

An initial detailed analysis was conducted to estimate the noise and vibration levels associated with various construction scenarios including individual pieces of ^ equipment expected to be used in construction of the Proposed Project^ . Maximum noise and vibration levels were determined for various construction equipment proposed for use on the Proposed Project and are summarized below in **Table 13-6**. The L_{max} noise level was used in lieu of the $L_{eq(8h)}$ or 30-day average L_{dn} as a conservative representation of noise levels, because the exact equipment usage is not currently known. Without such usage schedule information, the equipment L_{max} noise levels provide worst-case levels for evaluation.

As examples, reference noise levels at a distance of 50 feet range from ^ 73 dBA for a ^ vibratory roller and welding equipment to 94 dBA for ^ ballast regulators. Augers are proposed for construction in lieu of impact pile drivers (with a reference noise level of 101 dBA) to minimize noise impacts in the community.

^ Based on feedback from the LIRR track design and maintenance teams as well as from the New York State Department of Transportation (NYSDOT) regarding the grade crossing eliminations, various worst-case construction scenarios were developed using these reference equipment types. To gauge the magnitude of potential noise and vibration impact from the temporary construction activities, prototypical scenarios were developed at the following seven locations:

1. Covert Avenue (New Hyde Park)
2. New Hyde Park Road (New Hyde Park)
3. Mineola
4. Roslyn Road (Mineola)
5. North Atlantic Avenue (Carle Place)
6. Ellison Avenue (Westbury)
7. Urban Avenue (New Cassel)

Table 13-6
Construction Equipment Noise and Vibration Reference Levels

Equipment		Noise	Vibration	
ID	Description	L_{max}, dBA	RMS, VdB	PPV, ips
1	Air compressor	82	58	0.003
2	Ballast Regulators	82	94	0.210
3	Boom Trucks	83	86	0.076
4	Bulldozer	85	87	0.089
5	Cat 325 Excavator	85	87	0.089
6	Clipper	80	94	0.210
7	Concrete Saw	90	58	0.003
8	Concrete Truck	82	86	0.076
9	Crane	82	94	0.202
10	Declipper	80	94	0.210
11	Demolition Saw	82	58	0.003
12	Drill Rig	82	87	0.089
13	Drills	84	87	0.089
14	Dump Truck	88	86	0.076
15	Dynamic Track Stabilizers	82	94	0.210
16	Excavator/Track hoe	82	87	0.089
17	Flash Butt Welding Unit	73	86	0.076
18	Flatbed Truck	88	86	0.076
19	Gantry Crane	88	94	0.202
20	Generators	81	86	0.076
21	Gradall	82	87	0.089
22	Grapple Truck	83	86	0.076
23	Jack Hammer	88	79	0.035
24	Large Drill Rig	82	87	0.089
25	Little Giant Crane	83	94	0.202
26	Loader	82	58	0.003
27	Manitowoc Crane	88	94	0.202
28	MFS-40 Cars w/ Loader Unit	85	86	0.076
29	Milling machine	82	58	0.003
30	New Track Construction Machine	85	94	0.210
31	One or Two Large Cranes (100 - 150 ton)	82	94	0.202
32	Pickup Truck	82	58	0.003
33	Paver	82	94	0.210
34	Payloader	85	58	0.003
35	Pencil Vibrator	82	94	0.210
36	Plate Tamper/Jumping Jack	82	93	0.170
37	Power Auger	82	58	0.003
38	Powerbroom	82	58	0.003
39	Rail Saws and Drills	90	87	0.089
40	RailVac	85	58	0.003
41	Reach Forklift	85	58	0.003
42	Rotary Dump Truck	88	86	0.076
43	Shoulder Ballast Cleaner	82	58	0.003
44	Striping machine	82	58	0.003
45	Tack Truck	82	86	0.076
46	Tadano Cherry Picker	83	58	0.003
47	Tie Shearers	84	58	0.003
48	Track Laying Machine	85	94	0.210
49	Tractor Trailers	82	86	0.076
50	Unimat Tampers	83	94	0.210
51	Vibratory Hammer	82	93	0.170
52	Vibratory Roller	73	94	0.210
53	Welding Truck	73	86	0.076
54	Work Train w/ Rail unloading unit	85	86	0.076

Note: All reference levels are reported at a distance of 50 feet for noise and 25 feet for vibration.
Source: FTA's *Transit Noise and Vibration Impact Assessment*, FHWA's *Roadway Construction Noise Model User's Manual*.

A detailed construction noise assessment was prepared representing the different construction scenarios anticipated, e.g., track construction, platform demolition, platform and canopy construction, retaining wall and sound attenuation wall construction, and/or grade crossing construction. For each scenario, assumptions were made based on the overall duration of construction activity, number and type of construction equipment likely to be used, percentage of time equipment would operate at maximum noise level (usage factor), percentage of time equipment would operate during a standard 8-hour work shift (load factor), and maximum noise and vibration levels from the equipment. Calculated sound pressure levels at 50 feet from the equipment exceeded 80 dBA in most instances. However, with implementation of sound reduction strategies (see below), it is anticipated that a reduction in sound pressure levels of approximately 12 dBA can be achieved, thus bringing sound pressure levels below 70 dBA in most instances. While the absolute increase in sound pressure levels would be noticeable, and at certain times intrusive, the overall noise levels would be consistent with noise levels to currently exist within the Project Corridor (see Table 12-4) which range from 66 dBA (L_{eq}) to 75 dBA (L_{eq}).[8] With implementation of noise control measures and implementation of a Construction Noise Control Plan the number of potentially affected properties in the Project Corridor would likely be reduced by approximately 85 percent.

Exceedances of the LIRR L_{10} noise criteria are predicted at several locations during both the daytime and nighttime ^ periods. The predicted noise levels ^ reflect contractor-applied control measures that are estimated to reduce overall construction noise ^ by approximately 12 dBA.

As outlined below, various measures can be implemented to further minimize or avoid temporary increased noise levels.

Similarly, ^ exceedances of the FTA *frequent* vibration limit of 72 VdB for annoyance ^ are also predicted at several residences and other FTA Category 2 land-uses^ . Although potential ^ exceedances of the FTA ^ impact criteria ^ are predicted at several front-row residences and ^ institutional properties closest to the ^ rail corridor, no exceedances of the ^ FTA damage ^ criterion of 0.5 inches per second ^ are predicted anywhere along the Project Corridor. Therefore, there is no likelihood of damage from any of the proposed construction activities^ .

The bulk of the construction would normally occur during daylight hours when many residents are not at home, and when other community noise sources contribute to higher ambient noise levels. However, as noted, some construction activities may also occur during the nighttime and on weekends to complete the Proposed Project sooner and reduce the overall duration of construction-related impacts on the community and to minimize the loss of train service. Construction activities are generally expected to last for only a portion of the overall construction period at any one location, depending on the type of activity, and the overall Project Corridor construction period is expected to last approximately 3 to 4 years. During this time frame, work relating to grade crossing eliminations, bridge replacement, station improvements, construction of retaining and noise attenuation walls, and installation of the third Main Line track are expected to employ several pieces of equipment simultaneously at any one location. Given the potential impact distances as discussed above, exceedances of the FTA daytime and night time noise and vibration criteria may occur for certain periods along the Project Corridor. However, the Proposed Project would seek to minimize these periods to the maximum extent practicable, particularly at sensitive receptors adjacent to the rail

[8] One monitoring location had a baseline noise level of 62 dBA (Leq).

alignment and facilities. LIRR is committed to requiring its construction contractors to implement extensive noise and vibration control measures as detailed below that would minimize exceedances of the criteria and extended disruption of normal activities.

Table 13-7 describes the typical durations and relative peak uncontrolled noise levels by distance along the LIRR ROW from affected properties during construction of retaining walls along the LIRR ROW. Of the approximately 14 weeks when construction would be occurring within 800 feet of a property, noise levels would be moderate or high only half of that time. With the proposed noise controls measures in place the peak noise levels would be lower than those shown in Table 13-7. Other track work such as installation of ballast, ties, and rail would move through any given area substantially quicker than the durations shown in the table. Station work and grade crossings would remain in one location throughout the construction process and noise would be noticeable for a longer period of time that the more dynamic construction elements.

Table 13-7

Duration of Typical Retaining Wall Construction

Distance Along ROW from Property (ft.)	Noise Level	Days of Duration
800 west to 400 west	Moderate to low	25
400 west to 100 west	Moderate to high	19.5
100 west to 0	High	6.5
0 to 100 east	High	6.5
100 east to 400 east	Moderate to high	19.5
400 east to 800 east	Moderate to low	25
	Total	**103**

Notes: 85 dBA maximum; High Noise Level = > 78 dBA; Moderate Noise Level = ≥67 dBA to ≤78 dBA; Low Noise Level = < 67 dBA.

NOISE AND VIBRATION CONTROL MEASURES

LIRR's selected construction contractor would be required by contract to use noise control measures and Best Management Practices (BMPs) to minimize construction-related noise levels. The FTA recommends $L_{eq(8h)}$ noise level limits of 80 dBA during the daytime period from 7:00 a.m. to 10:00 p.m. and 70 dBA during the night time period from 10:00 p.m. to 7:00 a.m. at residences to avoid or minimize impacts in the community. For the Proposed Project, LIRR would require in its contract with the design-build contractor to meet the noise levels outlined in **Table 13-8** by land use and time period.

In addition, local noise ordinances, both at the town and village levels, regulate construction noise and the operation of mechanical equipment, primary through restrictions on the permissible hours of construction, which are summarized below **Table 13-^ 9.**

Table 13-8
Construction Noise Lot Line Limits

Land Use	L_{10} Level (dBA, slow)	L_{max} Level (dBA, slow)
Daytime (7:00 am to 6:00 pm)		
Residential	75 or BKGD+5*	85**
Commercial	80 or BKGD+5*	N/A
Industrial	85 or BKGD+5*	N/A
Evening (6:00 pm to 10:00 pm)		
Residential	BKGD+5	85
Commercial	N/A	N/A
Industrial	N/A	N/A
Night-Time (10:00 pm to 7:00 am)		
Residential	BKGD < 70 dBA = BKGD+5 BKGD ≥ 70 dBA = BKGD+3	80 80
Commercial	N/A	N/A
Industrial	N/A	N/A

Notes: BKGD = Background Noise Level (L_{10})

* Noise Limit is the greater of the two values.

** 90 dBA limit for impact equipment.

All measurements will be taken at the affected lot-line. In situations where the work site is within 50 feet a lot-line, the measurement will be taken from a point along the lot-line such that a 50-foot distance is maintained between the sound level meter and the construction activity being monitored.

Lot-line noise limits will apply to all points along the receptor's lot-line.

L_{10} noise readings are averaged over 20-minute intervals. L_{max} noise readings occur instantaneously.

Table 13-^ 9
Local Noise Ordinances

Municipality	Hours for Construction
Town of Hempstead	7AM – 6PM
Town of North Hempstead	7:30AM – 6PM
Town of Oyster Bay	7AM – 10PM
Village of Garden City	8AM – 8PM
Village of Mineola	No Direct Restrictions
Village of Westbury	7AM – 8PM
Village of Floral Park	8AM - 7PM
Village of New Hyde Park	7AM – 7PM

While these work hour restrictions would apply to typical construction projects, MTA and LIRR are exempt from the jurisdiction of municipalities pursuant to Section 1266(8) of the Public Authorities Law.[9] As noted, the Proposed Project would nevertheless comply with the work hour

[9] "The local laws, resolutions, ordinances, rules and regulations of a municipality or political subdivision, heretofore or hereafter adopted, conflicting with this title or any rule or regulation of the authority or its subsidiaries, or New York city transit authority or its subsidiaries, shall not be applicable to the activities or operations of the authority and its subsidiaries . . . except such facilities that are devoted to purposes other than transportation or transit purposes." See also New York State Highway Law, § 30 which is applicable to the activities of NYSDOT. (N.Y. Pub. Auth. Law § 1266 (McKinney^))

restrictions within residential areas, except where not feasible to accommodate work affecting rail operations such as work relating to bridge replacement, construction of retaining walls and grade alteration of track. DOT grade crossing construction is anticipated to take place outside of specified work hours in order to minimize the construction period and concomitant disruption. In cases where work is performed outside specified work hours in locations adjacent to residential neighborhoods, every effort would be made to keep intrusive noise to a minimum.

The agencies would make every effort to minimize the noise impacts of construction and would seek to comply with FTA's recommended noise limits at sensitive receptors. A construction noise and vibration monitoring program would be performed during construction to ensure contractor compliance with FTA noise and vibration criteria. The design-build contractor would be required by contract to submit noise and vibration control plans to demonstrate that each new phase of construction work would comply with the FTA construction noise criteria. Mitigative action would be taken in the event that there are exceedances of the FTA noise and vibration criteria during the monitoring process. In addition, to protect owners of properties adjacent to construction, a pre-construction survey program would be developed and implemented to assess buildings' structural elements and facades prior to the start of construction. Consistency with aforementioned FTA guidelines and work hours contained in local ordinances where feasible, as well as implementation of noise and vibration control measures and BMPs, would minimize exceedances of the FTA criteria within the Project Corridor at noise-sensitive land uses. Typical types of noise control measures and BMPs that the Proposed Project would seek to have its contractors implement include, but would not be limited to, the following:

^ 1. Comply with NYSDEC Regulations for idling vehicles.

2. Back-up alarms shall be either audible self-adjusting back-up alarms or manual adjustable alarms.

3. Impact and drilling equipment such as pile drivers, jackhammers, hoe rams, core drills, direct push soil probes (e.g. Geoprobe), and rock drills shall be equipped with a muffler.

4. Use of electrically operated hoists and compressor plants unless otherwise permitted by the Resident Engineer.

5. Maximum sized intake and exhaust mufflers on internal combustion engines.

6. Gears on machinery designed to reduce noise ^ to a minimum.

7. Concrete crushers or pavement saws for concrete deck removal, demolitions, or similar construction ^ activity.

8. Line hoppers and storage bins with sound-deadening material.

9. Pre-auguring equipment to reduce the ^ duration of impact or vibratory pile driving.

10. The prohibition of the use of air or gasoline driven saws unless otherwise permitted by the Resident Engineer.

11. Conducting the operation of dumping rock or other material and carrying it away in trucks so that noise is kept to a minimum.

⊥ 12. Routing of construction ^ equipment and vehicles carrying rock, concrete, or other materials over streets that will cause the least disturbance to noise-sensitive locations.

13. Slamming of dump truck tail gates shall be prohibited.

14. Earthmoving and stationary equipment shall be noise attenuated.

15. Silencers on air intakes and air exhaust of equipment.

16. Mitigate noise from construction devices with internal combustion engines by ensuring that the engine doors are kept closed, and by using noise-insulating material mounted on the engine housing that does not interfere with the manufacturer guidelines and by operating the device at lower engine speeds to the maximum extent possible.

17. Operate equipment to minimize banging, clattering, buzzing, and other annoying types of noises.

18. Provide shields, acoustic fabric, soundproof housings or other physical barriers to restrict the transmission of noise.

19. Jackhammers shall be equipped with elongated effective muffler casing or bellows.

20. Alternative methods to hoe ramming concrete, including hydraulic jacks or chemical splitting, shall be considered.

21. Hoe rams shall be the smallest and quietest necessary. A noise shroud enclosure shall be wrapped around the ^ head (i.e. chisel) of the hoe ram.

^ 22. Auger drill rigs shall be equipped with well-maintained and effective mufflers. All moving parts shall be well lubricated to avoid unnecessary noise squeaking parts. Debris from the drill bit shall be removed without quick twisting, jerking, or hammering the bit.

23. Street plates shall be properly installed minimize vehicular tire impact on the plate and minimize noise.

⊥ 24. Use ^ the local power grid to reduce the use of generators.

Similarly, BMPs that could be implemented by the construction contractor to minimize vibration in the community include, but would not be limited to, the following types of control measures:

- Use less vibration-intensive construction equipment or techniques near vibration-sensitive locations.
- Route heavily laden vehicles away from vibration-sensitive locations.
- Operate earthmoving equipment as far as possible from vibration-sensitive locations.
- Sequence construction activities that produce vibration, such as demolition, excavation, earthmoving, and ground impacting so that the vibration sources do not operate simultaneously.
- Use devices with the least impact to accomplish necessary tasks.

All specific noise control measures and BMPs would be confirmed by LIRR during later stages of design when the details of the Proposed Project construction activities are developed and finalized as part of the construction bid contracts.

SAFETY AND SECURITY

Many transit industry safety and security standards and processes described in Chapter 15, "Safety and Security," apply not only to the design and operational phases, but also to construction phases. Construction of the Proposed Project would follow existing MTA and LIRR operational safety and security programs and processes to provide the ^ public and construction

employees with a safe and secure environment at station areas, parking areas, and around construction staging areas. Safety and security requirements would be specified in the construction contracts for the Proposed Project.

Measures taken to ensure the avoidance of adverse construction impacts in terms of safety and security (see page 13-7) would include the adherence to current MTA and LIRR safety and security policies, guidelines, procedures, and requirements. Incorporation of specific features to protect adjacent communities, the traveling public, and workers during construction will continue to be a major focus of project planning and design. The development and incorporation of these features will be coordinated with federal, state, and local agencies having jurisdiction over safety and security issues. ✷