2ND AVE  E 68TH TO 59TH ST
BIKE NETWORK IMPROVEMENTS

New York City Department of Transportation
Presented by the Bicycle and Greenway Program on July 9, 2018
OVERVIEW

1. Protected Bike Network Implementation Update
2. Evaluation of Off-Peak Protected Bike Lane (52nd to 43rd Street)
3. Filling the Gaps
4. Proposal: Bridge (68th to 59th Street)
5. Update: Tunnel (43rd to 34th Street)
6. Next Steps
Protected Bike Network Implementation Update
EAST SIDE PROTECTED BIKE LANE NETWORK

Northbound: 1st Ave
- Continuous 9-mile protected bike lane connecting Brooklyn, Manhattan and the Bronx

Southbound: 2nd Ave
- Challenges to creating continuous protected bike lane:
  - 2nd Ave Subway construction
  - High traffic volumes approaching Queensboro Bridge and Midtown Tunnel
PROTECTED BIKE LANE
96 St – 88 St
2016 (MTA)

88 St – 82 St
Functional, not yet completed (MTA)

82 St to 74 St
2016 (DOT)

74 St – 68 St
Functional, not yet completed (MTA)

ENHANCED SHARED LANE
68 St – 59 St Bridge
Fall 2016/17 (MTA/DOT)

PROTECTED BIKE LANE
59 St – 43 St:
2017 (DOT)

52 St – 43 St: Off-peak Protected Bike Lane Design
2017 (DOT)

ENHANCED SHARED LANE
43 St – 34 St Tunnel
2011 (DOT)
BIKE VOLUMES ARE GROWING

In the third quarter of 2017, 699,000 Citi Bike trips either started or ended in CB 6 and CB 8.

Bike Counts on 2nd Ave:

<table>
<thead>
<tr>
<th>Year</th>
<th>Bike Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>631</td>
</tr>
<tr>
<td>2015</td>
<td>940</td>
</tr>
<tr>
<td>2016</td>
<td>1,024</td>
</tr>
<tr>
<td>2017</td>
<td>1,924</td>
</tr>
</tbody>
</table>

+B105% (2015-2017)

Bicycle Volume Data: Average of three 12-hr (7AM-7PM) counts conducted on weekdays in May, July, and September for each year reported.

On Average, 5,406 cyclists use the Queensboro Bridge bike lane daily (between April and October).
### SAFETY CONCERNS

#### 2nd Ave is a Vision Zero Priority Corridor

**2 Ave, 68 St – 59 St**
Injury Summary, 2012-2016 (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>87</td>
<td>9</td>
<td>0</td>
<td>9</td>
</tr>
<tr>
<td>Bicyclists</td>
<td>32</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Motor Vehicle Occ</td>
<td>244</td>
<td>16</td>
<td>0</td>
<td>16</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>363</strong></td>
<td><strong>26</strong></td>
<td><strong>0</strong></td>
<td><strong>26</strong></td>
</tr>
</tbody>
</table>

Fatalities, 01/01/2012 – 03/19/2018: None

**2 Ave, 43 St – 34 St**
Injury Summary, 2012-2016 (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>118</td>
<td>11</td>
<td>0</td>
<td>11</td>
</tr>
<tr>
<td>Bicyclists</td>
<td>64</td>
<td>5</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Motor Vehicle Occ</td>
<td>194</td>
<td>7</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>376</strong></td>
<td><strong>23</strong></td>
<td><strong>0</strong></td>
<td><strong>23</strong></td>
</tr>
</tbody>
</table>

Fatalities, 01/01/2012 – 03/19/2018: None

Source: Fatalities: NYCDOT. Injuries: NYSDOT. KSI: Persons killed or severely injured
Evaluation of Off-Peak Protected Bike Lane Design
BEFORE: 2 Ave, 52 St – 43 St

High traffic volumes, lack of organization in roadway
Gap in the protected bike lane network where facilities were most needed
Enhanced Shared Lane
Site specific curb access and parking needs
Evaluation of Off-Peak Protected Bike Lane Design

AFTER: Peak Period Design

Curbside bike lane provides dedicated space for cyclists
Maintains five moving lanes
Loading not permitted
Evaluation of Off-Peak Period Bike Lane Design

AFTER: Off-peak Design

Parking protected bike lane provides dedicated space for cyclists, separated from moving vehicles

Removal of travel lane calms traffic when speeding is more likely to occur

Loading permitted
**VEHICLE SPEEDS: MIDTOWN IN MOTION EZPASS DATA**

<table>
<thead>
<tr>
<th>Time</th>
<th>49 ST - 57 ST</th>
<th>42 ST - 49 ST</th>
<th>34 ST - 42 ST</th>
</tr>
</thead>
<tbody>
<tr>
<td>AM</td>
<td>10.3 mph</td>
<td>10.5 mph</td>
<td>8.1 mph*</td>
</tr>
<tr>
<td>MD</td>
<td>9.3 mph</td>
<td>6.9 mph</td>
<td>10.6 mph*</td>
</tr>
<tr>
<td>PM</td>
<td>13.8 mph</td>
<td>8.3 mph</td>
<td>8.6 mph*</td>
</tr>
<tr>
<td></td>
<td>2016</td>
<td>2017</td>
<td>2016</td>
</tr>
<tr>
<td></td>
<td>10.3 mph</td>
<td>11.2 mph</td>
<td>10.3 mph</td>
</tr>
<tr>
<td></td>
<td>10.3 mph</td>
<td>10.3 mph</td>
<td>7.2 mph</td>
</tr>
<tr>
<td></td>
<td>13.8 mph</td>
<td>13.2 mph</td>
<td>9.2 mph</td>
</tr>
</tbody>
</table>

Data show no significant change to average vehicle speeds in the project area (2nd Ave 59th St to 43rd St).

Overall, average motor vehicle speeds on streets in Midtown Manhattan decreased during this same time period.

Note: No operational changes made south of 43 St.

Source: EZPASS 2017 October Mid-week Vs. 2016 October Mid-Week.
Note *: 2nd Avenue - Southbound - 42nd St to 34th St, 15 min Average Travel Time using 2017 October midweek vs. 2016 October midweek (The 2016 data for this link is approximate using the historical travel time as EZPASS reader at 34 St was down during this month).
Note **Taxi GPS is used as a proxy for travel speeds.)
### Blocking of Bike Lane: Time Lapse Camera Observations

#### Bike Lane Blockages

<table>
<thead>
<tr>
<th>Locations</th>
<th>43 St</th>
<th>44 St</th>
<th>45 St</th>
<th>46 St</th>
<th>48 St</th>
<th>50 St</th>
</tr>
</thead>
<tbody>
<tr>
<td>Video Analyzed (Days)</td>
<td>5</td>
<td>5</td>
<td>6</td>
<td>9</td>
<td>12</td>
<td>9</td>
</tr>
<tr>
<td>Video Analyzed (Minutes)</td>
<td>1,200</td>
<td>1,200</td>
<td>1,440</td>
<td>2,160</td>
<td>2,880</td>
<td>2,160</td>
</tr>
<tr>
<td>Number of Times Bike Lane was Blocked</td>
<td>26</td>
<td>13</td>
<td>20</td>
<td>3</td>
<td>9</td>
<td>6</td>
</tr>
<tr>
<td>Total Time Bike Lane was Blocked in Minutes</td>
<td>81</td>
<td>48</td>
<td>86</td>
<td>21</td>
<td>46</td>
<td>36</td>
</tr>
<tr>
<td>Percentage of Time Bike Lane was Blocked</td>
<td>6.8%</td>
<td>4.0%</td>
<td>6.0%</td>
<td>1.0%</td>
<td>1.6%</td>
<td>1.7%</td>
</tr>
</tbody>
</table>

**Bike lane is clear 97% of the time**

#### No Stopping Left Turn Area Blockages

<table>
<thead>
<tr>
<th>Locations</th>
<th>43 St</th>
<th>44 St</th>
<th>45 St</th>
<th>46 St</th>
<th>48 St</th>
<th>50 St</th>
</tr>
</thead>
<tbody>
<tr>
<td>Video Analyzed (Days)</td>
<td>5</td>
<td>9</td>
<td>12</td>
<td>9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Video Analyzed (Minutes)</td>
<td>1,200</td>
<td>2,160</td>
<td>2,880</td>
<td>2,160</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Times No Stopping LT was Blocked</td>
<td>29</td>
<td>15</td>
<td>61</td>
<td>14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Time No Stopping LT was Blocked in Minutes</td>
<td>454</td>
<td>72</td>
<td>1,380</td>
<td>201</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percentage of Time No Stopping LT was Blocked</td>
<td>37.8%</td>
<td>3.3%</td>
<td>47.9%</td>
<td>9.3%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Left Turn Area is clear 75% of the time**

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*Video data collected on 2nd Ave at 43rd, 44th, 45th, 46th, 48th, and 50th Streets. Data collected in August, September 2017. Mid-week days from 7AM-10AM.*
Evaluation of Off-Peak Protected Bike Lane Design

BIKE VOLUMES: BEFORE/AFTER COUNTS

Off-Peak Protected Bike Lane installed on 2nd Ave (59 St to 43 St) in Spring/Summer 2017

Bike Lane Installed on 2nd Ave (59 St to 43 St) in Spring/Summer 2017

2nd Ave at 50th St

+36% increase in cycling (2015-2017)

Bicycle Volume Data: Average of three 12-hr (7AM-7PM) counts conducted on weekdays in May, July, and September for each year reported.
Proposal
## Proposal

### CORRIDOR: EXISTING CONDITIONS

<table>
<thead>
<tr>
<th>Condition</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>High Traffic Volume</strong></td>
<td>High volume especially approaching bridge and tunnel</td>
</tr>
<tr>
<td><strong>Curb Access/ Parking</strong></td>
<td>Commercial un/loading, drop-off/pick-up of passengers</td>
</tr>
<tr>
<td><strong>Heavily Used Cycling Route</strong></td>
<td>No dedicated space for cyclists</td>
</tr>
<tr>
<td></td>
<td>Gap in the protected bike network</td>
</tr>
</tbody>
</table>
**CORRIDOR: PROPOSED DESIGN (68th – 60th St)**

**EXISTING**
- 11’ Bus Lane/Turn Lane
- 10’ Travel Lane
- 10’ Travel Lane
- 10’ Travel Lane
- 10’ Travel Lane
- 10’ Enhanced Shared Lane
- 9’ Parking Lane

**PROPOSED: Peak Period**
- 11’ Bus Lane/Turn Lane
- 10’ Travel Lane
- 10’ Travel Lane
- 10’ Travel Lane
- 10’ Travel Lane
- 10’ Rush Hour/Loading Lane
- 6’ Bike Lane

**PROPOSED: Off-Peak Period**
- 11’ Bus Lane/Turn Lane
- 10’ Travel Lane
- 10’ Travel Lane
- 10’ Travel Lane
- 10’ Travel Lane
- 10’ Rush Hour/Loading Lane
- 6’ Bike Lane

**Shared Lane**

**Gap in the Protected Bike Network**
- No dedicated space for cyclists
- Enhanced shared lane breaks down during peak hour

**Peak Period** (7am - 10am, 3pm - 8pm)
- Curbside buffered bike lane
- Maintains vehicular capacity

**Off-Peak Period**
- Parking protected bike lane
- Traffic calming
- East curb access (loading/unloading)
- West curb access (loading/unloading) when bus lane not in effect
QUEENSBORO BRIDGE: EXISTING CONDITIONS

Complex intersection
- High, constant vehicle volumes
- Limited pedestrian and bicycle access
QUEENSBORO BRIDGE: EXISTING/ISSUES

Vehicle Volumes:

1. High volumes throughout the day

2. No pedestrian and bike crossing on east side from 60th and 59th St

3. Southbound cyclists forced to merge turning vehicles to continue traveling through
QUEENSBORO BRIDGE: PROPOSED THREE STAGE CROSSING

Phase 1

Phase 2

Phase 1
QUEENSBORO BRIDGE: PROPOSAL

1. Add pedestrian and bicycle crossing
   - Allows pedestrian crossing along east side
   - Closes the gap on the protected bike network on 2nd Ave

2. Add concrete island and tip extension
   - Shorter pedestrian and bicycle crossing that works with signal timing

3. Change in lane configuration
   **Existing:**
   - 3 SB through
   - 1 shared SB/left lane
   - 1 left lane onto QBB
   
   **Proposed:**
   - 3 SB through
   - 2 left lanes onto QBB
   - No left turn from 2nd Ave onto 59th St

4. No change to signal timing
BENEFITS OF PROPOSED DESIGN

Continue existing lane south to 59th Street
- Bike lane is now continuous from 125th to 43rd Street
- Shared lanes replaced with dedicated bike lanes at bridge

New pedestrian crossing at Bridge
- People can now walk continuously along east side

Minimize congestion impacts
- Signal timing remains the same, minimizing back-ups into surrounding streets
QUEENS MIDTOWN TUNNEL: ISSUES

Complex intersection

High vehicular volume for most of the day

Ongoing MTA work around the Tunnel area

DOT is currently working with MTA to develop a plan
Next Steps
Next Steps

QUEENSBORO BRIDGE
- Project Development
  - Complete analysis and design of corridor during all traffic configurations
  - Finalize proposal for rush hour/parking regulations
- Community Outreach
  - Present finalized designs to
    - Elected Officials
    - Community Board 6 and 8
- Implementation
  - Late 2018 / Early 2019

QUEENS MIDTOWN TUNNEL
- DEP capital work on 2nd Ave between 34th and 36th Streets
- DOT is working with MTA to develop a plan for the area
- Due to ongoing work and coordination efforts, facilities between 34th and 43rd Streets will not be implemented at the same time as QBB
THANK YOU!

Questions?