AMSTERDAM AVENUE 110TH ST TO 155TH ST

Safety Improvements

Presented to Manhattan Community Board 9 Transportation Committee
December 7, 2017
PRESENTATION OVERVIEW

- **RECAP**
- New Parking Information
- Summary

**Previously Presented (Optional):**
- **Background**
  - Project Location
  - Safety
  - Key Issues
- **Proposal**
  - Corridor Redesign
  - Intersection Improvements
  - Making It Work
- **Summary**
KEY ISSUES – Corridor Safety, Vision Zero

**Safety Issues**

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

- Speeding through Turns
- Wide Turning Radii at Intersections

- Weaving / Lane Shopping

- Long Pedestrian Crossings

**Mobility Issues**

- Peak Hour Traffic Congestion
- Lack of Commercial Loading / Excessive Double Parking
- No Dedicated Space for Bikes
  - 805 Cyclists (12h count 10/3/17)

**Injury Summary**

**Fatalities & Serious Injuries**

- 4 Pedestrian Fatalities (2010-2016)
- 28 Pedestrians Severely Injured (2010-2014)
- 8 Cyclists Severely Injured (2010-14)

*Speed Study: 136th -138th St mid-day 1/27/17*
The proposed project will increase safety for everyone on the street while maintaining parking and minimally affecting travel times for drivers.

- **Turn Bays**: create simpler, safer left turns, reduce back pressure
- **Bike Lanes**: provide dedicated space for cyclists, increase predictability
- **Narrower Roadway**: discourages speeding
Concrete phased as capacity permits

Amsterdam Ave at 172nd St looking north
RECAP

PROJECT EVOLUTION

Initial Corridor Design

Additional Data Collection / Analysis, Presented Conceptual Changes

Present Details of Revised Design

FEEDBACK

FEEDBACK

Revised Proposal with Additional Vehicular Capacity (135th – 145th)

Detail Loading Zones & Metered Parking Plan

Added Vehicular Capacity
New Parking Information

MAKING IT WORK – Loading Zones

Add 20 unmetered truck loading zones (7am-1pm Mon to Fri)

Add unmetered truck loading zones (7am-1pm Mon to Fri) & 8 new 2 hour metered parking (1pm-7pm Mon to Fri)

Reduce likelihood of trucks double-parking during peak travel times

Note 1: Existing metered parking to remain unless otherwise indicated.

Note 2: Truck loading zones will be approx 60’ long.
SUMMARY

SUMMARY OF BENEFITS – Corridor Safety, Vision Zero

Safety Improvements

- Narrowed Travel Lanes: Reduces Speeding
- Tighter Turning Radii / Hardened Center Lines: Slows Turns
- Better Organized Roadway: Reduces Lane Shopping
- Painted Curb Extensions / Phased Pedestrian Refuge Islands: Shortens Pedestrian Crossings

Mobility Improvements

- Traffic Flow Enhancements: Left Turn Bays, Signal Adjustments, Rush Hour Lanes
- Expanded Loading Zones & Metered Parking: Reduces Double Parking, Increases Effective Capacity
- Bike Lanes: Serving Residents & Local Restaurants

Amsterdam Looking North at West 187th
THANK YOU!

Questions?
Background
PROJECT LOCATION AND COMMUNITY REQUESTS

1. Amsterdam Ave W 110th – W 155th 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 155th St

4. Community Requests
   • Request from CM Levine to address safety concerns between 110th St and 125th St
     • Add metered parking around 140th
     • Additional north/south bike route

5. Citi Bike
   • Phase II expansion underway
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
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>Total</td>
<td>760</td>
<td>56</td>
<td>3</td>
<td>59</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
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 160th St
   - Amsterdam Ave (NB ends at 110th)
   - Columbus Ave (SB begins at 110th)
   - Hudson River Greenway

4. Cyclist Volumes
   - W 113th – W 114th St
     - Weekday 12hr: 805
     - Weekend 12hr: 767
   - W 142nd – W 143rd St
     - Weekday 12hr: 490
     - Weekend 12hr: 248

**Bike counts done on 10/3 and 10/8/2017**
Amsterdam Ave
Proposal
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**
   - Traffic Analysis
   - Transitions
   - Rush Hour Regulations
   - Loading Zones
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

**Proposed Design**

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

- **Narrower Roadway**
  - Discourages speeding

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

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

- **Maintain Consistent Moving Lane**
  - reduces speeding, reduce conflict
1. CORRIDOR REDESIGN – Safety Benefits of Left Turn Bays

Left turn movements are challenging because motorists:

• Feel **back pressure** from vehicles wanting to go thru while trying to turn
• Must identify a gap in **two lanes**, poor visibility for second lane
• Must look for **pedestrians** in crosswalk

Left turn movements are simplified because motorists:

• Feel less **back pressure** since no thru motorists are stuck behind them
• Only have to look for gap in **one lane** of motor vehicle traffic
• Find it easier to focus on **pedestrians** in crosswalk

Motorists **traveling thru** get stuck behind left turning vehicles and **weave or merge** into right lane

Motorists traveling thru are already in the correct position, resulting in **less weaving and merging**, which improves safety and traffic flow

Motorists turn less aggressively, reducing the risk of injury for all road users
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>
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</thead>
<tbody>
<tr>
<td><strong>Motor Vehicle</strong></td>
</tr>
<tr>
<td></td>
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<tr>
<td></td>
</tr>
<tr>
<td>Left</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td>Before (3 Years)</td>
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<tr>
<td>After (3 Years)</td>
</tr>
<tr>
<td>Change</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Pedestrian</strong></th>
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<td>Left</td>
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<td>-------</td>
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<tr>
<td>After (3 Years)</td>
</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”
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 for slower left-turns

10 Prioritized Locations

* Islands will be flush medians until capital construction*
2. INTERSECTION IMPROVEMENTS – Example of Pedestrian Refuge Islands
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
### 3. MAKING IT WORK – Traffic Analysis (PM)

<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 110th St</td>
<td>25.0</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>11.1</td>
<td>B</td>
</tr>
<tr>
<td>W 145th St</td>
<td>10.3</td>
<td>B</td>
</tr>
<tr>
<td>W 155th St</td>
<td>19.5</td>
<td>B</td>
</tr>
</tbody>
</table>

**Minimal impact on traffic**
- Delay at all intersections increases by an average of less than 3 seconds
- Sufficient or same capacity maintained at all intersections

*Peak hours vary per intersection*
3. MAKING IT WORK – Southern Transition (110th St - 113th St)

Proposal

- 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
3. MAKING IT WORK – (135th St - 145th St)

- Maintains capacity at high volume location to ensure traffic flow
- One lane SB, Two lanes NB from 135th St – 145th St
3. MAKING IT WORK – 125th St

**Existing**

- West Sidewalk
- 10’ Parking Lane
- 10’ Travel Lane
- 10’ Travel Lane
- 10’ Turn Lane
- 10’ Turn Lane
- East Sidewalk

**Proposed**

- West Sidewalk
- 8’ Parking Lane
- 5’
- 10’ Travel Lane
- 10’ Turn Lane
- 10’ Travel Lane
- 5’
- 11’ Turn Lane
- 60’
- East Sidewalk

- Maintains capacity at high volume location to ensure traffic flow
- Continues one lane SB
3. MAKING IT WORK – Rush Hour Regulations at 145th St, 155th St

**Proposal**

**Existing**

- West Sidewalk
  - 10’ Parking Lane
  - 10’ Travel Lane
  - 10’ Travel Lane
  - 10’ Travel Lane
  - 10’ Parking Lane

**Proposed**

- West Sidewalk
  - 8’ Parking Lane
  - 5’ Travel Lane
  - 11’ Turn Lane
  - 10’ Travel Lane
  - 10’ Parking Lane

- East Sidewalk

**Key Points**

- Increases capacity at high volume locations to maintain traffic flow
- Eastern parking lane will turn into travel lane during PM peak hours
  - Standard parking at all other times
3. MAKING IT WORK – Loading Zones

- Improve access to the curb for commercial deliveries
- Targeted loading zones address varied needs block by block
- Extensive business outreach with surveys
3. MAKING IT WORK – Loading Zones (Public Outreach)

**Merchant Surveys**
- 12 question survey
  - Number of deliveries
  - Time of day
  - Length of drop off
  - Vehicle type
- 124 surveys completed

**Survey Initial Takeaways**
- Double parking is a serious concern
  - Drivers constantly receiving tickets for double parking
- General support for dedicated commercial loading zones
- Most managers/owners seemed welcome to any street improvements
- Many restaurants rely on delivery cyclists

Ambassadors attempted to survey every business along project corridor
*April 24th and April 26th*
3. MAKING IT WORK – Loading Zones (Proposal)

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

Note 1: Existing metered parking to remain unless otherwise indicated.

Note 2: Truck loading zones will be approx 60’ long.

Add unmetered truck loading zones (7am-1pm Mon to Fri)

Add unmetered truck loading zones (7am-1pm Mon to Fri)

& NEW 2 hour metered parking (1pm-7pm Mon to Fri)
SUMMARY
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.

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

**Narrower Roadway**
- Discourages speeding

**Bike Lanes**
- Provide dedicated space for cyclists, increase predictability
THANK YOU!

Questions?
Appendix

Intersections with more than 10 Injuries 2010-2014

[Map showing various intersections with numbers indicating injury counts.]

- FF: 21
- F: 19
- 91
- 30
- 44
- 47

[Map includes streets such as Broadway, W 116th St, etc., with numbers indicating injury counts at each intersection.]