

MEMORANDUM

December 13, 2021

To: Lester Primus, Vice President for Administration and Finance
Organization: University of Maryland, Eastern Shore
From: Jim Sebastian, Senior Planner, Toole Design
Project: UMES Campus Circulation Trail

Re: DRAFT Concept Plan Memorandum

1. Introduction

The purpose of this memo is to document the planning process, review the proposed alignment, and present preferred recommendations for the UMES Campus Circulation Trail. The objective of this project is to develop a campus trail for use by students, faculty, and visitors. The 1.6 mile loop along the perimeter of the campus is expected to attract walkers, runners and some cyclists for fitness purposes, along with some transportation users headed to and from campus destinations, parking lots, and the nearby town of Princess Anne.

During a four-hour site visit on August 22, the project team walked the site and developed a preliminary alignment. Participants included project manager Jim Sebastian and project designer Vince Yi from Toole Design as well as UMES Vice President for Administration and Finance Lester Primus and faculty members Mark Williams and Donna Satterlee. UMES staff described how interest in a campus trail has been growing over the years. At the end of the day, there was broad agreement on the trail alignment and design.

2. Project Planning Process

The first phase included an existing conditions and data collection task to identify campus boundaries, roadways, buildings and other key geographic features, followed by a site visit that included a walk-through of the entire trail corridor to determine the best alignment. The results of these tasks are compiled in this Memorandum. Specifically, the process included:

- Kick-off Meeting/Site Visit – Toole Design staff led a kick-off meeting and site visit on August 22, 2021 with representatives from UMES. Notes from the site visit are included in **Attachment A**. UMES had no comments on the notes.
- Preliminary Alignment Maps – On September 30, Jim Sebastian sent the preliminary alignment roll plans to Lester Primus.
- Preliminary Alignment Review Meeting – On October 14, Toole Design and UMES staff held a brief conference call to review the roll plans. There was general agreement that the preliminary alignment

was satisfactory, with the comment that one of the two alignment alternatives along the Student Services Center could be eliminated.

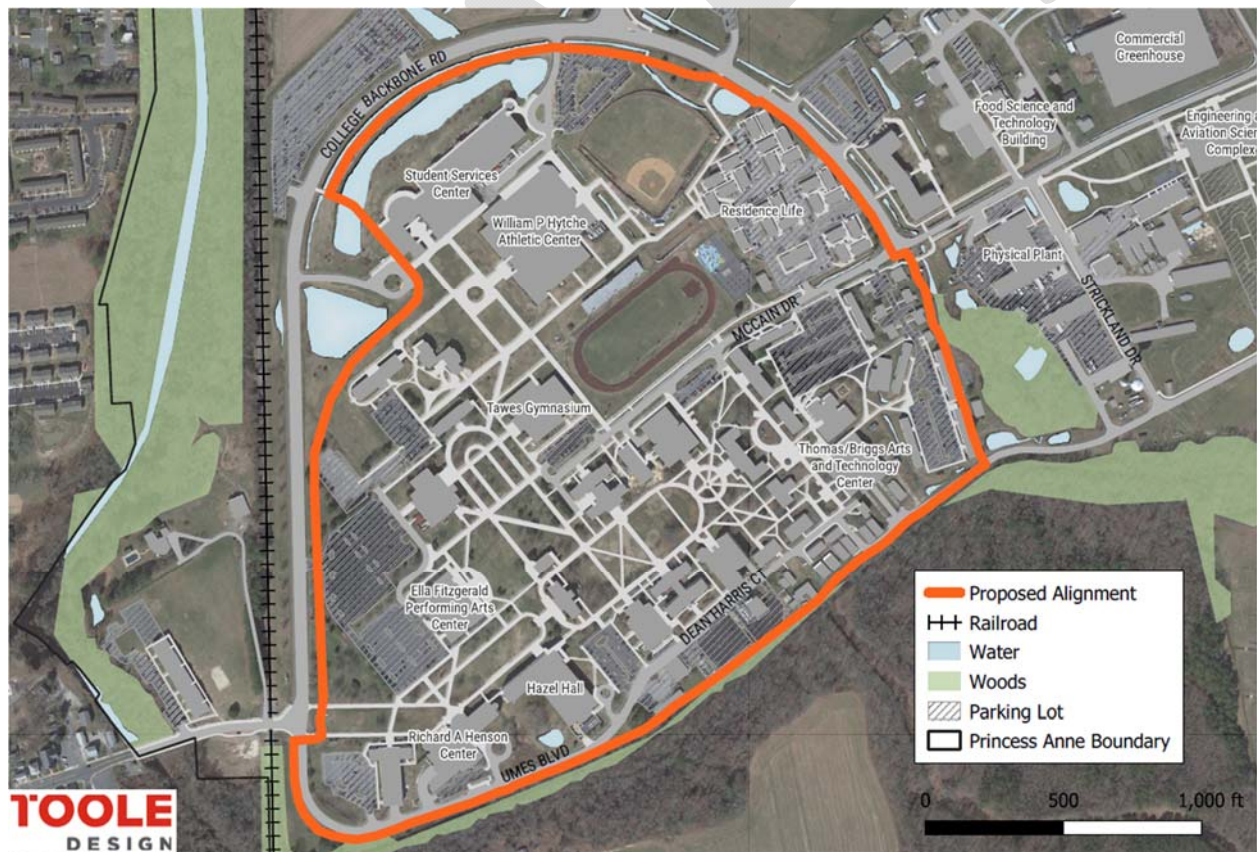
- Memo Review Meeting – Toole Design and UMES held a conference call to review the memo, along with concept plan sheets, on [TBD]
- Final Memorandum – Toole Design delivered this final memorandum, concept sheets, and cost estimate on [TBD].

3. Proposed Alignment

3.1 Alignment Overview

Toole Design worked with University staff to identify the preliminary alignment through a collaborative process. The process included the site visit and subsequent reviews and discussions. The alignment runs along the perimeter of the campus, primarily along roadways.

The team considered both sides of the perimeter roadways for the trail. For College Backbone Road the team chose the inside of the roadway in order to be closer to campus destinations and access points. On the south side of campus (Strickland Drive and University Boulevard), the team chose the outside of the roadways in order to take advantage of the adjacent wooded area and Manokin Branch. The entire alignment is on University property, minimizing right-of-way work. Because the alignment is almost entirely along campus roadways, construction staging and management is relatively straightforward.



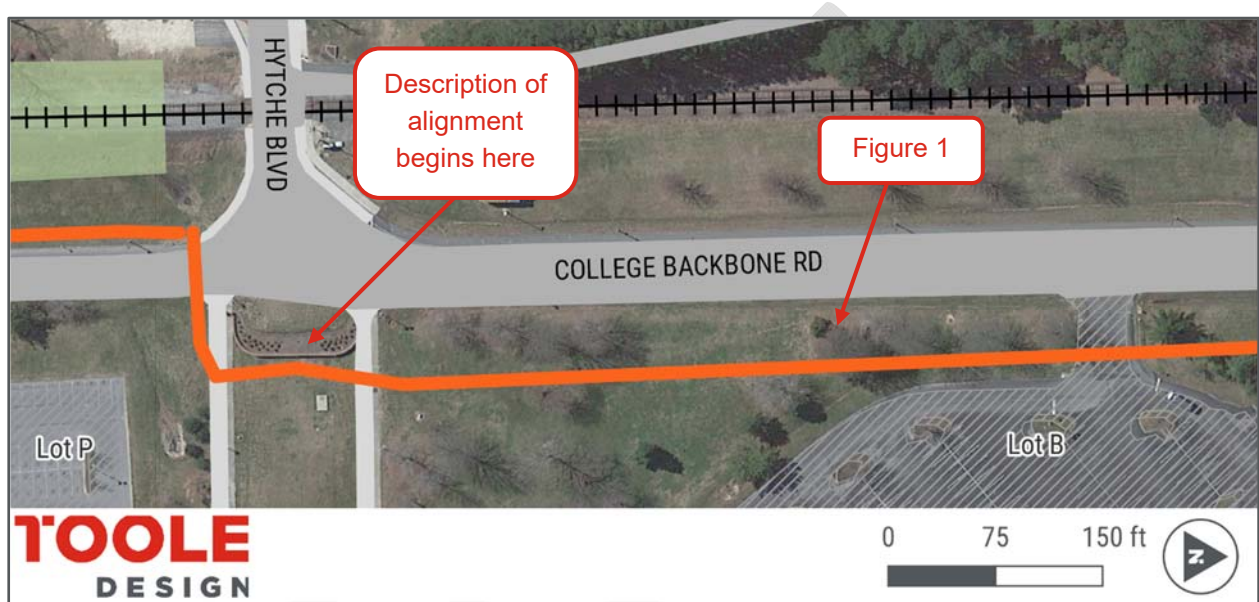
Map 1. Overview of Trail Alignment

3.2 Alignment by Section

The following is a description of the alignment by segment, along with photos from the site visit. The report begins at the intersection of Hytche Boulevard and College Backbone Rd and moves clockwise along the alignment. Red polygons are used to indicate where the trail will be located.

1. Main Entrance to Parking Lot B Driveway (1,620 ft)

Starting at the southwest entrance to the University at Hytche Blvd, behind the brick entryway, the trail heads north toward Lot B, running east of the large maple trees.



Map 2. Main Entrance to Parking Lot B Driveway



Figure 1.

2. Parking Lot B to Student Services Center (1,880 ft)

For this segment the trail will veer east, away from College Backbone Road, to avoid the narrow, sloped space between the road and the Drastormwater pond. This will also allow access to the Student Services Center. The trail will use the existing pedestrian bridge to cross the narrow stormwater pond. At eight feet wide, the bridge is narrower than the proposed trail, but acceptable for this short distance. The north approach to the pedestrian bridge will need to be altered to create a level area for the 90-degree turn.

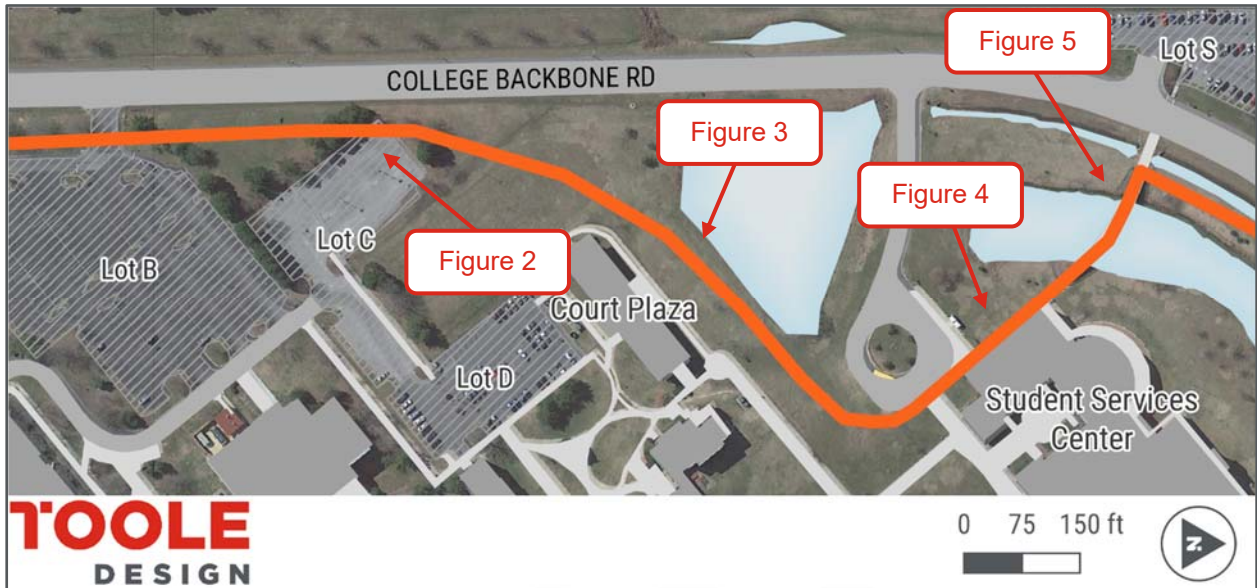


Figure 2. Parking Lot B will need to be adjusted to fit the trail.



Figure 3. Lawn between Parking Lot B and the Student Services Center.



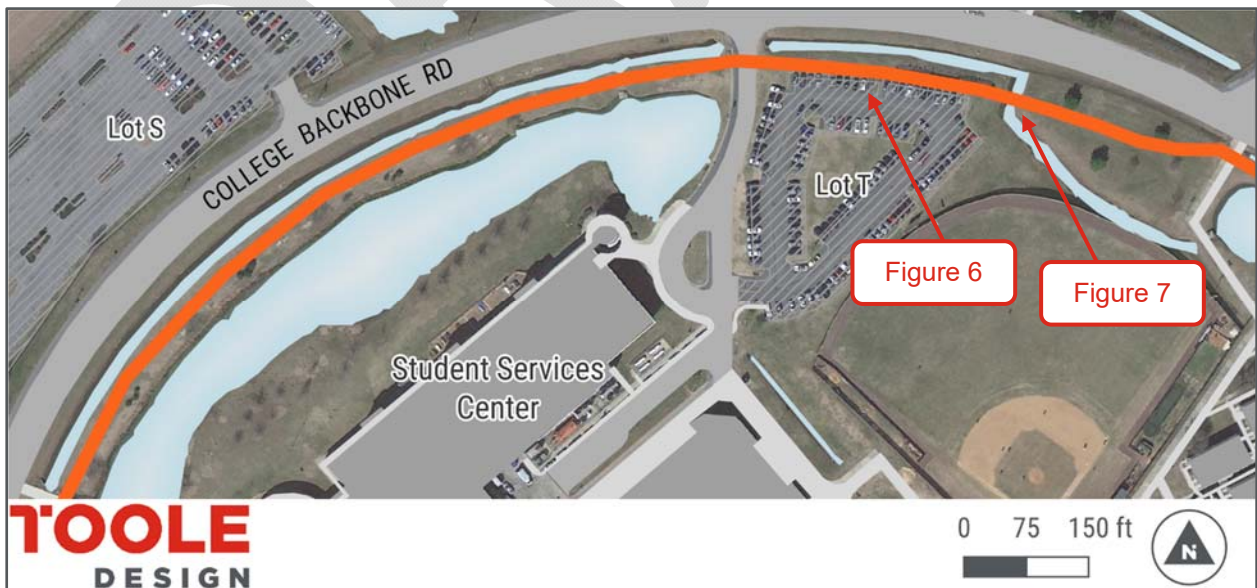
Figure 4. Sidewalk along the Student Services Center



Figure 5. Pedestrian bridge near Student Services Center. The northern bridge approach must be adjusted for the turn to be level.

3. Student Services Center Pedestrian Bridge to UMES Boulevard (1,490 ft)

Here the trail will run between the roadside drainage ditch and long pond until reaching the baseball field. At the brick entryway sign, Parking Lot T may need to be adjusted to fit the trail, ideally without removing any parking spaces. There is currently 11 feet between the brick entryway sign and the parking lot. Reducing the drive aisle in the parking lot from 20 to 18 feet could preserve all existing parking spaces. Also, a small bridge or culvert will be required to cross the ditch.



Map 4. Student Services Center Pedestrian Bridge to UMES Boulevard



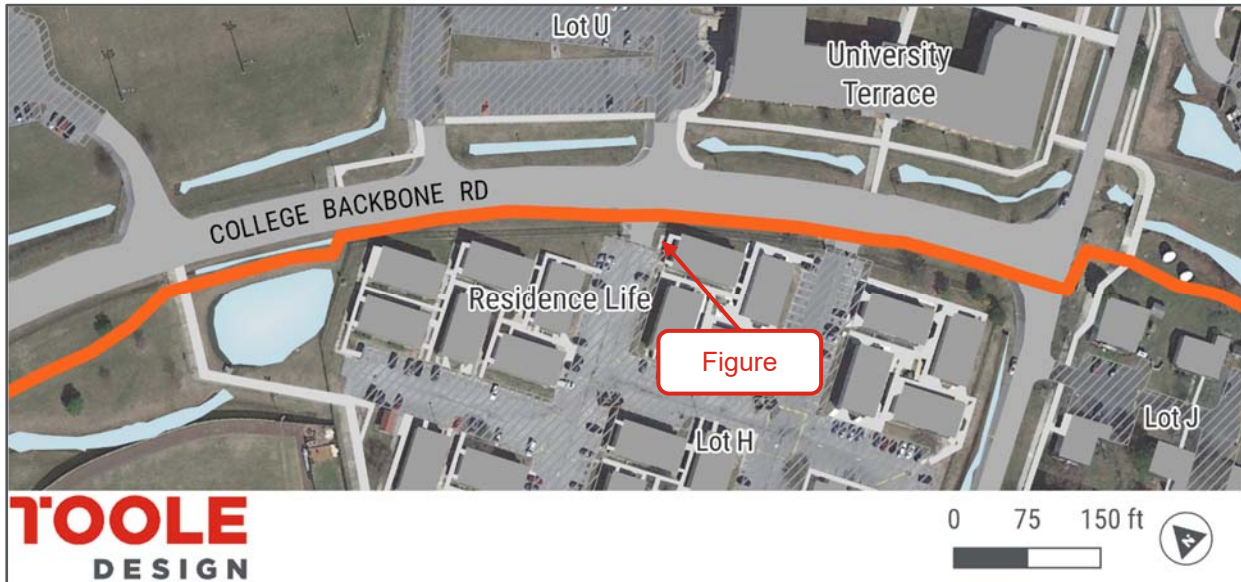
Figure 6. Parking Lot T. Some of the parking lot may need to be removed for the trail.



Figure 7. Entryway at Route 822. A small bridge or culvert will be needed to cross the drainage swale.

4. UMES Boulevard to McCain Drive (1,150 ft)

For this segment the trail will run along College Backbone Drive. Approximately 8 feet of the 10-foot wide shoulder will need to be removed to accommodate the trail.



Map 5. UMES Boulevard to McCain Drive

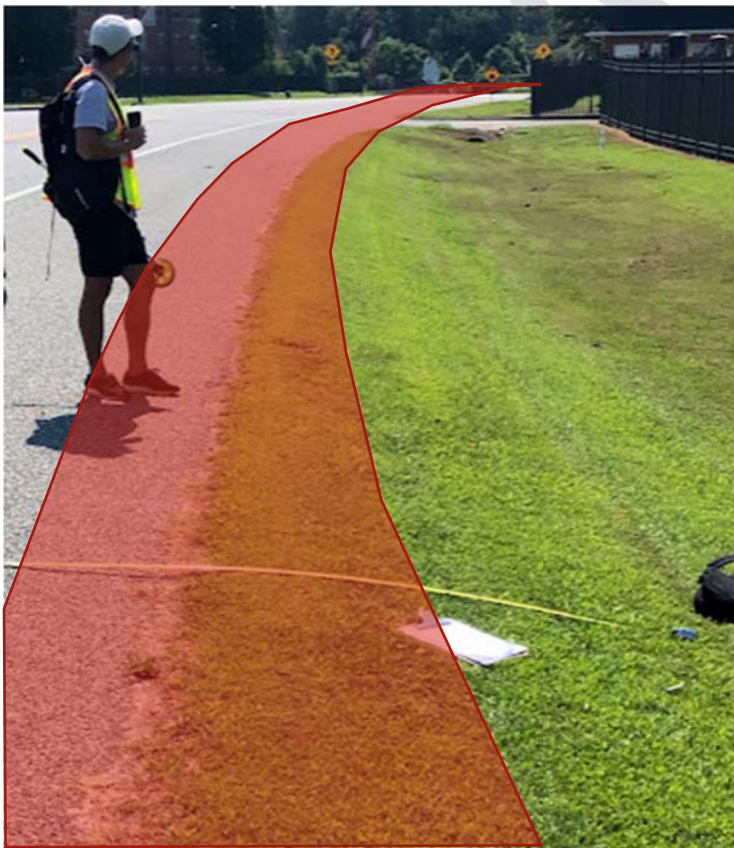


Figure 8. Campus Backbone Drive near Clusters apartment. The roadway will be narrowed to accommodate the trail

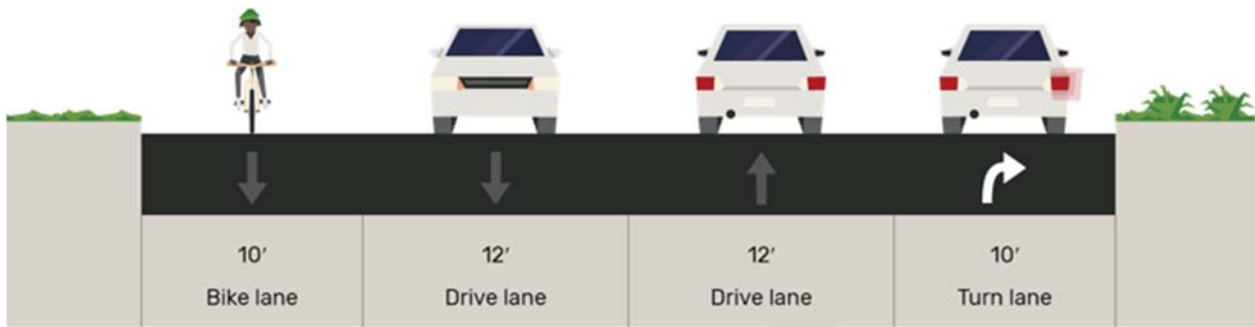


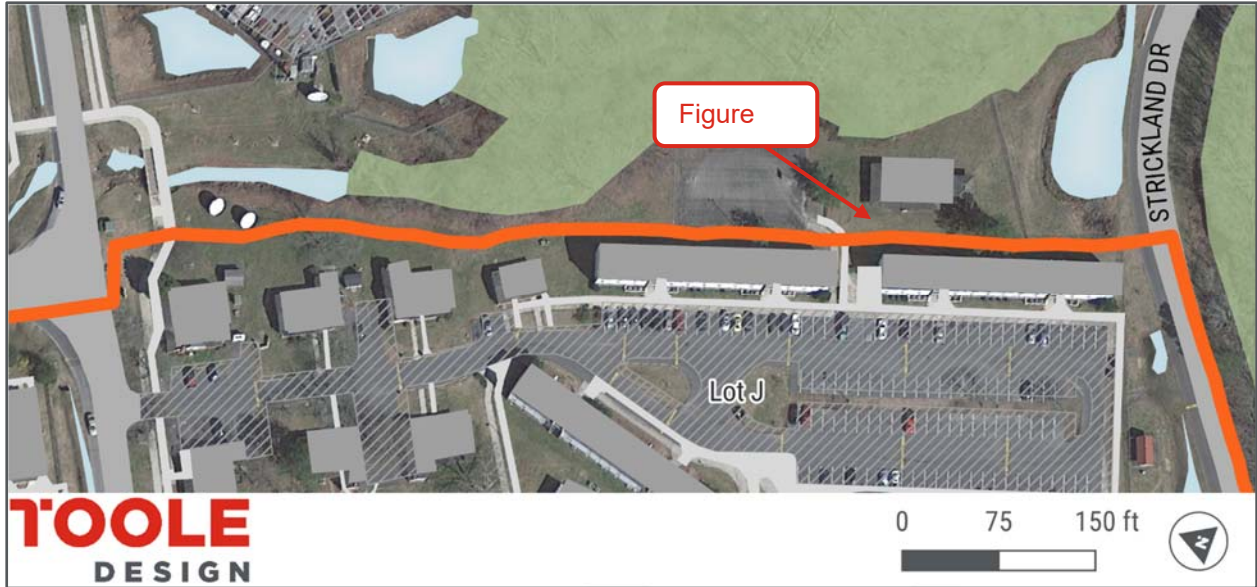
Figure 9. Cross-section of Campus Backbone Drive near Clusters and McCain Drive (Existing)



Figure 10. Cross section of Campus Backbone Drive near Clusters and McCain Drive (Proposed)

5. McCain Drive to Strickland Drive (920 ft)

This portion of the campus circulation trail will create an opportunity for a park-like experience and the possible revitalization of the old playground/park area. The existing, unnamed park behind the Dean Harris Court apartments includes an abandoned basketball court and a large picnic shelter. South of the park, the trail will run between the back of the apartment building and a stormwater pond and connect to Strickland Dr. There is an existing chain-link fence that will need to be removed for the trail to pass through.



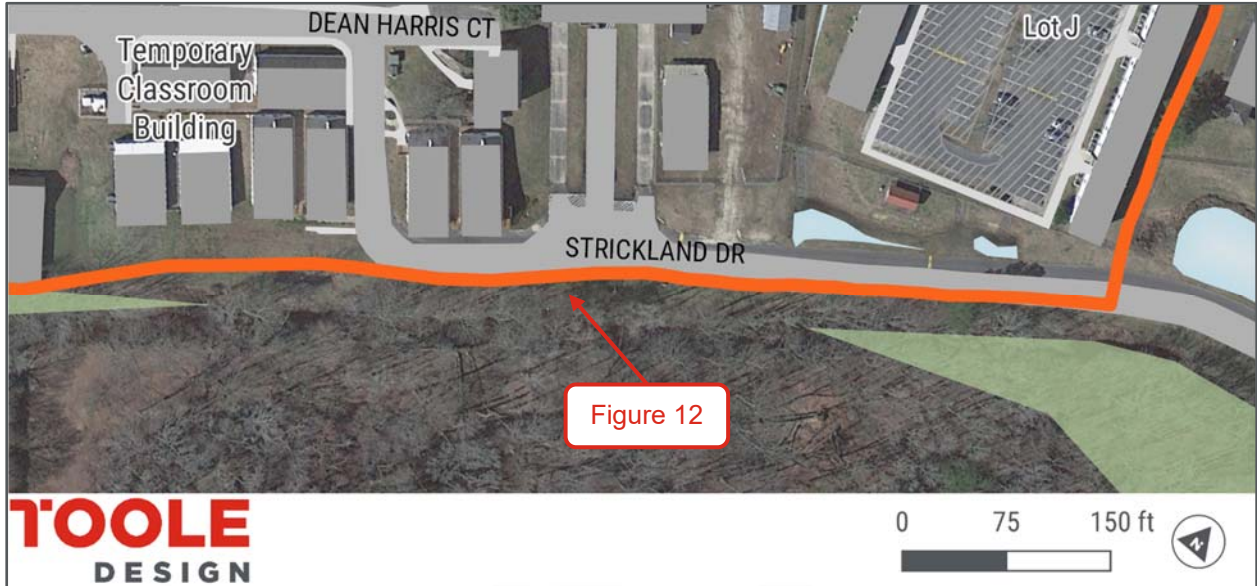
Map 6. McCain Drive to Strickland Drive



Figure 11. Space between the Dean Harris Court apartments and the picnic shelter.

6. Strickland Drive (740 ft)

For this segment the trail will run along Strickland Drive from the Dean Harris Court apartments to the bend in Strickland Drive. There is space for a trail on the south side of Strickland Drive with the adjustment of a light pole and removal of a tree or two. The trail may need to be narrowed for a short stretch.



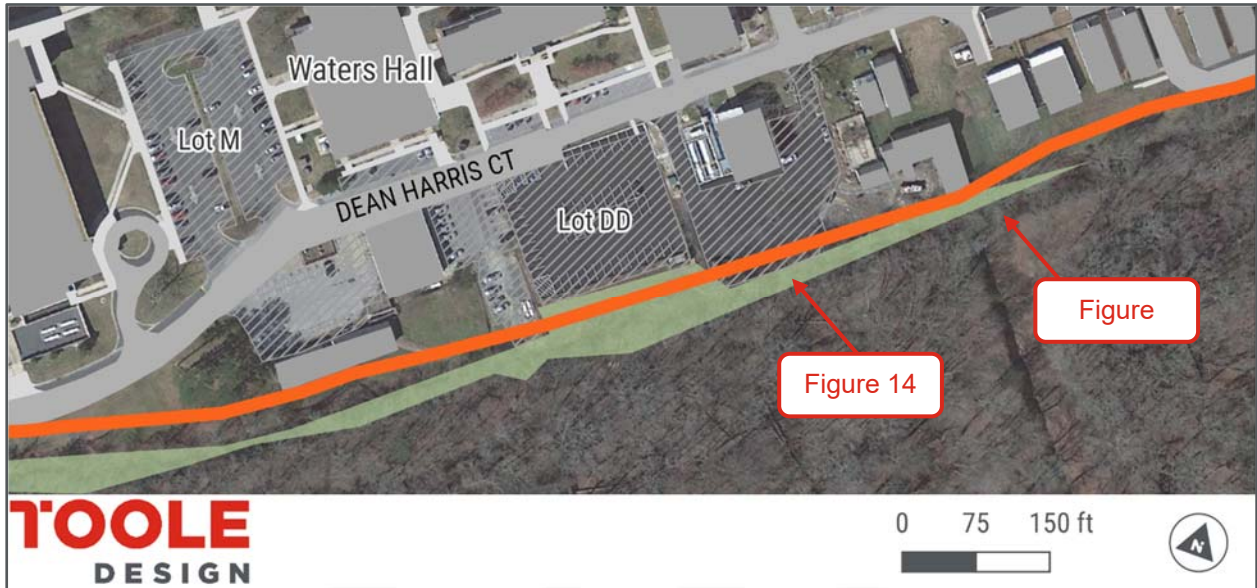
Map 7. Strickland Drive



Figure 12. Strickland Drive near Dean Harris Court.

7. Manokin Branch (1,040 ft)

For this segment the trail will run between the campus buildings and the Manokin Branch from the bend in Strickland Drive to University Boulevard near Hazel Hall on land that is currently lawn or parking lot. There is a pinch point between one of the buildings and the creek, but that building is slated to be removed soon.



Map 8. Manokin Branch



Figure 13. Campus buildings near Manokin Branch. These buildings will be removed.



Figure 14. Parking lot behind the campus buildings on Dean Harris Court. Approximately 20 feet of asphalt needs to be removed, along with approximately 10 underutilized parking spaces.

8. University Boulevard (1,340 ft)

The trail will emerge from behind the campus buildings and run along the south side of University Boulevard. Where there is limited space along the road due to a mature tree and a culvert, the road can be narrowed to accommodate the trail. The road is currently 30 feet with two travel lanes, and it can be narrowed by eight feet to 22 feet. The trail will then wrap around University Boulevard to Hytche Blvd. The trail will cross UMES Blvd at the southwest campus entrance in a wide crosswalk.



Map 9. University Boulevard



Figure 15. Pinch point on University Blvd with large tree and culvert on the left (and tape measure showing a 10-foot trail). Road can be narrowed by eight feet to accommodate the trail.

4. Trail Design

This section provides guidance on design standards for the trail, including elements such as trail and buffer width, surface materials, intersection crossings, signage, landscaping, lighting and site furnishings. The following publications were reviewed in the development of this section:

- *Guide for the Development of Bicycle Facilities by the American Association of State Highway and Transportation Officials (AASHTO)*
- *Bicycle Policy and Design Guidelines from the Maryland State Highway Administration*
- *Maryland Manual on Uniform Traffic Control Devices (MMUTCD) from the Maryland State Highway Administration*

Trail Width

According to the 2012 AASHTO Bike Guide, typical widths for a shared use path range from 10 to 14 feet and is dependent on the context of a trail and its anticipated volume and mix of users. Wider paths of 11 to 14 feet are recommended where there are high user volumes and where pedestrians account for at

least 30% of the trail users. This allows for safer passing movements and accounts for maintenance and emergency vehicle access. The minimum width for a two-directional shared use path is 10 feet with 2 feet of horizontal clearance on either side. Given the anticipated user volume here and the relatively low number of expected bicyclists a 10-foot trail width is recommended.

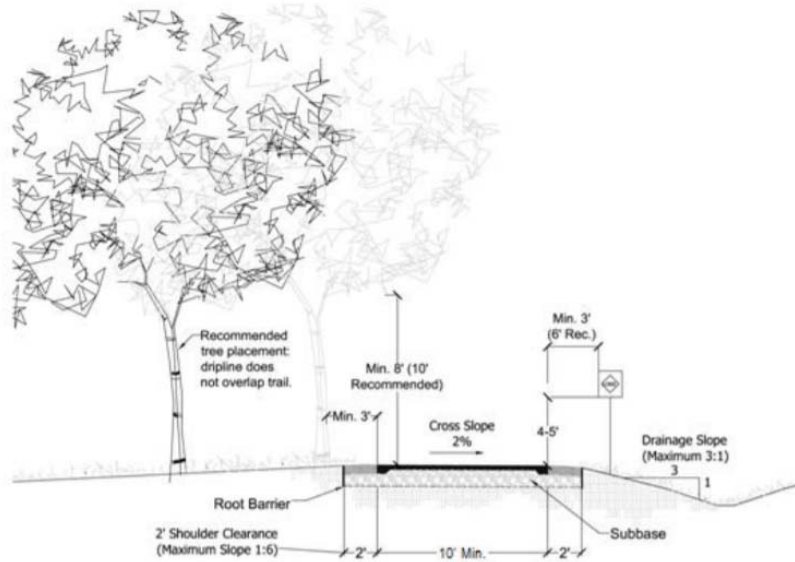
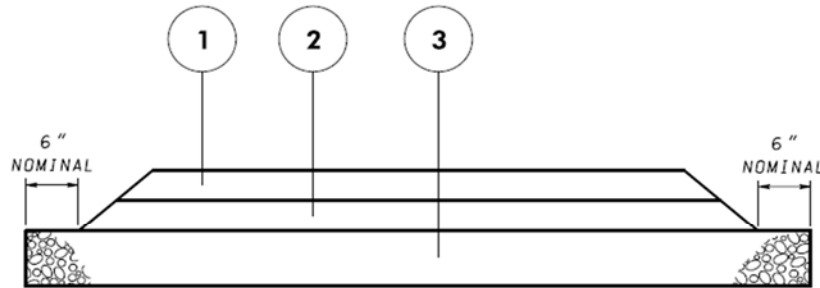


Figure 16. Typical Trail Cross-Section. Maryland State Highway Administration Bike Policy and Design Guide, 2015

Trail Surface

According to the Maryland Bike Policy and Design Guide, some form of asphalt or concrete paving is recommended for paths and trails. A hard, non-slip pavement surface works well for a variety of trail users, requires less maintenance, and can sustain heavy loads such as maintenance or emergency vehicles. Flexible pavement should be considered in wooded areas to reduce impacts to tree roots. Permeable mixes are desirable to lessen the effect of stormwater runoff; however, the positive effects of these materials must be balanced against their higher initial and long-term maintenance costs, as well as the underlying soil permeability.



- ① 1.5" SUPERPAVE ASPHALT MIX 9.5mm FOR SURFACE, PG64S-22, LEVEL 2
- ② 2.5" SUPERPAVE ASPHALT MIX 19.0mm FOR BASE, PG64S-22, LEVEL 2
- ③ 4" GRADED AGGREGATE BASE

Figure 17. Recommended Pavement Cross Section for the UMES Circulation Trail (Maryland State Highway Administration, Drawing #508.8)

Horizontal Clearance

The 2012 AASHTO Bike Guide recommends a 5-foot horizontal separation between a high-volume and high-speed roadway and sidepath. Where a 5-foot horizontal separation cannot be achieved, a 42" vertical separation is recommended. Future signs, mailboxes, and other side obstructions should be considered when designing separation between the shared use path (trail) and roadway. For most of the UMES trail, a five foot buffer is possible.

Trail and Roadway Intersection

Intersections between paths and roadways often require the most consideration in trail design. The Massachusetts DOT Guide on Shared Use Paths and Greenways specifies some basic principles to be followed when designing intersections:

- Unusual conflicts should be avoided.
- Intersection design should create a path for bicyclists that is direct, logical, and as close to the path of motor vehicle traffic as possible.
- Bicyclists following the intended trajectory should be visible and their movements should be predictable.
- Potential safety problems associated with the difference between auto and bicycle speeds should be minimized.



Figure 18. Example of a well-design trail crossing

As the trail approaches the crossing it should be aligned with the destination of the crossing on the other side of the road. The crossing should also be as perpendicular as possible to the road being crossed.

Refer to the MUTCD guide for appropriate signage and pavement markings.

There are three proposed road crossings along the proposed UMES trail. All are two-lane crossings with low traffic volumes and speeds where a crosswalk and signage should be adequate.

Trail Signage

Trail signage orients trail users to their destination and provides guidance on appropriate trail behavior. Directional signs are important along the trail, especially in locations where decisions are to be made about direction of travel. These signs orient the users to upcoming destinations and their respective direction and distance. Regulatory signs are required in locations where traffic laws are to be enforced. For example, at an unsignalized intersection between the trail and a road, stop signs are installed to regulate the flow of trail traffic. Warning signs are required ahead of possible hazards and conflict zones like narrowing of the trail.



Figure 19. Example of trail wayfinding signs and markers

Wayfinding and branding signs like these (Figure 19) should be considered for the UMES trail. This will help users get to their destinations, promote awareness of the trail, and aid in fitness activities on the 1.6 mile loop.

Trailheads and Site Furnishings

There are opportunities along the proposed alignments for trail furnishing and amenities. These include trailheads and waysides where trail users can be expected to stop and rest. At a minimum, trailheads and waysides should include pedestrian signage and benches to accommodate trail users that may need to rest between destinations. Where appropriate, lighting, water fountains, bicycle repair stations, and trash and recycle receptacles should also be provided. The County's furnishing standards applied to the trail will provide a level of visual uniformity in street furnishings throughout the trail corridor. Given the emphasis on fitness for this trail, exercise equipment could be added as well.



Figure 20. Trailhead with seating and bike parking

Landscaping

There may be additional landscaping opportunities in the trail corridor. Where the trail parallels a road, a minimum five-foot-wide planting strip is provided to accommodate street trees and potential bioretention facilities. Street trees provide a higher quality separation between trail and road users, enhance the streetscape character, and provides shade to trail and roadway users. Street trees should be limbed up to a height of 7 feet so as not to interfere with road and trail users. Plant heights should be limited to 2 feet tall at trail and roadway intersections and other conflict points to maximize sight distances. Maintenance requirements should be considered when selecting an appropriate plant palette for the corridor.



Figure 21. Landscaping along both sides of a trail

Lighting

Trail lighting is particularly important where nighttime trail use is anticipated. Lighting should also be considered at intersections and where nighttime security may be a concern. Because most of the trail will be along existing roads, there may be adequate lighting in most of the corridor already. But there is no lighting on the short section behind the building on Dean Harris Court. Lighting should be considered here. (The attached cost estimate does not include lighting).



Figure 22. Example of trail lighting

Emergency Call Boxes

Emergency call boxes are a valuable component of trail safety as they facilitate an emergency response when needed, increase the trail user's perceived safety, and may deter crime. Call box placement should be frequent enough so that trail users can reach the call box relatively quickly. However, they can also be costly, and with the rise of cell phones, they may become increasingly unnecessary (this is not true in rural locations where cell service is unreliable). The number of call boxes and their distances apart depend on the length of the trail and various at-risk locations on the trail. At UMES, the call boxes could be integrated into the existing call box system.

5. Next Steps

This planning project is the first step towards the design and construction of the UMES Campus Circulation trail. Some important next steps include:

- Design – In order to construct the trail, UMES will need to produce final design plans, specifications, and a final cost estimate. There are at least two possible project delivery options:
 - » Design-Bid-Build. For this option, UMES would hire a firm to produce preliminary (30%) and final (100%) design and then put a design package out to bid.
 - » Design-Build. For this option UMES would hire a design/build firm to both finish the design and build the trail. This could be done as a competitive bid using this memorandum and the accompanying roll plans (Appendix A).

In addition for more detail in the trail itself, the design will include landscaping, signs, intersection treatments, and possibly lighting.

Permitting – In the course of the final design, UMES staff will need to engage the relevant state and local agencies to obtain the necessary permits.

- Additional Stakeholder Involvement – The planning process thus far for this project has included minimal stakeholder involvement. UMES management could share this memorandum more widely among staff, students and community members before proceeding to the next steps. One option would be to post this Memorandum on the University web site, share it on social media, and post some of the graphics on campus bulletin boards.

ATTACHMENT LIST

- A. Roll Plan Sheets**
- B. Opinion of Probable Cost**
- C. Notes from Site Visit**

DRAFT