AMSTERDAM AVENUE 110TH ST TO 162ND ST

Safety Improvements

Presented to Manhattan Community Board 9
March 2, 2017
Amsterdam Avenue Safety Improvements

PRESENTATION OVERVIEW

- **Background**
  - Project Location
  - Safety
  - Key Issues

- **Proposal**
  - Corridor Redesign
  - Intersection Improvements
  - Making It Work

- **Summary**
Background
PROJECT LOCATION AND COMMUNITY REQUESTS

1. Amsterdam Ave W 110th – W 162nd St

2. Corridor Characteristics
   • Mix of high density residential and commercial
   • Columbia University
   • City College

3. Senior Safety Area
   • Hamilton Heights Senior Safety Area
     W 145th St – W 162nd St

4. Community Requests
   • Request from CM Levine to address safety concerns between 110th St and 125th St

5. Citi Bike
   • Phase II expansion scheduled for summer 2017 up to 130th St
Background

SAFETY – Vision Zero

Multi-agency effort to reduce traffic deaths and injuries through improved

- Engineering
- Education
- Enforcement

Priority Intersections on Amsterdam Ave at

- W 125th St
- W 133rd St
Background

SAFETY – Project Area

**4 Pedestrian Fatalities** 2010-2016
**(112th, 113th, 122nd, 155th)**

**28 Pedestrians Severely Injured** 2010-2014

**8 Cyclists Severely Injured** 2010-2014

**Injury Summary, 2010-2014 (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>246</td>
<td>25</td>
<td>3</td>
<td>28</td>
</tr>
<tr>
<td>Bicyclists</td>
<td>69</td>
<td>8</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>Motor Vehicle Occupant</td>
<td>445</td>
<td>23</td>
<td>0</td>
<td>23</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>760</strong></td>
<td><strong>56</strong></td>
<td><strong>3</strong></td>
<td><strong>59</strong></td>
</tr>
</tbody>
</table>

**Fatalities, 01/01/2010 – 01/09/2016: 4**

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

KEY ISSUES – Corridor Safety

*Speeding (136th - 138th St mid-day)
- 71% Above 25mph (NB)
- 70% Above 25mph (SB)

Off-peak Speeding
70% of vehicles travel above the speed limit during off peak time*

Undefined Lane Assignments
lead to unpredictable vehicular movements

No Dedicated Space for Bikes
cyclists ride with traffic, less predictable locations
Background

KEY ISSUES – Intersection Safety

Wide Roadway creates long pedestrian crossings

Wide Turn Radii enable drivers to take turns at high speeds, cut corners

Poor Alignment creates driver confusion, long pedestrian crossings
Background

KEY ISSUES – Bike Network Connectivity

1. Gap in Network

2. Broadway
   • North/South route requested in 2015
   • Amsterdam Ave preferred alternative

3. No Connection to Existing Bike Lanes
   • Amsterdam Ave north of 162nd St
   • Amsterdam Ave (NB ends at 110th)
   • Columbus Ave (SB begins at 110th)
   • Hudson River Greenway

4. Potential Connections
   • 110th St to Central Park
   • 133rd St to Hudson River Greenway
Amsterdam Ave Proposal
PROJECT OVERVIEW

1. Corridor Redesign
   4–to-3 lane conversion with left turn lanes and bike lanes

2. Intersection Improvements
   • Pedestrian Refuge Islands
   • Painted Curb Extensions

3. Making it Work
   • Rush Hour Regulations
   • Southern Transition
   • Northern Transition
   • Loading Zones
   • Traffic Analysis
1. CORRIDOR REDESIGN – Existing Conditions (Typical)

- **60 ft wide**
- **2 moving lanes in each direction**
- **Parking on both curbs**

Off-peak Speeding
70% of vehicles travel above the speed limit during off peak time*

Undefined Lane Assignments lead to unpredictable vehicular movements

No Dedicated Space for Bikes
cyclists ride with traffic, less predictable locations
1. CORRIDOR REDESIGN – Proposed Design (Typical)

- Remove one travel lane in each direction
- Install left turn bays
- Install bike lanes in both directions
- Maintain parking on both curbs

**Narrower Roadway**
- discourages speeding

**Turn Bays**
- create simpler, safer left turns, reduce back pressure

**Bike Lanes**
- provide dedicated space for cyclists, increase predictability
1. CORRIDOR REDESIGN – Example of Proposed Design

**Maintain Consistent Moving Lane**
- reduces speeding, reduce conflict

**Left Turn Bays**
- organize traffic and create safer left turns

Amsterdam Ave at 172nd St looking north
1. CORRIDOR REDESIGN – Safety Benefits of Left Turn Bays

Left turn bays improve traffic organization by allowing left turning vehicles their own space before turning left, which helps reduce back pressure from other vehicles.

<table>
<thead>
<tr>
<th>Injuries on Two-Way Approaches with Left Turn Bays</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Motor Vehicle</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Left</td>
</tr>
<tr>
<td>Before (3 Years)</td>
</tr>
<tr>
<td>After (3 Years)</td>
</tr>
<tr>
<td>Change</td>
</tr>
<tr>
<td><strong>Pedestrian</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Left</td>
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<tr>
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</tr>
<tr>
<td>Change</td>
</tr>
</tbody>
</table>

Before and after analysis of left turn bays installed at 140 intersections (2009-2011):

- -45% Left turn motor vehicle occupant injuries
- -25% Total motor vehicle occupant injuries
- -24% Left turn pedestrian injuries
- -9% Total pedestrian injuries

*On two-way approaches only, installed as part of DOT Street Improvement Projects
**Other includes "U-Turn" and "Unknown"

Proposal

2. INTERSECTION IMPROVEMENTS – Pedestrian Refuge Islands

Wide Roadway creates long pedestrian crossings

Wide Turn Radii enable drivers to take turns at high speeds, cut corners
2. INTERSECTION IMPROVEMENTS – Pedestrian Refuge Islands

Pedestrian Refuge Islands create safer crossings forces slower left-turns

14 Prioritized Intersections
2. INTERSECTION IMPROVEMENTS – Example of Pedestrian Refuge Islands
2. INTERSECTION IMPROVEMENTS – Painted Curb Extensions

**Poor Alignment**
creates driver confusion,
long pedestrian crossings
2. INTERSECTION IMPROVEMENTS – Painted Curb Extensions

Painted Curb Extension
improves alignment,
creates safer turns,
shortens pedestrian crossing,
improves visibility
5. MAKING IT WORK – Rush Hour Regulations at 145th St, 155th St

- Increases capacity at high volume locations to maintain traffic flow
- Eastern parking lane will turn into travel lane during AM/PM peak hours
  - Standard parking at all other times
5. MAKING IT WORK – Southern Transition (110th St - 113th St)

- Maintains capacity at high volume location to ensure traffic flow
- One lane SB from 113th St - 111th St, Two lanes NB from 110th St – 113th St
5. MAKING IT WORK – Northern Transition (161<sup>st</sup> St – 162<sup>nd</sup> St)

**Proposal**

**Existing**
- West Sidewalk
- 10’ Parking Lane
- 10’ Travel Lane
- 10’ Travel Lane
- 10’ Travel Lane
- 10’ Travel Lane
- 10’ Parking Lane
- East Sidewalk

**Proposed**
- West Sidewalk
- 9’ Bus Stop
- 5’
- 11’ Travel Lane
- 11’ Travel Lane
- 11’ Travel Lane
- 8’ Parking Lane
- East Sidewalk

- Maintains capacity at high volume location to ensure traffic flow
5. MAKING IT WORK – Loading Zones

Loading Zones allows curbside access, reduces double parking, ensures traffic flow

• Improve access to the curb for commercial deliveries
• Targeted loading zones address varied needs block by block
• Identified locations, looking for feedback
5. MAKING IT WORK – 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>Delay</td>
<td>LOS</td>
<td>Delay</td>
</tr>
<tr>
<td>W 110th St</td>
<td>25.5</td>
<td>C</td>
</tr>
<tr>
<td>W 125th St</td>
<td>35.3</td>
<td>D</td>
</tr>
<tr>
<td>W 135th St</td>
<td>9.2</td>
<td>A</td>
</tr>
<tr>
<td>W 145th St</td>
<td>10.3</td>
<td>B</td>
</tr>
<tr>
<td>W 155th St</td>
<td>22.2</td>
<td>C</td>
</tr>
<tr>
<td>W 162nd St</td>
<td>22.4</td>
<td>C</td>
</tr>
</tbody>
</table>

- Left turn bays organize traffic
- Minimal impact on traffic
- Maintains capacity at high volume locations to ensure traffic flow

* Peak hours vary per intersection*
SUMMARY

3
## PROPOSED IMPROVEMENTS AND SAFETY BENEFITS

The proposed project will **increase safety for all road users** along a corridor that had 4 pedestrian fatalities, 28 pedestrians and 8 cyclists severely injured between 2010 and 2014.

<table>
<thead>
<tr>
<th>Improvement</th>
<th>Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remove one lane in each direction</td>
<td>Discourages speeding</td>
</tr>
<tr>
<td>Install left turn bays</td>
<td>Creates safer left turns, improves traffic flow</td>
</tr>
<tr>
<td>Add bike lanes</td>
<td>Addresses gap in bike network, makes cyclist movements more predictable</td>
</tr>
<tr>
<td>Build pedestrian refuge islands</td>
<td>Creates shorter crossings</td>
</tr>
<tr>
<td>Add left turn treatments</td>
<td>Slows left-turning vehicles</td>
</tr>
<tr>
<td>Install painted curb extensions</td>
<td>Improves alignment, shortens crossings</td>
</tr>
<tr>
<td>Add right turn lane at 145th, 155th St</td>
<td>Increases capacity at high volume intersections</td>
</tr>
<tr>
<td>Create southern transition</td>
<td>Maintains vehicle capacity</td>
</tr>
<tr>
<td>Create northern transition</td>
<td>Creates smooth transition to the north</td>
</tr>
<tr>
<td>Add loading zones</td>
<td>Improves curb access, discourages double parking</td>
</tr>
</tbody>
</table>

The proposed project will increase safety for all road users along a corridor that had 4 pedestrian fatalities, 28 pedestrians and 8 cyclists severely injured between 2010 and 2014.
Questions?
THANK YOU!