1ST AVENUE
PROTECTED BICYCLE LANE

New York City Department of Transportation

Presented by the Bicycle and Greenway Program on June 6, 2016 to Manhattan Community Board 6
(1) Background
- Project Area
- Bike Network
- Safety
- Vehicle Network

(2) Existing Conditions
- Design of 1st Avenue
- Use of 1st Avenue

(3) Proposal
- Protected Bike Lanes
- Vehicle Mobility
- 48th St Island

(4) Summary
PROJECT BACKGROUND
On Average, 4,865 cyclists use the Queensboro Bridge bike lane daily (between April and October)
(1) Background

BIKE VOLUMES

1st Ave Bicycle Volume:

<table>
<thead>
<tr>
<th>Year</th>
<th>12-hour Bike Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>1,411</td>
</tr>
<tr>
<td>2014</td>
<td>1,447</td>
</tr>
<tr>
<td>2015</td>
<td>1,605</td>
</tr>
</tbody>
</table>

- Growing number of cyclists
- High level facility needed

Source: ATI Data, Bicycles btw. E 50 St and E 51 St, in May, August, and September in 2013, 2014, and 2015

14% Increase in ridership since 2013
Background

CITI BIKE January 2016 – March 2016

220,000 trips started CB 6

220,000 trips ended CB 6
(1) Background

SAFETY – Vision Zero

Total Injuries (2010-2014)

1st Ave at 47th St
• 3 Pedestrian Injuries
• 2 Bicyclist Injuries

1st Ave at 48th St
• 2 Pedestrian Injuries
• 2 Bicyclist Injuries; 1 severe

1st Ave (E 55th St to E 59th St), MN
Injury Summary, 2010-2014 (5 years)

<table>
<thead>
<tr>
<th></th>
<th>Total Injuries</th>
<th>Severe Injuries</th>
<th>Fatalities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pedestrian</td>
<td>83</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Bicyclist</td>
<td>19</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Motor Vehicle Occupant</td>
<td>92</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>0</td>
<td>9</td>
<td>3</td>
</tr>
</tbody>
</table>

Source: Fatalities: NYCDOT, Injuries: NYS DOT. KSI: Persons Killed or Severely Injured
(1) Background

SAFETY – Protected Bike Facilities

Protected Bicycle Lanes with 3 years of After Data: Before and After

<table>
<thead>
<tr>
<th>Category</th>
<th>Before</th>
<th>After</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crashes with Injuries</td>
<td>514</td>
<td>426</td>
<td>-17%</td>
</tr>
<tr>
<td>MV Occupant Injuries</td>
<td>221</td>
<td>166</td>
<td>-25%</td>
</tr>
<tr>
<td>Pedestrian Injuries</td>
<td>280</td>
<td>220</td>
<td>-22%</td>
</tr>
<tr>
<td>Cyclist Injuries</td>
<td>100</td>
<td>98</td>
<td>-2%</td>
</tr>
<tr>
<td>Total Injuries</td>
<td>601</td>
<td>484</td>
<td>-20%</td>
</tr>
</tbody>
</table>

Protected bicycle lane projects with 3 years of after data include the following: 9th Ave (16th-31st), 8th Ave (Bank-23rd, 23rd-34th), Broadway (59th-47th, 33rd-26th, 23rd-18th), 1st Avenue (Houston to 34th), 2nd Ave (Houston-34th), Columbus Ave (96th-77th) Note: Only sections of projects that included protected bicycle lanes were analyzed

Source: NYPD AIS/TAMS Crash Database
Fall 2015

- 1st Ave approaching E 49th St reduced from five travel lanes to four
- Protected bicycle lane installed from E 49th St to E 55th St

1st Ave between E 42nd St and E 49 St has two levels and seven lanes
IMPACT OF LANE REMOVAL

7-10AM Average Speed
March 2015: 11.9 mph
March 2016: 9.1 mph
Decrease of 23.7%

4-7PM Average Speed
March 2015: 8.3 mph
March 2016: 8.5 mph
Increase of 2.5%

7-10AM Average Speed
March 2015: 12.3 mph
March 2016: 14.8 mph
Increase of 20.5%

4-7PM Average Speed
March 2015: 9.6 mph
March 2016: 8.2 mph
Decrease of 13.8%

1st Ave (E 42nd St to E 49th St)
- Speeds are marginally lower during AM and PM peaks

1st Ave (E 49th St to E 57th St)
- Vehicle speeds are increased or maintained during AM and PM peaks within a range that does not significantly impact safety

Source: Midtown in Motion data on all Tuesdays, Wednesdays and Thursdays in March 2015 and March 2016. Midtown in Motion sample includes all vehicles equipped with EZPASS.
(1) Background

OVERNIGHT VEHICLE SPEEDS

Average Speeds of Vehicle on 1st Ave
Between E 49th St and E 57th St

Traffic calming benefits during off-peak hours

Source: Midtown in Motion data on all Tuesdays, Wednesdays and Thursdays in March 2015 and March 2016.
Midtown in Motion sample includes all vehicles equipped with EZPASS.
PROJECT
PROPOSAL

2
(2) Proposal

EXISTING CONDITIONS – 1st Ave (55th St to 59th St)

Enhanced Shared Lane

High Volume of Cyclists during peak-hour
(2) Proposal

PROPOSED DESIGN - 1st Ave (55th St to 59th St)

1. Parking Protected Bicycle Lane

Remove One Travel Lane
PROPOSED DESIGN – Left Turns at E 57th St and E 59th St

1. Separate Cyclists from Left Turns, Cyclists Proceed with Through Traffic

2. Maintain Two Left Turn Lanes with Dedicated Left Turn Signal Phase
(2) Proposal

PROPOSED DESIGN – 1st Ave at E 57th St

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>5-6 PM Peak Thru Volume (veh/hr)</strong></td>
</tr>
<tr>
<td><strong>Delay</strong></td>
</tr>
<tr>
<td><strong>Volume-to-Capacity Ratio</strong></td>
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EXISTING CONDITIONS – 1st Ave (47th St to 48th St)

1. Parking Regulation: No Standing Anytime

2. Motorists often use both 1st Ave west service road and E 48th St as if they were both two lanes
EXISTING CONDITIONS – E 48th St at 1st Ave

Consulate Parking

Roadway Obstructions

Hydrant

Catch basin
(2) Proposal

PROPOSED - 1st Ave (47th St to 48th St)

1. Preserves parking area while separating bikes from moving vehicles.

2. Concrete island at E 48th St positioned to channelize vehicles that are turning on to 1st Ave.
EXISTING

1. 30 feet Total Roadway Width
2. 11 feet Travel Lane
3. No Standing Anytime
4. Bike Lane
PROPOSED – Parking Protected Bike Lane

(2) Proposal

Proposed Design:
- Separates bike and travel lane
- Keep motorists from using bike and parking lane as travel lane
(3) Summary

PROPOSED DESIGN

1st Ave at E 47th and E 48th Streets

Islands
• Separates bikes from vehicles
• Discourage motorists from encroaching on the bike lane
• Channelizes vehicles that are turning from E 48th St to 1st Ave
• Shortens crossing

1st Ave between E 55th and E 59th Streets

Curbside bike lane
• Fill the gap in the protected network
• Off-peak traffic calming
• Maintain existing vehicle mobility
THANK YOU!

Questions?
VEHICLE SPEEDS – 1st Ave between E 42nd St and E 49th St

Source: Midtown in Motion data on all Tuesdays, Wednesdays and Thursdays in March 2015 and March 2016. Midtown in Motion sample includes all vehicles equipped with EZPASS.
Appendix

VEHICLE SPEEDS – 1st Ave between E 49th St and E 57th St

Source: Midtown in Motion data on all Tuesdays, Wednesdays and Thursdays in March 2015 and March 2016. Midtown in Motion sample includes all vehicles equipped with EZPASS.