

Upper Marlboro Community Center Trail Implementation Plan

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Executive Summary

The Upper Marlboro Community Center offers a wide range of services for the surrounding community, but is currently totally isolated from the multimodal network. No dedicated bike or pedestrian routes connects it to surrounding communities. Despite the lack of pedestrian infrastructure, community members still walk to and from the Community Center, along the edge of the highway. A shared-use sidepath would rectify this mobility and safety issue.

The proposed Community Center Trail would run parallel to Route 4 and connect the Community Center to pedestrian facilities along Water Street and in downtown Upper Marlboro. The Town of Upper Marlboro will need to secure the required permits, contract an engineering firm to produce the final design, and provide for ongoing trail maintenance. Permits are required from Maryland Department of the Environment (MDE) and the State Highway Administration (SHA). An agreement in the form of a Memorandum of Understanding with the Maryland-National Capital Park and Planning Commission (M-NCPPC) is required as well, since they own and operate the Community Center.

The trail design should be flexible; the narrow right-of-way may require the trail to be narrower in places than recommended in planning literature. However, the need for a path outweighs the disadvantages of a narrowed trail, and SHA design waivers expressly allow this type of non-standard design. Based on available research, the cost for implementation should be approximately \$100,000.00, with an estimated \$2,000.00 required annually for maintenance. There are many possible funding sources for implementation and maintenance at the State and federal levels.

This Implementation Plan outlines the needs and justifications for the Community Center Trail, details which permits are required and how they can be obtained, estimates the approximate costs of implementation and maintenance, and provides design recommendations.

Background

The town of Upper Marlboro is working this year with the UMD Partnership for Action Learning in Sustainability (PALS) to address the implementation component of the Bicycle and Pedestrian Network Plan developed by Toole Design Group in 2015. Toole Design Group identified the need for a shared use path to link the Community Center to the downtown. This trail segment, referred to in this plan as the Community Center Trail, would be a shared-use sidepath for bicycle and pedestrian use running parallel to Route 4. It is one of the highest priorities of the Network Plan.

Image 1, below, shows the shared-use trail alignment identified by Toole Design Group connecting pedestrian facilities along Water Street to the Community Center parallel to Route 4. Though it is a short trail, there are several challenges to successful implementation, outlined below.



Image 1: Alignment identified by Toole Design Group. Source: Town of Upper Marlboro Bike and Pedestrian Study, 2015

Need for a Trail

There is a clear need for the Community Center Trail. It would support public safety, the County's trail planning goals, and the transportation network needs of Upper Marlboro. The Upper Marlboro Community Center is a significant regional destination providing a wide range of civic programming from childcare and afterschool programming to recreational and gym facilities; it also functions as a polling place. However, there is no pedestrian route that connects to the Community Center. Given that the Community Center serves many groups unlikely to drive, such as the very young and the elderly, there is clearly a need for multimodal access. This need is further demonstrated by "social paths" leading to the Community Center along the proposed alignment, shown in Image 2 below. These informal paths illustrate how community members walk to the Community Center without the safety benefits that come from a well-marked, officially designated trail. A trail is desirable to meet the County's planning goals and Upper Marlboro's transportation needs; it is *necessary* for the safety of pedestrians.



Image 2: “Desire lines” along the proposed Community Center Trail alignment. Source: Author, September 2017

Trails of this nature are specifically prioritized in the *Trails Implementation Plan for Prince George’s County Park System*. Section 3-10 of the Plan lays out the criteria for trail prioritization, highlighting “increasing spur connections and trail linkages to public facilities,” “addressing major barriers created by the typical built environment of an American suburb,” and “expanding the trail system into and through the central and southern parts of the County, much of which is trails poor.” The Community Center Trail accomplishes all of these goals, creating a connection to a public facility that is completely isolated from multimodal facilities. This isolation is a product of car-centric suburban design, as mentioned in the second criterion. Additionally, Upper Marlboro is very much in the trails-poor central portion of the County, despite being the County seat. Last but not least, the Community Center Trail is a vital link in Upper Marlboro’s multimodal network. Ultimately it will be a section of a 2.3-mile recreational loop outlined in Chapter 4 of Toole Design Group’s *Bicycle and Pedestrian Network Plan*.

The Community Center Trail will provide not just a transportation solution but also a link in a low-stress bike and pedestrian facility that will highlight the natural beauty and scenic downtown of Upper Marlboro and the surrounding area, which has the potential to benefit the local economy as a tourist attraction. The Community Center Trail will also enhance access to many cultural and commercial amenities, as shown in Image 3 below.

It is also important to note that in the 2016 *Prince George’s County Community Health Needs Assessment* there is specific mention of the “need to focus on promoting healthy lifestyles” by enhancing the “built environment (walkable/bike trails)” (page 166). Recreational facilities are important for public health, and multimodal facilities will greatly increase fitness programming opportunities at the Community Center and provide an amenity for the thousands

of County employees who work within 1/2 mile of the Community Center Trail. The current lack of trail facilities does demonstrable harm to the Town of Upper Marlboro—to both individual community members and to the community as a whole. According to the County Health Department, in 2013, 71.5% of adults in Prince George’s County were obese or overweight, and in 2017 the County was approached by the organizers of the Walk to End Alzheimer’s, but was ultimately unable to host due to the lack of connected pedestrian facilities.

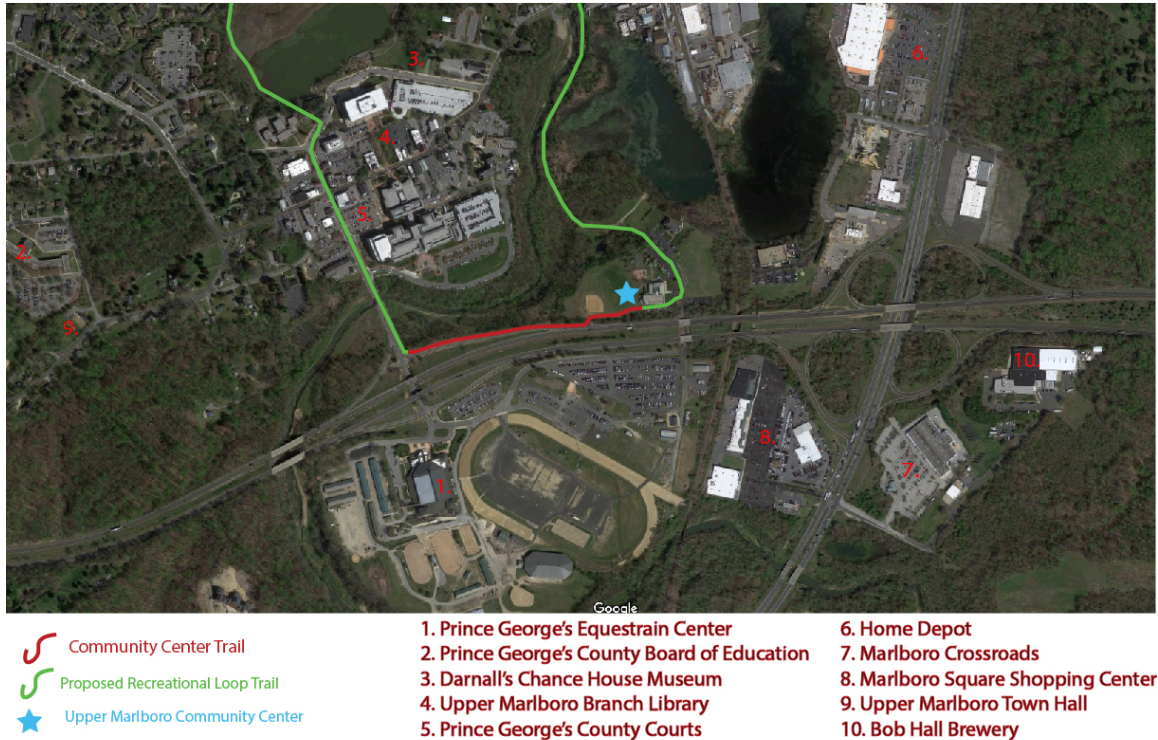


Image 3: Destinations within ½ mile of Community Center Trail, a proposed loop trail. Source: Author, October 2017

Design Recommendations

Because the Community Center Trail would run parallel to Route 4 for a significant portion of its length, it is technically a “sidepath” rather than a stand-alone trail, and must be understood in the context of its proximity to the road and the narrow alignment that results from that proximity. That narrow alignment is depicted below in Images 4 and 5. Further, it is a shared-use facility, intended to accommodate both bicyclist and pedestrian users. Design guidelines for sidepaths are stipulated in SHA’s *Bicycle Policy & Design Guidelines*, section 7.1, which is based on current AASHTO guidelines. The *AASHTO Guide for the Development of Bicycle Facilities*, 4th Edition (2012), makes a number of specific statements that recommend against providing shared-use paths directly adjacent to the roadway, which is the case with the proposed alignment. However, the Design Guidelines, Section 7.4 acknowledges that shared use paths adjacent to roads are “typically identified in local master plans” and are “widely used

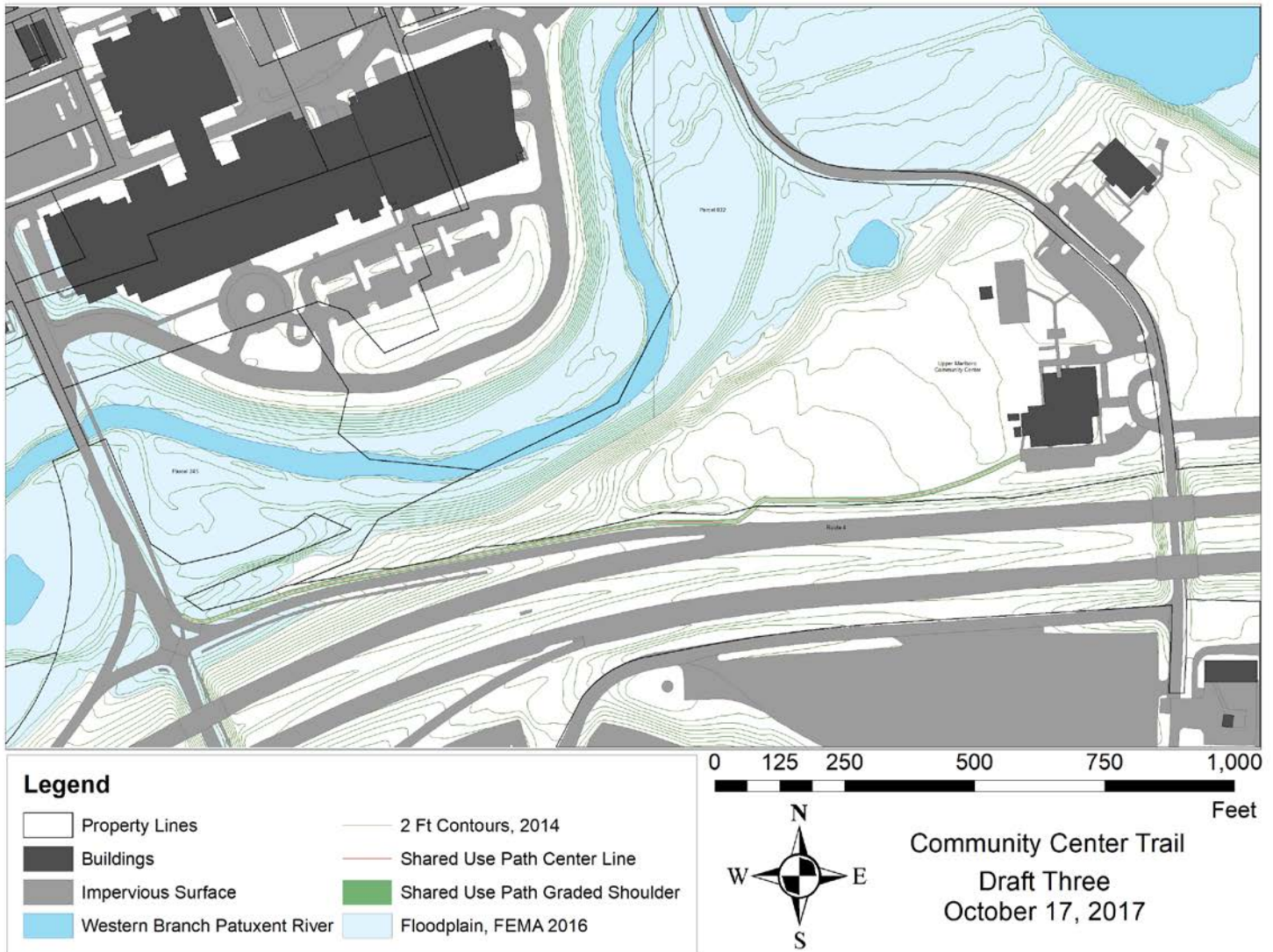


Image 4: Community Center Trail with Contours. Source: Author, October 2017

throughout Maryland and in other states,” and thus “where no other solution exists, new sidepaths may be constructed.” Geographic constraints in the area around the M-NCPPC Community Center dictate an alignment along the Route 4 on-ramp. The Western Branch Patuxent River shown in Image 4 isolates downtown Upper Marlboro from the Community Center, requiring the path alignment to run south of the Western Branch, parallel to Route 4. This alignment is in a very narrow right-of-way and partially in a FEMA-identified floodplain, creating the implementation challenges identified and addressed below.

The recommended surface material is asphalt. Though permeable surfaces are generally recommended for trail and path construction over impermeable materials like asphalt to lessen the effect of stormwater runoff, in a case like this where the path is relatively short and partially

in a flood plain, the benefits of permeable surfaces are offset by the increased cost and likelihood of immediate saturation making asphalt, though impermeable, the better option.

A two-foot wide graded shoulder should be provided along the length of the path, as per Section 7.6 of SHA's Design Guidelines. The path will connect to a preexisting pedestrian facility shown in Image 4 that runs parallel to Water Street. The preexisting pedestrian facility is six feet wide. Consultation with the M-NCPPC Trail Development Program Manager, Robert Patten yielded the recommendation that the shared use path also be six feet wide and be designated as a pedestrian facility with bikes permitted.

Final horizontal and vertical alignments shall be laid out in final designs to conform to Sections 7.10 and 7.11 of SHA's Design Guidelines. Existing grading yields a four percent slope all along the alignment, except for along the property line separating the SHA right-of-way and County land. The path does not intersect the roadway and will require no additional intersection design.

Image 5 shows how the alignment interacts with the surrounding environment. The trail begins at Water Street. and Route 4. It runs between the tree line and Route 4 until it reaches the Route 4 guardrail, where a gap in the trees allows the trail easy access to the Community Center grounds. The alignment is already graded at four percent, except for the entry point shown in Image 5, which will require minor regrading. The trail terminates in the drive lane of the Community Center parking lot, which creates a natural transition to Race Track Road.

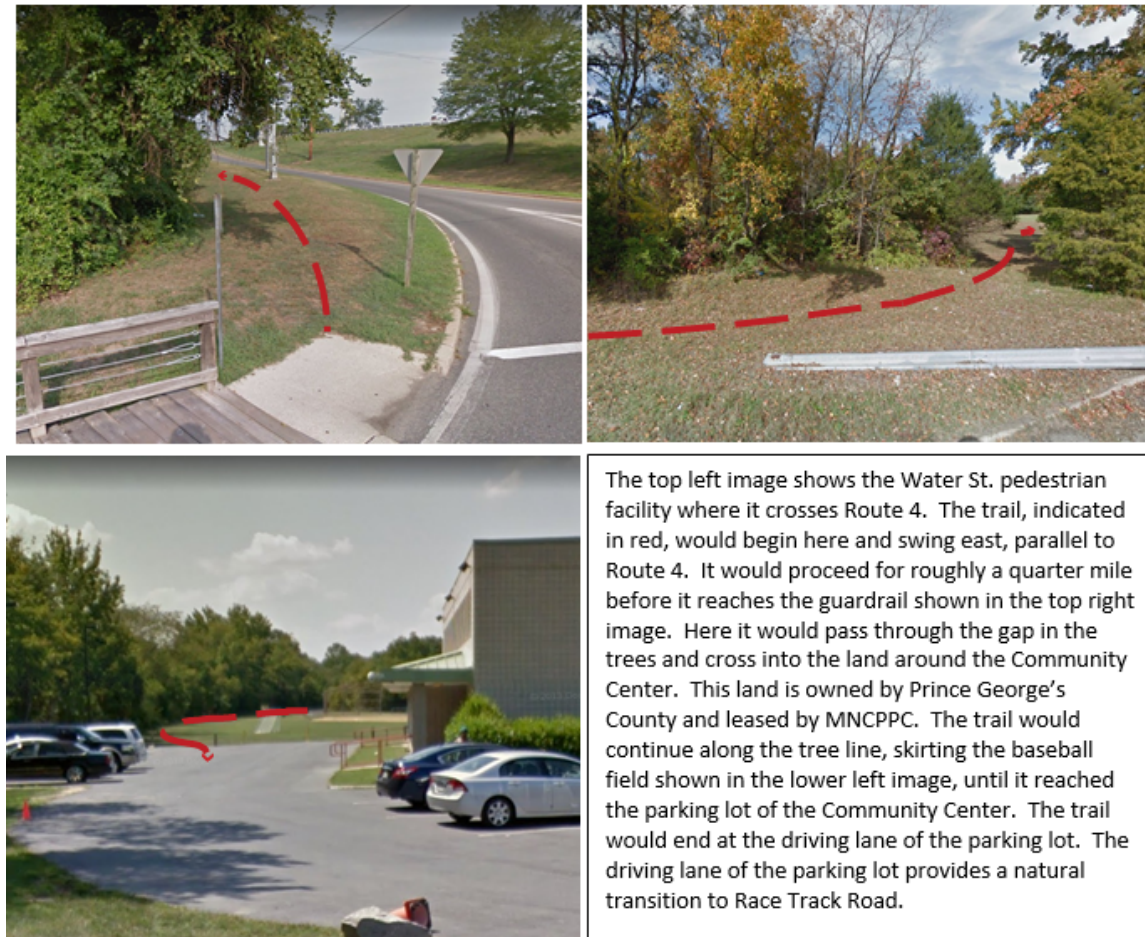


Image 5: Visualizations of Trail Alignment. Source: Author, September 2017

Approval Process and Stakeholders

Though the Community Center Trail is only 1,600 feet long, it has several significant complications. It is partially within a floodplain, requiring permitting from the Maryland Department of the Environment. It is within State Highway Administration and Prince George's County right-of-way, requiring permission from both. Finally, it connects to a community center owned and operated by the Maryland-National Capital Park and Planning Commission requiring a Memorandum of Understanding between them and the Town of Upper Marlboro. The sections below detail the materials that must be submitted to staff members in each of these stakeholder groups to streamline the approval process as much as possible. Unless otherwise noted, the staff mentioned below have been contacted by the author and are aware of the project. In many cases they have provide feedback that has been incorporated into this implementation plan.

The Town of Upper Marlboro

Upper Marlboro will be responsible for facilitating the final design of the Community Center Trail, securing funding for its construction, implementing that construction, and providing for ongoing maintenance. The Town of Upper Marlboro will also be responsible for securing permits, waivers, and agreements from the stakeholders below.

Prince George's County

The County owns Parcel 032, the land that the Community Center is located on. This plot is leased by M-NCPPC. To connect the Community Center Trail to the Community Center itself it will naturally be necessary for a portion of the trail to be built on this site. To secure a right-of-way easement from the County, the Town of Upper Marlboro must negotiate an agreement with the Prince George's County real estate office, which is within the Office of Central Services. Floyd Holt is the Deputy Director and would have approval power in this process. He is aware of the project and has had no comments so far. Image 6 shows which section of the Community Center Trail is within County-owned land.

Maryland-National Capital Parks and Planning Commission (M-NCPPC)

Though Prince George's County owns Parcel 032, M-NCPPC leases the land and administers the Community Center there. Upper Marlboro will have to sign a Memorandum of Understanding with M-NCPPC for construction and maintenance of the Community Center Trail. This MOU will be negotiated with Don Herring, the Area Park Planner at the M-NCPPC Southern Area Planning Office. It is likely that a similar agreement already exists—a request to review such agreements has been submitted by the author to the Upper Marlboro Town Clerk.

State Highway Administration (SHA)

The SHA requires a District Level Access Permit for construction within its right-of-way. The project is within the jurisdiction of the SHA District 3 Office. Correspondence with Montee Benjamin, C.E.T. Area Engineer SHA District 3, reveals that SHA requires a 60 percent “concept plan” for distribution to several SHA offices for review and comment prior to award of the permit. There is not a set criteria for the 60 percent “concept plan” but in this case it is understood to include design recommendations, concept drawings, and a grade plan with the path alignment.

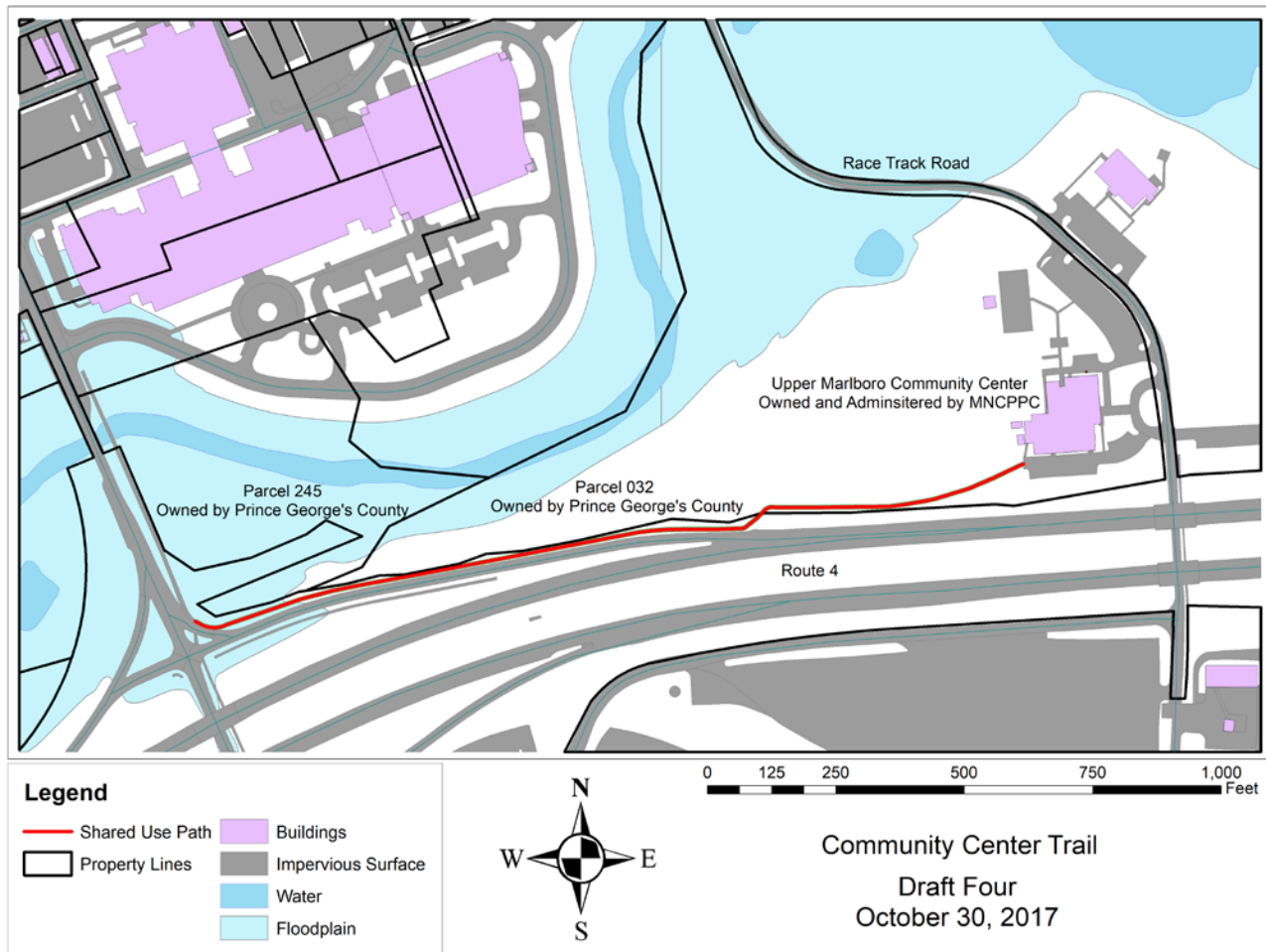


Image 6: Community Center Trail Alignment, Property Lines, and Roads. Source: Author, October, 2017

The scope of this project only included a 30 percent concept plan by the author, so SHA was only able to provide general comments. The 30 percent concept plan was submitted to Montee Benjamin in October, 2017 who facilitated distribution to all relevant SHA offices. So far only SHA's Office of Environmental Design has returned comments. They require an assessment of the impacts on trees in the construction area and a Soil Erosion and Retention plan to be completed by the engineering firm responsible for final design and implementation. These requirements are detailed in Appendix B. Fortunately sidepath projects are frequently found in communities like Upper Marlboro, creating many precedents for projects like the Community Center Trail.

Maryland Department of Environment (MDE)

The alignment identified by Toole Design Group and supported by the Town of Upper Marlboro is partially on a FEMA-identified floodplain. Paths and trails are not permitted developments within floodplains per Section 32-205 of the MDE code and so will require a waiver. To secure a waiver, grading plans must be submitted showing the alignment of trail, along with cut and fill information to determine the impact on the floodplain. Hydrologic and hydraulic studies may be

required. All materials should be submitted to Salman U. Babar, Senior Engineer, North District, Floodplain Engineer, Site/Road Plan Review Division. Additionally, MDE requires a waiver request letter. Mr. Babar provided a sample waiver request letter, which is found in Appendix C.

Estimated Costs for Construction and Maintenance

Construction costs vary widely by region, material, and local conditions. However, certain estimations can be made based on what is already known about the Community Center Trail project and similar projects.

In 2013, the University of North Carolina Highway Safety Research Center prepared a memo on costs for pedestrian and bicycle infrastructure improvements for the Federal Highway Administration. The authors found the median cost for a paved multi-use trail in 2013 was \$261,000.00 per mile, based on 11 projects that year. The Community Center Trail as currently envisioned is approximately one third of a mile long, so based on these estimations costs could be close to \$100,000.00 for implementation of the Community Center Trail.

Toole Design Group has also extensively documented similar trail construction projects in the area. In 2009, they documented the costs of many regional bike and pedestrian projects, along with calculations for base prices in general project categories. Their findings are attached in Appendix D. They find that in general for sidepaths like the Community Center Trail, the average cost per mile is approximately \$200,000.00 per mile, plus an additional 25 percent for “contingencies” and 20 percent for design, survey, and permitting costs. For the Community Center Trail (approximately 0.3 mile) this would come to about \$90,000.00 (see Figure 1, below).

The same document specifically examined two sidepaths: the Good Luck Road sidepath and the Old Gunpowder Road Trail Gap sidepath. The Good Luck Road sidepath included construction of a bridge and lighting, leading to a total cost of \$1,777,000.00 for 1.35 miles. This is very different from the Community Center Trail, which has no bridges or lighting, so can be disregarded. More similar was the Old Gunpowder Road Trail Gap sidepath, which like the Community Center Trail, was designed to fill a small gap in a region multimodal network—in this case, 900 feet (0.17 miles). The Old Gunpowder Road Trail Gap sidepath cost \$73,000.00 to implement, which is in keeping with the estimates above. It is safe to assume that implementation of the Community Center Trail could cost approximately \$111,000.

There has been less research into ongoing trail maintenance. In 2014 the Rails to Trails Conservancy conducted a comprehensive survey on trail maintenance costs, with 95 respondents. Costs varied widely as some areas had to deal with costly events like annual snow removal. On average, paved trail maintenance cost \$1,971 per mile.

Figure 1: Sidepath Base Cost Per Mile Estimation

Costs by Toole Design Group, calculations by Author, November 2017

Item	Unit	Quantity	2009 Unit Cost	Total Cost	Comment
Earthwork, Excavation, Grading	CY	1600	\$15.00	\$24,000	Assume 12 feet wide grading
Aggregate Base Course for Pavement	CY	980	\$50.00	\$49,000	
Asphalt Surface Course	TON	510	\$60.00	\$30,600	
Asphalt Base Course	TON	510	\$60.00	\$30,600	
Thermoplastic Pavement Marking	LF	2640	\$3.00	\$7,920	Assume 50% with centerline stripe
24" Thermoplastic Pavement Marking	LF	200	\$10.00	\$2,000	Assume 1 High Vis crossing every 2500 feet
New Sign	EA	5	\$220.00	\$1,162	Assume 1 Sign every 1000 feet
New Signal Heads	EA	1	\$5,000.00	\$5,000	Assume new signal head every mile
Bollards	EA	2	\$400.00	\$845	Assume new bollard every 2500 feet
Split Rail Fence	LF	200	\$20.00	\$4,000	Assume 200 LF of splitrail fence every mile
Bench	EA	0.5	\$800.00	\$400	Assume at wayside, 2 every miles
Bike Rack	EA	0.5	\$400.00	\$200	Assume at wayside, 2 every miles
Trash Can	EA	0.5	\$400.00	\$200	Assume at wayside, 2 every miles
Large Map or Interpretive Sign Panel	EA	0.5	\$3,000.00	\$1,500	Assume at wayside, 2 every miles
Lump Sum Items					
Landscaping (5%)	LS	1	\$7,871.00	\$7,871	
Drainage and E&S (10%)	LS	1	\$15,743.00	\$15,743	
Maintenance of Traffic (5%)	LS	1	\$7,871.00	\$7,871	
Utility Adjustments (10%)	LS	1	\$15,743.00	\$15,743	
			Subtotal	\$204,654	
Mobilization (10%)	LS	1	\$20,465.00	\$20,465	

Subtotal	\$225,119
25% Contingency	\$56,280
Total Estimated Cost per Mile	\$281,399
20% Design, Survey, Permitting	\$56,280
Grand Total Estimated Cost Per Mile	\$337,679
Approximate Distance of Community Center Trail in Miles:	0.33
Total Estimated Cost for the Community Center Trail:	\$ 111,434.07

Possible Funding Sources

Based on conversations with the Upper Marlboro Town Clerk and Mayor, the current plan to fund the implementation of the Community Center Trail is to apply for a County Economic Development Corporation grant. This body provides 7 to eleven million dollars a year for projects that can produce measurable economic impacts. As the Community Center Trail would enhance access to many commercial centers, as shown in Image 3 above, this project seems like a clear fit. The Town of Upper Marlboro has already initiated the application process, so it will not be addressed in depth here. However, there are several alternative funding sources should County Economic Development Corporation funds not be forthcoming. These funds are specifically for multimodal transportation solutions, making the Community Center Trail a strong contender.

The Maryland Transportation Alternatives Program (TAP) is a reimbursable federal aid program intended to fund community-based multimodal transportation projects. Bicycle and pedestrian projects are specifically mentioned as program priorities. The Town of Upper Marlboro would apply to the National Capital Region Transportation Planning Board, which disburses TAP funds from the Maryland State Highway Administration. Upper Marlboro would be responsible for the design, management, construction, implementation, and permit requests if the Community Center Trail was funded through TAP. Also, Upper Marlboro would be responsible for 20 percent of the project costs, as well as hold responsibility for maintenance and legal liability for the duration of the Community Center Trail's useful life. The TAP process manual is included in Appendix F.

Upper Marlboro is also within a Priority Funding Area for the Maryland Bikeways grant program. The Bikeways program is a Maryland Department of Transportation (MDOT) program intended to fund projects that "maximize bicycle access and fill missing links in the state's bicycle system, focusing on connecting bicycle-friendly trails and roads and enhancing last-mile connections to work, school, shopping and transit" which the Community Center Trail certainly does. The Community Center Trail may even qualify for priority funding as it provides bike access along a missing trail link and increases bike circulation within a heritage tourism area. The Community Center Trail would fall into the "construction" project category. Application instructions are provided in Appendix G, along with a sample of a successful application submitted by the author.

Finally, the Town of Upper Marlboro may wish to consider applying for a Recreational Trails Program grant. This program is notable in that it specifically funds trail maintenance, along with development and construction. This grant could complement construction funding to ensure a sustainable useful life for the Community Center Trail. Applications are reviewed by the Recreational Trails Advisory Committee, then forwarded to the Director of the MDOT SHA's Office of Planning and Preliminary Engineering for approval, partial approval, or rejection. Upper Marlboro would be responsible for providing 20 percent of project costs, securing all approvals and permits, and providing documentation required by SHA. The application, sample MOU, form templates, and contact list have been compiled by SHA and are included in Appendix H. Additionally, an MDOT compiled list of bicycle and pedestrian funding programs is included in Appendix E, which lists these and additional funding sources, though these grant programs are less likely to fit with the Community Center Trail project.

Concluding Remarks and Future Steps

There is a clear and present need for the Community Center Trail. The Upper Marlboro Community Center exists to serve the old and young—those least likely to have reliable access to a car. Community members are already walking to the Community Center, implying that better pedestrian access would attract even more visitors.

Filling this gap in the multimodal network will enhance safety and provide increased access to many other commercial and cultural amenities besides the Community Center. The Trail would also be a necessary link in a proposed loop that could have great heritage tourism and public health benefits in the area.

The stakeholders in this project—MDE, SHA, M-NCPPC, and the County—are all aware of the project and have given a great deal of feedback that has been incorporated into this implementation plan. There is also an abundance of funding mechanisms for projects like the Community Center Trail. Ideally, implementation will be swift with this plan as a guide.

Once this trail section has been completed the remainder of the proposed recreational loop should be implemented. The next step should be evaluating what multimodal facilities would best enhance Race Track Road. cursory examination shows that bike lanes or shared lane markings could be implemented relatively easily. Beyond that, pedestrian facilities should be added parallel to Race Track Road and at the intersections of Race Track Road and Main Street.

Appendix

1: Context Map (Image 3)

2: Contour Map (Image 4)

3: Visualizations (Image 5)

4: Alignment, Roads, Property Lines Map (Image 6)

5: Grade Plan

6: Regrade detail

6: GIS files

A: Contact information for Key Stakeholders

B: State Highway Administration Office of Environmental Design requirements

C: Maryland Department of the Environment waiver request example

D: Toole Design Group Bike Facility Cost Estimating Tool

E: List of State and Federal Bike/Ped Funding Sources

F: Transportation Alternatives Program Manual

G: Approved Bikeways Grant Example

H: Recreational Trails Program Manual

I: 2018 State Grant Awards for Bike/Ped Projects