



AMSTERDAM AVENUE 110TH ST TO 162ND ST

Safety Improvements

Presented to Manhattan Community Board 9
March 2, 2017

PRESENTATION OVERVIEW

- **Background**

- Project Location
 - Safety
 - Key Issues

- **Proposal**

- Corridor Redesign
 - Intersection Improvements
 - Making It Work

- **Summary**

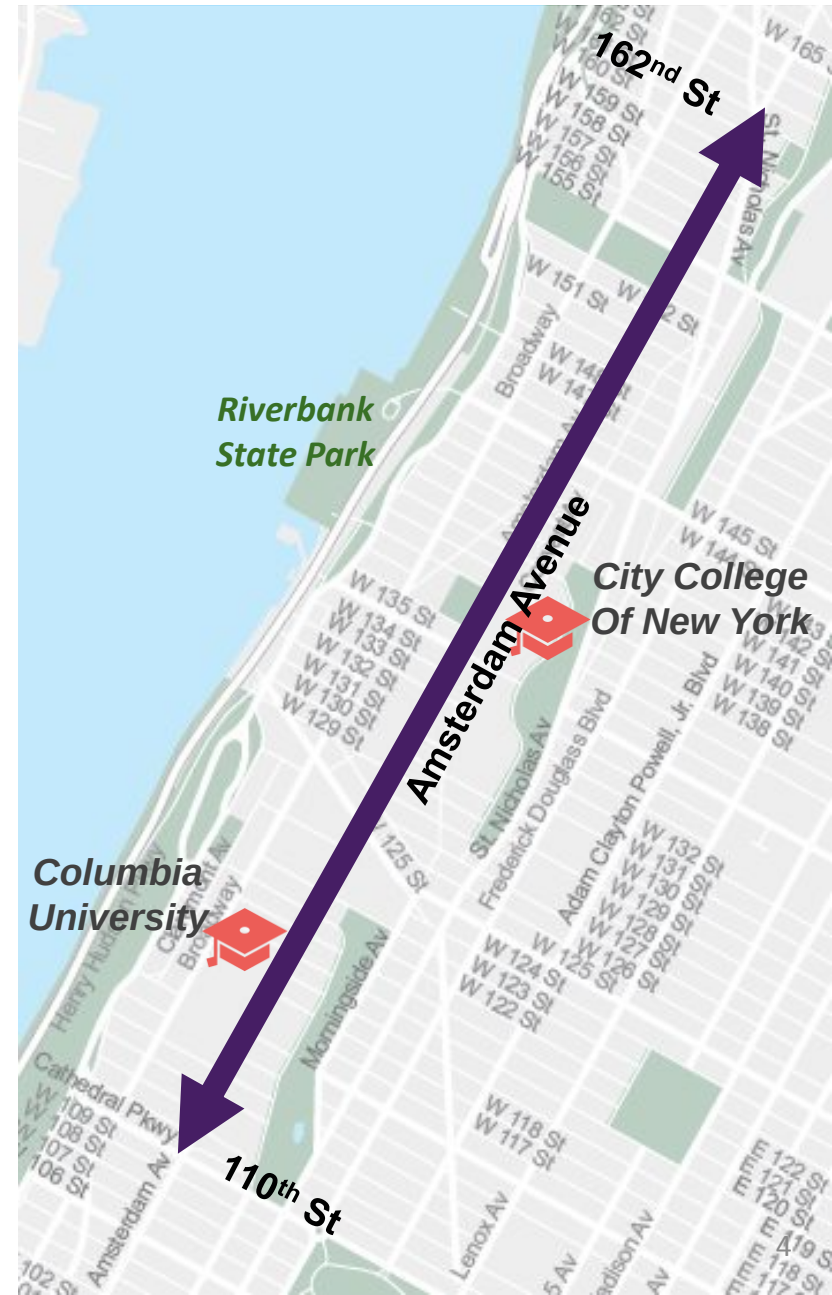


Background

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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



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

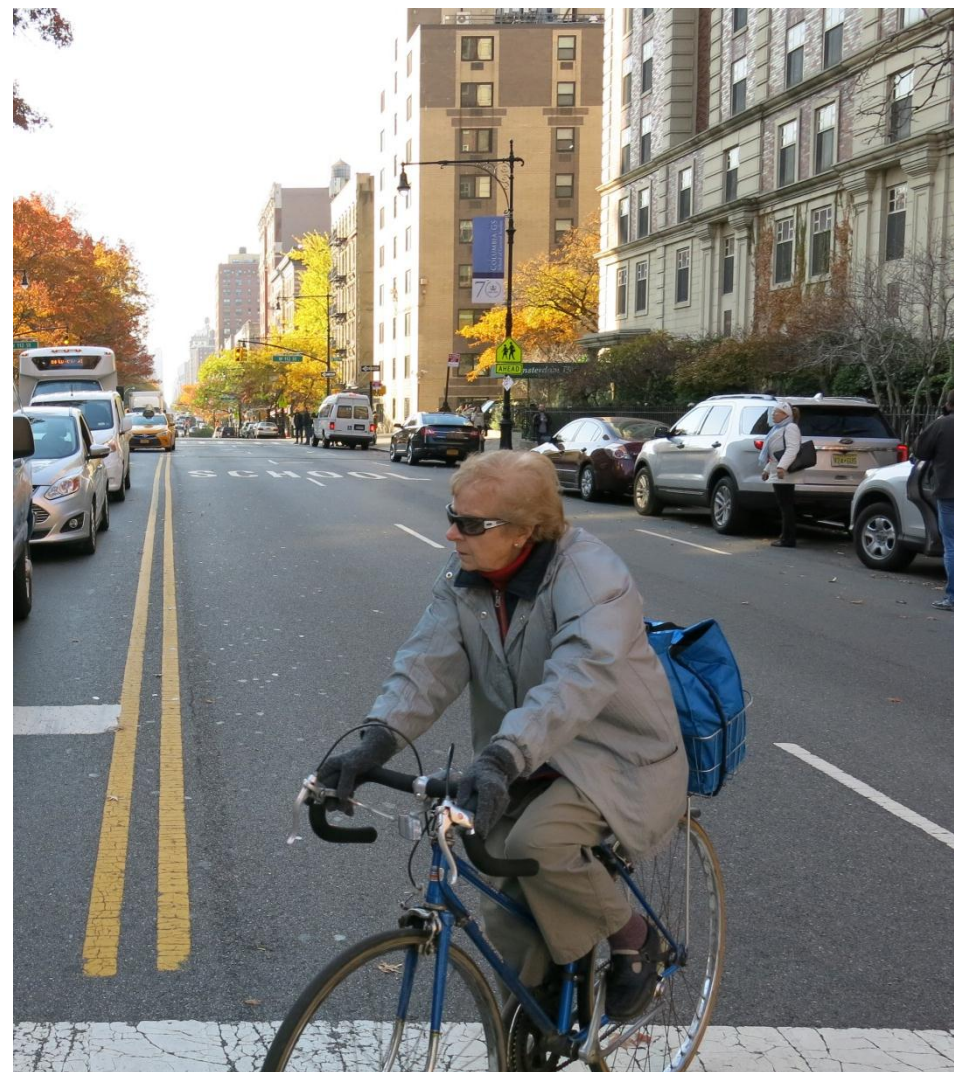
8 Cyclists Severely Injured 2010-2014

Injury Summary, 2010-2014 (5 years)

	Total Injuries	Severe Injuries	Fatalities	KSI
Pedestrian	246	25	3	28
Bicyclists	69	8	0	8
Motor Vehicle Occupant	445	23	0	23
Total	760	56	3	59

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

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



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

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 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

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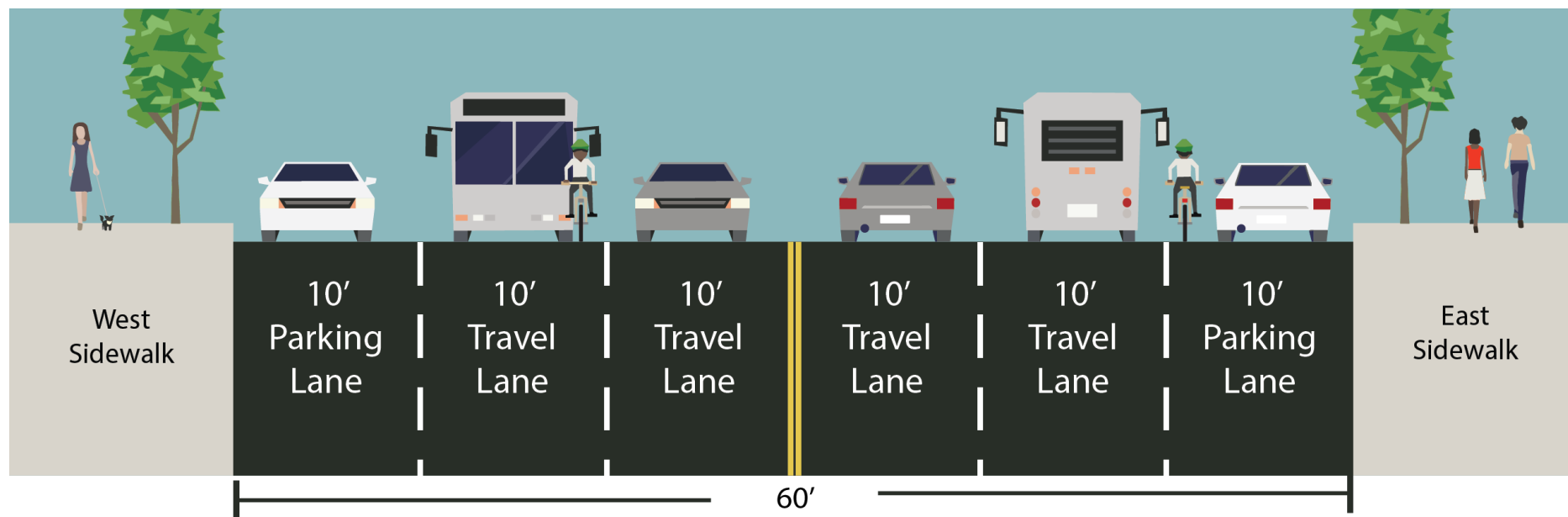
PROJECT OVERVIEW

- 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



Proposal

1. CORRIDOR REDESIGN – Existing Conditions (Typical)



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

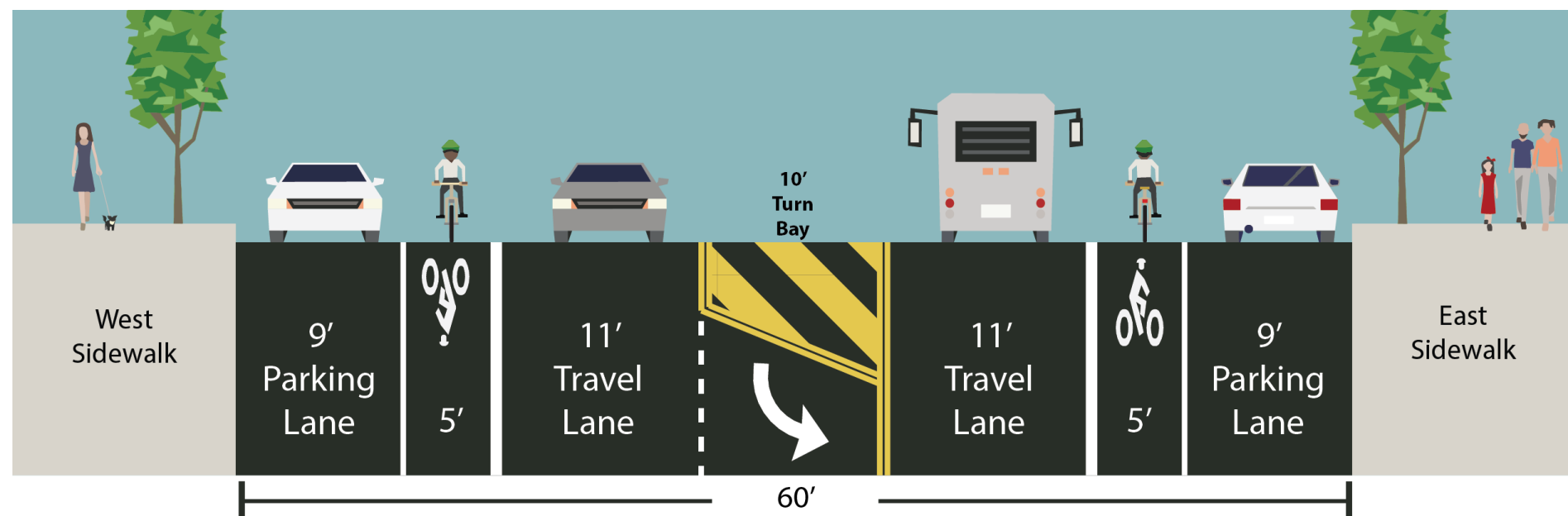
Off-peak Speeding
70% of vehicles travel
above the speed limit
during off peak time*

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

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

Proposal

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



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

Injuries on Two-Way Approaches with Left Turn Bays

Motor Vehicle

	Left	Total Injury
Before (3 Years)	350	1,137
After (3 Years)	191	850
Change	-45%	-25%

Pedestrian

	Left	Total Injury
Before (3 Years)	107	284
After (3 Years)	81	259
Change	-24%	-9%

* On two-way approaches only, installed as part of DOT Street Improvement Projects

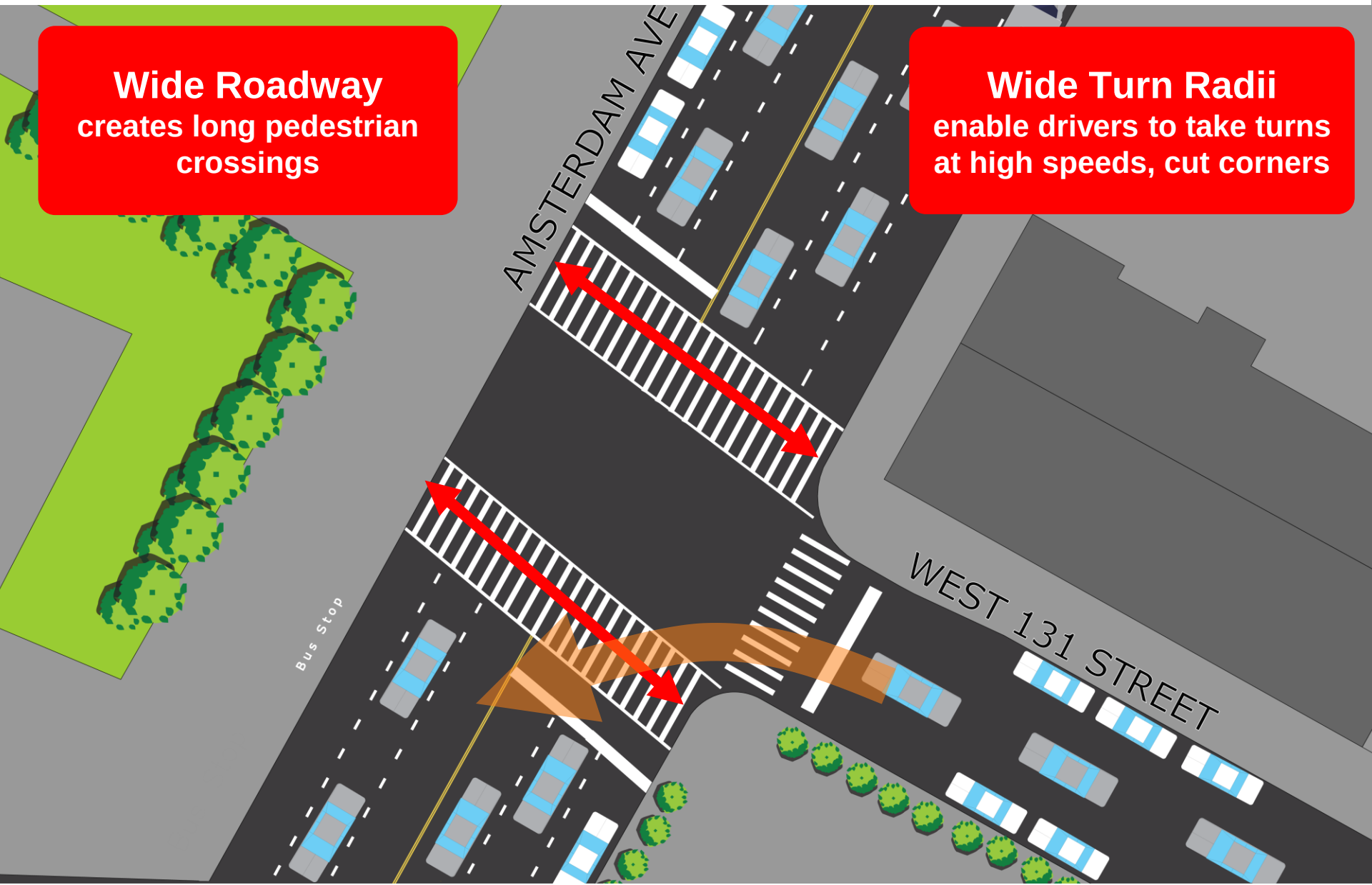
***Other* includes "U-Turn" and "Unknown"

Source: NYSDOT (2006 – 2014)

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

2. INTERSECTION IMPROVEMENTS – Pedestrian Refuge Islands



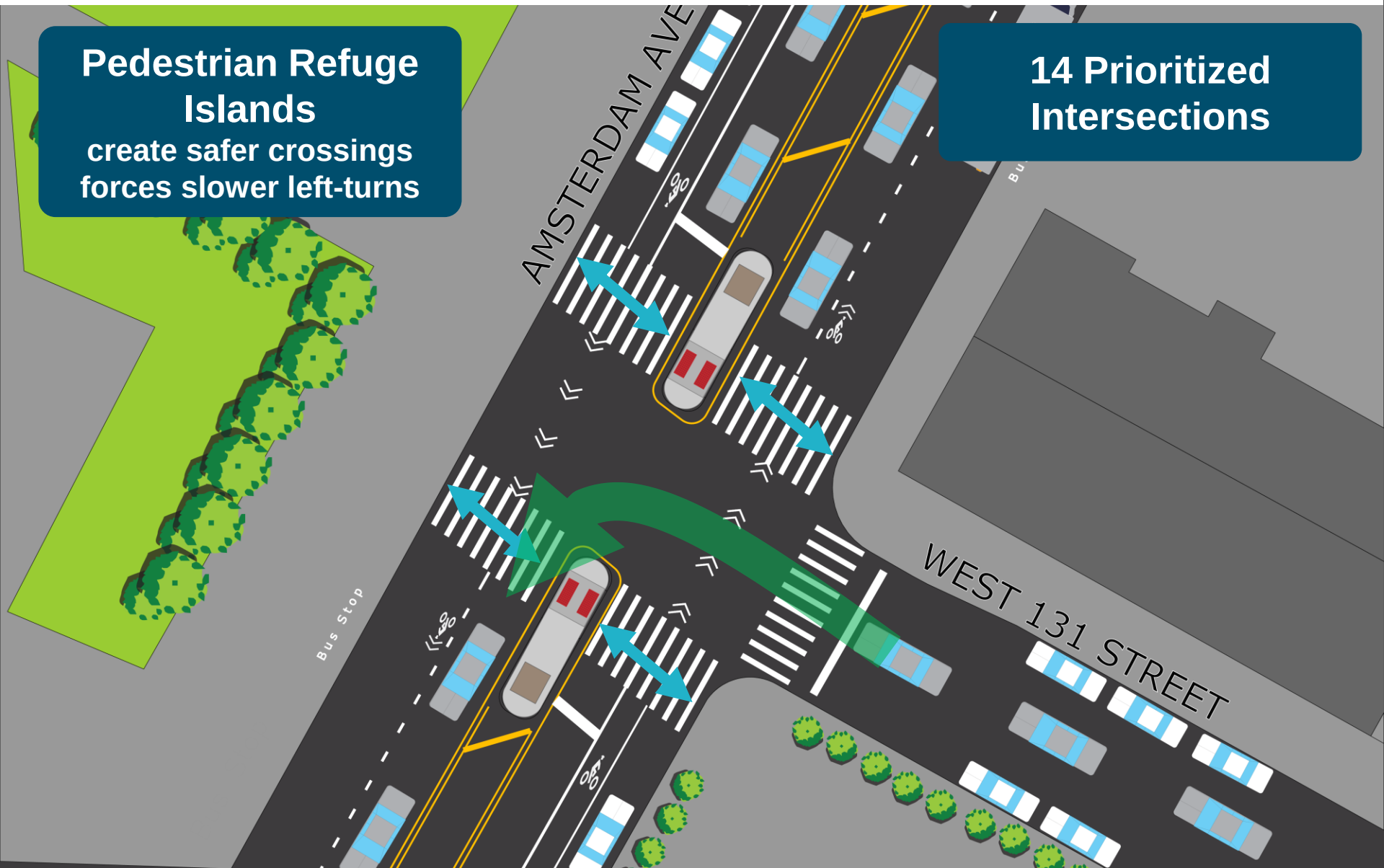
Wide Roadway
creates long pedestrian crossings

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

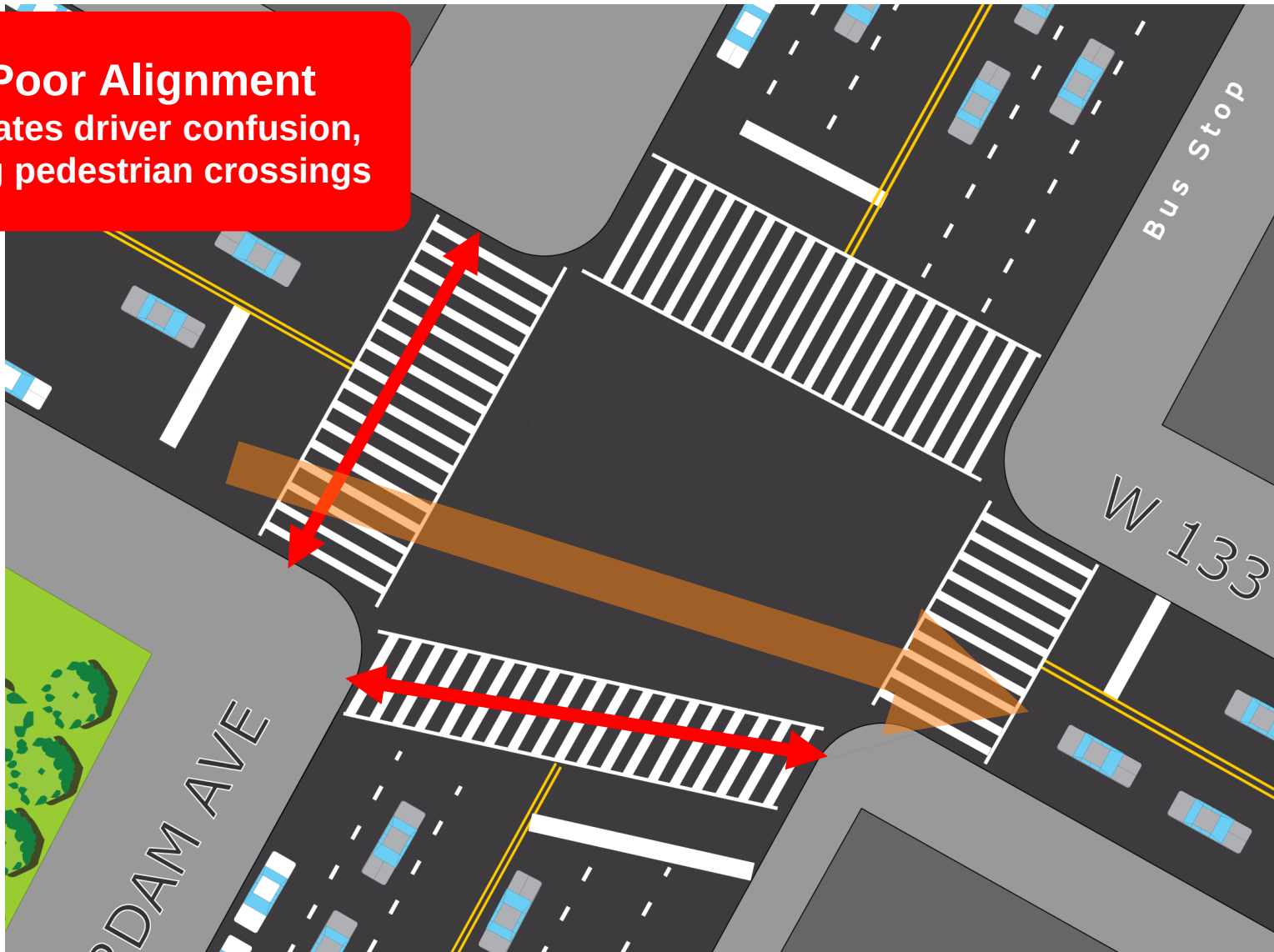


2. INTERSECTION IMPROVEMENTS – Example of Pedestrian Refuge Islands



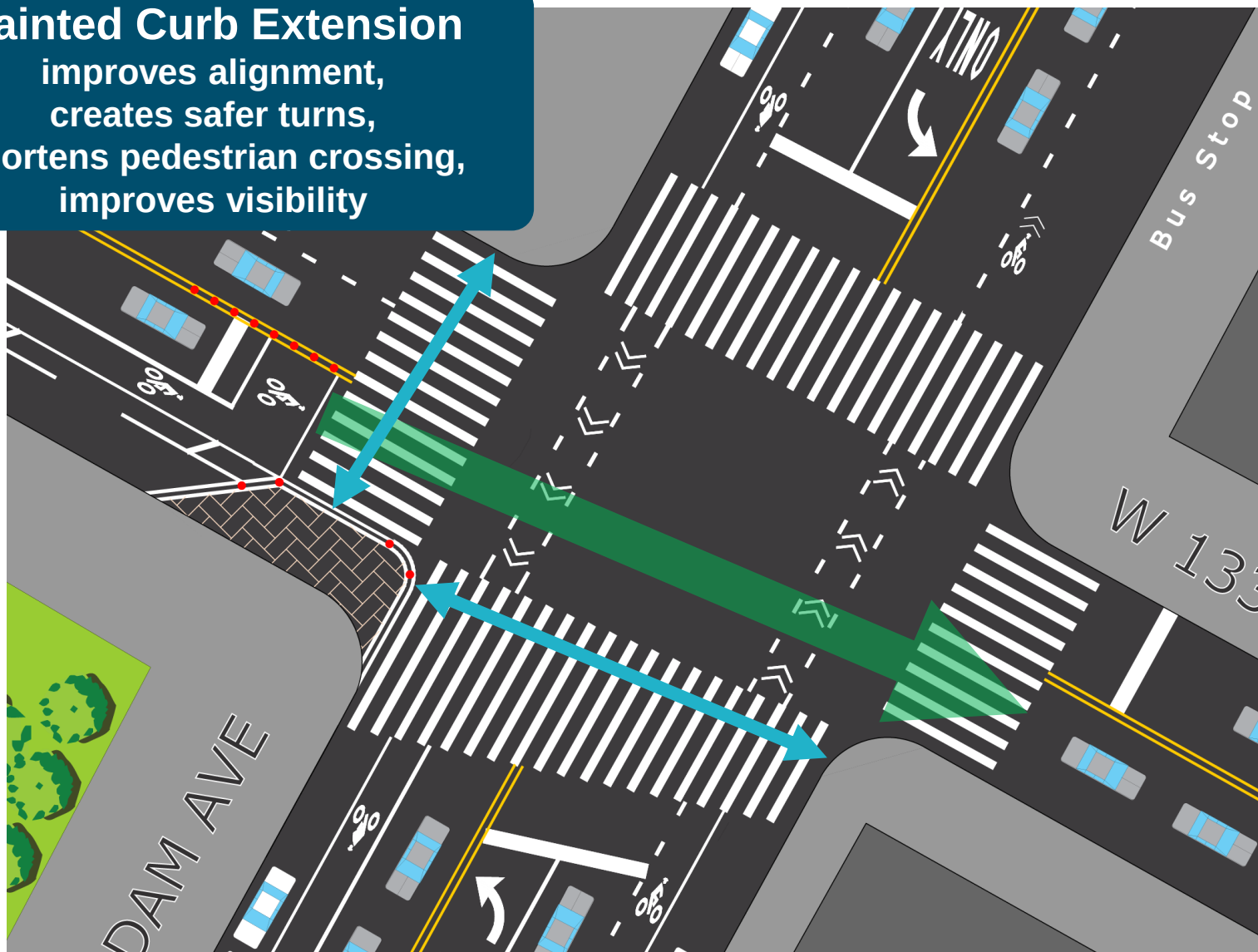
2. INTERSECTION IMPROVEMENTS – Painted Curb Extensions

Poor Alignment
creates driver confusion,
long pedestrian crossings

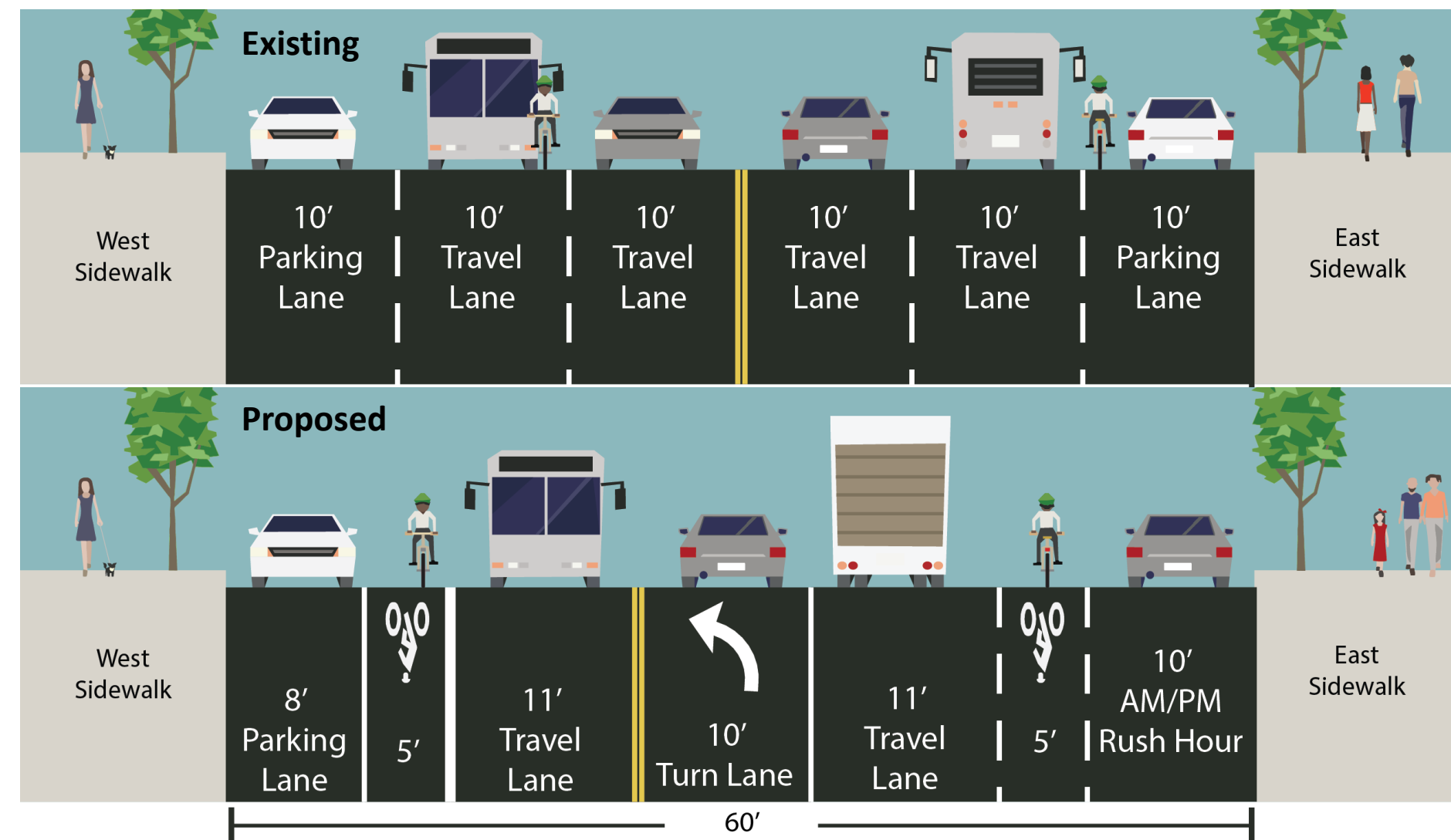


2. INTERSECTION IMPROVEMENTS – Painted Curb Extensions

Painted Curb Extension
improves alignment,
creates safer turns,
shortens pedestrian crossing,
improves visibility

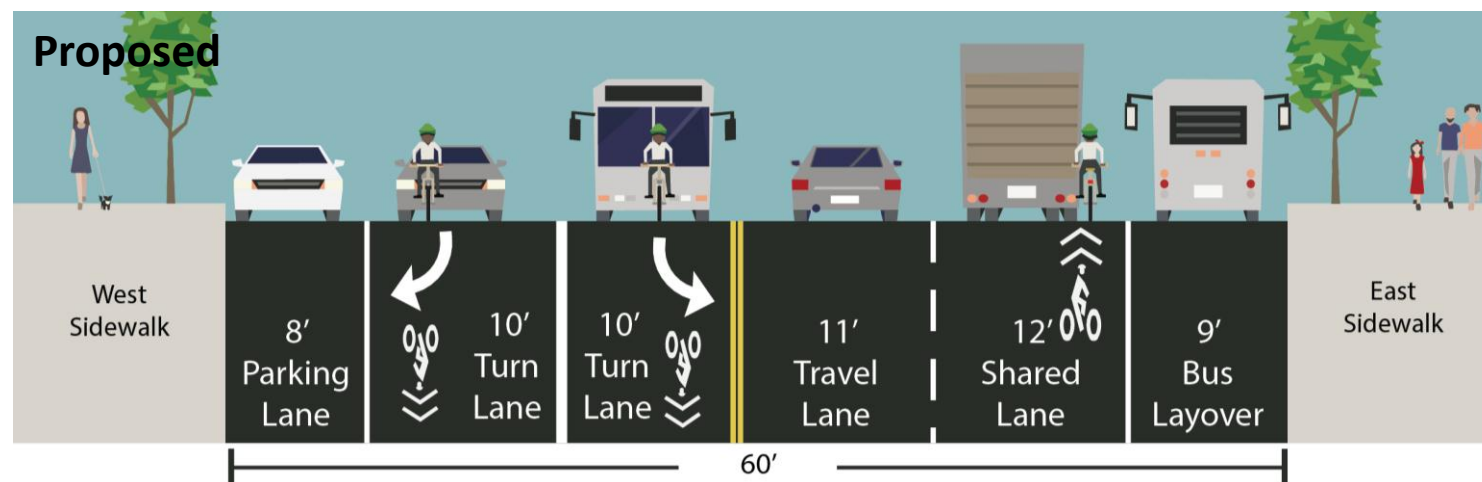
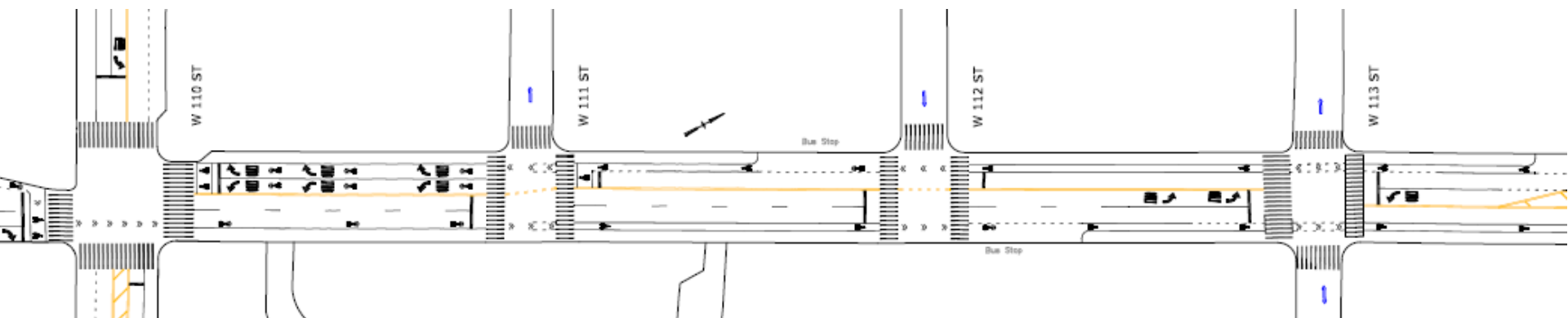


5. MAKING IT WORK – Rush Hour Regulations at 145th St, 155th St



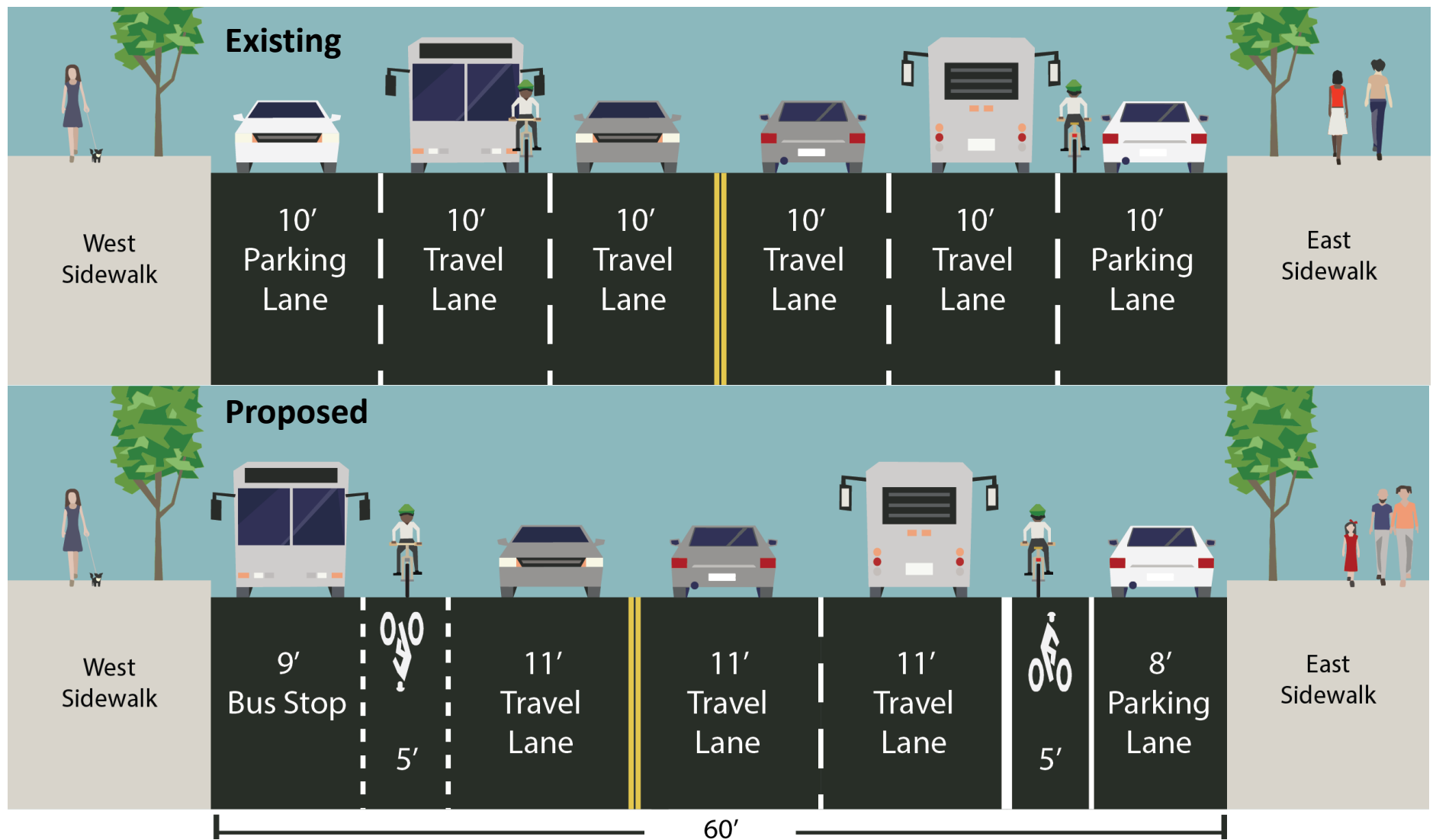
- Increases capacity at high volume locations to maintain traffic flow
- Eastern parking lane will turn into travel lane during AM/PM peak hours
 - Standard parking at all other times

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 (161ST St – 162nd St)



- Maintains capacity at high volume location to ensure traffic flow

5. MAKING IT WORK – Loading Zones

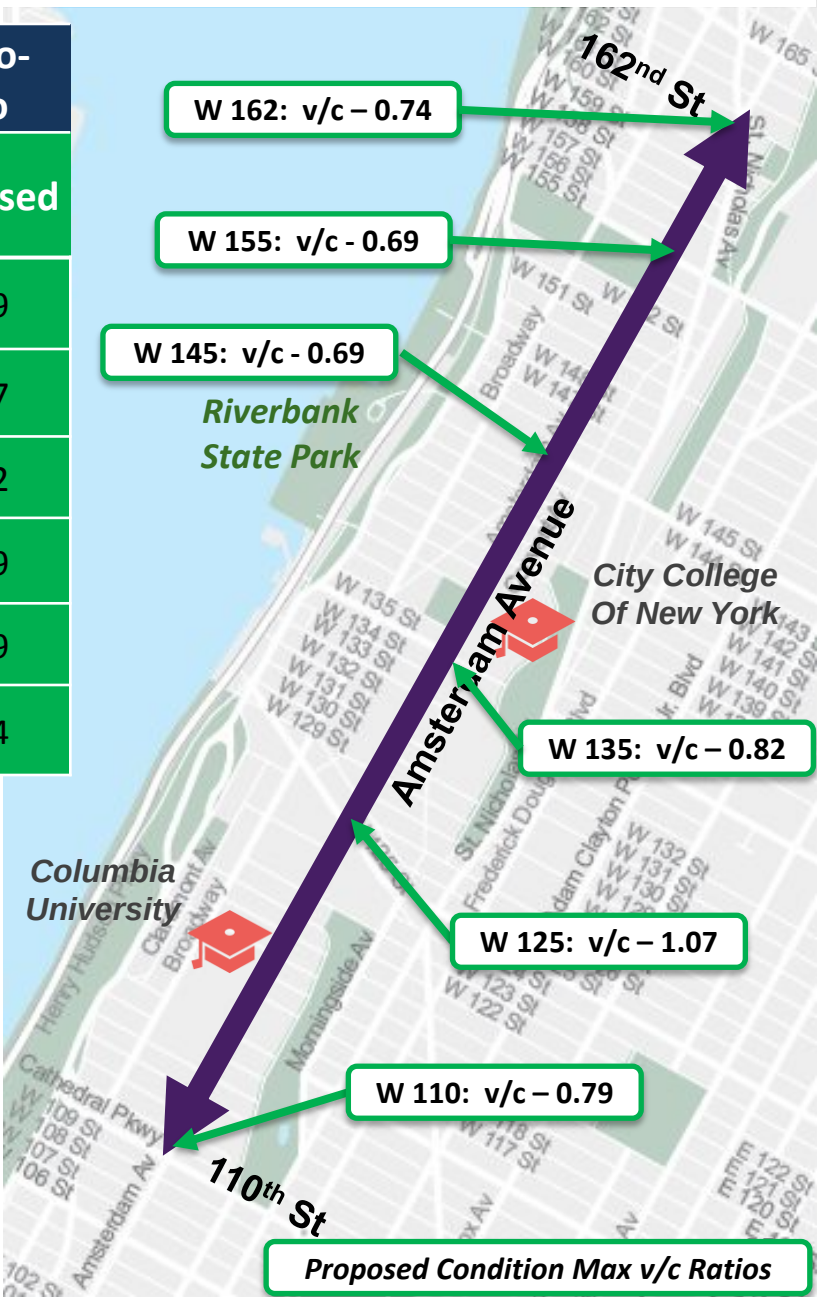
Loading Zones
allows curbside access,
reduces double parking,
ensures traffic flow



- 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

Cross Street	Overall Intersection Delay (sec) /LOS				Max Volume-to-Capacity Ratio	
	Existing		Proposed		Existing	Proposed
	Delay	LOS	Delay	LOS		
W 110 th St	25.5	C	25.3	C	0.79	0.79
W 125 th St	35.3	D	39.1	D	1.07	1.07
W 135 th St	9.2	A	25.3	C	0.66	0.82
W 145 th St	10.3	B	14.0	B	0.62	0.69
W 155 th St	22.2	C	19.0	B	0.65	0.69
W 162 nd St	22.4	C	24.7	C	0.74	0.74



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

* Peak hours vary per intersection*

Proposed Condition Max v/c Ratios

SUMMARY

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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

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

Questions?
THANK YOU!



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