LOCATION

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

• 8th Ave is a Vision Zero Priority Corridor

• 7th Ave has comparable crash and injury data

• Located within the Borough Park Senior Pedestrian Focus Area and a Vision Zero Priority Area

• 8th 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
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 7th Ave and 8th 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 39th and 66th St, 8th 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)

<table>
<thead>
<tr>
<th></th>
<th>Total Injuries</th>
<th>Severe Injuries</th>
<th>Fatalities</th>
<th>KSI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pedestrian</td>
<td>233</td>
<td>17</td>
<td>1</td>
<td>18</td>
</tr>
<tr>
<td>Bicyclist</td>
<td>32</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Motor Vehicle Occupant</td>
<td>242</td>
<td>15</td>
<td>0</td>
<td>15</td>
</tr>
<tr>
<td>Total</td>
<td>507</td>
<td>34</td>
<td>1</td>
<td>35</td>
</tr>
</tbody>
</table>

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

- 88% of respondents arrived on foot or public transportation
- 54% of cyclists feel unsafe biking on 7th Ave and 8th Ave
- 43% of pedestrians feel very unsafe or somewhat unsafe walking on 7th and 8th 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 7th Ave & 8th 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 7th Ave or 8th 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 8th Ave & 57th St (9/2019)

- **Cyclists**
  - 600 – 800 cyclists per day recorded in Fall 2019

- **Commuter Vans**
  - Observed at various locations on 8th Ave

Loading and pedestrian activity are two of the common uses that compete for limited curb space on 7th Ave and 8th Ave.
PROPOSAL

• Convert 7th Avenue to southbound between 39th St and 65th St

• Convert 8th Avenue to northbound between 65th St and 39th St

• Add a protected bike lane to each street

• Add additional pedestrian space and aggressive curbside management plan

• Add a contraflow bike lane on 66th St between 7th Ave and 8th 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 7th Ave & 8th 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 8th Ave from 60th St to 51st 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
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

7th Ave S protected bike lane implemented in 2019 and connection via 66th St

4th Ave protected bike lane

Ft Hamilton Pkwy protected bike lane (installation ongoing)

Proposed 7th Ave & 8th Ave protected bike lanes

7th Ave and 8th Ave protected bike lanes would provide a safe north/south connection through Sunset Park and a connection between Prospect Park, Bay Ridge, and the Belt Pkwy/Shore Pkwy bike path
PROPOSED DESIGN- 7TH AVE & 8TH AVE

Primary design – 7th Ave & 8th Ave:
One travel lane and protected bike lane

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

Pedestrian design 8th Ave, 60th St to 51st St:
One travel lane, protected bike lane, pedestrian expansion
SITE PLAN – TYPICAL BLOCK

- Channelization for turn clearance and around fire hydrants
- Right turn bay accommodates higher turn volumes as needed
- Relocated bus stop
- Narrower roadway discourages off-peak speeding
- Protected intersection calms turns across bike lane and reduces crossing distances
- Pedestrian refuge islands shorten crossing distances from 44' to 22'
- Mixing zones at left turn locations with higher volumes
B70 REROUTE AND STOP CONSOLIDATION

- NYC DOT and MTA have coordinated closely on plan to improve service for B70 bus on 7th and 8th Aves
- Southbound bus will be rerouted to 7th Ave
- Improved stop spacing in both directions will help speed up service along the corridors
- New traffic signal at 7th Ave and 62nd St will ensure that seamless connection between B70 bus and N train 8th Ave station is maintained
PROPOSAL - 65TH ST, 66TH ST, 67TH ST

65th St

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

66th St

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

67th St

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

Current angled parking on 66th St between 7th Ave & 8th Ave
66th ST – PROPOSED DESIGN

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

Protected left turn: 6th Ave, MN

Mixing Zone, 2nd Ave, MN

Right-turn lane, Queens Blvd, QN
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 39th St and 67th St and between 7th and 8th Ave to remain available.

<table>
<thead>
<tr>
<th>Element</th>
<th>Parking Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protected Bike Lane Design (Protected Left Turns, Mixing Zones, Pedestrian Islands, etc.)</td>
<td>- 122</td>
</tr>
<tr>
<td>Sidewalk Extension (West curb, 8th Ave – 60th St to 51st St)</td>
<td>- 69</td>
</tr>
<tr>
<td>Right Turn Lanes</td>
<td>- 52</td>
</tr>
<tr>
<td>Bus Stop Changes and Relocations</td>
<td>+ 25</td>
</tr>
<tr>
<td>Parking Changes on 65th St, 66th St, and 67th St</td>
<td>+ 35</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>Net loss of 183 parking spots</strong></td>
</tr>
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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 39th St and 67th St and between 7th and 8th Ave to remain available.
SUMMARY

• 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!

Questions?
B70 BUS STOP CONSOLIDATION PROPOSAL

Northbound 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

Southbound B70

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

- 8th Avenue, between 39th St and 66th St, is among the top 10% of Brooklyn streets for rates of people killed or severely injured per mile. 7th Ave is in the top 33%.

- 8th Avenue and 60th 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 7th Ave and 46th St).

<table>
<thead>
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<th>Injury Summary, 2014-2018 (5 Years)</th>
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<tr>
<td>Total</td>
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<td>-------</td>
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Source: Fatalities: NYCDOT, Injuries: NYSDOT, KSI: Persons Killed or Severely Injured

<table>
<thead>
<tr>
<th>8th Ave injury data (39th St to 66th St)</th>
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Source: Fatalities: NYCDOT, Injuries: NYSDOT, KSI: Persons Killed or Severely Injured

| 7th Ave injury data (39th St to 66th St) |
• 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)

• 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 6th Ave to Ft Hamilton Pkwy and 39th St to 70th St

- Modeling included all east-west cross streets between 39th St and 70th St

- DOT used origin and destination trip-tracking software (Streetlight) to determine current travel patterns and apply them to proposed conditions
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 60th St and 65th St with a peak volume of 341 SB vehicles on 8th Ave in the PM peak hour

- North of 60th St, no intersections have more than 250 vehicles per hour in one direction
TRAFFIC MODELING (CONTINUED)

- NYC DOT summed all intersection movements to analyze proposed conditions
  - All northbound volumes from 7th and 8th Ave are assigned to 8th Ave and southbound volumes are assigned to 7th Ave
  - Model assumes that existing volumes are kept within the existing street network (7th and 8th Ave, 39th St to 67th 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 7th Ave and 64th St due to existing and projected circulation patterns
  - Left turn bay added to 65th St at 8th Ave to accommodate increase of northbound travel on 8th Ave
  - Two lanes added to 7th Ave between 59th St and 65th St and 8th Ave between 65th St and 60th St to accommodate higher traffic volumes

Example of methodology: Existing peak volumes at 7th Ave and 8th Ave at 48th St were maintained and reassigned as per conversion.
RESULTS FROM ANALYSIS

- The design right-sizes 7th and 8th 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 7th Ave between 44th and 43rd St.
CONVERSION DETAILS

- Conversions of 7th Ave & 8th Ave to one-way pairs will have effects on 65th Street between 7th Ave and 8th Ave and surrounding streets.

- 65th Street and 7th Ave is a very congested intersection due to the BQE exit, existing congestion on 65th 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 7th and 8th Aves to improve vehicle processing.
BENEFITS OF PROPOSED CONVERSIONS

- Proposed design reduces the total northbound volume at 65th St and 7th Ave
  - Northbound vehicles on 7th Ave have multiple options to reroute to 8th Ave before 65th St

- Proposed design improves safety at the intersection of 7th Ave and 65th 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 65th St and 7th Ave

Various options for 7th Ave NB vehicles to divert to 8th Ave NB before 65th St
BENEFITS OF PROPOSED CONVERSIONS

- Proposal simplifies the northbound approach to 65th St on 7th 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 7th Ave, removing conflict of right turning vehicles turning across a bike lane

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