Chapter 1: Project Description

A. INTRODUCTION

The Metropolitan Transportation Authority's (MTA) Long Island Rail Road (LIRR) is proposing the LIRR Expansion Project from Floral Park to Hicksville (the "Proposed Project" or "LIRR Expansion Project"). The Proposed Project is a key element of Governor Andrew M. Cuomo's transportation infrastructure initiatives and is a strategic component of a comprehensive plan to transform and expand New York's vital regional transportation infrastructure and to enhance Long Island's economy, environment and future. The Proposed Project extends 9.8 miles between the Floral Park and Hicksville stations, where five branches converge carrying approximately 41 percent of LIRR's daily ridership. The addition of a third track would increase track capacity through the corridor making it easier to run trains along this busy, congested rail corridor. This would improve service reliability and make transit more attractive, with the further goal of getting travelers out of cars, reducing traffic congestion, and reducing adverse environmental impacts. This 9.8-mile stretch also includes seven street-level train crossings ("grade crossings") where road traffic must stop each time a train passes. Eliminating these grade crossings through grade separation (e.g., underpasses) or potentially, in one or two cases, closure (with consideration of public input), is anticipated to substantially reduce noise, traffic congestion, delays, and air pollution, and greatly improve safety for residents, motorists, and pedestrians.

The LIRR Expansion Project represents a completely different approach to bringing the third track capacity expansion to fruition than past proposals. Governor Cuomo has said that this project will set the standard for positive community engagement, with outreach being modeled on the successful efforts he ordered as part of the replacement for the Tappan Zee Bridge. While prior third track proposals required extensive property acquisitions to accommodate a widened right-of-way (ROW), by contrast, the Proposed Project would install a third track within the existing LIRR ROW. This approach to the construction of the third track within the existing LIRR ROW completely eliminates the need for any residential property acquisition. Furthermore, grade crossing separation would be completed using an expedited design-build approach to shorten the construction period and avoid the need to build diversion roads, as had been contemplated in prior proposals. This new approach, in addition to eliminating the need for any residential property acquisition, would also dramatically reduce the need for commercial property acquisitions (approximately four full commercial property acquisitions, with the help of State relocation assistance the goal would be to keep affected businesses in the same communities) and would seek to build community consensus around proposed grade separation options. The Proposed Project includes the following major components: installation of a third track within the existing LIRR ROW; elimination of all seven at-grade street-level crossings along the affected Main Line corridor; installation of sound attenuation walls; various station improvements and modifications; utility relocations; and other related railroad infrastructure improvements.

This chapter describes the regulatory context for this draft environmental impact statement (DEIS), the Proposed Project, its purpose and need, and all required approvals. Subsequent chapters of this DEIS discuss potential environmental impacts, organized by topic, in accordance with the Final Scoping Document.

B. REGULATORY CONTEXT

This DEIS has been prepared pursuant to the requirements of the State Environmental Quality Review Act (SEQRA) (Article 8 of the Environmental Conservation Law and its implementing regulations at 6 NYCRR 617). The purpose of this DEIS is to provide an objective analysis of the potential environmental impacts of the Proposed Project in all phases of construction and operation. LIRR is the lead state agency for SEQRA for this Proposed Project. The New York State Department of Transportation (NYSDOT) is an involved agency for approval of the work associated with the elimination of the grade crossings and proposed parking facilities. LIRR and NYSDOT issued a Draft Scoping Document on May 5, 2016. The Draft Scoping Document was widely circulated to the public, government agencies, and other interested parties to obtain input on the Proposed Project and to identify the scope and analysis methodologies to be used in the DEIS. As part of a robust public involvement and agency coordination program, six public scoping meetings were held to provide opportunities for comment on the Draft Scoping Document:

- Tuesday, May 24, 2016 from 11:00 AM to 2:00 PM at The Inn at New Hyde Park;
- Tuesday, May 24, 2016 from 10:00 AM to 2:00 PM at Hofstra University;
- Tuesday, May 24, 2016 from 5:00 PM to 9:00 PM at The Inn at New Hyde Park;
- Tuesday, May 24, 2016 from 6:00 PM to 9:00 PM at Hofstra University;
- Wednesday, May 25, 2016 from 11:00 AM to 2:00 PM at the Yes We Can Community Center in Westbury; and
- Wednesday, May 25, 2016 from 6:00 PM to 9:00 PM at Antun's by Minar in Hicksville.

Comments on the Draft Scoping Document were received through oral statements, written comment cards, the project website (www.AModernLI.com), and written comment letters. LIRR, NYSDOT, MTA, and the New York State Governor's Office also conducted an extensive series of community outreach and stakeholder meetings. In addition, the LIRR Expansion Project Information Center was established in the Mineola Station adjacent to the south platform waiting room. This information center provided opportunities for commuters and the general public to review the Draft Scoping Document, ask questions, and submit comments. Input solicited during the Scoping period was used to inform and guide the alternatives development and data collection efforts. A Final Scoping Document was issued on August 26, 2016.

In accordance with 6 NYCRR 617.9(a)(1), LIRR, as the project sponsor (or "Applicant") has opted to prepare this DEIS and has prepared the document to meet the requirements of SEQRA. Also pursuant to 6 NYCRR 617.9(a)(2), LIRR, as Lead Agency, has determined this DEIS to be complete and "adequate with respect to its scope and content for the purpose of commencing public review." The ultimate determination of impacts and potential mitigation measures associated with the Proposed Project is the responsibility of the Lead Agency and will be expressed in the Final Environmental Impact Statement and Statement of Findings, both of which are the ultimate responsibility of the Lead Agency to prepare and file at the appropriate time pursuant to SEQRA.

C. PROJECT PURPOSE AND NEED

BACKGROUND

The MTA is North America's largest transportation network, serving a population of 15.2 million people in a 5,000-square-mile area that extends from New York City to Long Island, the southeastern portion of New York State, and Connecticut. The MTA is a public-benefit corporation with five operating agencies—MTA New York City Transit, MTA Metro-North Railroad, MTA Bus Company, MTA Bridges and Tunnels, and LIRR. LIRR was founded in 1834. It is the busiest commuter railroad in North America, currently carrying approximately 304,000 customers each weekday on approximately 750 daily trains. The LIRR system comprises over 700 miles of track on eleven different branches (see **Figure 1-1**). It extends 120 miles from Montauk, Long Island to Pennsylvania Station in Manhattan. LIRR serves 124 stations in Nassau, Suffolk, Queens, Brooklyn, and Manhattan, providing service to over 87 million customers each year.

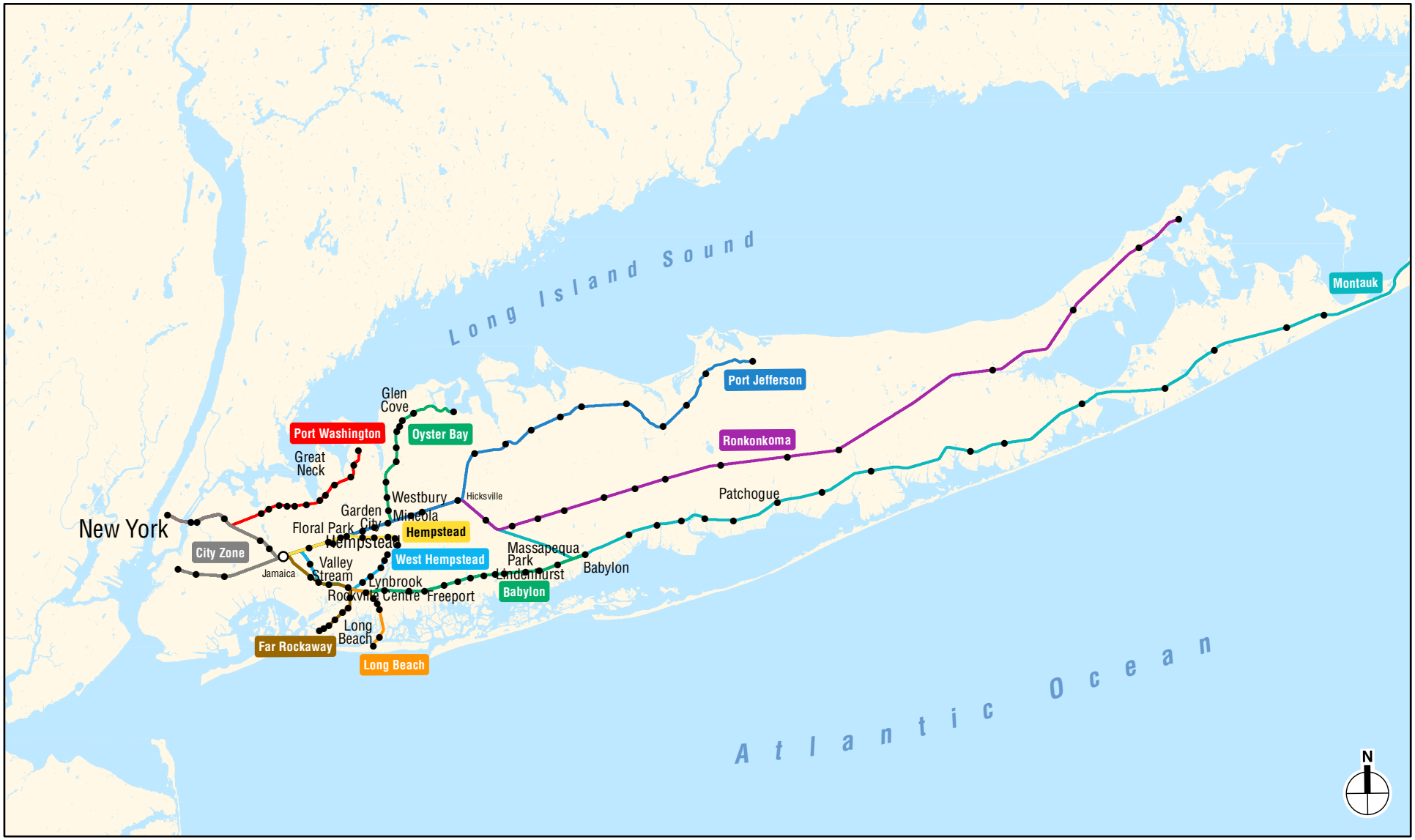
The LIRR's Main Line serves as the central artery of the commuter rail system in Queens, Nassau, and Suffolk Counties. At various points east of Bellerose, five LIRR branches split off from the Main Line—the Hempstead, Oyster Bay, Port Jefferson, Ronkonkoma, and Montauk Branches. The number of tracks along the Main Line corridor varies: it primarily has four tracks west of Floral Park, but narrows to two tracks east of Floral Park through to Hicksville. The Main Line is also used by the New York & Atlantic Railway for freight service.

The Proposed Project addresses the heavily utilized two-track Main Line segment between Floral Park and Hicksville (see **Figure 1-2**). This busy portion of the Main Line services the Hempstead, Ronkonkoma, and Port Jefferson Branches; some Montauk Branch trains; and all Oyster Bay Branch trains. This segment services approximately 107,000 riders on an average weekday. This two track portion of the corridor is problematic for several reasons, including:

- Severe congestion during peak periods
- Frequent delays with rippling effects to Main Line and other branches due to bottlenecks caused by emergency repair, a disabled train or other disruptions that would not allow trains to bypass during peak periods
- Insufficient track capacity to operate both eastbound and westbound service during peak periods
- Service interruptions during planned or unplanned maintenance activities
- Safety concerns related to railroad traffic, roadway traffic, and pedestrians at grade crossings
- Traffic delays at grade crossings

CONGESTION AND DELAYS ALONG EXISTING LIRR MAIN LINE

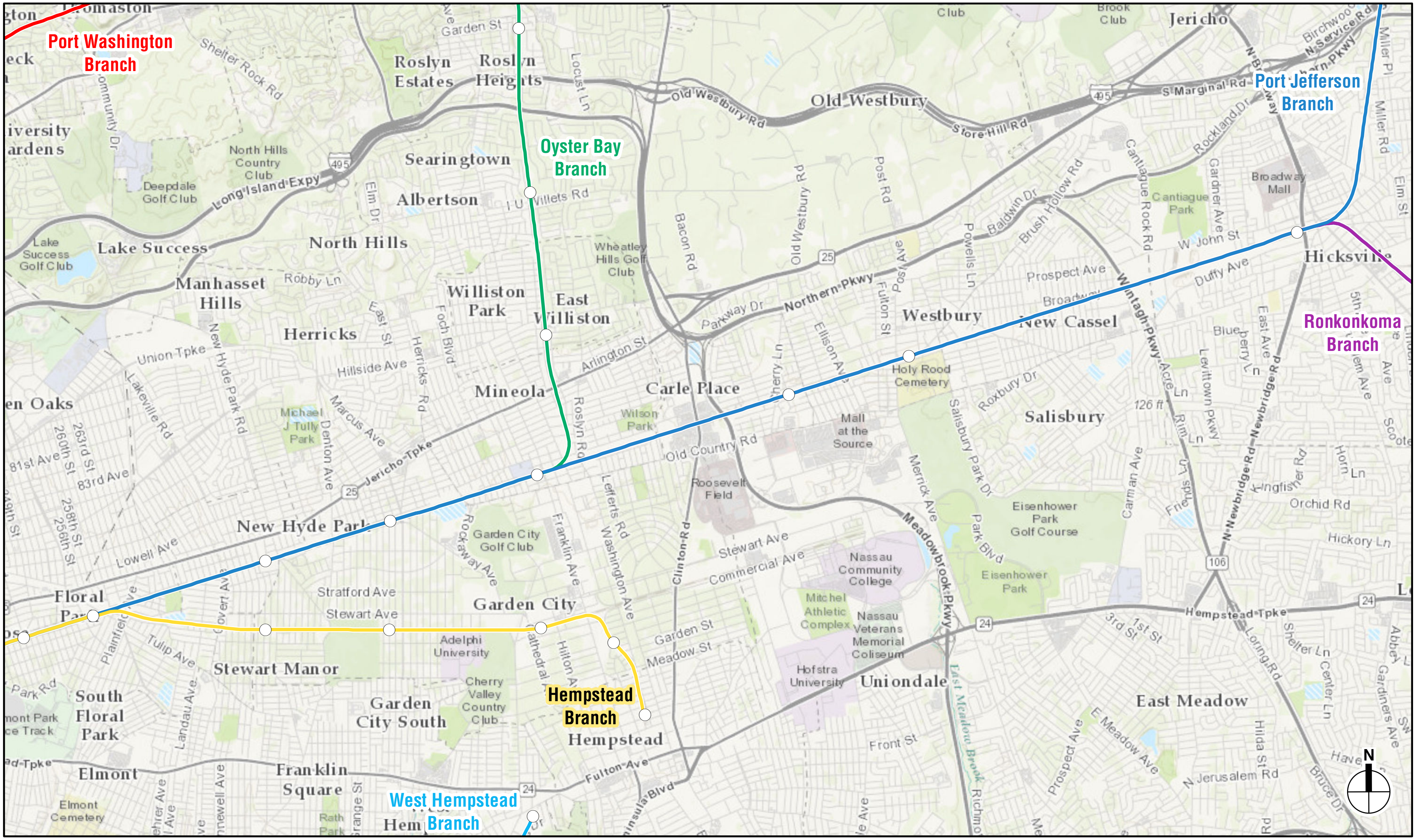
As discussed above, the existing LIRR Main Line segment between Floral Park and Hicksville comprises two tracks, and currently serves more than 250 trains on a typical weekday. While many of these 250 trains are passenger trains that carry fare-paying LIRR customers (referred to as "revenue trains" because they generate revenue for the LIRR), other LIRR trains also use these two tracks. Once a LIRR passenger train has reached the end of its route, the empty train must be placed in position for its next route or to another appropriate location (for example, overnight storage yard or maintenance facility). This is considered a "non-revenue" train. Both



LIRR Expansion Project
Floral Park to Hicksville

Long Island Rail Road System
Figure 1-1

10/12/2016



LIRR Main Line

Station Name ● *LIRR Station*

0 2 MILES

LIRR Expansion Project
Floral Park to Hicksville

Project Area
Figure 1-2

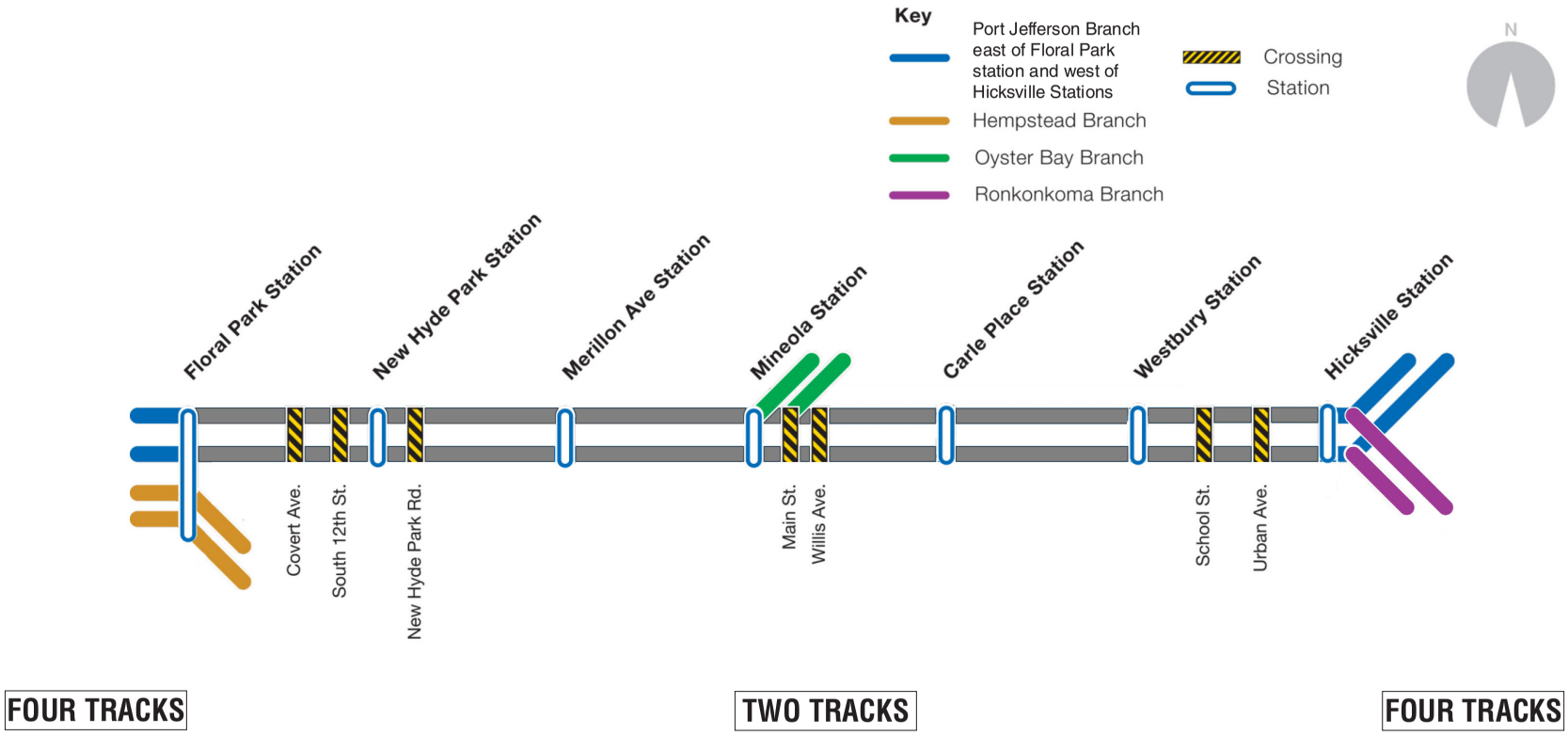
revenue train movements and non-revenue train movements are essential for the LIRR system to function properly.

Given the volume of train traffic along this Main Line segment, it frequently becomes congested during a normal rush hour. Moreover, in the event of a bottleneck caused by an emergency repair or disabled train, conditions can range from severely constrained to immobilized, creating significant delays. **Figure 1-3** illustrates the conditions that create the bottleneck on the Main Line. Passenger emergencies, police activity, and emergency track repairs are among the unforeseeable causes of delays. Unlike other events that may shut down the entire rail line (e.g., severe weather event), these types of delays often result in the temporary closure of the affected track only. However, due to the heavy train volumes along the Main Line, using the second (unaffected) track as a "run-around" track increases congestion because express and local service have to share one track. LIRR has very few options to route service around a disabled train or track outage. Typically, the trains along the affected track cannot move until the situation is resolved, compounding delays and affecting thousands of train riders (see **Figure 1-4)**. The limited two-track Main Line segment also slows recovery time after an incident. **Figure 1-5** presents a typical scenario involving an incident and how the two-track section hinders recovery time from an incident. A parallel situation exists on highways—a two-lane roadway without shoulders will experience more substantial delays and a longer recovery period than a four-lane roadway with shoulders (which can temporarily serve as a travel lane and/or emergency vehicle lane) that is subjected to the same incident.

From January 2013 through September 2016 there were 110 incidents that resulted in 10 or more late or cancelled trains along this segment of the LIRR Main Line (see **Table 1-1).** This averages more than one major incident every two weeks and does not account for any incidents where fewer than 10 trains were affected. (page 4). These 110 incidents affected over 3,500 trains, and hundreds of thousands of customers. The 2016 incidents alone equate to 115,000 person-hours of delays. Some of these incidents involved passengers only and others involved motorists using the grade crossings and other members of the public. The first and most critical step following any railroad incident is assessing the situation, evacuating passengers if needed, and getting any necessary first responders to the location. Once it is deemed safe to do so, the LIRR has a responsibility to continue or restore service as quickly as can safely be accomplished. This is often a tremendously difficult task, made more challenging by the limited number of tracks available to reroute trains.

Delays along the Main Line can have significant ramifications, affecting hundreds of thousands of customers on multiple branches. Even the less extreme delays have serious implications for LIRR commuters—including missed connections; missed meetings and other events; lost time at the workplace; and childcare complications. Routine delays (whether major or minor) place a serious burden on the lives of daily commuters, their employers, and their families.

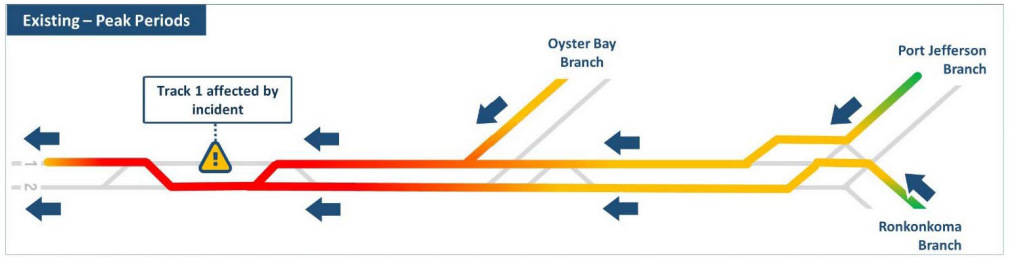
In each of the cases noted below, the Proposed Project would have helped speed the recovery from the incident and enabled LIRR to normalize service more quickly. For many instances, having a third track (and related railroad interlockings and crossovers) would have prevented delays completely.



LIRR Expansion Project
Floral Park to Hicksville

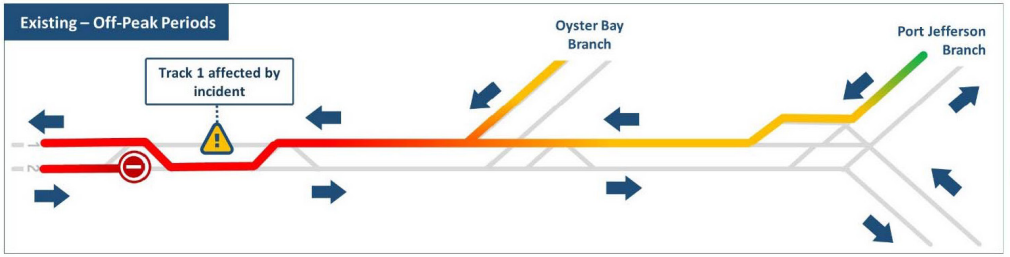
Existing Track Schematic
Figure 1-3

EXISTING RAIL OPERATIONS AFFECTED BY INCIDENT



Trains operate in the same direction on both tracks. No reverse peak service

Track 1 affected by incident. Trains from Track 1 merge with Track 2, causing delays to both tracks



Each track operates in one direction.

Track 1 affected by incident. Track 1 trains alternate past the incident

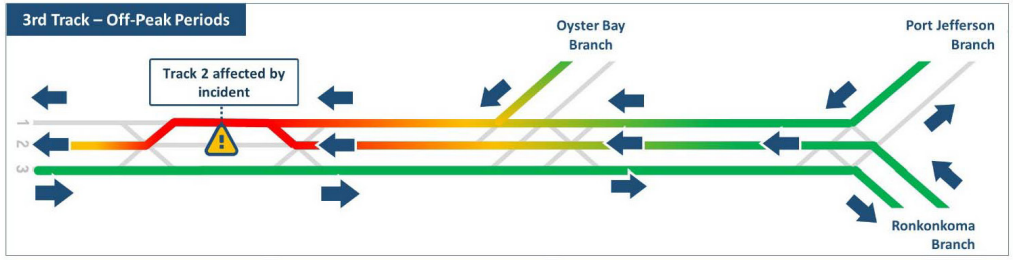
Track 2 reverse service is held, causing delays to both tracks

RAIL OPERATIONS AFFECTED BY INCIDENT W/ 3rd TRACK

Two tracks in same direction and reverse service operates on one.

Track 2 affected by incident.

Reverse peak service held. Peak period trains rerouted to Track 3 to maintain two tracks for peak service direction, minimizing delays to commuters.



Two tracks in same direction and reverse service operates on one.

Track 2 affected by incident. Trains from Track 2 merge with Track 1 to maintain one track per direction. Reverse service unaffected.

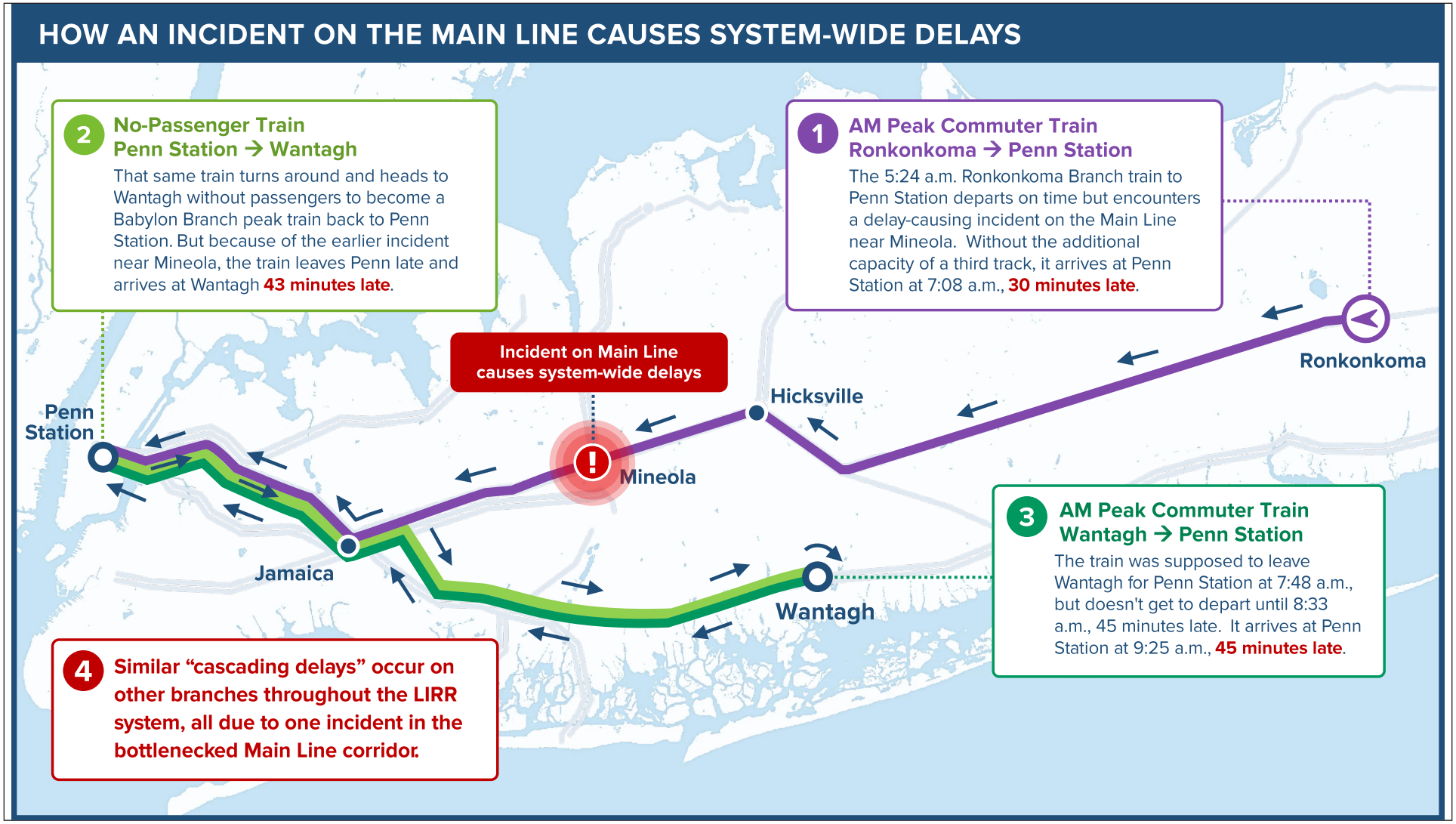

HOW AN INCIDENT ON THE MAIN LINE CAUSES SYSTEM-WIDE DELAYS
2
No-Passenger Train
Penn Station → Wantagh
That same train turns around and heads to Wantagh without passengers to become a Babylon Branch peak train back to Penn Station. But because of the earlier incident near Mineola, the train leaves Penn late and arrives at Wantagh 43 minutes late.
1
AM Peak Commuter Train
Ronkonkoma → Penn Station
The 5:24 a.m. Ronkonkoma Branch train to Penn Station departs on time but encounters a delay-causing incident on the Main Line near Mineola. Without the additional capacity of a third track, it arrives at Penn Station at 7:08 a.m., 30 minutes late.
Incident on Main Line causes system-wide delays
Penn Station
Jamaica
Mineola
Hicksville
Ronkonkoma
Wantagh
3
AM Peak Commuter Train
Wantagh → Penn Station
The train was supposed to leave Wantagh for Penn Station at 7:48 a.m., but doesn't get to depart until 8:33 a.m., 45 minutes late. It arrives at Penn Station at 9:25 a.m., 45 minutes late.
4
Similar "cascading delays" occur on other branches throughout the LIRR system, all due to one incident in the bottlenecked Main Line corridor.

Table 1-1

Main Line Events Causing Ten or More Late or Cancelled Trains*—2013 through September 2016

Date	Major Events	Number of Late or Cancelled Trains						
		AM Peak		PM Peak		Off Peak		
		Late	Cancelled	Late	Cancelled	Late	Cancelled	Total
2016								
1/29/2016	Track condition due to a cracked bar at Nassau Interlocking					11	1	12
2/13/2016	Track circuit failure due to a broken rail at Nassau Interlocking					6	4	10
2/14/2016	Broken rail at Nassau Interlocking (From 2/13)					11	10	21
3/9/2016	Track defect in Nassau Interlocking	17				14	4	35
3/17/2016	Train 666 with equipment trouble at Mineola			10	1	7		18
3/18/2016	Train 2737 with equipment trouble in Floral Park	10	1			11		22
3/21/2016	Train 2050 struck unauthorized person east of Westbury					17	4	21
3/24/2016	No. 1718 with equipment trouble at Carle Place			7	2		1	10
5/6/2016	Motor vehicle struck Post Avenue Bridge west of Westbury Station	9				9		18
5/8/2016	Defective insulated joint east of New Hyde Park Station					24		24
5/13/2016	Broken rail at Nassau Interlocking					13		13
6/18/2016	Bad insulated joint on Mainline 2 at Nassau 2					43	4	47
6/20/2016	Track circuit failure on #2 track at New Hyde Park			25	3	7		35
6/23/2016	Bridge strike west of Westbury Station					12		12
7/20/2016	Crossing protection at 12th Street (west of New Hyde Park) O/S	7				3		10
7/27/2016	Motor vehicle on tracks at Urban Avenue	43	13			30	16	102
7/29/2016	Bridge strike west of Westbury Station	5				9		14
8/10/2016	Train 609 with equipment trouble west of Hicksville	15						15
8/15/2016	Train 2062 struck a trespasser at Westbury Station			53	6	15		74
8/18/2016	Train 2011 struck a trespasser west of Mineola Station	31	11			15	11	68
8/23/2016	Crossing protection failure at NHP Road			19		22		41
8/23/2016	Signal supervisory malfunction at Nassau			41	4	10	1	56
8/24/2016	Track circuit failure at New Hyde Park					15		15
							TOTAL	**693**
2015								
1/8/2015	Defective insulated joint west of Divide interlocking	22						22
1/9/2015	Broken crossing gate New Hyde Park Road	21				12		33
1/16/2015	Bridge strike east of Merillon Ave Station			7		5		12
1/31/2015	Train 8094 struck debris in Divide interlocking					11	7	18
2/10/2015	Train 2716 equipment trouble New Hyde Park			11		3		14
2/17/2015	Train 2011 canceled in Hicksville with equipment problems	34	1			6		41
2/20/2015	Switch trouble Nassau 1 interlocking			26	2	8		36
2/22/2015	Broken crossing protection New Hyde Park Road					17		17
3/19/2015	Debris found in switch points Nassau 2 interlocking			18	3	3		24
3/23/2015	Track fire west of Nassau interlocking					12	1	13
3/25/2015	Track circuit failure west of Divide	6				4		10
7/10/2015	Train 2096 requiring medical assistance Mineola Station			14		3		17
7/19/2015	Track circuit failure at Nassau interlocking					12		12
7/24/2015	Train 2735 with equipment trouble in Nassau interlocking	21	1			8		30
7/30/2015	High water condition west of Divide			39	4	15	1	59
8/11/2015	High water Urban Avenue	11			12			23
8/16/2015	Down plane on the tracks at South Oyster Bay Road					10	28	38
8/21/2015	High water Urban Avenue	65	1		19			85
9/15/2015	Freight derailment			39	10	65	16	130

Table 1-1 (cont'd)

Main Line Events Causing Ten or More Late or Cancelled Trains*—2013 through September 2016

Date	Major Events	Number of Late or Cancelled Trains						
		AM Peak		PM Peak		Off Peak		
		Late	Cancelled	Late	Cancelled	Late	Cancelled	Total
2015 (continued)								
9/16/2015	Freight derailment	52	16	23	12	65	48	216
9/17/2015	Freight derailment	35	2			19	1	57
10/1/2015	Train 613 with equipment trouble in Mineola	7	1			6		14
10/2/2015	Motor vehicle on tracks at Urban Avenue	35				9		44
10/13/2015	Switch trouble west of Divide					11		11
10/15/2015	Misaligned third rail east of Floral Park			8	1	3	2	14
10/16/2015	Broken crossing gate at Covert Avenue			14		5		19
10/18/2015	Trespasser strike New Hyde Park Road					17	11	28
10/19/2015	Train 2013 disabled at Floral Park	13	2					15
10/21/2015	Multiple track circuit failure Westbury Station			15	5			20
10/26/2015	Bridge strike west of Westbury Station			6	5			11
10/26/2015	Loss of signal supervisory system at Divide Tower					15	3	18
							TOTAL	**1,101**
2014								
1/26/2014	Motor vehicle on tracks east of Mineola Station					18	3	21
2/6/2014	Train 2703 struck an unauthorized person at Hicksville Station	10	2			20	1	33
2/10/2014	Train 507 with equipment trouble west of Mineola	11	2			19	2	34
2/22/2014	Signal trouble at Nassau Interlocking					10		10
3/6/2014	Bridge strike west of Westbury Station			15		4		19
5/7/2014	Train 2401 with equipment trouble west of Merillon Avenue	18	1			12		31
5/27/2014	Bridge strike at Westbury Station	7				4		11
6/5/2014	Broken crossing protection east of Floral Park			9		6		15
6/9/2014	Crossing protection out of order on Mainline			16		1		17
6/11/2014	Train 561 struck unauthorized person at Merrilon Avenue					13	1	14
6/20/2014	Train 658 requiring medical assistance in Mineola			5	1	5		11
7/19/2014	Track circuit failure west of Nassau Interlocking					12		12
8/19/2014	Train 2096 requiring medical assistance in Carle Place			13		1		14
8/20/2014	Debris in switch points at nassau interlocking	3				13		16
9/8/2014	Train 2740 struck debris			14		1		15
9/13/2014	Motor vehicle on tracks east of Westbury Station					10		10
10/2/2014	Motor vehicle struck bridge east of Merillon Avenue			15		5		20
10/10/2014	Train 2013 with equipment trouble at Westbury Station	15	2			2		19
10/14/2014	Switch trouble at Nassau 2 Interlocking			19	3	21		43
10/17/2014	Broken crossing gate at New Hyde Park Road	10				3		13
10/29/2014	Broken crossing gate west of New Hyde Park Station			23		4		27
10/30/2014	Signal trouble at Nassau Interlocking due to vandalism	42	1			15	6	64
11/13/2014	Fire Department activity east of Merillon Avenue					30	3	33
11/17/2014	No. 501 with Equipment trouble at Mineola	38	1			9		48
12/3/2014	Train 2094 with a debris strike east of Westbury Station			29	1	13		43
12/5/2014	1730 with a possible trespasser strike west of New Hyde Park			30	7	18	4	59
12/11/2014	Train 1718 struck debris east of Westbury Station			9	1	6		16
							TOTAL	**668**

Table 1-1 (cont'd)

Main Line Events Causing Ten or More Late or Cancelled Trains*—2013 through September 2016

Date	Major Events	Number of Late or Cancelled Trains						
		AM Peak		PM Peak		Off Peak		
		Late	Cancelled	Late	Cancelled	Late	Cancelled	Total
2013								
1/3/2013	Bridge strike at Nassau Blvd, east of Merrilon Avenue			19				19
1/11/2013	Crossing protection damage west of New Hyde Park Station			17		5		22
1/20/2013	Train 8069 with a pedestrian strike east of Mineola Station					13	5	18
1/24/2013	Broken rail east of Mineola			30	4	30		64
1/31/2013	Various weather delays due to high winds	25		27	1	69	32	154
2/22/2013	Inverter trouble with train 2050 at Pinelawn			6	3	18	3	30
3/19/2013	Train 2739 striking an unauthorized person west of Mineola	4	1			21	4	30
3/26/2013	Broken rail at Nassau Interlocking	68	10			30	2	110
4/10/2013	Inappropriate action Train 4202	51	5			13		69
4/12/2013	Train 5312 striking unauthorized person at New Hyde Park Station					9	13	22
4/12/2013	Bridge strike east of Merillon Avenue					10		10
5/15/2013	Track circuit failure at Nassau Interlocking					11		11
6/4/2013	Track car incident in Divide Interlocking			13		45	10	68
6/24/2013	Building fire close to right of way at New Hyde Park Road			5		6		11
6/29/2013	Broken rail at Nassau					56	15	71
7/20/2013	Track circuit failure at Divide Interlocking					14	4	18
7/30/2013	Brush fire east of New Hyde Park			20	2	4		26
8/1/2013	Broken crossing protection east of New Hyde Park			12				12
8/18/2013	Train 8055 struck unauthorized pedestrian west of New Hyde Park					28	8	36
8/26/2013	NYAR striking an unauthorized person in Hicksville Station	6	1			4		11
8/27/2013	Track circuit failure at New Hyde Park			11		1		12
10/16/2013	Train 4703 with a trespasser strike east of Hicksville Station			22	5	10	1	38
11/18/2013	Train 2712 canceled in Hicksville due to equipment trouble			9	1			10
11/20/2013	Train 603 disabled at Carle Place	59	1			16		76
11/22/2013	Track circuit failure on Main Line 1	17				1		18
12/6/2013	Motor vehicle struck undergrade bridge at Post Avenue	8				4		12
12/6/2013	Train 2061 requiring medical assistance in New Hyde Park			10	2	5		17
12/6/2013	Motor vehicle on tracks at New Hyde Park Road					10	6	16
12/17/2013	Broken rail west of Mineola	38				26	1	65
							TOTAL	**1,076**

**Note: ***Cancelled trains include terminated trains (those trains that are cancelled after they have picked up passengers)

To give some flavor to the nature of these delays, below are three specific examples:

CASE 1: BROKEN RAIL

- Number of trains delayed: 98
- Number of trains cancelled: 12
- Approximately 90% of Main Line AM Peak trains delayed / cancelled
- Ripple delays continued for approximately eight hours after the incident was reported

- Number of Customers Delayed: 68,000
- Delays affected 11 LIRR branches (55% Main Line branches, 45% other branches)
- Individual trains delayed up to 48 minutes

LIRR track is subject to a rigorous maintenance program and receives substantial investment as part of the MTA Capital Program. However, track is exposed to the elements, and the sheer volume of trains results in wear and tear that can occasionally cause a rail to break–an issue faced by nearly all commuter rail systems.

During one early morning period at approximately 2:00 AM (before the start of the AM Peak), a westbound train encountered a broken rail near Carle Place, coming to a stop after one car had passed over the break. The customers on this train needed to be evacuated to an alternative train on the adjacent track resulting in both Main Line tracks being unavailable for service, with trains in both directions cancelled and delayed. Once the evacuation was completed, service was restored on one track for all eastbound and westbound service. However, while repairs were being made on the track with the broken rail, speed restrictions remained in place on the remaining track, further slowing traffic on the Main Line into the AM Peak.

A total of 98 trains system-wide were delayed, with an additional 12 trains cancelled. That is a total of 110 trains affected by one broken rail, even though it was completely repaired and the track put back into service by 7:30 AM. The incident affected 26 Ronkonkoma trains, 16 Babylon trains, 8 Oyster Bay trains, 24 Huntington trains, 5 Long Beach trains, 5 Far Rockaway trains, 4 Hempstead trains, 3 Montauk trains, 7 Port Washington trains, 11 Port Jefferson trains, and 1 West Hempstead train. Over 68,000 customers had their travel affected by an overnight broken rail.

This incident provides a vivid example of how one disruption can bring down an entire rush hour and prevent recovery of schedules for hours even after the issue is cleared. With all trains funneling west during the AM Peak, eastbound trains were unable to operate to eastern terminals to cover second trips. Connections were broken and reverse peak service was unable to operate at all. The cascading effects caused delays and cancellations on LIRR lines well beyond the Main Line branches. The additional track capacity from the Proposed Project would significantly reduce the impact of situations like this.

CASE 2: TRESSPASSER HIT BY TRAIN

- Number of Trains Delayed: 46
- Number of Trains Cancelled: 22
- Approximately 70% of Main Line AM Peak trains delayed / cancelled
- Ripple delays continued for nearly six hours after the incident was reported
- Number of Customers Delayed: 40,000
- Delays affected 8 LIRR branches (80% Main Line, 20% Other branches)

On a summer morning just before 7:00 AM, a train struck a person at Mineola Station. Whenever a person is struck, protocol requires emergency service personnel to arrive at the scene and assess the situation and make appropriate changes to LIRR service. In this instance, the event resulted in both tracks being closed for a little more than an hour. After that time, one track was returned to service. Delays, however, extended for nearly six hours. Many of the

cancelled trains were a result of delayed trains not being able to make it to their final destination in time to turn for another revenue run, including branches that do not traverse the Main Line.

The addition of a third track would have allowed many of these trains to reach their destinations in time for their turnaround trips. A total of 46 trains were delayed, and 22 trains were cancelled. The incident affected 21 Ronkonkoma trains, 6 Babylon trains, 7 Oyster Bay trains, 16 Huntington trains, 4 Long Beach trains, 2 Far Rockaway trains, 3 Montauk trains, and 9 Port Jefferson trains. Over 40,000 customers had their travel affected by this incident due to the inability to reposition trains and return to regular service when only a single track is available during peak periods.

The additional track from the Proposed Project would have substantially reduced the delays from this event. After the initial rescue and response, two tracks would have been restored for service within about one hour, reducing overall delays and train cancellations.

CASE 3: MAINTENANCE ISSUES

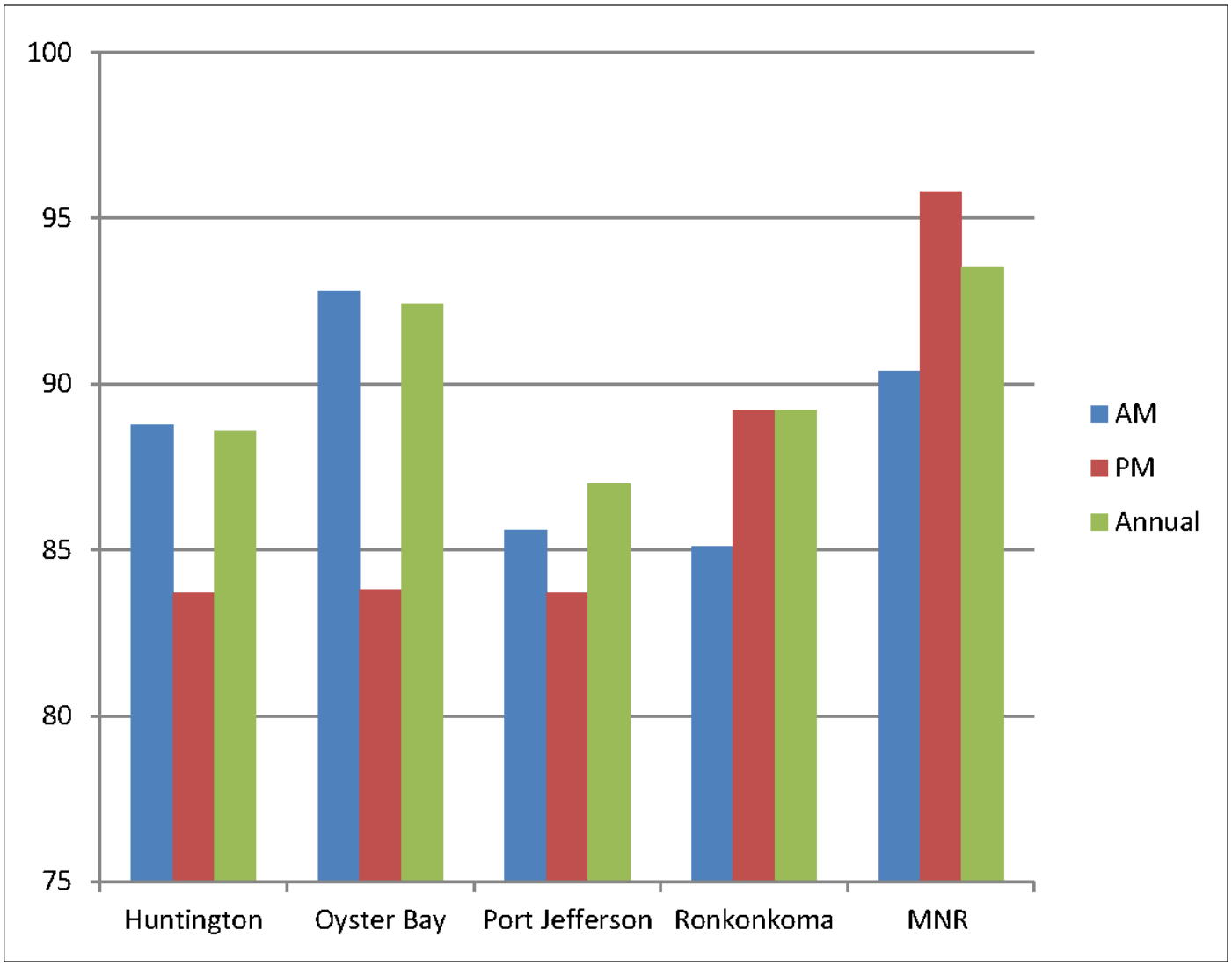
Regular railroad maintenance activities are essential. Due to the high volume of trains through the corridor, scheduled maintenance must be planned months in advance to minimize impacts to scheduled service. To avoid potential impacts to the AM and PM Peak periods, maintenance is frequently planned for weekends. However, weekend maintenance activities often result in the elimination of some trains, particularly half-hourly service to Huntington (reduced to hourly), and Port Jefferson service is reduced from 90 minutes to 120 minutes. When one track is taken out of service, there is an immediate bottleneck and the single track has to accommodate both eastbound and westbound service. The reduction in track capacity frequently means reduced service. Unplanned maintenance has negative impacts to the schedule and results in train cancellations. A third track would allow the LIRR to maintain an eastbound and a westbound track in service while the third one is taken out of service for maintenance. This increase in capacity would make scheduling more reliable and enable LIRR to maintain regularly scheduled service. It would also provide an opportunity for unscheduled maintenance to occur without impacts to regular service.

SUMMARY

In each instance, the reduction of capacity from two tracks to one track or cascading delays significantly impair the LIRR's ability to operate scheduled trains not just through the Project Corridor but in other parts of the system as well. With the addition of a third track and the proposed improvements to interlockings and crossovers, the bottleneck caused by disabled trains, track circuit failures, and other incidents (as well as the associated cascading delays) would be substantially alleviated as LIRR would have an additional track to bypass these trouble spots. This would significantly reduce the extent of delays both within the Project Corridor and on branches elsewhere in the system.

ON-TIME PERFORMANCE

One commonly used measure of train reliability is "on-time performance." For both LIRR and Metro-North Railroad, a train is recorded "on time" if it arrives at its final destination under six minutes of its scheduled arrival. A train that arrives at its final destination 6 minutes or more after its scheduled arrival is denoted as late. A wide array of issues can influence a rail branch's on-time performance; however, the number of tracks on the branch is an important factor. **Table 1-2** and **Figure 1-6** display a comparison of LIRR's recent on-time performance (for the


100
95
90
85
80
75
Huntington
Oyster Bay
Port Jefferson
Ronkonkoma
MNR
AM
PM
Annual

Huntington, Oyster Bay, Port Jefferson, and Ronkonkoma branches) as compared to Metro-North's system-wide on-time performance. As shown, in most cases, Metro-North has demonstrated greater on-time performance than LIRR over the same time period. Of the 12 LIRR statistics presented in **Table 1-2**, only one shows LIRR on-time performance exceeding Metro-North's for the same period. The superior on-time performance occurred on the Oyster Bay Branch, which provides more limited service than the other branches. In the remaining cases, Metro-North's on-time performance exceeds LIRR's. These differences in on-time performance are due in part to the number of tracks available. The most heavily-traveled segments of Metro-North's Harlem Line, New Haven Line, and Hudson Line consist of three or four tracks. This additional track capacity provides operational flexibility that enables Metro-North to re-route trains around a stalled engine or unforeseen track outage. Over time, the ability to manage around individual incidents improves reliability and on-time performance.

Table 1-2
Comparison of On-Time Performance for LIRR and Metro-North

LIRR Branch	AM	PM	Annual
Huntington	88.8	83.7	88.6
Oyster Bay	**92.8**	83.8	92.4
Port Jefferson	85.6	83.7	87.0
Ronkonkoma	85.1	89.2	89.2
Metro-North	90.4	95.8	93.5

Note: 2015 on-time performance (OTP). **Bold** indicates LIRR branch OTP exceeds MNR average OTP for referenced period

As noted in **Table 1-2**, the on-time performance on some LIRR branches during the evening peak period is lower than 85 percent. In other words, trains along these branches may be late 17 or 18 percent of the time. On-time performance has decreased in recent years, frustrating commuters and reducing the region's productivity. As discussed above, the root causes of some delays (police activity, passenger emergencies, etc.) are not predictable or easily rectified. To improve reliability and reduce delays, operational flexibility must be incorporated into the rail system.

FUTURE RIDERSHIP PROJECTIONS

While, as discussed above, the Proposed Project is critically necessary to address existing delays, these delays will only become exacerbated by anticipated increased future use of the LIRR. With or without the Proposed Project, LIRR is projecting a substantial increase in service to Manhattan by the year 2040 (see **Table 1-3**). The East Side Access Project (a separate project currently under construction) includes a new LIRR terminal beneath Grand Central Terminal that would result in a greater than 50 percent increase in peak hour capacity into Manhattan, thereby enabling the system to increase the number of trains run during peak periods. Ridership projections show: regional ridership growth; an increased need for reverse peak and intra-Island service opportunities; and planned future service growth to Manhattan terminals.

Table 1-3
LIRR Rail Operations:
Existing Conditions, 2020 Conditions, and 2040 Conditions

	Main Line Trains * Floral Park to Mineola		Main Line Trains* Mineola to Hicksville	
	Eastbound (no. of trains)	Westbound (no. of trains)	Eastbound (no. of trains)	Westbound (no. of trains)
Existing Conditions				
Daily (24-HR) Total	127	125	109	106
4-HR AM Peak Period	24**	49	21	43
4-HR PM Peak Period	47	24	41	20
2020 No Build Conditions				
Daily (24-HR) Total	141	138	123	119
4-HR AM Peak Period	24	49	21	43
4-HR PM Peak Period	47	24	41	20
2020 Build Conditions				
Daily (24-HR) Total	150	147	132	128
4-HR AM Peak Period	32	50	29	44
4-HR PM Peak Period	48	32	42	28
2040 No Build Conditions				
Daily (24-HR) Total	150	150	131	131
4-HR AM Peak Period	23	57	20	51
4-HR PM Peak Period	52	22	46	19
2040 Build Conditions				
Daily (24-HR) Total	158	159	139	140
4-HR AM Peak Period	31	58	28	52
4-HR PM Peak Period	53	30	47	27

Notes:

* Main Line train volumes include revenue (e.g., LIRR trains carrying passengers) and non-revenue trains (e.g., LIRR trains that are not carrying passengers and are being moved back to the next position).

** Currently, in the AM peak there are zero eastbound trains for approximately 90 minutes due to the "2 and 0" operations. The converse is true for the PM peak. This same condition would apply in the 2020 and 2040 No Build conditions.

Source: LIRR schedule (Effective 3-7-16 to 5-22-16).
2020 No Build based on LIRR current schedule, plus Double Track project. 2020 Build based on current schedule, plus Double Track project and LIRR Expansion Project. 2040 No Build based on East Side Access opening day service plan (includes Double Track project). 2040 Build based on East Side Access opening day service plan, plus LIRR Expansion Project.

Due to these improvements and projected background growth, LIRR estimates that the number of peak period customer trips on the Main Line within the Project Corridor will increase by 6.9 percent westbound and 8.4 percent eastbound by 2020. From 2020 to 2023, LIRR has estimated an increase of 22.2 percent—primarily as a result from the opening of the new East Side Access terminal in 2023. Compared to 2014 data, ridership is projected to increase by 65.4 percent westbound and 76.2 percent eastbound by 2040.[1]

[1] According to the New York Metropolitan Transportation Council (NYMTC), the population on Long Island (Nassau County and Suffolk County) is expected to grow from approximately 2,856,200 people in

Without the third track, the existing bottleneck coupled with the additional ridership and additional train service to Manhattan terminals will result in increased congestion, delays, and resulting passenger crowding, as well as additional gate-down time at grade crossings in the future. Further, the inability of the system to run reverse direction trains (operating reverse from the peak direction) during the peak period would continue.

The Proposed Project would alleviate these problems.

INTRA-ISLAND, REVERSE PEAK, AND REVERSE DIRECTION SERVICE LIMITATIONS

In addition to operational constraints, the two-track Main Line limits LIRR's ability to offer a broader range of services. The heavy demand for directional peak-period service (Manhattan-bound service in the morning rush hours and Long Island-bound service in the evening rush hours) requires full use of both tracks and restricts other services such as intra-Island service; and reverse direction travel (operating reverse from the peak direction). The use of both tracks in the peak direction and no reverse service during peak periods is referred to as "2 and 0 operation."

The result is no eastbound service for one and a half hours in the morning peak period and no westbound service for one hour in the evening peak period. Nassau County residents who want to travel by train east in the AM peak period to their jobs or schools to the east are severely limited in their ability to do so. Suffolk County residents who want to travel by train west, including to New York City, in the PM peak period, likewise are severely limited in their ability to do so. When reverse peak service is available, many passengers take advantage of such service. As shown in **Table 1-4**, a recent 2014 study evaluated the number of commuters headed eastbound in the morning peak hours and westbound in the evening peak hours, and noted the stations where passengers would commonly disembark. At Hicksville Station for example, 1,047 commuters boarded westbound trains in the evening peak period. Similarly, at Mineola, 980 commuters boarded westbound trains in the same period. In fact, the number of evening reverse peak commuters boarding at Hicksville (1,047) is greater than the number of evening peak direction commuters disembarking at several Main Line stations, including Floral Park (1,018), Merillon Avenue (636), and Carle Place (261).

2015 to 2,868,500 by 2020 and 3,195,800 by 2040, an ultimate population increase of nearly 12 percent. NYMTC's data supports LIRR's general projections of increased ridership.

Table 1-4
LIRR Main Line Station "On's and Off's" During 4-Hour Peak Period (2014 Data)

Station	Westbound				Eastbound			
	AM Peak		PM Reverse Peak		AM Reverse Peak		PM Peak	
	On	Off	On	Off	On	Off	On	Off
Floral Park	1,088	8	103	11	24	62	4	1,018
New Hyde Park	1,333	52	169	53	25	95	63	1,325
Merillon Avenue	636	13	79	21	5	33	21	636
Mineola	3,039	674	980	225	145	744	604	2,420
Carle Place	299	5	48	12	3	31	10	261
Westbury	1,149	54	193	45	25	248	47	1,103
Hicksville	5,854	718	1,047	191	185	745	673	5,419
Total	**13,398**	**1,524**	**2,619**	**558**	**412**	**1,958**	**1,422**	**12,182**

Because several large and many smaller employers are located on Long Island—which draw employees and visitors from the wider New York City metropolitan region—and because of increasing demand for service into New York City during evening hours, LIRR anticipates increasing demand for intra-Island travel and reverse peak travel—consistent with NYMTC projections for employment in Nassau and Suffolk counties.[2] The current Main Line configuration cannot support intra-Island travel and reverse peak travel during critical times of the day.

STREET-LEVEL GRADE CROSSINGS

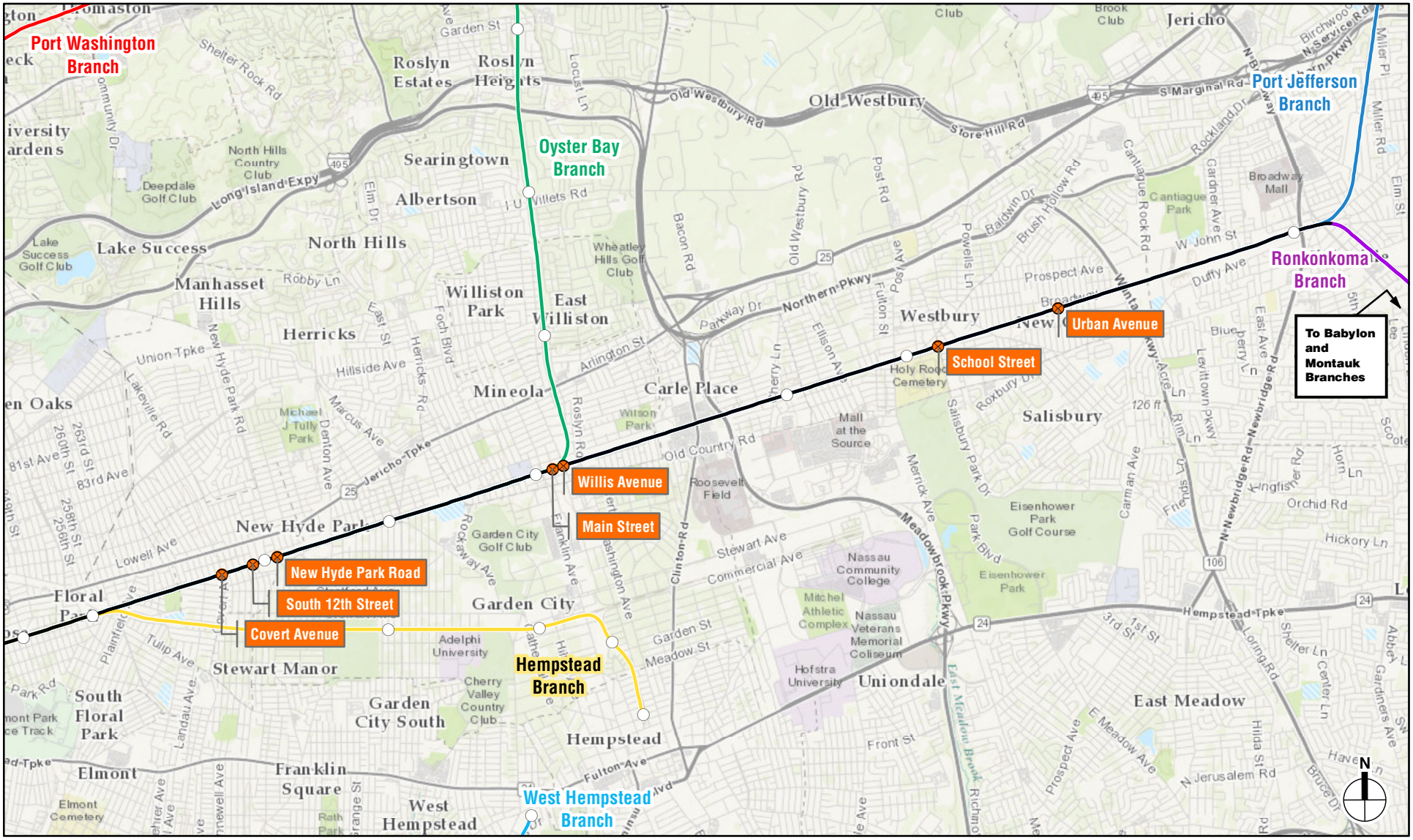
Along the LIRR Main Line segment between Floral Park and Hicksville are seven locations where the east-west rail line crosses the street bed of a north-south vehicular roadway (see **Figure 1-7).** These locations are as follows:

- 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

Street-level grade crossings adversely impact traffic and train operations, neighborhood quality-of-life, and vehicular, pedestrian and bicyclist safety (see **Figure 1-8**). Under normal conditions, grade crossings add automobile traffic congestion due to gate-down time. When incidents occur at or near grade crossings that affect operation of gates and/or bells, grade crossings also can

[2] According to NYMTC, the employment on Long Island (Nassau County and Suffolk County) is expected to increase from approximately 1,304,900 jobs in 2015 to 1,343,800 by 2020 and 1,440,400 by 2040, an ultimate increase of 135,500 jobs. NYMTC's data support LIRR's general projections of increased intra-island, reverse peak, and reverse direction service demand.

10/12/2016



LIRR Expansion Project
Floral Park to Hicksville

Existing Grade Crossings
Figure 1-7

slow train travel because trains must approach the grade crossing at a reduced speed. In addition, train horns that must be blown at grade crossings, and bells that ring when gates are down create noise in the adjacent communities. Grade crossings also raise safety concerns related to response times for emergency vehicles that may need to cross the tracks. Accordingly, the desired option from a safety, quality-of-life, and traffic flow standpoint is to eliminate the grade crossings through grade-separating the two modes of transportation (e.g., building a roadway underpass) or potentially, in one or two cases with consideration of public input, closure of the grade crossing.

PROJECT GOALS AND OBJECTIVES

The primary purpose of the LIRR Expansion Project is to improve rail service, reliability, and public safety along the LIRR Main Line segment between Floral Park and Hicksville. The goals and objectives of the Proposed Project are as follows:

- Reduce delays to commuters from Main Line congestion and rippling effects
  - Improve on-time performance on all branches
  - Add resiliency and accelerate recovery time from unplanned service disruptions
  - Reduce train delays due to roadway incidents or accidents near grade crossings
- Add operational flexibility eastbound and westbound
  - Improve mobility with additional intra-Island service
  - Improve mobility with additional reverse peak service
  - Facilitate scheduled and unscheduled maintenance
- Provide additional track capacity to accommodate projected system-wide service growth
- Improve public safety and roadway conditions
  - Eliminate Main Line street-level grade crossings
  - Enhance north-south vehicular and pedestrian connectivity in communities along the Main Line
  - Reduce traffic delays due to grade crossings
- Reduce noise and improve neighborhood quality-of-life
  - Reduce noise from train horns
  - Reduce noise from crossing-gate warning bells

PLANNING CONTEXT

As stated above, the LIRR Expansion Project is a key element of Governor Cuomo's transportation infrastructure initiatives. On January 8, 2016, Governor Cuomo unveiled the eighth signature proposal of his 2016 agenda—to modernize and fundamentally transform the MTA, dramatically improving the travel experience for millions of New Yorkers and visitors to the region. To help accomplish this ambitious agenda, the MTA has committed to eliminating inefficiencies and delivering improvements faster and at lower cost, using alternative delivery methods such as design-build and other techniques.

The $27 billion 2015-2019 MTA Capital Program was approved by the MTA Board on April 20, 2016 and was subsequently approved by the Capital Plan Review Board on May 23, 2016. The passage of this Capital Program marks the largest investment in MTA infrastructure in New

York State's history. It outlines vital investments to renew, enhance, and expand the MTA network and will ensure a safer, more reliable, and more resilient public transportation network. In combination with other ongoing efforts, the plan is to purchase new buses and subway cars, advance new Metro-North stations in underserved areas and Metro-North service to Penn Station, begin the extension of the Second Avenue Subway to East Harlem, continue to add a second LIRR track between Farmingdale and Ronkonkoma, renovate and revitalize stations, accelerate plans to create a new fare payment system, and continue building the East Side Access project. A fully funded 2015-2019 Capital Program will also enable the complete installation of Positive Train Control (a state-of-the-art system for monitoring and controlling commuter rail trains and improving safety) at Metro-North and LIRR. The 2015-2019 Capital Program priorities and major objectives include:

1. Renew—protect the safety, reliability, and quality of existing service;
2. Enhance—service improvements like Help Points, ADA accessibility, and next train arrival information; and
3. Expand—ease crowding, accommodate and create growth, and deliver more extensive and resilient service.

Separate from the LIRR Expansion Project, MTA/LIRR are moving forward with the following regional transportation projects and plans, several of which are a part of the 2015-2019 Capital Program:

- East Side Access Project (under construction by MTA Capital Construction), which will bring the LIRR directly to Grand Central Terminal, with a new two-level terminal constructed below the existing Terminal. This project will provide greater than 50 percent more peak hour capacity for trains from Queens and Long Island to Manhattan, with up to 24 peak-hour trains adding approximately 30,500 peak-hour seats and saving some commuters up to 40 minutes on their daily commute.
- Double Track Project from Farmingdale to Ronkonkoma, which will improve service and reliability by adding a second track to the LIRR's Ronkonkoma Branch. This project will increase capacity, improve operational performance, and allow frequent off-peak service in both directions for intra-Island commuting.
- Jamaica Capacity Improvements Project, which will streamline the Jamaica track layout while upgrading and modernizing the switch and signal system, (including installation of higher-speed switches). Jamaica Station is a critical hub and main LIRR transfer location, and the current constraints in track and station capacity limit the number of trains that the station can handle during peak periods. This project will improve interlocking configurations and modernize the complex, enabling trains to enter and leave the station more quickly.
- The Mid-Suffolk Yard Project, which will expand the yard east of Ronkonkoma Station, improve LIRR Ronkonkoma Branch service when East Side Access is complete, and meet anticipated AM and PM peak ridership to Penn Station and Grand Central Terminal.
- Addition of pocket tracks along the Port Washington and Babylon Branches, which will allow for greater service to stations along these branches and optimize the operations resulting from the East Side Access Project.
- Huntington/Port Jefferson Branch yard site selection, preliminary design and environmental review—a new electric fleet storage yard on the Huntington/Port Jefferson Branch, which will address current and future shortages of train storage capacity on this branch.

- Hicksville Station and North Track Siding Improvements, which will rehabilitate the existing station (a major transit hub) and construct an additional track to support faster and more frequent service upon completion of East Side Access.

Replacement of certain deteriorated bridges, including the Ellison Avenue (recently completed) and the Post Avenue Bridge in Westbury (which is underway), is also included in the Capital Program and are proceeding separately from the Proposed Project. The Post Avenue Bridge is a century old, offers limited clearance, and is subjected to frequent truck strikes. The replacement bridge will improve safety and provide the bridge width necessary so as not to preclude a third track along the Main Line.

Each of these discrete projects listed above have independent utility and can function in the absence of other improvements. These present and future projects, independent of the third track, would not individually or collectively satisfy the purpose and need for the Proposed Project because they would not eliminate the bottleneck along the Main Line, and thus would not reduce congestion and delays along the Main Line corridor and branches that feed into the Main Line corridor, nor would these projects add operational flexibility within the 9.8-mile Project Corridor, particularly for bi-directional travel at peak times. These separate projects also do not alone optimize projected system-wide growth, and would not improve safety through street-level grade crossing elimination within the 9.8-mile Project Corridor. Nonetheless, they are important components of an overall improved MTA and LIRR network and will function together to optimize the regional transportation system. The LIRR Expansion Project will complement these planned and ongoing projects.

The need for capacity enhancement along this segment of the Main Line has been documented in numerous studies conducted over the past twenty years, most recently in MTA's Twenty-Year Capital Needs Assessment 2015-2034:

> *"The LIRR's Main Line…serves as a crucial "central artery" for Long Island…The ability to accommodate a high volume of trains and density of customers along the Main Line is constrained by limited track capacity…additional track capacity expansion would improve reliability and provide for improved access within their portion of the LIRR Main Line."*
>
> *"There is also robust growth projected for reverse commute travel from the outer boroughs of NYC to Long Island (+22%), with projected employment growth in Suffolk County generating the heaviest travel increase (+31%)."*

The Needs Assessment focused on necessary capital investments, including those intended to enhance and expand the network to address critical transportation needs and respond to the region's changing travel demands. Strategic corridor improvements, such as expanding Main Line capacity, were identified as essential to improving reliability and regional accessibility. The Needs Assessment also analyzed future population and employment trends, identified the largest employment growth in areas such as Suffolk County, and projected increased demand for travel from the outer boroughs of New York City to employers on Long Island, as well as continued ridership growth in non-peak and intra-Island trips.

D. DESCRIPTION OF THE PROPOSED PROJECT

OVERVIEW

As previously stated, the LIRR Expansion Project extends 9.8 miles from the Village of Floral Park to the Hamlet of Hicksville and entails the following major components: installation of

additional track to complete a continuous third Main Line track; elimination of seven grade crossings; various station improvements and modifications; and other related railroad infrastructure improvements. More specifically, 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 street-level grade crossings to provide grade-separated crossings (or potentially, in one or two cases, full closures, after community consultation) to vehicular traffic
- Construction of retaining 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, including electric, signal, communications, gas, water, sewer, and storm sewer conveyances and drainage systems at the grade-separated crossings

The Proposed Project would result in a continuous three-track segment of the LIRR Main Line, substantial additional operational flexibility, improved safety, and a more resilient and reliable commuter rail network. A description of each of the major project components is provided below. **Appendix 1-A**, "Technical Memorandum," contains detailed engineering plans and schematics of the proposed track alignment, grade crossing reconfigurations, and other project improvements.

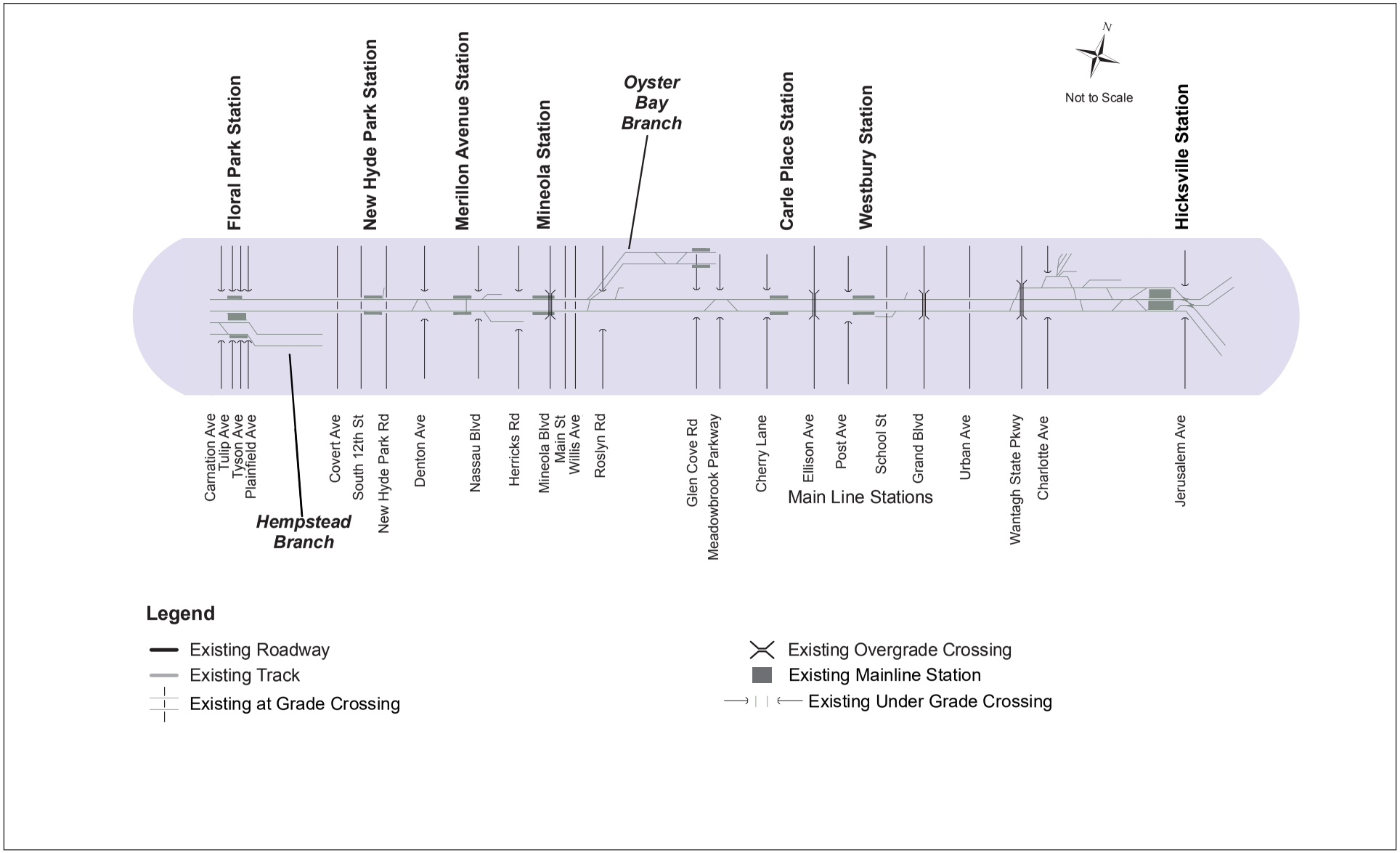
THIRD TRACK ALIGNMENT

Currently, the LIRR Main Line segment between the Floral Park Station and the Hicksville Station comprises two tracks. Various rail sidings exist on both the north and south sides and run parallel to the Main Line, but these sidings are not continuous. **Figure 1-9** shows the existing track schematic between Floral Park and Hicksville, including the rail sidings. The LIRR Expansion Project would minimize property impacts and optimize these existing rail sidings by incorporating them into the third track alignment. As a result, the third track would be placed on the north side of the existing two Main Line tracks in some locations and on the south side in other locations as described below. In railroad terminology, the "alignment" refers to the location of the track. This includes the "horizontal alignment", which refers to the location of the track relative to existing features (e.g., north or south of the existing Main Line tracks) as well as the "vertical alignment", which refers to the height or elevation of the track (e.g., higher or lower than the existing Main Line tracks).

HORIZONTAL ALIGNMENT

A proposed schematic plan for the third track is shown in **Figure 1-10**. **Appendix 1-A** contains detailed track alignment drawings. **Appendix 1-B** provides aerial photographs showing the LIRR ROW. Between Floral Park and Roslyn Road in Mineola, the new track location is proposed south of the existing alignment within the existing LIRR ROW. The proposed track alignment would then shift to the north side of the existing tracks east of Roslyn Road in

11.22.16

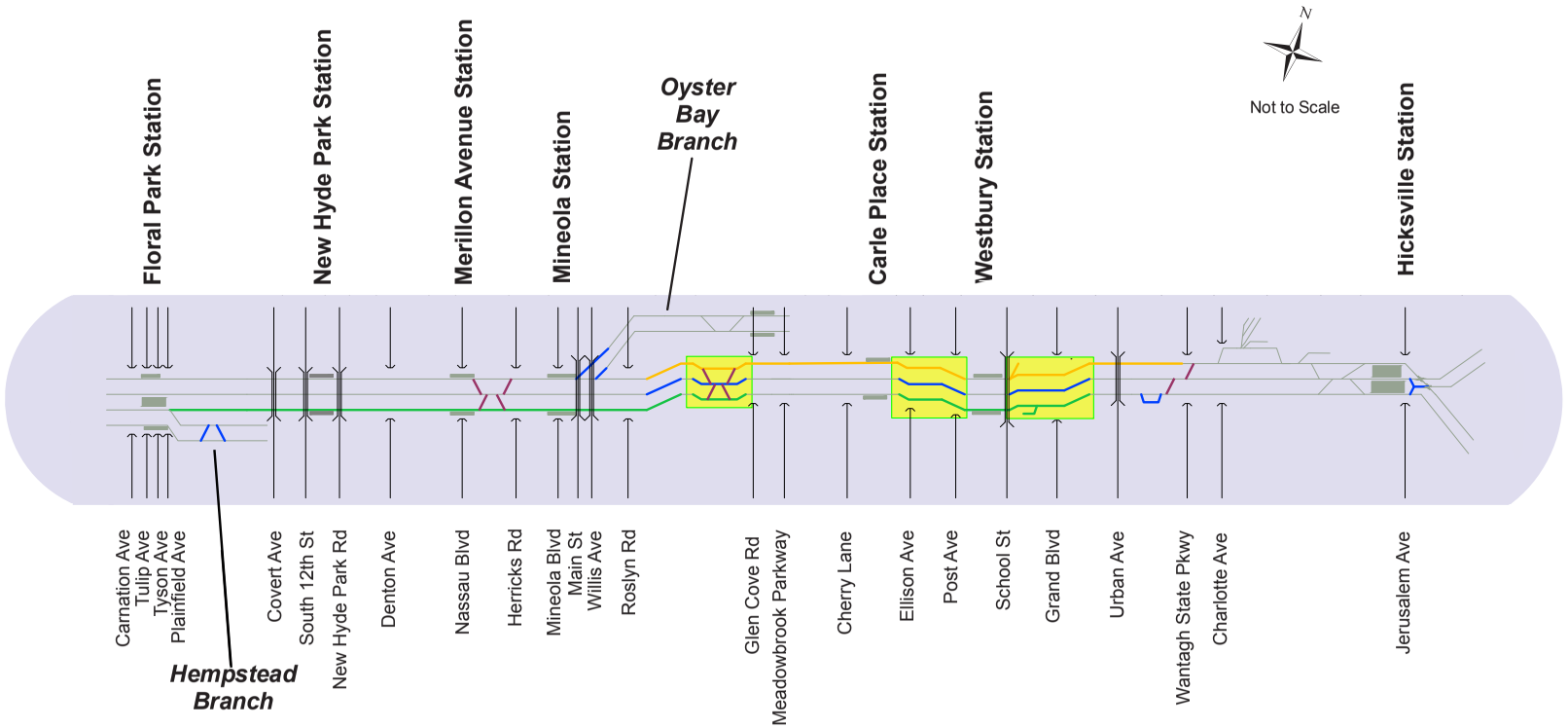


Source: *GF-AECOM*

LIRR Expansion Project
Floral Park to Hicksville

Existing Track Schematic
Figure 1-9

11.22.16



Source: *GF-AECOM*

LIRR Expansion Project
Floral Park to Hicksville

LIRR Main Line Expansion Project
Proposed Track Schematic
Figure 1-10

Mineola, and would continue to just east of Carle Place Station near the western limit of the Village of Westbury, all within the existing ROW. The entire alignment would gradually shift to the south between Carle Place 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. On the east end of Hicksville Station, an additional crossover track (between the southern tracks) would be installed to provide greater train capacity in and out of the station, again, all within the existing ROW.

In general, a buffer of 8.5 feet to 15 feet would exist between the centerline of the new track and the limits of the ROW (As shown in **Appendix 1-A**, the buffer distance is greater in some locations). The design maintains 13 to 14 feet of clearance between tracks. In several areas, existing underutilized rail sidings would be incorporated into the third Main Line track. 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 additional property impacts to keep all three tracks within the existing ROW:

- Between Roslyn Road and Glen Cove Road, relocating the existing tracks slightly to the north minimizes the impacts on the residential properties on the south side of the Main Line and industrial properties of the north side of the ROW;
- Between Carle Place Station and Post Avenue, the existing tracks would be realigned slightly to the south to enable all three tracks to be centered underneath the Ellison Avenue Bridge and minimize property impacts to the north;
- From west of School Street to east of Grand Boulevard, shifting the existing tracks to the south would reduce property impacts on both sides of the ROW and avoid impacts to the Grand Boulevard overpass.

VERTICAL PROFILE

The vertical profile is the height or elevation of the track. The existing tracks are at ground level with respect to the surrounding land in New Hyde Park and portions of New Cassel, elevated in Floral Park, Carle Place and Hicksville, and in a below-grade cut in portions of Westbury and New Cassel. In some locations, the Proposed Project would maintain the Main Line (including the new third track) at roughly the same elevation as it currently exists while at other locations, the tracks will be higher than at present. The proposed elimination of certain grade crossings and construction or reconstruction of roadway underpasses (as described in the sections below) requires a change in the vertical profile of the Main Line to avoid taking residential properties. Because the railroad tracks would be raised, the roadway would not have to be lowered as far, minimizing impacts to driveways and nearby intersections. At Covert Avenue in New Hyde Park, the Main Line will be raised approximately five feet above its current elevation. At Nassau Boulevard in Garden City, the Main Line will be raised approximately two feet. Similarly, the Main Line will be raised approximately three feet over School Street in Westbury and Urban Avenue in New Cassel.

INTERLOCKINGS, CROSSOVERS, COMMUNICATIONS & SIGNALS

The Proposed Project would include signal improvements, modifications to existing interlockings, and installation of new interlockings. Within the interlockings are crossovers, which allow trains to move from one track to another. This enables trains to change tracks or

routes and provides operational flexibility. A universal crossover is an arrangement of crossovers that allow trains moving in either direction on one track to crossover to any parallel track. An interlocking is an arrangement of signal equipment and track that prevents conflicting movements through an arrangement of tracks such as junctions or crossovers. Interlockings allow for flexibility of movement and provide a mechanism for trains to safely change tracks and connect to other rail branches.

To facilitate movements between the two existing Main Line tracks and the new third track, several interlockings within the project limits would be modified. As shown on **Figure 1-10**, there are two major interlockings along the Project Corridor—Nassau Interlocking and Divide Interlocking—which are each divided into numbered sub-sections (e.g., Nassau 1, Nassau 2, etc.). Nassau Interlocking is generally located between Garden City and Carle Place and allows for trains to connect between the Main Line and the Oyster Bay Branch. Divide Interlocking is located in Hicksville and enables operations at Hicksville Station, train connections between the Main Line and Port Jefferson Branch, and access to freight rail siding tracks. The existing Nassau 1 Interlocking will be moved from the vicinity of Denton Avenue to east of Nassau Boulevard. The Main Line tracks at the new Nassau 1 Interlocking would be realigned to accommodate new crossovers. The existing Nassau 2 Interlocking would remain in its current location, but be modified to accommodate the new third track and provide operational improvements on the Oyster Bay connection to the Main Line. East of Mineola Station, two new crossovers would be installed along the northernmost Main Line track—one left-hand crossover to the Oyster Bay Branch Track 1 (enabling a track speed of 30 mph) and a second left-hand crossover to Oyster Bay Branch Track 2 (enabling a track speed of 15 mph). The existing Nassau 3 Interlocking would be moved from the vicinity of Meadowbrook Parkway to east of Roslyn Road.

Divide 2 and Divide 4 Interlocking would be modified. East of Hicksville Station at Divide 4 Interlocking, two new crossovers would be constructed on Station Tracks 1, 2, and 3. These crossovers would connect to an equilateral turnout (i.e., where a rail track divides into two tracks relatively equal in terms of angle and maximum allowable speed) which would in turn connect to the Port Jefferson Branch.

Current operations of the Main Line and Hempstead Branch at Floral Park are controlled by Queens Interlocking. A previously planned modification to the Queens Interlocking would also accommodate the connection between the new third track and Hempstead Branch. A new interlocking plant will be required at the east end of the Floral Park Station for the connection between the new third track and Hempstead Track 1. This new connection would shave a few inches off of the southeast end of Floral Park Station's middle platform. A new universal crossover would be installed on the Hempstead Branch just east of Tunnel Street, to improve operations and avoid conflicts with the new third track connection at Floral Park Station. This universal crossover would avoid the need for single-track operations along the Hempstead Branch. These modifications would allow the LIRR to optimize operations and streamline movements between branches.

Signal equipment would be relocated within the LIRR ROW. Existing communication systems, including cable for ticket vending machines and public address systems, would be relocated as required.

RETAINING AND SOUND ATTENUATION WALLS

A retaining wall is a structure that holds back, or retains, the adjacent earth or other material and prevents it from sliding down to a more natural or gradual slope (see **Figure 1-11**). Essentially, a retaining wall is designed to resist the pressure from the material being held back. The LIRR Expansion Project would include installation of several types of retaining walls along the corridor. The main purpose of these retaining walls is to reduce impacts to adjacent properties and minimize the need for property acquisition. Without a retaining wall, the portions of the rail line that are elevated above ground surface would require an earthen embankment to support the rail line, which would gradually taper down on a slope (see **Figure 1-11**). With a retaining wall, by contrast, a sloped embankment would not be necessary and the width of property needed to build the third track would be reduced. Retaining walls also support the placement of track in rail segments that are below grade (i.e., "depressed" or "cut" segments). In addition to minimizing direct property impacts (i.e., acquisition), retaining walls would help retain soil and ballast, stormwater runoff, and track debris originating from the rail ROW, and prevent such items from migrating onto neighboring properties. In some locations, retaining walls optimize the use of LIRR property for station parking and/or equipment.

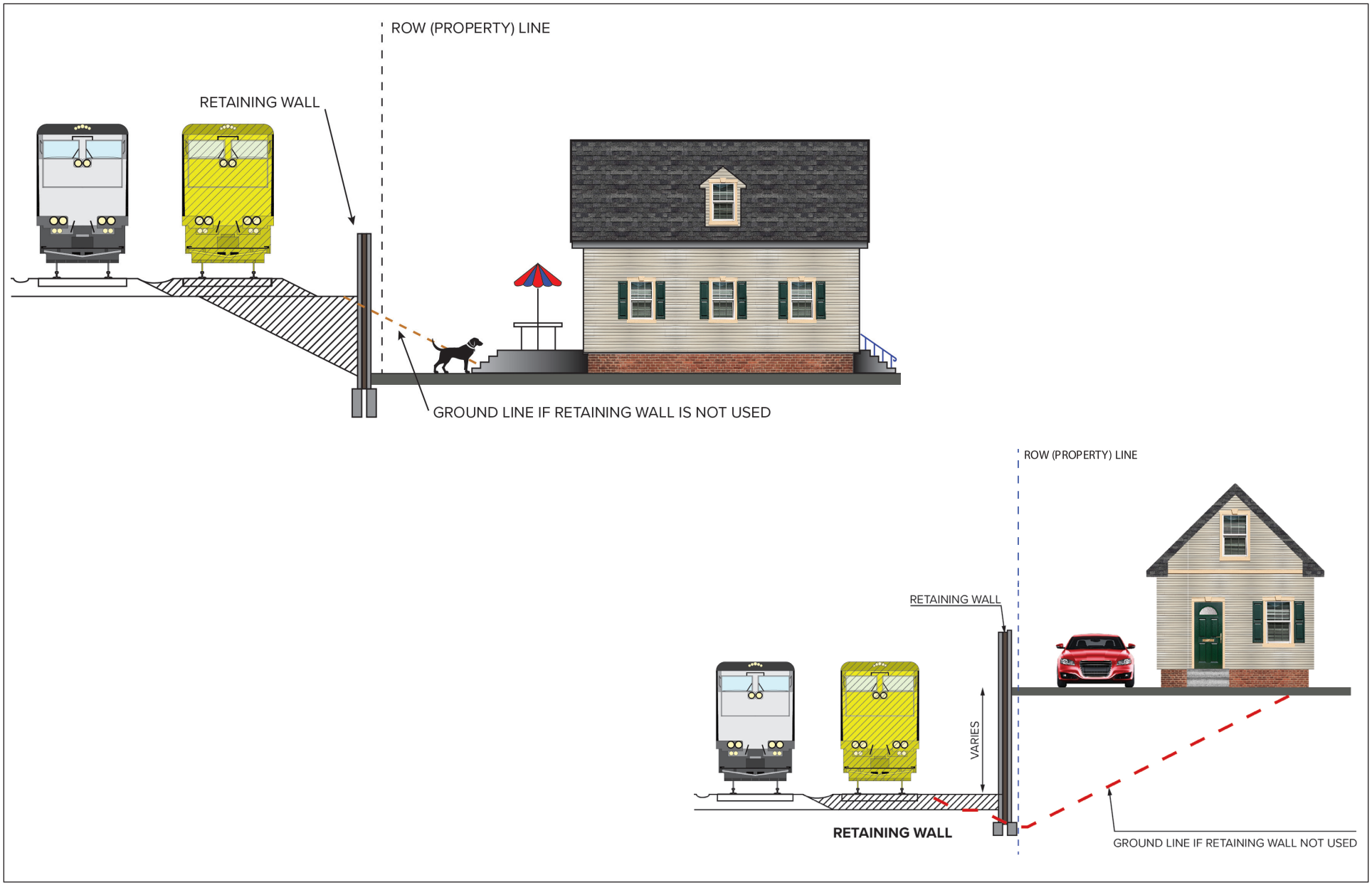
The retaining walls would be 2 to 16 feet in height. **Table 1-5** presents the specific locations and heights of each proposed retaining wall. In addition to these locations, retaining walls would be built adjacent to the existing Linden Avenue pedestrian tunnel in Floral Park to accommodate construction of the third track above. A photo-rendering of a typical retaining wall (shown for illustrative purposes only) is provided in **Figure 1-12**. In some locations, where the exterior of the retaining walls faces the adjacent communities, the retaining walls would receive architectural treatments to harmonize with the surrounding aesthetics. In areas where retaining walls are required and where noise impacts may occur, a sound wall would be provided on top of the retaining wall (see **Figure 1-13**). In segments of the ROW that do not require retaining walls, but where noise impacts may occur, sound attenuation walls would be installed. **Figure 1-14** shows what a potential sound attenuation wall would look like.

PASSENGER RAIL STATION IMPROVEMENTS

The LIRR Expansion 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 above in the "Planning Context" section.

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 (including NFPA 130 and the NYS Building Code), and include the following elements:

- Removal of all platforms and replacement with platforms to accommodate 12-car trains (platforms would be heated to facilitate snow removal).
- Eight-foot-wide side platforms, meeting LIRR minimum station guidelines, with ten-foot-wide platforms in certain locations where feasible.
- Canopies for both the eastbound and westbound platforms per LIRR station guidelines.
- Canopies over egress walkways.



LIRR Expansion Project
Floral Park to Hicksville

Retaining Wall in Fill / Retaining Wall in Cut
Figure 1-11

11.22.16

Source: GF-AECOM

LIRR Expansion Project
Floral Park to Hicksville

Retaining Wall without Sound Attenuation
Figure 1-12

11.22.16

Source: GF-AECOM

LIRR Expansion Project
Floral Park to Hicksville

Retaining Wall with Sound Attenuation
Figure 1-13

11.22.16

Source: GF-AECOM

LIRR Expansion Project
Floral Park to Hicksville

Sound Attenuation Wall
Figure 1-14

Table 1-5
Retaining Wall Locations and Details

#	Location	Cut/Fill	Approx. Length (ft)	Average Height (ft)*
1	South side approaching Plainfield Ave	Fill	250	16
2	South Side – Plainfield Avenue to between South 8th and South 9th Street (New Hyde Park)	Fill	4500	7
3	South Side – Between South 8th and South 9th Street to South 12th Street (New Hyde Park)	Cut	900	2
4	South Side – New Hyde Park Road to ~200' West of Denton Avenue (Garden City)	Cut	2200	2
5	South Side – ~200' West of Denton Avenue to Denton Avenue (Garden City)	Fill	200	5
6	South Side – 11th Avenue to Mineola Station (Mineola)	Cut	1400	5
7	South Side – Main Street to Willis Avenue (Mineola)	Cut	400	6
8	South Side – Willis Ave to Roslyn Road (Mineola)	Cut	600	7
9	South Side – Roslyn Road to Laurel Drive (Mineola)	Cut	2900	5
10	North Side – Croyden Road to Russel Drive (Mineola)	Cut	1500	9
11	North Side – ~1100' West of Glen Cove Road to Glen Cove Road (Mineola/Carle Place)	Fill	1100	7
12	North Side – Glen Cove Road to Meadowbrook State Parkway (Carle Place)	Fill	1000	11
13	North Side – Meadowbrook State Parkway to Cherry Lane (Carle Place)	Fill	2200	10
14	South Side – Bert Avenue to Ellison Avenue (Westbury)	Cut	1400	10
15	North Side – Carle Road to Ellison Avenue (Westbury)	Cut	1800	11
16	South Side – Madison Avenue to ~400' West of Post Avenue (Westbury)	Cut	750	7
17	South Side – ~350' West of Post Avenue to Post Avenue (Westbury)	Fill	400	6
18	South Side – East end of Westbury Station to ~400' West of School Street (Westbury)	Fill	350	4
19	North Side – Grant Street to 100' West of Urban Avenue (New Cassel)	Cut	4500	6
20	North Side – 100' West of Urban Avenue to between Kinkel Street and Sylvester Street (New Cassel)	Fill	600	3
21	North Side – Between Kinkel Street and Sylvester Street to Wantagh State Parkway (New Cassel)	Cut	2500	5
22	South Side – ~550' East of School Street to ~150' East of Costar Street (New Cassel)	Cut	2200	6
23	South Side – 100' East of Urban Avenue to 100' West of Sylvester Street	Fill	250	3
24	South Side – 100' West of Sylvester Street to 100' West of Bond Street	Cut	1000	4

Note: * Height of wall is measured from top of subgrade to existing ground for walls in cut and from existing ground to top of ballast for walls in fill. The height of wall does not include barrier or potential noise attenuation wall.

- Platform furnishings and accoutrements (e.g., benches, shelters, signage) per LIRR station guidelines.
- Closed circuit television (CCTV) at each station to improve safety and security.
- Provision of pedestrian overpasses/underpasses to connect the eastbound and westbound platforms. Except as noted below, pedestrian overpasses would include ADA-compliant elevators, as well as covered stairs for general access at each platform.
- A minimum of four staircases at each platform to comply with egress requirements. Stairs would be heated to facilitate snow removal.

- A minimum of two ADA-compliant ramps at each platform per NYS accessibility code requirements. Ramps would be heated to facilitate snow removal.

LIRR would work with local villages to establish Memoranda of Understanding to reaffirm maintenance and security responsibilities for each station area. LIRR also would provide initial funding and explore longer term license agreements with villages or community groups interested in landscaping and gardening in station areas.

LIRR station guidelines designate "use levels" for each station based on the daily ridership. These use levels dictate specific requirements that must be followed for each station in that category (with limited allowable deviations). These requirements include, but are not limited to: station building requirements, waiting room areas, bench quantity, shelter size and quantity, and lavatory planning requirements. Proposed improvements at the five stations within the Project Corridor consider each station's use level, and are described in more detail below and in **Appendix 1-A**. **Figure 1-15** is a rendering showing potential station improvements. LIRR will implement Enhanced Station Initiatives such as station art, WiFi, digital signage, and other amenities.

NEW HYDE PARK STATION

The existing New Hyde Park Station building located north of the westbound platform would remain. To accommodate the new third track, the existing eastbound (southern) platform would be demolished and replaced with a new eight-foot-wide side platform. The existing westbound (northern) platform would be demolished and replaced with a new eight-foot-wide side platform. Access to the platforms would be provided by four new staircases and two ADA-accessible ramps. The ramps would be sufficient for ADA compliance and therefore elevators would not be required.

Access at the eastern end of both platforms would be integrated with the reconfigured New Hyde Park Road crossing (discussed later in this chapter). Access to the station from New Hyde Park Road would be provided from sidewalks and stairs located on both the east and west side of the road. Access between the eastbound and westbound platforms would be provided by a new pedestrian overpass with elevators and covered stairs. A new pedestrian overpass would be west of South 12th Street. Other enhancements, such as a plaza area, with green space, located on Third Ave east of Baer Place to the existing dead end, are being considered. This portion of Third Avenue, east of Baer Place, would be permanently closed to traffic.

The vertical profile would remain relatively unchanged at New Hyde Park Station, meaning that the top of the finished platforms would be approximately the same height as the existing platforms. Platform shelters, canopies, and benches would be constructed per LIRR station guidelines.

MERILLON AVENUE STATION

To accommodate the new third track, the existing eastbound (southern) platform would be demolished and replaced with a new eight-foot-wide side platform located just south of the new third track. The existing building (not currently in use) would be demolished to make room for additional parking. The existing westbound (northern) platform would be demolished and replaced with an eight-foot-wide side platform. Access to the platforms would be provided by four new staircases and two ADA-accessible ramps. Since the ramps would provide sufficient ADA-compliant access from grade level to platform level, elevators would not be required.

Source: GF-AECOM

LIRR Expansion Project
Floral Park to Hicksville

Potential Station Improvements
Figure 1-15

Access between the eastbound and westbound platforms would be provided by a new pedestrian overpass with elevators and covered stair. The overpass would be located in the southwest corner of the western parking lot directly adjacent to the platform.

The vertical profile would remain relatively unchanged at Merillon Avenue Station and therefore the top of the finished platforms would be approximately the same height as the existing platforms. Platform shelters, canopies, and benches would be constructed per LIRR station guidelines.

MINEOLA STATION

The existing Mineola Station building (located north of the westbound platform) would remain. The south-side waiting room (along the eastbound platform) would be removed. The existing eastbound (southern) platform adjacent to the Mineola Intermodal Center would be demolished and replaced by a new eight-foot-wide side platform to the south of the new third track. The existing westbound (northern) platform would be demolished and replaced with a ten-foot-wide side platform in approximately the same location. At-grade access to the station would be maintained, providing multiple ADA access points without ramps. Since the eastern and western platform ends would be slightly above ground level, one set of stairs would be constructed at the end of each platform. An existing pedestrian overpass at the eastern end would be replaced. A second pedestrian overpass at the parking garage on the eastbound platform currently provides ADA-compliant elevator access between platforms. This overpass and its elevators would remain in place. A third pedestrian overpass (located on the western end and servicing Winthrop Hospital) would remain in place. Platform shelters, canopies, and benches would be constructed per LIRR station guidelines.

CARLE PLACE STATION

To accommodate the new third track, the existing westbound (northern) platform would be replaced with an eight-foot-wide side platform north of the new third track. The existing eastbound (southern) platform would be replaced with a new eight-foot-wide side platform. Four new staircases and two new ADA-accessible ramps would provide access to the platforms. ADA-compliant at-grade walkways would be provided to allow access between the eastbound and westbound platforms and access to local streets (including Carle Road, Stonehinge Lane, and Garden Avenue). The existing pedestrian overpass would be replaced at approximately the same location (near Stonehinge Lane). The new overpass would include elevators and covered stairs at each platform. Platform shelters, canopies, and benches would be constructed per LIRR station guidelines.

WESTBURY STATION

The existing Westbury Station building (located north of the westbound platform) would remain. To accommodate the new third track, the existing eastbound (southern) platform would be replaced with a new eight-foot-wide platform, which would be built on top of a new retaining wall south of the new third track. The existing westbound (northern) platform would be replaced with a ten-foot-wide platform. The platforms would be accessible via four new staircases and two new ADA-compliant ramps. The existing Westbury Station pedestrian tunnel, which connects the eastbound and westbound platforms, would be extended to accommodate the new third track above and upgraded in accordance with LIRR guidelines. One set of ADA-compliant

ramps would be built adjacent to the tunnel and Station building to provide ADA access. Platform shelters, canopies, and benches would be constructed per LIRR station guidelines.

Access from the eastbound to the westbound platform would be provided by new pedestrian overpasses with elevators and covered stairs at each platform, complying with ADA requirements. The overpass would be located within the limits of the proposed parking facility located in the existing south parking lot.

The eastern portion of the eastbound platform at Westbury Station is in close proximity of the existing LIRR ROW boundary and surrounding properties. Due to that proximity, a code-compliant means of egress (platform with eight-foot minimum width) from the platform could not be provided outside the LIRR ROW. In order to provide passengers with a means of egress at the east end of the platform, a second overpass with elevators and covered stairs would be located at the end of the platform to provide emergency egress from the eastbound platform to the westbound platform.

In order to improve the overall appearance of the LIRR embankment on the north side of the LIRR Westbury Station, the Proposed Project design would provide for the elimination of the embankment and the creation of a small plaza or pocket park in its place. LIRR would work with the Village of Westbury to create an attractive public space that would enhance the station environment and improve access to the station. Some of the design elements would be a retaining wall, pavers or stone for walkways/pavement surfaces, benches, bike racks, and low maintenance landscaping.

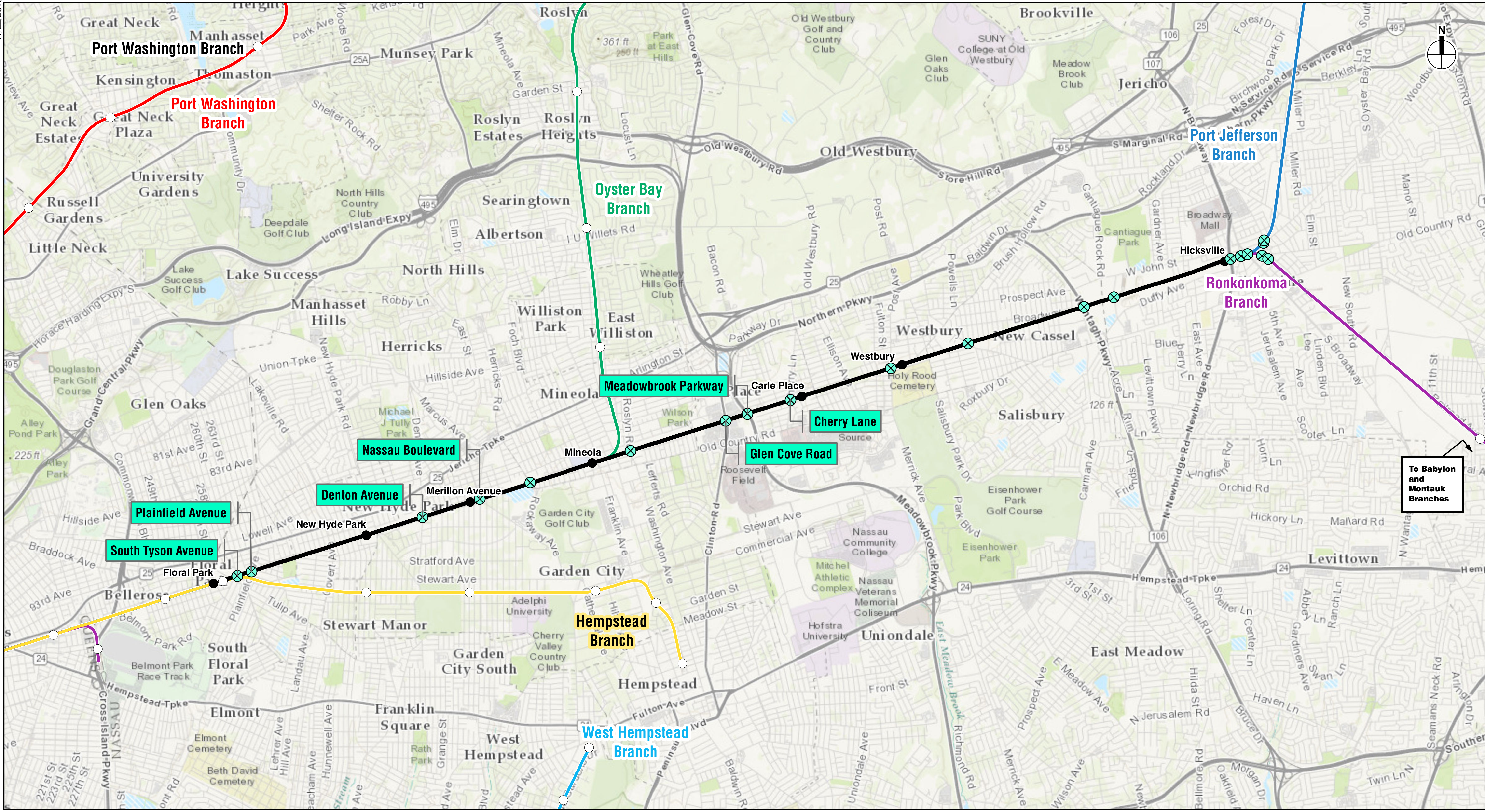
HICKSVILLE STATION

As discussed above in the "Planning Context" section, the separate Hicksville Station and North Track Siding Improvements Project is progressing separately from the LIRR Expansion Project. The separate Hicksville Station project will include installation of new platforms, heated and glass-enclosed platform waiting rooms, lighting, communications systems, signs, stairways, elevators, and escalators. As part of the LIRR Expansion Project, work at Hicksville Station would include removing the existing concrete curbing and roofing system installed to cover the southeast platform staircase opening and associated viaduct repairs.

STRUCTURE MODIFICATIONS

Modifications to existing bridges and other structures along the LIRR Main Line would be required to accommodate the new third track. For example, in certain locations, the two Main Line tracks cross over a roadway on a bridge or viaduct structure that would need to be widened to accommodate the new third track. **Table 1-6** describes the bridges that traverse the Main Line between Floral Park and Hicksville and the proposed changes to each structure. **Figure 1-16** identifies the location of each of the existing bridges that would be modified as part of the Proposed Project.

11/22/2016



Grade Separated Crossings (Bridges)

LIRR Stations

LIRR Main Line

LIRR Expansion Project
Floral Park to Hicksville

Proposed Project Bridge Modifications
Figure 1-16

Table 1-6
Bridges and Structures along LIRR Main Line

Structure Location	Jurisdiction	Proposed Structure Type
South Tyson Avenue - Hempstead Branch	Village of Floral Park	Widen existing station viaduct and construct new single track bridge bay
Plainfield Avenue	Nassau County	New single track bridge.
Tanners Pond / Denton Avenue	Village of Garden City	Remove and replace existing bridge superstructure and construct new three track bridge
Nassau Boulevard	Nassau County	Remove and replace existing bridge superstructure and construct new three track bridge
Herricks Road	Nassau County	Existing bridge to remain.
Mineola Boulevard	Nassau County	Existing bridge to remain.
Roslyn Road	Nassau County	Existing bridge to remain.
Glen Cove Road	Nassau County	Remove and replace existing bridge superstructure and construct new three track bridge
Meadowbrook Parkway	NYSDOT	Existing bridge to remain and construct new single track bridge bay
Cherry Lane	Town of North Hempstead	Remove and replace existing bridge superstructure and construct new three track bridge
Ellison Avenue	Village of Westbury	Existing bridge recently replaced.
Post Avenue	Village of Westbury / Nassau County	Existing bridge being replaced in another project
Grand Boulevard	Town of North Hempstead	Existing bridge to remain.
Wantagh State Parkway	NYSDOT	Existing bridge to remain.
Charlotte Avenue	Town of Oyster Bay	Existing bridge to remain.
Newbridge Road Ramp	NYSDOT	Existing bridge to remain.
Jerusalem Avenue	Nassau County	Existing bridge to remain.

UTILITY RELOCATIONS

As part of the engineering design process, LIRR conducted a preliminary utility inventory to determine the type, location, and ownership of utilities within the Project Corridor (including at the affected grade crossings and adjacent roadways). 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, PSEG-LI electric transmission, LIRR signal and communications, Verizon, and Cablevision are located within the ROW; other types of utilities cross the LIRR ROW along local roads, aerial structures (such as transmission poles), and/or through underground routes. Information and record plans were obtained from local utility companies and agencies. As part of the inventory, the project team requested information from utility companies regarding utility work planned within the next five years. The purpose of the preliminary utility inventory is to identify areas of potential conflict, the need for utility relocations, mitigation measures, data gaps, and the need for additional coordination with utility providers.

Appendix 1-A provides a list of known utilities and identifies specific locations where the Proposed Project may require utility relocation or other measures. For example, there are PSEG-LI (formerly LIPA) power lines parallel to, and within the LIRR ROW on either north or south sides of the Main Line, with dedicated rectifier feeds for LIRR substations and

signal/communication lines. A direct burial underground PSEG-LI power line is also present in some locations. In many cases, LIRR utility lines are located on both sides of the LIRR ROW or across the ROW from PSEG-LI. There are some instances where PSEG-LI poles support LIRR, Cablevision, and Verizon utilities.

Generally, utilities work is expected to include:

- Relocation of PSEG-LI 13.2kV and 69kV transmission lines within the LIRR ROW (for example, between Covert Avenue and New Hyde Park Station, poles and transmission lines would be relocated from the south side of the Main Line to the north side)
- Relocation of National Grid gas lines, including at the seven grade crossing elimination locations.
- Relocation of underground and aerial fiber optic and telephone lines and cable television equipment.
- Replacement and/or relocation of rail signal, power, and communications equipment.
- Further coordination with municipalities and regional agencies regarding water and sanitary sewer mains that parallel or cross the LIRR ROW and potential relocations (e.g., Nassau County Department of Public Works).

Replacement of utilities will provide additional lifespan on these systems, thereby benefitting customers served by the utilities. Replacement of PSEG-LI poles with taller steel poles will provide additional resiliency during any future high wind events as the poles would be stronger and power lines hung above tree height. Additional details regarding proposed utility relocations are provided in Chapter 9, "Infrastructure and Utilities," and in **Appendix 1-A**.

TRACTION POWER SUBSTATIONS

Eight LIRR traction power substations exist within the project limits:

- Floral Park Substation, located on Plainfield Avenue opposite 111 Plainfield Avenue
- New Hyde Park Substation, located at Third Avenue and South 9th Street
- Merillon Avenue Substation, located at Atlantic Avenue and Hilton Avenue
- Mineola Substation, located at the southwest corner of Main Street and Front Street
- Carle Place Substation, located in the southeast quadrant of Meadowbrook State Parkway and the LIRR just north of Mallard Road
- Westbury Substation, located southeast of Union Avenue and Sullivan Street north of the LIRR
- New Cassel Substation, located at Broadway and Bond Street north of the LIRR
- Hicksville Substation, located on the south side of West Barclay Street near Marion Place and adjacent to the LIRR ROW

Figure 1-17 shows a typical LIRR substation.

With the exception of the Floral Park Substation (which was replaced in 2010), seven existing substations need to be enhanced to accommodate the new third track. These substations are roughly 40 years old and near the end of their operating service life. The present condition of the substations and the inability to obtain spare parts concerning the same warrant their replacement rather than modification. Given the tight site constraints, it is currently anticipated that the new

Typical LIRR Substation
Figure 1-17

replacement substations would occupy the same parcels as the present equipment. Each substation would be removed from service and prefabricated substation equipment would be used to expedite the implementation of the new units. This would allow the existing substations to function for a longer period of time, as the prefabricated building can be constructed and factory tested offsite until such time it is deemed necessary to de-energize the existing equipment.

STREET-LEVEL GRADE CROSSINGS

This DEIS considers several potential options for each grade crossing listed below, with the exception of Covert Avenue. With respect to the Covert Avenue grade crossing, after consideration of several factors, including design criteria, impacts on traffic, construction impacts and duration, other environmental considerations, and the satisfaction of the Project Purpose and Need, LIRR has preliminarily concluded that only one option (discussed below) is available—subject to further input received from the public and elected officials for the municipalities where the grade crossing is located. Various other concepts (e.g., one-way and two-way overpass concepts in which the roadway would be elevated over the tracks) were considered and dismissed from further analysis, as explained in the Final Scoping Document. Unlike the project considered in 2005, the LIRR Expansion Project does not require the substantial number of property acquisitions at the grade crossings or the disruption to local communities through extended construction periods. The LIRR Expansion Project avoids these concerns through re-designing the grade crossing separations in response to community input.

The State will coordinate with the County and local municipalities to establish maintenance responsibilities for the new structures, sidewalks, and roadways.

The modifications to the grade crossings would be designed to accommodate bicycle traffic within travel lanes, emergency vehicles, snow plows, and truck traffic. Sidewalks or pedestrian bridges are proposed to allow for pedestrian and first responder access. **Figure 1-18 through Figure 1-52** show existing aerial images for each location as well as the design options outlined below.

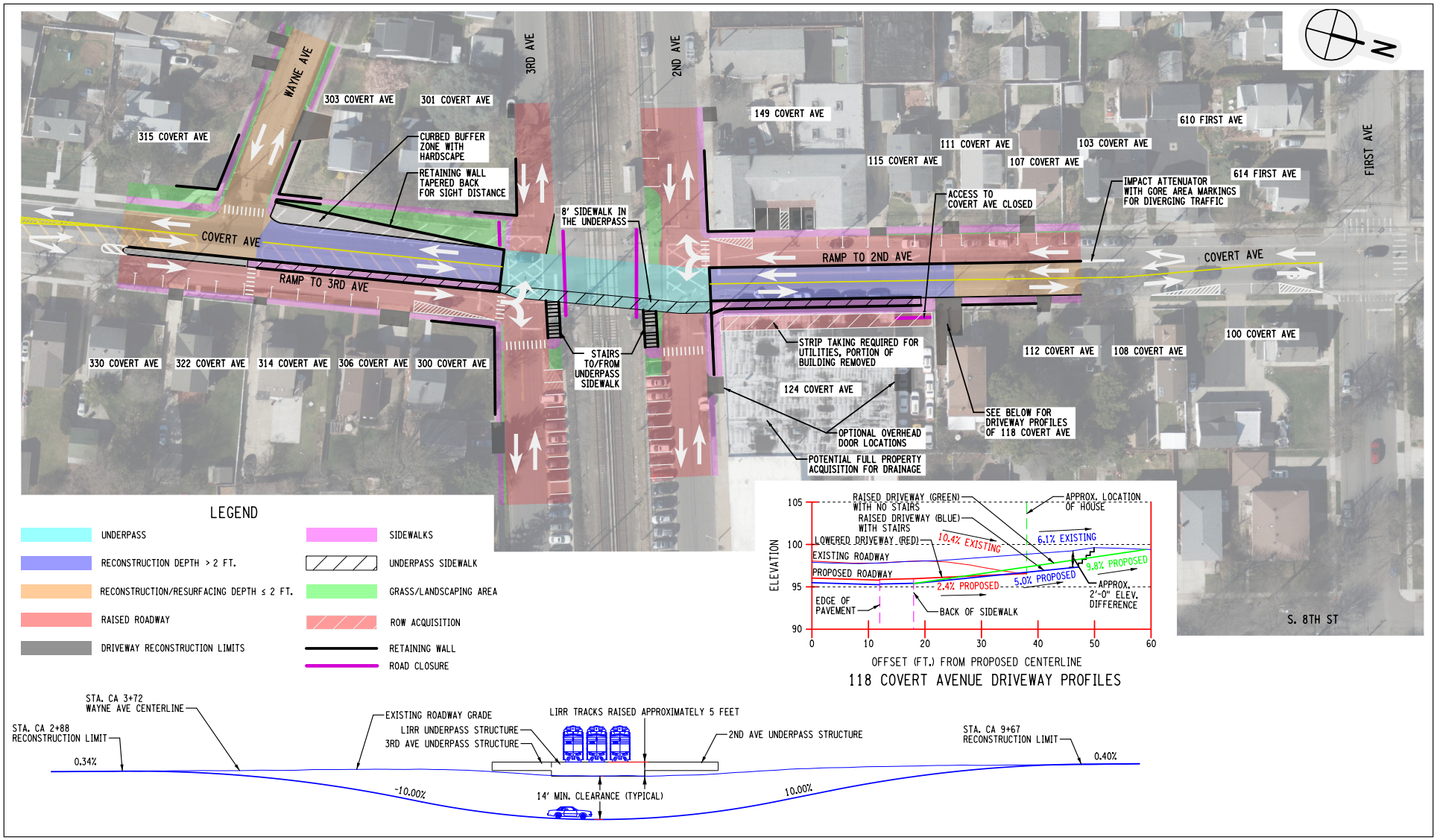
COVERT AVENUE CROSSING

Covert Avenue—Two-Way Underpass with Sidewalk, LIRR Tracks Raised Several Feet

The Covert Avenue crossing would be reconstructed to provide a two-lane grade-separated underpass with a sidewalk on the east side. It would require raising the LIRR tracks approximately five feet in order to keep Second Avenue and Third Avenue open to through-traffic and avoid the acquisition of residential property. This option would provide a one-way service road connecting Covert Avenue northbound traffic to Third Avenue and Covert Avenue southbound traffic to Second Avenue. The existing access from Covert Avenue to the commercial building at the northeast corner of Covert and Second Avenues would be restricted, potentially requiring acquisition. Minor reconstruction to Second Avenue, Third Avenue, Wayne Avenue, and driveways would be necessary.

Covert Avenue Grade Crossing
Existing Conditions

Figure 1-18



Source: NYSDOT

LIRR Expansion Project
Floral Park to Hicksville

Covert Ave Grade Crossing
Two-Way Underpass with Sidewalk, LIRR Tracks Raised Several Feet
Figure 1-19

Source: NYSDOT

Rendering: Covert Avenue Grade Crossing
Two-Way Underpass with Sidewalk, LIRR Tracks Raised Several Feet
Figure 1-20

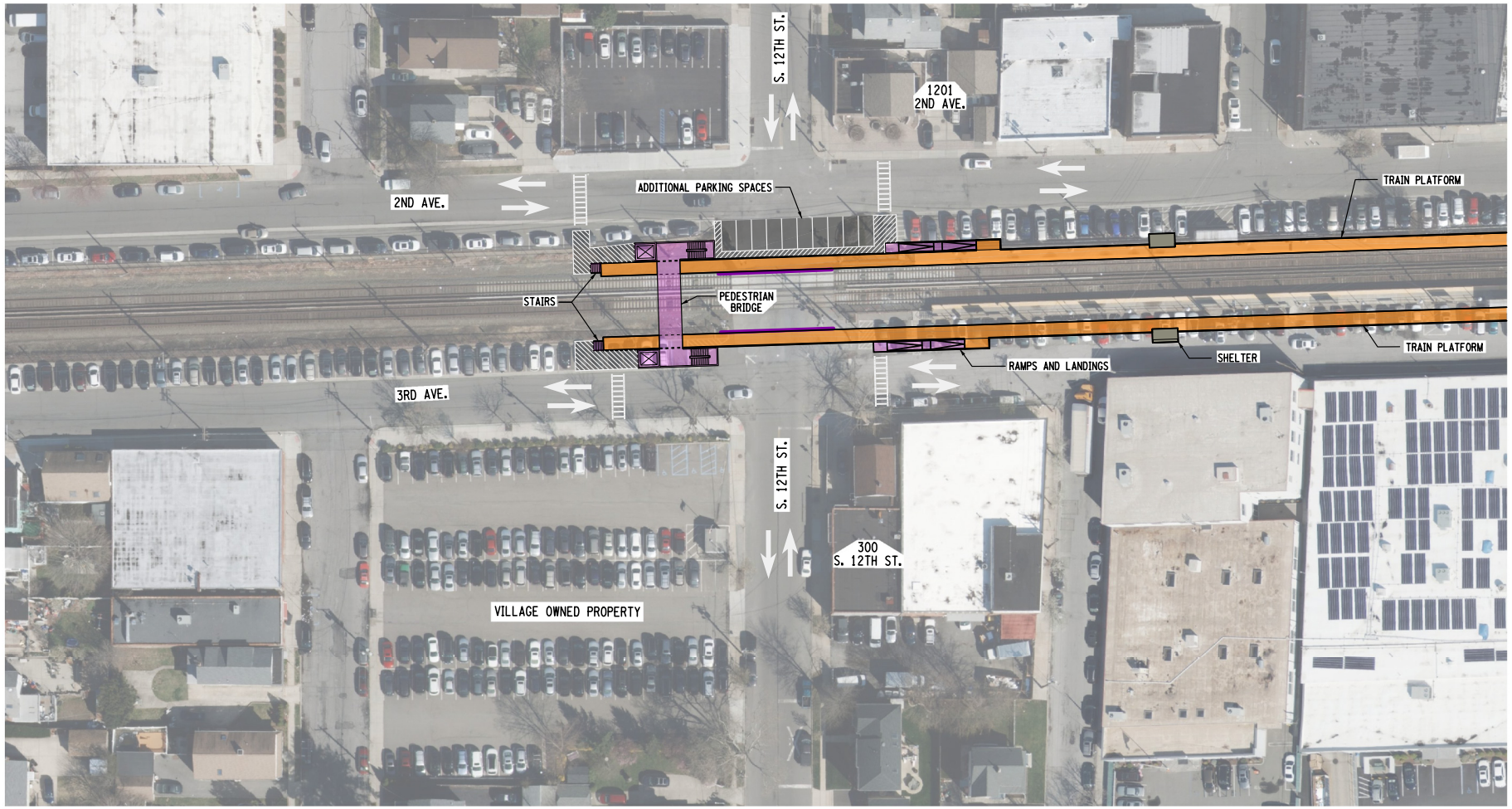
Source: NYSDOT

Rendering: Covert Avenue Grade Crossing
Two-Way Underpass with Sidewalk, LIRR Tracks Raised Several Feet

Figure 1-21

South 12th Street Grade Crossing
Existing Conditions
Figure 1-22

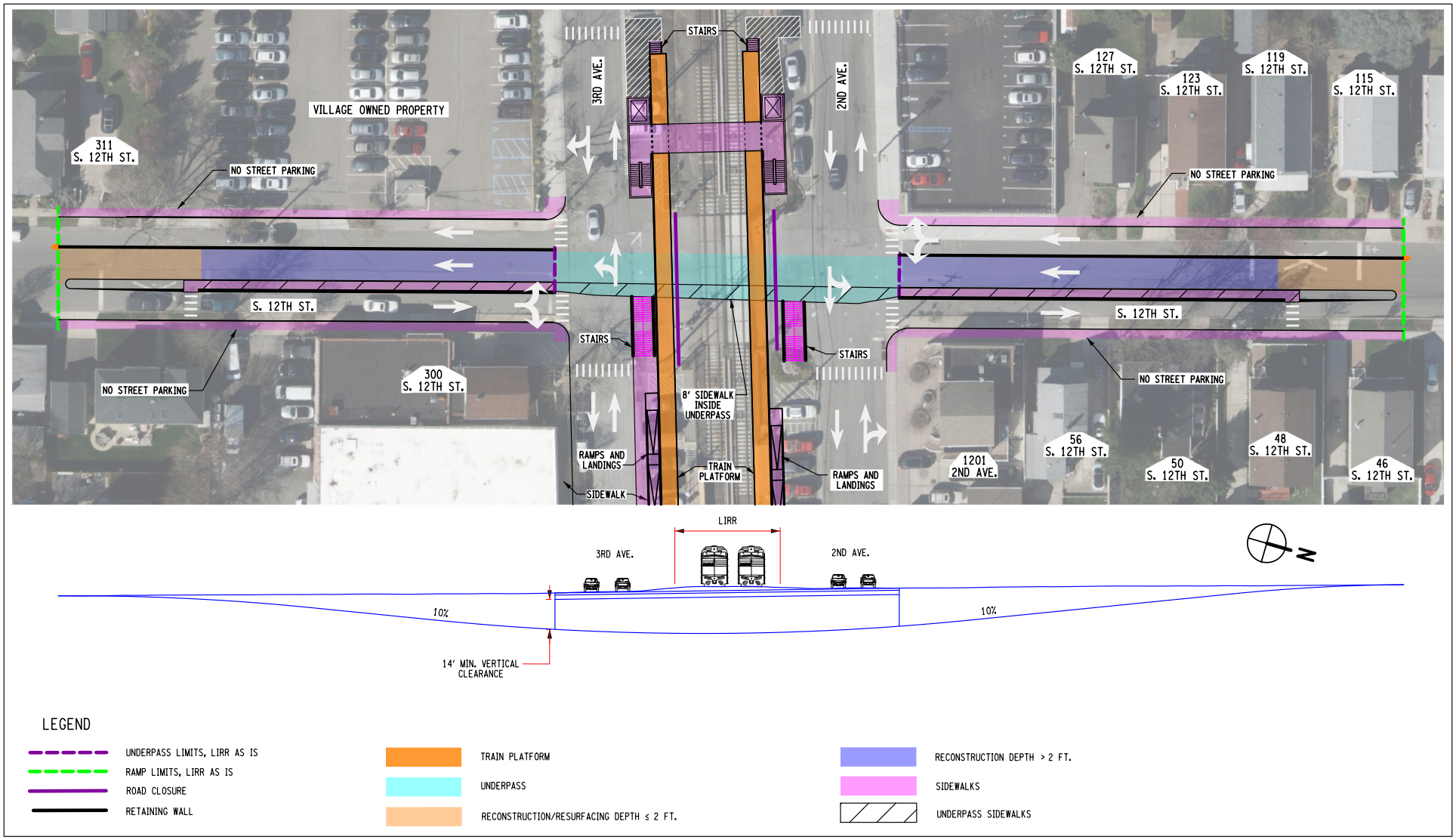
11.22.16



Source: NYSDOT

South 12th Street Grade Crossing
Option 1: Permanent Crossing Closure with Pedestrian Bridge
Figure 1-23

LIRR Expansion Project
Floral Park to Hicksville



Source: NYSDOT

LIRR Expansion Project
Floral Park to Hicksville

Option 2: One-Way Underpass with Sidewalk
Figure 1-24

Source: NYSDOT

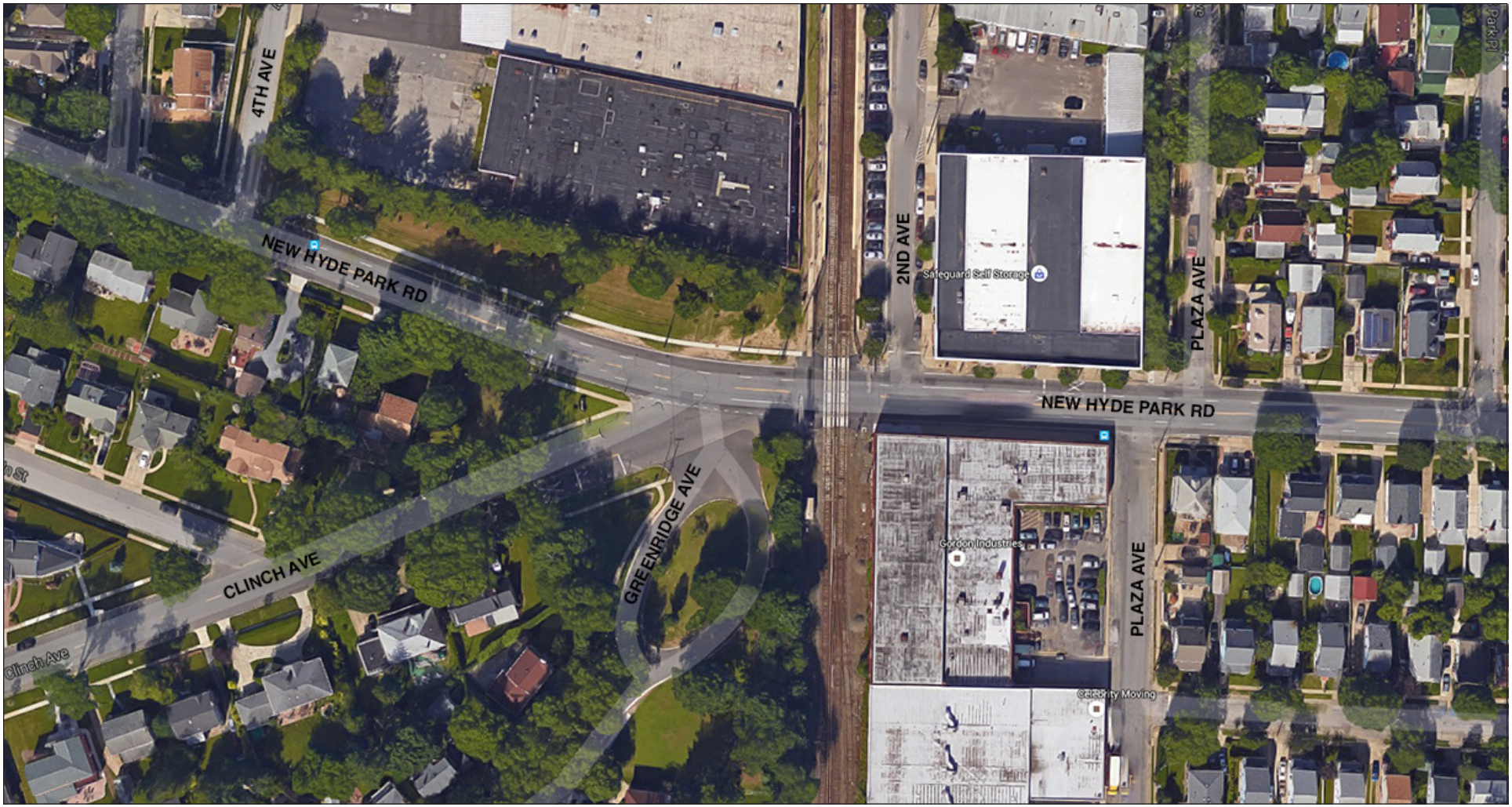
Rendering: South 12th Street Grade Crossing
Option 1: Permanent Crossing Closure with Pedestrian Bridge

Figure 1-25

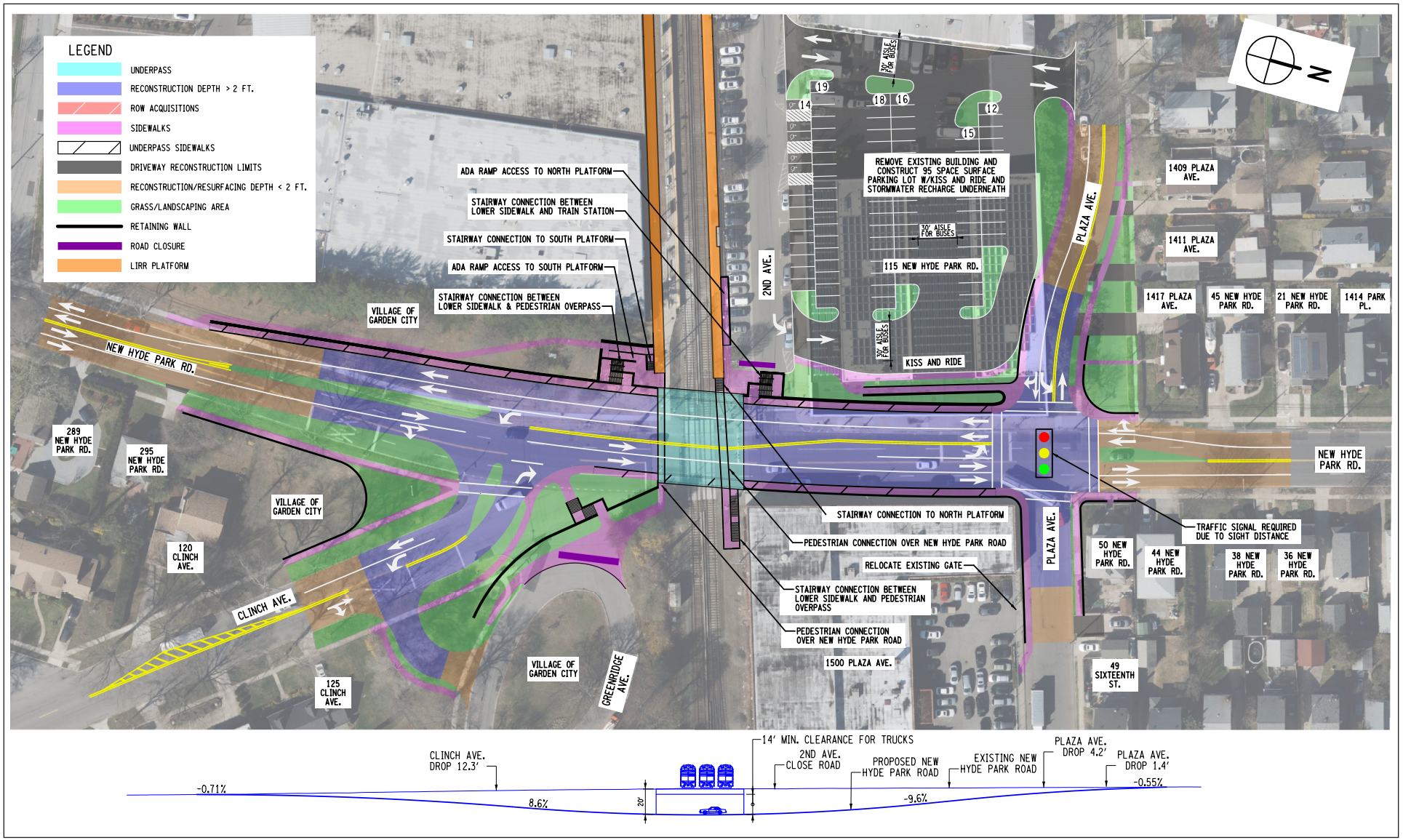
Source: NYSDOT

Rendering: South 12th Street Grade Crossing
Option 2: One-Way Underpass with Sidewalk

Figure 1-26

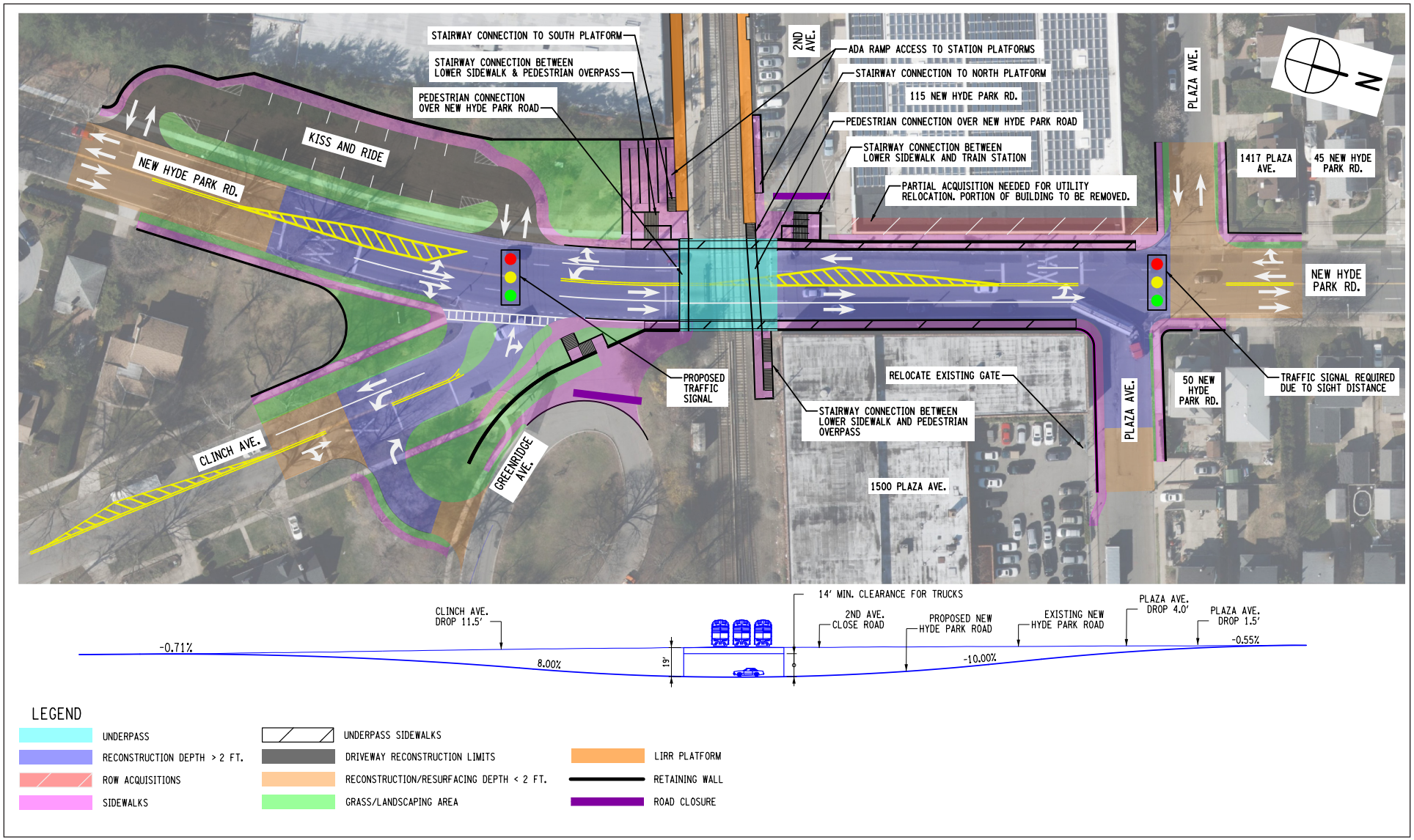


New Hyde Park Road Grade Crossing
Existing Conditions
Figure 1-27



Source: NYSDOT

New Hyde Park Road Grade Crossing
Option 1: Five-Lane Underpass with Kiss and Ride Northwest of Tracks
Figure 1-28



Source: NYSDOT

LIRR Expansion Project
Floral Park to Hicksville

New Hyde Park Road Grade Crossing
Option 2: Four-Lane Underpass with Kiss and Ride Southwest of Tracks
Figure 1-29

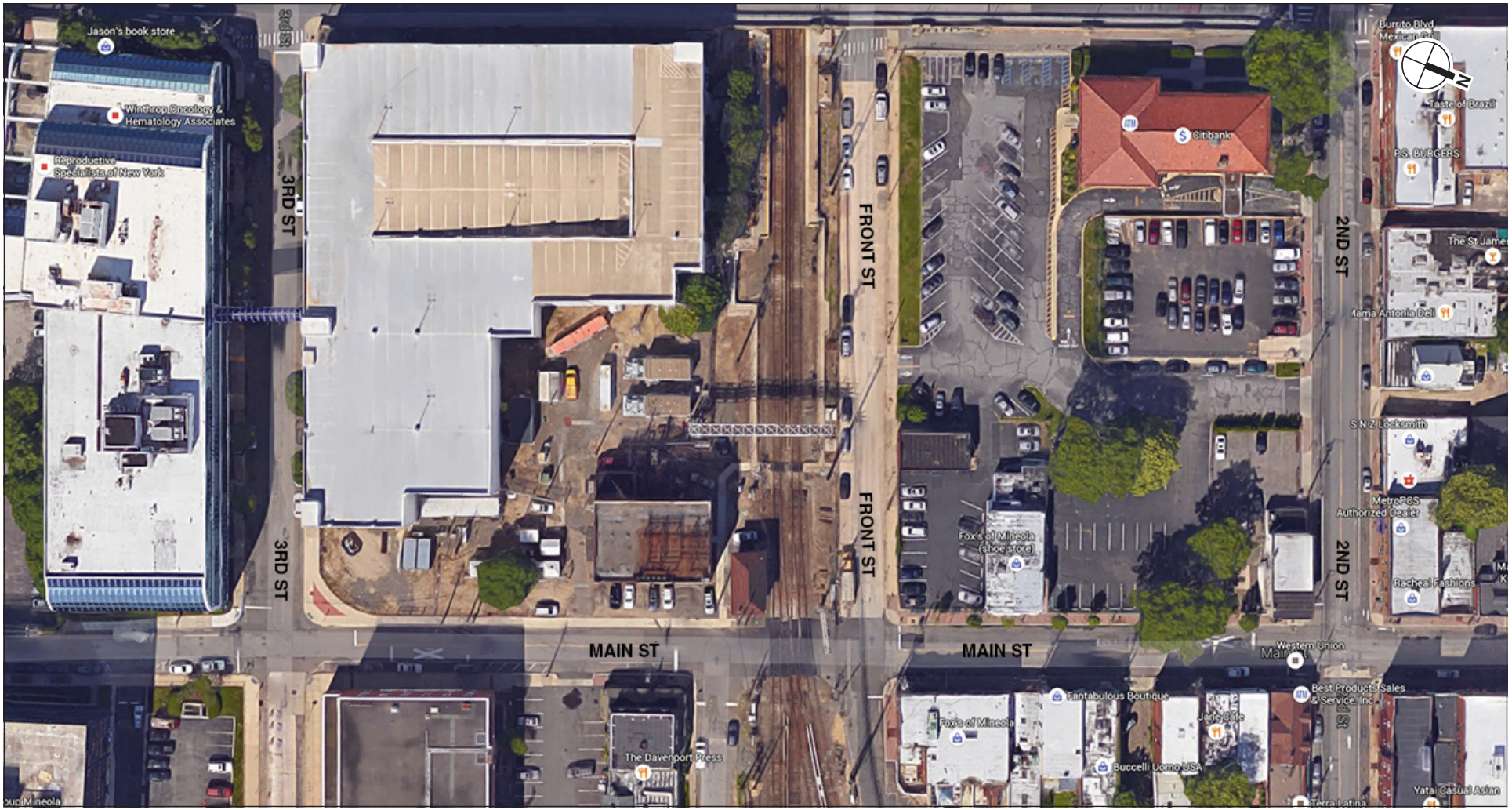
Source: NYSDOT

Rendering: New Hyde Park Road Grade Crossing
Option 1: Five-Lane Underpass with Kiss and Ride Northwest of Tracks
Figure 1-30

Source: NYSDOT

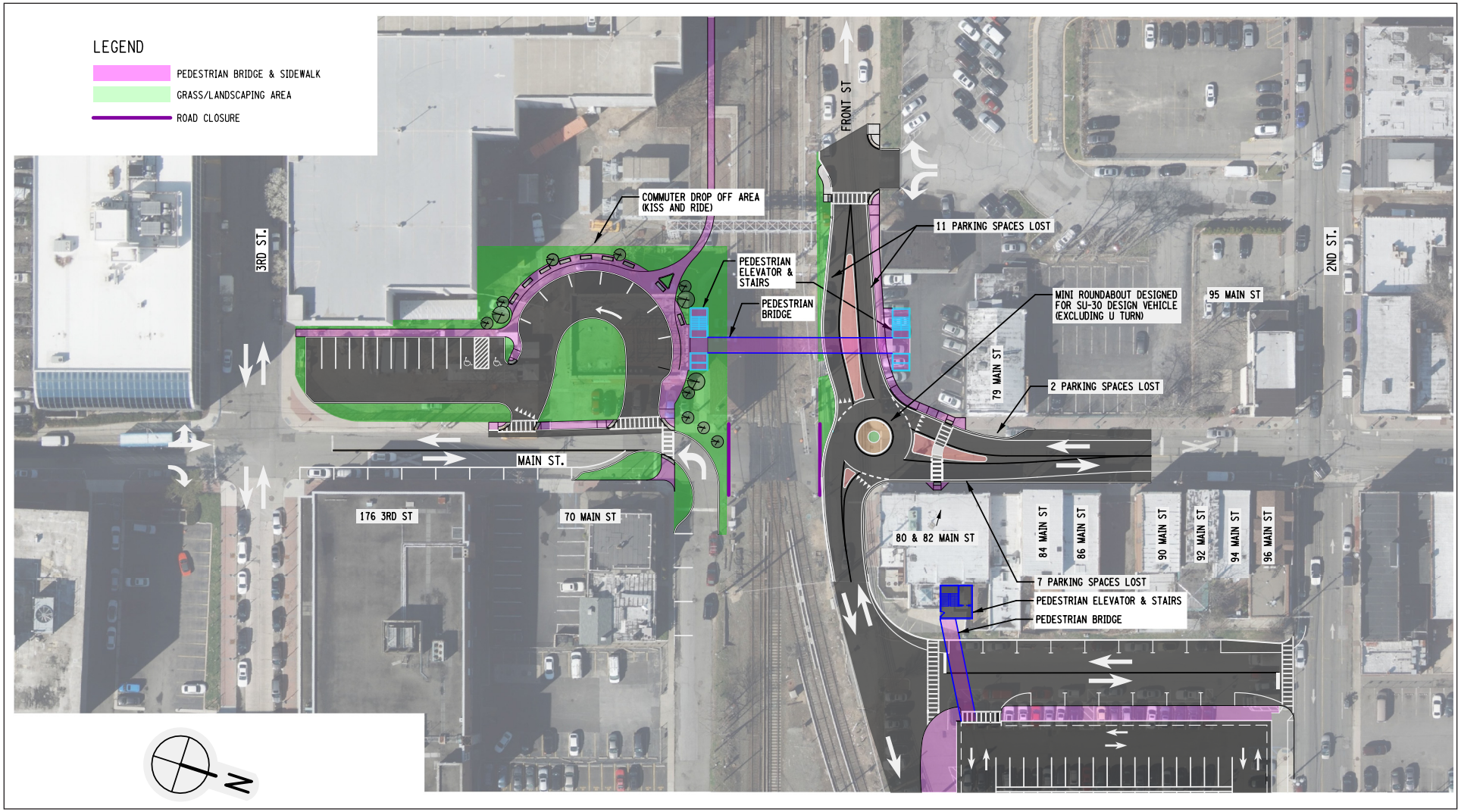
Rendering: New Hyde Park Road Grade Crossing
Option 2: Four-Lane Underpass with Kiss and Ride Southwest of Tracks Substation

Figure 1-31



Main Street Grade Crossing
Existing Conditions

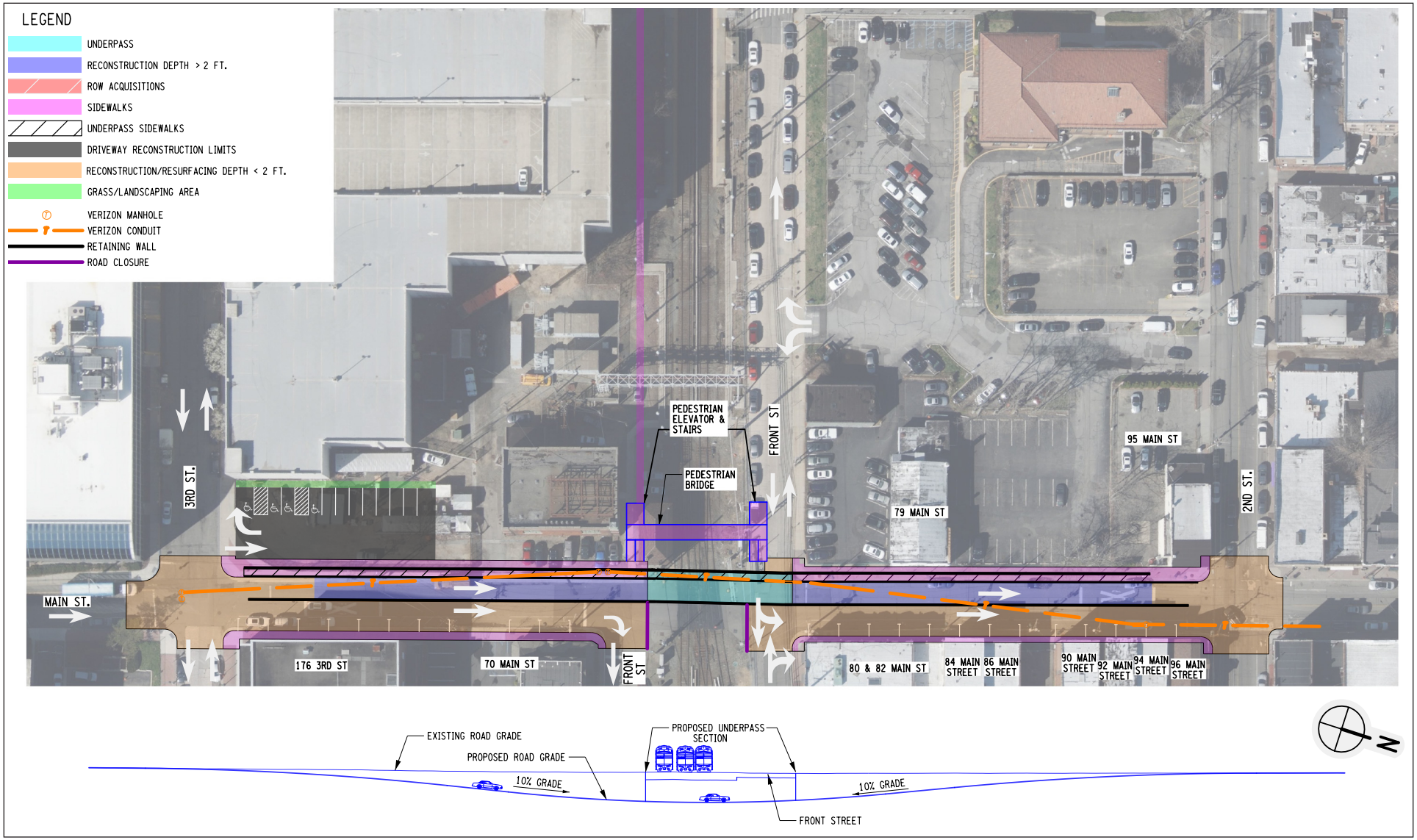
Figure 1-32



Source: NYSDOT

Main Street Grade Crossing
Option 1: Permanent Crossing Closure with Pedestrian Bridge
Figure 1-33

11.22.16



Source: NYSDOT

LIRR Expansion Project
Floral Park to Hicksville

Main Street Grade Crossing
Option 2: One-Way Underpass with Pedestrian Bridge
Figure 1-34

Source: NYSDOT

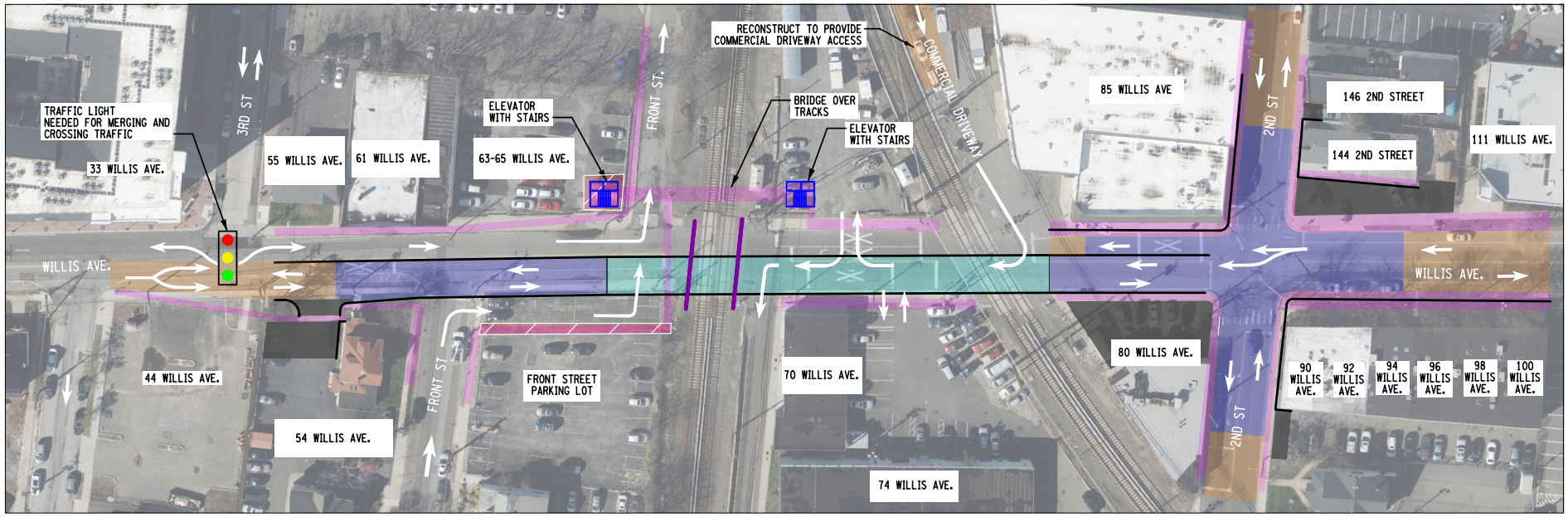
Rendering: Main Street Grade Crossing
Option 1: Permanent Crossing Closure with Pedestrian Bridge
Figure 1-35

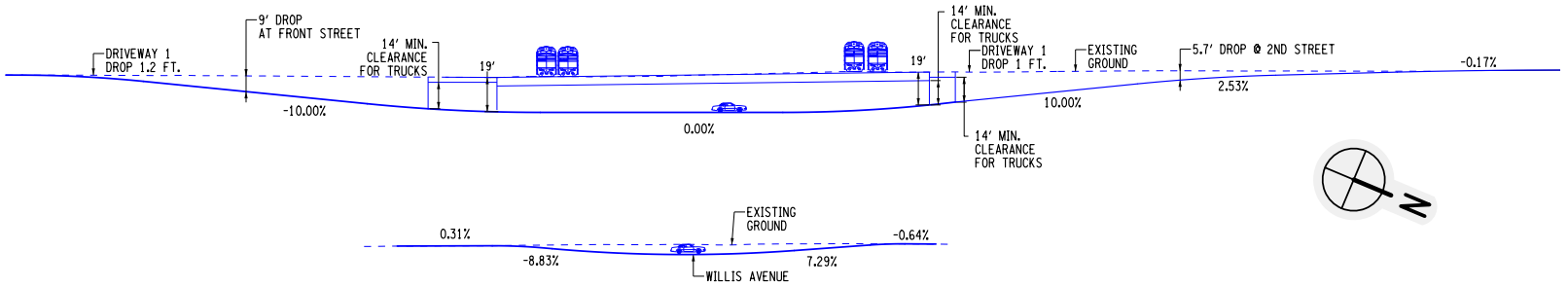
Source: NYSDOT

Rendering: Main Street Grade Crossing
Option 2: One-Way Underpass with Pedestrian Bridge
Figure 1-36

LIRR Expansion Project
Floral Park to Hicksville

Willis Avenue Grade Crossing
Existing Conditions
Figure 1-37





2ND STREET PROFILE

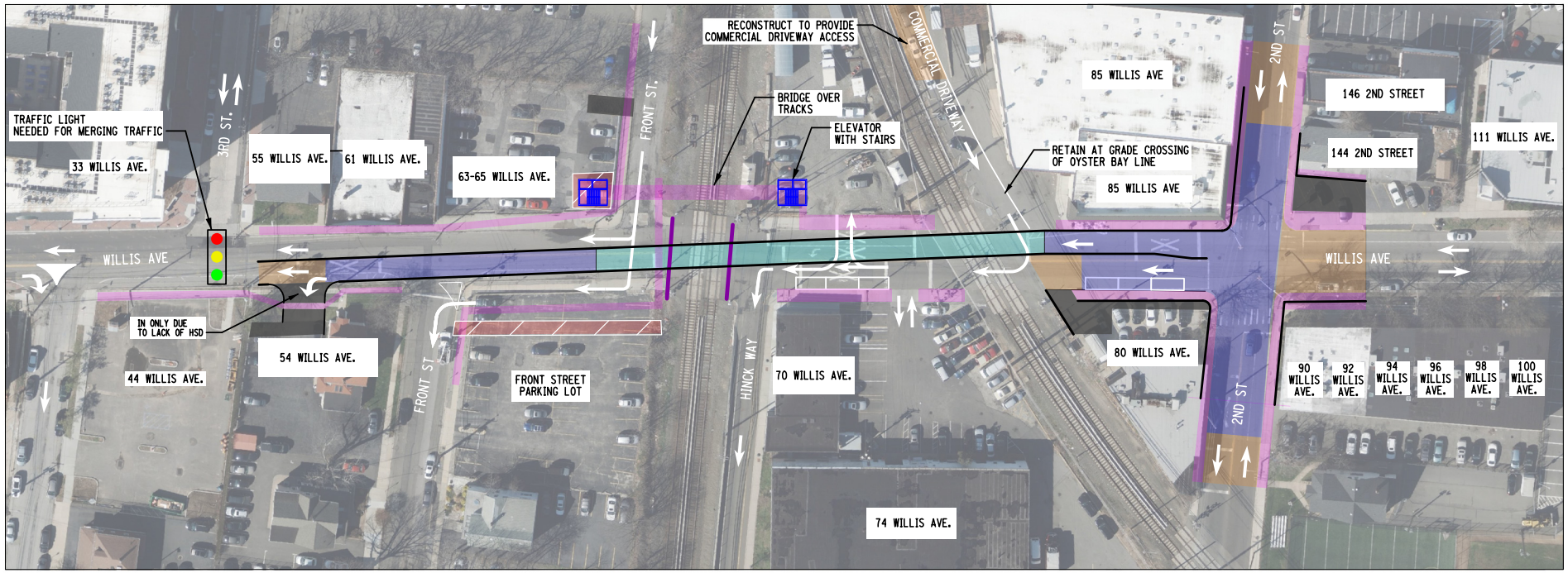
LEGEND

- UNDERPASS
- RECONSTRUCTION DEPTH > 2 FT.
- ROW ACQUISITIONS
- SIDEWALKS
- UNDERPASS SIDEWALKS
- DRIVEWAY RECONSTRUCTION LIMITS
- RECONSTRUCTION/RESURFACING DEPTH < 2 FT.
- GRASS/LANDSCAPING AREA
- RETAINING WALL
- ROAD CLOSURE

Source: NYSDOT

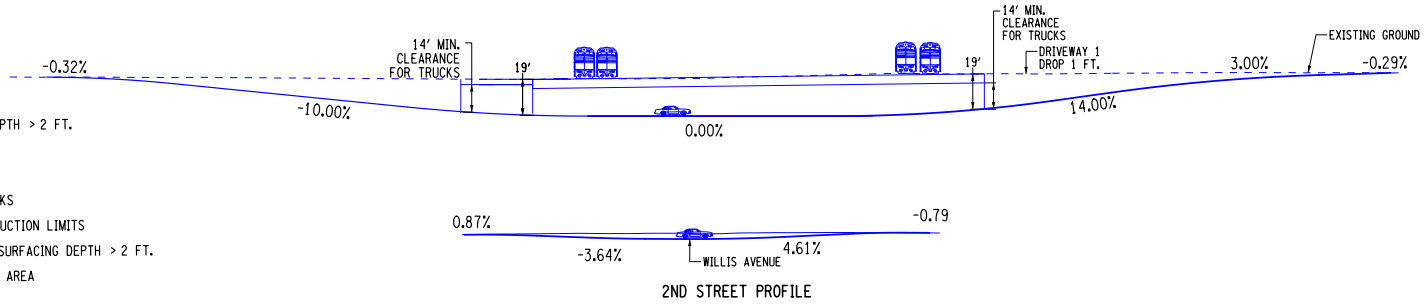
LIRR Expansion Project
Floral Park to Hicksville

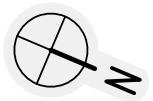
Willis Avenue Grade Crossing
Option 1: Two-Way Underpass
Figure 1-38



LEGEND

- UNDERPASS
- RECONSTRUCTION DEPTH > 2 FT.
- ROW ACQUISITIONS
- SIDEWALKS
- UNDERPASS SIDEWALKS
- DRIVEWAY RECONSTRUCTION LIMITS
- RECONSTRUCTION/RESURFACING DEPTH > 2 FT.
- GRASS/LANDSCAPING AREA
- RETAINING WALL
- ROAD CLOSURE





Source: NYSDOT

LIRR Expansion Project
Floral Park to Hicksville

Willis Avenue Grade Crossing
Option 2: One-Way Underpass
Figure 1-39

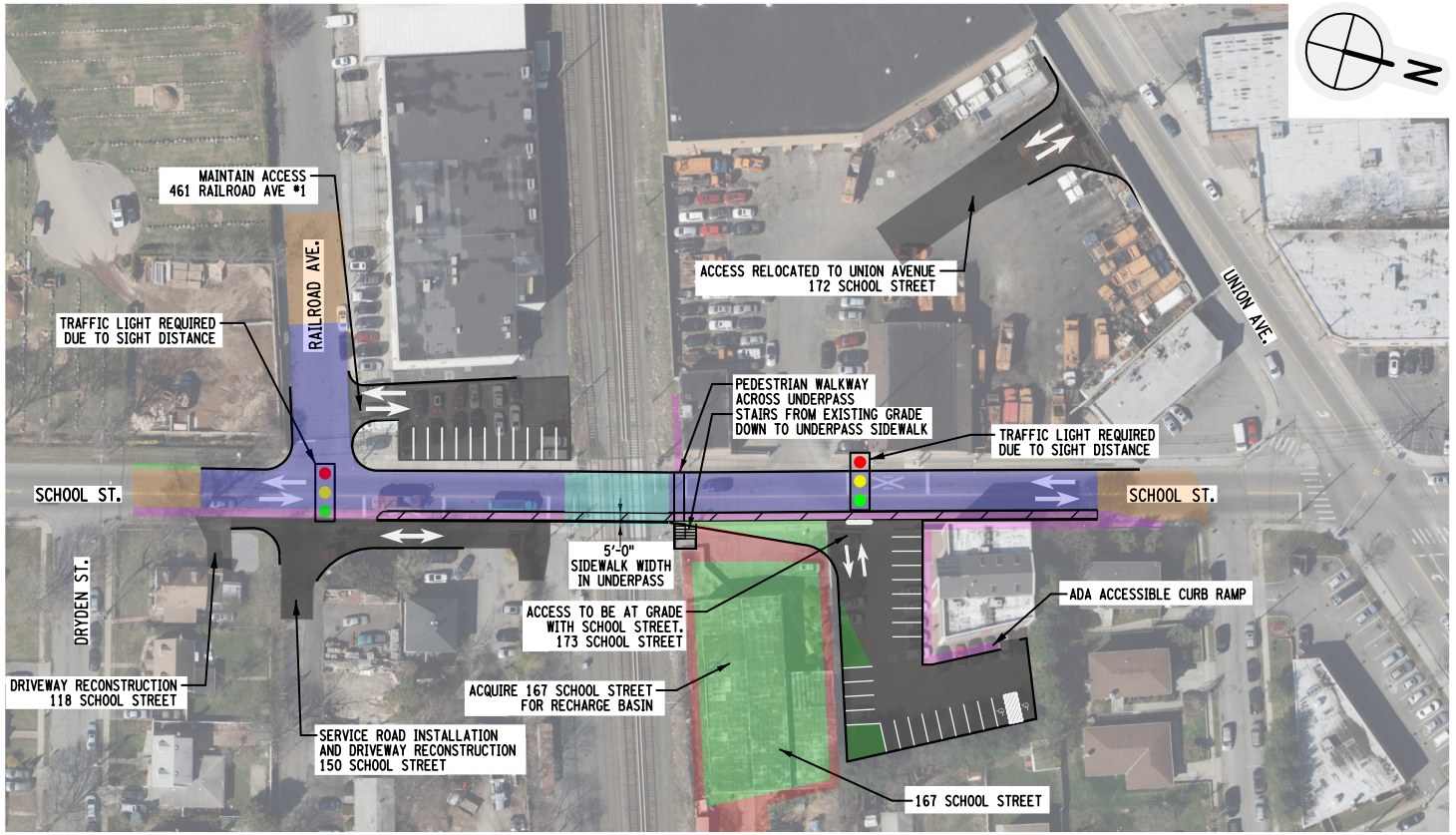
Source: NYSDOT

Rendering: Willis Avenue Grade Crossing
Option 1: Two-Way Underpass
Figure 1-40

Source: NYSDOT

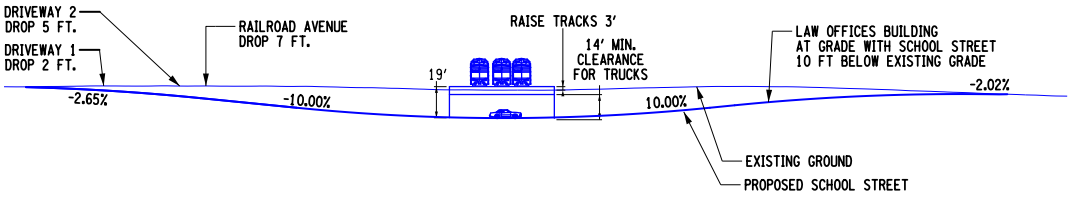
Rendering: Willis Avenue Grade Crossing
Option 2: One-Way Underpass
Figure 1-41

School Street Grade Crossing
Existing Conditions
Figure 1-42



LEGEND

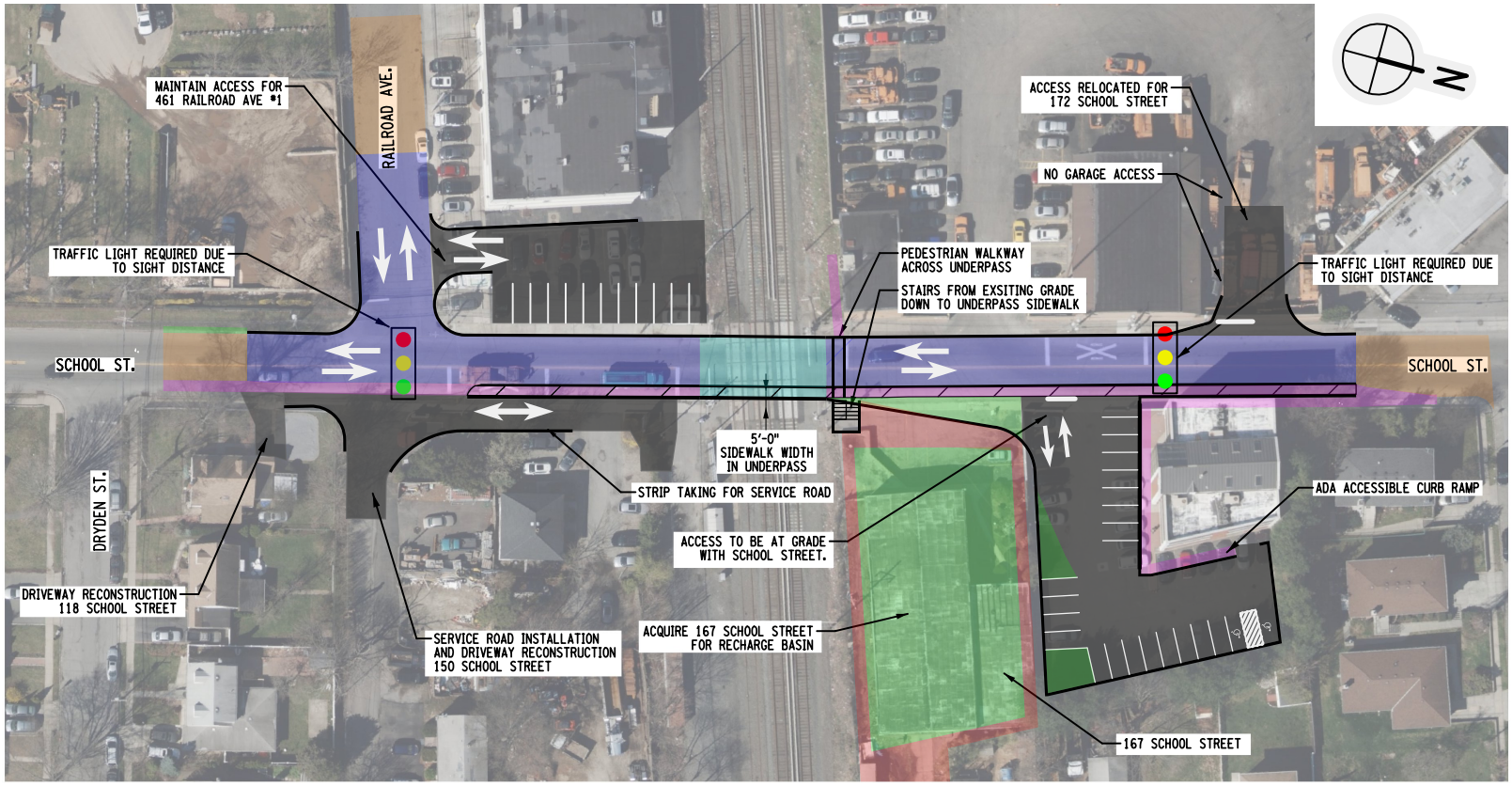
- UNDERPASS
- RECONSTRUCTION DEPTH > 2 FT.
- ROW ACQUISITIONS
- SIDEWALKS
- UNDERPASS SIDEWALKS
- DRIVEWAY RECONSTRUCTION LIMITS
- RECONSTRUCTION/RESURFACING DEPTH < 2 FT.
- GRASS/LANDSCAPING AREA
- RETAINING WALL
- ROAD CLOSURE



Source: NYSDOT

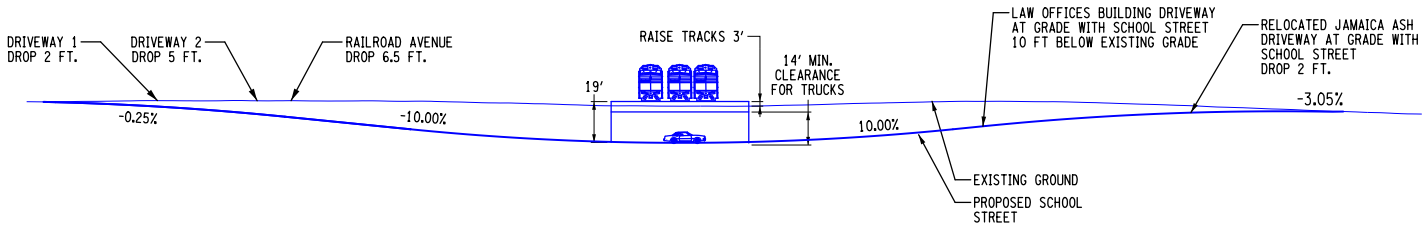
LIRR Expansion Project
Floral Park to Hicksville

School Street Grade Crossing
Scenario 1A: Two-Way Underpass and Tracks Raised Several Feet
Figure 1-43



LEGEND

- UNDERPASS
- RECONSTRUCTION DEPTH > 2 FT.
- ROW ACQUISITIONS
- SIDEWALKS
- UNDERPASS SIDEWALKS
- DRIVEWAY RECONSTRUCTION LIMITS
- RECONSTRUCTION/RESURFACING DEPTH < 2 FT.
- GRASS/LANDSCAPING AREA
- RETAINING WALL
- ROAD CLOSURE



Source: NYSDOT

LIRR Expansion Project
Floral Park to Hicksville

School Street Grade Crossing
Scenario 1B: Two-Way Underpass and Tracks Raised Several Feet
Figure 1-44

Source: NYSDOT

Rendering: School Street Grade Crossing
Scenario 1A: Two-Way Underpass and Tracks Raised Several Feet
Figure 1-45

Source: NYSDOT

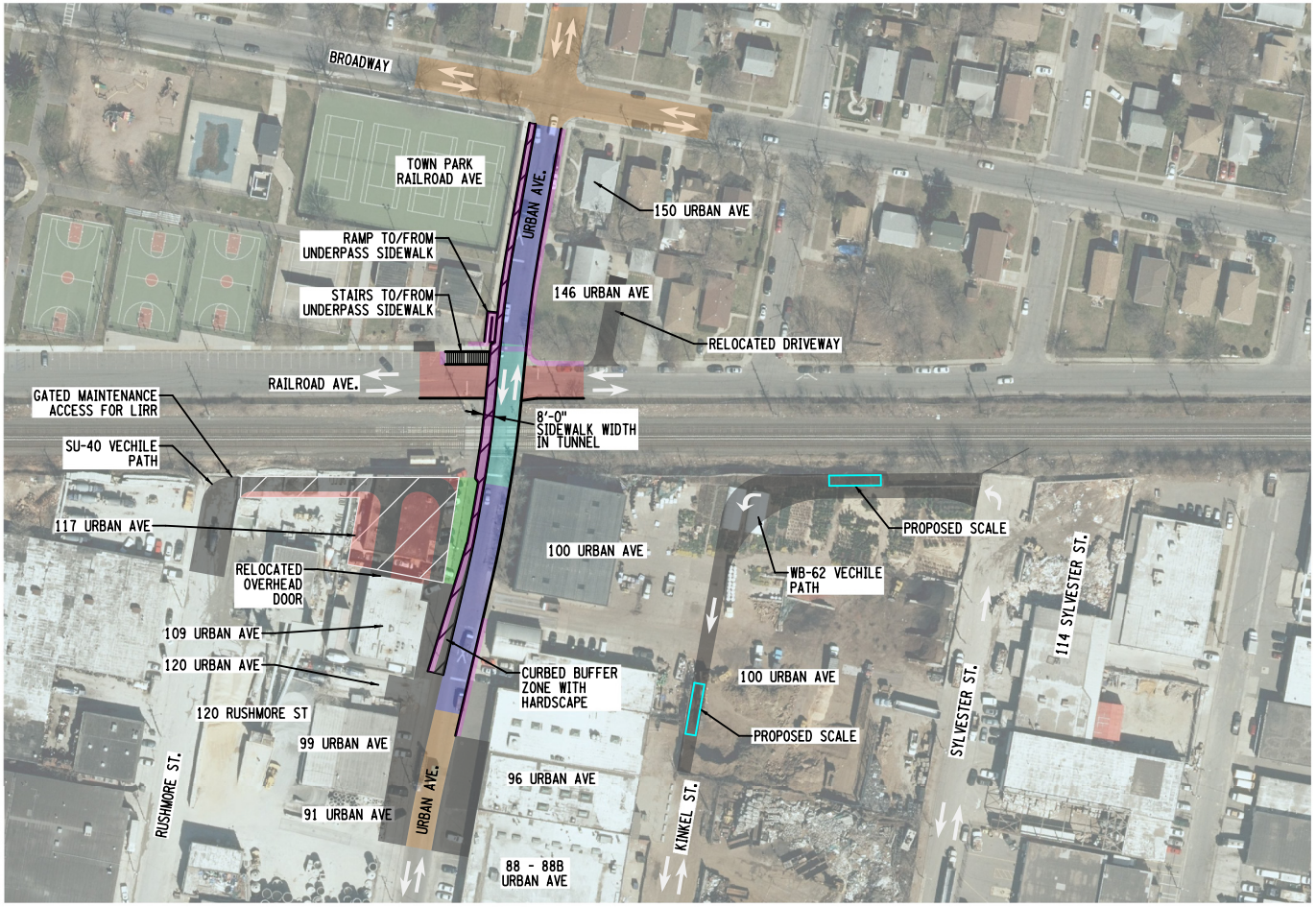
Rendering: School Street Grade Crossing
Scenario 1B: Two-Way Underpass and Tracks Raised Several Feet
Figure 1-46

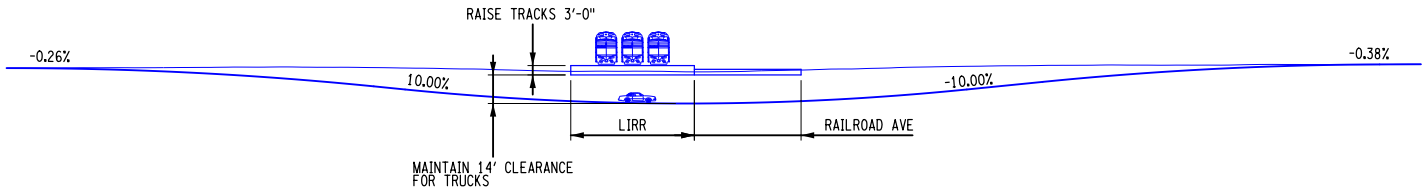
Source: NYSDOT

Rendering: School Street Grade Crossing
Scenario 1B: Two-Way Underpass and Tracks Raised Several Feet
Figure 1-47

Urban Avenue Grade Crossing
Existing Conditions
Figure 1-48

LIRR Expansion Project
Floral Park to Hicksville





LEGEND

- TUNNEL
- RECONSTRUCTION DEPTH > 2 FT.
- ROW ACQUISITIONS
- SIDEWALKS
- UNDERPASS SIDEWALKS
- DRIVEWAY RECONSTRUCTION LIMITS
- RECONSTRUCTION/RESURFACING DEPTH ≤ 2 FT.
- GRASS/LANDSCAPING AREA
- RAISED ROADWAY
- RETAINING WALL
- ROAD CLOSURE

Source: NYSDOT

Urban Avenue Grade Crossing
Scenario 1A: Two-Way Underpass with Sidewalk; LIRR Tracks Raised Several Feet
Figure 1-49

Source: NYSDOT

LIRR Expansion Project
Floral Park to Hicksville

Urban Avenue Grade Crossing
Scenario 1B: Two-Way Underpass with Sidewalk; LIRR Tracks Raised Several Feet
Figure 1-50

Source: NYSDOT

Rendering: Urban Avenue Grade Crossing
Scenario 1A: Two-Way Underpass with Sidewalk; LIRR Tracks Raised Several Feet
Figure 1-51

Source: NYSDOT

Rendering: Urban Avenue Grade Crossing
Scenario 1B: Two-Way Underpass with Sidewalk; LIRR Tracks Raised Several Feet

Figure 1-52

SOUTH 12TH STREET CROSSING

South 12th Street—Option 1: Permanent Crossing Closure with Pedestrian Bridge

This option would permanently close South 12th Street to vehicular traffic across the LIRR tracks and provide an ADA-compliant pedestrian bridge over the tracks with elevators and stairs providing access from Second Avenue and Third Avenue, integrated into the station design. The crossing vehicle traffic would divert to Covert Avenue and New Hyde Park Road, which are less than ¼-mile away on either side of the tracks and would be grade-separated.

South 12th Street—Option 2: One-Way Underpass with Sidewalk and Pedestrian Bridge

This option would construct a one-way grade-separated southbound underpass with a sidewalk on the east side and a pedestrian bridge integrated into the station design. It would provide a one-way service road connecting north bound South 12th Street traffic to Third Avenue and south bound South 12th Street traffic to Second Avenue. This option would result in the loss of approximately eight on-street parking spaces along South 12th Street and would re-route South 12th Street northbound traffic onto other roads in the area. The adjacent crossing streets are less than ¼-mile away on either side of the tracks.

NEW HYDE PARK ROAD CROSSING

New Hyde Park Road—Option 1: Five-Lane Underpass with Kiss and Ride northwest of Tracks

The New Hyde Park Road crossing would be reconstructed as a five-lane grade-separated underpass with sidewalks on the east and west sides of the underpass. It would provide a dedicated left-turn lane from southbound New Hyde Park Road to Clinch Avenue. Reconstruction of Clinch Avenue, Greenridge Avenue, Plaza Avenue, and Second Avenue would be necessary to improve safety. Pedestrian access from Garden City to the LIRR Station would be provided via a pedestrian crossing parallel to and south of the tracks and a pedestrian crossing north of the tracks. This option would require the acquisition of the commercial building at the southwest corner of New Hyde Park Road and Plaza Avenue. The space created with this acquisition would be used to connect Second Avenue to Plaza Avenue, providing a dedicated left-turn lane from northbound New Hyde Park Road to Plaza Avenue, providing space for a Kiss-and-Ride area, allowing for a safe and convenient location to drop off and pick up railroad passengers; the remaining space would be used for parking, drainage and stormwater management.

New Hyde Park Road—Option 2: Four-Lane Underpass with Kiss-and-Ride southwest of Tracks

This option would entail the construction of a four-lane grade-separated underpass with sidewalks on the east and west sides of the underpass. A dedicated left-turn lane would be provided for southbound New Hyde Park Road traffic turning onto Clinch Avenue. The left lane of the northbound New Hyde Park Road traffic would be shared with a left turn onto Plaza Avenue. This option would involve construction of a Kiss-and-Ride area on the southwest side of New Hyde Park Road. This option would not require the acquisition of any buildings. Under this option, Second Avenue would not be accessible to (connect to) New Hyde Park Road.

MAIN STREET CROSSING

Main Street—Option 1: Permanent Crossing Closure with Pedestrian Bridge

This option would permanently close Main Street to vehicular traffic across the LIRR tracks and provide a pedestrian bridge over the LIRR tracks with elevators. The pedestrian bridge would connect to a Kiss-and-Ride area, surface parking and other improvements on the LIRR property at the southwest corner of Main Street. A roundabout would be constructed on the north side of the railroad tracks connecting Main Street and Front Street. The crossing vehicle traffic would divert to Mineola Boulevard and Willis Avenue, which are less than ¼-mile away on either side of the tracks.

Main Street—Option 2: One-Way Underpass with Pedestrian Bridge

This option would construct a one-way grade-separated northbound traffic underpass and provide a pedestrian bridge over the LIRR tracks with elevators. The pedestrian bridge would connect to surface parking and other improvements on the LIRR property at the southwest corner of Main Street. This option would provide a one-way northbound service road connecting northbound Main Street to Front Street south of the tracks and Front Street north of the tracks to northbound Main Street. On-street parking would be maintained in front of the east side businesses. On the north side of the tracks, two four-foot-wide sidewalks would be constructed. This reduced width would allow for the construction of the underpass without the acquisition of the commercial building on the northwest side of the tracks. Southbound crossing vehicle traffic would be diverted to Mineola Boulevard and Willis Avenue, which are less than ¼ mile away on either side of the tracks.

WILLIS AVENUE CROSSING

Willis Avenue—Option 1: Two-Way Underpass

A two-way grade-separated underpass with a pedestrian bridge and elevators would be constructed. It would provide a one-way service road on the west side of Willis Avenue connecting northern Willis Avenue traffic to Hinck Way eastbound and to businesses located between the LIRR Main Line and the Oyster Bay Branch. The Willis Avenue grade crossing with the Oyster Bay Branch would remain. This option would extend the underpass to the south to maintain traffic on Front Street westbound across Willis Avenue.

The existing access from Willis Avenue to the commercial building at the southeast corner of Willis Avenue and Second Street would be restricted. This scenario also would require reconstructing Second Street and the parking area at the northwest corner of Second Street and Willis Avenue. A traffic signal would be required at the intersection of Willis Avenue and Third Street for merging traffic.

Willis Avenue—Option 2: One-Way Underpass

LIRR would construct a one-way southbound grade-separated underpass with pedestrian bridge and elevators. It would provide a one-way southbound service road connecting northern Willis Avenue traffic to Hinck Way eastbound and to businesses located between the LIRR Main Line and the Oyster Bay Branch. The Willis Avenue grade crossing with the Oyster Bay Branch would remain. This option would extend the underpass to the south to maintain traffic on Front Street eastbound across Willis Avenue. This option would allow the commercial building at the southeast corner of Willis Avenue and Second Street to maintain access to Willis Avenue.

SCHOOL STREET CROSSING

School Street—Two-Way Underpass and Tracks Raised Several Feet

The School Street crossing would be reconstructed as a two-way grade-separated underpass with a sidewalk on the east side. Railroad Avenue would be reconstructed to maintain access to School Street. Acquisition of a narrow strip of land would be required from the commercial property on the southeast corner of the intersection of School Street and the LIRR tracks to build a service road to maintain access to the business. This option would require raising the LIRR tracks approximately three feet in order to avoid the acquisition of a residential property to the southeast of School Street. It also would require the acquisition of the commercial property at the northeast quadrant due to the elimination of access to School Street. The following property access options will be explored for this location:

Scenario 1A: Under this scenario, the access of the commercial property on the northwest corner of the intersection of School Street and the LIRR tracks to Union Avenue would be relocated.

Scenario 1B: Under this scenario, access to the commercial property on the northwest corner would be maintained.

URBAN AVENUE CROSSING

Urban Avenue—Two-Way Underpass with Tracks Raised Several Feet

Under this option, LIRR would construct a two-lane grade-separated underpass with a sidewalk on the west side. Railroad Avenue would bridge over the underpass and remain connected. This option would require raising the LIRR tracks approximately three feet in order to avoid impacting residential properties at the north side of Broadway and acquiring an additional property on the south end of Urban Avenue. The driveway of the residential property northeast of the tracks would need to be relocated to provide access to Railroad Avenue. The commercial property at the southwest quadrant (117 Urban Ave) would be acquired due to the elimination of access to Urban Avenue. The following access scenarios will be explored for this location:

Scenario 1A: Access from Urban Avenue to the commercial property in the southeast quadrant (100 Urban Ave) would be eliminated. Access would be provided by a new driveway entering off of Sylvester Street and exiting on to Kinkle Street. The commercial property at the southwest quadrant (109 Urban Ave) would maintain access on to Urban Ave via a small driveway in front of the building. Truck access would be provided by a new driveway connecting to Rushmore Street.

Scenario 1B: Large truck access to the commercial property in the southeast quadrant (100 Urban Ave) would be provided by a new driveway entering off of Sylvester Street and exiting on to Kinkle Street. Small trucks and passenger vehicles would still have access off of Urban Avenue. Access to the commercial property at the southwest quadrant (109 Urban Ave) would be similar to Scenario 1A.

PARKING

The Proposed Project would include six new parking garages and one new surface parking lot with a total of 3,488 parking spaces near the New Hyde Park, Mineola, Westbury, and Hicksville stations. Because several of these new parking garages are located on existing surface parking lots, a total of 2,490 net new parking spaces would be constructed. The Proposed Project would

also result in the loss of approximately 233 parking spaces due to conversion of head-on parking spaces to parallel parking spaces; construction of new platforms, ramps, or stairs; or the grade crossings. However, the total net new parking spaces resulting from the Proposed Project would be 2,257. **Table 1-7** presents a summary of the new parking provided and parking lost as a result of the Proposed Project.

Table 1-7
Summary of Proposed Project Parking Gains and Losses

	Surface Parking					
	Existing	Lost	Remaining	New Parking	Total Parking Supply	Net New
New Hyde Park Road	0	0	0	95	95	95
Second Street, Mineola	102	102	0	424	424	322
Harrison Avenue, Mineola	120	120	0	553	553	433
Westbury South	302	179	123	503	626	324
Westbury North	275	223	52	630	682	407
Hicksville I	190	190	0	608	608	418
Hicksville II	184	184	0	675	675	491
					Net New Parking Spaces	**2,490**
Net Parking Lost Due to Station Improvements & Third Track Construction						
New Hyde Park Station		126	177 head-on parking spaces removed along Third Avenue due to south station platform and third track. 51 parallel parking spaces added			
		25	Spaces removed due to new north station platform			
Merillon Avenue Station		13	Spaces removed due to north platform ramps and stairs			
Mineola Station		0	35 head-on and angled parking spaces impacted by south station platform and third track, replaced along Station Road			
Carle Place Station		9	14 head-on spaces removed near Stonehinge Lane due to north station platform. 5 parallel parking spaces added			
Westbury Station		20	Spaces removed (including 7 handicap spaces) due to south station ramps and stairs.			
Spaces removed for Station Improvements		**193**				
Net Parking Lost Due to Grade Crossing Improvements						
Covert Avenue		10				
South 12th Street		(10)[1]				
Main Street		3				
Willis Avenue		31[2]				
School Street		0				
Urban Avenue		6				
Spaces removed for Grade Crossings		**40**				
Total Net New Parking Spaces provided by the Proposed Project		**2,257**				

Notes:
1. Net addition of 10 head-on parking spaces along Second Avenue.
2. Options 1.

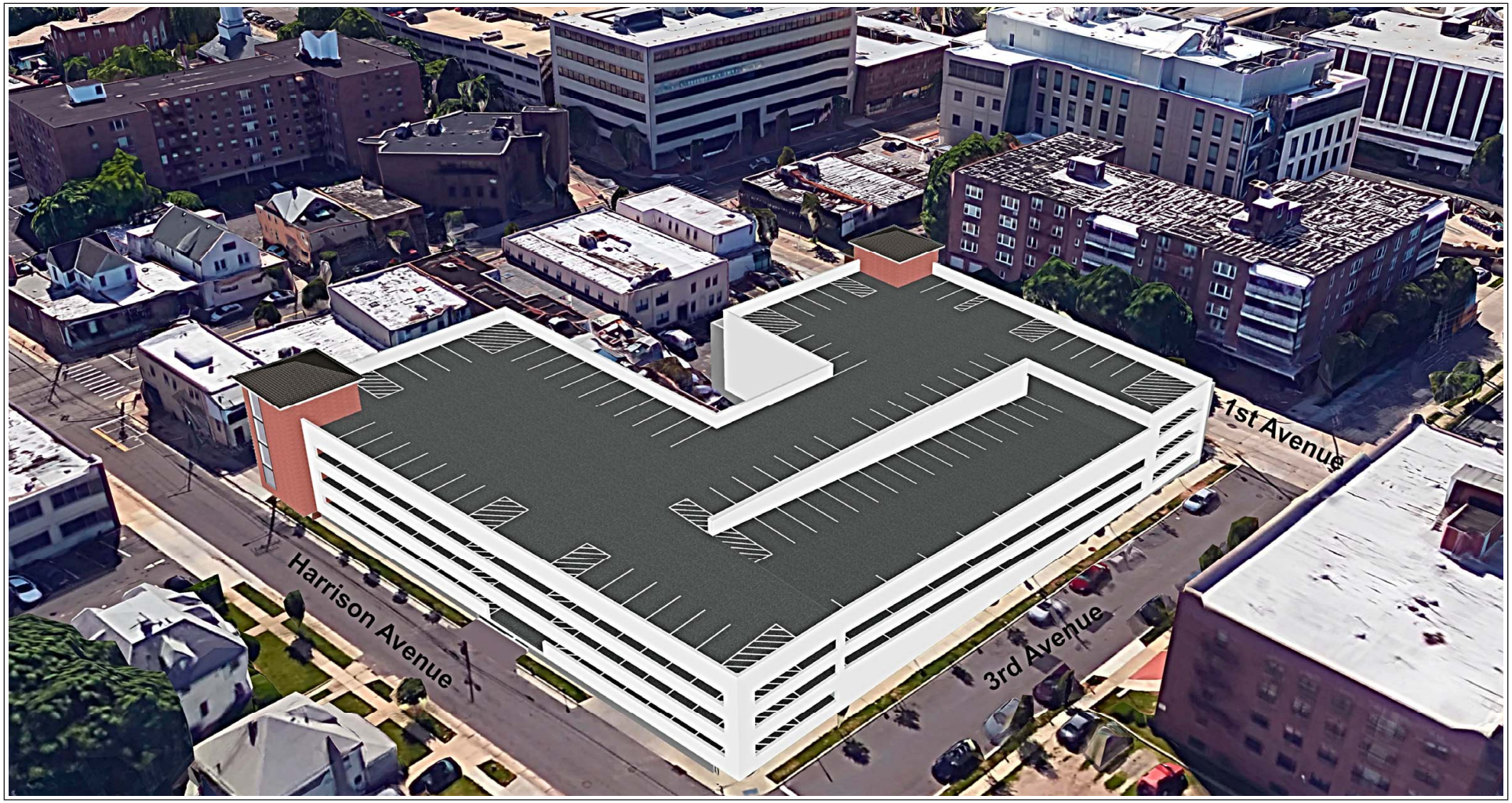
The following parking garages and lots would be provided as part of the Proposed Project (see **Figures 1-53** through **1-56** for renderings of the proposed parking garages):

- A new 95-space surface parking lot at 115 New Hyde Park Road between Plaza Avenue and Second Avenue in the Village of New Hyde Park, under one of the two Build options.
- A new 424-space seven-level parking deck (with one level below grade) on Second Street between Main Street and Willis Avenue on an existing 115-space Village of Mineola surface parking lot. The total supply of 424 parking spaces would be a net increase of 309 parking spaces.
- A new 553-space six-level parking deck (with one level below grade) on an existing Village-owned 120-space parking lot west of Mineola Boulevard between Harrison Avenue and First

Source: NYSDOT

Rendering: Mineola Parking Garage
Between Main Street and Willis Avenue
Figure 1-53

11.22.16



Source: NYSDOT

Rendering: Mineola Boulevard Parking Garage
Southeast View
Figure 1-54

LIRR Expansion Project
Floral Park to Hicksville

Source: NYSDOT

Rendering: Westbury Parking Garage
Figure 1-55

Source: NYSDOT

Rendering: Hicksville Parking Garage
Figure 1-56

Street. The total supply of 553 parking spaces would represent a net increase of 433 parking spaces.

- A new four-level parking deck would be constructed on the south side of the LIRR tracks at the Westbury station in the current 302-space surface lot. The new 503-space parking deck would occupy the central portion of the existing parking lot, leaving the east and west ends open for 123 surface parking spaces to remain. The total supply of 626 parking spaces would be a net increase of 324 parking spaces.
- A new four-level parking deck would be constructed on the north side of the LIRR tracks near the Westbury station in an existing 275-space Village-owned surface parking lot south of Scally Place. The 630-space parking deck would retain 52 existing surface spaces to yield a total supply of 682 parking spaces (net increase of 407 parking spaces).
- A new four-level 608-space parking deck (with one level below grade) would be constructed on the north side of the LIRR tracks near the Hicksville station south of West Barclay Street on an existing 190-space surface parking lot. The total supply of 608 parking spaces would represent a net increase of 418 parking spaces.
- A new four-level 675-space parking deck would be constructed on the north side of the LIRR tracks near the Hicksville station north of West Barclay Street (west of Bob's Self Storage) on an existing 184-space surface parking lot. The total supply of 675 parking spaces would represent a net increase of 491 parking spaces.

In general, measures to mitigate potential loss of parking in the Study Area as a result of the Proposed Project would be considered, including the construction of additional parking at a location to be determined north of the New Hyde Park LIRR station in consultation with the Village of New Hyde Park.

Under the Proposed Project, LIRR would consider temporary replacement parking for the residents of Birchwood Court in Mineola to address the removal of some parking during construction of the retaining wall that would support the third track in this location. Upon completion of construction of the retaining wall, the parking structure would be rebuilt, and the temporary parking measure would cease.

DRAINAGE IMPROVEMENTS

As discussed above, the vertical alignment of the proposed Main Line (including the new third track) would predominantly follow the existing ground topography with a raised profile in certain locations. Drainage improvements needed for the Proposed Project were developed based on the various "high points" and delineated watershed areas. In most cases, the new third track would displace existing station platform areas and/or existing drainage ditches. Therefore, relocation and upgrading of drainage ditches and channels would be required. The Proposed Project would include a combination of drainage improvements—such as reuse of existing drainage ditches within the LIRR ROW wherever practical, installation of interconnected drain-perforated pipes, stormwater swales, connections to local recharge basins, potential deepening of existing recharge basins to accommodate additional flow, and extension of existing culvert crossings. All stormwater practices would be able to accommodate the peak volume generated by the 100-year storm.

The proposed grade-separated crossings (including new roadway underpasses) would require separate stormwater practices. Conceptual drainage improvements have been identified for each grade crossing to ensure proper stormwater drainage and to minimize flooding. Roadway

drainage improvements at the grade crossing elimination locations are summarized in **Table 1-8** and described in more detail in **Appendix 1-A**.

Table 1-8
Summary of Drainage Improvements at Grade Crossing Locations

Grade Crossing Location	Drainage Improvements
Covert Avenue	Potential option to utilize Block 110 Lots 296-299, 312 for an underground drainage system if this parcel is acquired in full to accommodate Covert Avenue grade crossing elimination, or connect to existing Nassau County recharge basin.
South 12th Street	Option 1: Permanent Crossing Closure requires no new stormwater management. Option 2: Underground recharge system.
New Hyde Park Road	Underground recharge system under proposed kiss-and-ride facility, or connect to existing Nassau County recharge basin.
Main Street & Willis Avenue	Discharge to existing Nassau County recharge basin; potential deepening of basin to increase capacity, or new drainage systems north and south of tracks, connecting to the existing Nassau County recharge basin.
School Street	Discharge to existing Nassau County recharge basin; potential deepening of basin to increase capacity
Urban Avenue	Discharge to existing Nassau County recharge basin; potential deepening of basin to increase capacity

PROPERTY ACQUISITIONS

As stated above, avoidance of residential property acquisitions and minimization of all commercial property acquisitions are key guiding principles of the LIRR Expansion Project. The strategic placement of retaining walls (explained earlier in this chapter) is critical to optimizing the existing LIRR ROW and minimizing property acquisition. Nonetheless, in some locations, the Proposed Project would extend beyond the existing ROW and require commercial property acquisition. Most of these acquisitions would result from the grade crossing eliminations. **Table 1-9** presents a list of potential commercial property acquisitions. **Table 1-10** presents a list of potential partial (strip) acquisitions of commercial property. **Table 1-11** presents a list of potential permanent easements, under which title to the subject property would not be acquired. A number of temporary easements would also be required during the construction period as determined by the design-build contractor. **Table 1-12** presents a list of publicly-owned parcels that would be transferred via Memoranda of Understanding for the purpose of the Proposed Project.

Table 1-9
Summary of Anticipated Full Property Acquisitions

Parcel Location	Property Type	Need for Acquisition
124 Covert Ave., New Hyde Park S/B/L: 33/110/296-299, 312	Commercial property (auto repair facilities) to be demolished	Potential need to acquire (in part or in full) to accommodate Covert Avenue grade crossing elimination.
115 New Hyde Park Road, New Hyde Park S/B/L: 33/386/6-34	Commercial property (self-storage facility) to be demolished	Potential drainage features and surface parking lot to accommodate New Hyde Park Road grade crossing elimination (Option 1).
167 School Street, New Cassel S/B/L: 10/243/36, 51, 52	Industrial property (light manufacturing and warehouse) to be demolished	Accommodate potential drainage and access for School Street grade crossing elimination.
117 Urban Ave., New Cassel S/B/L: 11/174/63-66	Industrial property (auto repair) to be demolished	Accommodate potential drainage and access for Urban Avenue grade crossing elimination.

Table 1-10
Summary of Anticipated Partial Property Acquisitions

Parcel Location	Property Type	Need for Acquisition
1401 Fourth Ave., New Hyde Park S/B/L: 33/556/14-15	Commercial property (no impact to building)	Retaining wall for new third track / station platform
1403 Fourth Ave., Garden City S/B/L: 33/556/16-19	Commercial property (no impact to building)	Retaining wall for new third track / station platform
Main Street, Mineola S/B/L: 9/423/2, 103, 115, 314	Commercial property (no impact to building)	Local road improvements and elevator/stairs to accommodate Main Street grade crossing elimination (Option 1)
199 Second St., Mineola S/B/L: 9/423/4-6, 10	Commercial property (no impact to building)	Access road to accommodate Main Street grade crossing elimination (Option 1)
80 Main St., Mineola S/B/L: 9/426/5	Commercial property (no impact to building)	Access road to accommodate Main Street grade crossing elimination
63-65 Willis Ave., Mineola S/B/L: 9/129/232	Commercial property (impacts on strip of parking lot)	Elevators and stairs at new pedestrian bridge for Willis Avenue grade crossing elimination
Front Street, Mineola S/B/L: 9/417/518	Commercial property	Roadway widening for Willis Avenue grade crossing elimination (Options 1 and 2)
165 Second St., Mineola S/B/L: 9/437A/461	Commercial property (no impact to building)	Required for LIRR equipment and access
150 & 156 School St., New Cassel S/B/L: 10/61/5064-5065	Commercial property (no impact to buildings)	School Street grade crossing elimination (Options 1A and 1B)
120 Rushmore Ave., New Cassel S/B/L: 11/174/16-17	Industrial property (no impact to building)	Driveway reconstruction (Urban Avenue Options 1A and 1B)

Table 1-11
Summary of Anticipated Permanent Easements

Parcel Location	Property Type	Need for Acquisition
1500 Plaza Ave., New Hyde Park S/B/L: 33/571/12-13	Commercial property	Retaining wall tie backs to accommodate New Hyde Park Road grade crossing elimination (Options 1 and 2)
1417 Plaza Ave., New Hyde Park S/B/L: 33/387/75	Residential property	Retaining wall construction to accommodate New Hyde Park Road grade crossing elimination (Option 2)
115 New Hyde Park Rd., New Hyde Park S/B/L: 33/386/6-34	Commercial property	Retaining wall and sidewalk construction to accommodate New Hyde Park Road grade crossing elimination (Option 2)
Main St., Mineola S/B/L: 9/423/2, 11-13, 16	Commercial property	Retaining wall construction to accommodate Main Street grade crossing elimination (Option 2)
63-65 Willis Ave., Mineola S/B/L: 9/129/232	Parking Lot	Elevator and stairs at new pedestrian bridge (Willis Avenue Options 1 and 2)
79 Main St., Mineola S/B/L: 9/423/214	Commercial	Retaining wall tie back to accommodate Main Street grade crossing elimination (Option 2)
Main St., Mineola S/BL: 9/423/2, 115, 314	Commercial	Retaining wall tie back to accommodate Main Street grade crossing elimination (Option 2)
147 Second St., Mineola S/B/L: 9/437A/460	Commercial	Required for driveway access to LIRR equipment
165 Second St., Mineola S/B/L: 9/437A/461	Commercial	Required for LIRR equipment and access
109 Urban Ave., New Cassel S/B/L: 11/174/ 59-62	Industrial	Driveway and retaining wall construction to accommodate Urban Avenue grade crossing elimination
Note: No impacts to buildings would result from any of these permanent easements.		

Table 1-12
Summary of Anticipated Public ROW Impacts

Parcel Location	Property Type	Need for Acquisition
Mineola S/B/L: 423/113,212,213	New York State-owned property	Parking garage (Main Street grade crossing elimination Option 2)
Mineola S/B/L: 426/7	New York State-owned property	Parking garage (Main Street grade crossing elimination Option 2)
Mineola S/B/L: 474/134,140	Municipal property (no impact to parking garage)	Required for new platforms at Mineola station
Garden City Park S/B/L: A/8E	Town of North Hempstead property	Required for LIRR equipment
Garden City S/B/L: 505/1-6	Municipal property	Retaining wall and sidewalk construction to accommodate New Hyde Park Road grade crossing elimination (Option 2)
Garden City S/B/L: 213/76	Municipal property	Retaining wall and sidewalk construction to accommodate New Hyde Park Road grade crossing elimination (Option 2)
Garden City S/B/L: 556/20-24	Municipal property	Station platform at New Hyde Park station to accommodate new third track (Options 1 and 2) and Kiss-and-Ride (Option 2)

CONSTRUCTION PHASING

Final design and commencement of construction of the Proposed Project is anticipated to commence in 2017. Construction of the entire Proposed Project would take approximately four years, depending on the schedule agreed upon with the design-build contractor. However, as detailed in Chapter 13, "Construction," the Proposed Project would be phased in such a manner that construction activities in any given area would occur over a much shorter period. Expedited construction techniques for both the construction of the third track segments as well as the grade

crossing eliminations would result in shorter construction periods of the Proposed Project. For example, LIRR is targeting approximately six months for construction of grade crossings requiring complete temporary road closures. Through expedited construction measures, LIRR has slated nine months for work at grade crossings requiring only partial temporary road closure. Construction of the Proposed Project would entail varying temporary disruptions to rail service, certain passenger rail stations, and local traffic operations.

For the purpose of analyzing construction impacts, this DEIS conservatively assumes that the Proposed Project construction would take approximately four years, commencing in 2017 and completed in 2021. As is typical with a major transportation project, two separate build years are used for DEIS analysis purposes. This approach provides a comprehensive and conservative analysis of environmental impacts for both the 2020 and 2040 build years. Some project elements such as the grade crossings may be completed before 2020, and some would be completed shortly thereafter.

Under the Proposed Project, a number of measures to minimize community impacts would be implemented, such as continued communication with the community, coordination with local school districts, coordination with local emergency service providers, measures to ensure community safety and quality of life, and measures to minimize construction-related environmental impacts. A complete list of measures is included in Chapter 13, "Construction."

PROJECT COST

The construction cost estimate for the LIRR Expansion Project is approximately $2 billion, with funding to come from the MTA and other State sources

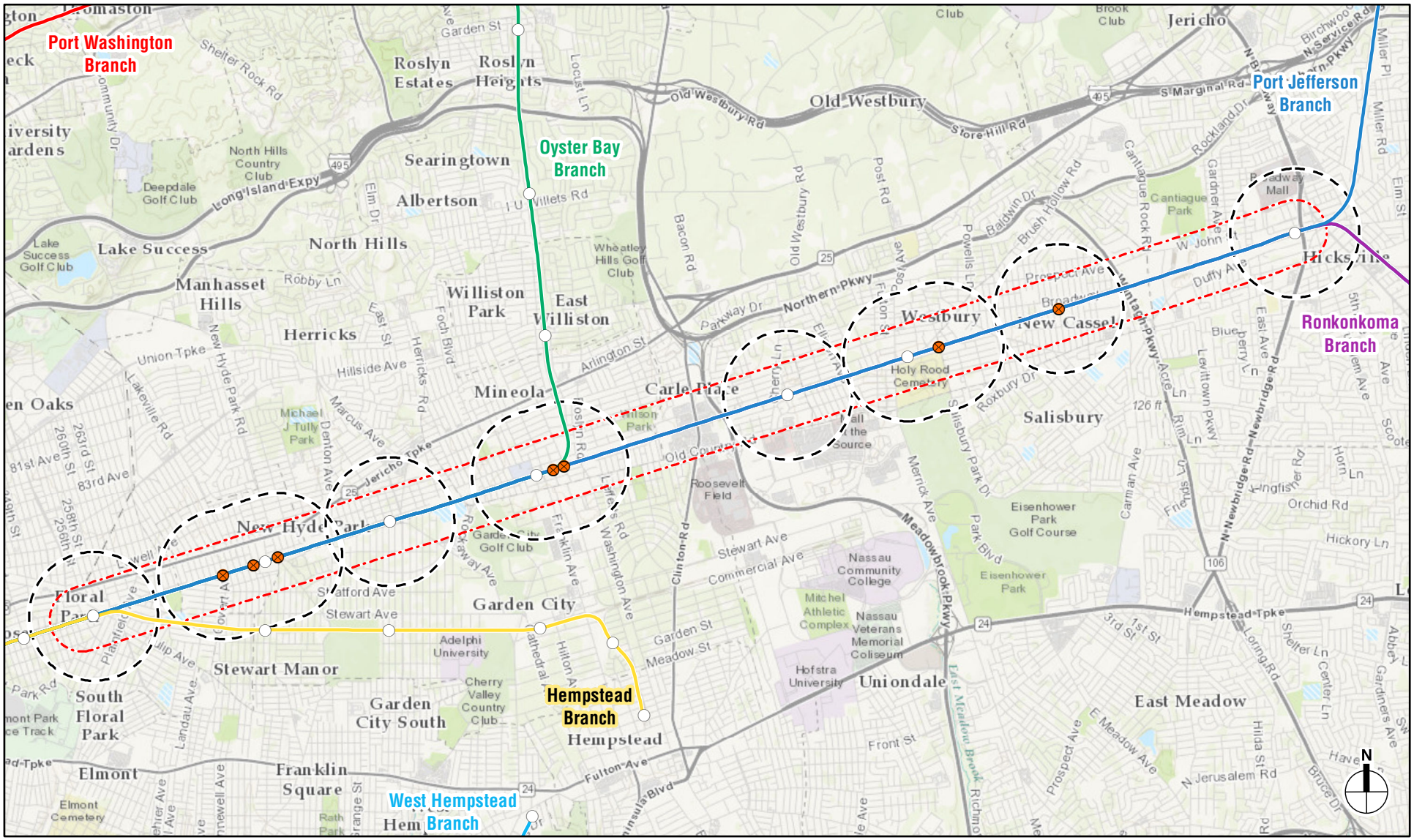
E. PROJECT CORRIDOR AND STUDY AREAS

Information collected and presented in this DEIS relate principally to the Main Line "Project Corridor," as shown on **Figure 1-57**. The Project Corridor comprises the railroad ROW, station areas, and grade crossings from Floral Park to Hicksville. The "Study Area" comprises an approximately ¼-mile buffer along the ROW and ½-mile area around the station areas and grade crossings. Certain analyses, such as those for indirect impacts and environmental justice, require information from an expanded study area whereas other analyses include a narrower study area. Each chapter of this DEIS describes the Study Area used for that analysis.

F. SUMMARY OF REQUIRED APPROVALS

- MTA/LIRR issuance of SEQRA Findings and final determination relating to the Proposed Project
- Potential property acquisition by the State of New York under the New York State Eminent Domain Procedure Law
- Empire State Development (ESD) to provide assistance to affected businesses to relocate within their communities where feasible
- NYSDOT approval of modifications to the roadway network
- NYSDOT approval of petition to alter grade crossings pursuant to §91 of the New York Railroad Law

11/20/2016



LIRR Expansion Project
Floral Park to Hicksville

Project Corridor/Study Area
Figure 1-57

- New York State Department of Environmental Conservation (NYSDEC) State Pollutant Discharge Elimination System (SPDES) General Permit for Construction Activity (GP-0-15-002)
- New York State Office of Parks, Recreation and Historic Preservation (OPRHP) consultation on parks and historic resources
- LIPA/PSEG-LI approval of overhead utility relocations
- Consultation with the following entities with regard to aspects of the work within each locality, and street opening permits in connection with grade separation and/or utility installation work:
  - Nassau County
  - Town of Hempstead
  - Town of North Hempstead
  - Town of Oyster Bay
  - Village of Floral Park
  - Village of New Hyde Park
  - Village of Garden City
  - Village of Mineola
  - Village of Westbury

✷