10TH AVE & AMSTERDAM AVE
W 52ND ST TO W 72ND ST

Protected Bike Lane

Presented on June 20 and July 10, 2018
PRESENTATION OVERVIEW

- **Background**
  - Project location
  - Recent safety projects

- **Issues**
  - Safety
  - Context
  - Bicycle connectivity

- **Proposal**
  - Protected Bike Lane
  - Intersection Improvements
Background
GROWTH IN CYCLING – Trends

+156% Growth in daily cycling in New York City (2006-2016)

+107% Growth in biking to work in Manhattan (2011-2016)

+55% Growth in number bikes crossing 50th St in Midtown (2012-2017)
GROWTH IN CYCLING – Citi Bike

Citi Bike regularly serves over 70,000 trips per day

Total Number of Citi Bike Trips in NYC:

2017 - 16 million
2016 - 14 million
2015 - 10 million

April – Sept 2017

2.4 million
Citi Bike trips started or ended in CB 4

3.3 million
Citi Bike trips started or ended in CB 5

1.3 million
Citi Bike trips started or ended in CB 7

Background
Background

BIKE NETWORK – Midtown West / Upper West Side

Previously Installed
• Hudson River Greenway
• 9th Avenue
• 8th Avenue
• Broadway
• Columbus Ave
• Amsterdam Ave

Proposed Future
• 52nd St, 55th St

Gap in Protected Bike Lane Network
• Amsterdam Ave protected bike lane begins at 72nd St
• No northbound connection from Hudson River Greenway and future crosstown protected bike lanes on 52nd St and 55th St

CM Rosenthal requested improvements on Amsterdam Ave (2015)
SAFETY – Amsterdam Ave

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>109</td>
<td>8</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>Bicyclists</td>
<td>32</td>
<td>4</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Motor Vehicle Occupant</td>
<td>136</td>
<td>4</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>277</td>
<td>16</td>
<td>0</td>
<td>16</td>
</tr>
</tbody>
</table>

Fatalities, 01/01/2012 – 04/23/2018: 2

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

2 Cyclist Fatalities 2012-2018
at W 55 St and W 72 St

8 Pedestrians Severely Injured 2012-2016

4 Cyclists Severely Injured 2012-2016

Notes: Unlabeled intersections had less than 10 injuries
SAFETY – Amsterdam Ave

**Speeding**
79% of vehicles travel above the speed limited during off-peak times

**Undefined Lane Assignments**
Lead to unpredictable vehicular movements

**Long Pedestrian Crossings**
Challenging, especially for less able pedestrians

**No Dedicated Space for Bikes**
Cyclists ride with traffic, less predictable locations

Speed study conducted on September 13, 2017, 10 - 11 pm, between 59 St and 60 St
SAFETY – Protected Bike Lanes

Protected bike lanes improve safety for all road users

On streets with protected bike lanes:
- Pedestrian injuries **decrease 21%**
- Motorist injuries **decrease 15%**
- Injuries to cyclists increase only 3%, despite a 61% bike volume increase

On Columbus Ave (W 96th to W 69th St):
- Cyclist volumes **increased 30%** *
- Total injuries **decreased 30%** *

Data from 25 separate protected bicycle lane projects installed from 2007-2014 with 3 years of after data. Includes portions of 1 Ave, 2 Ave, 8 Ave, 9 Ave, Broadway, Columbus Ave, Hudson St, Lafayette St / 4 Ave, Sands St, Allen/Pike St, Kent Ave, Prospect Park West, Flushing Ave, Bruckner Blvd & East 163 St, Imlay St / Conover St, Paerdegat Ave. Only sections of projects that included protected bike lanes were analyzed. Source: NYPD AIS/TAMS Crash Database

* Columbus 76-69: total injuries decreased 33% while bike volumes increased 15%. Columbus 96-77: total injuries decreased 20% and bike volumes increased 50%.
Amsterdam Ave Proposal
• Ranges from 60 – 70 ft wide
• 4 full-time travel lanes
• Peak period travel lanes on both curbs
• Parking on both curbs during non-peak hours
• Peak hour volume range from 1,200 to 1,600 vehicles
• Remove one full-time travel lane
• Remove PM rush hour regulation from the west curb and modify parking regulations to create full-time parking/loading lanes
• Install protected bike lane on west curb
• Install painted pedestrian islands to shorten crossing distances and calm turns to and from side streets
PROPOSED DESIGN - Precedent

- Lane reduction at all times calms traffic
- Bicycle lane protected from traffic
- Reduced crossing distances
- Neighborhood scale design
PROPOSED DESIGN – Turn Treatments

Mixing Zones
- Improve visibility of pedestrians and cyclists
- Reduce cyclist delay (cyclists stop and wait longer at split phase signals)
- Remove left turns from thru lanes to help process thru traffic and reduce back pressure

Split Phase Signals
- Turning vehicles queue in turn lane for dedicated turn phase
- Pedestrians and cyclists have a protected signal phase
- **Used on streets with two-way traffic and long crossings: 57th St and 66th St**

Roadway redesign converts 44 parking spaces into pedestrian islands and left turn treatments
PROPOSED DESIGN – W 70th St to W 72nd St

Maintains existing turn lane capacity
Creates dedicated cycling space through the majority of the bow tie
Design is compatible with current and future curb lines
PROPOSED DESIGN – Commercial Loading

- Improve access to the curb for commercial deliveries
- Reduce double parking
- Targeted loading zones address varied needs block by block
PROPOSED DESIGN – Commercial Loading

Reduce the likelihood of trucks double-parking during peak travel times

Indicates a combination of open metered parking and metered commercial

Indicates metered commercial 7am-7pm Monday to Friday

Note 1: Metered parking change from 1 hr metered to 2 hr metered for the length of corridor

Note 2: Proposal includes approx. 120 feet of metered parking on the south side of 70th st.
## TRAFFIC ANALYSIS

<table>
<thead>
<tr>
<th>Cross Street</th>
<th>Overall Intersection Delay (sec) /LOS</th>
<th>Max Volume-to-Capacity Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Existing</td>
<td>Proposed</td>
</tr>
<tr>
<td></td>
<td>Delay</td>
<td>LOS</td>
</tr>
<tr>
<td>W 57 St PM</td>
<td>5.9</td>
<td>A</td>
</tr>
<tr>
<td>W 66 St PM</td>
<td>5.5</td>
<td>A</td>
</tr>
<tr>
<td>W 70 St PM</td>
<td>11.9</td>
<td>B</td>
</tr>
</tbody>
</table>

### Cross Street (approaching)

<table>
<thead>
<tr>
<th>Cross Street (approaching)</th>
<th>10 / Amsterdam Av 6-7 PM Peak Volumes (veh/hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>W 55</td>
<td>1,661</td>
</tr>
<tr>
<td>W 57</td>
<td>1,577</td>
</tr>
<tr>
<td>W 59</td>
<td>1,155</td>
</tr>
<tr>
<td>W 65</td>
<td>1,643</td>
</tr>
<tr>
<td>W 67</td>
<td>1,227</td>
</tr>
<tr>
<td>W 71*</td>
<td>782</td>
</tr>
</tbody>
</table>

* Broadway contributes additional 730 vehicles at bow tie

### Minimal impact on traffic
- Delay at intersections increases by an average of less than 5 seconds (PM)
- Sufficient or same capacity maintained at all intersections
- Maintains three full time travel lanes with left turn lanes/mixing zones
PROPOSED DESIGN

Pedestrians
- Shorten crossing distances
- Calm traffic

Cyclists
- Provide protected bike lane
- Create northbound protected connection from Midtown

Motorists
- Maintain adequate vehicle capacity
- Organize left turns
THANK YOU!

Questions?
After implementation of the protected bike lane on Amsterdam Ave from 72 St to 110 St, average taxi speeds remained the same.

**AM peak**: Average speeds decreased by 1 mph

**Midday**: Average speeds increased by 1 mph

**PM peak**: Average speeds stayed the same

Before sample size: 1,984  
After sample size: 2,079