Montgomery Planning

THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION

MCPB
Item No. 10A.
Date: 4/08/2021

Northwood High School, Mandatory Referral, MR 2021009

Nkosi Yearwood, Planner Coordinator, Mid-County Planning, nkosi.yearwood@montgomeryplanning.org, 301-495-1332

Jessica McVary, Supervisor, Mid-County Planning, jessica.mcvary@montgomeryplanning.org, 301-495-4723

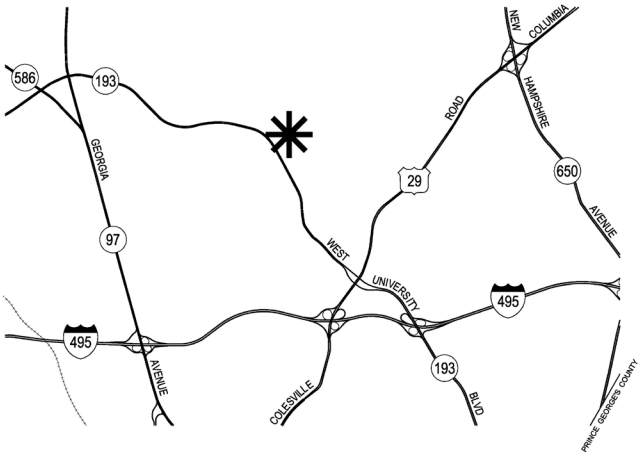
Carrie Sanders, Chief, Mid-County Planning, carrie.sanders@montgomeryplanning.org, 301-495-4653

Completed: 4/01/2021

Description

Mandatory Referral for the construction of a new 158,671 square foot Northwood High School with an enrollment capacity up to 2,700 students.

Location: 919 University Boulevard West.
Zone: R-60.
Master Plan: 2001 *Kemp Mill Master Plan* area.
Size: 29.5 acres.
Application Accepted: December 1, 2020.
Applicant: Montgomery County Public Schools (MCPS).



Summary

- Staff recommends approval to transmit comments to the Montgomery County Public Schools and Board of Education.
- The school is located within the Northwood Cluster – part of the Downcounty Consortium, and the proposed high school will replace the existing school, constructed in 1966, with a new school and allow for an enrollment capacity of up to 2,700 students.
- The proposal is subject to Chapter 22A, the Forest Conservation Law and requires a Forest Conservation Plan, which is covered in a separate report.

RECOMMENDATIONS

Staff recommends approval with the following comments to be transmitted to MCPS and the Board of Education:

1. Prior to construction, MCPS must receive a Final Forest Conservation Plan from the Planning Board.
2. Redesign the bus parking area along the school's frontage as a civic plaza for people that is occasionally used for bus parking – rather than a standard single-use parking lot – through pavers or colorful paint, as well as adjacent trees, landscaping, seating and/or art to exude public use in most hours of the day, evening, weekends and seasons.
3. Recreate the front retaining wall facing University Boulevard to be a beautifully paved or designed "façade" with art, landscape and an artistic top metal railing that announces the entry to Northwood High School in a proud and public way.
4. Incorporate linear accessible ramps, rather than the proposed switchback ramps, into the natural University Boulevard landscapes.
5. Incorporate large species street trees in the planting strip between the curb and sidepath along University Boulevard.
6. Where possible, provide more trees adjacent to entry drives, drop-off areas, and parking lots.
7. Connect the circulation completely around the school, as shown in Figure 3, to allow for full use of the two access points to University Boulevard, especially during special events or at the beginning and end of the school day.
8. Continue to coordinate with the Montgomery County Department of Transportation (MCDOT) and the Maryland Department of Transportation's State Highway Administration (MDSHA)regarding acceptable outcomes for intersection performance proximate to the school. The most recently-provided study, dated January 22, 2021, has not been deemed acceptable.
9. Prioritize transportation-demand management type strategies to limit surge traffic and reduce queuing rather than explore roadway improvements. Strategies that could be considered include carpooling programs, limitations on student parking, and disincentivizing pick-up and drop-offs during the peak period of use.
10. Dedicate 12-feet to the right-of-way of University Boulevard (MD 193), per the 2018 *Master Plan of Highways and Transitways*.
11. Construct a 16-foot wide breezeway asphalt sidepath for the entire extent of the site's frontage along University Boulevard (MD 193), accommodating no less than six feet of separation between the roadway curb and the front of the breezeway sidepath. Paving depths should be consistent with the Planning Department's *Bicycle Facilities Design Toolkit.*
12. Provide a Public Infrastructure Easement for the extent of the site's frontage along University Boulevard (MD 193), between the new proposed right-of-way line and the back of the 2018 *Bicycle Master Plan* required breezeway.

13. Provide no more than two vehicular access points along University Boulevard (MD 193) into the site. Prior to any reconsideration of the site's proposed access program, provide the requested comparative analysis to demonstrate how the site performs with two access points and a "traditionalized" main entry vs. two points and the existing main entry.
14. Hold the breezeway flush over the site's access points (i.e. do not ramp the breezeway down into the driveways where driveways and breezeways intersect).
15. Provide detectable warning strips on the breezeway prior to the main signalized intersection.
16. Provide bicycle parking in a minimum amount equivalent to the requirement for private schools (5 percent of the student population, 50 spaces maximum (all short-term) and 10 percent of employee population, 15 spaces maximum (all long-term).
17. Reduce curb radii at all access points to the tightest extent possible to slow turns in and out of the site.
18. Consider measures to slow circulation within the site for pedestrians, including raised crossings, where appropriate.
19. Improve pedestrian connections by providing better formalized connections to the Northwood Chesapeake Bay Trail and Loxford Terrace. In addition, provide seating opportunities for the open space area between 1125-1131 Loxford Terrace.
20. Contact MDSHA and MCDOT's Transportation Systems Engineering Team for proper executing procedures associated with the main entry's design. All costs associated with the traffic signal and related equipment, including relocation, if possible, should be addressed and accounted for by MCPS.
21. Per the pedestrian adequacy test findings, provide the missing detectable warning strip along the northwest corner of the intersection of University Boulevard (MD 193), and Caddington Avenue.
22. Per the pedestrian adequacy test findings, coordinate with the MDSHA, regarding options to reduce pedestrian delay at University Boulevard (MD 193), and Caddington Avenue.

INTRODUCTION

This report consists of the Mandatory Referral review for the new Northwood High School, including new bus loop and parking areas. The existing high school will be demolished and rebuilt in a similar location on the property. This high school is located within the Downcounty Consortium. The Planning Board's review on a Mandatory Referral is advisory.

Site Description

Northwood High School is located at 919 University Boulevard West ("Property" or "Subject Property") in Silver Spring. The rectangular-shaped 29.56-acre property is located between Arcola Avenue and Caddington Avenue and west of Loxford Terrace (Figure 1). The site slopes centrally from the west to the east with an elevation difference between the building and University Boulevard of approximately twenty feet. The high school's primary frontage and access points are along University Boulevard West. There are currently three separate entrances, including a signalized central entrance and a northern right-out-only bus exit. The Northwood Chesapeake Bay Trail is located along the school's northern boundary, and the Northwood Forest residential neighborhood is located to the south and east.

Figure 1: Northwood High School Site and Vicinity

Project Description

Montgomery County Public Schools (MCPS) proposes construction of a new Northwood High School, which was originally built in 1956. The school's current enrollment is more than 1,800 students, and it is projected to be more than 2,000 students by 2025. The new school facility will increase the enrollment capacity to 2,700 students.

Figure 2: Rendering for the Proposed Northwood High School

The proposed four level building is organized around a central courtyard with the academic areas to the north and activities, such as the gym and auditorium, to the south. The proposed building is approximately 158,671 square feet in size (Figure 2). Bus circulation and drop-off will occur in the front of the building with additional parking for visitors and staff to the north, south and east of the building. A variety of athletic fields, including a synthetic turf football field, four tennis courts, two basketball courts, and a softball field and a baseball field are located east of the new school. The existing cell tower will remain adjacent to the tennis courts.

Landscape and Lighting

The submitted lighting plan illustrates lighting throughout the parking areas, as well as for the athletic areas. The parking areas and stadium lighting fixtures will be 100 percent down-lighting to minimize light pollution. No special lights are proposed for the athletic fields. None of the proposed lights will impact adjacent rights-of-way or properties. Timers will operate exterior lighting. New evergreen and deciduous trees are proposed on different areas of the property, including adjacent to the existing single-family dwellings to the south. The proposed landscaping will contribute to screening lights from the parking areas.

Design Review

In the Spring of 2019, Montgomery Planning and Montgomery County Public Schools initiated a process to expand the design review of publicly funded projects with significant community presence subject to Mandatory Referral review. School projects were strongly encouraged to submit a Concept Plan for review prior to filing a Mandatory Referral application, to allow for an early opportunity to address master plan, design, transportation, and other site development concerns prior to the limited review time allocated by law for a Mandatory Referral review.

Consistent with this process, MCPS submitted Concept Plan No. 520200090 on October 18, 2019, which was reviewed by the Development Review Committee on November 26, 2019. Several comments were provided during the concept review, including the recommendation to relocate the proposed building as close to University Boulevard as feasible to improve the relationship between the proposed school and the street as well as to improve connectivity with the existing and proposed sidewalks, bikeways and transit stops. Staff also recommended the consolidation of existing curb cuts along University Boulevard to improve safety for pedestrians and bicyclists by minimizing conflicts with vehicles and buses.

Several design meetings occurred between the review of the Concept Plan and the Mandatory Referral submittal that included MCPS and their consultant team, as well as Planning staff. Prior to the submittal of the Mandatory Referral, staff issued comments continuing to encourage the relocation of the proposed building as close to University Boulevard as possible. Staff further encouraged the relocation of the bus parking to the north side of the property, as shown in Figure 3, and the creation of a multi-use civic plaza designed to integrate a drop-off drive during peak periods. Staff noted that these two revisions could significantly improve the relationship of the proposed school to University Boulevard West.

On December 1, 2020, the Mandatory Referral was accepted for staff review. While the Mandatory Referral included the consolidation of existing curb cuts along University Boulevard, the overall site design remained consistent with the Concept Plan. Consistent with the comments provided in both the Concept Review and subsequent design meetings, staff continues to encourage MCPS to create a strong public realm along University Boulevard and enhance the overall site design through the following improvements:

1. Redesign the bus parking area as a civic plaza. Staff acknowledges that, in this case, locating the bus parking in front is necessary for overall access to the sloped site. However, as the bus parking area is used for less than an hour each school day for buses, staff recommends that the area be designed as a civic plaza for people that is occasionally used for bus parking – rather than a standard single-use parking lot. Specifically, staff recommends that the Applicant use pavers or colorful paint, as well as adjacent trees, landscaping, seating and/or art to create a civic plaza in front of the school that exudes public use in most hours of the day, evening, weekends and seasons.

2. Recreate the front retaining wall facing University Boulevard to be a beautifully paved or designed "façade" with art, landscape and an artistic top metal railing that announces the entry to Northwood High School in a proud and public way. This wall and railing can designate the new plaza's western edge above and can provide views from the plaza to the street and entering cars below.

3. Rather than creating two monolithic switchback ramps that impede views and become overpowering to landscape designs, perhaps incorporate linear accessible ramps into the natural University Boulevard landscapes. Provide pedestrian and bike pathway linkages to adjacent neighborhoods from the north, south and east of this campus as well as providing those shown along University Boulevard.

4. Similar to the specimen trees proposed on the school side of the proposed sidepath, consider incorporating large species street trees in the planting strip between the curb and sidepath to help calm traffic, reduce heat island effect in the summer, and provide a physical, vertical buffer between moving cars and pedestrians and bikes on the path.

5. Where possible, provide more trees adjacent to entry drives, drop-off areas, and parking lots to help mitigate heat island effects and provide greater protection for pedestrians walking along these areas.

6. Connect the circulation completely around the school, as shown in Figure 3, to allow for full use of the two access points to University Boulevard, especially during special events or at the beginning and end of the school day. This additional circulation could help dissipate the large parking lots on campus in a way that allows for future expansion of fields, courts, or buildings behind the school. This link at the back of the school could be monitored and closed at different times of the day. Likewise, crosswalk tables and other traffic calming measures could be used to promote pedestrian safety.

In addition to the recommended site design enhancements, staff also encourages MCPS to design Northwood High School as a Net Zero Energy building to help achieve Montgomery County's greenhouse gas goals. The Draft Climate Action Plan establishes an ambitious goal of reducing greenhouse gas emissions 80 percent by 2027 and 100 percent by 2035. Northwood High School is likely one of the largest public buildings to be built in the coming years and could have a significant impact on the county reaching its greenhouse gas goals.

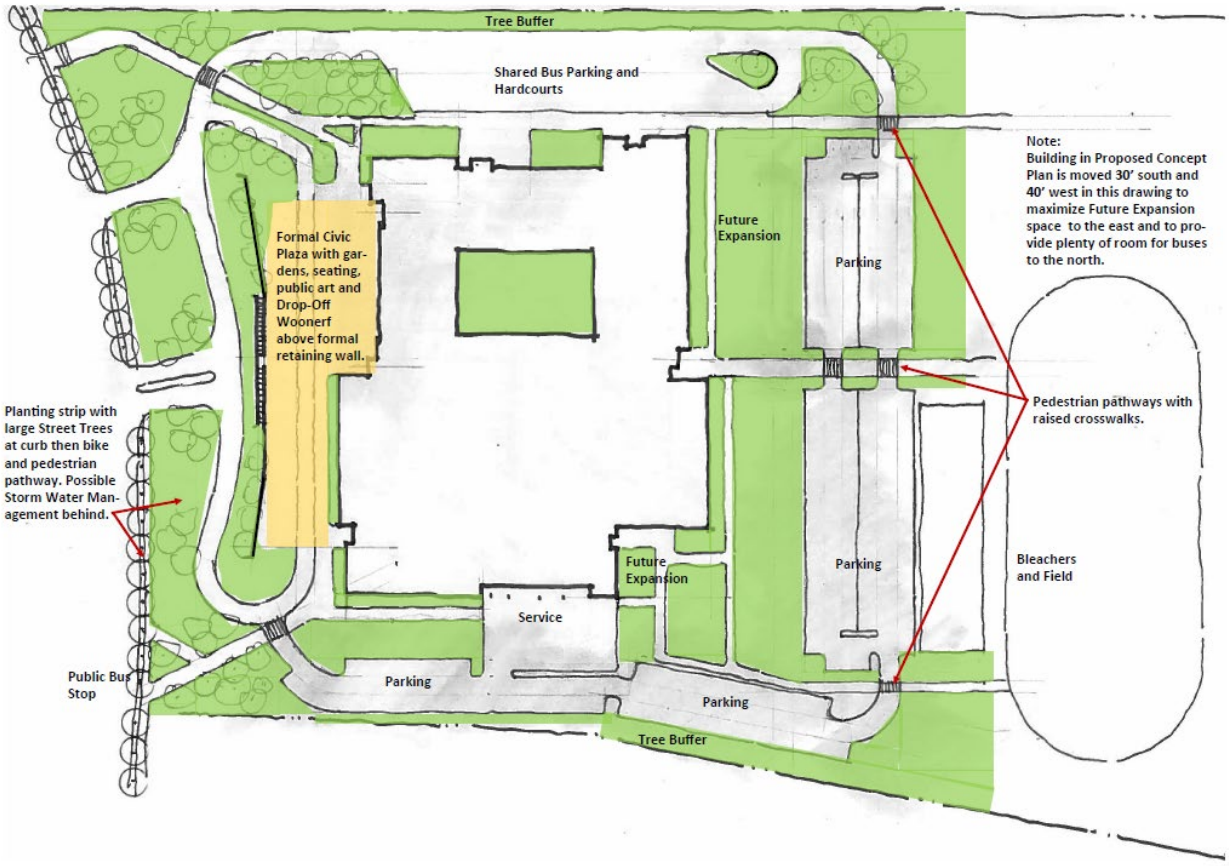


Figure 3: Urban Design proposed site plan

ANALYSIS

Development Standards

Northwood High School is in the R-60 Zone. Public schools, as publicly owned or publicly operated uses, are permitted uses in the zone. The proposed school is consistent with the zone's development standards, including building coverage and setbacks.

Master Plan Conformance

The proposed Northwood High School is within the 2001 *Kemp Mill Master Plan* area. The Master Plan recommends reinforcing the "ordering of residential, commercial, instructional and public uses in ways that continue to create neighborhoods in which people can live, play and shop" (p.17). The Master Plan recognized the high school and provided direction if the school is no longer in use but did not provide recommendations for the reconstruction of the school use.

The Master Plan also recommends the acquisition of the Maryland Department of Transportation's State Highway Administration (MDSHA) owned Northwood Chesapeake Bay Trail since it would "provide a park connection between Sligo Creek and Northwest Branch Parks" (p.49). The Parks Department has expressed an interest in acquiring the trail, but the State owns the area.

Hard surface path linking Northwood Terrace to the school

Trail within the Northwood Chesapeake Bay Trail

A formal hard surface path connects to the school from Northwood Terrace, and an informal trail exists within the wooded area. As proposed, the new school furthers several goals of the Master Plan, including providing residents of the plan area a safe means of getting to facilities within their community and stormwater management recommendations.

ENVIRONMENT

Staff approved a Natural Resource Inventory/Forest Stand Delineation (NRI/FSD #420080600) for the Property on November 11, 2007. The Subject Property is affected by steep slopes (≥25%) but contains no forest, streams or stream buffers, wetlands or wetland buffers, 100-year floodplains, known habitats of rare, threatened, and endangered species, historic resources, or erodible soils. The Property contains approximately 165 significant and specimen trees that measure 24" and greater at diameter breast height (DBH) and is zoned R-60, which is assigned a Land Use Category of Institutional Development in the Land Use Table of the Environmental Guidelines. This category gives the Property an afforestation requirement of 15 percent of the net tract and a conservation threshold of 20 percent.

Forest Conservation

Forest conservation issues are covered in a separate regulatory Staff Report to the Planning Board. In summary, this Property is subject to the Montgomery County Forest Conservation Law (Chapter 22A of the County Code). This Plan is an amendment to the Forest Conservation Plan approved with a Mandatory Referral Application No. MR2008601, which proposes an update to the forest conservation worksheet, landscape forest conservation credits, and a Category II Conservation Easement. The amended Preliminary/Final Forest Conservation Plan also requests a tree variance for the proposal to disturb the root zones of 24 specimen trees - 6 of which will be removed and 5 of which require mitigation. A total of 4.43 acres of forest is required for afforestation. The applicant proposes to satisfy the afforestation requirement with 3.19 acres of on-site plantings to provide additional tree canopy coverage. MCPS proposes to satisfy the remaining 1.24 acres planting requirement by the purchase of credits in an off-site forest bank. If forest mitigation bank credits are not available, MCPS will submit the forest conservation fee-in-lieu payment to the M-NCPPC Planning Department for the remaining 1.24 acres of afforestation requirement.

Environmental Sustainability

The new high school will be designed in compliance with MCPS's 2014 Environmental Sustainability Management Plan and will implement the International Green Construction Code (IgCC).

Stormwater Management

The Montgomery County Department of Permitting Services (MCDPS) has approved a stormwater management concept plan. Stormwater management will be implemented through an environmental site design (ESD) plan that includes permeable pavement, bioretention, and a vegetative roof along with structural practices of underground sand filters. Additional improvements to the Property include control of erosion and outfall stabilization.

TRANSPORTATION

Local Area Transportation Review

A Local Area Transportation Review (LATR) study was conducted for the proposed school. The school is in the Kensington/Wheaton policy area, per the *Growth and Infrastructure Policy* (GIP), and it is within the Orange category that follows both the Highway Capacity Manual (HCM) and Critical Lane Volume (CLV) procedures.

The school reconstruction will result in a new total student capacity of 2,700 students, representing a net increase of 969 students. MCPS retained Street Traffic Studies, Ltd. to undertake the required LATR study. Following revisions, a finalized study dated January 22, 2021 was provided to staff for review on January 29, 2021. As of this writing, the Local Area Transportation Review (LATR) study provided by MCPS's consultant has not been accepted due to the outstanding capacity issues related to queuing, which are detailed below. The applicant must continue to coordinate with SHA regarding acceptable outcomes, and additional analyses may be required.

The consultant took volume counts at seven intersections within the site vicinity in January 2020, before COVID-19 network reductions. Based on existing volumes, 7:00 a.m.-8:00 a.m. and 2:00 p.m.-3:00 p.m. were identified as the peak hours of analysis. This Mandatory Referral was submitted prior to the approval of the new *Growth and Infrastructure Policy* (GIP), and because no new LATR Guidelines have been approved to align with the GIP, the study was reviewed using the 2017 *LATR Guidelines.*

Trip Generation: The LATR study calculated the projected new trips using driveway counts rather than the Institute of Transportation Engineers' (ITE) *Trip Generation Manual*, which is permissible because driveway counts more accurately project new vehicle trips. In January 2020, there were .60 morning and .24 afternoon vehicle trips per student. Assuming 969 students, there will be 580 morning and 235 afternoon vehicle trips added to the adjacent roadway network (the conversion ratio is +/- one trip due to rounding). Driveway counts were employed, rather than ITE's *Trip Generation Manual*, and the Kensington Wheaton Policy Area adjustment factor was not employed. The multimodal trip generation table shown in Table 1 below builds out the project's multimodal trip generation based on the percentage split in the Department's *LATR Guidelines.* Based on the anticipated number of trips to the site, the study required both vehicular and pedestrian adequacy tests.

Table 1: Trip Generation Rates for the Proposed Development

Multimodal Trip Generation (Kensington Wheaton Policy Area, LU Category: Other)	**Percentage**	**AM**	**PM**
New Person Trips	**100.00%**	**831**	**337**
New Vehicle Driver Trips	69.80%	580	235
New Vehicle Passenger Trips	18.70%	155	63
New Transit Trips	5.60%	47	19
New Non-Motorized Trips	5.90%	49	20
Local Area Transportation Review Adequacy Tests		**AM**	**PM**
Local Area Transportation Review Required? (Are person trips > 50?)		Yes	Yes
Pedestrian Adequacy Test Required? (Are non-motorized + transit trips > 50?)		Yes	No
Bicycle Adequacy Test Required? (Are non-motorized trips > 50?)		No	No
Transit Adequacy Test Required? (Are transit trips > 50?)		No	No

Vehicular Adequacy Test: MCPS scoped and took counts at seven intersections, including the three existing site access points. However, the southernmost access was removed from the study because staff worked with MCPS to remove it from the proposal. The right-in, right-out northern access point is not stop controlled. Staff worked with MCPS to account for some degree of internal circulation in their analysis networks to account for any delay in total future conditions only. In existing conditions, the northernmost access functions as an exit only, and existing delay internal to the site was not assessed.

Table 2: Highway Capacity Manual (HCM) and Critical Lane Volumes (CLV)

Intersection	Highway Capacity Manual Average Intersection Delay (seconds/vehicle)						Critical Lane Volumes					
	Existing Conditions		Background Conditions		Total Future Conditions		Total Future Conditions		Background Conditions		Total Future Conditions	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
University Boulevard (MD 193) & Sligo Creek Parkway	10.6	9.8	10.7	9.8	12.1	9.8	765	526	766	527	798	536
University Boulevard (MD 193) & Arcola Avenue	25.2	21.1	22.6	21.1	24.6	21	991	765	993	765	1069	797
University Boulevard (MD 193) & Northwood Northernmost Access Point[1]	Not Reported	Not Reported	Not Reported	Not Reported	1.3	0.5	Not Reported	Not Reported	Not Reported	Not Reported	Not Reported	Not Reported
University Boulevard (MD 193) & Northwood HS Full Operation	12.6	10.7	11.6	10.7	32.7	15.2	921	611	922	612	1353	768
University Boulevard (MD 193) & Gabel Street	18.8	7.1	20.2	7.1	24.3	8.2	821	574	822	574	928	606
University Boulevard (MD 193) & Dennis Avenue	23.8	14	24.0	13.8	27.7	15.0	967	674	970	678	1,034	705

[1]The Applicant did not report existing and background delay and CLV, and future year CLV, for the northernmost access point, which is right-out only currently, but which is proposed to be converted to right-in, right-out.

A queuing analysis for the four intersections and one main intersection was provided. Based on the queuing analysis, available space to accommodate turning cars – known as storage need - is expected to exceed the space available or demand at the locations listed below. For the queuing analysis, the direction indicators (e.g. westbound), treat University Boulevard (MD 193) as the east-west running street, and intersecting streets as the north-south streets.

- University Boulevard (MD 193) & Sligo Creek Parkway – westbound left turn (morning)
- University Boulevard (MD 193) & Dennis Avenue – northbound right turn and northbound left turn (morning and afternoon)

As discussed in greater detail in the Vehicular Access section of this memo, the applicant proposes changes to the configuration of the existing site access and traffic signal program to a more traditional configuration. However, as the reconfiguration has not been completed, it is

not possible to assess whether storage needs will exceed demand; however, storage needs for the main entry are listed as follows:

- Eastbound left turn – morning 126 feet; afternoon 123 feet
- Southbound left turn – morning 73 feet; afternoon 74 feet
- Southbound right turn – morning 40 feet; afternoon 74 feet

To address these issues, Planning staff suggests MCPS work with other agencies and prioritize transportation-demand management type strategies to limit surge traffic and reduce queuing rather than explore roadway improvements. Some of the strategies that could be considered include carpooling programs, limitations on student parking, and disincentivizing pick-up and drop-offs during the peak period of use.

Pedestrian Adequacy Test: The number of non-motorized trips exceeded 50, and as such, MCPS provided the required Pedestrian System Adequacy review. The following issues are noted:

- Detectable warning strips are missing at the northwest corner of University Boulevard (MD 193), and Caddington Avenue.
- Pedestrian delay significantly exceeds average intersection delay for vehicles at University Boulevard (MD 193) and Caddington Avenue.

MCPS should address each issue, bringing the intersection up to acceptable ADA standards and within acceptable levels of pedestrian delay.

Master Planned Roadways, Transitways, and Bikeways

Northwood High School fronts onto University Boulevard (MD 193), and it is classified as a major highway (M-19) with six divided travel lanes and one dedicated transit lane. The 2018 *Master Plan of Highways and Transitways* recommends a right-of-way of 124 feet to accommodate future BRT. The existing right-of-way adjacent to the site is 100 feet and the applicant proposes to dedicate 12 feet of additional right-of-way.

The 2018 *Bicycle Master Plan* recommends a breezeway along University Boulevard. Breezeways, which are typically 16 feet in width, are intended to support high-speed bicycle travel. The development will implement a 16-foot path along the University Boulevard frontage. However, it will be located behind the proposed right-of-way; therefore, staff recommends MCPS enter a public infrastructure easement (PIE) with the Montgomery County Department of Transportation (MCDOT) to allow public access and maintenance of the breezeway facility.

Vehicular Access

The existing Northwood High School has four curb cuts servicing three vehicular access points. An existing wide median separates the main central access point. The primary access, shown in Figure 4, has an atypical entry-egress and signal design. Vehicles traveling southbound on University Boulevard make lefts into the northern curb cut of the central access, which is entry

only. Right-turning vehicles must travel past the southern curb cut and turn into the central access using the northern curb cut. This design accommodates high demand movements during the peak period by allowing southbound turns into the site and southbound turns out of the site to occur during the same signal phase. While innovative from a vehicular capacity perspective, MCPS proposes to redesign the central access into a standard geometry to improve the legibility of site circulation and reduce conflicts for those unfamiliar with the site.

Planning staff worked with MCPS to propose closure of the southernmost curb cut through this application for two reasons. First, reducing vehicular travel over the proposed breezeway reduces a conflict point over a high-quality pedestrian and bicycle facility. And, finally, it is not yet known if the future BRT on University Boulevard will be a curb-running facility. Reducing access points improves the planned BRT service's operational efficiency if it would ultimately be a curb-running service.

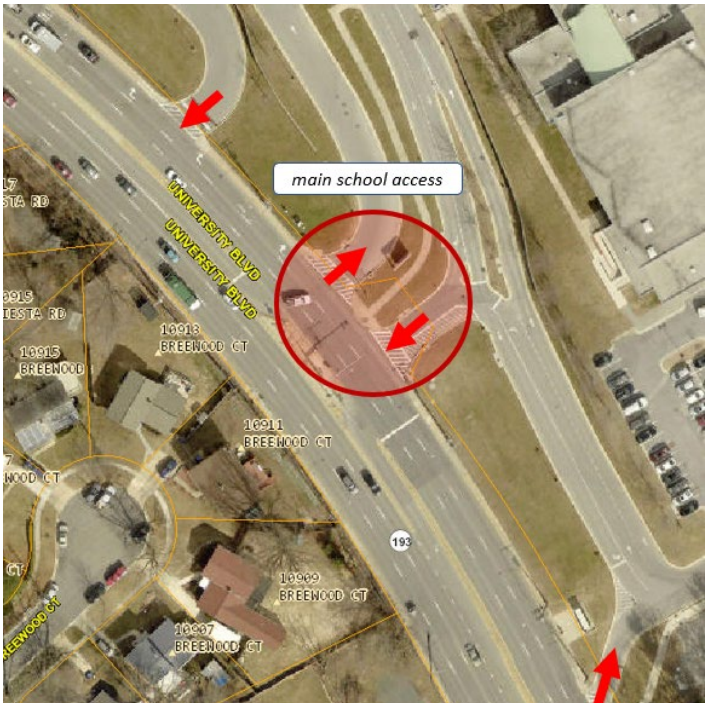


Figure 4: Existing access points to Northwood

To better assess the impacts of the main access point's potential redesign, Planning staff worked with the Maryland Department of Transportation's State Highway Administration (MDSHA) and MCDOT to consolidate comments on the Applicant's Local Area Transportation Review (LATR). These comments requested a comparative analysis showing the difference in impact for the existing entry design versus the impact of the proposed traditional design assuming the southernmost curb cut's closure. On December 18, 2020, MCPS responded that maintaining the existing main access as designed was not an option and did not provide the requested comparative analysis; however, a revised LATR study dated January 22, 2021 was submitted to address other MDSHA comments. The MDSHA provided additional comments noting capacity concerns related to queuing at nearby intersections. The MCPS consultant indicated that the removal of the southernmost curb cut resulted in the queuing at the nearby intersections. While Planning staff has no position on the proposed traditionalization of the main entry, staff appreciates removal of the southernmost curb cut, as proposed by MCPS, and recommends that the safety benefits of its removal outweigh capacity drawbacks. If there are capacity concerns that need to be addressed, staff recommends MCPS provide the previously requested comparative analysis to understand how maintaining the current signal design could improve operations. Without the information, it is challenging to weigh design trade-offs.

Since the applicant proposes changes to the existing site access configuration and existing traffic signal program, MCDOT requests that the applicant contact MDSHA and MCDOT's Transportation Systems Engineering Team for proper executing procedures. All costs associated with the traffic signal and related equipment, including relocation, if possible, should be addressed and accounted for by MCPS.

Site Circulation

It is a transportation best practice to position intersections in parking lots/circulation loops apart from intersections with public roads to reduce the potential for vehicular spillback. The MCPS proposes to supply only 150 feet between internal intersections with the main loop road and site access points on University Boulevard. Because the site is relatively constrained, legible site circulation is paramount to reduce the potential for vehicular queuing. Prior to submittal of the Mandatory Referral—in which MCPS proposes a drop-off loop, parking on the northern side of the site, a bus loop fronting the site, and additional parking on the south side of the site—Planning Department staff requested modifications to the site's internal circulation. The recommended site circulation for the property is discussed in the Design Review portion of this memorandum and shown in Figure 3.

Pedestrian Access and Bicycle Facilities

Two new pedestrian paths from University Boulevard West will provide more direct access to the building than the existing paths. There is an existing pedestrian access from Northwood Terrace, via the Northwood Chesapeake Bay Trail. Pedestrian access is also permitted between 1125-1131 Loxford Terrace, but there is no current path in this area. Staff recommends that MCPS install a path and seating opportunities in this area.

The MCPS proposes to provide the 16-foot wide master-planned breezeway fronting the site with adequate separation from the curb. As shown, the facility depresses (ramps down) across driveway entry-egress points. Staff recommended that the breezeway facility be carried flush at the sidewalk's grade across the driveway entrances, as consistent with a typical bikeway and sidewalk design. The MCPS has indicated that it agrees with this recommendation. Additionally, MCPS proposes that the median at the main entry be six feet wide to serve as an ADA-acceptable pedestrian refuge. While flush, staff recommends that the applicant provide detectable warning strips at this location as the driveway crossings will occur at a signalized location. This could be addressed at the time of MDSHA access permitting. The MCDOT and Planning staff additionally request that the curb radii at all access points be reduced to the tightest extent possible to slow turns in and out of the site.

Internal to the site, staff did not locate the need for stairway runnels as no stairs are proposed without adjacent ramping; however, staff recommends consideration of bicycle parking in a minimum amount equivalent to the requirement for private schools (5 percent of the student population, 50 spaces max [all short-term] and 10 percent of employee population, 15 spaces max [all long-term]).

Based on the school's proposed program, staff recommends providing 25 inverted u-racks on site for students and a dedicated bicycle storage room for no less than fifteen bicycles internal to the building, equipped with no less than three outlets for electric bicycle charging.

Sidewalks are proposed on site and are generally eight feet wide or greater. Staff recommends that MCPS improve pedestrian porosity by providing better formalized connections to the Northwood Chesapeake Bay Trail and Loxford Terrace.

Public Transit Service

Northwood High School fronts University Boulevard, which is served by the Washington Metropolitan Area Transit Authority's (WMATA) Metrobus C2 and C4 lines. An existing Ride On and WMATA bus stop with a shelter is located at the property's southern end.
The C2 and C4 lines provide service between the Twinbrook Metrorail Station and points east in Prince George's County. Service during the morning weekday peak hour runs with approximately 10-minute headways. Ride On Bus Route 9 provides access to the Wheaton Metrorail Station and the Silver Spring Metrorail Station with 20-minute weekday morning peak hour headways.

The MCDOT recommends that MCPS construct a large covered area with seating, lighting and access to power so real-time monitors can be installed at the existing stop. The MCDOT also requests that MCPS ensure that the proposed bus shelter does not obstruct the free and clear bikeway sidepath.

COMMUNITY OUTREACH

The MCPS held three community meetings between October 1 and November 12, 2019. The Planning Department has notified surrounding civic and homeowner associations of this proposal. Planning staff also met with residents and advocates for the Northwood Cluster and for improved pedestrian and bike safety along University Boulevard. As of the date of this memorandum, staff has received no written comments on the proposed new school.

CONCLUSION

Staff recommends transmitting the comments indicated at the beginning of this report to the Montgomery County Public Schools and the Board of Education.

Attachment:
1. Montgomery County Department of Transportation Comments

ATTACHMENT 1

DEPARTMENT OF TRANSPORTATION

Marc Elrich
County Executive

Christopher R. Conklin
Director

March 15, 2021

Mr. Nkosi Yearwood, Planner Coordinator
Area 2 Planning Division
The Maryland-National Capital
Park & Planning Commission
2425 Reedie Drive
Wheaton, Maryland 20902

RE: Mandatory Referral No. MR2021009
Northwood High School

Dear Mr. Yearwood:

We have completed our review of the revised Mandatory Referral Plan dated January 12, 2021. Based on our review, we have the following comments:

The public street fronting the subject property is maintained by Maryland State Highway Administration (MDSHA). Therefore, MCDOT does not have any jurisdiction other than the maintenance and operation of the traffic signal on state-maintained roadways. Per Montgomery County Code Chapter 50 Section 4.2, MCDOT shall provide recommendation about the subject property for the attention of the concerned agencies.

Significant Comments

1. University Boulevard (MD-193):
    a. Per the Kemp Mill Master Plan: University Boulevard is classified as a Major Highway (M-193) with 6 divided travel lanes. Per the Countywide Transit Corridors Master plan the minimum right-of-way is 124-ft. **We recommend the Planning Board require the applicant dedicate the additional 12-feet in order to comply with the Master Plan.**
    b. Comply with the Bikeway Master Plan recommendation of a 16-foot-wide separated bikeway path (east side) is along University Boulevard (MD-193).
2. The applicant's consultant submitted a revised Traffic Impact Study (TIS) dated January 22, 2020 offering revisions per comments from the Planning Department, Montgomery County Department of Transportation, and the State Highway Administration. MCDOT recommends the Planning

Board require the continued coordination with the Maryland Department of Transportation State Highway Administration (MDOT SHA) and the Montgomery County Department of Transportation regarding the proposed access concerns final determination on mitigation. Please refer to the MCDOT TIS letter dated March 15, 2021 for further recommendations.

Plan Review Comments

1. We defer to Maryland State Highway (MDSHA) for any improvements along University Boulevard (MD-193) with the exception of the 16-feet breezeway sidepath and the maintenance and operation of the traffic signal.
2. MCDOT reviews MCPS access and improvements for county schools. Therefore, we have the following recommendations:
    a. From a school safety/circulation standpoint having students cross on the south side of MD-187 should not be an issue internally. Students should be prevented from walking through the loop when vehicles from MD-187 are turning into it. But if the school exit at this signal is left-turn only this creates a potential conflict when students cross MD 187. That could be addressed with signal timing/phasing but how much time will be allotted for ped crossing/parent loop in the morning when the objective is to move vehicles on MD 187. Further detail will be needed with the traffic signal plans.
    b. Curve radii should be as tight as feasible.
    c. Any medians at the access points should be widened to a minimum of 6-feet to serve as pedestrian refuges.
3. Upgrade pedestrian facilities as necessary at adjacent intersections to comply with current ADA standards. The applicant is required to evaluate all adequacy tests based on their person trip generation by this use.
    a. Consider measures to improve the safety of the in-site pedestrian crossings, such as through the use of raised crosswalks.
    b. Ensure refuge areas between access points are a minimum 6 ft wide.
4. Consider a lead walk eastward to Loxford Terrace as well as Caddington Ave. The right-of-way appears to be available to connect to both streets.

Standard Comments

1. Storm Drain Analysis:
    a. If any portion of the subject site drains to an existing storm drain system maintained by Montgomery County, submit storm drain and/or flood plain studies, with computations, for

review and approval by Department of Permitting Services (DPS) at or before the Permit Stage. Analyze the capacity of the existing downstream public storm drain system and the impact of the post-development ten (10) year storm runoff on same. If the proposed subdivision drains to an existing closed section street, include spread computations in the impact analysis.

b. We defer to MDSHA for the portion of site draining to the storm drain system maintained by their jurisdiction.
c. The limits of the floodplain and the building restriction lines are to be shown on the plan where applicable. The floodplain is to be dimensioned from the property line.

2. The sight distance study shall be approved by MDSHA.
3. Design all access points and alleys to be at-grade with the sidewalk, dropping down to street level between the sidewalk and roadway.
4. If you have any pedestrian safety concerns at the Northwood High School, please contact Mr. John Hoobler of our Division of Traffic Engineering at 240-777-2192 or john.hoobler@montgomerycountymd.gov.
5. Our combined ridership with Metro at the shelter along University in front of the school is 191 on, 106 off. Purpose build a large covered area with seating, lighting and access to power supply so realtime monitors can be installed on the existing 8-ft by 22-ft pad. Please coordinate with Mr. Wayne Miller of our Division of Transit Services to coordinate bus stop improvements. Mr. Miller may be contacted at 240 777-5836 or at Wayne.Miller2@montgomerycountymd.gov.
    a. Ensure that bus shelters do not intrude into the free and clear path of the separated bikeway path.
6. Consider highlighting pedestrian paths toward the bus stop located along MD 193. Effort should be made for direct pedestrian paths between school access points and the Metrobus / Ride-On bus stop (provide lead walk between the bus stop and school).
7. There is a proposed BRT station at University Boulevard and Arcola Avenue. The final station location has not been decided. Please contact Corey Pitts for further information, MCDOT Planning Section Manager (240-777-7217 or Corey.Pitts@montgomerycountymd.gov).
8. Since the applicant proposes changes to the existing site access configuration and existing traffic signal modifications, they should contact MDSHA and Mr. Kamal Hamud of our Transportation Systems Engineering Team at (240) 777-2190 for proper executing procedures. All costs associated with the traffic signal and related equipment, including relocation, if possible, shall be the responsibility of the applicant.
9. If the proposed development will alter any existing street lights, replacement of signing, and/or pavement markings, please contact Mr. Dan Sanayi of our Traffic Engineering Design and Operations Section at (240) 777-2190 for proper executing procedures. All costs associated with

such relocations shall be the responsibility of the applicant.

10. Relocation of utilities along existing roads to accommodate the required roadway improvements shall be the responsibility of the applicant.

If you have any questions or comments regarding this letter, please contact myself for this project, at (240) 777-7170 or at brenda.pardo@montgomerycountymd.gov.

Sincerely,

Brenda M. Pardo

Brenda M. Pardo, Engineer III
Development Review Team
Office to Transportation Policy

SharePoint\teams\DOT\Director's_Office\Development_Review\Brenda\Mandatory_Referral\MR2029009_Northwood_HS\Letters\MR2021009-Northwood HS ltr_3.15.21

cc:e: Correspondence folder FY 2021

Shawn Benjaminson	ADTEK Engineers, Inc.
Atiq Panjshiri	MCDPS RWPR
Sam Farhadi	MCDPS RWPR
Mark Terry	MCDOT DTEO
Kamal Hamud	MCDOT DTEO
Corey Pitts	MCDOT DTEO
John Hoobler	MCDOT DTEO
Wayne Miller	MCDOT DTS
Rebecca Torma	MCDOT OTP