



# 7<sup>TH</sup> AVE & 8<sup>TH</sup> AVE, 39<sup>TH</sup> ST – 66<sup>TH</sup> ST

Brooklyn Community Board 7

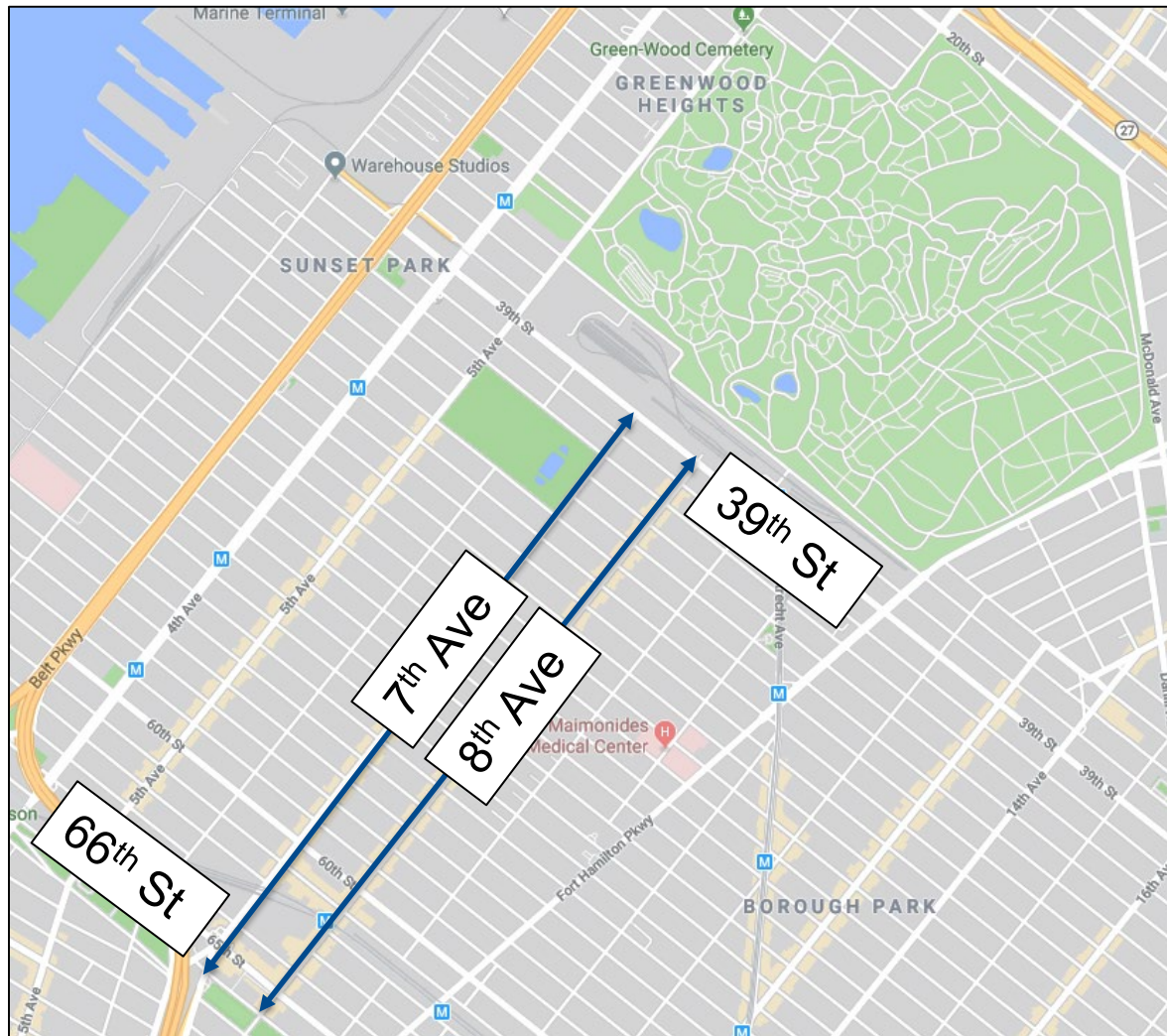
October 5, 2021





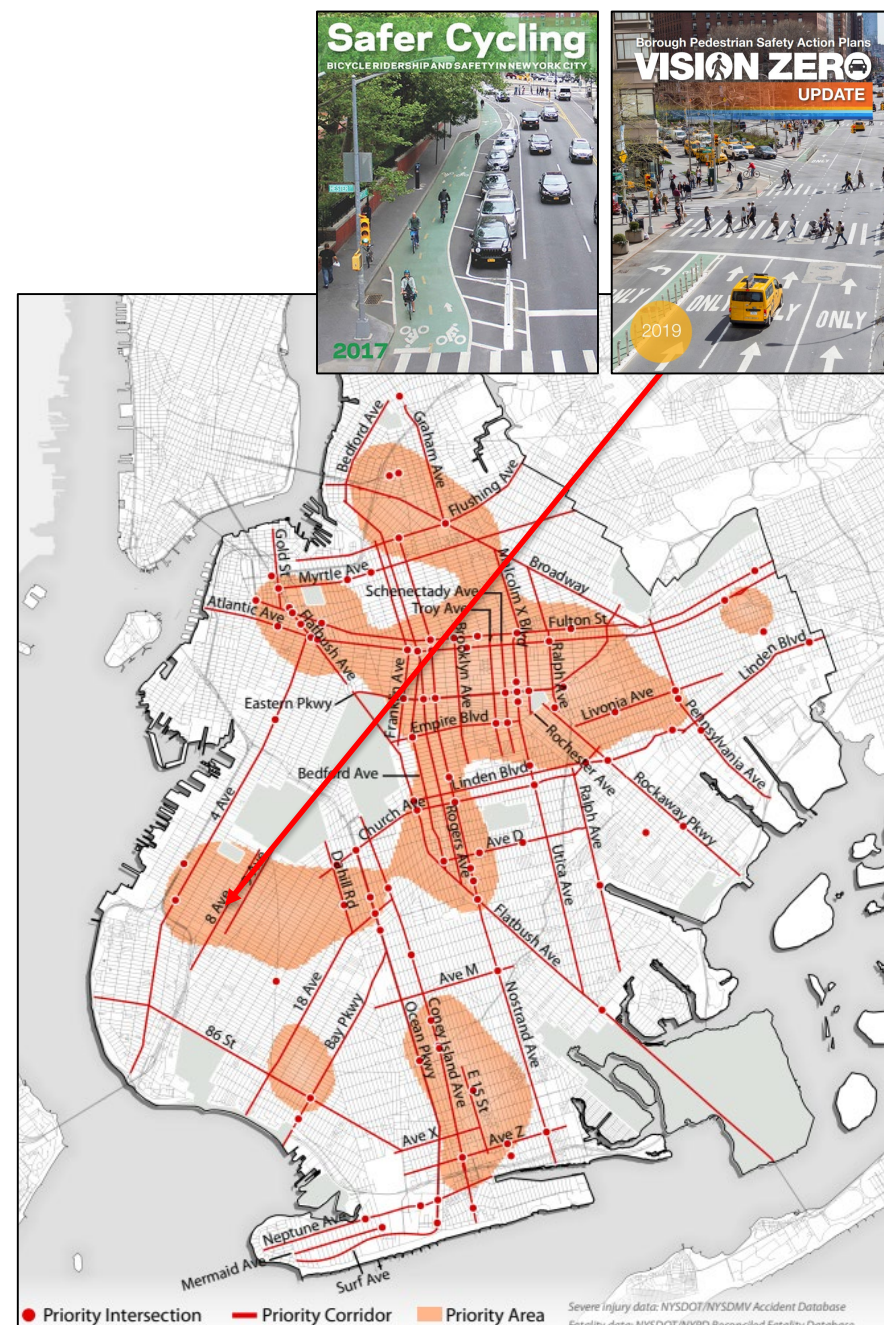
# LOCATION

- 7<sup>th</sup> Ave – 66<sup>th</sup> St to 39<sup>th</sup> St
- 8<sup>th</sup> Ave – 66<sup>th</sup> St to 39<sup>th</sup> St
- Commercial heart of Sunset Park's Chinatown
- B70 bus runs on 8<sup>th</sup> Avenue
- Existing two-way shared bike lane on 7<sup>th</sup> Ave



# BACKGROUND

- 8<sup>th</sup> Ave is a Vision Zero Priority Corridor
- 7<sup>th</sup> Ave has comparable crash and injury data
- Located within the Borough Park Senior Pedestrian Focus Area and a Vision Zero Priority Area
- 8<sup>th</sup> Ave is within a bike priority district (CB 12)
- Project area is within Community Boards 7, 10, and 12
- Community Board 7 requested study of one-way conversions in 2003 and 2015





# CURRENT STREET USAGE

## Commercial heart of Chinatown

- Double parking, frequent loading, and many trucks result in lane blockages frequently reducing the road to one travel lane, leading to unpredictable movements, congestion, and slow bus speeds (<4.0 MPH)

## Pedestrian corridor

- High pedestrian volumes, narrow sidewalks & street vendors result in crowded sidewalks and pedestrian spillover onto the street

## Cyclist activity

- North/south connection in Sunset Park. Commuter, recreational, and commercial cyclists



Pedestrians, cars, trucks, cyclists, and buses compete for space on 8<sup>th</sup> Ave



# CRASH TYPES/ANALYSIS

- Vehicle occupant injuries are a result of congested, narrow streets
  - Sideswipes and head-on collisions are 50% more frequent on these corridors compared to the rest of Brooklyn
- The breakdown due to congestion creates unpredictability and non-compliance resulting in pedestrian injuries
  - Many points of conflict are challenging to navigate due to congestion
- Lack of adequate cycling facilities compromises cyclist safety on corridors
  - High frequency of failure to yield crashes, especially on right turns
  - Disproportionate number of midblock cycling injuries



Narrow two way streets and high pedestrian volumes are some of the frequent causes of crashes on 7<sup>th</sup> Ave and 8<sup>th</sup> Ave



# CORRIDOR INJURIES

- Pedestrian and cyclist injuries represent more than half of total injuries and severe injuries on the corridors
- Traffic injuries to children and seniors on the corridors are 40% more common than borough average (35% vs 25%)
- Between 39<sup>th</sup> and 66<sup>th</sup> St, 8<sup>th</sup> Avenue is tied for the highest number of pedestrians killed or severely injured of all the north/south streets within the Community Boards

Injury Summary, 2014-2018 (5 Years)

	Total Injuries	Severe Injuries	Fatalities	KSI
Pedestrian	233	17	1	18
Bicyclist	32	2	0	2
Motor Vehicle Occupant	242	15	0	15
Total	507	34	1	35

Source: Fatalities: NYCDOT, Injuries: NYSDOT KSI: Persons Killed or Severely Injured



A crowded sidewalk on 8<sup>th</sup> Ave



# ON-STREET OUTREACH

- In February 2020, NYC DOT Street Ambassadors administered 391 surveys in the neighborhood about safety and mobility in Sunset Park
  - Partnered with Brooklyn Chinese-American Association, Chinese-American Planning Council, and the Sunset Park Recreation Center
- Largest safety concerns are speeding vehicles, vehicles not yielding, illegally parked vehicles, and heavy vehicle traffic
- 78% of respondents felt that the sidewalks are always too crowded
- Some respondents expressed concerns about the frequency of cyclists on the sidewalk



NYC DOT Street Ambassadors administering surveys.  
Top: Sunset Park Recreation Center; Bottom: Brooklyn Chinese American Association



# WHAT WE LEARNED

88% of respondents arrived on foot or public transportation

43% of pedestrians feel very unsafe or somewhat unsafe walking on 7<sup>th</sup> and 8<sup>th</sup> Ave

54% of cyclists feel unsafe biking on 7<sup>th</sup> Ave and 8<sup>th</sup> Ave

Half of respondents who want street changes asked for transit improvements



# NYC DOT BUSINESS OUTREACH

## Street Ambassadors

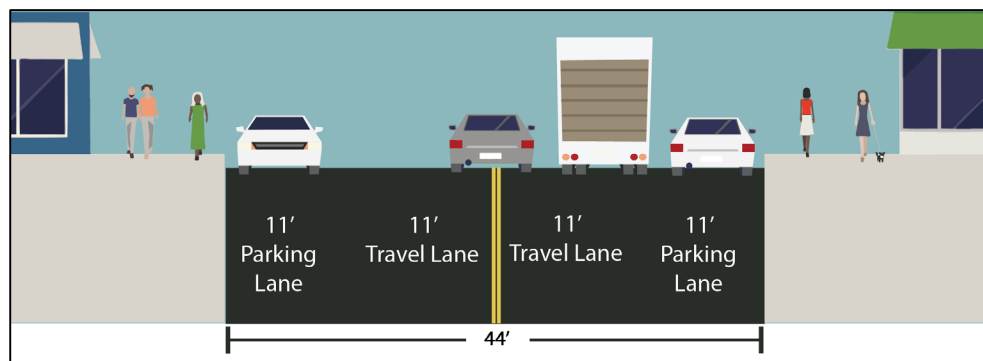
- The NYC DOT Street Ambassadors visited 340 businesses along 7<sup>th</sup> Ave & 8<sup>th</sup> Ave over three days in November 2019
- NYC DOT spoke to merchants about when they receive deliveries, vehicle parking patterns, double parking observations, and other loading issues
- 58% of businesses reported that they had difficulty receiving deliveries, most frequently due to the lack of dedicated curb space





# CURRENT SAFETY IMPROVEMENT LIMITATIONS

- Both streets are 44' wide two-way streets with parking on both sides
- As two-way streets, both 7 Ave and 8 Ave have limited corridor safety improvement possibilities
- NYC DOT treatments for these roads typically involve narrowing moving lanes to address speeding, which is not the cause of injuries on 7<sup>th</sup> Ave or 8<sup>th</sup> Ave



Above: Vehicles maneuver around a double parked truck, slowing traffic in each direction. Below: Diagram shows the limited street width

# CURBSIDE CONSIDERATIONS

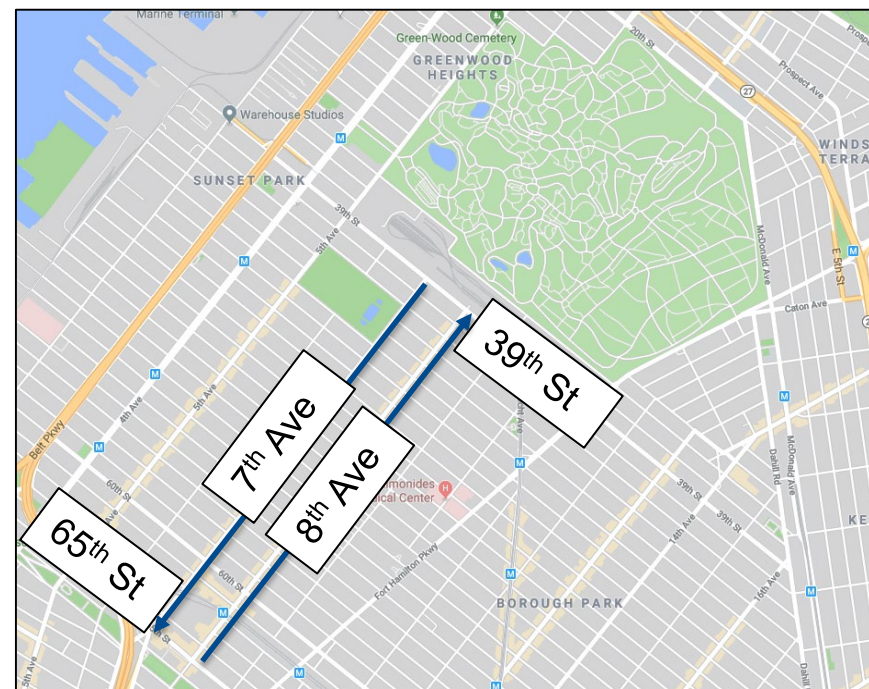
- Loading
  - Very heavy loading activity at all times. Concentrated on 8th Ave in the 50s
- Buses
  - B70 and charter bus stops every 400 to 700'. Below MTA average spacing guidelines
- Parking
  - Dense corridors – 66% of households in census tracts do not own cars
- Pedestrians
  - 5,070 pedestrian counted in one hour on 8<sup>th</sup> Ave & 57<sup>th</sup> St (9/2019)
- Cyclists
  - 600 – 800 cyclists per day recorded in Fall 2019
- Commuter Vans
  - Observed at various locations on 8<sup>th</sup> Ave



Loading and pedestrian activity are two of the common uses that compete for limited curb space on 7<sup>th</sup> Ave and 8<sup>th</sup> Ave



- Convert 7<sup>th</sup> Avenue to southbound between 39<sup>th</sup> St and 65<sup>th</sup> St
- Convert 8<sup>th</sup> Avenue to northbound between 65<sup>th</sup> St and 39<sup>th</sup> St
- Add a protected bike lane to each street
- Add additional pedestrian space and aggressive curbside management plan
- Add a contraflow bike lane on 66<sup>th</sup> St between 7<sup>th</sup> Ave and 8<sup>th</sup> Ave to connect northbound cyclists



Similar design implemented on Skillman Ave, QN

# ONE-WAY CONVERSIONS

- Substantial corridor safety improvements that address the crash history of 7<sup>th</sup> Ave & 8<sup>th</sup> Ave
- Eliminating two-way traffic improves vehicle predictability, reduces possible movements, and conflicts between vehicles, pedestrians, and cyclists
- Allow for the addition of safe, dedicated space for cyclists and expanded space for pedestrians that narrows the roadway to reduce speeding
- Signal progressions improve vehicle and transit mobility



Existing conditions (above) and similar design implemented on Skillman Ave, QN (below)



# PROPOSAL – CURBSIDE DETAILS

- Expanded Pedestrian Space
  - Sidewalk expansion on the west curb of 8<sup>th</sup> Ave from 60<sup>th</sup> St to 51<sup>st</sup> St
- New Loading and Parking Regulations
  - Add commercial loading zones at key locations during peak delivery times
  - NYC DOT completed a comprehensive curbside study using time lapse video, stakeholder conversations, and business survey data to determine regulation changes
- Transit
  - Relocate southbound B70 bus from 8th Ave to 7th Ave and consolidate bus stops
- Mobility
  - Add curbside parking protected bike lanes



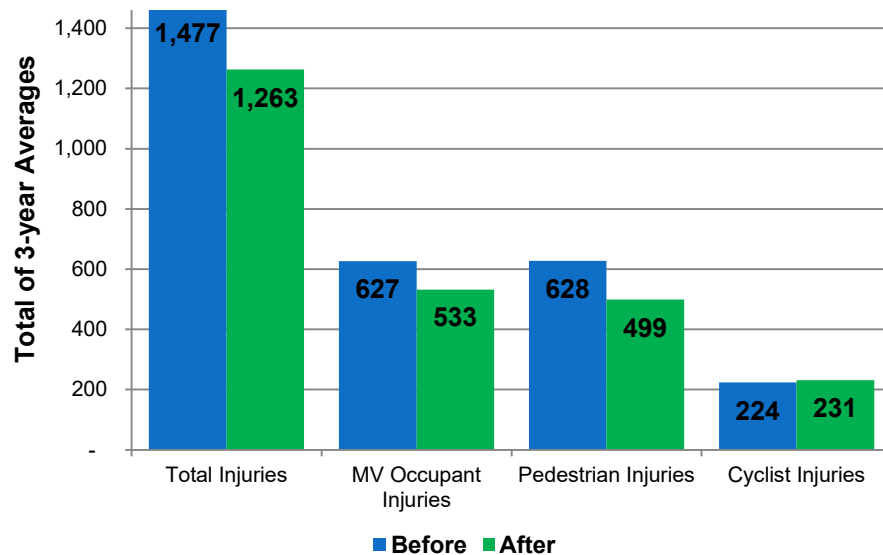
B70 bus passing two trucks loading simultaneously on 8 Ave at 45 St

# PROTECTED BIKE LANES

- Street designs that include protected bike lanes increase safety for all users
  - **-15%** drop in all crashes with injuries
  - **-21%** drop in pedestrian injuries*On streets where protected bike lanes were installed 2007-2017*
- Injuries to cyclists increase only 3%, despite a 61% bike volume increase

## Protected Bike Lanes

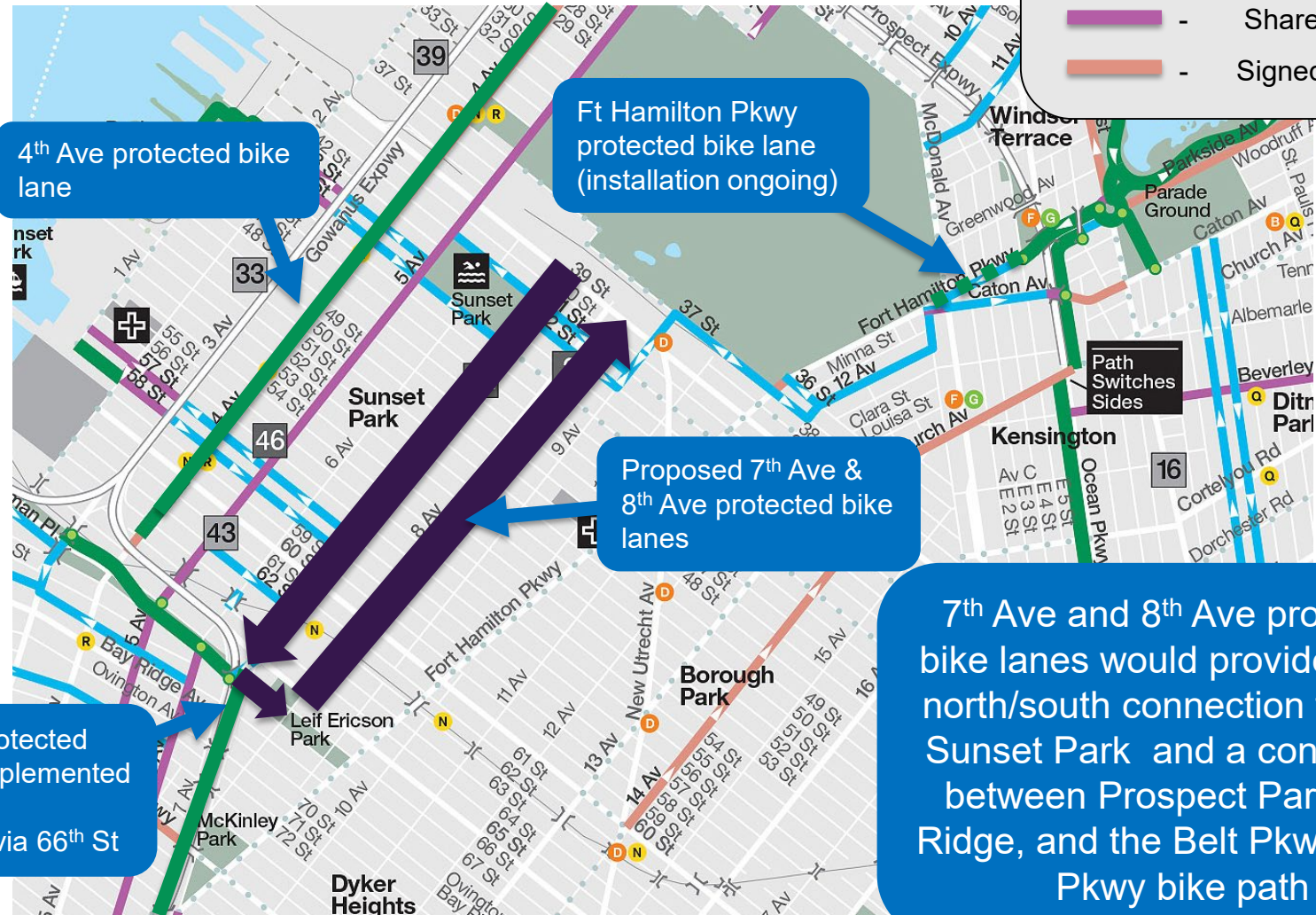
*Before and After Crash Data, 2007 - 2017*



Protected bike lane: Skillman Ave, QN

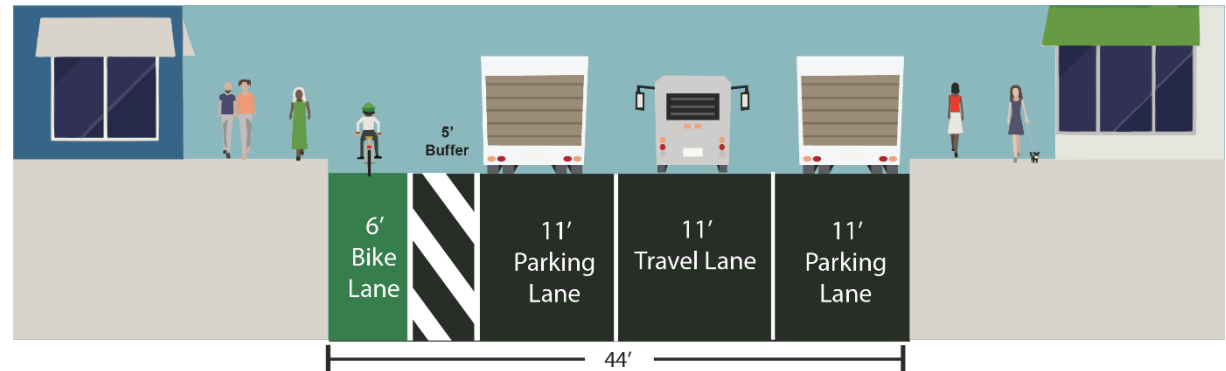


# BIKE NETWORK

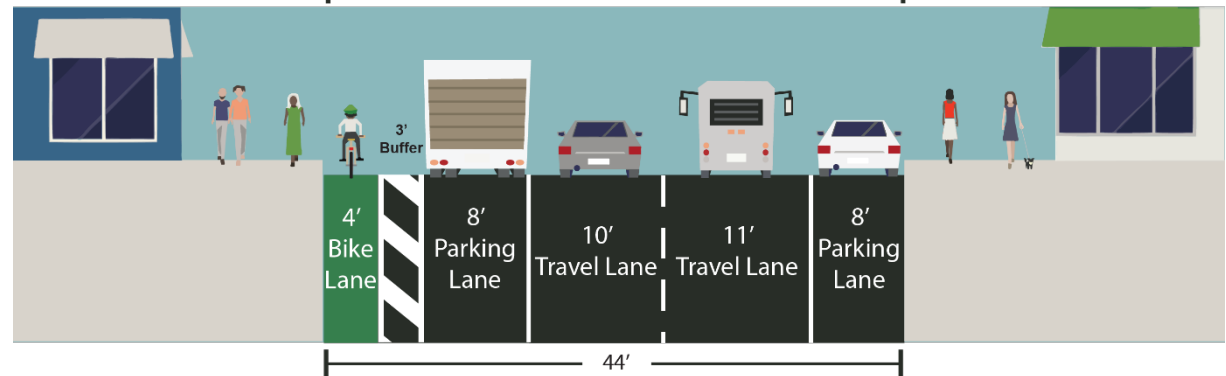


# PROPOSED DESIGN- 7<sup>TH</sup> AVE & 8<sup>TH</sup> AVE

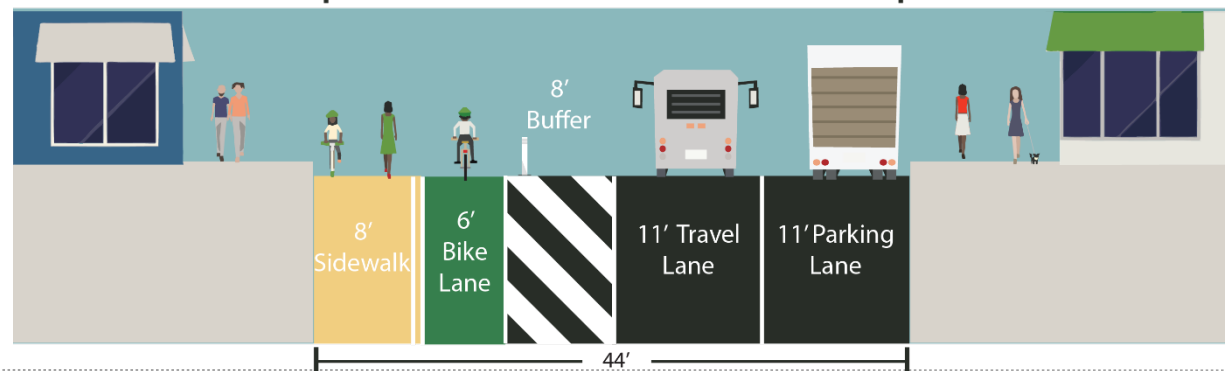
Primary design –  
7<sup>th</sup> Ave & 8<sup>th</sup> Ave:  
One travel lane  
and protected  
bike lane



Two-lane design  
(65<sup>th</sup> St to 60<sup>th</sup> St) –  
7<sup>th</sup> Ave & 8<sup>th</sup> Ave:  
Two travel lanes and  
protected bike lane

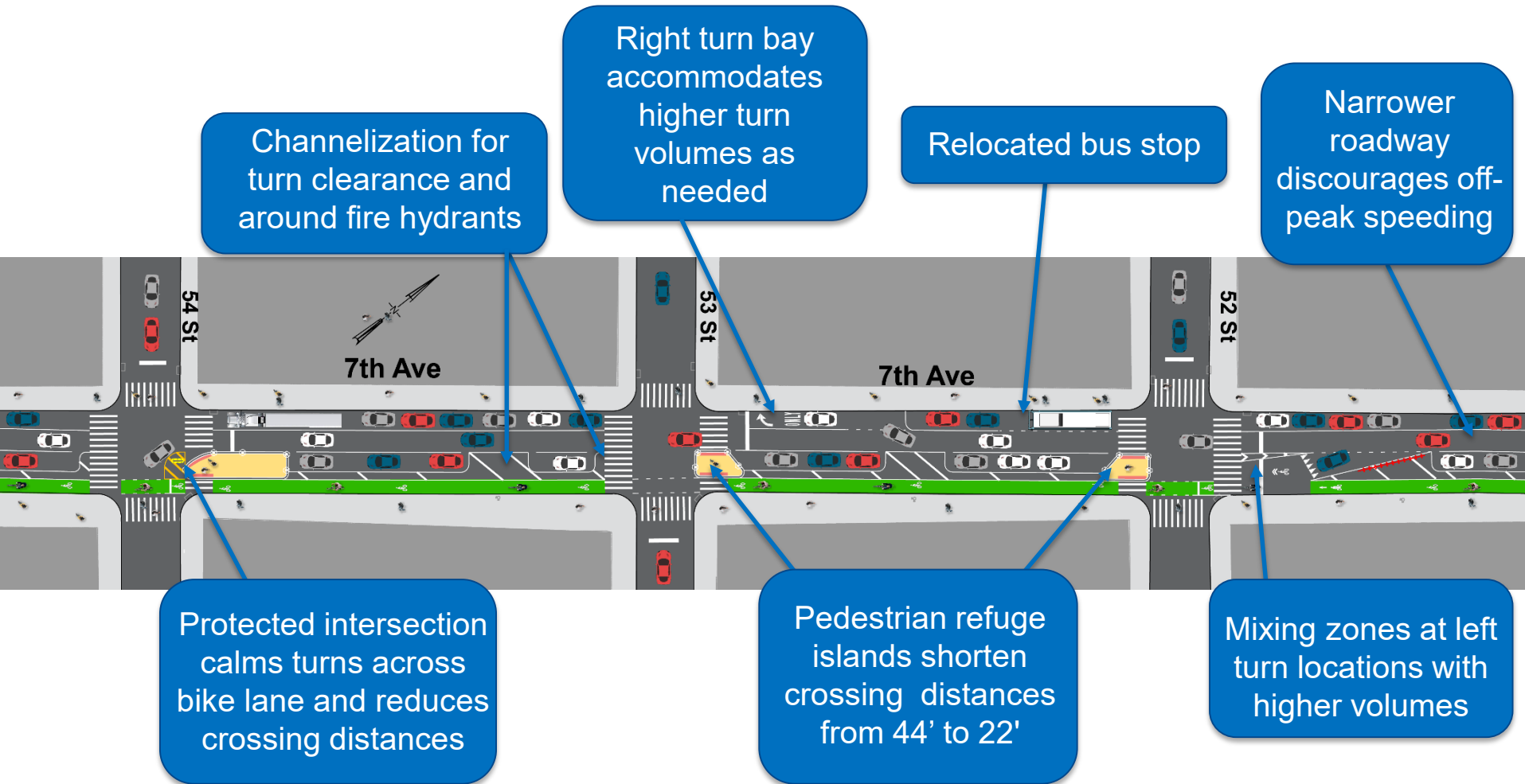


Pedestrian design  
8<sup>th</sup> Ave, 60<sup>th</sup> St to 51<sup>st</sup>  
St: One travel lane,  
protected bike lane,  
pedestrian expansion



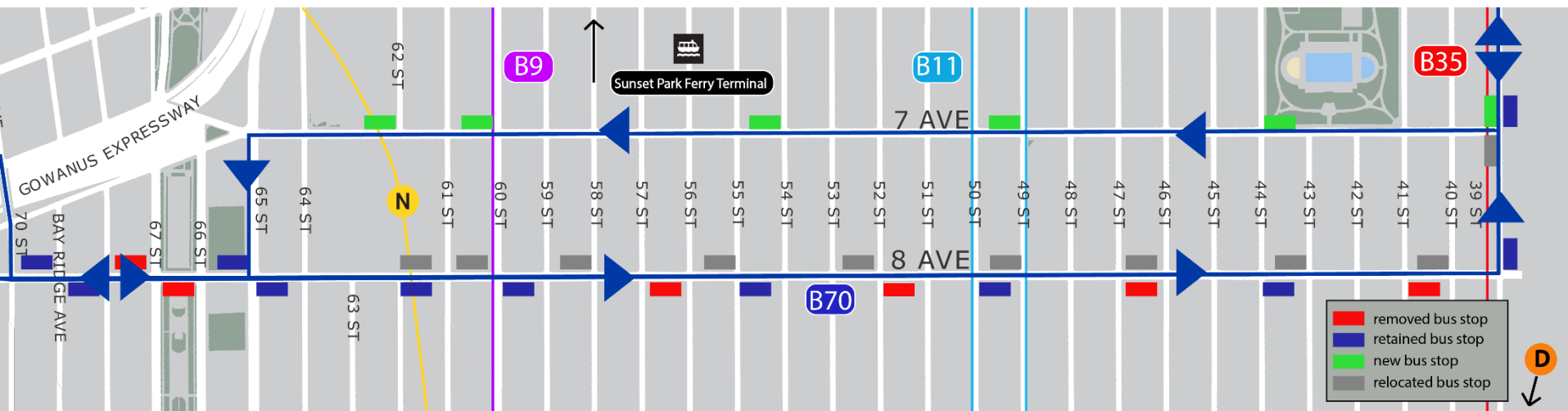


# SITE PLAN – TYPICAL BLOCK



# B70 REROUTE AND STOP CONSOLIDATION

- NYC DOT and MTA have coordinated closely on plan to improve service for B70 bus on 7<sup>th</sup> and 8<sup>th</sup> Aves
- Southbound bus will be rerouted to 7<sup>th</sup> Ave
- Improved stop spacing in both directions will help speed up service along the corridors
- New traffic signal at 7<sup>th</sup> Ave and 62<sup>nd</sup> St will ensure that seamless connection between B70 bus and N train 8<sup>th</sup> Ave station is maintained



Map showing removed bus stops, retained bus stops, and new bus stops for the B70



# PROPOSAL - 65<sup>TH</sup> ST, 66<sup>TH</sup> ST, 67<sup>TH</sup> ST

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## 65<sup>th</sup> St

- Add eastbound to northbound left turn bay on 65<sup>th</sup> Street at 8<sup>th</sup> Ave to accommodate higher turn volumes

## 66<sup>th</sup> St

- Add a protected, contra-flow bike lane traveling from 7<sup>th</sup> Ave to 8<sup>th</sup> Ave to connect northbound cyclists to 8<sup>th</sup> Ave

## 67<sup>th</sup> St

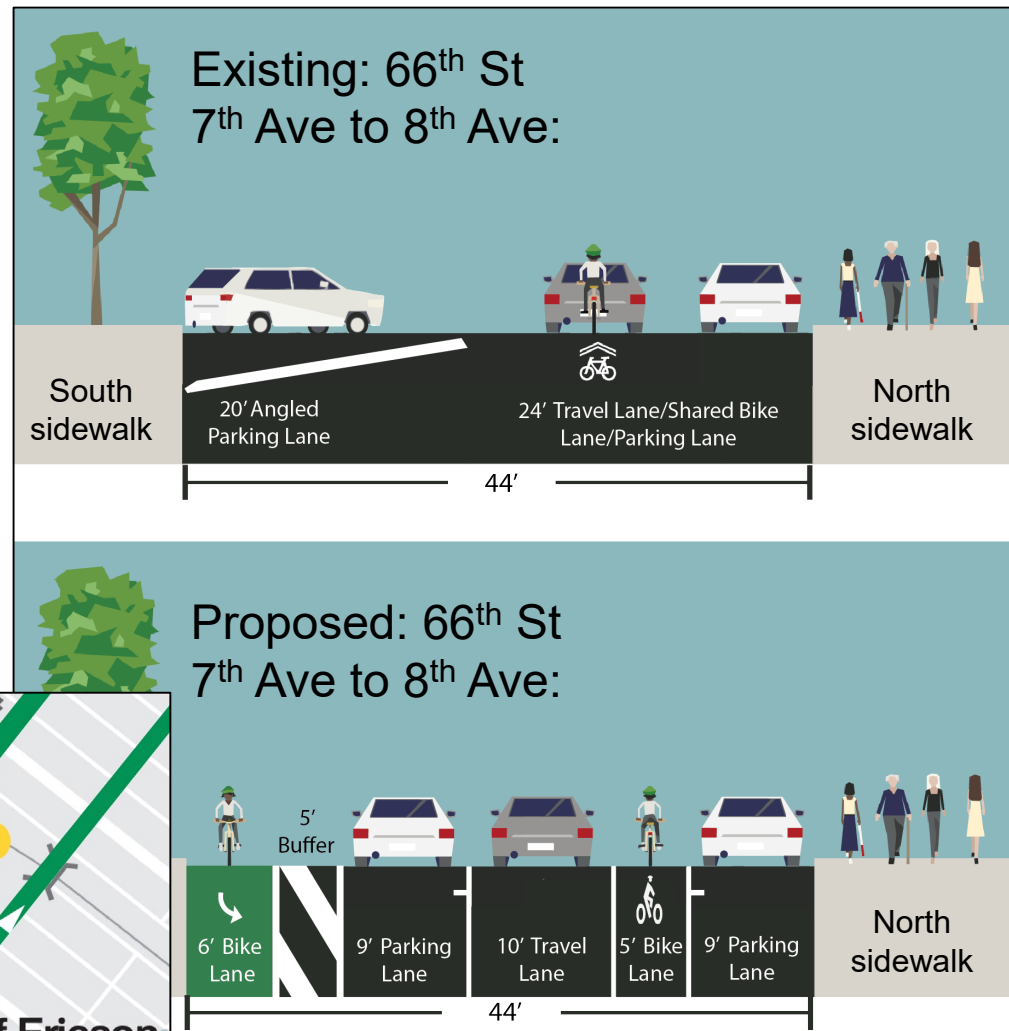
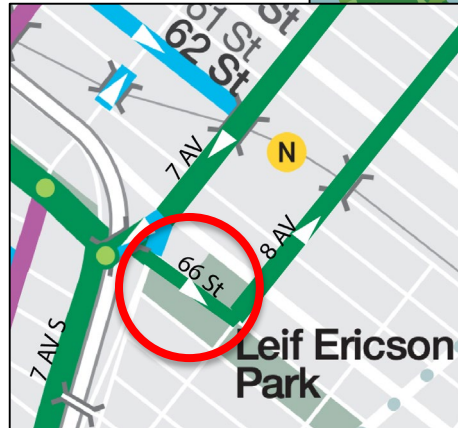
- Add angled parking on the north side adjacent to Leif Ericson Park between 7<sup>th</sup> Ave & 9<sup>th</sup> Ave



Current angled parking on 66<sup>th</sup> St between 7<sup>th</sup> Ave & 8<sup>th</sup> Ave

# 66<sup>TH</sup> ST – PROPOSED DESIGN

- Northbound cyclists will connect from existing protected bike path at 7<sup>th</sup> Ave and 66<sup>th</sup> St via 66<sup>th</sup> St
- Design will replace angled parking adjacent to park on south side of 66<sup>th</sup> St with floating parallel parking
- Design adds one block of eastbound contra-flow parking protected bike lane between 7<sup>th</sup> Ave and 8<sup>th</sup> Ave



Above: Cross-sections of 66<sup>th</sup> St  
Left: 66<sup>th</sup> St connection on the bike map



# PROTECTED BIKE LANES AND PARKING

- In order to increase visibility, reduce conflicts for all roadway users, and ensure safe and efficient operations, parking is repurposed near intersections

Left turns across the bike lane require removal of parking approaching the intersection to ensure that drivers have unobstructed views of the bike lane before turning across it



Curbside right turn lanes replace parking with turn bays to improve vehicle processing at intersections





# LOADING ZONES

- NYC DOT will install loading zones along the corridors
- Loading zones dedicate curb space to trucks and vans making deliveries for certain hours of the day
- Passenger vehicle parking remains available after loading zone hours
- Loading zone determinations made through business surveys, time lapse videos, and stakeholder conversations
- DOT to install mixture of metered and unmetered loading zones as needed

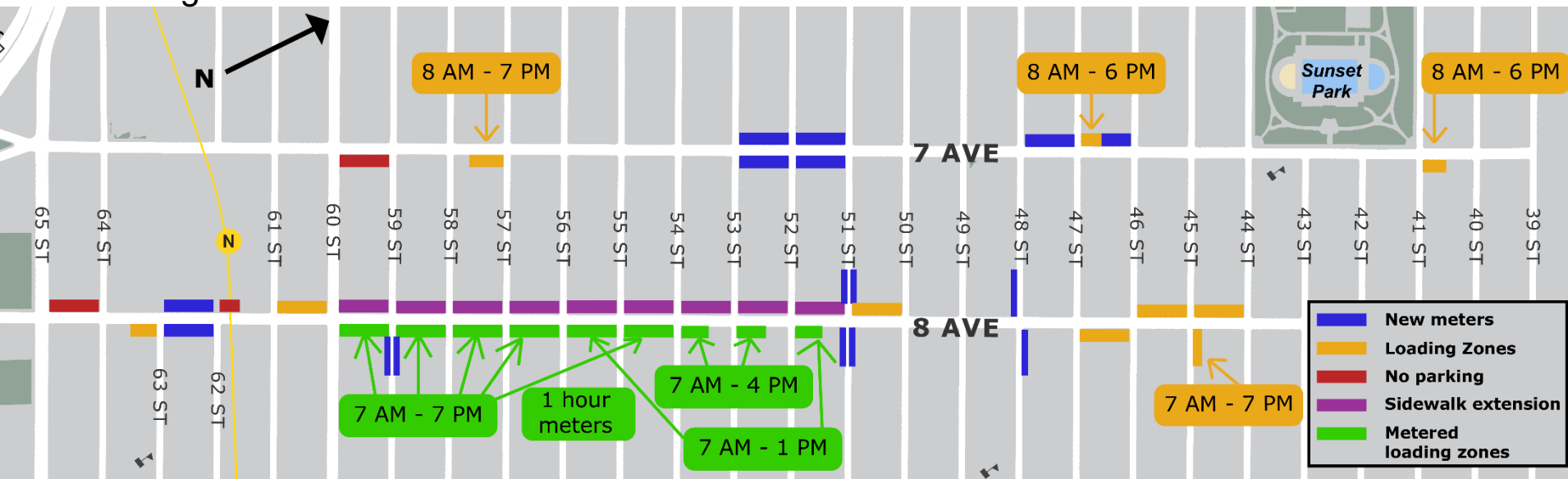


Trucks use loading zones to access curb to make deliveries without blocking traffic



# LOADING, DOUBLE PARKING, METERS

- NYC DOT to update parking regulations along the corridors to reduce truck double parking, provide dedicated loading space, and increase vehicle turnover
- Provide approximately 95 new 2-hour metered parking spots around commercial corridors to improve passenger vehicle access
- Provide new Commercial Loading Zones from 7 AM – 10 AM (except where noted below)
- Adjacent to the sidewalk expansion, update meters from 2-hour to 1-hour and install Metered Loading Zones



# PARKING IMPACTS

- Design will result in repurposing of approximately 185 spots across the 3.3 miles of streets being impacted as part of the Street Improvement Project
- More than 90% of total parking spots on all streets between 39<sup>th</sup> St and 67<sup>th</sup> St and between 7<sup>th</sup> and 8<sup>th</sup> Ave to remain available

Element	Parking Change
Protected Bike Lane Design (Protected Left Turns, Mixing Zones, Pedestrian Islands, etc.)	- 122
Sidewalk Extension (West curb, 8 <sup>th</sup> Ave – 60 <sup>th</sup> St to 51 <sup>st</sup> St)	- 69
Right Turn Lanes	- 52
Bus Stop Changes and Relocations	+ 25
Parking Changes on 65 <sup>th</sup> St, 66 <sup>th</sup> St, and 67 <sup>th</sup> St	+ 35
<b>Total</b>	<b>Net loss of 183 parking spots</b>



# SUMMARY

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- Directly addresses crash history of Vision Zero Priority Corridor through street conversion and design
- Provides much needed pedestrian space and improves pedestrian safety in the heart of Brooklyn's Chinatown
- Provides a safe, direct connection for cyclists in Sunset Park
- Improves the reliability of the B70 bus
- Project planning reflects the needs of businesses and residents in the area
- Aligns with NYC DOT Green Wave and NYC Master Transportation plans of expanding Protected Bike Lane network



# THANK YOU!

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## Questions?



NYCDOT



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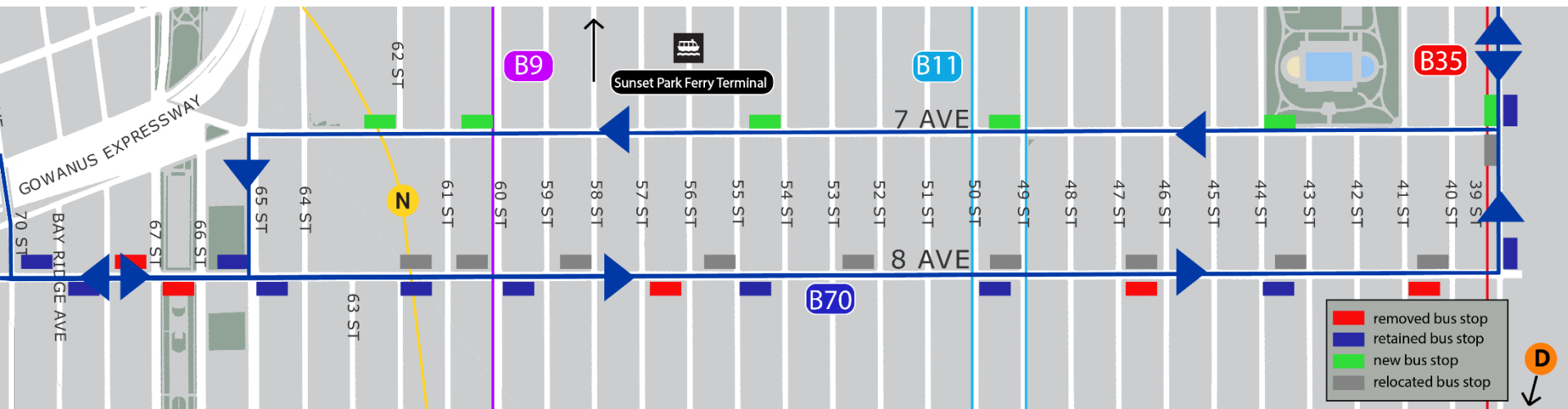
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NYCDOT



# B70 BUS STOP CONSOLIDATION PROPOSAL



Northbound B70

Southbound B70

8th Ave/Bay Ridge Ave

8th Ave/67th St

8th Ave/65th St

8th Ave/62nd St

8th Ave/60th St

8th Ave/57th St

8th Ave/55th St

8th Ave/52nd St

8th Ave/50th St

8th Ave/47th St

8th Ave/44th St

8th Ave/41st St

39th St/8th Ave

39th St/7th Ave

39th St/7th Ave

8th Ave/40th St

7th Ave/43rd St

8th Ave/46th St

7th Ave/49th St

8th Ave/52nd St

7th Ave/54th St

8th Ave/55th St

8th Ave/58th St

7th Ave/60th St

7th Ave/62nd St

8th Ave/65th St

8th Ave/67th St

8th Ave/Bay Ridge Ave

# CRASH AND INJURY DATA

- 8<sup>th</sup> Avenue, between 39<sup>th</sup> St and 66<sup>th</sup> St, is among the top 10% of Brooklyn streets for rates of people killed or severely injured per mile. 7<sup>th</sup> Ave is in the top 33%
- 8<sup>th</sup> Avenue and 60<sup>th</sup> Street is the intersection with the highest rate of pedestrian severe injuries (3 severe injuries within 5 year study period)
- Pedestrian or cyclist injuries have occurred at every single intersection in the project area (with the exception of 7<sup>th</sup> Ave and 46<sup>th</sup> St)

Injury Summary, 2014-2018 (5 Years)				
	Total Injuries	Severe Injuries	Fatalities	KSI
Pedestrian	128	11	0	11
Bicyclist	15	1	0	1
Motor Vehicle Occupant	112	7	0	7
Total	255	19	0	19
Source: Fatalities: NYCDOT, Injuries: NYSDOT KSI: Persons Killed or Severely Injured				

8<sup>th</sup> Ave injury data (39<sup>th</sup> St to 66<sup>th</sup> St)

Injury Summary, 2014-2018 (5 Years)				
	Total Injuries	Severe Injuries	Fatalities	KSI
Pedestrian	105	6	1	7
Bicyclist	17	1	0	1
Motor Vehicle Occupant	130	8	0	8
Total	252	15	1	16
Source: Fatalities: NYCDOT, Injuries: NYSDOT KSI: Persons Killed or Severely Injured				

7<sup>th</sup> Ave injury data (39<sup>th</sup> St to 66<sup>th</sup> St)



# CRASH AND INJURY DATA (CONTINUED)

- Distribution of corridor injuries shows injuries occur throughout the corridors with intersections in all portions having multiple injuries and severe injuries spread throughout
- Map does not display intersections that had fewer than 10 injuries within study period



# CRASH AND INJURY DATA (CONTINUED)

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- Top three actions by pedestrians when injured
  1. Crossing in the crosswalk with signal (47%)
  2. Crossing against signal (15%)
  3. Crossing at location with no signal/crosswalk (13%)
- Top three vehicle actions causing pedestrian injuries
  1. Going straight (38%)
  2. Turning left (31%)
  3. Turning right (12%)
- Top three actions by cyclists causing injuries\*
  1. Other actions/undefined (22%)
  2. Midblock crashes (16%)
  3. Crossing with signal (9%)

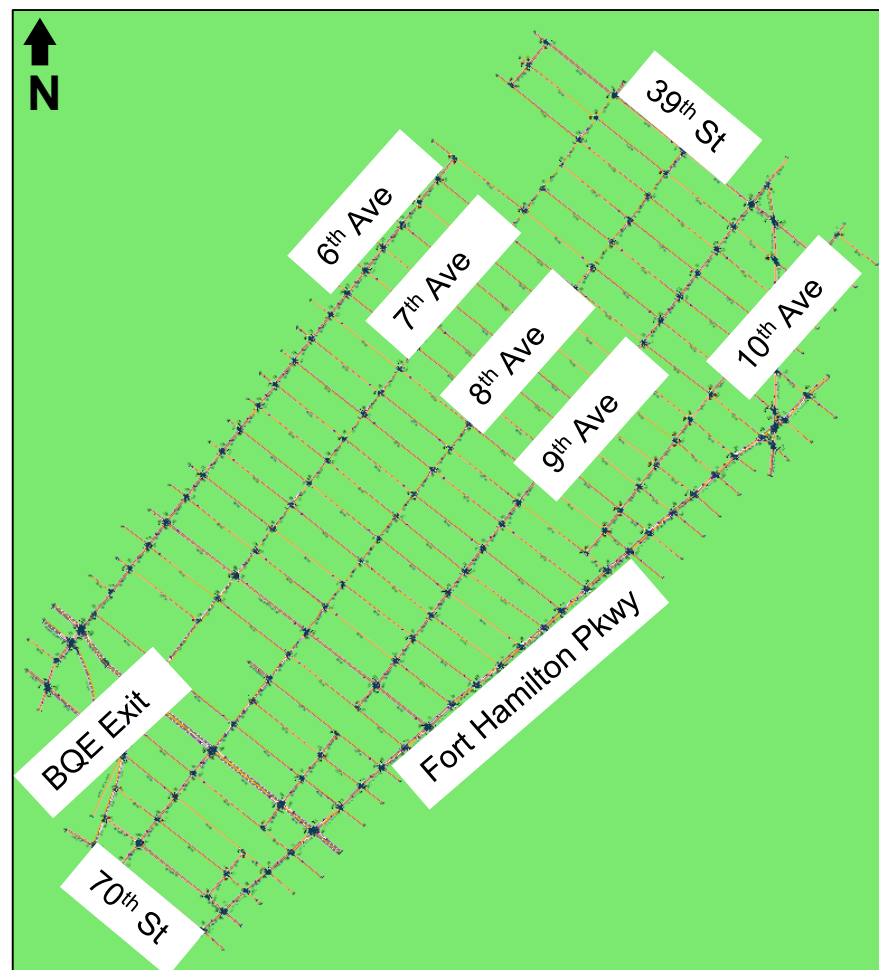
\* 53% of cyclist injuries are unclassified from NYSDMV data



# TRAFFIC MODELING

## Methodology

- NYC DOT built a comprehensive and detailed traffic model that includes all streets from 6<sup>th</sup> Ave to Ft Hamilton Pkwy and 39<sup>th</sup> St to 70<sup>th</sup> St
- Modeling included all east-west cross streets between 39<sup>th</sup> St and 70<sup>th</sup> St
- DOT used origin and destination trip-tracking software (Streetlight) to determine current travel patterns and apply them to proposed conditions



Map of model that DOT created to analyze project impacts

# TRAFFIC MODELING (CONTINUED)

## Traffic Volumes

- NYC DOT collected multiple days of traffic counts in September 2019 and averaged volumes for analysis
  - Traffic counts included both Turning Movement Counts for peak hour capacity analysis, Automatic Traffic Recorders for 24 hour traffic pattern characteristics, and in field observations by DOT staff
- Identified AM peak hour from 7:30 – 8:30 and PM peak hour from 5:15 – 6:15 for a typical weekday
- Heaviest volumes between 60<sup>th</sup> St and 65<sup>th</sup> St with a peak volume of 341 SB vehicles on 8<sup>th</sup> Ave in the PM peak hour
- North of 60<sup>th</sup> St, no intersections have more than 250 vehicles per hour in one direction

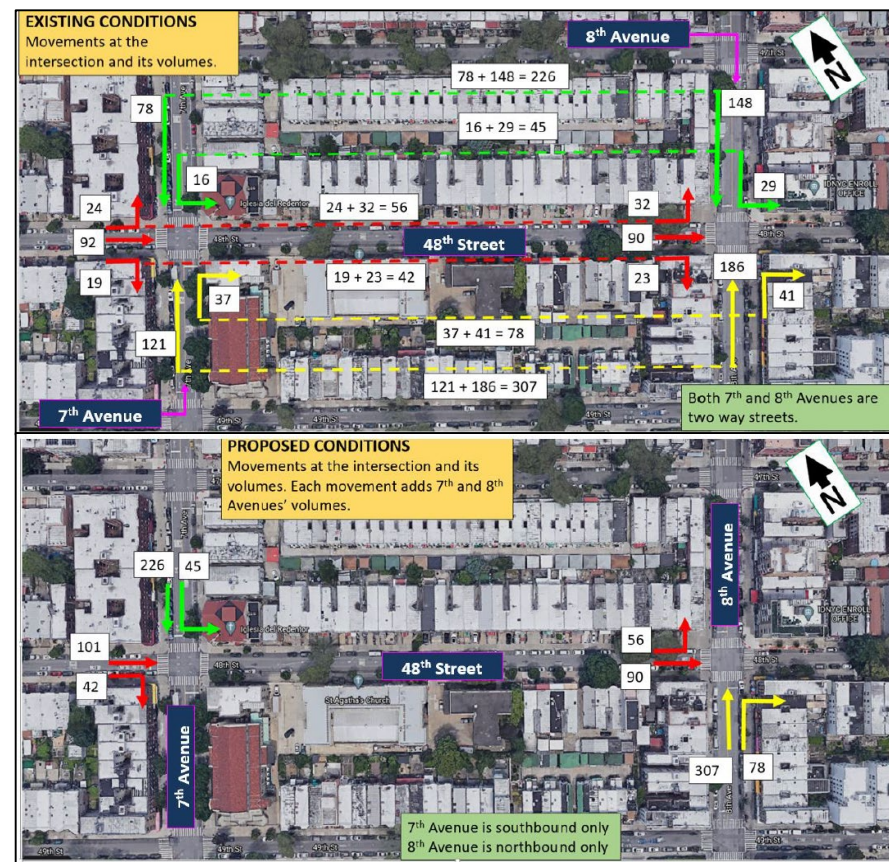


Screenshot from traffic camera used to collect data – 8<sup>th</sup> Ave and 57<sup>th</sup> St



# TRAFFIC MODELING (CONTINUED)

- NYC DOT summed all intersection movements to analyze proposed conditions
  - All northbound volumes from 7<sup>th</sup> and 8<sup>th</sup> Ave are assigned to 8<sup>th</sup> Ave and southbound volumes are assigned to 7<sup>th</sup> Ave
  - Model assumes that existing volumes are kept within the existing street network (7<sup>th</sup> and 8<sup>th</sup> Ave, 39<sup>th</sup> St to 67<sup>th</sup> St)
- NYC DOT design accommodates projected diversions
  - Right turn bays and mixing zones added at select locations to ensure more efficient processing of vehicles
  - Left turn bay added at 7<sup>th</sup> Ave and 64<sup>th</sup> St due to existing and projected circulation patterns
  - Left turn bay added to 65<sup>th</sup> St at 8<sup>th</sup> Ave to accommodate increase of northbound travel on 8<sup>th</sup> Ave
  - Two lanes added to 7<sup>th</sup> Ave between 59<sup>th</sup> St and 65<sup>th</sup> St and 8<sup>th</sup> Ave between 65<sup>th</sup> St and 60<sup>th</sup> St to accommodate higher traffic volumes



Example of methodology: Existing peak volumes at 7<sup>th</sup> Ave and 8<sup>th</sup> Ave at 48<sup>th</sup> St were maintained and reassigned as per conversion

# RESULTS FROM ANALYSIS

- The design right-sizes 7<sup>th</sup> and 8<sup>th</sup> Avenues while accommodating projected traffic demands by adding turn bays, mixing zones, and lane additions in combination with signal timing changes
- One-way conversions enhance traffic movement by allowing for more streamlined signal progression and speed management during peak and off-peak periods
- Due to large number of east/west options, no cross streets are expected to receive a disproportionately large number of rerouted/diverted vehicles



A cyclist and vehicle travel on 7<sup>th</sup> Ave between 44<sup>th</sup> and 43<sup>rd</sup> St

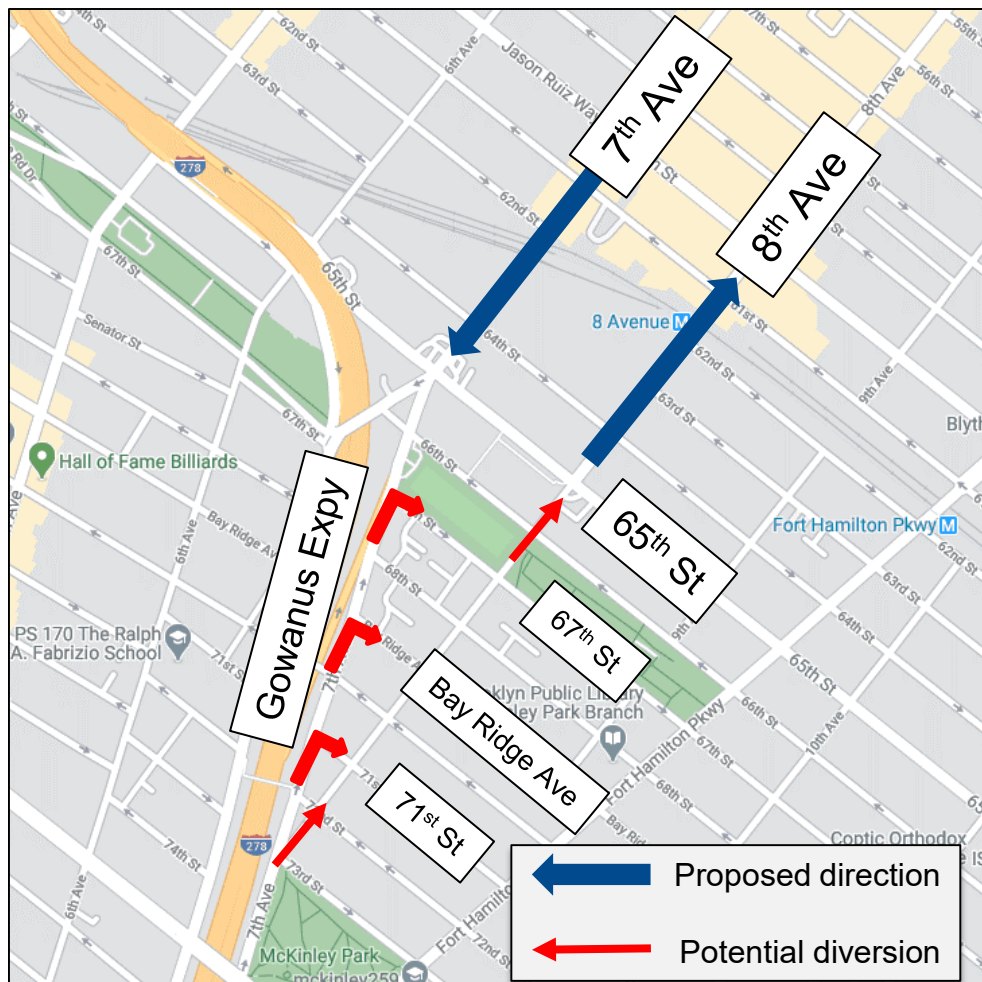


# CONVERSION DETAILS

- Conversions of 7<sup>th</sup> Ave & 8<sup>th</sup> Ave to one-way pairs will have effects on 65<sup>th</sup> Street between 7<sup>th</sup> Ave and 8<sup>th</sup> Ave and surrounding streets
- 65<sup>th</sup> Street and 7<sup>th</sup> Ave is a very congested intersection due to the BQE exit, existing congestion on 65<sup>th</sup> Street, and access to and from neighborhood streets
- NYC DOT's proposal will include design elements to minimize impacts on the street network while making improvements to vehicle processing
  - One-way conversions allow for signal progression on 7<sup>th</sup> and 8<sup>th</sup> Aves to improve vehicle processing



# BENEFITS OF PROPOSED CONVERSIONS



- Proposed design reduces the total northbound volume at 65<sup>th</sup> St and 7<sup>th</sup> Ave
  - Northbound vehicles on 7<sup>th</sup> Ave have multiple options to reroute to 8<sup>th</sup> Ave before 65<sup>th</sup> St
- Proposed design improves safety at the intersection of 7<sup>th</sup> Ave and 65<sup>th</sup> St
  - Removal of northbound through, eastbound lefts, and westbound rights reduce the total vehicle movements, reducing conflicts and improving safety
- Proposed design minimizes impacts
  - Two thirds of existing northbound vehicles are already turning at 65<sup>th</sup> St and 7<sup>th</sup> Ave

Various options for 7<sup>th</sup> Ave NB vehicles to divert to 8<sup>th</sup> Ave NB before 65<sup>th</sup> St

# BENEFITS OF PROPOSED CONVERSIONS



Many NB vehicles on 7<sup>th</sup> Ave merge, change lanes, cross a bike path, and make unpredictable movements approaching 65<sup>th</sup> St

- Proposal simplifies the northbound approach to 65<sup>th</sup> St on 7<sup>th</sup> Ave
  - With only two possible northbound movements and two northbound lanes, the design reduces conflicts and improves predictability for vehicles
- Proposal eliminates northbound cyclist conflict
  - Northbound cyclists will no longer continue onto 7<sup>th</sup> Ave, removing conflict of right turning vehicles turning across a bike lane