

County of Loudoun

Department of Transportation and Capital Infrastructure

MEMORANDUM

DATE: July 27, 2023

TO: Zach Pyle, Project Manager
Department of Planning and Zoning

THROUGH: Marie Pham, Transportation Planning Program Manager ^{MTP}
DTCI, Transportation Planning & Traffic Engineering Division

FROM: Mark Phillips, P.E., Transportation Planner ^{MP}
DTCI, Transportation Planning & Traffic Engineering Division

SUBJECT: **CMPT 2023-0006 – Dulles North High School & Elementary School
First Referral**

Background

This application seeks approval of a Commission Permit (CMPT) to allow a high school and elementary school to be built on the Watson Mountain Middle School site on a 173-acre property zoned Agricultural/Residential (A-3) and Transition Residential – 3 (TR3UBF). The subject property is located on the west side of Evergreen Mills Road (VA Route 621) and south of Red Hill Road (VA Route 617) at PIN 242-18-1260. Access to the site is proposed via a full access entrance on Red Hill Road, a right-in/right-out only entrance on Evergreen Mills Road, and a full access entrance on Evergreen Mills Road. The subject property is located within the Transition Policy Area and is subject to the regulations and policies of the Airport Impact Overlay District on the eastern portion of the property, Reservoir Protection Area on the northern portion of the property, and moderately steep slopes.

Department of Transportation and Capital Infrastructure (DTCI) review of this application is based on materials received from the Department of Planning and Zoning on July 7, 2023, including (1) an Information Sheet, dated July 7, 2023; (2) a Statement of Justification prepared by the Applicant, dated June 27, 2023; (3) a Traffic Impact Study prepared by Gorove/Slade, dated June 6, 2023; and (4) and CMPT Plat prepared by J2 Engineers Inc., dated June 27, 2023.

Executive Summary

Upon resolution of Comments 1, 2, and 3, DTCI could support approval of this application as proposed with this submission.

Countywide Transportation Plan Arterial and Collector Roadways

The existing and planned transportation network is subject to the policies of the Loudoun County 2019 Countywide Transportation Plan (2019 CTP). Arterial and collector roadways in the vicinity of the proposed development are described below.

Evergreen Mills Road – VA Route 621

Watson Road (VA Route 860) to Arcola Mills Drive (VA Route 621)

	Existing Condition	Ultimate Condition
<i>Functional Classification (CTP)</i>	Major Collector	Major Collector
<i>Section/Lanes</i>	R2 / 2 Lanes	R4M(TT) / 4 Lanes
<i>Bicycle and Pedestrian Facilities</i>	None	10-foot-wide shared use path on both sides of the roadway
<i>Speed Limit</i>	55 mph	N/A
<i>VDOT Traffic Counts</i>	11,400 (2019)	N/A
<i>Ultimate Improvements</i>	<i>Construct the 4-lane median divided section with 10-foot-wide shared use paths on both sides of the roadway.</i>	

Red Hill Road – VA Route 617

Watson Road (VA Route 860) to Evergreen Mills Road (VA Route 621)

	Existing Condition	Ultimate Condition
<i>Functional Classification (CTP)</i>	Minor Collector	Minor Collector
<i>Section/Lanes</i>	R2 / 2 Lanes	U2(T) / 2 Lanes along the property frontage and R2(T) / 2 Lanes west of the property
<i>Bicycle and Pedestrian Facilities</i>	None	10-foot-wide shared use path on one side of the roadway
<i>Speed Limit</i>	25 mph	N/A
<i>VDOT Traffic Counts</i>	700 (2019)	N/A
<i>Ultimate Improvements</i>	<i>Construct the 10-foot-wide shared use path along one side of the roadway and provide curb and gutter along the property frontage.</i>	

Summary of Traffic Impact Study (TIS)

DTCI’s assessment of the Applicant’s traffic analysis and transportation impacts deriving from the proposed development is based on review the Applicant’s submission materials, existing and planned transportation facilities, and applicable County policies.

There is no existing development on the site.

A review of safety and operations for existing roadways in the vicinity of the site indicates that within the past three years, the following incidents were reported to the Loudoun County Sheriff's Office:

- Evergreen Mills Road at Black Branch Parkway: 2 crashes, including 1 crash resulting in injury.
- Evergreen Mills Road at Ryan Road/Red Hill Road: 11 crashes, including 2 crashes resulting in injury.
- Evergreen Mills Road at Creighton Road/Hartland Drive: 11 crashes, including 4 crashes resulting in injury.
- Hartland Drive at Everfield Drive: 4 crashes, including 1 crash resulting in injury.
- Ryan Road at Conservancy Drive: 1 crash resulting in injury.
- Ryan Road at Beaverdam Drive: 6 crashes, including 2 crashes resulting in injury.
- Red Hill Road at Stone School Lane: 2 crashes.

The Applicant submitted a Traffic Impact Study (TIS) dated June 6, 2023, analyzing the impacts of the proposed development of a 2,100-student high school and a 960-student elementary school under Interim Future 2028 and Total Future 2032 conditions at the following intersections:

- Evergreen Mills Road and Black Branch Parkway (Intersection #1)
- Evergreen Mills Road and Red Hill Road/Ryan Road (Intersection #2)
- Evergreen Mills Road and Hartland Drive/Creighton Road (Intersection #3)
- Hartland Drive and Everfield Drive (Intersection #4)
- Ryan Road and Conservancy Drive (Intersection #5)
- Ryan Road and Beaverdam Drive (Intersection #6)
- Stone School Lane and Red Hill Road (Intersection #7)
- Red Hill Road and Approved Site Entrance 1 (Full Access) (Future Conditions in TIS - Intersection #8)
- Evergreen Mills Road and Proposed Site Entrance 2 (RI/RO) (Future Conditions in TIS - Intersection #9)
- Evergreen Mills Road and Proposed Site Entrance 3 (Full Access) (Future Conditions in TIS - Intersection #10)

With trips to and from the site distributed as follows:

- High School Trip Distribution:
 - 30% of trips to and from the south along Evergreen Mills Road
 - 19% of trips to and from the west along Hartland Drive
 - 10% of trips to and from the west from Everfield Drive
 - 5% of trips to and from the north on Beaverdam Drive
 - 4% of trips to and from the west on Stone School Lane
 - 2% of trips to and from the west on Black Branch Parkway
 - 22% of trips to and from the north from Evergreen Mills Road
 - 8% of trips to and from the north from Conservancy Drive
- Elementary School Trip Distribution:
 - 37% of trips to and from the west along Hartland Drive
 - 50% of trips to and from the west from Everfield Drive

- 2% of trips to and from the north on Beaverdam Drive
- 8% of trips to and from the west on Stone School Lane
- 3% of trips to and from the north from Conservancy Drive

And assuming the following trip reduction factors and travel demand management measures:

- Elementary School: 48% diverted trip reduction.
- High School: 29% diverted trip reduction.

Based upon the existing development on the site, permitted development potential, and this proposal, the development would impact existing and potential site trip generation as follows:

Table 1: Existing Trip Generation Comparisons for Dulles North High School and Elementary School

Development Program	AM Peak Trips	PM Peak Trips	Weekday Total Trips
<i>Total Existing Trips</i>	0	0	0
<i>Total Proposed Trips with This Application</i>	928	595	6,523
Difference (Proposed minus Existing)	+928	+595	+6,523

Sources: DTCl Staff and Dulles North High School & Elementary School TIS, Gorove/Slade, June 6, 2023, Page 52.

*For complete breakdown of trip generation, please consult the Applicant's TIS.

Based on the forecasted trip generation from the proposed development program, the following site-generated issues were identified in the TIS and will require mitigation. Specifically, the following intersections are forecast to operate at a failing level of service:

- At the intersection of Evergreen Mills Road and Hartland Drive/Creighton Road (Intersection #3), the Overall intersection is forecast to operate at LOS E in the AM Peak Hour and LOS F in the PM Peak Hour and Saturday Peak Hour.
- At the intersection of Everfield Drive and Hartland Drive (Intersection #4), the southbound approach is forecast to operate at LOS F in the PM Peak Hour and Saturday Peak Hour.

Transportation Comments and Recommendations

Based upon review of the Applicant's submission materials, DTCl has the following comments:

Traffic Study

1. DTCl requests the Applicant clarify the statement on Page 68 of the TIS regarding failing LOS at Intersection #10 (Evergreen Mills Road and Site Entrance 3). Per Tables 10 and 11 Intersection #10 operates at LOS D or better for all approaches. However, the third bullet related to Evergreen Mills Road and Site Entrance 3 mentioned that the eastbound approach operates at LOS F during the AM and PM High School peak hour along with the PM commuter peak hour recommending a signal.

2. DTCI requests the Applicant clarify what mitigation measures are proposed with this Application specifically relating to the traffic signal at Intersection #10.

Roadway Network and Site Access

3. DTCI requests the Applicant clarify and provide the necessary right-of-way and easements for the future Evergreen Mills Road widening consistent with the 2019 CTP.
4. As provided in **Attachment 2**, DTCI notes per the CTP Interpretation Letter for Red Hill Road, dated March 31, 2022, Red Hill Road from Evergreen Mills Road to approximately 0.19 mile east of Evergreen Mills Road, along the frontage of the subject property, was reclassified from a rural minor collector roadway to an urban minor collector roadway.
5. Approved CPAP 2021-0018 (MS-14 Road Improvements) provides a southbound right-turn lane from Evergreen Mills Road onto Red Hill Road and improves the eastbound approach of Red Hill Road to provide a shared left-turn/through lane and a dedicated right-turn lane at the intersection with Evergreen Mills Road.

Bicycle and Pedestrian Facilities

6. DTCI notes that per the CMPT Site Plan, the Application will provide pedestrian facilities along the CTP roadways adjacent to the site consistent with the 2019 CTP (*Chapter 2, Countywide Motor Vehicle Plan Policies, Policy 2-2.1, Purpose*).
7. Approved CPAP 2021-0018 provides a 10-foot-wide shared use path along the south side of Red Hill Road along the subject property frontage, a five-foot-wide sidewalk along one side of Steeplechase Loop Drive, and a five-foot-wide sidewalk along one side of Giving Best Court.
8. DTCI encourages the Applicant to provide interparcel bicycle and pedestrian access to adjacent neighborhoods to the north, west, and south consistent with the 2019 CTP (*Chapter 2, Countywide Bicycle and Pedestrian Policies, Policy 2-2.9, Community Access*).

ATTACHMENT

1. Site Vicinity Map

cc: Lou Mosurak, AICP, Senior Coordinator, DTCL
Yao Lu, P.E., Loudoun Area Land Use Engineer, VDOT
Avril Andrews, Planning Assistant, DPZ



**CMPT 2023-0006
Dulles North HS & Elementary School**

ATTACHMENT 1



Loudoun County, Virginia

www.loudoun.gov

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March 31, 2022

James C. Bishoff, P.E.
J2 Engineers, Inc.
602 King Street, Suite 100
Leesburg, Virginia 20175

**Ref: Countywide Transportation Plan Interpretation
Red Hill Road - Cross Section Modification
(Evergreen Mills Road to LCPS MS-14 School Access Road)**

Dear Mr. Bishoff:

This letter is in response to your letter dated February 4, 2022 requesting a change in the roadway classification of Red Hill Road (VA Route 617) from a Rural Minor Collector roadway to an Urban Minor Collector roadway from its intersection with Evergreen Mills Road to a point approximately 0.189 miles to the west of Evergreen Mills Road, at Red Hill Road's intersection with the future local roadway that will be used to access the Loudoun County Public Schools – Hartland project site (MS-14).

Red Hill Road is classified by the 2019 Loudoun County Countywide Transportation Plan (2019 CTP) (adopted by the Board of Supervisors on June 20, 2019) as a Minor Collector roadway with a rural two-lane undivided ultimate cross-section, R2 (T), including shoulders with a ditch section on both sides of the roadway and a shared-use path on one side of the roadway. This segment of Red Hill Road is located within the Rural Policy Area (RPA), which is intended to maintain and support rural economic uses and residential lifestyles in the western portion of the County. The intent of the 2019 CTP with respect to Red Hill Road is to facilitate a through connection for local traffic to access the Transition Policy Area (TPA) via Ryan Road, to provide a connection to both the northern and southern portions of the TPA via Evergreen Mills Road, and to provide local access to the parcels along Red Hill Road. Red Hill Road currently terminates to the west at Watson Road and to the east at the intersection of Evergreen Mills Road/Ryan Road.

The 2019 CTP (*Chapter 2, Page 2-15, Characteristics of Planned Roadways*), anticipates potential changes to planned characteristics of certain CTP roadways based on specific factors or circumstances, including but not limited to the built environment and environmental features, while providing for safe and efficient multimodal mobility and operation of the roadway. As such, County staff have reviewed Red Hill Road and believe that Red Hill Road between Evergreen Mills Road and the entrance to the MS-14 project site could be classified as an Urban Minor Collector roadway while maintaining roadway characteristics and features consistent with a rural roadway including a full shoulder and ditch section as well as the shared use path.


ATTACHMENT 2

This change in the roadway classification will allow the Applicant to utilize VDOT's Geometric Design Standards for Urban Collector Street Systems (GS-7) as found in Appendix A1 of VDOT's Road Design Manual in lieu of the Geometric Design Standards for Rural Collector Road Systems (GS-3) in order to address comments from VDOT's Land Use Engineer on the active application for this roadway improvement project (CPAP 2021-0018).

This letter serves as an acknowledgment that Red Hill Road may be reclassified an Urban Minor Collector from its intersection with Evergreen Mills Road to a point approximately 0.189 miles to the west, at the intersection with the future roadway that will be used to access the Loudoun County Public Schools – Hartland project site (MS-14), is sufficient to serve the area described above. This technical advisory shall remain in effect until a formal plan amendment (CPAM) reflecting this technical change is processed at a later date with other technical amendments to the 2019 CTP.

Should you have any additional questions or concerns, please do not hesitate to contact me.

Sincerely,



Joseph Kroboth, III, PE, Director
Transportation and Capital Infrastructure

cc: Blue Ridge District Supervisor, Tony Buffington
Tim Hemstreet
Charles Yudd, AICP
James David
Alan Brewer
Lou Mosurak, AICP
Yao Lu, PE