

AMSTERDAM AVENUE 110TH ST TO 155TH ST

Safety Improvements

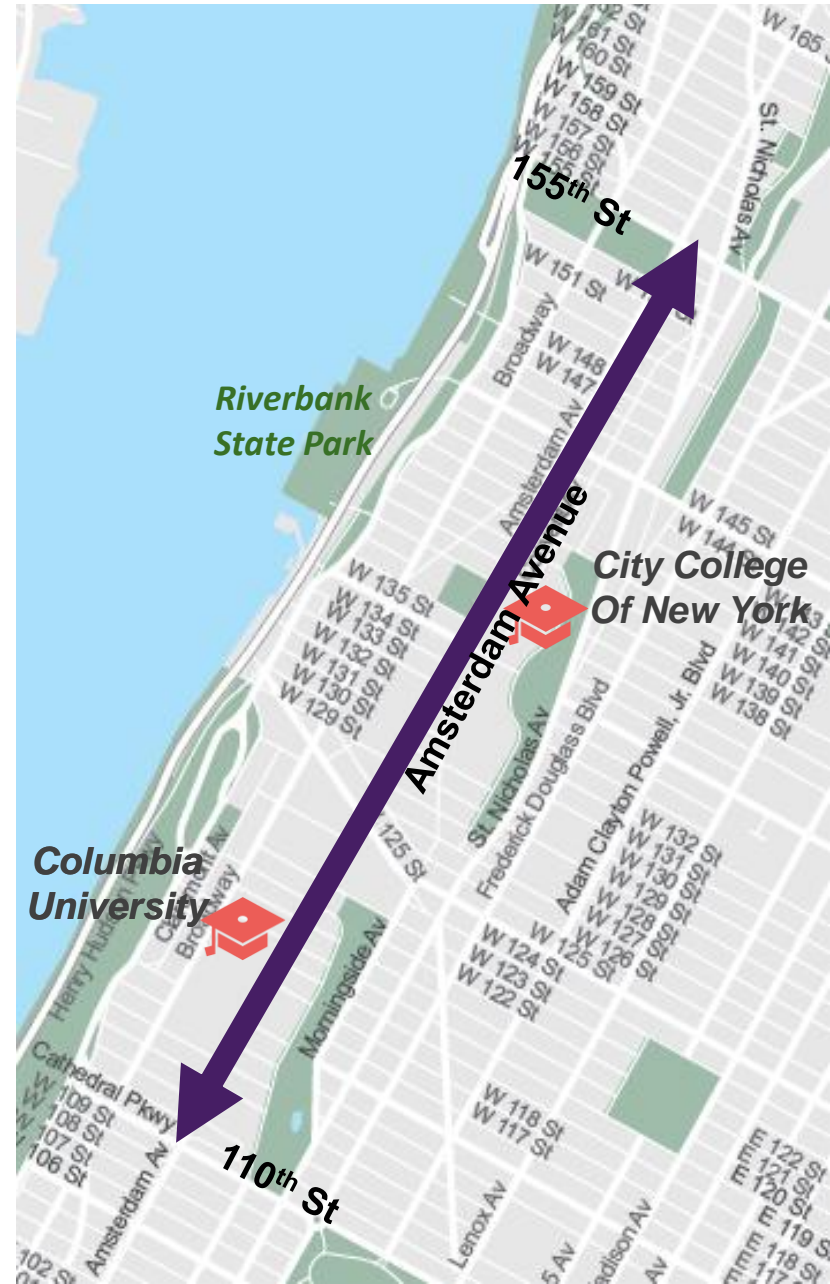
Presented to Manhattan Community Board 9 Transportation Committee

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**



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

Injury Summary

Fatalities & Serious Injuries

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

Mobility Issues

Peak Hour Traffic Congestion

Lack of Commercial Loading / Excessive Double Parking

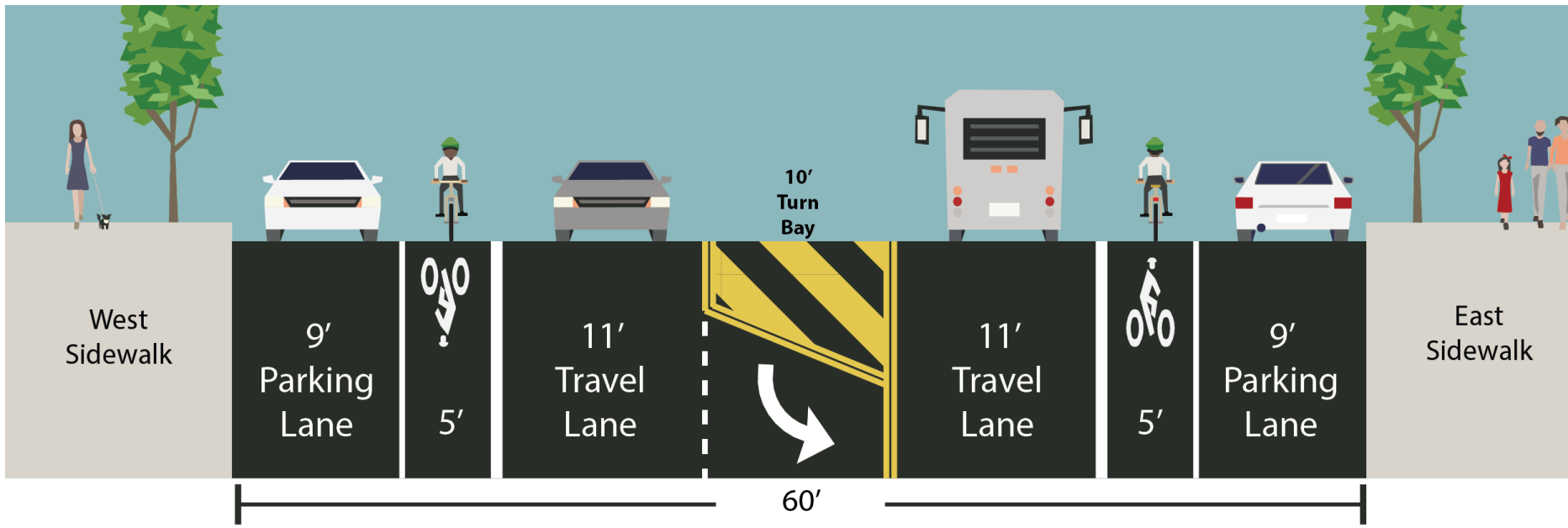
No Dedicated Space for Bikes *805 Cyclists (12h count 10/3/17)*



*Speed Study: 136th -138th St mid-day 1/27/17

PROPOSED IMPROVEMENTS AND SAFETY BENEFITS

The proposed project will **increase safety for everyone on the street** while maintaining parking and minimally affecting travel times for drivers



Narrower Roadway
discourages speeding

Turn Bays
create simpler, safer left turns, reduce back pressure

Bike Lanes
provide dedicated space for cyclists, increase predictability

PROPOSED IMPROVEMENTS AND SAFETY BENEFITS



Concrete phased as capacity permits

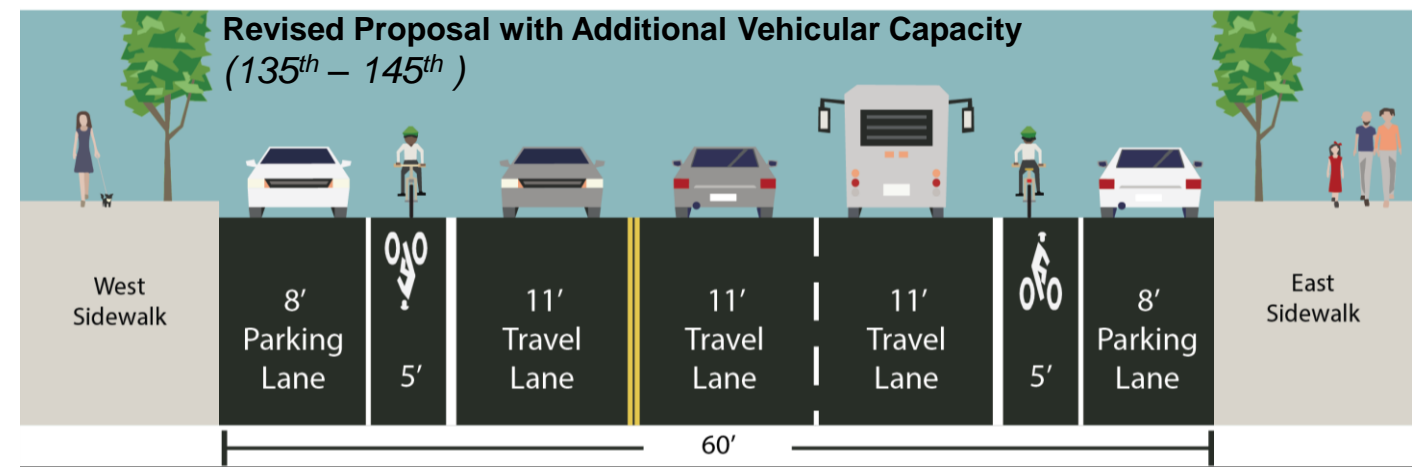
Amsterdam Ave at 172nd St looking north

PROJECT EVOLUTION



Detail Loading Zones & Metered Parking Plan

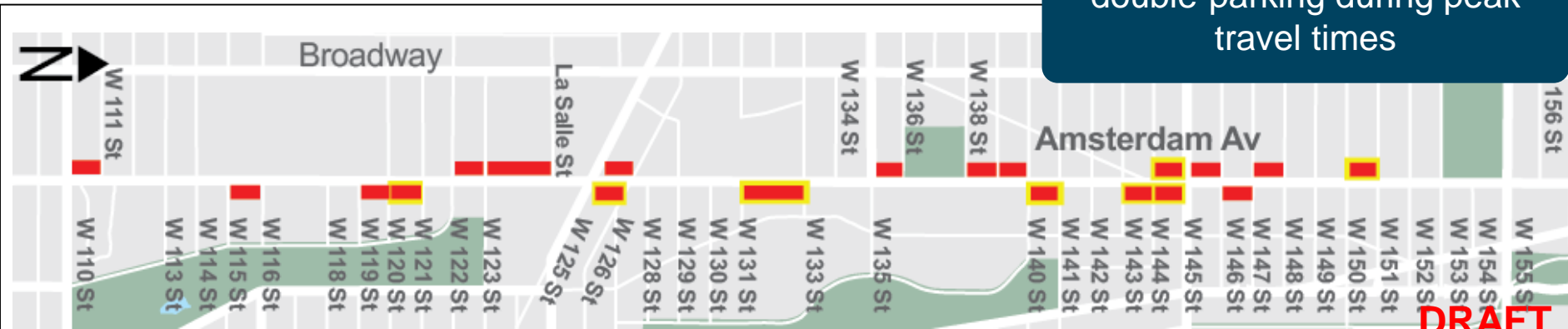
Added Vehicular Capacity



New Parking Information


MAKING IT WORK – Loading Zones

Reduce likelihood of trucks double-parking during peak travel times



DRAFT

 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)

Note 1: Existing metered parking to remain unless otherwise indicated.
Note 2: Truck loading zones will be approx 60' long.



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

THANK YOU!

Questions?



NYCDOT



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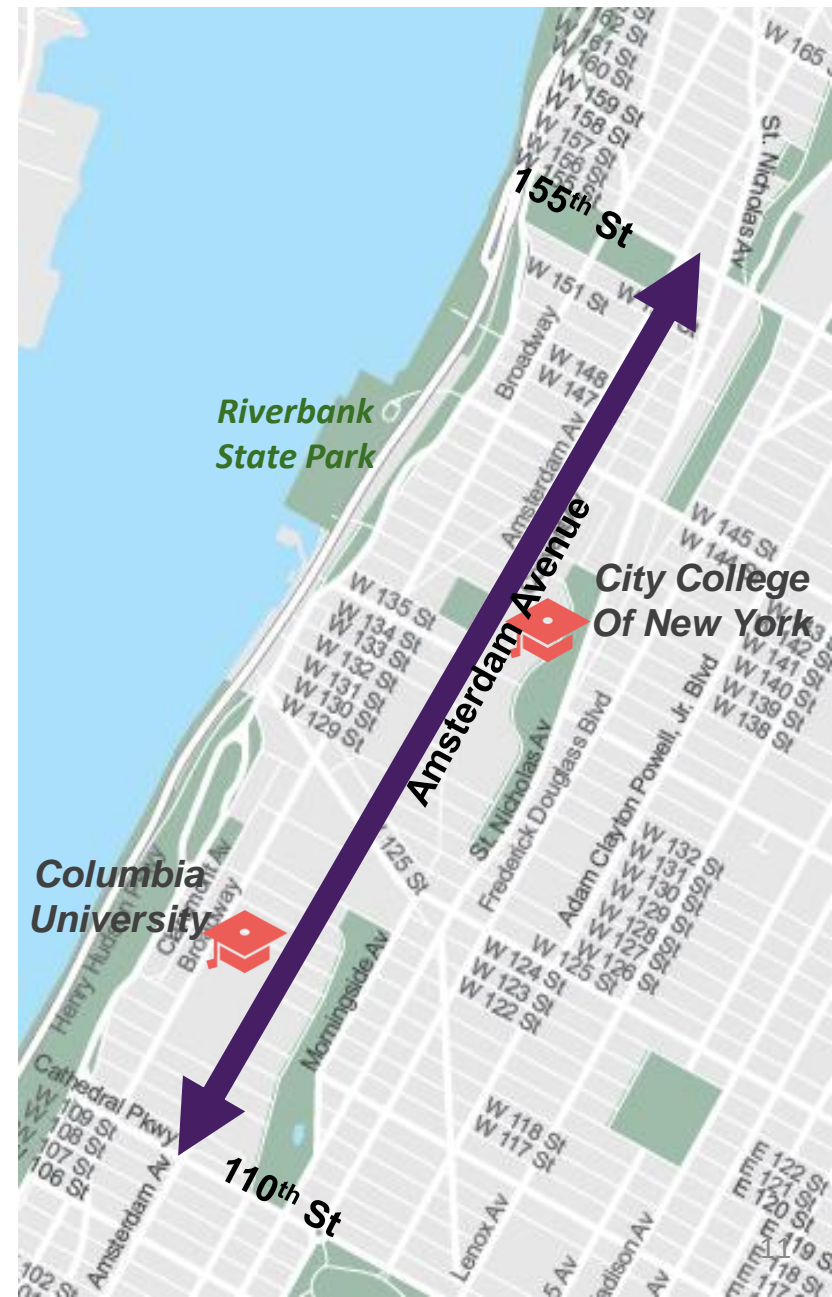
NYCDOT

Background

1

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



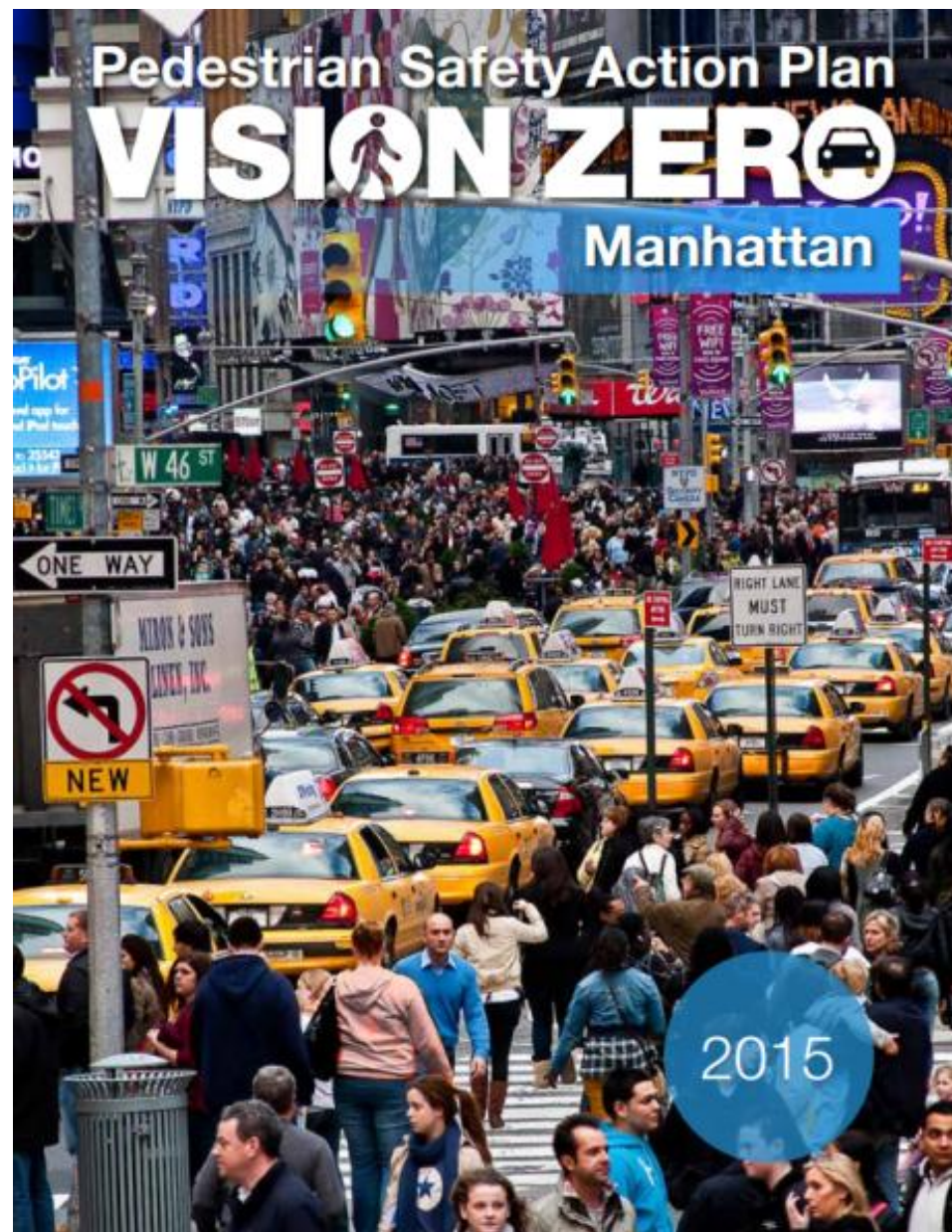
SAFETY – Vision Zero

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

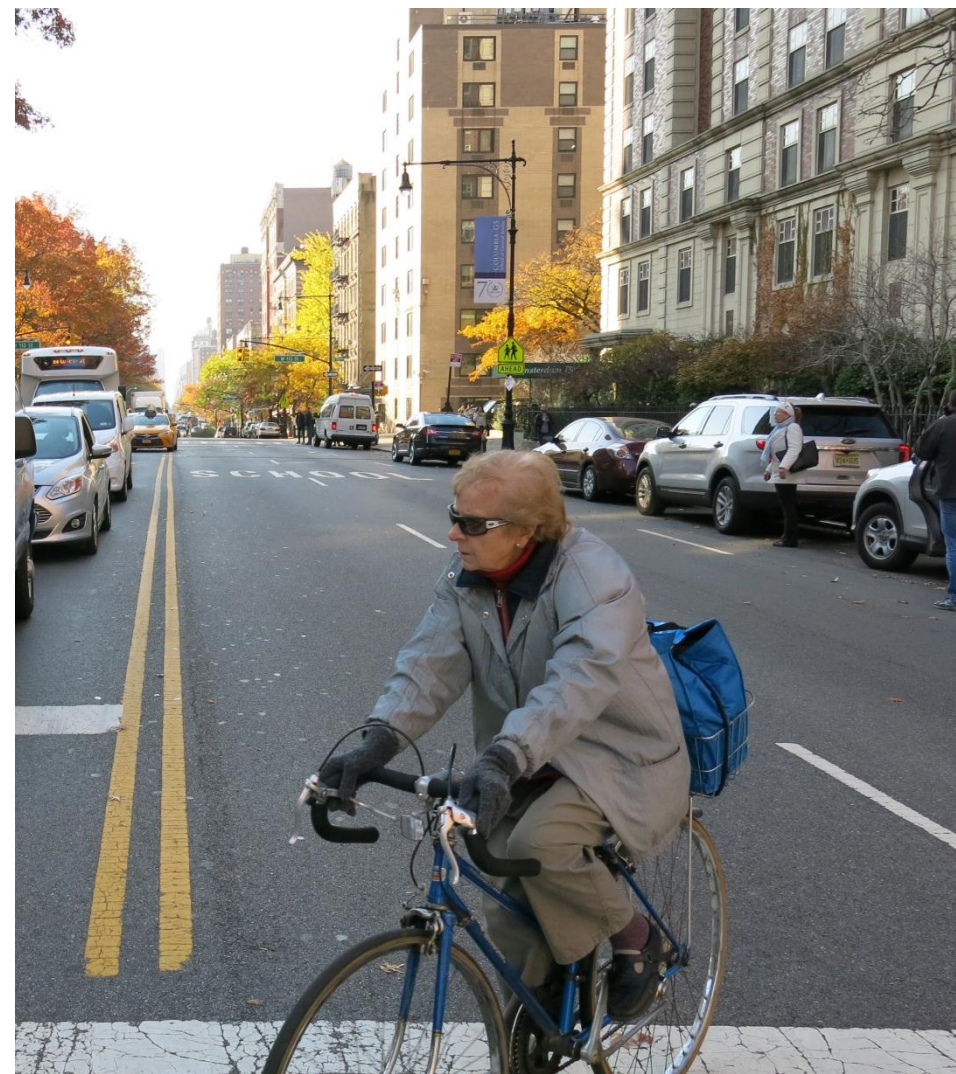
8 Cyclists Severely Injured 2010-2014

Injury Summary, 2010-2014 (5 years)

	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. **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**

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PROJECT OVERVIEW

1. Corridor Redesign

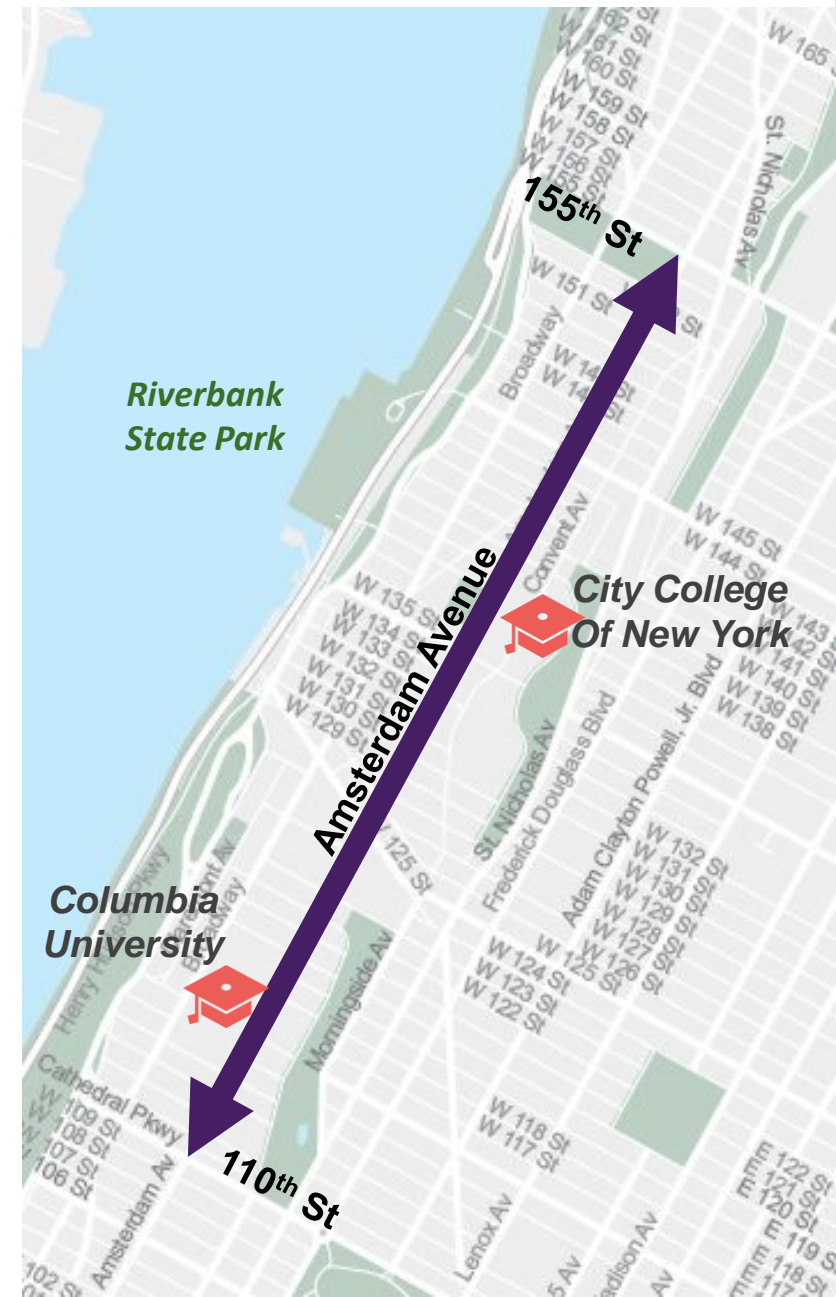
4-to-3 lane conversion with left turn lanes and bike lanes

2. Intersection Improvements

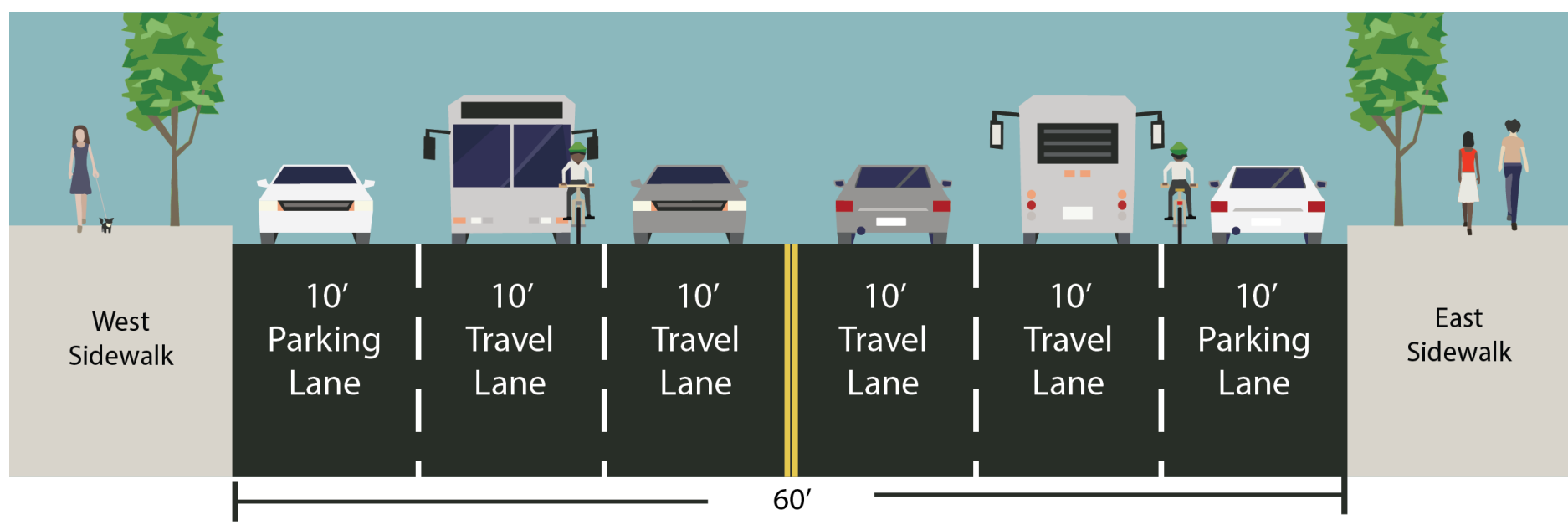
- Pedestrian Refuge Islands
- Painted Curb Extensions

3. Making it Work

- Traffic Analysis
- Transitions
- Rush Hour Regulations
- Loading Zones



1. CORRIDOR REDESIGN – Existing Conditions (Typical)



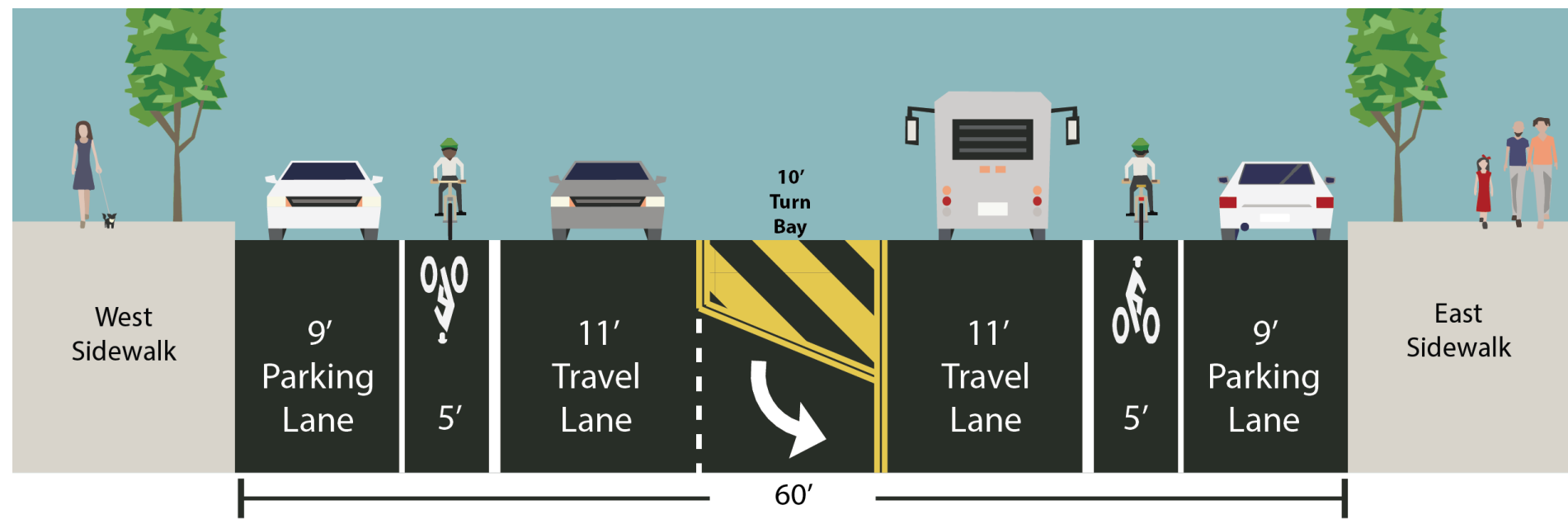
- 60 ft wide
- 2 moving lanes in each direction
- Parking on both curbs

Off-peak Speeding
70% of vehicles travel 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

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



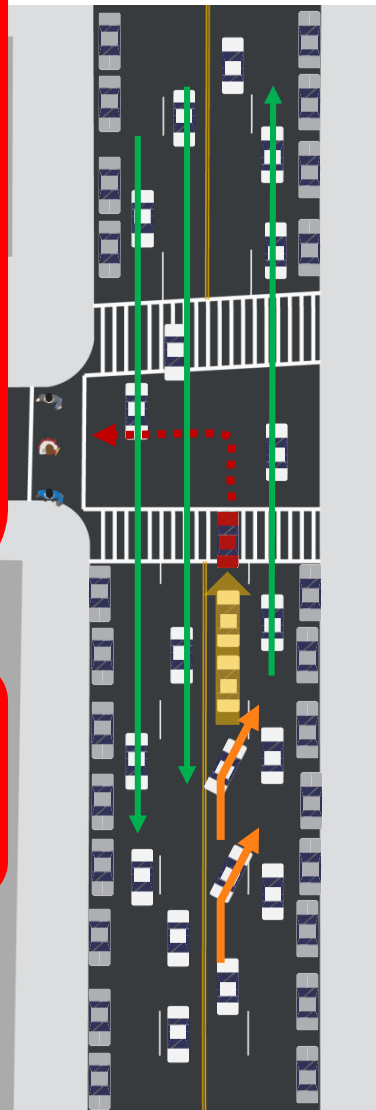
Amsterdam Ave at 172nd St looking north

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

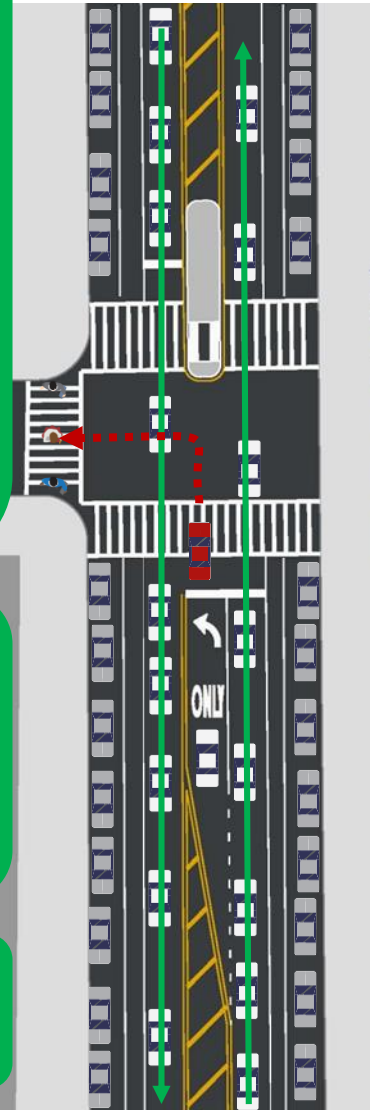


Left turn movements are **simplified** because motorists:

- **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%

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

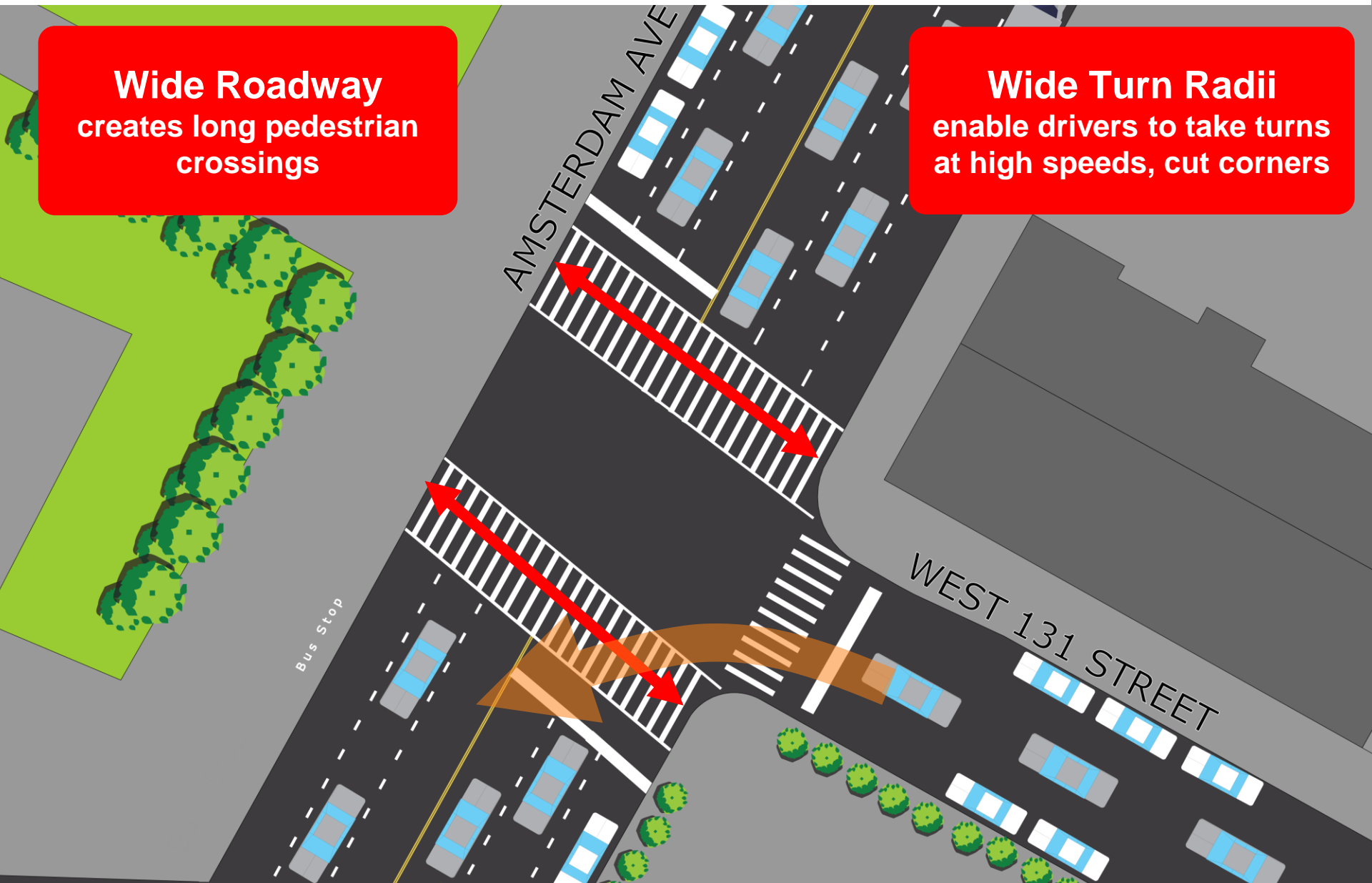
- **-45%** Left turn motor vehicle occupant injuries
- **-25%** Total motor vehicle occupant injuries
- **-24%** Left turn pedestrian injuries
- **-9%** Total pedestrian injuries

* On two-way approaches only, installed as part of DOT Street Improvement Projects
***Other* includes "U-Turn" and "Unknown"
Source: NYSDOT (2006 – 2014)

2. INTERSECTION IMPROVEMENTS – Pedestrian Refuge Islands

Wide Roadway
creates long pedestrian
crossings

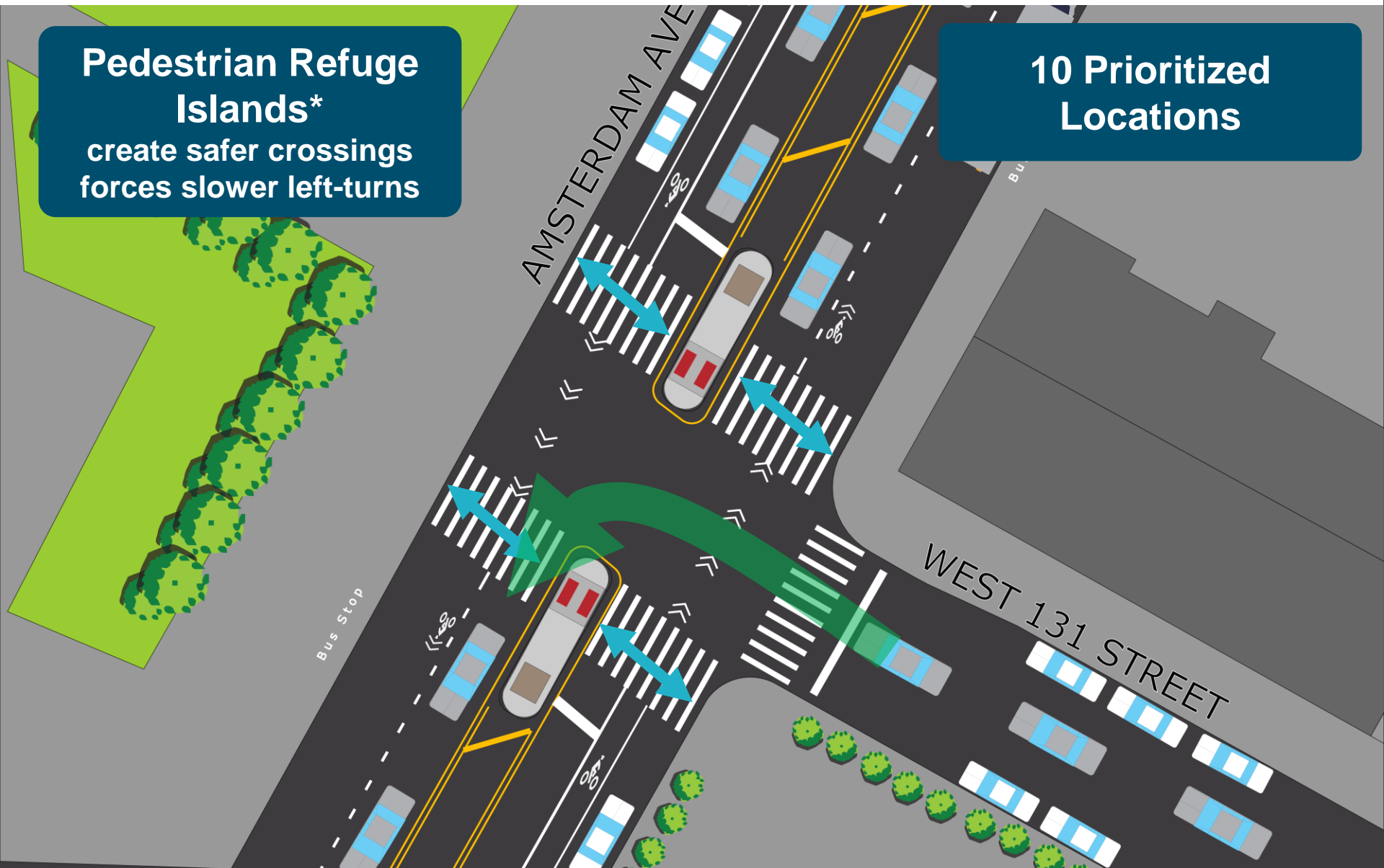
Wide Turn Radii
enable drivers to take turns
at high speeds, cut corners



2. INTERSECTION IMPROVEMENTS – Pedestrian Refuge Islands

Pedestrian Refuge Islands*
create safer crossings
forces slower left-turns

10 Prioritized Locations



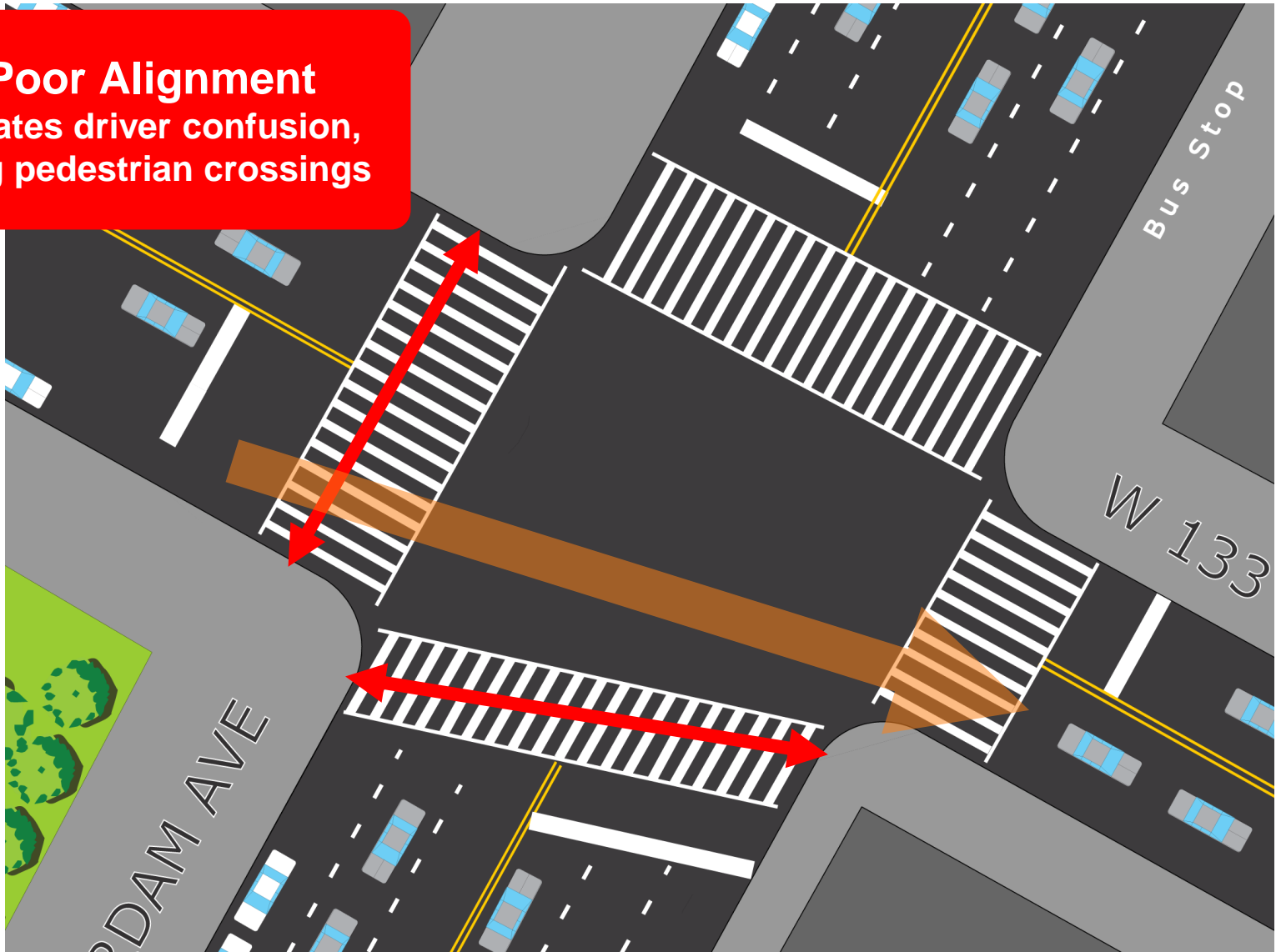
* Islands will be flush medians until capital construction*

2. INTERSECTION IMPROVEMENTS – Example of Pedestrian Refuge Islands



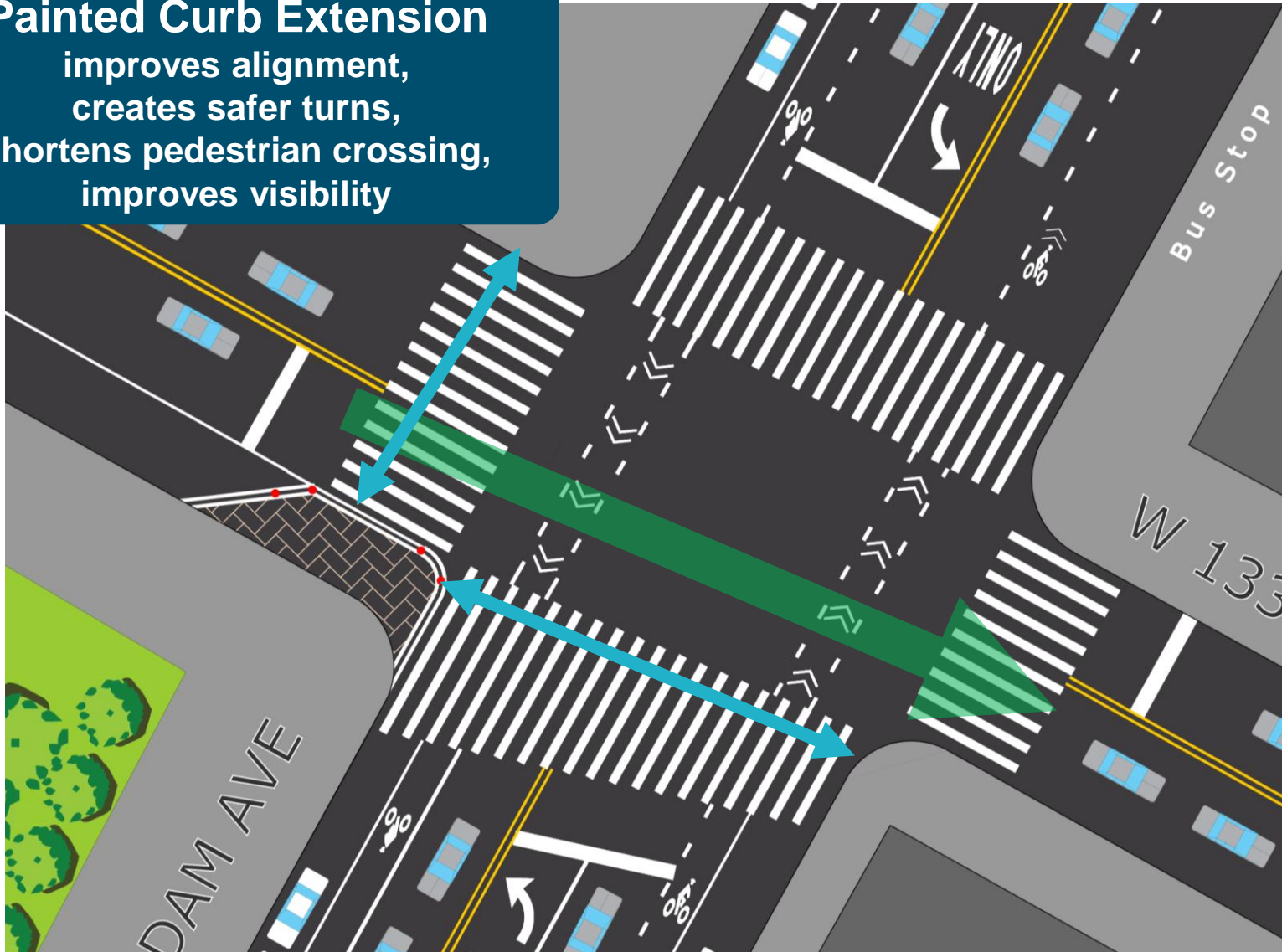
2. INTERSECTION IMPROVEMENTS – Painted Curb Extensions

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	39.0	D	1.07	1.07
W 135 th St	11.1	B	15.5	B	0.66	0.82
W 145 th St	10.3	B	11.8	B	0.62	0.69
W 155 th St	19.5	B	22.0	C	0.65	0.69



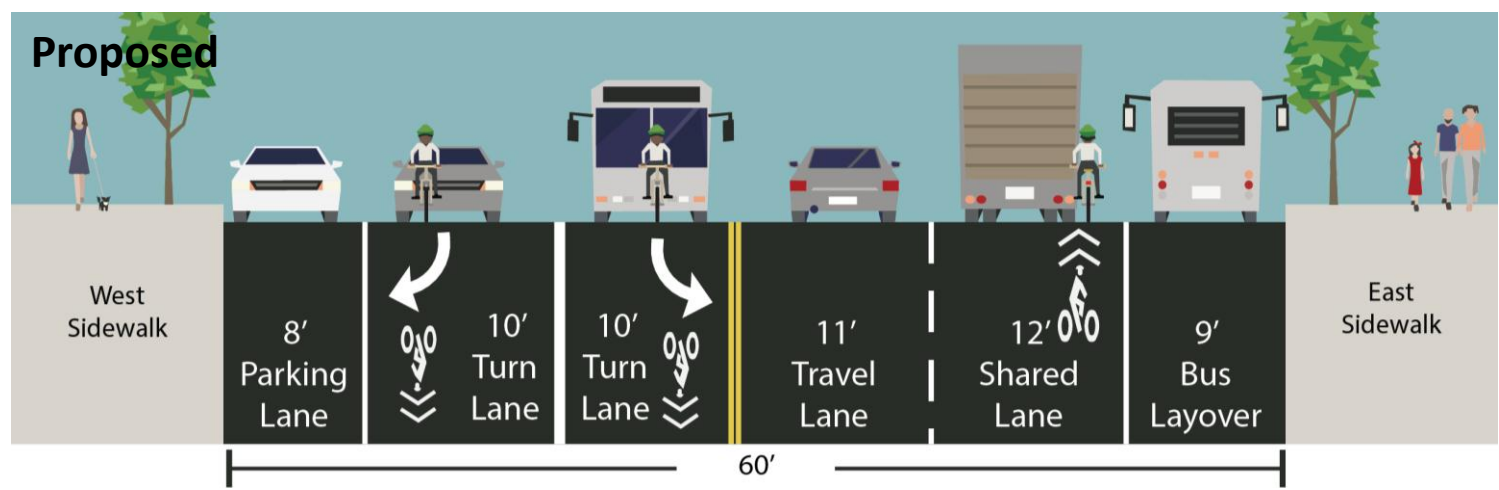
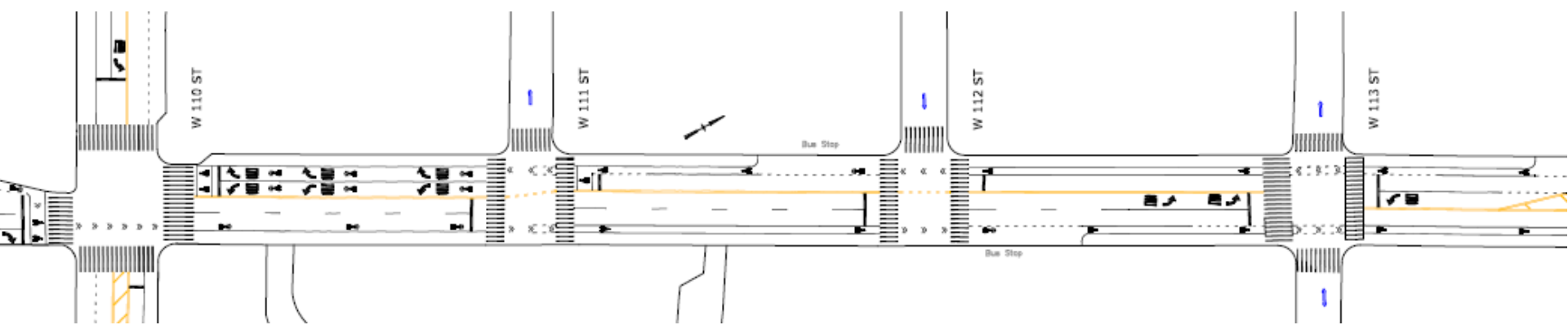
Minimal impact on traffic

- 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*

Proposed Condition Max v/c Ratios

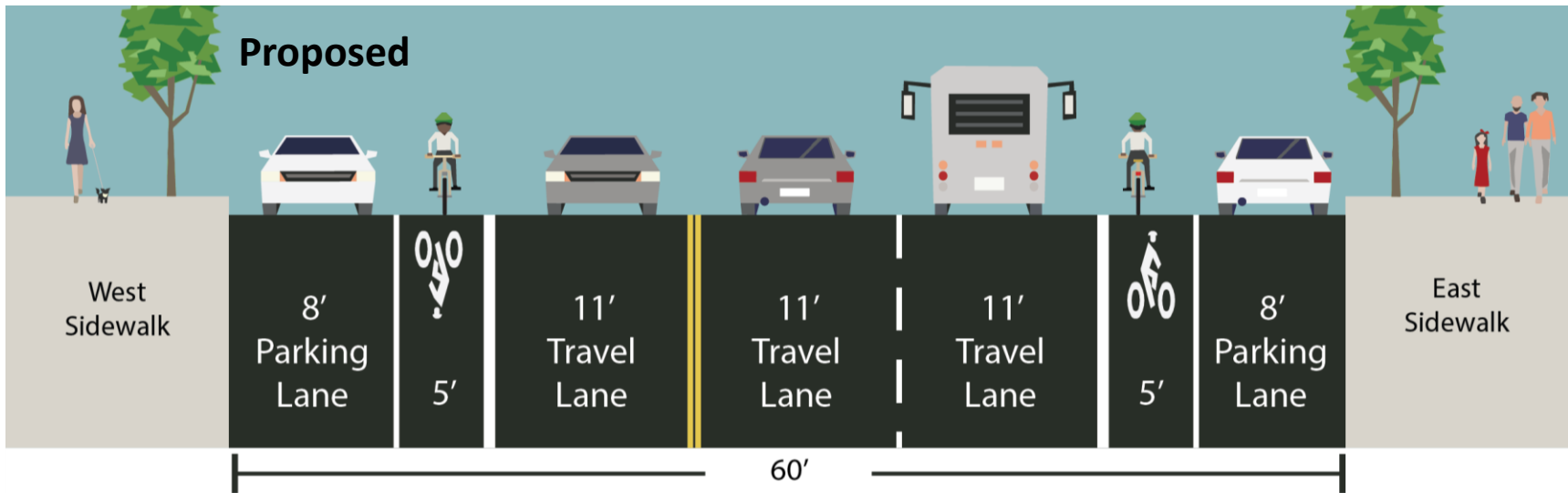
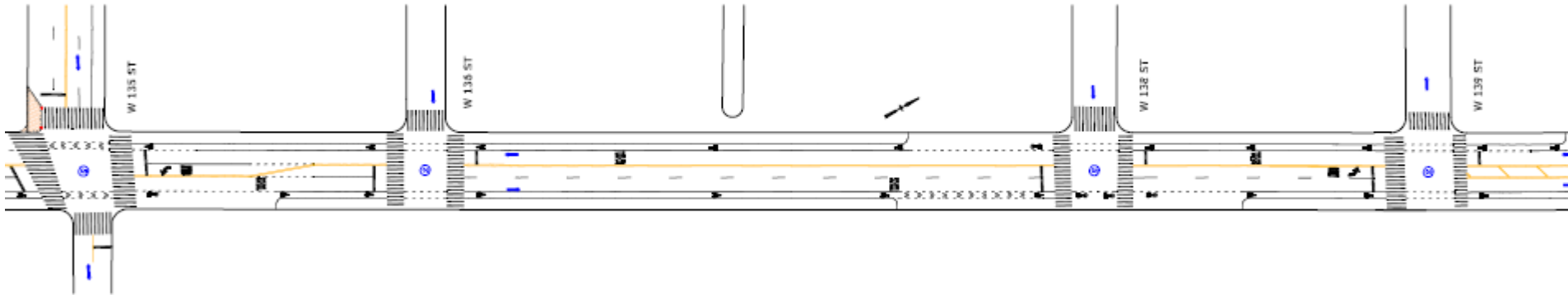
3. MAKING IT WORK – Southern Transition (110th St - 113th St)



- 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

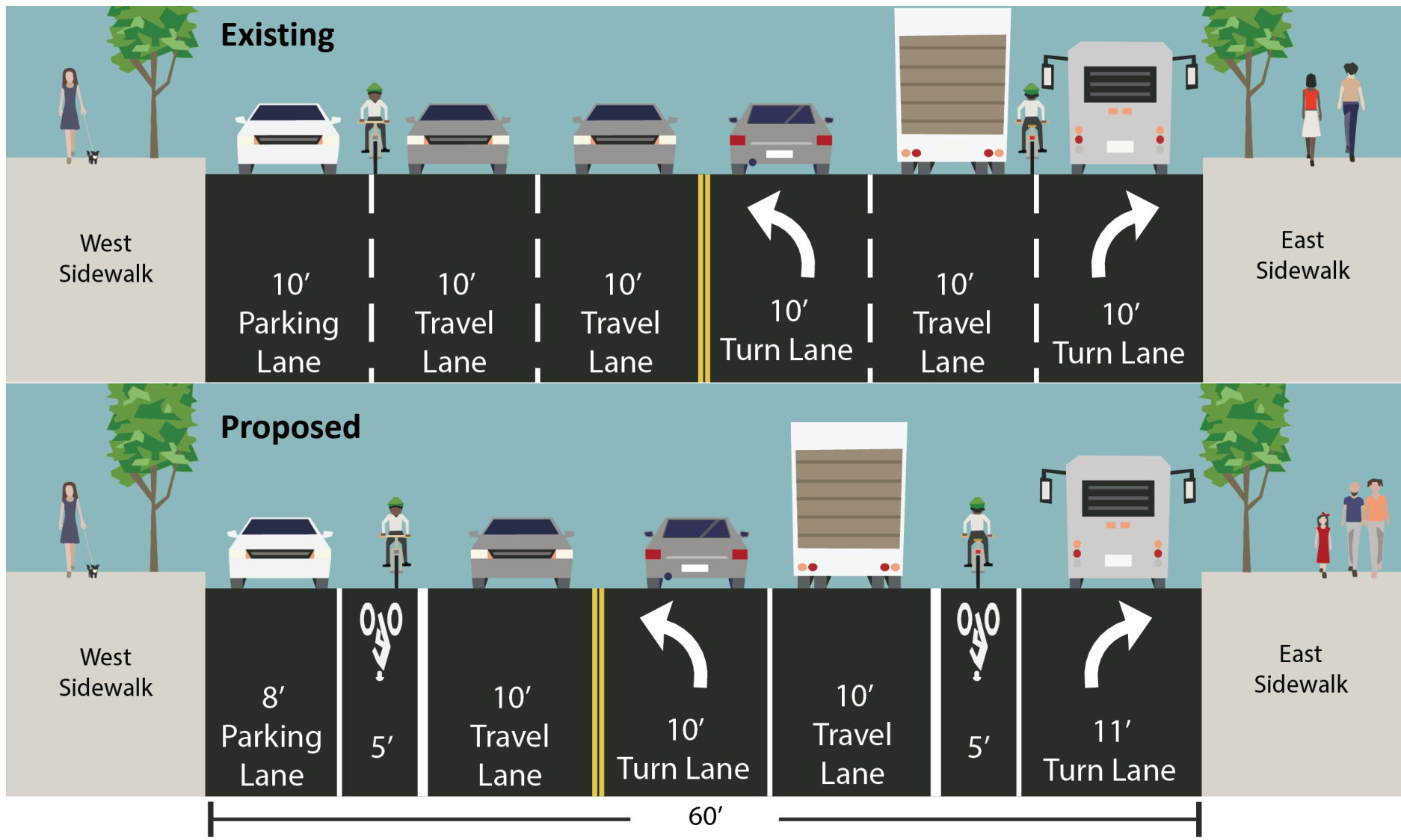
Proposal

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



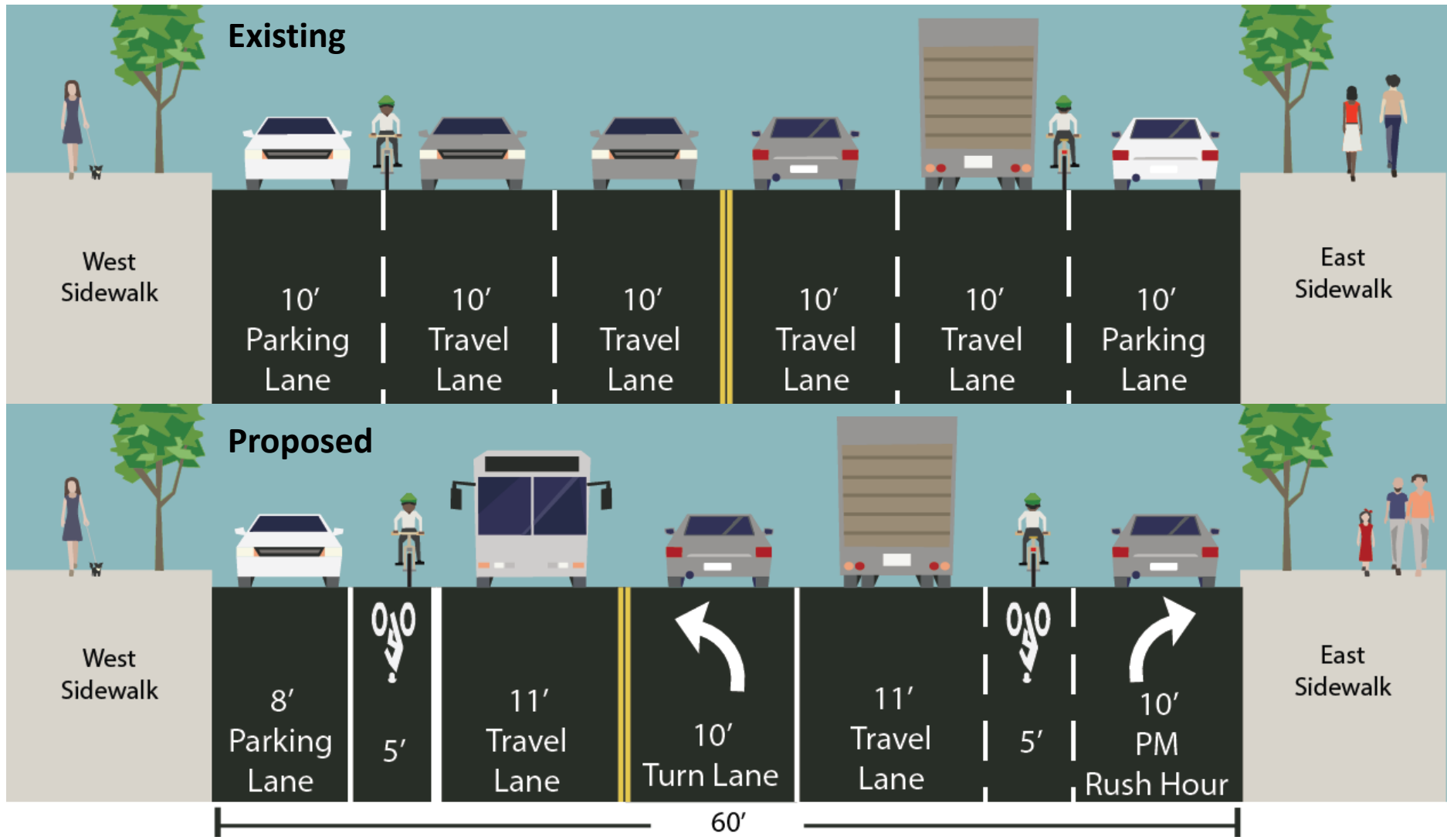
- Maintains capacity at high volume location to ensure traffic flow
- One lane SB, Two lanes NB from 135th St – 145th St

3. MAKING IT WORK – 125th St



- 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
- Extensive business outreach with surveys

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

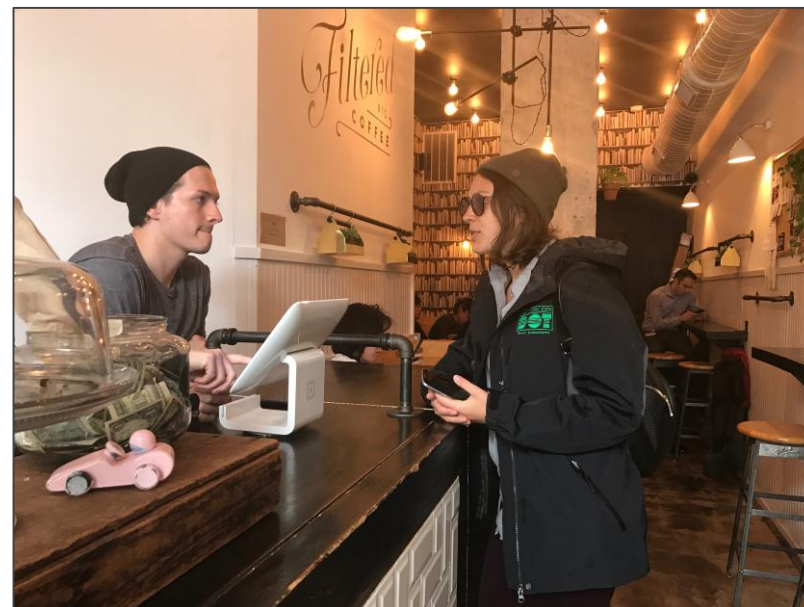
Merchant Surveys

- 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

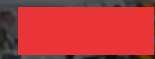
Ambassadors attempted to survey every business along project corridor
April 24th and April 26th



3. MAKING IT WORK – Loading Zones (Proposal)

Bronx

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



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)

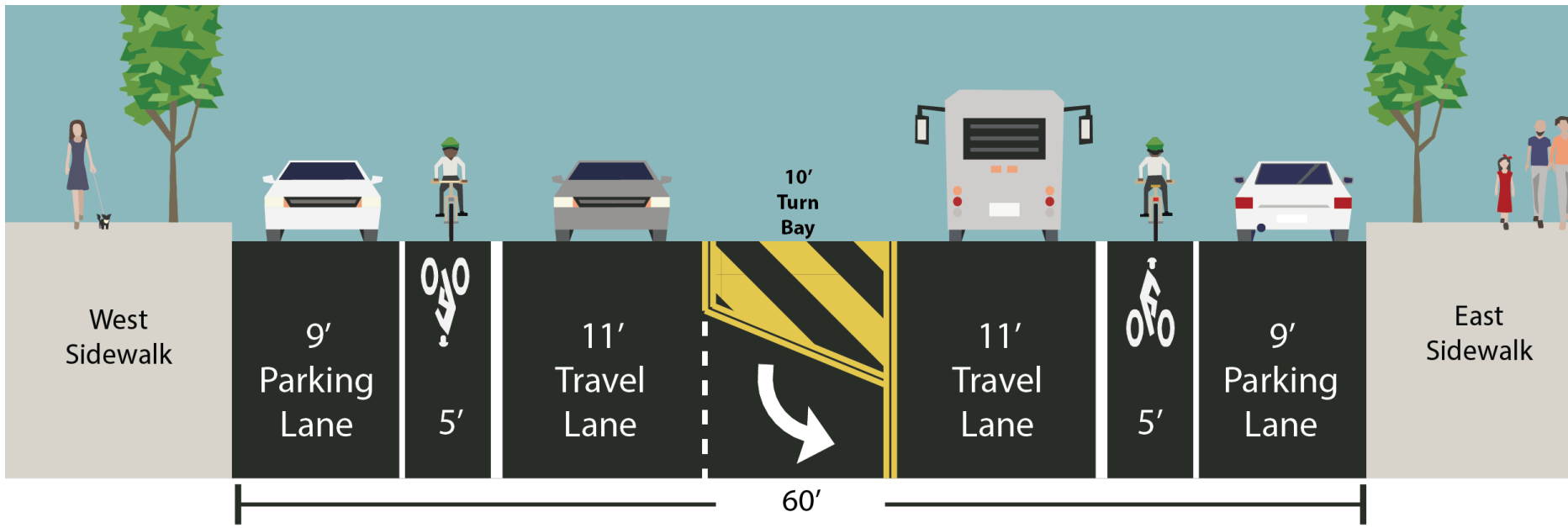
Note 1: Existing metered parking to remain unless otherwise indicated.
Note 2: Truck loading zones will be approx 60' long.

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



Narrower Roadway
discourages speeding

Turn Bays
create simpler, safer left turns, reduce back pressure

Bike Lanes
provide dedicated space for cyclists, increase predictability

THANK YOU!

Questions?



NYCDOT



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NYCDOT

Intersections with more than 10 Injuries 2010-2014

