



AMSTERDAM AVENUE 110TH ST TO 155TH ST

Safety Improvements

Presented to Manhattan Community Board 9 Executive Committee
May 11, 2017

PRESENTATION OVERVIEW

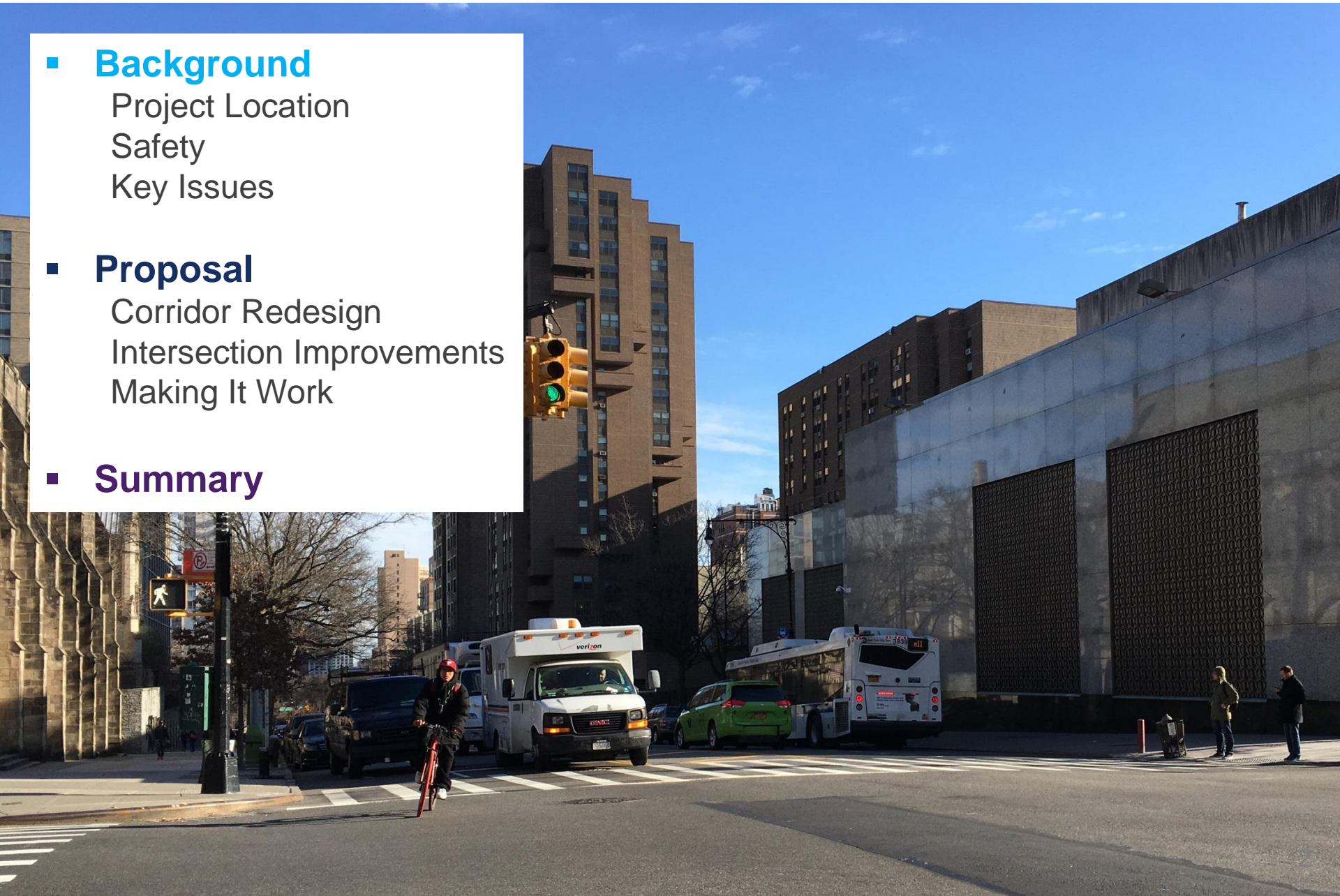
- **Background**

- Project Location
 - Safety
 - Key Issues

- **Proposal**

- Corridor Redesign
 - Intersection Improvements
 - Making It Work

- **Summary**

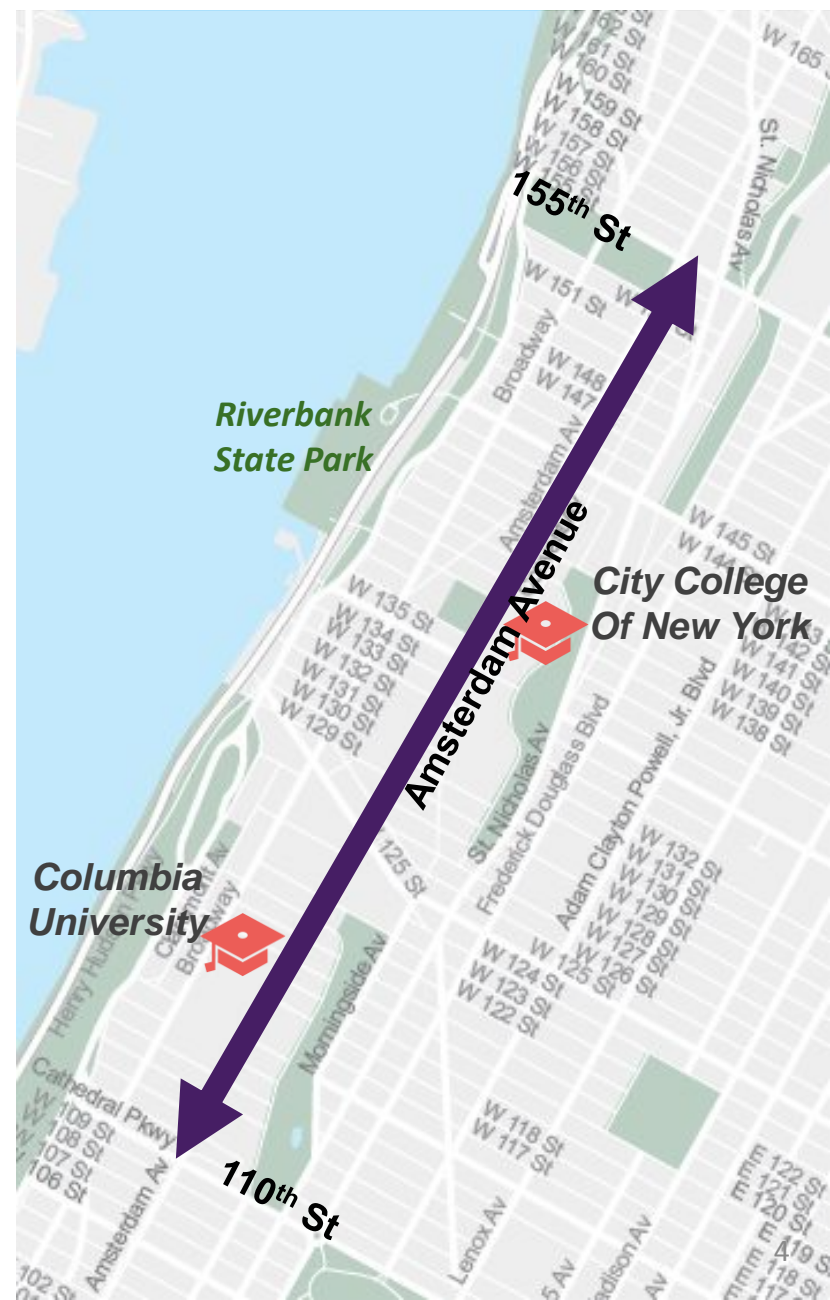


Background

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PROJECT LOCATION AND COMMUNITY REQUESTS

1. **Amsterdam Ave W 110th – W 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 162nd St
4. **Community Requests**
 - Request from CM Levine to address safety concerns between 110th St and 125th St
 - Additional north/south bike route
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

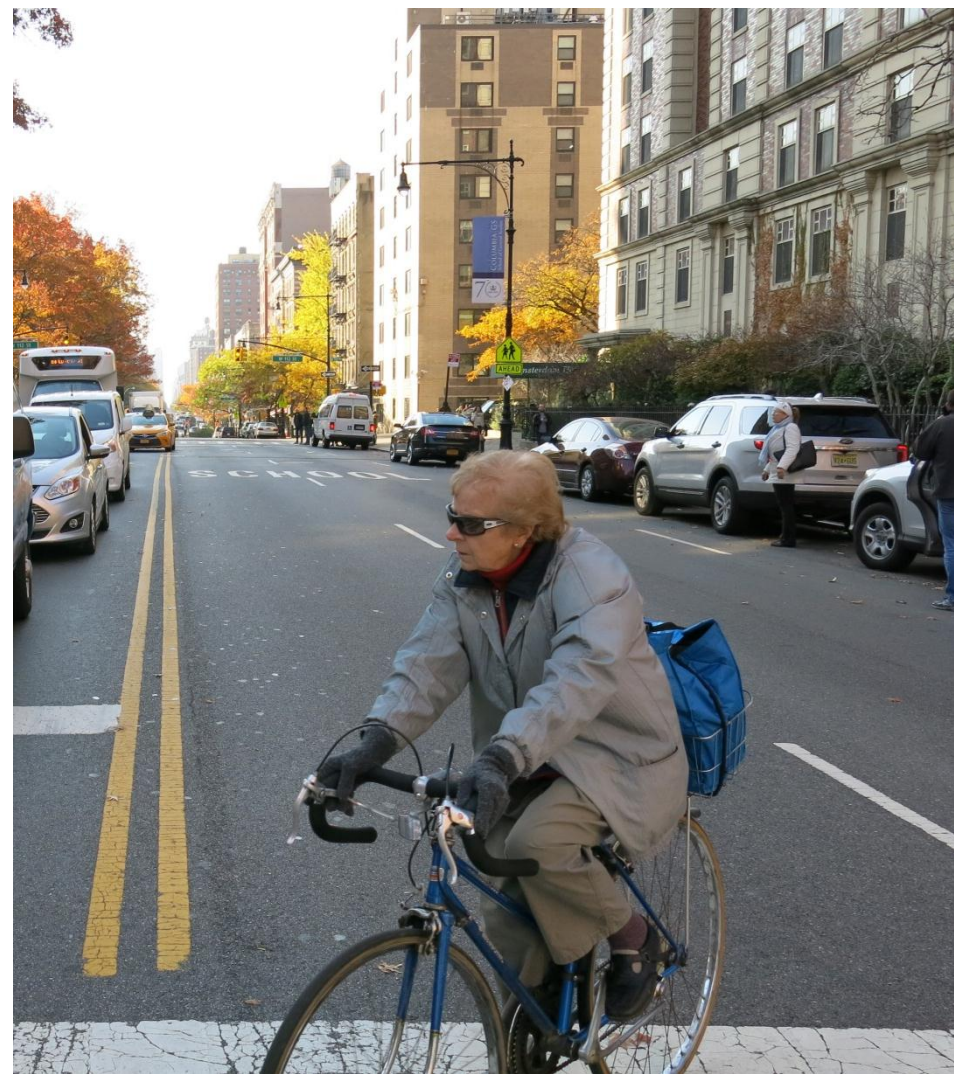
8 Cyclists Severely Injured 2010-2014

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 160th 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

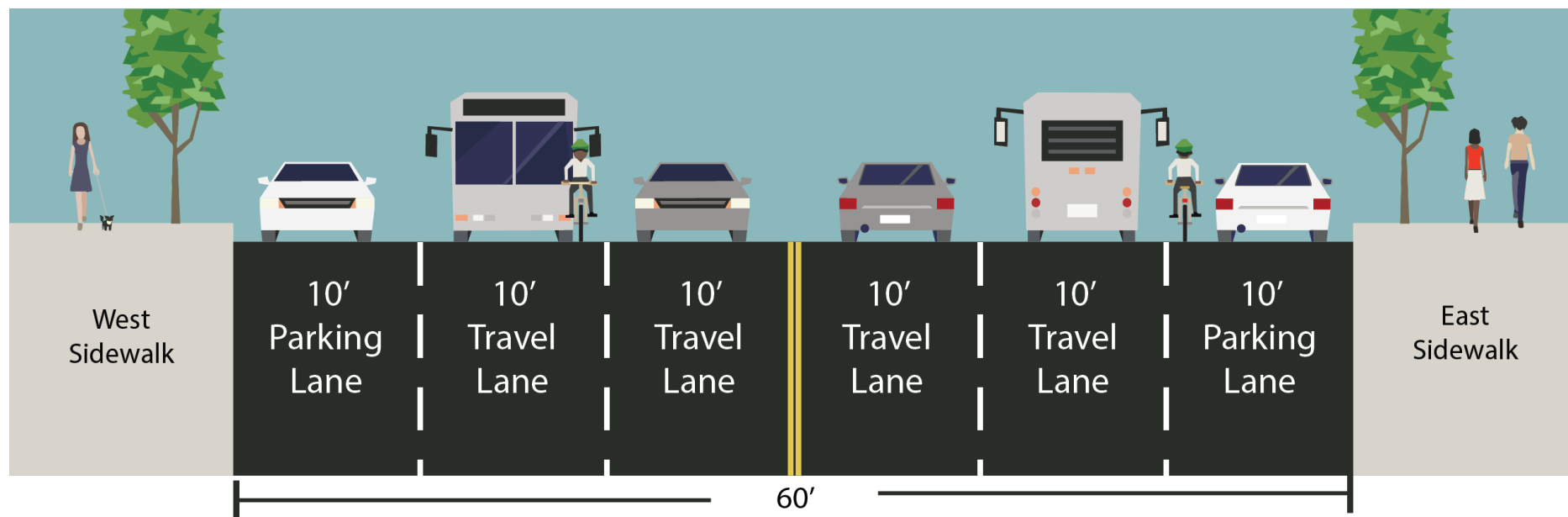
- Pedestrian Refuge Islands
- Painted Curb Extensions

3. Making it Work

- 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

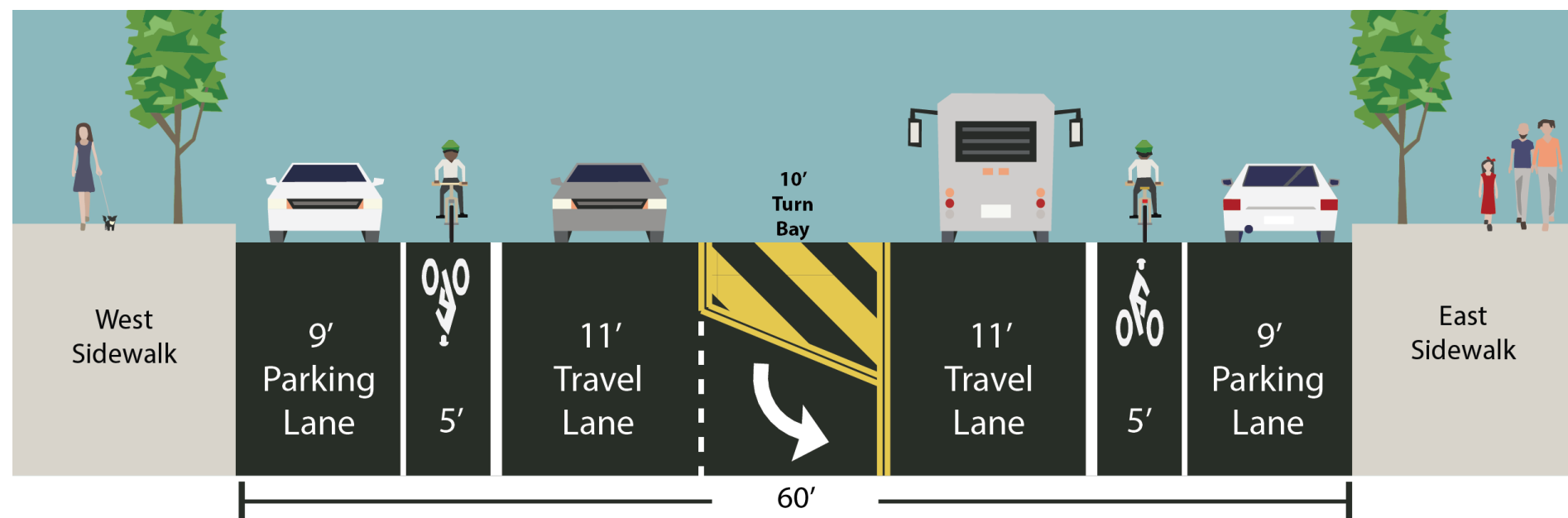
Off-peak Speeding
70% of vehicles travel
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**Undefined Lane
Assignments**
lead to unpredictable
vehicular movements

**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

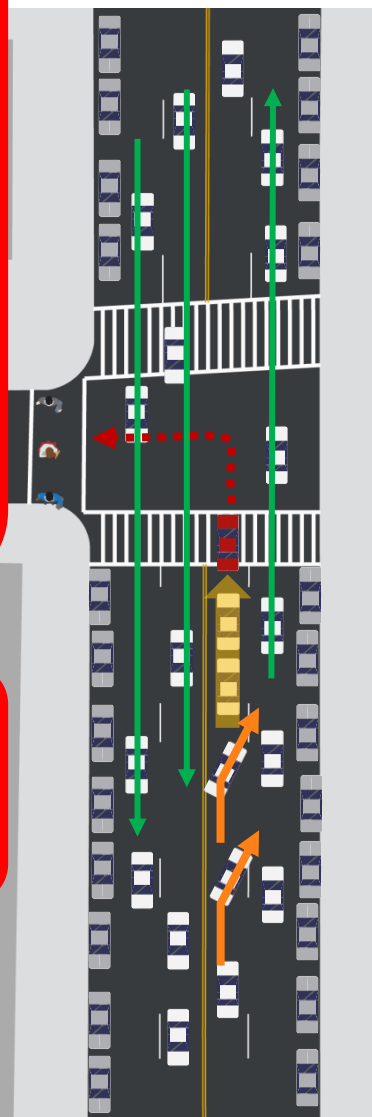


1. CORRIDOR REDESIGN – Safety Benefits of Left Turn Bays

Left turn 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

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

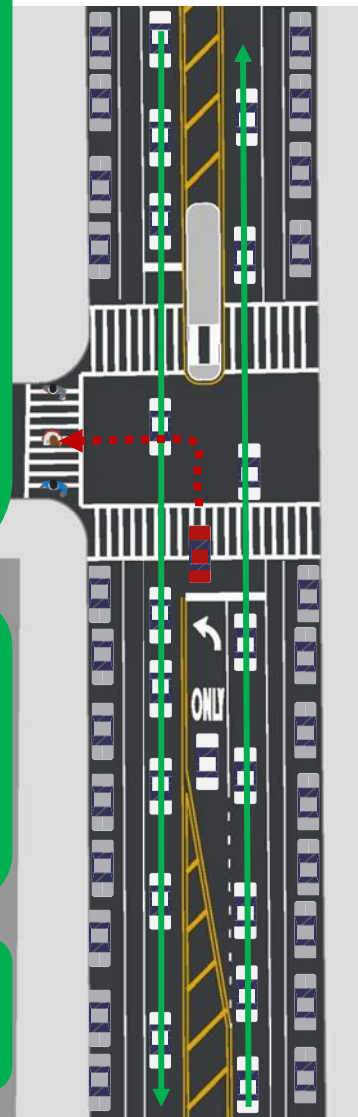


Left turn movements are **simplified** because motorists:

- 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 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

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)

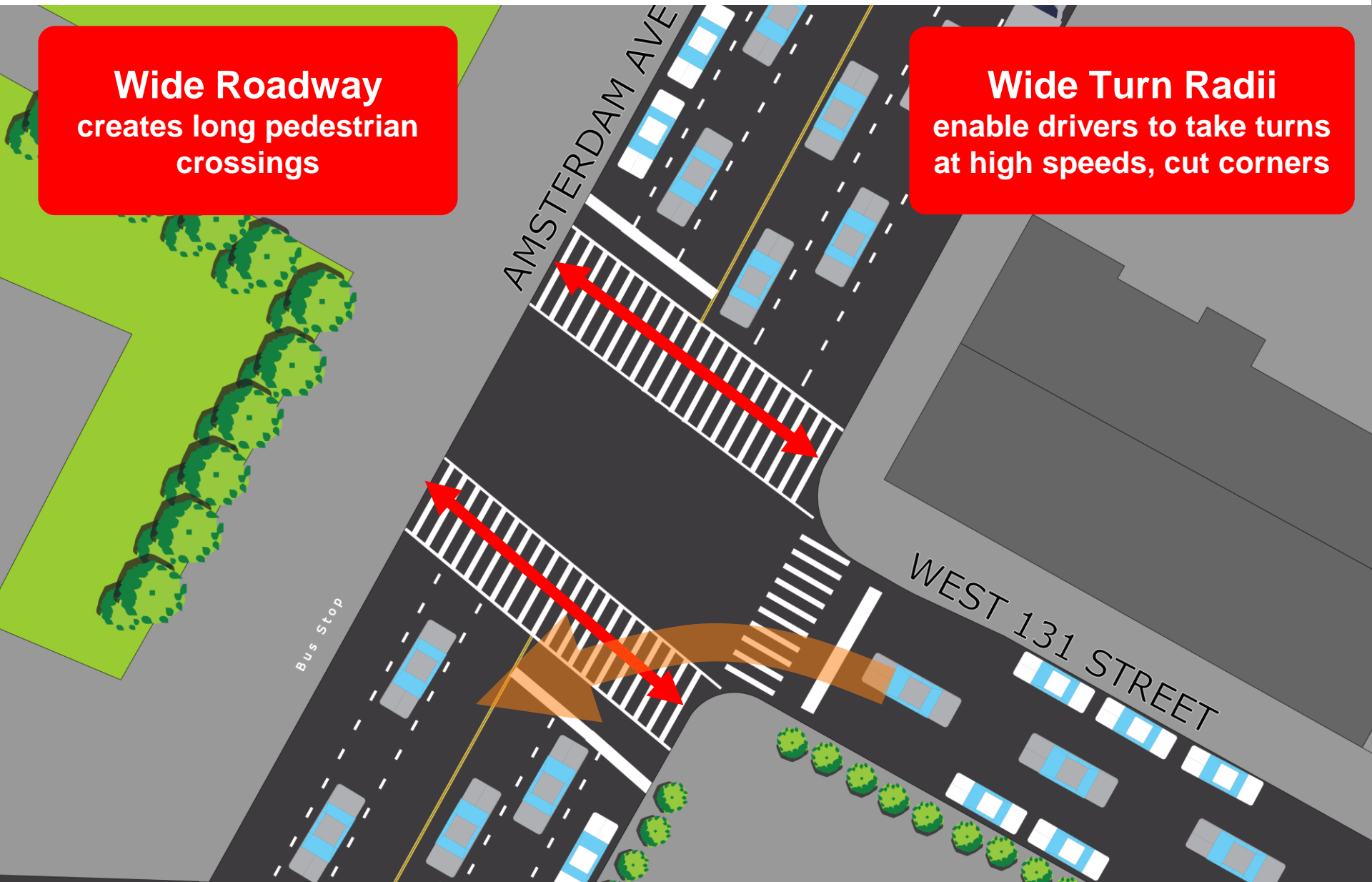
Before and after analysis of left turn bays installed at 140 intersections (2009-2011):

- **-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

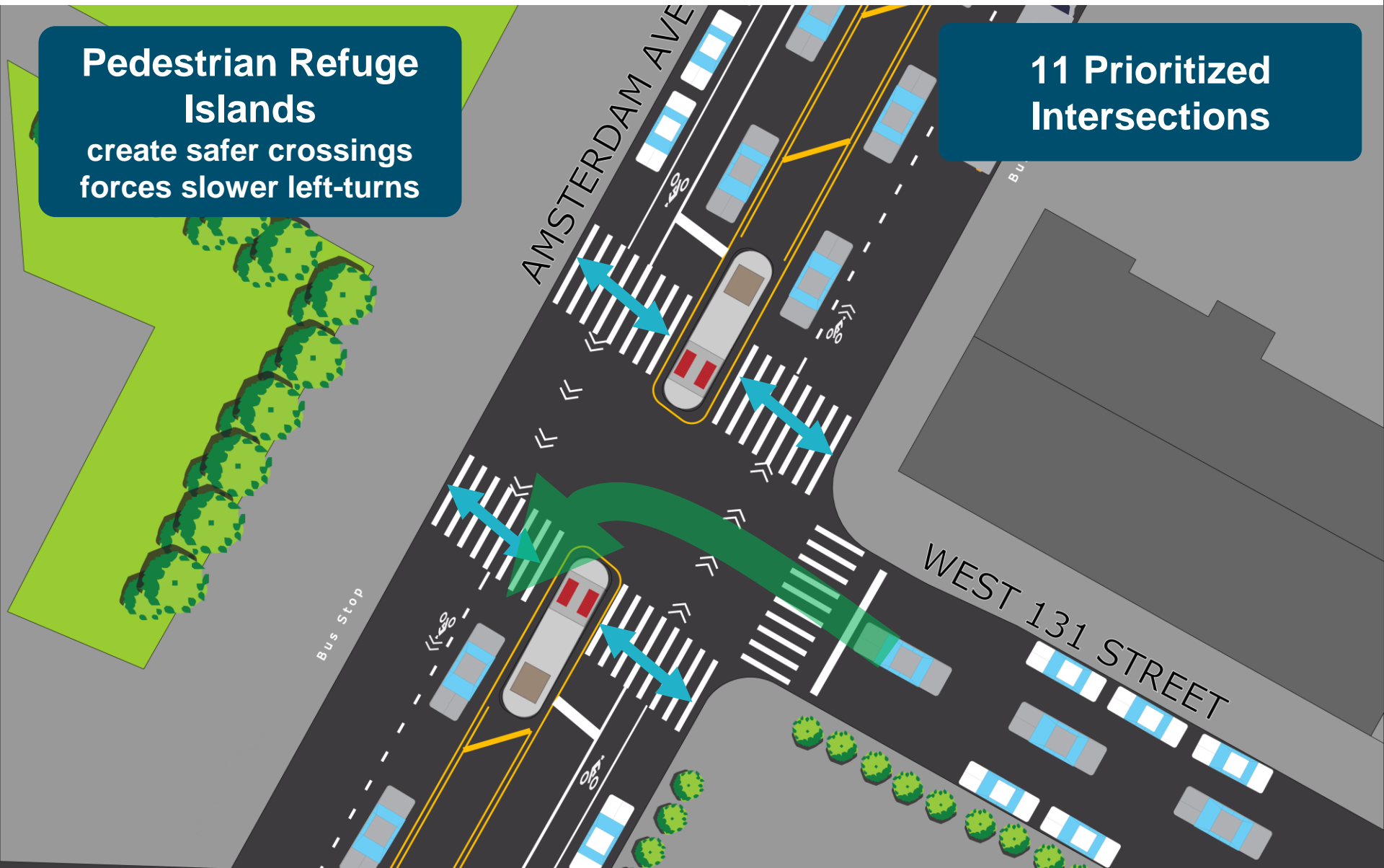
Wide Turn Radii
enable drivers to take turns
at high speeds, cut corners



2. INTERSECTION IMPROVEMENTS – Pedestrian Refuge Islands

Pedestrian Refuge Islands
create safer crossings
forces slower left-turns

11 Prioritized Intersections

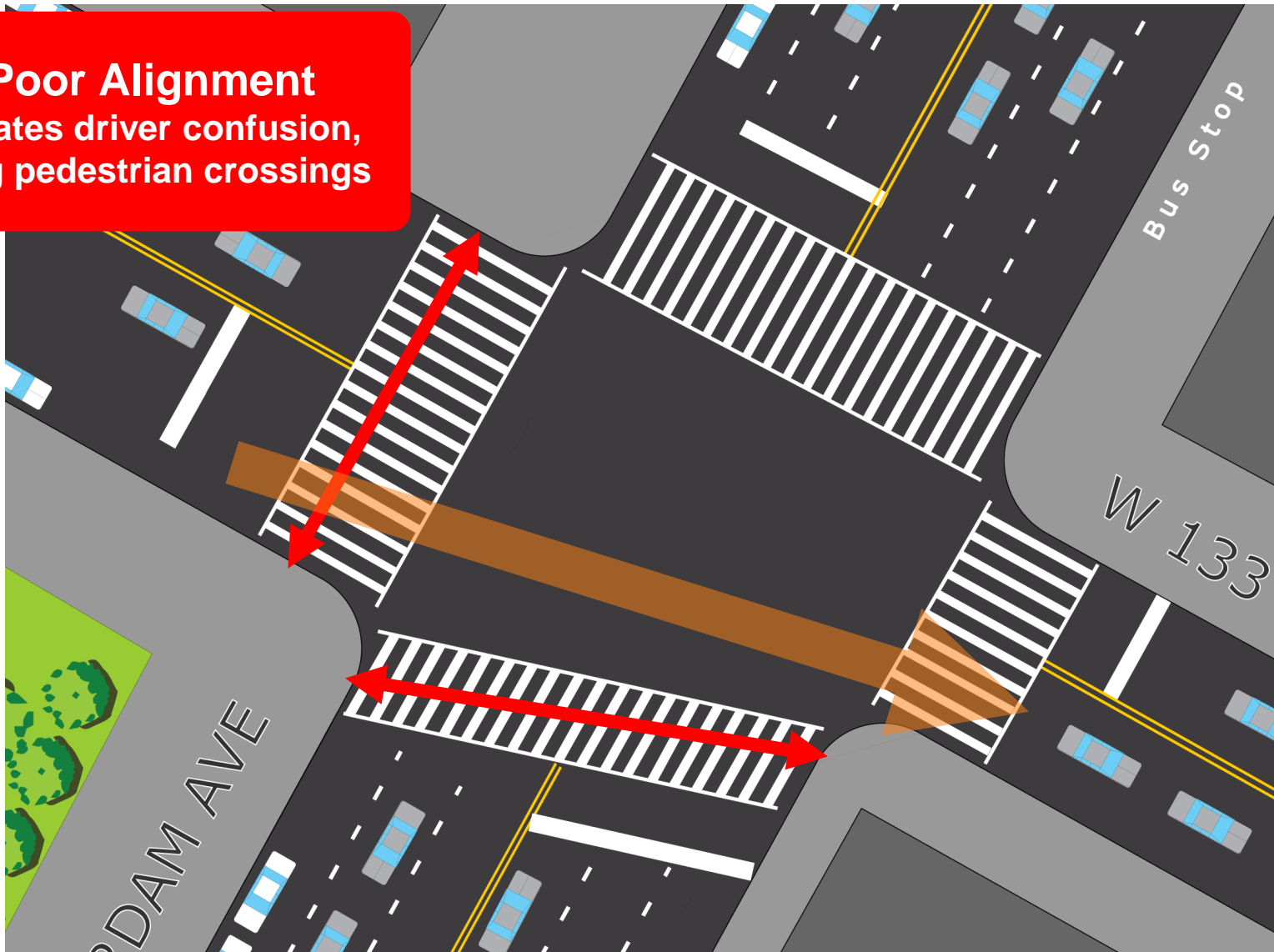


2. INTERSECTION IMPROVEMENTS – Example of Pedestrian Refuge Islands



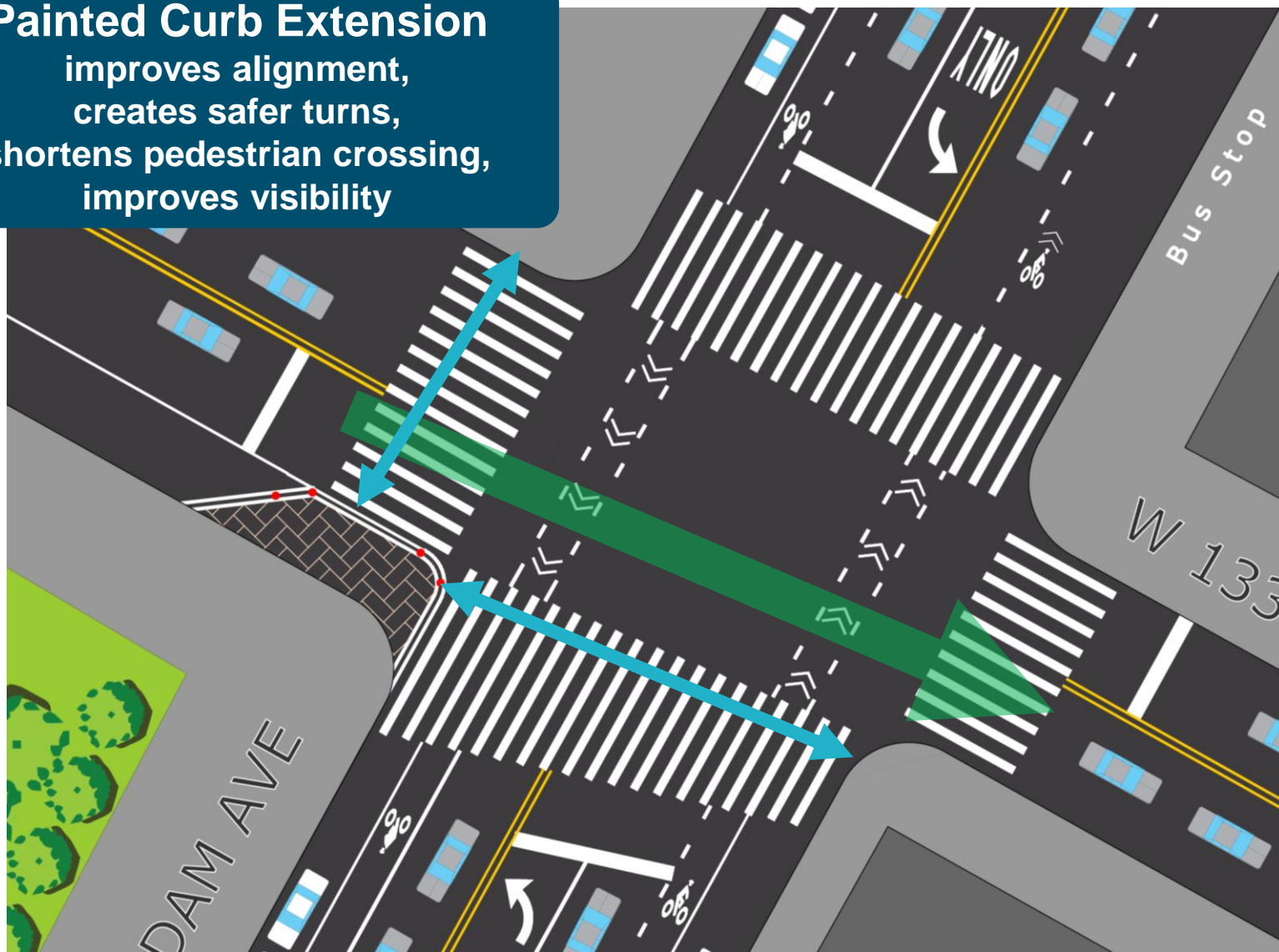
2. INTERSECTION IMPROVEMENTS – Painted Curb Extensions

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



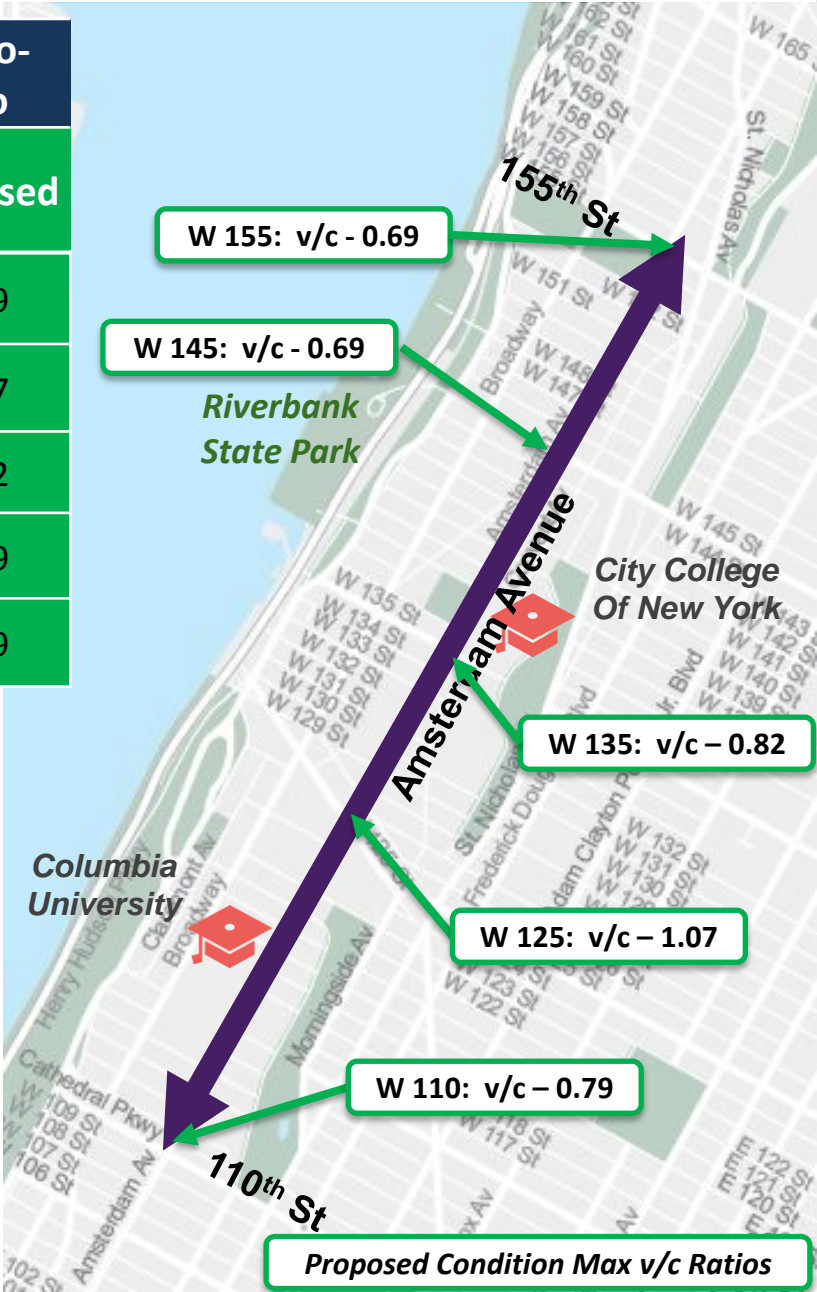
3. MAKING IT WORK – Traffic Analysis (PM)

Cross Street	Overall Intersection Delay (sec) /LOS				Max Volume-to-Capacity Ratio	
	Existing		Proposed		Existing	Proposed
	Delay	LOS	Delay	LOS		
W 110 th St	25.0	C	24.8	C	0.79	0.79
W 125 th St	35.3	D	38.3	D	1.07	1.07
W 135 th St	10.7	B	14.1	B	0.66	0.82
W 145 th St	10.4	B	11.1	B	0.62	0.69
W 155 th St	19.9	B	22.0	C	0.65	0.69

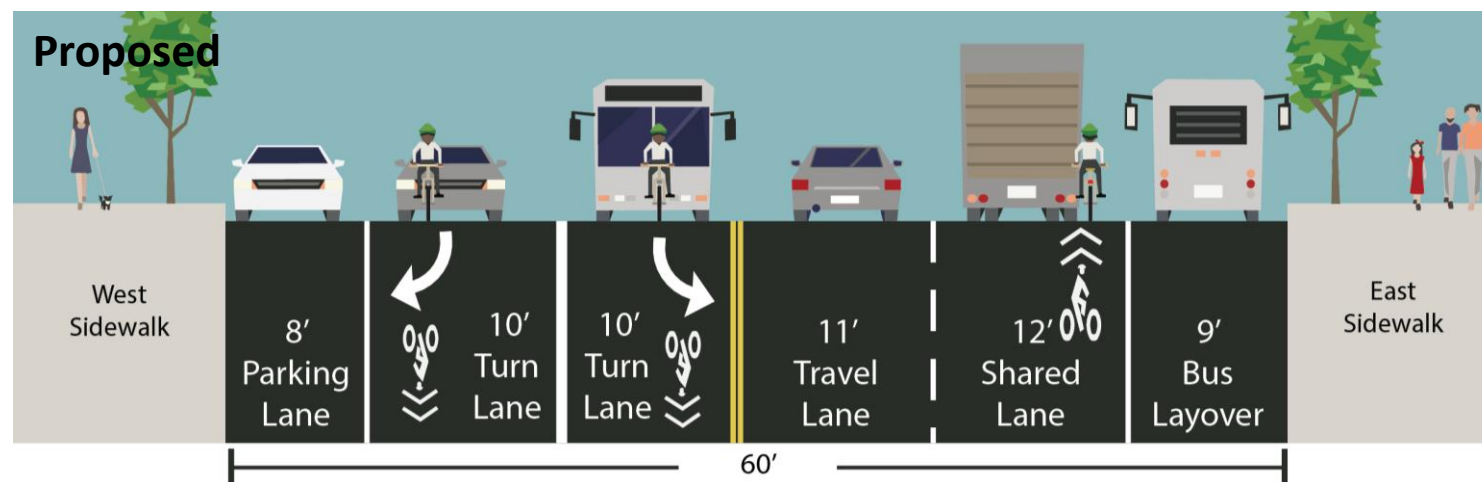
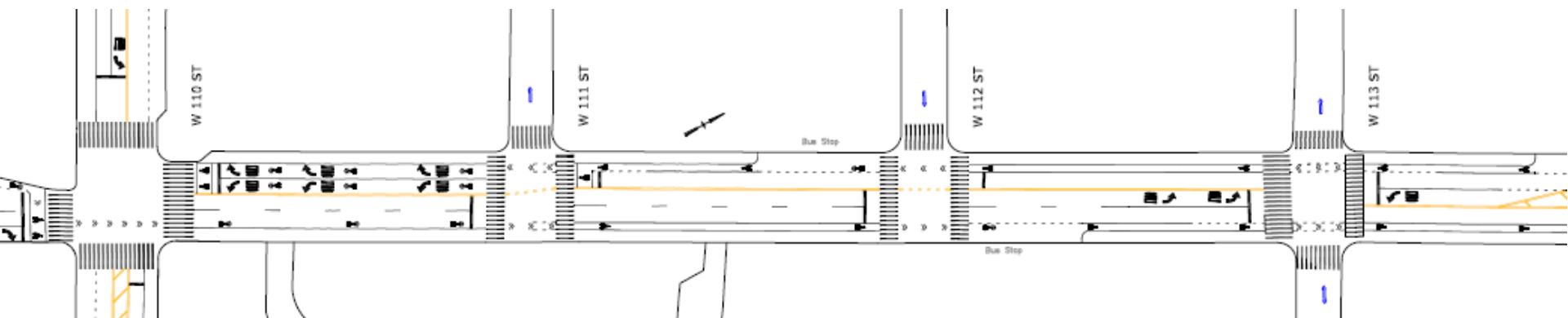
Minimal impact on traffic

- Delay at intersections increases by an average of less than 3 seconds
- Sufficient or same capacity maintained at all intersections

* Peak hours vary per intersection*

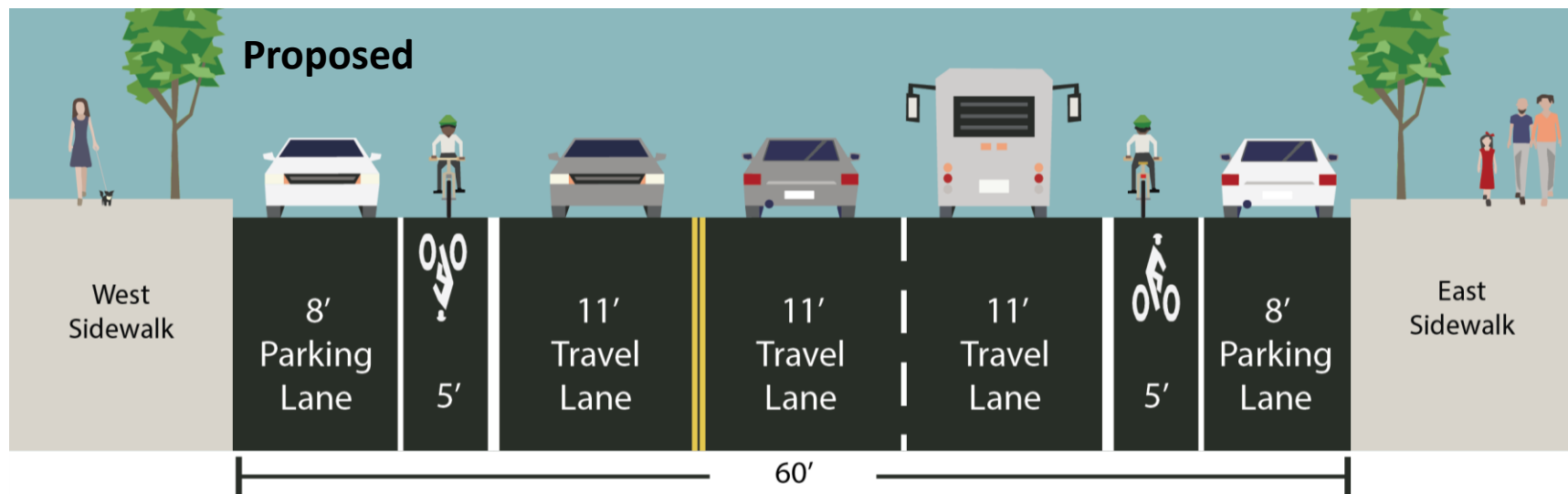
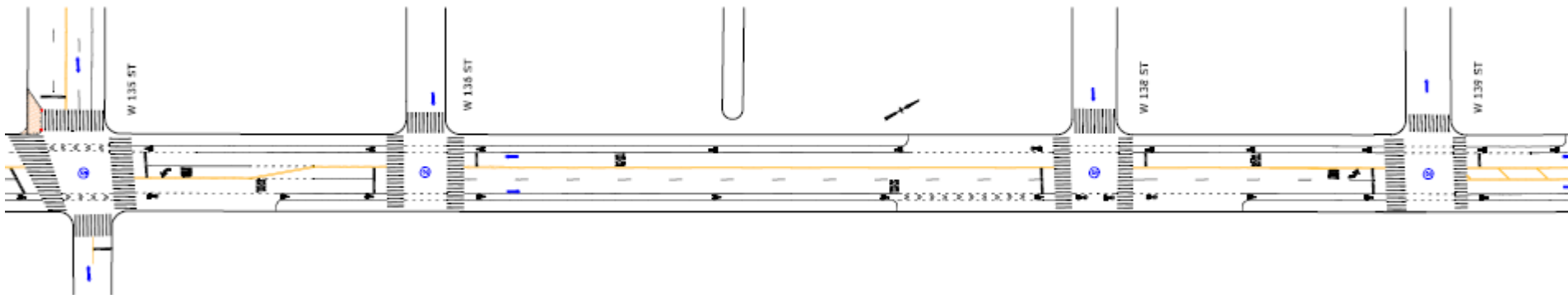


3. MAKING IT WORK – Southern Transition (110th St - 113th St)



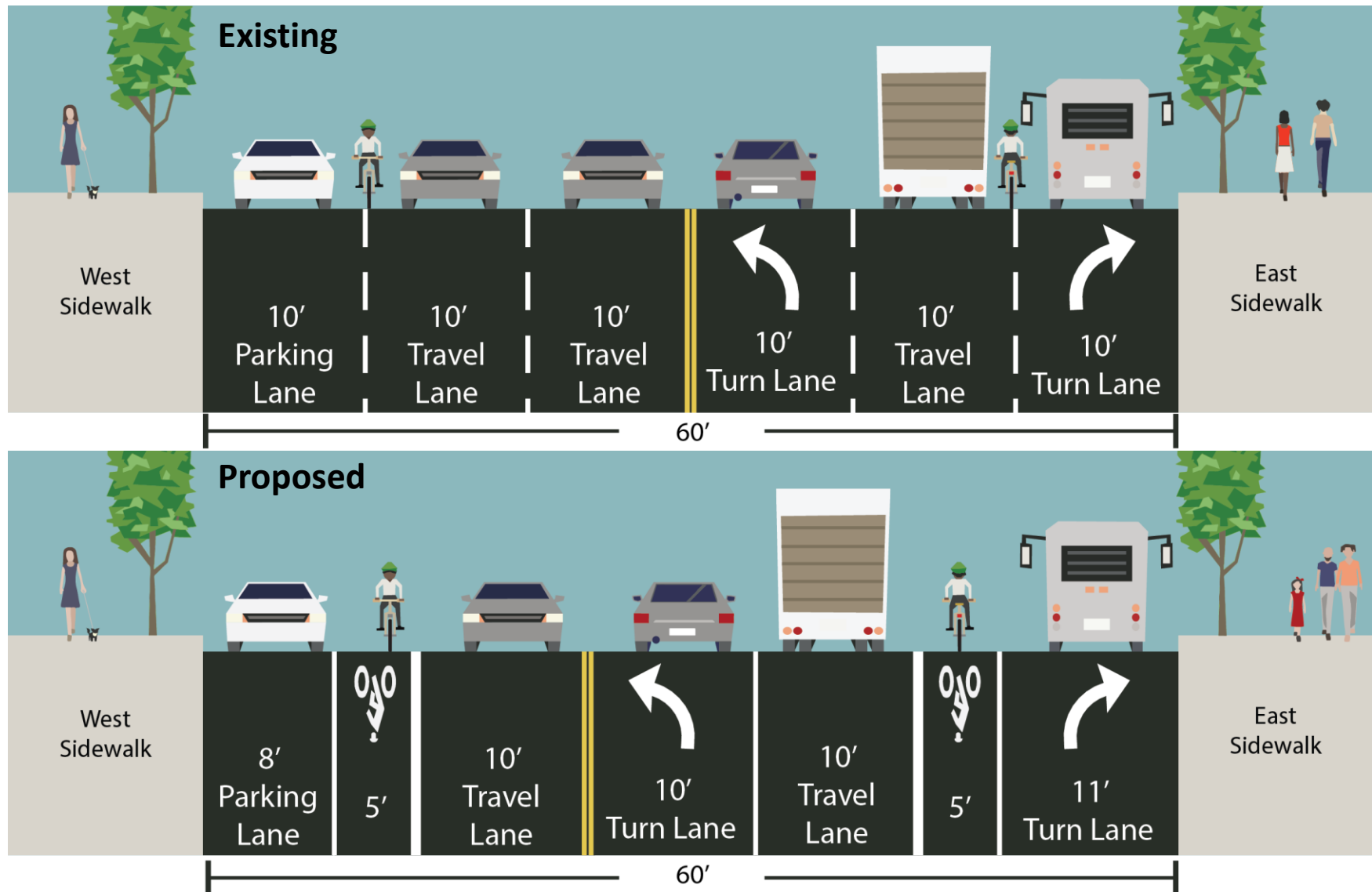
- Maintains capacity at high volume location to ensure traffic flow
- One lane SB from 113th St - 111th St, Two lanes NB from 110th St – 113th St

3. MAKING IT WORK – (135th St - 139th St)



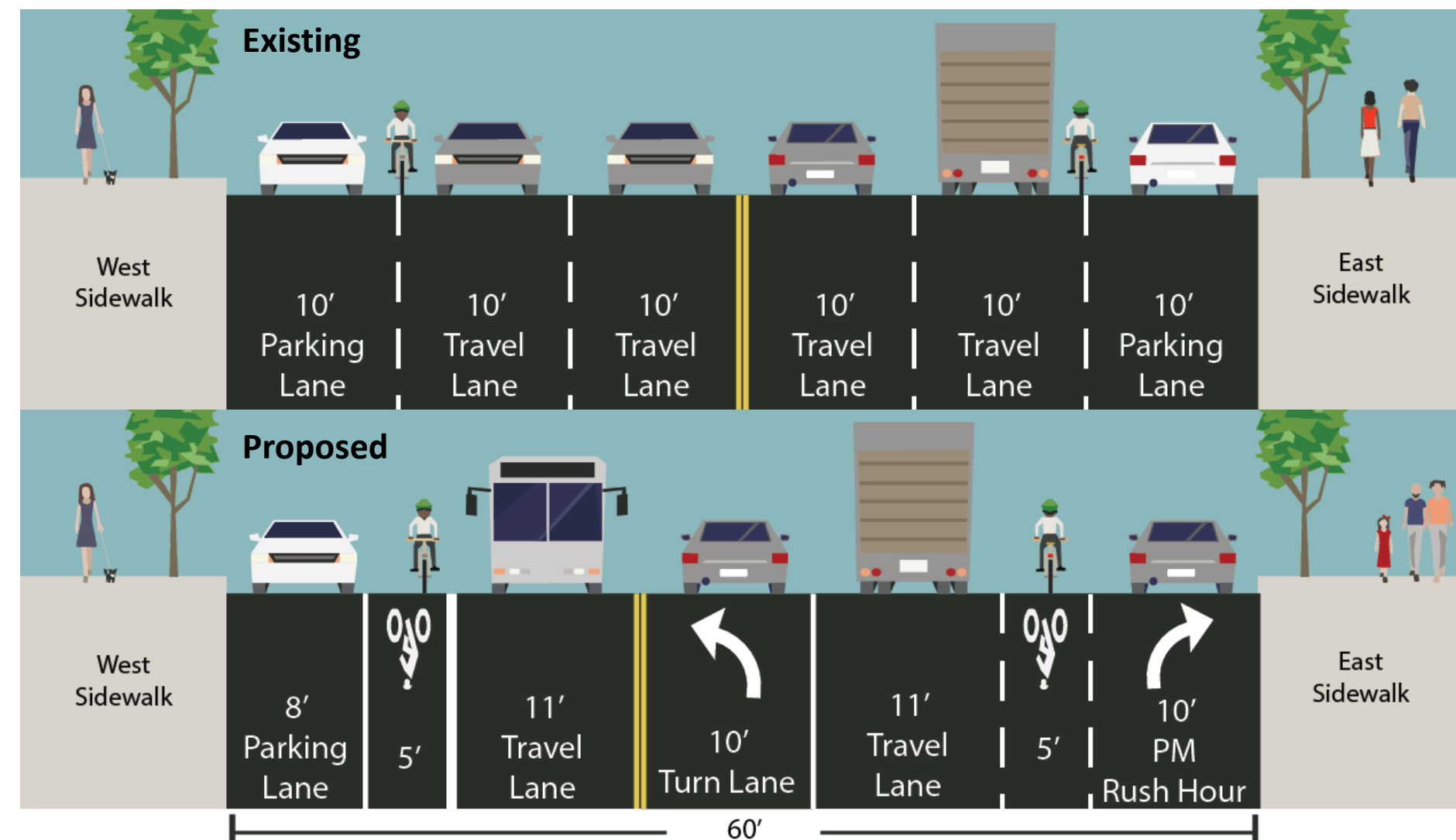
- Maintains capacity at high volume location to ensure traffic flow
- One lane SB, Two lanes NB from 135th St – 139th St

3. MAKING IT WORK – 125th St



- 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



- 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

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
- Business outreach and surveys completed

3. MAKING IT WORK – Loading Zones (Public Outreach)

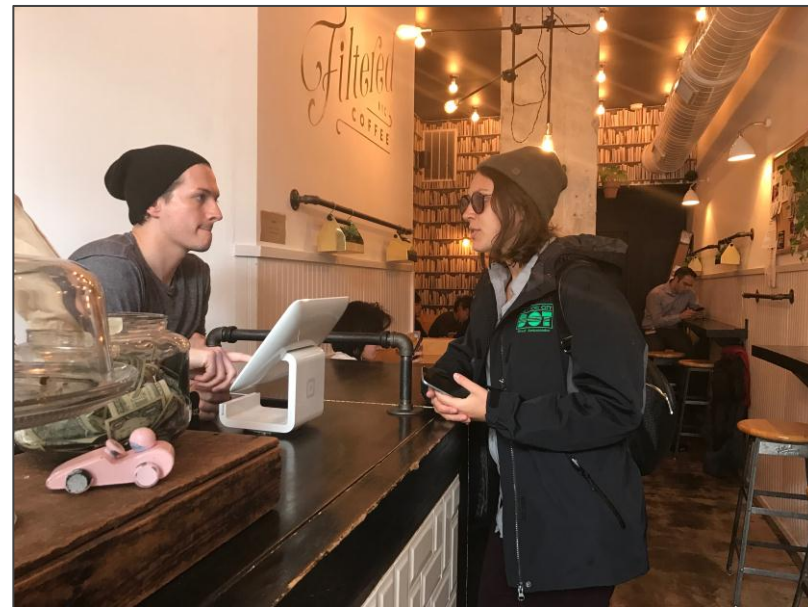
Merchant Surveys (full report available soon)

- 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



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

Discourages speeding

Install left turn bays

Creates safer left turns, improves traffic flow

Add bike lanes

Addresses gap in bike network, makes cyclist movements more predictable

Build pedestrian refuge islands

Creates shorter crossings

Add left turn treatments

Slows left-turning vehicles

Install painted curb extensions

Improves alignment, shortens crossings

Add rush hour lane at 145th, 155th

Increases capacity at high volume intersections

Create transitions

Maintain vehicle capacity on high volume sections

Add loading zones

Improves curb access, discourages double parking

THANK YOU!

Questions?



NYCDOT



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NYCDOT

Broadway (135th-155th) Average Vehicle Speed

Intersections with more than 10 Injuries 2010-2014

