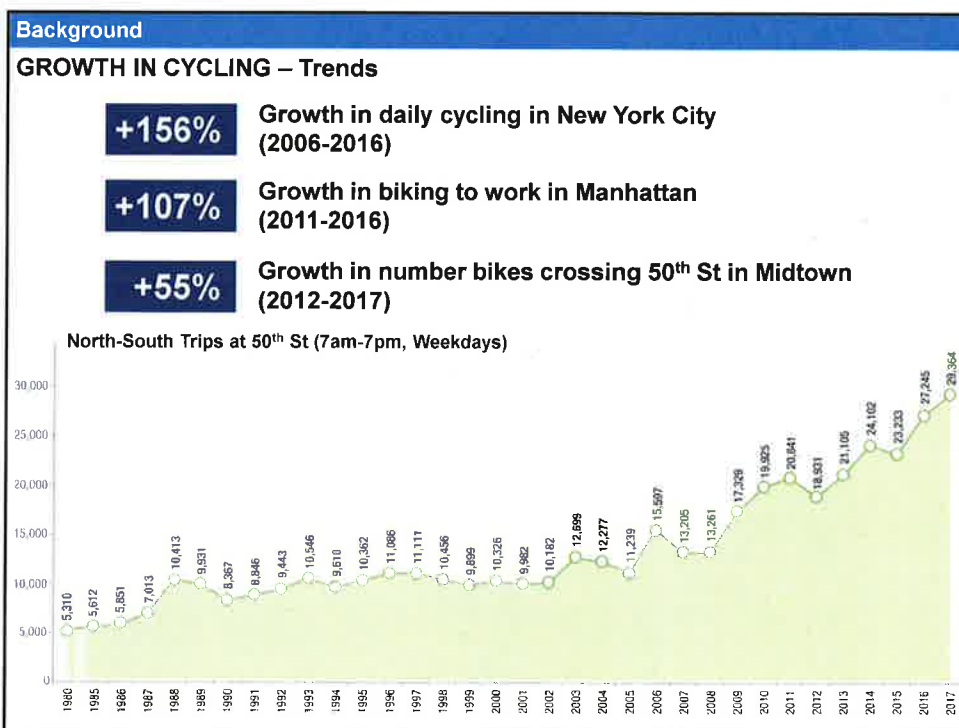


10 Ave & Amsterdam Avenue Safety Improvements

PRESENTATION OVERVIEW

- **Background**
 - Project location
 - Recent safety projects
- **Issues**
 - Safety
 - Context
 - Bicycle connectivity
- **Proposal**
 - Protected Bike Lane
 - Intersection Improvements

2



Background

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 – July 2017
1.4 million
 Citi Bike trips started or ended in CB 4

600,000+
 Citi Bike trips started or ended in CB 7



5

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

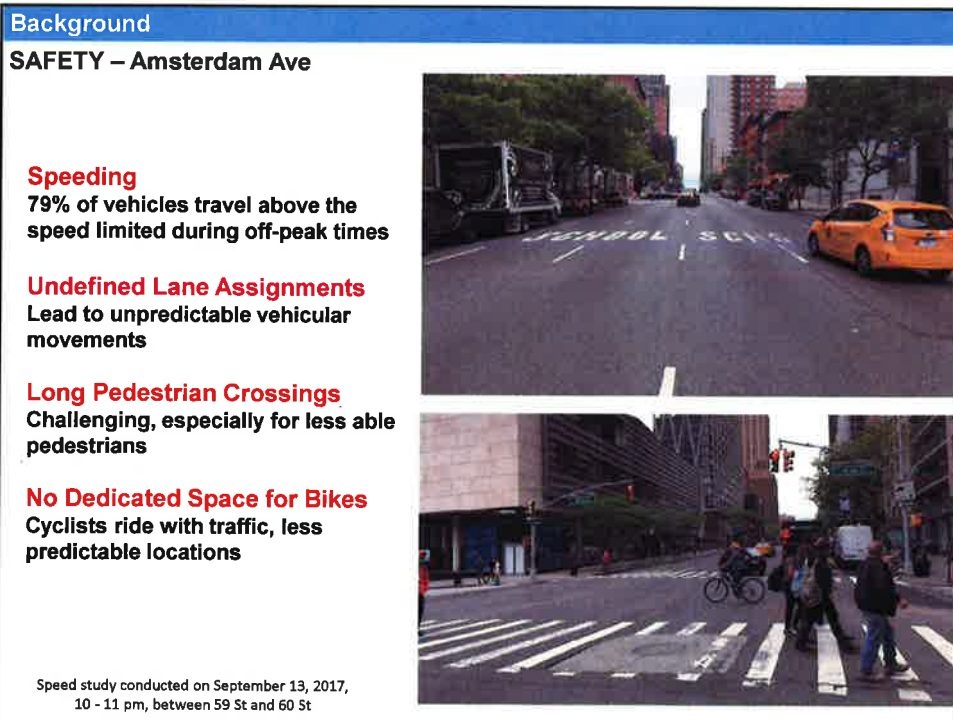
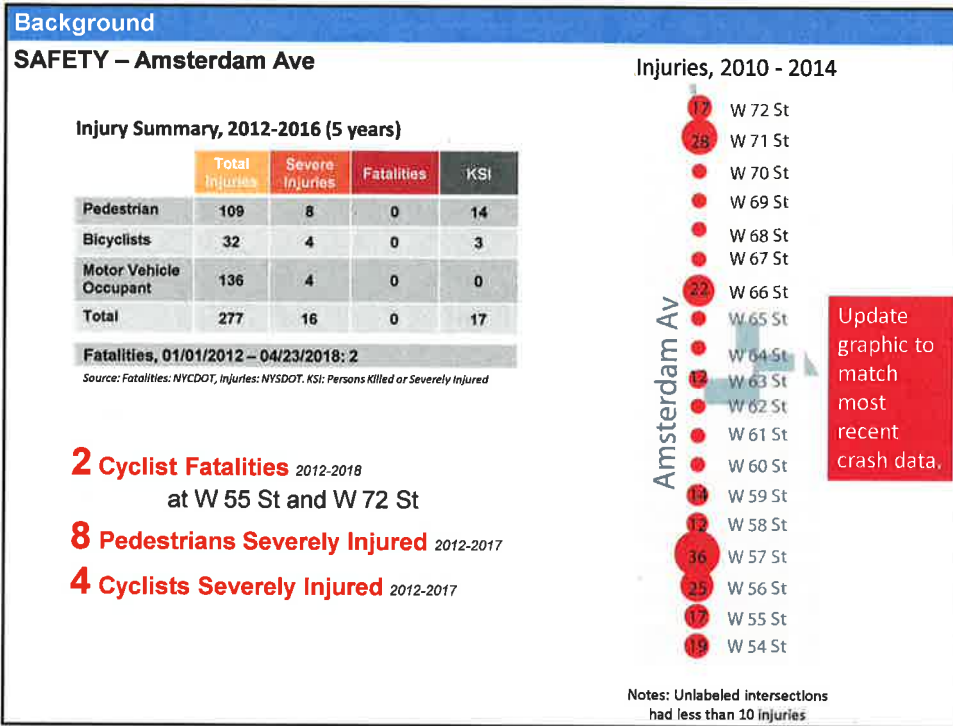
- Amsterdam Ave protected bike lane begins at 72nd St
- No northbound connection from Hudson River Greenway and future crosstown protected bike lanes on 52nd St and 55th St

CM Rosenthal requested improvements on Amsterdam Ave (2015)



LEGEND

- Proposed Bicycle Route
- Existing Bicycle Facilities
- Protected Bicycle Lane
- Bicycle Lane
- Shared Lane
- Signaled Bicycle



Background

SAFETY – Protected Bike Lanes

Protected bike lanes improve safety for all road users

On streets with protected bike lanes:

- Pedestrian injuries **decrease 21%** on 1-way paths
- Pedestrian injuries **decrease 29%** on 2-way paths
- 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%***

Protected Bike Lanes – Before and After Installation

| Category | Before | After | % Change |
|----------------------|--------|-------|----------|
| Total Injuries | 1,477 | 1,263 | -15% |
| MV Occupant Injuries | 677 | 533 | -15% |
| Pedestrian Injuries | 628 | 499 | -21% |
| Cyclist Injuries | 224 | 231 | +3% |

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, Hushing 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

2

Proposal
EXISTING CONDITIONS- Typical

The diagram illustrates a typical existing street layout. It features a 60-foot wide roadway with four travel lanes (two in each direction). On both the East and West sides, there is a 10-foot wide 'Metered Parking / No Standing' zone, with specific time restrictions: 7-10am and 4-7pm. The remaining 40-foot roadway is divided into four 10-foot wide travel lanes. Sidewalks are present on both sides, with various pedestrian figures and a dog shown. A bus and several cars are depicted in the travel lanes.

- 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

Proposal
PROPOSED DESIGN - Typical


The diagram illustrates the proposed street design. It features a 60-foot wide roadway with three travel lanes (two in each direction). On the East side, there is a 10-foot wide 'Parking Lane'. On the West side, there is a 6-foot wide 'Protected Bike Lane' and a 5-foot wide 'Pedestrian Island Parking Lane'. A 5-foot wide 'Buffer' zone is located between the bike lane and the pedestrian island parking lane. The remaining 40-foot roadway is divided into three 10-foot wide travel lanes. Sidewalks are present on both sides, with various pedestrian figures and a dog shown. A bus and several cars are depicted in the travel lanes.

- Remove one full-time travel lane *Remove*
- 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

Proposal

PROPOSED DESIGN - Precedent

- Lane reduction at all times calms traffic
- Bicycle lane protected from traffic
- Reduced crossing distances
- Neighborhood scale design



An aerial photograph of a city street showing a proposed design. The street is wide with multiple lanes. A green-painted bicycle lane is visible on the right side, separated from the main traffic lanes by a white curb. The street is lined with multi-story buildings. Pedestrians and cyclists are visible on the sidewalks and in the bicycle lane. A white van is driving in the left lane.

Proposal

PROPOSED DESIGN – Turn Treatments



Two aerial photographs of a city street showing proposed turn treatments. The left image shows a street with a crosswalk and a bicycle lane. The right image shows a street with a dedicated turn lane for right turns, marked with 'ONLY' and arrows. The street is lined with multi-story buildings. Pedestrians and cyclists are visible on the sidewalks and in the bicycle lane. A white van is driving in the left lane.

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 protected signal phase
- **Used at high conflict locations: 57th St and 66th St**

Roadway redesign converts 44 parking spaces into pedestrian islands and left turn treatments

Proposal
PROPOSED DESIGN – W 70th St to W 72nd St

Existing

Proposed

AMSTERDAM AVE

W 70th ST

W 71st ST

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

Proposal
PROPOSED DESIGN – Commercial Loading

• Improve access to the curb for commercial deliveries

• Reduce double parking

• Targeted loading zones address varied needs block by block

Proposal

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.

Proposal

TRAFFIC ANALYSIS

| | Cross Street | Overall Intersection Delay (sec) / LOS | | | | Max Volume-to-Capacity Ratio | |
|---------|--------------|----------------------------------------|-----|----------|-----|------------------------------|----------|
| | | Existing | | Proposed | | Existing | Proposed |
| | | Delay | LOS | Delay | LOS | | |
| W 57 St | PM | 5.9 | A | 10.6 | B | 0.71 | 0.81 |
| W 66 St | PM | 5.5 | A | 9.7 | A | 0.66 | 0.67 |
| W 70 St | PM | 11.9 | B | 14.6 | B | 0.55 | 0.70 |

| Cross Street (approaching) | 10 / Amsterdam Av 6-7 PM Peak Volumes (veh/hr) |
|----------------------------|---------------------------------------------------|
| W 55 | 1,661 |
| W 57 | 1,577 |
| W 59 | 1,155 |
| W 65 | 1,643 |
| W 67 | 1,227 |
| W 71* | 782 |


* 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

Proposal

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?



NYCDOT



nyc_dot



nyc_dot

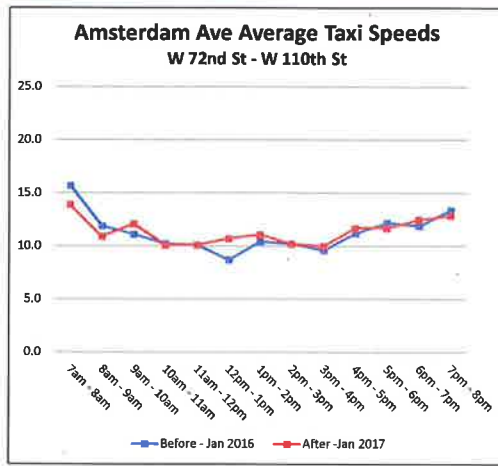


NYCDOT

Proposal

TRAFFIC ANALYSIS

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



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

AM peak: Average speeds decreased by 1 mph

Midday: Average speeds increased by 1 mph

PM peak: Average speeds stayed the same