

Chapter II

Existing Conditions

This chapter provides a general description of the study corridor, an overview of historic considerations, and traffic related data including volumes, levels of service, crash history, and speed history.

Corridor Description

Hunter Mill Road (Route 674) is a 7.2-mile roadway in Fairfax County, Virginia beginning at Baron Cameron Road (Route 606) to the north and Chain Bridge Road (State Route 123) to the south (**Figure 1**). The primarily 2-lane road is divided by an interchange with the Dulles Toll Road (State Route 267). The road includes four (4) magisterial districts.

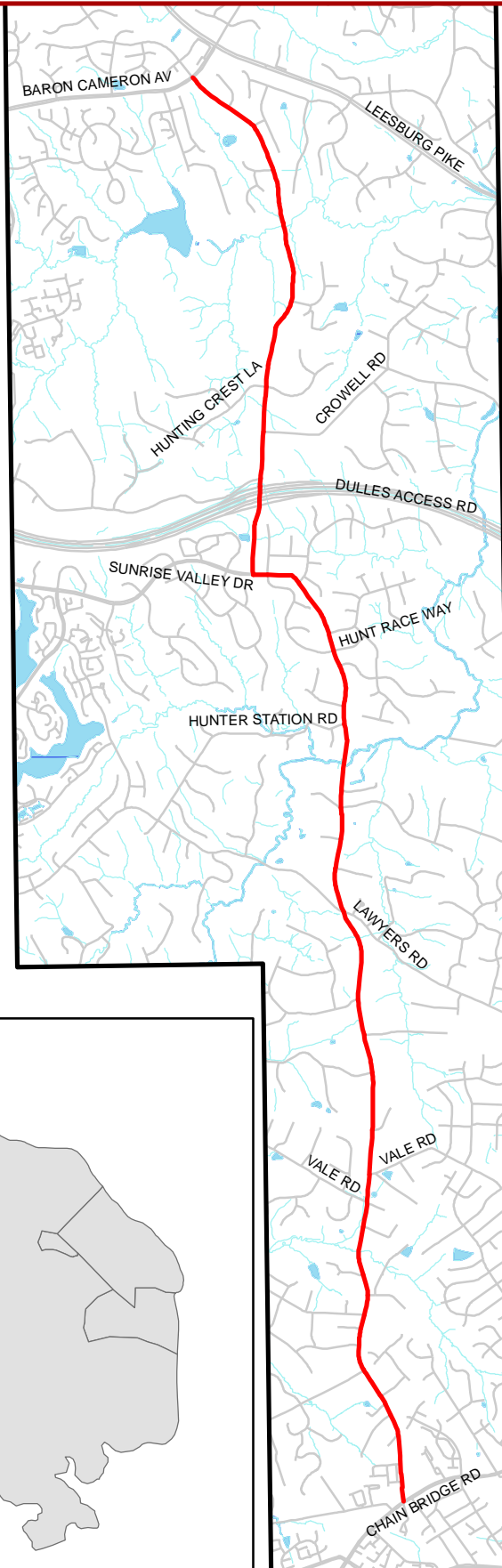
The road visually can be characterized as a rolling 2-lane (plus shoulders) rural road with significant horizontal and vertical curves and frequent locations of both natural and manufactured (such as bridge structures) features close to the roadway edge. The ends and the Dulles Toll Road area are widened and realigned, with multiple lane sections of roadway. Posted speed is 35 mph. Except for a small section at the southern end of Hunter Mill Road, there are no sidewalks, nor are there any dedicated lanes for cyclists.

Corridor right-of-way typically is 50-feet, but there are sporadically located wider sections of typically 100 feet. It is apparent that these additional right-of-way sections were acquired by the County as isolated development along the corridor occurred.





Site reviews undertaken during peak and off-peak periods found the following conditions:

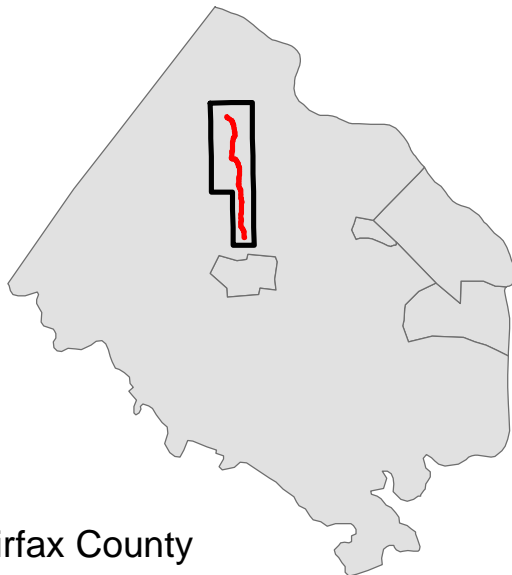
- Limited sight lines due to a sharp crest or a tight curve in the road at multiple intersections;
- Many drivers were not yielding to trail users at the W&OD trail crossing;
- Pedestrians observed during field reviews walking on road shoulder with little separation from traffic;
- Traffic flow during the peak hours restricts access into and out of driveways and side streets, many of which serve cul-de-sac neighborhoods; and
- A few trees had been hit by vehicles running off the road.





Legend

-  Hunter Mill Rd (Rt. 674)
-  Street Centerline
-  River, Stream, Creek
-  Lake, Pond, Stream



Fairfax County



STUDY AREA

Hunter Mill Road Traffic Calming Study

Fairfax County, Virginia

0 875 1,750 3,500 5,250 Feet

FIGURE

1

Historic and Scenic Features

Most striking is the rural Virginia rolling countryside appearance of the corridor, reminiscent perhaps of how most of the roads in the area were 100 years ago. These circumstances have contributed to the Virginia Byway designation of the corridor.

Perhaps more significant than the corridor's natural features is its historic heritage. For this reason, it has been deemed "eligible for nomination to the Virginia and National registers", as stated in the Virginia Department of Historic Resources letter (**Appendix C**).

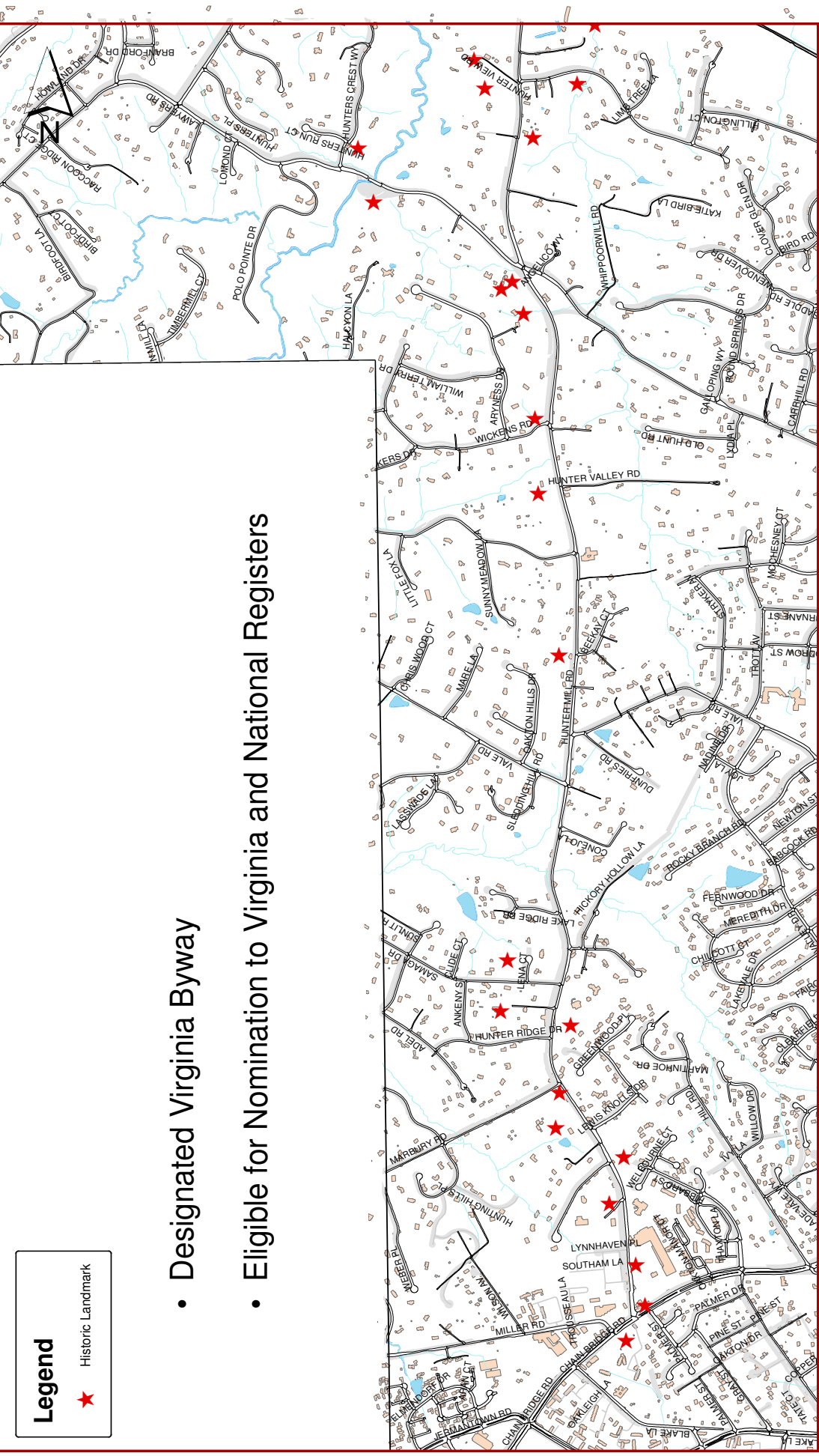


Figures 2 and 3 locate over 50 historic features and sites in the corridor. A description of these sites is included in **Appendix C**.

Appendix E provides a comprehensive report of the historic significance of the corridor. Key elements of this report include the following:

Summary of Historic Features

- *Hunter Mill Road witnessed Civil War raids, pickets, marches, burnings, encampments, hospitals and staging areas. Both Union forces and Confederates from General JEB Stuart to Col. John Mosby and his Raiders focused on this area as a strategic point equidistant from Washington and Bull Run, a useful highpoint for vistas, and of value due to the railroad tracks and station there.*
- *Hunter Mill Road linked Oakton (f/k/a Flint Hill) to the important turnpike system in Northern Virginia. Chronicles of the area report that a portion of the route originally surveyed for the Leesburg Turnpike Road (Route 7) followed what became Hunter Mill Road via Cartersville, Hunter, and Oakton.*



- Designated Virginia Byway
- Eligible for Nomination to Virginia and National Registers

Legend

★ Historic Landmark



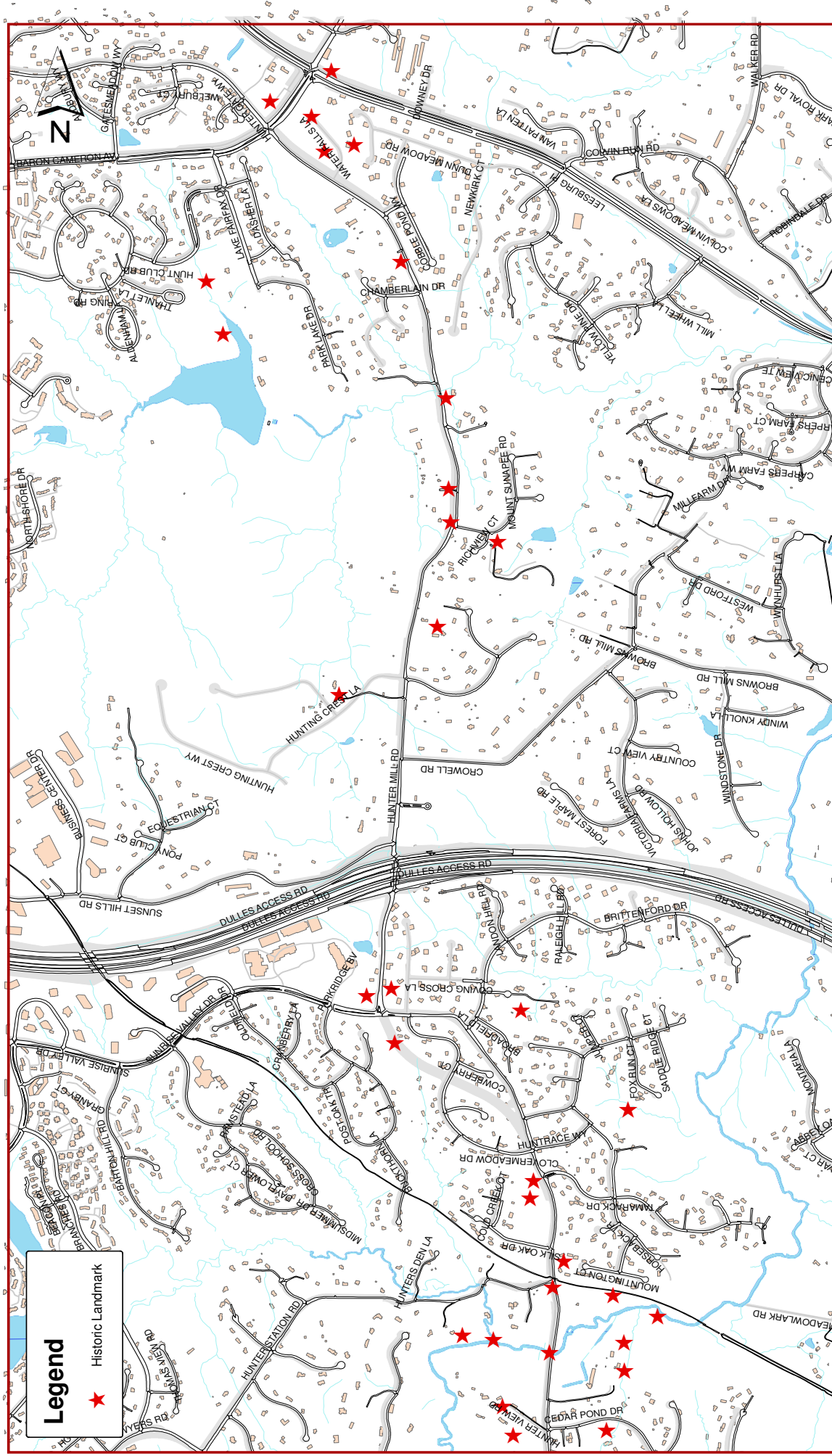
HISTORIC LANDMARKS

Hunter Mill Road Traffic Calming Study

Fairfax County, Virginia

FIGURE

2



HISTORIC LANDMARKS

Hunter Mill Road Traffic Calming Study

Fairfax County, Virginia

- *The Alexandria, Loudoun, and Hampshire Railroad featured an important station in the hamlet of Hunter, near Hunter's Post Office and the nearby mill at Difficult Run. Thus, Hunter hamlet was a regional focus for settlers and merchants seeking to profit from commerce with distant parts of the Republic, and for travelers needing to reach Washington or Leesburg by rail in an era before paved roads. The rail station became an important focus of troop activities during the Civil War, particularly in tandem with topological features that gave the area special value to both Union and Confederate forces.*
- *The Cartersville Baptist Church at 1727 Hunter Mill Road reflects one of the most vibrant traditions of black Baptist churches in Virginia. Oral histories indicate the Church was founded in 1863 and later served as a school for children who lived in the nearby hamlets of Cartersville and Woodentown.*
- *Houses and other buildings on or near Hunter Mill Road hold key places in regional history. For example, the oldest house in the entire County of Fairfax may well be a hunting outpost that the Sixth Lord Fairfax built in 1747, which remains as a Potomac Valley dwelling residence. A house near the gristmill was one of the earliest miller's residences in the area before it was burned in the War. A second miller's house nearby did double-duty as a hospital for Union cavalry.*

Traffic Volumes

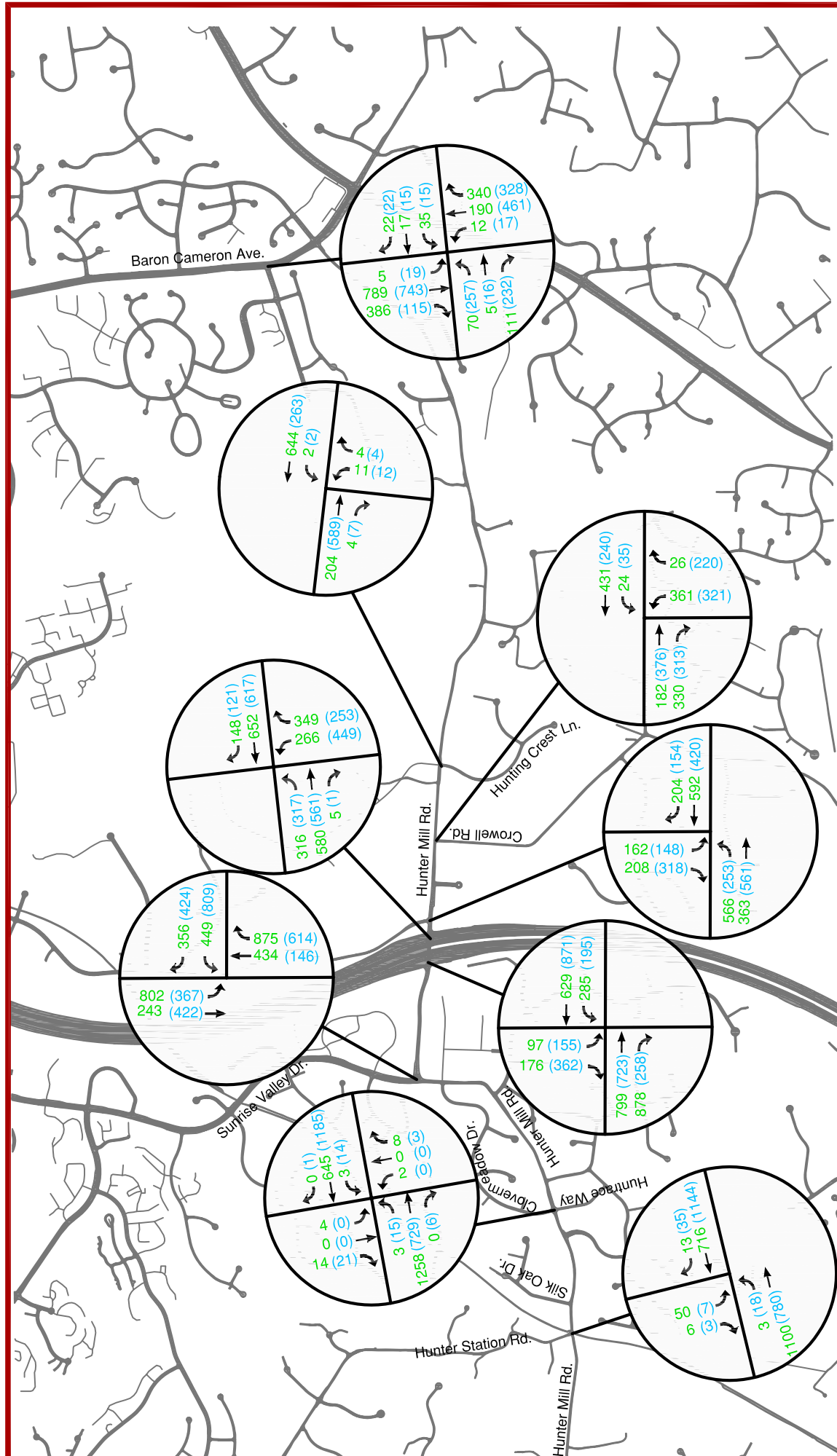
Current traffic data were obtained from Fairfax County, and data collected by the consultants to fill in data voids. Daily volumes – 2-way, 24-hour – typically range between 16,000 and 18,000 vehicles. The similar weekday peak hour volumes typically vary between 1,500 and 1,900 vehicles.

AM and PM peak hour weekday intersection vehicle turning movement counts were collected and summarized for 12 locations, and are presented in **Figures 4** and **5**. Most of these counts were collected between late 2005 and early 2006. These volumes are important because they provide the basis of the future traffic volumes used in the formal traffic analysis of alternative transportation concepts evaluated.

Current Levels of Service

Computer traffic simulations can estimate the average driver delay experienced at an intersection based on traffic volumes, intersection geometrics and lanes, and type operation (traffic signal, STOP sign, etc.). The resulting “Level of Service”, or LOS, are expressed in letter grades, like school grades: “A” is excellent (minimal driver delay) to “F”, which is failure (congestion and excessive delay). **Table 1** provides a general definition of each service level.





CURRENT TRAFFIC VOLUMES

Hunter Mill Road Traffic Calming Study

Fairfax County, Virginia

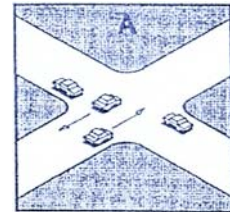
**L.O.S. Roadway Segments or
Controlled Access Highways**

Intersections

A

Free flow, low traffic density.

No vehicle waits longer than one signal indication.



B

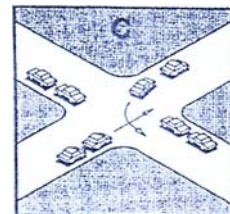
Delay is not unreasonable, stable traffic flow.

On a rare occasion motorists wait through more than one signal indication.

C

Stable condition, movements somewhat restricted due to higher volumes, but not objectionable for motorists.

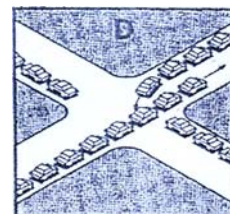
Intermittently drivers wait through more than one signal indication, and occasionally backups may develop behind left turning vehicles, traffic flow still stable and acceptable.



D

Movements more restricted, queues and delays may occur during short peaks, but lower demands occur often enough to permit clearing, thus preventing excessive backups.

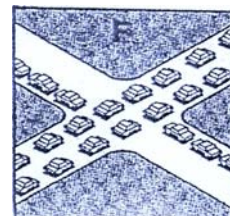
Delays at intersections may become extensive with some, especially left-turning vehicles waiting two or more signal indications, but enough cycles with lower demand occur to permit periodic clearance, thus preventing excessive back-ups.



E

Actual capacity of the roadway involves delay to all motorists due to congestion.

Very long queues may create lengthy delays, especially for left turning vehicles.



F

Forced flow with demand volumes greater than capacity resulting in complete congestion. Volumes drop to zero in extreme cases.

Backups from locations downstream restrict or prevent movement of vehicles out of approach creating a storage area during part or all of an hour.

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

Table 2 summarizes existing AM and PM peak hour LOS based on the previously summarized volumes and existing roadway conditions. The LOS varies from B and C levels to F conditions. The detailed computed generation LOS calculation sheets for these, and subsequent analyzes, are included in Appendix E.

Crash Data

Crash data for the three (3) years 2003-2005, are summarized in **Figures 6** and **7**. The most accidents, as expected, are concentrated at the intersections with traffic signals and at major STOP-controlled intersections. The significant number of mid-block rear end collisions are perhaps due to drivers stopping to make a left turn, from the one (1) through lane, into a cross street or residence driveway, then “rear ended” by a driver not prepared to stop.

Speed Data

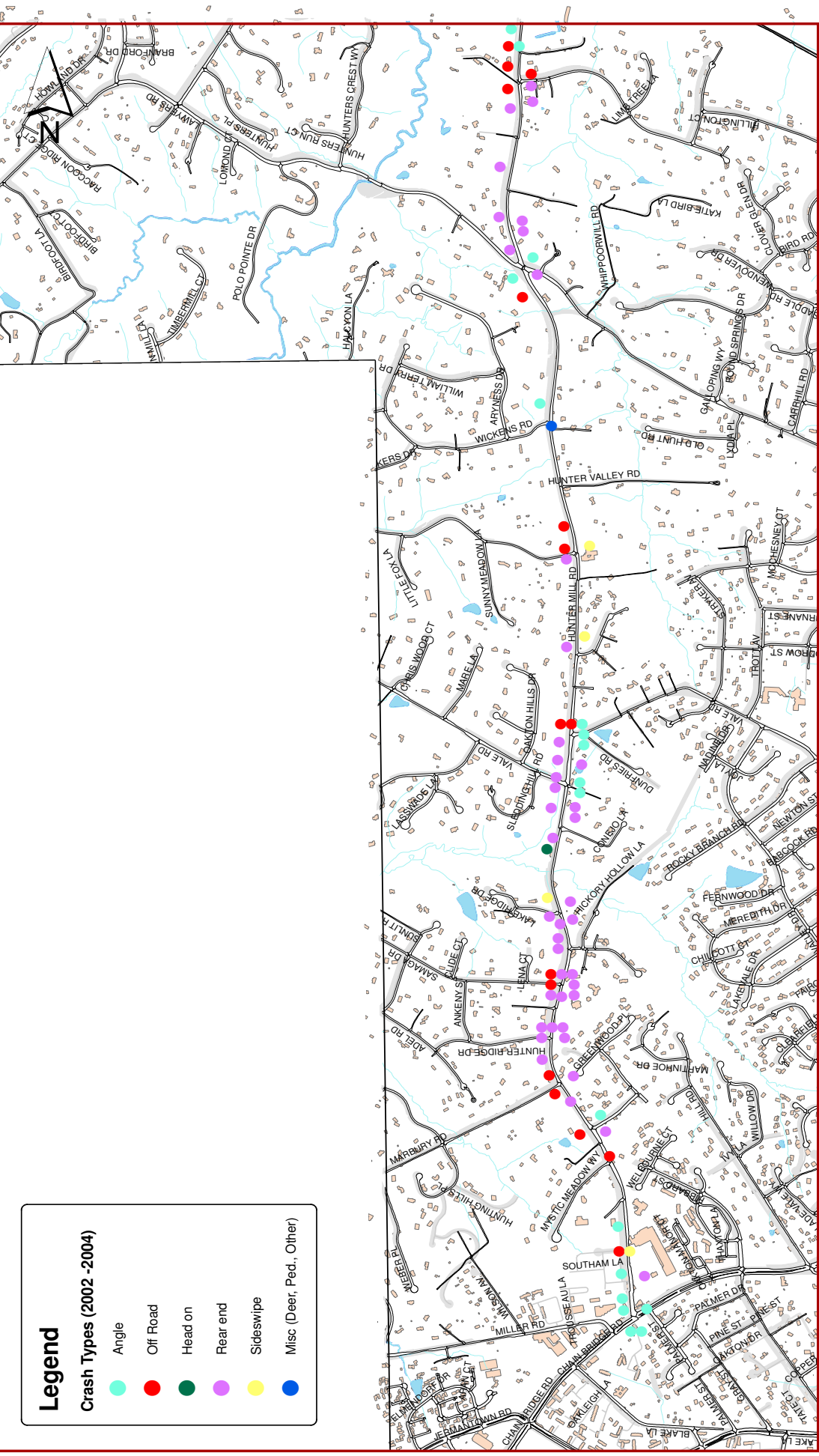
Figure 8 summarizes vehicle speed data collected by VDOT at three (3) Hunter Mill Road locations. The “85th percentile” speeds are noted at these locations, for each direction. The 85th percent of the drivers are traveling at or below is considered the maximum speed at which the average driver feels naturally comfortable driving. This is considered to be the optimal driving speed and, theoretically, the appropriate posted speed at which speed variations will be minimized. For example, if posted speeds are set arbitrarily too low, speed differentials will increase; often resulting in increased crash frequency.

The observed speeds just south of Lawyers Road match reasonably closely with the posted speed. Interestingly, the 85th percentile speeds in the vicinity of Clovermeadow Drive - 48.5 mph northbound and 46 mph southbound – are significantly higher than the posted 35 mph. This suggests that positive speed controls are a valid consideration.

Table 2
Current Conditions

INTERSECTION	LEVEL OF SERVICE	
	AM Peak	PM Peak
Baron Cameron Avenue	C	C
Hunting Crest Lane	C	C
Crowell Road	F	F
Sunset Hills Road	C	B
Dulles Toll Westbound Ramps	C	D
Dulles Toll Eastbound Ramps	C	C
Sunrise Valley Road	D	D
Hunt Race Way / Clovermeadow Drive (W/E) *	F/F	C/D
Hunter Station Road / W&OD Trail	F	F
Lawyers Road	E	E
Vale Road (North)	B	B
Vale Road (South)	C	B
Chain Bridge Road	F	F

*Note: * (W/E) indicates directional West and East, therefore "F/F" in AM Peak column means "F" LOS west traffic, and "F" LOS east traffic. Same for the PM Peak column.*



Legend
Crash Types (2002 -2004)
 Angle
 Off Road
 Head on
 Rear end
 Sideswipe
 Misc (Deer, Ped., Other)



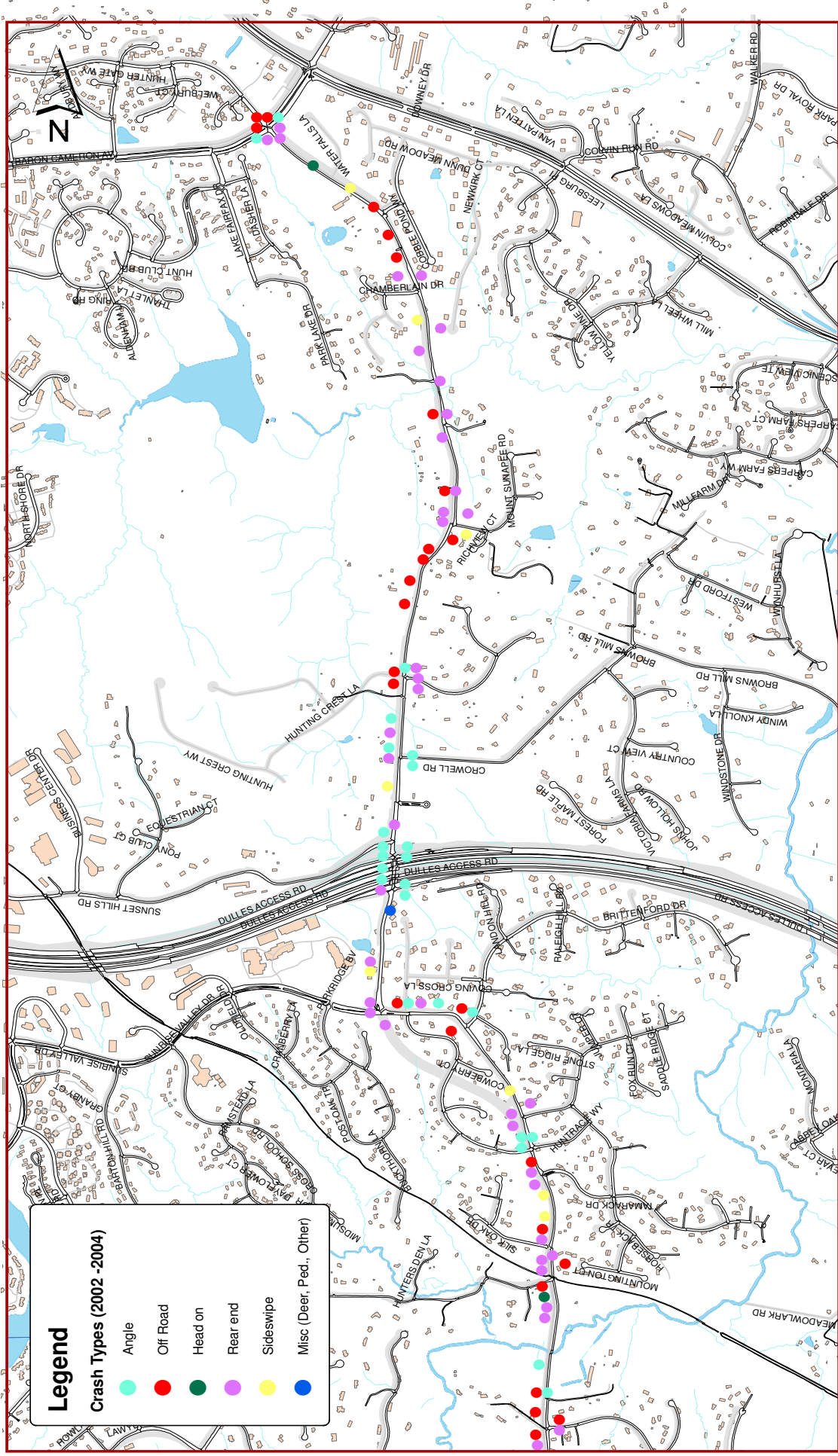
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Regional Commission

CRASH TRENDS

Hunter Mill Road Traffic Calming Study

Fairfax County, Virginia





Legend

Crash Types (2002 -2004)

Angle

Off Road

Head on

Rear end

Sideswipe

Misc (Deer, Ped., Other)



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 Draper Aden Associates
 Fairfax, Virginia 22031

CRASH TRENDS

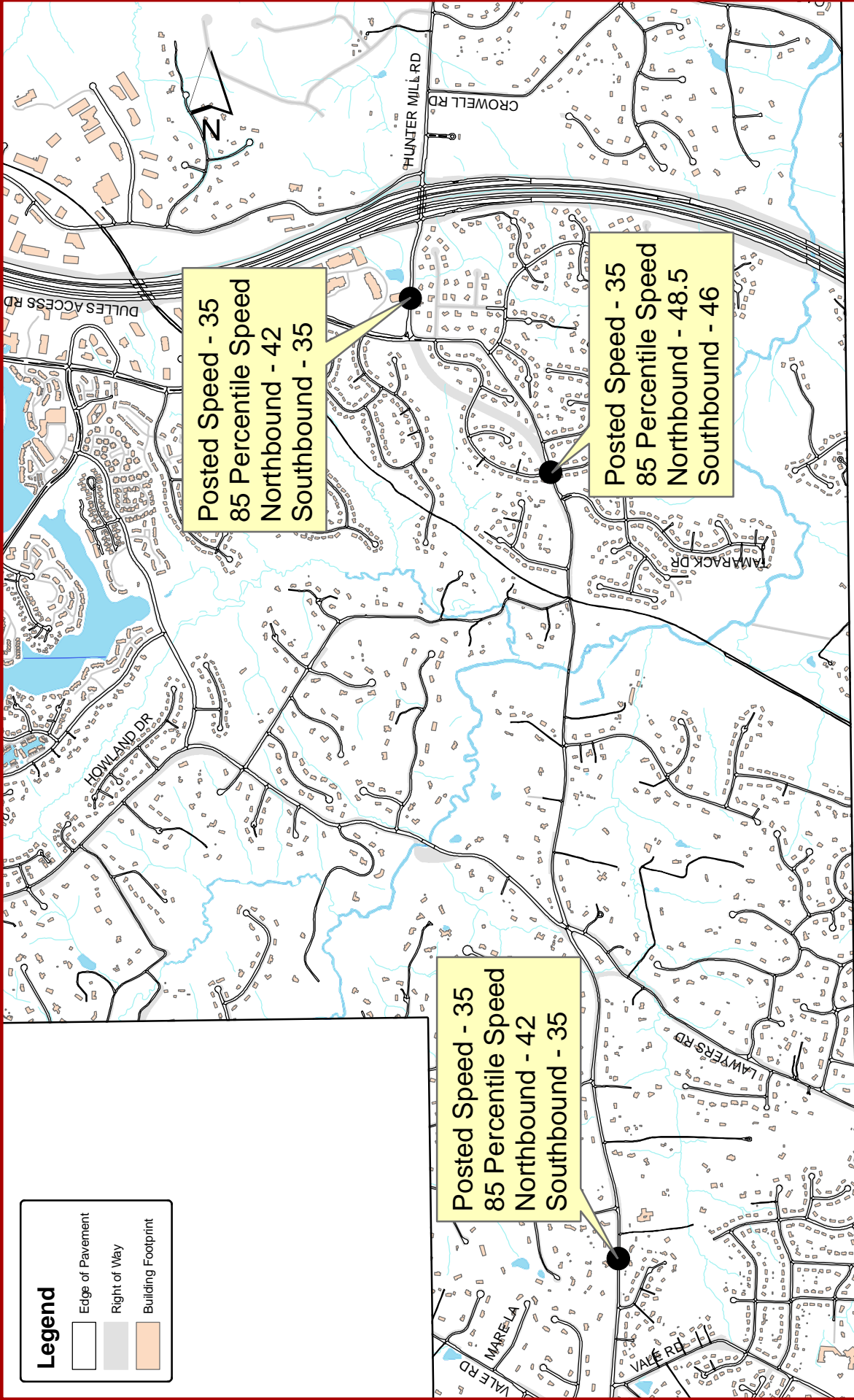
Hunter Mill Road Traffic Calming Study

Fairfax County, Virginia

FIGURE

7





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CURRENT SPEEDS

Hunter Mill Road Traffic Calming Study

Fairfax County, Virginia

FIGURE

8

