FAIRFAX CITY

Jermantown Road Multimodal Improvements Project

North of US 50 (Fairfax Boulevard) to the City Line

City Council Work Session

Agenda

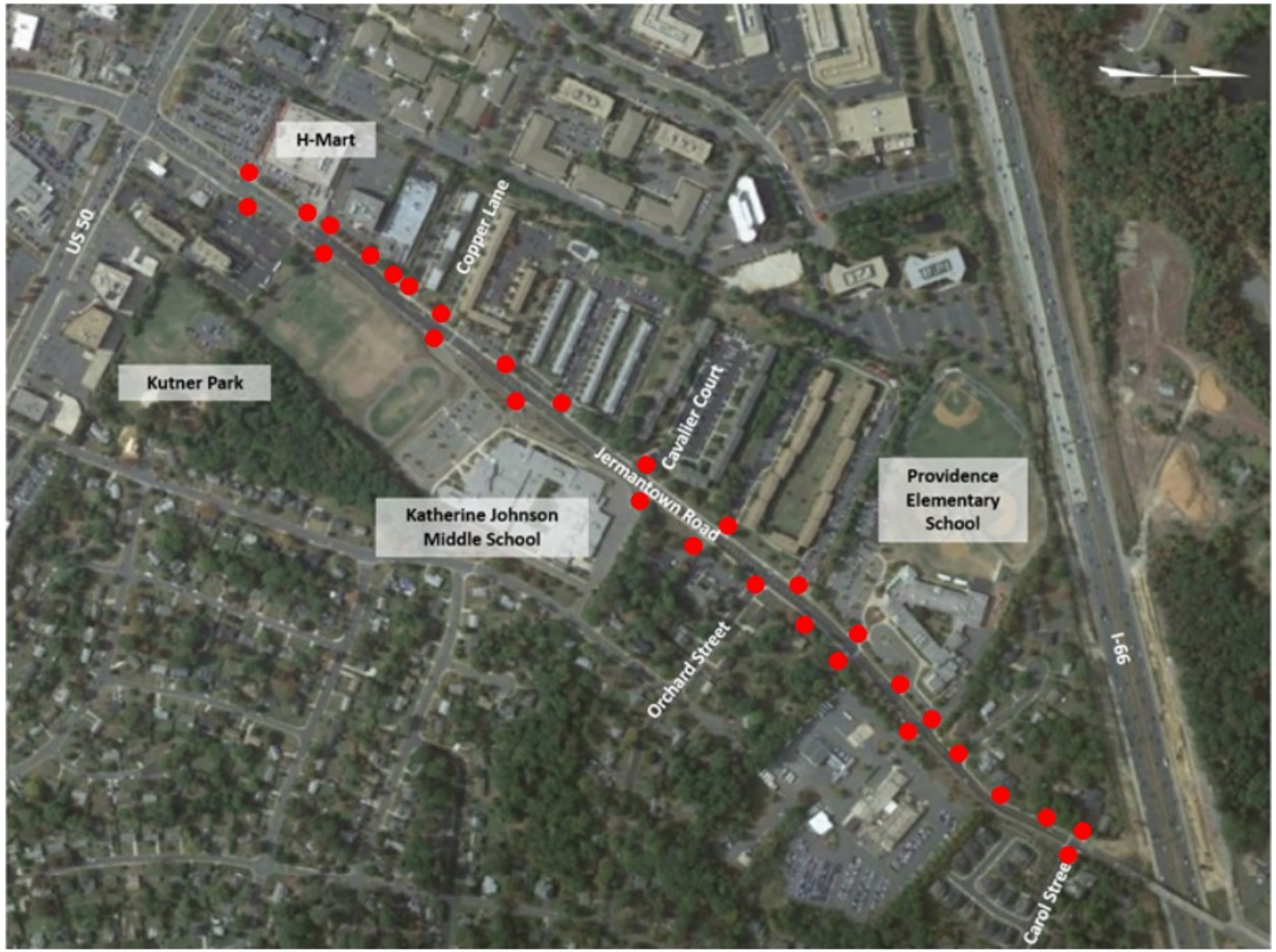
- Project Introduction
- Project Background & History
- Existing Conditions & Challenges
- Proposed Design

Corridor Overview

PROJECT INTRODUCTION

Project Corridor

- Minor Arterial | 0.8 miles
- 30 mph posted speed
- Two- to Three-lane roadway
  - One-lane in each direction
  - Two-way center left turn lane
- Social / Civic Network
- Retail & Commercial Buildings
- Multi-Family Residential Properties
- 30+ Access Points



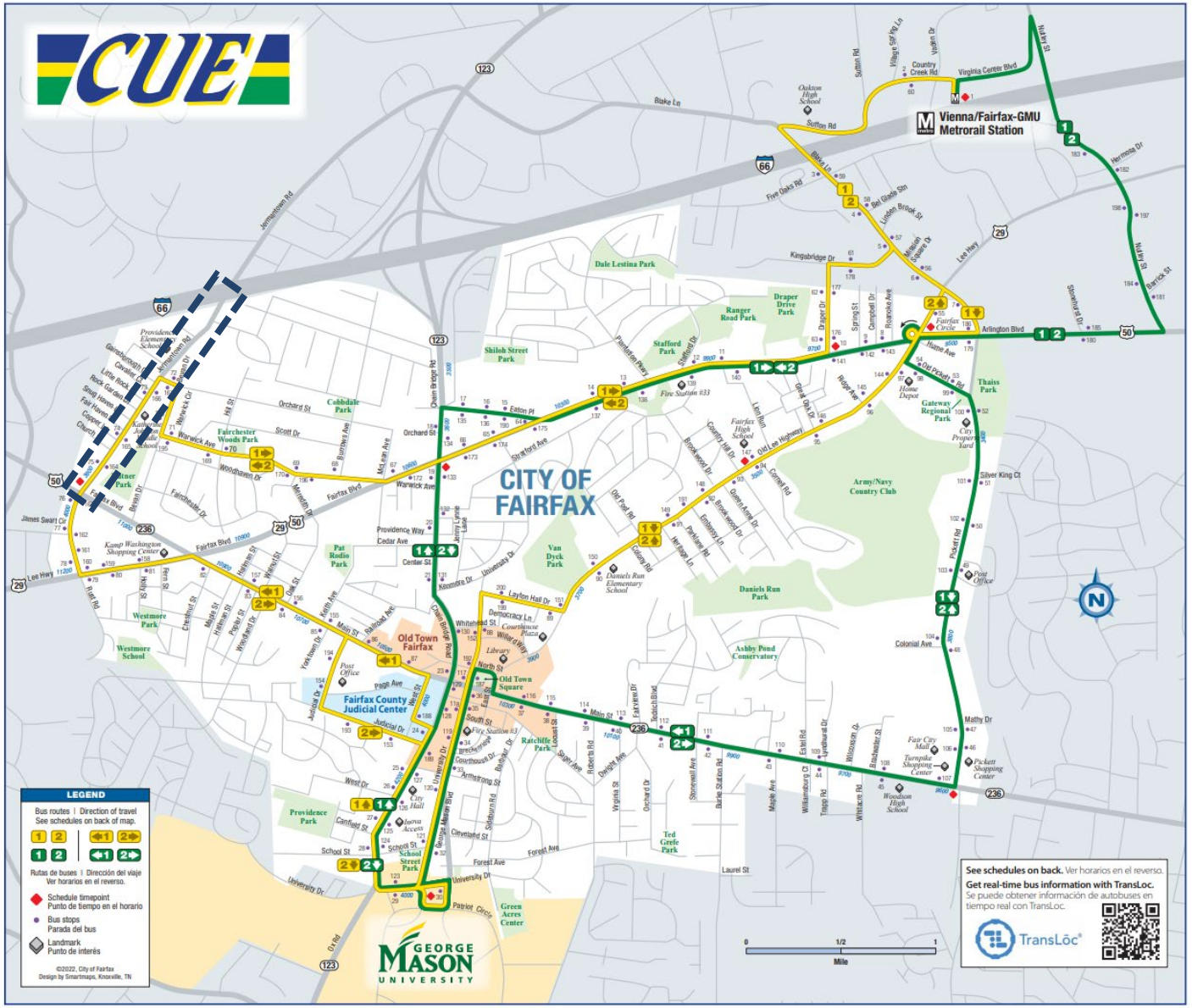
PROJECT INTRODUCTION

Transit

- CUE Gold Route & WMATA 2B Route
- Existing Stops
  - H-Mart Entrance / Kutner Park
  - Fairhaven Court (Johnson MS Entrance)
  - Cavalier Court (Orchard Street)
  - Carol Street (WMATA Only)

DAILY BOARDINGS & ALIGHTINGS (Weekday Average)

	SB	NB
At Cavalier Court *Stop 73 (SB), 166 (NB)*	82	44
At Fairhaven Court *Stop 74 (SB), 165 (NB)*	59	43
At Kutner Park / H-Mart Ent. *Stop 75 (SB), 164 (NB)*	20	64



CUE Route Map

PROJECT INTRODUCTION

Households & Land Use

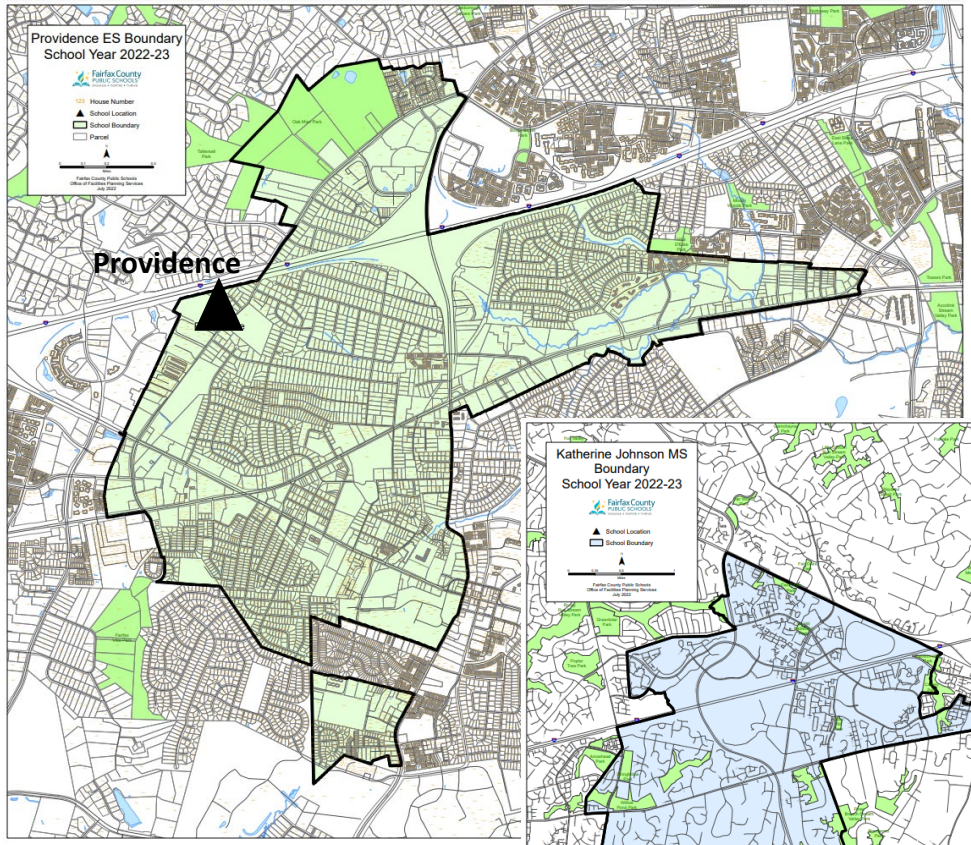
- Approx. 500 households on Jermantown Road within project limits
  - 5 large multi-family complexes
- Approx. 620 households within ¼ mile

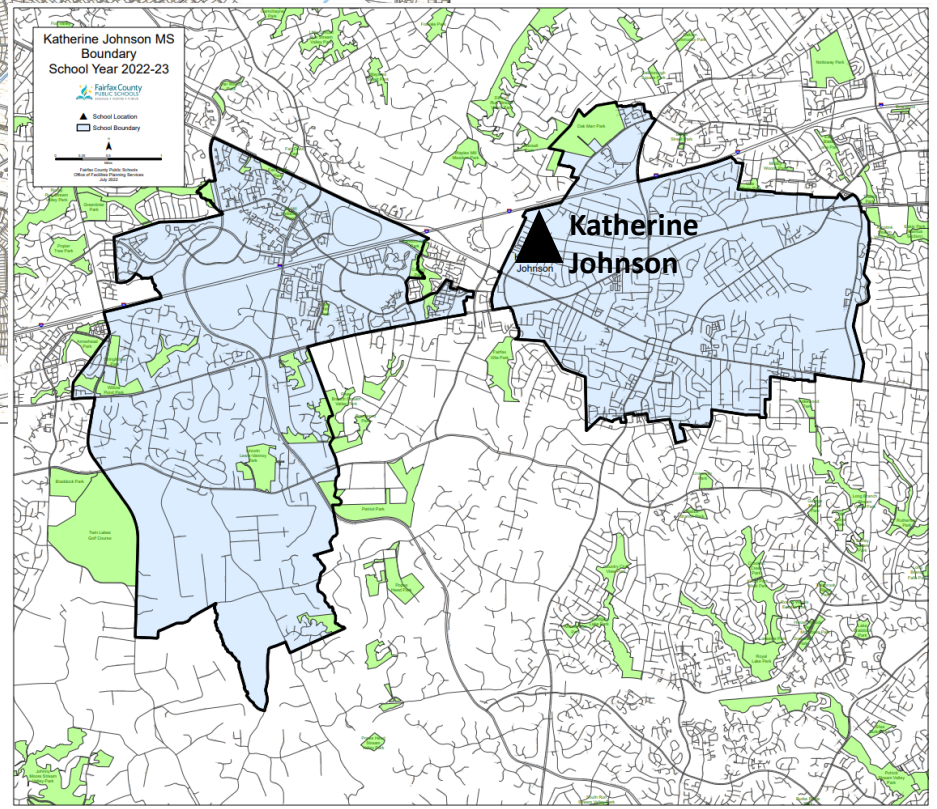
JERMANTOWN RD. CORRIDOR HOUSING UNITS	
Churchill Mews Apts.	20
Copperfield Square Apts.	77
Oxford Row Condos	100
Cavalier Court Apts.	128
Gainsborough Court Apts.	151
Jermantown Village (SFD)	15
Other SFD on Jermantown Rd.	3
TOTAL	**494**

PROJECT INTRODUCTION

Social / Civic

- Katherine Johnson MS
  - Approx. 1050 students
  - 10% walkers (114 students)
- Providence ES
  - Approx. 860 students
  - 16% walkers (142 students)
- Kutner Park
  - Tennis | Volleyball | Field | Playground
  - Rentable: Garden Plots | Picnic Area
- Oakmarr Rec Center (County)





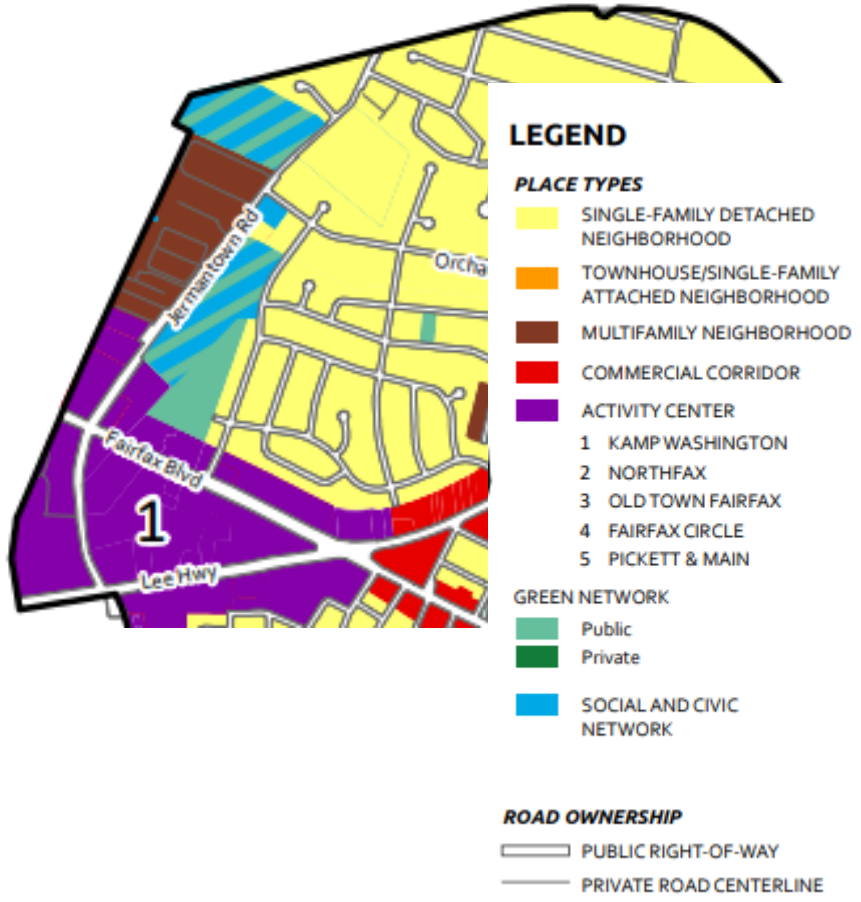
City Plan Goals

- Comprehensive Plan
- Multimodal Plan
- Kamp Washington Plan

COMPREHENSIVE PLAN

Community Appearance, Land Use, and Parks & Rec Goals

- **Action CCAC 1.1.6:** Provide pedestrian and bicycle connections to nearby neighborhoods
- **Action N 2.1.1:** Identify opportunities for future open space and trails in neighborhoods that are currently deficient in offering these amenities
- **Action N 2.1.2:** Expand existing pedestrian network to increase connectivity within neighborhoods and to other destinations
- **Action SI 2.2.1:** Promote walking and trail use as part of a healthy community initiative.
- **Action PR1.1.3** Enhance public access to parks and recreational facilities by making necessary infrastructure improvements.
- **Action PR1.1.4** Partner with the Department of Public Works on efforts to improve pedestrian and bicycle networks throughout the City.



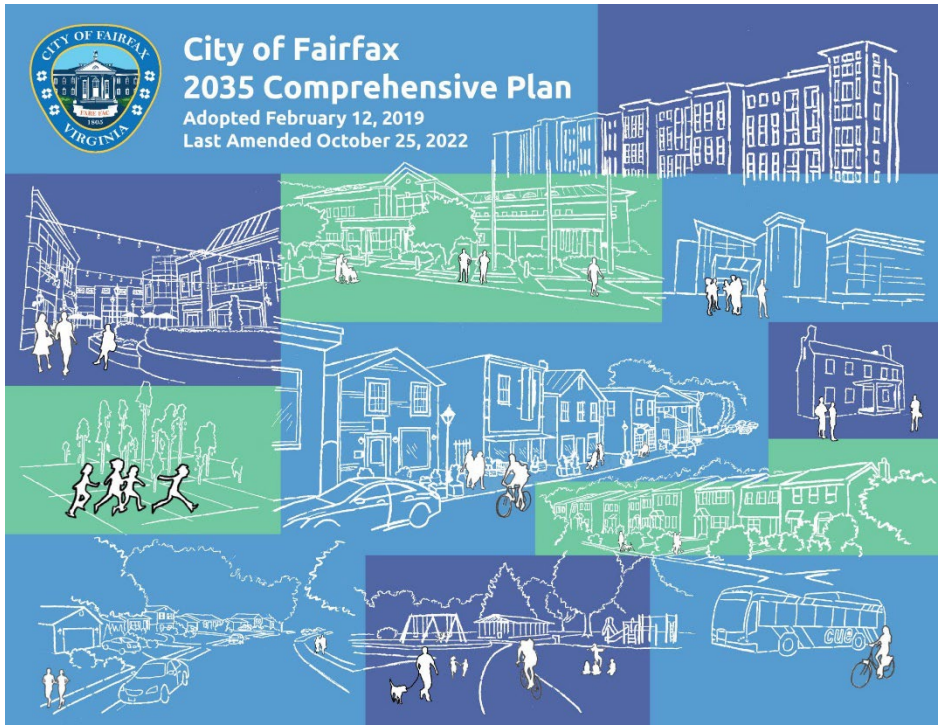
3 Multimodal Transportation

Guiding Principle:

In 2035, Fairfax is a city with... options for residents to easily, safely, and efficiently move within and between neighborhoods either by walking, bicycling, taking public transportation or driving.

Multimodal Goals

- **Action MM 1.1.5:** Improve the Blake Lane-Jermantown corridor
- **Action MM 2.1.1:** Fill critical gaps in the pedestrian network.
- **Action MM 2.1.3:** Enhance safe routes to school, to transit, and to community facilities.
- **Action MM 2.1.4:** Improve pedestrian crosswalks
- **Action MM 2.2.4:** Provide wayfinding, trail blazing and traffic calming/ safety, and nonmotorized facility improvements to provide connections between parks and trails.
- **Action MM 3.2.1:** Increase non-motorized connections to between neighborhoods, communities, and local activity centers
- **Action MM 3.2.3:** Increase the number, safety and frequency of pedestrian crossings, including across major streets.
- **Action MM 3.3.3:** Ensure quality street design in both the pedestrian zone and travel zone of the street

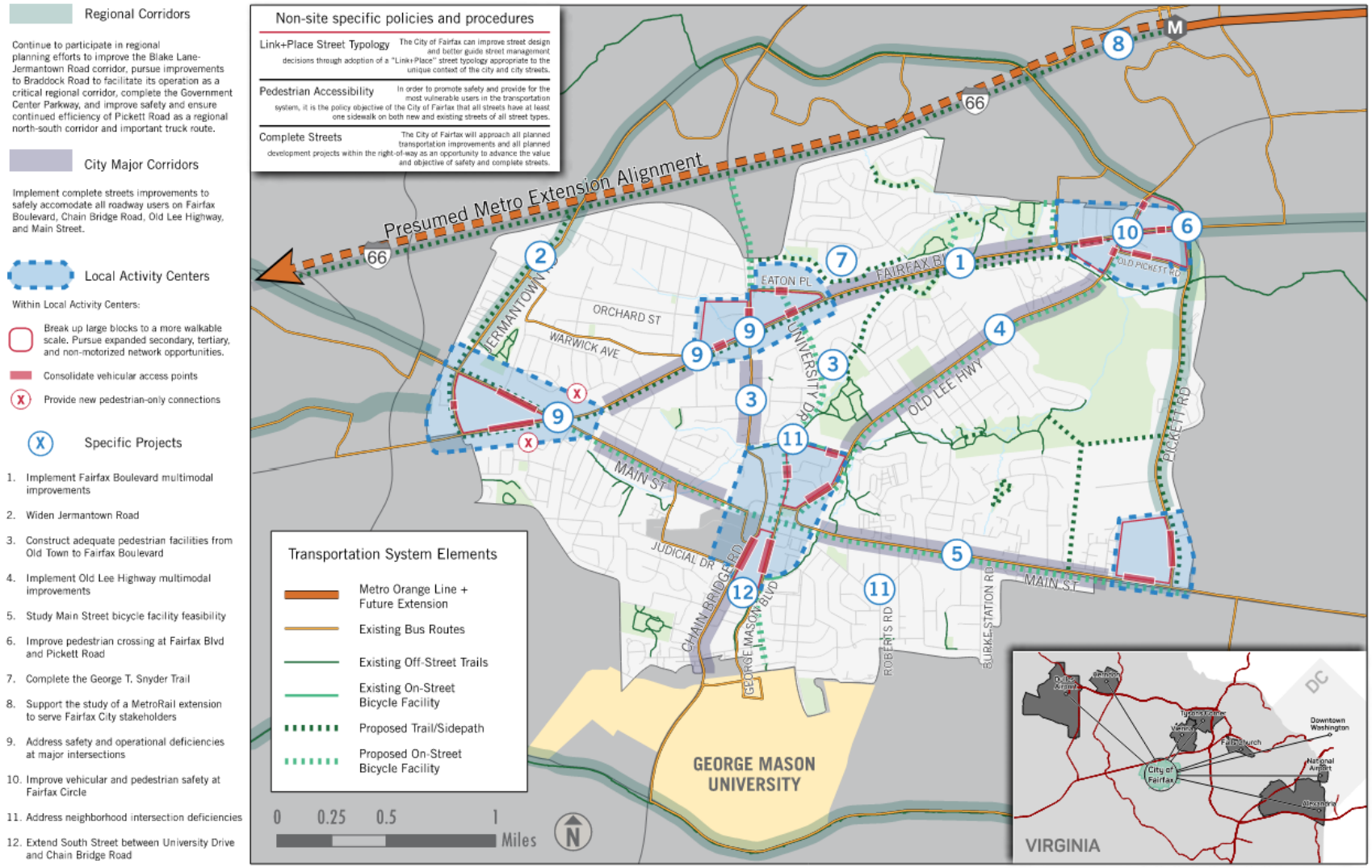


MULTIMODAL PLAN

Multimodal Plan

- Jermantown Road
  - Regional Corridor
  - Widening Project
  - Proposed Sidepath

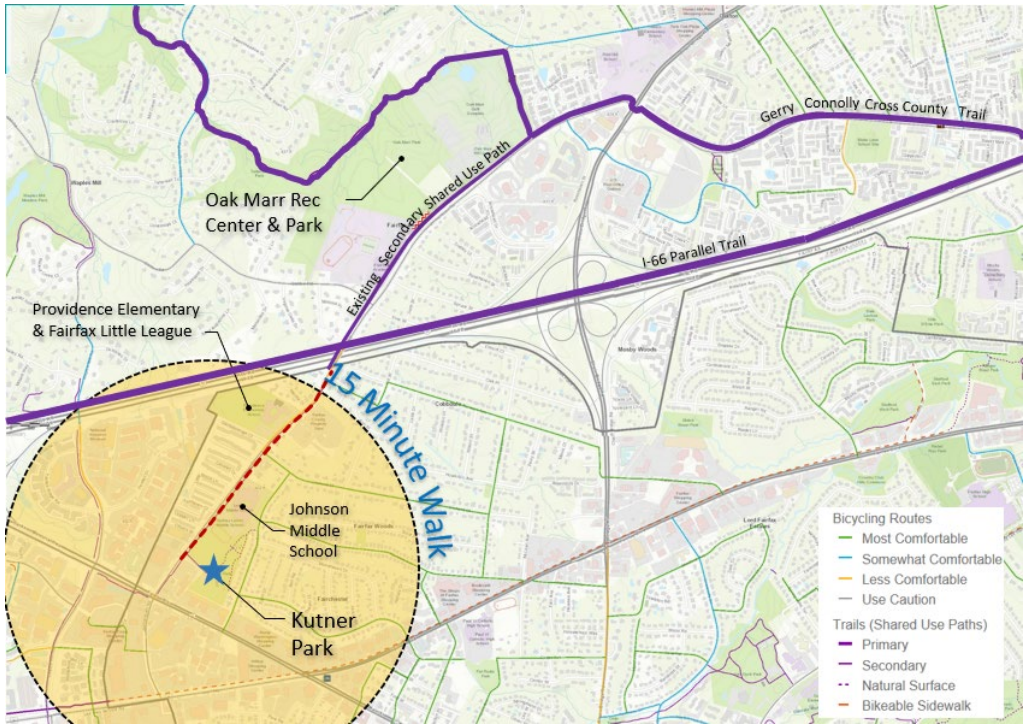
FIGURE 14 TRANSPORTATION POLICIES AND PROJECTS



KAMP WASHINGTON SMALL AREA PLAN

THE KUTNER PARK HUB

- Prioritize developments that are mixed-use and pedestrian-oriented with emphasis on views and engagement of Kutner Park as the main placemaking anchor.
- Implement streetscapes along Fairfax Boulevard and Jermantown Road that can help link this area to the residential and commercial elsewhere in the study area.
- Explore street improvements such as improved tree canopy and enhanced pedestrian access to Kutner Park from within the study area.



THE VISION PLAN: NEAR TERM

Project Background

- Project History
- Project Goals

PROJECT INTRODUCTION

Regional Connectivity

- Jermantown Road over I-66 Bridge connects the City and County
- Coordination in 2016 between City and County on bridge typical section
  - Four vehicle lanes
  - Shared Use Path & Wide Sidewalk
- I-66 Parallel Trail construction to be completed in 2023
  - Bicycle & pedestrian connection from Dunn Loring to Centreville
  - Connects to other regional trails

August 31, 2016

Ms. Susan Shaw
Mega Projects Director
Northern Virginia District Office
Virginia Department of Transportation
4975 Alliance Drive
Fairfax, Virginia 22030

Re: Jermantown Road Bridge over Interstate 66

Dear Ms. Shaw:

On behalf of Fairfax County and the City of Fairfax, we are writing in regards to the Jermantown Road Bridge over I-66 and the Transform 66 Outside the Beltway Project. Jermantown Road is a four-lane facility in Fairfax County north of I-66, while it is mostly a two-lane facility in the City of Fairfax between I-66 and Route 50. The jurisdictional boundary between the County and the City is located just south of the bridge. Therefore, the bridge itself is in the County. However, any changes to the roadway would impact both of our jurisdictions.

On July 26, 2016, the Fairfax County Board of Supervisors authorized an amendment to the County Transportation Plan to show the Jermantown Road Bridge over I-66 as a four-lane bridge. The County is taking this action to amend the County Transportation Plan, so that it is clear that the bridge should ultimately be four lanes. This is consistent with past County policy to widen Jermantown Road north of I-66 to four lanes. Additionally, in its comment letter on the I-66 Tier 2 Corridor Improvement Project, dated June 12, 2015, the City requested that VDOT consider widening the bridge on Jermantown Road to four lanes (two in each direction) so that the City is not precluded from making future capacity improvements on Jermantown Road in the City in the future. The City is currently in the process of updating its Comprehensive Plan, and intends to include the widening of Jermantown Road as part of the update.

In January 2016, VDOT responded to the City stating that the I-66 project team would continue to coordinate with the City to ensure that future widening of the bridge is not precluded. Additionally, the typical section for the Jermantown Road Bridge in the Final RFP, dated July 29, 2016, contains a graphic showing a cross section of both a two lane bridge and four lane bridge with future widening. This graphic contains a note stating "Design shall accommodate future widening as shown below."

Ms. Susan Shaw, P.E.
August 31, 2016
Page 2 of 2

Given the actions taken by our localities, we would like assurance from VDOT that, at a minimum, the project design will demonstrate clearly how the future widening of the bridge can occur. It is unclear from the graphic how this would be accomplished. We also believe that building the full cross section during the construction of the Transform 66 Outside the Beltway project could result in a significant cost savings and minimize the time period that the bridge would be under construction. As such, we are also requesting that a full assessment of the difference in time and cost that could be achieved by constructing a four lane bridge as part of the initial project.

We look forward to working with VDOT in solving the problems along the I-66 corridor. Should you have any questions or need additional information, please contact Leonard Wolfenstein at (703) 877-5674 or by email at Leonard.Wolfenstein@fairfaxcounty.gov or Wendy Block Sanford at (703) 385-7889 or by e-mail at Wendy.Sanford@fairfaxva.gov.

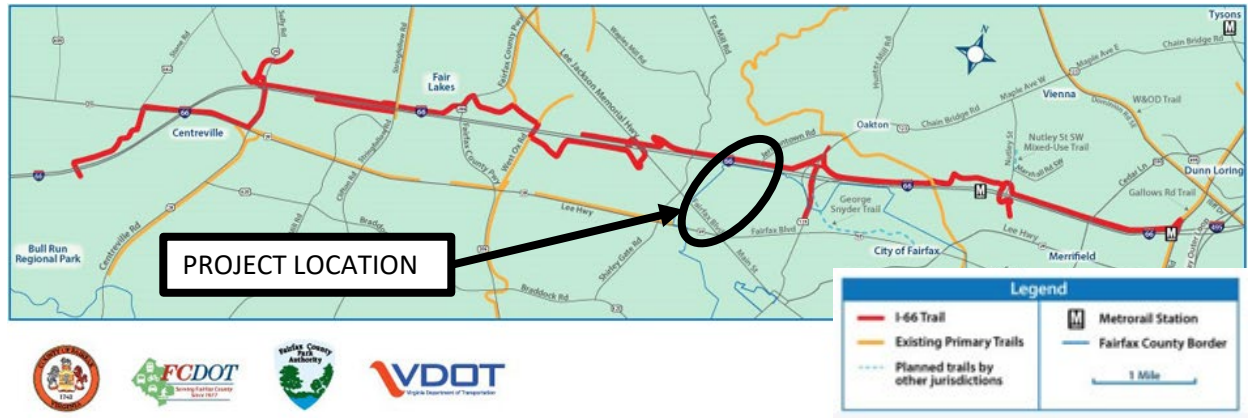
Thank you for your consideration.

Sincerely,

Sharon Bulova
Chairman
Fairfax County Board of Supervisors

Steven C. Stombres
Mayor
City of Fairfax

cc: Members, Board of Supervisors, Fairfax County
Members, City Council, City of Fairfax
Edward L. Long Jr., County Executive, Fairfax County
Robert Sisson, City Manager, City of Fairfax
Robert A. Stalzer, Deputy County Executive, Fairfax County
Catherine A. Chianese, Assistant County Executive, Fairfax County



PROJECT INTRODUCTION

Jermantown Road Bridge

- Northern terminus of project
  - Tie in at Carol Street
- Under Construction by I-66 Project
  - NB: 2 lanes
  - SB: 1 lane and wide shoulder (accommodates 2nd lane in future)

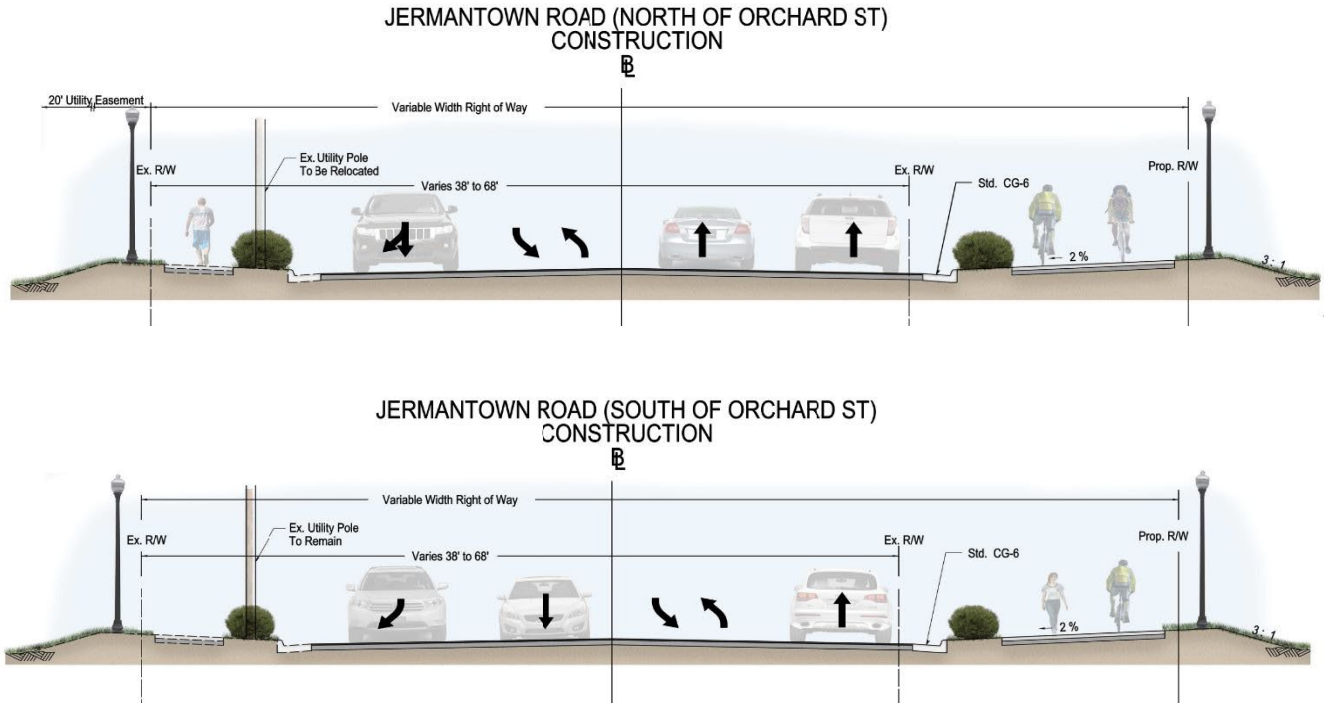
Jermantown Road Bridge Rendering - Looking East
Source: Transform 66 Outside the Beltway Website

PROJECT INTRODUCTION

Modal Components
Vehicles
Transit
Pedestrians
Cyclists

Corridor History

- Phase 1 – Johnson MS to Orchard | 2008
- Phase 2 – US 50 and Jermantown Road | 2015
- Conceptual Planning Study (Phase 3) | 2018
  - Spot Improvement & Boulevard Options
  - Spot Improvements Selected
    - SB right turn lane south of Orchard St.
    - NB through lane north of Orchard St.
    - Multi-modal improvements
- NVTA Funding Obtained: $21M

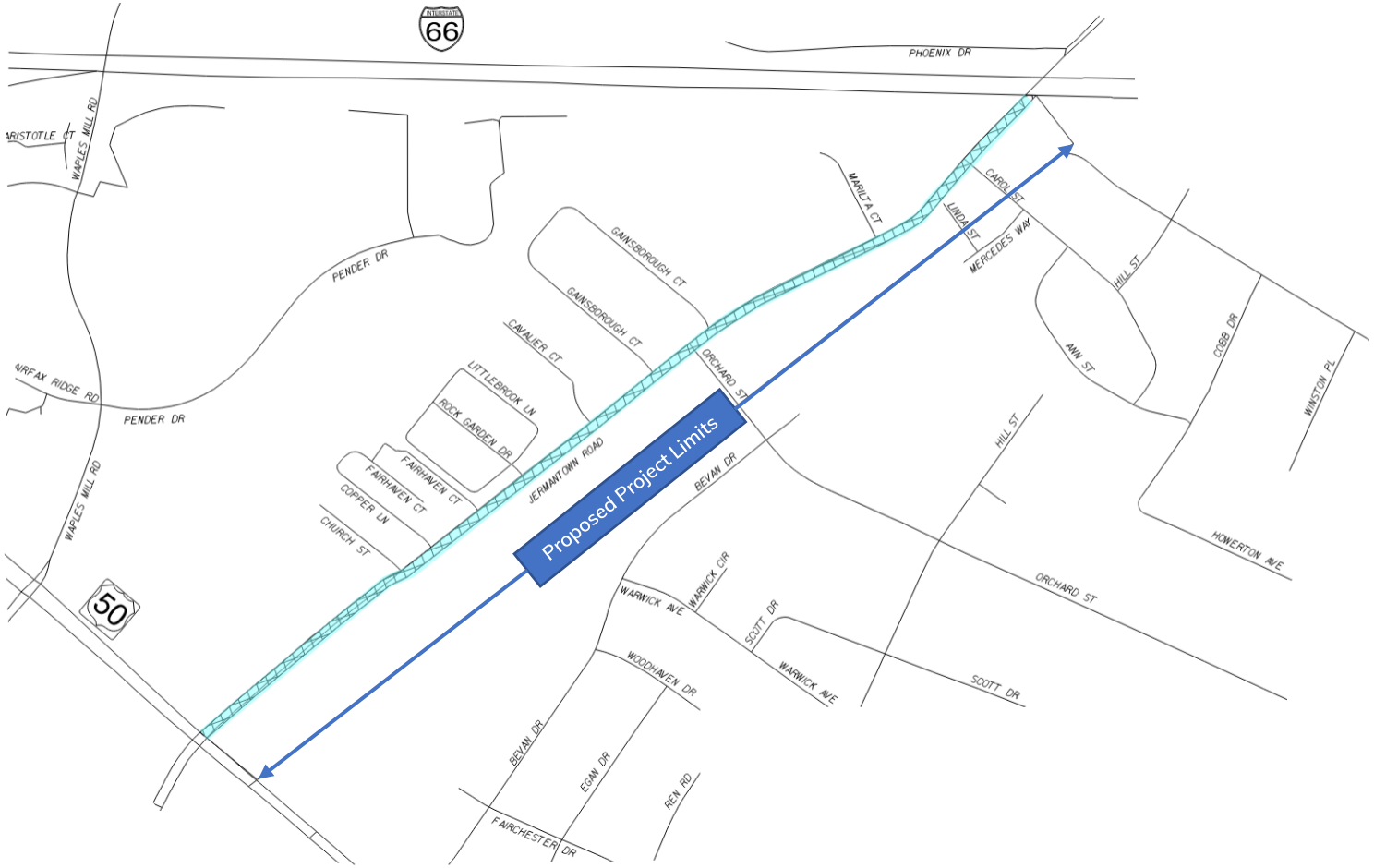


Concept Study Typical Section – Selected Alternative

PROJECT INTRODUCTION

Project Goals

- Improve current roadway operations for all travelers
- Plan for future demand and travel needs
- Maintain connections to the County
- Maintain and improve transit operations
- Increase pedestrian and bicycle safety and connectivity



Project Vicinity Map

Corridor Challenges & Key Metrics

EXISTING CONDITIONS

Corridor Challenges

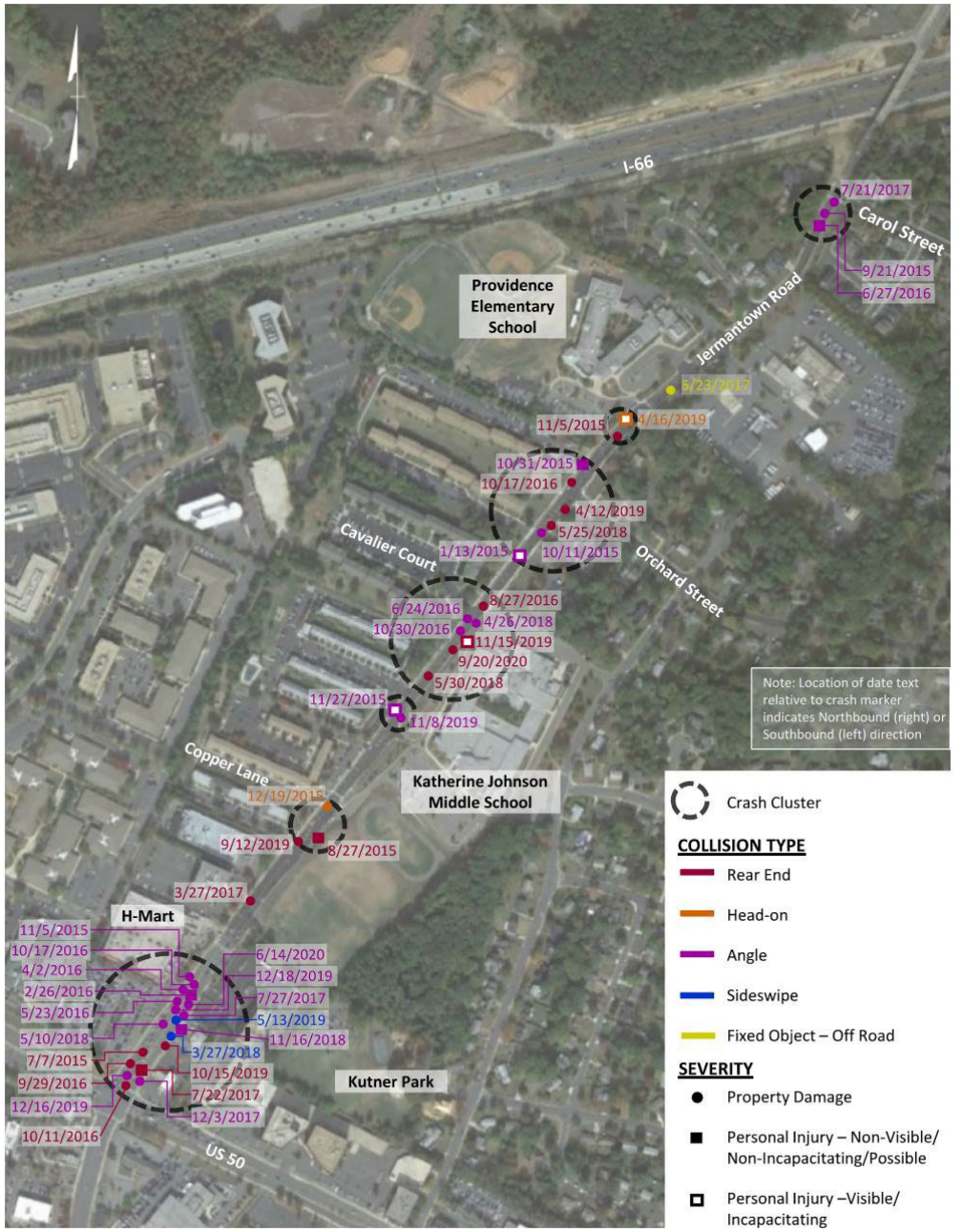
- Capacity / Operations
  - Ave. Annual Daily Traffic: 14,000 veh
- Access Management
  - Closely Spaced Entrances
  - Signalized Intersections with Closely Offset Unsignalized Intersections
- Multimodal Access
  - Uncontrolled Pedestrian Crossings
  - Pedestrian Facility Gap
  - Limited bicycle accommodations
- Crash History

Closely Spaced Entrances along Jermantown Road

EXISTING CONDITIONS

Crash History

- 44 crashes 2015 to 2019 (No fatalities)
- Angle crashes (52%) | typically most severe type of crash
  - Driver fails to yield right of way to another
  - Typically occur when one vehicle is turning
  - Common at unsignalized intersections and driveways
- Rear-end crashes (36%)
  - Driver hits the vehicle in front of it
  - Often lead vehicle is stopped or moving at slow speed
  - Common in corridors with many access points
- Both types support the need for access management improvements



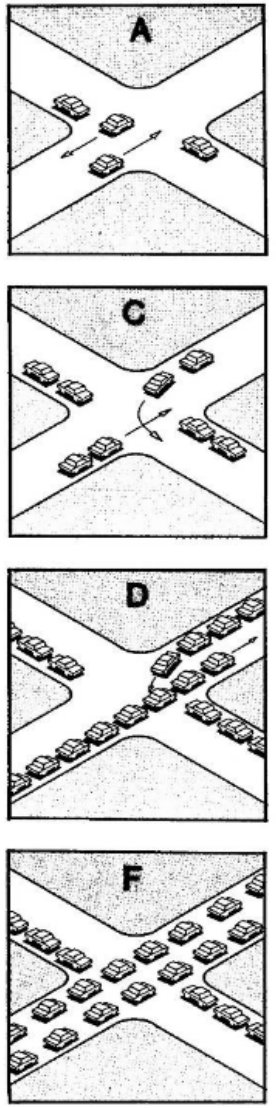
EXISTING CONDITIONS

Vehicle Capacity

- Level of Service (LOS)
  - Measured in seconds of delay per vehicle
  - Graded A through F
  - LOS D acceptable for urban setting
- Queue length
  - Measured in feet (distance of backup)
- Issues to Address on Jermantown Rd.
  - Queues are longer than turn lanes
  - Failing LOS in the future if no improvements are made to corridor
  - School kiss & ride complicates traffic operations along Jermantown Rd.

LOS	Intersection Description
A	Free flow, insignificant delays
B	Stable operation, minimal delays
C	Stable operation, acceptable delays
D	Restricted flow, common delays
E	Maximum capacity, extended delays. Volumes at or near capacity. Long queues form.
F	Forced flow, excessive delays. Represents jammed conditions. Queues may block upstream intersections

Visual Representation of Level of Service

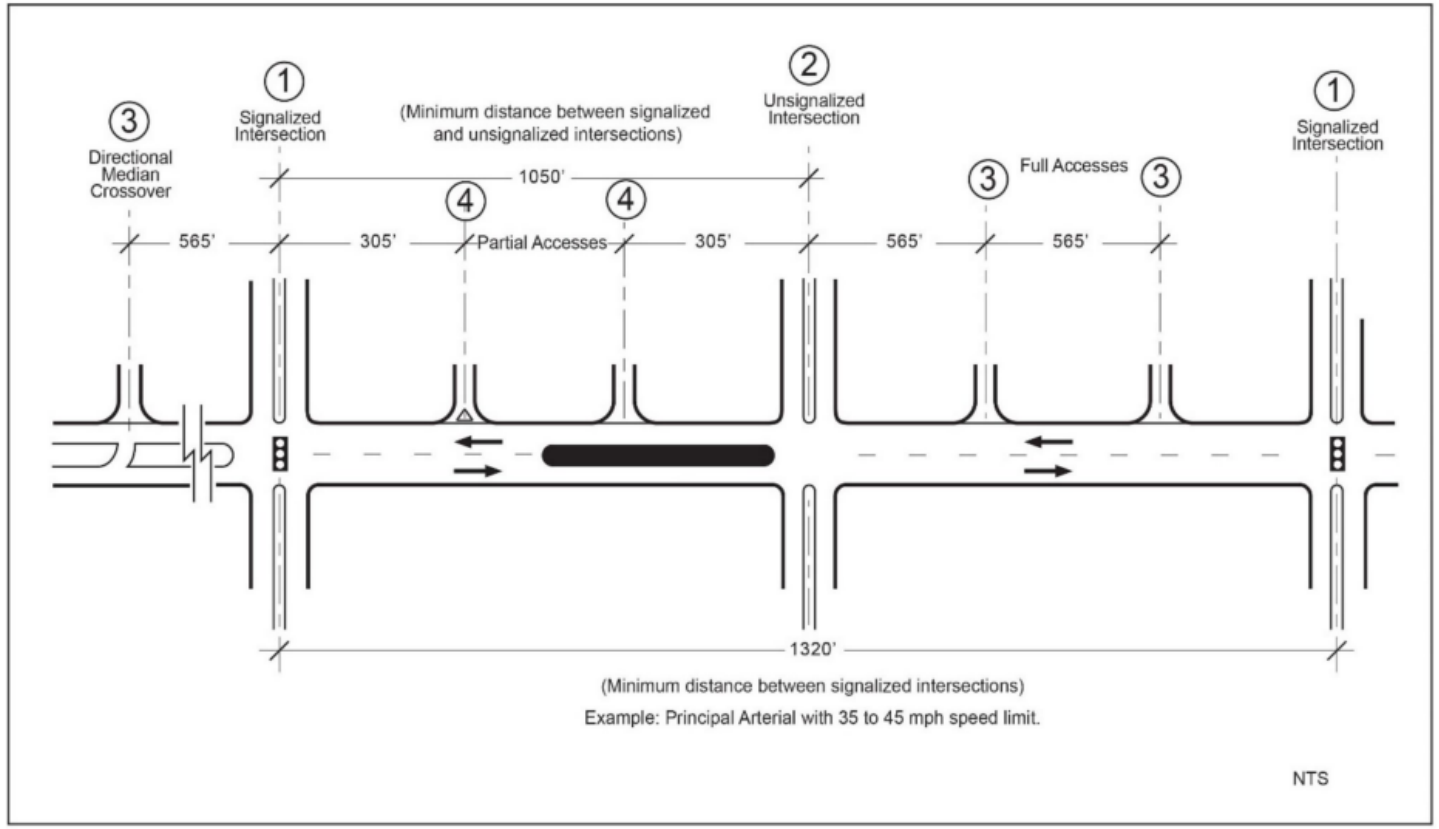


SOURCE: *"A Policy on Design of Design of Urban Highways and Arterial Streets"* - AASHTO, 1973 based upon material published in *"Highway Capacity Manual"*, National Academy of Sciences, 1965.

EXISTING CONDITIONS

Access Management

- Spacing between intersections
- Increased distance improves conditions
  - Allows for longer left turn lanes
  - Increases reaction time
  - Increases intersection efficiency
  - Reduces conflict points & increases safety for all users
- Issues to Address on Jermantown Rd.
  - Closely Spaced Entrances
  - Signalized Intersections with Closely Offset Unsignalized Intersections



VDOT Road Design Manual – Spacing Standards

Existing Corridor does not meet City or State access spacing requirements

EXISTING CONDITIONS

Transit

- Ridership / Satisfaction
- Stop placement & ridership
  - Frequency of stops impacts route length
  - Ridership impacts stop placement
  - Amenities improve comfort
  - Comfort encourages ridership
- Issues to Address on Jermantown Rd.
  - Duplicative stops
  - Stops without any amenities

CUE Route Map

EXISTING CONDITIONS

Multimodal Access

- Pedestrians, Bicycles
- Dedicated space improves safety & access
  - Encourages walking and biking
  - Provides safe crossing locations
  - Provides safe access to schools
  - Reduces conflict points
- Issues to Address on Jermantown Rd.
  - Uncontrolled Pedestrian Crossings
  - Pedestrian Facility Gap
  - Limited bicycle accommodations
  - Lack of regional connectivity

Uncontrolled Crossing

Jermantown Road at Johnson Middle School Entrance – Looking to the North (Source: Google Maps)

Controlled Crossing

Jermantown Road at H-Mart Entrance – Looking to the South (Source: Google Maps)

EXISTING CONDITIONS

EXISTING CONDITIONS

EXISTING CONDITIONS

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EXISTING CONDITIONS

Improvements Under Consideration

- Capacity Improvements
- Access Improvements
- Bike/Pedestrian Improvements
- Transit Improvements

SCREENING

Screening Tools

- FHWA Proven Safety Countermeasures
- Crash Reduction Factor (CRF)
  - Expected percentage decrease in crashes due to a countermeasure
- Safety at Uncontrolled Crossing Locations
  - FHWA Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations
- Traffic Operations Analysis Results
- Signal Warrant Analysis

Table 1. Application of pedestrian crash countermeasures by roadway feature.

Roadway Configuration	Posted Speed Limit and AADT								
	Vehicle AADT <9,000			Vehicle AADT 9,000–15,000			Vehicle AADT >15,000		
	≤30 mph	35 mph	≥40 mph	≤30 mph	35 mph	≥40 mph	≤30 mph	35 mph	≥40 mph
2 lanes (1 lane in each direction)	● 2 4 5 6	● 5 6 7 9	○ 5 6 ● ●	● 4 5 6	● 5 6 7 9	○ 5 6 ● ●	● 4 5 6 7 9	○ 5 6 7 9	○ 5 6 ●
3 lanes with raised median (1 lane in each direction)	● 2 3 4 5	● # 5 7 9	○ # 5 ● ●	○ 3 4 5 7 9	○ # 5 ● ●	○ # 5 ● ●	○ # 4 5 7 9	○ # 5 ● ●	○ # 5 ●
3 lanes w/o raised median (1 lane in each direction with a two-way left-turn lane)	● 2 3 4 5 6 7 9	● # 5 6 7 9	○ # 5 6 ●	○ 3 4 5 6 7 9	○ # 5 6 ● ●	○ # 5 6 ●	○ # 4 5 6 7 9	○ # 5 6 ●	○ # 5 6
4+ lanes with raised median (2 or more lanes in each direction)	● # 5 7 8 9	● # 5 7 8 9	○ # 5 8 ●	○ # 5 7 8 9	○ # 5 ● 8 ●	○ # 5 8 ●	○ # 5 ● 8 ●	○ # 5 8 ●	○ # 5 8 ●
4+ lanes w/o raised median (2 or more lanes in each direction)	● # 5 6 7 8 9	○ # 5 6 7 8 9	○ # 5 6 8 ●	○ # 5 6 7 8 9	○ # 5 6 ● 8 ●	○ # 5 6 8 ●	○ # 5 6 ● 8 ●	○ # 5 6 8 ●	○ # 5 6 8 ●

Given the set of conditions in a cell,

- # Signifies that the countermeasure is a candidate treatment at a marked uncontrolled crossing location.
- ● Signifies that the countermeasure should always be considered, but not mandated or required, based upon engineering judgment at a marked uncontrolled crossing location.
- ○ Signifies that crosswalk visibility enhancements should always occur in conjunction with other identified countermeasures.*

The absence of a number signifies that the countermeasure is generally not an appropriate treatment, but exceptions may be considered following engineering judgment.

1 High-visibility crosswalk markings, parking restrictions on crosswalk approach, adequate nighttime lighting levels, and crossing warning signs
2 Raised crosswalk
3 Advance Yield Here To (Stop Here For) Pedestrians sign and yield (stop) line
4 In-Street Pedestrian Crossing sign
5 Curb extension
6 Pedestrian refuge island
7 Rectangular Rapid-Flashing Beacon (RRFB)**
8 Road Diet
9 Pedestrian Hybrid Beacon (PHB)**

Source: FHWA Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations

VEHICLES

Traffic Operations

- Level of Service
  - Achieve LOS D or better for AM & PM peak
  - Consider LOS during school peak
- Existing Signal Locations
  - US 50 (just outside project limits)
  - H-Mart Entrance
  - Orchard Street
- Potential Intersection Improvements
  - Carol Street
    - Does not meet warrants for signal
    - Looking at alternative safety measures

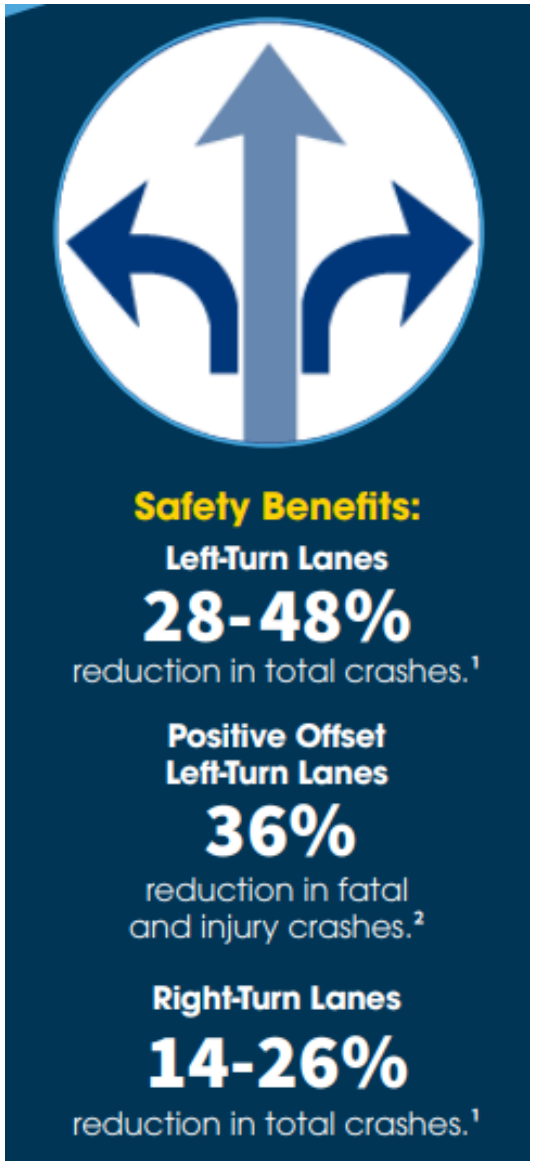
Existing Signalized Intersection at H-Mart Entrance – Looking to the North (Source: Google Maps)

Existing Signalized Intersection at Orchard Street – Looking to the North (Source: Google Maps)

VEHICLES

Capacity / Safety

- Replace two-way left turn lane with median & individual left turn lanes
  - CRF: reduces angle crashes by 35%
- Add SB right turn lanes
  - Individual right turn lanes where possible
  - Allows for pavement removal / green space
  - CRF: reduces rear-end crashes by 30%
- Lengthening existing turn lanes
  - Allow for longer queues
  - Reduce speed differential
- Widening to add a second through lane NB



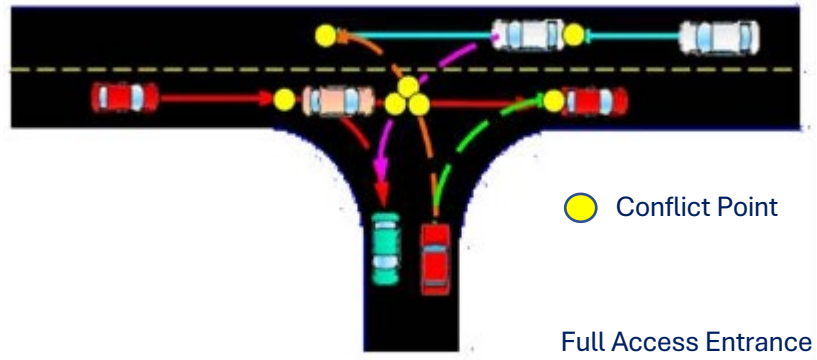
Source: FHWA Proven Safety Countermeasures

VEHICLES

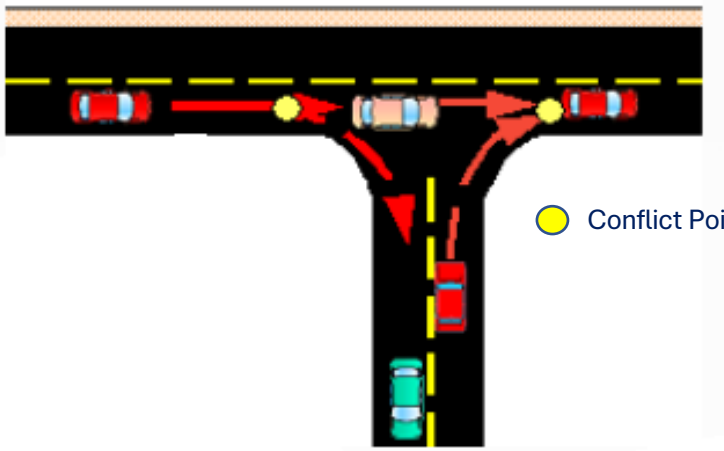
Access

- Reduce Conflict Points
  - Consolidate driveways where possible
    - 2 potential locations
  - Convert full access driveways to right-in-right out configuration
    - CRF: reduces all crash types by 45%
    - 2 potential locations
- Shift entrances to create 4-leg signalized intersections
  - Relocate entrances that are too close to signals
  - 2 potential locations

CONFLICT POINTS AT DRIVEWAY



Full Access Entrance



Right-in-Right-Out Entrance

Image Source: Wisconsin DOT

PEDESTRIAN / CYCLISTS

Considerations

- Corridor meets traffic volume threshold for bikes to be separated
- Proximity to Schools & Parks
  - All ages and abilities facilities
- Sidewalk on one side
- Sidepath / SUP on one side

Sidewalk Rendering

Sidepath Rendering

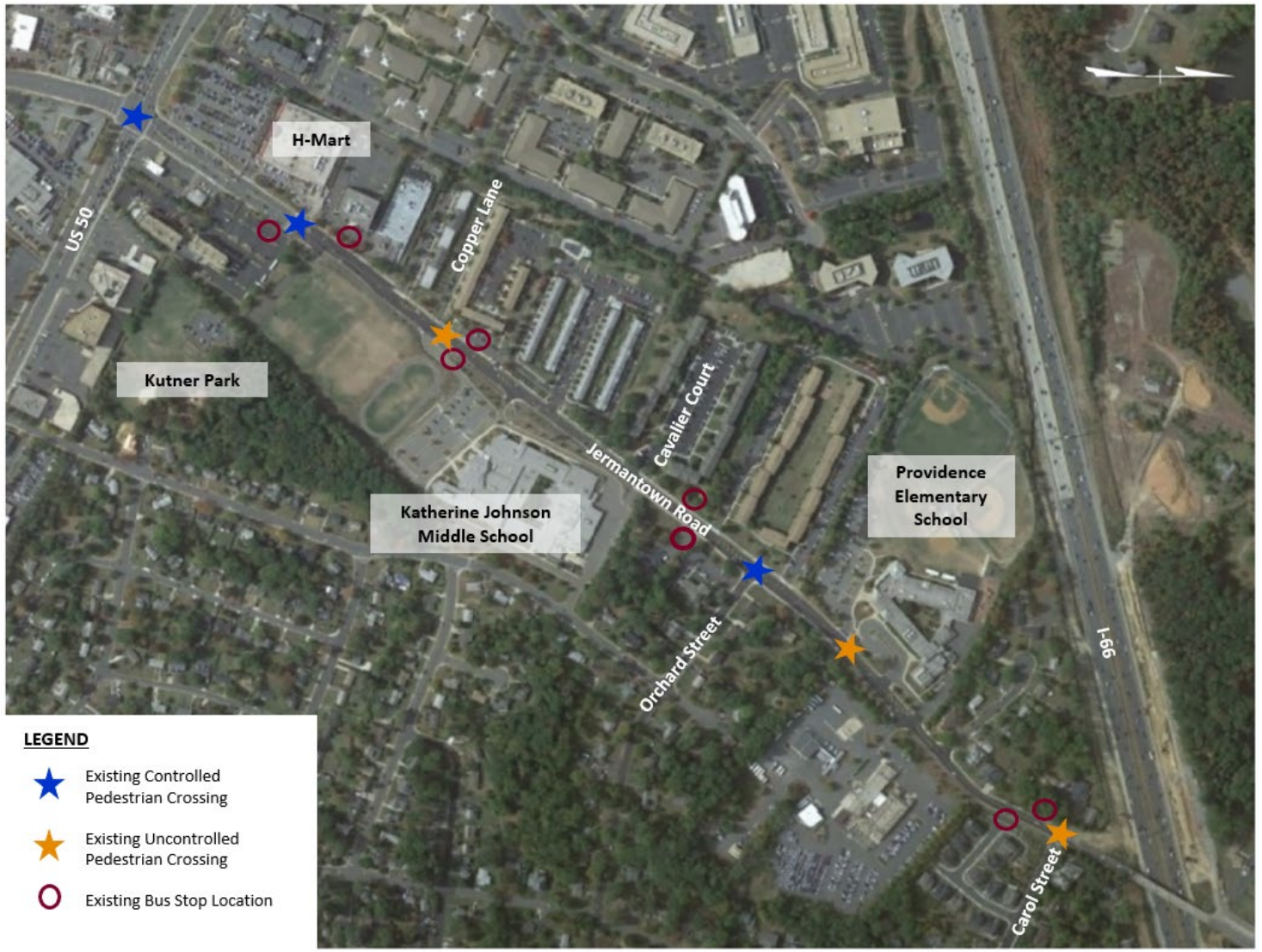
Sidepath / SUP serves both bicyclists and pedestrians

Sidewalk serves pedestrians

PEDESTRIAN / CYCLISTS

Crossing Considerations

- Signalized (Controlled) Locations
  - H-Mart Entrance / Kutner Park
  - Orchard Street
- Unsignalized (Uncontrolled) Locations
  - Increase signing
  - Consider Higher Visibility Markings
  - Consider Flashing Beacons (RRFBs)
- Consider proximity of crossings to bus stops



CONSIDERATION: RRFB

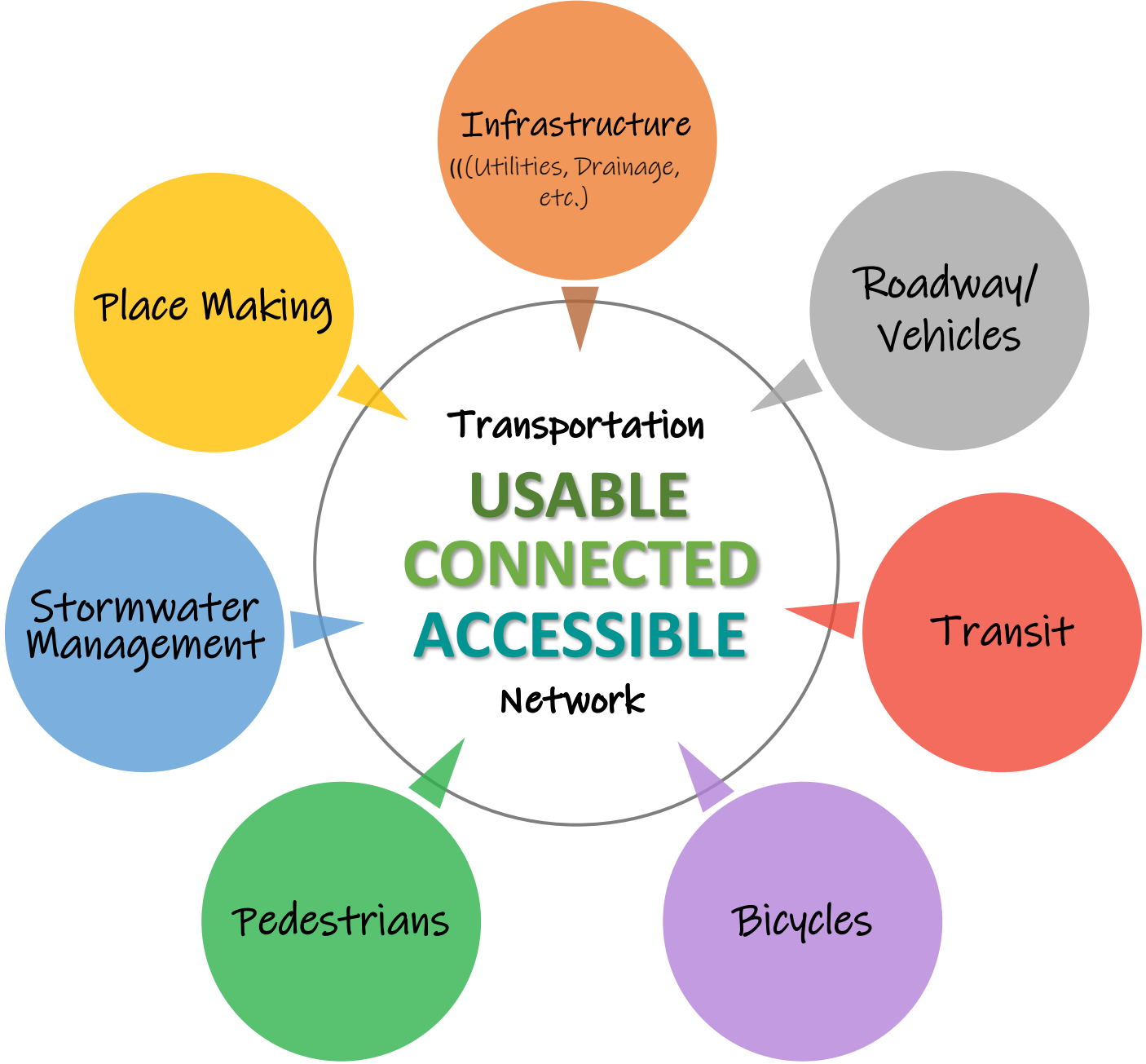
Rectangular Rapid Flashing Beacon (RRFB)

Project Status & Next Steps

PROJECT STATUS

Current Work & Next Steps

- Concept Development
- Project Outreach underway
  - Schools & City Parks
  - Impacted Commercial & Multi-Family Property Owners
- Coordination with I-66 Team on-going
- Environmental Assessment beginning
- Public Engagement Meeting – May 31



Questions?