

# Q52/53 Woodhaven/Cross Bay Blvd SBS

Progress Report – Fall 2018



# Executive Summary

- On November 12<sup>th</sup>, 2017 the Q52/Q53 Select Bus Service (SBS) began service from Woodside to the Rockaways, primarily along Woodhaven and Cross Bay Boulevards
- At 11 miles long and one of the only direct north-south roadways in Queens, Woodhaven and Cross Bay Boulevards provide critical connections for bus riders and drivers alike.
- The redesign of the corridor has brought Select Bus Service improvements to the 30,000+ daily bus riders on the corridor, while working to insure impacts to drivers are minimized and allowing for safe and even traffic flow.
- This corridor has also historically been among the most dangerous in Queens, with 129 people, including 34 pedestrians, killed or seriously injured between 2012 and 2016.
- Crashes have declined, but recently two tragic deaths at the intersection of Jamaica Ave & Woodhaven Blvd show us we have more to do and DOT is committed to continued investments in pedestrian and vehicular safety.

# Executive Summary (continued)

- The new Q52/Q53 Select Bus Service included many improvements to bus service and results include:
  - 5-8% increase in Q52/Q53 ridership
  - Reduced bus bunching and improved schedule adherence
  - 82-87% prefer Q52/Q53 SBS to the service it replaced
  - 9-10% improvement in Q52/Q53 SBS travel times
  - In most segments, bus speeds improved, however north of Metropolitan Avenue, buses have gotten slower, while general traffic has gotten faster.
- Vehicular travel times have changed little from end to end, however some segments are slower than before the project, and some segments are faster.
  - The corridor is now 3 consistent general travel lanes in each direction, where before the project merging create choke points.
  - Travel times have slowed most between Rockaway Blvd and Jamaica Ave northbound in the AM (1.7 minutes slower) and between Rockaway Blvd and 157<sup>th</sup> Ave southbound in the PM (2 minutes slower).
  - Travel times have improved most between Jamaica and Metropolitan Aves northbound in the AM (2.2 minutes faster) and between Queens Blvd and Metropolitan Ave southbound in the PM (1.7 minutes faster).

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## Project Background

# 1

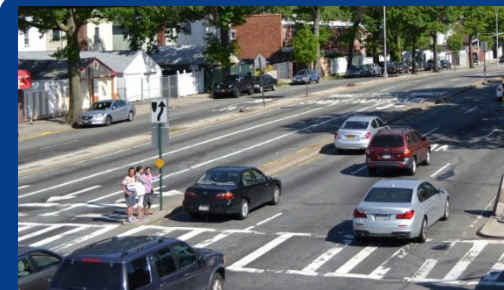


# Why Woodhaven / Cross Bay Blvds?

- **Bus service was unreliable and slow, trips were long, and many residents rely on transit for their commutes**
  - End to end travel times were 55 to 85 minutes, with buses stopped in traffic or dwelling at stops nearly half that time.
  - 60% of the 400,000 residents within a 15-minute walk of the corridor commute by transit, and 43% of those households do not own a car.
- **These were high crash corridors with difficult pedestrian crossings**
  - Woodhaven and Cross Bay Blvds are Vision Zero Priority Corridors with some of the highest crash and fatality rates in the city. From 2012 to 2016, 129 people, including 34 pedestrians, were killed or seriously injured on the corridor, with 2 others killed in 2018.
  - Speeding issues persisted in less congested parts of the corridor, despite 2015 speed limit reductions.
- **Congestion led to long and difficult trips for buses and drivers and hanging road widths made the corridor difficult to navigate**
  - As one of the few major north-south streets in central Queens, the corridor provides connections to the Belt Pkwy to the south and the Long Island Expy to the north for regional travelers, but was subject to local delays at key chokepoints.
  - Lane drops forced traffic to merge at Metropolitan Av, Union Turnpike, and Rockaway Blvd intersections, and turning movements limited green time for north-south traffic.



Slow boarding & crowding at popular stops



Dangerous pedestrian crossings and speeding issues



Inconsistent roadway design and traffic patterns

# Goals of the SBS Project

Convert Q52/Q53 to Select Bus Service and transform Woodhaven and Cross Bay Boulevards into complete streets where:

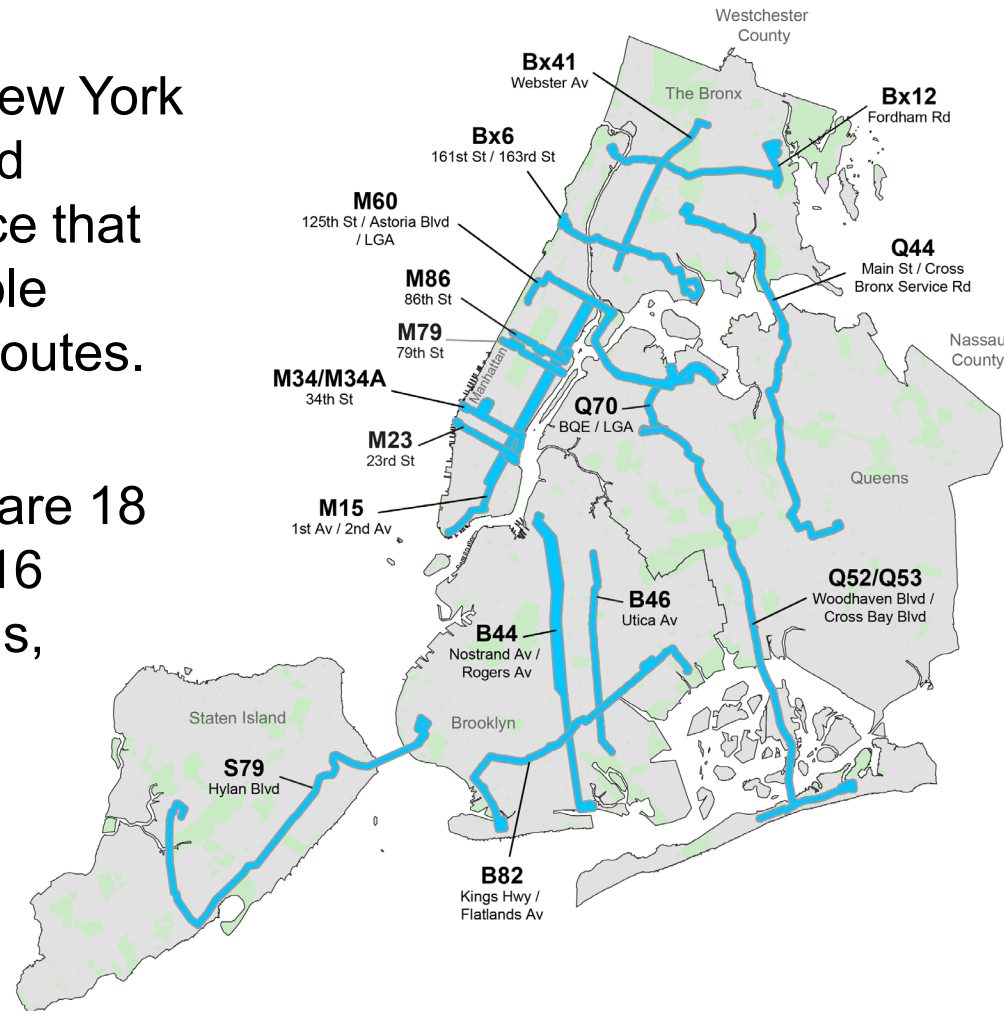
- Buses operate quickly and reliably
- Bus customers safely and easily access bus stations
- Pedestrians are comfortable walking along and crossing the street
- Drivers get where they need to go at a reasonable and safe speed



Original concept rendering for main road bus lanes with safety improvements

# Select Bus Service

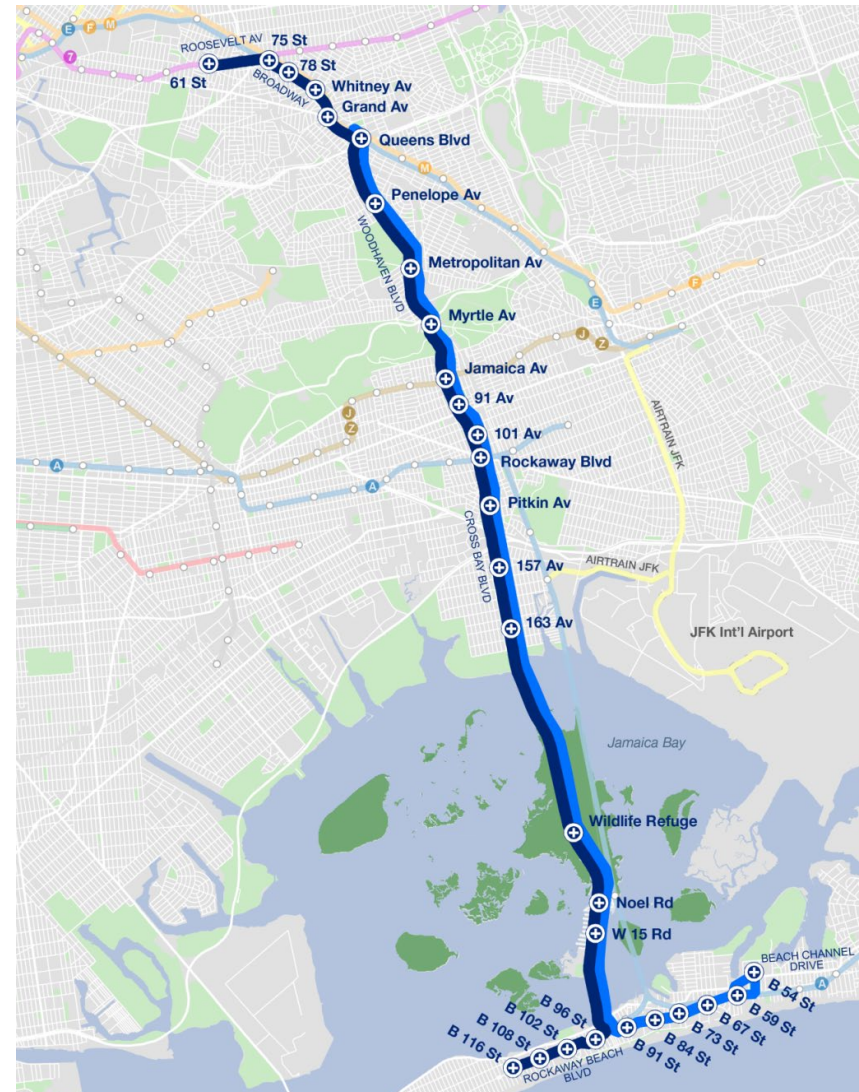
- Select Bus Service (SBS) is New York City's brand name for bus rapid transit: an improved bus service that offers fast, frequent, and reliable service on high-ridership bus routes.
- As of October 1<sup>st</sup>, 2018, there are 18 Select Bus Service routes on 16 corridors serving all 5 boroughs, including the Q52/Q53 SBS.





# The Q52/Q53 Route

- About 20,000 daily bus riders on the Q52/Q53, and 30,000+ riders on the entire corridor
- 14 miles long from Woodside to the Rockaways
- Provides connections to 8 subway lines, over 20 bus routes, and the LIRR
- Converted to SBS on November 12<sup>th</sup>, 2017:
  - Q52 extended further east in Rockaways to Beach 54<sup>th</sup> St in April 2017 in anticipation of SBS launch
  - Bus stop consolidation in the Rockaways and Broad Channel to rationalize stop spacing
  - New SBS stops added at 101<sup>st</sup> Av and Pitkin Av. New stop at 91<sup>st</sup> Av replaced Atlantic Av stop





# Community Outreach

## 2014

- CAC Meeting #1
- Queens Metropolitan High School
- Community Planning Workshop
- CB 10 Full Board
- Design Workshop
- On-street bus rider outreach
- On-street bus rider outreach
- Rockaways Bus Planning workshop
- CAC Meeting #2
- Design Concepts Public Open House

## 2015

- CB 9 Transportation Committee
- Congressional Tour of the Corridor
- CAC Meeting #3
- Public Design Workshop #1 – Woodhaven Blvd (Union Tpke and Rockaway Blvd)
- Public Design Workshop #2 – Woodhaven Blvd (Queens Blvd & Union Tpke)
- Public Design Workshop #3 – Cross Bay Boulevard
- Public Design Workshop #4 – Broad Channel & the Rockaways
- CB 6 Full Board

## 2015 continued

- Broad Channel Civic Association
- CB 14 Transportation Committee
- CB 9 Full Board
- CB 5 Leadership - Field Meeting
- CAC Meeting #4
- Rockaway Beach Civic Association
- Howard Beach – Lindenwood Civic Association
- Woodhaven BID
- Bus Tour: Senator Addabbo, Assemblymember Miller, Council Member Crowley
- CB 5 Transportation Committee
- CAC Meeting #5

## 2016

- CB 9 Full Board
- CB 6 Transportation Committee
- Bus Tour: Senator Addabbo
- CAC Meeting #6
- Spring Public Open Houses
- CB 9 Full Board
- Broad Channel Civic Association

## 2017

- CB 14 Full Board



Community Advisory Committee



Public Workshops / Open Houses



Community Board & Stakeholder Meetings

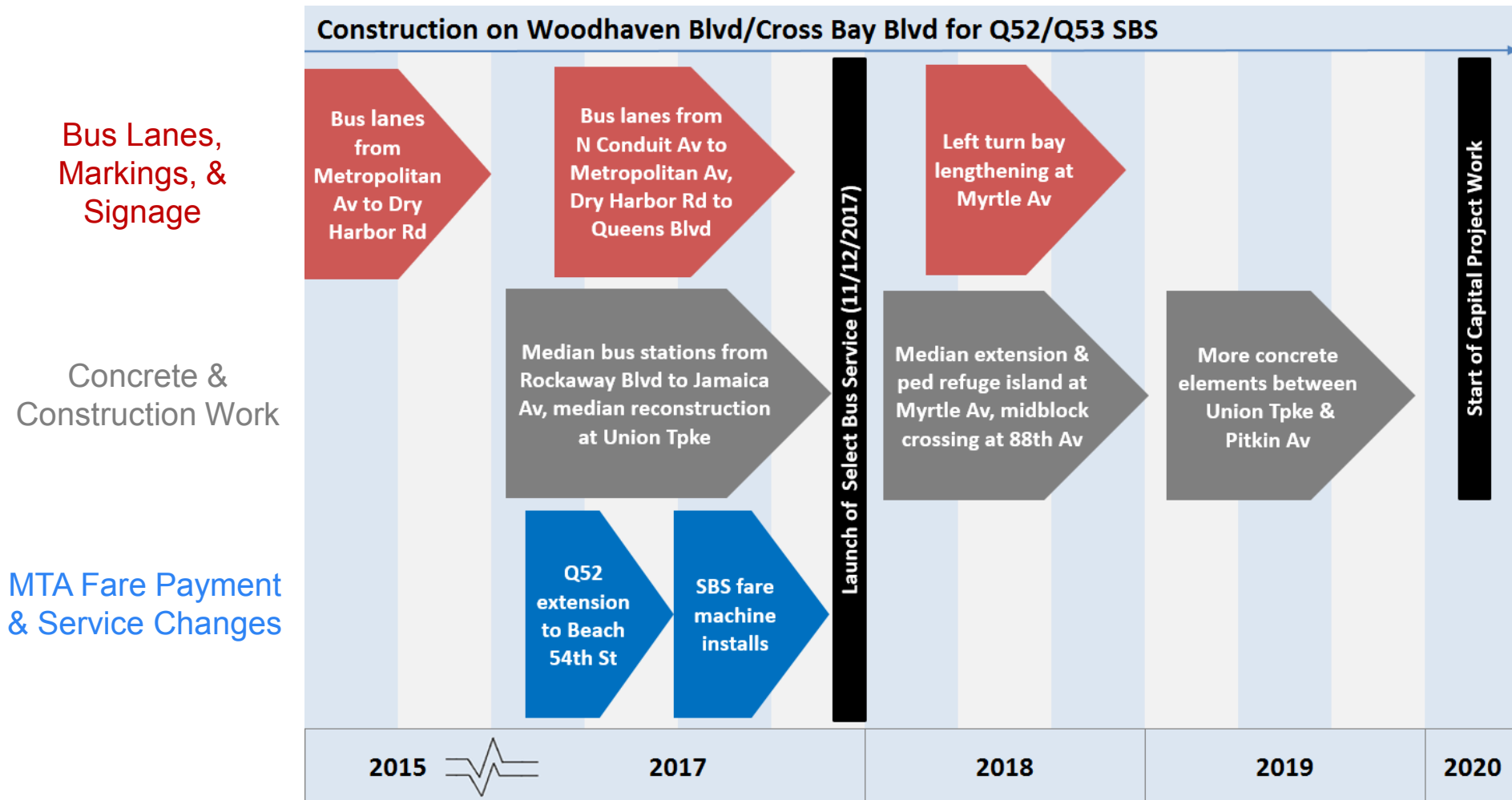
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## Project Implementation

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# Implementation Timeline

Q52/Q53 Select Bus Service launched on November 12<sup>th</sup>, 2017



# Conversion to SBS



Real-time information



Bus lanes & median stations



Off-board fare collection



Pedestrian safety upgrades



# Project Corridor

## A: Roosevelt Av / Broadway

- SBS station elements only

## B: Woodhaven / Cross Bay Blvd

- SBS station elements
- Three lanes of general traffic and a bus lane in each direction
- Median bus stations where service roads exist (between Park Lane South and Rockaway Blvd)
- Signal timing optimization
- Pedestrian safety treatments
- Parking restored where possible
- Left turns restricted at Union Tpke, 101<sup>st</sup> Av, and Rockaway Blvd

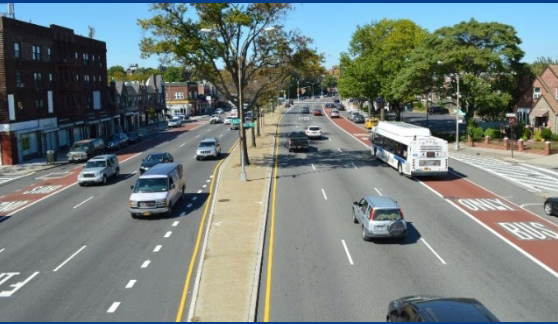
## C: Howard Beach / Broad Channel / Rockaways

- SBS station elements only





# Project Work



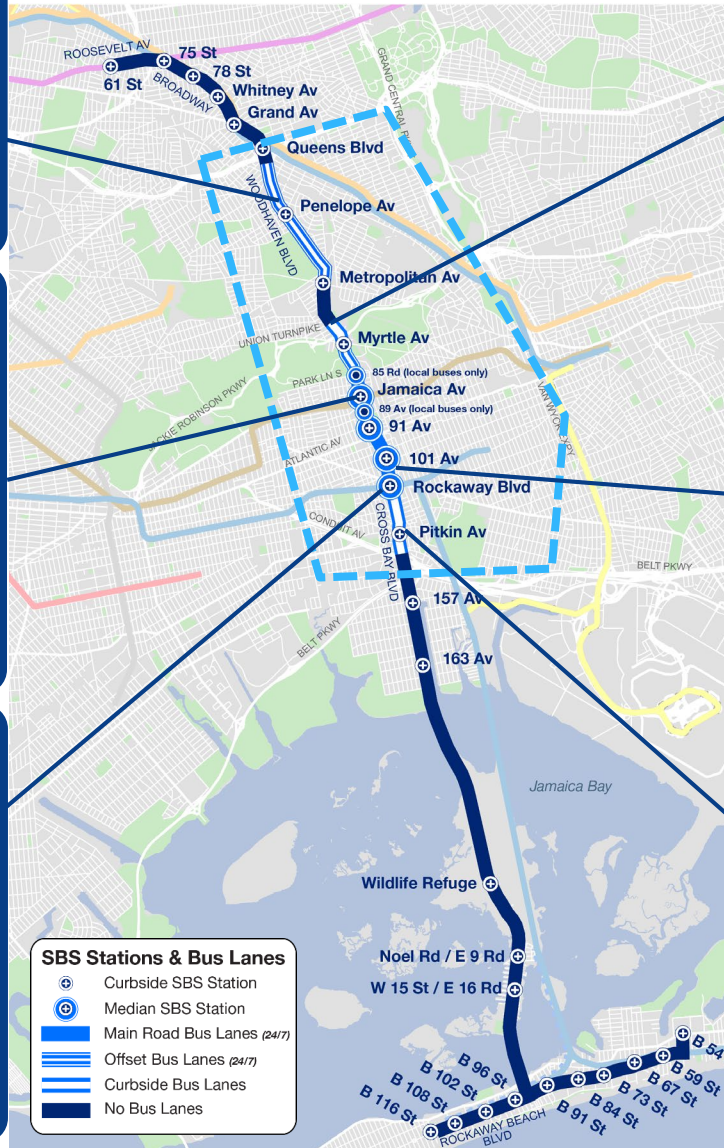
Offset bus lanes preserve parking, and improve bus speeds in sections with no service roads



Longer turn bays keep through lanes clear



Main line bus lanes & median stations eliminate slowdown caused by right turning vehicles, and parking



Median tip extension for pedestrian safety



New slip lanes allow vehicles to more easily access service roads



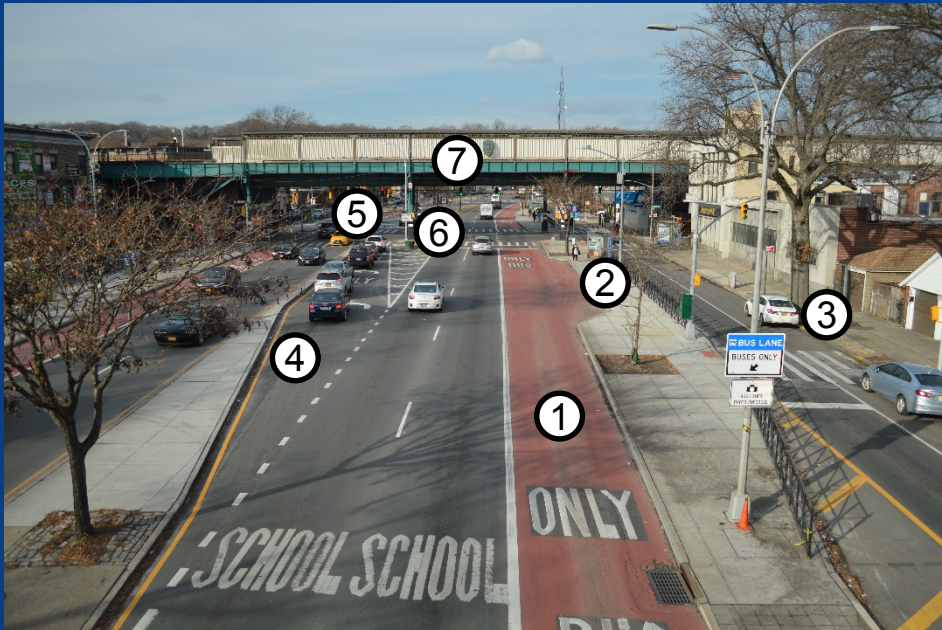
New intersection adds a pedestrian crossing and calms traffic



# Woodhaven Blvd & Jamaica Av

Historically, one of the highest crash intersections on the corridor, with 6 pedestrians killed or seriously injured (4 killed) between 2012 and 2016.

## Intersection Improvements



1. Main road, median-adjacent bus lanes provide dedicated space for buses and calm traffic
2. Widened medians with bus stations and pedestrian refuges at crosswalk with tactile warning strips for ADA accessibility
3. Added service road crossings
4. Lengthened & physically separated turn bays improve alignment and keep left turners out of the way of through traffic
5. Northbound left turn traffic calming with flexi-bollards and rubber speed bumps
6. Leading pedestrian interval gives additional protected crossing time
7. Overhead lighting upgrades

44% reduction in crashes resulting in injuries at this intersection since SBS implementation, and additional safety improvements since two 2018 pedestrian deaths. This intersection is also among the targeted locations for NYPD enforcement during the ongoing Dusk & Darkness initiative.

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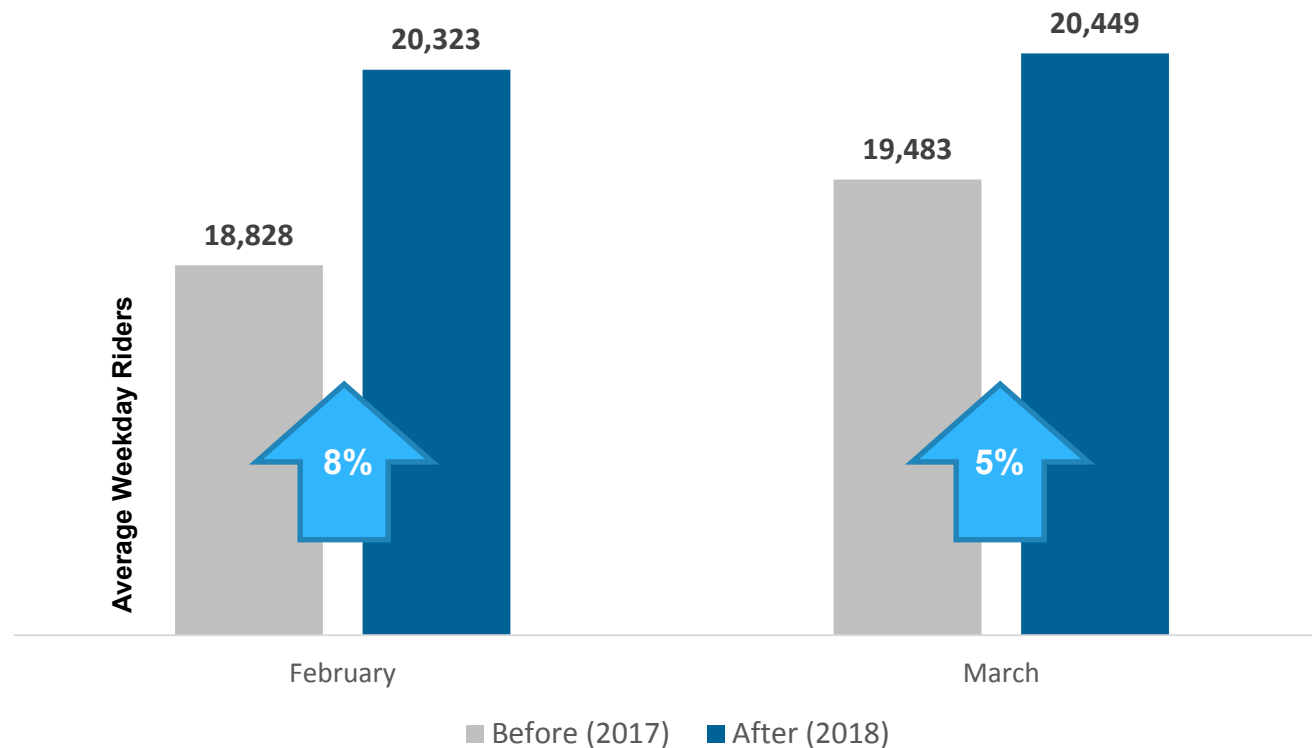
## Project Results & Analysis

# 3



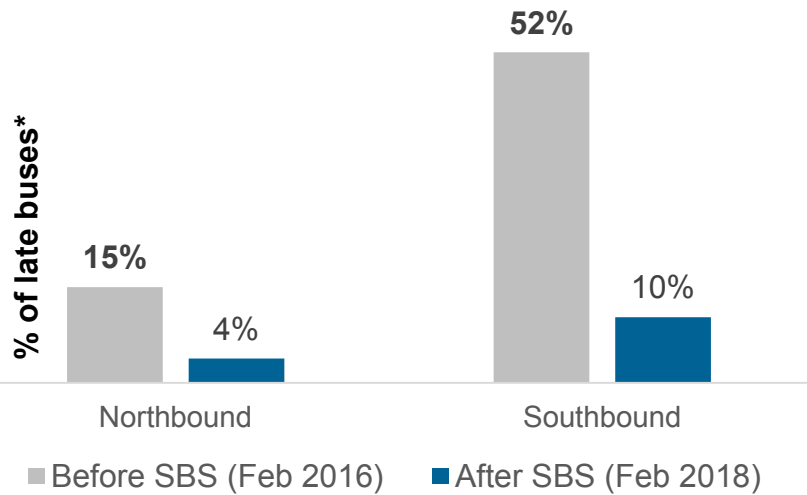
# Bus Ridership

- 5-8% increase in Q52/Q53 average weekday ridership since implementation (from February-March 2017 to February-March 2018).



# Bus Service Performance Metrics

## On-Time Performance



\* 'Late' defined as arriving 5 minutes or more after scheduled arrival time

## Bus Bunching

Time	Direction	Route	Before SBS (Feb 2016)	After SBS (Feb 2018)
6-10 AM	Northbound	Q52	0.7%	0.3% ▼
		Q53	8.3%	4.3% ▼
3-7 PM	Southbound	Q52	3.6%	0.8% ▼
		Q53	7.4%	2.7% ▼

Bunching defined as two or more buses heading in the same direction departing a stop within 90 seconds of each other

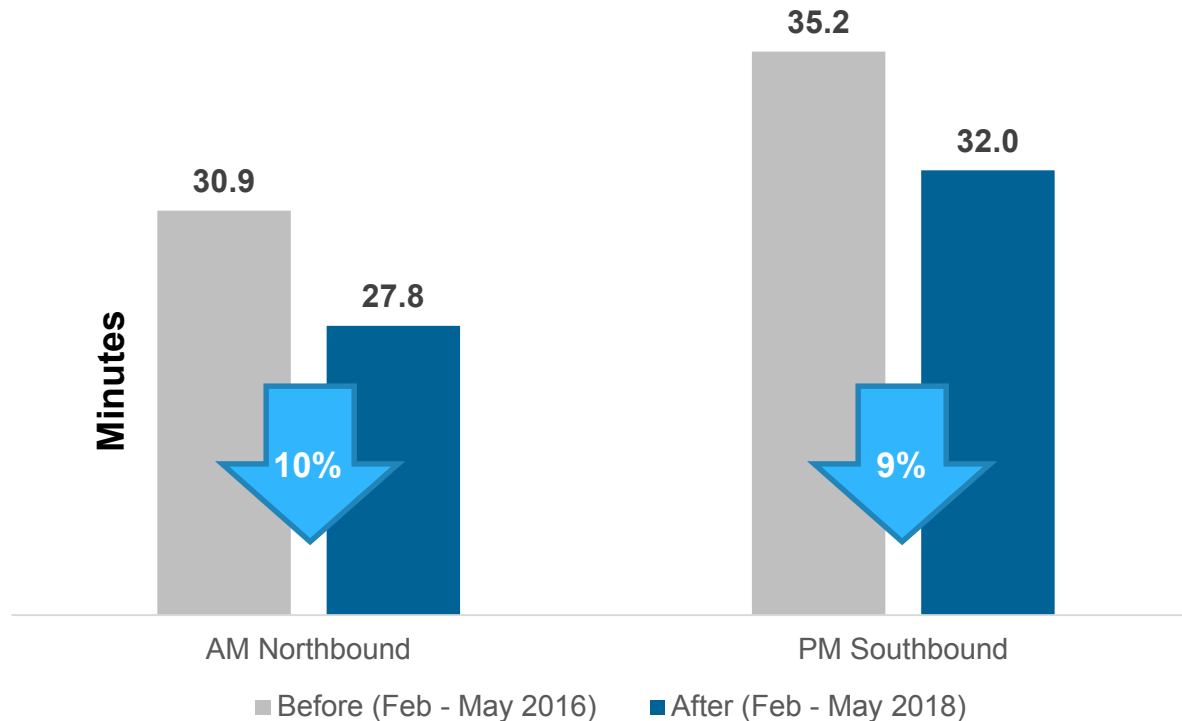
- Poor on-time performance, especially going southbound in the PM, was common before SBS, and has greatly improved.
- SBS implementation has also reduced bus bunching, especially in the middle portion of the route.

# Bus Customer Satisfaction

- 1,400 riders surveyed in spring 2018
- 82% to 87% of respondents believe the SBS is better than the Q52/Q53 Limited service it replaced.
- The majority of respondents believe the SBS:
  - is more frequent
  - is faster
  - is less crowded
  - has better amenities at bus stops

# Bus Travel Time

Corridor: 156<sup>th</sup> Av to Queens Blvd



> 3 minute  
savings in  
each  
direction

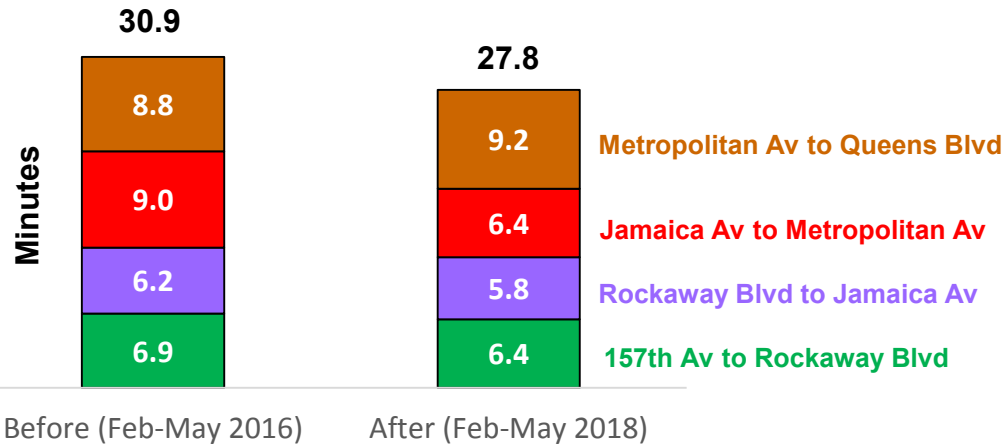
- Bus travel times have improved 10% in the northbound direction during the AM peak, and 9% in the southbound direction during the PM peak
- This equates to more than a 3 minute travel time savings for riders traveling the majority of the route in either direction.



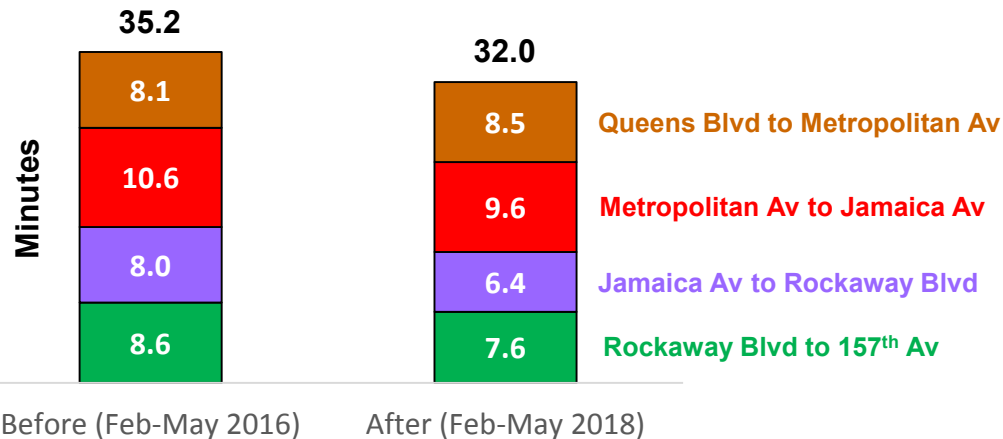
# Bus Travel Times

## By Segment

### Northbound (7-10 AM)



### Southbound (4-7 PM)



# Bus Travel Time Discussion

- **Queens Blvd to Metropolitan Av:**
  - Travel times worsened despite offset bus lanes (while car travel times improved). MTA & DOT are looking into bus scheduling issues in this section.
- **Metropolitan Av to Jamaica Av:**
  - Travel times improved 29% (2.6 minutes) northbound and 9% southbound due to the addition of bus lanes, turn restrictions, and northbound signal improvements at the Union Tpke chokepoint
- **Jamaica Av to Rockaway Blvd:**
  - Travel times improved 6% northbound and 20% southbound (1.6 minutes) due to the addition of main road bus lanes, median stations, southbound signal improvements at Rockaway Blvd, and the route's use of the Atlantic Av flyover
- **Rockaway Blvd to 157<sup>th</sup> Av:**
  - Travel times improved 7% northbound and 12% southbound due to geometry improvements approaching Rockaway Blvd, and curbside bus lanes north of Pitkin Av.
- Off-board fare collection reduces dwell time at stops and improves bus travel times corridor-wide

Offset bus lanes implemented in 2015 north of Metropolitan Av



Bollard-protected bus lanes at Park Ln S allow bus to bypass right turners



Bus using Atlantic Av flyover bypassing service road intersections

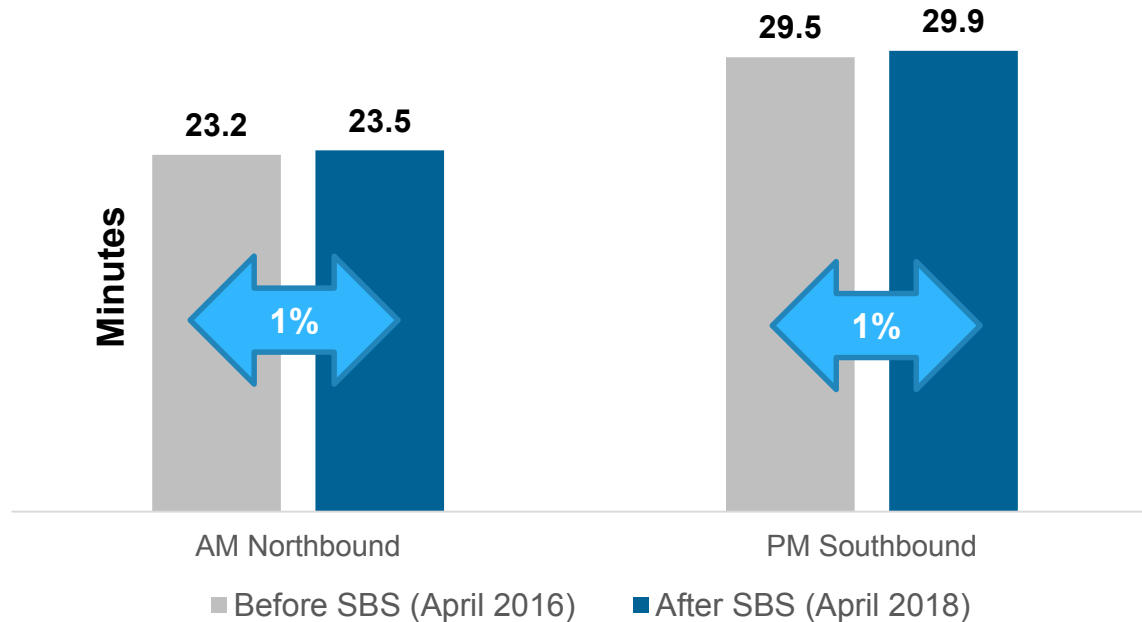


Bus using main road bus lane to bypass queues at Rockaway Blvd



# Car Travel Time

Corridor: 156<sup>th</sup> Av to Queens Blvd



Less than 30  
second travel  
time change  
in each  
direction

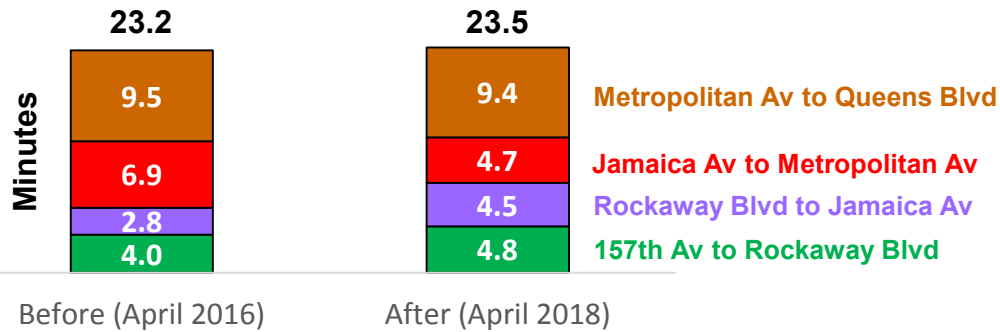
- Despite segment to segment variation (see next slide), overall car travel times remained almost identical before and after SBS implementation.
- DOT aims to continue monitoring signal progression changes made along the corridor to ensure timing is optimized for all users of all modes.



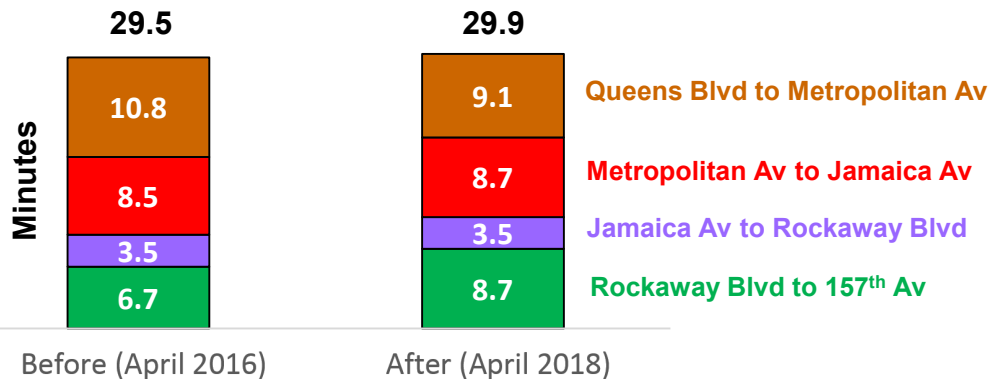
# Car Travel Time

## By Segment

### Northbound (7-10 AM)



### Southbound (4-7 PM)





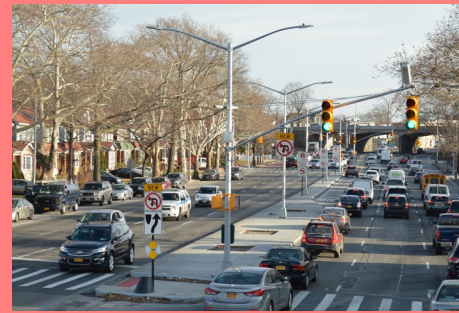
# Car Travel Time Discussion

- **Queens Blvd to Metropolitan Av:**
  - Travel times were mostly unchanged northbound, and improved 16% southbound due to more consistent geometry and improved southbound signal coordination.
- **Metropolitan Av to Jamaica Av:**
  - Travel times improved 32% northbound (2.2 minutes) due to additional northbound green time at Union Tpke, and were largely unchanged going southbound.
- **Jamaica Av to Rockaway Blvd:**
  - Large scale geometric changes and bus lanes have calmed traffic and worsened travel times for northbound vehicles by 60% (1.7 minutes), but have had no effect on southbound travel times due to a substantial increase in southbound green time at the Rockaway Blvd intersection.
- **Rockaway Blvd to 157<sup>th</sup> Av:**
  - Travel times worsened 20% northbound and 30% southbound (2 minutes) with minor geometric changes in this section. The new intersection at Desarc Rd has caused some increase in signal delay, and curbside bus lanes were added, mostly replacing daytime parking and not a travel lane.

Offset bus lanes and 3 travel lanes in each direction north of Metropolitan Av



Southbound turn restriction at Union Tpke has added green time for northbound traffic



Main line bus lanes calm traffic and reduce speeding



Intersection added at Desarc Rd improves pedestrian safety



# Traffic Safety

- Woodhaven Boulevard/Cross Bay Boulevard is a Vision Zero Priority Corridor with one of highest crash and fatality rates in the city. 129 people were killed or seriously injured on the corridor between 2012 and 2016.
- To address this, the SBS project added widened medians, pedestrian refuges, sidewalk extensions, additional crossing time, turn restrictions, and traffic calming throughout the corridor
- Since the implementation of Q52/Q53 SBS, there's been a 6% reduction in crashes resulting in injuries on the corridor (2016 v. 2018 month-month comparison)
- DOT is continuing to make safety improvements along the corridor

# Project Results

- Since the launch of Select Bus service:
  - Ridership has increased 5-8% on the Q52/Q53
  - Reduced bus bunching and improved schedule adherence
  - 82-87% prefer Q52/Q53 SBS to the service it replaced
  - 9-10% improvement in Q52/Q53 travel times,
  - ~1% change in general traffic corridor travel times
  - 6% reduction in crashes resulting in injuries corridor-wide, and additional safety measures taken since two 2018 pedestrian deaths at the Jamaica Av intersection
- Turn restrictions, signal timing improvements, and expanded turn bays have maintained travel time for general traffic.
- Off-board fare collection, bus lanes, and signal enhancements have improved bus travel times. Bus travel times improved most between Forest Park Dr and Rockaway Blvd, largely due to median bus lanes and the use of the Atlantic Avenue overpass.
- Slight traffic slowdown observed in southernmost section of the corridor where little change was made to the roadway's traffic capacity.

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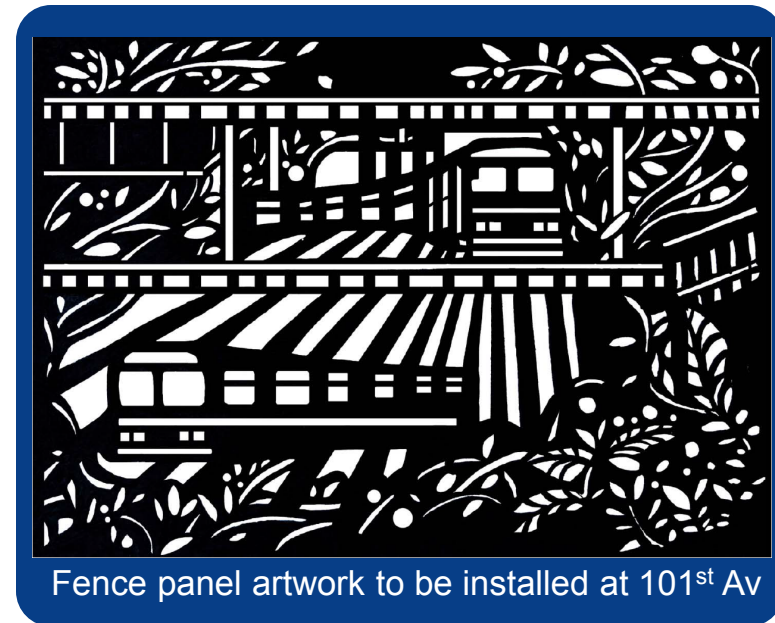
Next Steps

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# Upcoming Implementation

- Public Art Fencing
  - Will be installed at 4 SBS stations – Jamaica Ave, 91<sup>st</sup> Ave, 101<sup>st</sup> Ave, and Rockaway Blvd in Winter 2018/Spring 2019
- Transit Signal Priority
  - TSP Phase 1 (Metropolitan Av to Rockaway Blvd) will be implemented by end of 2018.
  - TSP Phase 2 (Roosevelt Av/61<sup>st</sup> St to Rockaway Beach Blvd/Beach 116<sup>th</sup> St) will be implemented by end of 2019
- 2018 - 2019 Street Improvement Project
- Multi-Phase Capital Project beginning in 2020



# 2018 - 2019 Project

- Queens Blvd to 165 Ave
- Additional safety improvements that could not be addressed in 2017 in-house project:
  - Extend left turn bays in some locations
  - Construct 11 median extensions with pedestrian refuges
  - Construct 5 new slips between service and main road on Woodhaven Blvd
  - Install curbside signalized bus queue jumps along Broadway

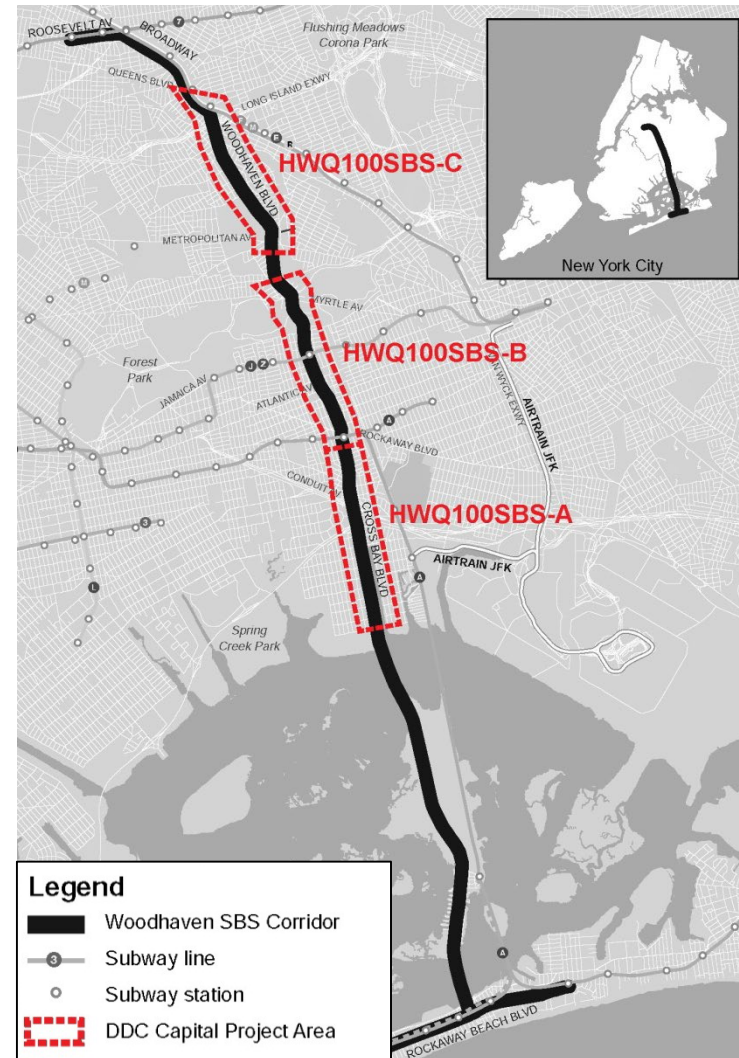


*Key locations will benefit from additional pedestrian refuges and lengthened turn bays*

# Future Capital Project Phasing

Segment	Scope
<b>A</b>	Cross Bay Blvd from 165 Ave to 107 Av (currently in design)
<b>B</b>	Woodhaven Blvd from 107 Ave to Union Tpke
<b>C</b>	Woodhaven Blvd from 73 Ave to Queens Blvd; Hoffman Dr from Woodhaven Blvd to Queens Blvd

- Capital project will construct additional bus bulbs, medians and median tip extensions, and sidewalk extensions.
- Street resurfacing and some street reconstruction are also planned
- DOT will return to Community Boards as design progresses



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Before & After Photos

5



# Before: Woodhaven Blvd & Jamaica Av





## After: Woodhaven Blvd & Jamaica Av





# Before: Woodhaven Blvd & 101 Av





# After: Woodhaven Blvd & 101 Av





# Before: Woodhaven Blvd & Rockaway Blvd





# After: Woodhaven Blvd & Rockaway Blvd





# Before: Cross Bay Blvd & Pitkin Av





# After: Cross Bay Blvd & Pitkin Av

