VISION ZERØ

HUNTING PARK

A transportation safety study and recommended improvements from Wissahickon Avenue to Old York Road

March 2024

DELAWARE VALLEY dvrpc REGIONAL PLANNING COMMISSION

City of Philadelphia

The Delaware Valley Regional Planning Commission is the federally designated Metropolitan Planning Organization for the Greater Philadelphia region, established by an Interstate Compact between the Commonwealth of Pennsylvania and the State of New Jersey. Members include Bucks, Chester, Delaware, Montgomery, and Philadelphia counties, plus the City of Chester, in Pennsylvania; and Burlington, Camden, Gloucester, and Mercer counties, plus the cities of Camden and Trenton, in New Jersey.

DVRPC serves strictly as an advisory agency. Any planning or design concepts as prepared by DVRPC are conceptual and may require engineering design and feasibility analysis. Actual authority for carrying out any planning proposals rest solely with the governing bodies of the states, local governments or authorities that have the primary responsibility to own, manage or maintain any transportation facility.

DELAWARE VALLEY dvrpc REGIONAL PLANNING COMMISSION

DVRPC's vision for the Greater Philadelphia Region is a prosperous, innovative, equitable, resilient, and sustainable region that increases mobility choices by investing in a safe and modern transportation system; that protects and preserves our natural resources while creating healthy communities; and that fosters greater opportunities for all.

DVRPC's mission is to achieve this vision by convening the widest array of partners to inform and facilitate data-driven decision-making. We are engaged across the region, and strive to be leaders and innovators, exploring new ideas and creating best practices.

DVRPC is funded through a variety of funding sources including federal grants from the U.S. Department of Transportation's Federal Highway Administration (FHWA) and Federal Transit Administration (FTA), the Pennsylvania and New Jersey departments of transportation, as well as by DVRPC's state and local member governments. The authors, however, are solely responsible for the findings and conclusions herein, which may not represent the official views or policies of the funding agencies.

ACKNOWLEDGMENTS

The project team extends their heartfelt thanks to the following individuals and organizations that contributed their valuable time, assistance, and expertise to this project.

Matthew Albracht, *Philadelphia Department of Streets* • **Meghan Alvarez,** *Office of Transportation, Infrastructure, and Sustainability* • **Cynthia Barnes,** *Nicetown-Tioga Improvement Team, Broad-Germantown Collaborative, & Hunting Park Resident* • **Corey Bell,** *Office of Transportation, Infrastructure, and Sustainability* • **Thomas Bimble,** *Philadelphia Police 39th District* • **Chinita Bradshaw,** *Vision Zero Ambassador* • **LaTanya Boswell,** *Office of Representative Parker* • **Joseph Busa,** *Philadelphia Police 39th District* • **Sara Calderón,** *Esperanza* • **Vince Cerbone,** *Pennsylvania Department of Transportation* • **Harley Cooper,** *Southeastern Pennsylvania Transportation Authority* • **Lisa Desamour,** *Philadelphia Fire Department* • **Keith Dial,** *Office of Council President Darrell Clarke* • **Leroy Fisher,** *Hunting Park United – Friends Group for the Park* • **Vadim Fleysh,** *Philadelphia Department of Streets Philadelphia Department of Streets* • **Neil Garry,** *Office of Transportation, Infrastructure, and Sustainability* • **Marco Gorini,** *Office of Transportation, Infrastructure, and Sustainability* • **Nathan Grace,** *Philadelphia City Planning Commission* • **Jeffrey Harley,** *Called to Serve* • **Nicole Hostettler,** *Philadelphia Water Department David Kanthor* • **Sharon Ings,** *Philadelphia Police 39th District* • **Antoinette R Johnson,** *Office of Philadelphia City Councilmember and Deputy Majority Whip Cindy Bass, 8th District Councilman* • **David Kanthor,** *Philadelphia City Planning Commission* • **Lydia Kenselaar,** *Office of Transportation, Infrastructure, and Sustainability* • **Perla Lara,** *Impacto* • **Sharang Malaviya,** *Pennsylvania Department of Transportation* • **Tom Marcucci,** *Southeastern Pennsylvania Transportation Authority* • **Ángel Ortiz-Siberón,** *Impacto* • **Amelia Price,** *Called to Serve* • **Niño Ranjo,** *Philadelphia Department of Streets* • **Aissa Richardson,** *Office of Senator Street* • **Andrew Simpson,** *Office of Transportation, Infrastructure, and Sustainability* • **Nicole Tillman,** *Philadelphia Department of Commerce* • **Walter Toliver,** *Esperanza* • **Uriel Rendon,** *Impacto* • **Mark Washington,** *Philadelphia Department of Streets* • **Katie Wcislo,** *Simon Gratz High School Mastery Charter* • **Melissa Williams,** *Philadelphia Department of Commerce* • **Venise Whitaker,** *Office of Councilman Clarke* • **Michael Wilcox,** *Hunting Park Community Garden* • **Kelley Yemen,** *Office of Transportation, Infrastructure, and Sustainability* • **Matt Zapson,** *Southeastern Pennsylvania Transportation Authority*

VISION ZERO

HUNTING PARK

Contents

Figures

Tables

Appendices

Executive Summary

Hunting Park Avenue is an important arterial corridor serving numerous communities in North Philadelphia. The corridor's crash history shows that Hunting Park Avenue presents safety challenges for roadway users. This project worked with stakeholders and the community to identify these challenges and develop recommendations to improve safety for all users of Hunting Park Avenue.

Study Area Overview

The corridor was identified in the City's *Vision Zero Capital Plan 2025* as part of the High Injury Network because of its crash history. Philadelphia's Vision Zero program works to eliminate deaths and serious injuries from traffic crashes by 2030. The Study Area, which stretches from Wissahickon Avenue to Old York Road along Hunting Park Avenue, is part of the City of Philadelphia's Vision Zero program. The corridor currently serves residential, commercial and nearby industrial uses and also functions as a priority transit corridor for the City of Philadelphia. The variety of overlapping needs create challenges and opportunities for eliminating severe crashes along the corridor.

Community-Informed Design Process

The study team for this project conducted extensive neighborhood outreach, research on existing planning efforts, a road safety audit, and a crash and traffic analysis to inform the development of concept alternatives for the roadway. The public outreach effort during the fall of 2022 and summer of 2023 included both in-person and online outreach methods, collecting over 400 relevant survey responses. The road safety audit and crash and traffic analysis identified additional specific safety concerns. Key concerns identified through the community outreach included aggressive driving, speeding, and congestion. The crash and traffic analysis also highlighted high rates of pedestrian crashes and red light running.

The study team explored a series of roadway design alternatives to improve safety, mobility, and community vitality for all street users. The recommendations include traffic calming, separated bicycle facilities, and shortening pedestrian crossings, among others. The steering committee, comprised of City officials and community members, provided feedback on the recommendations before the public open house, where neighbors and passers-by had the same opportunity.

Recommendations

This report presents the final recommended alternative, serving as a resource for the City, as it moves forward with improving safety along this corridor under the Vision Zero program. Elements included in the alternative include a center median, a side path for walking and biking, and other improvements. The City is actively seeking funding for further design and construction.

Source: DVRPC

VISION ZERØ
HUNTING PARK

INTRODUCTION

PROJECT PURPOSE • PROJECT OBJECTIVES • BACKGROUND •
COMMUNITY INVOLVEMENT • REPORT ORGANIZATION

Project Purpose

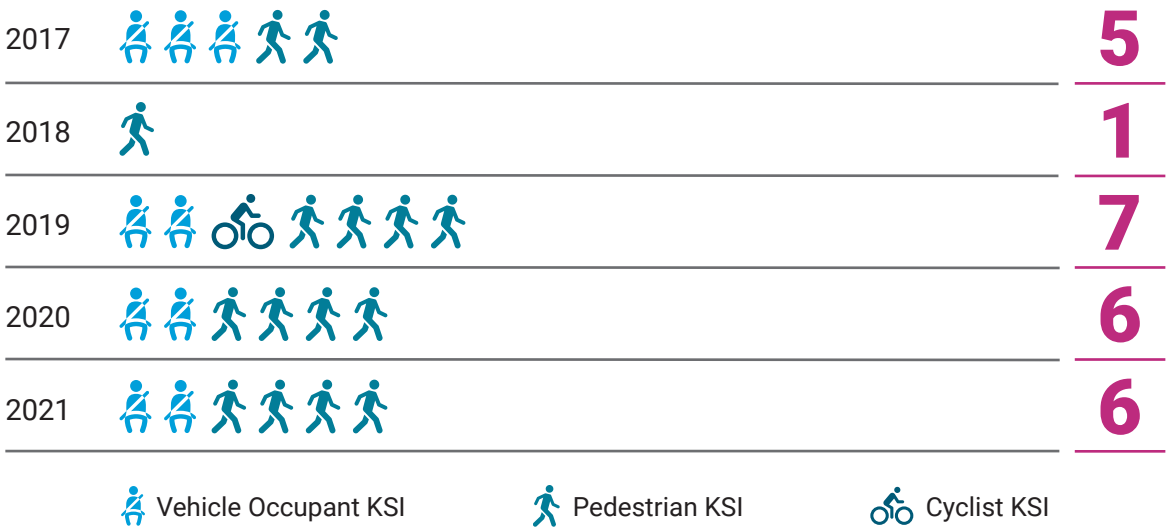
The City of Philadelphia asked the Delaware Valley Regional Planning Commission (DVRPC) to analyze traffic safety on Hunting Park Avenue from Wissahickon Avenue to Old York Road as part of their Vision Zero program. The project goal was to develop safety recommendations to ensure all road users can travel safely along Hunting Park Avenue. This report summarizes the outreach and analysis conducted to examine the corridor and presents the subsequent safety improvement recommendations.

Project Objectives

This project aims to support three key objectives, identified by the steering committee.

1. **Safety** is approached through the framework of Vision Zero; the ultimate goal of Vision Zero is to achieve zero traffic fatalities through targeted and proven safety strategies.
2. **Mobility** is sought for all road users, and the project aims to provide efficient travel and operations for everyone.
3. **Community vitality** is an acknowledgment that local residents and businesses are most affected by transportation decisions on the corridor. The project aims to support local businesses and residents while providing well-maintained roads and planning for future growth in a way that benefits all residents and business owners.

Figure 1: Number of People Killed or Seriously Injured by Travel Mode along Hunting Park Avenue between Wissahickon Avenue and Old York Road (2017–2021)



Source: PennDOT 2017-2021

Background

Philadelphia's Vision Zero program works to eliminate deaths and serious injuries from traffic crashes by 2030. The City's *Vision Zero Capital Plan 2025* identified the Hunting Park Avenue corridor as part of the High Injury Network because of its high crash history. The High Injury Network represents only 12 percent of Philadelphia Streets, but accounts for 80 percent of severe crashes (See **Figure 1**).

By targeting safety improvements on streets that are part of the High Injury Network,

the City of Philadelphia can make progress on reducing severe traffic injuries and fatalities.

By targeting safety improvements on streets that are part of the High Injury Network, the City of Philadelphia can make progress on reducing severe traffic injuries and fatalities. The City's *Vision Zero Capital Plan 2025* aims to achieve zero traffic deaths in the City by 2030.[1]

Hunting Park Avenue intersects three major roadways: Wissahickon Avenue, Roosevelt Boulevard, and Broad Street. A Southeastern Pennsylvania Transportation Authority (SEPTA) Broad Street Line subway station and numerous bus lines serve residents along the corridor. The roadway also supports foot traffic to nearby essential services, faith-based institutions, and recreational resources like Hunting Park and Marcus Foster Memorial Stadium. Hunting Park Avenue is a four-lane corridor that serves as a parallel arterial to Lincoln Highway and provides access to Roosevelt Boulevard. Pedestrians often have to navigate through high-speed traffic with large distances between signalized crosswalks. Without proper bike facilities, bicyclists opt to ride along the wide sidewalks. Parked vehicles and frequent driveways often obstruct the pedestrian network.

Community Involvement

In collaboration with the City of Philadelphia, DVRPC formed a steering committee to convene stakeholders, identify issues, and prepare recommendations along the corridor. The project team conducted two community engagement events to help identify corridor-wide issues and obtain resident feedback on proposed recommendations. The finalized traffic safety recommendations address synthesized residential concerns and build off findings from the analysis-based research.

Report Organization

The Vision Zero: Hunting Park report is organized into six additional chapters that explore:

1. Study Area History;
2. Existing Conditions;
3. Crash Analysis;
4. Public Outreach;
5. Study Approach; and
6. Recommendations.

[1] Vision Zero Action Plan, City of Philadelphia, 2020

Philadelphia Fire Department Ladder 18
Source: DVRPC

VISION ZERØ
HUNTING PARK

STUDY AREA HISTORY

HISTORY • PREVIOUS STUDIES

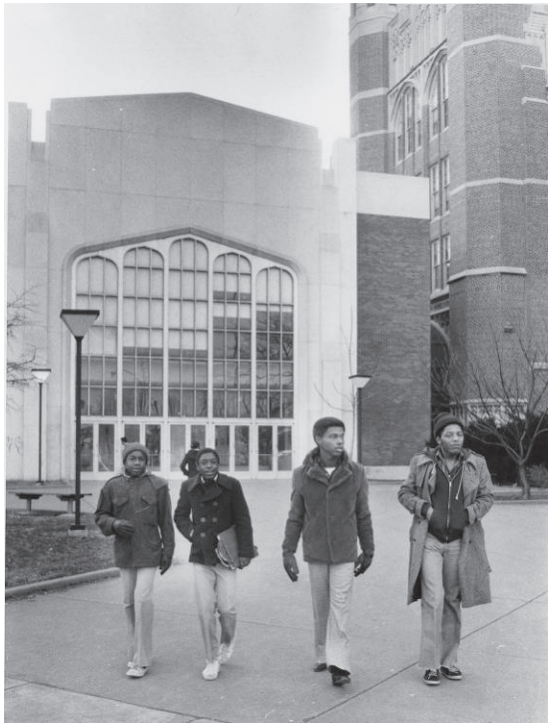
To better understand the community, the project team explored its history and previous community plans.

History

In character with Philadelphia's history as a city of neighborhoods, the study area surrounding Hunting Park Avenue is trisected by three separate neighborhoods: Nicetown, Tioga, and Hunting Park. Each neighborhood contributes to the diverse and rich history of the study area.

Hunting Park[2]

The Hunting Park neighborhood's namesake, Hunting Park, functions as the community's primary access to green space. The history of the park goes back to the 1700s and its original owners, the Logan Family.[3] The area around the park has deep industrial roots that are still prevalent in the community today. Since the industrial revolution, the prospect of employment has been drawing new residents into cities across the county including North Philadelphia. In order to support the transportation of goods and employees, passenger and freight rail systems were developed.[4] By the 1960s, a new wave of economic prosperity drew Latin American immigrants and African American migrants into the previously European and Jewish community[5]—making the community diverse in land use and racial make-up alike. Unfortunately, the prosperity did not last as factories began to relocate to suburban, southern, and foreign locations. Residents were left without access to jobs, adequate education, and eventually housing, stifling their ability to create opportunities for themselves and their children. The community group Esperanza formed in 1987 to confront concerns and address local needs.



Students leaving Gratz High School, 1968
Courtesy of the Special Collections Research Center. Temple University Libraries. Philadelphia, PA.

[2] "Philadelphia Neighborhoods," (2011) *DVRPC*.
[3] Sydney Coffin, "'My City Need' Something: Making Safe Inner City Green Spaces in Philadelphia's Hunting Park," *Yale*.
[4] "DVRPC Improving Access to the Hunting Park: Broad Street Line Station" (2022), *DVRPC*
[5] Hunting Park Neighborhood Strategic Plan, 2022

Tioga-Nicetown

Much like, Hunting Park, the Tioga and Nicetown neighborhoods experienced an economic boom caused by the prevalence of manufacturing jobs and supporting businesses, creating the diverse community still recognized today. Similar to Hunting Park, the manufacturing jobs eventually left the neighborhood. In an effort to stop decline in the area, in 1949, the City introduced a urban renewal project in the area funded by the Federal Highway Act to create an extension of Roosevelt Boulevard. Despite City reports, the community at that point was not in a state of neglect.[6] Officials proactively condemned it as 'at risk' due to its proximity to industrial uses, diminishing residents' abilities to obtain mortgages, and ultimately causing the decline of a once thriving working-class neighborhood. Residents who were displaced by the highway construction were often inadequately compensated for their properties, making it difficult to afford to stay in the area. Today, community members from organizations like the Nicetown Community Development Corporation (NTCDC) are trying to right past wrongs and provide amenities that serve the community.

Residents displaced by the highway construction and inadequately compensated for their properties

found themselves spending more money than what they were compensated

to stay in the area.

Previous Studies

Vision Zero

Vision Zero is a policy founded on the goal of eliminating all roadway fatalities. Since its inception in 1997 in Sweden, the policy has spread internationally. Many major American cities like Philadelphia have adopted their own version. Intended as a companion piece to Philadelphia's *Vision Zero Action Plan 2025,*[7] Philadelphia's *Vision Zero Capital Plan 2025* prioritizes safety improvements for ten sub-corridors and intersections throughout the City's High Injury Network (HIN) to be designed, funded, and constructed in the five years following the release of the report. The HIN inventories a set of Philadelphia that account for merely 12 percent of the City's roadway network yet contribute 80 percent of serious injury crashes.[8] Locations were selected through prioritizing areas with high levels of Killed or Seriously Injured (KSI) that

The HIN inventories a set of Philadelphia streets, which

account for merely 12 percent of the City's roadway network yet contribute 80 percent of serious injury crashes.

Source: Vision Zero Capital Plan 2025

[6] Elizabeth Greenspan, "Nicetown," *Places Journal*, June 2019. Accessed 12 Jan 2023.

[7] Vision Zero Action Plan, 2025

[8] Vision Zero Capital Plan, 2025

met the City's six additional criteria: (1) Bike Network, (2) Competitive City, (3) Efficient Government, (4) Equity, (5) Schools, and (6) Transit First.

Based on those parameters, Hunting Park Avenue was selected as one of ten priority sub-corridors. Each location summary offers a description of the area and why it was selected, a map detailing crashes throughout the area, a cost estimate, and a toolbox of recommended Federal Highway Administration (FHWA) proven safety countermeasures. Hunting Park's engineering toolbox suggests:

- traffic signals with reflective borders;
- corridor access management;
- reduced left-turn conflicts at intersections;
- leading pedestrian intervals;
- medians/pedestrian crossing island; and
- road dieting and reassessment of speed limits.

The toolbox also calls for a local road safety plan and road safety audit; this was the starting place for the Vision Zero: Hunting Park study.

[9] North District Plan, 2018
[10] Green Stormwater Infrastructure

North District Plan 2018

Building on the *Philadelphia 2035 Citywide Master Plan*, the City developed individual plans for each of its 18 districts. Every plan provides its respective district with a focused approach to creating healthy, sustainable, and equitable communities. District plans, which are intended to be achieved within a decade, expand on universal objectives initially introduced in the City Vision to thrive, connect, and renew.[9] Along with Hunting Park, the North District includes the neighborhoods of Feltonville, Juniata Park, Nicetown, Tioga, East Tioga, Saint Hugh, Harrowgate, Paradise, Kensington, Fairhill, and Swampoodle/ Allegheny West.

Focus areas are locations with the potential for growth. Hunting Park's focus area is split into two to denote the difference in characteristics between the land west and east of Whitaker Avenue: institutional and industrial, respectively. The plan seeks to create a safe environment for pedestrians and other transportation users in areas with high vehicle and freight traffic. While much of this is can be achieved through maintenance of existing facilities like sidewalks, the plan also describes a desire for improved

- traffic calming;
- crossing safety;
- bus service;
- pedestrian refuge islands;
- lighting;
- greening/green stormwater infrastructure;[10]
- bike infrastructure; and
- intersection simplification.

Philadelphia City Planning Commission (PCPC)'s *2012 Pedestrian and Bicycle Plan* identifies the need for bike lanes and parking on Hunting Park Avenue as priorities. The plan hopes to improve public health by increasing the presence of street trees and pedestrian access to local green spaces like Hunting Park. Bus service enhancements

Hunting Park Avenue Street Sign
Source: DVRPC

The plan hopes to improve public health by

increasing the presence of street trees and pedestrian access to local green spaces like Hunting Park.

Source: Philadelphia City Planning Commission (PCPC)'s 2012 Pedestrian and Bicycle Plan

are highlighted on Lehigh, Erie, Allegheny, Hunting Park, and Wyoming Avenues, which may include: transit signal priority, stop consolidation, increased frequency, and bus stop improvements including shelters. This corridor is also the location of potential Direct Bus routes at Wissahickon and Germantown Avenues.

These multimodal and streetscape improvements are not intended to fully inhibit truck traffic that supports local, industrial, and institutional business. Conversely, transition areas are recommended to buffer industrial and residential uses. Primarily to the east of the Vision Zero corridor, the City plans to work with the Delaware Valley Goods Movement Task Force to create a truck routing plan that would navigate freight drivers through Hunting Park to the national highway network.

Hunting Park Neighborhood Strategic Plan 2022 (2012)

Esperanza is a non-profit organization focused on "empowering those on a pathway out of poverty in the Hunting Park section of North Philadelphia by offering programs that cultivate self-belief, grit, and knowledge acquisition, allowing clients to develop agency, voice, and influence over their own lives."[11] In 2012, the organization published a local strategic plan focused on revitalizing the community with the help of V Lamar Wilson Associates and Interface Studio, LLC. Based on Harlem Children's Zone in New York City and Strive Partnership in Cincinnati, *Hunting Park Neighborhood Strategic Plan* views revitalization and community building through largely an educational lens. Their plan, referred to as 'The Road Map,' offers recommendations addressing "education, housing, employment, safety, [and more]."[12] Hunting Park Collaborative, a group of local stakeholders, intends to work with Esperanza to ensure the implementation of these goals. In accordance with Esperanza's first goal to instill community pride, rigorous community engagement is intended to inform how Hunting Park grows its existing resources.

The plan focuses on a portion of Hunting Park just east of the Vision Zero Corridor study area. Hunting Park Avenue from 5th Street to Front Street serves as one of the community's vital corridors, hosting a mix of largely institutional, industrial, and commercial uses. Fifth Street to Ninth Street is primarily mixed-used and residential. The plan aims to increase pedestrian safety by redesigning streetscapes on and around the corridor. At Hunting Park Promenade, the plan suggests two alternatives that reduce the number of travel lanes from two to one in favor of increased green space and pedestrian amenities along the corridor.

Improving Access to the Hunting Park Broad Street Line Station (2022)

DVRPC's recent *Improving Access to*

[11] "Our Mission & Values," *Esperanza*.
[12] Hunting Park Neighborhood Strategic Plan 2022 (2012)

The study also suggests expanding the area's bicycle network through road dieting at Hunting Park Avenue

to include two conventional bike lanes and a center-turn lane or greening treatment with complementary curb extensions.

the Hunting Park Station study explores increasing active transportation access to the Broad Street Line's Hunting Park Station as well as the proposed Broad Street Boulevard Direct station.[13] Picking up in Phase A, this study continues the investigation of community concerns through interacting with local stakeholder groups and a community engagement surveying effort. The study also identified several challenging intersections in the Vision Zero study area: Hunting Park Avenue at 15th and 16th Street, Broad Street, and Old York Street. Pedestrian concerns include vehicle volumes and speeds, driver's lack of visibility of pedestrians, and prolonged exposure in the crosswalks. The study also cites that frequent, wide commercial driveways put users at risk of crashes. Additionally, the study area has very few comfortable bicycle facilities.

Upon observing these potential access issues, the project team developed a Pedestrian and Bicycle Toolkit to provide recommendations for the area within a quarter-mile of Hunting Park Station. The toolkit details best practices for sidewalk maintenance and implementation, intersection treatments, re-striping, bicycle facility design and implementation, and traffic calming. Location specific recommendations are provided for 13 intersections. At Hunting Park Avenue and 15th and 16th Street, the study suggests reconfiguring the crosswalk to improve pedestrian navigation through the complex, wide crosswalk in addition to re-striping the faded lines. Broad Street's crosswalk is identified as being uncomfortably long for pedestrians. The south side of Hunting Park Avenue from Old York Road to Broad Street has a 600-foot stretch between crosswalks; it also

Crossing Broad Street on Hunting Park Avenue
Source: DVRPC, 2022

may require streetlight improvements. In order to address the difficult left turn vehicle movement at Carlisle Street, it is recommended to close Carlisle Street. Drivers desiring to travel eastbound on Hunting Park would instead make a turn at 15th Street. The study also suggests expanding the area's bicycle network through road dieting at Hunting Park Avenue to include two conventional bike lanes and a center-turn lane or greening treatment with complementary curb extensions. The study supports mixed-uses that encourages residents to utilize transit services, particularly at the intersection of Hunting Park Avenue and Broad Street.

[13] DVRPC Improving Access to the Hunting Park: Broad Street Line Station (2022)

Lil' Philly Safety Village in Hunting Park
Source: DVRPC

All in Together: The Hunting Park-East Tioga Neighborhood Plan

In 2021, North10 Philadelphia, a community-focused foundation in the Hunting Park-East Tioga area of North Philadelphia, commissioned Interface Studio LLC and Lamar Wilson Associates to conduct a neighborhood plan for Hunting Park and East Tioga. The study area is loosely bounded by Sedgley Avenue, Broad Street, 9th Street and Hunting Park, and is located south of the Vision Zero study area. The strategies were developed through a multifaceted community engagement effort, which incorporated the input of a steering committee, resident interviews, focus groups, and hired resident advisors. The plan was also developed based on guidance from the Broad, Germantown & Erie Collaborative, which has representatives from a number of local organizations. In order to reach its goal of being a healthy and affordable community, the plan establishes nine objectives regarding safety, litter, reinvestment in existing homes, future development, employment, open space, community health, and implementation.[14] Methods for supporting community members of all ages range from promoting safer transportation to school through walking school buses to investments in small businesses.

Much like other neighborhood initiatives, as a part of their goal to improve health, the plan recommends the implementation of green infrastructure to manage stormwater, reduce heat, and beautify the area, and to increase access to nourishing foods. Erie Avenue, Lycoming Street south of Hunting Park, and Germantown Avenue between Ontario and Broad Street are locations near the Vision Zero study area that were identified as corridors in need of improvements to the pedestrian infrastructure. To improve pedestrian safety and comfort along these corridors, the plan recommends repainted crosswalks, sidewalk maintenance and connectivity, pedestrian signals, pedestrian-scale lighting, trash disposal maintenance, and traffic slowing devices. Bollards are suggested on several streets—including Old York Road from Erie Avenue to Lycoming Street and at the intersection of Germantown Avenue, Old York Road, Ontario Street, and Rising Sun—to prevent drivers from parking on the sidewalks.

Nicetown CDC Nicetown Economic Development and Housing Strategy

In 2012, Nicetown Community Development Corporation (CDC) established an economic development and housing strategy for Nicetown. The plan aimed to identify recommendations that could be executed using Nicetown CDC funding resources within ten years. The planning effort included community surveys and meetings to ensure that the plan appropriately addressed community concerns. The study area of this report includes portions of the Vision Zero study area from 18th Street to Broad Street. However, the economic report primarily focuses on the revitalization of the perpendicular Germantown Avenue, a commercial corridor, and Wayne Junction Station. The strategy suggests investments in affordable housing and transit-oriented design, . The report also provides recommendations on ways to:

- support commercial and local business;
- increase access to public spaces;
- address public safety;
- improve police/public relations;
- improve availability of care centers for vulnerable populations; and
- manage vacant land activation.

[14] All In Together: The Hunting Park - East Tioga Neighborhood Plan

the plan identifies the area as

an urban arterial with a relatively high need for pedestrian infrastructure improvements, especially from Broad Street to Hunting Park.

Source: Philadelphia Pedestrian & Bicycle Plan

The community plans to take advantage of the facade and streetscape improvement program to reduce project costs. One of the projects includes streetscaping and facade improvements recommended on the 4100 to 4400 block of Germantown Avenue, starting at the intersection at Hunting Park Avenue and terminating at Winrum Avenue. Some of these recommended improvements include human scale lighting, seating, sidewalk maintenance, and green infrastructure.

Tioga Goal and Strategies Report 2016

The Philadelphia City Planning Commission's (PCPC) *2016 Tioga Goal and Strategies Report* evaluates development strategies addressing land management, housing, commercial development, historic resources, access, mobility and open space.[15] Community concerns are consolidated into recommendations based on the feedback received in two public meetings. Equitable and sustainable development practices like affordable housing and green stormwater infrastructure (GSI) are recommended uses of vacant lots. The plan also emphasizes the importance of supporting local business and improving multimodal access along corridors throughout the study area like 17th Street, Pulaski Avenue, Broad Street, and Roosevelt Boulevard.

The northwestern border of the study area directly overlaps with this Vision Zero: Hunting Park effort. Recommendations in the area suggest supporting inclusive mixed-use development, and activating the street front through strategic use of the open space.

Philadelphia Pedestrian & Bicycle Plan (2012–2015)

The City of Philadelphia developed its Bicycle and Pedestrian Plan[16] in response to a recommendation from the *Philadelphia2025 Comprehensive Plan.* This plan suggests improvements to the City's bicycle and pedestrian network that can be achieved through policy, design standards, and overall network improvement. The plan introduces a street classification system to help assess and recommend appropriate bicycle facilities. A series of survey efforts and open houses were organized to inform the proposed recommendations and ensure community agreement.

While the plan does not focus on the Vision Zero: Hunting Park study area, it identifies the area as an urban arterial with a relatively high need for pedestrian infrastructure improvements, especially from Broad Street to Hunting Park.[17] The plan also provides guidance for the intersection east of the study area at Hunting Park Avenue, Allegheny Avenue, and Henry Avenue. Each street was determined to be either an urban arterial or auto-oriented commercial/industrial street

[15] Tioga Goals and Strategies Report, 2016
[16] Philadelphia Pedestrian & Bicycle Plan
[17] Combined Pedestrian Demand and Need Map pg25, pg31

type, which according to the plans proposed street classification, implies a certain degree of auto-dependence. In order to address concerns brought on by this complex, diagonal intersection, the plan suggests pedestrian signals, curb extensions/refuges, squaring the intersection geometries, and even suggests converting the intersection into a traffic circle. Since 2012, the City released a progress report in 2015 detailing the challenges and improvements to the infrastructure including the launching of Ride Indego Bikeshare.

Philadelphia Transit Plan (2021)

Philadelphia's residents and visitors rely on a variety of bus and rail services operated by Southeastern Pennsylvania Transportation Authority (SEPTA), the Delaware River Port Authority (DRPA), and NJTransit. In the wake of decreased ridership as a result of the COVID-19 pandemic, the City of Philadelphia launched its 2021 Transit Plan,[18] which aims to leverage its transportation strengths while acknowledging its weaknesses to achieve its vision to be "a city connected by transit." Transportation plays a vital role in "address[ing] the systemic racial disparities among our residents, recover[ing] from the current economic and health crises, and fight[ing] the climate crisis."

Five goals and strategies are outlined by the City:

1. Transit for Safety, Reliability, & Cleanliness;
2. Transit for the Environment;
3. Transit for an Equitable & Just Philadelphia;
4. Transit for Today's Challenges; and
5. Transit for the Future.

These goals are supported by policy recommendations, network improvements, and relevant examples from other cities.

The City utilized a quantitative and qualitative corridor selection process to prioritize corridors for shorter or longer term implementation. Hunting Park Avenue ranked twenty-first in the Transit Plan as a corridor to be addressed in the longer-term and was identified as a location of a proposed direct bus route. While Hunting Park Avenue is not discussed in detail in this report, Erie Avenue, a corridor which intersects with the Vision Zero corridor study area, is identified as an area for near-term implementation. Recommendations for Erie Avenue include reducing the number of vehicle lanes in either direction from two to one in favor of either parking protected bike lanes or bus lanes with sidewalk level separated bike lanes. These recommendations suggest curb extensions with bus shelters.

SEPTA Bus Revolution

In 2021, SEPTA initiated a three year comprehensive redesign of its bus services. The last third of the project will be implementation of the recommendations formed through rigorous community engagement. The following SEPTA bus routes intercept the Vision Zero: Hunting Park study area: 1, 2, 16, 23, 53, BSO, H, R, and XH. An official set of recommendations is slated to be announced in 2024. The previously funded "Direct Bus B" alignment is recommended as part of Bus Revolution, as it is already funded and in design. The Route R alignment will have both a local service and an express service (Direct Bus). This service change will be implemented upon completion of Wissahickon Transit Center. In the meantime the organization has been releasing report updates such as a Market Analysis, State of the Bus System, and Engagement Findings and Lessons Learned.

[18] The Philadelphia Transit Plan: A Vision for 2045

Roosevelt Boulevard Route for Change Program (2021)[19]

In 2016, with support from a U.S. DOT TIGER planning grant, the City of Philadelphia, PennDOT, and SEPTA joined together to develop the Roosevelt Boulevard Route for Change Program to ensure all users can safely travel the Boulevard.

The Route for Change Program area spans 12.3 miles of Roosevelt Boulevard in the City of Philadelphia, from N. Broad Street to the Philadelphia County line shared with Bucks County, and an additional 1.7 miles of U.S. 1 in Bucks County to the Neshaminy Mall at Rockhill Road.

The Program's planning process identified recommendations for improvement projects in the first horizon year, 2025, along the entire 14-mile corridor. Crash statistics and feedback heard during the five rounds of public forums, established the following five priorities for the Program, in order of importance:

1. Increase safety.
2. Reduce travel time.
3. Reduce wait time.
4. Reduce confusion.
5. Manage access.

To help ensure the Boulevard can safely be traveled by all users, the Program recommends supporting four initiatives to raise awareness about risky travel behaviors and improve travel along the corridor. The Program recommends implementing these initiatives by 2025:

- Camera Automated Speed Enforcement (CASE);
- Roosevelt Boulevard Vision Zero;
- Educational Program;
- Signage Inventory & Evaluation; and
- Lighting Assessment & Strategy.

[19] Roosevelt Boulevard Route for Change Program, 2021

SEPTA Bus traveling across Hunting Park Avenue
Source: DVRPC

VISION ZERØ
HUNTING PARK

EXISTING CONDITIONS

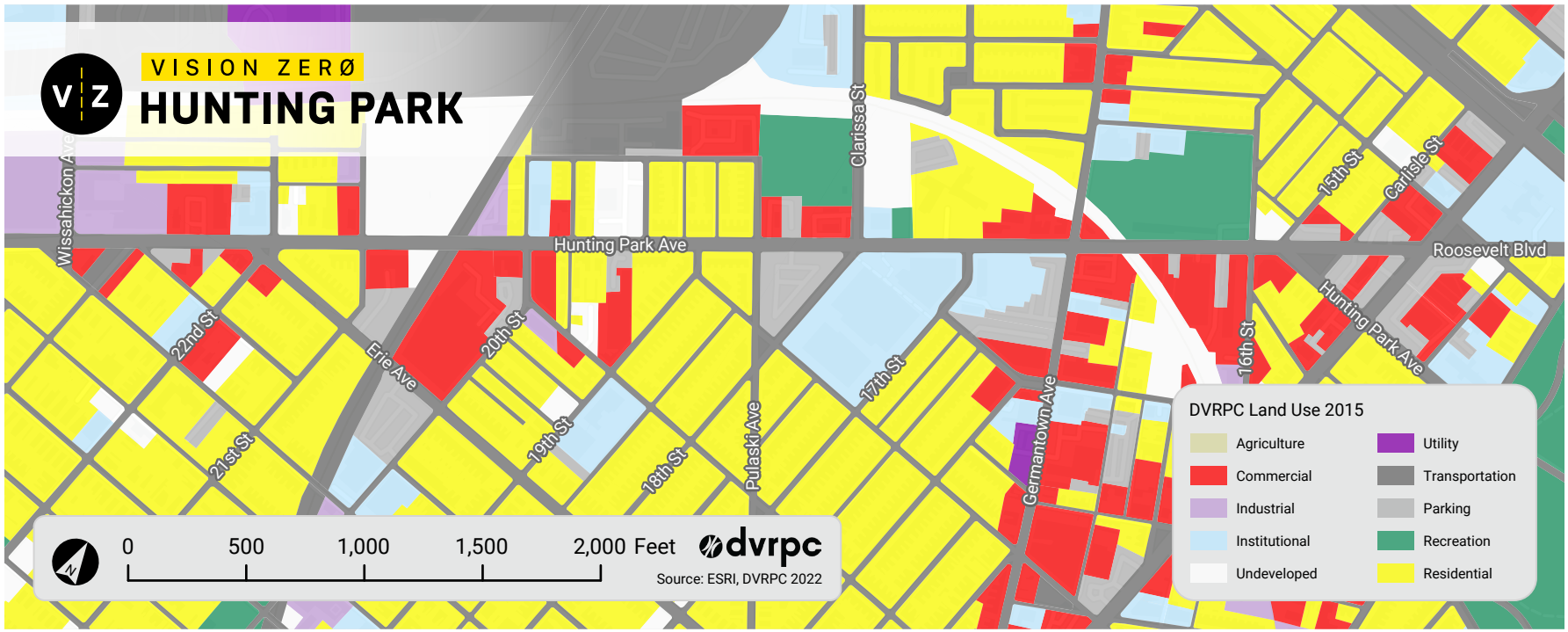
LAND USE • COMMUNITY DEMOGRAPHICS • TRAFFIC COUNTS •
TRAFFIC MODELING • TRANSIT ANALYSIS • ON-STREET PARKING

Land Use

Along Hunting Park Avenue, land uses include residential, commercial, industrial, and institutional. Auto-oriented commercial businesses, such as mechanic and auto-body shops, gas stations, and chain stores, are common along the eastern end of the corridor near Broad Street.

Properties towards the center of the corridor tend to be a mixture of low-density residential row houses and smaller neighborhood-servicing businesses. Industrial sites are common along the western end of the corridor. Undeveloped lots can be found throughout the corridor, especially further west. Additionally, the corridor is home to many institutions, including Simon Gratz High School and Mastery Prep Elementary Charter School at 17th Street, the Police Department's 39th District Headquarters, and Fire Department's Engine Company 59, Ladder Company 18, Medic 4 at Erie Avenue. The Marcus Foster Memorial Stadium is also on the corridor at 16th Street.

Figure 2: Land Use

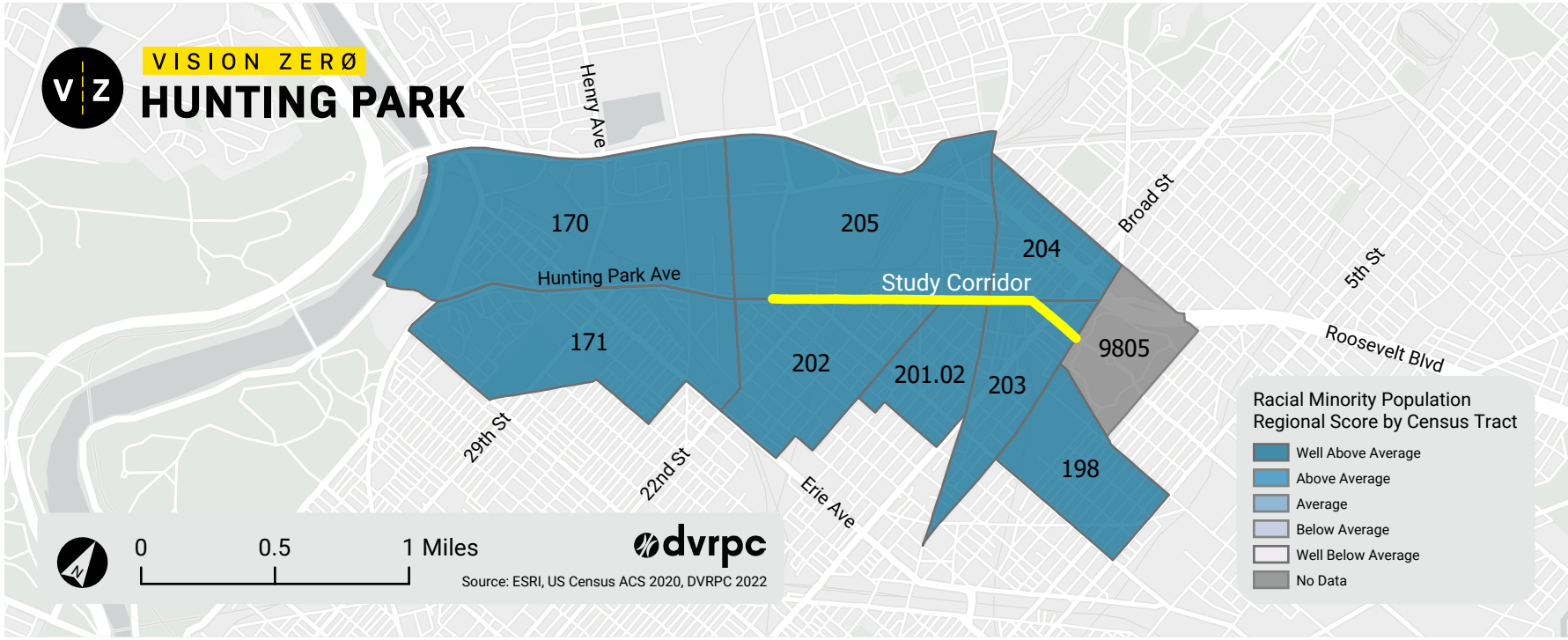


Community Demographics

The extended study area is comprised of nine census tracts within a quarter-mile of Hunting Park Avenue, accounting for a total population of nearly 30,000.[20] The project team used DVRPC's Indicators of Potential Disadvantage (IPD) analysis to explore the makeup of this population. The IPD analysis estimates potential disparities in local communities by measuring the prevalence of nine historically vulnerable population groups. This is achieved by comparing the population of each group in a tract to the nine-county DVRPC region. Based on this analysis, census tracts in the study area receive a score ranging from 'Well Below Average' to 'Well Above Average.' The nine population groups that are included in the following IPD analysis of the study corridor are:

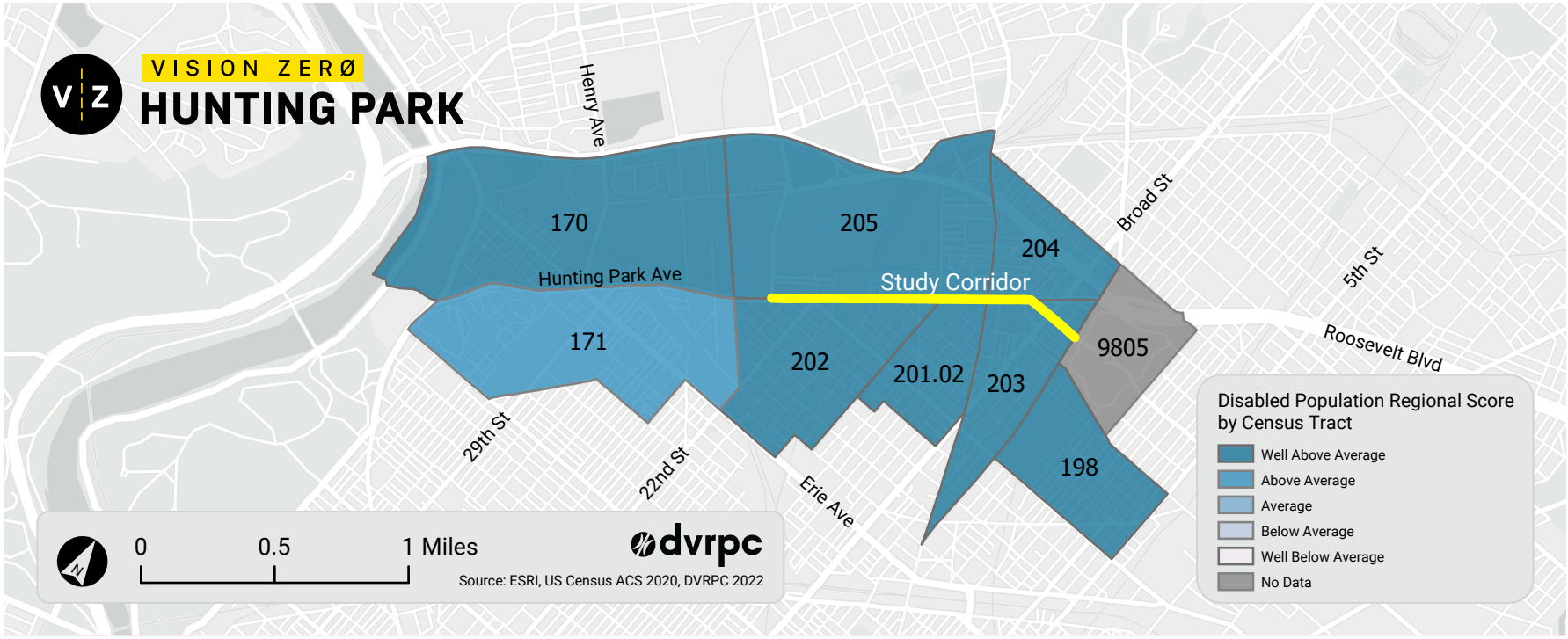
- Youth (under age of 18);
- Older Adults (age 65 and over);
- Racial Minority;
- Ethnic Minority;
- Female;
- Foreign Born;
- Limited English Proficiency;
- Disabled; and
- Low-Income (within 200 percent of poverty line).

Figure 3: Indicators of Potential Disadvantage (IPD): Racial Minority Population Regional Score



[20] 2020 American Community Survey 5-Year Estimates

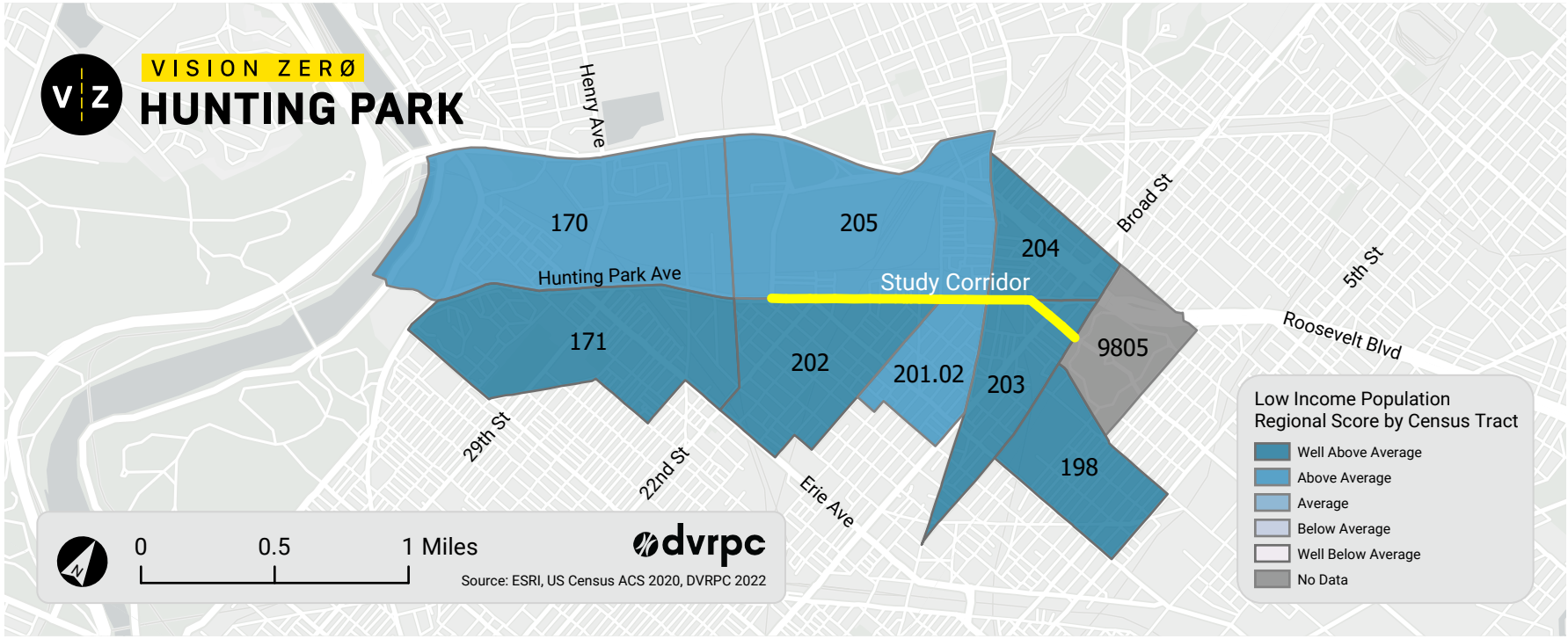
Figure 4: Indicators of Potential Disadvantage (IPD): Disabled Population Regional Score



Each group, with the exception of Foreign Born individuals, scored "Above Average" or "Well Above Average" in at least one populated census tract in the study area. Racial Minority, Disabled, and Low-Income populations are the most prominent groups throughout the extended study area. All eight populated tracts have "Well Above Average" racial minority populations (see **Figure 3**), where 92.6 percent of individuals identified as racial minority compared to 60.7 percent in Philadelphia and 35.3 percent in the region.[21] Over three quarters of the area's population identifies as Black or African American, while many individuals (12.31 percent) also identify as some other race.[22] Nearly all of the tracts scored "Well Above Average" for disabled populations (see **Figure 4**). 27.2 percent of individuals in the study area identified as having a disability compared to 17 percent in the city (2020 ACS 5-Year Estimates). Five populated tracts in the area have a "Well Above Average" proportion of low-income residents with the other three tracts having "Above Average" proportion of low-income populations (see **Figure 5**). Over half of individuals in the extended study area are

[21] 2020 ACS 5-Year Estimates
[22] 2020 ACS 5-Year Estimates

Figure 5: Indicators of Potential Disadvantage (IPD): Low-Income Population Regional Score



low income, which is nearly 10 percent higher than the city and over double the regional proportion.[23] The median household income for the entire study area is about $28,878.[24] Most people (82.11 percent) speak English at home, though a substantial percentage (15.64 percent) speak Spanish.[25]

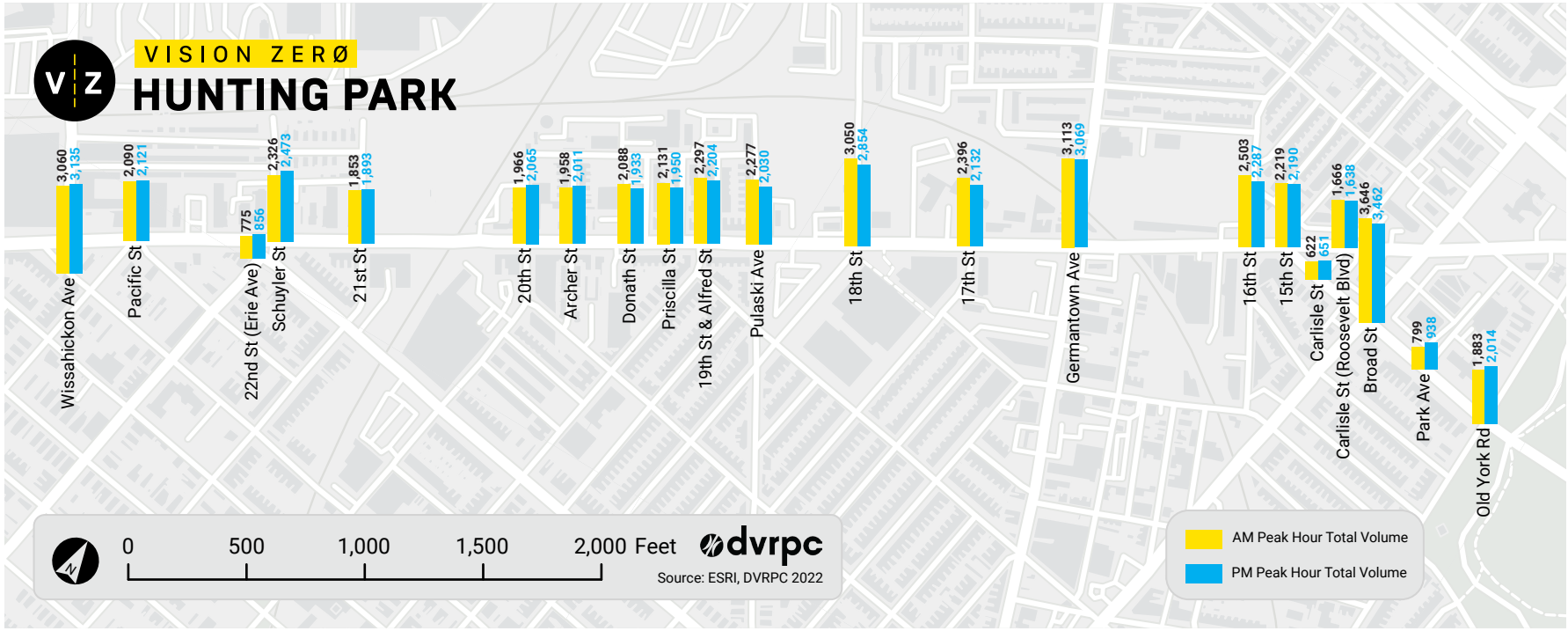
Traffic Counts

Intersection Peak Hour Volume

Turning movement counts were collected at 21 intersections along Hunting Park Avenue. The morning peak hour was determined to be 7:30 AM - 8:30 AM (AM) and the evening peak hour was 3:30 PM - 4:30 PM (PM). During both the AM and PM peak hours, the busiest intersection along the corridor in terms of vehicle volumes is Broad Street. Other busy intersections that have at least one peak hour with traffic volumes of 3,000 or more include the intersections at Germantown Avenue, Wissahickon Avenue, 18th Street, and Clarissa Street (as shown in **Figure 6**).

[23] 2020 ACS 5-Year Estimates
[24] 2020 ACS 5-Year Estimates
[25] 2020 ACS 5-Year Estimates

Figure 6: Intersection Peak Hour Volumes

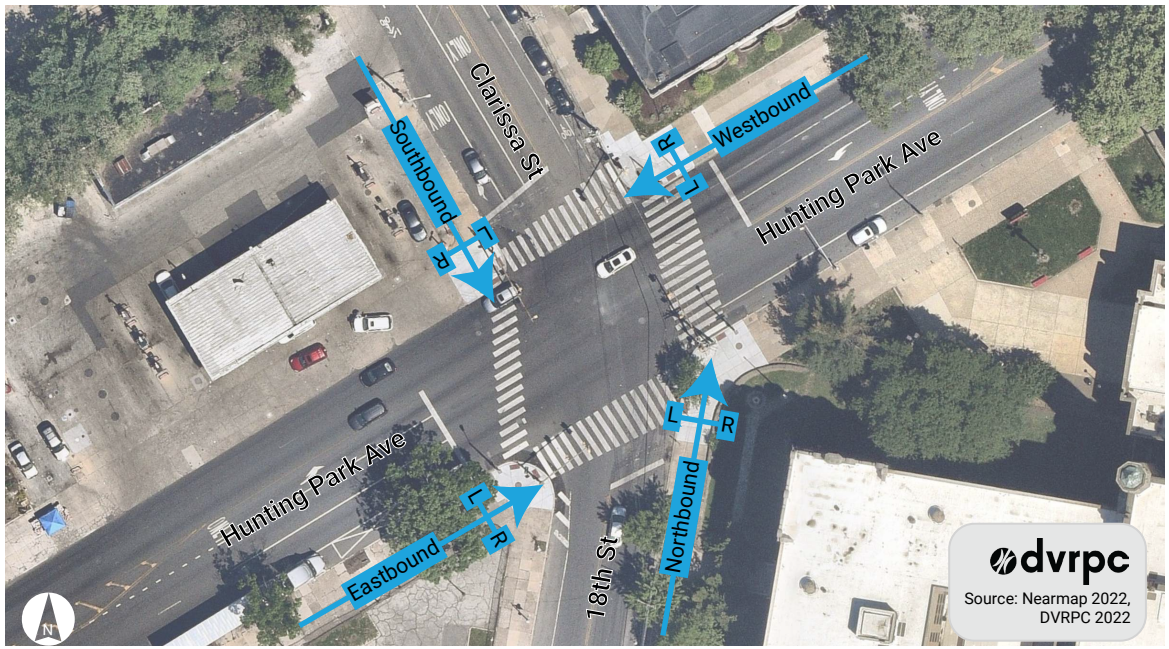


In general, the traffic volumes during the peak hours are higher in the more commercial sections of the corridor: between Schuyler Street and Wissahickon Avenue, and between Old York Road and Pulaski Avenue; while the peak hour traffic volumes are lower in the residential section of the corridor between Pulaski Avenue and Schuyler Street.

During the AM peak hour, there is generally more vehicular traffic traveling west than east along Hunting Park Avenue except for the intersections east of Broad Street. During the AM peak hour, the corridor receives large amounts of vehicular traffic from vehicles turning eastbound from southbound Wissahickon Avenue, westbound from northbound Erie Avenue, eastbound from northbound 19th Street, and westbound from southbound Clarissa Street. The corridor distributes large amounts of vehicular traffic onto northbound Wissahickon Avenue (from westbound vehicles on the corridor turning right), eastbound Erie Avenue (eastbound turning right), and northbound Clarissa Street (eastbound turning left). **Figure 7** shows an example turning movement diagram.

During the PM peak hour, there is generally more vehicular traffic traveling east than west along Hunting Park Avenue except for the intersections east of Broad Street. The corridor receives large amounts of vehicular traffic from vehicles turning eastbound from southbound Wissahickon Avenue,

Figure 7: Example Intersection Turning Movement Diagram



Source: DVRPC, Nearmap 2023

westbound from northbound Erie Avenue, and westbound from southbound Clarissa Street. Similar to the AM peak hour, the corridor distributes large amounts of vehicular traffic onto northbound Clarissa Street (*from eastbound vehicles turning left*), eastbound Erie Avenue (*eastbound turning right*), and northbound Wissahickon Avenue (*westbound turning right*).

Pedestrian Volumes

During both the AM and PM peak hours, the busiest intersection along Hunting Park Avenue in terms of pedestrian volumes is Germantown Avenue (shown in **Figure 8**). Other busy intersections with peak hour pedestrian volumes of 100 or more include the intersections at:

AM and PM Peak Hours

- 17th Street;
- Carlisle Street (at Roosevelt Boulevard);
- 15th Street/Roosevelt Boulevard; and
- 18th Street/Clarissa Street.

During both the AM and PM peak hours,

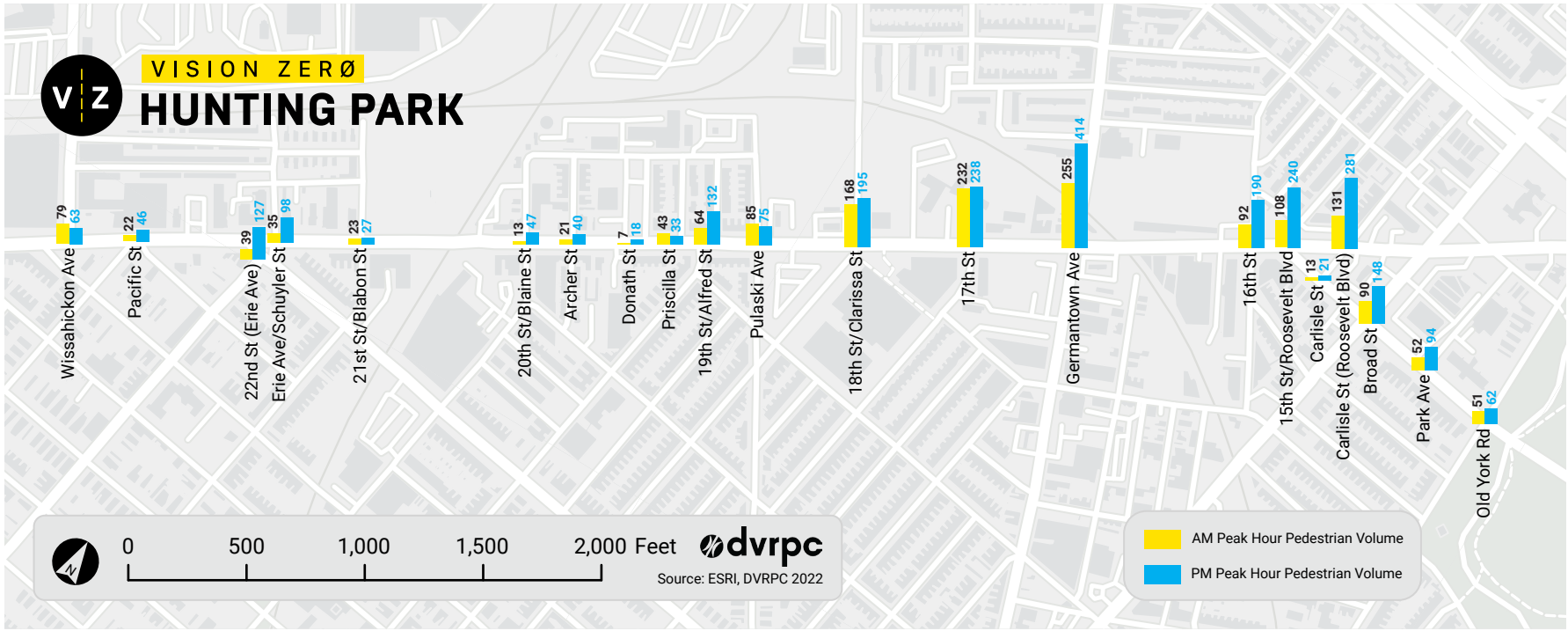
the busiest intersection in terms of pedestrian volumes is Germantown Avenue.

PM Peak Hours

- 16th Street;
- Broad Street;
- 19th Street/Alfred Street; and
- 22nd Street (at Erie Avenue).

In general, the peak hour pedestrian volumes are highest in the section of the corridor between 18th Street and Clarissa Street and Carlisle Street at Roosevelt Boulevard, which is home to Simon Gratz High School and the auto-oriented businesses near Broad Street. Meanwhile, the peak hour pedestrian volumes are lowest in the residential section of the corridor between Pulaski Avenue and 21st Street and Blabon Street.

Figure 8: Pedestrian Peak Hour Volumes

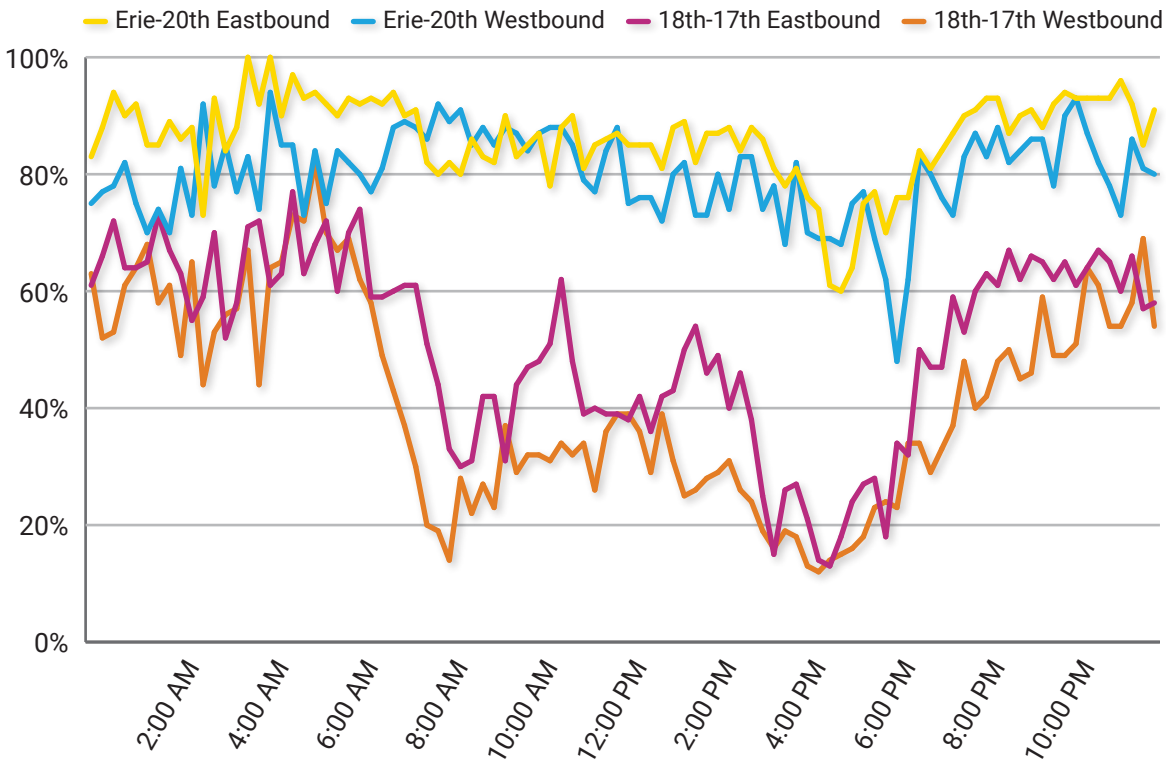


Vehicular Speeds

Automatic traffic recorders (ATRs) were placed along Hunting Park Avenue to record vehicular travel speeds during a non-holiday week in late November and early December. One set of ATRs were placed on the west side of the corridor between Wissahickon Avenue and 20th Street, while the other set of ATRs were placed on the east side of the corridor between 18th Street and 17th Street. The project team identified when and where vehicles exceeded the 30 miles-per-hour (MPH) speed limit on the corridor.

Figure 9 shows the percentage of vehicles traveling above the speed limit in both directions at both locations over 24 hours. Speeding on the corridor was much more prevalent between Wissahickon Avenue and 20th Street than between 18th Street and 17th Street. Most vehicles exceeding the speed limit on the corridor were traveling between 1 and 10 MPH over the speed limit. Speeding on the corridor was most common in the early morning and night-time hours. During both the AM and PM peak hours, speed most vehicles traveling between 18th Street and 17th Street were traveling at or under the speed limit, while most vehicles traveling between Wissahickon Avenue and 20th Street were traveling between 1 and 10 MPH over the speed limit.

Figure 9: Percentage of Vehicles Exceeding 30 Mile-per-Hour Speed Limit



Source: DVRPC 2022

Traffic Modeling

Trafficware's Synchro traffic analysis software was used to perform capacity analysis for both peak hours. Synchro is a macroscopic analysis tool used to quantify traffic conditions, determine intersection capacity, and optimize signal timings. Synchro uses Highway Capacity Manual (HCM) procedures to evaluate intersection Level of Service (LOS) and delay. Analysis was performed at all 21 intersections along the study corridor. The study network was created using aerial photos and field measurement for geometric inputs, and traffic signal phasing for each intersection was based on traffic signal plans provided by the City of Philadelphia.

Speeding on the corridor was much more prevalent between Wissahickon Avenue and 20th Street

than between 18th Street and 17th Street.

LOS

What LOS is: Level of Service (LOS) is a transportation engineering method used to quantify motor vehicle traffic conditions. The Highway Capacity Manual uses letter grades, "A" through "F," to describe vehicle congestion and average delay (in seconds) by turning movement, intersection approach, or entire intersections, as shown in **Table 1**. Agencies often base transportation and development decisions on their impact on LOS, with the intention of maintaining or improving the quality of life for residents and users of the local road network. However, traditional LOS does not paint the entire picture of mobility.

Table 1: Levels of Service (LOS)

SIGNALIZED INTERSECTIONS		UNSIGNALIZED INTERSECTIONS		INTERPRETATION
LOS	DELAY (S)	LOS	DELAY (S)	
A	≤10	a	≤10	Predictable and Stable Flow
B	>10-20	b	>10-15	
C	>20-35	c	>15-25	
D	>35-55	d	>25-35	Predictable but approaching Unstable
E	>55-80	e	>35-50	Unpredictable and Unstable
F	>80	f	>50	

Source: DVRPC 2022

What LOS is not: Although it uses letter grades, LOS results should not be read like a report card. The goal in traffic operations is not to achieve an LOS of A, but to create conditions that maintain stable traffic flow that is typically achieved within the LOS range of A to C. An entire network of intersections with LOS of A during peak hours often points to a system designed for more capacity than necessary. The customary LOS for urban collectors is D, according to the American Association of State Highway and Transportation Officials (AASHTO) Green Book.

The bigger picture: Focusing solely on LOS centers the conversation around vehicle congestion, without considering relationships and conflicts with other modes and skewing recommendations away from designs that create truly complete streets. Transportation improvement projects should prioritize the movement of people and goods, not just the movement of vehicles.

A variety of methods exist for calculating an LOS-like measure for other modes, such as bikes, pedestrians, and transit, and for calculating combined Multimodal LOS (MMLOS) measures. However, it is difficult to quantify the quality of service for non-motorized modes, since the comfort, convenience, and safety of walking, biking, and using transit is often more subjective. Many of these methods require copious amounts of data that may not be reliably available or are not trusted to result in an apples-to-apples comparison between modes. While this report will provide LOS results, it will also present ideas to support mobility for all road users. LOS should be considered as an important part of a larger picture of mobility.

Figure 10: Levels of Service (LOS): AM Peak Hour Existing Conditions

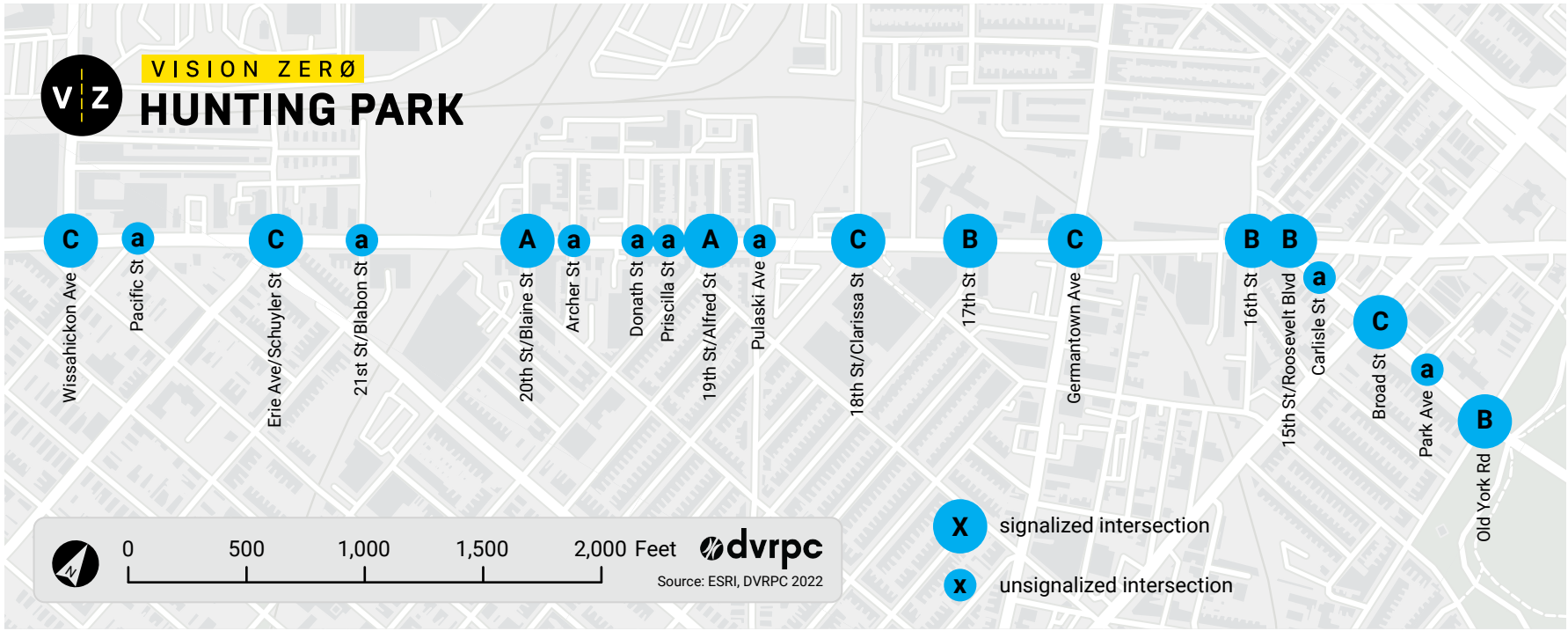
Existing Conditions

The peak-hour counts and existing traffic signal plans were input into traffic modeling software to calculate the existing delay and levels of service (LOS) at each intersection. This existing conditions traffic model was used to compare with recommendation alternatives.

Results

Under the existing conditions, all study intersections along Hunting Park Avenue operate at levels of service D or better during both the AM and PM peak hours. The intersection LOS for each intersection along the corridor under the existing conditions are shown in **Figure 10** (AM peak hour) and **Figure 11** (PM peak hour). All synchro reports can be found in **Appendix A**.

Figure 11: Levels of Service (LOS): PM Peak Hour Existing Conditions



Transit Analysis

Hunting Park Avenue between Old York Road and Wissahickon Avenue is primarily served by two SEPTA bus routes (Routes R and 1) and has 29 bus stops. The corridor is also crossed by:

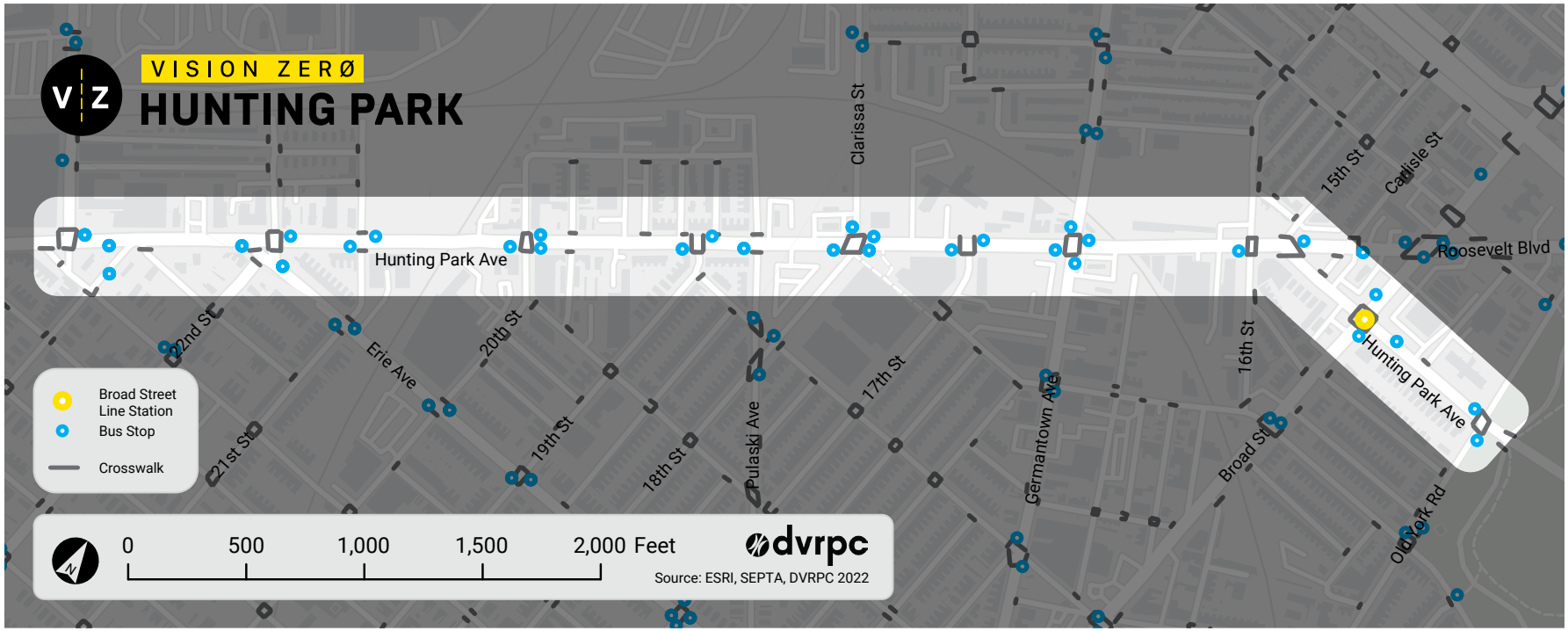
- Route 16 (at Broad Street);
- Route 23 (at Germantown Avenue); Route 53 (at 18th Street);
- Route 2 (18th Street);
- Pulaski Avenue, and 20th Street);
- Route H (at 18th Street, Erie Avenue, Wissahickon Avenue); and
- Route 33 and Route 56 (at Erie Avenue and 23rd Street).

The Broad Street Line stops at Hunting Park Avenue, drawing many pedestrians to the area.

SEPTA's Route R sees the most ridership along the corridor. Over 600 people ride Route R during its AM peak hour between 7:00 AM and 8:00 AM, while about 450 people ride Route R during its PM peak hour between 3 PM and 4 PM. Midday ridership between 8 AM and 3 PM is approximately 200 per hour. The stops with the highest passenger activity are at Wissahickon Avenue, Germantown Avenue, and Broad Street.

Route R experiences speed reliability issues when traveling along the corridor. Overall, Route R primarily runs at speeds lower than

Figure 12: Crosswalks and Transit Stops



The Route R is in the process of being transitioned to the Direct Bus B, providing high-frequency service between Frankford Transportation Center and Wissahickon Transportation Center.

the system average except at 6:00 AM, 8:00 AM, and 9:00 AM in the eastbound direction. The segment of Route R between Wissahickon Avenue and 19th Street runs faster than the segment of Route R between 18th Street and Broad Street. In addition, while Route R westbound consistently runs between 10 and 12 MPH except during the early morning or late evening, Route R eastbound runs at inconsistent speeds throughout the day. Route R westbound primarily runs at speeds at or above 12 MPH between 5:00 AM and 9:00 AM, but between 3:00 PM and 5:00 PM, Route R westbound runs at speeds of less than 10 MPH.

Eastbound PM peak trips on Route R between 18th Street and Broad Street take between five to seven minutes, significantly longer than the three minutes it typically takes for Route R to traverse this segment during off-peak hours.

Figure 13: Future SEPTA Direct Bus B

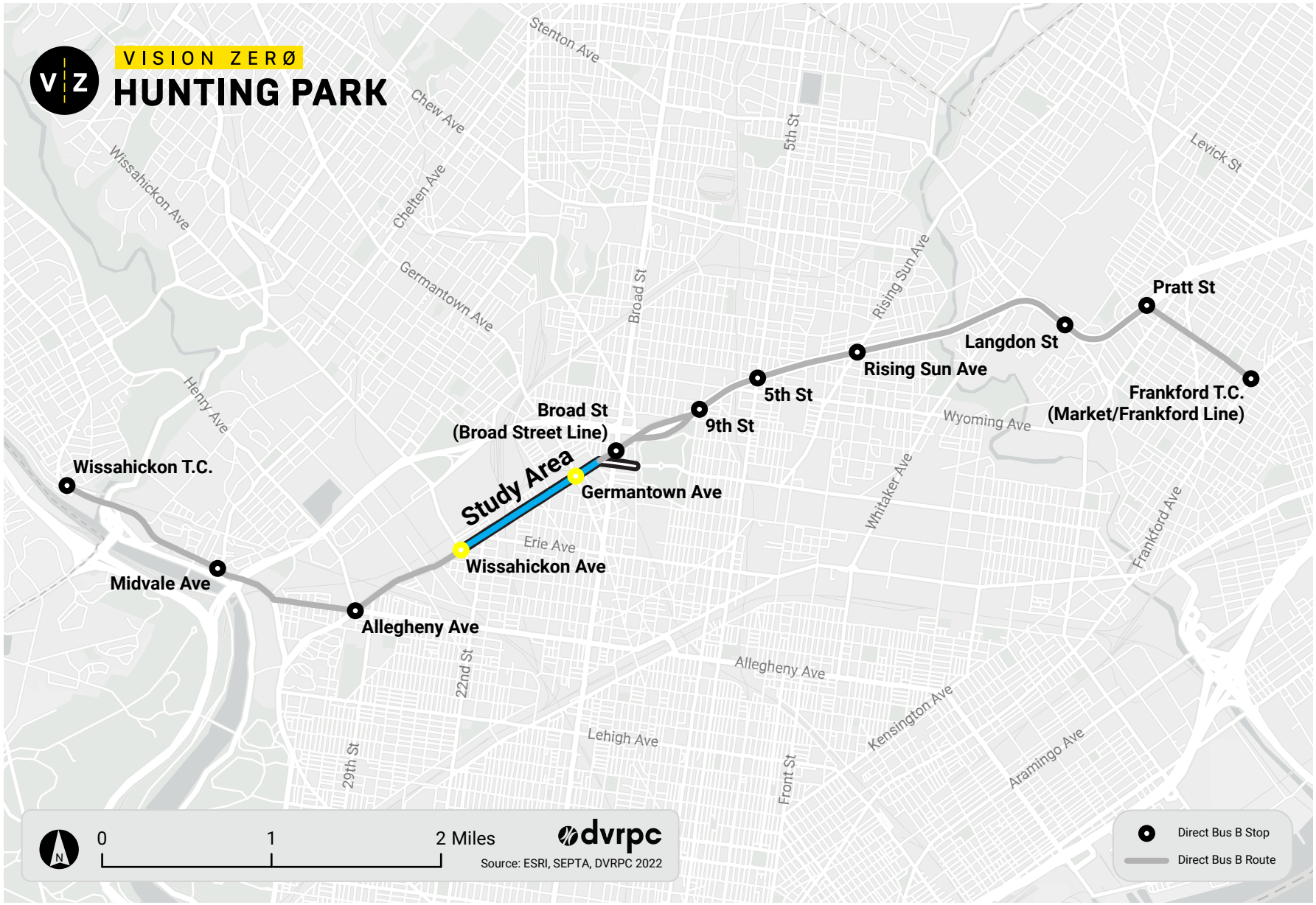
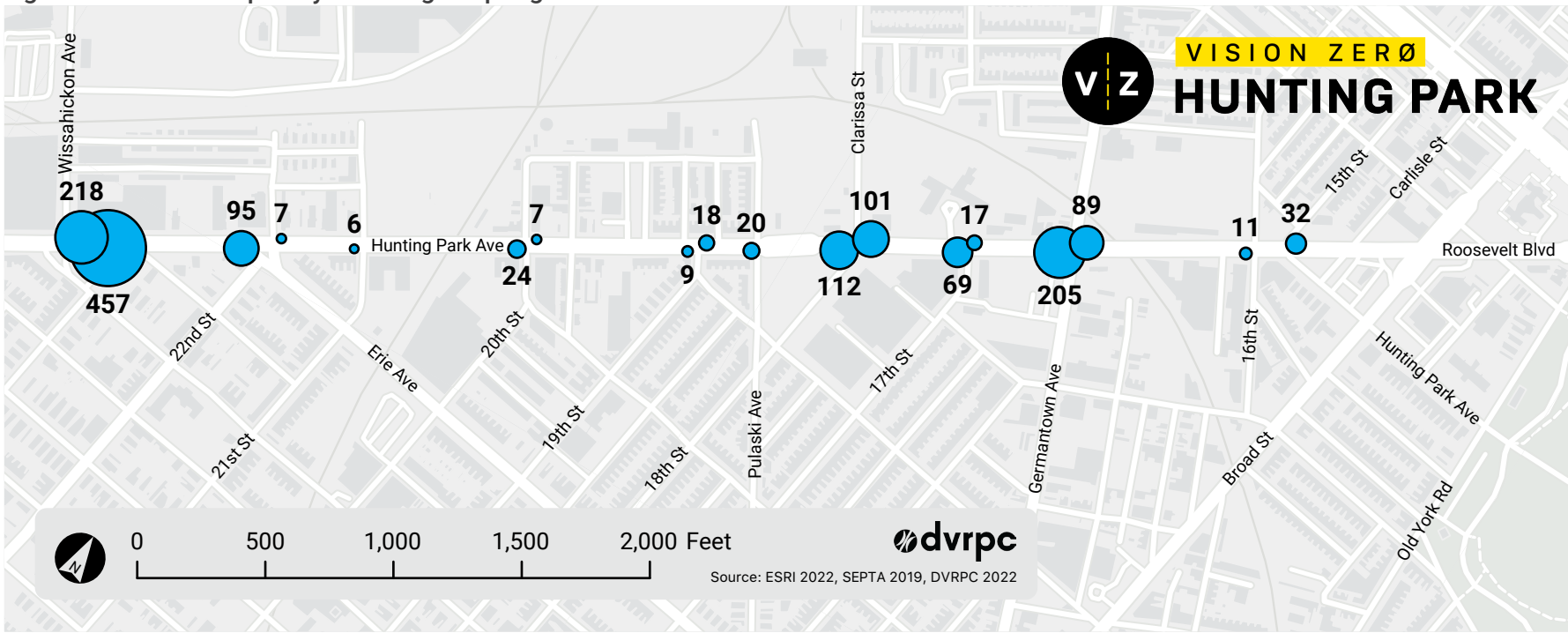


Figure 14: SEPTA Stop Daily Boardings—Spring 2019



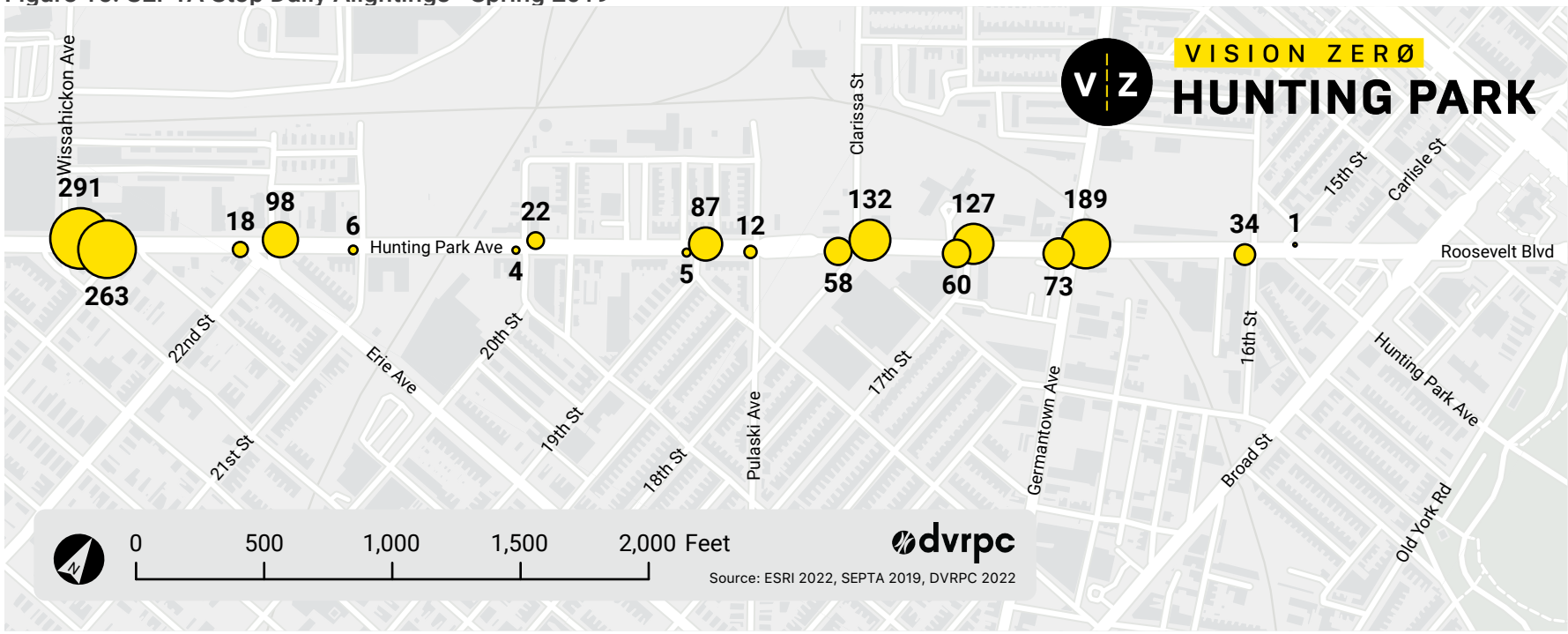
According to the draft network released in the fall of 2022, SEPTA's Bus Revolution includes plans for increased frequency along Hunting Park Avenue. The Route R is in the process of being transitioned to the Direct Bus B (shown in **Figure 13**), providing high-frequency service between Frankford Transportation Center and Wissahickon Transportation Center. All routes intersecting the corridor would also see an increase in service frequency.

Figure 14 and **Figure 15** show the average daily SEPTA bus stop boardings and alightings. These figures are based on SEPTA's Spring 2019 Automatic Passenger Count (APC) data. This data is a sample of all SEPTA bus trips for that time period. In other words, one can view this information as representative of the average spring day in 2019. The bus stops with the most frequent usage on the Hunting Park Avenue corridor are at Wissahickon Avenue, 18th Street, and Germantown Avenue.

Direct Bus B

In 2019, SEPTA and the City of Philadelphia partnered to extend Direct Bus Service along the full length of Roosevelt Blvd and Hunting Park Ave connecting Wissahickon Transit Center to Bucks County via Frankford Transit Center. SEPTA was awarded a $2M Federal Transit Administration (FTA) Bus and Bus Facilities grant to design and construct four Direct Bus B Stations along Hunting Park and Ridge. The City of Philadelphia received

Figure 15: SEPTA Stop Daily Alightings—Spring 2019

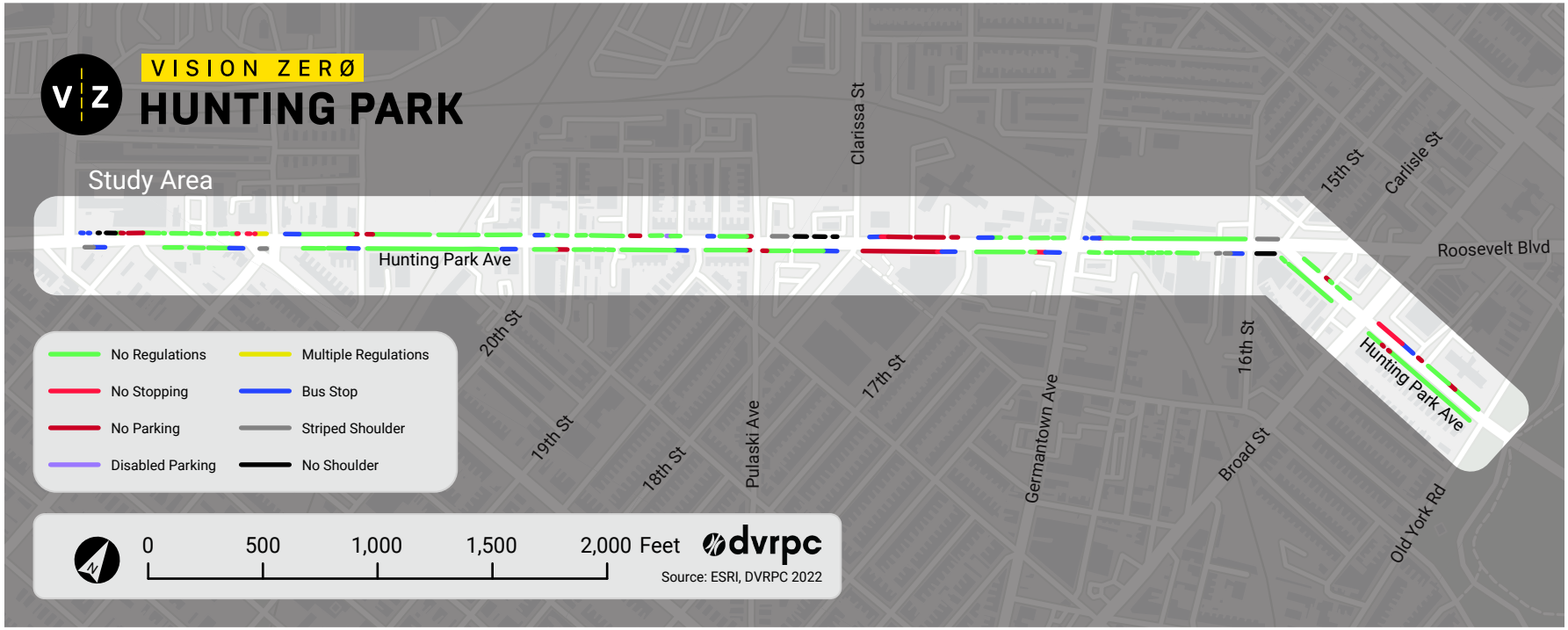


an additional $3M in grant funding to design and construct six Direct Bus B stations along Roosevelt Blvd. The project has been documented in DVRPC's TIP under federally obligated projects. In 2023, SEPTA and the City signed a memorandum of understanding to assign responsibilities and formalize the partnership.

In the 2021 Route for Change Project, SEPTA identified implementation of Direct Bus service on Roosevelt Blvd and Hunting Park Ave as near-term commitments for the agency by 2025.

SEPTA's Bus Revolution proposes to carry out the agency's commitments to Direct Bus service on Ridge and Hunting Park Ave in close coordination with the City of Philadelphia. In the draft plan, Route R will continue to operate as a local service and Direct Bus will operate as an overlay service, similar to Route 14/Direct Bus Service on Roosevelt Blvd north of Frankford Transit Center. The corridor will have combined service frequencies of 10 minutes or better from 6am to 9pm, creating frequent service with faster end-to-end travel times between Wissahickon Transit Center, Frankford Transit Center, and Bucks County.

Figure 16: On-Street Parking Regulations



On-Street Parking

Figure 14 shows the on-street parking regulations within the study area. For most of its length between Old York Road and Wissahickon Avenue, Hunting Park Avenue offers free parallel parking spots on both sides with no regulations. Most of the parking restrictions along the corridor are between 17th Street and 18th Street/Clarissa Street, where the westbound side does not allow parking at any time, while the eastbound side does not allow parking between 7 AM and 4:30 PM on school days. Another special parking restriction is on the eastbound side of the corridor approaching Archer Street, where trucks are not allowed to park between 6 PM and 6 AM. The westbound side of the corridor just after Schuyler Street, in front of the district headquarters of both the Police and Fire Departments, is under multiple restrictions, as it is reserved for police use only, it explicitly does not allow parking on the sidewalk, and it does not allow stopping in front of the fire house. The sections of the corridor between 15th Street and 16th Street, westbound between 17th Street and Pulaski Avenue, and westbound approaching Wissahickon Avenue have no parking spaces available, as these sections have no shoulders or striped shoulders. There are many driveways along the corridor that interrupt on-street parking, especially between Broad Street and Pulaski Avenue and between

Erie Avenue and Wissahickon Avenue.

Many places along the corridor experience issues with parking. Double parking was observed at Broad Street as well as in front of the funeral homes at 17th Street and at Archer Street. The project team observed vehicles parked on the sidewalk at Germantown Avenue and Pulaski Avenue, and adjacent to the Police and Fire Department district headquarters on Schuyler Street. Other parking issues along the corridor include vehicles stopped in the no-parking zone in front of Simon Gratz High School at 18th Street/Clarissa Street and vehicles parked on the north side of the intersection at 19th Street.

Hunting Park and 19th Street
Source: DVRPC

VISION ZERØ
HUNTING PARK

CRASH ANALYSIS

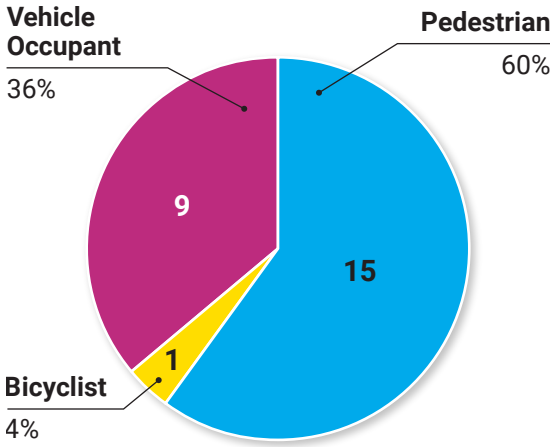
CRASH ANALYSIS SUMMARY • HIGH INJURY LOCATIONS • CRASH ANALYSIS BY SEGMENT • ROAD SAFETY AUDIT SUMMARY

A robust crash analysis was central to developing the recommendations and concept designs presented in this study. Studying crash data revealed a number of key concerns, including the high rate of hit pedestrian crashes between Wissahickon Avenue and 15th Street, the number of hit bicyclist crashes at the intersection of Old York Road, and the number and severity of crashes that occurred at high injury locations, discussed later in this section.

Crash Analysis Summary

The project team performed the crash analysis using PennDOT crash data, which is limited to injury and fatality crashes along the corridor, and excludes property damage only (crashes not resulting in a person hurt or killed). Killed and Severe Injury (KSI) is used to describe crashes where a person was killed or severely injured, a special category separating those events from the total of all injury and fatal crashes—the universe of crashes considered in this analysis. There were 242 reported injury and fatal crashes from 2017 to 2021, including 25 people killed or severely injured (KSI): 15 were pedestrians, 9 were vehicle occupants, and 1 was a bicyclist. These crashes involved 8 fatalities, 17 serious injuries (suspected at time of crash), 377 people injured (all types), and a total of 642 people involved. The following pie chart depicts the KSI by mode.

Figure 17: Number of People Killed and Seriously Injured (2017–2021)



Source: PennDOT 2017-2021

The following four collision types account for 91 percent of the crashes that resulted in an injury or a fatality:

- Angle (93 crashes);
- Pedestrian (65 crashes);
- Rear-end (36 crashes); and
- Same-direction sideswipe (26 crashes).

The year-over-year crash trend has held relatively steady with approximately 40 to 50 injuries and 4 to 5 KSI per year. The study team also investigated factors like illumination level, time of day, and weather conditions in search of over-representations.

Corridor-wide, 129 of 242 reported crashes resulting in injury or fatality (53 percent) were darkness-related and 16 of 21 (76 percent) killed and serious injury (KSI) crashes were

There were 242 reported injury and fatal crashes from 2017 to 2021, including 25 people killed or severely injured (KSI).

darkness-related. Of the KSI crashes involving cyclists and pedestrians, 13 of 15 KSI crashes (87 percent), and 53 percent of all reported crashes were darkness-related. More information can be found in **Appendix B**.

Additionally, red light running analysis identified that 13 of the 242 total injury crashes (5 percent) were confirmed as red-light running crashes, according to police reporting. Additional analysis of crash factors commonly associated with red-light running identified 7 crashes as speeding-related (3 percent), 36 crashes as angle crashes (15 percent), and 45 crashes as hit pedestrian crashes (19 percent). More information can be found in **Appendix B**.

Corridor-wide, 129 of 242 reported crashes resulting in injury or fatality were darkness-related

and 16 of 25 killed and serious injury (KSI) crashes were darkness-related. Of the KSI crashes involving cyclists and pedestrians, 13 of 15 crashes were darkness-related.

High Injury Locations

High Injury Locations are stop-controlled intersections that see higher rates of crashes. Along Hunting Park Avenue, 145 (60 percent) of the 242 total injury and fatality crashes occurred at high injury locations. Additionally, 13 (52 percent) of the 25 people killed or severely injured in a crash along Hunting Park Avenue were hit within one of these high injury locations (intersections are listed in order from west to east):

- Wissahickon Avenue;
- Erie Avenue/Schuyler Street;
- 19th Street;
- 18th Street/Clarissa Street;
- Germantown Avenue;
- Broad Street; and
- Old York Road.

While it's typical for intersections to be high crash locations due to the number of conflict points, it is notable that Hunting Park Avenue has an overwhelmingly high percentage (85 percent) of crashes occurring within intersections. This is perhaps due to the density of intersections and therefore the high percentage of roadway that is considered to be within an intersection (50 to 100 feet of the intersection, depending on the footprint of the intersecting streets).

Intersection at Old York Road
Source: DVRPC

While intersections are of particular importance in this study, it is important to note that 48 percent of people killed or severely injured in a crash along Hunting Park Avenue were involved in crashes that happened outside of an intersection. For example, 3 KSI crashes occurred between 20th Street and 21st Street, where the SEPTA overpass is located.

Figure 18: Study Area Crashes 2017-2021

Within the following narrative, a brief summary of the crashes at each of these high injury locations is presented, including a table of crash data by mode.

Crash Analysis by Segment

The Hunting Park Avenue corridor was divided into three segments (A, B, and C) according to the context of land use and geography for organization and to understand that crash trends may differ based on the context of the roadway and its surrounding land use. Each section will include an overall summary of the segment along with summary tables of the crashes at specific high injury locations, which are listed below.

Segment A stretches from Wissahickon Avenue to 18th Street/Clarissa Street and includes the high injury locations of Wissahickon Avenue, Erie Avenue/Schuyler Street, and 19th Street.

Segment B stretches from 18th Street/ Clarissa Street to 15th Street/Roosevelt Boulevard and includes the high injury locations of 18th Street/Clarissa Street and Germantown Avenue.

Segment C stretches from 15th Street/ Roosevelt Boulevard to Old York Road and includes the high injury locations of Broad Street and Old York Road.

HIGH INJURY LOCATION

Hunting Park Avenue and Wissahickon Avenue

Five pedestrians were struck at the Wissahickon Avenue intersection, including three pedestrians crossing Hunting Park Avenue on the east side of the intersection. This crosswalk connects significant pedestrian trip generators including transit stops and destinations north on Wissahickon Avenue. Left turn movements from Wissahickon Avenue southbound onto Hunting Park Avenue eastbound conflict with pedestrians using this crosswalk. Although this is a common signal configuration, the wide intersection design allows high speed left turns which, when combined with pedestrians using the crosswalk, increases the likelihood of crashes. Two pedestrians were also struck crossing Wissahickon Avenue by drivers turning left onto Wissahickon Avenue from Hunting Park Avenue westbound. Illumination may have been a factor in 5 of the 12 crashes at this location.

Table 2: Hunting Park Avenue and Wissahickon Avenue

MODE	# OF KSI CRASHES	TOTAL # INJURY AND/OR FATAL
Pedestrian-involved crashes	1	5
Bicyclist-involved crashes	0	0
Vehicle occupant only crashes	0	7
TOTAL	**1**	**12**

Source: PennDOT 2017-2021

Segment A: Wissahickon Avenue to east of 18th/Clarissa Street

The western end of the study area, at around two-thirds of a mile long, represents 53 percent of the total study area length and accounts for 50 percent of the total fatal and injury crashes (122 fatal and injury crashes) and 60 percent of the pedestrian-involved crashes. This section is overrepresented for pedestrian KSI with 12 of the 15 total pedestrian KSI that were recorded corridor-wide. One bicyclist-involved crash occurred along this stretch. Other crash types are typical of the whole corridor, including significant numbers of angle, rear-end, and same direction sideswipe crashes.

Intersection at Wissahickon Avenue
Source: DVRPC

HIGH INJURY LOCATION

Hunting Park Avenue and Erie Avenue/Schuyler Street

The intersection of Hunting Park Avenue with Erie Avenue and Schuyler Street is complex with three roads converging (22nd Street meets Erie Avenue very near the Hunting Park Avenue intersection). The police and fire department buildings, located along Hunting Park Avenue westbound at the corner where Schuyler Street meets Hunting Park Avenue, have driveways onto Hunting Park Avenue, adding to the complexity. There were 17 fatal and injury crashes at this intersection, including three KSI and three pedestrian injury crashes. In nine of the crashes, illumination may have been a factor. All hit pedestrian crashes occurred in the crosswalk over Hunting Park Avenue west of Schuyler Street and involved drivers turning left onto Hunting Park Avenue from Erie Avenue westbound. While angle crashes were the most common at this intersection, hit fixed object, hit parked vehicle, and rear-end crashes also each occurred more than once each, though not in the same locations. No hit pedestrian crashes occurred in the slip lane from Hunting Park Avenue eastbound to Erie Avenue.

Table 3: Hunting Park Avenue and Erie Avenue/Schuyler Street

MODE	# OF KSI CRASHES	TOTAL # INJURY AND/OR FATAL
Pedestrian-involved crashes	2	3
Bicyclist-involved crashes	0	0
Vehicle occupant only crashes	0	14
TOTAL	**2**	**17**

Source: PennDOT 2017-2021

Intersection at Erie Avenue/Schuyler Street
Source: DVRPC

Moving eastward there were 10 fatal and injury crashes between Wissahickon Avenue and Erie Avenue, including three pedestrian KSI crashes and two additional pedestrians involved in a single crash.

The distance from Erie Avenue to 20th Street/ Blaine Street is 1,000 feet and there are no crosswalks or traffic signals between these two intersections. This uninterrupted stretch passes 21st Street and the viaduct carrying SEPTA Regional Rail trains. 29 fatal and injury crashes occurred along this stretch including four KSI, of which one was a pedestrian (a total of 7 pedestrians were involved in the 29 crashes). In 13 of these crashes, illumination may have been a factor. Speeding was identified as a factor in one crash.

HIGH INJURY LOCATION

Hunting Park Avenue and 19th Street

19th Street is one-way carrying traffic northwest to Hunting Park Avenue. Crash analysis for 19th Street includes crashes that occurred in the intersections of Alfred Street and Priscilla Street due to the close proximity to 19th Street. The intersection design of 19th Street allows higher speeds of turning traffic onto Hunting Park Avenue, possibly because the approach has a dedicated signal phase. This is a complex intersection with all traffic exiting 19th Street turning left or right plus additional traffic turning onto Priscilla Street located opposite though offset to slightly west of 19th Street (however, no pedestrians were struck while crossing these minor street approaches).

Table 4: Hunting Park Avenue and 19th Street

MODE	# OF KSI CRASHES	TOTAL # INJURY AND/OR FATAL
Pedestrian-involved crashes	3	15
Bicyclist-involved crashes	0	0
Vehicle occupant only crashes	0	5
TOTAL	**3**	**20**

Source: PennDOT 2017-2021

The 470-ft stretch of Hunting Park Avenue from the Family Dollar at Donath Street to Pulaski Avenue had the highest concentration of hit pedestrian crashes along the corridor. This short stretch is a densely developed mix of housing and retail that generates auto, transit and vulnerable road user trips.

The Pulaski Avenue intersection, 200 ft east of 19th Street, is unsignalized and marks a transition where parking drops away on the westbound side of Hunting Park Avenue to make room for a center turn lane, widening the traveled way. Out of 26 fatal and injury crashes, there were 18 pedestrians involved, including 5 pedestrian KSI (accounting for all KSI in this subsection). In 13 crashes, illumination may have been a factor. Pedestrians were struck in every approach of the 19th Street intersection, both in and out of the crosswalks, but the most common location was in the crosswalk over Hunting Park Avenue west of 19th Street where seven pedestrians were struck.

Segment B: 18th/Clarissa Street to 15th Street/Roosevelt Boulevard

The middle portion of the study area, at one-third of a mile, represents 28 percent of the study area and accounts for 87 fatal and injury crashes (35 percent of the 242 total fatal and injury crashes). Five KSI

HIGH INJURY LOCATION

Hunting Park Avenue and 18th Street/Clarissa Street

The 18th Street/Clarissa Street intersection with Hunting Park Avenue saw 15 fatal and injury crashes, including one KSI and five pedestrians struck. The most common crash type was angle crashes. One crash involved red light running, according to police reports. Illumination may have been a factor in eight of the crashes. Most hit pedestrian crashes involved turning vehicles, especially in the crosswalk while crossing Clarissa Street on the westbound side of Hunting Park Avenue. The KSI crash at this intersection was a rear-end crash involving three vehicles on Clarissa Street southbound approaching the intersection. This was one of three rear-end crashes resulting in injuries.

Table 5: Hunting Park Avenue and 18th Street/Clarissa Street

MODE	# OF KSI CRASHES	TOTAL # INJURY AND/OR FATAL
Pedestrian-involved crashes	0	5
Bicyclist-involved crashes	0	0
Vehicle occupant only crashes	1	10
TOTAL	**1**	**15**

Source: PennDOT 2017-2021

occurred along this stretch, two of which were pedestrians. Compared to the rest of the study area, angle crashes made up a larger share of crashes along this stretch at nearly 50 percent. Hit pedestrian (18 percent) and same direction sideswipe (6 percent) crashes were less common than the rest of the corridor. This stretch of Hunting Park Avenue is marked by several important community assets, including the Mastery schools around Gratz High, the Triumph Baptist Church, and Marcus Foster Memorial Stadium. There is no discernible pattern in terms of time of day, week or year to suggest that operating times for these community assets influences crash rates.

Intersection at 18th Street/Clarissa Street
Source: DVRPC

HIGH INJURY LOCATION

Hunting Park Avenue and Germantown Avenue

Germantown Avenue and Hunting Park Avenue was the highest crash location along the study corridor with 30 fatal and injury crashes. Among vulnerable road users, there were five hit pedestrian crashes (including the sole KSI crash) and one hit bicyclist crash. Police reported red light running in five crashes and illumination may have been a factor in 18 crashes. Angle crashes were the most common collision type and few, if any, appeared to involve turning vehicles suggesting that crashes were due to through-movement conflicts.

Table 6: Intersection of Hunting Park Avenue and Germantown Avenue

MODE	# OF KSI CRASHES	TOTAL # INJURY AND/OR FATAL
Pedestrian-involved crashes	1	5
Bicyclist-involved crashes	0	1
Vehicle occupant only crashes	0	24
TOTAL	**1**	**30**

Source: PennDOT 2017-2021

17th Street meets Hunting Park Avenue at a T-intersection, creating conflicts for pedestrians with many turning vehicles. There were a total of six injury crashes here, including one hit pedestrian crash.

27 injury crashes occurred in the complex intersection of Hunting Park Avenue with 16th Street, 15th Street and Roosevelt Boulevard. Over half of crashes were angle crashes and four were rear-end, followed by three each of hit-fixed-object and hit-pedestrian. Police reported red light running in two of the crashes at this location. Illumination may have been a factor in 12 crashes. There were no KSI at the intersection.

Intersection at Germantown Avenue
Source: DVRPC

HIGH INJURY LOCATION

Hunting Park Avenue and Broad Street

There were 18 fatal and injury crashes at Broad Street, including one pedestrian KSI. Half of the fatal and injury crashes at Broad Street involved a pedestrian. Hit pedestrian crashes were much more common crossing Broad Street than Hunting Park Avenue, most involved crossing Broad Street south of Hunting Park Avenue including the KSI crash. Police reported red light running in two crashes. Illumination may have been a factor in ten crashes.

Table 7: Hunting Park Avenue and Broad Street

MODE	# OF KSI CRASHES	TOTAL # INJURY AND/OR FATAL
Pedestrian-involved crashes	1	9
Bicyclist-involved crashes	0	0
Vehicle occupant only crashes	0	9
TOTAL	**1**	**18**

Source: PennDOT 2017-2021

Segment C: East of 15th Street/ Roosevelt Boulevard to Old York Road

While the cross-section of Hunting Park Avenue remains largely unchanged after turning east toward Broad Street, the nature of the corridor changes significantly as it no longer serves as a connector to Roosevelt Boulevard and ends at the entrance to Hunting Park (the recreational area).

The block between Broad Street and Old York Road is the most residential block along the corridor. This section of the corridor is the shortest at only one-fifth of a mile or 18 percent of the total corridor length. Thirty-three fatal and injury crashes occurred here, including three KSI crashes. Crashes were similar to the rest of the corridor with hit pedestrian (36 percent) and angle (33 percent) crashes most frequent, followed by rear-end (21 percent), and then same direction sideswipe (9 percent).

HIGH INJURY LOCATION

Hunting Park Avenue and Old York Road

There were 11 fatal and injury crashes at Old York Road, including two KSI crashes, one involving a bicyclist and one resulting from a rear-end crash. There were a total of three hit pedestrian crashes and two hit bicyclist crashes (including the KSI). Most crashes were angle crashes in which both vehicles were making through movements. Police reported red light running in three crashes and illumination may have been a factor in seven crashes.

Table 8: Hunting Park Avenue and Old York Road

MODE	# OF KSI CRASHES	TOTAL # INJURY AND/OR FATAL
Pedestrian-involved crashes	0	3
Bicyclist-involved crashes	1	2
Vehicle occupant only crashes	1	6
TOTAL	**2**	**11**

Source: PennDOT 2017-2021

Road Safety Audit Summary

A Road Safety Audit (RSA) is the qualitative examination of a road that identifies potential safety issues and opportunities for improvement. RSAs are approached as a multidisciplinary effort and consider the safety and needs of all road users. Observations were grouped into one of three categories: (1) Operations, Interactions, and Behaviors; (2) Physical Environment and Infrastructure; and (3) Traffic Control Devices. These categories are reflected in the following sections.

The Hunting Park Avenue RSA was conducted over two days in early November 2022. The pre-audit meeting was held virtually on Tuesday, November 1, at 2 PM during which the team reviewed the project purpose, explored existing roadway characteristics, and discussed crash statistics from the universe of injury and fatal crashes (property damage only crashes were excluded).

The Field Audit, held the next day, Wednesday, November 2, from 2-5 PM, was an in-person visit to the study area as a group to identify issues and discuss improvement scenarios. The auditors were representatives from the project's stakeholder group including project team staff, City staff, SEPTA staff, and community organization members. Auditors were asked to consider the experience of

RSA team during the field audit
Source: DVRPC

people using all modes along Hunting Park Avenue: pedestrians, bicyclists, drivers, and transit users. Most participants used the DVRPC-designed RSA Data Collection Tool to record issues, while some took notes manually. Information collected from the RSA provided the foundation for issue identification and preliminary recommendations.

Segment A: Wissahickon to east of 18th/ Clarissa

Operations, Interactions, and Behaviors: Groups observed aggressive driving behavior and general impatience for other roadway users from Wissahickon Avenue to 18th Street/Clarissa Street. Sharp, high-speed, and/or illegal turning movements occurred on Wissahickon Avenue, Erie Avenue/22nd Street, and 19th Street. During the audit, one driver was observed driving in the wrong direction on Pulaski Avenue. Although prevalent throughout the corridor, speeding was most common between gaps in signalized intersections, such as in the vicinity of Blabon Street.

Despite the availability of nearby on-street and off-street parking, vehicles commonly parked on the sidewalks, particularly at:

- the southeast corner of Pacific Street;
- the northeast corner of Pacific Street, Wissahickon Avenue;
- 22nd Street/Erie Avenue/Schuyler Street;
- Archer Street, 19th Street;
- Pulaski Avenue; and
- 18th Street.

Additional parking issues, included double parking, especially during business hours of establishments like bars on Blabon Street and the funeral home at Archer Street.

Pedestrians were observed crossing intersections outside of pedestrian signal times along the corridor, notably at Wissahickon Avenue and Erie Avenue/22nd Street. Pedestrians also crossed at locations without crosswalks, such as at Pulaski Ave, where there is roughly 1,000 ft between crosswalks. At the southeast corner of 18th Street, students stood in the bus box while waiting for the bus.

Physical Environment and Infrastructure: Throughout the corridor, participants observed a lack of pedestrian scale lighting and roadway lighting. Areas of concern include:

- Wissahickon Ave;
- 22nd Street/Erie Avenue/Schuyler

Crossing between distant crosswalks (*first image*); truck traffic approaching crosswalk (*second image*); and debris below underpass during the field audit (*third image*)
Source: DVRPC

Street;
- the viaduct (gateway opportunity);
- 20th Street, Priscilla Street; and
- 19th Street.

Additional visibility/sight-line concerns were also identified at 19th Street and southbound on Clarissa Street.

Crosswalks were faded at Wissahickon Avenue, 21st Street, 20th Street, and Blabon Street, and not present at Pulaski Avenue, Blabon Street, and Erie Street. Curb cuts did not align with crosswalks at 19th and 20th Street, and curb cuts were not present at the northwest corner of Wissahickon Avenue and in some locations at the 22nd Street/ Erie Avenue/Schuyler Street intersection. Crosswalks were obstructed by a utility pole at Wissahickon Avenue and 22nd Street/Erie Avenue.

Throughout the corridor, sidewalk maintenance is required. Specific locations of broken or uneven sidewalks included:

- the southwest and northeast corners of Wissahickon Avenue;
- 22nd Street/Erie Avenue/Schuyler Street;
- east of 21st Street;
- 20th Street; and
- 19th Street.

Litter was found from Pacific Street to Erie Avenue. There was a gap in the street trees between Wissahickon Avenue and Erie Avenue on the north side. While minor ponding was present throughout the corridor, particularly at Pacific Street and at the south curb ramp of 20th Street, major flooding at the viaduct forces road closures several times a year. The new housing facility for older adults at the corner of Pacific Street may increase demand for improved pedestrian facilities, including longer pedestrian crossing times, reduced crosswalk length, and less distance between crosswalks.

Obtuse intersection turning angles encouraged speeding at Pacific Street, Wissahickon Avenue, and 22nd Street/Erie Avenue/Schuyler Street. Abandoned trolley tracks from Pacific Street to Erie Avenue created confusion for roadway users.

The following locations were identified as signage-only bus stops:

- between sections of Wissahickon Avenue and 21st Street;
- at 19th Street; and
- at 18th/Clarissa Street. There was also a large SEPTA bus depot on Pulaski Avenue.

Traffic Control Devices:
A variety of traffic control issues were observed from Wissahickon Avenue to 18th Street/ Clarissa Street. Despite prevalent speeding and aggressive driving along this complex corridor, the corridor lacked 'Yield to Pedestrian' signs. Speed limit signs were missing between 21st Street and the viaduct. At the time of the RSA, 'One-way' signage on Pulaski Avenue was missing. Pedestrian signals across the corridor were often too short or not present, such as along the southern crosswalks at 22nd Street and Erie Avenue. The angled mast arm supporting the traffic lights at Wissahickon creates visibility challenges for the southbound and eastbound approaches. Road safety auditors found the right-on-red at 19th Street to be problematic, leading to potential crashes. There was also faded and cluttered pedestrian signage at 22nd Street/Erie Avenue/Schuyler Street.

Segment B: 18th/Clarissa to 15th/ Roosevelt Boulevard

Operations, Interactions, and Behaviors:
Similar aggressive behaviors continued east of 18th Street/Clarissa Street until Hunting Park Avenue splits and the through movement continues as Roosevelt Boulevard. During the audit, team members witnessed six vehicles run red lights during school dismissal at 18th Street/Clarissa Street, and one ran a

Truck and bus traffic at 20th Street during the field audit
Source: DVRPC

Eastbound on Hunting Park Avenue (*first image*); Outside Marcus Foster Memorial Stadium (*second image*); and crossing at Broad Street (*third image*)
Source: DVRPC

red light at 16th Street. Several vehicles also sped up for yellow signals at 18th Street and 17th Street. Left turning vehicles at 17th Street did not yield to pedestrian activity. Stakeholders informed the RSA group that the area between 18th Street and 17th Street has high pedestrian volumes due to its proximity to the school, senior apartments, and the boys and girls club. Outside of Gratz High School, at 18th Street/Clarissa Street, clusters of students inched into the right-of-way while waiting to cross the street, where the high visibility beacon was out of commission.

Much like the previous corridor, pedestrians traveled outside of pedestrian signal times, particularly at Germantown Avenue and 16th Street. Also at Germantown Ave, vehicles exceeded queues, blocking the intersection. Stopping buses also impacted the queue length at times. Parking concerns included parking in 'No Parking' Zone during dismissal in front of Gratz High, double parking at Pulaski Hall, and sidewalk parking at auto body shops on Germantown Avenue and in front of Marcus Foster Memorial Stadium.

Physical Environment and Infrastructure:
Similar to several other intersections throughout the corridor, the skewed intersection of 18th Street is problematic and may lead to further pedestrian endangerment. Speedway gas station's driveway at the north east corner of 18 Street/Clarissa Street was unusually wide, allowing drivers to speed through. The curb cuts at 18th Street/ Clarissa Street did not align with crosswalks and the bike lane on Clarissa Street ended at Hunting Park Avenue. The corridor generally had under-maintained sidewalks and several abandoned curb cuts. Crosswalks were faded at 18th Street and Germantown Avenue and were not present between 15th and 16th Street. Additionally, ponding was observed at the northern 15th Street crosswalk. Like the remainder of the corridor, 18th Street to 15th Street lacked pedestrian scale lighting, notably at 17th Street. Additional visibility issues were present at 17th Street (turning sight-lines) and on the west and north sides of the Germantown Avenue intersection (vertical obstruction).

Traffic Control Devices:
At 18th Street and Clarissa Street, left turn lanes were not complemented by a left turn signal phase. Additionally, the high visibility school zone beacon was not operational. At Germantown Avenue, vehicular traffic exceeded queues, blocking the intersection. Finally, pedestrian signals along the south side of Hunting Park at 15th Street did not align with the traffic signal to allow crossing. The traffic signals at 15th and 16th Streets

were uncoordinated.

West of 15th/Roosevelt Boulevard to Old York Rd

Operations, Interactions, and Behaviors

On the shortest segment of the corridor, most concerns revolved around the intersection of Broad Street and Hunting Park Avenue, where auditors observed a significant number of left turns onto Broad Street. In one instance, a left turning articulated bus struggled to complete a turn onto Broad Street. Food trucks and street vendors parked at the northeast corner of the sidewalk, and their customers were observed double parking. The curb cuts at McDonald's were obstructed by parked trucks. At the easternmost intersection of the corridor, Old York Road, the gateway entrance of Hunting Park obstructed sight lines for left turns going into and out of the park. Additionally, auditors observed vehicles speeding and failing to yield to pedestrians along both Hunting Park Avenue and Old York Road. This intersection lacked pedestrian signals.

Physical Environment and Infrastructure:

This segment of the corridor, much like the remainder of the study area, had sidewalk and crosswalk maintenance concerns and lacked pedestrian-scale lighting. The eastern crosswalk at Roosevelt Boulevard and Hunting Park Avenue was quite long, putting pedestrians in harm's way for a length not typical along the corridor. Curb cuts did not align with crosswalks on Carlisle Street. Pavement rutting was prevalent on Hunting Park Avenue west of Broad Street. A wooden board was found at the southwest corner ramp of Broad Street. There were visibility issues at Old York Road due to poor sight lines for left turns.

Traffic Control Devices:

The audit team observed that the pedestrian signal at Broad Street did not provide adequate crossing time for pedestrians to comfortably cross the street. Offset issues were identified at Old York Road. Additionally, there were no pedestrian signals present at the intersection of Old York Road.

VISION ZERØ
HUNTING PARK

PUBLIC OUTREACH

COMMUNITY ENGAGEMENT SUMMARY • FALL COMMUNITY ENGAGEMENT • FALL ENGAGEMENT RESULTS • SUMMER COMMUNITY ENGAGEMENT • SUMMER ENGAGEMENT RESULTS

Gathering feedback from the public was a primary goal of the Vision Zero: Hunting Park project. It was important to collect feedback on perceptions of safety and mobility prior to developing recommendations, and to gather input on concept alternatives to get community direction and buy-in to a preferred design.

Community Engagement Summary

The study team deployed a number of strategies to gather feedback from the community for this project, including tabling at events planned by community organizations in the area to engage people in conversation about the project, surveying people online and in-person, and holding one-on-one conversations with community stakeholders such as neighborhood community organization representatives and block captains. Some of the organizations and individuals we worked most closely with are listed below:

- Hunting Park Community Garden;
- Hunting Park Connected;
- Esperanza & Impacto Magazine;
- Bicycle Coalition; and
- Chinita Bradshaw.

Overall, the community engagement efforts resulted in feedback from approximately 500 community members.

Fall Community Engagement

In the fall of 2022, the project team reached out to the community to identify areas and issues of concern along Hunting Park Avenue from Wissahickon Avenue to Old York Road. To reach a representative sample of the neighborhood, the team created and distributed surveys in both English and Spanish through several different means. The team created an online survey and webmap, which was advertised for ten days through Facebook and Instagram ads targeted to residents of zip codes 19129, 19132, 19140, 19141, and 19144.

In total, about 1,900 postcards were mailed to residents in the study area and about 200 postcards were printed out to be distributed at in-person events. These postcards contained project information and a link to the survey. The team posted 30 posters with survey and event information throughout the corridor.

Haunted Hunting Park
Source: DVRPC

The study team identified and reached out to over 25 local organizations to share the survey, as well as offer paper surveys for drop off/pick up. The team also attended three community events throughout October to conduct surveys.

Face-to-face intercept surveys were conducted at two locations, the intersection of Broad Street and Hunting Park Avenue and the 23rd Street and Venango Street Bus Loop, on a Monday in early November. Each location was staffed by three volunteers over a three-hour period. Four gift cards were used as an incentive for people to answer either the online or in-person survey.

Fall engagement effort resulted in 405 relevant surveys.

127 surveys were paper surveys, while 278 surveys were online surveys from the nine-county Greater Philadelphia region.

Fall Engagement Results

These engagement efforts resulted in 405 community members completing surveys. 127 surveys were paper surveys, while 278 surveys were online surveys from the nine-county Greater Philadelphia region.

About 28 percent of respondents lived in the 19140 zip code, the location of the study area, while about 7.5 percent of respondents lived outside the 19140 zip code but in another local zip code (19129, 19132, 19141, and 19144). The in-person survey saw more responses from people living in or near the study area than the online survey, which saw more responses from people all over Greater Philadelphia.

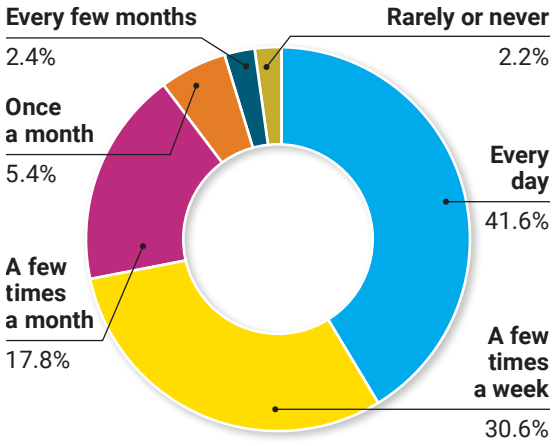
Engagement efforts aim to collect input from individuals local to the Hunting Park community and reflect the demographics of this area.

About 46 percent of respondents identified as White, while about 36 percent of respondents identified as Black or African American and 30 percent of respondents identified as Hispanic or Latino (sum is greater than 100 percent due to respondents identifying with multiple races). People identifying as Black or African American, who comprise 75 percent of the population in the study area according to the 2020 ACS 5-Year Estimates, were underrepresented in this engagement.

People identifying as White submitted more online surveys, while people identifying as Black or African American were more proportionately represented in the in-person survey.

Nearly 40 percent of respondents were between 18 and 34, while only 3 percent of respondents were under 18, and 8 percent of respondents were 65 and over. The youth (under 18) and elderly (65 and over) populations, who comprise 20 percent and 17 percent, respectively, of the population in the study area according to the 2020 ACS 5-Year Estimates, were underrepresented in this engagement. Sixty percent of respondents identified as female, while 40 percent of respondents identified as male. Over 20 percent of respondents indicated having a disability that impacts the way they travel.

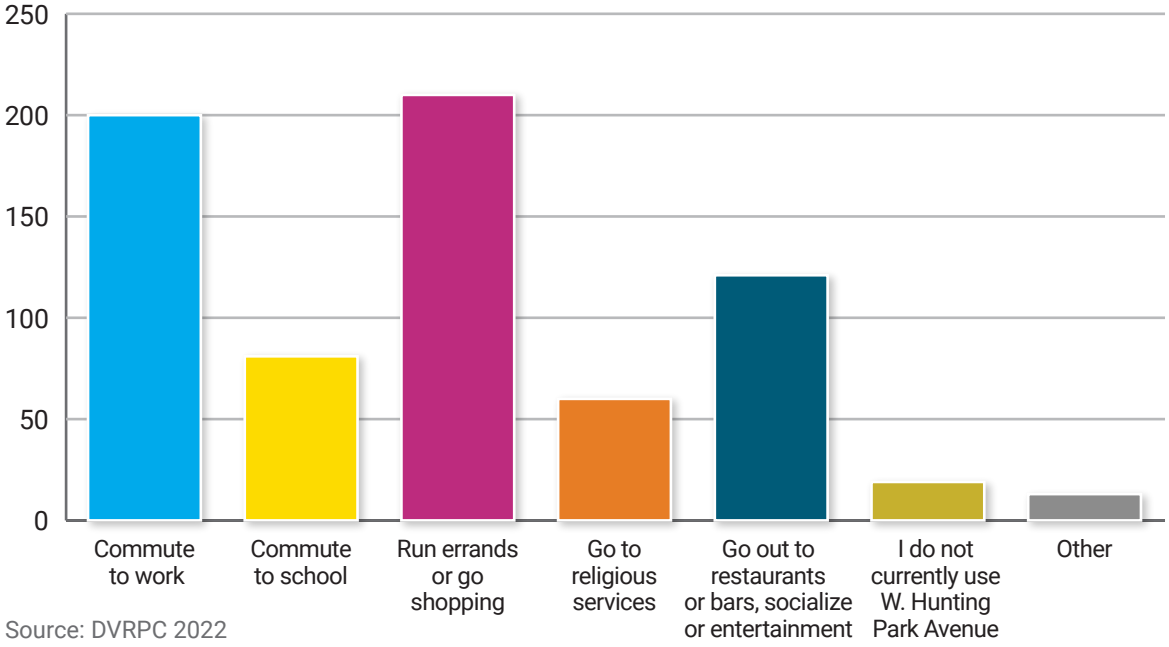
Figure 19: Frequency of Corridor Use



Source: DVRPC 2022

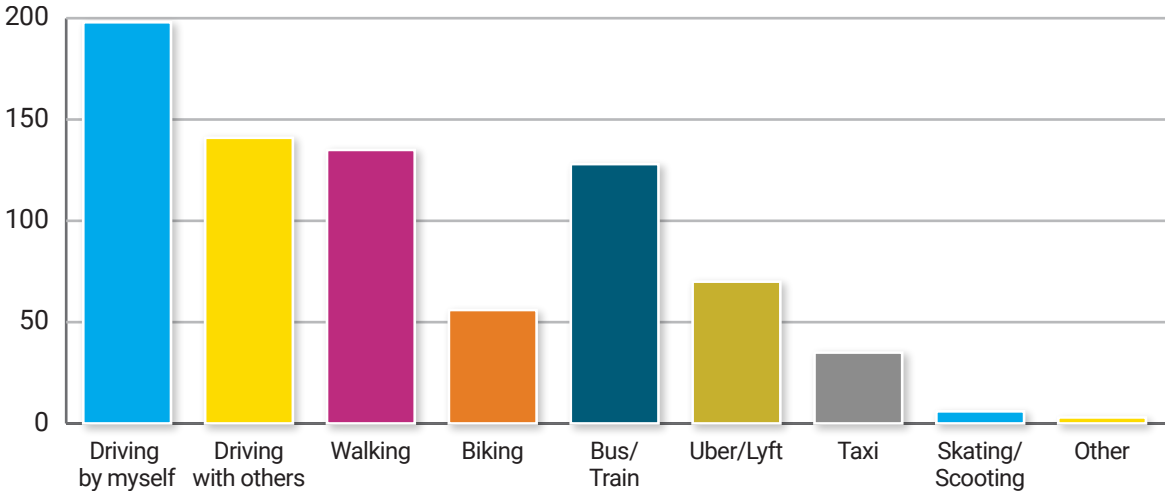
Most respondents used the corridor often, with 40 percent of respondents using it daily and 90 percent of respondents using it at least a few times a month. A pie chart indicating how often respondents used the corridor is provided in **Figure 19.** Respondents used the corridor for many reasons, with over 200 respondents (51 percent of those who responded to the question) using Hunting Park Avenue for commuting to work or running errands/going shopping. Over 100 respondents (25.5

Figure 20: Purpose of Corridor Use



Source: DVRPC 2022

Figure 21: Travel Mode on Corridor



Source: DVRPC 2022

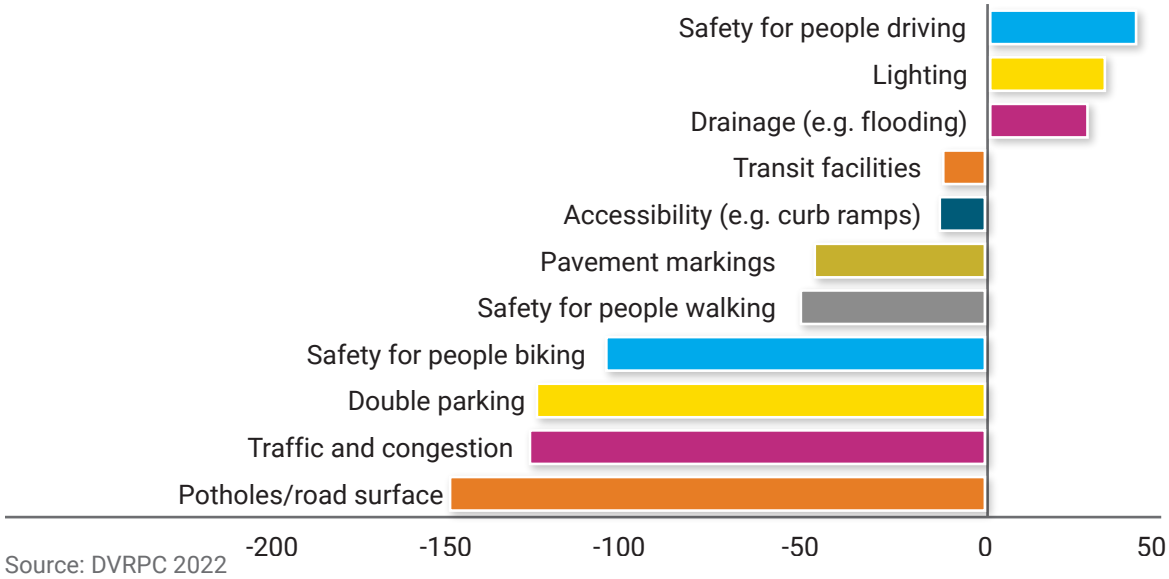
percent) use Hunting Park Avenue for socializing, entertainment, and going out to restaurants or bars. A bar chart showing why respondents used the corridor is provided in **Figure 20.**

Driving was extremely prevalent on the corridor, as nearly 200 respondents (51 percent) reported driving by themselves and more than 100 respondents (25.5 percent) reported driving with others along Hunting Park Avenue. Walking and using public transit were common modes for traveling along the corridor, as more than 100 respondents (25.5 percent) walked or took a bus or train. A bar chart indicating how respondents traveled on the corridor is provided in **Figure 21.** Local respondents traveled along Hunting Park Avenue using similar modes as respondents from outside the five local zip codes. However, local respondents were more likely to drive with others or walk and less likely to take a bus or train than respondents from outside the area.

Complete results from the survey are provided in **Appendix C**.

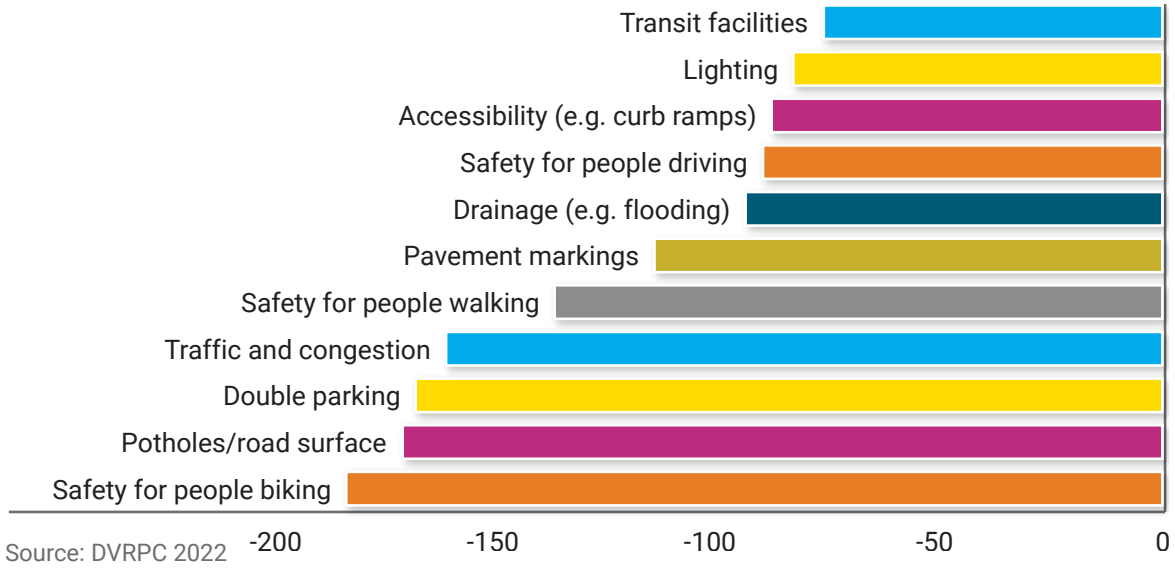
The survey asked participants to rate the condition of transportation infrastructure along Hunting Park Avenue. When including all respondents, the corridor was rated negatively in all but three conditions. The

Figure 22: Conditions Rating, All Respondents



Source: DVRPC 2022

Figure 23: Conditions Rating, Local Respondents



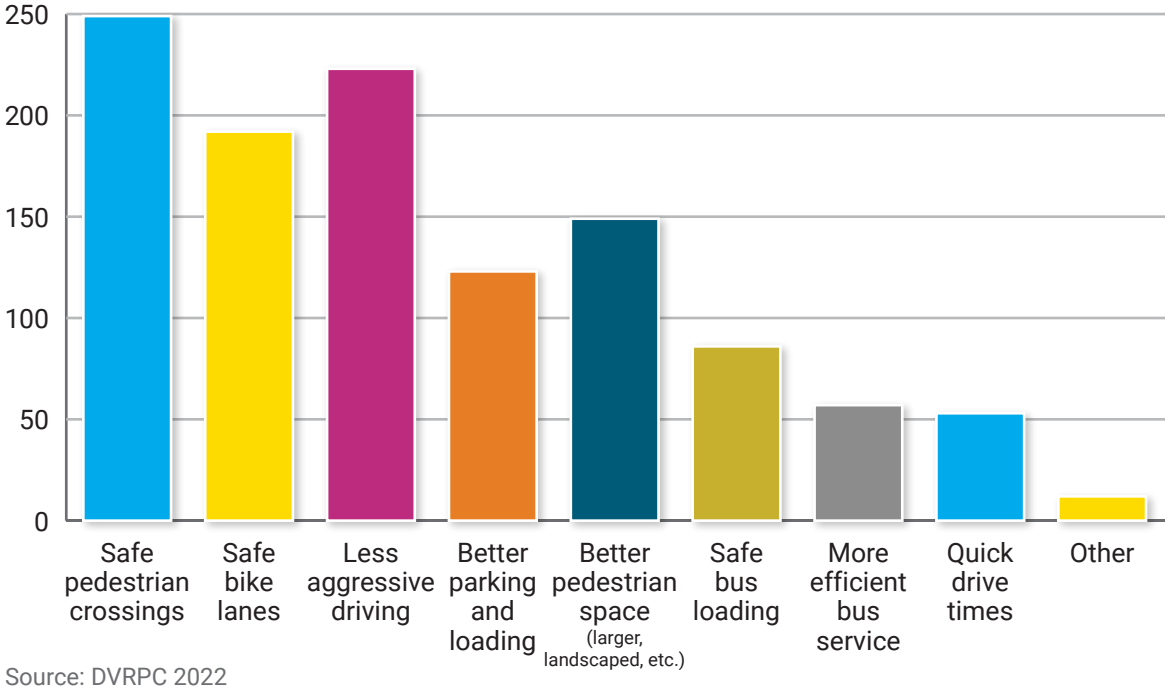
Source: DVRPC 2022

The lowest ranking conditions included potholes/ road surface, congestion, double-parking, and safety for people biking

while respondents rated safety for people driving, lighting, and drainage the highest.

lowest ranking conditions included potholes/ road surface, congestion, double-parking, and safety for people biking while respondents rated safety for people driving, lighting, and drainage the highest. The physical conditions and use of the roadway (except for safety for people driving) were rated lower than the accompanying infrastructure. A bar chart indicating how all respondents rated conditions on the corridor is provided in **Figure 22.**

Figure 24: Priorities for Improvement



Source: DVRPC 2022

Local respondents rated all conditions negatively, with transit facilities being rated the least negative. Similar to respondents from outside the five local zip codes, local respondents rated lighting, accessibility, safety for people driving, and drainage higher than other conditions. A bar chart indicating how local respondents rated conditions on the corridor is provided in **Figure 23.**

The survey then asked participants to prioritize safety improvements. Safe pedestrian crossings and less aggressive driving were top priorities for the corridor. Nearly 200 respondents (51 percent) prioritized safe bike lanes. Quick drive times, more efficient bus service, and safe bus loading were prioritized by fewer than 100 respondents (25.5 percent), indicating they were the lowest priorities. Overall, priorities related to improved pedestrian and bicycle infrastructure were more common than improvements related to automobile and transit infrastructure. A bar chart indicating the priorities of respondents for improving the corridor is provided in **Figure 24.** Generally, local respondents had similar priorities to other respondents.

The survey presented two open-ended questions in which participants had the opportunity to discuss their experiences with and suggestions for the improvement of Hunting Park Avenue.

Question 1: Thinking about the last month, what were some of the challenges you faced while traveling on W. Hunting Park Avenue? Did those challenges impact how you chose to travel (such as driving instead of walking or taking transit)?

The most common factor limiting travel in the respondent's desired mode was traffic stress and congestion. While some drivers avoid the area entirely or are forced to make detours during peak hours, others choose different modes of transportation (such as walking or taking transit) to avoid the stress of driving or parking along Hunting Park Avenue. Double parking, dirt bikes, and aggressive driving were also cited as challenges for driving along the corridor. Pedestrians and cyclists who experience traffic stress, however, reported traveling less in their desired mode due to fear for their personal safety. The most

common reports of traffic stress came from driver speeds and drivers' failure to yield to pedestrians at crossings. For pedestrians especially, high driving speeds and aggressive driving made walking in the area feel unsafe.

Those who reported wanting to walk, cycle, or use public transportation more, cited personal safety concerns that limited the opportunity to use their desired traveling modes or caused them to avoid traveling the Hunting Park Avenue corridor, especially during peak travel hours or at night. Fear of crime and gun violence are atop the list of personal safety concerns. Respondents also commented on environmental conditions like dust, ponding, and poor waste management posing challenges to walking and cycling. Respondents reported that sidewalks were sometimes blocked by vendors or parking, presenting yet another challenge.

Some respondents want to use public transportation more, but found that a lack of reliability, route access, and amenities (bus shelters, benches, etc.) limited their engagement.

Overall, an overwhelming majority of responses cited

street maintenance (fixing potholes, updated signage, clearer road markings, etc.) and speed management

as a needed improvement along the corridor.

Question 2: How do you think safety along W. Hunting Park Avenue could be improved?

Many respondents identified a desire to improve safety conditions for pedestrians, cyclists, and transit users. Other pedestrian infrastructure improvements were mentioned, as well, including improved sidewalk maintenance, curb ramp access, and more rarely, pedestrian crossing bridges, and sidewalk fencing. A large number of respondents suggested re-timing pedestrian crossing signals to allow more time to cross, especially at wide intersections. For transit riders, respondents suggested improving or adding transit infrastructure like bus shelters, seating, and better signage. The area around Simon Gratz High School was one location explicitly identified as needing safety improvements. Respondents also suggested street tree planting and other greening efforts along the entire corridor.

Overall, an overwhelming majority of responses cited street maintenance (fixing potholes, updated signage, clearer road markings, etc.) and speed management as needed improvements along the corridor. Suggestions for speed management included lowering speed limits, using cameras to enforce speed limits and red light running, and installing vertical deflection.

A number of respondents suggested improvements to traffic controls and related signage. Some argued for better traffic light synchronization, and others suggested adding more traffic lights to address speeding concerns. Overall, respondents desired more signage to better communicate speed limits, safety concerns, and other traffic management issues.

Other street improvements were suggested primarily by drivers wishing to improve traffic congestion or otherwise improve the driving experience along Hunting Park Avenue. Suggestions included regrading the road, expanding the road width to add more travel lanes, and improving parking facilities.

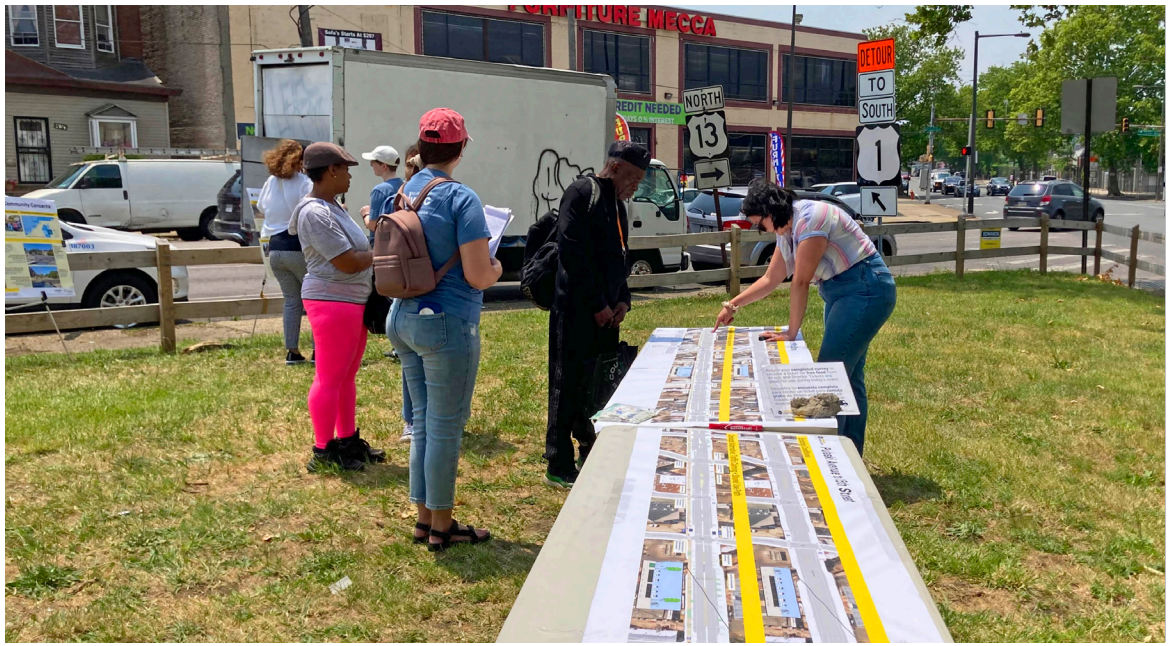
Policing was another frequently suggested improvement. This included traffic policing (presence during rush hours, red light and speeding cameras, etc.) and crime policing (increased patrols). Related suggestions included enhanced lighting, improved waste management, and the installation of emergency phone booths.

Summer Community Engagement

Design Alternatives Surveying

After developing the initial concept alternatives with safety recommendations for the corridor, the project team engaged the community again to gather feedback on those recommendations. The project team collaborated with community organizations and members to help identify potential event locations and to promote the recommendation feedback survey.

In June 2023, a community open house was held at Carlisle Street Park (Hunting Park Avenue and Roosevelt Boulevard), where residents had the opportunity to learn about the study and recommendations, give feedback, both conversationally and through a survey, and enjoy free food. During the event, Carlisle Street was temporarily closed to simulate the recommendation of expanding the park to include Carlisle Street. The event was staffed by ten people, consisting of staff from both DVRPC and the Office of Transportation, Infrastructure, and Sustainability (OTIS), who shared information about the project and the proposed recommendations.



Hunting Park Open House
Source: DVRPC

In June 2023, a community open house was held at Carlisle Street Park (Hunting Park Avenue and Roosevelt Boulevard),

where residents had the opportunity to learn about the study and recommendations, give feedback, both conversationally and through a survey, and enjoy free food.

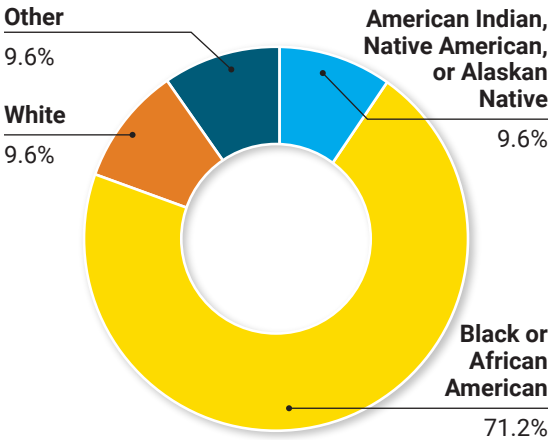
Of the 57 respondents, 46 stated that Vision Zero: Hunting Park recommendations would make them feel either safer or a lot safer.

To advertise the event, the project team mailed postcards to approximately 1,900 neighbors' homes and posted about 30 flyers throughout the corridor. Additionally, the team posted advertisements in local newspapers and on DVRPC's social media pages (Facebook, Instagram, and Twitter). In addition to the in-person event, online surveys were available for about three weeks, opening the day of the community engagement event and closing at the beginning of July. Forty-eight respondents completed in-person surveys and 9 respondents completed online surveys, for a total of 57 respondents.

Summer Engagement Results

Respondents to the recommendations survey were roughly representative of the study area. Eighty-eight percent of respondents reported a zip code, and 62 percent of that group lived in 19140, which covers the study area. The remainder were from other parts of Philadelphia.

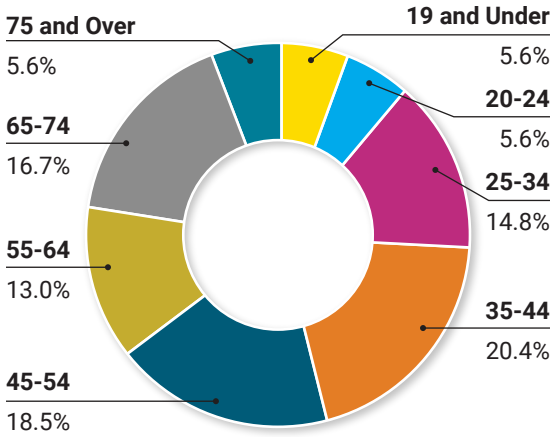
Figure 25: With which race do you identify?



Source: DVRPC 2023

Nearly all (95 percent) respondents identified their race, with 71 percent of respondents identifying as Black; 10 percent as American Indian, Native American, or Alaskan Native; 10 percent as White, and 10 percent as some other race (**Figure 25**). Most respondents (87 percent) identified an ethnicity; of these, 8 percent identified as being of Spanish/ Hispanic/Latino origin.

Figure 26: What is your age range?



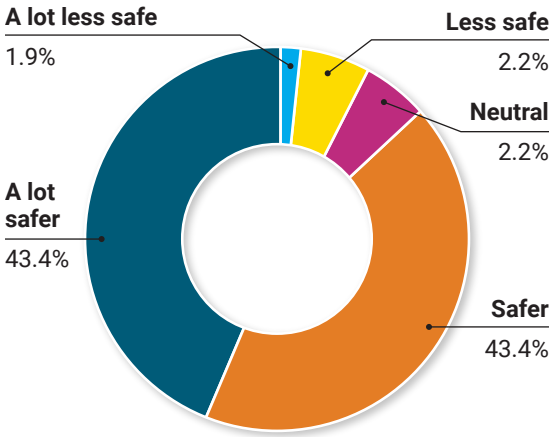
Source: DVRPC 2023

The survey had a nearly even distribution of respondents between the ages of 25 and 74 (**Figure 26**). Of people that responded, 58 percent identified as male and 42 percent identified as female. Out of all respondents, 26 percent reported a disability that required mobile assistance.

Respondents most commonly travel along Hunting Park Avenue by walking, driving alone or with others, or by bus/train. The majority of responses were received from residents walking up to the open house event and, therefore, results may be skewed

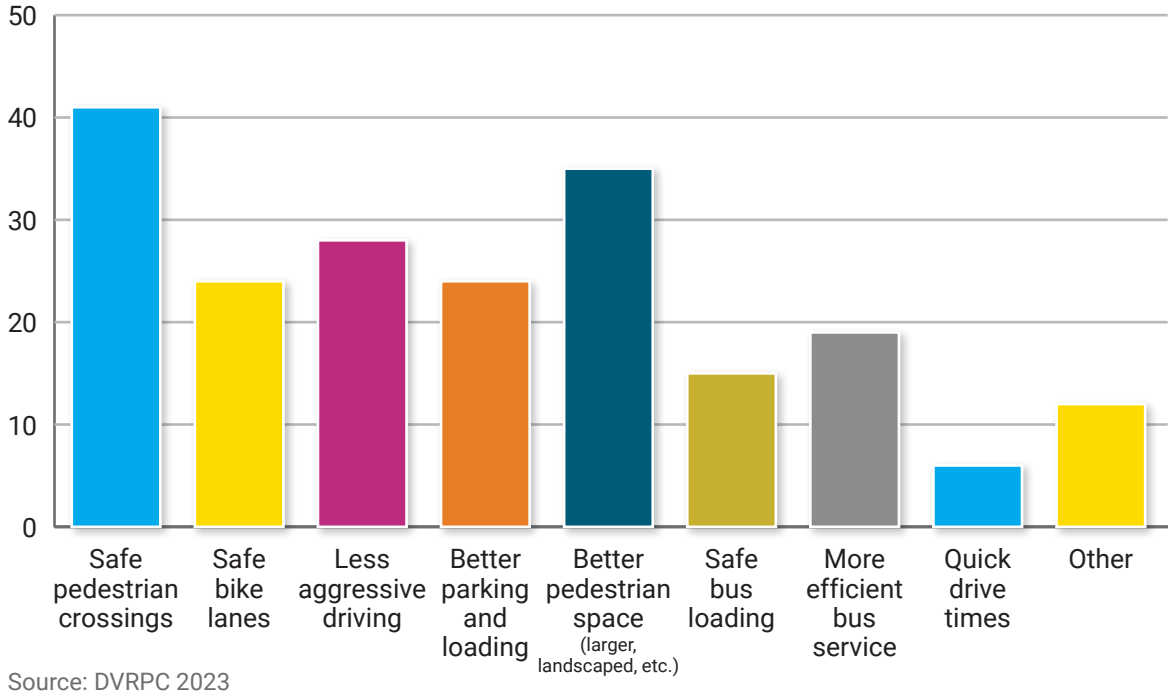
towards pedestrian concerns. Of the 57 respondents, 46 stated that Vision Zero: Hunting Park recommendations would make them feel either safer or a lot safer (**Figure 27**). Respondents indicated that safer pedestrian crossings and less aggressive driving would improve the feeling of safety the most, followed by safer bike lanes and safer bus loading (**Figure 28**). Community members also expressed a desire for vertical deflections, increased police presence, red light cameras, street furniture, and better lighting.

Figure 27: Overall, do these improvements to Hunting Park Avenue make you feel safer walking, biking, or driving?



Source: DVRPC 2023

Figure 28: Which improvements would make you feel safer?



Source: DVRPC 2023

At the in-person open house and in the online survey, the project team provided participants with the opportunity to comment on preferred design options along the corridor. Of the participants who responded, most stated that they agreed with the use of traffic calming elements along the corridor, the shared-use path, and closing Carlisle Street. Fifty-eight percent of respondents preferred a sidewalk-level separated two-way bikeway on Hunting Park Avenue from Roosevelt Boulevard to Old York Road rather than on-street bike lanes. Detailed community engagement survey results can be found in **Appendix C**.

VISION ZERØ

HUNTING PARK

STUDY APPROACH

OBJECTIVE AND PRIORITIES • RECOMMENDATION TOOLKIT

This section outlines the goals and objectives that factored significantly into the recommendations presented in the next chapter. This approach was the result of the analysis of existing conditions, including the traffic and crash analyses, as well as the community outreach, outlined in the previous chapters.

Objective and Priorities

There are three objectives for this project:

1. **Safety** is approached through the framework of Vision Zero; the ultimate goal of Vision Zero is to achieve zero traffic fatalities through targeted and proven safety strategies.
2. **Mobility** is sought for all road users, and the project aims to provide efficient travel and operations for everyone.
3. **Community vitality** is an acknowledgment that local residents and businesses are most affected by transportation decisions on the corridor. The project aims to support local businesses and residents while providing well-maintained roads and planning for future growth in a way that benefits all residents and business owners.

To achieve these objectives, the project team devised goals that should be pursued throughout the study corridor, as well as goals specific to sub-corridors.

Corridor-wide goals:

- High visibility crossings to support pedestrian desire lines;
- Traffic calming: through and turning movements;
- Well-supported transit to enhance rider experience and corridor function;
- Parking policies and access management to support businesses and residents, and that anticipate future growth; and
- Reduce heat island effects.

Sub-corridor priorities

Wissahickon Avenue to 18th Street/Clarissa Street

- Address illegal parking issues (parking on sidewalk, etc.).
- Shorten crosswalk lengths.
- Improve bus stops.
- Increase pedestrian-scale lighting.
- Add landscaping and greening.
- Address ponding and flooding.

Safety, mobility, and community vitality

are the three key objectives for the vision for this project.

18th Street/Clarissa Street to Roosevelt Boulevard

- Address red light running and speeding.
- Reduce angle crashes.
- Increase crosswalk visibility.
- Reduce queue lengths.
- Improve pedestrian safety, especially during school dismissals.

Roosevelt Boulevard to Old York Road

- Improve traffic light coordination. Address transit congestion.
- Introduce traffic calming measures.
- Improve visibility issues.
- Improve cross section.

Recommendation Toolkit

The proposed recommendations for the Hunting Park Avenue corridor were chosen from a recommendation toolkit, developed by the project team and stakeholders. The toolkit elements were chosen to prioritize the project vision (safety, mobility, and community vitality). Many elements benefit multiple project objectives.

Curb Extension
Source: OTIS

Safety Recommendations

Recommendations to improve safety include pedestrian safety improvements, bicyclist safety improvements, and vehicular safety improvements, as described below:

Pedestrian Safety Improvements:

- **Curb extensions** narrow the crossing distance for pedestrians and increase visibility and safety for pedestrians.
- **Pedestrian countdown timers** are recommended at existing signalized intersections and should provide adequate time for pedestrians to cross safely.
- **Driveway consolidation** reduces the number of driveways that cut into the sidewalk to limit conflicts between pedestrians and vehicles.
- **Crosswalk straightening** creates a direct crossing, shortening the distance that pedestrians need to travel across the street.
- **Street trees and planters** strategically placed to prevent sidewalk parking to improve mobility for pedestrians, provide environmental benefits, increase shade to cool temperatures, and can help calm traffic.
- **Pedestrian-scale street lighting** allows for improved visibility of pedestrians at night.
- **Center median** improves safety for drivers, and in some places creates a refuge island for people crossing the street.

Bicyclist Safety Improvements:

- A **sidewalk-level shared-use path** creates separate space for both pedestrians and bicyclists.
- **Sidewalk-level separated two-way bicycle tracks** are two-way bike lanes located on the same side of the sidewalk, mimicking a typical two-way street.
- **Bike lanes** provide dedicated space for bicyclists on the street to separate bicyclists from vehicles.
- **Bike turning boxes** are recommended areas at the head of traffic lanes at signalized intersections that provide enhanced visibility and safety for bicyclists.
- **Green striping** across driveways and through intersections provide added visibility.

Vehicular Safety Improvements:

- **Curb extensions** increase visibility and reduce travel speeds for motorists to improve safety for all users.
- **Reduced traffic lane width** decreasing vehicle speeding. Travel lanes are right-sized to 10’-11’ within the study area,

Raised Crosswalk
Source: Getty Images

Shared-Use Path
Source: OTIS

creating space for a center median.

- **Road diets**, deemed feasible between Roosevelt Boulevard and Old York Road, will right-size the road to properly reflect vehicular capacity needs while reducing speeds and enhancing driver safety.
- **Speed slots** are speed humps with strategically placed breaks that require drivers to slow down before crossing while allowing emergency vehicles to pass unhindered.[26]
- **Raised crosswalks** allow pedestrians to cross the street at or close to sidewalk-level and require drivers to slow down before crossing.
- **Straightened intersections** improve the visibility of pedestrians, bicyclists, and vehicles and reduce pedestrian crossing distances.

Mobility Recommendations

Several mobility recommendations were included in the toolkit to provide efficient travel and operations for all users of the road.

- **Transit signal priority (TSP)**, a queue jump, and a bus-only lane are recommended at select intersections along Hunting Park Avenue to reduce transit interaction with motorists and decrease transit delays caused by turning vehicles.
- **Bus bulb outs** extend the curb into the parking lane to allow buses to remain in the travel lane during a stop and create a larger space for riders to board and depart the bus.
- **Bus shelters** are shown in accordance with SEPTA's new Direct Bus stops.

Community Vitality Recommendations

Recommendations were also made for community vitality to support local businesses and residents, while providing well-maintained roads and planning for future growth in a way that benefits all residents.

- **Gateway treatments** are placemaking improvements that welcome roadway users to the area.
- **Expanded green space** provides more areas for community members to gather and socialize.
- **Roadway repaving** will address key community concerns like potholes and faded striping to improve the safety and experience of the corridor.
- **Street trees** provide shade and help reduce the urban heat island effect, they also help calm traffic and beautify the corridor.
- **Green stormwater infrastructure (GSI)** stores water runoff and contains plants that absorb and filter runoff to reduce the amount of sewer overflows.[27] Specific locations would need to be further coordinated with the Philadelphia Water Department (PWD).

Speed Slot
Source: OTIS

[26] A Comparative Study of Speed Humps, Speed Slots and Speed Cushions (2004), LaToya Johnson & A.J. Nedzesky, Federal Highway Administration

[27] Green Stormwater Infrastructure (n.d.), Philadelphia Water Department

VISION ZERØ
HUNTING PARK

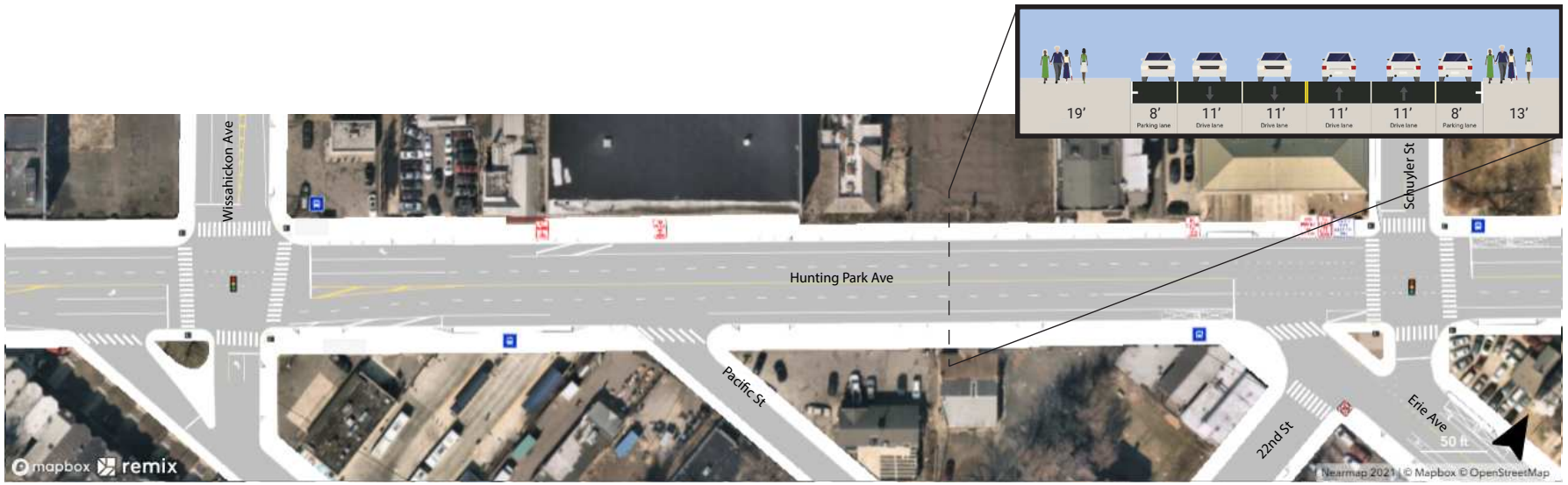
RECOMMENDATIONS

PROPOSED IMPROVEMENTS • PROPOSED LEVELS OF SERVICE (LOS) • NEXT STEPS

Proposed Improvements

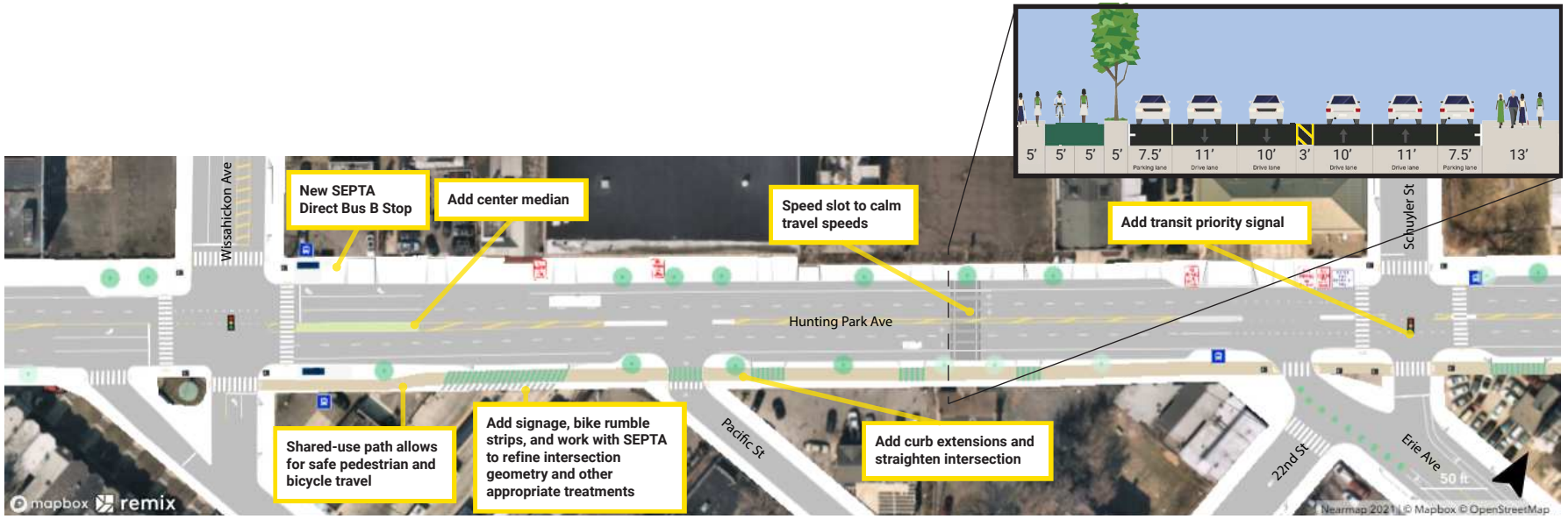
The following pages include maps of the existing conditions and proposed recommendations along segments of the Hunting Park Avenue corridor. Recommendations were chosen from the toolkit guided by the project vision, corridor-wide goals, and sub-corridor priorities.

Figure 29: Existing Conditions — Wissahickon Avenue to Erie Avenue/Schuyler Street



Concept created in Remix, 2023

Figure 30: Proposed Improvements — Wissahickon Avenue to Erie Avenue/Schuyler Street



Concept created in Remix, 2023

Wissahickon Avenue to Roosevelt Boulevard

The westernmost portion of Hunting Park Avenue supports high-volume traffic. The project team analyzed a road diet along this portion of the corridor, which proved to be infeasible for the existing peak-hour volumes. Therefore, two lanes of travel in each direction remain.

Although removing a lane is not currently recommended, there are other countermeasures that can be implemented to reduce speed and improve safety for all users. Beginning at Wissahickon Avenue, the project team proposes the following improvements:

- Right-size travel lanes: narrow parking lanes to 7', and narrow center travel lanes to 10' with a 1' offset edge stripe and a 2' concrete center median where feasible, or 3' gored median where driveway access is needed. Outer lanes remain 11' for optimized bus operations.
- Convert the gore median at the westbound approach of Wissahickon Avenue to a concrete median with the opportunity for landscaping.
- Shorten the existing crosswalks with curb bumpouts.
- Install a sidewalk-level, shared-use path along the south side of Hunting Park Avenue behind SEPTA's Direct Bus B shelter. Coordinate with SEPTA on the Direct Bus B shelter siting. Optimal path alignment would be located behind the bus shelter, providing the most visibility to bus operators and bicyclists. This will require coordination and collaboration with SEPTA; any costs associated with relocating the Direct Bus B shelter would be assumed by the City and this project
- Stripe the crosswalks and green bike lanes across streets and driveways to increase visibility of pedestrians and cyclists along the shared-use path.

Wissahickon Avenue to Erie Avenue/ Schuyler Street

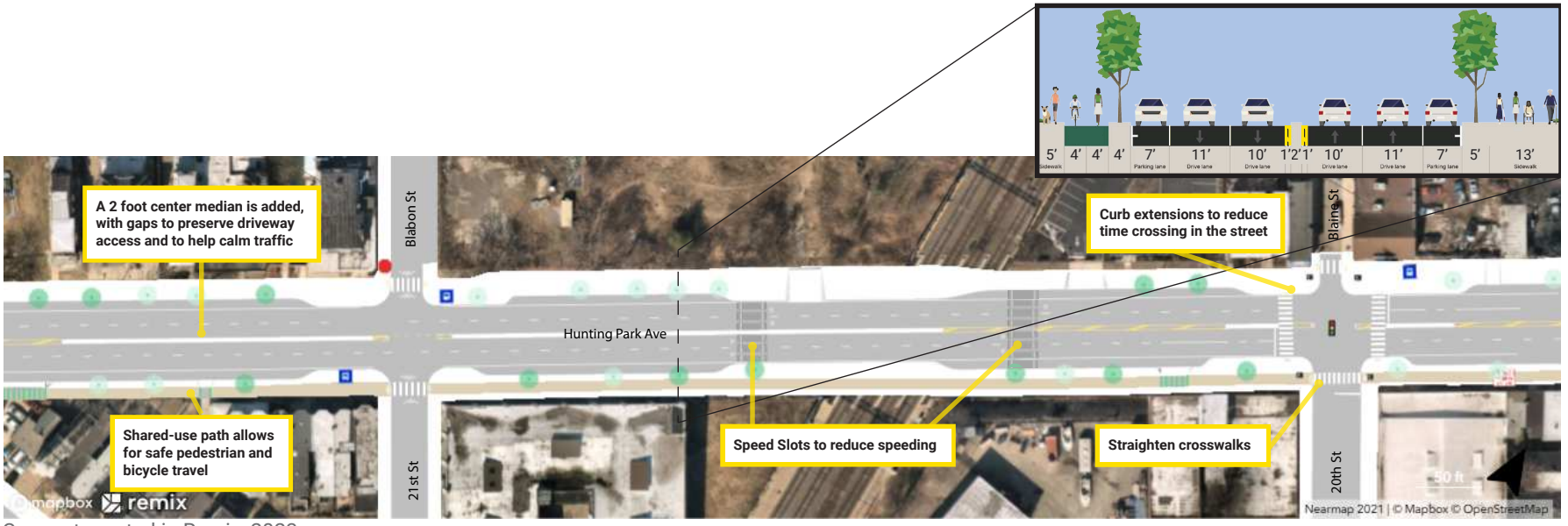
Figures 27 and 28 show the existing and proposed conditions of Hunting Park Avenue between Wissahickon Avenue and Erie Avenue/Schuyler Street.

- Narrow the intersection with Pacific Street and install a raised crosswalk to slow turning movements.
- Narrow the intersection with Erie Avenue/Schuyler Street with curb bumpouts and install concrete medians.
- At Erie Avenue/Schuyler Street, extend the existing median on the on the north side only and convert 22nd Street to one-way southbound only to maintain current bus operations. Work with SEPTA and the Streets department to further explore feasibility of this improvement.
- Striping improvements to connect Hunting Park Avenue to the existing bike lanes along Erie Avenue.
- The proposed multi-use path has the potential to create conflicts with the SEPTA's Venango Bus Loop, which has a high volume of buses turning in and out of the loop. The City and its design engineers are committed to coordinating closely with SEPTA's Bus Operations and Civil Engineering staff to identify a design solution for the driveway that prioritizes safety for bus operators, bus riders, pedestrians, and cyclists.
- Provide clear signage, bike rumble strips, conflict markings to make bicyclists as visible as possible in front of bus loop, and to make bicyclists aware of buses entering/exiting the loop.

Figure 31: Existing Conditions — 21st Street to 20th Street

Concept created in Remix, 2023

Figure 32: Proposed Improvements — 21st Street to 20th Street



Concept created in Remix, 2023

21st Street to 20th Street

Figures 29 and 30 show the existing and proposed conditions of Hunting Park Avenue between 21st Street and 20th Street.

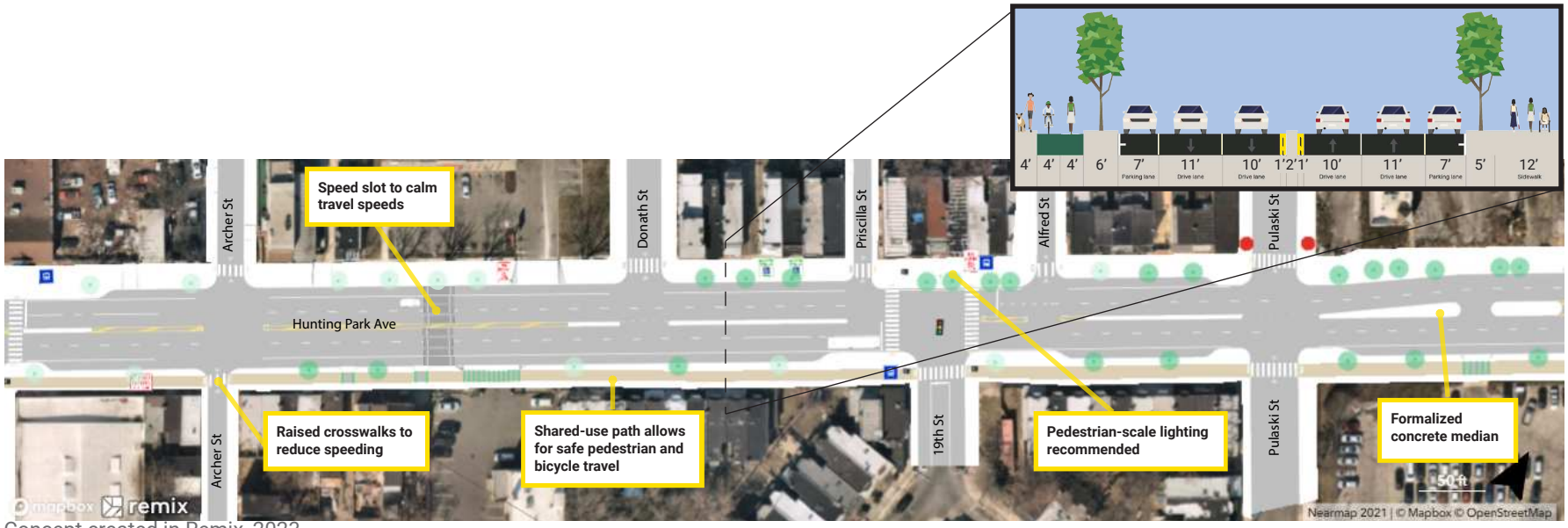
Continuing east past the intersection of Erie Avenue/Schuyler Avenue, the project team proposes the following improvements:

- Continue the proposed lane-narrowing, concrete median, and shared-use path along Hunting Park Avenue. Along this stretch of the corridor, the median is 2' wide with 1' buffer on either side.
- Raise the existing crosswalks across 21st Street and 20th Street to slow turning movements and improve pedestrian safety.
- Install curb bumpouts at the intersection with 21st Street to streamline bus operations, provide more pedestrian space, and shorten crosswalks.
- Install speed slots on either side of the railroad underpass. During field work and the Roadway Safety Audit, the project team observed high speeds at this location, encouraged by the lack of turning opportunities and grade changes due to the underpass.
- The railroad underpass experiences excessive flooding and would be a good location for GSI. Suggest further investigation and coordination with PWD.
- Parking was observed to be underutilized beneath the railroad overcrossing. Widen the sidewalks here to reduce speeding and improve safety.
- Widen sidewalks to improve safety and enhance pedestrian experience. This is achieved by removing parking in some under-utilized portions of the roadway and could require a parking study.

Figure 33: Existing Conditions — Archer Street to Pulaski Avenue

Concept created in Remix, 2023

Figure 34: Proposed Improvements — Archer Street to Pulaski Avenue



Concept created in Remix, 2023

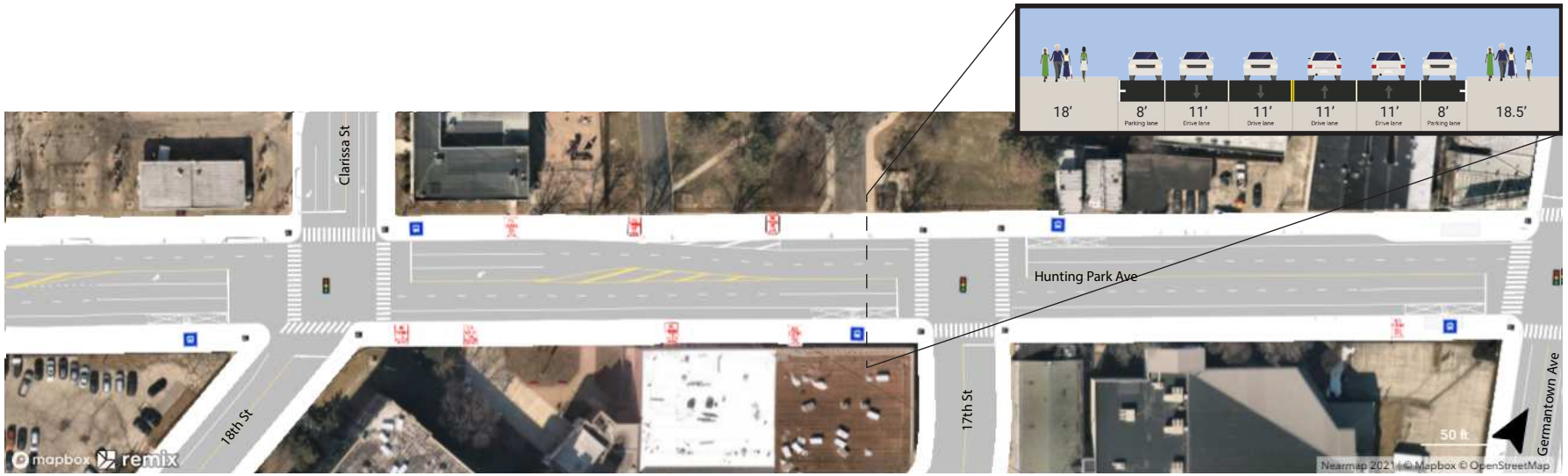
Archer Street to Pulaski Avenue

Figures 31 and 32 show the existing and proposed conditions of Hunting Park Avenue between Archer Street and Pulaski Avenue.

Continuing along Hunting Park Avenue between Archer Street and Pulaski Avenue, the project team suggests the following improvements:

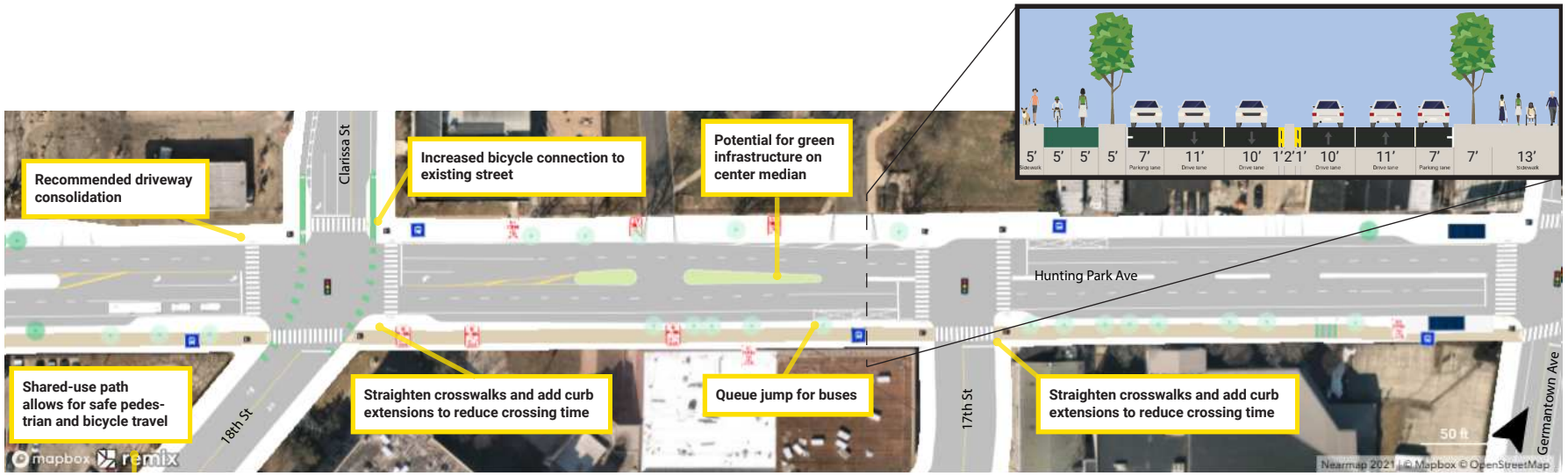
- Raise the existing crosswalks across Archer Street.
- Right-size travel lanes: narrow parking lanes to 7', and narrow center travel lanes to 10' with a 1' offset edge stripe and a 2' concrete center median where feasible, or 3' gored median where driveway access is needed. Outer lanes remain 11' for optimized bus operations. East of Pulaski Street, the median is widened to the width of the eastbound left-turn lane at 18th Street.
- Continue the shared-use path on the south side of Hunting Park Avenue.
- Install a speed slot on Hunting Park Avenue east of Archer Street to reduce speeding and improve safety for all users.
- Install a raised crosswalk across Donath Street.
- Extend the north sidewalk along Hunting Park Avenue at the intersection with 19th Street to prevent illegal parking, enhance visibility, and shorten the crosswalks.
- Continue the concrete/gore median and curb bumpouts.
- Raise the existing crosswalks across Priscilla Street, Alfred Street, and Pulaski Avenue.

Figure 35: Existing Conditions — 18th Street to 17th Street



Concept created in Remix, 2023

Figure 36: Proposed Improvements — 18th Street to 17th Street



Concept created in Remix, 2023

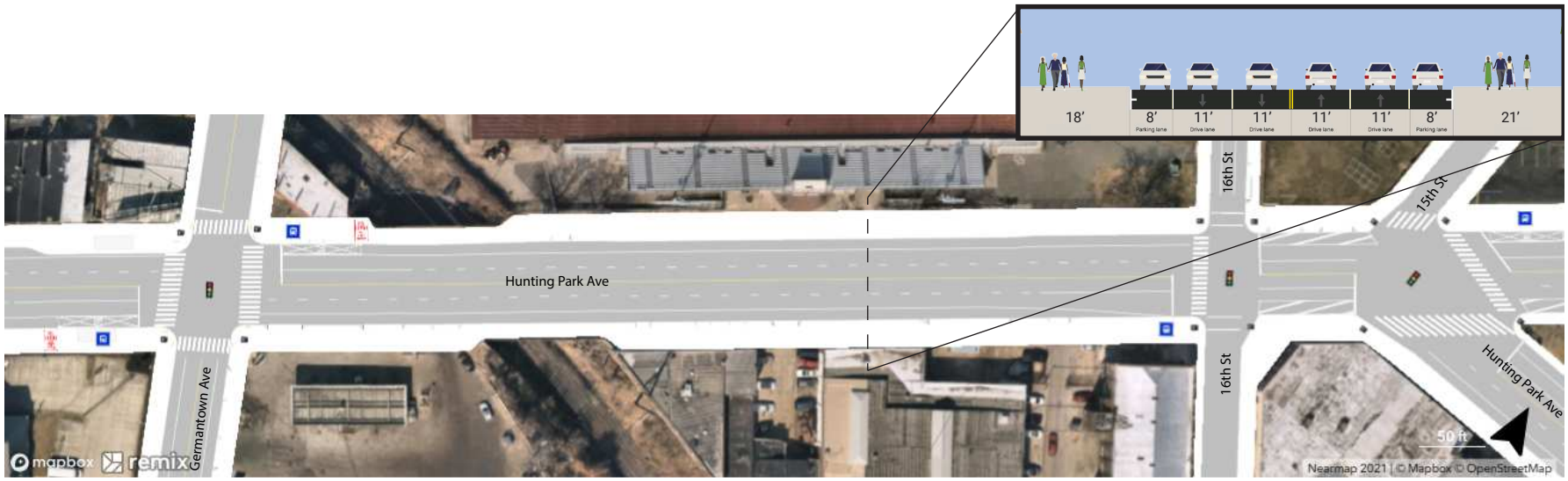
18th Street to 17th Street

Figures 33 and 34 show the existing and proposed conditions of Hunting Park Avenue between 18th Street and 17th Street.

Continuing onto the portion of Hunting Park Avenue between 18th Street and 17th Street, the project team suggests the following improvements:

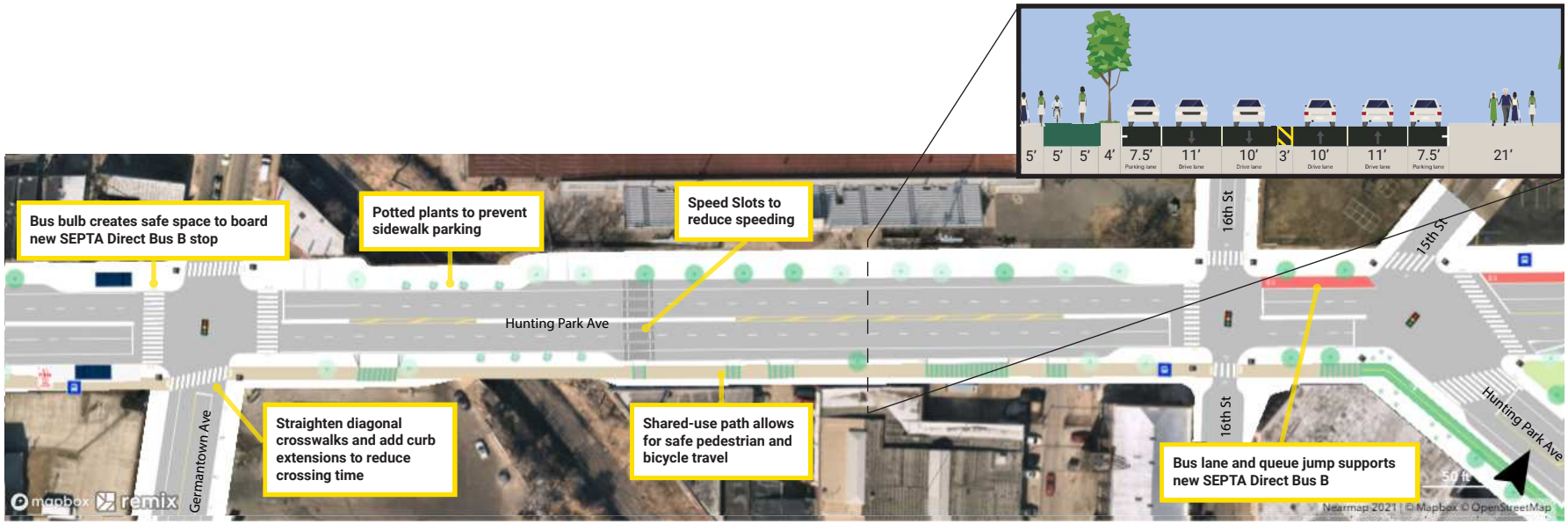
- Right-size travel lanes: narrow parking lanes to 7', and narrow center travel lanes to 10' with a 1' offset edge stripe and a 2' concrete center median where feasible, or 3' gored median where driveway access is needed. Outer lanes remain 11' for optimized bus operations
- Continue the proposed shared-use path along the south side of Hunting Park Avenue.
- Install curb bumpouts to improve visibility and shorten crosswalks.
- Install curb extensions to protect the existing bike lanes along the southbound approach of Clarissa Street.
- Install Transit Signal Priority (TSP) for the existing bus stop at Hunting Park Avenue and 17th Street to align with Bus Revolution.
- Install a wider median at 18th Street to provide opportunities for landscaping and GSI, to be coordinated with PWD.

Figure 37: Existing Conditions — Germantown Avenue to 15th Street



Concept created in Remix, 2023

Figure 38: Proposed Improvements — Germantown Avenue to 15th Street



Concept created in Remix, 2023

Germantown Avenue to 15th Street

Figures 35 and 36 show the existing and proposed conditions of Hunting Park Avenue between Germantown Avenue and 15th Street.

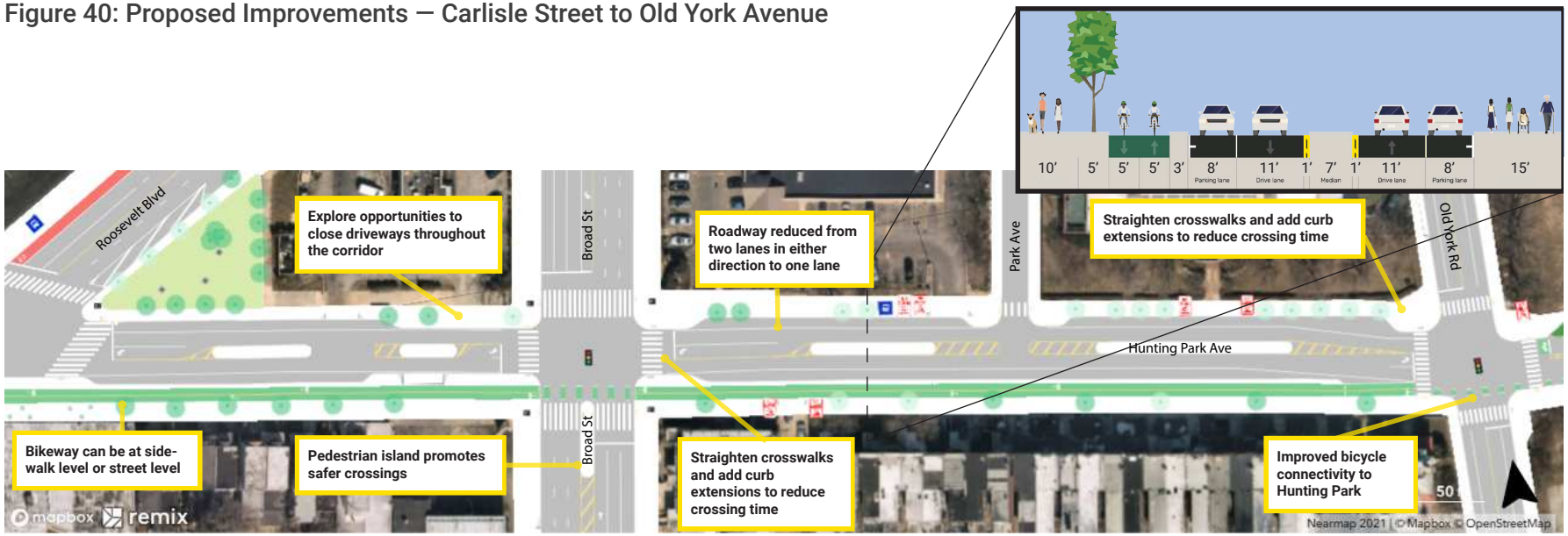
Continuing along Hunting Park Avenue between Germantown Avenue and 15th Street, the project team suggests the following improvements:

- Continue the proposed shared-use path along the south side of Hunting Park Avenue.
- Install curb bumpouts and a concrete median at the intersections of Germantown Avenue and 15th Street to enhance visibility and safety.
- Continue the proposed 10’ inner lanes, 11’ outer lanes, and 3’ median over the railroad overpass and install another speed slot as well as sidewalk landscaping and planters to prevent parking on the sidewalk.
- Install a westbound bus-only lane with TSP at the intersections with 16th Street and 15th Street.
- Install raised crosswalks across 16th Street and 15th Street to slow turning movements.
- Transition the shared-use path to a sidewalk-level, two-way separated bikeway at the southern corner of the intersection with 15th Street/Roosevelt Boulevard. This portion of Hunting Park Avenue provides adequate space for pedestrians along the sidewalk as well as a two-way separated bikeway.

Figure 39: Existing Conditions — Carlisle Street to Old York Avenue

Concept created in Remix, 2023

Figure 40: Proposed Improvements — Carlisle Street to Old York Avenue



Concept created in Remix, 2023

Carlisle Street to Old York Avenue

Figures 37 and 38 show the existing and proposed conditions of Hunting Park Avenue between Carlisle Street and Old York Avenue.

Continuing onto the portion of Hunting Park Avenue between Carlisle Street and Old York Road, the project team suggests the following improvements:

- Close Carlisle Street south of Roosevelt Boulevard, as the roadway does not serve a significant amount of traffic, and all movements can easily be diverted to adjacent intersections. In addition, closing Carlisle Street provides the opportunity to expand the park area on the western corner. Continue to coordinate with Streets to explore the viability of this closure.
- A traffic analysis of vehicular volumes deemed a road diet feasible through the segment of Hunting Park Avenue between 15th Street/Roosevelt Boulevard and Old York Road, reducing the cross section from 4 lanes to 3. Analysis showed this would not significantly impact delay, will improve safety for all users, and creates space for dedicated bike facilities.
- Install a sidewalk-level, two-way cycle track along the south side of Hunting Park Avenue.
- Install curb bumpouts and a gore/ concrete median at the intersections with Broad Street and Old York Avenue.
- Harden the center median along the northbound approach of Broad Street to provide pedestrian refuge.
- Install a bike turning box at the westbound approach of Old York Road to guide cyclists to the cycle track.

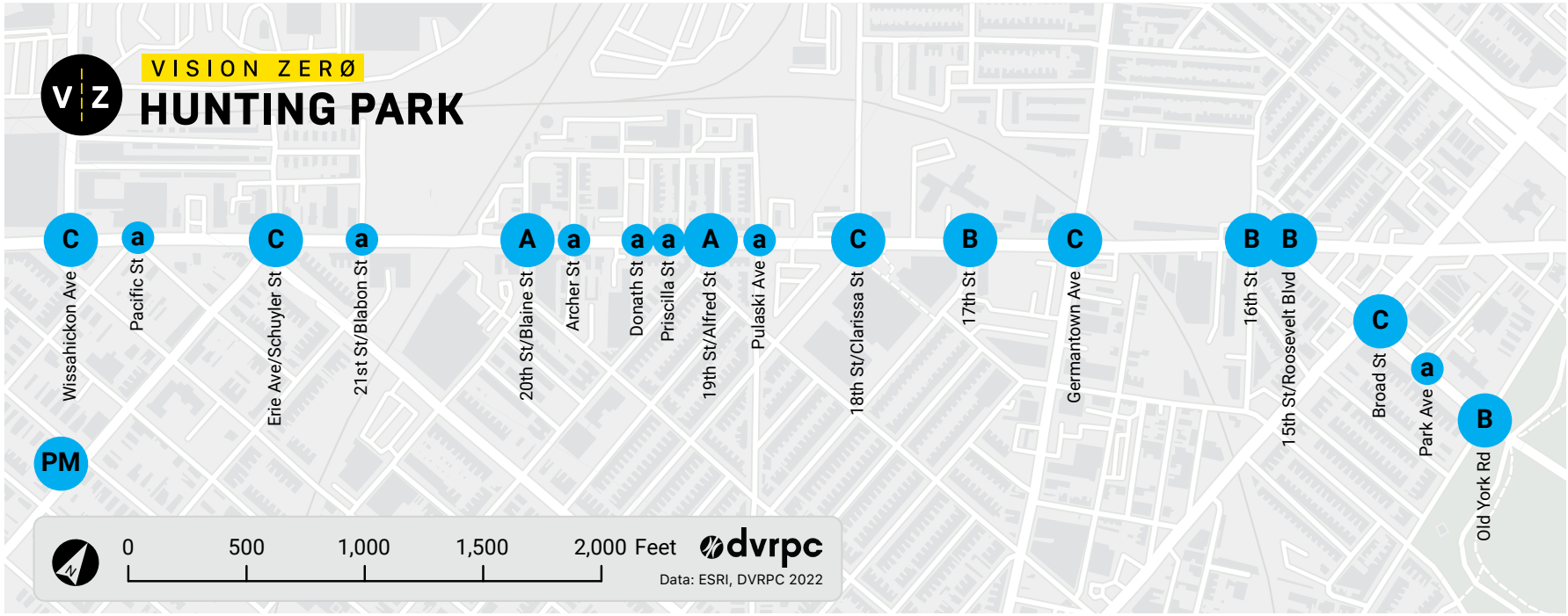
Proposed Levels of Service (LOS)

The recommendations were simulated using traffic modeling software to analyze the delay and Levels of Service (LOS). The most impactful element proposed is the road diet east of Roosevelt Boulevard. While the recommendations include a reduction in the number of travel lanes, the proposed conditions reflect similar delay and LOS as the existing conditions at all study intersections.

Figures 39 and 40 show the intersection LOS for the proposed scenario for the AM and PM peak hours, respectively. All Synchro reports can be found in **Appendix A**.

Figure 41: Levels of Service (LOS): AM Proposed Recommendations

Figure 42: Levels of Service (LOS): PM Proposed Recommendations



Next Steps

The recommendations identified in this report will help the City of Philadelphia advance safety improvements on Hunting Park Avenue. The next steps for this project include securing funding for design and construction, translating the concept designs into engineering documents, and implementation. Community and stakeholder engagement will continue to be an integral component of implementation.

The Infrastructure Investment and Jobs Act's Safe Streets and Roads for All grant program would be an ideal funding opportunity to pursue to carry these improvements toward implementations. This program is designed to support the Federal Department of Transportation's National Roadway Safety Strategy by funding projects, like the Vision Zero: Hunting Park project, that advance a jurisdiction's transportation safety action plan (like Philadelphia's Vision Zero Action Plan).

Philadelphia's Office of Transportation, Infrastructure, and Sustainability (OTIS) will lead continuing community engagement around the planned improvements for Hunting Park Avenue. OTIS expects to create a website for this project as it moves toward implementation and will seek continued input from the community groups in the area.

VISION ZERØ
HUNTING PARK

APPENDICES

APPENDIX A: SYNCHRO REPORTS
APPENDIX B: RED LIGHT RUNNING AND ILLUMINATION CRASH ANALYSIS MEMO
APPENDIX C: PUBLIC OUTREACH MATERIALS

Appendix A: Synchro Reports

VZ: Hunting Park
1: Venango St/Wissahickon Ave & Hunting Park Ave

2022 Existing Conditions
AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	145	517	21	0	1006	209	44	138	18	375	267	245
Future Volume (veh/h)	145	517	21	0	1006	209	44	138	18	375	267	245
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	0.95		0.90	0.95		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1826	1693	0	1841	1663	1796	1796	1796	1811	1885	1826
Adj Flow Rate, veh/h	149	533	0	0	1037	215	45	142	19	387	275	253
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	5	14	0	4	16	7	7	7	6	1	5
Cap, veh/h	235	1696		0	1244	498	249	323	43	361	670	519
Arrive On Green	0.07	0.49	0.00	0.00	0.36	0.36	0.21	0.21	0.21	0.08	0.36	0.36
Sat Flow, veh/h	1767	3561	0	0	3589	1399	802	1529	205	1725	1885	1460
Grp Volume(v), veh/h	149	533	0	0	1037	215	45	0	161	387	275	253
Grp Sat Flow(s),veh/h/ln	1767	1735	0	0	1749	1399	802	0	1734	1725	1885	1460
Q Serve(g_s), s	4.6	8.4	0.0	0.0	24.4	10.5	4.2	0.0	7.3	7.0	9.9	12.2
Cycle Q Clear(g_c), s	4.6	8.4	0.0	0.0	24.4	10.5	4.2	0.0	7.3	7.0	9.9	12.2
Prop In Lane	1.00		0.00	0.00		1.00	1.00		0.12	1.00		1.00
Lane Grp Cap(c), veh/h	235	1696		0	1244	498	249	0	366	361	670	519
V/C Ratio(X)	0.63	0.31		0.00	0.83	0.43	0.18	0.00	0.44	1.07	0.41	0.49
Avail Cap(c_a), veh/h	235	1696		0	1244	498	249	0	366	361	670	519
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.7	13.9	0.0	0.0	26.6	22.1	29.7	0.0	30.9	33.5	21.9	22.6
Incr Delay (d2), s/veh	12.4	0.5	0.0	0.0	6.7	2.7	1.6	0.0	3.8	67.4	1.9	3.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	3.2	0.0	0.0	10.9	3.7	0.9	0.0	3.4	11.4	4.6	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.0	14.4	0.0	0.0	33.2	24.8	31.3	0.0	34.7	100.9	23.7	25.9
LnGrp LOS	C	B		A	C	C	C	A	C	F	C	C
Approach Vol, veh/h		682			1252			206			915	
Approach Delay, s/veh		18.5			31.8			33.9			57.0	
Approach LOS		B			C			C			E	

Timer - Assigned Phs	2	4	5	6	7	8
Phs Duration (G+Y+Rc), s	51.0	39.0	12.0	39.0	13.0	26.0
Change Period (Y+Rc), s	7.0	7.0	6.0	7.0	6.0	7.0
Max Green Setting (Gmax), s	44.0	32.0	6.0	32.0	7.0	19.0
Max Q Clear Time (g_c+I1), s	10.4	14.2	6.6	26.4	9.0	9.3
Green Ext Time (p_c), s	4.0	2.4	0.0	3.5	0.0	0.8

Intersection Summary	
HCM 6th Ctrl Delay	36.5
HCM 6th LOS	D

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	874	17	4	1173	0	0
Future Volume (Veh/h)	874	17	4	1173	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	910	18	4	1222	0	0
Pedestrians	2			2	18	
Lane Width (ft)	10.0			10.0	0.0	
Walking Speed (ft/s)	3.5			3.5	3.5	
Percent Blockage	0			0	0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	295			579		
pX, platoon unblocked			0.91		0.87	0.91
vC, conflicting volume			946		1558	484
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			733		848	223
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		100	100
cM capacity (veh/h)			798		262	712

Direction, Lane #	EB 1	EB 2	WB 1	WB 2
Volume Total	607	321	411	815
Volume Left	0	0	4	0
Volume Right	0	18	0	0
cSH	1700	1700	798	1700
Volume to Capacity	0.36	0.19	0.01	0.48
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	0.0	0.0	0.2	0.0
Lane LOS			A	
Approach Delay (s)	0.0		0.1	
Approach LOS				

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	45.9%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	374	13	23	0	189	0	76	58	0	0	0
Future Vol, veh/h	0	374	13	23	0	189	0	76	58	0	0	0
Conflicting Peds, #/hr	13	0	5	5	0	13	16	0	4	4	0	16
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	6	54	30	0	16	0	1	12	0	0	0
Mvmt Flow	0	386	13	24	0	195	0	78	60	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	-	0	0	404	0	0	-	654	402
Stage 1	-	-	-	-	-	-	-	398	-
Stage 2	-	-	-	-	-	-	-	256	-
Critical Hdwy	-	-	-	4.4	-	-	-	6.51	6.32
Critical Hdwy Stg 1	-	-	-	-	-	-	-	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	5.51	-
Follow-up Hdwy	-	-	-	2.47	-	-	-	4.009	3.408
Pot Cap-1 Maneuver	0	-	-	1019	-	-	0	387	627
Stage 1	0	-	-	-	-	-	0	605	-
Stage 2	0	-	-	-	-	-	0	697	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	-	-	-	1015	-	-	-	0	623
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	0	-
Stage 1	-	-	-	-	-	-	-	0	-
Stage 2	-	-	-	-	-	-	-	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	12.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	623	-	-	1015	-	-
HCM Lane V/C Ratio	0.222	-	-	0.023	-	-
HCM Control Delay (s)	12.4	-	-	8.6	0	-
HCM Lane LOS	B	-	-	A	A	-
HCM 95th %tile Q(veh)	0.8	-	-	0.1	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	502	0	0	1036	38	171	24	72	32	5	7
Future Volume (veh/h)	10	502	0	0	1036	38	171	24	72	32	5	7
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	0.99		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1811	0	0	1841	1900	1633	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	10	523	0	0	1079	40	178	25	75	33	5	7
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	6	0	0	4	0	18	0	0	0	0	0
Cap, veh/h	55	2049	0	0	2139	79	281	33	92	284	45	48
Arrive On Green	0.62	0.62	0.00	0.00	0.62	0.62	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	22	3376	0	0	3529	127	967	150	413	966	203	215
Grp Volume(v), veh/h	282	251	0	0	549	570	278	0	0	45	0	0
Grp Sat Flow(s),veh/h/ln	1750	1566	0	0	1749	1816	1530	0	0	1384	0	0
Q Serve(g_s), s	0.0	6.5	0.0	0.0	15.6	15.6	13.3	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	6.3	6.5	0.0	0.0	15.6	15.6	15.4	0.0	0.0	2.1	0.0	0.0
Prop In Lane	0.04		0.00	0.00		0.07	0.64		0.27	0.73		0.16
Lane Grp Cap(c), veh/h	1130	974	0	0	1088	1130	406	0	0	377	0	0
V/C Ratio(X)	0.25	0.26	0.00	0.00	0.50	0.50	0.69	0.00	0.00	0.12	0.00	0.00
Avail Cap(c_a), veh/h	1130	974	0	0	1088	1130	406	0	0	377	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.6	7.6	0.0	0.0	9.4	9.4	33.0	0.0	0.0	28.0	0.0	0.0
Incr Delay (d2), s/veh	0.5	0.6	0.0	0.0	1.7	1.6	9.1	0.0	0.0	0.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	2.1	0.0	0.0	5.7	6.0	6.6	0.0	0.0	0.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.1	8.3	0.0	0.0	11.0	11.0	42.1	0.0	0.0	28.6	0.0	0.0
LnGrp LOS	A	A	A	A	B	B	D	A	A	C	A	A
Approach Vol, veh/h		533			1119			278			45	
Approach Delay, s/veh		8.2			11.0			42.1			28.6	
Approach LOS		A			B			D			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		64.0		26.0		64.0		26.0				
Change Period (Y+Rc), s		8.0		6.0		8.0		6.0				
Max Green Setting (Gmax), s		56.0		20.0		56.0		20.0				
Max Q Clear Time (g_c+I1), s		8.5		4.1		17.6		17.4				
Green Ext Time (p_c), s		3.7		0.1		9.5		0.4				

Intersection Summary												
HCM 6th Ctrl Delay			15.0									
HCM 6th LOS			B									

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕						↕	
Traffic Vol, veh/h	1	576	7	107	1090	23	0	0	0	4	0	2
Future Vol, veh/h	1	576	7	107	1090	23	0	0	0	4	0	2
Conflicting Peds, #/hr	6	0	14	14	0	6	1	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	1081	581	568	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	6	0	2	4	0	0	0	0	0	0	0
Mvmt Flow	1	600	7	111	1135	24	0	0	0	4	0	2

Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	1165	0	0	621	0	0			1677	1998	587
Stage 1	-	-	-	-	-	-			1375	1375	-
Stage 2	-	-	-	-	-	-			302	623	-
Critical Hdwy	4.1	-	-	4.14	-	-			6.8	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-			5.8	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-			5.8	5.5	-
Follow-up Hdwy	2.2	-	-	2.22	-	-			3.5	4	3.3
Pot Cap-1 Maneuver	607	-	-	956	-	-			88	61	458
Stage 1	-	-	-	-	-	-			204	215	-
Stage 2	-	-	-	-	-	-			730	481	-
Platoon blocked, %		-	-		-	-					
Mov Cap-1 Maneuver	604	-	-	956	-	-			58	0	455
Mov Cap-2 Maneuver	-	-	-	-	-	-			58	0	-
Stage 1	-	-	-	-	-	-			202	0	-
Stage 2	-	-	-	-	-	-			488	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	2	52.5
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	604	-	-	956	-	-	82
HCM Lane V/C Ratio	0.002	-	-	0.117	-	-	0.076
HCM Control Delay (s)	11	0	-	9.3	1.3	-	52.5
HCM Lane LOS	B	A	-	A	A	-	F
HCM 95th %tile Q(veh)	0	-	-	0.4	-	-	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	585	11	85	1202	0	2	0	46	7	6	9
Future Volume (veh/h)	0	585	11	85	1202	0	2	0	46	7	6	9
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1811	1900	1841	1841	0	1900	1900	1737	1900	1900	1737
Adj Flow Rate, veh/h	0	597	11	87	1227	0	2	0	47	7	6	9
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	6	0	4	4	0	0	0	11	0	0	11
Cap, veh/h	0	2228	41	153	1963	0	44	11	346	142	125	149
Arrive On Green	0.00	0.64	0.64	1.00	1.00	0.00	0.22	0.00	0.22	0.22	0.22	0.22
Sat Flow, veh/h	0	3545	64	168	3128	0	14	51	1544	402	558	664
Grp Volume(v), veh/h	0	297	311	670	644	0	49	0	0	22	0	0
Grp Sat Flow(s),veh/h/ln	0	1721	1798	1621	1591	0	1610	0	0	1624	0	0
Q Serve(g_s), s	0.0	6.8	6.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	6.8	6.8	0.0	0.0	0.0	2.2	0.0	0.0	0.9	0.0	0.0
Prop In Lane	0.00		0.04	0.13		0.00	0.04		0.96	0.32		0.41
Lane Grp Cap(c), veh/h	0	1109	1159	1090	1026	0	402	0	0	416	0	0
V/C Ratio(X)	0.00	0.27	0.27	0.61	0.63	0.00	0.12	0.00	0.00	0.05	0.00	0.00
Avail Cap(c_a), veh/h	0	1109	1159	1090	1026	0	402	0	0	416	0	0
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	7.0	7.0	0.0	0.0	0.0	28.4	0.0	0.0	27.9	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.6	0.6	2.6	2.9	0.0	0.6	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.4	2.5	0.8	0.8	0.0	0.9	0.0	0.0	0.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	7.6	7.5	2.6	2.9	0.0	29.0	0.0	0.0	28.1	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	C	A	A	C	A	A
Approach Vol, veh/h		608			1314			49			22	
Approach Delay, s/veh		7.6			2.7			29.0			28.1	
Approach LOS		A			A			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		65.0		26.5		65.0		26.5				
Change Period (Y+Rc), s		6.0		* 6		6.0		6.0				
Max Green Setting (Gmax), s		59.0		* 21		59.0		19.0				
Max Q Clear Time (g_c+I1), s		8.8		2.9		2.0		4.2				
Green Ext Time (p_c), s		4.2		0.0		14.1		0.1				

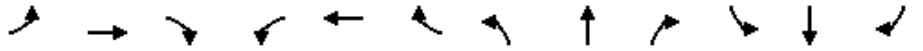
Intersection Summary	
HCM 6th Ctrl Delay	5.1
HCM 6th LOS	A

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

VZ: Hunting Park
7: Archer St & Hunting Park Ave

2022 Existing Conditions
AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	626	1	6	1282	7	0	0	0	0	0	0
Future Volume (Veh/h)	13	626	1	6	1282	7	0	0	0	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	13	645	1	6	1322	7	0	0	0	0	0	0
Pedestrians		1						11			8	
Lane Width (ft)		10.0						0.0			0.0	
Walking Speed (ft/s)		3.5						3.5			3.5	
Percent Blockage		0						0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		189			573							
pX, platoon unblocked	0.74			0.93			0.77	0.77	0.93	0.77	0.77	0.74
vC, conflicting volume	1337			657			1356	2032	334	1694	2028	674
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	739			470			442	1316	122	879	1312	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			99			100	100	100	100	100	100
cM capacity (veh/h)	645			1021			381	120	846	185	120	802

Direction, Lane #	EB 1	EB 2	WB 1	WB 2
Volume Total	336	324	667	668
Volume Left	13	0	6	0
Volume Right	0	1	0	7
cSH	645	1700	1021	1700
Volume to Capacity	0.02	0.19	0.01	0.39
Queue Length 95th (ft)	2	0	0	0
Control Delay (s)	0.7	0.0	0.2	0.0
Lane LOS	A		A	
Approach Delay (s)	0.3		0.1	
Approach LOS				

Intersection Summary				
Average Delay	0.2			
Intersection Capacity Utilization	43.2%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	3	665	1401	12	0	0
Future Volume (Veh/h)	3	665	1401	12	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	3	707	1490	13	0	0
Pedestrians		1	3		3	
Lane Width (ft)		10.0	10.0		0.0	
Walking Speed (ft/s)		3.5	3.5		3.5	
Percent Blockage		0	0		0	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		499	263			
pX, platoon unblocked	0.71				0.74	0.71
vC, conflicting volume	1506				1862	756
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	900				1118	0
tC, single (s)	4.8				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.5				3.5	3.3
p0 queue free %	99				100	100
cM capacity (veh/h)	416				150	775

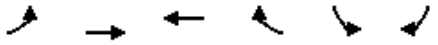
Direction, Lane #	EB 1	EB 2	WB 1	WB 2
Volume Total	239	471	993	510
Volume Left	3	0	0	0
Volume Right	0	0	0	13
cSH	416	1700	1700	1700
Volume to Capacity	0.01	0.28	0.58	0.30
Queue Length 95th (ft)	1	0	0	0
Control Delay (s)	0.3	0.0	0.0	0.0
Lane LOS	A			
Approach Delay (s)	0.1		0.0	
Approach LOS				

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	49.4%	ICU Level of Service	A
Analysis Period (min)	15		

Figure B-1: Existing Conditions - AM Peak Hour

VZ: Hunting Park
9: Hunting Park Ave & Priscilla St

2022 Existing Conditions
AM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	666	1421	1	0	0
Future Volume (Veh/h)	1	666	1421	1	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	1	716	1528	1	0	0
Pedestrians		20	12		10	
Lane Width (ft)		10.0	10.0		0.0	
Walking Speed (ft/s)		3.5	3.5		3.5	
Percent Blockage		2	1		0	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		664	98			
pX, platoon unblocked	0.71				0.73	0.71
vC, conflicting volume	1539				1910	794
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	945				1248	0
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	522				122	763

Direction, Lane #	EB 1	EB 2	WB 1	WB 2
Volume Total	240	477	1019	510
Volume Left	1	0	0	0
Volume Right	0	0	0	1
cSH	522	1700	1700	1700
Volume to Capacity	0.00	0.28	0.60	0.30
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	0.1	0.0	0.0	0.0
Lane LOS	A			
Approach Delay (s)	0.0		0.0	
Approach LOS				

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	54.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	662	0	0	1306	4	110	1	149	0	0	0
Future Volume (veh/h)	1	662	0	0	1306	4	110	1	149	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1900	1811	0	0	1841	1900	1885	1900	1870			
Adj Flow Rate, veh/h	1	720	0	0	1420	4	120	1	162			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	0	6	0	0	4	0	1	0	2			
Cap, veh/h	40	2137	0	0	2266	6	165	1	222			
Arrive On Green	1.00	1.00	0.00	0.00	0.63	0.63	0.23	0.23	0.23			
Sat Flow, veh/h	0	3457	0	0	3670	10	706	6	953			
Grp Volume(v), veh/h	387	334	0	0	694	730	283	0	0			
Grp Sat Flow(s),veh/h/ln	1809	1566	0	0	1749	1839	1665	0	0			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	21.7	21.7	14.1	0.0	0.0			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	21.7	21.7	14.1	0.0	0.0			
Prop In Lane	0.00		0.00	0.00		0.01	0.42		0.57			
Lane Grp Cap(c), veh/h	1186	992	0	0	1107	1165	388	0	0			
V/C Ratio(X)	0.33	0.34	0.00	0.00	0.63	0.63	0.73	0.00	0.00			
Avail Cap(c_a), veh/h	1186	992	0	0	1107	1165	388	0	0			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	10.0	10.0	31.9	0.0	0.0			
Incr Delay (d2), s/veh	0.7	0.9	0.0	0.0	2.7	2.6	11.4	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.2	0.3	0.0	0.0	8.0	8.4	6.8	0.0	0.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.7	0.9	0.0	0.0	12.7	12.6	43.2	0.0	0.0			
LnGrp LOS	A	A	A	A	B	B	D	A	A			
Approach Vol, veh/h		721			1424			283				
Approach Delay, s/veh		0.8			12.7			43.2				
Approach LOS		A			B			D				

Timer - Assigned Phs	2				6		8					
Phs Duration (G+Y+Rc), s	63.0				63.0		27.0					
Change Period (Y+Rc), s	6.0				6.0		6.0					
Max Green Setting (Gmax), s	57.0				57.0		21.0					
Max Q Clear Time (g_c+I1), s	2.0				23.7		16.1					
Green Ext Time (p_c), s	5.3				13.3		0.7					

Intersection Summary												
HCM 6th Ctrl Delay			12.7									
HCM 6th LOS			B									

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕						↕	
Traffic Vol, veh/h	1	788	33	21	1318	15	0	0	0	13	2	1
Future Vol, veh/h	1	788	33	21	1318	15	0	0	0	13	2	1
Conflicting Peds, #/hr	20	0	61	61	0	20	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	1080	713	216	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	5	12	5	4	7	0	0	0	15	0	0
Mvmt Flow	1	847	35	23	1417	16	0	0	0	14	2	1

Major/Minor	Major1			Major2				Minor2		
Conflicting Flow All	1453	0	0	943	0	0		1918	2436	737
Stage 1	-	-	-	-	-	-		1491	1491	-
Stage 2	-	-	-	-	-	-		427	945	-
Critical Hdwy	4.1	-	-	4.2	-	-		7.1	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-		6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-		6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.25	-	-		3.65	4	3.3
Pot Cap-1 Maneuver	472	-	-	705	-	-		51	32	365
Stage 1	-	-	-	-	-	-		153	189	-
Stage 2	-	-	-	-	-	-		589	343	-
Platoon blocked, %		-	-		-	-				
Mov Cap-1 Maneuver	465	-	-	705	-	-		41	0	359
Mov Cap-2 Maneuver	-	-	-	-	-	-		41	0	-
Stage 1	-	-	-	-	-	-		150	0	-
Stage 2	-	-	-	-	-	-		486	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0.9	131.9
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	465	-	-	705	-	-	44
HCM Lane V/C Ratio	0.002	-	-	0.032	-	-	0.391
HCM Control Delay (s)	12.8	0	-	10.3	0.8	-	131.9
HCM Lane LOS	B	A	-	B	A	-	F
HCM 95th %tile Q(veh)	0	-	-	0.1	-	-	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	234	512	21	73	1133	77	24	173	68	87	260	219
Future Volume (veh/h)	234	512	21	73	1133	77	24	173	68	87	260	219
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	0.98		0.94	0.96		0.89	0.94		0.88
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1811	1826	1856	1841	1856	1841	1841	1885	1796	1841	1870
Adj Flow Rate, veh/h	246	539	22	77	1193	81	25	182	72	92	274	231
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	5	6	5	3	4	3	4	4	1	7	4	2
Cap, veh/h	241	1832	75	411	1323	90	65	309	115	290	511	386
Arrive On Green	0.08	0.54	0.54	0.40	0.40	0.40	0.28	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	1739	3365	137	828	3309	224	76	1113	413	1019	1841	1391
Grp Volume(v), veh/h	246	275	286	77	630	644	279	0	0	92	274	231
Grp Sat Flow(s),veh/h/ln	1739	1721	1782	828	1749	1784	1602	0	0	1019	1841	1391
Q Serve(g_s), s	7.0	7.8	7.8	5.5	30.4	30.5	1.8	0.0	0.0	0.3	11.4	12.9
Cycle Q Clear(g_c), s	7.0	7.8	7.8	5.5	30.4	30.5	13.2	0.0	0.0	13.5	11.4	12.9
Prop In Lane	1.00		0.08	1.00		0.13	0.09		0.26	1.00		1.00
Lane Grp Cap(c), veh/h	241	937	970	411	699	714	489	0	0	290	511	386
V/C Ratio(X)	1.02	0.29	0.29	0.19	0.90	0.90	0.57	0.00	0.00	0.32	0.54	0.60
Avail Cap(c_a), veh/h	241	937	970	411	699	714	489	0	0	290	511	386
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.4	11.1	11.1	17.9	25.3	25.4	28.1	0.0	0.0	28.5	27.6	28.1
Incr Delay (d2), s/veh	63.4	0.8	0.8	1.0	16.9	16.9	4.8	0.0	0.0	2.9	4.0	6.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.9	3.0	3.1	1.1	15.2	15.6	5.7	0.0	0.0	1.9	5.4	4.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	84.9	11.9	11.9	18.9	42.2	42.3	32.9	0.0	0.0	31.4	31.6	34.8
LnGrp LOS	F	B	B	B	D	D	C	A	A	C	C	C
Approach Vol, veh/h		807			1351			279			597	
Approach Delay, s/veh		34.1			40.9			32.9			32.8	
Approach LOS		C			D			C			C	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		58.0		32.0	13.0	45.0		32.0				
Change Period (Y+Rc), s		9.0		7.0	6.0	9.0		7.0				
Max Green Setting (Gmax), s		49.0		25.0	7.0	36.0		25.0				
Max Q Clear Time (g_c+I1), s		9.8		15.5	9.0	32.5		15.2				
Green Ext Time (p_c), s		3.8		2.1	0.0	2.5		1.2				

Intersection Summary												
HCM 6th Ctrl Delay			36.8									
HCM 6th LOS			D									

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	561	111	145	1196	93	58
Future Volume (veh/h)	561	111	145	1196	93	58
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.84	0.95		1.00	0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1811	1900	1870	1841	1841	1870
Adj Flow Rate, veh/h	597	118	154	1272	99	62
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	6	0	2	4	4	2
Cap, veh/h	1813	356	219	1698	213	134
Arrive On Green	0.66	0.66	1.00	1.00	0.21	0.21
Sat Flow, veh/h	2857	544	259	2673	1010	633
Grp Volume(v), veh/h	370	345	677	749	162	0
Grp Sat Flow(s),veh/h/ln	1721	1589	1257	1591	1653	0
Q Serve(g_s), s	8.5	8.6	16.4	0.0	7.7	0.0
Cycle Q Clear(g_c), s	8.5	8.6	25.0	0.0	7.7	0.0
Prop In Lane		0.34	0.23		0.61	0.38
Lane Grp Cap(c), veh/h	1128	1042	873	1043	349	0
V/C Ratio(X)	0.33	0.33	0.77	0.72	0.46	0.00
Avail Cap(c_a), veh/h	1128	1042	873	1043	349	0
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	6.8	6.8	0.9	0.0	31.0	0.0
Incr Delay (d2), s/veh	0.8	0.9	6.7	4.3	4.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	2.8	1.6	1.2	3.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	7.6	7.7	7.5	4.3	35.4	0.0
LnGrp LOS	A	A	A	A	D	A
Approach Vol, veh/h	715			1426	162	
Approach Delay, s/veh	7.6			5.8	35.4	
Approach LOS	A			A	D	

Timer - Assigned Phs	2			6	8
Phs Duration (G+Y+Rc), s	65.0			65.0	25.0
Change Period (Y+Rc), s	6.0			6.0	6.0
Max Green Setting (Gmax), s	59.0			59.0	19.0
Max Q Clear Time (g_c+I1), s	10.6			27.0	9.7
Green Ext Time (p_c), s	5.5			14.5	0.3

Intersection Summary	
HCM 6th Ctrl Delay	8.5
HCM 6th LOS	A

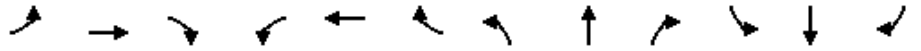
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	587	29	6	1305	122	2	249	34	88	380	56
Future Volume (veh/h)	0	587	29	6	1305	122	2	249	34	88	380	56
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.85	0.95		0.87	0.98		0.93	0.97		0.93
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1826	1752	1900	1841	1796	1900	1796	1856	1870	1826	1796
Adj Flow Rate, veh/h	0	611	30	6	1359	127	2	259	35	92	396	58
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	5	10	0	4	7	0	7	3	2	5	7
Cap, veh/h	0	1630	80	42	1524	141	41	562	76	128	449	63
Arrive On Green	0.00	0.98	0.98	0.16	0.16	0.16	0.37	0.37	0.37	0.37	0.37	0.37
Sat Flow, veh/h	0	3426	163	3	3118	288	2	1534	206	221	1225	172
Grp Volume(v), veh/h	0	317	324	797	0	695	296	0	0	546	0	0
Grp Sat Flow(s),veh/h/ln	0	1735	1763	1836	0	1574	1742	0	0	1618	0	0
Q Serve(g_s), s	0.0	0.6	0.6	5.1	0.0	39.0	0.0	0.0	0.0	17.2	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.6	0.6	38.2	0.0	39.0	11.7	0.0	0.0	28.9	0.0	0.0
Prop In Lane	0.00		0.09	0.01		0.18	0.01		0.12	0.17		0.11
Lane Grp Cap(c), veh/h	0	848	862	938	0	769	679	0	0	640	0	0
V/C Ratio(X)	0.00	0.37	0.38	0.85	0.00	0.90	0.44	0.00	0.00	0.85	0.00	0.00
Avail Cap(c_a), veh/h	0	848	862	938	0	769	679	0	0	640	0	0
HCM Platoon Ratio	1.00	2.00	2.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.5	0.5	35.3	0.0	35.6	21.8	0.0	0.0	26.9	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.3	1.3	9.5	0.0	16.0	2.0	0.0	0.0	13.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.4	0.4	21.1	0.0	19.7	5.0	0.0	0.0	13.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	1.8	1.8	44.8	0.0	51.6	23.8	0.0	0.0	40.4	0.0	0.0
LnGrp LOS	A	A	A	D	A	D	C	A	A	D	A	A
Approach Vol, veh/h		641			1492			296			546	
Approach Delay, s/veh		1.8			48.0			23.8			40.4	
Approach LOS		A			D			C			D	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	50.0	40.0	50.0	40.0
Change Period (Y+Rc), s	6.0	7.0	6.0	7.0
Max Green Setting (Gmax), s	44.0	33.0	44.0	33.0
Max Q Clear Time (g_c+I1), s	2.6	30.9	41.0	13.7
Green Ext Time (p_c), s	4.5	0.8	2.4	1.7

Intersection Summary	
HCM 6th Ctrl Delay	34.2
HCM 6th LOS	C

VZ: Hunting Park
15: 16th St & Hunting Park Ave

2022 Existing Conditions
AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	692	17	15	1320	0	0	0	0	104	142	120
Future Volume (vph)	0	692	17	15	1320	0	0	0	0	104	142	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0						6.0	
Lane Util. Factor		0.95			0.95						1.00	
Frpb, ped/bikes		1.00			1.00						0.99	
Flpb, ped/bikes		1.00			1.00						1.00	
Frt		1.00			1.00						0.96	
Flt Protected		1.00			1.00						0.99	
Satd. Flow (prot)		3186			3236						1620	
Flt Permitted		1.00			0.94						0.99	
Satd. Flow (perm)		3186			3057						1620	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	713	18	15	1361	0	0	0	0	107	146	124
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	0	0	20	0
Lane Group Flow (vph)	0	729	0	0	1376	0	0	0	0	0	357	0
Confl. Peds. (#/hr)	45		34	34		45	8		3	3		8
Confl. Bikes (#/hr)			1			1						
Heavy Vehicles (%)	0%	5%	12%	7%	4%	0%	0%	0%	0%	2%	2%	3%
Turn Type		NA		Perm	NA					Split	NA	
Protected Phases		2			6 1					4	4	
Permitted Phases				6 1								
Actuated Green, G (s)		32.0			60.0						18.0	
Effective Green, g (s)		32.0			60.0						18.0	
Actuated g/C Ratio		0.36			0.67						0.20	
Clearance Time (s)		6.0									6.0	
Lane Grp Cap (vph)		1132			2038						324	
v/s Ratio Prot		0.23									c0.22	
v/s Ratio Perm					c0.45							
v/c Ratio		0.64			0.68						1.10	
Uniform Delay, d1		24.2			9.1						36.0	
Progression Factor		0.50			0.30						1.00	
Incremental Delay, d2		0.3			0.9						80.2	
Delay (s)		12.4			3.6						116.2	
Level of Service		B			A						F	
Approach Delay (s)		12.4			3.6			0.0			116.2	
Approach LOS		B			A			A			F	

Intersection Summary				
HCM 2000 Control Delay	23.3	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.85			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	19.0	
Intersection Capacity Utilization	84.5%	ICU Level of Service	E	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	74	519	222	4	940	9	301	40	2	0	0	0
Future Volume (vph)	74	519	222	4	940	9	301	40	2	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		6.0		7.0	7.0				
Lane Util. Factor		0.95	1.00		0.95		1.00	1.00				
Frpb, ped/bikes		1.00	0.94		1.00		1.00	1.00				
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00				
Frt		1.00	0.85		1.00		1.00	0.99				
Flt Protected		0.99	1.00		1.00		0.95	1.00				
Satd. Flow (prot)		3231	1353		3232		1636	1760				
Flt Permitted		0.64	1.00		0.95		0.95	1.00				
Satd. Flow (perm)		2084	1353		3079		1636	1760				
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	79	552	236	4	1000	10	320	43	2	0	0	0
RTOR Reduction (vph)	0	0	89	0	1	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	631	147	0	1013	0	320	43	0	0	0	0
Confl. Peds. (#/hr)	43		55	55		43	4		6	6		4
Heavy Vehicles (%)	1%	4%	5%	0%	4%	0%	3%	0%	0%	0%	0%	0%
Turn Type	pm+pt	NA	Perm	Perm	NA		Split	NA				
Protected Phases	5	2 4!			6		8!	8!				
Permitted Phases	2 4!		2 4	6								
Actuated Green, G (s)		50.0	56.0		32.0		21.0	21.0				
Effective Green, g (s)		50.0	56.0		32.0		21.0	21.0				
Actuated g/C Ratio		0.56	0.62		0.36		0.23	0.23				
Clearance Time (s)					6.0		7.0	7.0				
Lane Grp Cap (vph)		1387	841		1094		381	410				
v/s Ratio Prot		c0.09					c0.20	0.02				
v/s Ratio Perm		0.16	0.11		c0.33							
v/c Ratio		0.45	0.17		0.93		0.84	0.11				
Uniform Delay, d1		11.9	7.2		27.9		32.9	27.1				
Progression Factor		0.19	0.00		1.00		1.86	2.01				
Incremental Delay, d2		0.8	0.3		14.4		17.7	0.5				
Delay (s)		3.1	0.3		42.3		78.8	55.1				
Level of Service		A	A		D		E	E				
Approach Delay (s)		2.3			42.3			75.9			0.0	
Approach LOS		A			D			E			A	

Intersection Summary			
HCM 2000 Control Delay	32.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	86.7%	ICU Level of Service	E
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	502	3	39	976	7	0	0	0	0	0	0
Future Volume (Veh/h)	8	502	3	39	976	7	0	0	0	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	8	523	3	41	1017	7	0	0	0	0	0	0
Pedestrians		3			5			55			67	
Lane Width (ft)		10.0			10.0			0.0			0.0	
Walking Speed (ft/s)		3.5			3.5			3.5			3.5	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		281										
pX, platoon unblocked				0.91			0.91	0.91	0.91	0.91	0.91	
vC, conflicting volume	1091			581			1189	1768	323	1452	1766	582
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1091			354			1019	1653	72	1307	1651	582
tC, single (s)	4.4			4.2			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.3			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			96			100	100	100	100	100	100
cM capacity (veh/h)	575			1092			170	86	894	104	87	460

Direction, Lane #	EB 1	EB 2	WB 1	WB 2
Volume Total	270	264	550	516
Volume Left	8	0	41	0
Volume Right	0	3	0	7
cSH	575	1700	1092	1700
Volume to Capacity	0.01	0.16	0.04	0.30
Queue Length 95th (ft)	1	0	3	0
Control Delay (s)	0.5	0.0	1.0	0.0
Lane LOS	A		A	
Approach Delay (s)	0.3		0.5	
Approach LOS				

Intersection Summary				
Average Delay	0.4			
Intersection Capacity Utilization	49.3%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↾	
Traffic Vol, veh/h	0	231	341	0	30	6
Future Vol, veh/h	0	231	341	0	30	6
Conflicting Peds, #/hr	9	0	0	9	2	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	4	0	3	3	0
Mvmt Flow	0	243	359	0	32	6

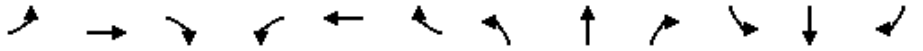
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	483	182
Stage 1	-	-	-	-	359	-
Stage 2	-	-	-	-	124	-
Critical Hdwy	-	-	-	-	6.86	6.9
Critical Hdwy Stg 1	-	-	-	-	5.86	-
Critical Hdwy Stg 2	-	-	-	-	5.86	-
Follow-up Hdwy	-	-	-	-	3.53	3.3
Pot Cap-1 Maneuver	0	-	-	0	510	836
Stage 1	0	-	-	0	674	-
Stage 2	0	-	-	0	885	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	510	835
Mov Cap-2 Maneuver	-	-	-	-	510	-
Stage 1	-	-	-	-	674	-
Stage 2	-	-	-	-	885	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	12.1
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	545
HCM Lane V/C Ratio	-	-	0.07
HCM Control Delay (s)	-	-	12.1
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.2

VZ: Hunting Park
19: Broad St & Hunting Park Ave

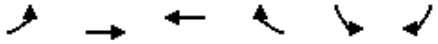
2022 Existing Conditions
AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	185	39	67	307	46	1	964	25	110	1776	13
Future Volume (veh/h)	23	185	39	67	307	46	1	964	25	110	1776	13
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.96	0.98		0.95	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1707	1856	1856	1856	1856	1870	1900	1856	1722	1841	1885	1781
Adj Flow Rate, veh/h	24	191	40	69	316	47	1	994	26	113	1831	13
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	13	3	3	3	3	2	0	3	12	4	1	8
Cap, veh/h	103	744	153	163	703	106	40	1968	51	351	2870	20
Arrive On Green	0.10	0.10	0.10	0.30	0.30	0.30	0.40	0.40	0.40	0.08	0.54	0.54
Sat Flow, veh/h	187	2480	512	367	2343	353	1	4920	128	1753	5271	37
Grp Volume(v), veh/h	132	0	123	219	0	213	374	311	336	113	1192	652
Grp Sat Flow(s),veh/h/ln	1606	0	1573	1460	0	1603	1852	1537	1660	1753	1716	1877
Q Serve(g_s), s	0.0	0.0	6.5	5.5	0.0	9.7	0.0	13.7	13.7	3.1	21.8	21.8
Cycle Q Clear(g_c), s	9.7	0.0	6.5	12.0	0.0	9.7	13.6	13.7	13.7	3.1	21.8	21.8
Prop In Lane	0.18		0.33	0.32		0.22	0.00		0.08	1.00		0.02
Lane Grp Cap(c), veh/h	529	0	472	491	0	481	781	615	664	351	1868	1022
V/C Ratio(X)	0.25	0.00	0.26	0.45	0.00	0.44	0.48	0.51	0.51	0.32	0.64	0.64
Avail Cap(c_a), veh/h	529	0	472	491	0	481	781	615	664	351	1868	1022
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.0	0.0	31.3	26.1	0.0	25.4	20.3	20.3	20.3	13.8	14.3	14.3
Incr Delay (d2), s/veh	1.1	0.0	1.3	2.9	0.0	2.9	2.1	3.0	2.7	2.4	1.7	3.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	0.0	2.7	4.2	0.0	4.0	6.1	5.2	5.6	1.4	8.2	9.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.2	0.0	32.7	29.0	0.0	28.4	22.4	23.3	23.1	16.2	16.0	17.4
LnGrp LOS	C	A	C	C	A	C	C	C	C	B	B	B
Approach Vol, veh/h		255			432			1021			1957	
Approach Delay, s/veh		32.4			28.7			22.9			16.5	
Approach LOS		C			C			C			B	

Timer - Assigned Phs	1	2	4	6	8
Phs Duration (G+Y+Rc), s	13.0	43.0	34.0	56.0	34.0
Change Period (Y+Rc), s	6.0	7.0	7.0	7.0	7.0
Max Green Setting (Gmax), s	7.0	36.0	27.0	49.0	27.0
Max Q Clear Time (g_c+I1), s	5.1	15.7	11.7	23.8	14.0
Green Ext Time (p_c), s	0.0	6.5	1.3	15.5	2.2

Intersection Summary	
HCM 6th Ctrl Delay	20.8
HCM 6th LOS	C



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	3	312	426	6	0	0
Future Volume (Veh/h)	3	312	426	6	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	3	343	468	7	0	0
Pedestrians		6	1		44	
Lane Width (ft)		10.0	10.0		0.0	
Walking Speed (ft/s)		3.5	3.5		3.5	
Percent Blockage		0	0		0	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		330	346			
pX, platoon unblocked					0.99	
vC, conflicting volume	519				694	288
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	519				665	288
tC, single (s)	4.8				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.5				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	855				391	712

Direction, Lane #	EB 1	EB 2	WB 1	WB 2
Volume Total	117	229	312	163
Volume Left	3	0	0	0
Volume Right	0	0	0	7
cSH	855	1700	1700	1700
Volume to Capacity	0.00	0.13	0.18	0.10
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	0.3	0.0	0.0	0.0
Lane LOS	A			
Approach Delay (s)	0.1		0.0	
Approach LOS				

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	24.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	200	97	17	346	90	59	414	15	78	482	22
Future Volume (veh/h)	12	200	97	17	346	90	59	414	15	78	482	22
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.97	0.99		0.97	1.00		0.98	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1781	1885	1767	1900	1870	1856	1781	1856	1900	1885	1870	1767
Adj Flow Rate, veh/h	13	217	105	18	376	98	64	450	16	85	524	24
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	8	1	9	0	2	3	8	3	0	1	2	9
Cap, veh/h	405	499	242	73	586	148	121	633	21	137	628	27
Arrive On Green	0.42	0.42	0.42	0.42	0.42	0.42	0.43	0.43	0.43	0.43	0.43	0.43
Sat Flow, veh/h	867	1188	575	26	1395	353	125	1473	50	160	1460	64
Grp Volume(v), veh/h	13	0	322	492	0	0	530	0	0	633	0	0
Grp Sat Flow(s),veh/h/ln	867	0	1763	1775	0	0	1648	0	0	1684	0	0
Q Serve(g_s), s	0.0	0.0	7.8	0.0	0.0	0.0	0.0	0.0	0.0	4.8	0.0	0.0
Cycle Q Clear(g_c), s	0.9	0.0	7.8	13.1	0.0	0.0	15.5	0.0	0.0	20.3	0.0	0.0
Prop In Lane	1.00		0.33	0.04		0.20	0.12		0.03	0.13		0.04
Lane Grp Cap(c), veh/h	405	0	741	808	0	0	776	0	0	792	0	0
V/C Ratio(X)	0.03	0.00	0.43	0.61	0.00	0.00	0.68	0.00	0.00	0.80	0.00	0.00
Avail Cap(c_a), veh/h	405	0	741	808	0	0	776	0	0	792	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	10.4	0.0	12.3	13.9	0.0	0.0	13.9	0.0	0.0	15.3	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	1.9	3.4	0.0	0.0	4.8	0.0	0.0	8.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	3.0	5.4	0.0	0.0	6.0	0.0	0.0	8.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.5	0.0	14.2	17.3	0.0	0.0	18.7	0.0	0.0	23.6	0.0	0.0
LnGrp LOS	B	A	B	B	A	A	B	A	A	C	A	A
Approach Vol, veh/h		335			492			530			633	
Approach Delay, s/veh		14.1			17.3			18.7			23.6	
Approach LOS		B			B			B			C	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	30.0	30.0	30.0	30.0
Change Period (Y+Rc), s	* 4.2	* 4.8	* 4.2	* 4.8
Max Green Setting (Gmax), s	* 26	* 25	* 26	* 25
Max Q Clear Time (g_c+I1), s	17.5	9.8	22.3	15.1
Green Ext Time (p_c), s	2.3	1.8	1.4	2.3

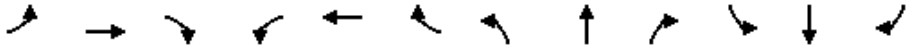
Intersection Summary	
HCM 6th Ctrl Delay	19.1
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

VZ: Hunting Park
1: Venango St/Wissahickon Ave & Hunting Park Ave

2022 Existing Conditions
PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	202	856	17	0	743	249	62	262	9	291	212	168
Future Volume (veh/h)	202	856	17	0	743	249	62	262	9	291	212	168
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1841	1811	0	1841	1767	1856	1885	1737	1752	1856	1796
Adj Flow Rate, veh/h	210	892	0	0	774	259	65	273	9	303	221	175
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	4	6	0	4	9	3	1	11	10	3	7
Cap, veh/h	296	1710		0	1244	532	287	383	13	283	660	540
Arrive On Green	0.07	0.49	0.00	0.00	0.36	0.36	0.21	0.21	0.21	0.08	0.36	0.36
Sat Flow, veh/h	1810	3589	0	0	3589	1495	979	1814	60	1668	1856	1520
Grp Volume(v), veh/h	210	892	0	0	774	259	65	0	282	303	221	175
Grp Sat Flow(s),veh/h/ln	1810	1749	0	0	1749	1495	979	0	1874	1668	1856	1520
Q Serve(g_s), s	6.0	15.7	0.0	0.0	16.5	12.2	5.0	0.0	12.6	7.0	7.8	7.5
Cycle Q Clear(g_c), s	6.0	15.7	0.0	0.0	16.5	12.2	5.0	0.0	12.6	7.0	7.8	7.5
Prop In Lane	1.00		0.00	0.00		1.00	1.00		0.03	1.00		1.00
Lane Grp Cap(c), veh/h	296	1710		0	1244	532	287	0	396	283	660	540
V/C Ratio(X)	0.71	0.52		0.00	0.62	0.49	0.23	0.00	0.71	1.07	0.33	0.32
Avail Cap(c_a), veh/h	296	1710		0	1244	532	287	0	396	283	660	540
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.2	15.8	0.0	0.0	24.0	22.6	30.0	0.0	33.0	32.9	21.2	21.1
Incr Delay (d2), s/veh	13.4	1.1	0.0	0.0	2.4	3.2	1.8	0.0	10.4	73.4	1.4	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	6.2	0.0	0.0	7.0	4.6	1.3	0.0	6.7	8.8	3.6	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.7	16.9	0.0	0.0	26.4	25.8	31.8	0.0	43.4	106.4	22.6	22.7
LnGrp LOS	C	B		A	C	C	C	A	D	F	C	C
Approach Vol, veh/h		1102			1033			347			699	
Approach Delay, s/veh		20.1			26.2			41.2			58.9	
Approach LOS		C			C			D			E	

Timer - Assigned Phs		2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s		51.0		39.0	12.0	39.0	13.0	26.0				
Change Period (Y+Rc), s		7.0		7.0	6.0	7.0	6.0	7.0				
Max Green Setting (Gmax), s		44.0		32.0	6.0	32.0	7.0	19.0				
Max Q Clear Time (g_c+I1), s		17.7		9.8	8.0	18.5	9.0	14.6				
Green Ext Time (p_c), s		7.1		1.8	0.0	5.3	0.0	0.8				

Intersection Summary												
HCM 6th Ctrl Delay			32.9									
HCM 6th LOS			C									

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1135	20	8	1011	0	0
Future Volume (Veh/h)	1135	20	8	1011	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	1207	21	9	1076	0	0
Pedestrians	5				40	
Lane Width (ft)	10.0				0.0	
Walking Speed (ft/s)	3.5				3.5	
Percent Blockage	0				0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	295			579		
pX, platoon unblocked			0.81		0.86	0.81
vC, conflicting volume			1268		1818	654
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			851		1076	90
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		100	100
cM capacity (veh/h)			642		183	772

Direction, Lane #	EB 1	EB 2	WB 1	WB 2
Volume Total	805	423	368	717
Volume Left	0	0	9	0
Volume Right	0	21	0	0
cSH	1700	1700	642	1700
Volume to Capacity	0.47	0.25	0.01	0.42
Queue Length 95th (ft)	0	0	1	0
Control Delay (s)	0.0	0.0	0.4	0.0
Lane LOS			A	
Approach Delay (s)	0.0		0.2	
Approach LOS				

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	36.9%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	254	16	22	0	251	17	72	96	0	0	0
Future Vol, veh/h	0	254	16	22	0	251	17	72	96	0	0	0
Conflicting Peds, #/hr	49	0	14	14	0	49	53	0	11	11	0	53
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	9	38	9	0	8	0	1	4	0	0	0
Mvmt Flow	0	262	16	23	0	259	18	74	99	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	-	0	0	292	0	0	513	638	295
Stage 1	-	-	-	-	-	-	284	284	-
Stage 2	-	-	-	-	-	-	229	354	-
Critical Hdwy	-	-	-	4.19	-	-	6.4	6.51	6.24
Critical Hdwy Stg 1	-	-	-	-	-	-	5.4	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	5.51	-
Follow-up Hdwy	-	-	-	2.281	-	-	3.5	4.009	3.336
Pot Cap-1 Maneuver	0	-	-	1231	-	-	525	396	740
Stage 1	0	-	-	-	-	-	769	678	-
Stage 2	0	-	-	-	-	-	814	632	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	-	-	-	1217	-	-	486	0	725
Mov Cap-2 Maneuver	-	-	-	-	-	-	486	0	-
Stage 1	-	-	-	-	-	-	761	0	-
Stage 2	-	-	-	-	-	-	762	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.6	11.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	725	-	-	1217	-	-
HCM Lane V/C Ratio	0.239	-	-	0.019	-	-
HCM Control Delay (s)	11.5	-	-	8	0	-
HCM Lane LOS	B	-	-	A	A	-
HCM 95th %tile Q(veh)	0.9	-	-	0.1	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	862	0	0	777	31	248	33	84	42	1	12
Future Volume (veh/h)	3	862	0	0	777	31	248	33	84	42	1	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	0.97		0.96	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1826	0	0	1841	1900	1781	1900	1870	1900	1900	1900
Adj Flow Rate, veh/h	3	880	0	0	793	32	253	34	86	43	1	12
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	5	0	0	4	0	8	0	2	0	0	0
Cap, veh/h	41	2115	0	0	2128	86	294	30	77	302	15	67
Arrive On Green	0.62	0.62	0.00	0.00	0.42	0.42	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	2	3482	0	0	3513	138	1020	137	347	1039	67	302
Grp Volume(v), veh/h	473	410	0	0	405	420	373	0	0	56	0	0
Grp Sat Flow(s),veh/h/ln	1822	1578	0	0	1749	1810	1504	0	0	1408	0	0
Q Serve(g_s), s	0.0	11.9	0.0	0.0	14.4	14.4	17.3	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	11.9	11.9	0.0	0.0	14.4	14.4	20.0	0.0	0.0	2.7	0.0	0.0
Prop In Lane	0.01		0.00	0.00		0.08	0.68		0.23	0.77		0.21
Lane Grp Cap(c), veh/h	1174	982	0	0	1088	1126	401	0	0	384	0	0
V/C Ratio(X)	0.40	0.42	0.00	0.00	0.37	0.37	0.93	0.00	0.00	0.15	0.00	0.00
Avail Cap(c_a), veh/h	1174	982	0	0	1088	1126	401	0	0	384	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.7	8.7	0.0	0.0	14.1	14.1	35.8	0.0	0.0	28.2	0.0	0.0
Incr Delay (d2), s/veh	1.0	1.3	0.0	0.0	1.0	0.9	30.2	0.0	0.0	0.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	4.0	0.0	0.0	6.4	6.6	11.6	0.0	0.0	1.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.7	10.0	0.0	0.0	15.1	15.1	66.0	0.0	0.0	29.0	0.0	0.0
LnGrp LOS	A	A	A	A	B	B	E	A	A	C	A	A
Approach Vol, veh/h		883			825			373			56	
Approach Delay, s/veh		9.8			15.1			66.0			29.0	
Approach LOS		A			B			E			C	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	64.0	26.0	64.0	26.0
Change Period (Y+Rc), s	8.0	6.0	8.0	6.0
Max Green Setting (Gmax), s	56.0	20.0	56.0	20.0
Max Q Clear Time (g_c+I1), s	13.9	4.7	16.4	22.0
Green Ext Time (p_c), s	6.8	0.2	6.2	0.0

Intersection Summary	
HCM 6th Ctrl Delay	22.2
HCM 6th LOS	C

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	947	10	83	804	11	0	0	0	4	4	3
Future Vol, veh/h	1	947	10	83	804	11	0	0	0	4	4	3
Conflicting Peds, #/hr	6	0	19	19	0	6	2	0	0	0	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	1081	581	568	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	99	99	99	99	99	99	99	99	99	99	99	99
Heavy Vehicles, %	0	5	0	0	4	0	0	0	0	0	0	0
Mvmt Flow	1	957	10	84	812	11	0	0	0	4	4	3

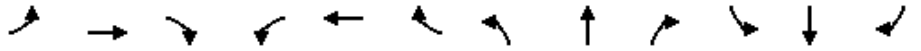
Major/Minor	Major1			Major2						Minor2		
Conflicting Flow All	829	0	0	986	0	0				1473	1980	420
Stage 1	-	-	-	-	-	-				992	992	-
Stage 2	-	-	-	-	-	-				481	988	-
Critical Hdwy	4.1	-	-	4.1	-	-				6.8	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-				5.8	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-				5.8	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-				3.5	4	3.3
Pot Cap-1 Maneuver	811	-	-	709	-	-				120	62	588
Stage 1	-	-	-	-	-	-				324	326	-
Stage 2	-	-	-	-	-	-				593	328	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	807	-	-	709	-	-				93	0	584
Mov Cap-2 Maneuver	-	-	-	-	-	-				93	0	-
Stage 1	-	-	-	-	-	-				321	0	-
Stage 2	-	-	-	-	-	-				461	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	1.9	31.9
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	807	-	-	709	-	-	145
HCM Lane V/C Ratio	0.001	-	-	0.118	-	-	0.077
HCM Control Delay (s)	9.5	0	-	10.8	1	-	31.9
HCM Lane LOS	A	A	-	B	A	-	D
HCM 95th %tile Q(veh)	0	-	-	0.4	-	-	0.2

VZ: Hunting Park
6: 20th St/Blaine St & Hunting Park Ave

2022 Existing Conditions
PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	933	24	85	862	0	6	0	67	14	10	17
Future Volume (veh/h)	0	933	24	85	862	0	6	0	67	14	10	17
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		1.00	0.99		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1826	1900	1900	1856	0	1648	1900	1796	1900	1900	1900
Adj Flow Rate, veh/h	0	962	25	88	889	0	6	0	69	14	10	18
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	5	0	0	3	0	17	0	7	0	0	0
Cap, veh/h	0	2225	58	174	1725	0	52	19	328	146	110	153
Arrive On Green	0.00	0.64	0.64	1.00	1.00	0.00	0.22	0.00	0.22	0.22	0.22	0.22
Sat Flow, veh/h	0	3542	90	197	2760	0	45	83	1466	418	491	681
Grp Volume(v), veh/h	0	484	503	451	526	0	75	0	0	42	0	0
Grp Sat Flow(s),veh/h/ln	0	1735	1806	1268	1604	0	1594	0	0	1589	0	0
Q Serve(g_s), s	0.0	12.6	12.6	5.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	12.6	12.6	17.8	0.0	0.0	3.5	0.0	0.0	1.7	0.0	0.0
Prop In Lane	0.00		0.05	0.20		0.00	0.08		0.92	0.33		0.43
Lane Grp Cap(c), veh/h	0	1118	1164	865	1034	0	400	0	0	409	0	0
V/C Ratio(X)	0.00	0.43	0.43	0.52	0.51	0.00	0.19	0.00	0.00	0.10	0.00	0.00
Avail Cap(c_a), veh/h	0	1118	1164	865	1034	0	400	0	0	409	0	0
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	8.0	8.0	0.3	0.0	0.0	28.9	0.0	0.0	28.2	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.2	1.2	2.2	1.8	0.0	1.0	0.0	0.0	0.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.5	4.7	0.5	0.5	0.0	1.4	0.0	0.0	0.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	9.2	9.2	2.6	1.8	0.0	29.9	0.0	0.0	28.7	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	C	A	A	C	A	A
Approach Vol, veh/h		987			977			75			42	
Approach Delay, s/veh		9.2			2.2			29.9			28.7	
Approach LOS		A			A			C			C	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	65.0	26.5	65.0	26.5
Change Period (Y+Rc), s	6.0	* 6	6.0	6.0
Max Green Setting (Gmax), s	59.0	* 21	59.0	19.0
Max Q Clear Time (g_c+I1), s	14.6	3.7	19.8	5.5
Green Ext Time (p_c), s	8.1	0.1	9.0	0.3

Intersection Summary	
HCM 6th Ctrl Delay	7.0
HCM 6th LOS	A

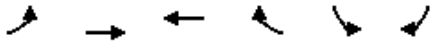
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	991	1	5	947	14	0	0	0	0	0	0
Future Volume (Veh/h)	13	991	1	5	947	14	0	0	0	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	14	1032	1	5	986	15	0	0	0	0	0	0
Pedestrians		4			2			14			18	
Lane Width (ft)		10.0			10.0			0.0			0.0	
Walking Speed (ft/s)		3.5			3.5			3.5			3.5	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		189			535							
pX, platoon unblocked	0.89			0.85			0.91	0.91	0.85	0.91	0.91	0.89
vC, conflicting volume	1019			1047			1582	2104	532	1568	2096	522
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	763			706			872	1447	102	857	1439	203
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			99			100	100	100	100	100	100
cM capacity (veh/h)	760			768			220	118	799	226	119	716

Direction, Lane #	EB 1	EB 2	WB 1	WB 2
Volume Total	530	517	498	508
Volume Left	14	0	5	0
Volume Right	0	1	0	15
cSH	760	1700	768	1700
Volume to Capacity	0.02	0.30	0.01	0.30
Queue Length 95th (ft)	1	0	0	0
Control Delay (s)	0.5	0.0	0.2	0.0
Lane LOS	A		A	
Approach Delay (s)	0.3		0.1	
Approach LOS				

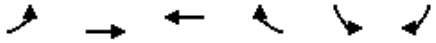
Intersection Summary				
Average Delay	0.2			
Intersection Capacity Utilization	39.9%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	6	982	915	12	0	0
Future Volume (Veh/h)	6	982	915	12	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	6	1034	963	13	0	0
Pedestrians		1	7		10	
Lane Width (ft)		10.0	10.0		0.0	
Walking Speed (ft/s)		3.5	3.5		3.5	
Percent Blockage		0	1		0	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		499	225			
pX, platoon unblocked	0.87				0.92	0.87
vC, conflicting volume	986				1516	499
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	694				776	136
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				100	100
cM capacity (veh/h)	796				309	780

Direction, Lane #	EB 1	EB 2	WB 1	WB 2
Volume Total	351	689	642	334
Volume Left	6	0	0	0
Volume Right	0	0	0	13
cSH	796	1700	1700	1700
Volume to Capacity	0.01	0.41	0.38	0.20
Queue Length 95th (ft)	1	0	0	0
Control Delay (s)	0.3	0.0	0.0	0.0
Lane LOS	A			
Approach Delay (s)	0.1		0.0	
Approach LOS				

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	41.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	3	989	914	11	0	0
Future Volume (Veh/h)	3	989	914	11	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	3	1020	942	11	0	0
Pedestrians		9	22		13	
Lane Width (ft)		10.0	10.0		0.0	
Walking Speed (ft/s)		3.5	3.5		3.5	
Percent Blockage		1	2		0	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		664	60			
pX, platoon unblocked	0.87				0.93	0.87
vC, conflicting volume	966				1498	498
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	657				762	118
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	816				315	791

Direction, Lane #	EB 1	EB 2	WB 1	WB 2
Volume Total	343	680	628	325
Volume Left	3	0	0	0
Volume Right	0	0	0	11
cSH	816	1700	1700	1700
Volume to Capacity	0.00	0.40	0.37	0.19
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	0.1	0.0	0.0	0.0
Lane LOS	A			
Approach Delay (s)	0.0		0.0	
Approach LOS				

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	42.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	990	0	0	829	4	118	1	124	0	0	0
Future Volume (veh/h)	4	990	0	0	829	4	118	1	124	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.95			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1826	0	0	1826	1870	1870	1870	1885			
Adj Flow Rate, veh/h	4	1031	0	0	864	4	123	1	129			
Peak Hour Factor	0.92	0.96	0.96	0.96	0.96	0.92	0.96	0.92	0.96			
Percent Heavy Veh, %	2	5	0	0	5	2	2	2	1			
Cap, veh/h	42	2152	0	0	2243	10	185	2	194			
Arrive On Green	1.00	1.00	0.00	0.00	0.63	0.63	0.23	0.23	0.23			
Sat Flow, veh/h	2	3480	0	0	3632	16	792	6	830			
Grp Volume(v), veh/h	555	480	0	0	423	445	253	0	0			
Grp Sat Flow(s),veh/h/ln	1821	1578	0	0	1735	1823	1628	0	0			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	10.6	10.7	12.7	0.0	0.0			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	10.6	10.7	12.7	0.0	0.0			
Prop In Lane	0.01		0.00	0.00		0.01	0.49		0.51			
Lane Grp Cap(c), veh/h	1194	1000	0	0	1099	1155	380	0	0			
V/C Ratio(X)	0.46	0.48	0.00	0.00	0.39	0.39	0.67	0.00	0.00			
Avail Cap(c_a), veh/h	1194	1000	0	0	1099	1155	380	0	0			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	8.0	8.0	31.3	0.0	0.0			
Incr Delay (d2), s/veh	1.3	1.7	0.0	0.0	1.0	1.0	8.9	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.4	0.5	0.0	0.0	3.8	4.0	5.8	0.0	0.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	1.3	1.7	0.0	0.0	9.0	9.0	40.2	0.0	0.0			
LnGrp LOS	A	A	A	A	A	A	D	A	A			
Approach Vol, veh/h		1035			868			253				
Approach Delay, s/veh		1.5			9.0			40.2				
Approach LOS		A			A			D				
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		63.0				63.0		27.0				
Change Period (Y+Rc), s		6.0				6.0		6.0				
Max Green Setting (Gmax), s		57.0				57.0		21.0				
Max Q Clear Time (g_c+I1), s		2.0				12.7		14.7				
Green Ext Time (p_c), s		8.9				6.7		0.8				
Intersection Summary												
HCM 6th Ctrl Delay			9.0									
HCM 6th LOS			A									

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕						↕	
Traffic Vol, veh/h	2	1071	26	13	801	7	0	0	0	17	7	8
Future Vol, veh/h	2	1071	26	13	801	7	0	0	0	17	7	8
Conflicting Peds, #/hr	13	0	42	42	0	13	13	0	6	6	0	13
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	1081	380	864	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	0	4	19	8	5	0	0	0	0	6	0	0
Mvmt Flow	2	1093	27	13	817	7	0	0	0	17	7	8

Major/Minor	Major1			Major2				Minor2		
Conflicting Flow All	837	0	0	1162	0	0		1417	2026	438
Stage 1	-	-	-	-	-	-		860	860	-
Stage 2	-	-	-	-	-	-		557	1166	-
Critical Hdwy	4.1	-	-	4.26	-	-		6.92	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-		5.92	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-		5.92	5.5	-
Follow-up Hdwy	2.2	-	-	2.28	-	-		3.56	4	3.3
Pot Cap-1 Maneuver	806	-	-	564	-	-		123	58	572
Stage 1	-	-	-	-	-	-		365	376	-
Stage 2	-	-	-	-	-	-		526	270	-
Platoon blocked, %		-	-		-	-				
Mov Cap-1 Maneuver	798	-	-	564	-	-		115	0	560
Mov Cap-2 Maneuver	-	-	-	-	-	-		115	0	-
Stage 1	-	-	-	-	-	-		359	0	-
Stage 2	-	-	-	-	-	-		498	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0.4	34.6
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	798	-	-	564	-	-	154
HCM Lane V/C Ratio	0.003	-	-	0.024	-	-	0.212
HCM Control Delay (s)	9.5	0	-	11.5	0.2	-	34.6
HCM Lane LOS	A	A	-	B	A	-	D
HCM 95th %tile Q(veh)	0	-	-	0.1	-	-	0.8

VZ: Hunting Park
12: 18th St/Clarissa St & Hunting Park Ave

2022 Existing Conditions
PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	321	770	2	65	610	140	10	243	42	74	198	184
Future Volume (veh/h)	321	770	2	65	610	140	10	243	42	74	198	184
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.93	0.98		0.93	0.96		0.92	0.96		0.92
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1796	1900	1900	1811	1841	1900	1841	1826	1796	1841	1870
Adj Flow Rate, veh/h	328	786	2	66	622	143	10	248	43	76	202	188
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	7	0	0	6	4	0	4	5	7	4	2
Cap, veh/h	377	1901	5	353	1094	251	47	410	69	282	511	403
Arrive On Green	0.08	0.54	0.54	0.40	0.40	0.40	0.28	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	1810	3491	9	682	2735	627	22	1476	250	1002	1841	1452
Grp Volume(v), veh/h	328	384	404	66	391	374	301	0	0	76	202	188
Grp Sat Flow(s),veh/h/ln	1810	1706	1794	682	1721	1641	1748	0	0	1002	1841	1452
Q Serve(g_s), s	7.0	11.9	11.9	5.8	15.9	16.0	0.0	0.0	0.0	0.0	8.0	9.7
Cycle Q Clear(g_c), s	7.0	11.9	11.9	5.8	15.9	16.0	13.3	0.0	0.0	12.0	8.0	9.7
Prop In Lane	1.00		0.00	1.00		0.38	0.03		0.14	1.00		1.00
Lane Grp Cap(c), veh/h	377	929	977	353	688	657	527	0	0	282	511	403
V/C Ratio(X)	0.87	0.41	0.41	0.19	0.57	0.57	0.57	0.00	0.00	0.27	0.40	0.47
Avail Cap(c_a), veh/h	377	929	977	353	688	657	527	0	0	282	511	403
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.4	12.1	12.1	17.9	21.0	21.0	28.3	0.0	0.0	27.8	26.4	27.0
Incr Delay (d2), s/veh	23.0	1.4	1.3	1.2	3.4	3.6	4.5	0.0	0.0	2.3	2.3	3.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.0	4.6	4.8	1.0	6.8	6.5	6.2	0.0	0.0	1.5	3.8	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.4	13.4	13.3	19.1	24.3	24.6	32.7	0.0	0.0	30.2	28.6	30.8
LnGrp LOS	D	B	B	B	C	C	C	A	A	C	C	C
Approach Vol, veh/h		1116			831			301			466	
Approach Delay, s/veh		22.8			24.0			32.7			29.8	
Approach LOS		C			C			C			C	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		58.0		32.0	13.0	45.0		32.0				
Change Period (Y+Rc), s		9.0		7.0	6.0	9.0		7.0				
Max Green Setting (Gmax), s		49.0		25.0	7.0	36.0		25.0				
Max Q Clear Time (g_c+I1), s		13.9		14.0	9.0	18.0		15.3				
Green Ext Time (p_c), s		5.7		1.7	0.0	5.3		1.2				

Intersection Summary												
HCM 6th Ctrl Delay			25.5									
HCM 6th LOS			C									

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	794	98	106	678	125	93
Future Volume (veh/h)	794	98	106	678	125	93
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.81	0.97		1.00	0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1826	1811	1826	1826	1870	1856
Adj Flow Rate, veh/h	934	115	125	798	147	109
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	5	6	5	5	2	3
Cap, veh/h	1981	244	218	1437	203	151
Arrive On Green	0.66	0.66	1.00	1.00	0.21	0.21
Sat Flow, veh/h	3113	372	251	2276	963	714
Grp Volume(v), veh/h	536	513	370	553	257	0
Grp Sat Flow(s),veh/h/ln	1735	1659	865	1578	1684	0
Q Serve(g_s), s	13.9	13.9	13.8	0.0	12.8	0.0
Cycle Q Clear(g_c), s	13.9	13.9	27.7	0.0	12.8	0.0
Prop In Lane		0.22	0.34		0.57	0.42
Lane Grp Cap(c), veh/h	1137	1088	621	1035	356	0
V/C Ratio(X)	0.47	0.47	0.60	0.53	0.72	0.00
Avail Cap(c_a), veh/h	1137	1088	621	1035	356	0
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	7.7	7.7	2.0	0.0	33.0	0.0
Incr Delay (d2), s/veh	1.4	1.5	4.2	2.0	12.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	4.7	0.7	0.6	6.3	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	9.1	9.2	6.2	2.0	45.1	0.0
LnGrp LOS	A	A	A	A	D	A
Approach Vol, veh/h	1049			923	257	
Approach Delay, s/veh	9.2			3.7	45.1	
Approach LOS	A			A	D	

Timer - Assigned Phs	2				6	8
Phs Duration (G+Y+Rc), s	65.0				65.0	25.0
Change Period (Y+Rc), s	6.0				6.0	6.0
Max Green Setting (Gmax), s	59.0				59.0	19.0
Max Q Clear Time (g_c+I1), s	15.9				29.7	14.8
Green Ext Time (p_c), s	9.1				8.5	0.3

Intersection Summary		
HCM 6th Ctrl Delay	11.0	
HCM 6th LOS	B	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	835	40	1	745	134	2	404	57	97	279	50
Future Volume (veh/h)	12	835	40	1	745	134	2	404	57	97	279	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.96		0.80	0.95		0.80	1.00		0.90	0.97		0.89
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1781	1826	1856	1900	1826	1885	1900	1841	1826	1870	1811	1781
Adj Flow Rate, veh/h	13	928	44	1	828	149	2	449	63	108	310	56
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	8	5	3	0	5	1	0	4	5	2	6	8
Cap, veh/h	49	1570	74	40	1347	242	41	574	80	127	301	51
Arrive On Green	0.98	0.98	0.98	0.16	0.16	0.16	0.37	0.37	0.37	0.37	0.37	0.37
Sat Flow, veh/h	16	3211	151	0	2756	495	1	1565	219	211	822	138
Grp Volume(v), veh/h	522	0	463	549	0	429	514	0	0	474	0	0
Grp Sat Flow(s),veh/h/ln	1788	0	1590	1825	0	1427	1786	0	0	1171	0	0
Q Serve(g_s), s	0.0	0.0	1.4	0.0	0.0	25.2	0.0	0.0	0.0	9.8	0.0	0.0
Cycle Q Clear(g_c), s	1.3	0.0	1.4	25.2	0.0	25.2	23.2	0.0	0.0	33.0	0.0	0.0
Prop In Lane	0.02		0.09	0.00		0.35	0.00		0.12	0.23		0.12
Lane Grp Cap(c), veh/h	915	0	777	932	0	698	695	0	0	478	0	0
V/C Ratio(X)	0.57	0.00	0.60	0.59	0.00	0.62	0.74	0.00	0.00	0.99	0.00	0.00
Avail Cap(c_a), veh/h	915	0	777	932	0	698	695	0	0	478	0	0
HCM Platoon Ratio	2.00	2.00	2.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.5	0.0	0.5	29.9	0.0	29.9	25.4	0.0	0.0	30.0	0.0	0.0
Incr Delay (d2), s/veh	2.6	0.0	3.4	2.7	0.0	4.0	6.9	0.0	0.0	38.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	0.9	12.9	0.0	10.3	10.7	0.0	0.0	15.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	3.1	0.0	3.9	32.6	0.0	33.9	32.4	0.0	0.0	68.9	0.0	0.0
LnGrp LOS	A	A	A	C	A	C	C	A	A	E	A	A
Approach Vol, veh/h		985			978			514			474	
Approach Delay, s/veh		3.5			33.2			32.4			68.9	
Approach LOS		A			C			C			E	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	50.0	40.0	50.0	40.0
Change Period (Y+Rc), s	6.0	7.0	6.0	7.0
Max Green Setting (Gmax), s	44.0	33.0	44.0	33.0
Max Q Clear Time (g_c+I1), s	3.4	35.0	27.2	25.2
Green Ext Time (p_c), s	8.3	0.0	6.3	2.1

Intersection Summary	
HCM 6th Ctrl Delay	28.9
HCM 6th LOS	C

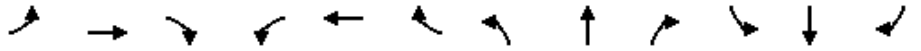
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	963	18	11	818	0	0	0	0	138	85	63
Future Volume (vph)	0	963	18	11	818	0	0	0	0	138	85	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0						6.0	
Lane Util. Factor		0.95			0.95						1.00	
Frpb, ped/bikes		1.00			1.00						1.00	
Flpb, ped/bikes		1.00			1.00						1.00	
Frt		1.00			1.00						0.97	
Flt Protected		1.00			1.00						0.98	
Satd. Flow (prot)		3193			3204						1631	
Flt Permitted		1.00			0.94						0.98	
Satd. Flow (perm)		3193			3011						1631	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	993	19	11	843	0	0	0	0	142	88	65
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	0	0	11	0
Lane Group Flow (vph)	0	1011	0	0	854	0	0	0	0	0	284	0
Confl. Peds. (#/hr)	56		102	102		56	4		6	6		4
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	0%	5%	0%	9%	5%	0%	0%	0%	0%	1%	5%	3%
Turn Type		NA		Perm	NA					Split	NA	
Protected Phases		2			6 1					4	4	
Permitted Phases				6 1								
Actuated Green, G (s)		32.0			60.0						18.0	
Effective Green, g (s)		32.0			60.0						18.0	
Actuated g/C Ratio		0.36			0.67						0.20	
Clearance Time (s)		6.0									6.0	
Lane Grp Cap (vph)		1135			2007						326	
v/s Ratio Prot		c0.32									c0.17	
v/s Ratio Perm					c0.28							
v/c Ratio		0.89			0.43						0.87	
Uniform Delay, d1		27.3			7.0						34.9	
Progression Factor		0.50			0.09						1.00	
Incremental Delay, d2		7.2			0.5						25.7	
Delay (s)		20.9			1.1						60.6	
Level of Service		C			A						E	
Approach Delay (s)		20.9			1.1			0.0			60.6	
Approach LOS		C			A			A			E	

Intersection Summary			
HCM 2000 Control Delay	18.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	63.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

VZ: Hunting Park
16: Hunting Park Ave & Roosevelt Blvd & 15th St

2022 Existing Conditions
PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	95	690	233	3	571	17	270	64	7	0	0	0
Future Volume (vph)	95	690	233	3	571	17	270	64	7	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		6.0		7.0	7.0				
Lane Util. Factor		0.95	1.00		0.95		1.00	1.00				
Frpb, ped/bikes		1.00	0.84		1.00		1.00	1.00				
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00				
Frt		1.00	0.85		1.00		1.00	0.99				
Flt Protected		0.99	1.00		1.00		0.95	1.00				
Satd. Flow (prot)		3169	1174		3188		1668	1694				
Flt Permitted		0.76	1.00		0.95		0.95	1.00				
Satd. Flow (perm)		2424	1174		3034		1668	1694				
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	98	711	240	3	589	18	278	66	7	0	0	0
RTOR Reduction (vph)	0	0	91	0	3	0	0	5	0	0	0	0
Lane Group Flow (vph)	0	809	149	0	607	0	278	68	0	0	0	0
Confl. Peds. (#/hr)	36		178	178		36	5		20	20		5
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	1%	6%	8%	0%	5%	0%	1%	0%	29%	0%	0%	0%
Turn Type	pm+pt	NA	Perm	Perm	NA		Split	NA				
Protected Phases	5	2 4!			6		8!	8!				
Permitted Phases	2 4!		2 4	6								
Actuated Green, G (s)		50.0	56.0		32.0		21.0	21.0				
Effective Green, g (s)		50.0	56.0		32.0		21.0	21.0				
Actuated g/C Ratio		0.56	0.62		0.36		0.23	0.23				
Clearance Time (s)					6.0		7.0	7.0				
Lane Grp Cap (vph)		1495	730		1078		389	395				
v/s Ratio Prot		c0.11					c0.17	0.04				
v/s Ratio Perm		0.19	0.13		c0.20							
v/c Ratio		0.54	0.20		0.56		0.71	0.17				
Uniform Delay, d1		12.7	7.4		23.4		31.7	27.6				
Progression Factor		0.09	0.00		1.00		1.82	1.99				
Incremental Delay, d2		0.6	0.3		2.1		9.4	0.8				
Delay (s)		1.7	0.3		25.5		67.3	55.7				
Level of Service		A	A		C		E	E				
Approach Delay (s)		1.4			25.5			64.9			0.0	
Approach LOS		A			C			E			A	

Intersection Summary			
HCM 2000 Control Delay	19.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	86.7%	ICU Level of Service	E
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	671	3	51	609	5	0	0	0	0	0	0
Future Volume (Veh/h)	14	671	3	51	609	5	0	0	0	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	15	706	3	54	641	5	0	0	0	0	0	0
Pedestrians		7			11			194			68	
Lane Width (ft)		10.0			10.0			0.0			0.0	
Walking Speed (ft/s)		3.5			3.5			3.5			3.5	
Percent Blockage		1			1			0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		281										
pX, platoon unblocked				0.87			0.87	0.87	0.87	0.87	0.87	
vC, conflicting volume	714			903			1367	1754	560	1214	1752	398
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	714			580			1116	1562	184	939	1561	398
tC, single (s)	4.2			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.3			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			94			100	100	100	100	100	100
cM capacity (veh/h)	850			870			134	90	716	179	90	604

Direction, Lane #	EB 1	EB 2	WB 1	WB 2
Volume Total	368	356	374	326
Volume Left	15	0	54	0
Volume Right	0	3	0	5
cSH	850	1700	870	1700
Volume to Capacity	0.02	0.21	0.06	0.19
Queue Length 95th (ft)	1	0	5	0
Control Delay (s)	0.6	0.0	2.0	0.0
Lane LOS	A		A	
Approach Delay (s)	0.3		1.1	
Approach LOS				

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	44.3%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↾	
Traffic Vol, veh/h	0	242	338	0	50	1
Future Vol, veh/h	0	242	338	0	50	1
Conflicting Peds, #/hr	11	0	0	11	7	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	7	0	1	0	0
Mvmt Flow	0	269	376	0	56	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	518	190
Stage 1	-	-	-	-	376	-
Stage 2	-	-	-	-	142	-
Critical Hdwy	-	-	-	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	0	-	-	0	492	826
Stage 1	0	-	-	0	670	-
Stage 2	0	-	-	0	876	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	492	825
Mov Cap-2 Maneuver	-	-	-	-	492	-
Stage 1	-	-	-	-	670	-
Stage 2	-	-	-	-	876	-

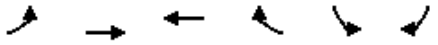
Approach	EB	WB	SB
HCM Control Delay, s	0	0	13.2
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	496
HCM Lane V/C Ratio	-	-	0.114
HCM Control Delay (s)	-	-	13.2
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	191	54	62	317	91	0	1366	48	124	1001	18
Future Volume (veh/h)	40	191	54	62	317	91	0	1366	48	124	1001	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.97	0.98		0.95	1.00		0.95	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1455	1856	1900	1900	1856	1900	0	1870	1900	1885	1856	1811
Adj Flow Rate, veh/h	41	195	55	63	323	93	0	1394	49	127	1021	18
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	30	3	0	0	3	0	0	2	0	1	3	6
Cap, veh/h	126	579	172	135	644	186	0	2077	73	269	2789	49
Arrive On Green	0.10	0.10	0.10	0.30	0.30	0.30	0.00	0.41	0.41	0.07	0.54	0.54
Sat Flow, veh/h	248	1929	574	282	2145	621	0	5221	178	1795	5123	90
Grp Volume(v), veh/h	141	0	150	248	0	231	0	939	504	127	673	366
Grp Sat Flow(s),veh/h/ln	1189	0	1562	1506	0	1542	0	1702	1827	1795	1689	1836
Q Serve(g_s), s	2.1	0.0	8.0	5.2	0.0	11.1	0.0	20.2	20.2	3.4	10.2	10.2
Cycle Q Clear(g_c), s	13.2	0.0	8.0	13.2	0.0	11.1	0.0	20.2	20.2	3.4	10.2	10.2
Prop In Lane	0.29		0.37	0.25		0.40	0.00		0.10	1.00		0.05
Lane Grp Cap(c), veh/h	408	0	469	502	0	462	0	1399	751	269	1839	1000
V/C Ratio(X)	0.35	0.00	0.32	0.49	0.00	0.50	0.00	0.67	0.67	0.47	0.37	0.37
Avail Cap(c_a), veh/h	408	0	469	502	0	462	0	1399	751	269	1839	1000
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.7	0.0	32.0	26.4	0.0	25.9	0.0	21.6	21.6	16.3	11.7	11.7
Incr Delay (d2), s/veh	2.3	0.0	1.8	3.5	0.0	3.8	0.0	2.6	4.7	5.8	0.6	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	0.0	3.4	4.9	0.0	4.5	0.0	8.2	9.2	1.7	3.7	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.0	0.0	33.8	29.8	0.0	29.7	0.0	24.1	26.3	22.1	12.2	12.7
LnGrp LOS	D	A	C	C	A	C	A	C	C	C	B	B
Approach Vol, veh/h		291			479			1443			1166	
Approach Delay, s/veh		34.4			29.8			24.9			13.5	
Approach LOS		C			C			C			B	

Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	12.0	44.0		34.0		56.0		34.0				
Change Period (Y+Rc), s	6.0	7.0		7.0		7.0		7.0				
Max Green Setting (Gmax), s	6.0	37.0		27.0		49.0		27.0				
Max Q Clear Time (g_c+I1), s	5.4	22.2		15.2		12.2		15.2				
Green Ext Time (p_c), s	0.0	8.5		1.3		8.5		2.3				

Intersection Summary												
HCM 6th Ctrl Delay			22.5									
HCM 6th LOS			C									



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	6	341	476	17	0	0
Future Volume (Veh/h)	6	341	476	17	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	6	355	496	18	0	0
Pedestrians		3	21		69	
Lane Width (ft)		10.0	10.0		0.0	
Walking Speed (ft/s)		3.5	3.5		3.5	
Percent Blockage		0	2		0	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		330	346			
pX, platoon unblocked						
vC, conflicting volume	583				784	329
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	583				784	329
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				100	100
cM capacity (veh/h)	1001				327	671

Direction, Lane #	EB 1	EB 2	WB 1	WB 2
Volume Total	124	237	331	183
Volume Left	6	0	0	0
Volume Right	0	0	0	18
cSH	1001	1700	1700	1700
Volume to Capacity	0.01	0.14	0.19	0.11
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	0.5	0.0	0.0	0.0
Lane LOS	A			
Approach Delay (s)	0.2		0.0	
Approach LOS				

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	24.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	220	85	25	382	99	74	572	16	81	338	30
Future Volume (veh/h)	29	220	85	25	382	99	74	572	16	81	338	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.96	0.98		0.94	0.99		0.98	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1870	1900	1900	1870	1885	1885	1900	1870	1870	1856
Adj Flow Rate, veh/h	30	224	87	26	390	101	76	584	16	83	345	31
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	2	2	0	0	2	1	1	0	2	2	3
Cap, veh/h	411	532	207	81	583	146	126	683	18	148	523	43
Arrive On Green	0.42	0.42	0.42	0.42	0.42	0.42	0.43	0.43	0.43	0.43	0.43	0.43
Sat Flow, veh/h	907	1266	492	42	1389	347	137	1590	42	180	1215	101
Grp Volume(v), veh/h	30	0	311	517	0	0	676	0	0	459	0	0
Grp Sat Flow(s),veh/h/ln	907	0	1758	1779	0	0	1769	0	0	1497	0	0
Q Serve(g_s), s	0.0	0.0	7.5	0.8	0.0	0.0	6.9	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	2.1	0.0	7.5	14.0	0.0	0.0	20.9	0.0	0.0	14.0	0.0	0.0
Prop In Lane	1.00		0.28	0.05		0.20	0.11		0.02	0.18		0.07
Lane Grp Cap(c), veh/h	411	0	738	810	0	0	827	0	0	714	0	0
V/C Ratio(X)	0.07	0.00	0.42	0.64	0.00	0.00	0.82	0.00	0.00	0.64	0.00	0.00
Avail Cap(c_a), veh/h	411	0	738	810	0	0	827	0	0	714	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	10.7	0.0	12.3	14.1	0.0	0.0	15.5	0.0	0.0	13.3	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.0	1.8	3.8	0.0	0.0	8.8	0.0	0.0	4.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	2.9	5.8	0.0	0.0	9.2	0.0	0.0	5.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.1	0.0	14.0	18.0	0.0	0.0	24.3	0.0	0.0	17.7	0.0	0.0
LnGrp LOS	B	A	B	B	A	A	C	A	A	B	A	A
Approach Vol, veh/h		341			517			676			459	
Approach Delay, s/veh		13.8			18.0			24.3			17.7	
Approach LOS		B			B			C			B	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	30.0	30.0	30.0	30.0
Change Period (Y+Rc), s	* 4.2	* 4.8	* 4.2	* 4.8
Max Green Setting (Gmax), s	* 26	* 25	* 26	* 25
Max Q Clear Time (g_c+I1), s	22.9	9.5	16.0	16.0
Green Ext Time (p_c), s	1.3	1.8	2.3	2.4

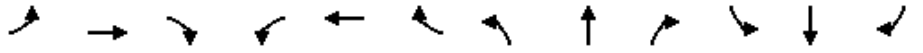
Intersection Summary	
HCM 6th Ctrl Delay	19.3
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

VZ: Hunting Park
1: Venango St/Wissahickon Ave & Hunting Park Ave

2022 Proposed Improvements
AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	145	517	21	0	1006	209	44	138	18	375	267	245
Future Volume (veh/h)	145	517	21	0	1006	209	44	138	18	375	267	245
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	0.95		0.90	0.95		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1826	1693	0	1841	1663	1796	1796	1796	1811	1885	1826
Adj Flow Rate, veh/h	149	533	0	0	1037	215	45	142	19	387	275	253
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	5	14	0	4	16	7	7	7	6	1	5
Cap, veh/h	235	1696		0	1244	498	249	323	43	361	670	519
Arrive On Green	0.07	0.49	0.00	0.00	0.36	0.36	0.21	0.21	0.21	0.08	0.36	0.36
Sat Flow, veh/h	1767	3561	0	0	3589	1399	802	1529	205	1725	1885	1460
Grp Volume(v), veh/h	149	533	0	0	1037	215	45	0	161	387	275	253
Grp Sat Flow(s),veh/h/ln	1767	1735	0	0	1749	1399	802	0	1734	1725	1885	1460
Q Serve(g_s), s	4.6	8.4	0.0	0.0	24.4	10.5	4.2	0.0	7.3	7.0	9.9	12.2
Cycle Q Clear(g_c), s	4.6	8.4	0.0	0.0	24.4	10.5	4.2	0.0	7.3	7.0	9.9	12.2
Prop In Lane	1.00		0.00	0.00		1.00	1.00		0.12	1.00		1.00
Lane Grp Cap(c), veh/h	235	1696		0	1244	498	249	0	366	361	670	519
V/C Ratio(X)	0.63	0.31		0.00	0.83	0.43	0.18	0.00	0.44	1.07	0.41	0.49
Avail Cap(c_a), veh/h	235	1696		0	1244	498	249	0	366	361	670	519
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.7	13.9	0.0	0.0	26.6	22.1	29.7	0.0	30.9	33.5	21.9	22.6
Incr Delay (d2), s/veh	12.4	0.5	0.0	0.0	6.7	2.7	1.6	0.0	3.8	67.4	1.9	3.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	3.2	0.0	0.0	10.9	3.7	0.9	0.0	3.4	11.4	4.6	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.0	14.4	0.0	0.0	33.2	24.8	31.3	0.0	34.7	100.9	23.7	25.9
LnGrp LOS	C	B		A	C	C	C	A	C	F	C	C
Approach Vol, veh/h		682			1252			206			915	
Approach Delay, s/veh		18.5			31.8			33.9			57.0	
Approach LOS		B			C			C			E	

Timer - Assigned Phs	2	4	5	6	7	8
Phs Duration (G+Y+Rc), s	51.0	39.0	12.0	39.0	13.0	26.0
Change Period (Y+Rc), s	7.0	7.0	6.0	7.0	6.0	7.0
Max Green Setting (Gmax), s	44.0	32.0	6.0	32.0	7.0	19.0
Max Q Clear Time (g_c+I1), s	10.4	14.2	6.6	26.4	9.0	9.3
Green Ext Time (p_c), s	4.0	2.4	0.0	3.5	0.0	0.8

Intersection Summary	
HCM 6th Ctrl Delay	36.5
HCM 6th LOS	D

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	874	17	4	1173	0	0
Future Volume (Veh/h)	874	17	4	1173	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	910	18	4	1222	0	0
Pedestrians	2			2	18	
Lane Width (ft)	10.0			10.0	0.0	
Walking Speed (ft/s)	3.5			3.5	3.5	
Percent Blockage	0			0	0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	295			579		
pX, platoon unblocked			0.91		0.87	0.91
vC, conflicting volume			946		1558	484
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			733		848	223
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		100	100
cM capacity (veh/h)			798		262	712

Direction, Lane #	EB 1	EB 2	WB 1	WB 2
Volume Total	607	321	411	815
Volume Left	0	0	4	0
Volume Right	0	18	0	0
cSH	1700	1700	798	1700
Volume to Capacity	0.36	0.19	0.01	0.48
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	0.0	0.0	0.2	0.0
Lane LOS			A	
Approach Delay (s)	0.0		0.1	
Approach LOS				

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	45.9%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection												
Int Delay, s/veh	2.5											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	374	13	23	0	189	0	76	58	0	0	0
Future Vol, veh/h	0	374	13	23	0	189	0	76	58	0	0	0
Conflicting Peds, #/hr	13	0	5	5	0	13	16	0	4	4	0	16
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	6	54	30	0	16	0	1	12	0	0	0
Mvmt Flow	0	386	13	24	0	195	0	78	60	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	-	0	0	404	0	0	-	654	402
Stage 1	-	-	-	-	-	-	-	398	-
Stage 2	-	-	-	-	-	-	-	256	-
Critical Hdwy	-	-	-	4.4	-	-	-	6.51	6.32
Critical Hdwy Stg 1	-	-	-	-	-	-	-	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	5.51	-
Follow-up Hdwy	-	-	-	2.47	-	-	-	4.009	3.408
Pot Cap-1 Maneuver	0	-	-	1019	-	-	0	387	627
Stage 1	0	-	-	-	-	-	0	605	-
Stage 2	0	-	-	-	-	-	0	697	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	-	-	-	1015	-	-	-	0	623
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	0	-
Stage 1	-	-	-	-	-	-	-	0	-
Stage 2	-	-	-	-	-	-	-	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	12.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	623	-	-	1015	-	-
HCM Lane V/C Ratio	0.222	-	-	0.023	-	-
HCM Control Delay (s)	12.4	-	-	8.6	0	-
HCM Lane LOS	B	-	-	A	A	-
HCM 95th %tile Q(veh)	0.8	-	-	0.1	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	502	0	0	1036	38	171	24	72	32	5	7
Future Volume (veh/h)	10	502	0	0	1036	38	171	24	72	32	5	7
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	0.99		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1811	0	0	1841	1900	1633	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	10	523	0	0	1079	40	178	25	75	33	5	7
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	6	0	0	4	0	18	0	0	0	0	0
Cap, veh/h	55	2049	0	0	2139	79	281	33	92	284	45	48
Arrive On Green	0.62	0.62	0.00	0.00	0.62	0.62	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	22	3376	0	0	3529	127	967	150	413	966	203	215
Grp Volume(v), veh/h	282	251	0	0	549	570	278	0	0	45	0	0
Grp Sat Flow(s),veh/h/ln	1750	1566	0	0	1749	1816	1530	0	0	1384	0	0
Q Serve(g_s), s	0.0	6.5	0.0	0.0	15.6	15.6	13.3	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	6.3	6.5	0.0	0.0	15.6	15.6	15.4	0.0	0.0	2.1	0.0	0.0
Prop In Lane	0.04		0.00	0.00		0.07	0.64		0.27	0.73		0.16
Lane Grp Cap(c), veh/h	1130	974	0	0	1088	1130	406	0	0	377	0	0
V/C Ratio(X)	0.25	0.26	0.00	0.00	0.50	0.50	0.69	0.00	0.00	0.12	0.00	0.00
Avail Cap(c_a), veh/h	1130	974	0	0	1088	1130	406	0	0	377	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.6	7.6	0.0	0.0	9.4	9.4	33.0	0.0	0.0	28.0	0.0	0.0
Incr Delay (d2), s/veh	0.5	0.6	0.0	0.0	1.7	1.6	9.1	0.0	0.0	0.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	2.1	0.0	0.0	5.7	6.0	6.6	0.0	0.0	0.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.1	8.3	0.0	0.0	11.0	11.0	42.1	0.0	0.0	28.6	0.0	0.0
LnGrp LOS	A	A	A	A	B	B	D	A	A	C	A	A
Approach Vol, veh/h		533			1119			278			45	
Approach Delay, s/veh		8.2			11.0			42.1			28.6	
Approach LOS		A			B			D			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		64.0		26.0		64.0		26.0				
Change Period (Y+Rc), s		8.0		6.0		8.0		6.0				
Max Green Setting (Gmax), s		56.0		20.0		56.0		20.0				
Max Q Clear Time (g_c+I1), s		8.5		4.1		17.6		17.4				
Green Ext Time (p_c), s		3.7		0.1		9.5		0.4				

Intersection Summary												
HCM 6th Ctrl Delay			15.0									
HCM 6th LOS			B									

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕						↕	
Traffic Vol, veh/h	1	576	7	107	1090	23	0	0	0	4	0	2
Future Vol, veh/h	1	576	7	107	1090	23	0	0	0	4	0	2
Conflicting Peds, #/hr	6	0	14	14	0	6	1	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	1081	581	568	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	6	0	2	4	0	0	0	0	0	0	0
Mvmt Flow	1	600	7	111	1135	24	0	0	0	4	0	2

Major/Minor	Major1			Major2				Minor2		
Conflicting Flow All	1165	0	0	621	0	0		1677	1998	587
Stage 1	-	-	-	-	-	-		1375	1375	-
Stage 2	-	-	-	-	-	-		302	623	-
Critical Hdwy	4.1	-	-	4.14	-	-		6.8	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-		5.8	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-		5.8	5.5	-
Follow-up Hdwy	2.2	-	-	2.22	-	-		3.5	4	3.3
Pot Cap-1 Maneuver	607	-	-	956	-	-		88	61	458
Stage 1	-	-	-	-	-	-		204	215	-
Stage 2	-	-	-	-	-	-		730	481	-
Platoon blocked, %		-	-		-	-				
Mov Cap-1 Maneuver	604	-	-	956	-	-		58	0	455
Mov Cap-2 Maneuver	-	-	-	-	-	-		58	0	-
Stage 1	-	-	-	-	-	-		202	0	-
Stage 2	-	-	-	-	-	-		488	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	2	52.5
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	604	-	-	956	-	-	82
HCM Lane V/C Ratio	0.002	-	-	0.117	-	-	0.076
HCM Control Delay (s)	11	0	-	9.3	1.3	-	52.5
HCM Lane LOS	B	A	-	A	A	-	F
HCM 95th %tile Q(veh)	0	-	-	0.4	-	-	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	585	11	85	1202	0	2	0	46	7	6	9
Future Volume (veh/h)	0	585	11	85	1202	0	2	0	46	7	6	9
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1811	1900	1841	1841	0	1900	1900	1737	1900	1900	1737
Adj Flow Rate, veh/h	0	597	11	87	1227	0	2	0	47	7	6	9
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	6	0	4	4	0	0	0	11	0	0	11
Cap, veh/h	0	2228	41	153	1963	0	44	11	346	142	125	149
Arrive On Green	0.00	0.64	0.64	1.00	1.00	0.00	0.22	0.00	0.22	0.22	0.22	0.22
Sat Flow, veh/h	0	3545	64	168	3128	0	14	51	1544	402	558	664
Grp Volume(v), veh/h	0	297	311	670	644	0	49	0	0	22	0	0
Grp Sat Flow(s),veh/h/ln	0	1721	1798	1621	1591	0	1610	0	0	1624	0	0
Q Serve(g_s), s	0.0	6.8	6.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	6.8	6.8	0.0	0.0	0.0	2.2	0.0	0.0	0.9	0.0	0.0
Prop In Lane	0.00		0.04	0.13		0.00	0.04		0.96	0.32		0.41
Lane Grp Cap(c), veh/h	0	1109	1159	1090	1026	0	402	0	0	416	0	0
V/C Ratio(X)	0.00	0.27	0.27	0.61	0.63	0.00	0.12	0.00	0.00	0.05	0.00	0.00
Avail Cap(c_a), veh/h	0	1109	1159	1090	1026	0	402	0	0	416	0	0
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	7.0	7.0	0.0	0.0	0.0	28.4	0.0	0.0	27.9	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.6	0.6	2.6	2.9	0.0	0.6	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.4	2.5	0.8	0.8	0.0	0.9	0.0	0.0	0.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	7.6	7.5	2.6	2.9	0.0	29.0	0.0	0.0	28.1	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	C	A	A	C	A	A
Approach Vol, veh/h		608			1314			49			22	
Approach Delay, s/veh		7.6			2.7			29.0			28.1	
Approach LOS		A			A			C			C	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	65.0	26.5	65.0	26.5
Change Period (Y+Rc), s	6.0	* 6	6.0	6.0
Max Green Setting (Gmax), s	59.0	* 21	59.0	19.0
Max Q Clear Time (g_c+I1), s	8.8	2.9	2.0	4.2
Green Ext Time (p_c), s	4.2	0.0	14.1	0.1

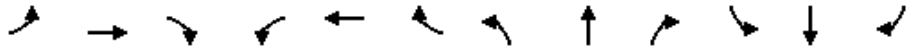
Intersection Summary	
HCM 6th Ctrl Delay	5.1
HCM 6th LOS	A

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

VZ: Hunting Park
7: Archer St & Hunting Park Ave

2022 Proposed Improvements
AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	626	1	6	1282	7	0	0	0	0	0	0
Future Volume (Veh/h)	13	626	1	6	1282	7	0	0	0	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	13	645	1	6	1322	7	0	0	0	0	0	0
Pedestrians		1						11			8	
Lane Width (ft)		10.0						0.0			0.0	
Walking Speed (ft/s)		3.5						3.5			3.5	
Percent Blockage		0						0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		189			573							
pX, platoon unblocked	0.74			0.93			0.77	0.77	0.93	0.77	0.77	0.74
vC, conflicting volume	1337			657			1356	2032	334	1694	2028	674
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	739			470			442	1316	122	879	1312	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			99			100	100	100	100	100	100
cM capacity (veh/h)	645			1021			381	120	846	185	120	802

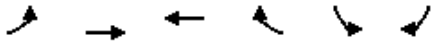
Direction, Lane #	EB 1	EB 2	WB 1	WB 2
Volume Total	336	324	667	668
Volume Left	13	0	6	0
Volume Right	0	1	0	7
cSH	645	1700	1021	1700
Volume to Capacity	0.02	0.19	0.01	0.39
Queue Length 95th (ft)	2	0	0	0
Control Delay (s)	0.7	0.0	0.2	0.0
Lane LOS	A		A	
Approach Delay (s)	0.3		0.1	
Approach LOS				

Intersection Summary				
Average Delay	0.2			
Intersection Capacity Utilization	43.2%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	3	665	1401	12	0	0
Future Volume (Veh/h)	3	665	1401	12	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	3	707	1490	13	0	0
Pedestrians		1	3		3	
Lane Width (ft)		10.0	10.0		0.0	
Walking Speed (ft/s)		3.5	3.5		3.5	
Percent Blockage		0	0		0	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		499	263			
pX, platoon unblocked	0.71				0.74	0.71
vC, conflicting volume	1506				1862	756
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	900				1118	0
tC, single (s)	4.8				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.5				3.5	3.3
p0 queue free %	99				100	100
cM capacity (veh/h)	416				150	775

Direction, Lane #	EB 1	EB 2	WB 1	WB 2
Volume Total	239	471	993	510
Volume Left	3	0	0	0
Volume Right	0	0	0	13
cSH	416	1700	1700	1700
Volume to Capacity	0.01	0.28	0.58	0.30
Queue Length 95th (ft)	1	0	0	0
Control Delay (s)	0.3	0.0	0.0	0.0
Lane LOS	A			
Approach Delay (s)	0.1		0.0	
Approach LOS				

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	49.4%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	666	1421	1	0	0
Future Volume (Veh/h)	1	666	1421	1	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	1	716	1528	1	0	0
Pedestrians		20	12		10	
Lane Width (ft)		10.0	10.0		0.0	
Walking Speed (ft/s)		3.5	3.5		3.5	
Percent Blockage		2	1		0	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		664	98			
pX, platoon unblocked	0.71				0.73	0.71
vC, conflicting volume	1539				1910	794
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	945				1248	0
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	522				122	763

Direction, Lane #	EB 1	EB 2	WB 1	WB 2
Volume Total	240	477	1019	510
Volume Left	1	0	0	0
Volume Right	0	0	0	1
cSH	522	1700	1700	1700
Volume to Capacity	0.00	0.28	0.60	0.30
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	0.1	0.0	0.0	0.0
Lane LOS	A			
Approach Delay (s)	0.0		0.0	
Approach LOS				

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	54.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	662	0	0	1306	4	110	1	149	0	0	0
Future Volume (veh/h)	1	662	0	0	1306	4	110	1	149	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1900	1811	0	0	1841	1900	1885	1900	1870			
Adj Flow Rate, veh/h	1	720	0	0	1420	4	120	1	162			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	0	6	0	0	4	0	1	0	2			
Cap, veh/h	40	2137	0	0	2266	6	165	1	222			
Arrive On Green	1.00	1.00	0.00	0.00	0.63	0.63	0.23	0.23	0.23			
Sat Flow, veh/h	0	3457	0	0	3670	10	706	6	953			
Grp Volume(v), veh/h	387	334	0	0	694	730	283	0	0			
Grp Sat Flow(s),veh/h/ln	1809	1566	0	0	1749	1839	1665	0	0			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	21.7	21.7	14.1	0.0	0.0			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	21.7	21.7	14.1	0.0	0.0			
Prop In Lane	0.00		0.00	0.00		0.01	0.42		0.57			
Lane Grp Cap(c), veh/h	1186	992	0	0	1107	1165	388	0	0			
V/C Ratio(X)	0.33	0.34	0.00	0.00	0.63	0.63	0.73	0.00	0.00			
Avail Cap(c_a), veh/h	1186	992	0	0	1107	1165	388	0	0			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	10.0	10.0	31.9	0.0	0.0			
Incr Delay (d2), s/veh	0.7	0.9	0.0	0.0	2.7	2.6	11.4	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.2	0.3	0.0	0.0	8.0	8.4	6.8	0.0	0.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.7	0.9	0.0	0.0	12.7	12.6	43.2	0.0	0.0			
LnGrp LOS	A	A	A	A	B	B	D	A	A			
Approach Vol, veh/h		721			1424			283				
Approach Delay, s/veh		0.8			12.7			43.2				
Approach LOS		A			B			D				

Timer - Assigned Phs	2				6		8					
Phs Duration (G+Y+Rc), s	63.0				63.0		27.0					
Change Period (Y+Rc), s	6.0				6.0		6.0					
Max Green Setting (Gmax), s	57.0				57.0		21.0					
Max Q Clear Time (g_c+I1), s	2.0				23.7		16.1					
Green Ext Time (p_c), s	5.3				13.3		0.7					

Intersection Summary												
HCM 6th Ctrl Delay			12.7									
HCM 6th LOS			B									

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕						↕	
Traffic Vol, veh/h	1	788	33	21	1318	15	0	0	0	13	2	1
Future Vol, veh/h	1	788	33	21	1318	15	0	0	0	13	2	1
Conflicting Peds, #/hr	20	0	61	61	0	20	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	1080	713	216	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	5	12	5	4	7	0	0	0	15	0	0
Mvmt Flow	1	847	35	23	1417	16	0	0	0	14	2	1

Major/Minor	Major1			Major2				Minor2		
Conflicting Flow All	1453	0	0	943	0	0		1918	2436	737
Stage 1	-	-	-	-	-	-		1491	1491	-
Stage 2	-	-	-	-	-	-		427	945	-
Critical Hdwy	4.1	-	-	4.2	-	-		7.1	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-		6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-		6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.25	-	-		3.65	4	3.3
Pot Cap-1 Maneuver	472	-	-	705	-	-		51	32	365
Stage 1	-	-	-	-	-	-		153	189	-
Stage 2	-	-	-	-	-	-		589	343	-
Platoon blocked, %		-	-		-	-				
Mov Cap-1 Maneuver	465	-	-	705	-	-		41	0	359
Mov Cap-2 Maneuver	-	-	-	-	-	-		41	0	-
Stage 1	-	-	-	-	-	-		150	0	-
Stage 2	-	-	-	-	-	-		486	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0.9	131.9
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	465	-	-	705	-	-	44
HCM Lane V/C Ratio	0.002	-	-	0.032	-	-	0.391
HCM Control Delay (s)	12.8	0	-	10.3	0.8	-	131.9
HCM Lane LOS	B	A	-	B	A	-	F
HCM 95th %tile Q(veh)	0	-	-	0.1	-	-	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	234	512	21	73	1133	77	24	173	68	87	260	219
Future Volume (veh/h)	234	512	21	73	1133	77	24	173	68	87	260	219
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	0.98		0.94	0.96		0.89	0.94		0.88
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1811	1826	1856	1841	1856	1841	1841	1885	1796	1841	1870
Adj Flow Rate, veh/h	246	539	22	77	1193	81	25	182	72	92	274	231
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	5	6	5	3	4	3	4	4	1	7	4	2
Cap, veh/h	241	1832	75	411	1323	90	65	309	115	290	511	386
Arrive On Green	0.08	0.54	0.54	0.40	0.40	0.40	0.28	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	1739	3365	137	828	3309	224	76	1113	413	1019	1841	1391
Grp Volume(v), veh/h	246	275	286	77	630	644	279	0	0	92	274	231
Grp Sat Flow(s),veh/h/ln	1739	1721	1782	828	1749	1784	1602	0	0	1019	1841	1391
Q Serve(g_s), s	7.0	7.8	7.8	5.5	30.4	30.5	1.8	0.0	0.0	0.3	11.4	12.9
Cycle Q Clear(g_c), s	7.0	7.8	7.8	5.5	30.4	30.5	13.2	0.0	0.0	13.5	11.4	12.9
Prop In Lane	1.00		0.08	1.00		0.13	0.09		0.26	1.00		1.00
Lane Grp Cap(c), veh/h	241	937	970	411	699	714	489	0	0	290	511	386
V/C Ratio(X)	1.02	0.29	0.29	0.19	0.90	0.90	0.57	0.00	0.00	0.32	0.54	0.60
Avail Cap(c_a), veh/h	241	937	970	411	699	714	489	0	0	290	511	386
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.4	11.1	11.1	17.9	25.3	25.4	28.1	0.0	0.0	28.5	27.6	28.1
Incr Delay (d2), s/veh	63.4	0.8	0.8	1.0	16.9	16.9	4.8	0.0	0.0	2.9	4.0	6.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.9	3.0	3.1	1.1	15.2	15.6	5.7	0.0	0.0	1.9	5.4	4.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	84.9	11.9	11.9	18.9	42.2	42.3	32.9	0.0	0.0	31.4	31.6	34.8
LnGrp LOS	F	B	B	B	D	D	C	A	A	C	C	C
Approach Vol, veh/h		807			1351			279			597	
Approach Delay, s/veh		34.1			40.9			32.9			32.8	
Approach LOS		C			D			C			C	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		58.0		32.0	13.0	45.0		32.0				
Change Period (Y+Rc), s		9.0		7.0	6.0	9.0		7.0				
Max Green Setting (Gmax), s		49.0		25.0	7.0	36.0		25.0				
Max Q Clear Time (g_c+I1), s		9.8		15.5	9.0	32.5		15.2				
Green Ext Time (p_c), s		3.8		2.1	0.0	2.5		1.2				

Intersection Summary												
HCM 6th Ctrl Delay			36.8									
HCM 6th LOS			D									

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	561	111	145	1196	93	58
Future Volume (veh/h)	561	111	145	1196	93	58
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.84	0.95		1.00	0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1811	1900	1870	1841	1841	1870
Adj Flow Rate, veh/h	597	118	154	1272	99	62
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	6	0	2	4	4	2
Cap, veh/h	1813	356	219	1698	213	134
Arrive On Green	0.66	0.66	1.00	1.00	0.21	0.21
Sat Flow, veh/h	2857	544	259	2673	1010	633
Grp Volume(v), veh/h	370	345	677	749	162	0
Grp Sat Flow(s),veh/h/ln	1721	1589	1257	1591	1653	0
Q Serve(g_s), s	8.5	8.6	16.4	0.0	7.7	0.0
Cycle Q Clear(g_c), s	8.5	8.6	25.0	0.0	7.7	0.0
Prop In Lane		0.34	0.23		0.61	0.38
Lane Grp Cap(c), veh/h	1128	1042	873	1043	349	0
V/C Ratio(X)	0.33	0.33	0.77	0.72	0.46	0.00
Avail Cap(c_a), veh/h	1128	1042	873	1043	349	0
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	6.8	6.8	0.9	0.0	31.0	0.0
Incr Delay (d2), s/veh	0.8	0.9	6.7	4.3	4.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	2.8	1.6	1.2	3.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	7.6	7.7	7.5	4.3	35.4	0.0
LnGrp LOS	A	A	A	A	D	A
Approach Vol, veh/h	715			1426	162	
Approach Delay, s/veh	7.6			5.8	35.4	
Approach LOS	A			A	D	

Timer - Assigned Phs	2			6	8
Phs Duration (G+Y+Rc), s	65.0			65.0	25.0
Change Period (Y+Rc), s	6.0			6.0	6.0
Max Green Setting (Gmax), s	59.0			59.0	19.0
Max Q Clear Time (g_c+I1), s	10.6			27.0	9.7
Green Ext Time (p_c), s	5.5			14.5	0.3

Intersection Summary	
HCM 6th Ctrl Delay	8.5
HCM 6th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	587	29	6	1305	122	2	249	34	88	380	56
Future Volume (veh/h)	0	587	29	6	1305	122	2	249	34	88	380	56
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.85	0.95		0.87	0.98		0.93	0.97		0.93
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1826	1752	1900	1841	1796	1900	1796	1856	1870	1826	1796
Adj Flow Rate, veh/h	0	611	30	6	1359	127	2	259	35	92	396	58
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	5	10	0	4	7	0	7	3	2	5	7
Cap, veh/h	0	1630	80	42	1524	141	41	562	76	128	449	63
Arrive On Green	0.00	0.98	0.98	0.16	0.16	0.16	0.37	0.37	0.37	0.37	0.37	0.37
Sat Flow, veh/h	0	3426	163	3	3118	288	2	1534	206	221	1225	172
Grp Volume(v), veh/h	0	317	324	797	0	695	296	0	0	546	0	0
Grp Sat Flow(s),veh/h/ln	0	1735	1763	1836	0	1574	1742	0	0	1618	0	0
Q Serve(g_s), s	0.0	0.6	0.6	5.1	0.0	39.0	0.0	0.0	0.0	17.2	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.6	0.6	38.2	0.0	39.0	11.7	0.0	0.0	28.9	0.0	0.0
Prop In Lane	0.00		0.09	0.01		0.18	0.01		0.12	0.17		0.11
Lane Grp Cap(c), veh/h	0	848	862	938	0	769	679	0	0	640	0	0
V/C Ratio(X)	0.00	0.37	0.38	0.85	0.00	0.90	0.44	0.00	0.00	0.85	0.00	0.00
Avail Cap(c_a), veh/h	0	848	862	938	0	769	679	0	0	640	0	0
HCM Platoon Ratio	1.00	2.00	2.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.5	0.5	35.3	0.0	35.6	21.8	0.0	0.0	26.9	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.3	1.3	9.5	0.0	16.0	2.0	0.0	0.0	13.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.4	0.4	21.1	0.0	19.7	5.0	0.0	0.0	13.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	1.8	1.8	44.8	0.0	51.6	23.8	0.0	0.0	40.4	0.0	0.0
LnGrp LOS	A	A	A	D	A	D	C	A	A	D	A	A
Approach Vol, veh/h		641			1492			296			546	
Approach Delay, s/veh		1.8			48.0			23.8			40.4	
Approach LOS		A			D			C			D	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	50.0	40.0	50.0	40.0
Change Period (Y+Rc), s	6.0	7.0	6.0	7.0
Max Green Setting (Gmax), s	44.0	33.0	44.0	33.0
Max Q Clear Time (g_c+I1), s	2.6	30.9	41.0	13.7
Green Ext Time (p_c), s	4.5	0.8	2.4	1.7

Intersection Summary	
HCM 6th Ctrl Delay	34.2
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	692	17	15	1320	0	0	0	0	104	142	120
Future Volume (vph)	0	692	17	15	1320	0	0	0	0	104	142	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0						6.0	
Lane Util. Factor		0.95			0.95						1.00	
Frpb, ped/bikes		1.00			1.00						0.99	
Flpb, ped/bikes		1.00			1.00						1.00	
Frt		1.00			1.00						0.96	
Flt Protected		1.00			1.00						0.99	
Satd. Flow (prot)		3186			3236						1620	
Flt Permitted		1.00			0.94						0.99	
Satd. Flow (perm)		3186			3057						1620	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	713	18	15	1361	0	0	0	0	107	146	124
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	0	0	20	0
Lane Group Flow (vph)	0	729	0	0	1376	0	0	0	0	0	357	0
Confl. Peds. (#/hr)	45		34	34		45	8		3	3		8
Confl. Bikes (#/hr)			1			1						
Heavy Vehicles (%)	0%	5%	12%	7%	4%	0%	0%	0%	0%	2%	2%	3%
Turn Type		NA		Perm	NA					Split	NA	
Protected Phases		2			6 1					4	4	
Permitted Phases				6 1								
Actuated Green, G (s)		32.0			60.0						18.0	
Effective Green, g (s)		32.0			60.0						18.0	
Actuated g/C Ratio		0.36			0.67						0.20	
Clearance Time (s)		6.0									6.0	
Lane Grp Cap (vph)		1132			2038						324	
v/s Ratio Prot		0.23									c0.22	
v/s Ratio Perm					c0.45							
v/c Ratio		0.64			0.68						1.10	
Uniform Delay, d1		24.2			9.1						36.0	
Progression Factor		0.50			0.30						1.00	
Incremental Delay, d2		0.3			0.9						80.2	
Delay (s)		12.4			3.6						116.2	
Level of Service		B			A						F	
Approach Delay (s)		12.4			3.6			0.0			116.2	
Approach LOS		B			A			A			F	

Intersection Summary			
HCM 2000 Control Delay	23.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	84.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	74	519	222	4	940	9	301	40	2	0	0	0
Future Volume (vph)	74	519	222	4	940	9	301	40	2	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		6.0		7.0	7.0				
Lane Util. Factor		0.95	1.00		0.95		1.00	1.00				
Frpb, ped/bikes		1.00	0.90		1.00		1.00	1.00				
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00				
Frt		1.00	0.85		1.00		1.00	0.99				
Flt Protected		0.99	1.00		1.00		0.95	1.00				
Satd. Flow (prot)		3231	1298		3232		1636	1760				
Flt Permitted		0.64	1.00		0.95		0.95	1.00				
Satd. Flow (perm)		2084	1298		3079		1636	1760				
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	79	552	236	4	1000	10	320	43	2	0	0	0
RTOR Reduction (vph)	0	0	89	0	1	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	631	147	0	1013	0	320	43	0	0	0	0
Confl. Peds. (#/hr)	43		55	55		43	4		6	6		4
Heavy Vehicles (%)	1%	4%	5%	0%	4%	0%	3%	0%	0%	0%	0%	0%
Turn Type	pm+pt	NA	Perm	Perm	NA		Split	NA				
Protected Phases	5	2 4!			6		8!	8!				
Permitted Phases	2 4!		2 4	6								
Actuated Green, G (s)		50.0	56.0		32.0		21.0	21.0				
Effective Green, g (s)		50.0	56.0		32.0		21.0	21.0				
Actuated g/C Ratio		0.56	0.62		0.36		0.23	0.23				
Clearance Time (s)					6.0		7.0	7.0				
Lane Grp Cap (vph)		1387	807		1094		381	410				
v/s Ratio Prot		c0.09					c0.20	0.02				
v/s Ratio Perm		0.16	0.11		c0.33							
v/c Ratio		0.45	0.18		0.93		0.84	0.11				
Uniform Delay, d1		11.9	7.2		27.9		32.9	27.1				
Progression Factor		0.19	0.00		1.00		1.82	1.94				
Incremental Delay, d2		0.8	0.4		14.4		15.6	0.4				
Delay (s)		3.1	0.4		42.3		75.4	52.9				
Level of Service		A	A		D		E	D				
Approach Delay (s)		2.4			42.3			72.6			0.0	
Approach LOS		A			D			E			A	

Intersection Summary			
HCM 2000 Control Delay	31.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	86.7%	ICU Level of Service	E
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

VZ: Hunting Park
19: Broad St & Hunting Park Ave

2022 Proposed Improvements
AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	185	39	67	307	46	1	964	25	110	1776	13
Future Volume (veh/h)	23	185	39	67	307	46	1	964	25	110	1776	13
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.96	0.98		0.95	1.00		0.95	0.99		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1707	1856	1856	1856	1856	1870	1900	1856	1722	1841	1885	1781
Adj Flow Rate, veh/h	24	191	40	69	316	47	1	994	26	113	1831	13
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	13	3	3	3	3	2	0	3	12	4	1	8
Cap, veh/h	193	443	93	298	470	70	40	1967	51	350	2869	20
Arrive On Green	0.30	0.30	0.30	0.30	0.30	0.30	0.40	0.40	0.40	0.08	0.54	0.54
Sat Flow, veh/h	915	1476	309	1114	1566	233	1	4917	128	1753	5270	37
Grp Volume(v), veh/h	24	0	231	69	0	363	375	311	336	113	1192	652
Grp Sat Flow(s),veh/h/ln	915	0	1785	1114	0	1799	1852	1537	1657	1753	1716	1876
Q Serve(g_s), s	2.1	0.0	9.4	4.8	0.0	15.9	0.0	13.7	13.7	3.1	21.8	21.8
Cycle Q Clear(g_c), s	18.0	0.0	9.4	14.1	0.0	15.9	13.7	13.7	13.7	3.1	21.8	21.8
Prop In Lane	1.00		0.17	1.00		0.13	0.00		0.08	1.00		0.02
Lane Grp Cap(c), veh/h	193	0	536	298	0	540	781	615	663	350	1868	1022
V/C Ratio(X)	0.12	0.00	0.43	0.23	0.00	0.67	0.48	0.51	0.51	0.32	0.64	0.64
Avail Cap(c_a), veh/h	193	0	536	298	0	540	781	615	663	350	1868	1022
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.5	0.0	25.3	31.0	0.0	27.6	20.3	20.3	20.3	13.8	14.3	14.3
Incr Delay (d2), s/veh	1.3	0.0	2.5	1.8	0.0	6.6	2.1	3.0	2.8	2.4	1.7	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	4.3	1.4	0.0	7.6	6.1	5.2	5.6	1.4	8.2	9.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.9	0.0	27.8	32.8	0.0	34.2	22.4	23.3	23.1	16.2	16.0	17.4
LnGrp LOS	D	A	C	C	A	C	C	C	C	B	B	B
Approach Vol, veh/h		255			432			1021			1957	
Approach Delay, s/veh		28.7			34.0			22.9			16.5	
Approach LOS		C			C			C			B	

Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	13.0	43.0		34.0		56.0		34.0				
Change Period (Y+Rc), s	6.0	7.0		7.0		7.0		7.0				
Max Green Setting (Gmax), s	7.0	36.0		27.0		49.0		27.0				
Max Q Clear Time (g_c+I1), s	5.1	15.7		20.0		23.8		17.9				
Green Ext Time (p_c), s	0.0	6.5		0.8		15.5		1.7				

Intersection Summary		
HCM 6th Ctrl Delay		21.2
HCM 6th LOS		C

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	3	312	426	6	0	0
Future Volume (Veh/h)	3	312	426	6	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	3	343	468	7	0	0
Pedestrians		6	1		44	
Lane Width (ft)		10.0	10.0		0.0	
Walking Speed (ft/s)		3.5	3.5		3.5	
Percent Blockage		0	0		0	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		330	346			
pX, platoon unblocked	0.81				0.86	0.81
vC, conflicting volume	519				866	522
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	290				511	294
tC, single (s)	4.4				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.5				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	903				450	606

Direction, Lane #	EB 1	WB 1
Volume Total	346	475
Volume Left	3	0
Volume Right	0	7
cSH	903	1700
Volume to Capacity	0.00	0.28
Queue Length 95th (ft)	0	0
Control Delay (s)	0.1	0.0
Lane LOS	A	
Approach Delay (s)	0.1	0.0
Approach LOS		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	34.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	200	97	17	346	90	59	414	15	78	482	22
Future Volume (veh/h)	12	200	97	17	346	90	59	414	15	78	482	22
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.97	0.99		0.97	1.00		0.98	0.99		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1781	1885	1767	1900	1870	1856	1781	1856	1900	1885	1870	1767
Adj Flow Rate, veh/h	13	217	105	18	376	98	64	450	16	85	524	24
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	8	1	9	0	2	3	8	3	0	1	2	9
Cap, veh/h	405	499	242	73	586	148	121	633	21	137	628	27
Arrive On Green	0.42	0.42	0.42	0.42	0.42	0.42	0.43	0.43	0.43	0.43	0.43	0.43
Sat Flow, veh/h	867	1188	575	26	1395	353	125	1473	50	160	1459	64
Grp Volume(v), veh/h	13	0	322	492	0	0	530	0	0	633	0	0
Grp Sat Flow(s),veh/h/ln	867	0	1763	1775	0	0	1648	0	0	1683	0	0
Q Serve(g_s), s	0.0	0.0	7.8	0.0	0.0	0.0	0.0	0.0	0.0	4.8	0.0	0.0
Cycle Q Clear(g_c), s	0.9	0.0	7.8	13.1	0.0	0.0	15.5	0.0	0.0	20.3	0.0	0.0
Prop In Lane	1.00		0.33	0.04		0.20	0.12		0.03	0.13		0.04
Lane Grp Cap(c), veh/h	405	0	741	808	0	0	776	0	0	792	0	0
V/C Ratio(X)	0.03	0.00	0.43	0.61	0.00	0.00	0.68	0.00	0.00	0.80	0.00	0.00
Avail Cap(c_a), veh/h	405	0	741	808	0	0	776	0	0	792	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	10.4	0.0	12.3	13.9	0.0	0.0	13.9	0.0	0.0	15.3	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	1.9	3.4	0.0	0.0	4.8	0.0	0.0	8.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	3.0	5.4	0.0	0.0	6.0	0.0	0.0	8.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.5	0.0	14.2	17.3	0.0	0.0	18.7	0.0	0.0	23.6	0.0	0.0
LnGrp LOS	B	A	B	B	A	A	B	A	A	C	A	A
Approach Vol, veh/h		335			492			530			633	
Approach Delay, s/veh		14.1			17.3			18.7			23.6	
Approach LOS		B			B			B			C	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	30.0	30.0	30.0	30.0
Change Period (Y+Rc), s	* 4.2	* 4.8	* 4.2	* 4.8
Max Green Setting (Gmax), s	* 26	* 25	* 26	* 25
Max Q Clear Time (g_c+I1), s	17.5	9.8	22.3	15.1
Green Ext Time (p_c), s	2.3	1.8	1.4	2.3

Intersection Summary	
HCM 6th Ctrl Delay	19.1
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

VZ: Hunting Park
1: Venango St/Wissahickon Ave & Hunting Park Ave

2022 Proposed Improvements
PM Peak Hour

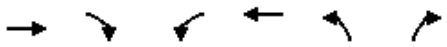
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	202	856	17	0	743	249	62	262	9	291	212	168
Future Volume (veh/h)	202	856	17	0	743	249	62	262	9	291	212	168
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1841	1811	0	1841	1767	1856	1885	1737	1752	1856	1796
Adj Flow Rate, veh/h	210	892	0	0	774	259	65	273	9	303	221	175
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	4	6	0	4	9	3	1	11	10	3	7
Cap, veh/h	296	1710		0	1244	532	287	383	13	283	660	540
Arrive On Green	0.07	0.49	0.00	0.00	0.36	0.36	0.21	0.21	0.21	0.08	0.36	0.36
Sat Flow, veh/h	1810	3589	0	0	3589	1495	979	1814	60	1668	1856	1520
Grp Volume(v), veh/h	210	892	0	0	774	259	65	0	282	303	221	175
Grp Sat Flow(s),veh/h/ln	1810	1749	0	0	1749	1495	979	0	1874	1668	1856	1520
Q Serve(g_s), s	6.0	15.7	0.0	0.0	16.5	12.2	5.0	0.0	12.6	7.0	7.8	7.5
Cycle Q Clear(g_c), s	6.0	15.7	0.0	0.0	16.5	12.2	5.0	0.0	12.6	7.0	7.8	7.5
Prop In Lane	1.00		0.00	0.00		1.00	1.00		0.03	1.00		1.00
Lane Grp Cap(c), veh/h	296	1710		0	1244	532	287	0	396	283	660	540
V/C Ratio(X)	0.71	0.52		0.00	0.62	0.49	0.23	0.00	0.71	1.07	0.33	0.32
Avail Cap(c_a), veh/h	296	1710		0	1244	532	287	0	396	283	660	540
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.2	15.8	0.0	0.0	24.0	22.6	30.0	0.0	33.0	32.9	21.2	21.1
Incr Delay (d2), s/veh	13.4	1.1	0.0	0.0	2.4	3.2	1.8	0.0	10.4	73.4	1.4	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	6.2	0.0	0.0	7.0	4.6	1.3	0.0	6.7	8.8	3.6	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.7	16.9	0.0	0.0	26.4	25.8	31.8	0.0	43.4	106.4	22.6	22.7
LnGrp LOS	C	B		A	C	C	C	A	D	F	C	C
Approach Vol, veh/h		1102			1033			347			699	
Approach Delay, s/veh		20.1			26.2			41.2			58.9	
Approach LOS		C			C			D			E	

Timer - Assigned Phs	2	4	5	6	7	8
Phs Duration (G+Y+Rc), s	51.0	39.0	12.0	39.0	13.0	26.0
Change Period (Y+Rc), s	7.0	7.0	6.0	7.0	6.0	7.0
Max Green Setting (Gmax), s	44.0	32.0	6.0	32.0	7.0	19.0
Max Q Clear Time (g_c+I1), s	17.7	9.8	8.0	18.5	9.0	14.6
Green Ext Time (p_c), s	7.1	1.8	0.0	5.3	0.0	0.8

Intersection Summary	
HCM 6th Ctrl Delay	32.9
HCM 6th LOS	C

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1135	20	8	1011	0	0
Future Volume (Veh/h)	1135	20	8	1011	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	1207	21	9	1076	0	0
Pedestrians	5				40	
Lane Width (ft)	10.0				0.0	
Walking Speed (ft/s)	3.5				3.5	
Percent Blockage	0				0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	295			579		
pX, platoon unblocked			0.81		0.86	0.81
vC, conflicting volume			1268		1818	654
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			851		1076	90
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		100	100
cM capacity (veh/h)			642		183	772

Direction, Lane #	EB 1	EB 2	WB 1	WB 2
Volume Total	805	423	368	717
Volume Left	0	0	9	0
Volume Right	0	21	0	0
cSH	1700	1700	642	1700
Volume to Capacity	0.47	0.25	0.01	0.42
Queue Length 95th (ft)	0	0	1	0
Control Delay (s)	0.0	0.0	0.4	0.0
Lane LOS			A	
Approach Delay (s)	0.0		0.2	
Approach LOS				

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	36.9%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	254	16	22	0	251	17	72	96	0	0	0
Future Vol, veh/h	0	254	16	22	0	251	17	72	96	0	0	0
Conflicting Peds, #/hr	49	0	14	14	0	49	53	0	11	11	0	53
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	9	38	9	0	8	0	1	4	0	0	0
Mvmt Flow	0	262	16	23	0	259	18	74	99	0	0	0

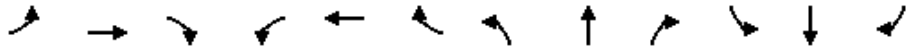
Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	-	0	0	292	0	0	513	638	295
Stage 1	-	-	-	-	-	-	284	284	-
Stage 2	-	-	-	-	-	-	229	354	-
Critical Hdwy	-	-	-	4.19	-	-	6.4	6.51	6.24
Critical Hdwy Stg 1	-	-	-	-	-	-	5.4	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	5.51	-
Follow-up Hdwy	-	-	-	2.281	-	-	3.5	4.009	3.336
Pot Cap-1 Maneuver	0	-	-	1231	-	-	525	396	740
Stage 1	0	-	-	-	-	-	769	678	-
Stage 2	0	-	-	-	-	-	814	632	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	-	-	-	1217	-	-	486	0	725
Mov Cap-2 Maneuver	-	-	-	-	-	-	486	0	-
Stage 1	-	-	-	-	-	-	761	0	-
Stage 2	-	-	-	-	-	-	762	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.6	11.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	725	-	-	1217	-	-
HCM Lane V/C Ratio	0.239	-	-	0.019	-	-
HCM Control Delay (s)	11.5	-	-	8	0	-
HCM Lane LOS	B	-	-	A	A	-
HCM 95th %tile Q(veh)	0.9	-	-	0.1	-	-

VZ: Hunting Park
4: 22nd St/Schuyler St & Hunting Park Ave

2022 Proposed Improvements
PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	862	0	0	777	31	248	33	84	42	1	12
Future Volume (veh/h)	3	862	0	0	777	31	248	33	84	42	1	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	0.97		0.96	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1826	0	0	1841	1900	1781	1900	1870	1900	1900	1900
Adj Flow Rate, veh/h	3	880	0	0	793	32	253	34	86	43	1	12
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	5	0	0	4	0	8	0	2	0	0	0
Cap, veh/h	41	2115	0	0	2128	86	294	30	77	302	15	67
Arrive On Green	0.62	0.62	0.00	0.00	0.42	0.42	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	2	3482	0	0	3513	138	1020	137	347	1039	67	302
Grp Volume(v), veh/h	473	410	0	0	405	420	373	0	0	56	0	0
Grp Sat Flow(s),veh/h/ln	1822	1578	0	0	1749	1810	1504	0	0	1408	0	0
Q Serve(g_s), s	0.0	11.9	0.0	0.0	14.4	14.4	17.3	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	11.9	11.9	0.0	0.0	14.4	14.4	20.0	0.0	0.0	2.7	0.0	0.0
Prop In Lane	0.01		0.00	0.00		0.08	0.68		0.23	0.77		0.21
Lane Grp Cap(c), veh/h	1174	982	0	0	1088	1126	401	0	0	384	0	0
V/C Ratio(X)	0.40	0.42	0.00	0.00	0.37	0.37	0.93	0.00	0.00	0.15	0.00	0.00
Avail Cap(c_a), veh/h	1174	982	0	0	1088	1126	401	0	0	384	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.7	8.7	0.0	0.0	14.1	14.1	35.8	0.0	0.0	28.2	0.0	0.0
Incr Delay (d2), s/veh	1.0	1.3	0.0	0.0	1.0	0.9	30.2	0.0	0.0	0.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	4.0	0.0	0.0	6.4	6.6	11.6	0.0	0.0	1.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.7	10.0	0.0	0.0	15.1	15.1	66.0	0.0	0.0	29.0	0.0	0.0
LnGrp LOS	A	A	A	A	B	B	E	A	A	C	A	A
Approach Vol, veh/h		883			825			373			56	
Approach Delay, s/veh		9.8			15.1			66.0			29.0	
Approach LOS		A			B			E			C	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	64.0	26.0	64.0	26.0
Change Period (Y+Rc), s	8.0	6.0	8.0	6.0
Max Green Setting (Gmax), s	56.0	20.0	56.0	20.0
Max Q Clear Time (g_c+I1), s	13.9	4.7	16.4	22.0
Green Ext Time (p_c), s	6.8	0.2	6.2	0.0

Intersection Summary	
HCM 6th Ctrl Delay	22.2
HCM 6th LOS	C

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕						↕	
Traffic Vol, veh/h	1	947	10	83	804	11	0	0	0	4	4	3
Future Vol, veh/h	1	947	10	83	804	11	0	0	0	4	4	3
Conflicting Peds, #/hr	6	0	19	19	0	6	2	0	0	0	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	1081	581	568	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	99	99	99	99	99	99	99	99	99	99	99	99
Heavy Vehicles, %	0	5	0	0	4	0	0	0	0	0	0	0
Mvmt Flow	1	957	10	84	812	11	0	0	0	4	4	3

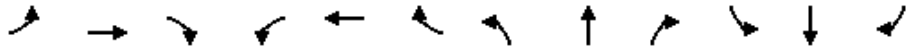
Major/Minor	Major1			Major2						Minor2		
Conflicting Flow All	829	0	0	986	0	0				1473	1980	420
Stage 1	-	-	-	-	-	-				992	992	-
Stage 2	-	-	-	-	-	-				481	988	-
Critical Hdwy	4.1	-	-	4.1	-	-				6.8	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-				5.8	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-				5.8	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-				3.5	4	3.3
Pot Cap-1 Maneuver	811	-	-	709	-	-				120	62	588
Stage 1	-	-	-	-	-	-				324	326	-
Stage 2	-	-	-	-	-	-				593	328	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	807	-	-	709	-	-				93	0	584
Mov Cap-2 Maneuver	-	-	-	-	-	-				93	0	-
Stage 1	-	-	-	-	-	-				321	0	-
Stage 2	-	-	-	-	-	-				461	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	1.9	31.9
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	807	-	-	709	-	-	145
HCM Lane V/C Ratio	0.001	-	-	0.118	-	-	0.077
HCM Control Delay (s)	9.5	0	-	10.8	1	-	31.9
HCM Lane LOS	A	A	-	B	A	-	D
HCM 95th %tile Q(veh)	0	-	-	0.4	-	-	0.2

VZ: Hunting Park
6: 20th St/Blaine St & Hunting Park Ave

2022 Proposed Improvements
PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	933	24	85	862	0	6	0	67	14	10	17
Future Volume (veh/h)	0	933	24	85	862	0	6	0	67	14	10	17
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		1.00	0.99		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1826	1900	1900	1856	0	1648	1900	1796	1900	1900	1900
Adj Flow Rate, veh/h	0	962	25	88	889	0	6	0	69	14	10	18
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	5	0	0	3	0	17	0	7	0	0	0
Cap, veh/h	0	2225	58	174	1725	0	52	19	328	146	110	153
Arrive On Green	0.00	0.64	0.64	1.00	1.00	0.00	0.22	0.00	0.22	0.22	0.22	0.22
Sat Flow, veh/h	0	3542	90	197	2760	0	45	83	1466	418	491	681
Grp Volume(v), veh/h	0	484	503	451	526	0	75	0	0	42	0	0
Grp Sat Flow(s),veh/h/ln	0	1735	1806	1268	1604	0	1594	0	0	1589	0	0
Q Serve(g_s), s	0.0	12.6	12.6	5.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	12.6	12.6	17.8	0.0	0.0	3.5	0.0	0.0	1.7	0.0	0.0
Prop In Lane	0.00		0.05	0.20		0.00	0.08		0.92	0.33		0.43
Lane Grp Cap(c), veh/h	0	1118	1164	865	1034	0	400	0	0	409	0	0
V/C Ratio(X)	0.00	0.43	0.43	0.52	0.51	0.00	0.19	0.00	0.00	0.10	0.00	0.00
Avail Cap(c_a), veh/h	0	1118	1164	865	1034	0	400	0	0	409	0	0
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	8.0	8.0	0.3	0.0	0.0	28.9	0.0	0.0	28.2	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.2	1.2	2.2	1.8	0.0	1.0	0.0	0.0	0.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.5	4.7	0.5	0.5	0.0	1.4	0.0	0.0	0.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	9.2	9.2	2.6	1.8	0.0	29.9	0.0	0.0	28.7	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	C	A	A	C	A	A
Approach Vol, veh/h		987			977			75			42	
Approach Delay, s/veh		9.2			2.2			29.9			28.7	
Approach LOS		A			A			C			C	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	65.0	26.5	65.0	26.5
Change Period (Y+Rc), s	6.0	* 6	6.0	6.0
Max Green Setting (Gmax), s	59.0	* 21	59.0	19.0
Max Q Clear Time (g_c+I1), s	14.6	3.7	19.8	5.5
Green Ext Time (p_c), s	8.1	0.1	9.0	0.3

Intersection Summary	
HCM 6th Ctrl Delay	7.0
HCM 6th LOS	A

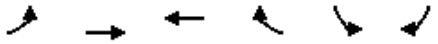
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	991	1	5	947	14	0	0	0	0	0	0
Future Volume (Veh/h)	13	991	1	5	947	14	0	0	0	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	14	1032	1	5	986	15	0	0	0	0	0	0
Pedestrians		4			2			14			18	
Lane Width (ft)		10.0			10.0			0.0			0.0	
Walking Speed (ft/s)		3.5			3.5			3.5			3.5	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		189			573							
pX, platoon unblocked	0.89			0.85			0.91	0.91	0.85	0.91	0.91	0.89
vC, conflicting volume	1019			1047			1582	2104	532	1568	2096	522
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	766			706			877	1452	102	862	1444	207
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			99			100	100	100	100	100	100
cM capacity (veh/h)	759			768			218	117	799	224	118	712

Direction, Lane #	EB 1	EB 2	WB 1	WB 2
Volume Total	530	517	498	508
Volume Left	14	0	5	0
Volume Right	0	1	0	15
cSH	759	1700	768	1700
Volume to Capacity	0.02	0.30	0.01	0.30
Queue Length 95th (ft)	1	0	0	0
Control Delay (s)	0.5	0.0	0.2	0.0
Lane LOS	A		A	
Approach Delay (s)	0.3		0.1	
Approach LOS				

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	39.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	6	982	915	12	0	0
Future Volume (Veh/h)	6	982	915	12	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	6	1034	963	13	0	0
Pedestrians		1	7		10	
Lane Width (ft)		10.0	10.0		0.0	
Walking Speed (ft/s)		3.5	3.5		3.5	
Percent Blockage		0	1		0	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		499	263			
pX, platoon unblocked	0.87				0.92	0.87
vC, conflicting volume	986				1516	499
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	695				777	137
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				100	100
cM capacity (veh/h)	795				308	779

Direction, Lane #	EB 1	EB 2	WB 1	WB 2
Volume Total	351	689	642	334
Volume Left	6	0	0	0
Volume Right	0	0	0	13
cSH	795	1700	1700	1700
Volume to Capacity	0.01	0.41	0.38	0.20
Queue Length 95th (ft)	1	0	0	0
Control Delay (s)	0.3	0.0	0.0	0.0
Lane LOS	A			
Approach Delay (s)	0.1		0.0	
Approach LOS				

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	41.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	3	989	914	11	0	0
Future Volume (Veh/h)	3	989	914	11	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	3	1020	942	11	0	0
Pedestrians		9	22		13	
Lane Width (ft)		10.0	10.0		0.0	
Walking Speed (ft/s)		3.5	3.5		3.5	
Percent Blockage		1	2		0	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		664	98			
pX, platoon unblocked	0.87				0.93	0.87
vC, conflicting volume	966				1498	498
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	657				762	119
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	816				315	791

Direction, Lane #	EB 1	EB 2	WB 1	WB 2
Volume Total	343	680	628	325
Volume Left	3	0	0	0
Volume Right	0	0	0	11
cSH	816	1700	1700	1700
Volume to Capacity	0.00	0.40	0.37	0.19
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	0.1	0.0	0.0	0.0
Lane LOS	A			
Approach Delay (s)	0.0		0.0	
Approach LOS				

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	42.0%	ICU Level of Service	A
Analysis Period (min)	15		

VZ: Hunting Park
10: 19th St/Alfred St & Hunting Park Ave

2022 Proposed Improvements
PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	990	0	0	829	4	118	1	124	0	0	0
Future Volume (veh/h)	4	990	0	0	829	4	118	1	124	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.95			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1826	0	0	1826	1870	1870	1870	1885			
Adj Flow Rate, veh/h	4	1031	0	0	864	4	123	1	129			
Peak Hour Factor	0.92	0.96	0.96	0.96	0.96	0.92	0.96	0.92	0.96			
Percent Heavy Veh, %	2	5	0	0	5	2	2	2	1			
Cap, veh/h	42	2152	0	0	2243	10	185	2	194			
Arrive On Green	1.00	1.00	0.00	0.00	0.63	0.63	0.23	0.23	0.23			
Sat Flow, veh/h	2	3480	0	0	3632	16	792	6	830			
Grp Volume(v), veh/h	555	480	0	0	423	445	253	0	0			
Grp Sat Flow(s),veh/h/ln	1821	1578	0	0	1735	1823	1628	0	0			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	10.6	10.7	12.7	0.0	0.0			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	10.6	10.7	12.7	0.0	0.0			
Prop In Lane	0.01		0.00	0.00		0.01	0.49		0.51			
Lane Grp Cap(c), veh/h	1194	1000	0	0	1099	1155	380	0	0			
V/C Ratio(X)	0.46	0.48	0.00	0.00	0.39	0.39	0.67	0.00	0.00			
Avail Cap(c_a), veh/h	1194	1000	0	0	1099	1155	380	0	0			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	8.0	8.0	31.3	0.0	0.0			
Incr Delay (d2), s/veh	1.3	1.7	0.0	0.0	1.0	1.0	8.9	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.4	0.5	0.0	0.0	3.8	4.0	5.8	0.0	0.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	1.3	1.7	0.0	0.0	9.0	9.0	40.2	0.0	0.0			
LnGrp LOS	A	A	A	A	A	A	D	A	A			
Approach Vol, veh/h		1035			868			253				
Approach Delay, s/veh		1.5			9.0			40.2				
Approach LOS		A			A			D				
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		63.0				63.0		27.0				
Change Period (Y+Rc), s		6.0				6.0		6.0				
Max Green Setting (Gmax), s		57.0				57.0		21.0				
Max Q Clear Time (g_c+I1), s		2.0				12.7		14.7				
Green Ext Time (p_c), s		8.9				6.7		0.8				
Intersection Summary												
HCM 6th Ctrl Delay			9.0									
HCM 6th LOS			A									

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕						↕	
Traffic Vol, veh/h	2	1071	26	13	801	7	0	0	0	17	7	8
Future Vol, veh/h	2	1071	26	13	801	7	0	0	0	17	7	8
Conflicting Peds, #/hr	13	0	42	42	0	13	13	0	6	6	0	13
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	1080	713216	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	0	4	19	8	5	0	0	0	0	6	0	0
Mvmt Flow	2	1093	27	13	817	7	0	0	0	17	7	8

Major/Minor	Major1			Major2				Minor2		
Conflicting Flow All	837	0	0	1162	0	0		1417	2026	438
Stage 1	-	-	-	-	-	-		860	860	-
Stage 2	-	-	-	-	-	-		557	1166	-
Critical Hdwy	4.1	-	-	4.26	-	-		6.92	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-		5.92	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-		5.92	5.5	-
Follow-up Hdwy	2.2	-	-	2.28	-	-		3.56	4	3.3
Pot Cap-1 Maneuver	806	-	-	564	-	-		123	58	572
Stage 1	-	-	-	-	-	-		365	376	-
Stage 2	-	-	-	-	-	-		526	270	-
Platoon blocked, %		-	-		-	-				
Mov Cap-1 Maneuver	798	-	-	564	-	-		115	0	560
Mov Cap-2 Maneuver	-	-	-	-	-	-		115	0	-
Stage 1	-	-	-	-	-	-		359	0	-
Stage 2	-	-	-	-	-	-		498	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0.4	34.6
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	798	-	-	564	-	-	154
HCM Lane V/C Ratio	0.003	-	-	0.024	-	-	0.212
HCM Control Delay (s)	9.5	0	-	11.5	0.2	-	34.6
HCM Lane LOS	A	A	-	B	A	-	D
HCM 95th %tile Q(veh)	0	-	-	0.1	-	-	0.8

VZ: Hunting Park
12: 18th St/Clarissa St & Hunting Park Ave

2022 Proposed Improvements
PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	321	770	2	65	610	140	10	243	42	74	198	184
Future Volume (veh/h)	321	770	2	65	610	140	10	243	42	74	198	184
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.93	0.98		0.93	0.96		0.92	0.96		0.92
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1796	1900	1900	1811	1841	1900	1841	1826	1796	1841	1870
Adj Flow Rate, veh/h	328	786	2	66	622	143	10	248	43	76	202	188
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	7	0	0	6	4	0	4	5	7	4	2
Cap, veh/h	377	1901	5	353	1094	251	47	410	69	282	511	403
Arrive On Green	0.08	0.54	0.54	0.40	0.40	0.40	0.28	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	1810	3491	9	682	2735	627	22	1476	250	1002	1841	1452
Grp Volume(v), veh/h	328	384	404	66	391	374	301	0	0	76	202	188
Grp Sat Flow(s),veh/h/ln	1810	1706	1794	682	1721	1641	1748	0	0	1002	1841	1452
Q Serve(g_s), s	7.0	11.9	11.9	5.8	15.9	16.0	0.0	0.0	0.0	0.0	8.0	9.7
Cycle Q Clear(g_c), s	7.0	11.9	11.9	5.8	15.9	16.0	13.3	0.0	0.0	12.0	8.0	9.7
Prop In Lane	1.00		0.00	1.00		0.38	0.03		0.14	1.00		1.00
Lane Grp Cap(c), veh/h	377	929	977	353	688	657	527	0	0	282	511	403
V/C Ratio(X)	0.87	0.41	0.41	0.19	0.57	0.57	0.57	0.00	0.00	0.27	0.40	0.47
Avail Cap(c_a), veh/h	377	929	977	353	688	657	527	0	0	282	511	403
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.4	12.1	12.1	17.9	21.0	21.0	28.3	0.0	0.0	27.8	26.4	27.0
Incr Delay (d2), s/veh	23.0	1.4	1.3	1.2	3.4	3.6	4.5	0.0	0.0	2.3	2.3	3.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.0	4.6	4.8	1.0	6.8	6.5	6.2	0.0	0.0	1.5	3.8	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.4	13.4	13.3	19.1	24.3	24.6	32.7	0.0	0.0	30.2	28.6	30.8
LnGrp LOS	D	B	B	B	C	C	C	A	A	C	C	C
Approach Vol, veh/h		1116			831			301			466	
Approach Delay, s/veh		22.8			24.0			32.7			29.8	
Approach LOS		C			C			C			C	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		58.0		32.0	13.0	45.0		32.0				
Change Period (Y+Rc), s		9.0		7.0	6.0	9.0		7.0				
Max Green Setting (Gmax), s		49.0		25.0	7.0	36.0		25.0				
Max Q Clear Time (g_c+I1), s		13.9		14.0	9.0	18.0		15.3				
Green Ext Time (p_c), s		5.7		1.7	0.0	5.3		1.2				

Intersection Summary												
HCM 6th Ctrl Delay			25.5									
HCM 6th LOS			C									

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	794	98	106	678	125	93
Future Volume (veh/h)	794	98	106	678	125	93
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.81	0.97		1.00	0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1826	1811	1826	1826	1870	1856
Adj Flow Rate, veh/h	934	115	125	798	147	109
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	5	6	5	5	2	3
Cap, veh/h	1981	244	218	1437	203	151
Arrive On Green	0.66	0.66	1.00	1.00	0.21	0.21
Sat Flow, veh/h	3113	372	251	2276	963	714
Grp Volume(v), veh/h	536	513	370	553	257	0
Grp Sat Flow(s),veh/h/ln	1735	1659	865	1578	1684	0
Q Serve(g_s), s	13.9	13.9	13.8	0.0	12.8	0.0
Cycle Q Clear(g_c), s	13.9	13.9	27.7	0.0	12.8	0.0
Prop In Lane		0.22	0.34		0.57	0.42
Lane Grp Cap(c), veh/h	1137	1088	621	1035	356	0
V/C Ratio(X)	0.47	0.47	0.60	0.53	0.72	0.00
Avail Cap(c_a), veh/h	1137	1088	621	1035	356	0
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	7.7	7.7	2.0	0.0	33.0	0.0
Incr Delay (d2), s/veh	1.4	1.5	4.2	2.0	12.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	4.7	0.7	0.6	6.3	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	9.1	9.2	6.2	2.0	45.1	0.0
LnGrp LOS	A	A	A	A	D	A
Approach Vol, veh/h	1049			923	257	
Approach Delay, s/veh	9.2			3.7	45.1	
Approach LOS	A			A	D	

Timer - Assigned Phs	2				6	8
Phs Duration (G+Y+Rc), s	65.0				65.0	25.0
Change Period (Y+Rc), s	6.0				6.0	6.0
Max Green Setting (Gmax), s	59.0				59.0	19.0
Max Q Clear Time (g_c+I1), s	15.9				29.7	14.8
Green Ext Time (p_c), s	9.1				8.5	0.3

Intersection Summary	
HCM 6th Ctrl Delay	11.0
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	835	40	1	745	134	2	404	57	97	279	50
Future Volume (veh/h)	12	835	40	1	745	134	2	404	57	97	279	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.96		0.80	0.95		0.80	1.00		0.90	0.97		0.89
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1781	1826	1856	1900	1826	1885	1900	1841	1826	1870	1811	1781
Adj Flow Rate, veh/h	13	928	44	1	828	149	2	449	63	108	310	56
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	8	5	3	0	5	1	0	4	5	2	6	8
Cap, veh/h	49	1570	74	40	1347	242	41	574	80	127	301	51
Arrive On Green	0.98	0.98	0.98	0.16	0.16	0.16	0.37	0.37	0.37	0.37	0.37	0.37
Sat Flow, veh/h	16	3211	151	0	2756	495	1	1565	219	211	822	138
Grp Volume(v), veh/h	522	0	463	549	0	429	514	0	0	474	0	0
Grp Sat Flow(s),veh/h/ln	1788	0	1590	1825	0	1427	1786	0	0	1171	0	0
Q Serve(g_s), s	0.0	0.0	1.4	0.0	0.0	25.2	0.0	0.0	0.0	9.8	0.0	0.0
Cycle Q Clear(g_c), s	1.3	0.0	1.4	25.2	0.0	25.2	23.2	0.0	0.0	33.0	0.0	0.0
Prop In Lane	0.02		0.09	0.00		0.35	0.00		0.12	0.23		0.12
Lane Grp Cap(c), veh/h	915	0	777	932	0	698	695	0	0	478	0	0
V/C Ratio(X)	0.57	0.00	0.60	0.59	0.00	0.62	0.74	0.00	0.00	0.99	0.00	0.00
Avail Cap(c_a), veh/h	915	0	777	932	0	698	695	0	0	478	0	0
HCM Platoon Ratio	2.00	2.00	2.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.5	0.0	0.5	29.9	0.0	29.9	25.4	0.0	0.0	30.0	0.0	0.0
Incr Delay (d2), s/veh	2.6	0.0	3.4	2.7	0.0	4.0	6.9	0.0	0.0	38.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	0.9	12.9	0.0	10.3	10.7	0.0	0.0	15.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	3.1	0.0	3.9	32.6	0.0	33.9	32.4	0.0	0.0	68.9	0.0	0.0
LnGrp LOS	A	A	A	C	A	C	C	A	A	E	A	A
Approach Vol, veh/h		985			978			514			474	
Approach Delay, s/veh		3.5			33.2			32.4			68.9	
Approach LOS		A			C			C			E	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	50.0	40.0	50.0	40.0
Change Period (Y+Rc), s	6.0	7.0	6.0	7.0
Max Green Setting (Gmax), s	44.0	33.0	44.0	33.0
Max Q Clear Time (g_c+I1), s	3.4	35.0	27.2	25.2
Green Ext Time (p_c), s	8.3	0.0	6.3	2.1

Intersection Summary	
HCM 6th Ctrl Delay	28.9
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	963	18	11	818	0	0	0	0	138	85	63
Future Volume (vph)	0	963	18	11	818	0	0	0	0	138	85	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0						6.0	
Lane Util. Factor		0.95			0.95						1.00	
Frpb, ped/bikes		1.00			1.00						1.00	
Flpb, ped/bikes		1.00			1.00						1.00	
Frt		1.00			1.00						0.97	
Flt Protected		1.00			1.00						0.98	
Satd. Flow (prot)		3193			3204						1631	
Flt Permitted		1.00			0.94						0.98	
Satd. Flow (perm)		3193			3011						1631	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	993	19	11	843	0	0	0	0	142	88	65
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	0	0	11	0
Lane Group Flow (vph)	0	1011	0	0	854	0	0	0	0	0	284	0
Confl. Peds. (#/hr)	56		102	102		56	4		6	6		4
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	0%	5%	0%	9%	5%	0%	0%	0%	0%	1%	5%	3%
Turn Type		NA		Perm	NA					Split	NA	
Protected Phases		2			6 1					4	4	
Permitted Phases				6 1								
Actuated Green, G (s)		32.0			60.0						18.0	
Effective Green, g (s)		32.0			60.0						18.0	
Actuated g/C Ratio		0.36			0.67						0.20	
Clearance Time (s)		6.0									6.0	
Lane Grp Cap (vph)		1135			2007						326	
v/s Ratio Prot		c0.32									c0.17	
v/s Ratio Perm					c0.28							
v/c Ratio		0.89			0.43						0.87	
Uniform Delay, d1		27.3			7.0						34.9	
Progression Factor		0.47			0.09						1.00	
Incremental Delay, d2		7.2			0.5						25.7	
Delay (s)		20.2			1.1						60.6	
Level of Service		C			A						E	
Approach Delay (s)		20.2			1.1			0.0			60.6	
Approach LOS		C			A			A			E	

Intersection Summary				
HCM 2000 Control Delay	18.2	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.77			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	19.0	
Intersection Capacity Utilization	63.1%	ICU Level of Service	B	
Analysis Period (min)	15			

c Critical Lane Group

VZ: Hunting Park
16: Hunting Park Ave & Roosevelt Blvd & 15th St

2022 Proposed Improvements
PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	95	690	233	3	571	17	270	64	7	0	0	0
Future Volume (vph)	95	690	233	3	571	17	270	64	7	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		6.0		7.0	7.0				
Lane Util. Factor		0.95	1.00		0.95		1.00	1.00				
Frpb, ped/bikes		1.00	0.73		1.00		1.00	1.00				
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00				
Frt		1.00	0.85		1.00		1.00	0.99				
Flt Protected		0.99	1.00		1.00		0.95	1.00				
Satd. Flow (prot)		3169	1025		3188		1668	1694				
Flt Permitted		0.76	1.00		0.95		0.95	1.00				
Satd. Flow (perm)		2424	1025		3034		1668	1694				
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	98	711	240	3	589	18	278	66	7	0	0	0
RTOR Reduction (vph)	0	0	91	0	3	0	0	5	0	0	0	0
Lane Group Flow (vph)	0	809	149	0	607	0	278	68	0	0	0	0
Confl. Peds. (#/hr)	36		178	178		36	5		20	20		5
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	1%	6%	8%	0%	5%	0%	1%	0%	29%	0%	0%	0%
Turn Type	pm+pt	NA	Perm	Perm	NA		Split	NA				
Protected Phases	5	2 4!			6		8!	8!				
Permitted Phases	2 4!		2 4	6								
Actuated Green, G (s)		50.0	56.0		32.0		21.0	21.0				
Effective Green, g (s)		50.0	56.0		32.0		21.0	21.0				
Actuated g/C Ratio		0.56	0.62		0.36		0.23	0.23				
Clearance Time (s)					6.0		7.0	7.0				
Lane Grp Cap (vph)		1495	637		1078		389	395				
v/s Ratio Prot		c0.11					c0.17	0.04				
v/s Ratio Perm		0.19	0.15		c0.20							
v/c Ratio		0.54	0.23		0.56		0.71	0.17				
Uniform Delay, d1		12.7	7.5		23.4		31.7	27.6				
Progression Factor		0.09	0.00		1.00		1.84	2.00				
Incremental Delay, d2		0.6	0.4		2.1		6.7	0.6				
Delay (s)		1.7	0.4		25.5		65.2	55.6				
Level of Service		A	A		C		E	E				
Approach Delay (s)		1.4			25.5			63.2			0.0	
Approach LOS		A			C			E			A	

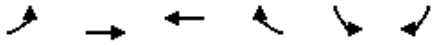
Intersection Summary			
HCM 2000 Control Delay	19.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	86.7%	ICU Level of Service	E
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	191	54	62	317	91	0	1366	48	124	1001	18
Future Volume (veh/h)	40	191	54	62	317	91	0	1366	48	124	1001	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.97	0.98		0.95	1.00		0.91	0.99		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1455	1856	1900	1900	1856	1900	0	1870	1900	1885	1856	1811
Adj Flow Rate, veh/h	41	195	55	63	323	93	0	1394	49	127	1021	18
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	30	3	0	0	3	0	0	2	0	1	3	6
Cap, veh/h	142	414	117	288	411	118	0	2074	73	269	2788	49
Arrive On Green	0.30	0.30	0.30	0.30	0.30	0.30	0.00	0.41	0.41	0.07	0.54	0.54
Sat Flow, veh/h	746	1380	389	1126	1368	394	0	5213	177	1795	5120	90
Grp Volume(v), veh/h	41	0	250	63	0	416	0	941	502	127	673	366
Grp Sat Flow(s),veh/h/ln	746	0	1770	1126	0	1762	0	1702	1818	1795	1689	1833
Q Serve(g_s), s	4.8	0.0	10.4	4.3	0.0	19.5	0.0	20.2	20.2	3.4	10.2	10.2
Cycle Q Clear(g_c), s	24.3	0.0	10.4	14.7	0.0	19.5	0.0	20.2	20.2	3.4	10.2	10.2
Prop In Lane	1.00		0.22	1.00		0.22	0.00		0.10	1.00		0.05
Lane Grp Cap(c), veh/h	142	0	531	288	0	529	0	1399	747	269	1839	998
V/C Ratio(X)	0.29	0.00	0.47	0.22	0.00	0.79	0.00	0.67	0.67	0.47	0.37	0.37
Avail Cap(c_a), veh/h	142	0	531	288	0	529	0	1399	747	269	1839	998
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.0	0.0	25.7	31.7	0.0	28.9	0.0	21.6	21.6	16.3	11.7	11.7
Incr Delay (d2), s/veh	5.0	0.0	3.0	1.7	0.0	11.2	0.0	2.6	4.8	5.9	0.6	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	4.7	1.3	0.0	9.6	0.0	8.2	9.2	1.7	3.7	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.0	0.0	28.7	33.4	0.0	40.1	0.0	24.2	26.3	22.1	12.2	12.7
LnGrp LOS	D	A	C	C	A	D	A	C	C	C	B	B
Approach Vol, veh/h		291			479			1443			1166	
Approach Delay, s/veh		31.0			39.2			24.9			13.5	
Approach LOS		C			D			C			B	

Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	12.0	44.0		34.0		56.0		34.0				
Change Period (Y+Rc), s	6.0	7.0		7.0		7.0		7.0				
Max Green Setting (Gmax), s	6.0	37.0		27.0		49.0		27.0				
Max Q Clear Time (g_c+I1), s	5.4	22.2		26.3		12.2		21.5				
Green Ext Time (p_c), s	0.0	8.5		0.1		8.5		1.4				

Intersection Summary	
HCM 6th Ctrl Delay	23.5
HCM 6th LOS	C



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	6	341	476	17	0	0
Future Volume (Veh/h)	6	341	476	17	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	6	355	496	18	0	0
Pedestrians		3	21		69	
Lane Width (ft)		10.0	10.0		0.0	
Walking Speed (ft/s)		3.5	3.5		3.5	
Percent Blockage		0	2		0	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		330	346			
pX, platoon unblocked	0.80				0.85	0.80
vC, conflicting volume	583				962	577
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	351				598	343
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				100	100
cM capacity (veh/h)	973				388	560

Direction, Lane #	EB 1	WB 1
Volume Total	361	514
Volume Left	6	0
Volume Right	0	18
cSH	973	1700
Volume to Capacity	0.01	0.30
Queue Length 95th (ft)	0	0
Control Delay (s)	0.2	0.0
Lane LOS	A	
Approach Delay (s)	0.2	0.0
Approach LOS		

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	37.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	220	85	25	382	99	74	572	16	81	338	30
Future Volume (veh/h)	29	220	85	25	382	99	74	572	16	81	338	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.96	0.98		0.94	0.99		0.98	0.99		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1870	1900	1900	1870	1885	1885	1900	1870	1870	1856
Adj Flow Rate, veh/h	30	224	87	26	390	101	76	584	16	83	345	31
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	2	2	0	0	2	1	1	0	2	2	3
Cap, veh/h	411	532	207	81	583	146	126	683	18	148	522	43
Arrive On Green	0.42	0.42	0.42	0.42	0.42	0.42	0.43	0.43	0.43	0.43	0.43	0.43
Sat Flow, veh/h	907	1266	492	42	1389	347	137	1589	42	180	1214	101
Grp Volume(v), veh/h	30	0	311	517	0	0	676	0	0	459	0	0
Grp Sat Flow(s),veh/h/ln	907	0	1758	1779	0	0	1768	0	0	1496	0	0
Q Serve(g_s), s	0.0	0.0	7.5	0.8	0.0	0.0	6.9	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	2.1	0.0	7.5	14.0	0.0	0.0	20.9	0.0	0.0	14.0	0.0	0.0
Prop In Lane	1.00		0.28	0.05		0.20	0.11		0.02	0.18		0.07
Lane Grp Cap(c), veh/h	411	0	738	810	0	0	827	0	0	714	0	0
V/C Ratio(X)	0.07	0.00	0.42	0.64	0.00	0.00	0.82	0.00	0.00	0.64	0.00	0.00
Avail Cap(c_a), veh/h	411	0	738	810	0	0	827	0	0	714	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	10.7	0.0	12.3	14.1	0.0	0.0	15.5	0.0	0.0	13.3	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.0	1.8	3.8	0.0	0.0	8.8	0.0	0.0	4.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	2.9	5.8	0.0	0.0	9.1	0.0	0.0	5.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.1	0.0	14.0	18.0	0.0	0.0	24.3	0.0	0.0	17.7	0.0	0.0
LnGrp LOS	B	A	B	B	A	A	C	A	A	B	A	A
Approach Vol, veh/h		341			517			676			459	
Approach Delay, s/veh		13.8			18.0			24.3			17.7	
Approach LOS		B			B			C			B	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	30.0	30.0	30.0	30.0
Change Period (Y+Rc), s	* 4.2	* 4.8	* 4.2	* 4.8
Max Green Setting (Gmax), s	* 26	* 25	* 26	* 25
Max Q Clear Time (g_c+I1), s	22.9	9.5	16.0	16.0
Green Ext Time (p_c), s	1.3	1.8	2.3	2.4

Intersection Summary	
HCM 6th Ctrl Delay	19.3
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Appendix B: Red Light Running and Illumination Crash Analysis Memo

Date: July 12, 2023
To: City of Philadelphia | Office of Transportation, Infrastructure, and Sustainability
From: DVRPC Project Team
Subject: Vision Zero | Hunting Park, Red Light Running and Illumination Crash Analysis Memo

This memorandum explores two additional crash factors that were identified during the project process as concerns for the entire corridor but were not originally considered exclusively: red light running and illumination. This analysis identifies that these two factors are overrepresented among killed and serious injury crashes, among vulnerable road user crashes (bicyclists and pedestrians), and in places along the study area where the highest severity crashes are concentrated.

This analysis demonstrates the need for safety interventions, such as corridor-wide upgrades to lighting and potential installation of red light running cameras, that directly address two critical factors in crash frequency and severity. This analysis also provides additional insight for proposed recommendations with the goal of enhancing the **safety**, **mobility**, and **community vitality** in the study area.

Illumination

Methods

Using the "Illumination" field from the crash table provided by PennDOT, we were able to identify lighting conditions as a crash factor in the 242 reported injury and fatal crashes that happened between Wissahickon Avenue and Old York Road between 2017–2021. Because this field does not identify the adequacy of lighting conditions if streetlights are identified, this analysis includes all instances of "darkness-related" crashes whether or not streetlights are present.

Using the "illumination" field from the PA AA500 crash reporting form, the project team defined "darkness-related" crashes as any crash coded with one of the following categories:

- 2 – Dark – no streetlights,
- 3 – Dark – streetlights,
- 4 – Dusk,
- 5 – Dawn,
- 6 – Dark – unknown roadway lighting.

Definition of darkness-related does **not** include these remaining Illumination categories:

- 1 – Daylight,
- 8 – other,
- 9 – unknown.

Percentages included in this report may not equal 100 due to rounding.

Corridor Results

Corridor-wide, 129 of 242 reported injury and fatal crashes (53 percent) were darkness-related and 16 of 21 (76 percent) killed and serious injury (KSI) crashes were darkness-related. Of the KSI crashes involving cyclists and pedestrians, 13 of 15 crashes (87 percent) were darkness-related.

High Injury Location Results

Locations identified as high injury locations, which are stop-controlled/ signalized intersections that saw higher rates of crashes than elsewhere on the corridor, were also considered in this analysis. Findings are below, listed in order of intersections from west to east.

As a note, 19th Street is in close proximity to Priscilla Street and Alfred Street, both of which are northbound lanes away from Hunting Park Avenue.

- **Wissahickon Avenue (signalized)** at Hunting Park Avenue
    - 12 total crashes
        - 5 total darkness-related crashes (42 percent of crashes)
        - 1 total KSI crash (1 ped KSI)
            - Of which, 100 percent were darkness-related (1 crash)
- **Erie Avenue (signalized) / Schuyler Street (signalized)** at Hunting Park Avenue
    - 17 total crashes
        - 10 darkness-related crashes (59 percent)
        - 2 total KSI crashes (2 ped KSI)
            - Of which, 100 percent were darkness-related (2 crashes)
- **19th Street (signalized)** at Hunting Park Avenue
    - 19 total crashes
        - 13 darkness-related crashes (68 percent of crashes)
        - 3 total KSI crashes (3 ped KSI)
            - Of which, 67 percent were darkness-related (2 crashes)
- **18th Street (signalized)** at Hunting Park Avenue
    - 16 total crashes
        - 8 darkness-related crashes (50 percent of crashes)
        - 1 total KSI crash (0 ped KSI)
            - Of which, 0 percent were darkness-related (0 crashes)
- **Germantown Avenue (signalized)** at Hunting Park Avenue
    - 30 total crashes
        - 18 darkness-related crashes (60 percent of crashes)
        - 1 total KSI crash (1 ped KSI)
            - Of which, 100 percent were darkness-related (1 crash)
- **Broad Street (signalized)** at Hunting Park Avenue
    - 19 total crashes
        - 10 darkness-related crashes (53 percent of crashes)
        - 1 total KSI crash (0 ped KSI)
            - Of which, 0 percent were darkness-related (0 crashes)
- **Old York Road (signalized)** at Hunting Park Avenue
    - 11 total crashes
        - 7 darkness-related crashes (64 percent of crashes)
        - 2 total KSI crash (0 ped KSI, 1 bike KSI)
            - Of which, 50 percent were darkness-related (1 crash). The darkness-related crash was the bike KSI crash that occurred at this location.

Red Light Running

Methods

Using the “Red Light Running” field from the flag table, crashes were identified where red light running was listed as a factor. The flag table, provided by PennDOT’s crash database, is a table identifying crash characteristics and additional crash factors as identified in the initial crash report.

We conducted additional analysis of crash types commonly associated with red light running, such as: angle crashes (front into side)[28], speeding-related crashes[29], and bicyclist and pedestrian-involved crashes[30] all at signalized intersections.

Summary reports were created for the entire corridor for high-level analysis. More in-depth analysis was conducted for high injury locations, which are stop-controlled/signalized intersections that saw higher rates of crashes than elsewhere on the corridor.

Percentages included in this report may not equal 100 due to rounding.

Corridor Results

- 13 of the 242 total injury crashes (5 percent) were confirmed in the flag table as red light running crashes
    - 12 angle crashes; 1 hit pedestrian
    - no KSI crashes
    - 9 of the 13 crashes (69 percent) happened in dark conditions
    - 11 of the 13 (85 percent) occurred at high injury locations
- 7 of the 242 total injury crashes (3 percent) were flagged as speeding-related
    - 3 angle crashes; 3 rear-end crashes; 1 same-direction sideswipe crash; 1 hit pedestrian
    - 2 KSI crashes
    - all 7 (100 percent) occurred at a high injury location
- 36 of the 242 total injury crashes (15 percent) were angle crashes
    - 1 KSI crash
- 45 of the 242 total injury crashes (19 percent) were hit pedestrian crashes
    - 8 KSI crashes
- Additional finding:
    - 3 KSI crashes occurred along an unsignalized stretch between 20th Street and Erie Avenue. This area has been identified by police and community members as problematic due to the speed that drivers pick up here.

High Injury Location Results

Locations identified as high injury locations, which are stop-controlled/signalized intersections that saw higher rates of crashes than elsewhere on the corridor, were also considered in this analysis. Findings are below, listed in order of intersections from west to east. Note that some crashes may be counted in multiple categories, as crashes may have an overlap in factors.

Also as a note, 19th Street is in close proximity to Priscilla Street and Alfred Street, both of which are northbound lanes away from Hunting Park Avenue.

- **Wissahickon Avenue (signalized)** at Hunting Park Avenue
    - 12 total crashes
        - 5 confirmed red light running crashes (42 percent of crashes at Wissahickon)
            - Red light crashes at this intersection make up 38 percent of the corridor's total red light running crashes.

[28] Research compiled by the Insurance Institute for Highway Safety (IIHS) estimates a 13-29% reduction in all types of injury crashes and a 24 percent reduction in right-angle injury crashes. www.iihs.org/topics/red-light-running

[29] PennDOT has two separate fields for "speeding" and "speeding-related" crashes. Because the "speeding-related" field is more inclusive (of behaviors like racing and driving too fast for conditions), it was chosen over the "speeding" field for the sake of this analysis.

[30] highways.dot.gov/safety/intersection-safety/about

- 1 speeding-related crash (8 percent of crashes at Wissahickon)
    - Speeding-related crashes at this intersection make up 14 percent of the corridor's total speeding-related crashes.
- 6 angle crashes (50 percent of crashes at Wissahickon)
    - Angle crashes at this intersection make up 17 percent of the corridor's total angle crashes.
- 5 pedestrian crashes (42 percent of crashes at Wissahickon)
    - Pedestrian crashes at this intersection make up 11 percent of the corridor's total hit pedestrian crashes.
- 0 bicycle crashes

- **Erie Avenue (signalized)/Schuyler**
- **Street (signalized)** at Hunting Park Avenue
    - 17 total crashes
        - 0 confirmed red light running crashes
        - 2 speeding-related crashes (12 percent of crashes at Erie/Schuyler)
            - Red light crashes at this intersection make up 29 percent of the corridor's total red light running crashes.
        - 6 angle crashes (35 percent of crashes at Erie/Schuyler)
            - Angle crashes at this intersection make up 17 percent of the corridor's total angle crashes.
        - 3 pedestrian crashes (18 percent of crashes at Erie/Schuyler)
            - Pedestrian crashes at this intersection make up 7 percent of the corridor's total hit pedestrian crashes.
        - 0 bicycle crashes
- **19th Street (signalized)** at Hunting Park Avenue
    - 19 total crashes
        - 0 confirmed red light running crashes
        - 0 speeding-related crashes
        - 1 angle crash (5 percent of crashes at Erie/Schuyler)
            - Angle crashes at this intersection make up 3 percent of the corridor's total angle crashes.
        - 15 pedestrian crashes (79 percent of crashes at Erie/Schuyler)
            - Pedestrian crashes at this intersection make up 33 percent of the corridor's total hit pedestrian crashes.
        - 0 bicycle crashes
- **18th Street (signalized)** at Hunting Park Avenue
    - 16 total crashes
        - 1 confirmed red light running crash (6 percent of crashes at 18th)
            - Red light running crashes at this intersection make up 8 percent of the corridor's total red light running crashes.
        - 1 speeding-related crash (6 percent of crashes at 18th)
            - Speeding-related crashes at this intersection make up 14 percent of the corridor's total speeding-related crashes.
        - 6 angle crashes (38 percent of crashes at 18th)
            - Angle crashes at this intersection make up 17 percent of the corridor's total angle crashes.
        - 5 pedestrian crashes (31 percent of crashes at 18th)
            - Pedestrian crashes at this intersection make up

11 percent of the corridor's total hit pedestrian crashes.
- 0 bicycle crashes

- **Germantown Avenue (signalized)** at Hunting Park Avenue
  - 30 total crashes
    - 0 confirmed red light running crashes
    - 1 speeding-related crash (3 percent of crashes at Germantown)
      - Speeding-related crashes at this intersection make up 14 percent of the corridor's total speeding-related crashes.
    - 12 angle crashes (40 percent of crashes at Germantown)
      - Angle crashes at this intersection make up 33 percent of the corridor's total angle crashes.
    - 5 pedestrian crashes (17 percent of crashes at Germantown)
      - Pedestrian crashes at this intersection make up 11 percent of the corridor's total hit pedestrian crashes.
    - 1 bicycle crash (3 percent of crashes at Germantown)
      - Bicycle crashes at this intersection make up 33 percent of the corridor's total bicycle crashes.
- **Broad Street (signalized)** at Hunting Park Avenue
  - 19 total crashes
    - 2 confirmed red light running crashes (11 percent of crashes at Broad)
      - Red light running crashes at this intersection make up 15 percent of the corridor's total red light running crashes.
    - 0 speeding-related crashes
    - 2 angle crashes (11 percent of crashes at Broad)
      - Angle crashes at this intersection make up 6 percent of the corridor's total angle crashes.
    - 9 pedestrian crashes (47 percent of crashes at Broad)
      - Pedestrian crashes at this intersection make up 20 percent of the corridor's total hit pedestrian crashes.
    - 0 bicycle crashes
- **Old York Road (signalized)** at Hunting Park Avenue
  - 11 total crashes
    - 3 confirmed red light running crashes (27 percent of crashes at Old York)
      - Red light running crashes at this intersection make up 23 percent of the corridor's total red light running crashes.
    - 2 speeding-related crashes (18 percent of crashes at Old York)
      - Speeding-related crashes at this intersection make up 29 percent of the corridor's total speeding-related crashes.
    - 3 angle crashes (27 percent of crashes at Old York)
      - Angle crashes at this intersection make up 8 percent of the corridor's total angle crashes.
    - 3 pedestrian crashes (27 percent of crashes at Old York)
      - Pedestrian crashes at this intersection make up 7 percent of the corridor's total hit pedestrian crashes.
    - 2 bicycle crashes (18 percent of crashes at Old York)
      - Bicycle crashes at this intersection make up 66 percent of the corridor's total bicycle crashes.

Next Steps

Corridor-wide, 129 of 242 reported crashes resulting in injury or fatality (53 percent) were darkness-related and 16 of 21 (76 percent) killed and serious injury (KSI) crashes were darkness-related. Of the KSI crashes involving cyclists and pedestrians, 13 of 15 crashes (87 percent) were darkness-related.

The red light running analysis identified that 13 of the 242 total injury crashes (5 percent) were confirmed as red light running crashes, according to police reporting. Additional analysis of crash factors commonly associated with red light running identified 7 crashes as speeding-related (3 percent), 36 crashes as angle crashes (15 percent), and 45 crashes as hit pedestrian crashes (19 percent).

With this memorandum, the project team has identified two additional recommendations to address the issues of illumination and red light running as crash factors.

First, it is recommended to pursue corridor-wide lighting improvements, including the installation of pedestrian-scale lighting along the entire corridor and prioritizing high-pedestrian locations, such as: Simon Gratz High School (between 17th and 18th Streets), SEPTA's Venango Street bus loop (Wissahickon Avenue), the entrance to Hunting Park at Old York Road, and the 19th Street area where there are frequent nightlife and other high-pedestrian activities. Though not a high-pedestrian area, the underpass between Erie Avenue and 20th Street should also be considered for targeted lighting improvements due to its history of KSI crashes.

Second, it is recommended to investigate the possibility of automated red light enforcement (ARLE) to address safety at key intersections. Particular intersections with confirmed red light running crashes along Hunting Park Avenue include: Wissahickon Avenue (5 crashes), Broad Street (2 crashes), and Old York Road (3 crashes). However, this analysis also identified other possible crash factors for consideration.

Appendix C: Public Outreach Materials

2022 Fall Community Survey Multiple Choice Results

Figure C-1: When you use W. Hunting Park Avenue, what do you use it for? [check all that apply]

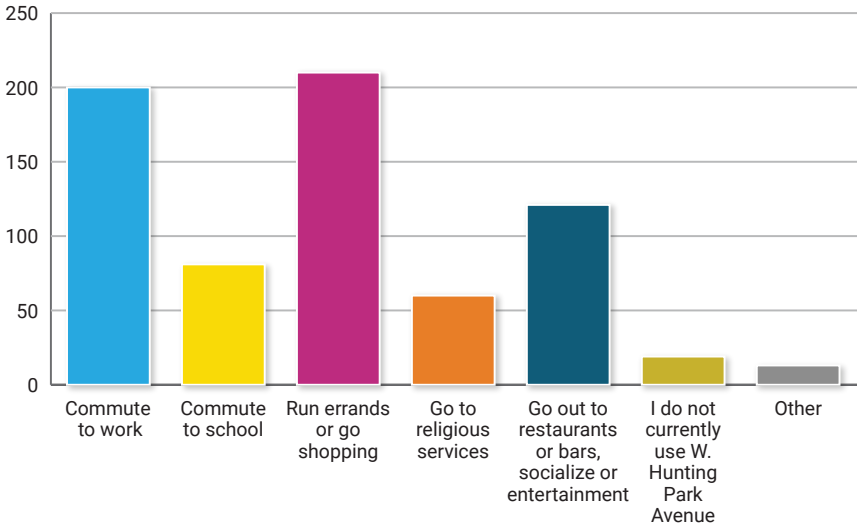


Figure C-2: How frequently do you travel to destinations on or near W. Hunting Park Avenue?

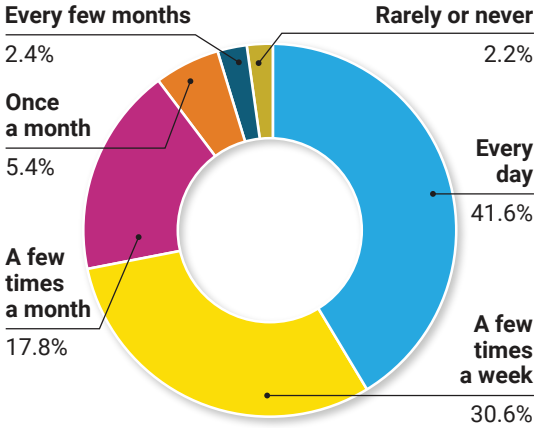


Figure C-3: Thinking about the last month, how have you traveled to destinations on or near W. Hunting Park Avenue? [check all that apply]

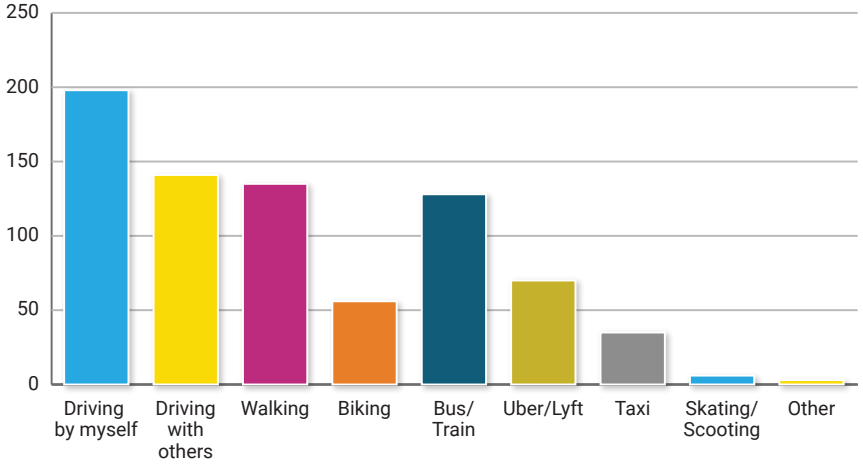


Figure C-4: On a scale of 1-5, how would you rate W. Hunting Park Ave based on the below concerns?

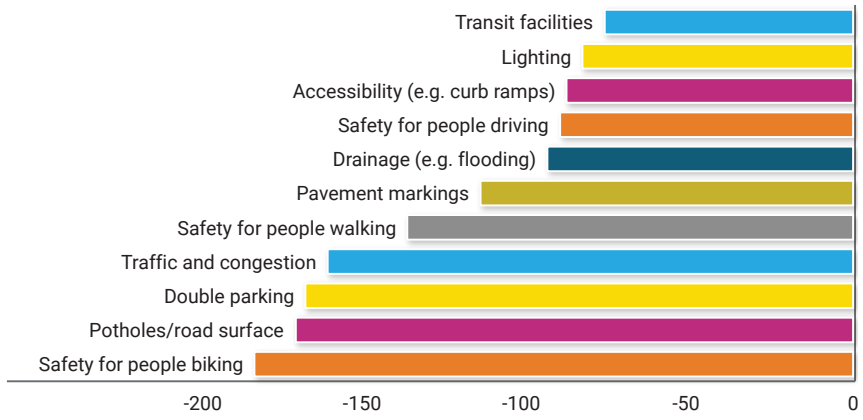


Figure C-5: Select your top three goals for this project:

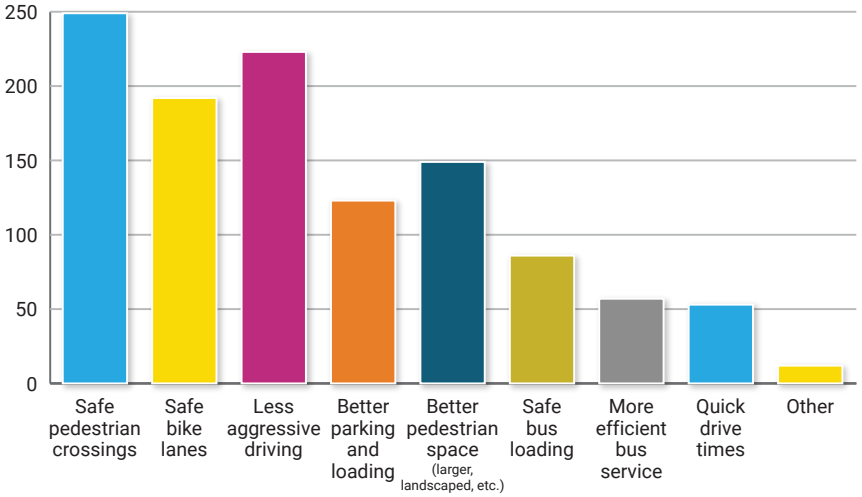


Figure C-6: Are you of Spanish/Hispanic/Latino origin?

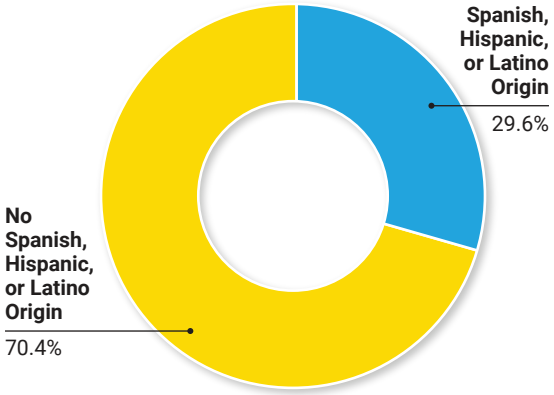


Figure C-7: With which race do you identify? [Select all that apply]

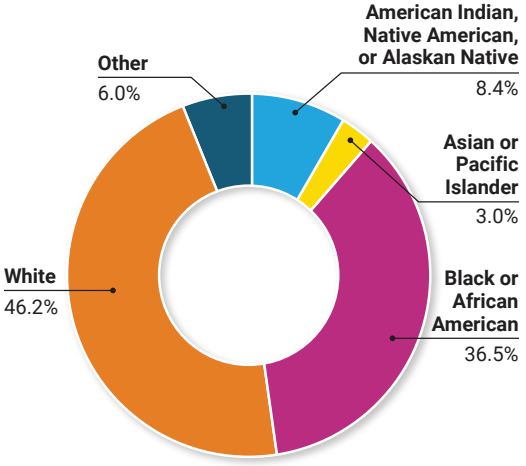


Figure C-8: What is your age range?

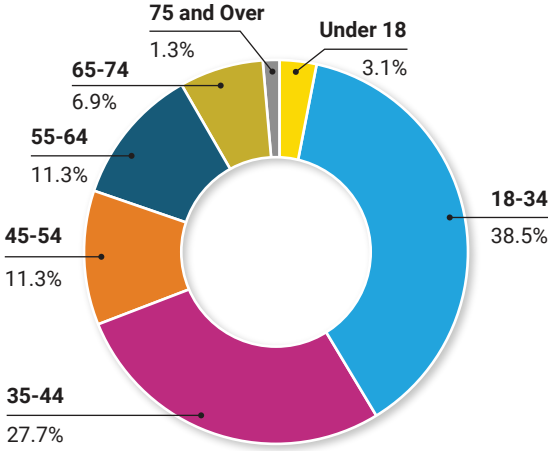


Figure C-9: What is your gender?

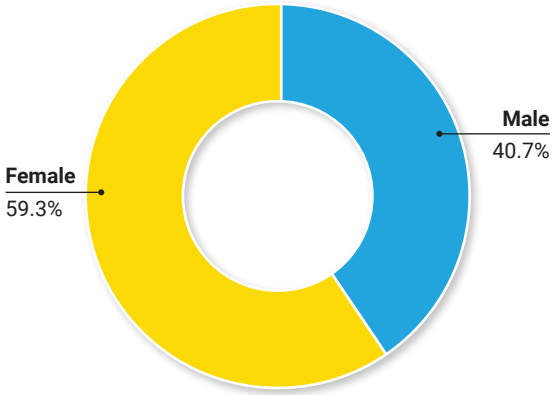


Figure C-10: Do you consider yourself someone with a disability that impacts the way that you travel?

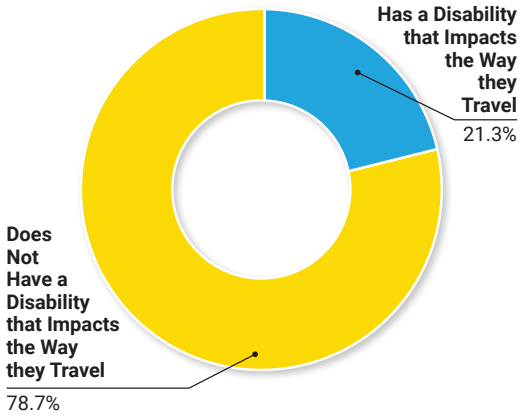
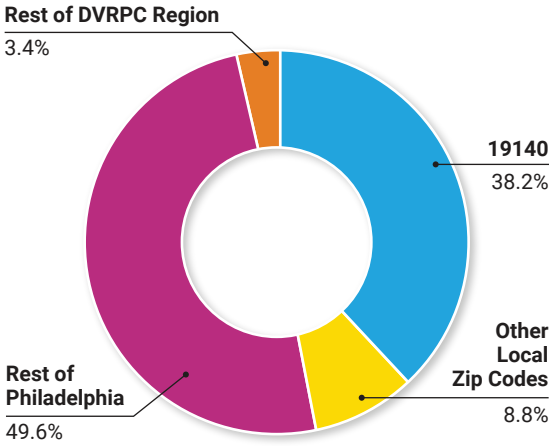


Figure C-11: What is your zip code?



Following open-ended questions are summarized in text in the Public Outreach Chapter:

- Thinking about the last month, what were some of the challenges you faced while traveling on W. Hunting Park Ave? Did those challenges impact how you chose to travel (such as driving instead of walking or taking transit)? [Please describe in the space below.
- How do you think safety along W. Hunting Park Avenue could be improved? [Please describe in the space below.]

VISION ZERØ

HUNTING PARK

Community Survey

Vision Zero is a strategy to eliminate all traffic-related deaths and severe injuries, while increasing safety, health, and mobility for all. As part of the City of Philadelphia's Vision Zero Action Plan 2025, W. Hunting Park Avenue from Wissahickon Avenue to Old York Road was identified as a top ten corridor. For more information, please visit publicparticipation.dvrpc.org/hunting-park.

How do you use W. Hunting Park Avenue?

1. When you use W. Hunting Park Avenue, what do you use it for? [check all that apply]

- ☐ Commute to work
- ☐ Commute to school
- ☐ Run errands or go shopping
- ☐ Go to religious services
- ☐ Go out to restaurants or bars, socialize or entertainment
- ☐ I do not currently use W. Hunting Park Avenue
- ☐ Other: _____

2. How frequently do you travel to destinations on or near W. Hunting Park Avenue?

- ☐ Every day
- ☐ A few times a week
- ☐ A few times a month
- ☐ Once a month
- ☐ Every few months
- ☐ Rarely or never

3. Thinking about the last month, how have you traveled to destinations on or near W. Hunting Park Avenue? [check all that apply]

- ☐ Driving by myself
- ☐ Driving with others
- ☐ Walking
- ☐ Biking
- ☐ Bus/Train
- ☐ Uber/Lyft
- ☐ Taxi
- ☐ Skating/Scooting
- ☐ Other: _____

4. Thinking about the last month, what were some of the challenges you faced while traveling on W. Hunting Park Ave? Did those challenges impact how you chose to travel (such as driving instead of walking or taking transit)? [Please describe in the space below.]

What is your vision for W. Hunting Park Avenue?

5. On a scale of 1-5, how would you rate W. Hunting Park Ave based on the below concerns?

Safety for people walking	○ 1 (Bad)	○ 2	○ 3	○ 4	○ 5 (Great)
Safety for people driving	○ 1 (Bad)	○ 2	○ 3	○ 4	○ 5 (Great)
Safety for people biking	○ 1 (Bad)	○ 2	○ 3	○ 4	○ 5 (Great)
Double parking	○ 1 (Bad)	○ 2	○ 3	○ 4	○ 5 (Great)
Traffic and congestion	○ 1 (Bad)	○ 2	○ 3	○ 4	○ 5 (Great)
Transit facilities	○ 1 (Bad)	○ 2	○ 3	○ 4	○ 5 (Great)

Please turn over >

Pavement markings	○ 1 (Bad)	○ 2	○ 3	○ 4	○ 5 (Great)
Potholes/road surface	○ 1 (Bad)	○ 2	○ 3	○ 4	○ 5 (Great)
Accessibility (e.g. curb ramps)	○ 1 (Bad)	○ 2	○ 3	○ 4	○ 5 (Great)
Drainage (e.g. flooding)	○ 1 (Bad)	○ 2	○ 3	○ 4	○ 5 (Great)
Lighting	○ 1 (Bad)	○ 2	○ 3	○ 4	○ 5 (Great)

6. Select your top three goals for this project:

- ☐ Safe pedestrian crossings
- ☐ Less aggressive driving
- ☐ Better pedestrian space (larger, landscaped)
- ☐ More efficient bus service
- ☐ Other:
- ☐ Safe bike lanes
- ☐ Better parking and loading
- ☐ Safe bus loading
- ☐ Quick drive times

_____

7. How do you think safety along W. Hunting Park Avenue could be improved? [Please describe in the space below.]

DEMOGRAPHICS

DVRPC's public outreach process will ideally represent the residents of the W. Hunting Park Avenue project area by geographic and demographic diversity. Please help us understand who is responding to this survey by sharing some of your demographic characteristics.

8. Are you of Spanish/Hispanic/Latino origin? ☐ Yes ☐ No

9. With which race do you identify? [Select all that apply]

- ☐ American Indian, Native American, or Alaskan Native
- ☐ Asian or Pacific Islander
- ☐ Black or African American
- ☐ White
- ☐ Other _____

10. What is you age range? ☐ Under 18 ☐ 18-34 ☐ 35-44 ☐ 45-54 ☐ 55-64 ☐ 65-74 ☐ 74+

11. What is your gender? ☐ Male ☐ Female ☐ Other_____

12. Do you consider yourself someone with a disability that impacts the way that you travel? ☐ Yes ☐ No

13. What is your zip code? _____

14. Please indicate if you are interested in the following:

☐ $50 Gift Card Drawing ☐ Project mailing list

If you checked either of the boxes above, please provide an email or phone number:

_____

2023 Spring Community Survey Multiple Choice Results

Figure C-13: Thinking about the last month, how have you traveled to destinations on or near W. Hunting Park Avenue? [Check all that apply]

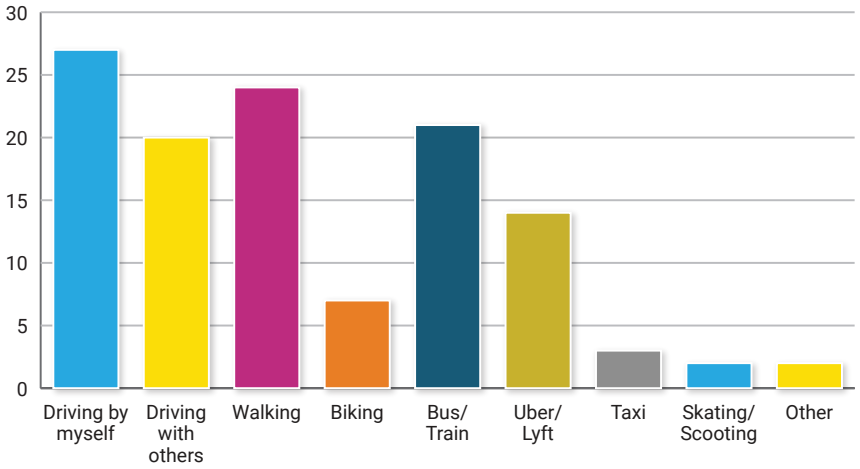


Figure C-14: Overall, do these improvements to Hunting Park Avenue make you feel safer walking, biking, or driving?

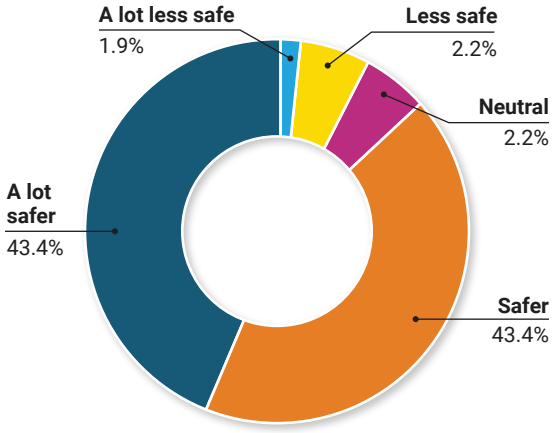


Figure C-15: Which improvements would make you feel safer? [Check all that apply]

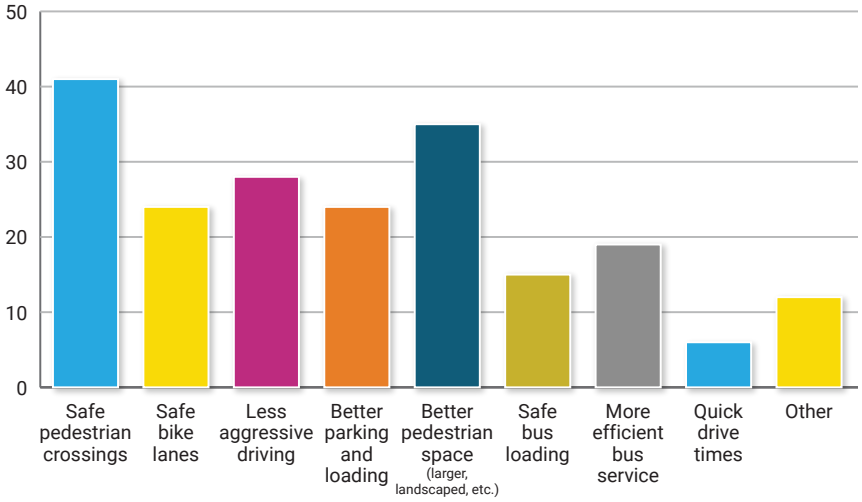


Figure C-16: Which design do you prefer for Hunting Park Avenue from Roosevelt Boulevard to Old York Road?

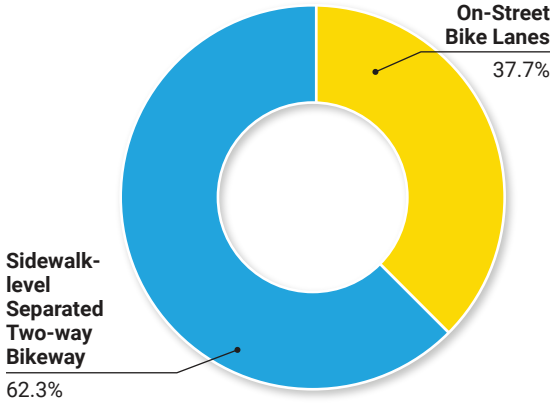


Figure C-17: How did you learn about our Vision Zero Project?

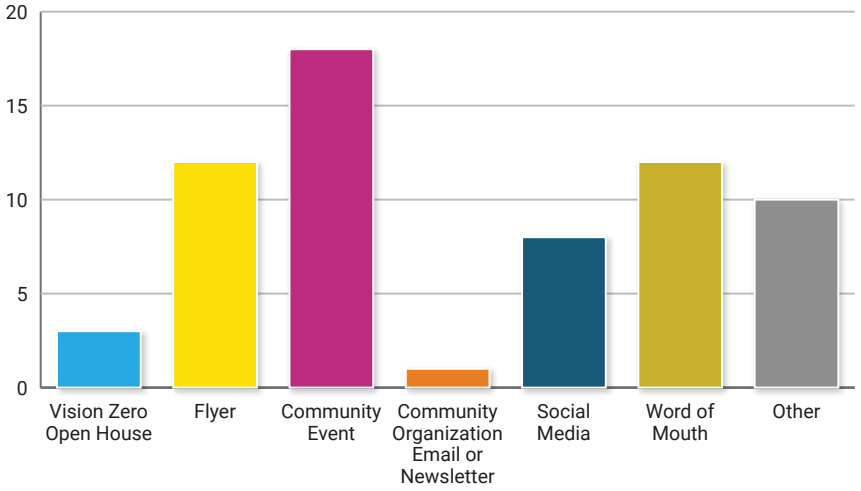


Figure C-18: What is your zip code?

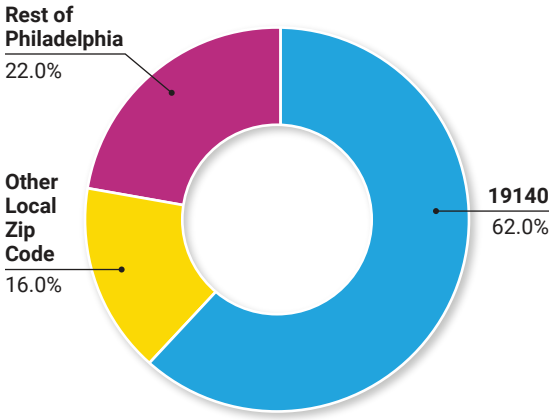


Figure C-19: Are you of Spanish/Hispanic/Latino origin?

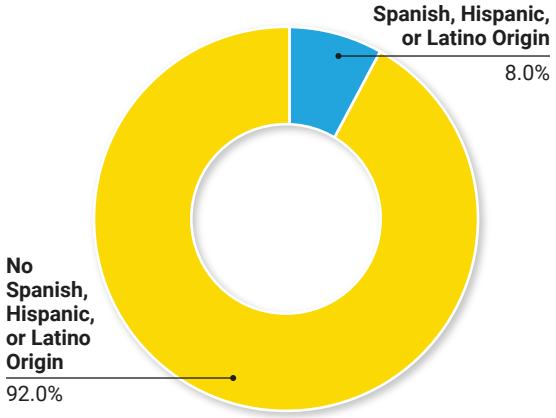


Figure C-20: With which race do you identify? [Select all that apply]

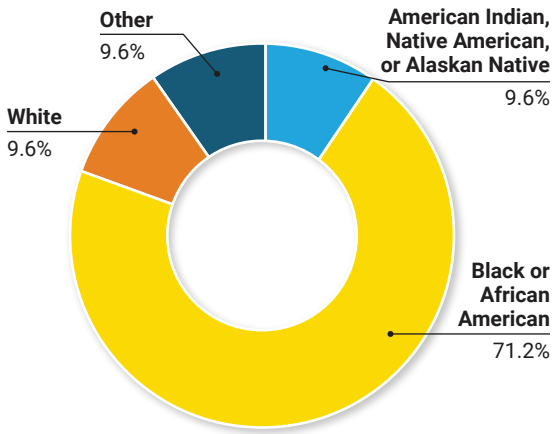


Figure C-21: What is your age range?

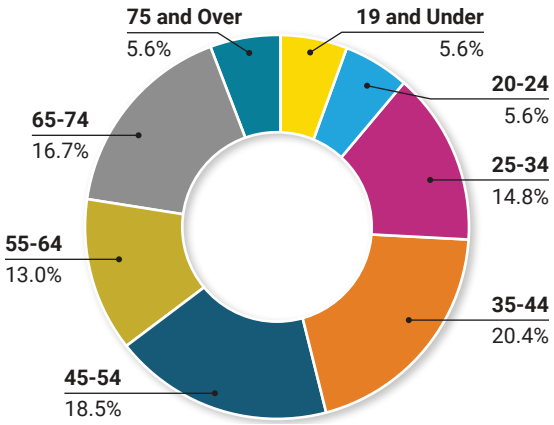


Figure C-22: What is your gender?

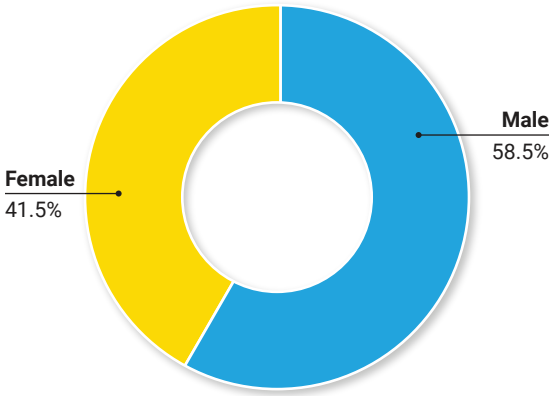
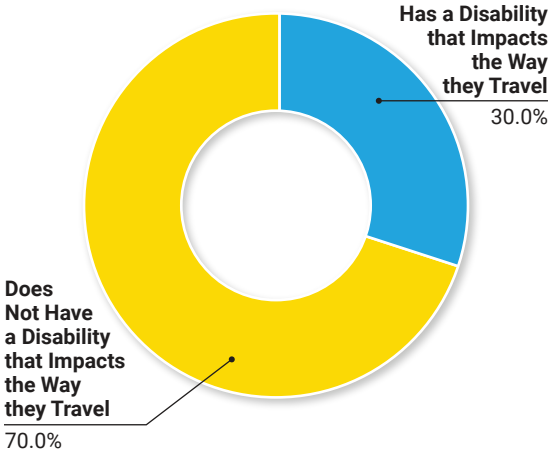


Figure C-23: Do you consider yourself someone with a disability that impacts the way you travel?



Following open-ended questions are summarized in text in the Public Outreach Chapter:

- Do you have any additional thoughts or concerns about the project?

VISION ZERØ

HUNTING PARK Community Survey

Our Vision Zero project goal is to select the safest design improvements for people walking, biking, driving, and taking transit on Hunting Park Avenue from Wissahickon Avenue to Old York Road. The design improvements recommended below are based on community feedback shared last year. Your response to this survey will help us better understand which improvements will make Hunting Park Avenue safer for your community. www.dvrpc.org/huntingpark.

How do you use W. Hunting Park Avenue?

1. Thinking about the last month, how have you traveled to destinations on or near W. Hunting Park Avenue? [Check all that apply]

- ☐ Driving by myself
- ☐ Driving with others
- ☐ Walking
- ☐ Biking
- ☐ Bus/ Train
- ☐ Uber/Lyft
- ☐ Taxi
- ☐ Skating/Scooting
- ☐ Other: _____

Do these improvements feel safer?

2. Overall, do these improvements to Hunting Park Avenue make you feel safer walking, biking, or driving?

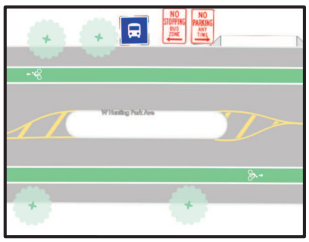
○ A lot safer ○ Safer ○ Neutral ○ Less Safe ○ A lot less safe

3. Which improvements would make you feel safer? [Check all that apply]

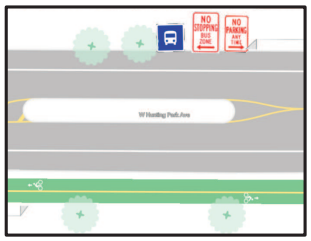
- ☐ Safer pedestrian crossings
- ☐ Safer bike lanes
- ☐ Less aggressive driving
- ☐ Better parking and loading
- ☐ Other: _____
- ☐ Better pedestrian space
- ☐ Safer bus loading
- ☐ More efficient bus service

4. Which design do you prefer for Hunting Park Avenue from Roosevelt Boulevard to Old York Road?
The green areas represent the bike lanes.

☐ Option A: On-street Bike Lanes



☐ Option B: Sidewalk-level Separated Two-way Bikeway



Please turn over >

5. [Open ended] Do you have any additional thoughts or concerns about the project? _____

_____

_____

_____

_____

_____

How did you hear about us?

6. How did you learn about our Vision Zero Project?

- ☐ Vision Zero Open House
- ☐ Flyer
- ☐ Community Event
- ☐ Community Organization Email or Newsletter
- ☐ Social Media
- ☐ Word of mouth
- ☐ Other: _____

(Optional) Demographic Questions

DVRPC's public outreach process will ideally represent the residents of the W. Hunting Park Avenue project area by geographic and demographic diversity. Please help us understand who is responding to this survey by sharing some of your demographic characteristics.

7. What is your zip code? _____

8. Are you of Spanish/Hispanic/Latino origin? ☐ Yes ☐ No

9. With which race do you identify? [Select all that apply]

- ☐ American Indian, Native American, or Alaskan Native
- ☐ Asian or Pacific Islander
- ☐ Black or African American
- ☐ White
- ☐ Other: _____

10. What is you age range? ☐ 19 and under ☐ 20-24 ☐ 25-34 ☐ 35-44 ☐ 45-54 ☐ 45-54 ☐ 65-74 ☐ 75+

11. What is your gender? ☐ Male ☐ Female ☐ Other: _____

12. Do you consider yourself someone with a disability that impacts the way that you travel? ☐ Yes ☐ No

13. Please indicate if you are interested joining our project mailing list by providing your name and email or phone number:

_____

DELAWARE VALLEY dvrpc REGIONAL PLANNING COMMISSION | City of Philadelphia

Figure C-25: Fall Mailed Postcard

Figure C-26: Fall Printed Poster

Figure C-27: Fall Social Media Post

4 likes

dvrpc Do you drive, bike, walk, or ride on Hunting Park? We want to hear from you! Complete the Vision Zero safety survey and help identify future... more

November 21, 2022 · **See translation**

Figure C-28: Spring Social Media Post

3 likes

dvrpc THIS SATURDAY! Do you walk, ride, or bike on Hunting Park Avenue? DVRPC and @philaotis want to hear from you! Join us Saturday, June 17th... more

View 1 comment

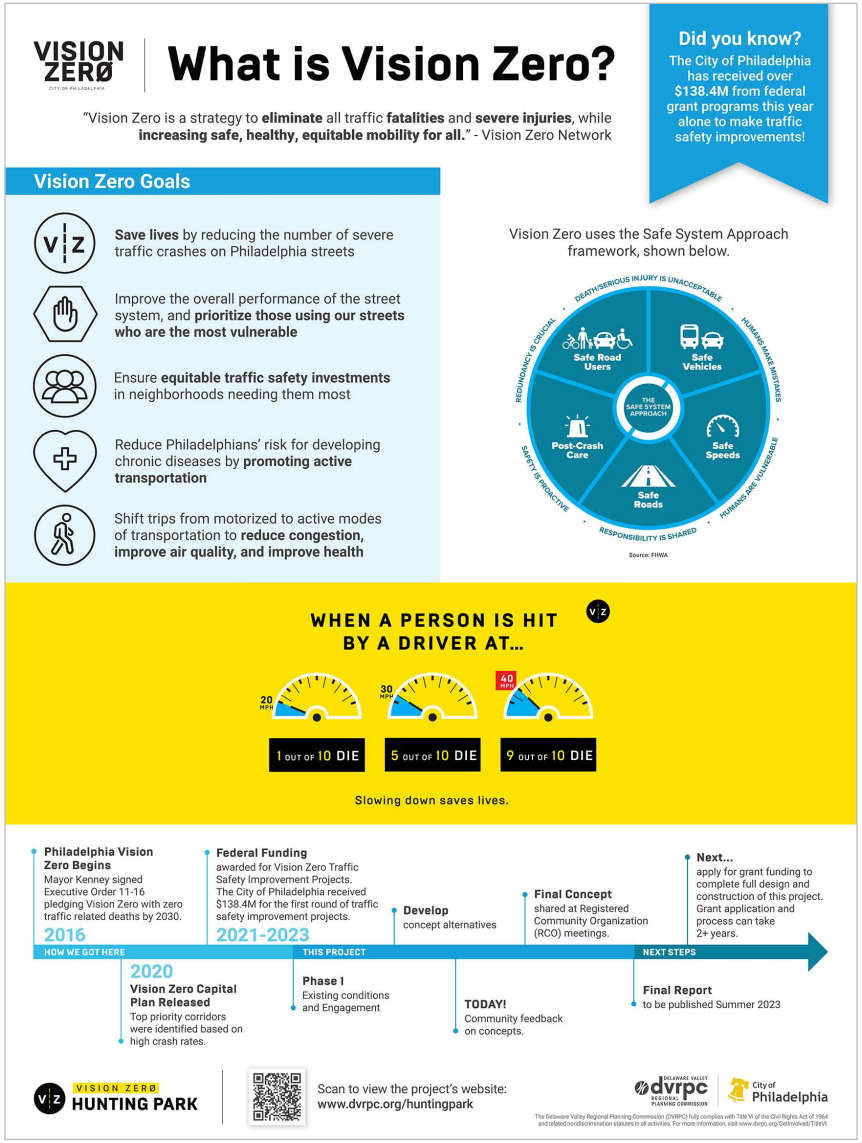
June 15

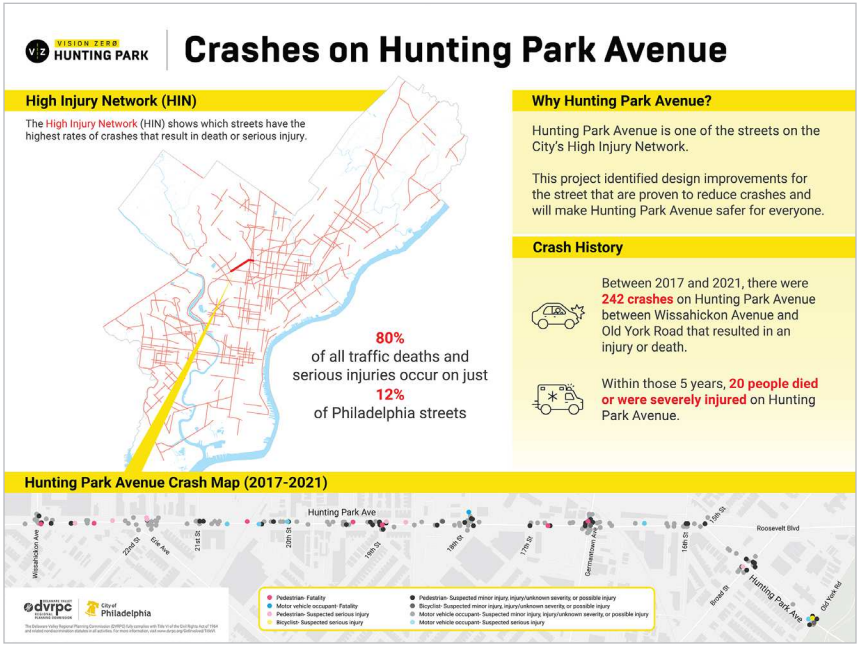
Figure C-29: Spring Mailed Postcard

Figure C-30: Spring Impacto Newspaper Ad

Figure C-31: Spring Printed Flyer

Figure C-32: Community Open House Informational Boards





VISION ZERO HUNTING PARK

What We Heard: Community Concerns

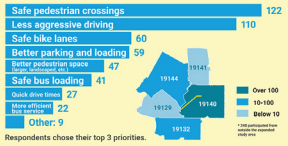
Project Goals

- Increase safety for all roadway users
- Improve crossing safety
- Reduce aggressive driving and calm traffic speeds
- Support and enhance transit
- Increase safety for cyclists
- Preserve existing street trees and identify new greening opportunities

Gathering Community Feedback

The project team collected feedback by attending community events and town halls, collecting 405 surveys on the corridor and online, as well as holding conversations with a number of community stakeholders.

Community's Priorities for Improvement



Respondents chose their top 3 priorities.

Corridor Concerns

Drivers take turns aggressively and at high speeds
Recommendations: curb extensions to slow down turning vehicles

Drivers don't yield to pedestrians crossing
Recommendations: curb extensions, medians to force slower turns

Long pedestrian crossing times; crosswalks that don't align with curb ramps
Recommendations: curb extensions, realigning crosswalks

Bicycle lanes end at intersection, creating an incomplete bike network
Recommendations: Shared use path along Hunting Park Ave.

Excessive driveways and illegal sidewalk parking creates an uncomfortable environment for people walking
Recommendations: driveway consolidation, street tree planting, street furniture, shared-use path

Buses stuck in traffic; no place for people to wait comfortably
Recommendations: bus bulbs, shelters, and seating

Unsafe intersection for cyclists at the entrance of a park where lots of people ride bikes
Recommendations: add a bike lane and bike-friendly intersection improvements

Street lights are not bright enough
Recommendations: LED lighting along entire corridor

How can you make your voice heard?

Take a survey to let us know what you think about these traffic safety recommendations!

Sign up for project updates at **www.dvrpc.org/huntingpark**

dvrpc Delaware Valley Regional Planning Commission | City of Philadelphia

VISION ZERO HUNTING PARK

How to Make the Street Safer

Curb Extension / Bus Boarding Bulb

What are they?
- Extension of sidewalk into the "no parking zone" at an intersection

How do they help?
- Shorter crosswalk distances
- Direct access to buses without stepping into traffic lane
- Buses do not exit travel lane, which can improve bus times

Traffic Calming Strategies

What are they?
- Design changes to the roadway that reduce speeding and aggressive driving
- Strategies include: narrow lanes and corner turns, street trees, and medians and speed slots

How do they help?
- Slowing speeds reduces crash severity

Crossing Improvements

What are they?
- Raised Crosswalks: Ramped speed table across the entire width of the crosswalk
- Pedestrian Signals: Indicates when and how long pedestrians can cross

How do they help?
- Raised Crosswalks: Reduces vehicle speeds and raises awareness of where pedestrians are crossing
- Pedestrian Signals: Include countdown timers so pedestrians know when it is safest to cross

Shared-Use Path

What are they?
- Designated paths that cyclists and pedestrians share
- Located at the same level as the sidewalk
- Can replace the sidewalk or be built next to the sidewalk

How do they help?
- Provides physical separation between people driving and people biking, walking, and rolling
- Different pavement tells people walking where to expect people biking
- Replaces the sidewalk and repairs sidewalk damages that create safety hazards at no cost to homeowners

Option A: Street-Level Bike Lane

(Roosevelt Blvd to Old York Rd)

What are they?
- Also known as traditional bike lanes
- Provides a dedicated lane with striping for people on bikes

How do they help?
- Creates a designated space for cyclists away from vehicles
- Increases predictability: people driving know where to expect to see people riding bikes

Option B: Separated Two-Way Bikeway

(Roosevelt Blvd to Old York Rd)

What are they?
- Two-way bike lanes on one side of the street next to the sidewalk, separated from vehicle traffic
- Bikeway can either be the same height as the sidewalk or at the same height as the road with a 6" curb separation from vehicle traffic

How do they help?
- Safest location for cyclists by eliminating conflict with vehicles
- More accessible for all ages and abilities

dvrpc Delaware Valley Regional Planning Commission | City of Philadelphia


uyler St
Hunting Park Motors, LLC.
OFFICE
MoravianHealth

VISION ZERØ

HUNTING PARK

Publication Number:

23130

Date Published:

March 2024

Geographic Area Covered:

Hunting Park, Tioga-Nicetown, Philadelphia, North Philadelphia,

Key Words:

Safety, Mobility, Design, Vision Zero

Abstract:

This project was funded by the City of Philadelphia as part of Vision Zero, an effort to eliminate traffic fatalities by 2030. Hunting Park Avenue from Wissahickon Avenue to Old York Road is considered part of Philadelphia's High Injury Network, where a high frequency of severe crashes occurs. The study team for this project conducted extensive neighborhood outreach, research on existing planning efforts, a road safety audit, and a crash traffic analysis, all of which indicated the need for safety improvements on the corridor. The team produced a series of recommendations aimed at improving safety, mobility, and community vitality for all users of the street. The recommendations were presented to a steering committee made up of city government and community members, as well as to the public during a pop-up event hosted at a local park.

Staff Project Team:

Kelsey McElduff, *Principal Transportation Engineer*
Kaylen Phillips, *Transportation Planner*
Kendra Nelson, *Transportation Planner*
Sarah Moran, *Manager, Office of Mobility Analysis and Design*
Kevin Murphy, *Manager, Office of Safe Streets*
Elise Turner, *Manager, Office of Communications and Engagement*
Gina Myers, *Senior Communications Specialist*
Stephanie Cavacini, *Associate Manager, Office of Creative and Print Services*

Staff Contact:

Kelsey McElduff
Principal Transportation Engineer
Phone: 215.238.0879
Email: kmcelduff@dvrpc.org

DELAWARE VALLEY dvrpc REGIONAL PLANNING COMMISSION

190 N Independence Mall West
8th Floor
Philadelphia, PA 19106-1520
215.592.1800
www.dvrpc.org

DELAWARE VALLEY
dvrpc
REGIONAL
PLANNING COMMISSION

190 N Independence Mall West
8th Floor
Philadelphia, PA 19106-1520
215.592.1800
www.dvrpc.org

Connect With Us!