



PROJECT PIPELINE

**Roberts Parkway | Fairfax County Parkway to Burke Centre
Parkway**

**Northern Virginia District
NV-25-03**

**PHASE 3 REPORT
July 2026**

Prepared for



Prepared by



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Chapter 1: Needs Evaluation and Alternatives Development

1.1 Introduction

Project Pipeline is a performance-based planning program to identify cost-effective solutions to multimodal transportation needs in Virginia. Through this planning process, projects and solutions may be considered for funding through programs, including SMART SCALE, revenue sharing, interstate funding, and others. Visit the Project Pipeline webpage for additional information: <https://vapipeline.virginia.gov/>.

This study, entitled NV-25-03 – Roberts Parkway from Fairfax County Parkway to Burke Centre Parkway, focuses on concepts targeting identified needs including congestion mitigation, safety improvements, pedestrian and bicycle infrastructure along the corridor, and transit and transportation demand management (TDM) access. The four key steps within the Project Pipeline performance-based planning and programming process are shown in **Figure 1**.



Figure 1: Project Pipeline Key Steps

1.2 Methodology

The Project Pipeline study process consists of three phases:

- **Phase 1:** Problem Diagnosis and Alternative Brainstorming
- **Phase 2:** Alternative Evaluation and Sketch-Level Analysis
- **Phase 3:** Investment Strategy and Cost Estimate

Figure 2 shows the overall Project Pipeline process, key milestones, and schedule in relation to critical SMART SCALE dates.

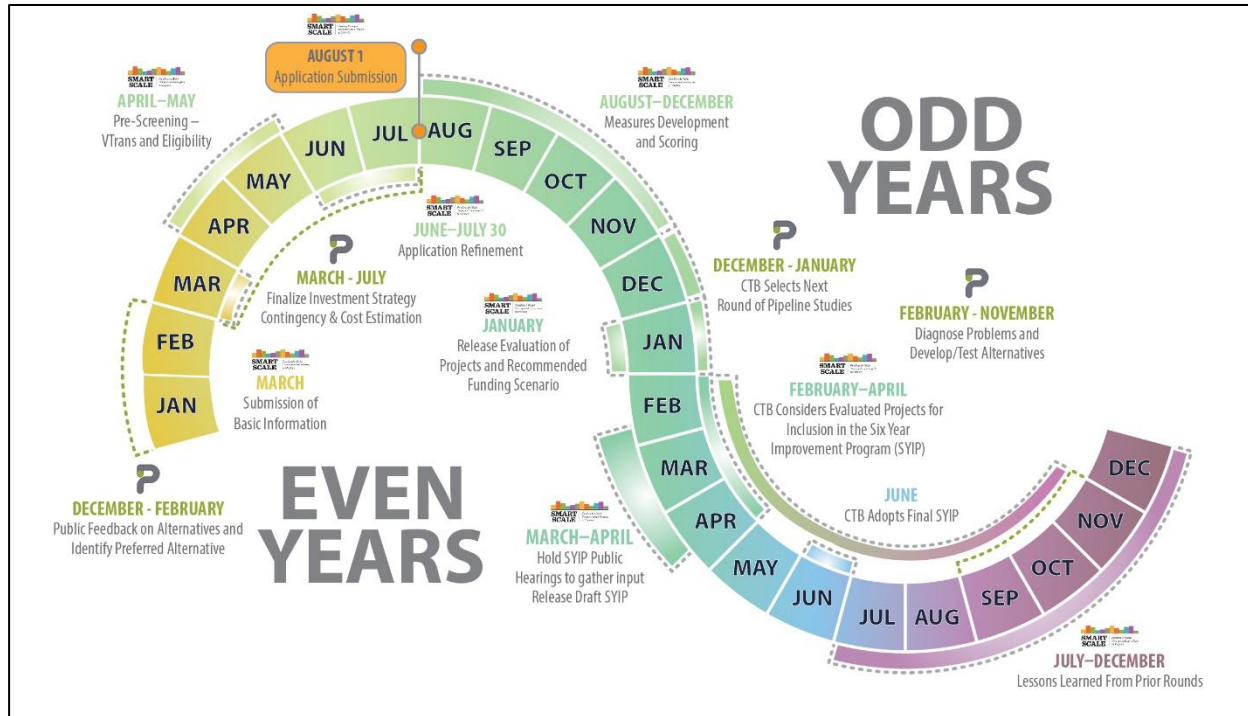


Figure 2: Study Phase Methods and Solutions

The study team is broken down into technical teams to review data, develop preliminary alternatives, refine solutions, and provide clear messages to stakeholders regarding the most viable and effective solutions related to the priorities and needs for each study. The priorities, needs, and scope of each study guide the level of Technical Team involvement. In general, the technical teams include the Office of Intermodal Planning and Investment (OIPI), the Virginia Department of Transportation (VDOT), and consultant staff from the following departments and/or disciplines:

- District Planning
- District Traffic Operations
- District Location and Design (L&D)
- District subject matter experts (e.g., Right of Way, Utilities, and Environmental, as needed)
- Consultant Teams, Central Office Divisions(s), as needed
- DRPT, as needed.
- Localities, if applicable
- Metropolitan Planning Organizations (MPOs) or Planning District Commissions (PDCs), if applicable

A sample organizational chart of a technical team is shown in **Figure 3**.

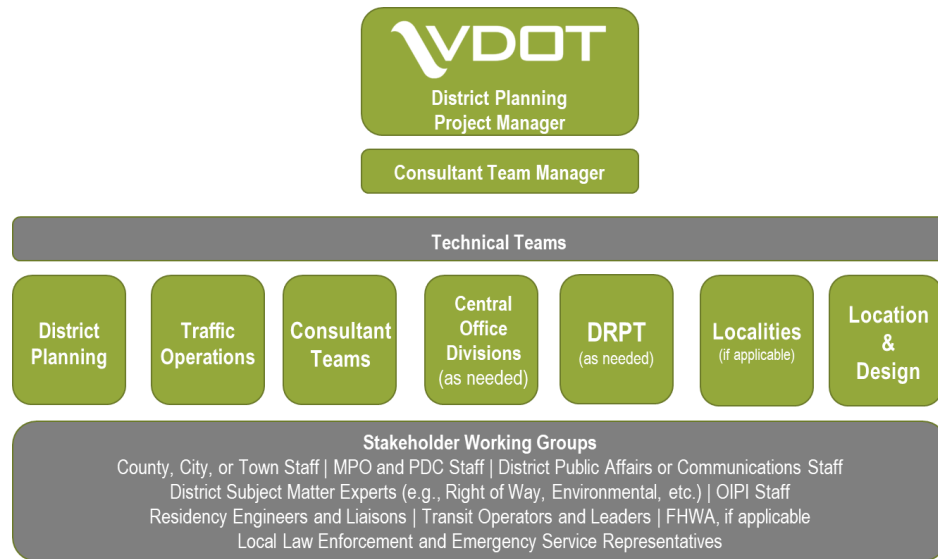


Figure 3: Structure of a Technical Team

1.3 Study Background

A Study Work Group (SWG) was formed for this study to capture input from local stakeholders and shape the development of potential improvements. The SWG provided local and institutional knowledge of the corridor, reviewed study methodologies, provided input on key assumptions, and reviewed and approved proposed improvements developed through the study process. The SWG included members representing the following organizations:

- Fairfax County
- Fairfax Connector
- Virginia Department of Transportation (VDOT)
- Office of Intermodal Planning and Investment (OIPI)
- Virginia Department of Rail and Public Transportation (DRPT)
- Northern Virginia Transportation Authority (NVTA)
- Michael Baker International

As shown in **Figure 4**, the study area along Roberts Parkway extends from Fairfax County Parkway to Burke Centre Parkway. The typical section of Roberts Parkway varies within the study area. From Fairfax County Parkway, the typical section along Roberts Parkway is a two-lane roadway to approximately 550 feet north of Burnside Landing Drive, where it transitions to a four-lane divided roadway. Roberts Parkway is functionally classified as a minor arterial, with a posted speed limit of 40 miles per hour (mph). The land use along Roberts Parkway is primarily residential between Fairfax County Parkway and Burke Centre Parkway; however, it should be noted that there is a commercial development, including a Walmart, in the northwest quadrant of the Roberts Parkway and Burke Centre Parkway intersection.

The study area includes five at-grade intersections, four of which are the primary focus of this analysis, as shown in **Table 1**.

Table 1: Study Intersections

#	Intersection Name	Control Type
1	Roberts Parkway/Karmich Street and Fairfax County Parkway	Signalized
2	Roberts Parkway and Heritage Landing Road/Poburn Road	Unsignalized
3	Roberts Parkway and Burnside Landing Drive	Unsignalized
4	Roberts Parkway and Burke Centre Parkway	Signalized

The study team collected data including 12-hour turning movement counts, 48-hour tube counts, traffic signal timings, and pedestrian and bicycle counts to assist with the transportation analysis in the study area.

In addition to the 12-hour turning movement counts collected at the study intersections listed in **Table 1** and the 48-hour tube counts collected along Roberts Parkway, additional 12-hour turning movement counts were collected at the following intersections:

- Roberts Parkway and Walmart Access – collected to aid in the calibration of the existing *SimTraffic* model.
- Fairfax County Parkway and Burke Centre Parkway – collected to review any travel pattern changes that may have happened as a result of the recent intersection modifications at this intersection and widening along Fairfax County Parkway.

Neither of these intersections will be analyzed as part of this study.

A framework document was developed prior to commencing the study which outlined the study methods and assumptions. The signed framework document is in **Appendix A**. A kickoff meeting with the SWG was held on April 9, 2025, to provide an overview of the study and obtain feedback on the study's assumptions.

Figure 4: Project Study Area



1.4 VTrans Needs

Project Pipeline follows a performance-based planning approach to identify solutions that address VTrans mid-term needs. VTrans is Virginia's statewide transportation plan that is prepared by OIPI for the Commonwealth Transportation Board (CTB). VTrans mid-term needs (0-10 years) were identified from a data-informed process and were used as a primary source in the selection of Project Pipeline study corridors. **Table 2** outlines the VTrans needs in the study area.

Table 2: VTrans Needs Identified in the Study Area

VTrans 2023 Mid-Term Need	Priority
 Capacity Preservation	Very High
 Safety Improvement	Low
 Pedestrian Safety Improvement	Low
 Transportation Demand Management (TDM)	Low
 Pedestrian Access	Low
 Bicycle Access	Medium
 Transit Access	High

The Roberts Parkway corridor was selected as a Project Pipeline study location due to the presence of multiple VTrans needs. It should be noted that the Capacity Preservation need only applies to Fairfax County Parkway. The project team took the following steps to confirm and evaluate the VTrans needs identified in the study area:

- Reviewed the Project Pipeline data dashboards to identify issues and transportation trends in the study area.
- Conducted a field review of the study area to observe issues and document existing conditions.
- Collected traffic counts at the study area intersections.
- Reviewed relevant studies and plans near the study area to inform the alternative development.
- Conducted detailed existing conditions and no-build conditions traffic operational analyses using *SimTraffic*.
- Assessed existing transit service, multimodal infrastructure, and the suitability for additional transit service within the study area.

1.5 High-Level Needs Diagnosis

Data dashboards were developed by OIPI and VDOT to centralize data collection and leverage big data sources to streamline VTrans needs and problem diagnosis across all Project Pipeline studies as well as to expand on the core issues and patterns identified in the study's framework document.

The data dashboards contained performance measures including VDOT crash data, and speed data for each study area. The results of this analysis are summarized in the Needs and Existing Conditions Summary, which can be found in **Appendix B**.

The study team reviewed the dashboard performance measures in addition to other sources to validate the presence of VTrans needs and identify the most effective improvements in the study area.

1.5.1 Operations and Access Needs

Although Roberts Parkway has no congestion mitigation need or capacity preservation need, Fairfax County Parkway has been identified with a capacity preservation need. Fairfax County Parkway is located on VDOT's Arterial Preservation Program Network (APN) which are roads considered major highways that function similarly to the interstate system, accommodating long-distance mobility of people and goods throughout the commonwealth. The goal of the APN is to preserve and enhance the safety and capacity of the critical highways.

1.5.2 Safety and Reliability Needs

The study area has low Safety Improvement and Pedestrian Safety Improvement VTrans needs. The study team reviewed the VDOT crash data from 2018 – 2024, excluding 2020 and 2021, to identify high-level crash trends in the study corridor.

In total, there were 92 reported crashes in the study area between 2018 and 2024, excluding 2020 and 2021, including 30 injury crashes. Angle crashes (60%) and rear end crashes (29%) were the most common crash types. No fatal crashes were reported. **Figure 5** shows the crashes by type along the corridor.

Segments of Fairfax County Parkway, Roberts Parkway and Burke Centre Parkway are identified as a Statewide Top 5% VDOT Pedestrian and Bicycle Safety Action Plan (PBSAP) priority corridor, while another segment of Burke Centre Parkway is identified as a Statewide Top 1% VDOT PBSAP priority corridor, as shown in **Figure 6**.

Figure 5: Crashes by Type (2018 – 2024, excluding 2020 and 2021)

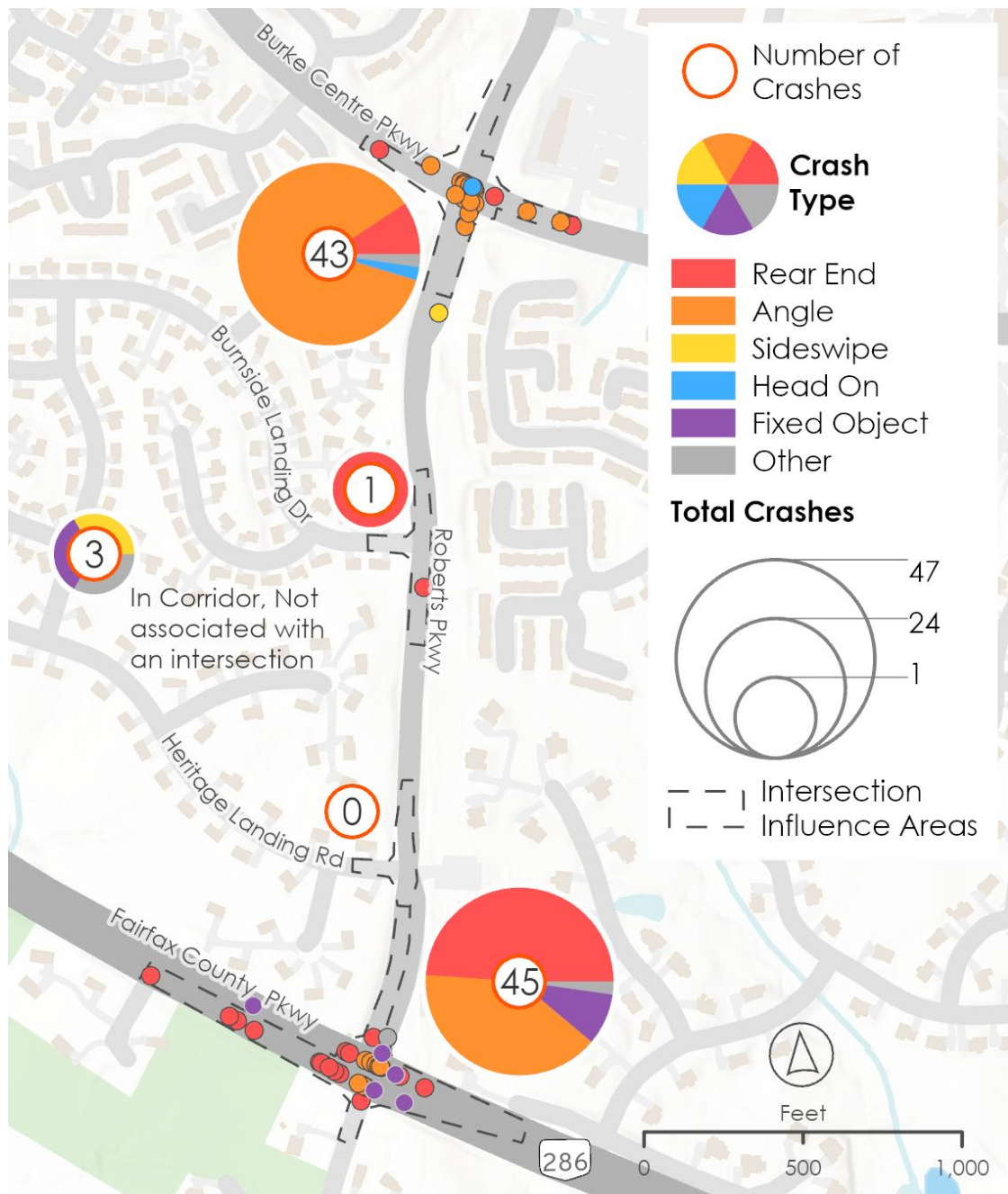
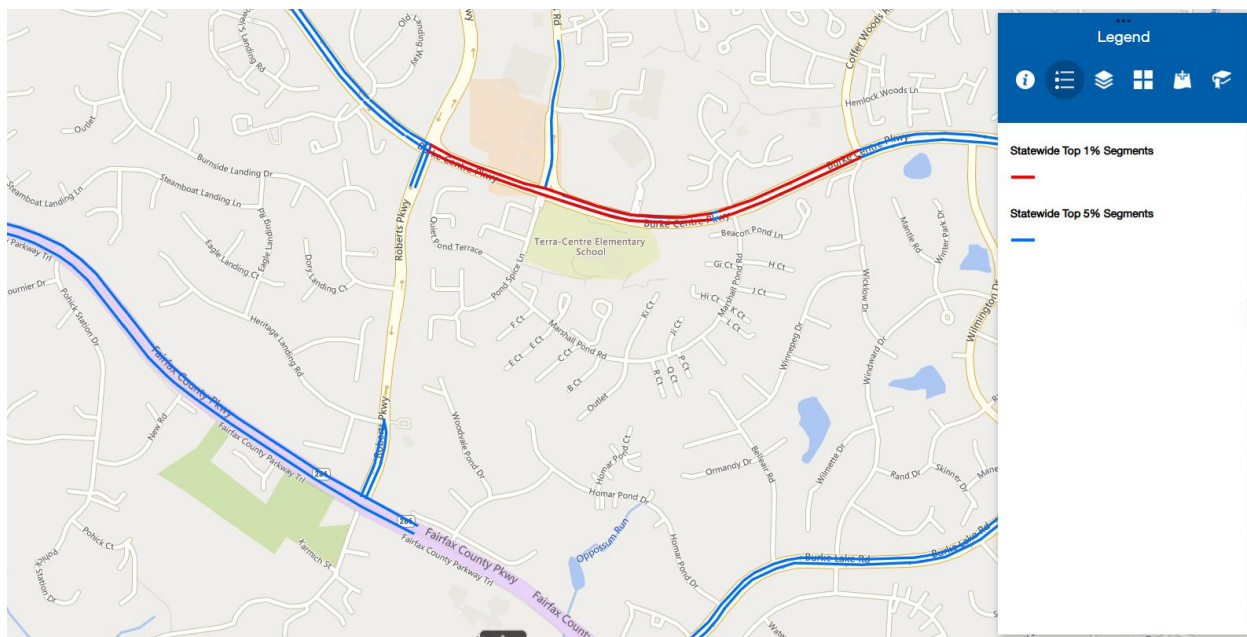


Figure 6: VDOT PBSAP Locations

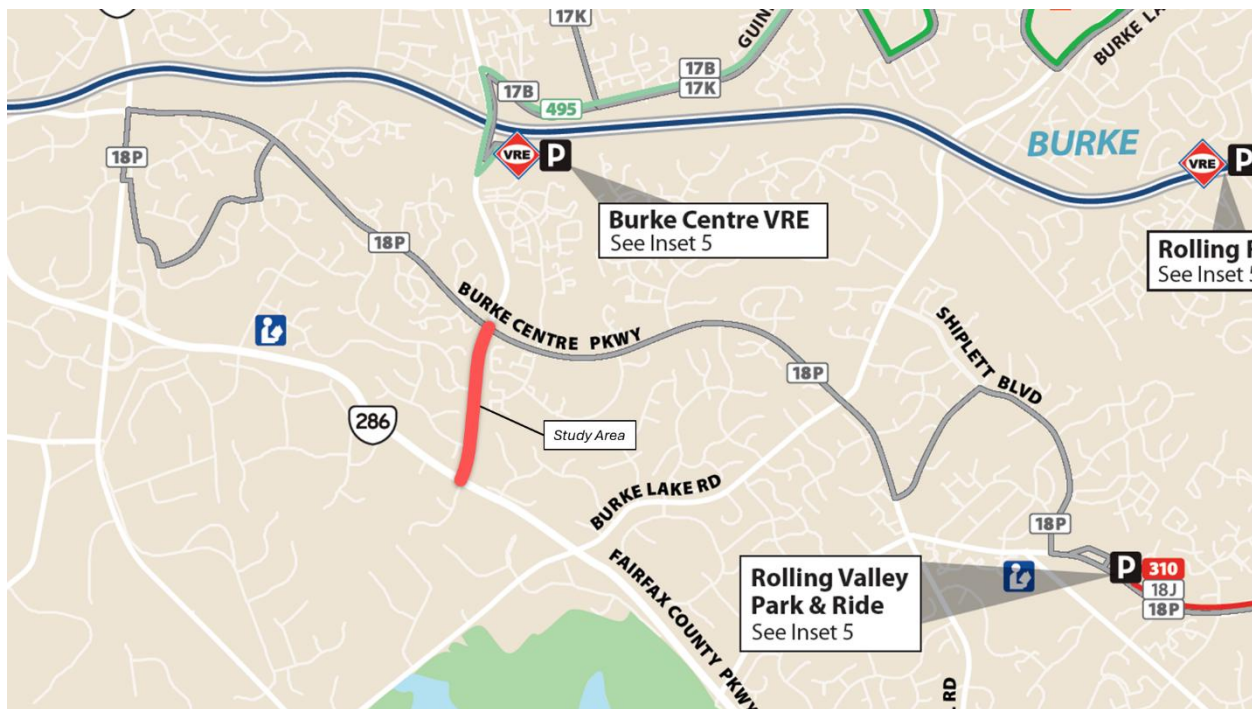


1.5.3 Transit and Transportation Demand Management Needs

The study area has a high Transit Access VTrans need and a low TDM VTrans need. The study team reviewed existing Fairfax Connector Service transit information in the study area and noted that Metrobus 18P (currently called F81) currently serves Burke Centre Parkway within the study area and connects to the Pentagon Metro Station. Additionally, the Burke Centre Virginia Rail Expressway (VRE) Station is located approximately 0.7 miles north of the Roberts Parkway and Burke Centre Parkway intersection with several transit routes providing access to this location, including Metrobuses 17B (currently called F28 and F29 | Pentagon Metro Station) and 17K (currently called F28 and F 29 | Pentagon Metro Station) and Route 495 (Express Service | Tysons Corner Metro Station). **Figure 7** shows an excerpt from the Fairfax Connector Service system map within the study area.

Fairfax County's website indicates that there are 49 park-and-ride lots in Fairfax County. VDOT shows that the closest park and ride lot to the study area is the Buke Centre VRE park-and-ride lot, located at the Burke Centre VRE Station previously mentioned.

Figure 7: Fairfax Connector Service



1.5.4 Environmental Considerations

The Virginia Department of Environmental Quality (DEQ) [EJScreen+ tool](#) is an enhanced environmental justice screening and mapping tool. It is designed to support state-level decision-making by integrating various data sets to identify and address environmental justice issues. EJScreen+ offers detailed information on environmental and demographic indicators, helping to pinpoint areas with potential environmental risks and vulnerable communities. The tool helps to ensure that environmental actions and policies are equitable and effectively benefit all residents, particularly those disproportionately affected by environmental hazards.

EJScreen+ identified several communities surrounding the study area limits (Block Group ID: 510594321001 and 510594322011) to be "Community of Color – Over Statewide Average (37.8%)" since the percentage of the population of color within these communities range from 49% to 52%. Additionally, the EJScreen+ tool identified one childcare center along the corridor at 6215 Roberts Parkway.

Table 3: Existing Environmental Conditions Summary

Environmental Resource	Description	Source	Existing Resources in Study Area
Environmental Justice	Identifying minority and low-income populations adjacent to the project corridor, as defined by the VDOT Environmental Division Instructional and Informational Memorandum and determining if a disproportionately high and adverse effect is anticipated.	Environmental Justice (EJ) Screen: Low Income Communities - 30% or more of the Population Under HUD 80% AMI and Under Two Times Federal Poverty Level (2011-2018 ACS), Communities of Color – Over Statewide Average (37.8%) (2014-2018 ACS)	Within the study area, there are low-income communities with population percentages between 39.6-47.7%. There are also communities of color with population percentages ranging between 49-51.7%.
Limited English Proficiency	Populations who speak English less than very well within and adjacent to the project corridor.	United States Census Bureau	8.6-9.3% of the population within the study area Block Groups are considered LEP.
Recreational Facilities	Places available for recreational or communal use, such as a YMCA or community parks.	Virginia Department of Conservation and Recreation (VDCR) Outdoor Plan Mapper Fairfax County GIS Data Google Maps	Landings Community Center, Burke Racquet & Swim Club, and two city parks are recreational and communal facilities located in the vicinity of the study area.
Community Services	Places available to the public such as hospitals, schools, and churches.	Virginia Geographic Information Network (VGIN) Fairfax County GIS Data Google Maps	Several churches and Terra Centre Elementary School are located in the vicinity of the study area.

Environmental Resource	Description	Source	Existing Resources in Study Area
Bike/Pedestrian Facilities	Existing sidewalks, bike paths, and trails.	Fairfax County GIS Data Google Maps VDCR Virginia Outdoor Plan Mapper	A continuous paved sidewalk is provided along the west side of Roberts Parkway along with other various sidewalks, trails, and bike paths in the immediate vicinity of the study area corridor.
Section 6(f)	Sites funded through the Land and Water Conservation Fund (LWCF) and owned by state or local entities.	VDCR Virginia Outdoor Plan Mapper VDOT Pathways for Planning	Some conservation areas were identified surrounding the southern terminus of the study area.
Section 106* Resources	Known historic architectural or archaeological sites within or immediately adjacent to the project corridor including sites that are listed or eligible for listing on the National Register of Historic Places (NRHP) and sites that have not been evaluated are potentially eligible, or any other status as noted on the VDHR V-CRIS website.	Virginia Department of Historic Resources (VDHR) Virginia Cultural Resource Information System (V-CRIS) National Register of Historic Places (NRHP)	A few archaeological sites surrounding the study area were listed or determined eligible historic resources.
Section 4(f)*	Publicly owned parks or recreation lands, wildlife and waterfowl refuges, and privately and publicly owned historic sites protected by Section 4(f) of the U.S.	VDCR NHDE VDCR Virginia Outdoor Plan Mapper VDHR V-CRIS	No publicly owned parks or recreation lands, wildlife and waterfowl refuges, or privately and publicly owned historic sites are located within the study area or the surrounding vicinity.

Environmental Resource	Description	Source	Existing Resources in Study Area
	Department of Transportation Act of 1966.		
Protected Species	Threatened and endangered species, as defined by the state and federal government databases, existing within or near the project corridor.	United States Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPAC) Virginia Department of Wildlife Resource (VDWR) VDWR Bat Consultation Tool Northern Long-Eared Bat [NLEB], Tri-Colored Bat, and Little Brown Bat Center for Conservation Biology (CCB) Eagle Nest Locator	<u>USFWS IPaC</u> – The Monarch Butterfly is listed as a proposed threatened species. The Small Whorled Pogonia is listed as a threatened species. There are no refuge lands, fish hatcheries, or critical habitats located within a 2-mile radius of the study area. <u>VDWR NLEB</u>- The study area is not located within the NLEB Year-Round Presence area. <u>CCB</u>- No eagle nests were located within the study area.
Floodplains	Areas considered at risk for flooding during 100-year and 500-year storms.	Federal Emergency Management Agency (FEMA) Flood Hazard Areas	No portions of the study area are located in a Floodway or 500-Year Floodplain area.
Surface Water & Wetlands	Review of NHD and NWI to determine the likelihood of streams and wetlands present within and immediately adjacent to the project corridor.	United States Geological Survey (USGS) National Hydrography Dataset (NHD) USFWS National Wetland Inventory (NWI)	A freshwater pond is located to the east of the study area. There are various streams located in the vicinity of the study area. Portions of the surrounding rivers are located within the Chesapeake Bay Preservation Area

Environmental Resource	Description	Source	Existing Resources in Study Area
Hazardous Materials	Any documented spills, releases, or history of contamination on surrounding sites that may be impacted by the proposed project.	Virginia Department of Environmental Quality (DEQ) Environmental Data Mapper	Multiple registered petroleum tank facilities and petroleum release cases are located near the northern terminus of the study area.
Open Space, Conservations Easements, Agricultural, and Forestal Districts	Lands protected by a voluntary agreement with a non-profit land trust or government agency that allows a landowner to limit the type or amount of development on the property. Agricultural and forestal districts are those defined as such in the zoning map.	VDCR Outdoors Plan Mapper Fairfax County GIS Data The Virginia Outdoor Foundation The Nature Conservancy VDOT Pathways for Planning	Several protected open spaces are located near the southern terminus of the study area including the Pobarn Woods City Park.
Farmland	Lands with soils that are considered prime farmland and outside a census-designated urban area.	United States Census Bureau Urban Area Maps Natural Resources Conservation Service Web Soil Survey VDCR Outdoors Plan Mapper Fairfax County GIS Data	There are not any designated farmland areas along the study area corridor. All the parcels along the corridor are either designated Residential or Planned Residential communities.
Noise	Determining whether the subject project may be considered a Type I project based on VDOT and FHWA guidance.	VDOT and FHWA Noise Guidance	Based on VDOT and FHWA guidance, it is not anticipated that the project will be considered a Type I noise project.

Environmental Resource	Description	Source	Existing Resources in Study Area
Land Use	Land Area that has been given a specific use based on local jurisdiction land use designations.	Fairfax County GIS Data	The study area is primarily classified as Residential or Planned Residential.
Air Quality	Determine whether the subject project is in an air quality attainment area and whether a qualitative analysis may be required.	Office of Air Quality Planning and Standards EPA	The study area is with a non-attainment area therefore a project may need a qualitative analysis depending on the project type.

Figure 8: Existing Environmental Conditions

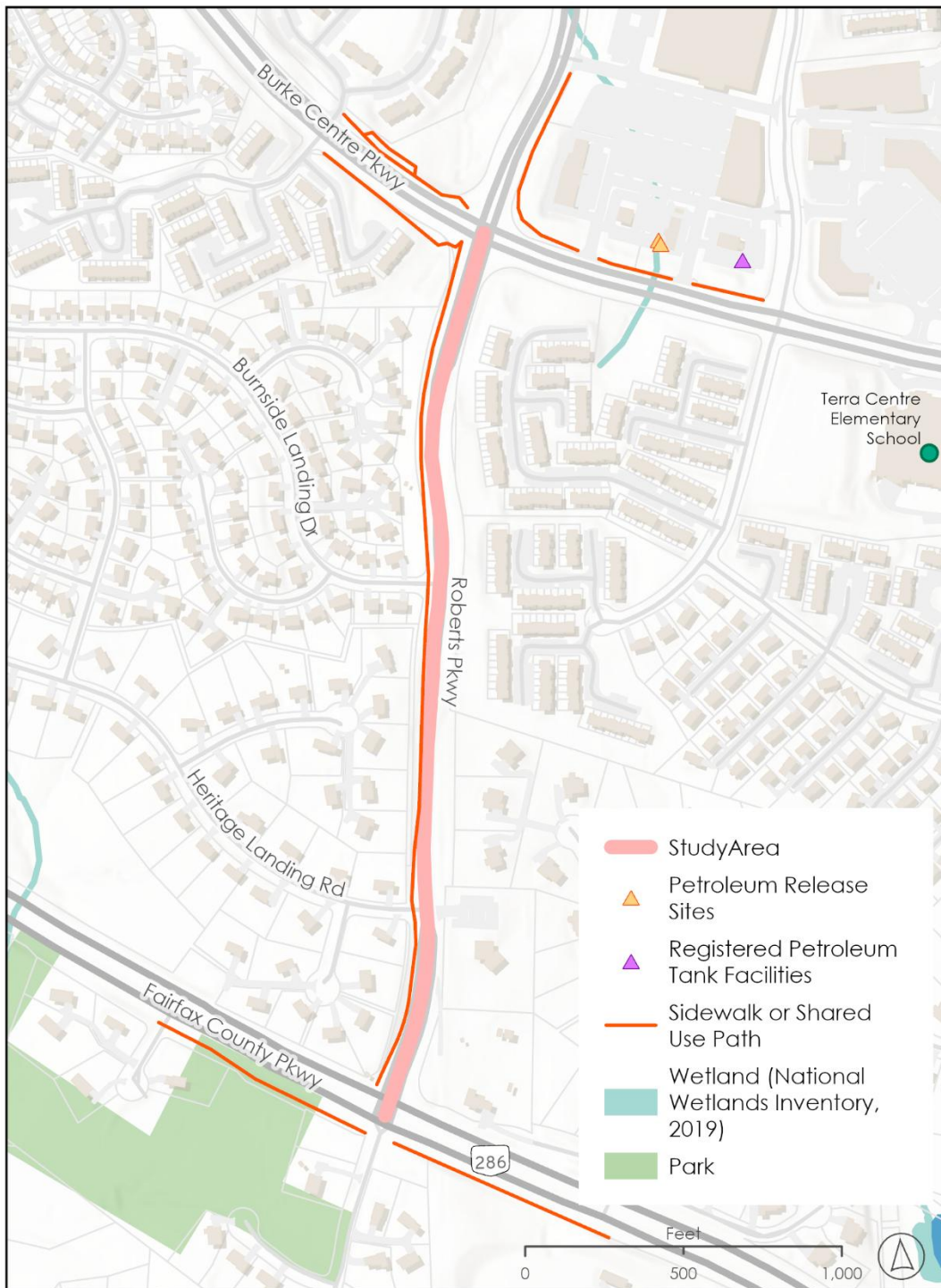


Figure 9: EJScreen+ Low Income Communities

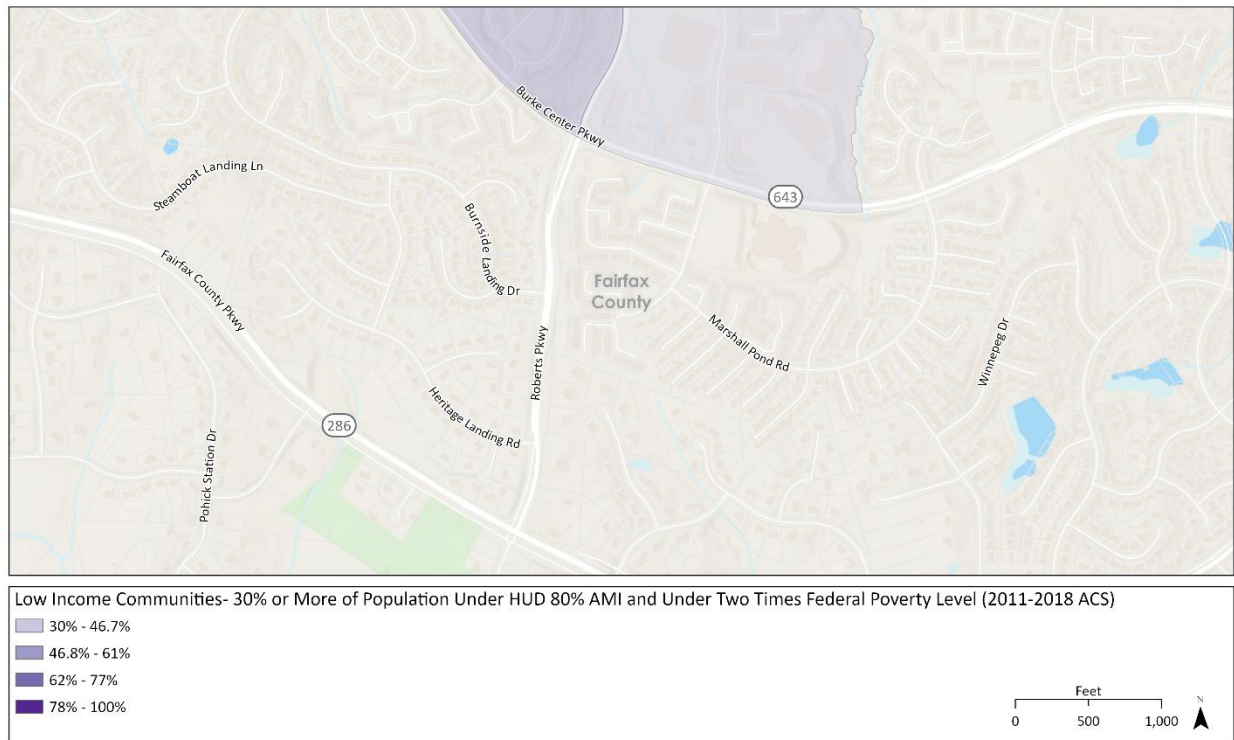
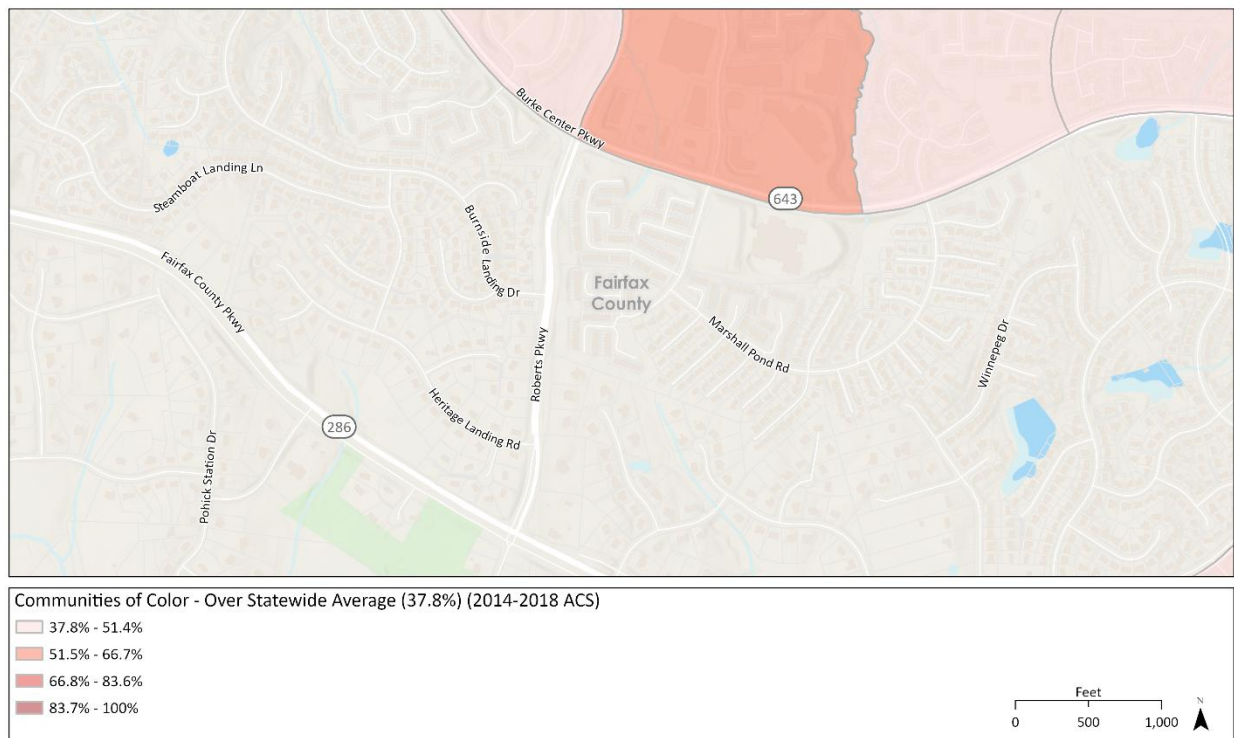


Figure 10: EJScreen+ Communities of Color



1.6 Detailed Needs Validation

The study team performed additional traffic operations and safety analysis to further quantify the existing and anticipated needs within the study area. Results from these analyses were used as a baseline when comparing the conditions of the proposed improvements to the existing and anticipated no-build conditions.

1.6.1 Existing Conditions Traffic Operations and Safety Analysis

The study team conducted a multifaceted analysis of the existing conditions of the study corridor, which included reviewing previous studies, conducting a safety analysis, conducting a preliminary field review, analyzing traffic operations using *SimTraffic*, and reviewing of pedestrian, bicycle, and transit activity.

Relevant Studies, Plans, and Projects

Information for the following studies, plans, and projects was collected and reviewed to identify previous or ongoing recommendations in and adjacent to the study area:

- 2024 National Capital Region Transportation Planning Board Transportation Resilience Improvement Plan
- 2022 National Capital Region Transportation Planning Board Policy Framework
- 2022 National Capital Region Transportation Planning Board Visualize 2045 Long-Range Transportation Plan (LRTP)
- 2022 National Capital Region Transportation Planning Board Bike and Pedestrian Plan
- 2022 National Capital Region Transportation Planning Board Transportation Improvement Program
- 2022 NVTa TransAction Plan
- 2020–2025 Fairfax County Transportation Priorities Plan
- 2017 Fairfax County Comprehensive Plan – Area III, Amended through May 2025

Safety Analysis

A safety analysis was conducted using crash data from the VDOT Crash Database over a five-year period (January 1, 2018 – December 31, 2024, excluding 2020 and 2021). In total, 92 crashes were reported in the study area, including 30 injury crashes. No fatal crashes or pedestrian/bicycle crashes were reported over the study period.

Summaries of crashes in the study area by severity and type are shown in **Table 4** and **Table 5**, respectively. **Appendix C** includes a crash summary for the study area.

Crash severity is coded using the KABCO scale, which is defined using the following classifications:

- K—Fatality
- A—Suspected Serious Injury
- B—Suspected Minor Injury
- C—Possible Injury
- PDO—Property Damage Only

Of the 92 crashes, 88 occurred at the signalized intersections of Fairfax County Parkway and Burke Centre Parkway, with 45 and 43 crashes over the analysis period at these intersections, respectively. Roberts Parkway at Burnside Landing Drive was the location of a single, rear-end crash, while three other crashes

occurred along non-intersection locations along the corridor. Twenty-seven crashes (29%) were rear-ends, with 22 concentrated around the Fairfax County Parkway at Roberts Parkway intersection. 55 angle crashes, 60%, occurred during the analysis period. Eighteen angle collisions were located at the Fairfax County Parkway at Roberts Parkway intersection, while 37 occurred at Roberts Parkway at Burke Centre Parkway.

Table 4 displays the breakdown of crashes by intersection and severity. Two-thirds of all crashes were property damage only (PDO), with 31 occurring at the signalized Fairfax County Parkway at Roberts Parkway and 28 occurring at the signalized Roberts Parkway at Burke Centre Parkway. Thirty percent of all crashes were classified as visible injury (“B”) crashes, with 13 and 14 of these crashes at the Fairfax County Parkway and Burke Centre Parkway intersections, respectively. The remaining visible injury crash was the previously mentioned rear-end collision at Burnside Landing Drive. No fatal crashes were reported during the analysis period, and 2 crashes were classified as severe injury (“A”), with one (1) occurring at each of the signalized intersections.

As previously mentioned, 55 (60%) of all crashes were angle crashes, with 27 (29%) rear-end collisions. Other crash types include fixed object crashes (5 crashes, 5% of all crashes), 1 head-on collision, 1 sideswipe, and 3 crashes classified as other. **Table 5** provides the breakdown of crashes by intersection and crash type.

Table 4: Study Area Crashes by Crash Severity

Intersection	# of Crashes—K	# of Crashes—A	# of Crashes—B	# of Crashes—C	# of Crashes—PDO	Total
Fairfax County Parkway and Roberts Parkway	0	1	13	0	31	45
Roberts Parkway and Heritage Landing Road	0	0	0	0	0	0
Roberts Parkway and Burnside Landing Drive	0	0	1	0	0	1
Roberts Parkway and Burke Centre Parkway	0	1	14	0	28	43
Roberts Parkway and Burke Town Center	0	0	0	0	0	0
Rest of Corridor	0	0	0	0	3	3
Total	0	2	28	0	62	92

Table 5: Study Area Crashes by Crash Type

Intersection	# of Crashes – Angle	# of Crashes – Rear End	# of Crashes – Head-On	# of Crashes – Fixed Object	# of Crashes – Side-swipe	# of Crashes – Pedestrian	# of Crashes – Other	# of Crashes – Total
Fairfax County Parkway and Roberts Parkway	18	22	0	4	0	0	1	45
Roberts Parkway and Heritage Landing Road	0	0	0	0	0	0	0	0
Roberts Parkway and Burnside Landing Drive	0	1	0	0	0	0	0	1
Roberts Parkway and Burke Centre Parkway	37	4	1	0	0	0	1	43
Roberts Parkway and Burke Town Center	0	0	0	0	0	0	0	0
Rest of Corridor	0	0	0	1	1	0	1	3
Total	55	27	1	5	1	0	3	92

Annual crash rates were also developed for the signalized intersections of Fairfax County Parkway at Roberts Parkway and Roberts Parkway at Burke Centre Parkway. To determine the crash rates, the total entering vehicles (TEV) were calculated using each of the approach AADTs reported in VDOT's Pathways for Planning tool for each analysis year (since 2024 AADT was not available for analysis, 2023 AADT was used for 2024 analysis year).

The million entering vehicles (MEV) were then calculated for each year, which was then used to determine the annual crash rate by dividing the number of crashes by the MEV. Taking the average TEV and the total number of crashes over the analysis period, the crash rate was calculated for each intersection. For Fairfax County Parkway at Roberts Parkway, the crash rate during the analysis period was 0.39 crashes/MEV, with annual rates varying from 0.26 in 2024 and 0.65 in 2022. **Table 6** lists the calculated annual crash rates for Fairfax County Parkway at Roberts Parkway. Roberts Parkway at Burke Centre Parkway had a five-year crash rate of 0.31 crashes/MEV, ranging between 0.22 in 2023 and 2024 to 0.38 in both 2018 and 2022. **Table 7** displays the annual crash rates for Roberts Parkway at Burke Centre Parkway.

Table 6: Fairfax County Parkway at Roberts Parkway Annual Crash Rates

SR 286/Roberts Pkwy Annual Crash Rates				
Year	Crashes	TEV	MEV	Crash Rate
2018	11	64433	23.52	0.47
2019	7	64512	23.55	0.30
2022	14	59034	21.55	0.65
2023	7	62220	22.71	0.31
2024	6	62220	22.71	0.26
Total	45	62484	114.03	0.39

Table 7: Roberts Parkway at Burke Centre Parkway Annual Crash Rates

Roberts Pkwy/Burke Pkwy Annual Crash Rates				
Year	Crashes	TEV	MEV	Crash Rate
2018	11	79290	28.94	0.38
2019	10	79389	28.98	0.35
2022	10	72190	26.35	0.38
2023	6	75966	27.73	0.22
2024	6	75966	27.73	0.22
Total	43	76560	139.72	0.31

All intersection and roadway segments within the VDOT linear referencing system (LRS) are evaluated annually by VDOT for the potential for safety improvement (PSI) based on the Highway Safety Manual (HSM) methodology. The crash frequency, severity of crashes, volume, and length of segment are contributing factors in the predicative analysis. Crash predictions, based on the safety performance function (SPF) crash data files, are made for intersection and segments. The top 100 intersections and 100 miles of segments are published by VDOT for each district on an annual basis. VDOT also identifies Targeted Safety Need (TSN) locations, which are intersections or segments that have been identified as PSI locations for three or more of the last five years. No study area intersections or segments were identified as PSI locations or TSN locations.

Field Review Observations

A preliminary field review of the study area was conducted on Thursday, May 15, 2025, to verify existing conditions, confirm traffic control devices and lane configurations, and observed peak hour traffic conditions and driver behavior. The existing lane configurations for each of the study intersections are shown in **Figure 11**.

The following observations were made during the field visit:

Fairfax County Parkway at Roberts Parkway

- Southbound right-turning drivers were observed not yielding to pedestrians crossing along the western crosswalk when pedestrians had the walk indication shown.
- During both peak hours, there is a noticeable duration of red signal time before the flashing yellow for the left-turn movements at Burke Centre Parkway – approximately 7-8 seconds. It should be noted that VDOT signal timings indicate that this should be 3.7 seconds of red time.

- Throughout both peak periods, southbound through vehicles on Roberts Parkway utilize both lanes prior to the drop lane located south of the intersection.
- During the AM peak period, left-turning traffic from eastbound Burke Centre Parkway onto northbound Roberts Parkway regularly exceeds the left-turn storage capacity (approximately 400 feet), causing blockages for through vehicles. The maximum observed queue extended over 600 feet to the intersection of Martins Landing Lane and Burke Centre Parkway.
 - Through vehicles appear to anticipate this congestion and position themselves in the outside (curb) lane to avoid queues caused by the eastbound left-turns.
- During the PM peak period, left-turning traffic from eastbound Burke Centre Parkway onto northbound Roberts Parkway frequently utilizes the full length of the available left-turn storage. On one occasion, the queue extended beyond the left-turn lane by about 2-3 additional vehicles.
- There were no significant delays or queue blockages observed for the other movements.

Segment between Burke Centre Parkway and Burnside Landing Drive

- Vehicles were observed parking along the shoulder in both directions of travel, despite parking restrictions being present along this facility.
- The existing path is narrow and uneven (about 5 – 6 feet), which results in no passing room for pedestrians or cyclists.
- It is difficult to see the Burke Centre Parkway traffic signal and existing crosswalk just before the curve when traveling northbound on Roberts Parkway.

Segment between Burnside Landing Drive and Heritage Landing Road

- Vehicles were observed parking along the shoulder in both directions of travel, despite parking restrictions being present along this facility.
- The existing path is narrow and uneven (about 5 – 6 feet), which results in no passing room for pedestrians or cyclists.

Fairfax County Parkway at Roberts Parkway

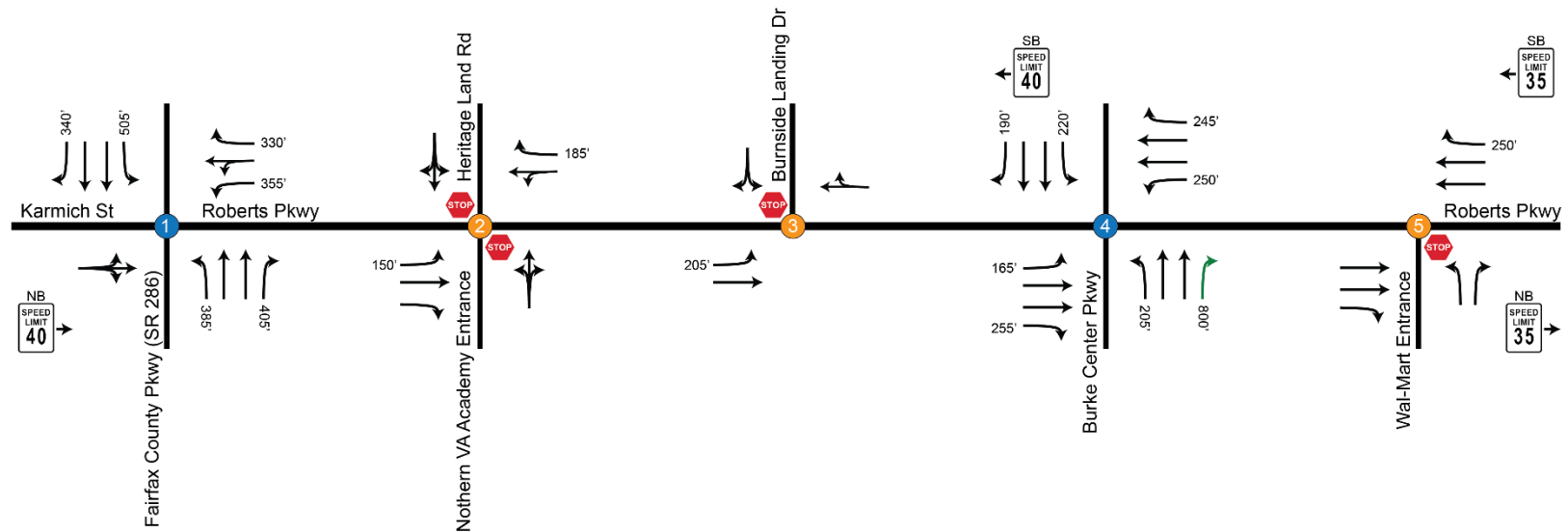
- Pedestrians and bicyclists are frequently observed using the Fairfax County Parkway shared-use path (south side of intersection)
- It is difficult from the eastbound left-turn on Fairfax County Parkway to assess gaps when making a left-turn during the flashing yellow phase.
- The existing crosswalk median refuge is degraded, “sunk” (wet from previous rain event) and narrow. The southwest receiving crosswalk corner does not meet ADA guidelines and sits a couple feet above the Fairfax County Parkway Trail.
- During both peak hours, the eastbound left-turn from Fairfax County Parkway onto northbound Roberts Parkway is heavily utilized, with vehicles often entering the middle of the intersection during the flashing-yellow phase. Some red-light running was observed.
- The through lane width (through-left for southbound Roberts Parkway) is approximately 20 feet between Heritage Landing Road and the start of the turn lane tapers. Drivers were observed using this extra space to drive around queued vehicles.
- During both peak hours, the westbound right-turning queues typically consist of one or two vehicles. However, due to the long westbound Fairfax County Parkway through queues, the right-turn lane was frequently blocked.
- During both peak hours, the westbound through traffic frequently queued back to Knolls Pond Lane, but queues cleared every cycle.

Figure 11: 2025 Existing Lane Configurations

Legend

- Signalized Intersection
- Unsignalized Intersection
- Channelized Right Turn Lane
- ### Effective Storage Length

Existing Lane Configuration



Synchro Analysis

The study team conducted a traffic operations analysis to evaluate the overall performance of the study corridor under Existing (2025) AM and PM peak hour conditions, which were modeled in the *Synchro 11 – SimTraffic* module, based on the existing roadway geometry, recently collected turning movement counts and signal information from VDOT. Inputs and analysis methodologies were consistent with the VDOT *Traffic Operations and Safety Analysis Manual (TOSAM), Version 2.0*. The SimTraffic Calibration Memo can be found in **Appendix E**.

Traffic Data

Twelve-hour vehicle turning movement, pedestrian, and bicycle counts were collected at the study intersections on March 18, 2025. Additionally, one 48-hour vehicle classification counts were collected along Roberts Parkway between Heritage Landing and Burnside Landing.

The AM peak hour used for the analysis was 7:30 AM – 8:30 AM. For the PM peak hour, a peak hour of 4:30 PM – 5:30 PM for all of the study intersections. The peak hour was approved by VDOT on May 29, 2025. The raw traffic data can be found in **Appendix D**.

All peak hour volumes were balanced between each of intersections. These balanced volumes were used as the 2025 Existing volumes as shown in **Figure 12**. The heavy vehicle percentages and peak hour factors are included in **Figure 13**, respectively.

Level of Service (LOS) Criteria

The intersection Level of Service (LOS) is a qualitative measure that describes a driver's perception of the operating conditions. LOS ratings range from A to F. LOS A indicates little or no congestion and LOS F indicates severe congestion, unstable traffic flow, and/or stop-and-go conditions. **Table 8** summarizes the LOS corresponding to the delay at unsignalized and signalized intersections as specified in the Highway Capacity Manual (HCM). The delay criteria for LOS differs slightly for unsignalized and signalized intersections due to driver expectations and behavior. For signalized intersections, LOS is calculated as the lost travel time caused by vehicles waiting at a traffic signal. For unsignalized intersections, LOS and corresponding delay is calculated by determining the number of gaps that are available in the conflicting traffic stream, since the LOS analysis assumes that traffic on the mainline is not affected by the traffic on the side street.

Table 8: Level of Service Criteria

Level of Service	Control Delay (seconds/vehicle) - Signalized Intersection	Control Delay (seconds/vehicle) - Unsignalized Intersection
A	≤ 10.0	≤ 10.0
B	> 10.0 to 20.0	> 10.0 to 15.0
C	> 20.0 to 35.0	> 15.0 to 25.0
D	> 35.0 to 55.0	> 25.0 to 35.0
E	> 55.0 to 80.0	> 35.0 to 50.0
F	≥ 80.0	≥ 50.0

Figure 12: 2025 Existing Peak Hour Volumes

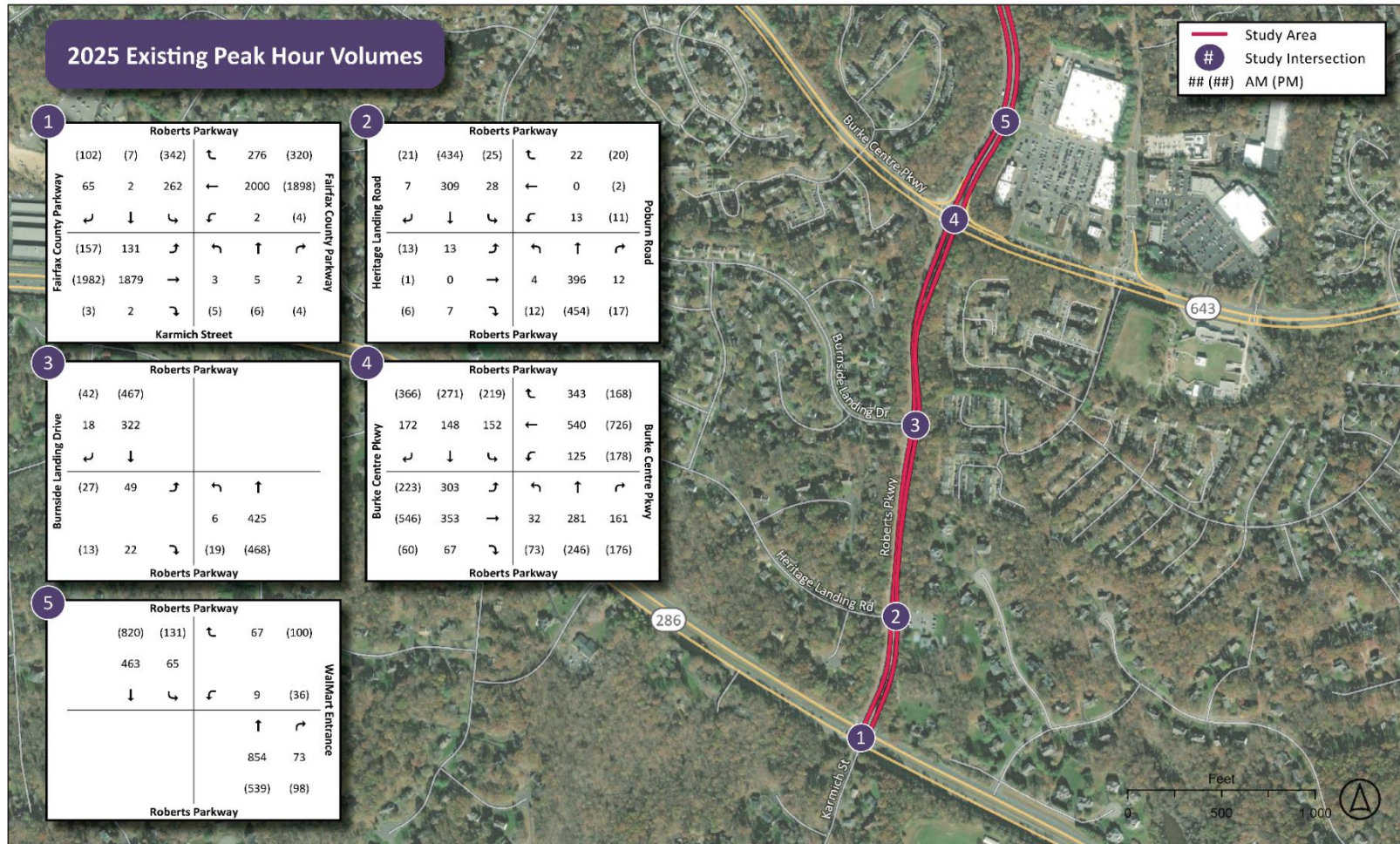
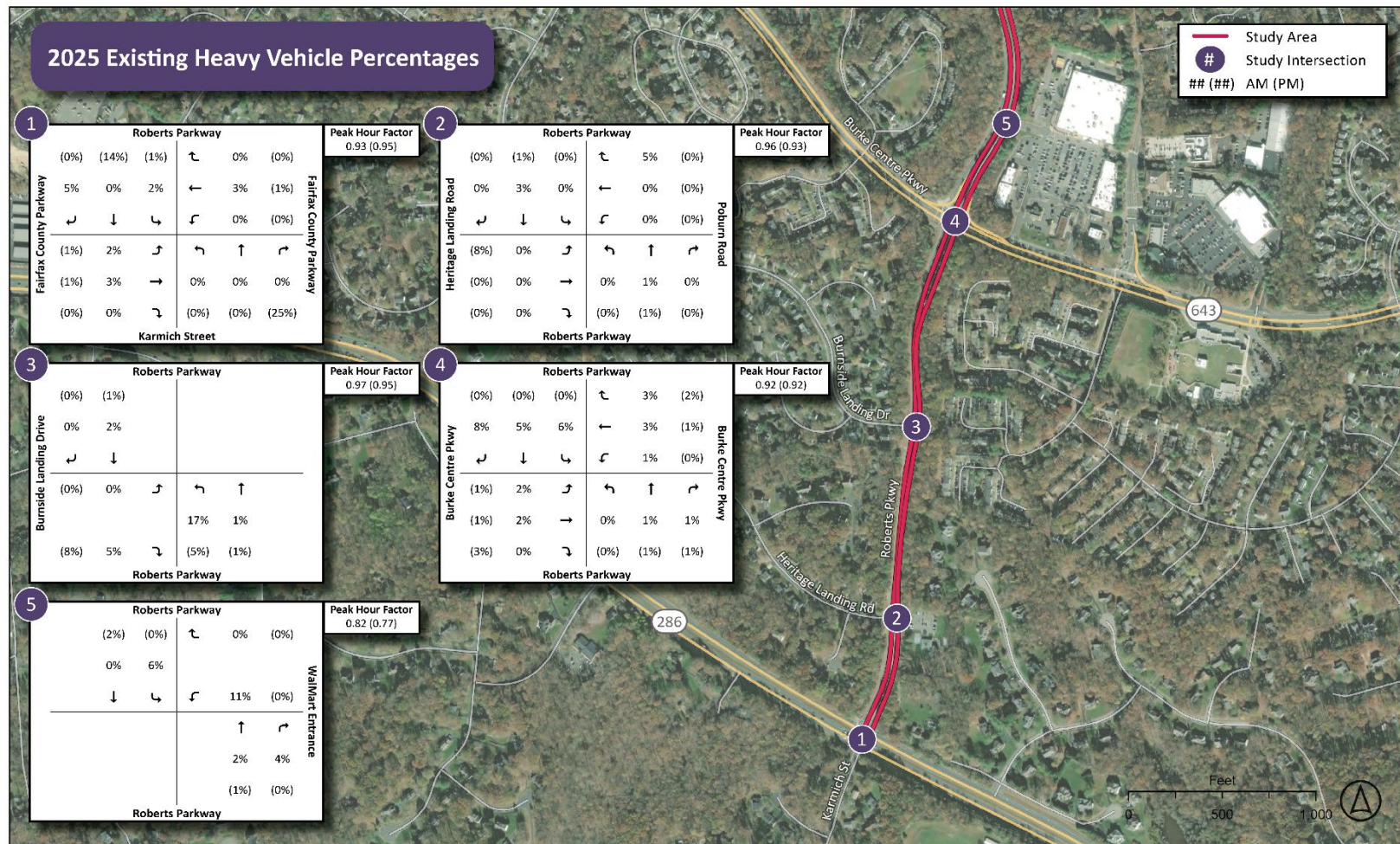


Figure 13: 2025 Existing Heavy Vehicle Percentages & Peak Hour Factors



Traffic Analysis Results

Control delay (seconds per vehicle), LOS, maximum and average queue lengths (feet), and travel times were selected as measures of effectiveness to quantitatively report the performance of each study intersection.

Table 9 summarizes the *SimTraffic* reports used to determine control delay for each intersection. *SimTraffic 11* was used as part of this analysis.

Ten simulations were run for both the AM and PM peak hours. The *VDOT Sample Size Determination Tool* was used to confirm that number of *SimTraffic* runs necessary (10).

SimTraffic results for the 2025 Existing LOS, maximum queues, average queues, and travel times are included in **Table 10**, **Table 11**, **Table 12**, and **Table 13**, respectively. The 2025 Existing AM and PM peak hour *SimTraffic* reports are included in **Appendix F**.

Table 9: *SimTraffic* Reports for Control Delay

Intersection Name [<i>Synchro</i> Node #]	<i>SimTraffic</i> Reports
Roberts Parkway & Fairfax County Parkway [1]	Control Delay, Maximum Queue, Average Queue
Roberts Parkway & Heritage Landing Road/Poburn Road [2]	Control Delay, Maximum Queue, Average Queue
Roberts Parkway & Burnside Landing Drive [3]	Control Delay, Maximum Queue, Average Queue
Roberts Parkway & Burke Centre Parkway [4]	Control Delay, Maximum Queue, Average Queue

Table 10 shows that the intersection of Roberts Parkway & Fairfax County Parkway operates at an overall LOS D or better during both AM and PM peak hours. Most delays occur on southbound Roberts Parkway in the PM and westbound Fairfax County Parkway in both peak hours, with queues over 800 feet. Roberts Parkway and Burke Centre Parkway operates well at LOS C during both peak periods. However, left-turns on Burke Centre Parkway face delays, especially the eastbound left-turn, which can sometimes get blocked by the eastbound Fairfax County Parkway traffic in the PM peak hour. Unsignalized intersections have minimal delays or queueing during peak hours. The intersection of Roberts Parkway & Heritage Landing Road/Poburn Road can be affected by the southbound queue from Roberts Parkway & Fairfax County Parkway in the PM peak hour, but vehicles on Roberts Parkway usually avoid blocking this intersection.

Table 10: 2025 Existing Level of Service

Intersection Number and Description	Type of Control	Lane Group	Eastbound				Westbound				Northbound				Southbound				Overall	
			AM		PM		AM		PM		AM		PM		AM		PM			
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	AM	PM
1SR 286 (Fairfax County Parkway)	Signal		Fairfax County Pkwy				Fairfax County Pkwy				Karmich Street				Roberts Parkway					
		Left	88.6	F	100.3	F	30.7	C	41.3	D	101.9	F	133.5	F	101.2	F	174.0	F	Delay	Delay
		Through	12.3	B	15.7	B	34.0	C	33.1	C	100.5	F	114.7	F	35.2	D	156.1	F	30.2	38.6
		Right	3.8	A	6.0	A	17.5	B	17.0	B	43.6	D	55.9	E	50.6	D	68.2	E	C	D
2Heritage Landing Road	Two-Way Stop		Heritage Landing Road				Private Entrance				Roberts Parkway				Roberts Parkway					
		Left	9.8	A	18.2	C	12.2	B	51.4	F	2.6	A	4.9	A	3.7	A	15.7	C	Delay	Delay
		Through	0.0	A	19.7	C	0.0	A	21.7	C	1.4	A	1.6	A	1.7	A	13.3	B	2.0	8.4
		Right	4.6	A	12.9	B	3.8	A	29.1	D	0.5	A	0.7	A	0.7	A	5.8	A	A	A
3Burnside Landing Drive	Two-Way Stop		Burnside Landing Drive				---				Roberts Parkway				Roberts Parkway					
		Left	9.4	A	13.4	B	---	---	---	---	2.3	A	5.0	A	---	---	---	---	Delay	Delay
		Through	0.0	A	0.0	A	---	---	---	---	0.9	A	0.9	A	1.1	A	2.4	A	1.6	2.1
		Right	5.1	A	6.6	A	---	---	---	---	---	---	---	---	0.6	A	1.4	A	A	A
4Burke Centre Parkway	Signal		Burke Centre Parkway				Burke Centre Parkway				Roberts Parkway				Roberts Parkway					
		Left	51.7	D	49.4	D	22.0	C	33.8	C	45.3	D	43.5	D	51.7	D	51.9	D	Delay	Delay
		Through	24.9	C	31.7	C	36.6	D	39.8	D	58.4	E	57.6	E	40.7	D	41.7	D	31.0	34.6
		Right	3.4	A	4.7	A	1.9	A	0.9	A	7.3	A	9.1	A	6.8	A	17.0	B	C	C
5Walmart Entrance	Two-Way Stop		---				Walmart Entrance				Roberts Parkway				Roberts Parkway					
		Left	---	---	---	---	31.8	C	48.7	D	---	---	---	---	9.8	A	7.3	A	Delay	Delay
		Through	---	---	---	---	0.0	A	0.0	A	2.8	A	2.4	A	0.2	A	0.4	A	2.7	2.9
		Right	---	---	---	---	7.4	A	5.1	A	2.9	A	2.7	A	---	---	---	---	A	A

Table 11: 2025 Existing Max Queues

Intersection Number and Description	Type of Control	Lane Group	Eastbound			Westbound			Northbound			Southbound		
			Storage	AM	PM	Storage	AM	PM	Storage	AM	PM	Storage	AM	PM
			Bay Length	Queue (ft)	Queue (ft)	Bay Length	Queue (ft)	Queue (ft)	Bay Length	Queue (ft)	Queue (ft)	Bay Length	Queue (ft)	Queue (ft)
1SR 286 (Fairfax County Parkway)	Signal	Fairfax County Parkway			Fairfax County Parkway			Karmich Street			Roberts Parkway			
		Left	505	323	389	385	23	104	---	54	82	355	307	348
		Through		493	536		917	839					383	523
		Right	340	2	7	405	405	405					330	217
2Heritage Landing Road	Two-Way Stop	Heritage Landing Road			Private Entrance			Roberts Parkway				Roberts Parkway		
		Left	---	30	55	---	60	82	150	12	32		2	400
		Through								0	0		2	400
		Right								0	0		0	92
3Burnside Landing Drive	Two-Way Stop	Burnside Landing Drive							---			Roberts Parkway		
		Left		70	70	---	---	---	205	17	38	---	---	---
		Through	---	---	---	---	---	---		6	5		11	9
		Right		70	70	---	---	---	---	---	---		11	9
4Burke Centre Parkway	Signal	Burke Centre Parkway			Burke Centre Parkway			Roberts Parkway			Roberts Parkway			
		Left	220	533	351	205	204	205	165	229	152	250	13	248
		Through		470	342		317	420		232	236		235	361
		Right	190	80	173	Cont.	0	0	255	153	180	245	152	227
5Walmart Entrance	Two-Way Stop	---			Walmart Entrance			Roberts Parkway			Roberts Parkway			
		Left	---	---	---		53	111	---	---	---	250	0	97
		Through	---	---	---	---	---	---		21	0		0	10
		Right	---	---	---		64	76		80	29	---	---	---

Table 12: 2025 Existing Average Queues

Intersection Number and Description	Type of Control	Lane Group	Eastbound			Westbound			Northbound			Southbound		
			Storage	AM	PM	Storage	AM	PM	Storage	AM	PM	Storage	AM	PM
			Bay Length	Queue (ft)	Queue (ft)	Bay Length	Queue (ft)	Queue (ft)	Bay Length	Queue (ft)	Queue (ft)	Bay Length	Queue (ft)	Queue (ft)
1SR 286 (Fairfax County Parkway)	Signal		Fairfax County Parkway			Fairfax County Parkway			Karmich Street			Roberts Parkway		
		Left	505	129	157	385	2	7	---	13	21	355	182	269
		Through		176	202		433	402					182	370
		Right	340	0	0	405	147	175					330	64
2Heritage Landing Road	Two-Way Stop		Heritage Landing Road			Private Entrance						Roberts Parkway		
		Left	---	11	15	---	21	25	150	0	4		0	87
		Through								0	0		0	87
		Right								0	0		0	3
3Burnside Landing Drive	Two-Way Stop								Burnside Landing Drive			---		
		Left		35	29	---	---	---	205	1	7	---	---	---
		Through	---	---	---	---	---	---		0	0		0	0
		Right		35	29	---	---	---	---	---	---		0	0
4Burke Centre Parkway	Signal		Burke Centre Parkway			Burke Centre Parkway			Roberts Parkway			Roberts Parkway		
		Left	220	162	167	205	72	123	165	121	61	250	0	155
		Through		120	143		187	246		121	112		115	147
		Right	190	10	19	Cont.	0	0	255	53	60	245	54	123
5Walmart Entrance	Two-Way Stop		---			Walmart Entrance			Roberts Parkway			Roberts Parkway		
		Left	---	---	---		8	30	---	---	---	250	0	39
		Through	---	---	---	---	---	---		2	0		0	0
		Right	---	---	---		29	38		31	3	---	---	---

Table 13: 2025 Existing Travel Times

Route Name	Start Intersection	End Intersection	AM Peak	PM Peak
			SimTraffic Travel Time [sec]	SimTraffic Travel Time [sec]
Roberts Pkwy NB	SR 286 (Fairfax County Parkway)	Walmart Entrance	124.0	120.4
Roberts Pkwy SB	Walmart Entrance	SR 286 (Fairfax County Parkway)	141.9	264.7

NB – Northbound / SB - Southbound

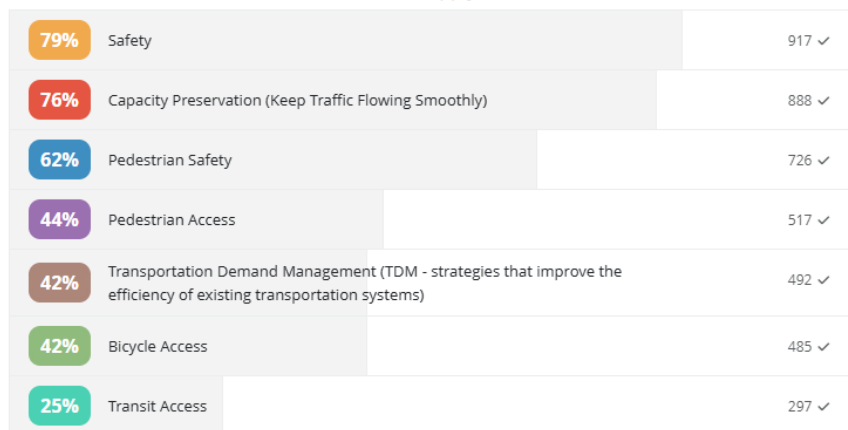
Phase 1 Public Outreach

The Phase 1 PublicInput.com survey was held from June 2, 2025 to June 16, 2025 to collect feedback on existing traffic, safety, transit, and bicycle and pedestrian issues within the study area. The online survey had a total of 1,245 participants and received 1,534 comments.

As shown in **Figure 14**, participants ranked safety as the most important issue in the study area, followed by capacity preservation and pedestrian safety.

Figure 14: VTrans Needs Along the Corridor

The following needs have been identified for this study. Do you agree with these needs? (Check all that apply)



As shown in **Figure 15**, corridor safety/intersection was identified as the greatest safety issue, followed by reducing traffic congestion, speeding/aggressive driving and pedestrian safety and accessibility.

Figure 15: Needs Along the Corridor

Rank the following needs in order of importance to you along the study area.



Speeding/aggressive driving was the greatest safety concern, followed by running red lights and lack of sidewalks/missing sidewalks, as shown in **Figure 16**.

Figure 16: Safety Issues Along the Corridor

Which of the following safety issues concern you? (Check all that apply)

65%	Speeding / aggressive driving	594 ✓
50%	Running red lights	453 ✓
40%	Lack of sidewalks / missing sidewalks	360 ✓
38%	Insufficient / missing crosswalks and pedestrian signal timing	343 ✓
35%	Inadequate lighting	321 ✓
33%	Sudden stopping / rear-end crashes	304 ✓
33%	Side-impact / angle crashes	302 ✓
29%	Inadequate pavement marking and signage	262 ✓
24%	Difficulty weaving / merging	220 ✓
18%	Inadequate bicycle facilities	165 ✓
7%	Lack of ADA ramps and accessibility	67 ✓
7%	Inadequate transit / bus stops	63 ✓
5%	Closely spaced driveways	46 ✓
3%	Other	30 ✓

Common themes among written comments included the following:

- Traffic flow – long cycle, and specifically red clearance times, at the two signalized intersection, poor intersection design and suggestions for roundabout.
- Pedestrian safety – crosswalks are often blocked by cars, pedestrian signals are too short, requests for better signage and pedestrian signals.
- Aggressive driving – excessive speeding near intersections and schools, tailgating, and requests for traffic calming measures and enforcement.
- Infrastructure – poor lighting was noted, especially at night and during inclement weather, narrow lanes, lack of shoulders and damaged sidewalks, requests for widening, resurfacing and better drainage improvements.
- Cyclist safety – mixed opinions, with some wanting on-road bike lanes and others noting that the road is too narrow and unsafe for bikes.

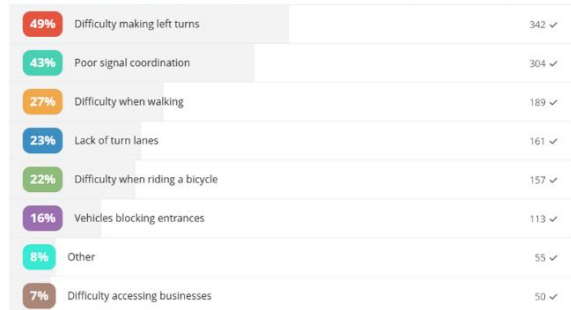
Most of the respondents traveled during the weekday afternoon (4:00 PM – 7:00 PM) and morning (6:00 AM – 9:00 AM) rushes and experienced mobility concerns during these times, including making left-turns, poor signal coordination and lack of turn lanes. Most respondents indicated that they traveled along the corridor a few times a week (44%), while 40% indicated that they traveled along the corridor daily. Personal vehicle (99%) was the mode of choice when traveling along the corridor, followed by walking (25%) and cycling (15%), with shopping/errands (80%) being the predominant reason, followed by home (54%), passing through (50%) and work (41%). Respondents indicated that crosswalks/pedestrian signals (70%), sidewalks (57%) shared-use paths (38%) and bicycle lanes (35%) are needed along the corridor. **Figure 17** summarizes some of the additional responses.

Figure 17: Additional Survey Responses

Do you experience congestion when traveling along the study area? If so, when? (Check all that apply)



What mobility issues do you typically experience when using the study area? (Check all that apply)



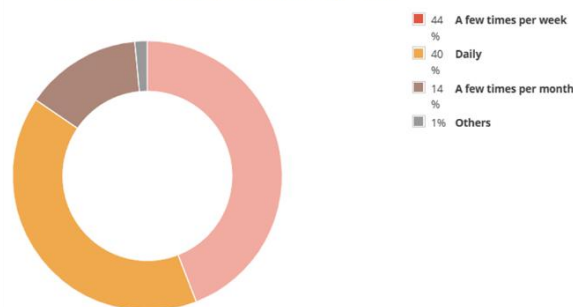
When do you typically experience mobility issues in the study area? (Check all that apply)



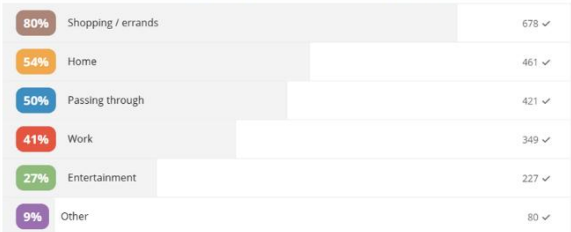
When do you typically travel in the study area? (Check all that apply)



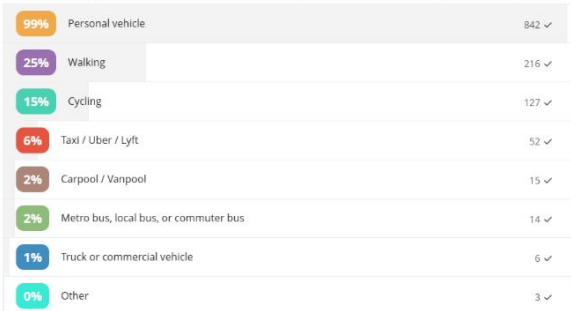
How often do you travel along the study area?



Why do you travel along the study area? (Check all that apply)



What mode(s) of travel do you use when traveling along the study area? (Check all that apply)



1.6.2 No-Build Conditions Traffic Operations Analysis

No-Build 2055 Volume Development

Traffic operational analyses were conducted to evaluate the overall performance of the study corridor under No-Build (2055) AM and PM peak hour conditions. The intent of the no-build conditions analysis is to provide a general understanding of the baseline future traffic conditions as a starting point for developing improvement concepts.

The following sources were reviewed to determine the growth rates to apply to existing traffic volumes to forecast future (2055) traffic volumes.

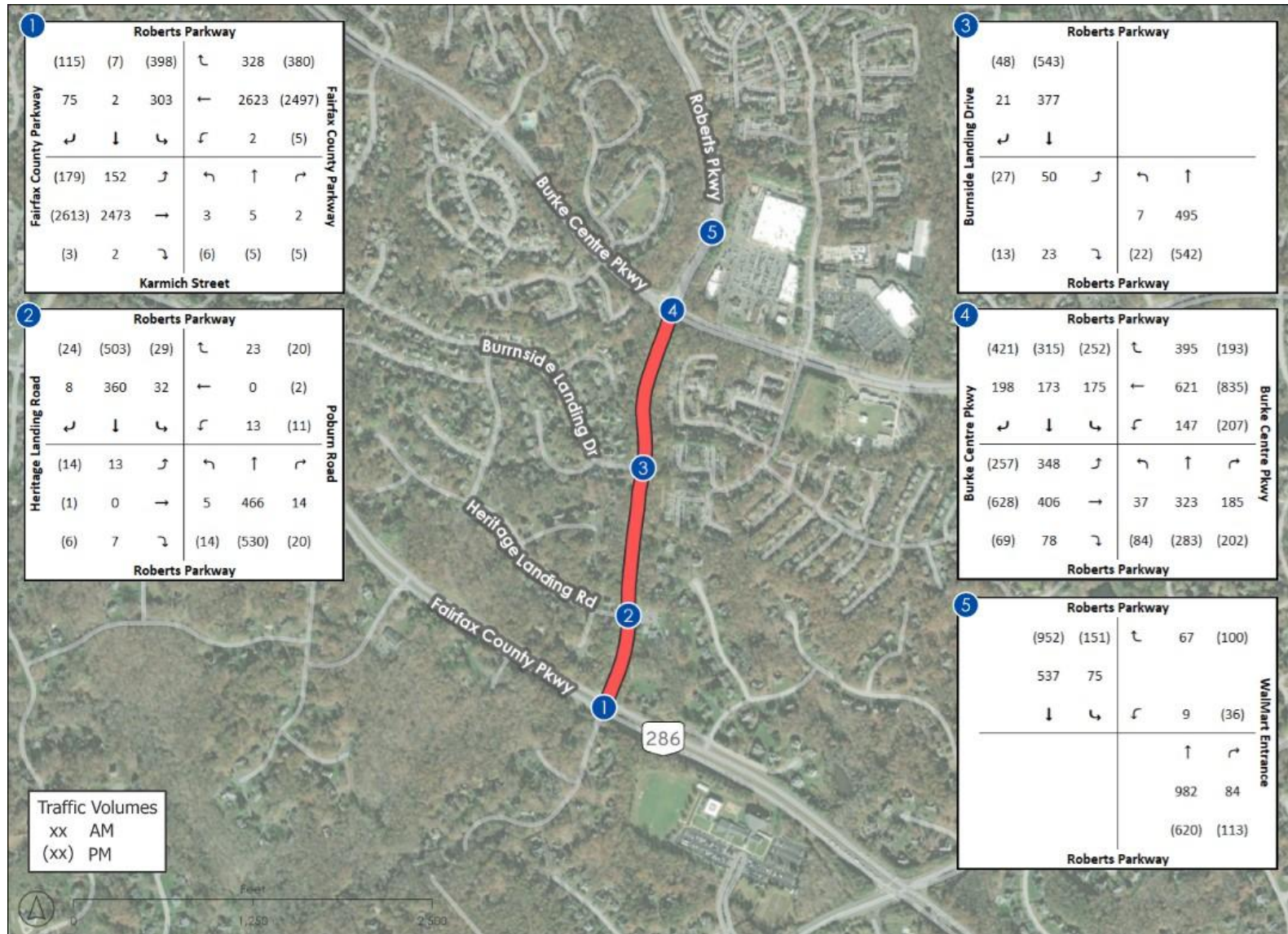
- Historical Annual Average Daily Traffic (AADT) data published by VDOT
- VDOT's Pathways for Planning (P4P) Traffic Forecast
- Metropolitan Washington Council of Governments (MWCOC) Travel Demand Model (TDM)

From these sources, the linear growth rates used to develop the future traffic volumes are as follows:

- Fairfax County Parkway (Through Volumes Only) – 1.0%
- Roberts Parkway – 0.5%
- Burke Centre Parkway – 0.5%
- All other roadways – 0%

The growth rates and future year volumes were approved by VDOT on October 13, 2025. The approved future growth rate memo is included in **Appendix G**. The 2055 Future No-Build Volumes are shown below in **Figure 18**.

Figure 18: 2055 No-Build Peak Hour Volumes



Synchro Analysis

Traffic operational analyses were conducted to evaluate the overall performance of the study intersections under No-Build (2055) AM and PM peak hour conditions. The intent of no-build conditions analyses was to provide a general understanding of the baseline future traffic conditions as a starting point for developing improvement alternatives. No-build conditions were modeled using *SimTraffic* for the entire study area.

The existing conditions Synchro models were used as a basis to develop the No-Build models for the AM and PM peak hour conditions. Two funded, approved projects within the study area were added to the Synchro models:

The models were updated with the projected 2055 No-Build traffic volumes, while traffic signal cycle lengths, splits and offsets were kept consistent with existing conditions. No-Build inputs and analysis methodologies were applied consistently with *TOSAM*. Control delay (seconds per vehicle), LOS, and maximum queue length (feet) were selected as measures of effectiveness to quantitatively report the performance of each study intersection.

Operations across the corridor deteriorate to unacceptable levels of service in the no-build condition. Several movements and approaches operate at LOS F, especially during the PM peak. Fairfax County Parkway experiences failing levels of service during both peak periods, while Burke Centre Parkway operates at LOS D during both peak periods.

The following trends were observed under no-build conditions; the results for the level of service, maximum and average queue lengths are shown in **Table 14**, **Table 15**, and **Table 16**, respectively:

AM Peak Hour

- Fairfax County Parkway features an overall intersection delay of 120.7 seconds. All movements along the westbound approach operate at LOS F, while the eastbound through, northbound right and southbound right turn movements operate at LOS E.
- Maximum queue lengths at Fairfax County Parkway extend over a quarter-mile (1,444 feet) along the eastbound through movement, and almost a half-mile (2,414 feet) along the westbound through movement.
- Also at Fairfax County Parkway, the queues for the eastbound left-turn and westbound right-turn movements exceed the available storage lengths, spilling over into the mainline.
- Overall intersection delay increases at Burke Centre Parkway by over 10 seconds, operating at LOS D in the no-build. The eastbound left-turn movement experiences over 109 seconds of delay, and the northbound through and southbound left-turn movements operate at LOS E.

PM Peak Hour

- Every movement Fairfax County Parkway is failing, except for the eastbound through and right movements, which operate at LOS E and D respectively.
- Several movements at Fairfax County Parkway experience over 200 seconds of delay: eastbound left turn, westbound left turn, and southbound left and through movements.
- Due to the operations downstream, the southbound approach at Heritage Landing Road operates at LOS F. The eastbound and westbound side street approaches also operate at LOS F.
- While there are no failing movements at Burke Centre Parkway, several operate at LOS E: eastbound and westbound lefts, northbound through, and southbound left.
- As with the AM peak, eastbound queue lengths at Fairfax County extend almost 1,500 feet, and the westbound queues measured 2,403 feet.

PROJECT PIPELINE

- Queue lengths exceeded storage for the following movements: eastbound left turn, westbound right turn and southbound right turn at Fairfax County Parkway; eastbound and westbound left turns at Burke Centre Parkway.

The 2055 No-Build *SimTraffic* reports are included in **Appendix H**.

Table 14: 2055 No-Build Level of Service

Intersection Number and Description	Type of Control	Lane Group	Eastbound				Westbound				Northbound				Southbound				Overall	
			AM		PM		AM		PM		AM		PM		AM		PM		AM	PM
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS		
1 SR 286 (Fairfax County Parkway)	Signal		Fairfax County Pkwy				Fairfax County Pkwy				Karmich Street				Roberts Parkway					
		Left	267.9	F	241.5	F	190.5	F	202.4	F	79.0	E	112.1	F	116.2	F	234.2	F	Delay	Delay
		Through	57.4	E	61.9	E	174.6	F	163.2	F	114.2	F	132.7	F	28.1	C	201.2	F	120.7	123.7
		Right	50.4	D	48.5	D	156.9	F	148.4	F	62.5	E	92.7	F	60.5	E	109.3	F	F	F
2 Heritage Landing Road	Two-Way Stop		Heritage Landing Road				Private Entrance				Roberts Parkway				Roberts Parkway					
		Left	11.9	B	80.6	F	14.4	B	438.9	F	4.2	A	9.7	A	4.8	A	93.0	F	---	---
		Through	0.0	A	32.9	D	0.0	A	224.0	F	1.8	A	1.7	A	2.4	A	101.8	F	---	---
		Right	4.9	A	130.5	F	5.5	A	324.2	F	0.5	A	0.7	A	0.7	A	75.2	F	---	---
3 Burnside Landing Drive	Two-Way Stop		Burnside Landing Drive				---				Roberts Parkway				Roberts Parkway					
		Left	9.8	A	32.4	D	---	---	---	---	3.4	A	8.2	A	---	---	---	---	---	---
		Through	---	---	---	---	---	---	---	---	0.9	A	0.9	A	1.4	A	27.0	D	---	---
		Right	5.0	A	51.7	F	---	---	---	---	---	---	---	---	0.7	A	21.8	C	---	---
4 Burke Centre Parkway	Signal		Burke Centre Parkway				Burke Centre Parkway				Roberts Parkway				Roberts Parkway					
		Left	109.7	F	79.3	E	26.5	C	56.2	E	44.8	D	44.8	D	68.0	E	57.2	E	Delay	Delay
		Through	31.0	C	39.0	D	42.4	D	48.8	D	63.7	E	58.5	E	42.5	D	43.9	D	41.2	42.4
		Right	4.5	A	8.2	A	2.2	A	1.1	A	9.2	A	10.6	B	7.8	A	21.6	C	D	D
5 Walmart Entrance	Two-Way Stop		---				Walmart Entrance				Roberts Parkway				Roberts Parkway					
		Left	---	---	---	---	36.6	E	82.6	F	---	---	---	---	12.3	B	8.2	A	---	---
		Through	---	---	---	---	0.0	A	0.0	A	2.9	A	2.4	A	0.2	A	0.6	A	---	---
		Right	---	---	---	---	9.4	A	5.2	A	2.9	A	2.6	A	---	---	---	---	---	---

Table 15: 2055 No-Build Max Queues

Intersection Number and Description	Type of Control	Lane Group	Eastbound			Westbound			Northbound			Southbound		
			Storage Bay	AM	PM	Storage Bay	AM	PM	Storage Bay	AM	PM	Storage Bay	AM	PM
			Length	Queue (ft)	Queue (ft)	Length	Queue (ft)	Queue (ft)	Length	Queue (ft)	Queue (ft)	Length	Queue (ft)	Queue (ft)
1 SR 286 (Fairfax County Parkway)	Signal	Left	Fairfax County Parkway			Fairfax County Parkway			Karmich Street			Roberts Parkway		
		Through	505	505	505	385	18	137	---	54	92	355	330	354
		Right		1,444	1,498		2,414	2,403					452	566
			340	102	68	405	405	405				330	284	330
2 Heritage Landing Road	Two-Way Stop	Left	Heritage Landing Road			Private Entrance			Roberts Parkway			Roberts Parkway		
		Through	---	42	83	---	60	126	150	35	32		146	861
		Right								0	0		0	861
										0	0		0	184
3 Burnside Landing Drive	Two-Way Stop	Left	Burnside Landing Drive			---			Roberts Parkway			Roberts Parkway		
		Through		67	109	---	---	---	205	54	46	---	---	---
		Right		---	---		---	---		6	6		10	494
				67	109		---	---	---	---	---		10	494
4 Burke Centre Parkway	Signal	Left	Burke Centre Parkway			Burke Centre Parkway			Roberts Parkway			Roberts Parkway		
		Through	220	220	220	205	205	205	165	148	153	250	246	249
		Right		1,010	492		412	586		266	208		312	393
			190	155	190	Cont.	0	0	255	190	167	245	154	243
5 Walmart Entrance	Two-Way Stop	Left	---			Walmart Entrance			Roberts Parkway			Roberts Parkway		
		Through		---	---		55	122	---	---	---	250	85	111
		Right		---	---		---	---		50	2		3	25
				---	---		70	73		16	27	---	---	---

Table 16: 2055 No-Build Average Queues

Intersection Number and Description	Type of Control	Lane Group	Eastbound			Westbound			Northbound			Southbound		
			Storage Bay Length	AM Queue (ft)	PM Queue (ft)	Storage Bay Length	AM Queue (ft)	PM Queue (ft)	Storage Bay Length	AM Queue (ft)	PM Queue (ft)	Storage Bay Length	AM Queue (ft)	PM Queue (ft)
1 SR 286 (Fairfax County Parkway)	Signal	Left	Fairfax County Parkway			Fairfax County Parkway			Karmich Street			Roberts Parkway		
		Through	505	394	352	385	1	10	---	14	22	355	193	319
		Right		876	908		2,333	2,248					226	498
			340	4	4	405	208	222				330	94	182
2 Heritage Landing Road	Two-Way Stop	Left	Heritage Landing Road			Private Entrance			Roberts Parkway			Roberts Parkway		
		Through	---	12	23	---	23	66	150	7	4		21	468
		Right								0	0		0	468
										0	0		0	11
3 Burnside Landing Drive	Two-Way Stop	Left	Burnside Landing Drive			---			Roberts Parkway			Roberts Parkway		
		Through		34	33	---	---	---	205	7	9	---	---	---
		Right		---	---		---	---		0	0		0	130
				34	33		---	---		---	---		0	130
4 Burke Centre Parkway	Signal	Left	Burke Centre Parkway			Burke Centre Parkway			Roberts Parkway			Roberts Parkway		
		Through	220	180	180	205	96	163	165	35	63	250	144	184
		Right		374	261		222	332		136	110		111	177
			190	15	32	Cont.	0	0	255	60	65	245	154	153
5 Walmart Entrance	Two-Way Stop	Left	---			Walmart Entrance			Roberts Parkway			Roberts Parkway		
		Through		---	---		10	36	---	---	---	250	35	45
		Right		---	---		---	---		2	0		0	2
				---	---		31	35		1	2	---	---	---

1.7 Phase 1 Alternatives Development

The study team developed preliminary alternatives in parallel with the high-level needs diagnosis efforts documented in **Chapter 1**. The proposed Phase 1 alternatives were developed to meet the following criteria:

- Improve operations particularly at the signalized intersections in the study area
- Enhance bike and pedestrian access throughout the study area

In order to develop alternative concepts to address the needs identified in Chapter 1, a thorough review of the existing conditions data was conducted. VJuST was used as a high-level screening tool to identify potential alternative concepts at both signalized intersections along the Roberts Parkway corridor. These concepts were further screened manually based on several factors including operational and safety benefits, costs, and right-of-way impacts. The remaining concepts were modeled in Synchro and/or Sidra Intersection.

1.7.1 Initial Alternatives

The needs evaluation, diagnosis, and initial alternatives were presented in SWG Meeting #2, held on August 19, 2025. Six alternatives were presented for Roberts Parkway and Fairfax County Parkway intersection:

- Restrict Flashing Yellow Arrow on Fairfax County Parkway during weekday peak hours
- Offset Left Turns on Fairfax County Parkway
- Dual Eastbound Left Turns
- Reduced Phasing by Reconfiguration of Karmich Street Approach
- Restricted Crossing U-Turn (RCUT)
- Thru-Cut Intersection

Five alternatives were presented for Roberts Parkway and Burke Centre Parkway:

- Restrict Flashing Yellow Arrow on Burke Centre Parkway during weekday peak hours
- Hybrid Roundabout
- Dual Eastbound Left Turns
- Offset Left Turns on Burke Centre Parkway
- Partial Road Reconfiguration on Southbound Roberts Parkway

Following SWG Meeting #2, the study team used the Virginia Junction Screening Tool (VJuST) to screen intersection alternatives based on impacts to traffic operations, pedestrian accommodations, safety, and cost. The Stage 1 iCAP results are summarized in **Section 1.7.2**.

Bicycle and Pedestrian Concepts

In addition to concepts addressing vehicular operations and safety, the study team reviewed alternatives addressing bicycle and pedestrian access. The SWG decided to advance an alternative adding a shared-use path (SUP) along the east side of Roberts Parkway between Fairfax County Parkway and Burke Centre Parkway for further refinement in Phase 2. Another concept would widen Roberts Parkway to established buffered bike lanes in each direction. These alternatives will allow for greater bicycle and pedestrian connectivity throughout the area. It was also recommended to the study group to evaluate the need for Rectangular Rapid Flashing Beacons (RRFBs) at the existing mid-block crossings along Roberts Parkway. The concepts that propose innovative intersection designs at the signalized locations would benefit bicycles and pedestrians due to the reduction of signal phases. A reduction of signal phases allows for the possibility

of median refuge islands and shortens the distance bicycles and pedestrians must traverse through the intersection.

1.7.2 Phase 1 Alternatives Summary

The Stage 1 iCAP results for Fairfax County Parkway and Burke Centre Parkway are summarized in **Figure 19** and **Figure 20**, respectively. The Phase 1 alternatives were presented again to the SWG at SWG Meeting #3, held on August 19, 2025 where it was decided which concepts would move forward to Phase 2. In total, the SWG agreed to carry four of the alternatives forward to Phase 2 for further refinement. The four alternatives included:

1. Dual left-turn lanes (Fairfax County Parkway)
2. Offset left-turn lanes (Fairfax County Parkway)
3. Dual left-turn lanes (Burke Centre Parkway)
4. Offset left-turn lanes (Burke Centre Parkway)
5. Shared-Use Path between Fairfax County Parkway and Burke Centre Parkway

The Reduced Phasing concept was incorporated into the advanced alternatives for Fairfax County Parkway, as the SWG cited the benefit of removing the Karmich Street approach phase for additional green time to mainline movements. Similarly, the Southbound Reconfiguration was incorporated into the Burke Centre Parkway advanced alternatives, to provide a multimodal benefit.

The Stage 1 iCAP results for the PM peak hour at Fairfax County Parkway and Burke Centre Parkway are presented in **Figure 19** and **Figure 20**, respectively.

Table 17 summarizes the alternatives considered in Phase 1 and gives the justification of if a concept were to move forward to Phase 2.

Figure 19: Virginia iCAP Stage 1 Results - PM Peak Hour (Fairfax County Parkway)

Metric Weighting (Based on Purpose and Need)			Traffic Operations		Pedestrian		Safety		Stage 1 Cost		Total Possible Score	
			Traffic Operations Weight 3		Pedestrian Weight 2		Safety Weight 2		Stage 1 Cost Weight 2			
Alternatives		Source / Additional Details	VJuST Maximum VIC Ratio	Traffic Operations Metric MOE Score	VJuST Accommodation Compared to Conventional	Pedestrian Metric MOE Score	VJuST Weighted Total Conflict Points	Safety Metric MOE Score	VJuST Planning Level Cost Category	Stage 1 Cost Metric MOE Score	Total Stage 1 Score	
Existing	Conventional		1.06	--		--	48	--		--		
Alternative 1	Conventional	Dual EB Left Turn Lanes	0.99	1.0	0	0.5	48	0.0	\$\$	1.0	6 out of 9	
Alternative 2	Conventional	Offset Fairfax County Parkway Left Turns	1.05	0.1	0	0.5	48	0.0	\$\$	1.0	3.3 out of 9	
Alternative 3	Restricted Crossing U-Turn EB-WB		1.04	0.3	0	0.5	20	1.0	\$\$\$	0.7	5.3 out of 9	
Alternative 4	Thru-Cut		1.05	0.1	0	0.5	28	0.7	\$\$\$	0.7	4.1 out of 9	

Figure 20: Virginia iCAP Stage 1 Results - PM Peak Hour (Burke Centre Parkway)

Metric Weighting (Based on Purpose and Need)			Traffic Operations		Pedestrian		Safety		Stage 1 Cost		Total Possible Score			
			Traffic Operations Weight 3		Pedestrian Weight 3		Safety Weight 2		Stage 1 Cost Weight 2					
Alternatives		Source / Additional Details	VJuST Maximum VIC Ratio	Traffic Operations Metric MOE Score	VJuST Accommodation Compared to Conventional	Pedestrian Metric MOE Score	VJuST Weighted Total Conflict Points	Safety Metric MOE Score	VJuST Planning Level Cost Category	Stage 1 Cost Metric MOE Score	Total Stage 1 Score			
Existing	Conventional		0.69	--		--	48	--		--				
Alternative 1	Conventional	Dual EB Left Turn Lanes	0.63	1.0	0	0.5	48	0.0	\$\$	1.0			6.5 out of 10	
Alternative 2	Conventional	Offset Burke Centre Parkway Left Turns	0.69	0.0	0	0.5	48	0.0	\$\$	1.0			3.5 out of 10	
Alternative 3	Single Roundabout		1.20	0.0	+	1.0	8	1.0	\$\$\$	0.7			6.4 out of 10	

Table 17: Phase 1 Alternatives to Move Forward to Phase 2

Intersection	Alternative	Move Forward to Phase 2?	Justification
Roberts Parkway and Fairfax County Parkway	Offset Left-Turn Lanes	Yes	SWG favored traditional improvements at this location, consistent with other improvements across the Fairfax County Parkway corridor.
	Dual Eastbound Left-Turn Lanes	Yes	SWG favored traditional improvements at this location, consistent with other improvements across the Fairfax County Parkway corridor.
	Reduced Phasing	Yes	Incorporated into the offset and dual left-turn lane alternatives, providing additional green time to mainline Fairfax County Parkway movements.
	RCUT	No	SWG elected not to pursue this option, as re-routed movements along Fairfax County Parkway was not considered ideal given the context of the network.
	Thru-Cut	Yes	SWG favored traditional improvements at this location, consistent with other improvements across the Fairfax County Parkway corridor.
Roberts Parkway and Burke Centre Parkway	Offset Left-Turn Lanes	Yes	SWG favored traditional improvements at this location, citing safety and operational benefits
	Dual Eastbound Left-Turn Lanes	Yes	SWG favored traditional improvements at this location, citing safety and operational benefits
	Hybrid Roundabout	Yes	SWG favored traditional improvements at this location, citing safety benefits, but would like to understand operational results better.
	Partial Southbound Reconfiguration	Yes	Incorporated into the offset and dual left-turn lane alternatives, multimodal benefit by shortening bicycle/pedestrian crossing distances.
Corridor-Wide	Shared-Use Path	Yes	SWG favored improvement bicycle and pedestrian access and mobility along Roberts Parkway.

Chapter 2: Alternatives Refinement

2.1 Alternatives Refinement Overview

The study team refined the alternatives chosen to be carried forward in Phase 2 including concept drawings, cost estimates, and concept screening traffic operations and safety analysis. The primary goal of the Phase 2 alternatives refinement effort was to prepare a refined set of alternatives to present to the public and solicit feedback. The study team compared each alternative using analysis tools such as Synchro, *SimTraffic*, and SIDRA to determine the refined list of alternatives to present to the public.

SWG Meeting #4 was held on October 21, 2025 to gather feedback on the draft concept sketches and cost estimates of the initial advanced concepts, and SWG Meeting #5 was held on November 5, 2025 to review the refined concepts that were to be brought forward for public input. During SWG Meeting #5, the study team discussed each alternative based on impacts to safety, traffic operations, cost, and right-of-way impacts and chose which concepts to be shared during public outreach.

The following alternative concepts were part of the initial list of advanced alternatives from which the refined alternatives were derived from:

Roberts Parkway and Fairfax County Parkway

- Offset Left Turns on Fairfax County Parkway
- Dual Eastbound Left Turns
- Reduced Phasing by Reconfiguration of Karmich Street Approach
- Thru-Cut Intersection

Roberts Parkway and Burke Centre Parkway:

- Hybrid Roundabout
- Dual Eastbound Left Turns on Burke Centre Parkway
- Offset Left Turns on Burke Centre Parkway
- Partial Road Reconfiguration on Southbound Roberts Parkway

Corridor-Wide Improvements:

- Shared-Use Path from Fairfax County Parkway to Burke Centre Parkway

Reconfiguring the westbound Burke Centre Parkway slip lane to a standard right-turn lane was considered in all the options.

2.2 Phase 2 Alternatives Description

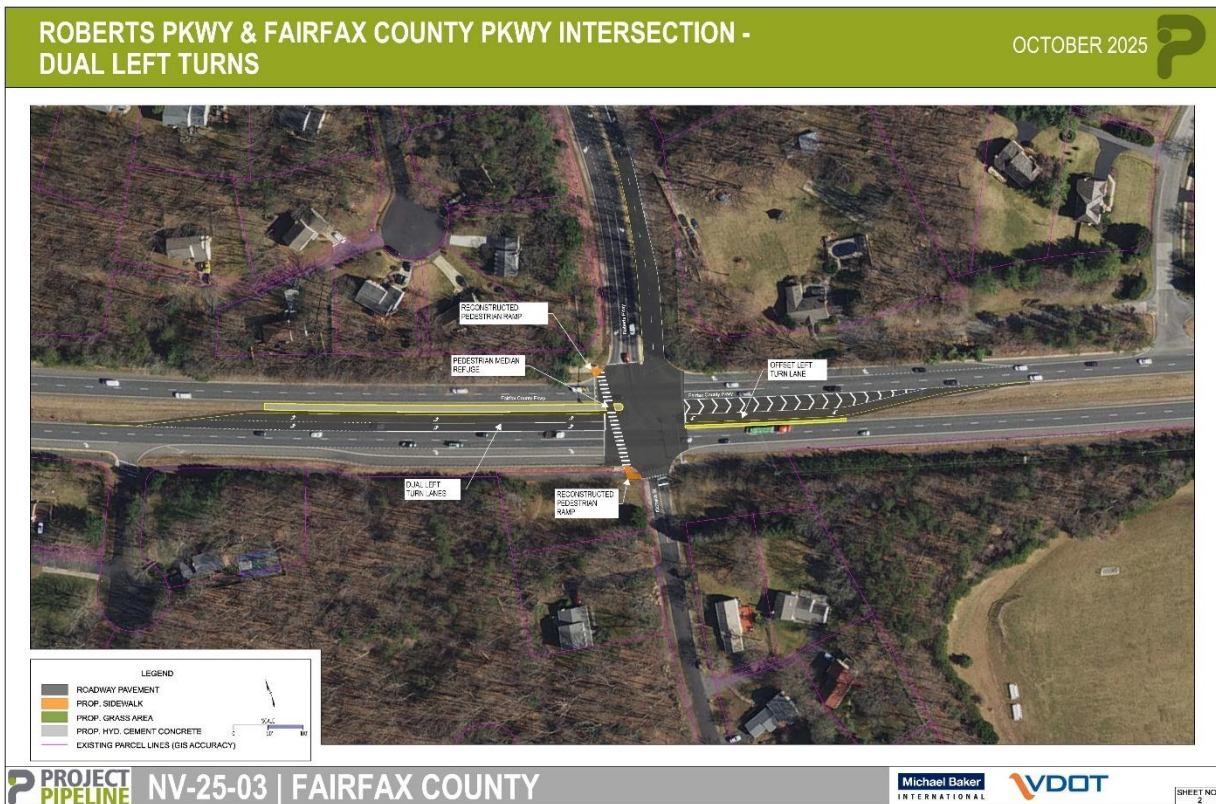
The following section gives a description of each of the alternatives at the two signalized intersections at Fairfax County Parkway and Burke Centre Parkway, details the delay results as reported from Synchro – HCM module, and provides a conceptual sketch of the alternative.

2.2.1 Fairfax County Parkway Initial Advanced Alternatives

Dual Left-Turn Lanes

This concept adds a second left-turn lane in the eastbound direction with protected left-turn phasing. The left-turn lane in the westbound direction will be converted into an offset turn lane, also with protected left-turn phasing. The existing crosswalk along the eastbound approach will be reconstructed to include new pedestrian ramps and median refuge island. The concept requires some widening of Roberts Parkway to allow for two receiving lanes in the northbound direction. All other approach lane configurations would remain the same. **Figure 21** presents a conceptual sketch of the alternative.

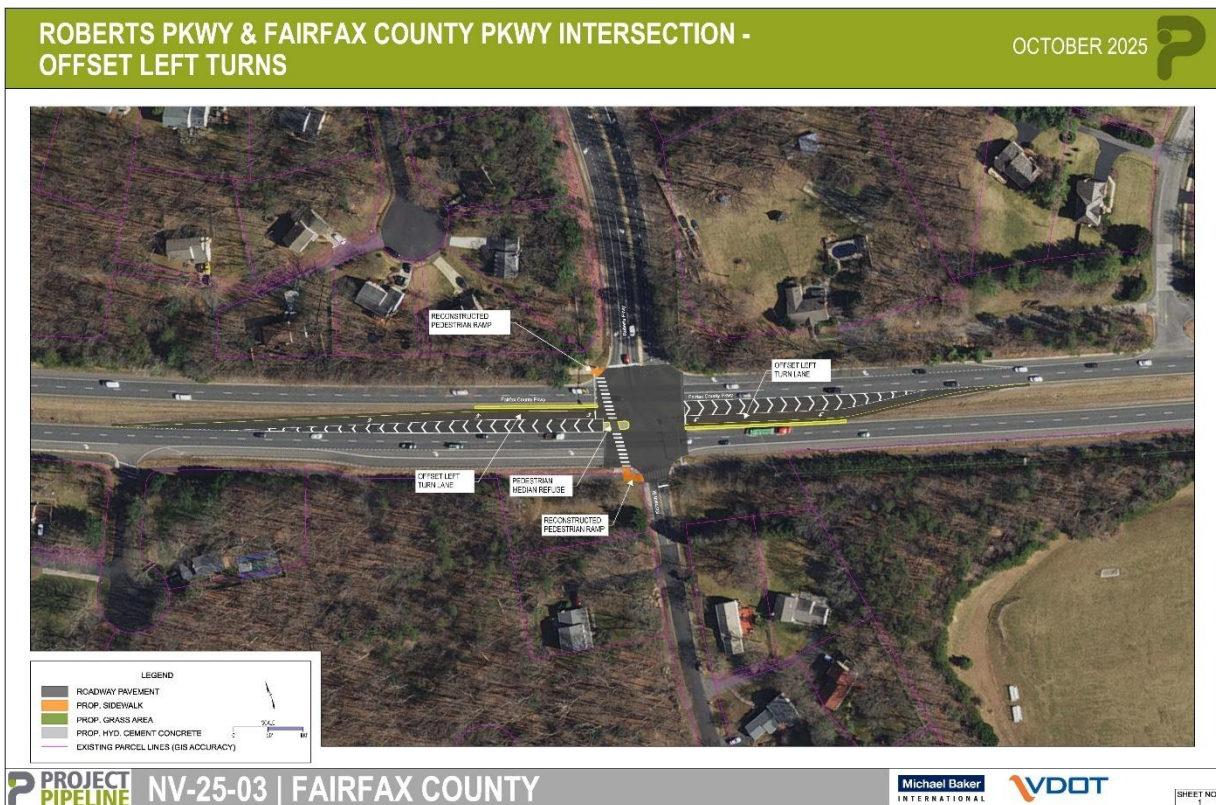
Figure 21: Phase 2 Alternative - Dual Eastbound Left-Turn Lanes (Fairfax County Parkway)



Offset Left-Turn Lanes

This concept shifts the left-turn lanes in the eastbound and westbound directions and provides an offset between the left turn and through lanes. This alternative would provide a safety benefit by providing better visibility of oncoming traffic for the Fairfax County Parkway left turn movements. The existing crosswalk along the eastbound approach will be reconstructed to include new pedestrian ramps and median refuge island. All widening would be accommodated within the existing median. **Figure 22** presents a conceptual sketch of the alternative.

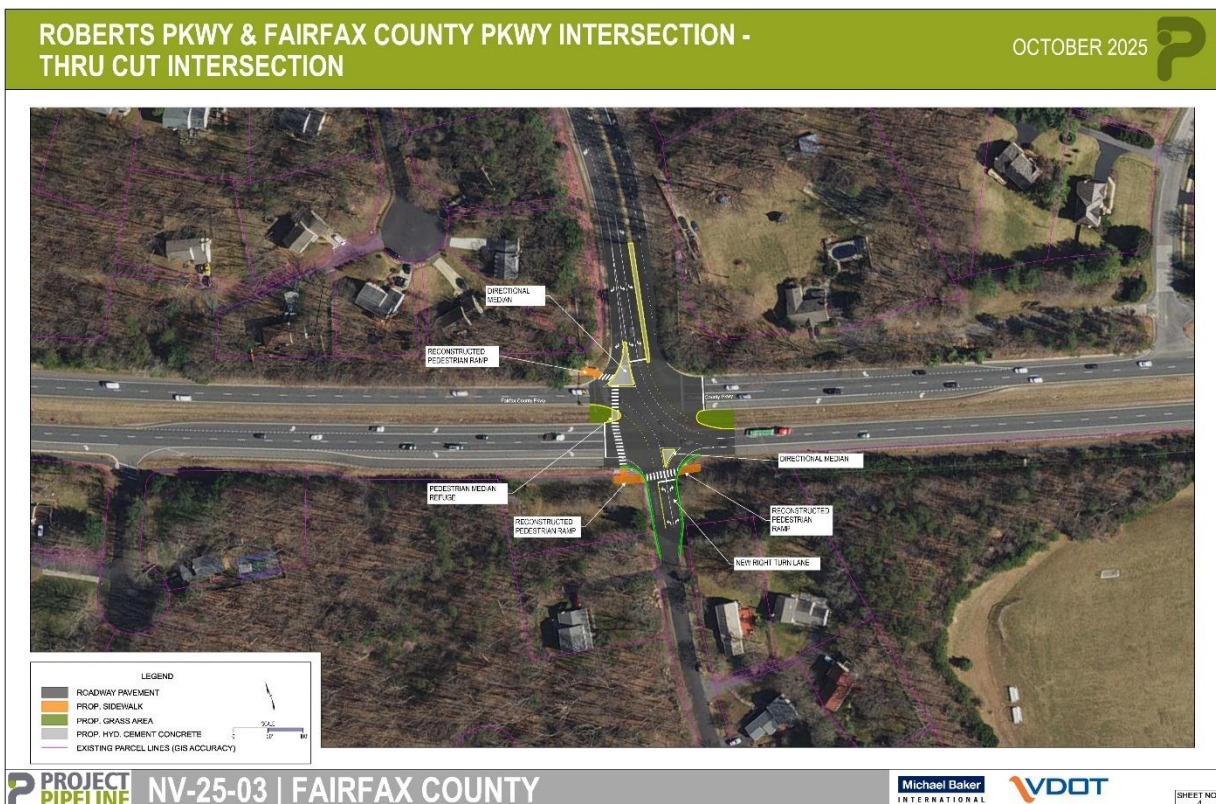
Figure 22: Phase 2 Alternative - Offset Left-Turn Lanes (Fairfax County Parkway)



Thru-Cut Intersection

A Thru-Cut intersection reduces the phasing at an intersection by removing the split phasing along the side street approaches. This is achieved by eliminating the through movement along the side streets (Roberts Parkway and Karmich Street) via the use of a directional median, allowing only left and right turns. Through movements would be rerouted to adjacent intersections to perform U-turns to access the desired cross street. Intersection widening would be required to accommodate the directional medians and concurrent left turns. **Figure 23** presents a conceptual sketch of the alternative. This alternative was ultimately dropped by the stakeholder group due to construction complexity, enforcement concerns, and general amount of movements that would need to be relocated.

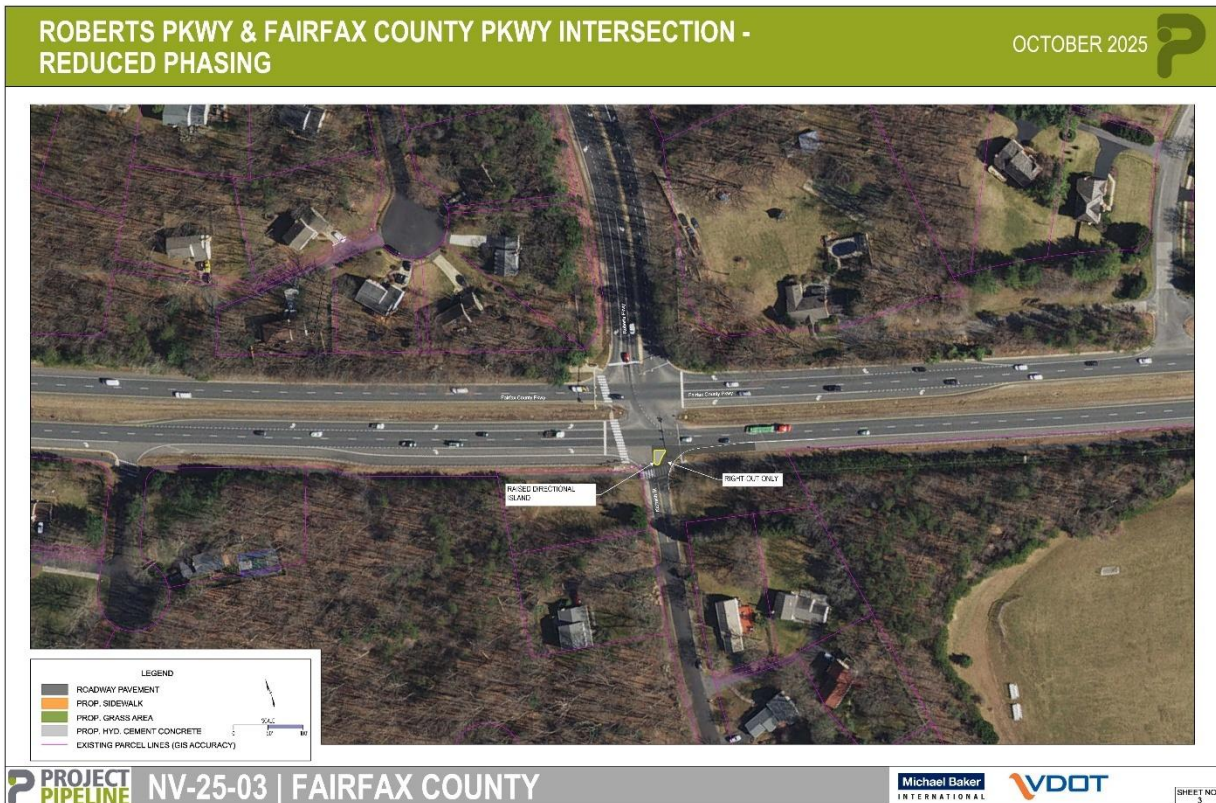
Figure 23: Phase 2 Alternative - Thru-Cut (Fairfax County Parkway)



Reduced Phasing

This alternative would restrict the Karmich Street approach to allow only right turns from the approach, while allowing through and left turns into the approach. This is achieved via the use of a directional channelizing island. This alternative removes the split phasing at the intersection and would require minimal impacts to the intersection outside of the Karmich Street approach. This alternative could be paired with any of the concepts mentioned previously. The conceptual sketch for the alternative is shown below in **Figure 24**.

Figure 24: Phase 2 Alternative - Reduced Phasing (Fairfax County Parkway)

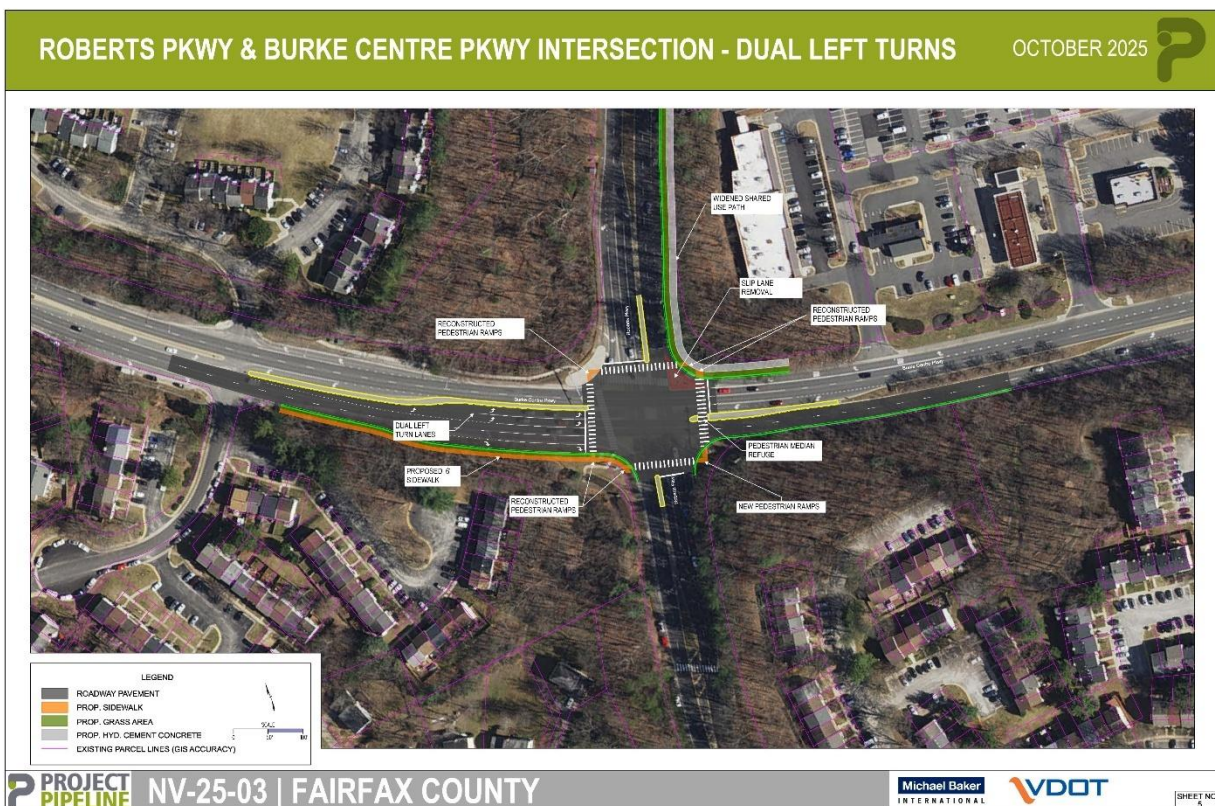


2.2.2 Burke Centre Parkway Initial Advanced Alternatives

Dual Left-Turn Lanes

This concept adds a second left-turn lane in the eastbound direction with protected left-turn phasing. The concept would also remove the westbound right-turn slip lane in order to widen the existing shared-use path located in that quadrant. All other approach lane configurations would remain the same as existing. Other pedestrian improvements include new crossings along the northbound and westbound approaches, reconstructed pedestrian ramps, and a new six-foot sidewalk along the south side of the eastbound approach. To accommodate the dual left-turn lanes, widening along Burke Centre Parkway is required. The conceptual sketch for the alternative is shown below in **Figure 25**.

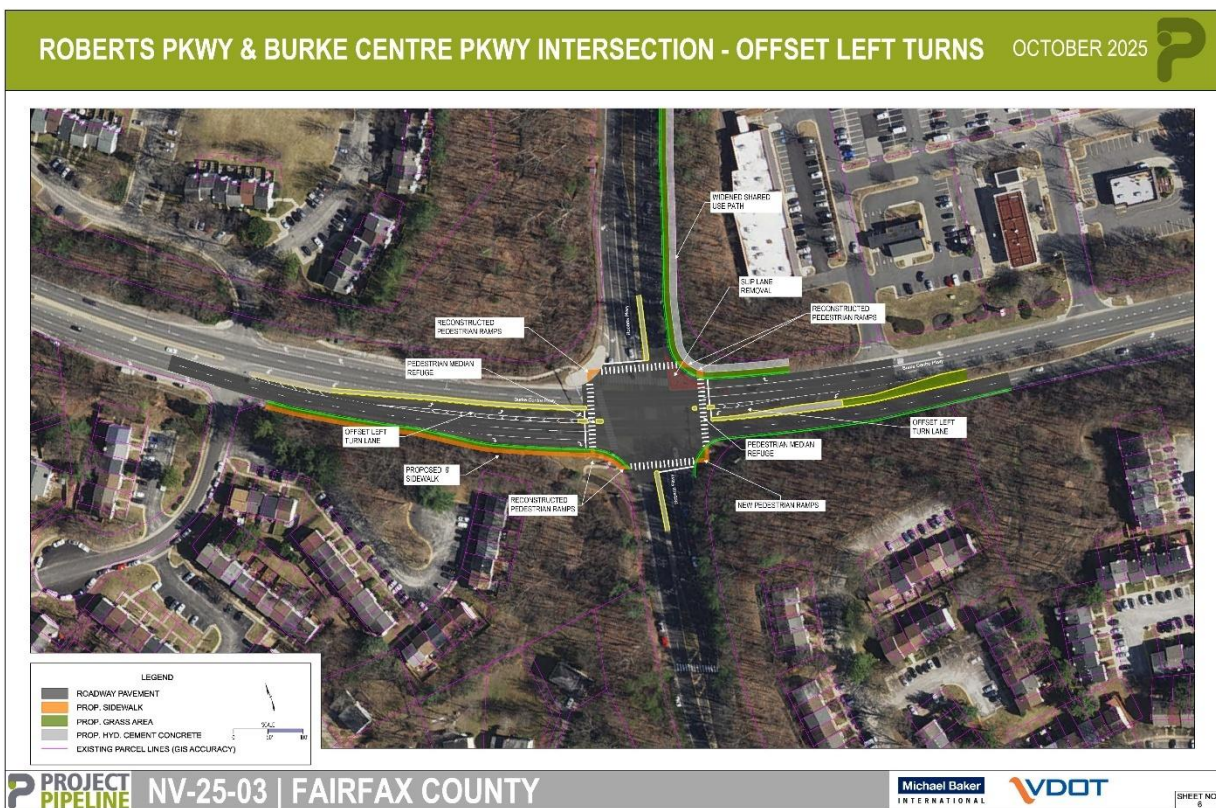
Figure 25: Phase 2 Alternative - Dual Eastbound Left-Turn Lanes (Burke Centre Parkway)



Offset Left-Turn Lanes

This concept would shift and extend the left-turn lanes in the eastbound and westbound directions and provides an offset between the left turn and through lanes. The protect-permissive phasing currently in place for the left turn movements would be maintained with this alternative. This alternative would provide a safety benefit by providing better visibility of oncoming traffic for the Burke Centre Parkway left turn movements. This alternative would also feature the same pedestrian improvements as listed with the dual left-turn lanes alternative, including the new sidewalk along the south side of Burke Centre Parkway. Widening along Burke Centre Parkway would be required for this alternative. **Figure 26** presents a conceptual sketch of the alternative.

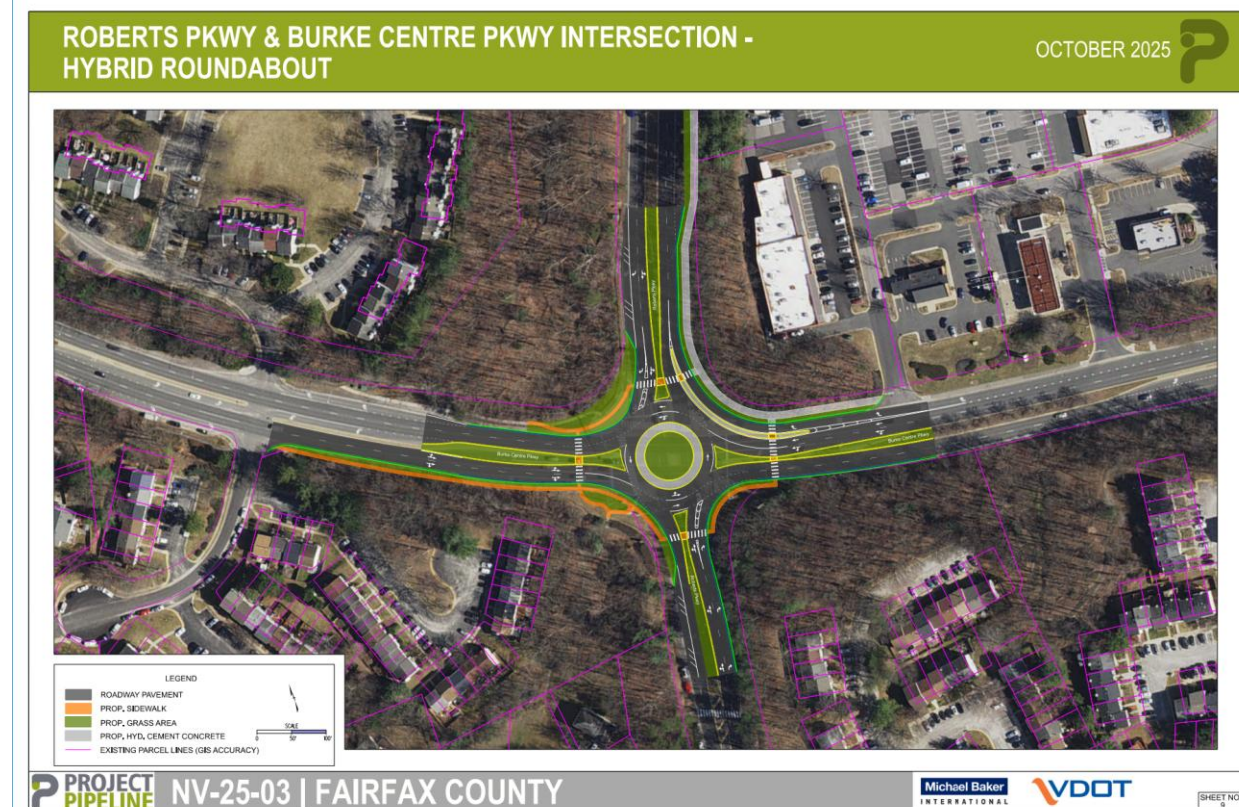
Figure 26: Phase 2 Alternative - Offset Left-Turn Lanes (Burke Centre Parkway)



Multi-Lane Hybrid Roundabout

A hybrid roundabout featuring a single circulating lane and two through lanes for the Burke Centre Parkway approaches was presented to the SWG. The concept would also improve dedicated right-turn lanes for the Roberts Parkway approaches, along with a right-turn bypass lane along the westbound approach. This concept also includes pedestrian accommodations, providing new sidewalk connections and reducing the crossing distance for bicyclists and pedestrians. A conceptual sketch of this alternative is presented in **Figure 27**. This alternative was ultimately not advanced by stakeholder group as there were concerns by VDOT and Fairfax County regarding context of the area and driver understand of a multi-lane hybrid roundabout.

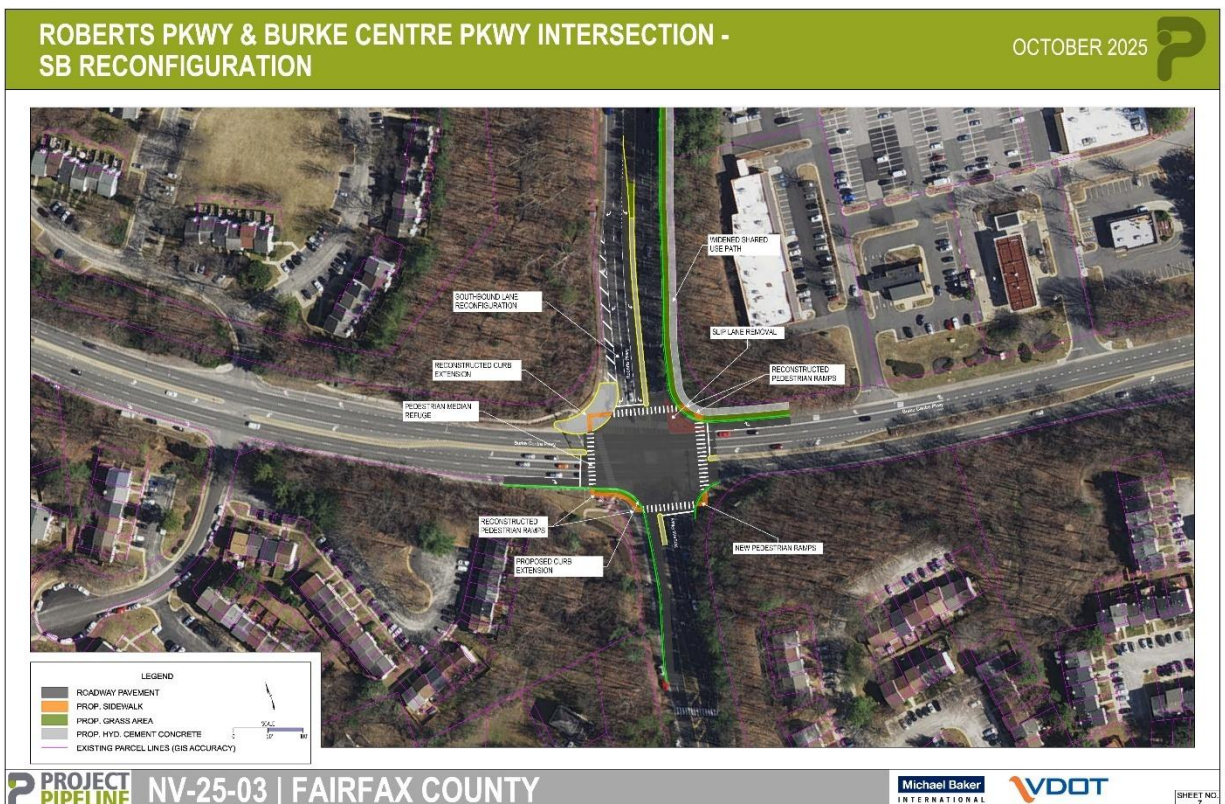
Figure 27: Phase 2 Alternative – Hybrid Roundabout (Burke Centre Parkway)



Southbound Roberts Parkway Reconfiguration

This alternative would modify the lane configuration for the southbound Roberts Parkway approach by reducing the number of through lanes from two to one. South of the intersection there is a lane drop in the southbound direction; changing the lane configuration north of the intersection would match driver expectations traveling south, as most drivers are local and aware of the southbound lane drop. By shifting the travel lanes inside towards the median, a curb extension in the northwest quadrant can be constructed, reducing the crossing distance for pedestrians along the eastbound and southbound approaches. The westbound right-turn slip lane would also be removed, facilitating the extension of the shared-use path in that quadrant. **Figure 28** displays the conceptual sketch for this concept.

Figure 28: Phase 2 Alternative – Southbound Lane Reconfiguration (Burke Centre Parkway)



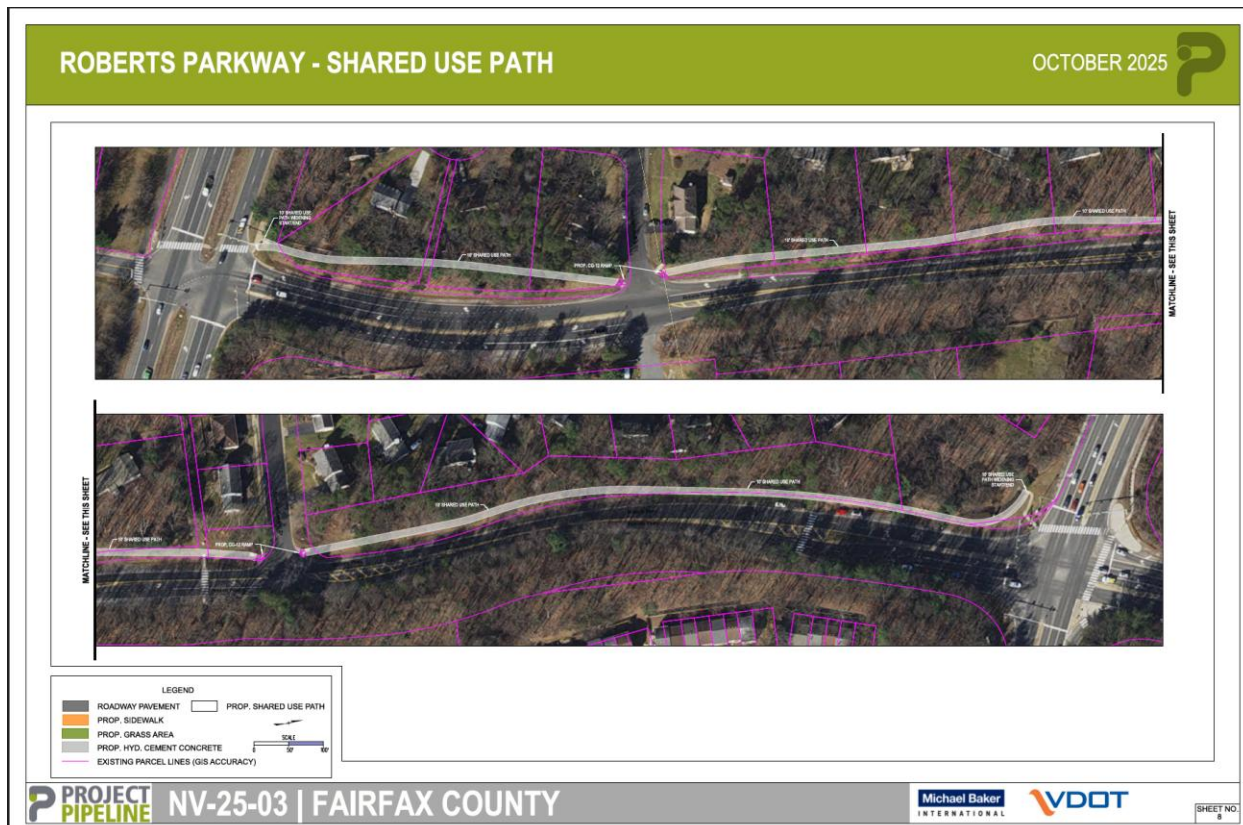
2.2.3 Bicycle and Pedestrian Initial Advanced Alternatives

The SWG elected to carry forward the shared-use path concept along Roberts Parkway from Fairfax County Parkway to Burke Centre Parkway. This would include widening the existing path from five feet to ten feet, which would improve comfort for pedestrians, cyclists and scooters. Existing minor approach crossings and ADA curb ramps would also be improved as part of the alternative. Rectangular rapid flashing beacons (RRFBs) will be implemented at existing mid-block crossings within the study corridor.

Figure

29 displays a sketch of the proposed shared-use path.

Figure 29: Phase 2 Alternative – Roberts Parkway Shared-Use Path



2.2.4 Refined Advanced Alternatives & Selection

Following the SWG Meeting #4, the SWG elected to advance the following alternatives for the two signalized intersections:

Fairfax County Parkway:

- Offset Left-Turn Lanes
- Dual Left-Turn Lanes
- Reduced Phasing by Reconfiguration of Karmich Street Approach

The SWG determined that the Reduced Phasing concept could be combined with the other alternatives, providing additional benefit by providing additional green time to the mainline movements. **Figure 30** displays the combined alternative of the eastbound dual left-turn lanes with reduced phasing, and **Figure 31** shows the combined offset left-turn lanes with reduced phasing alternative.

Figure 30: Phase 2 Advanced Alternative – Dual Left-Turn Lanes & Reduced Phasing (Fairfax County Parkway)



Figure 31: Phase 2 Advanced Alternative – Offset Left-Turn Lanes & Reduced Phasing (Fairfax County Parkway)



Burke Centre Parkway:

As with the concepts at Fairfax County Parkway, the SWG decided to combine the southbound approach reconfiguration with the dual and offset left-turn lane alternatives. The SWG cited combining the operational benefits of the turn lane alternatives with multimodal benefit that the southbound reconfiguration would contribute. **Figure 32** and **Figure 33** show the Offset Left-Turn Lane and Dual Left-Turn Lane concepts at Burke Centre Parkway, respectively.

Figure 32: Phase 2 Advanced Alternative – Offset Left-Turn Lanes & Southbound Reconfiguration (Burke Centre Parkway)



Figure 33: Phase 2 Advanced Alternative – Dual Left-Turn Lanes & Southbound Reconfiguration (Burke Centre Parkway)



These concepts were brought forward for the second phase of public outreach. After the conclusion of the Phase 2 survey (discussed in the next section), the SWG indicated that the following concepts should be carried forward to Phase 3 as preferred alternatives:

- Offset Left-Turn Lanes at Fairfax County Parkway
- Offset Left-Turn Lanes at Burke Centre Parkway
- Roberts Parkway Shared-Use Path

2.3 Traffic Operations and Safety Results

Anticipated Traffic Operations Results for Alternatives

Intersection operations were evaluated to compare projected operations between the different alternatives using Synchro 11 and *SimTraffic*. The study team analyzed AM and PM future year (2055) traffic volumes to evaluate the operational benefits of the two alternatives at each intersection. Control delay (seconds per vehicle), LOS, and maximum queue length (feet) were used as measures of effectiveness. The operational results for the alternatives at Fairfax County Parkway are shown in **Table 18** and **Table 19**, while the results for Burke Centre Parkway are shown in **Table 20** and **Table 21**. It should be noted that the preferred alternative at Fairfax County Parkway, discussed later in the Chapter, has no operational benefit and the operations are similar to the No-Build Condition.

The 2055 Build *SimTraffic* reports are included in **Appendix I**.

Table 18: 2055 Build Level of Service Comparison – Fairfax County Parkway

FAIRFAX COUNTY PARKWAY & ROBERTS PARKWAY All Options Include Reduced Phase Traffic Signal																			
Alternative	Lane Group	Eastbound				Westbound				Northbound				Southbound				Overall	
		AM		PM		AM		PM		AM		PM		AM		PM		AM	PM
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS		
BUILD OPTION 1 OFFSET LEFTS		Fairfax County Pkwy				Fairfax County Pkwy				Karmich Street				Roberts Parkway					
	Left	313.0	F	210.2	F	171.0	F	215.8	F	---	---	---	---	101.5	F	184.9	F	Delay	Delay
	Through	57.7	E	59.5	E	168.1	F	154.8	F	---	---	---	---	30.7	C	134.2	F	119.7	114.4
BUILD OPTION 2 EB DUAL LEFT-TURNS	Right	36.1	D	37.3	D	150.5	F	138.2	F	0.1	A	4.5	A	61.2	E	102.9	F	F	F
		Fairfax County Pkwy				Fairfax County Pkwy				Karmich Street				Roberts Parkway					
	Left	247.8	F	258.0	F	355.0	F	212.7	F	---	---	---	---	98.1	F	150.5	F	Delay	Delay
	Through	51.8	D	72.5	E	167.0	F	157.7	F	---	---	---	---	34.7	C	97.1	F	112.2	120.5
	Right	31.0	C	54.0	D	149.0	F	141.9	F	0.2	A	1.1	A	65.6	E	85.8	F	F	F

Table 19: 2055 Maximum Queue Length Comparison – Fairfax County Parkway

Alternative	Type of Control	Lane Group	Eastbound			Westbound			Northbound			Southbound		
			Storage Bay Length	AM	PM	Storage Bay Length	AM	PM	Storage Bay Length	AM	PM	Storage Bay Length	AM	PM
				Queue (ft)	Queue (ft)		Queue (ft)	Queue (ft)		Queue (ft)	Queue (ft)		Queue (ft)	Queue (ft)
BUILD OPTION 1 OFFSET LEFTS	Signal		Fairfax County Parkway			Fairfax County Parkway			Karmich Street			Roberts Parkway		
		Left	505	505	504	385	87	137	---	6	44	355	340	355
		Through		1,345	1,504		2,411	2,409					452	562
		Right	340	4	70	405	405	405				330	280	330
BUILD OPTION 2 EB DUAL LEFT-TURNS	Signal		Fairfax County Parkway			Fairfax County Parkway			Karmich Street			Roberts Parkway		
		Left	505	504	505	385	22	139	---	12	35	355	314	354
		Through		1,470	1,483		2,414	2,401					439	557
		Right	340	137	136	405	405	405				330	261	330

Table 20: 2055 Build Level of Service Comparison – Burke Centre Parkway

BURKE CENTRE PARKWAY & ROBERTS PARKWAY All Options Include Reconfiguration of Westbound Right-turn Lane and Southbound Reconfiguration																			
Alternative	Lane Group	Eastbound				Westbound				Northbound				Southbound				Overall	
		AM		PM		AM		PM		AM		PM		AM		PM		AM	PM
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS		
BUILD OPTION 1 OFFSET LEFTS		Burke Centre Parkway				Burke Centre Parkway				Roberts Parkway				Roberts Parkway					
	Left	88.5	F	58.9	E	27.0	C	42.3	D	53.7	D	49.8	D	81.2	F	64.4	E	Delay	Delay
	Through	30.2	C	39.6	D	41.0	D	46.2	D	61.6	E	61.0	E	47.7	D	60.5	E	40.9	42.3
BUILD OPTION 2 EB DUAL LEFT-TURNS	Right	6.3	A	12.4	B	11.8	B	5.5	A	8.8	A	11.4	B	8.3	A	20.4	C	D	D
		Burke Centre Parkway				Burke Centre Parkway				Roberts Parkway				Roberts Parkway					
	Left	59.6	E	69.3	E	34.8	C	56.8	E	42.7	D	43.3	D	55.5	E	56.5	E	Delay	Delay
	Through	22.3	C	36.0	D	39.6	D	46.6	D	59.2	E	56.2	E	42.6	D	54.8	D	34.8	42.0
	Right	4.5	A	10.7	B	15.2	B	7.7	A	7.7	A	11.2	B	8.1	A	22.5	C	C	D

Table 21: 2055 Maximum Queue Length Comparison – Burke Centre Parkway

Alternative	Type of Control	Lane Group	Eastbound			Westbound			Northbound			Southbound		
			Storage Bay Length	AM Queue (ft)	PM Queue (ft)	Storage Bay Length	AM Queue (ft)	PM Queue (ft)	Storage Bay Length	AM Queue (ft)	PM Queue (ft)	Storage Bay Length	AM Queue (ft)	PM Queue (ft)
BUILD OPTION 1 OFFSET LEFTS	Signal	Left	270	0	269	255	254	255	165	148	156	350	326	350
		Through		890	391		382	490		262	236		358	508
		Right	190	137	190	Cont.	254	119	255	197	207		148	363
BUILD OPTION 2 EB DUAL LEFT-TURNS	Signal	Left	245	244	242	255	254	255	165	155	154	350	264	346
		Through		406	378		402	551		237	192		309	491
		Right	190	54	176	Cont.	273	138	255	123	159		139	327

Figure 34 summarizes the iCAP Stage 2 traffic operations results for Roberts Parkway and Fairfax County Parkway, while the iCAP Stage 2 traffic operations results for Roberts Parkway and Burke Centre Parkway are shown in **Figure 35**.

Figure 34: Virginia iCAP Stage 2 Traffic Operations Results – Fairfax County Parkway

Metric Weighting (Based on Purpose and Need)		Traffic Operations				
		Traffic Operations Weight				
		3				
Alternatives		Control Delay		V/C Ratio		Traffic Operations Metric MOE Score
		Result	Score	Result	Score	
Alternative 1	Dual Left Turns	121.9	1.0	0.99	1.0	1.0
Alternative 2	Offset Left Turns	116.1	1.0	1.05	0.9	1.0

Figure 35: Virginia iCAP Stage 2 Traffic Operations Results – Burke Centre Parkway

Metric Weighting (Based on Purpose and Need)		Traffic Operations				
		Traffic Operations Weight				
		3				
Alternatives		Control Delay		Maximum Queue Length		Traffic Operations Metric MOE Score
		Result	Score	Are Queues Acceptable?	No Score Calculated for Queue MOEs	
Alternative 1	Dual Left Turns	42.6	1.0	Yes		1.0
Alternative 2	Offset Left Turns	40.8	1.0	Yes		1.0

Anticipated Crash Reduction for Alternatives

The study team reviewed crash modification factors (CMFs) to determine the potential safety benefits for each alternative. CMFs are used to estimate the expected change in the number of crashes after a specific countermeasure is implemented. They are calculated as the ratio of crashes with the countermeasure to the number of crashes without the countermeasure. A CMF of 1.00 means that there is no expected change, a CMF less than 1.00 means there is an expected reduction in crashes, and a CMF greater than 1.00 means there is an expected increase in crashes (e.g., a CMF of 0.6 means the countermeasure is projected to reduce crashes by 40%). CMFs were selected from the SMART SCALE Planning Level CMF List from Round 7, as well as the Virginia State Preferred CMF List. The CMF resulting in the highest anticipated crash reduction was applied to fatal and injury crashes within the influence area of each intersection, as shown in **Table 22** and **Table 23**.

The dual left-turns improvement annual crash reduction at Burke Centre Parkway is determined by using two CMFs. The first is the CMF for adding a turn lane to an existing turn lane, and the second is the CMF for converting Flashing Yellow Arrow (FYA) phasing to protected left-turn phasing, the latter being from the VDOT State Preferred CMF list.

Table 22: CMF and Crash Reduction Summary (Fairfax County Parkway)

Alternative	F+I CMF	Annual Crash Reduction (F+I)
Dual Left Turns	0.97	0.42
Offset Left Turns	0.644	4.98

Table 23: CMF and Crash Reduction Summary (Burke Centre Parkway)

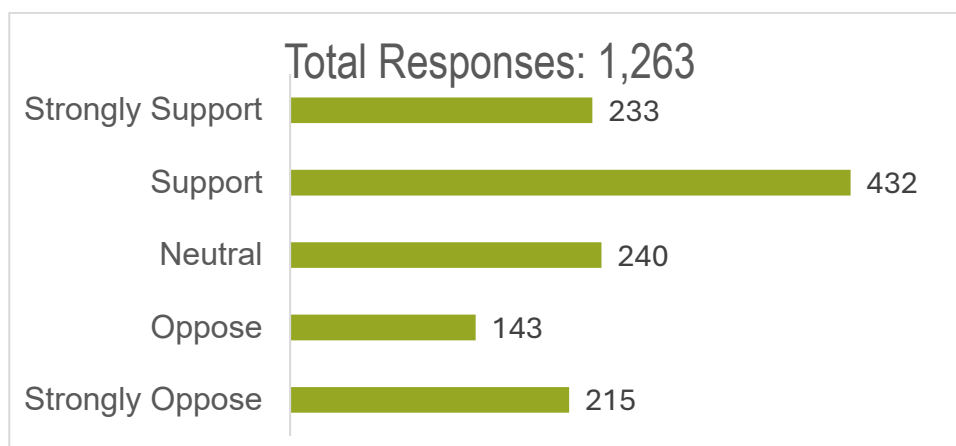
Alternative	F+I CMF	Annual Crash Reduction (F+I)
Dual Left Turns	0.97	14.85*
Offset Left Turns	0.644	5.34
Add New Sidewalk/Shared-Use Path	0.598	0.804

*Annual crash reduction also includes reduction in angle crashes due to conversion of FYA to protected left-turn phasing

2.4 Phase 2 Public Involvement

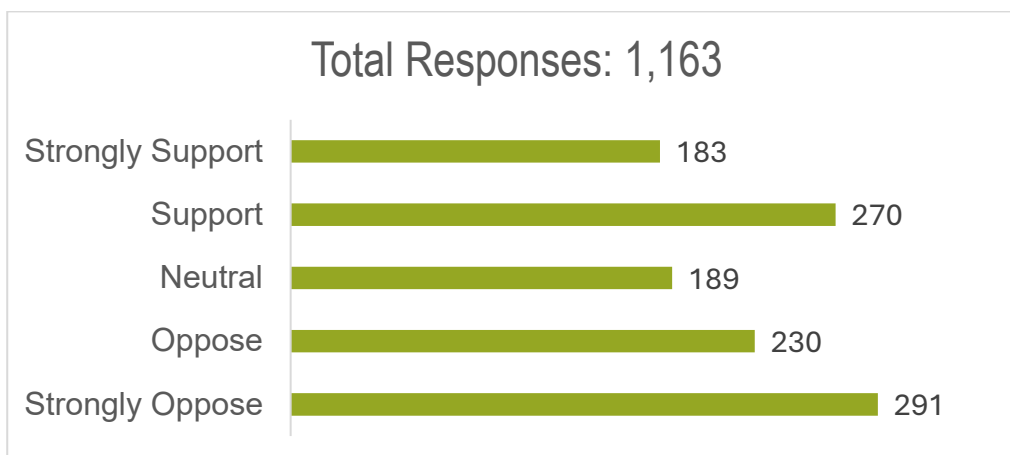
The Phase 2 PublicInput survey was held from January 5, 2026, to January 21, 2026 to collect feedback on the potential improvements within the study corridor. The survey provided the study team with an understanding of how the public viewed each alternative before selecting the preferred option. The survey had 1,303 participants, with 9,310 responses and 1,833 comments made on the alternatives presented. At Fairfax County Parkway and Roberts Parkway, the Offset Left Turn concept received the most support, with 52 percent of the 1,263 responses indicating support for the concept. **Figure 36** displays the survey results for the Offset Left-Turn Lane concept at Fairfax County Parkway.

Figure 36: Fairfax County Parkway & Roberts Parkway - Offset Left Turns Survey Results



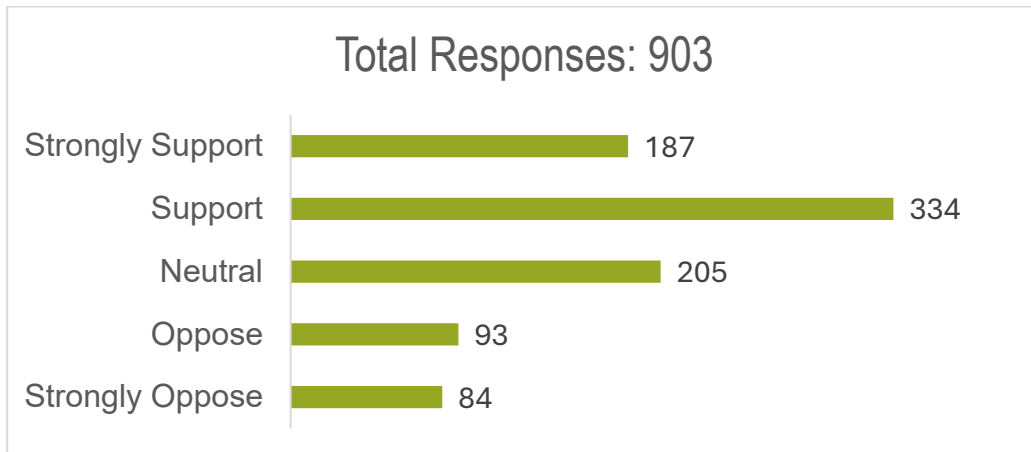
39 percent of respondents indicated support for the Dual Left Turns concept, while 45 percent indicated opposition. Participants stated concerns with the dual turn lane concept, citing potential safety issues as Roberts Parkway immediately north of the intersection narrows to one travel lane, which would create a merge conflict. For both concepts, participants expressed strong concern regarding the relocation of Karmich Street movements to U-turn at Burke Lake Road, citing the potential for increased delays at that intersection. **Figure 37** presents the survey results for the Dual Left-Turn Lane alternative.

Figure 37: Fairfax County Parkway & Roberts Parkway - Dual Left Turns Survey Results



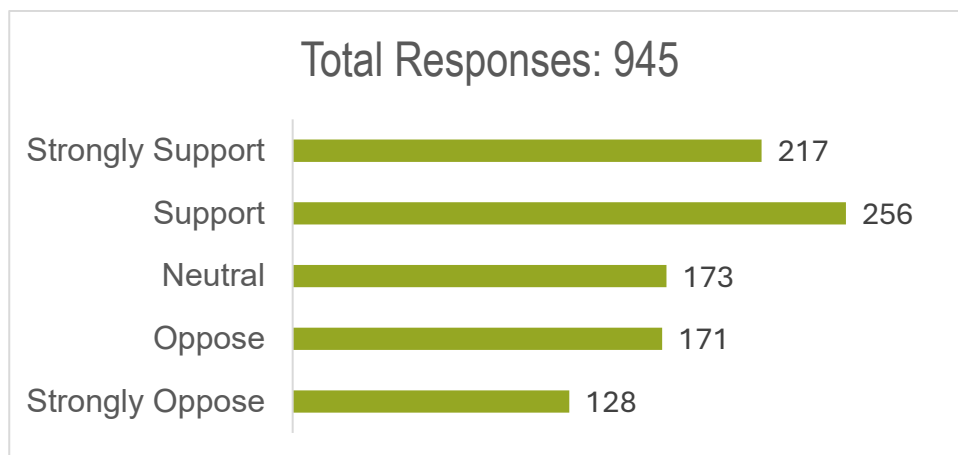
At Burke Centre Parkway, 58 percent of the 903 respondents voted in support of the Offset Left Turn alternative. While some participants expressed concern about reducing the number of southbound travel lanes due to a potential increase in congestion and unsafe maneuvers, most participants wrote in support of the bicycle and pedestrian improvements. **Figure 38** shows the survey results for this alternative.

Figure 38: Burke Centre Parkway & Roberts Parkway - Offset Left Turns Survey Results



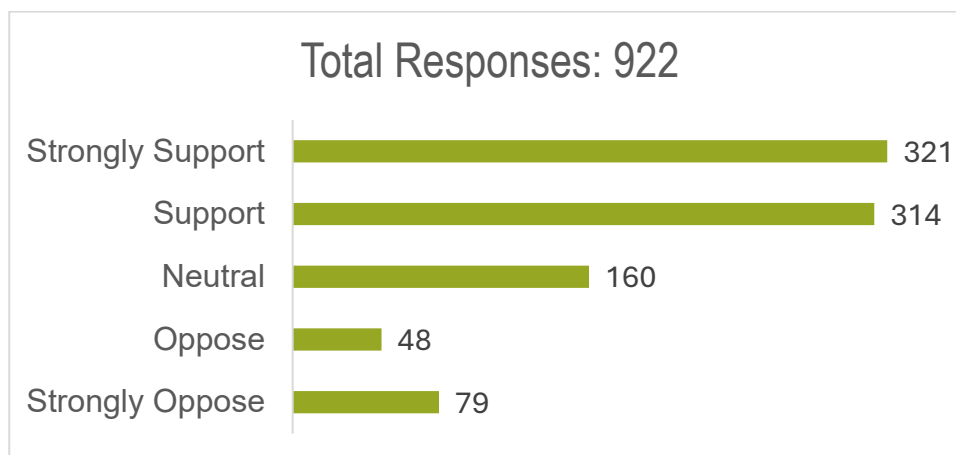
Of the 945 responses to the proposed Dual Left Turn Lane alternative at Burke Centre Parkway, 50 percent indicated support. Participants were split with some supporting a second eastbound left turn lane to reduce queueing, while others expressed concerns about visibility, merging, and pedestrian conflicts. The survey results for the alternative are shown below in **Figure 39**.

Figure 39: Burke Centre Parkway & Roberts Parkway - Dual Left Turns Survey Results



The shared-use path along Roberts Parkway was supported by 69 percent of the 922 total responses from the survey. Many participants expressed that the removal of parking near crosswalks was necessary, while others opposed, citing neighborhood needs. Participants also mentioned a desire for RRFBs and safer crossings through the area. The survey results for the shared-use path are shown below in **Figure 40**.

Figure 40: Roberts Parkway Shared-Use Path Survey Results



The study team incorporated input from the survey to finalize the preferred alternative. Rankings from the public involvement survey were in line with the preferences of the study work group.

2.5 Preferred Alternative Selection

Michael Baker presented the PublicInput survey results and reviewed the benefits of the improvements at SWG Meeting #6, held on February 20, 2026. During this meeting, Michael Baker suggested a set of alternatives to advance towards the development of a preferred alternative as outlined in **Chapter 1**.

The iCAP Stage 2 results for Fairfax County Parkway showed the offset left turns having the highest ranking between the two alternatives, with a total score of 7.9 out of 9. With comparable operations, pedestrian and cost metrics between the two alternatives, in addition to the public input, the offset left turns better crash reduction was a deciding factor. However, the Karmich Street re-routing recommendation was dropped due to strong public opposition. Therefore, the operational impact of the offset left-turn lanes is expected to be the same as the no build results. The iCAP Stage 2 results are shown in **Figure 41**.

Figure 41: Virginia iCAP Stage 2 Results - Fairfax County Parkway

Alternative	Traffic Operations Metric			Pedestrian Metric Score	Safety Metric		Stage 2 Cost Metric		Total Stage 2 Score
	MOE 1 Score	MOE 2 Score	Total Score		Annual F+I Crash Reduction	Score	VJuST-C Cost Estimate	Score	
Dual Left Turns	1.0	1.0	1.0	0.5	0.06	0.1	\$ 3,500,000	1.0	6.2 out of 9
Offset Left Turns	1.0	0.9	1.0	0.5	0.72	1.0	\$ 3,500,000	1.0	7.9 out of 9

The iCAP Stage 2 results for Burke Centre Parkway, shown in **Figure 42**, indicated that the offset left turn concept has the highest score between the two alternatives, with a score of 7.9 out of 9, with the safety score being the deciding metric. It's important to note that the road reconfiguration option for the southbound Roberts Parkway travel lanes was not advanced. Instead, the existing configuration would remain the same and better markings and signage would be installed to delineate the merge area. This option is also expected to operate similar to the no-build results, although the extended left-turn areas will reduce the amount blocking from left-turning vehicles.

Figure 42: Virginia iCAP Stage 2 Results - Burke Centre Parkway

Alternative	Traffic Operations Metric			Pedestrian Metric Score	Safety Metric		Stage 2 Cost Metric		Total Stage 2 Score
	MOE 1 Score	MOE 2 Score	Total Score		Annual F+I Crash Reduction	Score	VJuST-C Cost Estimate	Score	
Dual Left Turns	1.0		1.0	0.5	0.06	0.1	\$ 3,500,000	1.0	6.7 out of 10
Offset Left Turns	1.0		1.0	0.5	0.77	1.0	\$ 3,500,000	1.0	8.5 out of 10

In addition to the iCAP results, the benefits of each project were reviewed with the SWG, listed below:

Intersection improvements at Fairfax County Parkway and Roberts Parkway

- The offset left-turn lanes on Fairfax County Parkway are proposed to increase the sight distance for the left-turning vehicles, which will reduce angle crashes associated with the sight distance issues noted during the field visit, particularly when an opposing left-turn vehicle was present
- The left-turn lane extension is proposed to reduce the amount of lane blocking from the eastbound Fairfax County through traffic
- Pedestrian improvements for PROWAG compliance

Intersection improvements at Burke Centre Parkway and Roberts Parkway

- Crosswalks with median refuges are proposed to improve pedestrian access and safety
- Converting the westbound right-turn slip lane to a standard right-turn lane is proposed to slow turning vehicle speeds and reduce pedestrian crossing distance which will improve pedestrian safety
- The offset left-turn lanes on Burke Centre Parkway are proposed to increase the sight distance for the left-turning vehicles, which will reduce angle crashes associated with the sight distance issues noted during the field visit, particularly when an opposing left-turn vehicle was present
- The left-turn lane extensions on Burke Centre Parkway are proposed to reduce the number of spillback occurrences from the left-turn lanes which will reduce re-end crashes.

After reviewing the benefits of each project, survey results, Virginia iCAP Stage 2 results, and further discussing the concepts, the SWG decided to move forward with the following as preferred alternatives:

Fairfax County Parkway

- Offset Left-Turn Lanes on Fairfax County Parkway
- Extend the eastbound left-turn lane on Fairfax County Parkway

Burke Centre Parkway

- Offset Left-Turn Lanes on Burke Centre Parkway
- Extend the left-turn lanes on Burke Centre Parkway
- Construct a sidewalk along Burke Centre Parkway between Roberts Parkway and Martins Landing Lane
- Reconfigure the westbound right-turn slip lane to a standard right-turn lane
- Construct a shared use path along the northbound lanes of Roberts Parkway between Burke Centre Parkway and the entrance to Walmart
- Construct pedestrian crosswalks on all four approaches

Roberts Parkway

- Widen the existing shared use path to 10 feet
- Upgrade all the existing curb ramps to meet American Disability (ADA) act compliance
- Remove parking at the two existing mid-block crossings 25 feet on each side to improve sight distance

Appendix J includes the Phase 2 Executive Summary.

Chapter 3: Preferred Alternative Analysis and Investment Strategy

Phase 3 of the study included a detailed design, cost estimate, risk assessment, and further operations assessment of the selected preferred alternative. As discussed in **Section 2.1**, the SWG chose to advance the following as a single preferred alternative:

Fairfax County Parkway

- Offset Left-Turn Lanes on Fairfax County Parkway
- Extend the eastbound left-turn lane on Fairfax County Parkway

Burke Centre Parkway

- Offset Left-Turn Lanes on Burke Centre Parkway
- Extend the left-turn lanes on Burke Centre Parkway
- Construct a sidewalk along Burke Centre Parkway between Roberts Parkway and Martins Landing Lane
- Reconfigure the westbound right-turn slip lane to a standard right-turn lane
- Construct a shared use path along the northbound lanes of Roberts Parkway between Burke Centre Parkway and the entrance to Walmart
- Construct pedestrian crosswalks on all four approaches

Roberts Parkway

- Widen the existing shared use path to 10 feet
- Upgrade all the existing curb ramps to meet American Disability (ADA) act compliance
- Remove parking at the two existing mid-block crossings 25 feet on each side to improve sight distance

Table 24 and **Table 25** summarizes the preferred alternative results for the intersection improvement. As mentioned in **Chapter 2**, the improvements are primarily safety targeted recommendations and results are similar to the no build as only turn lane extensions are being provided. Summarized in Chapter 2, the recommendation will improve safety by improving sight-lights with the offset turn lanes at both intersections with Roberts Parkway at Fairfax County Parkway and Burke Centre Parkway. In addition, the pedestrian and bicycle improvements will provide safer, more accessible, and comfortable results by providing accessible curb ramps, elimination of the slip lane at Burke Centre Parkway, and a wider path that connects the Fairfax County Trail to the existing trail north of the Walmart area.

Table 24: Preferred Alternative LOS Summary

FAIRFAX COUNTY PARKWAY & ROBERTS PARKWAY																			
Scenario	Lane Group	Eastbound				Westbound				Northbound				Southbound				Overall	
		AM		PM		AM		PM		AM		PM		AM		PM			
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	AM	PM
EXISTING		Fairfax County Pkwy				Fairfax County Pkwy				Karmich Street				Roberts Parkway				AM	PM
	Left	88.6	F	100.3	F	30.7	C	41.3	D	101.9	F	133.5	F	101.2	F	174.0	F	Delay	Delay
	Through	12.3	B	15.7	B	34.0	C	33.1	C	100.5	F	114.7	F	35.2	D	156.1	F	30.2	38.6
	Right	3.8	A	6.0	A	17.5	B	17.0	B	43.6	D	55.9	E	50.6	D	68.2	E	C	D
NO BUILD		Fairfax County Pkwy				Fairfax County Pkwy				Karmich Street				Roberts Parkway				AM	PM
	Left	267.9	F	241.5	F	190.5	F	202.4	F	79.0	E	112.1	F	116.2	F	234.2	F	Delay	Delay
	Through	57.4	E	61.9	E	174.6	F	163.2	F	114.2	F	132.7	F	28.1	C	201.2	F	120.7	123.7
	Right	50.4	D	48.5	D	156.9	F	148.4	F	62.5	E	92.7	F	60.5	E	109.3	F	F	F
BUILD		Fairfax County Pkwy				Fairfax County Pkwy				Karmich Street				Roberts Parkway				AM	PM
	Left	248.3	F	286.2	F	218.8	F	233.8	F	108.0	F	141.6	F	118.1	F	262.5	F	Delay	Delay
	Through	35.1	D	56.5	E	171.0	F	157.7	F	90.8	F	129.1	F	36.5	D	220.2	F	108.3	122.8
	Right	23.7	C	54.1	D	152.6	F	140.4	F	79.2	E	102.1	F	63.3	E	127.6	F	F	F
BURKE CENTRE PARKWAY & ROBERTS PARKWAY																			
Scenario	Lane Group	Eastbound				Westbound				Northbound				Southbound				Overall	
		AM		PM		AM		PM		AM		PM		AM		PM			
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	AM	PM
EXISTING		Burke Centre Parkway				Burke Centre Parkway				Roberts Parkway				Roberts Parkway				AM	PM
	Left	51.7	D	49.4	D	22.0	C	33.8	C	45.3	D	43.5	D	51.7	D	51.9	D	Delay	Delay
	Through	24.9	C	31.7	C	36.6	D	39.8	D	58.4	E	57.6	E	40.7	D	41.7	D	31.0	34.6
	Right	3.4	A	4.7	A	1.9	A	0.9	A	7.3	A	9.1	A	6.8	A	17.0	B	C	C
NO BUILD		Burke Centre Parkway				Burke Centre Parkway				Roberts Parkway				Roberts Parkway				AM	PM
	Left	109.7	F	79.3	E	26.5	C	56.2	E	44.8	D	44.8	D	68.0	E	57.2	E	Delay	Delay
	Through	31.0	C	39.0	D	42.4	D	48.8	D	63.7	E	58.5	E	42.5	D	43.9	D	41.2	42.4
	Right	4.5	A	8.2	A	2.2	A	1.1	A	9.2	A	10.6	B	7.8	A	21.6	C	D	D
BUILD		Burke Centre Parkway				Burke Centre Parkway				Roberts Parkway				Roberts Parkway				AM	PM
	Left	69.8	E	59.7	E	25.5	C	45.2	D	48.9	D	43.8	D	96.6	F	56.7	E	Delay	Delay
	Through	26.9	C	36.2	D	41.4	D	45.6	D	64.3	E	61.2	E	45.3	D	43.3	D	38.6	39.4
	Right	3.9	A	7.9	A	6.5	A	4.2	A	8.5	A	10.8	B	9.3	A	20.7	C	D	D

Table 25 Preferred Alternative Maximum Queues Summary

FAIRFAX COUNTY PARKWAY & ROBERTS PARKWAY														
Scenario	Type of Control	Lane Group	Eastbound			Westbound			Northbound			Southbound		
			Storage Bay Length	AM Queue (ft)	PM Queue (ft)	Storage Bay Length	AM Queue (ft)	PM Queue (ft)	Storage Bay Length	AM Queue (ft)	PM Queue (ft)	Storage Bay Length	AM Queue (ft)	PM Queue (ft)
Existing	Signal		Fairfax County Pkwy			Fairfax County Pkwy			Karmich Street			Roberts Parkway		
		Left	505	323	389	385	23	104	---	54	82	355	307	348
		Through		493	536		917	839					383	523
Right	340	2	7	405	405	405		330				217	329	
No Build	Signal		Fairfax County Pkwy			Fairfax County Pkwy			Karmich Street			Roberts Parkway		
		Left	505	505	505	385	18	137	---	54	92	355	330	354
		Through		1,444	1,498		2,414	2,403					452	566
Right	340	102	68	405	405	405		330				284	330	
Build	Signal		Fairfax County Pkwy			Fairfax County Pkwy			Karmich Street			Roberts Parkway		
		Left	600	599	576	385	18	103	---	52	87	355	341	355
		Through		1,216	1,403		2,412	2,404					443	566
Right	340	34	38	405	405	405		330				310	330	
BURKE CENTRE PARKWAY & ROBERTS PARKWAY														
Scenario	Type of Control	Lane Group	Eastbound			Westbound			Northbound			Southbound		
			Storage Bay Length	AM Queue (ft)	PM Queue (ft)	Storage Bay Length	AM Queue (ft)	PM Queue (ft)	Storage Bay Length	AM Queue (ft)	PM Queue (ft)	Storage Bay Length	AM Queue (ft)	PM Queue (ft)
Existing	Signal		Burke Centre Parkway			Burke Centre Parkway			Roberts Parkway			Roberts Parkway		
		Left	220	219	219	205	204	205	165	129	152	250	235	248
		Through		533	351		317	420		232	236		198	361
	Right	190	80	173	Cont.	0	0	255	153	180	245	115	227	
No Build	Signal		Burke Centre Parkway			Burke Centre Parkway			Roberts Parkway			Roberts Parkway		
		Left	220	220	220	205	205	205	165	148	153	250	246	249
		Through		1,010	492		412	586		266	208		312	393
	Right	190	155	190	Cont.	0	0	255	190	167	245	154	243	
Build	Signal		Burke Centre Parkway			Burke Centre Parkway			Roberts Parkway			Roberts Parkway		
		Left	330	330	309	235	235	235	165	164	159	250	247	248
		Through		707	382		423	493		287	221		342	380
	Right	190	111	190	Cont.	157	89	255	194	180	245	160	240	

3.1 Conceptual Sketch and Cost Estimates

Appendix K includes the Basis of Design Memo detailing the established project design criteria, field review notes, risk assessment, and assumptions made during the design effort. **Figure 43** through **Figure 46** present the preferred alternative planning level sketches.

An engineer's preliminary opinion of probable cost was created for construction costs, right-of-way acquisition costs, and utility relocation costs for the preferred alternative. These cost opinions established the project budget, in FY2026 dollars, as shown in **Table 26**. Detailed cost estimates are included in the Basis of Design Memo found in **Appendix K**.

Table 26: Preferred Alternatives Improvements

Phase Description	Budget (FY 2026)
Preliminary Engineering	\$2,686,500
Right of Way and Utility Relocation	\$6,409,200
Construction	\$16,554,368
Total Project Budget	\$25,650,068

3.2 Schedule Estimates

A schedule estimate was developed for the preferred alternative. **Table 27** summarizes the projected timeframes for the preliminary engineering (PE), right of way (RW), and construction (CN) phases.

Table 27: Schedule Estimate

Preferred Concept (all inclusive)	Estimated Schedule by Phase (months)
Preliminary Engineering	27
Right of Way and Utility Relocation	10
Construction	36
Total	73

Figure 43: Preferred Alternative Conceptual Sketch - Fairfax County Parkway Intersection

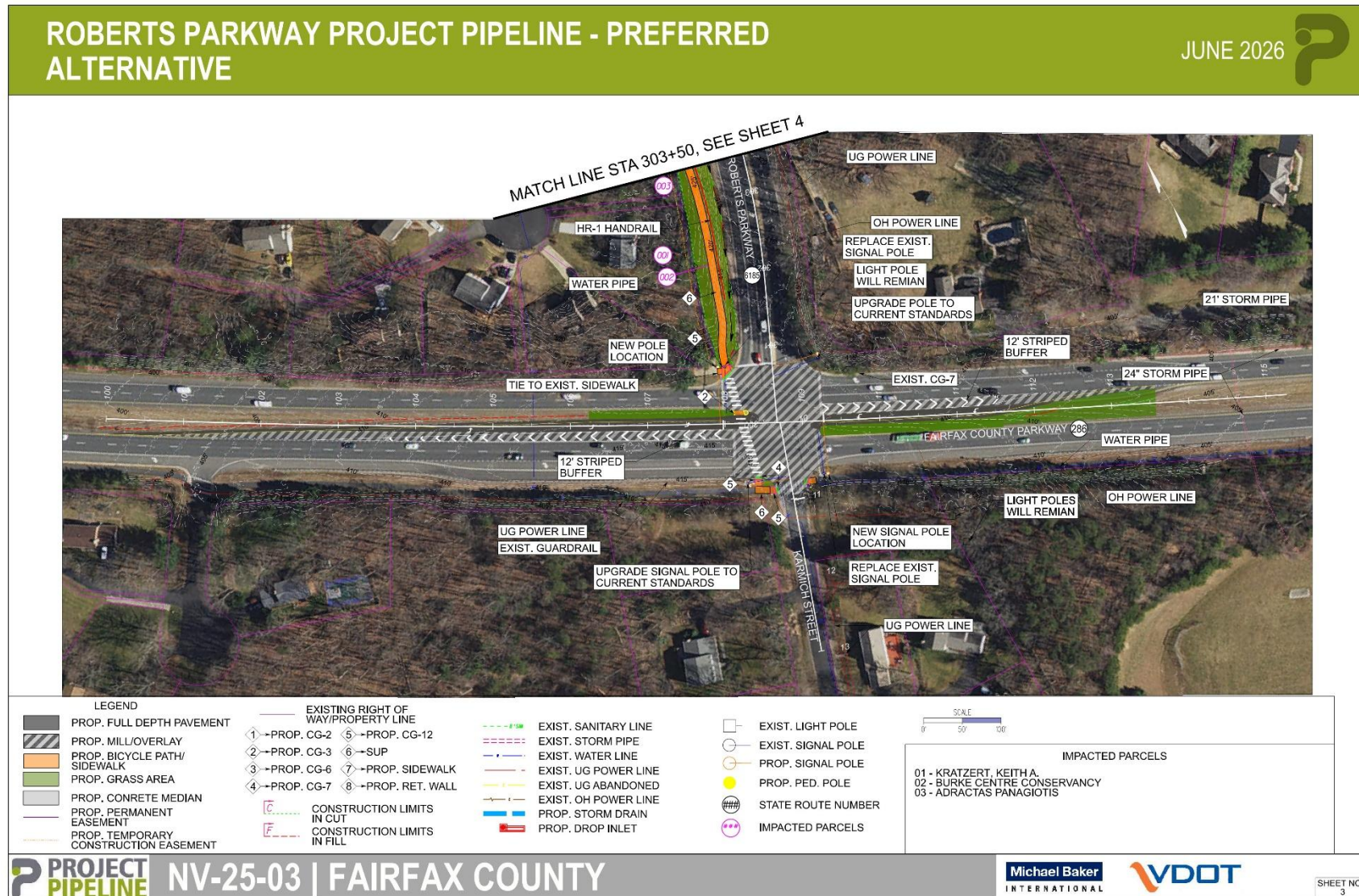


Figure 44: Preferred Alternative Conceptual Sketch – Shared-Use Path between Fairfax County Parkway and Burke Centre Parkway

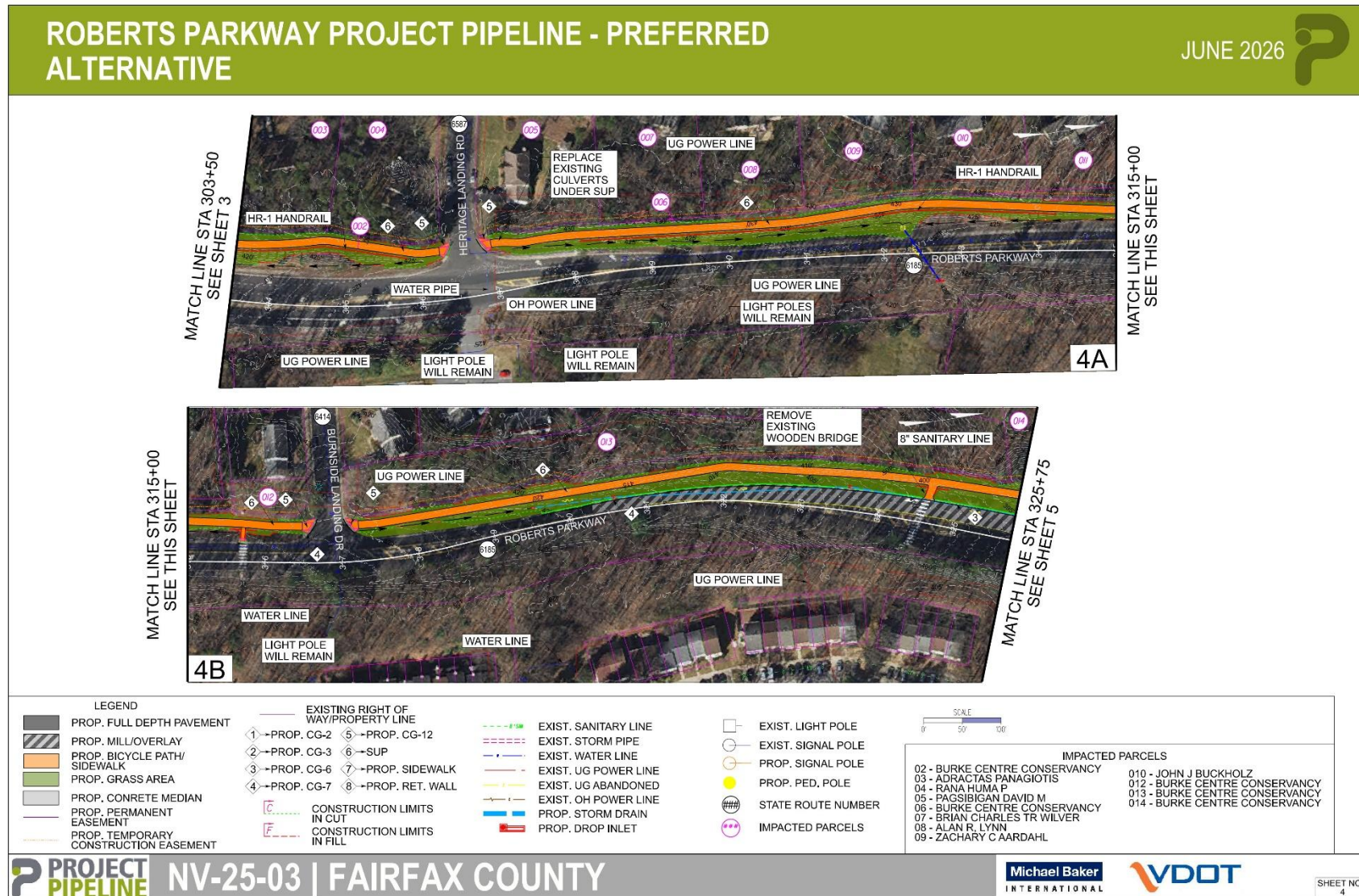


Figure 45: Preferred Alternative Conceptual Sketch – Burke Centre Parkway Intersection

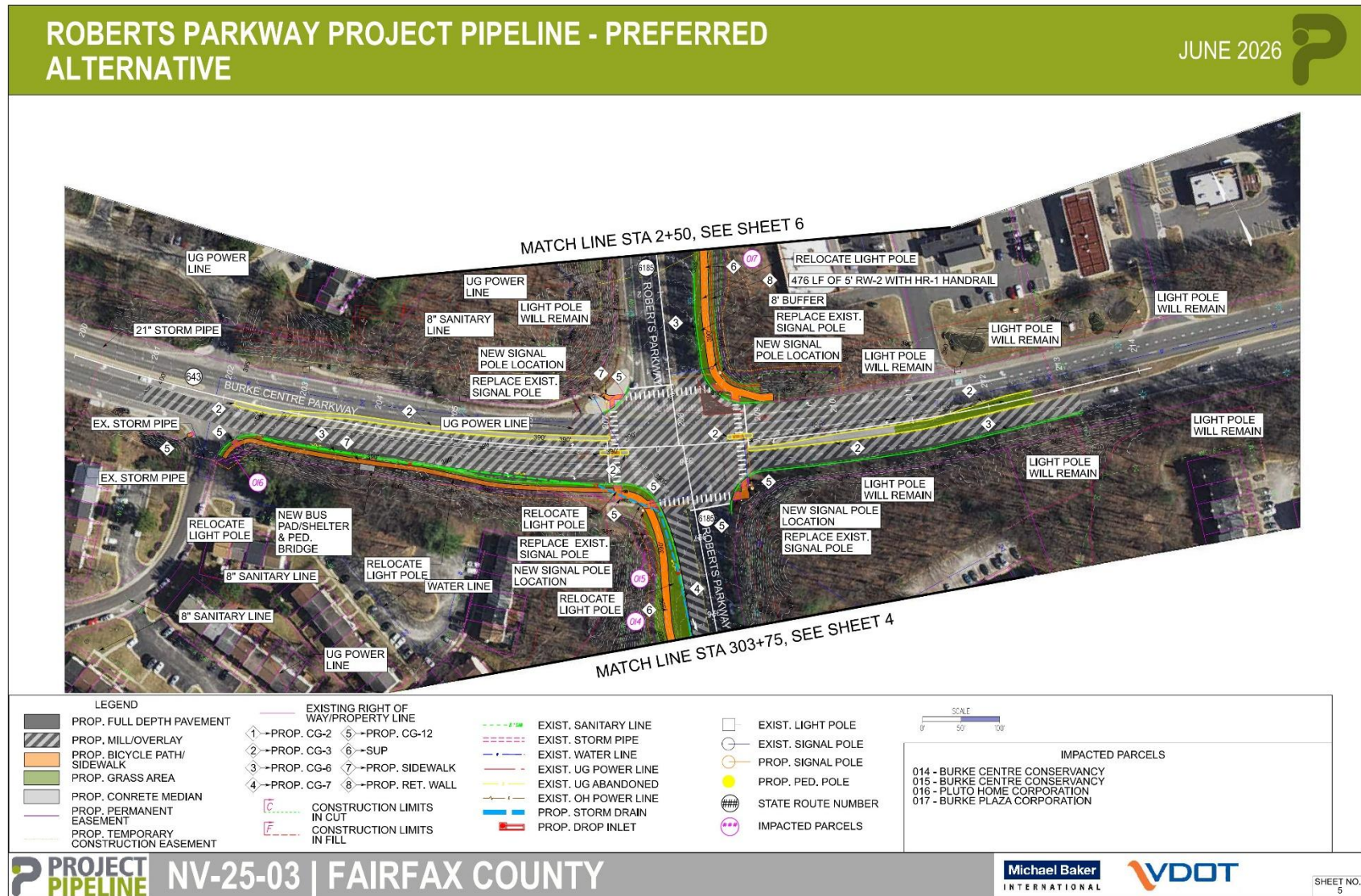
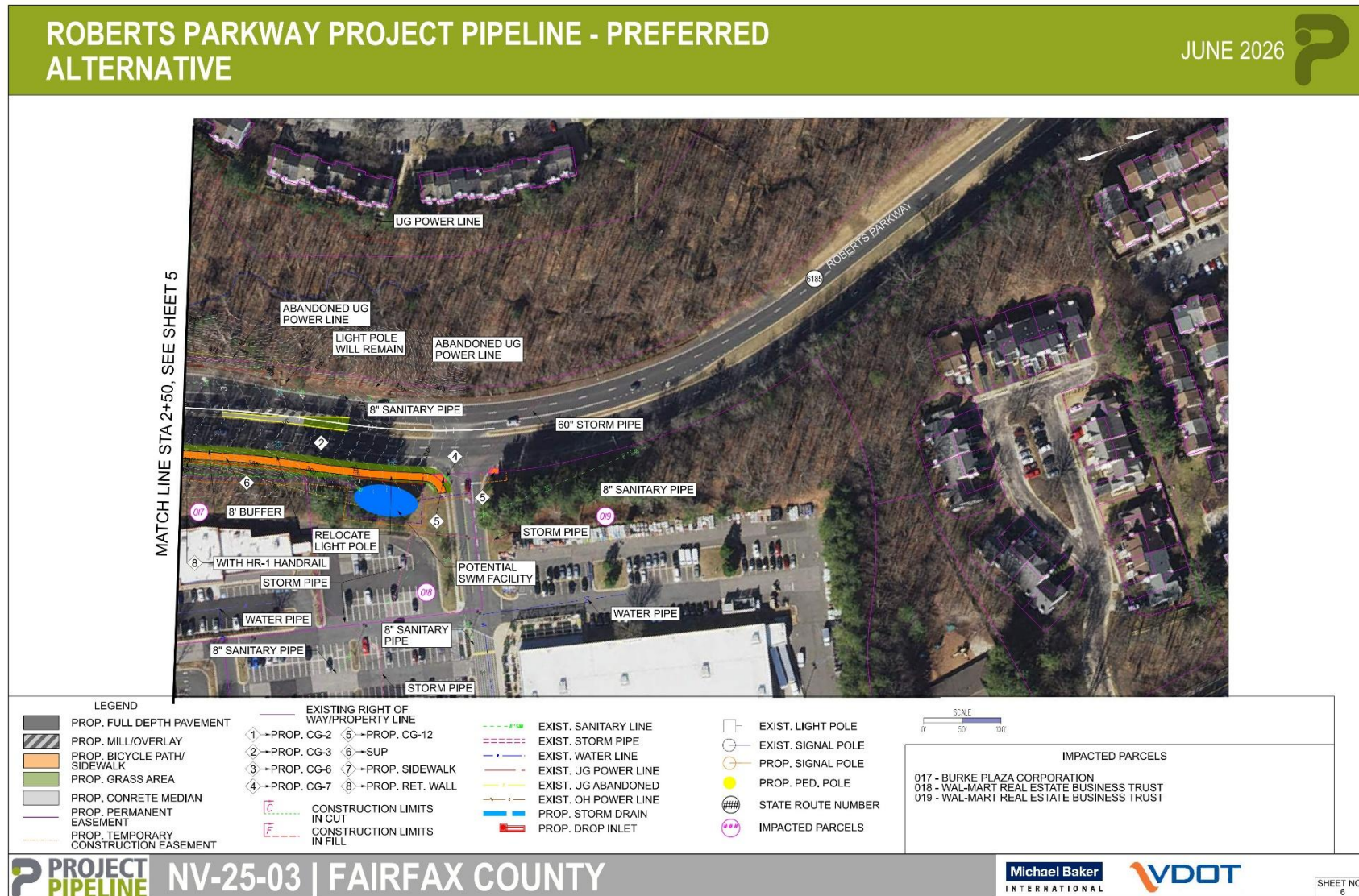


Figure 46: Preferred Alternative Conceptual Sketch –Shared-Use Path North of Burke Centre Parkway



3.3 Project Risks

All projects have risks; however, some projects may have more significant risks than others due to technical complexity, funding, financing, and stakeholder acceptance. Risk management generally involves the process of anticipating what risks a project may face, mitigating them to the extent reasonably possible, and having a plan to react to them if and when they occur. This is recognized in VDOT guidance regarding the analysis of and mitigation of risks.

The stakeholder group, which included VDOT and Fairfax County, attended a site visit on May 15th, 2026. During this site visit the project concept was discussed and it was key to identify critical risks. The group identified that the proposed shared use path between Fairfax County Parkway and Burke Centre Parkway is assumed to require significant earthwork to cut into existing slopes, especially as the path approaches Fairfax County Parkway. There is potential for unsuitable materials, slope stability issues, and need for additional fill.

The following is a list of the most notable potential issues that may affect project development, risks faced by the project, and risk mitigation strategies to be applied to manage and minimize risks throughout project development. **Appendix K**, Basis of Design Memo, includes the risk analysis matrix with details on the risk assessment, mitigation strategy, and site visit photos.

Risk/Issue: Earthwork

There are steep slopes present, especially near Fairfax County Parkway; it's possible that during reconstruction of the cross-section to accommodate the shared use path, slope stability may be a challenge. There is also potential that cut from the project may not be re-used for fill or additional unsuitable may be found below roadway cross-section which will require to bring in more suitable fill.

Risk/Issue: Right of Way

It is accepted and assumed that right-of-way will be required within the project area and is relatively accounted for by generating a 3D model of the shared use path to properly assess the potential permanent easements and temporary construction easements. During public feedback, concern was raised from public and supervisors regarding widening the shared-use path and impacts to trees and properties.

Risk/Issue: Utilities

The overhead and underground electrical lines are primarily outside of the project's longitudinal footprint. Additionally, water lines and sanitary lines are assumed to be at a depth well below the proposed cuts for pavement, sidewalk, and earthwork. Minor adjustments may be required at spot locations.

Risk/Issue: Construction Phasing/MOT

The construction of a shared-use-path and the modification of multiple ramps and pedestrian crossings within the intersections at Fairfax County Parkway and Burke Centre Parkway will require multiple phases to ensure an accessible and continuous path. As such, this will increase maintenance traffic costs to accommodate these phases. This will most likely result in additional temporary pedestrian signals, temporary curb ramps or sidewalks, and longer construction schedules.

3.4 Possible Funding Sources

Fairfax County elected to submit the preferred alternative for SMART SCALE funding, which includes the intersection improvements at the Fairfax County Parkway and Burke Centre Parkway intersections. In addition, the SMART SCALE application will include the shared use path improvements between Fairfax County Parkway and Burke Centre Parkway.