



# AMSTERDAM AVENUE 110<sup>TH</sup> ST TO 162<sup>ND</sup> ST

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## Safety Improvements

Presented to Manhattan Community Board 12  
March 6, 2017



# PRESENTATION OVERVIEW

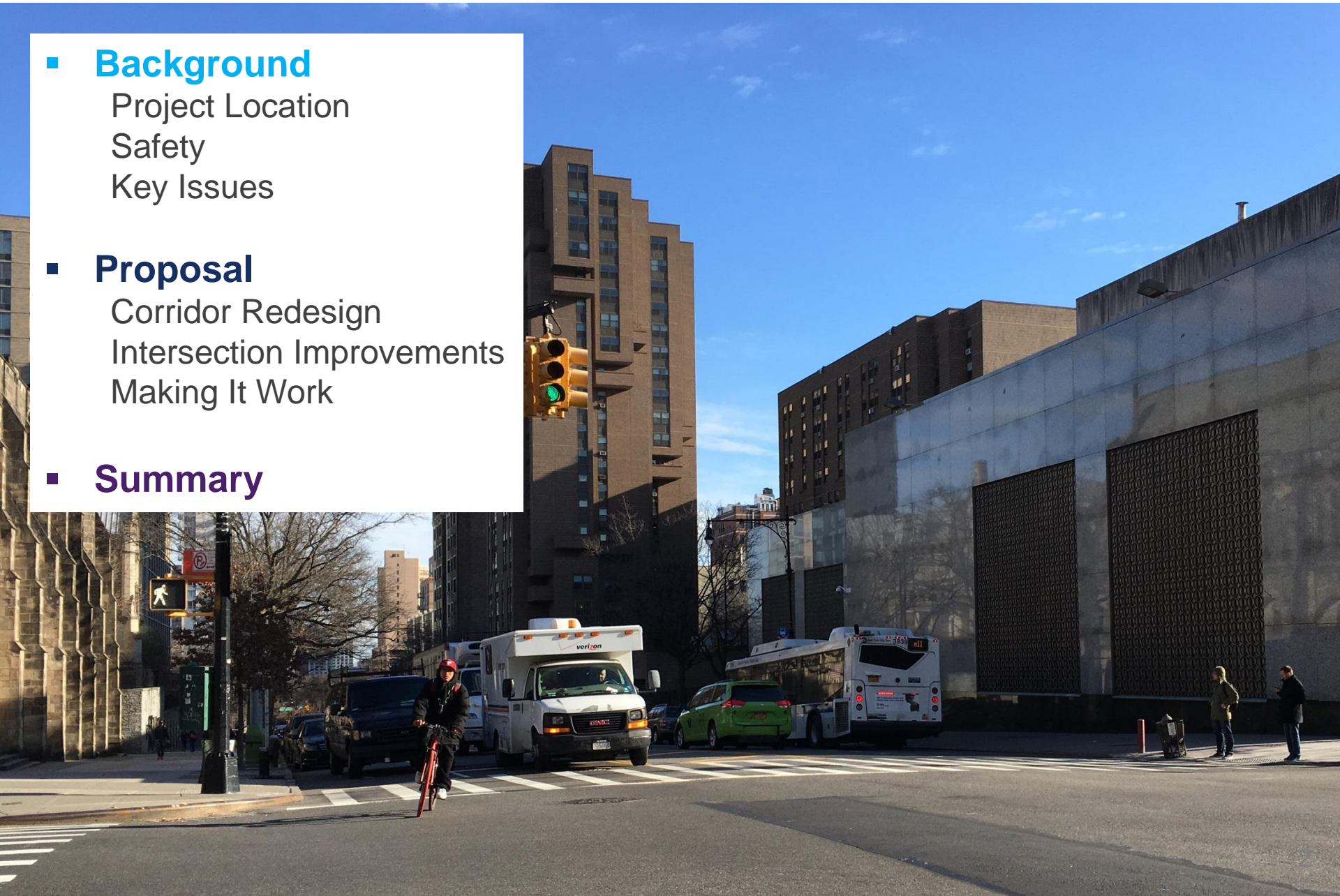
- **Background**

- Project Location
  - Safety
  - Key Issues

- **Proposal**

- Corridor Redesign
  - Intersection Improvements
  - Making It Work

- **Summary**



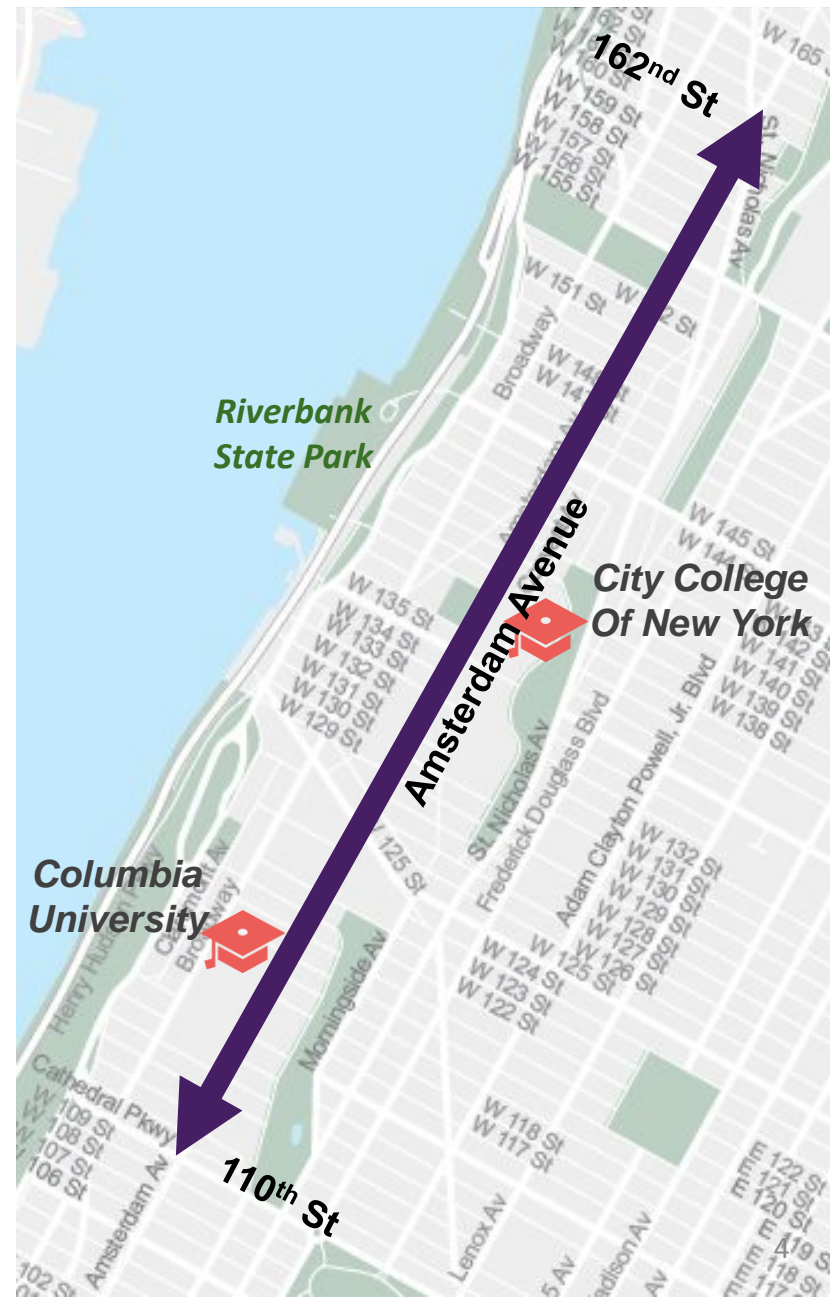
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Background

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## PROJECT LOCATION AND COMMUNITY REQUESTS

1. **Amsterdam Ave W 110<sup>th</sup> – W 162<sup>nd</sup> 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 145<sup>th</sup> St – W 162<sup>nd</sup> St
4. **Community Requests**
  - Request from CM Levine to address safety concerns between 110<sup>th</sup> St and 125<sup>th</sup> 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  
**(112<sup>th</sup> , 113<sup>th</sup> , 122<sup>nd</sup> , 155<sup>th</sup>)**

**28 Pedestrians Severely Injured** 2010-2014

**8 Cyclists Severely Injured** 2010-2014

### Injury Summary, 2011-2015 (5 years)

	Total Injuries	Severe Injuries	Fatalities	KSI
Pedestrian	235	27	4	31
Bicyclists	65	7	0	7
Motor Vehicle Occupant	413	27	0	27
Total	713	61	4	65

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

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





KEY ISSUES– Corridor Safety



**\*Speeding (136<sup>th</sup> -138<sup>th</sup> 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



## 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 162<sup>nd</sup> St
- Amsterdam Ave (NB ends at 110<sup>th</sup>)
- Columbus Ave (SB begins at 110<sup>th</sup>)
- Hudson River Greenway

### 4. Potential Connections

- 110<sup>th</sup> St to Central Park
- 133<sup>rd</sup> St to Hudson River Greenway



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## Amsterdam Ave Proposal

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## PROJECT OVERVIEW

### 1. Corridor Redesign

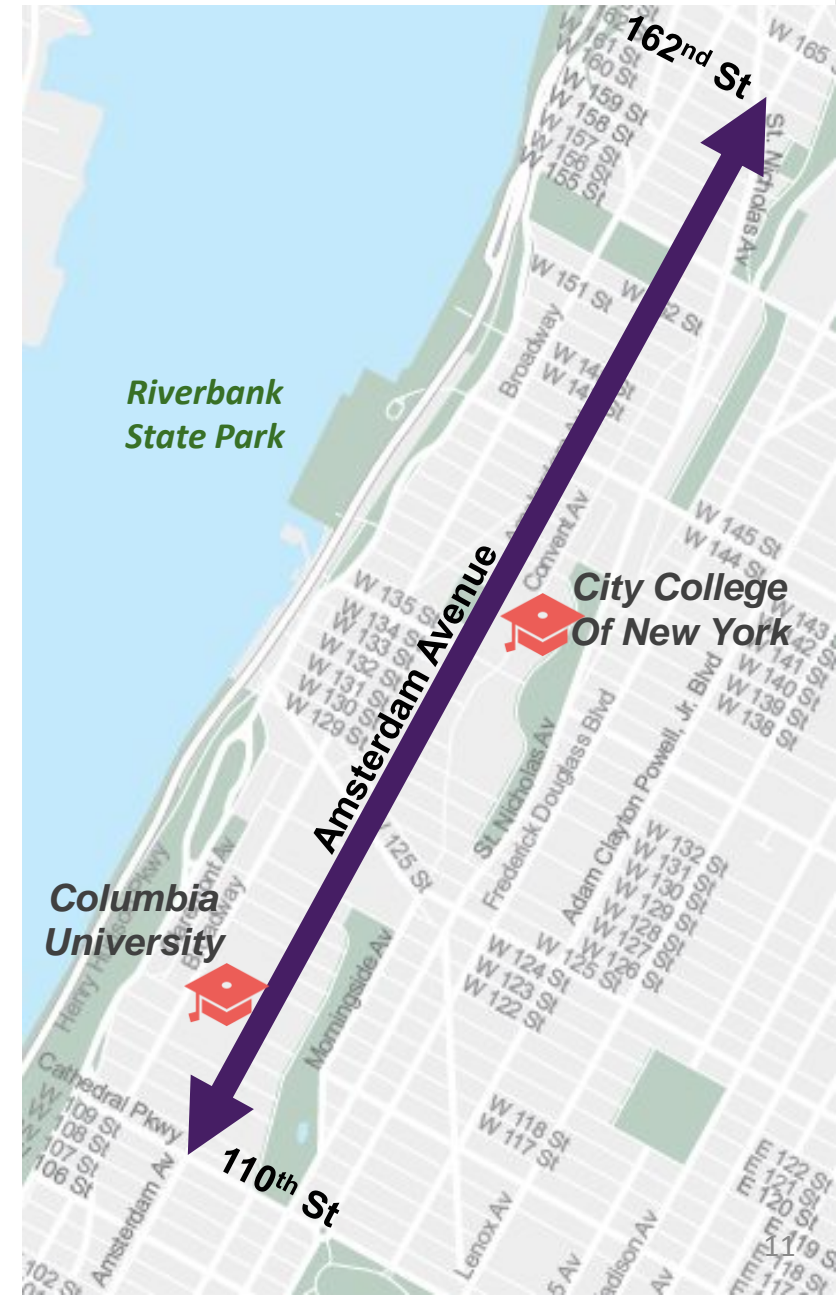
4-to-3 lane conversion with  
left turn lanes and bike lanes

### 2. Intersection Improvements

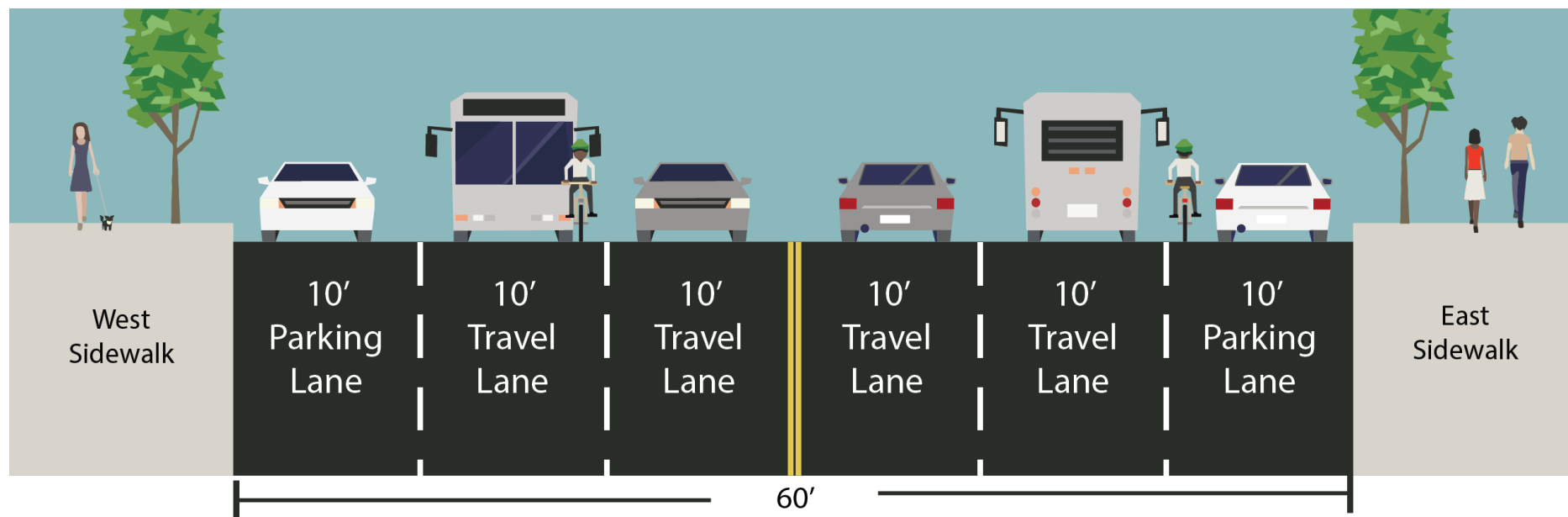
- Pedestrian Refuge Islands

### 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\*

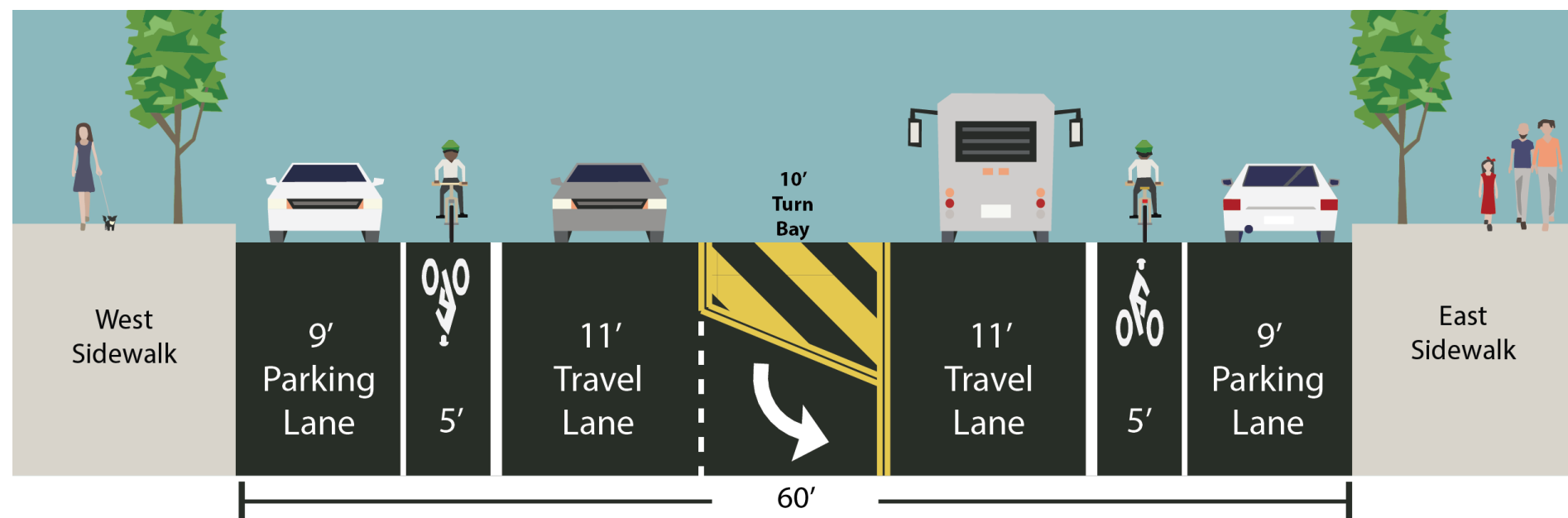
**Undefined Lane  
Assignments**  
lead to unpredictable  
vehicular movements

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



# 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)

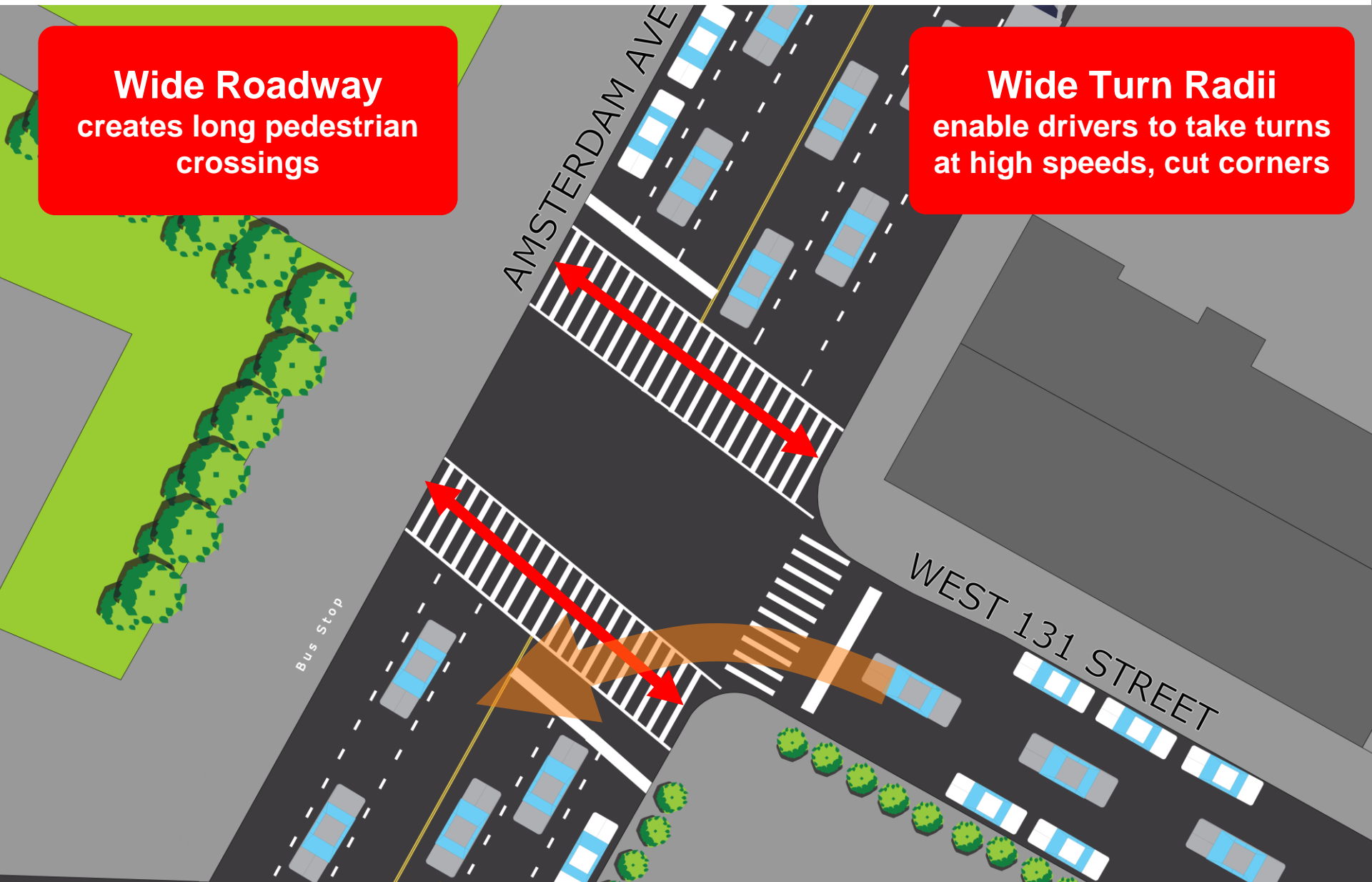
Before and after analysis of left turn bays installed at 140 intersections (2009-2011):

- **-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

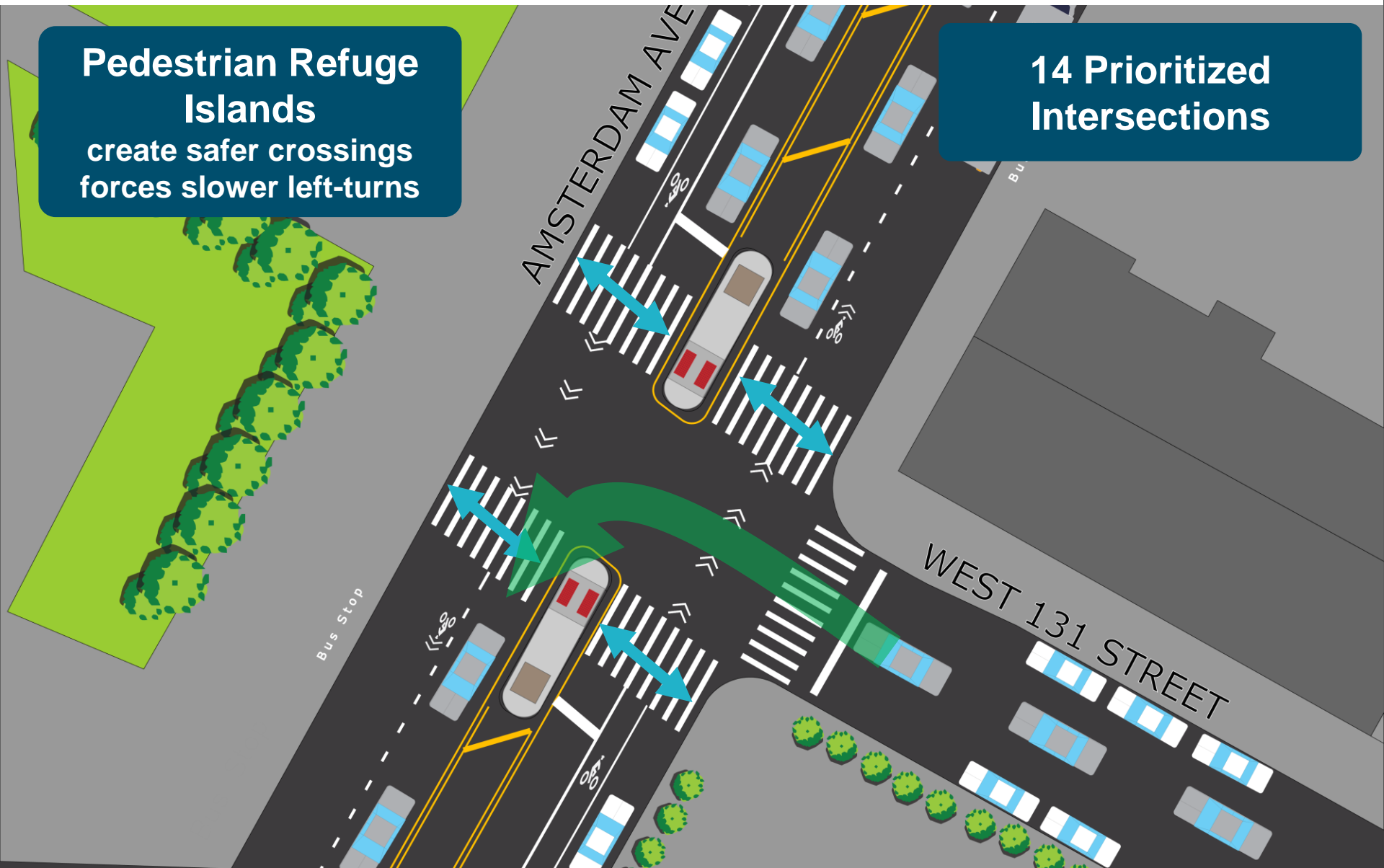
**Wide Roadway**  
creates long pedestrian  
crossings

**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

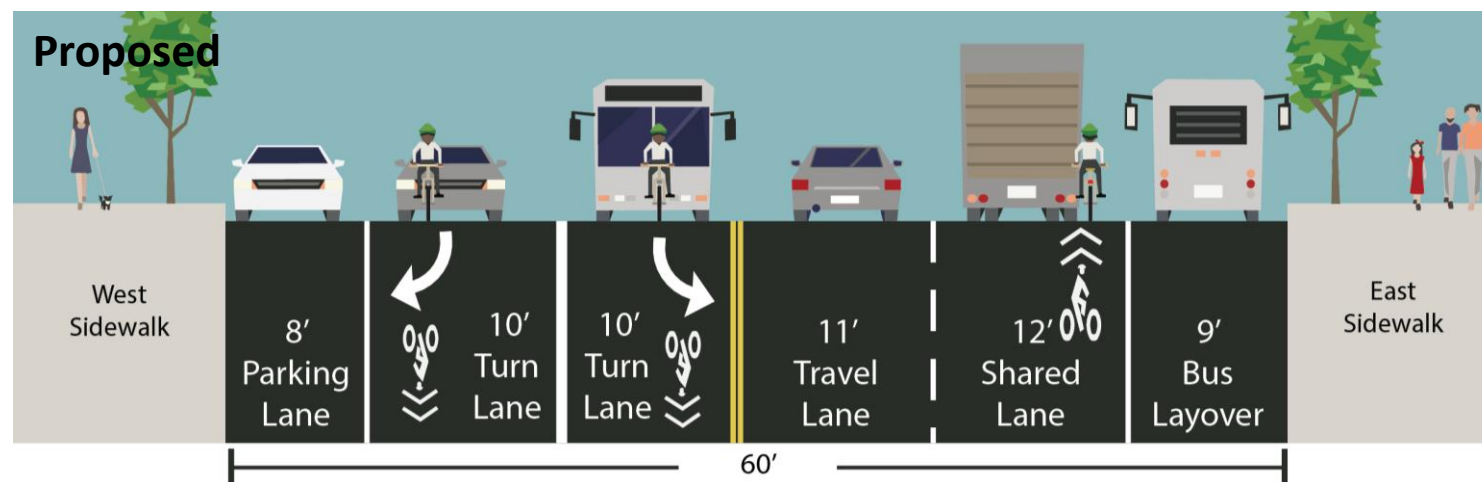
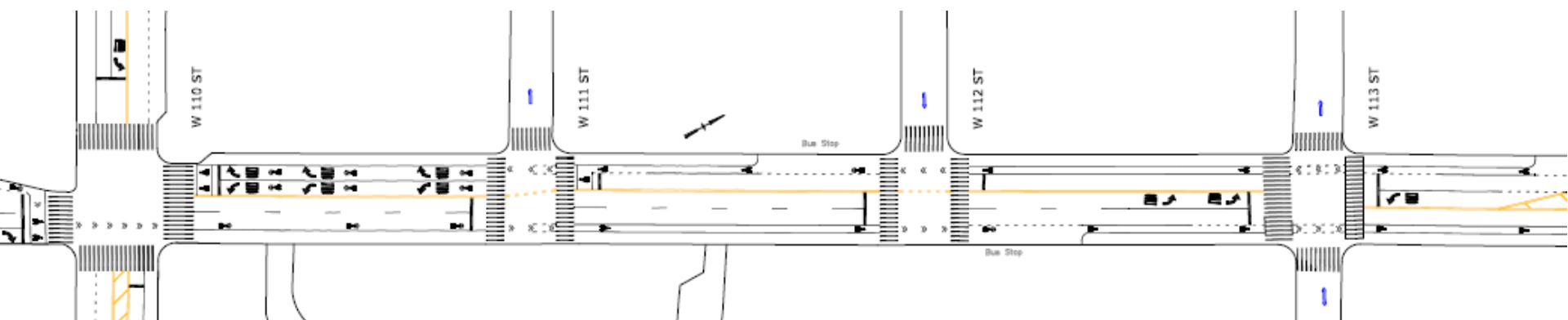
**14 Prioritized Intersections**

## 2. INTERSECTION IMPROVEMENTS – Example of Pedestrian Refuge Islands



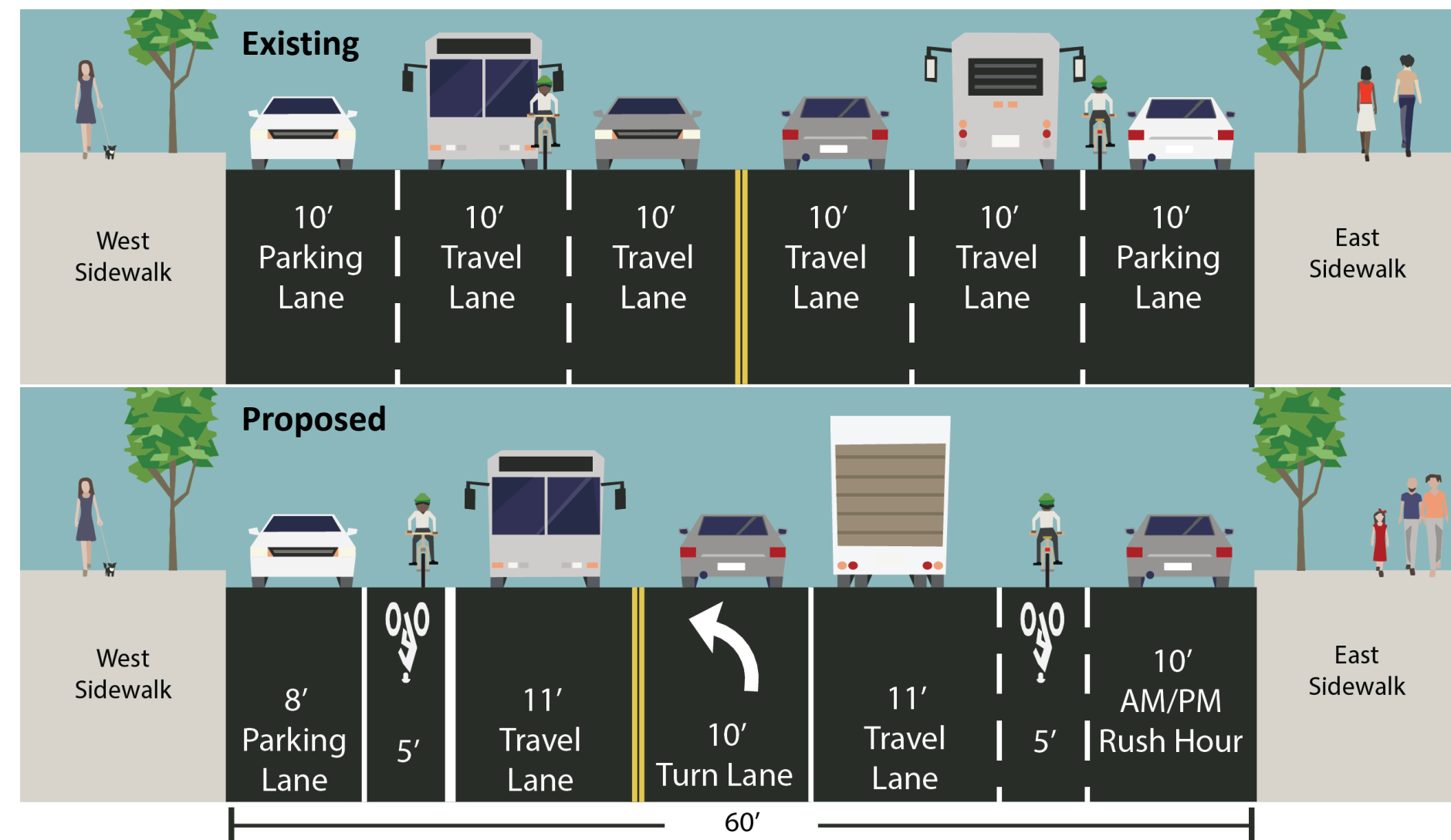


## 5. MAKING IT WORK – Southern Transition (110<sup>th</sup> St - 113<sup>th</sup> St)



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

## 5. MAKING IT WORK – Rush Hour Regulations at 145<sup>th</sup> St, 155<sup>th</sup> 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



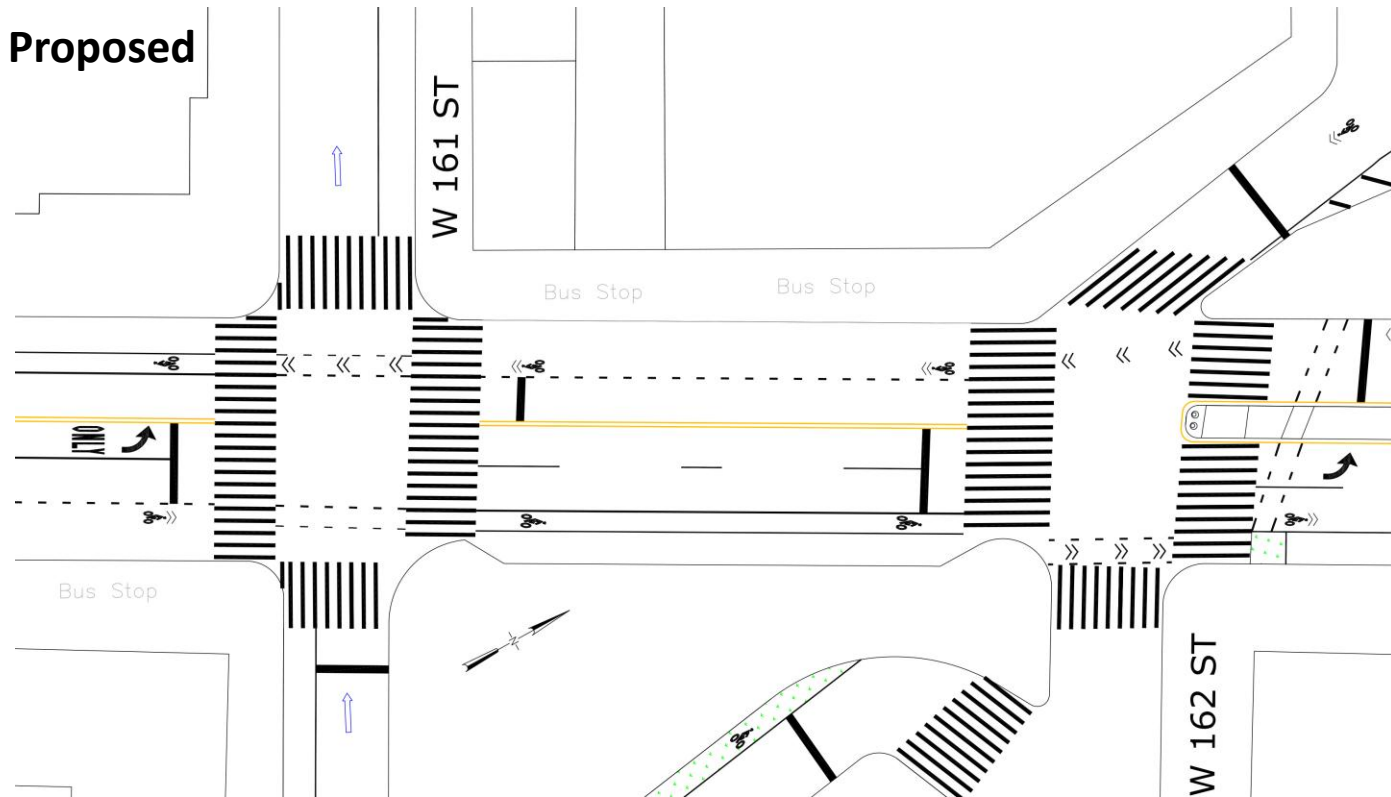
## 5. MAKING IT WORK – Northern Transition (161<sup>ST</sup> St – 162<sup>nd</sup> St)

Existing



Proposed

- Maintains capacity at high volume intersection to ensure traffic flow



## 5. MAKING IT WORK – Loading Zones

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



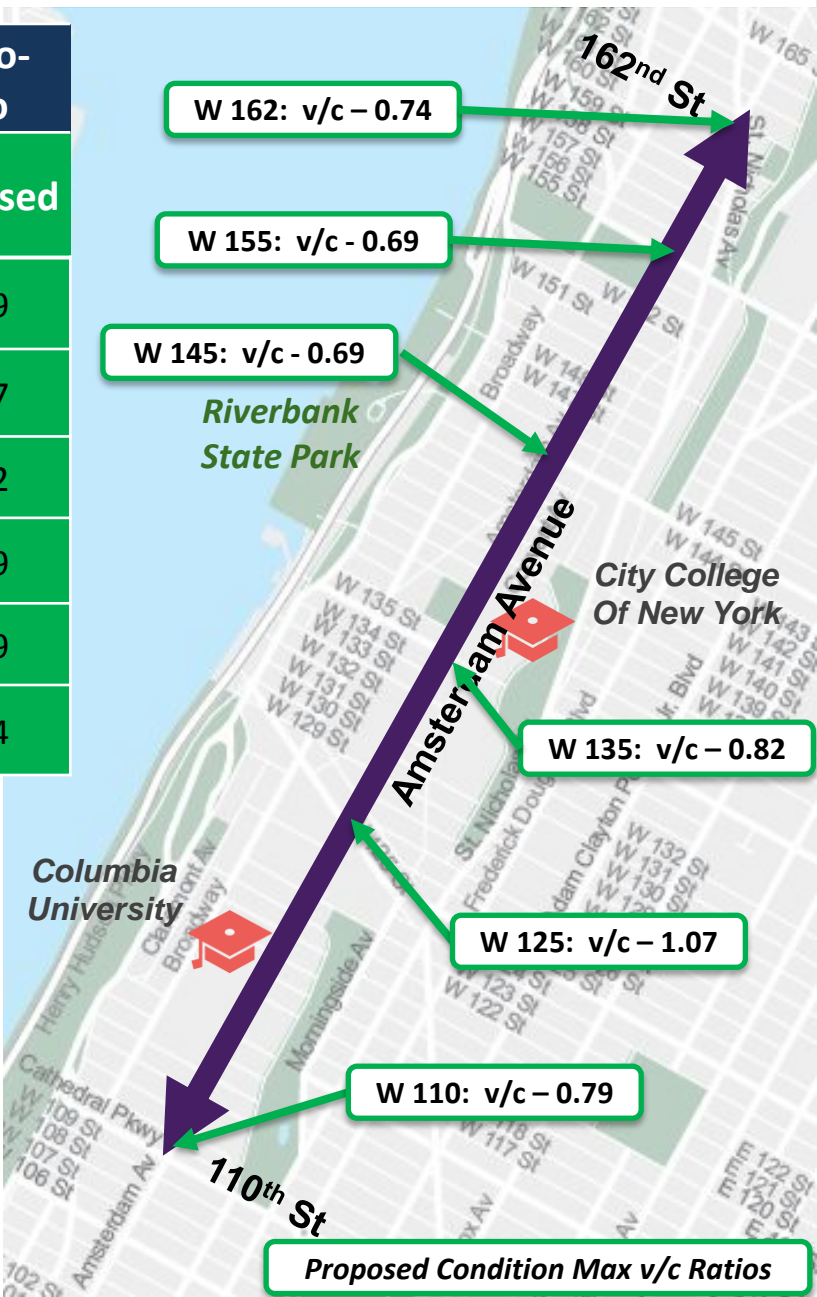
- Improve access to the curb for commercial deliveries
- Targeted loading zones address varied needs block by block
- Identified locations, looking for feedback



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 <sup>th</sup> St	25.5	C	25.3	C	0.79	0.79
W 125 <sup>th</sup> St	35.3	D	39.1	D	1.07	1.07
W 135 <sup>th</sup> St	9.2	A	25.3	C	0.66	0.82
W 145 <sup>th</sup> St	10.3	B	14.0	B	0.62	0.69
W 155 <sup>th</sup> St	22.2	C	19.0	B	0.65	0.69
W 162 <sup>nd</sup> 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

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## 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

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 <sup>th</sup> , 155 <sup>th</sup> 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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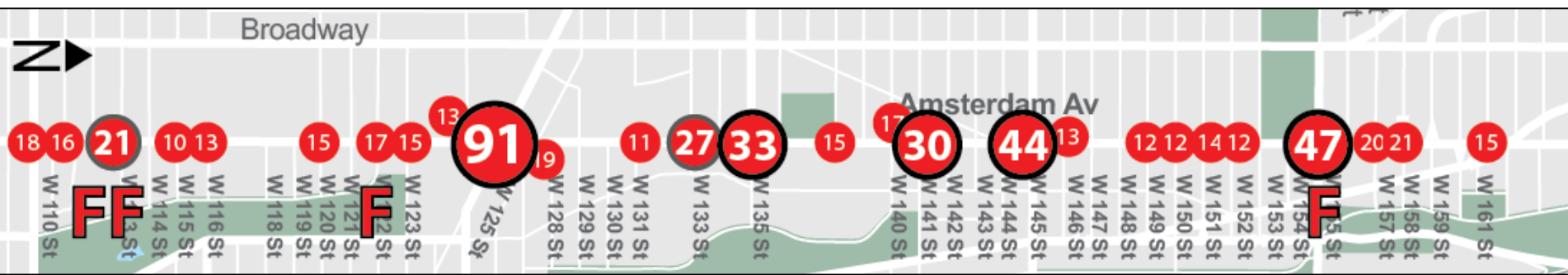


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Intersections with more than 10 Injuries 2010-2014



Identified Need for Loading Zones



- Full Block
- Half Block