

# Grand Concourse, 138<sup>th</sup> St to 158<sup>th</sup> St

## Corridor Safety Improvements

2016





# Project Area



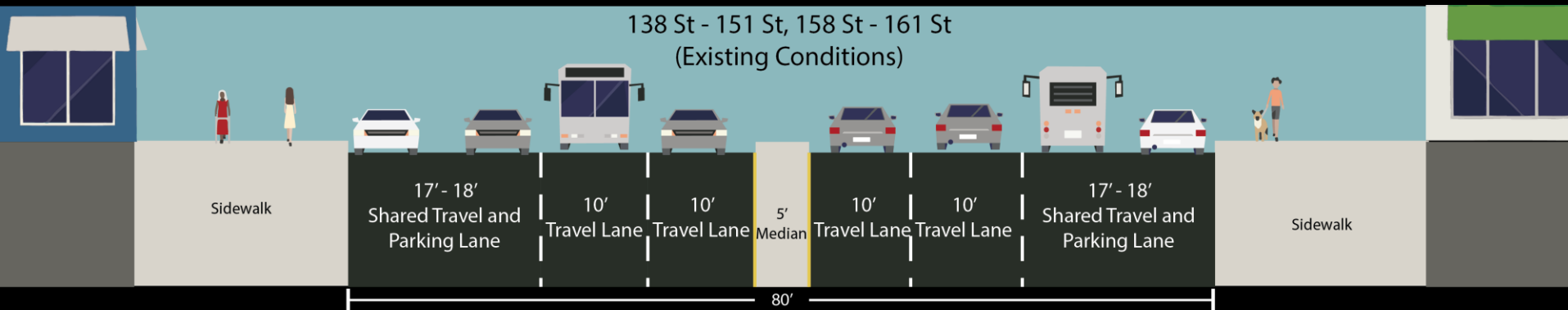
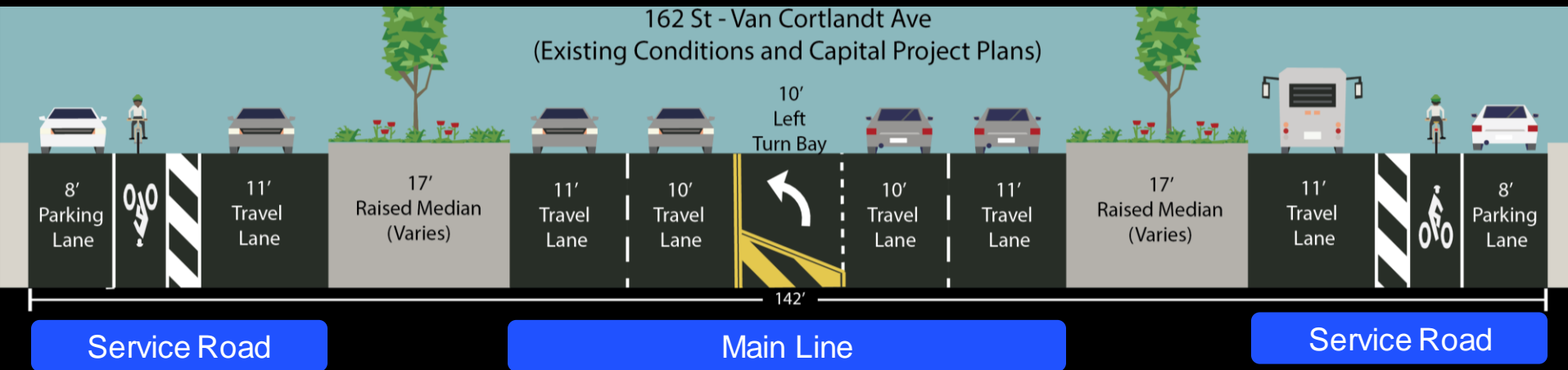
# Timeline: Grand Concourse Redesign

- Capital Projects
  - 161<sup>st</sup> St to 166<sup>th</sup> St completed
  - 166<sup>th</sup> St to 171<sup>st</sup> St under construction
  - 171<sup>st</sup> St to 175<sup>th</sup> St in planning
- Safety Projects
  - 2009 – Safe routes to school pedestrian improvements
  - 2009 - Service Road Bike Lanes b/n 166<sup>th</sup> St and Mosholu Parkway
  - 2013 – 204<sup>th</sup> St to Mosholu Pkwy
  - 2014 – Grand Concourse Arterial Slow Zone (25 mph)
  - 2015 – Intersection improvements at 165<sup>th</sup> St
- Section south of 158<sup>th</sup> St is the only area that has not yet been redesigned





# Grand Concourse Geometry





# Existing Issues: Injuries



Killed or  
Severely  
Injured  
(KSI)  
2010-2014

Total  
Injuries  
2010-2014

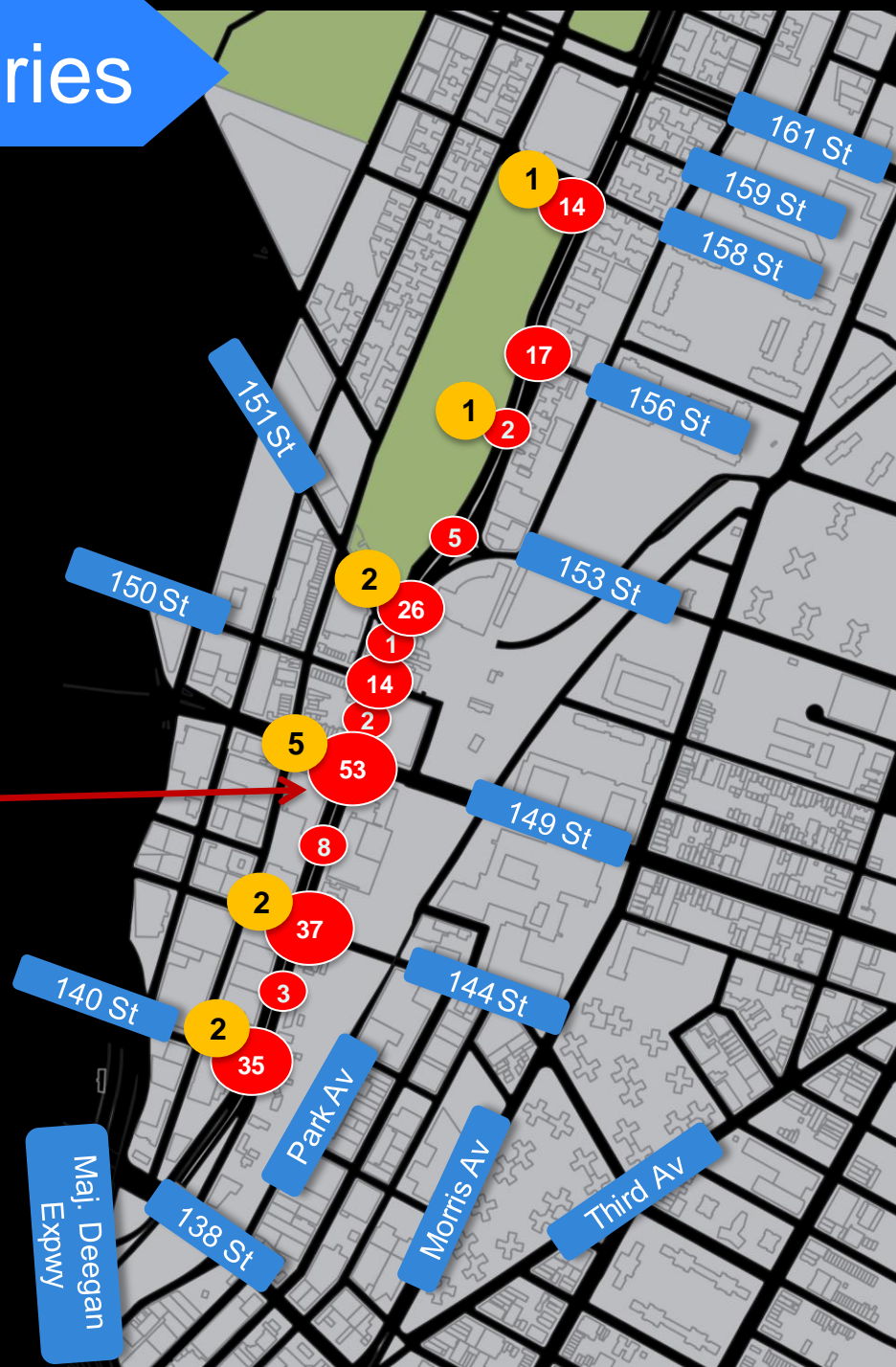
149<sup>th</sup> St is a Vision Zero  
priority intersection

13 Pedestrian Injuries (2 Fatalities)  
(2010-2014)

Grand Concourse - 138 St to 158 St, BX

Injury Summary, 2010-2014 (5 Years)

	Total Injuries	Severe Injuries	Fatalities	KSI
Pedestrian	24	3	2	5
Bicyclist	10	1	0	1
Motor Vehicle Occupant	182	7	0	7
Total	216	11	2	13

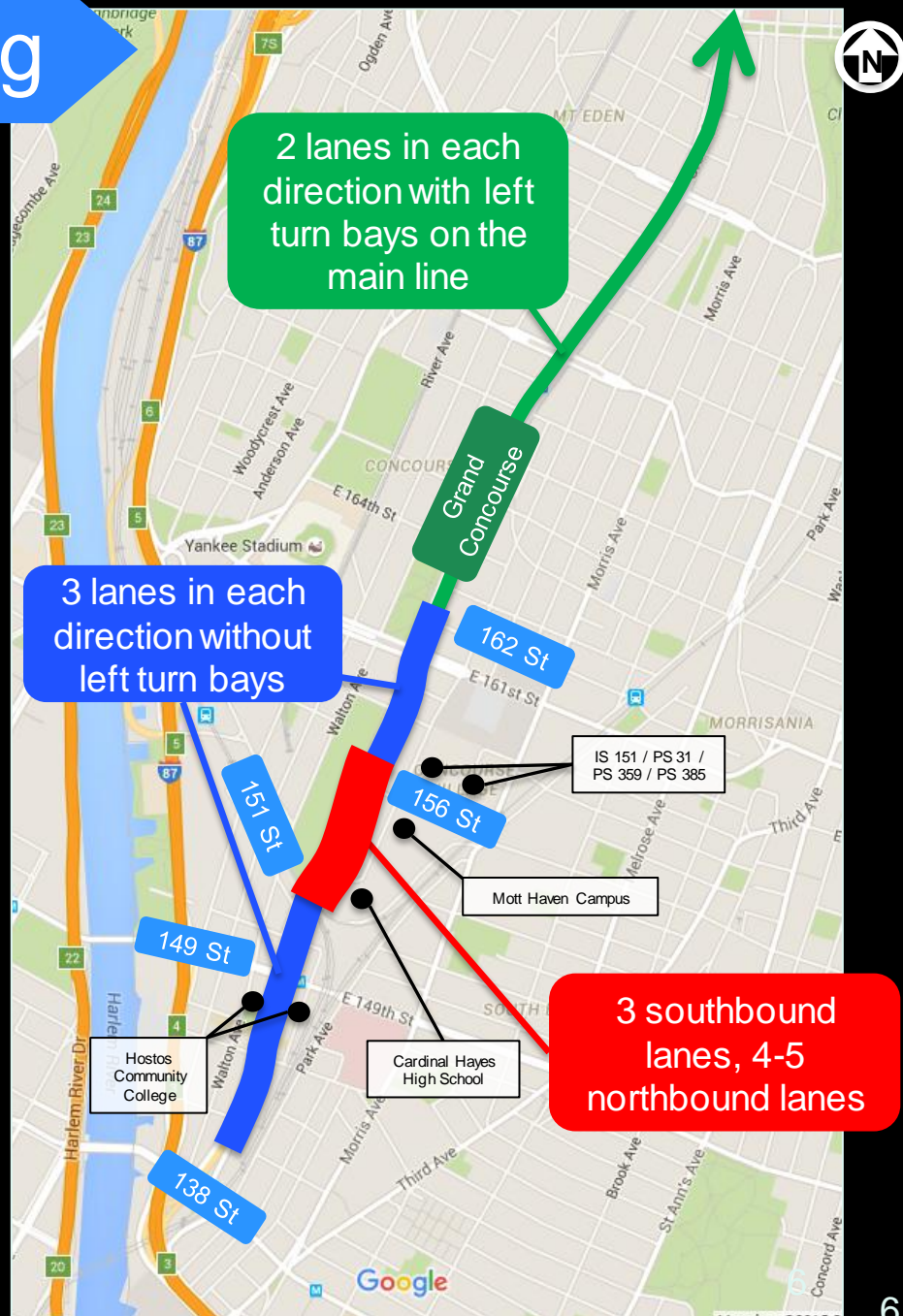


# Existing Issues: Speeding

- Approximately 1,100-1,200 vehicles in the peak hour in the peak direction
- North of 161<sup>st</sup> St, this volume is accommodated by 2 lanes with left turn bays
- Excess lanes and roadway space south of 161<sup>st</sup> St encourages speeding

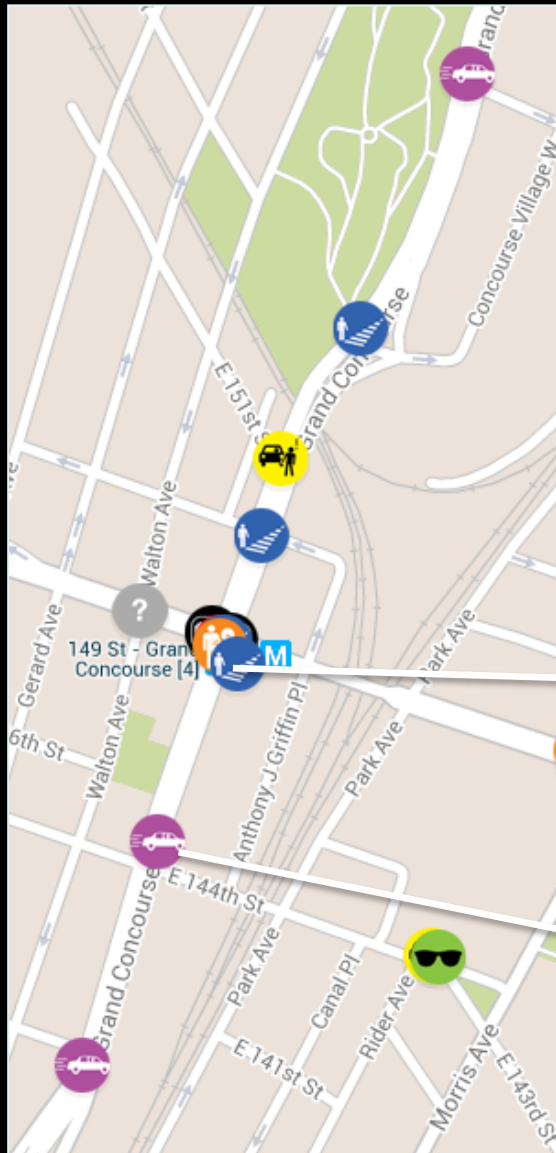
Street		Percent of Vehicles Speeding	85 <sup>th</sup> Percentile Speed
153 St – 156 St	Northbound	82%	40 mph
	Southbound	53%	32 mph
144 St – 149 St	Northbound	79%	34 mph
	Southbound	72%	37 mph

\*Study conducted December 30, 2015





# Existing Issues: Community Concerns



- Issues identified by community members on Vision Zero map:
  - Speeding
  - Long crossing distances
  - Not enough time to cross
  - Long wait to cross
  - Failure to yield

## Long Distance to Cross



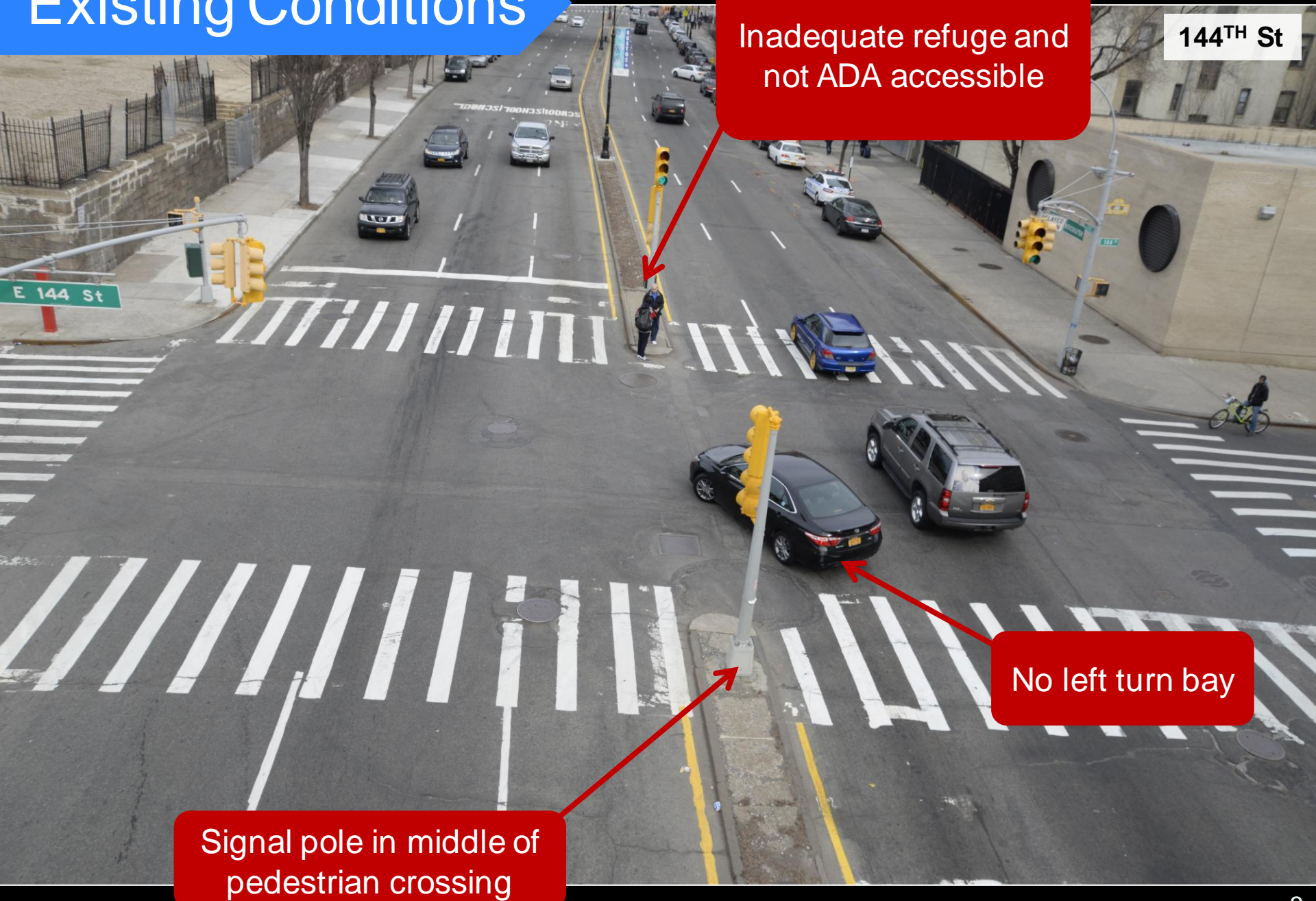
Needs a larger median. During the day, enough people are stuck in the middle that some must dangerously remain off the curb.

## Speeding



Wide-open pavement invites speeding; scary for pedestrians and cyclists to navigate.

# Existing Conditions



Inadequate refuge and  
not ADA accessible

144TH St

No left turn bay

Signal pole in middle of  
pedestrian crossing



# Existing Conditions

144<sup>TH</sup> ST



Few turning lanes:  
Left turning cars  
obstruct traffic flow



# Existing Conditions

149th St



No pedestrian refuge



# Existing Conditions

151<sup>ST</sup> ST

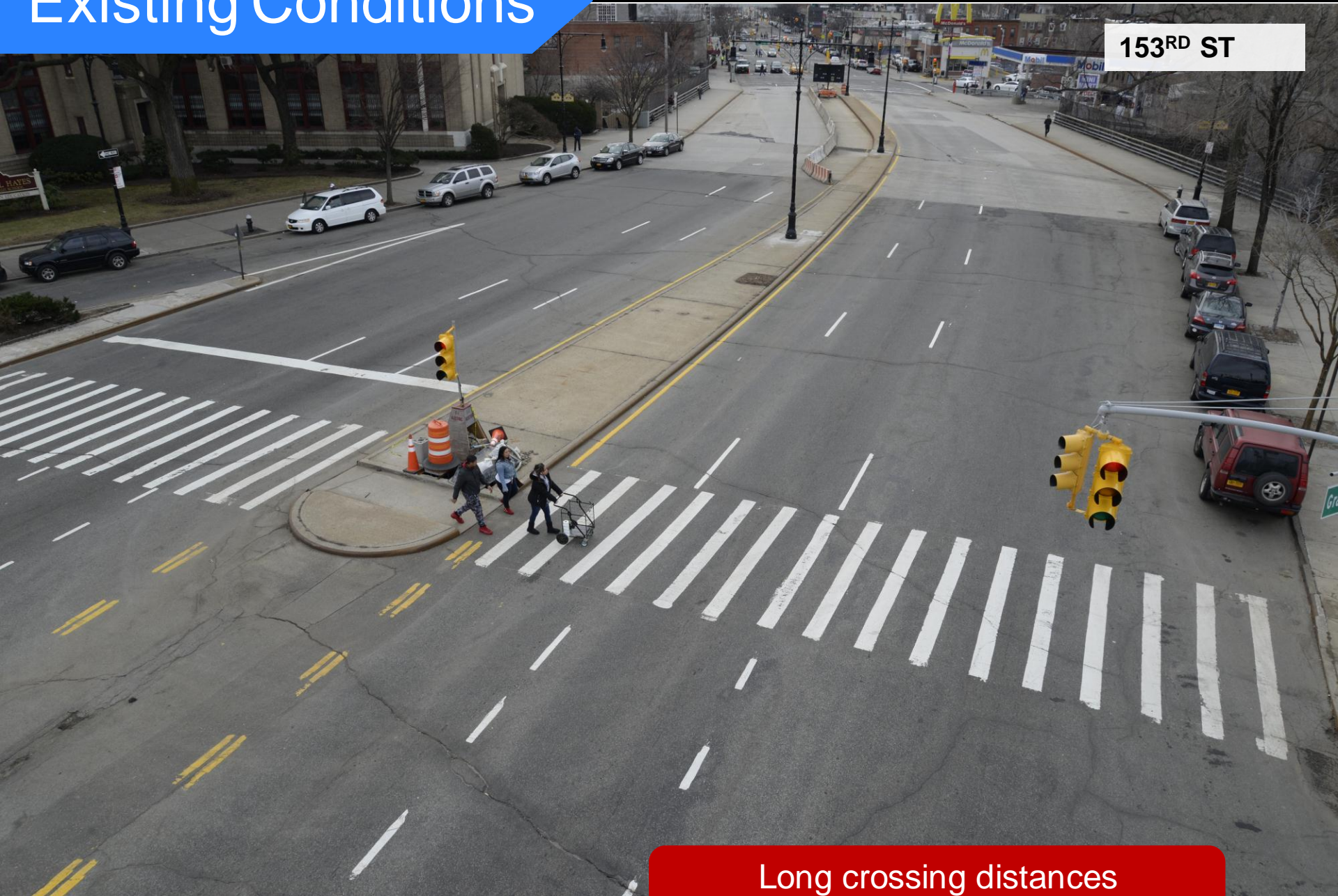


Cut-back median allows for fast, uncontrolled turns that conflict with pedestrians



# Existing Conditions

153<sup>RD</sup> ST



Long crossing distances  
Street width varies from 80' to 115'



# In-House Toolkit



New signage



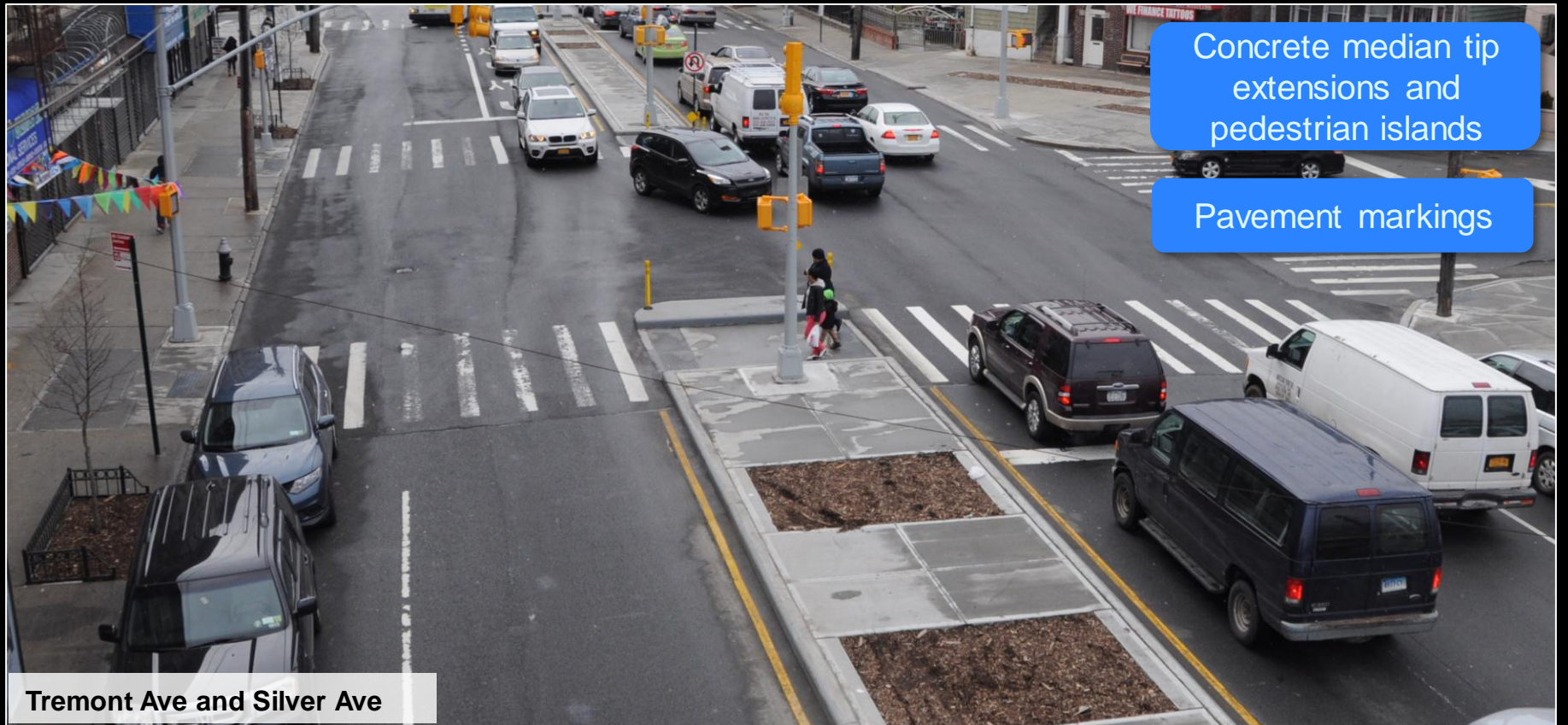
Flexible delineators

Forsyth St



Painted and gravel pedestrian spaces

Grand Concourse and Mosholu Parkway



Concrete median tip extensions and pedestrian islands

Pavement markings

Tremont Ave and Silver Ave



# Proposed Plans: Typical

Reduce to 5 lanes  
(2 moving lanes in each direction  
+ 1 left turning lane)

Stripe parking lanes  
and bus stops

Install concrete or painted  
median tip extensions at  
intersections

Upgrade crosswalks to  
high visibility

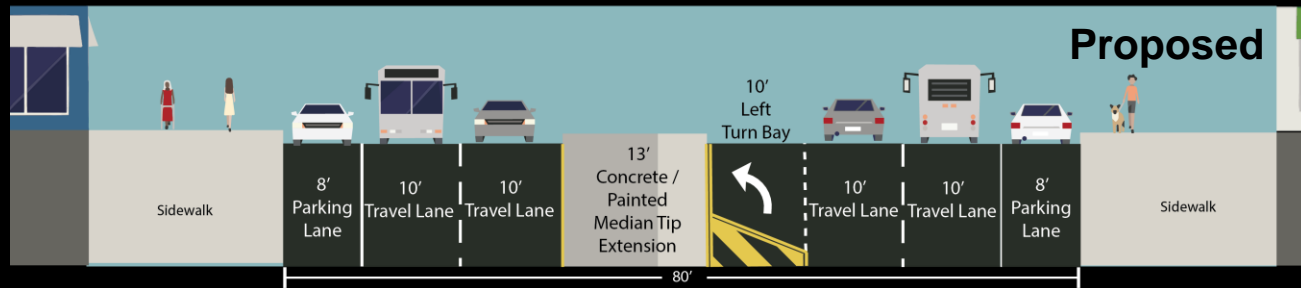
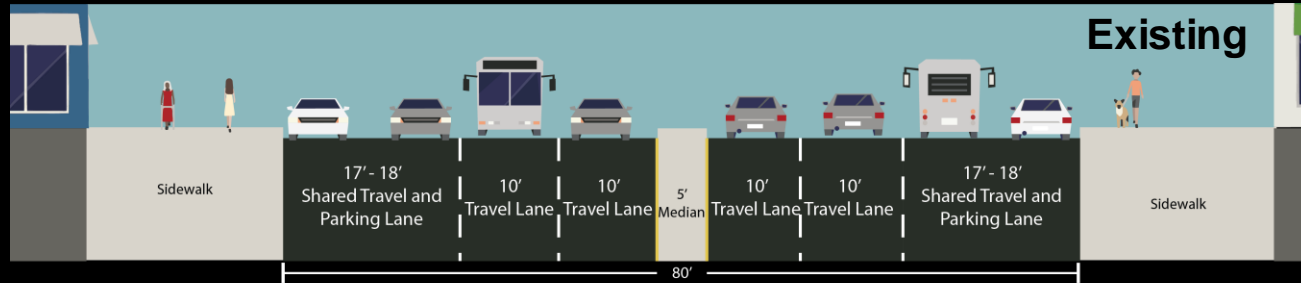
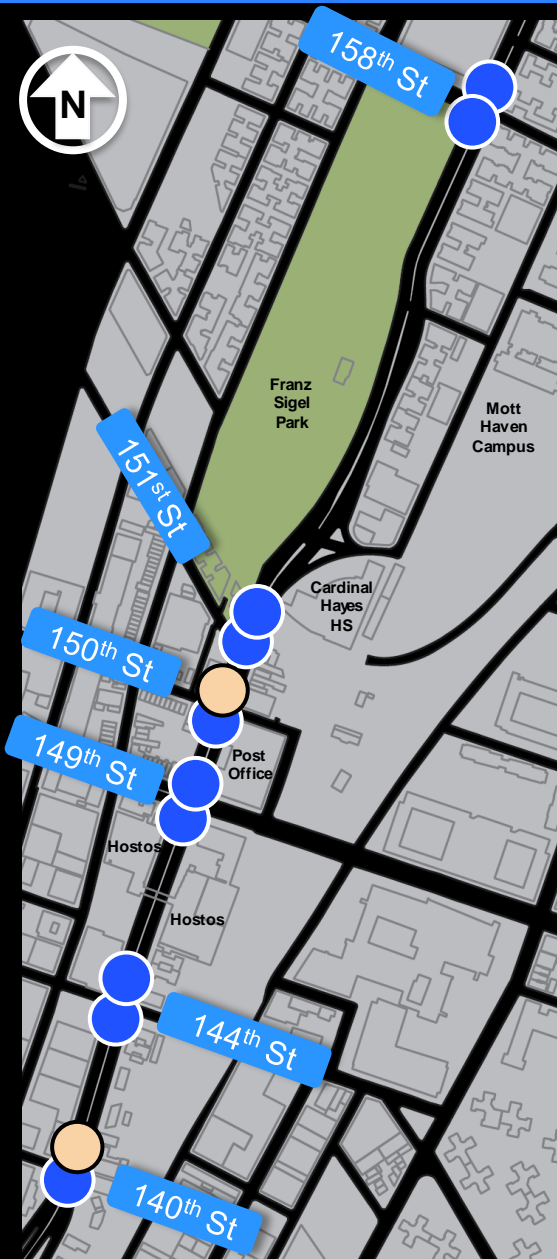
Install left turn  
bays at  
intersections

**Pennsylvania Avenue, Brooklyn**





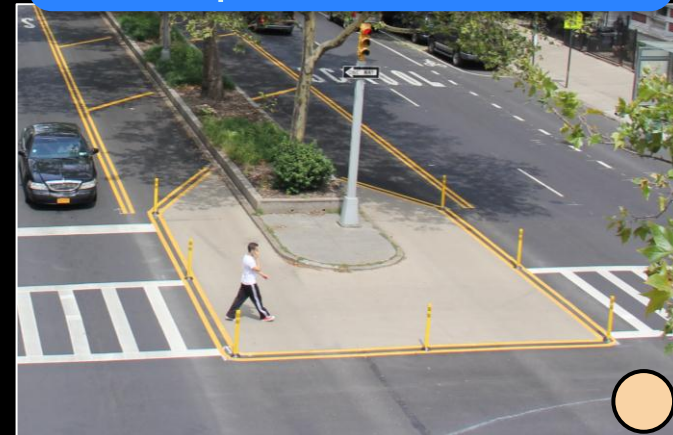
# 140<sup>th</sup> St – 151<sup>st</sup> St, 156<sup>th</sup> St - 158<sup>th</sup> St: Typical



Construct 10 concrete median tip extensions



Install 2 painted median tip extensions



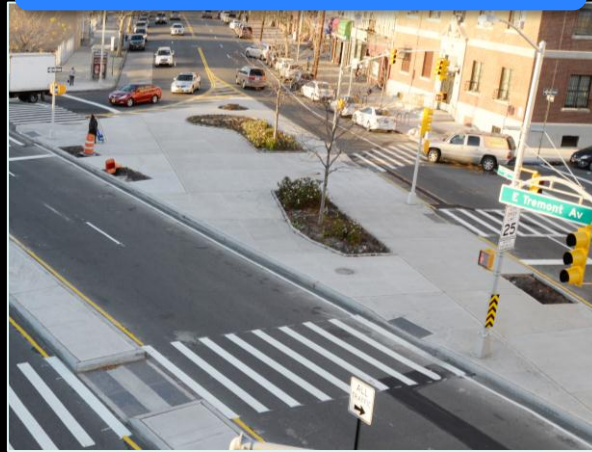
# 153<sup>rd</sup> St – 156<sup>th</sup> St: Operational Changes

Implement safety improvements at intersections with complicated geometry

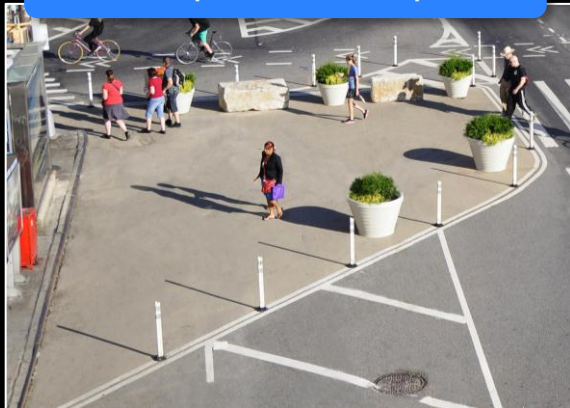
Concrete median tip extensions and pedestrian islands



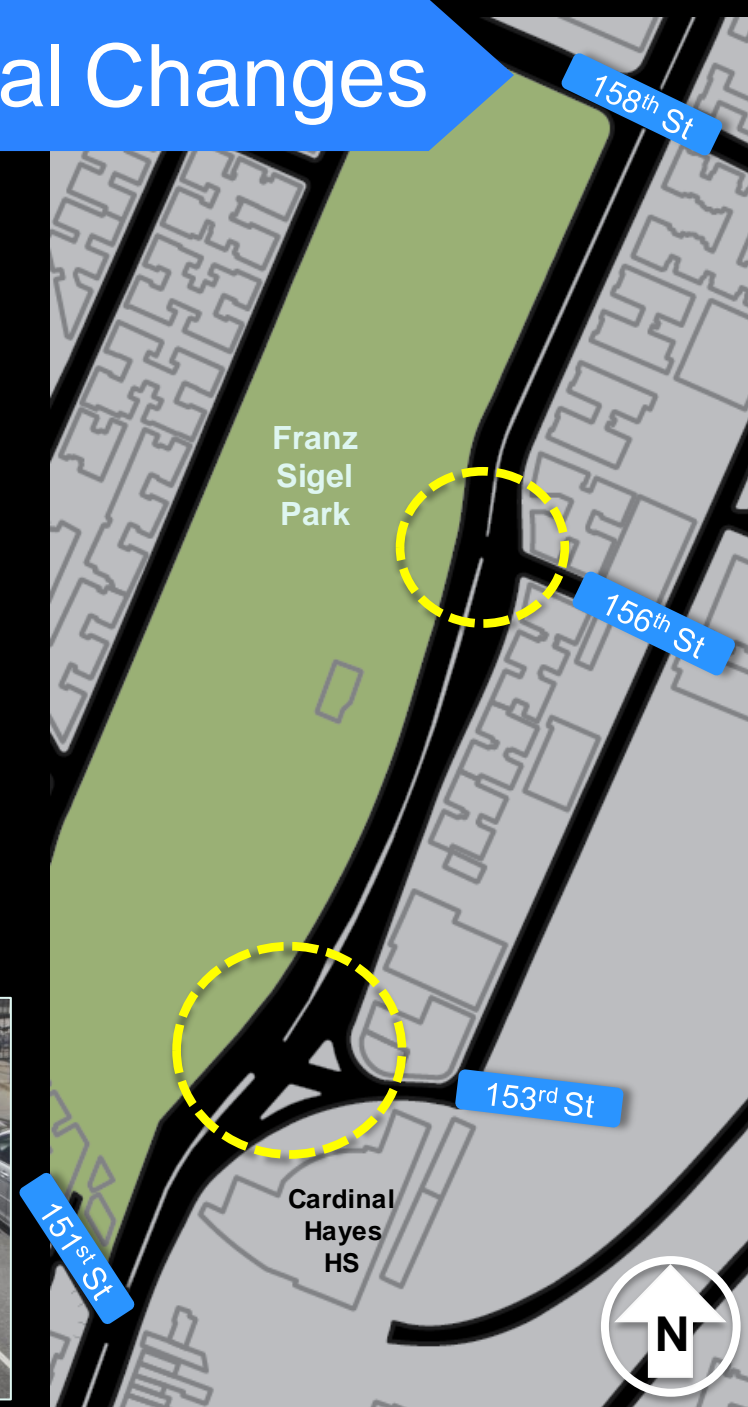
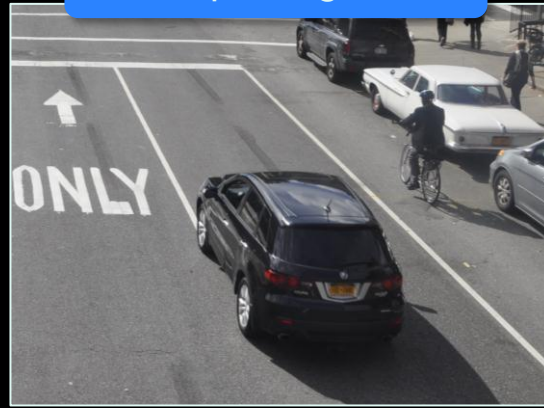
Concrete island extensions



Painted pedestrian spaces



Wide parking lanes





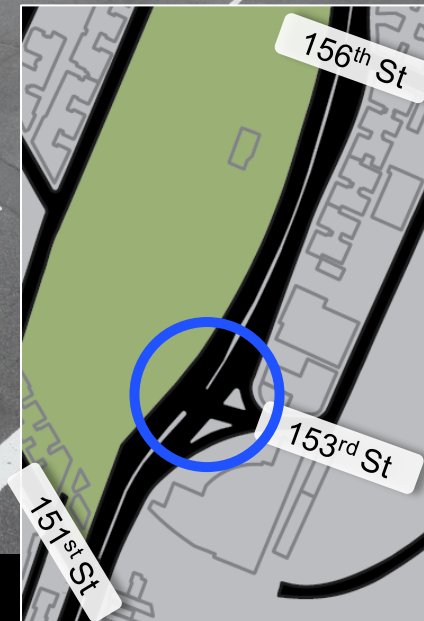
# 153<sup>rd</sup> St: Existing Issues

Long crossing distances



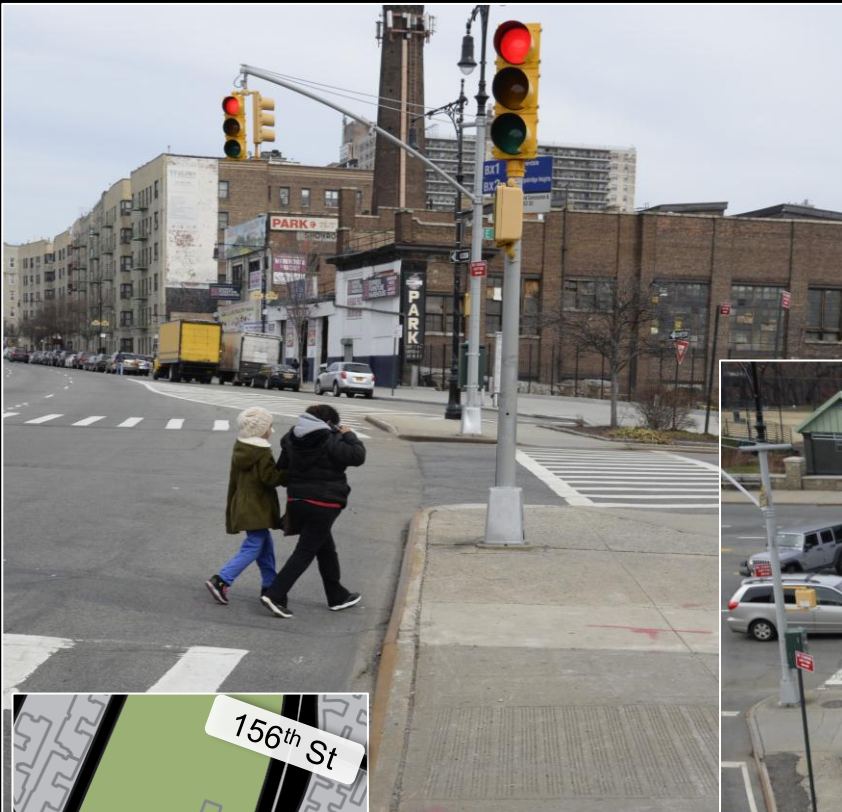
Excess road capacity

4 northbound moving lanes, 3-4 southbound lanes + left turn bay





# 153<sup>rd</sup> St: Existing Issues



Significant pedestrian activity, particularly before and after school

Yield-controlled westbound right slip lane





# 153<sup>rd</sup> St: Existing Conditions



Narrow median on north side does not provide sufficient refuge for pedestrians

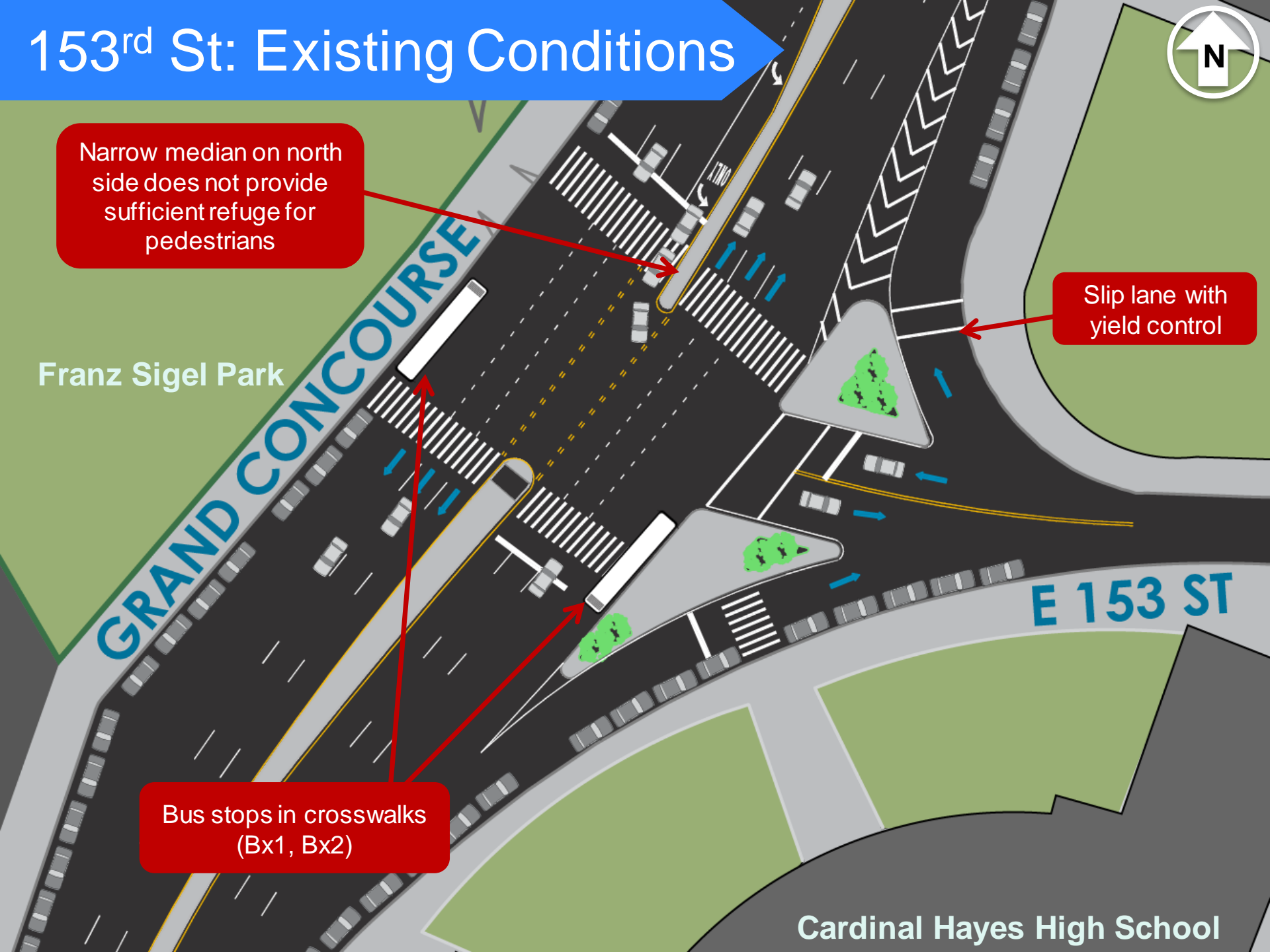
Franz Sigel Park

Slip lane with yield control

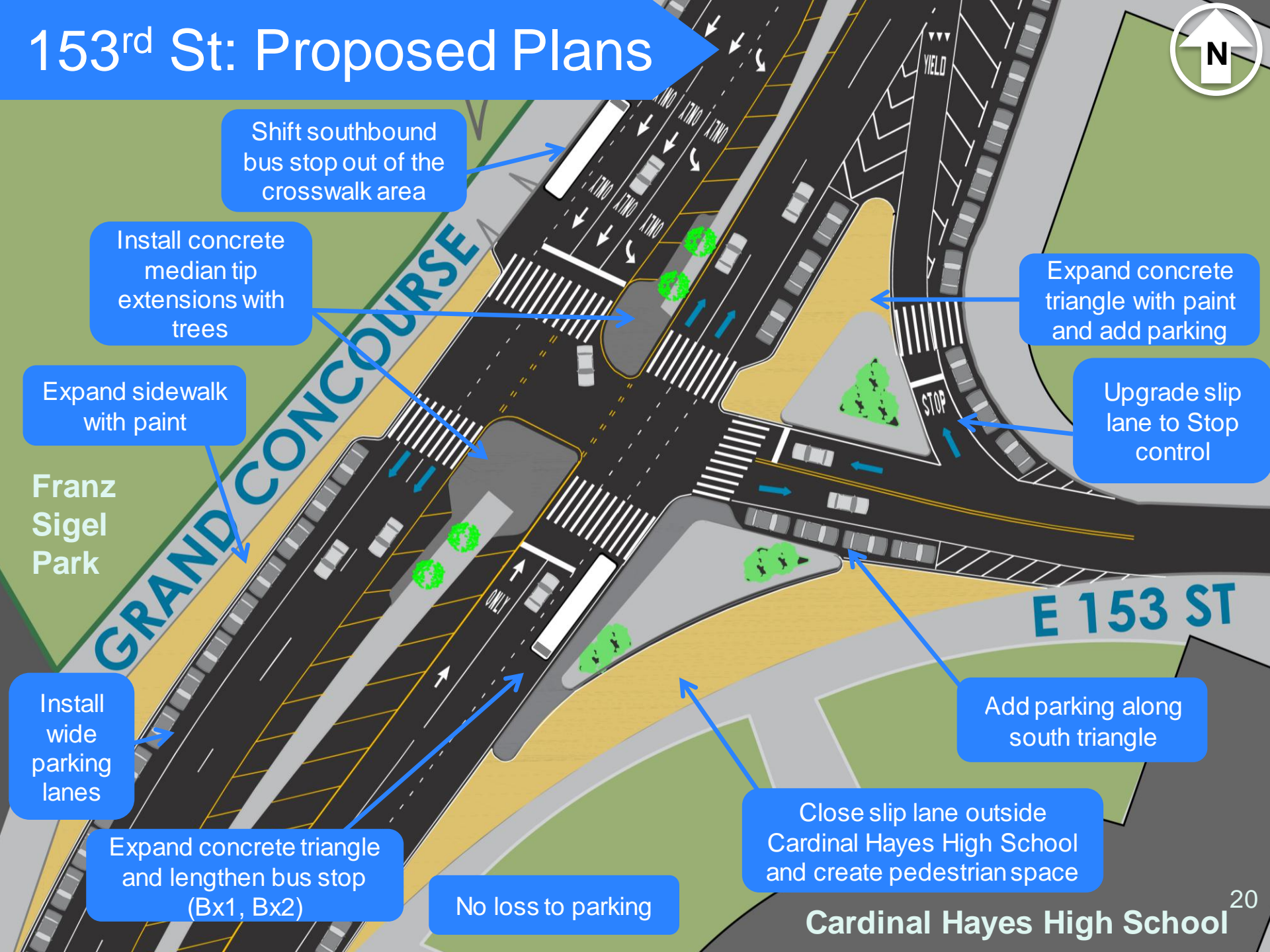
Bus stops in crosswalks  
(Bx1, Bx2)

E 153 ST

Cardinal Hayes High School



# 153<sup>rd</sup> St: Proposed Plans



Shift southbound bus stop out of the crosswalk area

Install concrete median tip extensions with trees

Expand sidewalk with paint

Franz Sigel Park

Expand concrete triangle with paint and add parking

Upgrade slip lane to Stop control

E 153 ST

Add parking along south triangle

Close slip lane outside Cardinal Hayes High School and create pedestrian space

Cardinal Hayes High School

No loss to parking

Expand concrete triangle and lengthen bus stop (Bx1, Bx2)

Install wide parking lanes



# Existing Issues: 156<sup>th</sup> St

Excess road capacity

4 northbound thru lanes + 1  
northbound turn bay



65' 43'

Long crossing distances



# Existing Issues: 156<sup>th</sup> St



Bx1/2 buses have difficulty pulling all the way into stop



# Existing Conditions: 156<sup>th</sup> St



Shared thru  
and left turn  
lane blocks  
thru traffic

Bus cannot  
pull all the  
way to  
sidewalk

Franz Sigel  
Park

Long crossing  
distances with  
insufficient refuge

Excessively wide roadway  
(3-5 lanes in each direction)

GRAND CONCOURSE

E 156 ST

# Proposed Plans: 156<sup>th</sup> St



Install  
exclusive left  
turn lane

Franz Sigel  
Park

Install concrete  
median tip  
extensions with  
trees

Install wide  
parking lanes

Install concrete  
curb extension

Install pedestrian island  
with trees

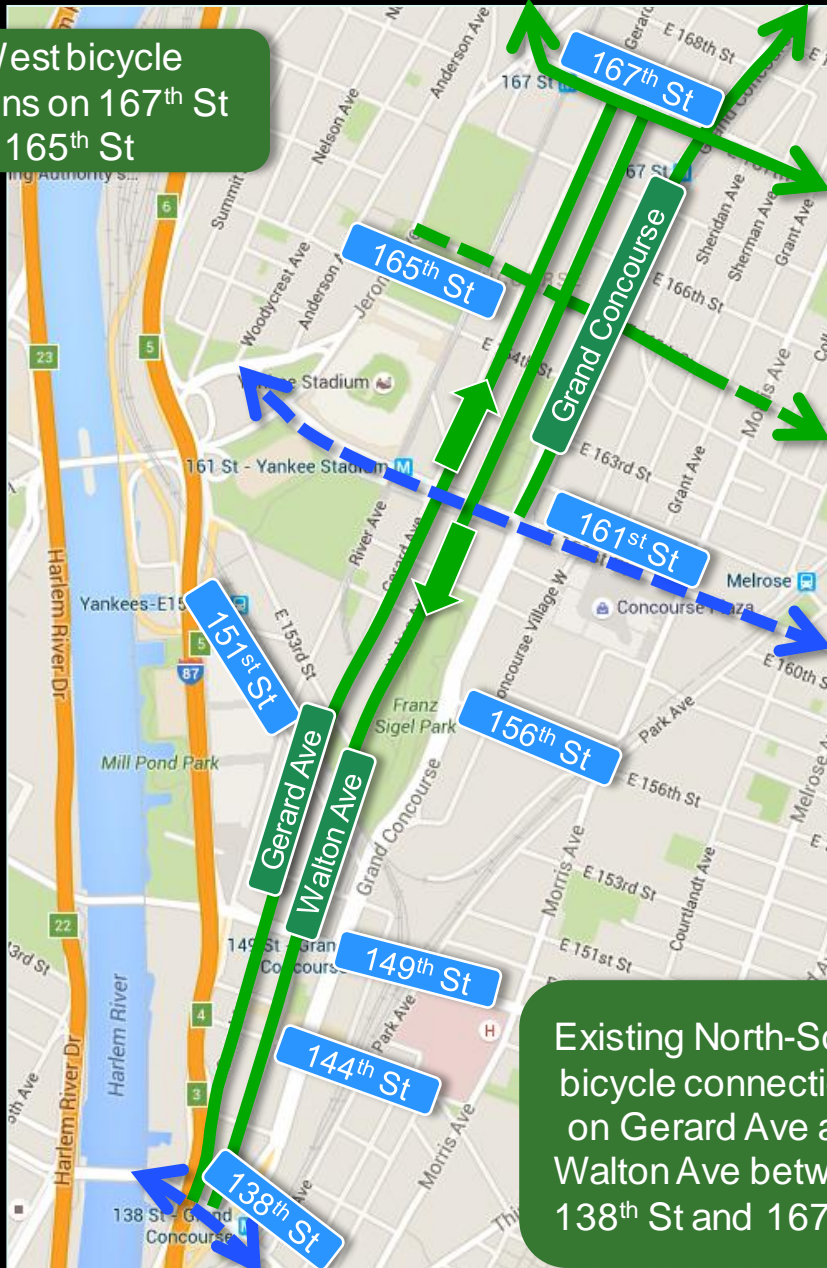
GRAND CONCOURSE

E 156 ST



# Bike Enhancements

East-West bicycle connections on 167<sup>th</sup> St and 165<sup>th</sup> St



Bike facilities are not feasible between 138<sup>th</sup> St and 158<sup>th</sup> St on the Grand Concourse due to constrained geometry, however wide sections between 153<sup>rd</sup> St and 156<sup>th</sup> St allow for 13' parking lanes that accommodate bicyclists

Future capital plans would incorporate bicycle facilities on this section of the Grand Concourse

Upgraded bicycle facilities are in planning for all sections of the Grand Concourse north of 162<sup>nd</sup> St

## Legend

- Existing Bicycle Facility
- Proposed Bicycle Facility



# Project Benefits

Simpler, safer intersections

Reduced speeding and weaving

Safer, shorter pedestrian crossings

Better refuge for pedestrians

Improved pedestrian visibility

Clarified vehicular movements

Parking maintained

Traffic flow maintained

## Similar treatments have improved safety

Adam Clayton Powell Jr Blvd,  
133 St – 153 St, Manhattan

(3 year averages)

- 26% reduction in total injuries
- 37% reduction in pedestrian injuries

4<sup>th</sup> Avenue, 15 St – 65 St, Brooklyn

(2 year averages)

- 17% reduction in total injuries
- 34% reduction in pedestrian injuries

Pennsylvania Ave, Brooklyn

(2 year averages)

- 12% reduction in total injuries
- 29% reduction in pedestrian injuries



# Proposal Summary

1. Reduce the number of moving lanes from 6 to 5, including a left turn lanes where needed
2. Install 14 concrete and 2 painted median tip extensions at intersections along the corridor
3. Expand concrete triangles in paint/gravel (north side) and concrete (south side) and close south slip lane with paint/gravel at 153<sup>rd</sup> St outside Cardinal Hayes High School. Extend west sidewalk by Franz Sigel Park in paint/gravel.
4. Install 1 concrete island and 1 concrete curb extension at 156<sup>th</sup> St
5. Install parking lanes and channelization to clarify traffic movements
6. Upgrade all crosswalks to high visibility crosswalks
7. Update markings on the corridor
8. Install pedestrian ramps along the corridor



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Thank  
You