

MIXED LANE CORRIDOR

WASHINGTON AVENUE REPAVING AND IMPROVEMENT PROJECT

Why did the City select the Mixed Lane Layout?

Substantially improves Safety compared to today's conditions

Assumes minimal (5%) vehicles divert to other streets at rush hour

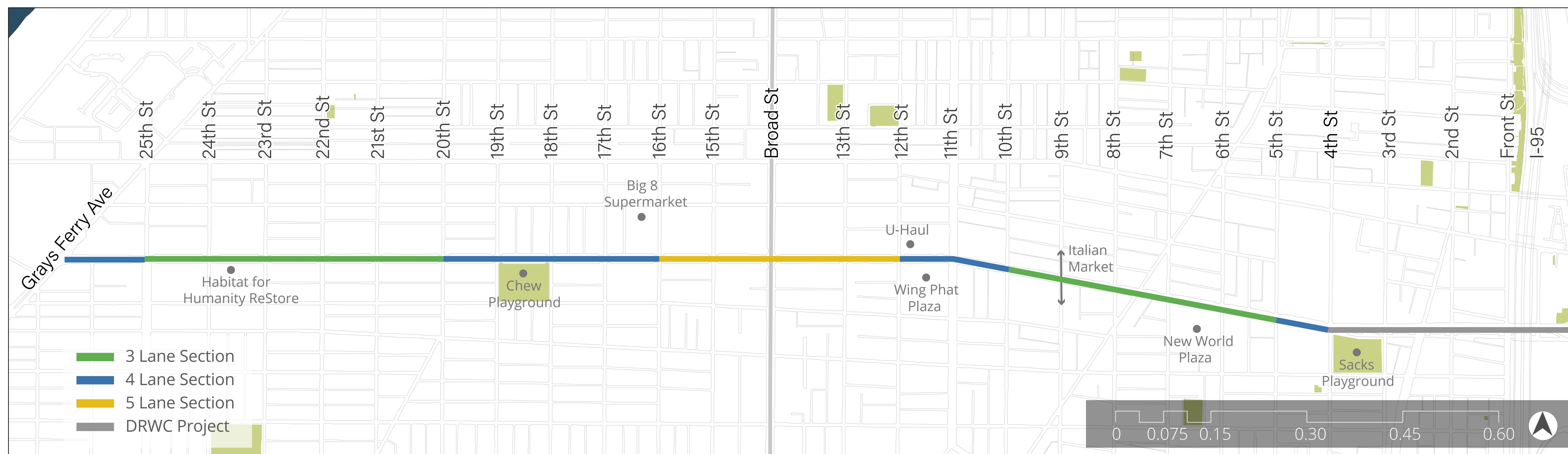
Balances community input and needs

Features of the Mixed Lane Layout:

Reduces effective pedestrian crossing distance from 50' to 33' and 40' on most blocks

Improves protection for people riding bikes

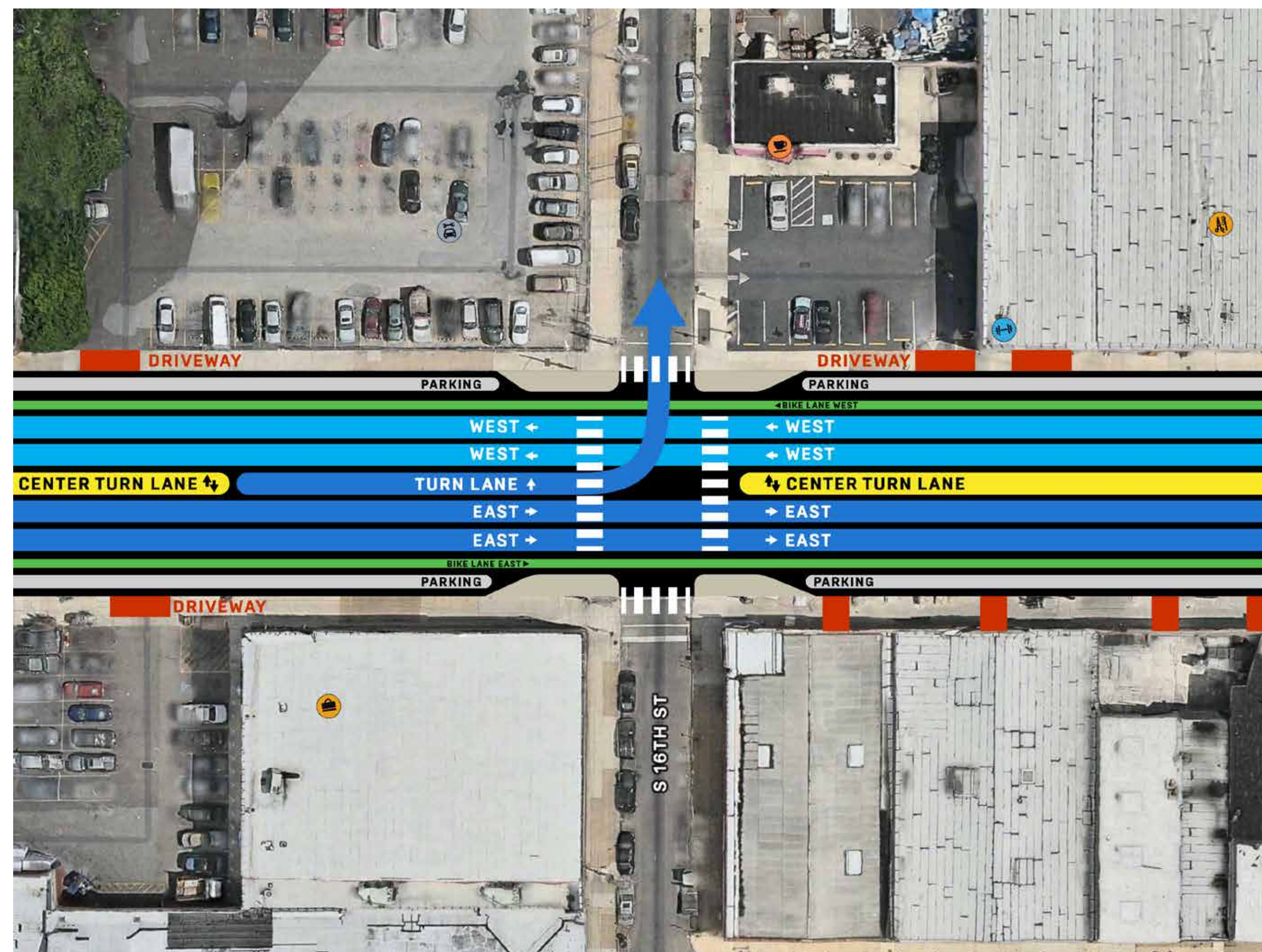
Provides safe Bus Boarding Islands in up to 24 locations



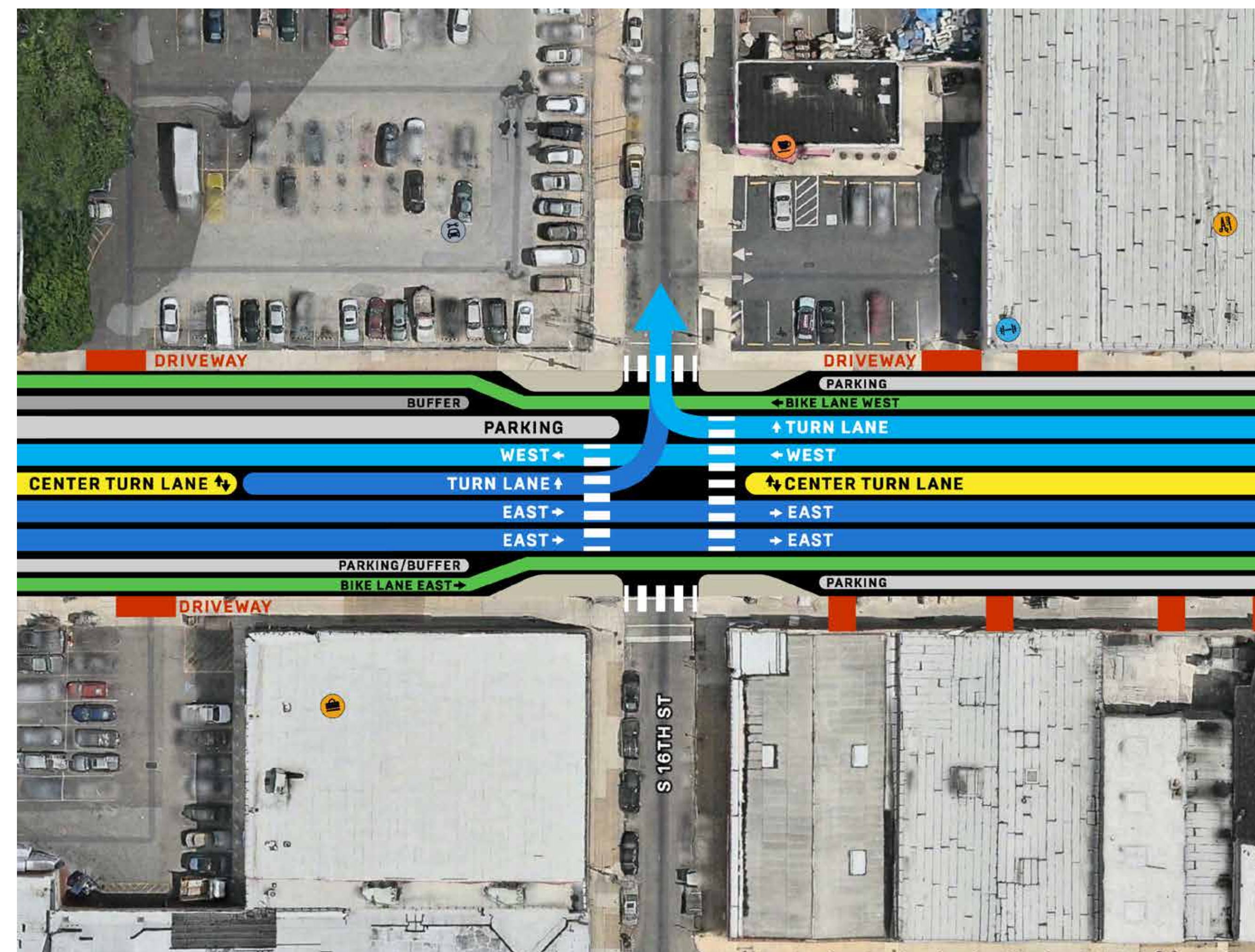
Mixed Lane Layout Along Washington Avenue

Why are certain blocks 4-lane and others 3-lane?

The Mixed Lane layout was developed to balance needs across the corridor. Four and five-lane sections were used on blocks where needed to help with traffic flow and minimize diversion.

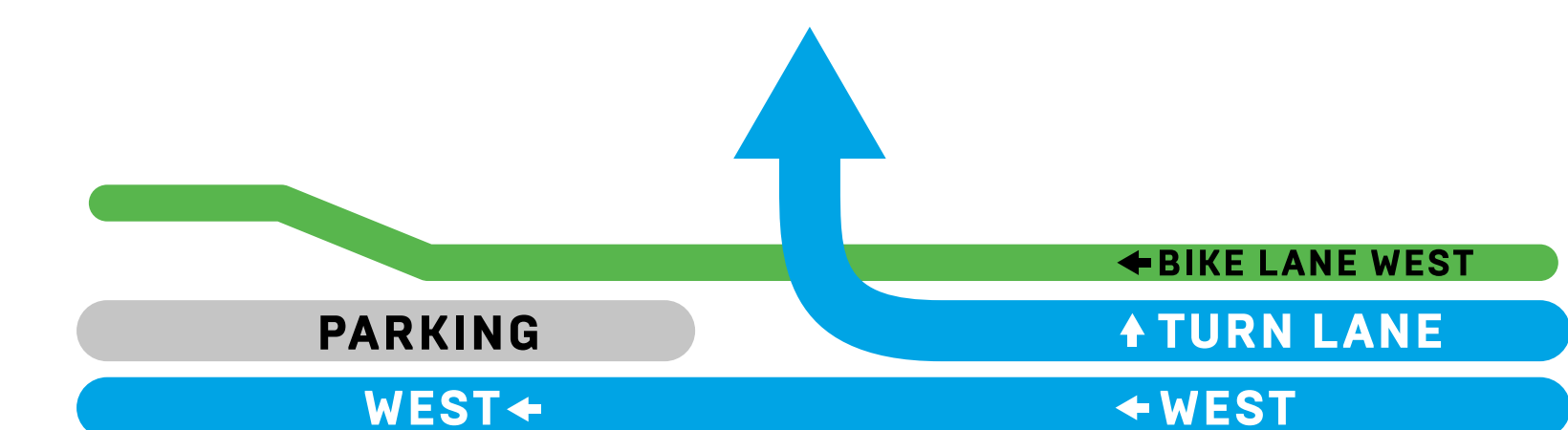


Existing Washington Avenue at 16th Street



Future Washington Avenue at 16th Street

How will the transition work?



The proposed design has two locations where 2-lanes would need to transition to 1-lane: at 16th Street in the westbound direction and at 12th Street in the eastbound direction.

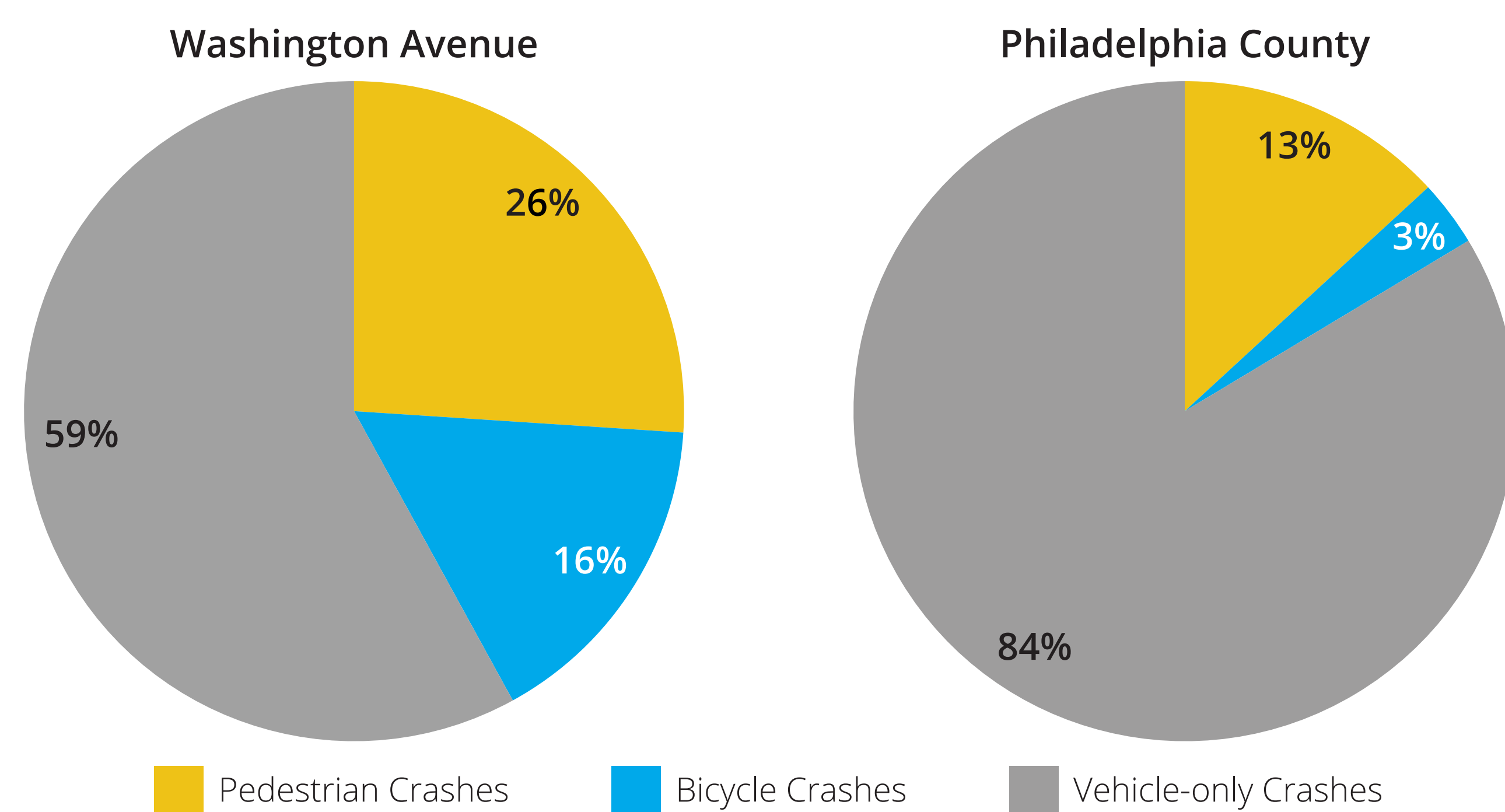
At these locations, the outer lane would become a right turn lane while the inner lane would continue through the intersection.

CRASH ANALYSIS

WASHINGTON AVENUE REPAVING AND IMPROVEMENT PROJECT

VULNERABLE USERS

A person walking or riding a bicycle is more likely to be hit by a car on Washington Avenue than they are on the average Philadelphia street.



Source: PennDOT PCIT for years 2016 through 2020, accessed December 2021

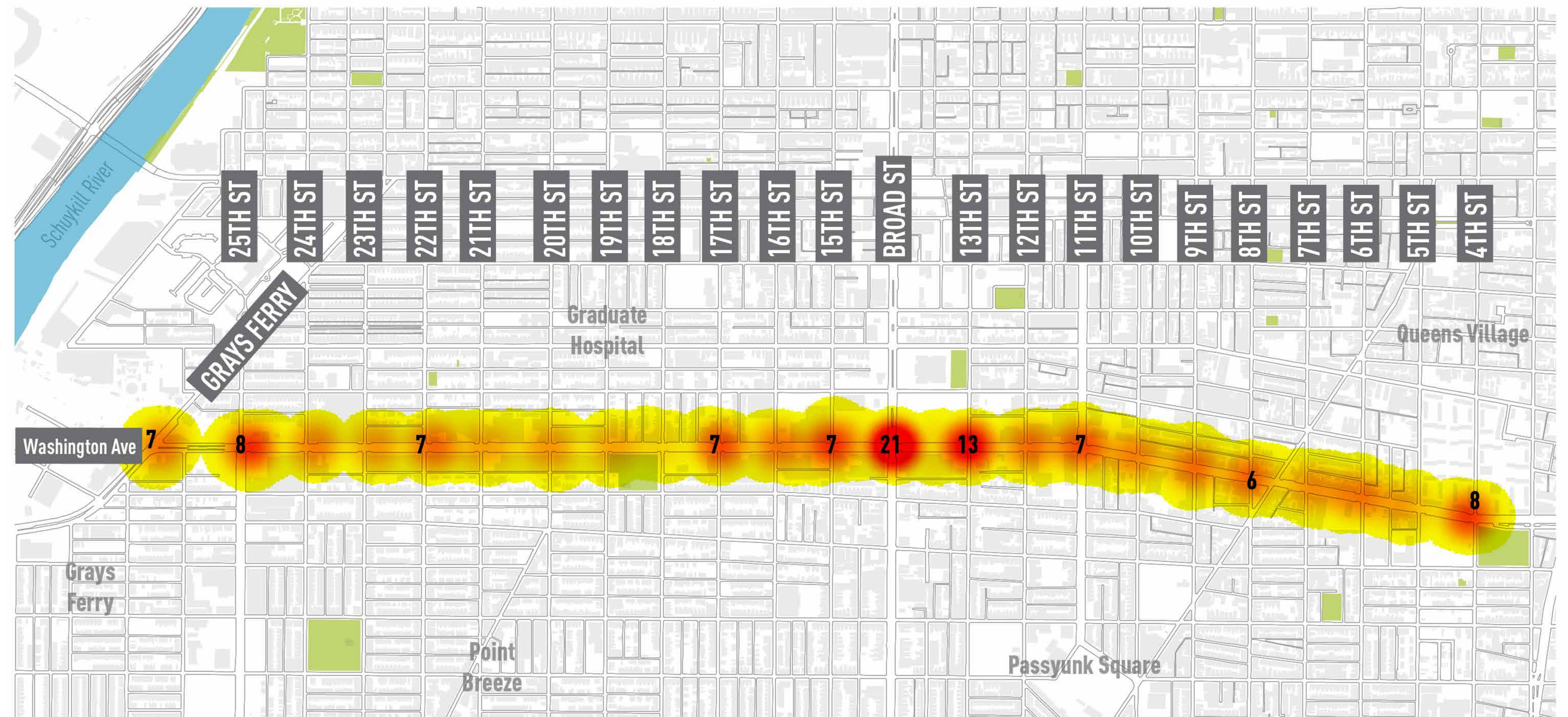
SEPARATING CARS & BIKES

On Washington Avenue crashes between people driving and people riding bicycles happened in locations where these people were sharing space.

30% of crashes are related to careless and illegal driving behavior and 30% are related to careless and illegal bicycling behavior.

Physically separating bicycles from motor vehicles could address the causes of up to 48% of reported bicycle crashes on Washington Avenue

Crashes might not have happened if people driving and people riding bikes had their own spaces. Separated bike lanes increase the number of people on bikes who obey traffic rules. (1) In addition, the more people riding bikes has been shown to increase the likelihood people bicycling obey traffic rules.(2)



DENSITY OF CRASHES



— Crashes at top 10 intersections shown



Source: Pennsylvania Department of Transportation

LEFT TURNS & PEDESTRIAN CRASHES

77% of pedestrian crashes occurred at intersections and of those over 30% resulted from a driver making a left run on to Washington Ave. Protected bike lanes and hardened centerlines have been shown to reduced these types of crashes in peer cities.

RED LIGHT RUNNING

Red light running caused 25% of all crashes at intersections. Nearly 90% were driving on, not across Washington Avenue.

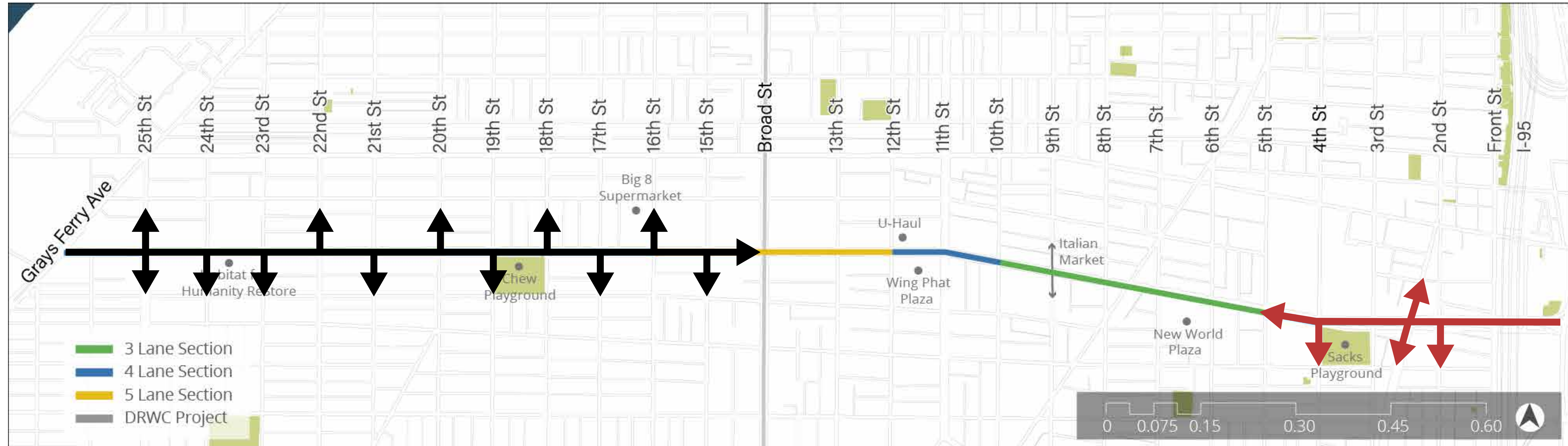
1 Furth, Dulaski, Bergenthal, and Brown. "More Than Sharrows: Lane-Within-A-Lane Bicycle Priority Treatments in Three U.S. Cities." Presented at the 2011 Annual Meeting of the Transportation Research Board, January 2011.

2 Tuckel, P., Milczarski, M., "Bike Lanes + Bike Share Program = Bike Safety: An Observational Study of Biking Behavior in Lower and Central Manhattan." Hunter College, the City University of New York, January 2014. http://silo-public.hunter.cuny.edu/62eaab1fad6c75d37293d2f2f6504a15adacd5c6/Cycling_Study_January_2014.pdf

Data Source: PennDOT 2016-2020

TRAFFIC ANALYSIS

WASHINGTON AVENUE REPAVING AND IMPROVEMENT PROJECT



50% of cars going east leave Washington by Broad Street

50% of cars going west leave Washington by 5th Street

The City of Philadelphia completed the following traffic analyses and studies as part of the Washington Avenue design process:

Traffic Counts

Traffic Counts of existing traffic conditions in 2019 and reviewed again in 2021.

Origin/Destination

Origin/Destination study of how people use Washington Avenue in their travel route.

Traffic Modeling

Traffic Modeling Modeled multiple different roadway options to make sure that nothing proposed would add significant travel time for people driving.

Parallel Route Analysis

Parallel Route Analysis of Christian and Ellsworth Streets to ensure changes to Washington Avenue would not add significant traffic to nearby streets.

Key Findings

Distance

Most people driving on Washington Avenue travel for only a few blocks, not the entire corridor.

Signal Timing

Traffic can be improved by optimizing signal timing.

Parking/Loading

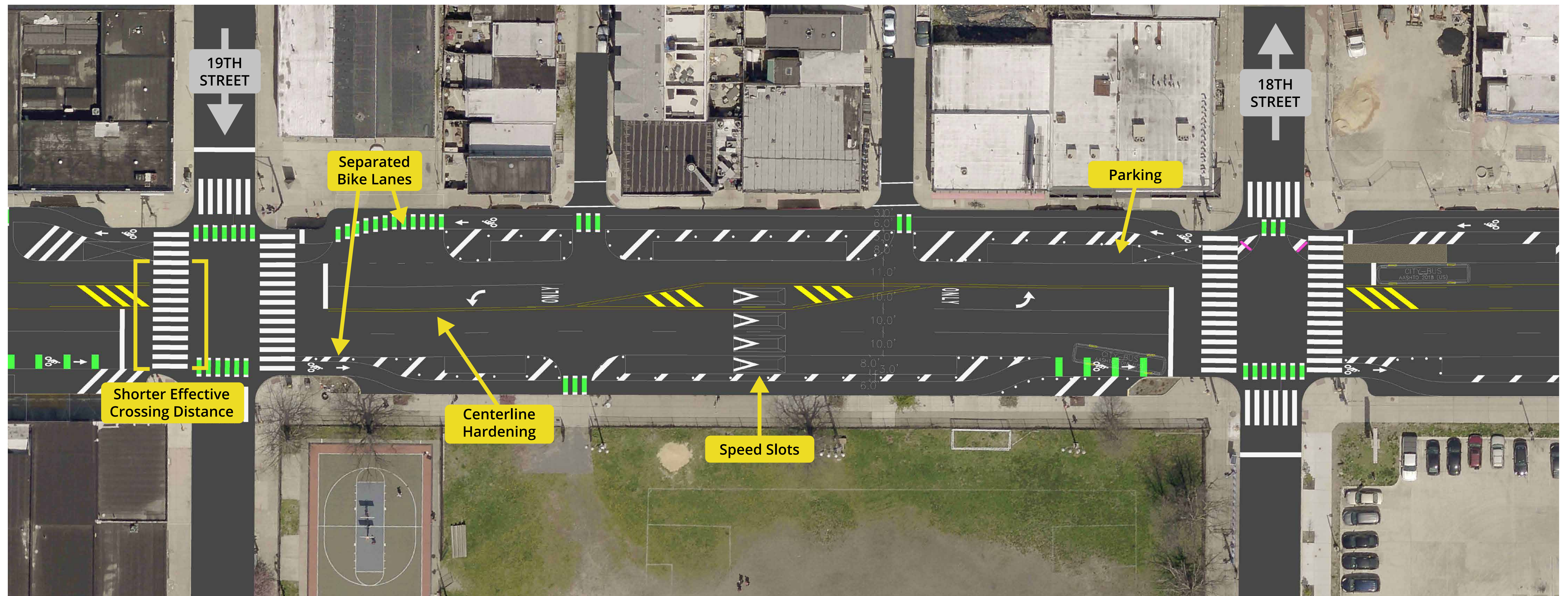
Traffic is impacted by double parking and median parking.

Travel Time

Travel Time - With the Mixed Lane Layout, at rush hour it will take people driving an average of an additional 3.5 seconds per block. During the rest of the day, travel time should remain the same.

TARGETED TRAFFIC CALMING

WASHINGTON AVENUE REPAVING AND IMPROVEMENT PROJECT



Washington Avenue Between 19th Street and 18th Street

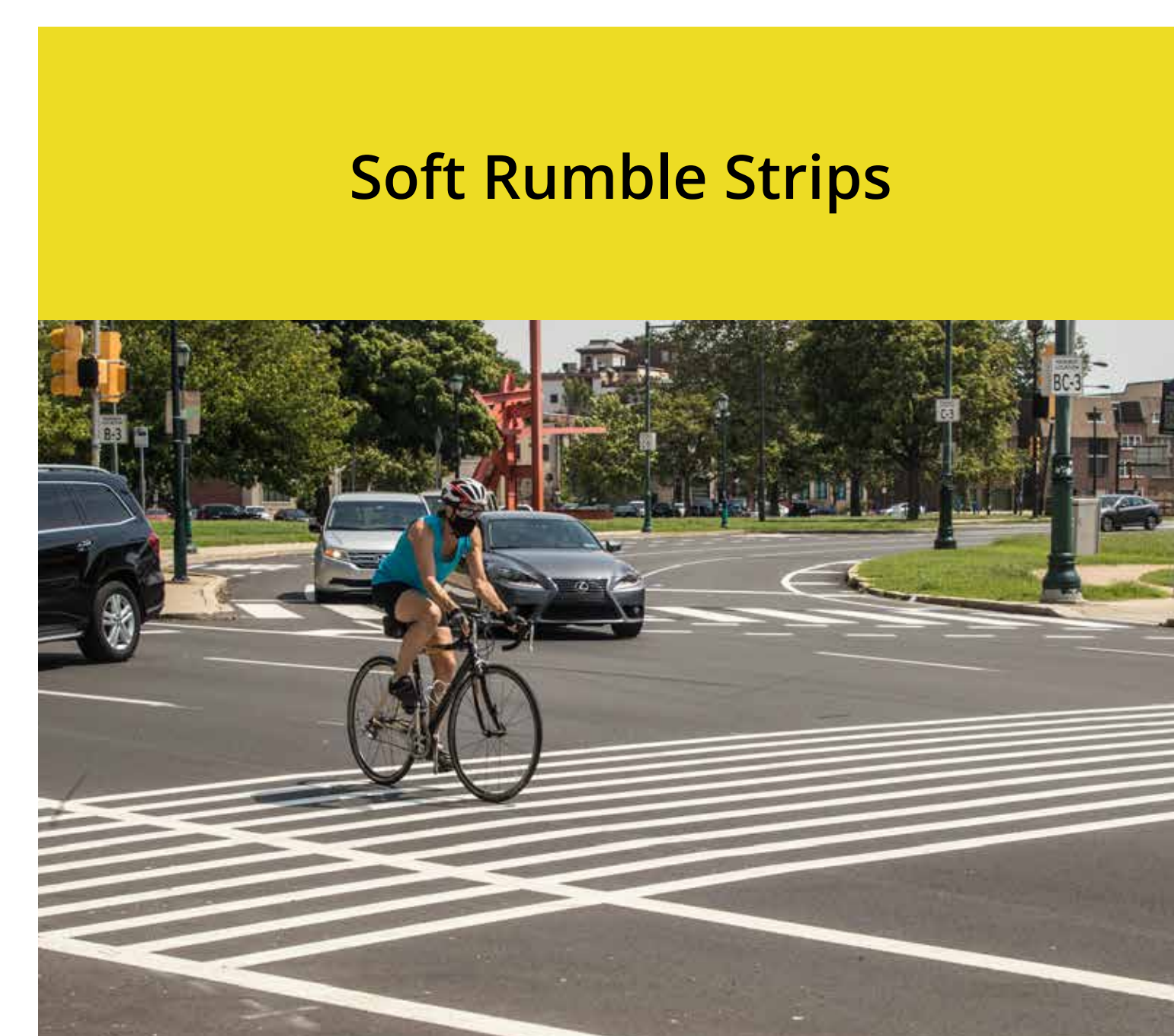
How will pedestrian safety be addressed?



(Example) Market at 16th Street



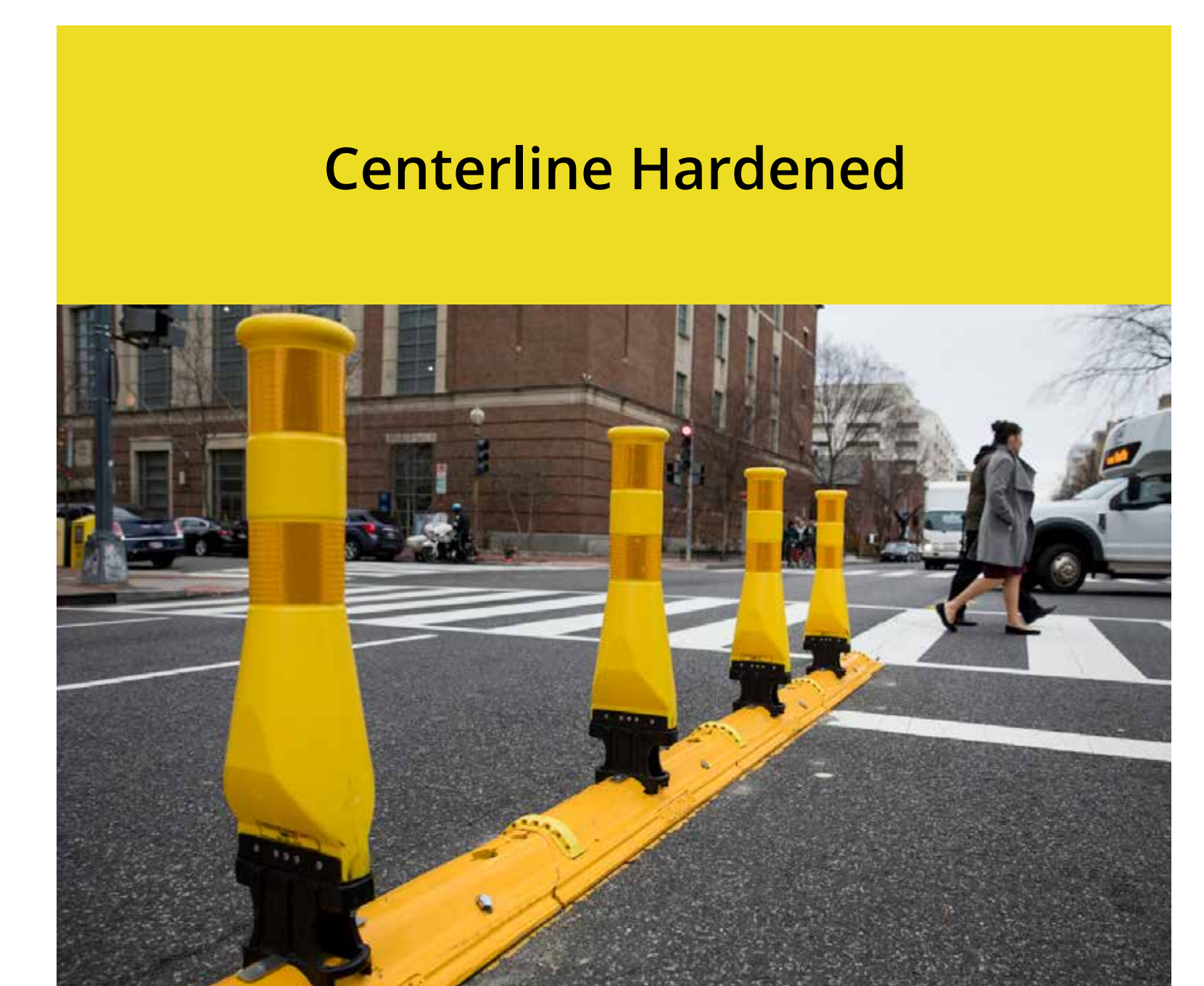
(Example) 22nd Street



(Example) Eakins Oval



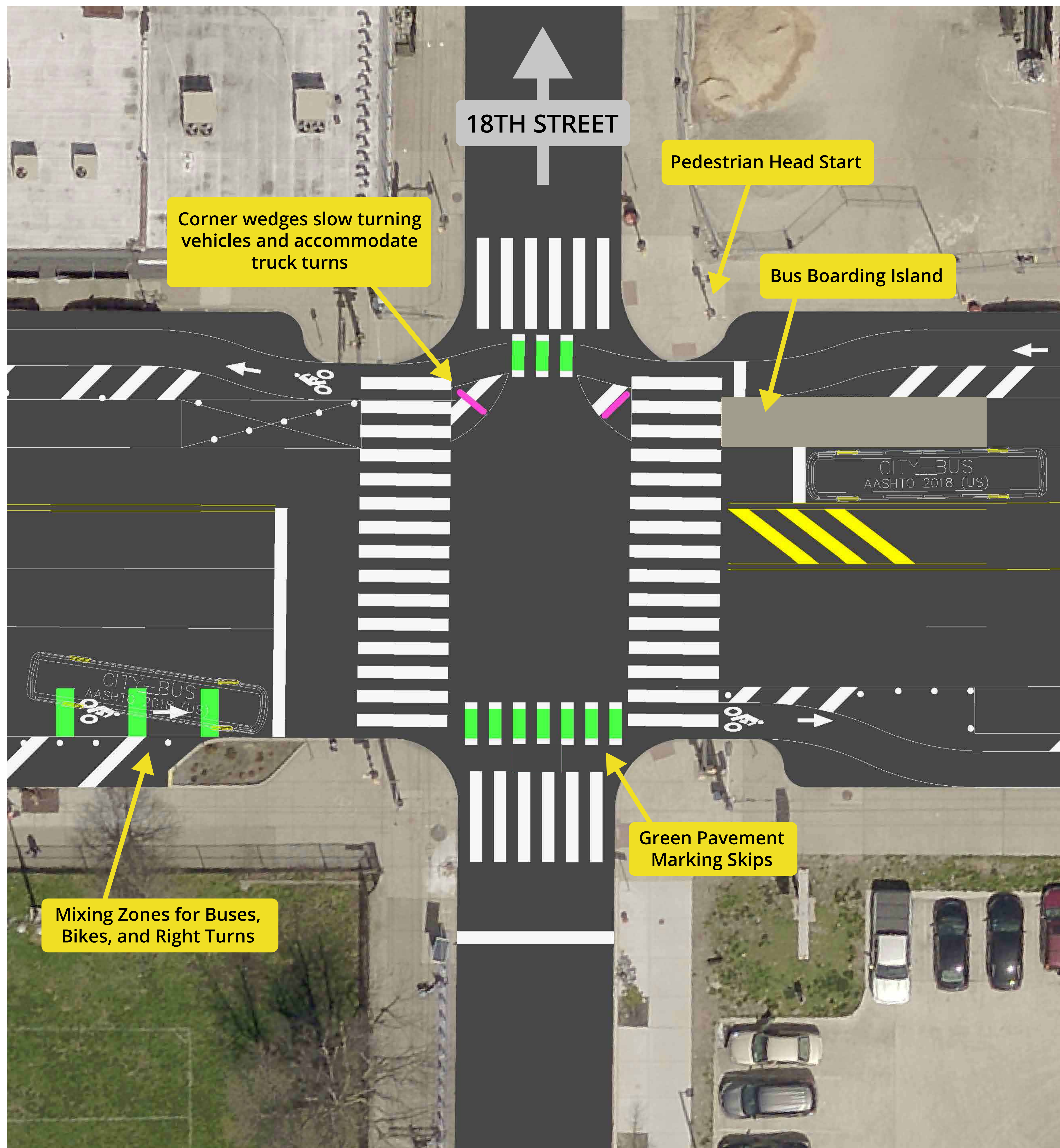
(Example) Cobbs Creek



(Example) Tyrone Turner for WAMU

EXAMPLE INTERSECTION 4-LANE

WASHINGTON AVENUE REPAVING AND IMPROVEMENT PROJECT



Washington Avenue At 18th Street

Flex Post Delineators



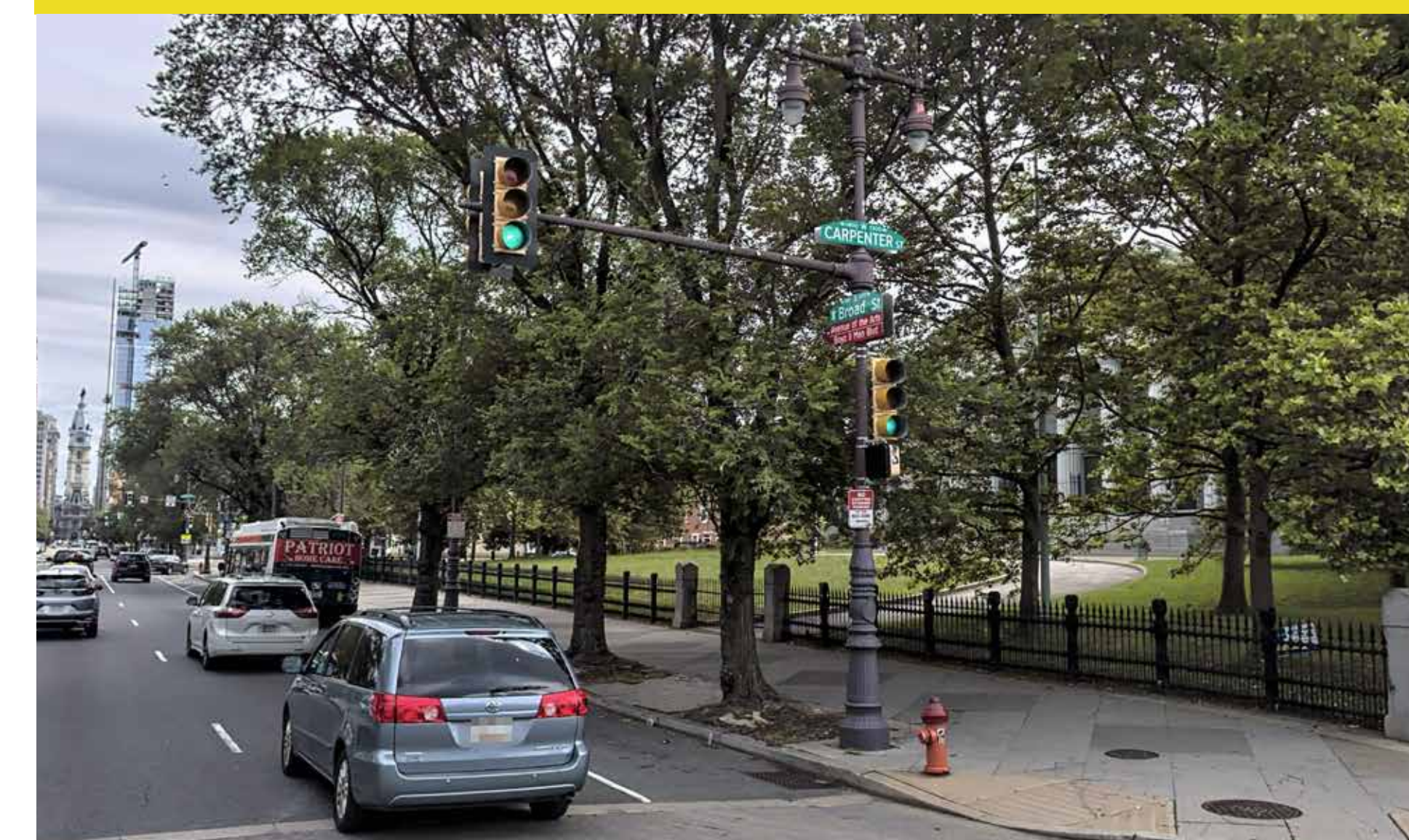
(Example) 22nd Street at Carpenter Street

Corner Wedges



(Example) 6th Avenue at West 12th Street, NYC

Pedestrian Head Start



(Example) Washington Avenue at Broad Street

Centerline Hardening



(Example) Tyrone Turner for WAMU

Bus Boarding Island



(Example) Guadalupe St, Austin
(Credit: Austin Transportation Department)

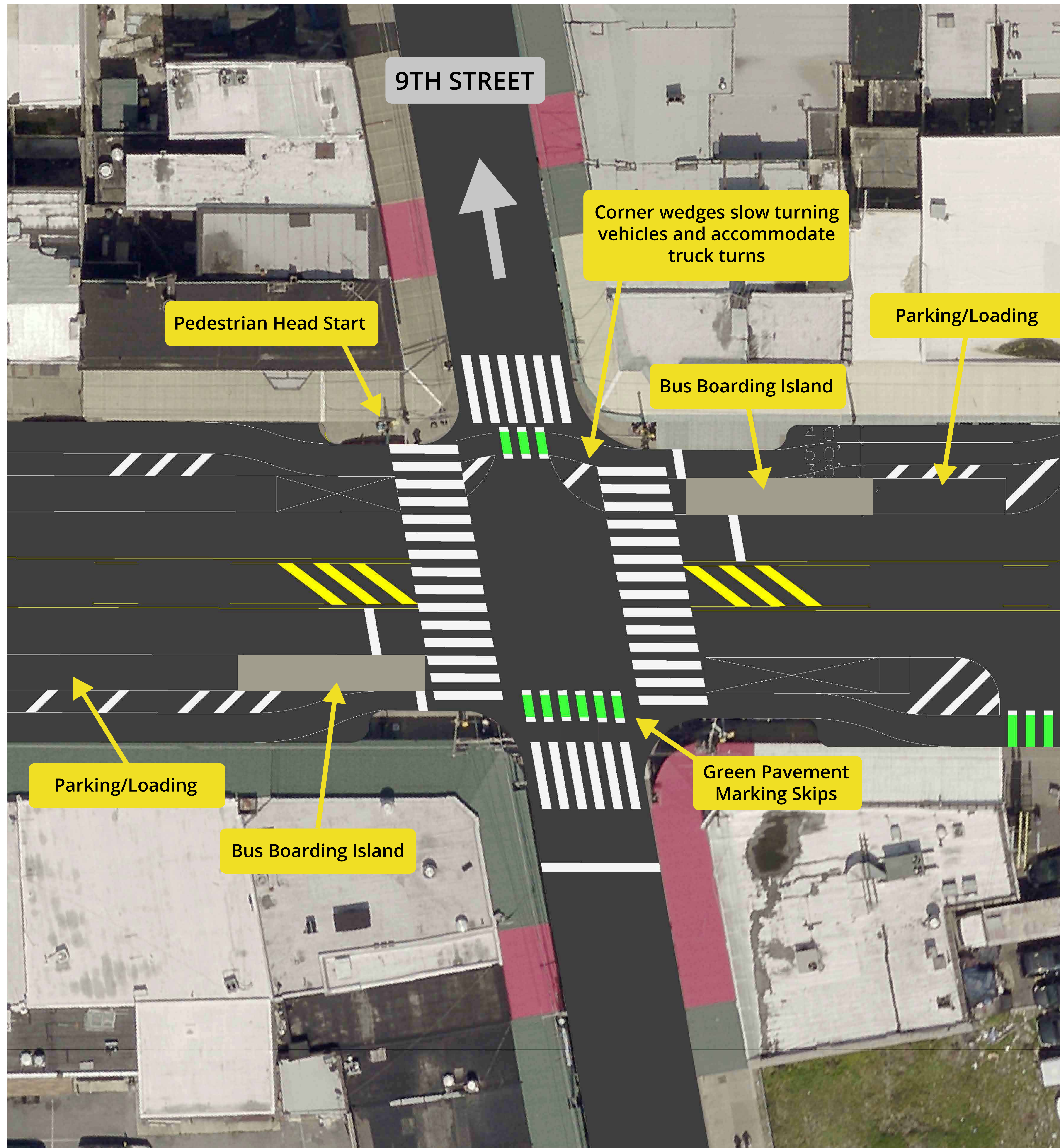
Green Pavement Marking Skips



(Example) Washington Avenue at 22nd Street

EXAMPLE INTERSECTION 3-LANE

WASHINGTON AVENUE REPAVING AND IMPROVEMENT PROJECT



Washington Avenue At 9th Street

Flex Post Delineators



(Example) 22nd Street at Carpenter Street

Corner Wedges



(Example) 6th Avenue at West 12th Street, NYC

Pedestrian Head Start



(Example) Washington Avenue at Carpenter Street

Green Pavement Marking Skips



(Example) Washington Avenue at 22nd Street

Bus Boarding Island



(Example) Guadalupe St, Austin
(Credit: Austin Transportation Department)

PARKING AND LOADING

WASHINGTON AVENUE REPAVING AND IMPROVEMENT PROJECT

Every block on Washington Avenue has unique business parking and loading needs. Parking & loading analyses found:

Businesses have unmet loading needs today.

Parking is not serving businesses or residents well.

Parking and Loading Today

7+ Hours West of Broad
(2-3 Hours Expected)

8+ Hours East of Broad
(2-3 Hours Expected)

Proposed Parking and Loading

Hours and Days of week will vary by block depending on the needs and types of businesses



Example of today's challenges on Washington due to insufficient loading zones



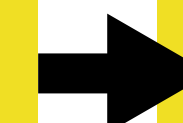
NEXT STEPS

WASHINGTON AVENUE REPAVING AND IMPROVEMENT PROJECT

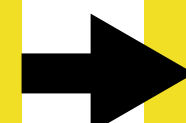
Construction

Construction will take place in 2022 and will be implemented in phases:

The existing road will be ground down (milling).



New asphalt will be installed, and traffic signal timing will be altered.



New paint lane markings, vertical posts, and signs will be installed.

Monitoring and Evaluating

Post-construction: Washington Avenue

Vehicle speeds

Vehicle Volume

Bicycle Volume

Pedestrian
Volume

Crash Data
(Several years post installation)

Red Light
Violations

Community
Feedback

Business
Feedback

Construction Notification

Community members and businesses will be notified by the City via Registered Community Organization (RCO) networks, email channels, no parking signs, automated calls, and more, before and during construction.

Monitoring and Evaluating

Post-construction: Nearby Streets

Vehicle speeds

Vehicle Volume

Crash Data
(Several years post installation)

Community
Feedback

What else should we monitor?

Add your own notes below:

Future Improvements Planned 2023-24

Concrete Bus
Boarding Islands

Emergency Vehicle
Preemption