WILLIS AVENUE (E 135 ST TO E 147 ST)

BICYCLE AND PEDESTRIAN SAFETY IMPROVEMENTS

Presented to Bronx Community Board 1

April 1, 2019

VISION ZERO
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NEW YORK CITY DOT

Presentation Overview

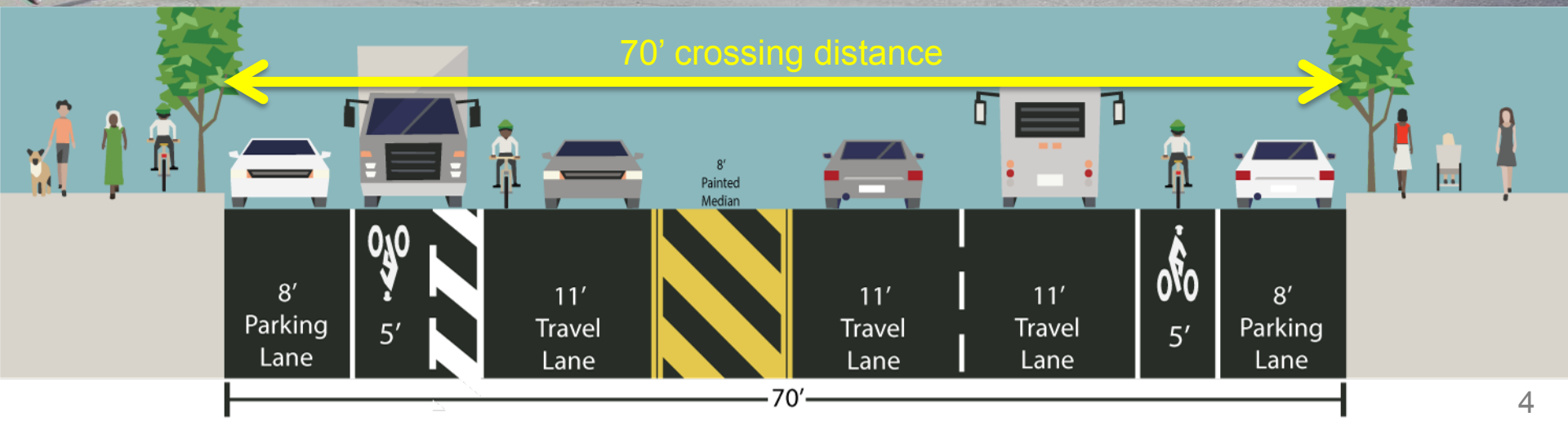
1. Project Proposal
2. Background
3. Making It Work
4. Summary

Proposal

1

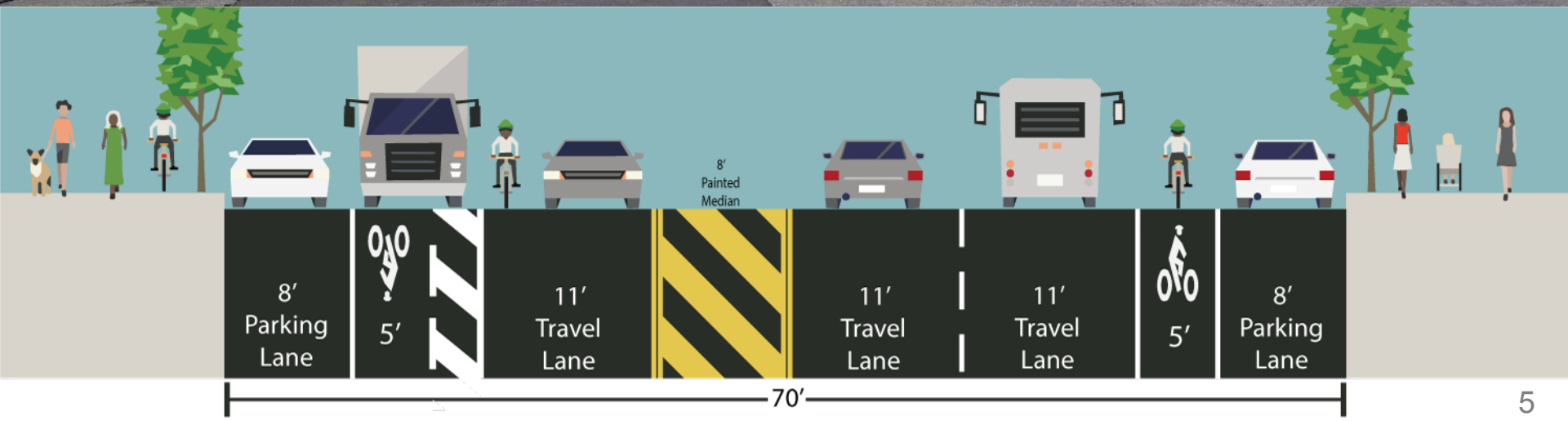
Pedestrian Issues

- **Long pedestrian crossings** on a **local truck route** in a **senior safety area**
- **High pedestrian volumes** near schools, businesses, and high-density housing
- **High turning volumes** on Willis Ave at E 135 St, and E 138 St

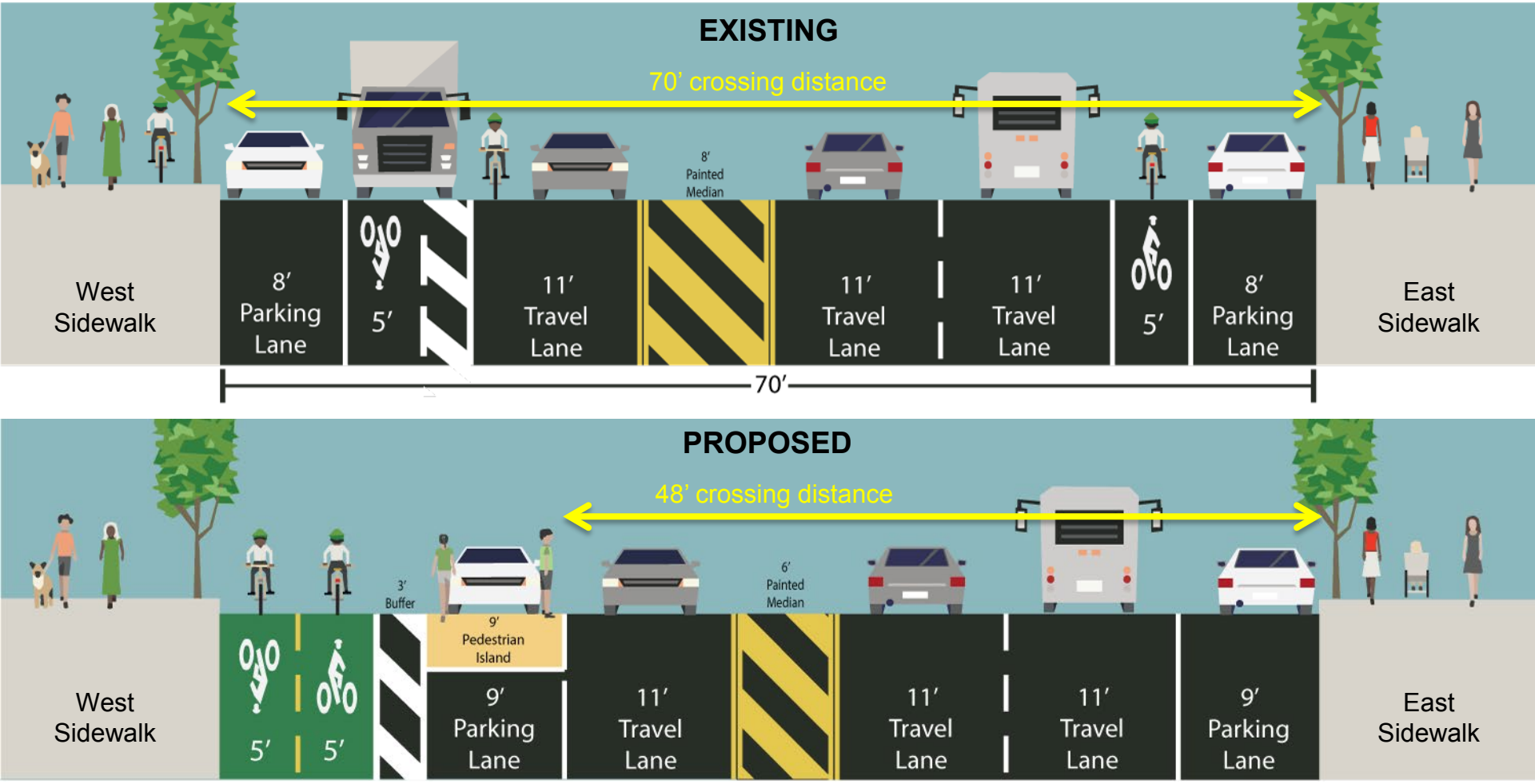


Bicycling Issues

- Existing bike lanes not separated from moving vehicles; **does not serve novice bicyclists**
- **Blocking of the bike lane** results in unpredictable location of cyclist in the roadway
- Bronx-bound **bicyclists exiting the Willis Ave Bridge must cross** Willis Ave to continue north



Proposed Corridor Design: Willis Ave (E 135 St to E 147 St)



2-way protected bike lane creates dedicated, predictable space for cyclists, discourages wrong-way and sidewalk riding, and reduces pedestrian conflicts.

Pedestrian islands reduce crossing distance by 30+%

Proposed Design Elements

Improvements proposed for all (13) intersections between E 135 St and E 147 St:

- Painted Pedestrian Space: Shortens pedestrian crossing
- Floating Parking Lane: Protects cyclists from moving vehicles

Kent Ave, Brooklyn

Background

2

Crash History

Willis Ave is in a Vision Zero Priority Area

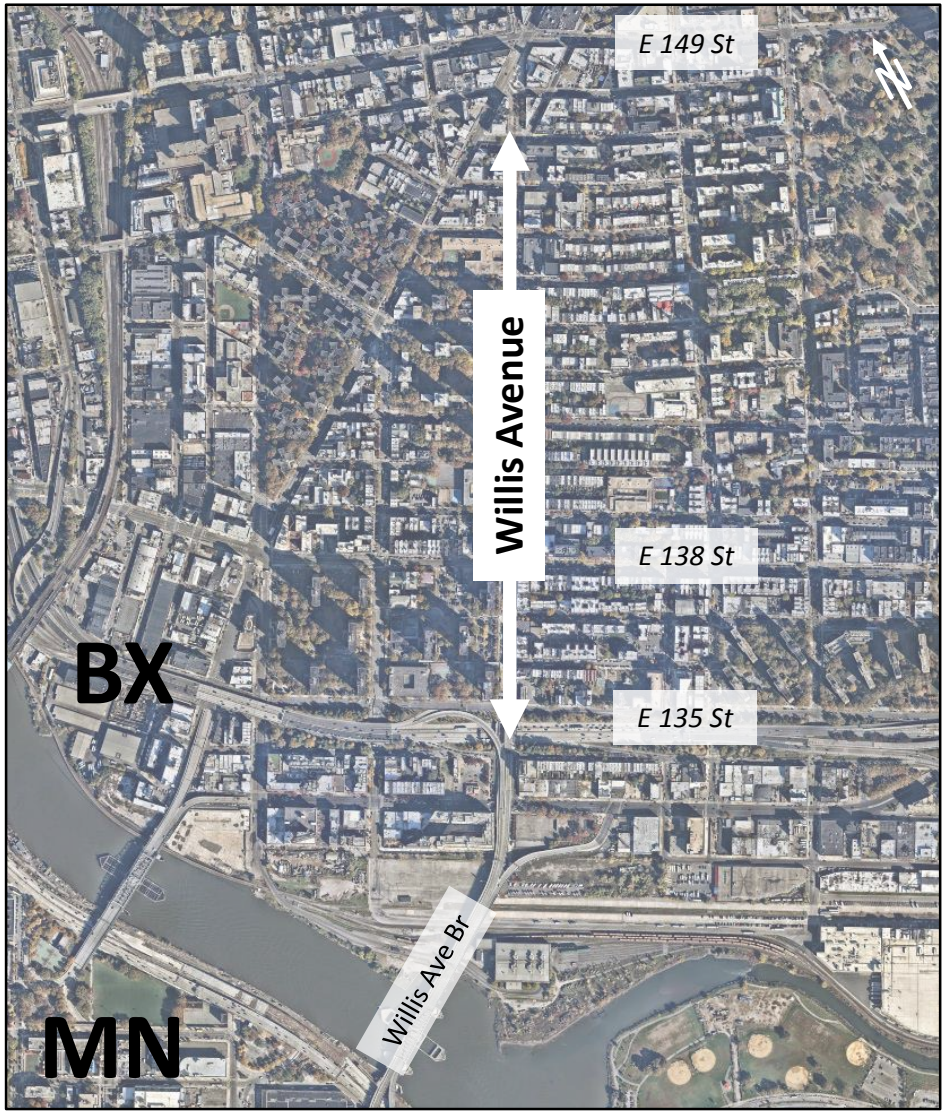
Willis Ave at E 138 St is a Vision Zero Priority Intersection and the site of a recent pedestrian fatality

Willis Ave (135th – 147th St), BX

Injury Summary, 2013-2017 (5 years)

	Total Injuries	Severe Injuries	Fatalities	KSI
Pedestrian	73	9	2	11
Bicyclists	37	5	0	5
Motor Vehicle Occupant	126	1	0	1
Total	236	15	2	17

*Source: Fatalities: NYCDOT, Injuries: NYSDOT. KSI: Persons Killed or Severely Injured. * Includes fatalities from 2012-2018*



Safety – Protected Bike Lanes

Street designs that include protected bike lanes increase safety for all users

-15% drop in all crashes with injuries

-21% drop in pedestrian injuries

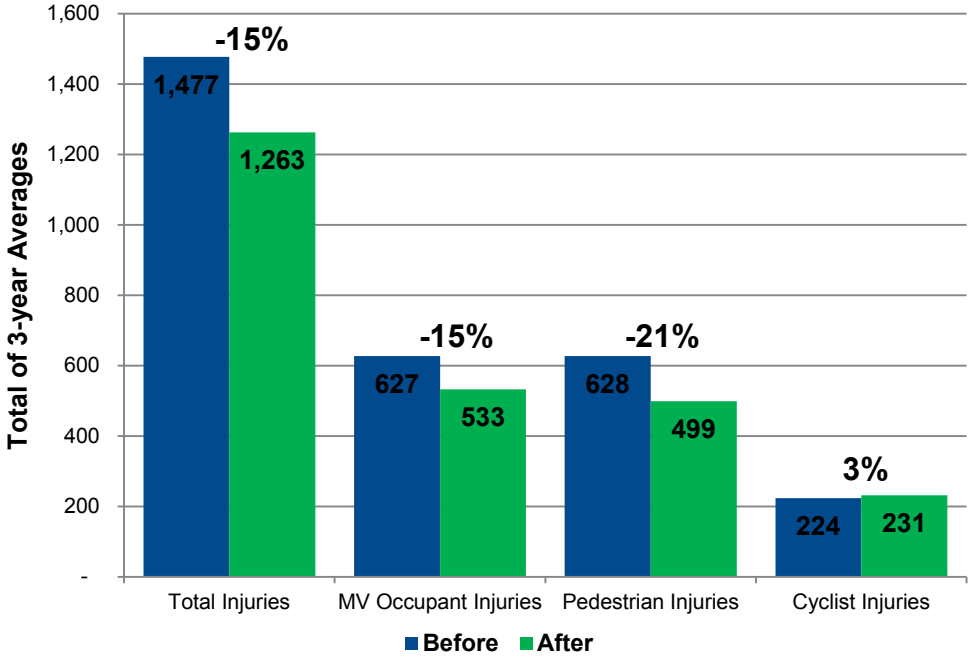
on streets where protected bike lanes were installed 2007-2017

Injuries to cyclists increase only 3%,
*despite a **61% bike volume increase***

Bruckner Blvd, Bronx

Protected Bike Lanes

Before and After Crash Data, 2007 - 2017



2nd Ave, Manhattan

Data from 25 separate protected bicycle lane projects installed from 2007-2014 with 3 years of after data. Includes portions of 1 Ave, 2 Ave, 8 Ave, 9 Ave, Broadway, Columbus Ave, Hudson St, Lafayette St / 4 Ave, Sands St, Allen/Pike St, Kent Ave, Prospect Park West, Flushing Ave, Bruckner Blvd & Longfellow Ave, Imlay St / Conover St, Paerdegat Ave. Only sections of projects that included protected bike lanes were analyzed.
Source: NYPD AIS/TAMS Crash Database

Community Outreach

Bronx Workshop, 3/23/2016

Bronx Workshop, 3/29/2016

- DOT led a community-driven planning process to increase pedestrian and bicycle mobility between the Bronx and Manhattan
- The result of this outreach, ***Connecting Communities: A Vision for the Harlem River Bridges,*** includes requests and recommendations for improved pedestrian and bicycle connections to the Willis Ave Bridge
- In 2016 DOT installed the 1st Ave/E 124th St Bicycle and Pedestrian Safety Improvements on the Manhattan side of the Willis Ave Bridge

1st Ave near the Willis Ave Bridge, Manhattan

Making It Work

3

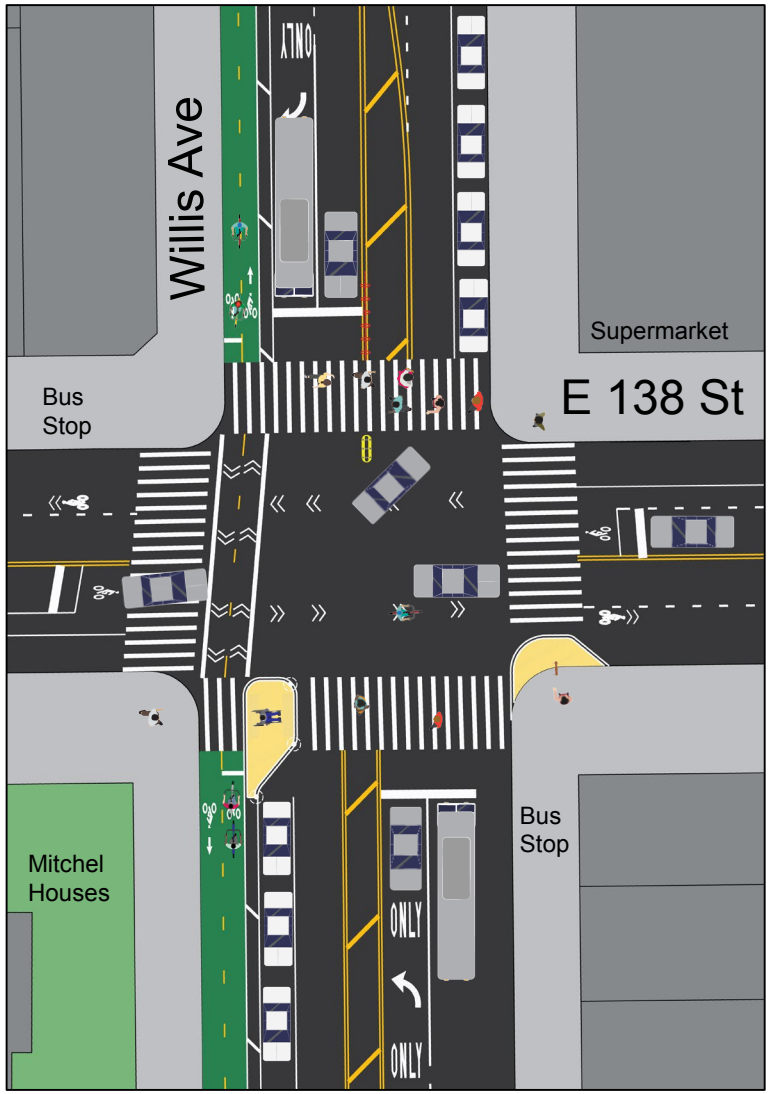
Existing Conditions: Willis Ave at E 138 St

- Vision Zero Priority Intersection: ranks in **the worst 2% of Bronx intersections** for pedestrian fatalities and serious injuries
- Both Willis Ave and E 138 St are **local truck routes** and feature conventional **bike lanes**
- January, 2019 crash in north crosswalk resulted in a pedestrian fatality

Proposed Design: Willis Ave At E 138 St

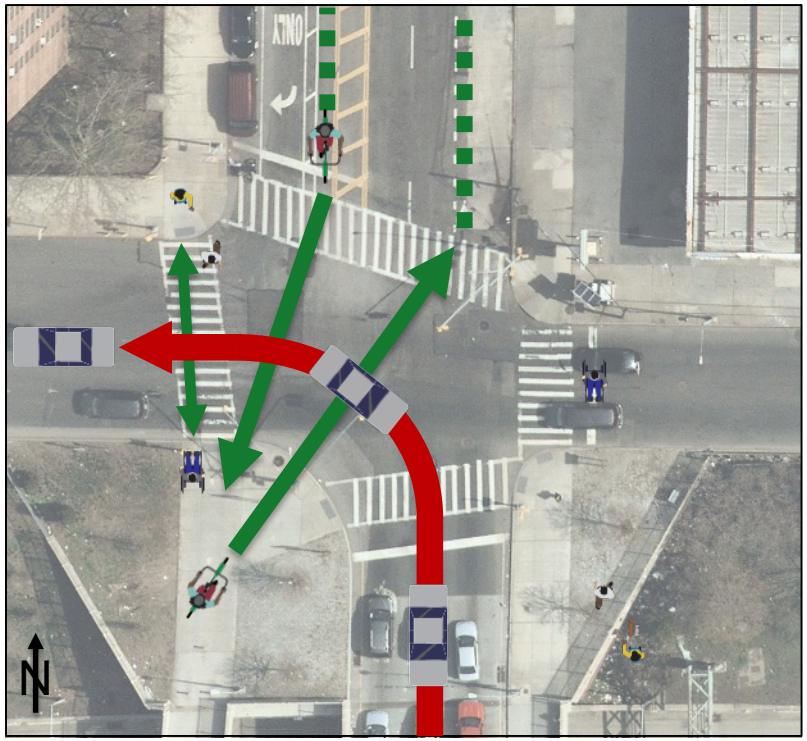
- **Signal phasing** to improve west crosswalk and 2-way bicycle lane (detailed in appendix)
- **Ban southbound left turn** to improve east crosswalk
  - Necessary to avoid the “left turn trap“
- Install **pedestrian island** to shorten the south crosswalk and slow vehicle turns
- Install **left-turn traffic calming** at north crosswalk to slow vehicle turns

Example of left-turn traffic calming



Existing Conditions: Willis Ave at E 135 St and the Willis Ave Bridge

Facing south at Willis Ave Bridge exit onto Willis Ave/E 135 St



High vehicle volume turning left from the Willis Ave Br to E 135 St

Used as a "cut-through" for vehicles traveling to Major Deegan Expy

Willis Ave Bridge Exit and E 135 St Conflict:

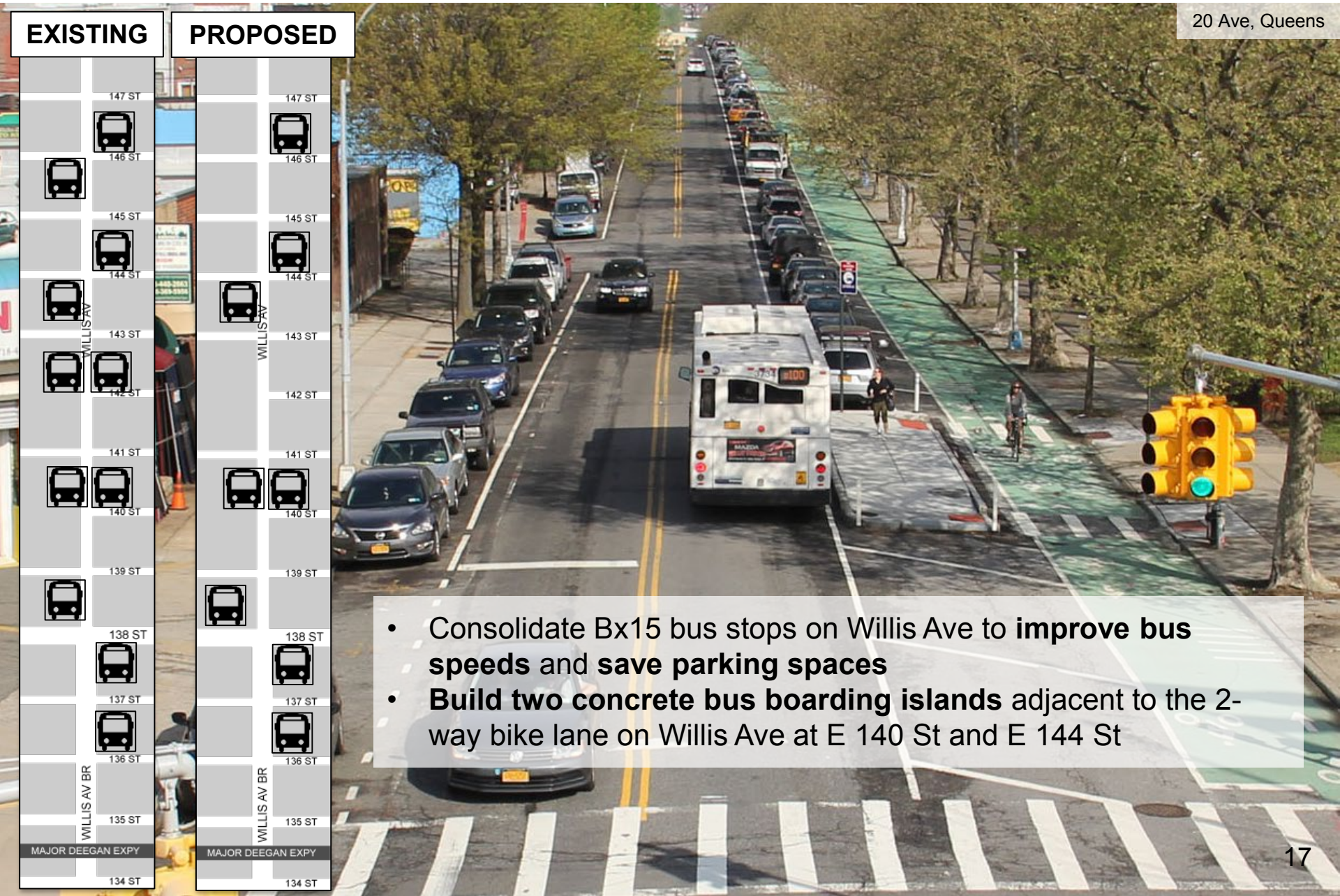
Turning vehicles cross the entrance of the bridge's pedestrian/bicycle path

Cyclists exiting path must cross Willis Ave to continue north into the Bronx

Proposed Design: Willis Ave at E 135 St and the Willis Ave Bridge

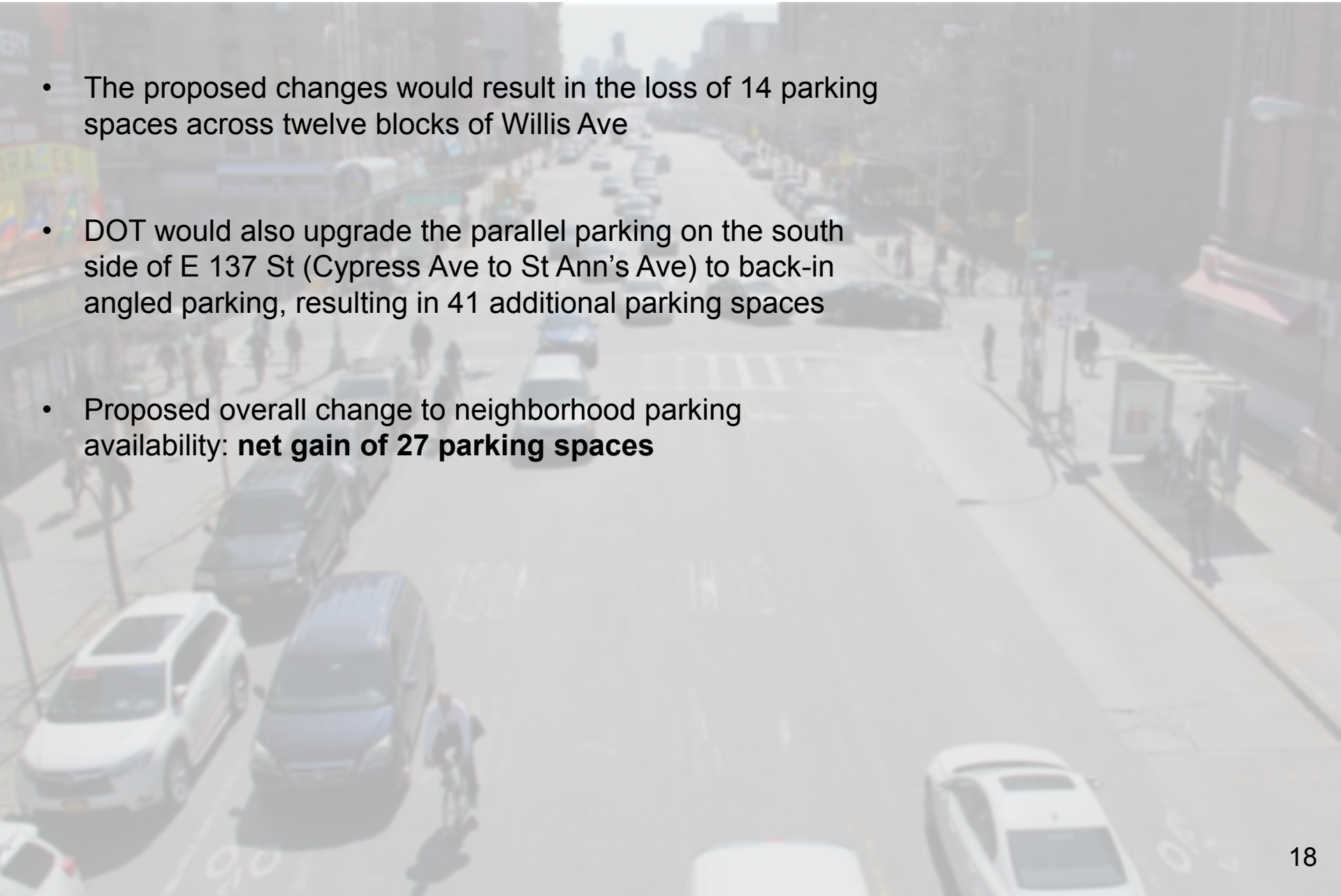
- Ban the northbound left turn from Willis Ave Bridge to E 135 St; drivers heading to Major Deegan Expy can stay on the highway and avoid neighborhood streets
- Install pedestrian island to shorten the crossing distance across Willis Ave
- Install leading pedestrian and bicycle signal phase that would give people walking and biking over the bridge a head start
- Northbound bicyclists can continue north from the bridge to the 2-way protected bike lane without changing sides on Willis Ave

Bus Stops



- Consolidate Bx15 bus stops on Willis Ave to **improve bus speeds** and **save parking spaces**
- **Build two concrete bus boarding islands** adjacent to the 2-way bike lane on Willis Ave at E 140 St and E 144 St

Parking Spaces



- The proposed changes would result in the loss of 14 parking spaces across twelve blocks of Willis Ave

- DOT would also upgrade the parallel parking on the south side of E 137 St (Cypress Ave to St Ann's Ave) to back-in angled parking, resulting in 41 additional parking spaces

- Proposed overall change to neighborhood parking availability: **net gain of 27 parking spaces**

Proposed Bike Routing Around the Hub

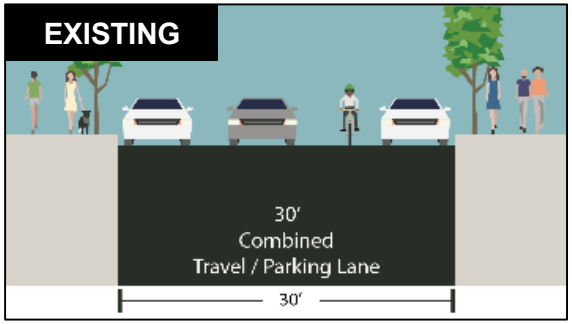
Current bike routing through the Hub is challenging to novice cyclists:

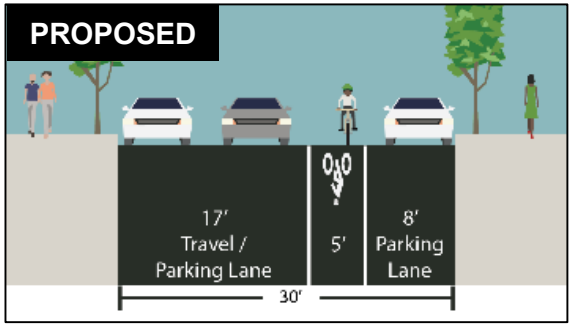
1. Shared lanes on high-traffic truck routes
2. Permitted left turns from multi-lane roads

Reroute cyclists in order to provide:

1. Dedicated space for bicyclists
2. Easier turns

Maintain all travel lanes and parking spaces.





Summary of Benefits

Walking
- Shortened crossing distances
- Signal phasing that reduces vehicular conflicts
- Left Turn Traffic Calming
- Improved connection to Willis Ave Bridge

Bicycling
- 2-way parking protected bike lane separated from moving traffic
- Improved connection to Willis Ave Bridge and 1st/2nd Ave protected bike lanes in Manhattan
- Improved connections around the Hub

Bx15 Bus
- Bus stop consolidation improves reliability and speeds

Driving
- All travel lanes and vehicular capacity maintained
- Net gain of 27 parking spaces across the neighborhood

THANK YOU!

Questions?

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Appendix

4

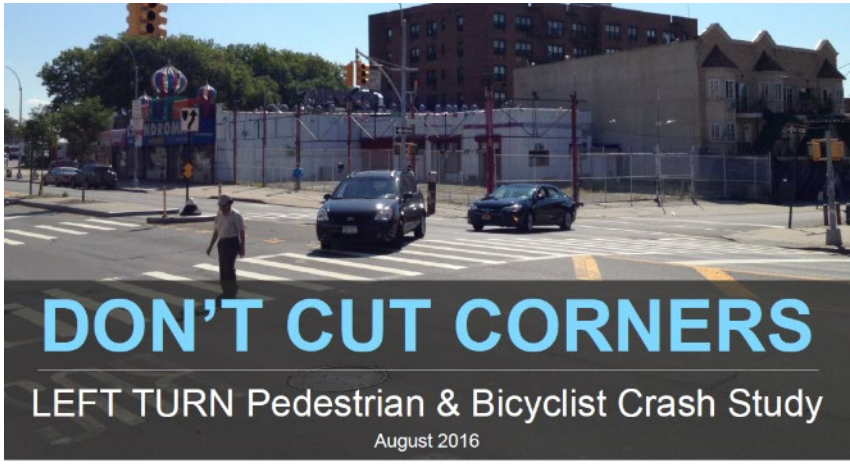
Intersection Design

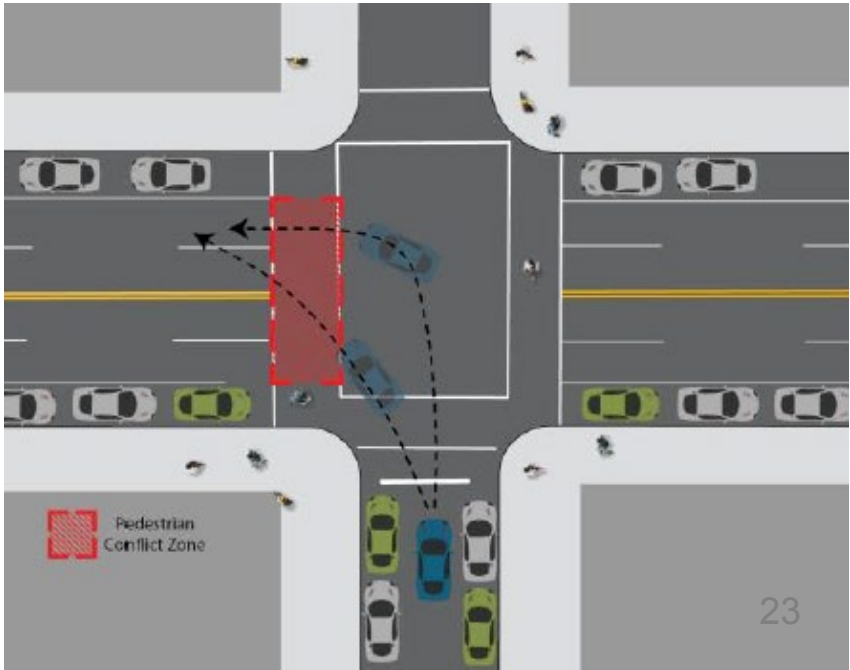
Left Turn Pedestrian and Bicycle Crash Study

- NYC DOT study finds that vehicular left turns are especially dangerous for pedestrians and bicyclists
- Recommended treatments to improve safety include:
  - Left turn restrictions
  - Pedestrian islands
  - Protected bicycle lanes
  - Left turn only signals and left turn bays
  - Leading pedestrian intervals
  - Pedestrian and bicycle split phase

15% of the Bronx's Killed or Severely Injured (KSI) occurred at only 1% of the borough's intersections

The overwhelming majority of cyclist fatalities and cyclist KSI occurred at intersections. The majority of cyclist fatalities (65%) and an even greater percentage of cyclist KSI (89%) occurred at intersections.





Improved Signal Timing

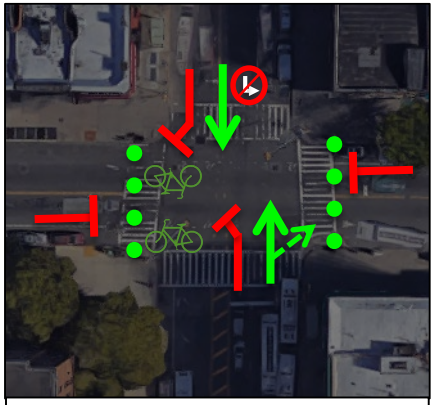
- **Bicycle phase** to coincide with west crosswalk

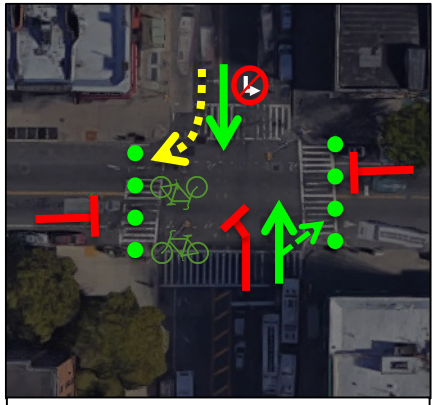
- All northbound left turns would occur only during dedicated turn phase (green left turn arrow)
  - People walking in the west crosswalk or riding in the 2-way bicycle lane would be **fully separated and protected from left-turning vehicles**, including the high-volume northbound left turn onto E 138 St

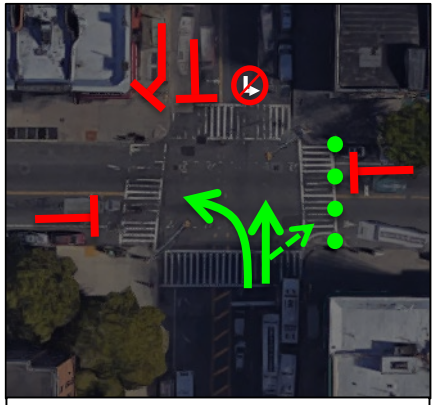
- All southbound right turns would be permitted (flashing amber right turn arrow) after a **7-second leading pedestrian and bicycle phase**
  - Lower volume turn movement throughout the corridor
  - Dedicated turn lane would improve visibility
  - People walking and biking would be given a 7-second head start

- **Southbound left turn ban** at E 138 St is necessary to implement this signal phasing plan
  - Reduced turn conflicts in east crosswalks

Proposed Signal Phasing at E 138 St, E 139 St, E 141 St, E 143 St, E 145 St, and E 147 St


1: Leading Pedestrian Interval


2: Southbound Right Permitted


3: Protected Northbound Left


4: Eastbound/Westbound