TOWN OF Herndon VIRGINIA

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MEMORANDUM

To: John Irish
Acting Director, Public Works - Engineering

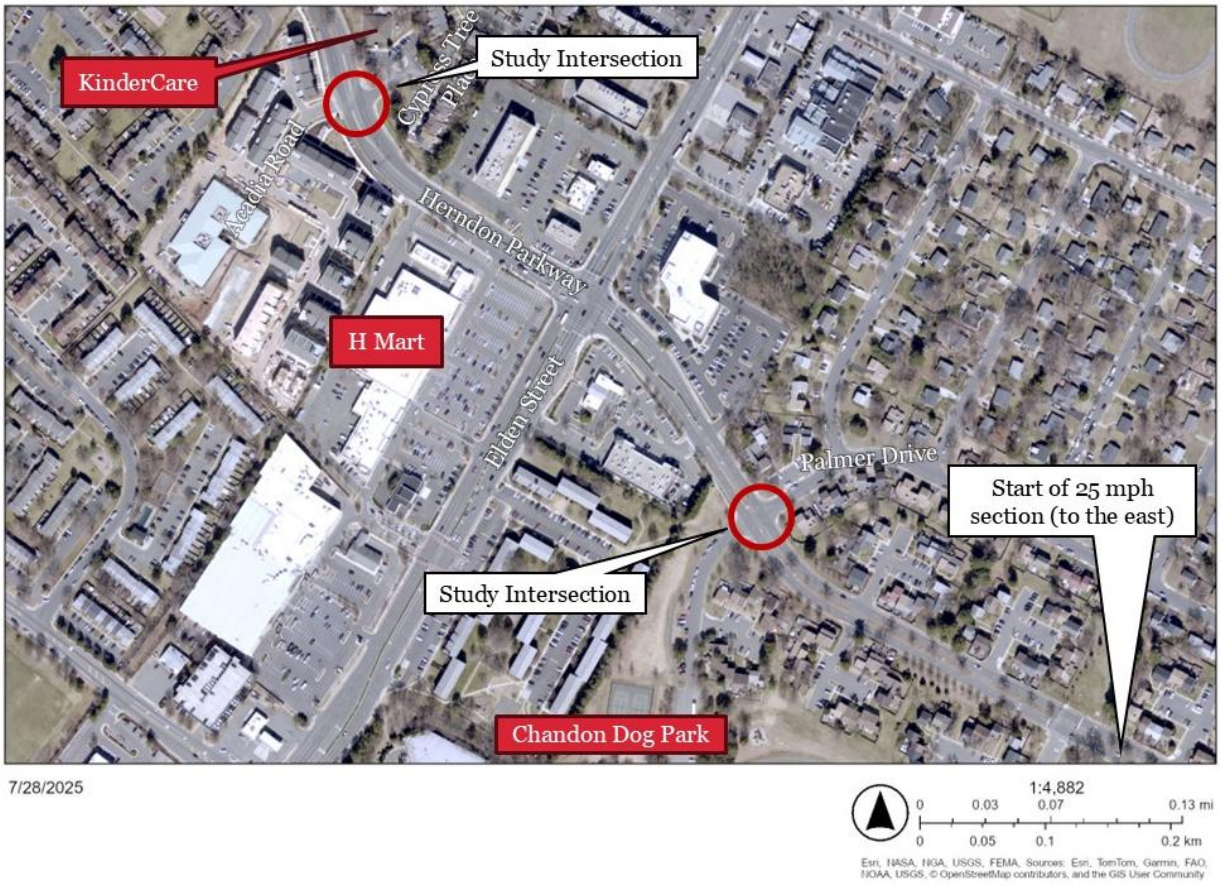
From: Mike Shindledecker
Transportation Engineer

Date: July 2025

Subject: Herndon Parkway at Palmer Drive (west)
Herndon Parkway at Cypress Tree Place/Acadia Road

This memorandum documents a review of conditions along Herndon Parkway in the vicinity of Palmer Drive (west) and Cypress Tree Place/Acadia Road. This assessment is in response to resident requests at both locations due to concerns related to pedestrian and motorist safety. **Figure 1** below indicates the location of the study intersections and nearby roadways/places.

Figure 1: Study Area Intersections



Palmer Drive

A resident called the Town's Department of Public Works in August 2024, commenting that pedestrians regularly cross Herndon Parkway at Palmer Drive (west) in order to access Chandon Park and connecting trail. This section documents an assessment of the subject location.

Existing Conditions

Herndon Parkway is a 4-lane, divided urban arterial. This segment of the facility carries approximately 8,650 vehicles per day based on 2022 continuous count records and has a posted speed limit of 35 mph. Palmer Drive is a 2-lane neighborhood street and intersects Herndon Parkway in two locations; the subject of this memorandum being the western intersection. The intersection of Palmer Drive and Herndon Parkway is stop-controlled on the Palmer Drive approaches and uncontrolled for the Herndon Parkway approach. Only the westbound Herndon Parkway approach includes a dedicated left turn lane.

Nearby land use at the subject intersection consists of the following:

- Commercial and retail businesses to the west along Elden Street; includes grocery, restaurant, services, child care, and other pedestrian-generating establishments
- Medium- to low-density residential to the north and east (predominately duplex homes and townhomes with some multi-family buildings to the west)
- Chanden Dog Park to the south (connected via shaved use path)

Observations at the subject location indicate the following:

- Stopping sight distance along westbound Herndon Parkway to southbound Palmer Drive is insufficient based on posted speeds (approximately 230 feet on a required 250-foot minimum).
- Intersection sight distance is inadequate along Herndon Parkway in the westbound direction (230 feet on a 415-foot minimum to the left).
- Pedestrians regularly attempt to cross Herndon Parkway at this location based on observations and desire paths through the median.
- Four overhead cobra-head style street lights provide illumination at the subject intersection.
- The nearest crosswalks of Herndon Parkway are as follows:
    - 680 feet to the west at Elden Street
    - 975 feet to the east at Campbell Way
- The speed limit of Herndon Parkway to the east of the subject location is posted as 25 mph between Campbell Way and Van Buren Street

Furthermore, Department of Public Works staff met with a Herndon Police Department officer to discuss the subject location. HPD staff noted the following:

- Measured vehicle speeds are often in excess of posted speeds, with regular speed enforcement activities occurring in the subject area.
- Motorists appear to accelerate from the 25 mph section of Herndon Parkway into the 35 mph (subject) section in a manner that indicates "making up for lost time" by traveling at a higher speed than posted.
- Pedestrian activity is regular in this area, including along Herndon Parkway west of Elden Street through Early Fall Court/Summerfield Drive (east).

Crash Data

Crash data indicates that five crashes occurred over the previous five years. None of the crashes involved pedestrians; however, two serious injury pedestrian crashes occurred in 2017. Based on systemic factors, this location is anticipated to be at higher risk of pedestrian crashes in the future without improvements. Note that vehicular crash data suggests that there is a trend in eastbound rear-end crashes, presumably

resulting from the lack of eastbound left-turn lane and unexpected deceleration of turning vehicles in the inside eastbound travel lane.

Speed Data

Existing conditions speed data was collected using radar between 8:00 AM on June 23, 2025 through 11:00 AM on June 30, 2025 between Palmer Drive and the driveway of 950 Herndon Parkway. The posted speed limit is 35 mph. The following data was recorded:

- Eastbound:
  - Operating (85th percentile) speed: 38 mph
  - Median Speed: 33 mph
  - Pace Speed: 28 mph to 38 mph
- Westbound:
  - Operating (85th percentile) speed: 37 mph
  - Median Speed: 31 mph
  - Pace Speed: 27 mph to 37 mph

While operating speeds are in excess of posted speed limit, the data does necessitate mitigation of vehicles speeds with traffic calming.

Discussion

Several factors contribute to potential safety concerns along Herndon Parkway near Palmer Drive:

- Roadway geometry in this area is complex, consisting of closely-spaced horizontal curves, regular intersections/driveways, and land uses which closely abut the right-of-way.
- There are numerous pedestrian generators in the immediate vicinity of Plamer Drive and Herndon Parkway; longer spacing between pedestrian crosswalks may encourage crossings are unmarked locations.
- A sudden change in speed limit and land uses may not allow drivers sufficient time to adjust behaviors from the lower-density residential area into the higher-density commercial/retail area; as such, roadway users may be slower to react to unexpected conditions such as lane changes, pedestrians, or turning vehicles.

The Town's Standards for *Traffic Calming and Crosswalks* indicate that a crosswalk may be warranted at the intersection of Herndon Parkway and Palmer Drive based on the following:

- Distance to adjacent crosswalks
- Pedestrian demand at the location
- Adjacent and nearby land uses
- Inadequate visibility

However, the configuration of Herndon Parkway may limit the configuration of crosswalk that may be safely and effectively installed. Under current conditions, standards recommend a combination of the following enhancements for a crosswalk at a multi-lane location with a posted 35 mph speed limit or below:

- High-visibility markings and enhanced signage
- Advanced signage
- Rectangular Rapid Flashing Beacons
- Road Diet
- Pedestrian Hybrid Beacon

However, limited visibility may be difficult or costly to modify given the roadway alignment of Herndon Parkway near the subject location.

The above factors suggest that modifications to the roadway speed limit would support installation of a crosswalk by reducing required sight distance and lowering potential exposure of higher-speed vehicles to pedestrians at the subject location.

Cypress Tree Place/Acadia Road

A resident submitted an email to the Town's Clerk in March 2025. The email indicated that the resident was concerned for both pedestrian and motorist safety at the intersection of Herndon Parkway and Cypress Tree Place/Acadia Road. The resident indicated that the new construction south of Herndon Parkway would likely increase the potential severity of crashes and worsen intersection operations. This section documents a study in response to the resident's concerns.

Existing Conditions

Herndon Parkway is a 4-lane, divided urban arterial. This segment of the facility carries approximately 12,600 vehicles per day based on 2022 continuous count records and has a posted speed limit of 35 mph. Both Cypress Tree Place and Acadia Road are 2-lane neighborhood streets serving residential developments. The intersection of Cypress Tree Place and Herndon Parkway is stop-controlled on the Cypress Tree Place/Acadia Road approaches and uncontrolled for the Herndon Parkway approach. Eastbound and westbound Herndon Parkway approaches include dedicated left turn lanes. Only the westbound approach of Herndon Parkway includes a dedicated right turn lane into Cypress Tree Place.

Nearby land use at the subject intersection consists of the following:

- Medium-density residential to the north and south (predominately townhomes)
- A daycare facility on the northwest quadrant of the intersection
- Commercial and retail businesses to the east along Elden Street; includes grocery, restaurant, services, child care, and other pedestrian-generating establishments

Observations at the subject location indicate the following:

- Stopping sight distance along Herndon Parkway is adequate based on posted speeds (approximately 255 feet on a required 250-foot minimum).
- Intersection sight distance is inadequate along Herndon Parkway in the westbound direction (255 feet on a 415-foot minimum to the left).
- Overhead cobra-head style street lights provide illumination at the subject intersection.
- The nearest crosswalks of Herndon Parkway are as follows:
    - 850 feet to the west at Early Fall Court
    - 750 feet to the east at Elden Street
- The geometry of Herndon Parkway at the intersection is a reverse curve (also known as an s-curve). This is typically a more challenging maneuver for motorists and limits forward sight distance.

Crash Data

Crash data indicates that five crashes occurred at Herndon Parkway and Cypress Tree Place/Acadia Road over the previous five years. None of the crashes involved pedestrians and all resulted in property damage only. Crash types varied without discernable pattern. As such, the subject intersection does not indicate a crash-based historical need for mitigation.

However, there have been 19 crashes clustered at the shopping center driveways 300 feet to the east over the previous 5 years. Data indicates 13 of the crashes were angle crashes, and 11 crashes resulted in injury. While this is not a direct impact to the subject intersection, the pattern of crashes indicates there is a geometric or operational characteristic to this segment of roadway that negatively impacts motorist safety.

Speed Data

Existing conditions speed data was collected using radar between 8:00 AM on June 23, 2025 through 11:00 AM on June 30, 2025 at approximately 1178 Herndon Parkway. The posted speed limit is 35 mph. The following data was recorded:

- Eastbound:
  - Operating (85th percentile) speed: 40 mph
  - Median Speed: 35 mph
  - Pace Speed: 30 mph to 40 mph
- Westbound:
  - Operating (85th percentile) speed: 37 mph
  - Median Speed: 33 mph
  - Pace Speed: 28 mph to 38 mph

While operating speeds are in excess of posted speed limit, the data does necessitate mitigation of vehicles speeds with traffic calming.

Planned Development

As of the publication of this memorandum, a residential development is under construction along the southern side of Herndon Parkway. This development consists of townhomes and stacked townhomes to replace a previously-existing commercial office park.

The development's 2020 traffic study indicates that the traffic volumes estimated as part of the development do not meet thresholds for the installation of a traffic signal per VDOT and industry guidance. However, results indicate that intersection level of service (measured by average vehicle delay) at Herndon Parkway and Cypress Tree Lane/Acadia Road are below Town thresholds; however, as the volume of vehicles are below by-right thresholds, no improvements were proposed by the applicant.

Results indicate that vehicles on the minor street approaches (Cypress tree Lane and Acadia Road) may experience greater delays that typically experienced at other intersections within the Town.

Discussion

The intersection of Herndon Parkway and Cypress Tree Place/Acadia Road has several factors that contribute to safety concerns:

- Existing reverse curve geometry of Herndon Parkway at this intersection limits intersection sight distance and can be challenging for motorists to navigate.
- Crash data does not indicate a historical problem at the existing development, but an adjacent intersection may suggest potential future challenges due to similar roadway characteristics.
- The eastbound 85th percentile speed of 40 mph suggests that safety may be improved with a reduction of operating speeds.
- Lack of destinations/generators on either side of the street limit potential for pedestrian crossing.
- Children are often present in the area due to the adjacent preschool.
- Conversion of commercial property to residential property may make turns to and from Acadia Road more regular (though less intense during peak commuting periods).

The above factors indicate that while there are not immediately correctable conditions, there is a higher likelihood that a future crash could occur at the subject intersection. As such, proactive modifications may limit risk to motorists.

Recommendations

Based on the observations, data, roadway geometry, police experience, and standards published by the Town of Herndon, the following is recommended for the intersection of Herndon Parkway with Palmer Drive (west):

- Reduce the speed limit of Herndon Parkway to 25 mph from Campbell Way in the east (existing 25 mph speed limit area) to Early Fall Court/Summerfield Drive (west).
- Initiate a capital project to install a crosswalk of Herndon Parkway at Palmer Drive. Design features should include:
    - High visibility crosswalk markings
    - Enhanced crosswalk signage
    - Advance crosswalk signage
    - Adequate pedestrian refuge within the Herndon Parkway median
    - Either a rapid flashing rectangular beacon OR a pedestrian hybrid beacon, with push-button activation within the median

The above speed limit reduction will also improve conditions at the intersection of Herndon Parkway and Cypress Tree Place/Acadia Road by providing additional time for side street turns to assess and complete maneuvers. This will reduce both the likelihood and severity of crashes at the intersection.