Pulaski Middle School Walkabout Report

Figure 1. The entrance to the middle school.

Introduction

On November 16, 2020, stakeholders at Pulaski Middle School in Pulaski, Virginia met to discuss conditions for walking and bicycling to school and identify potential projects to be included in a future Transportation Alternatives grant application. Stakeholders also discussed future developments in the neighborhood that will change access to the middle school. Their participation in a VDOT Safe Routes to School (SRTS) Walkabout shows their support for improving the walking and bicycling environment and increasing the number of students safely walking and bicycling to school. Given the COVID-19 pandemic, the meeting was held virtually. Meeting participants included the principal, representatives from Pulaski County, Virginia Safe Routes to School Program staff members, and representatives from the Virginia Department of Transportation. The names of the Walkabout Team members are listed in Appendix A.

Data Collection

SRTS Walkabouts are traditionally held as a large in-person meeting that includes an observation of school dismissal. To protect the health of Walkabout participants during the COVID-19 pandemic, data was collected via virtual and socially-distanced methods.

To collect information on the existing walking and bicycling conditions on the campus and in the surrounding area, two SRTS Program staff members visited Pulaski on October 23, 2020. The staff members also observed school dismissal at a safe distance.

An online interactive mapping tool was distributed in advance of the Walkabout meeting for stakeholders to share their thoughts on the existing conditions. The map enabled stakeholders to upload photos, videos, and written comments about walking and bicycling conditions near the school. Their input was reviewed during the meeting on November 16. During the meeting, Virginia Safe Routes

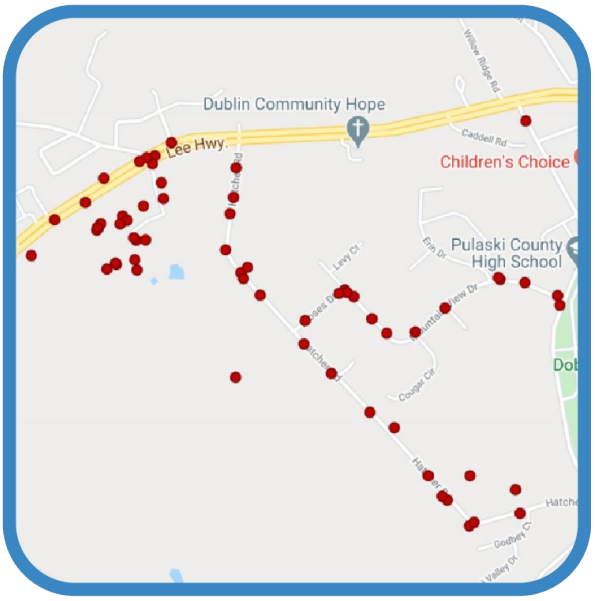

Figure 2. Screenshot of online mapping tool.

to School Program staff and stakeholders shared additional observations and discussed school division policies, arrival/dismissal procedures, and project priorities.

Existing Conditions

School Location and Demographics

Pulaski Middle School is located at 4396 Lee Hwy, Pulaski, VA 24301 and serves 930 students. The school is at the northeastern side of the attendance boundary and is about 5 miles away from Pulaski's town center (Figure 3).

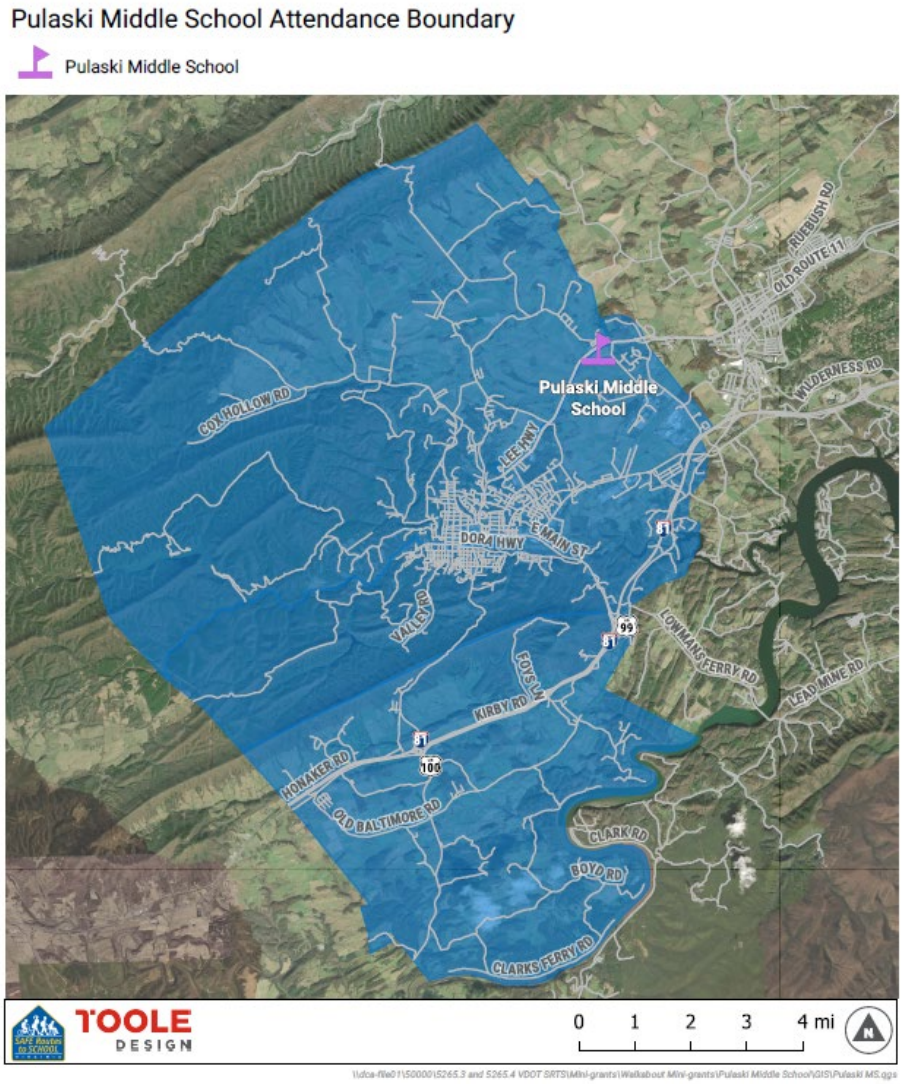

Figure 3. Map of Pulaski Middle School's attendance boundary.

Pulaski Middle School was built in 2020 and opened in the fall of 2020. Due to COVID-19, about 600 students are attending in-person while 330 students are taking classes virtually. Currently, about 200 students are driven to school in a family vehicle, and almost all of the remaining students ride the school bus. School buses are currently not operating to full capacity due to social-distancing guidelines. Multiple school bus fleets allow all students to travel to and from school safely. The Walkabout team witnessed one student walking home. No students currently bike to or from school. Travel patterns, as well as the school's processes for arrival and dismissal, are likely to change after the pandemic, when the principal expects more students will ride the bus.

The new Pulaski Middle School campus is surrounded by high-speed rural roads and very low-density development. Only a few houses are located within 1 mile of the campus as shown in Figure 4. Pulaski High School is approximately 1 mile to the east of the middle school.

Pulaski Middle School Walkshed

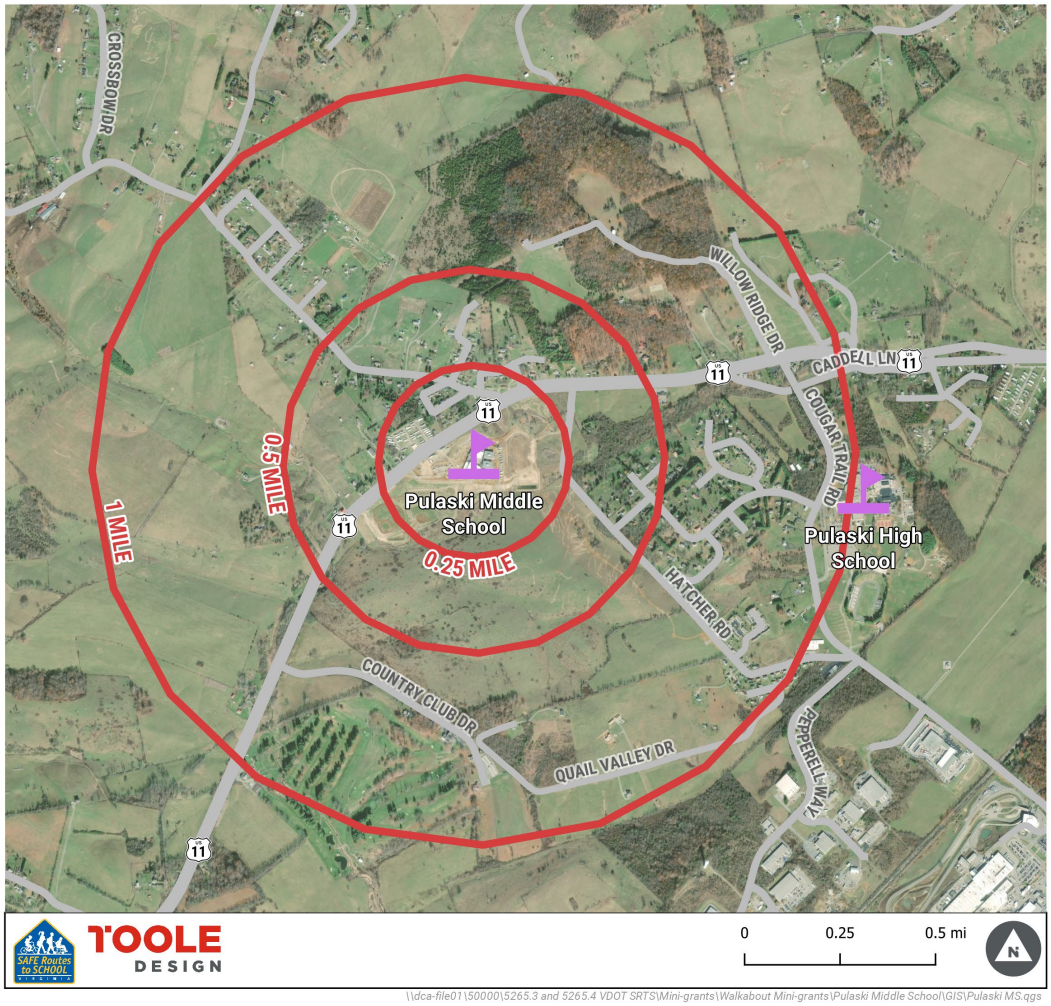

Figure 4. Quarter-, half- and one-mile distance buffers around the middle school.

Context and Future Development

Job opportunities are increasing in Pulaski County, as is demand for housing and other community amenities. Several changes to the Pulaski Middle School neighborhood in the coming years present opportunities for active transportation for students and other community members alike.

Countryside Landing is a residential and commercial development to the south of Pulaski Middle School. The project broke ground mid-2020 and will be constructed within a 10-year period. Phase 1 of the project is nearly 50 single-family homes closest to Hatcher Road. The development is within 1 mile of the middle school; this proximity will greatly increase the number of students who could walk and bike to school. County planning staff indicates the developer of Countryside Landing is open to providing easements for trails or shared use paths to connect the development to the middle school. See Appendix E for the site plans.

In conjunction with Countryside Landing, there are plans to realign Hatcher Road to Thornspring Road. The existing segment of Hatcher Road will be maintained. The new intersection with Hatcher Road and Route 11/Lee Hwy will be signalized. When finished, the primary entrance to Pulaski Middle School will be located off of Hatcher Road. This realignment presents opportunities for new active transportation facilities. See Appendix E for the site plan.

Additionally, Fairview Home, an assisted living facility on Hatcher Road, is partnering with the county to construct a pocket park to the west of the building. The park will be managed by the county and open to the public. Connecting nearby residences to the Fairview Home pocket park will allow the community to enjoy this amenity.

Nearby Planned Projects

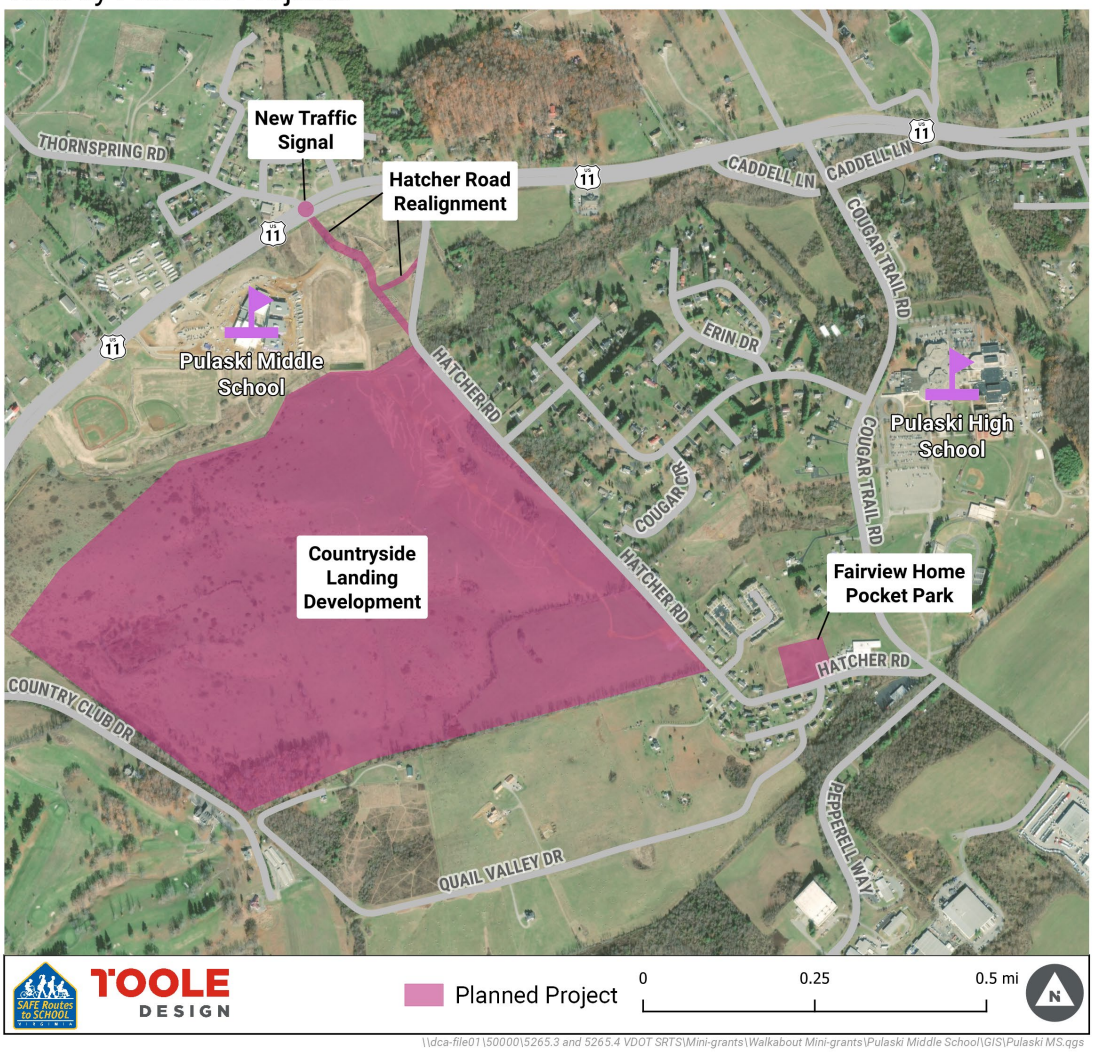

Figure 5. Map of planned projects in the Pulaski Middle School area.
(Polygons may not accurately represent project boundaries)

Bicycle and Pedestrian Infrastructure

There are sidewalks and several marked crossings on the school's campus. There are no sidewalks that directly connect the school to the surrounding neighborhoods. In addition, there are no sidewalks that connect Pulaski Middle School to Pulaski County High School about 1 mile away, which was indicated as a high priority by the Walkabout applicant and other stakeholders.

The absence of sidewalks creates an environment that is not conducive to walking. Currently only one student walks to the middle school. There are also no bicycle facilities within the roadway right-of-way connecting neighborhoods or the high school to Pulaski Middle School.

Walkabout Summary

After a brief meeting with the principal and Walkabout applicant to review existing dismissal procedures and community concerns, Virginia SRTS staff walked around the school campus to observe dismissal preparations and students' release from both the front and the back of the school. SRTS staff used these observations, as well as information shared in the online mapping tool, to facilitate the discussion of the school dismissal, key issues, and potential opportunities at the online meeting.

Dismissal Overview

Students are dismissed at 2:15 p.m. Originally, car pick-up was planned to occur in the front parking lot and school buses would circulate in the back lot. Because cars were backed up along Route 11/Lee Highway at the beginning of the school year, the car pick-up line was extended to weave through the front parking lot to the back of the school. The school's back lot is separated by barricades into two sections, one for car pick-up and the other for school buses. Students exit the building from several doors at the back of the school.

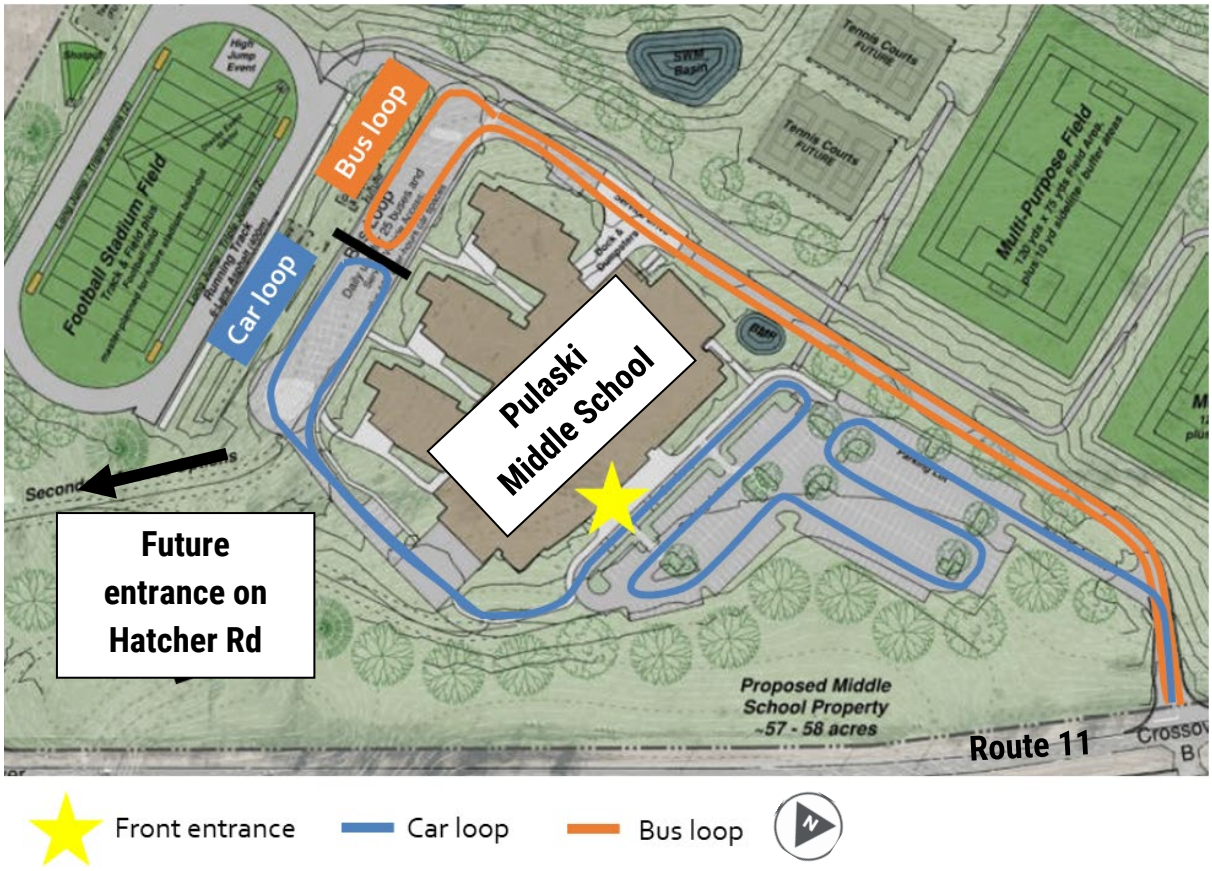

Figure 6. 2018 School site plan with current dismissal process.

Drivers enter the school campus through the main entrance off of Route 11/Lee Highway and follow a painted blue line[1] that weaves through the front parking lot to the back parking lot where pick-up occurs. A school staff member walks to each car, asks the driver for the student's name, and relays to the front desk via walkie talkie. At the front desk, the students' names are added to a shared Google document that teachers can see. The teacher then releases those students to the back of the school to wait for their parent. Students are supposed to wait on the sidewalk or grassy area until their parent reaches the front of the line; monitors are present to enforce this. However, the Walkabout Team did notice multiple students breaking this rule, causing vehicles to skip the queue to exit and make a U-turn into the opposite lane.

Figure 7. Students wait on the grass or sidewalk at the back of the school during the dismissal process

Bus riders are dismissed before car riders and are dismissed by announcing bus numbers over the intercom when the bus is ready to pick-up students. There is room for six buses along the sidewalk and the other buses wait in line. The first round of buses left around 2:18 p.m., with nearly all buses leaving by 2:30 p.m.

During the Walkabout, one student asked the principal for permission to walk home. The student crossed the back parking lot near the barricades, then walked along a curb-separated section of the parking lot to a dirt road leading to Hatcher Road. While this is the path that this particular student chose to take, it is not immediately clear to drivers and pedestrians what space is designated for pedestrian use in the parking lot.

The Hatcher Road re-alignment and post-COVID-19 adjustments will change the school's arrival/dismissal processes. Therefore, this report does not provide recommendations for the arrival/dismissal process.

Figure 8. The back parking lot is currently divided into halves. The left side is used by family vehicles, and the right side is used as a school bus loop.

[1] The car loop can be viewed from a driver's perspective with this video: https://www.facebook.com/watch/?v=807053000114638

Key Issues and Barriers

The key barriers and issues identified by the Walkabout Team and Virginia SRTS Program staff are listed below. Location specific issues and recommendations are listed on the following pages. For additional information regarding key roadways mentioned in this barriers and issues discussion, including speed limits and annual average daily traffic (AADT), see Appendix B.

Figure 9. Sidepath on the south side of the school near the athletic facilities.

- **Missing walking/biking facilities –** The campus was built with some active transportation facilities, but the surrounding area is currently lacking in spaces to walk or bicycle safely.
- **Motor vehicle speeds and volumes –** Route 11/Lee Highway, Cougar Trail Road, and segments of Hatcher Road are major barriers to students walking and bicycling due to high vehicle volumes and speeds. Additional traffic is expected from residents of and visitors to Countryside Landing. Cougar Trail Road is a key connection between Route 11/Lee Hwy and I-81 to the south and is often used by trucks.
- **Difficult crossings –** There are no marked crossings in the surrounding neighborhoods to allow students and other community members to cross streets safely. Improved crossings must address poor sight lines and increase visibility of people crossing.

The Walkabout Team also identified opportunities for Pulaski Middle School due to the Countryside Landing development. Location-specific recommendations to capitalize on these opportunities are listed on the following pages.

Infrastructure Recommendations

A map of the infrastructure recommendations for Pulaski Middle School is provided in Figure 10 below. This map is followed by information detailing the issues and recommendations, with photos of existing conditions at each location. A glossary of engineering terms is provided in Appendix C and key state policies supporting the recommendations are highlighted in Appendix D.

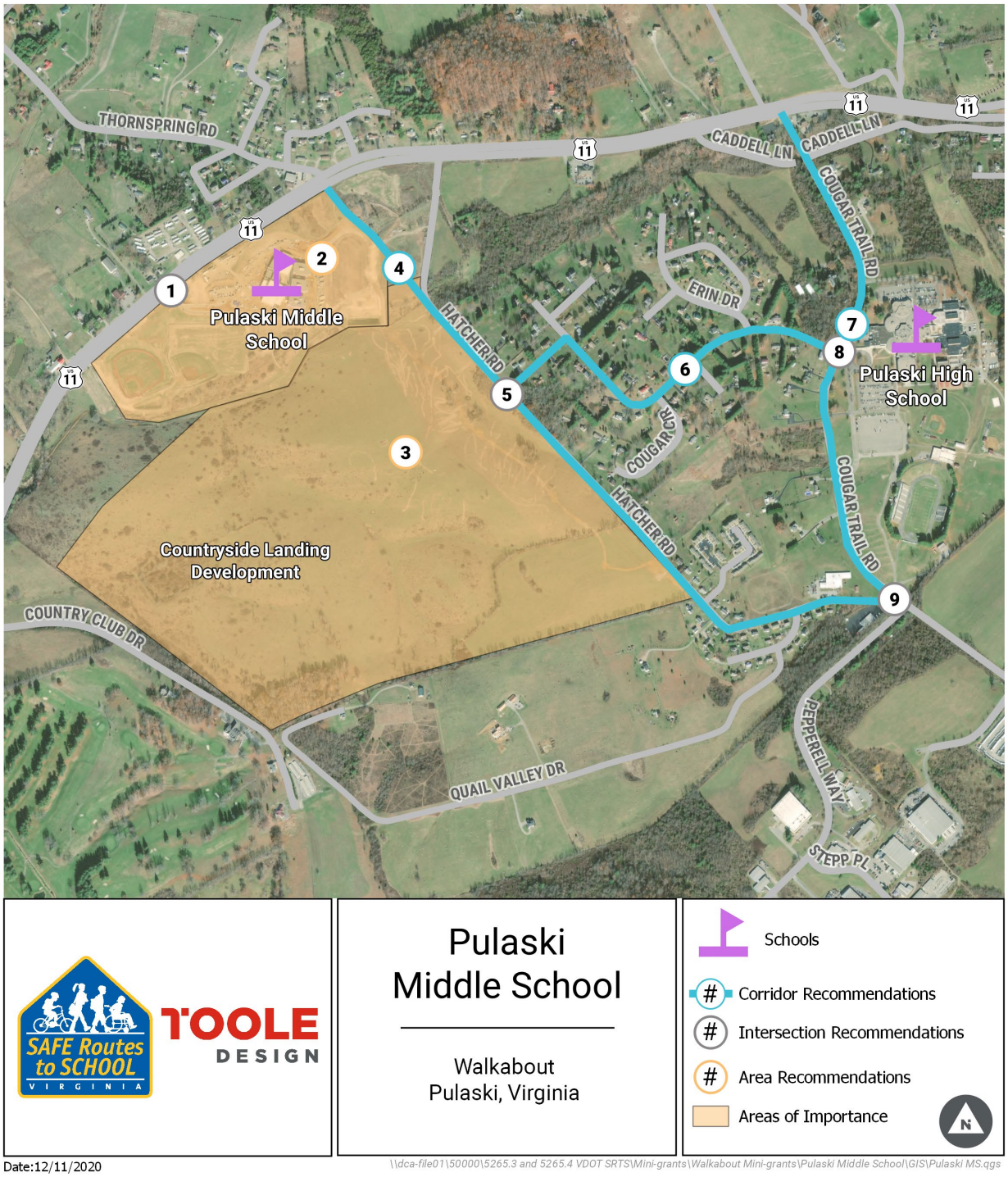

Figure 10. Map of recommendations.

Map ID 1: Entrance to School on Route 11/Lee Highway

Issue: Motor vehicle speeds and volumes

As a primary corridor through western Virginia, Route 11/Lee Highway is heavily trafficked and has high speeds. The posted speed limit is 55 mph. At the time of this report, school zone signage is temporary; the only signage currently present is depicted in Figure 11. This variable message sign warns drivers of the upcoming school but does not indicate a speed limit appropriate for a school zone.[2] The school's current primary entrance is on Route 11/Lee Highway, though there are plans to relocate the primary entrance to the realigned Hatcher Road in the future. Enhancing signage near the current and future entrance to the school will create a more established school zone, slow vehicles, and complement current planning efforts aimed at making it possible to walk and bike around the middle school. Though students will likely not be walking or biking across or on Route 11/Lee Highway, reducing the speed limit also improves safety for drivers of vehicles and buses entering and exiting the campus.

Figure 11. School signage on Route 11/Lee Highway approaching Pulaski Middle School from the east, as of October 2020.

Short-Term Recommendations (1 to 3 years)

- Install school zone signage (S5-1 and R2-6P with flashing beacons) near school entrances with a posted speed limit of 40 mph. Consider using flashing beacons to alert motorists of the reduced speed zone during school hours. Solar powered beacons could be used to avoid hard wiring.
    - Note: As of January 2021, school signage with flashing beacons have been installed on Route 11. The regulatory speed of the highway is reduced to 35 mph when the beacons flash during arrival and dismissal times.

Medium-Term Recommendations (4 to 7 years)

- Evaluate the school zone speed in the future, as proposed development, Hatcher Road realignment, and infrastructure changes recommended in this report may increase pedestrian activity in the area.

[2] Note that per VA code §46.2-873 portable signs for school zones should be removed daily when school is not in session. County staff should investigate if this code applies to variable message signs if they continue to use them for the school zone.

Map ID 2: School Campus

Issue: Missing walking and biking facilities

In the school's front parking lot (near the entrance off of Route 11/Lee Highway), primary pedestrian crossing areas to the school are painted the same blue color as the line that parents or family members follow if they are dropping off/picking up a student. During the walkabout, many cars were observed idling in the crosswalk while waiting to pick up their child (see Figure 12). In addition to non-standard crosswalk markings, a stop sign near the school entrance was observed as being non-MUTCD compliant because it was not reflective, which can impair visibility in low-light conditions. This stop sign, and any future stop signs added to the school campus, should be made MUTCD-compliant and include reflective features.[3]

There are currently few dedicated active transportation facilities on the campus providing pathways for people who walk or bike to and from the school. The school's campus does have a sidewalk that wraps around the school, as well as one connecting the school and the soccer fields. However, there are gaps in sidewalk between the school and nearby neighborhoods and destinations that prevent students from entering or exiting the campus safely. Dedicated walking and biking pathways (such as sidewalks, painted crossings, or shared use paths) create a safer environment by establishing where pedestrians and bicyclists have a safe space to travel and making this space visible to drivers. Areas where people may desire to walk or bike (nearby neighborhoods, school sports facilities, and Countryside Landing) are all on the back side of the school.

Figure 12. A driver idling in a crosswalk during student pick-up.

Figure 13. The stop sign exiting the school parking lot towards Route 11/Lee Highway.

[3] https://mutcd.fhwa.dot.gov/htm/2009/part2/part2b.htm#section2B05

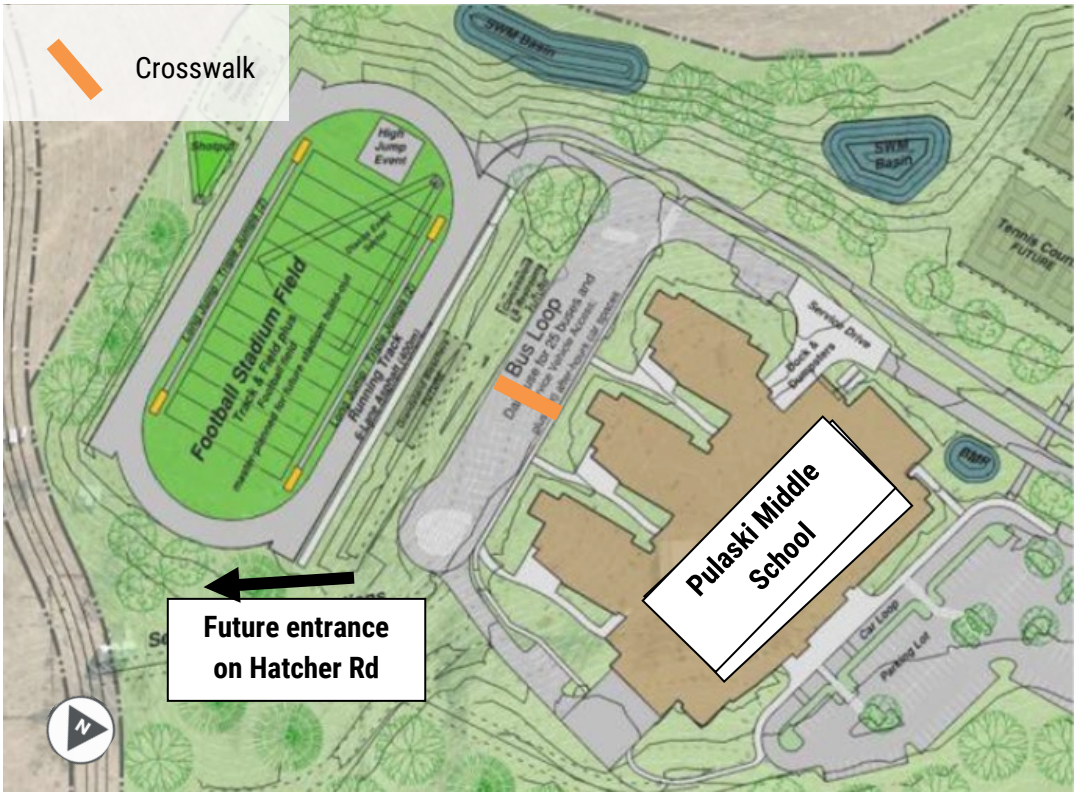

Figure 14. 2018 School site plan. The school's back parking lot is large and has no clear, safe way for pedestrians and bicyclists to cross to Hatcher Road or the football field. There are sidewalks on the northwest and southeast sides of the back parking lot.

Short-Term Recommendations (1 to 3 years)

- Upgrade all crossings on school campus, particularly those in the current front school parking lot, to be white and high-visibility.
- Make stop signs MUTCD-compliant by adding reflective qualities to aid with visibility.
- Add a high-visibility or artistic crossing bisecting the schools' back parking lot for use as a walking and biking path. This crossing should be protected by sawhorses or other types of barriers while the back parking lot is used for both family vehicle and school bus circulation.

Medium-Term Recommendation (4 to 7 years)

- Ensure that there are continuous, comfortable, and ADA accessible walking facilities to access to Hatcher Road.
- When drop-off and pick-up changes, evaluate the need for more permanent protection for pedestrians crossing the back parking lot.

Map ID 3: Countryside Landing

Issue: Ensuring walking and biking connections to adjacent development

Countryside Landing is a new mixed-use development adjacent to the school's southern and eastern edges with huge potential to enhance pedestrian and bicyclist mobility. Sidewalks are currently planned for the development's internal roadways. In conversations with the county planner, the developer is open to providing easements for walking and bicycling connections between the school and Countryside Landing. Adding bicycle and pedestrian facilities connecting Countryside Landing and Pulaski Middle School is an amenity for students who live in the development, as well as others who may attend events or use sports facilities on the school campus. Shared use paths, in particular, are preferable to sidewalks and bike lanes as they provide a more comfortable walking and biking environment that is designed for people of all ages and abilities. Conventional bike lanes that are not horizontally and/or vertically separated from traffic may not be comfortable for younger children or less experienced bicyclists. Figure **16** highlights potential locations for shared use paths between Countryside Landing and Pulaski Middle School. Note that this figure includes a shared use path recommendation on Hatcher Road which is discussed in further detail in Map ID 4.

Figure 15. Looking at the future Countryside Landing site from the school's back parking lot.

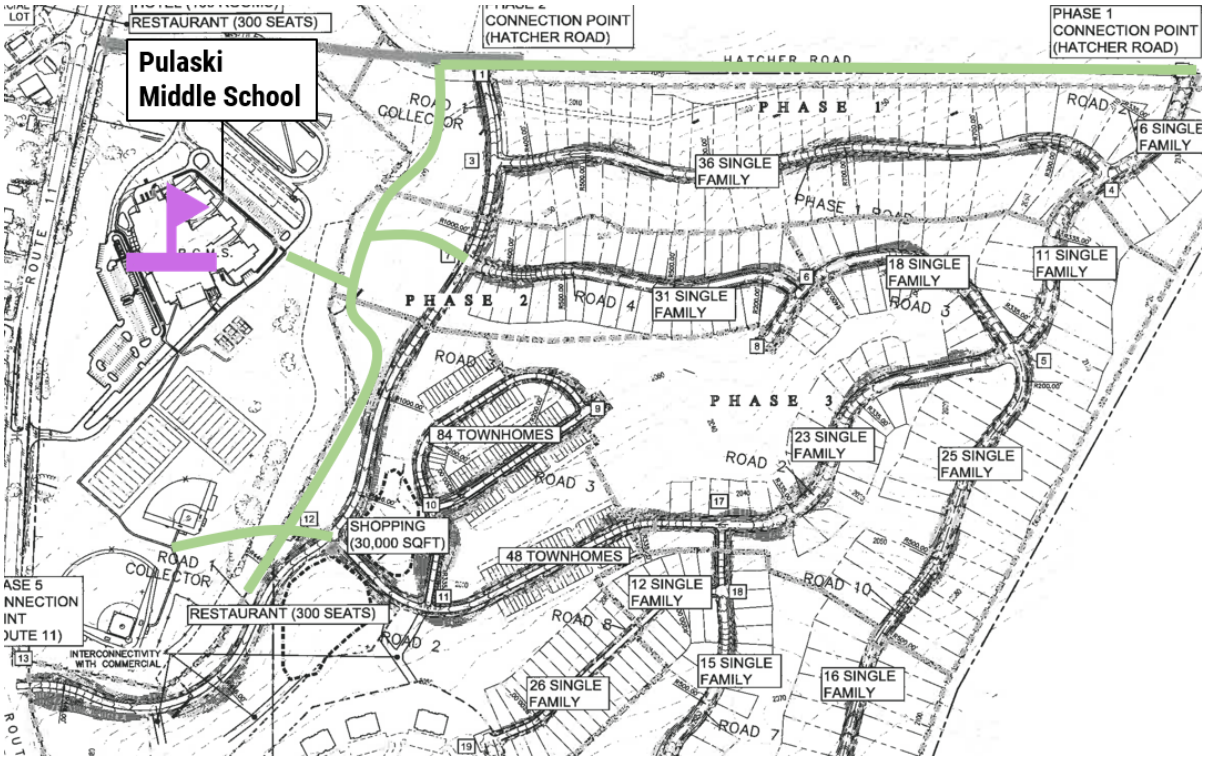

Figure 16. Potential route for shared use paths connecting the Countryside Landing development to Pulaski Middle School.

Short-Term Recommendations (1 to 3 years)

- Install a shared use path with Phase I of Countryside Landing that connects Hatcher Road to the back of the school. Additional connections may be made to the neighborhood streets within Phase I. The Countryside Landing developer is planning to install 5' sidewalks on these streets, and shared use paths will connect these facilities to the school and surrounding neighborhood.
    - The shared use path should be a minimum of 10 ft. wide to accommodate pedestrians, joggers, and people using assistive mobility devices.

Medium-Term Recommendation (4 to 7 years)

- Install additional shared use path connections to Pulaski Middle School. Adding multiple connections to the school will create a network that enhances mobility and provides multiple options to travel between the school and Countryside Landing. Figure **16** serves as an example of how these shared use paths may be conceptualized, but further study will be needed to identify the exact alignment.

Map ID 4: Hatcher Road

Issue: Missing walking and biking facilities

Today, Hatcher Road has a 40 mph posted speed limit and no facilities for people who walk or bike. As a part of the Countryside Landing development, there are plans to re-align Hatcher Road to form a four-way intersection at Route 11/Lee Highway and Thornspring Road. The re-alignment plan in Figure 17 proposes sidewalks and bike lanes along Hatcher Road. In addition, the plan proposes several motor vehicle turn lanes to the new primary entrance to Pulaski Middle School.

As detailed in Map ID 3, this Walkabout report proposes a shared use path on the southwest side of Hatcher Road, from the intersection at Route 11 to Cougar Trail Road. This report recommends a shared use path, rather than sidewalk and bike lanes, to create a comfortable walking and biking facility that better fits the context, demand for walking and bicycling mostly on one side of the road, and increased separation from moving vehicles. If demand for walking facilities increases in the future, a sidewalk can still be added to the north side of the road.

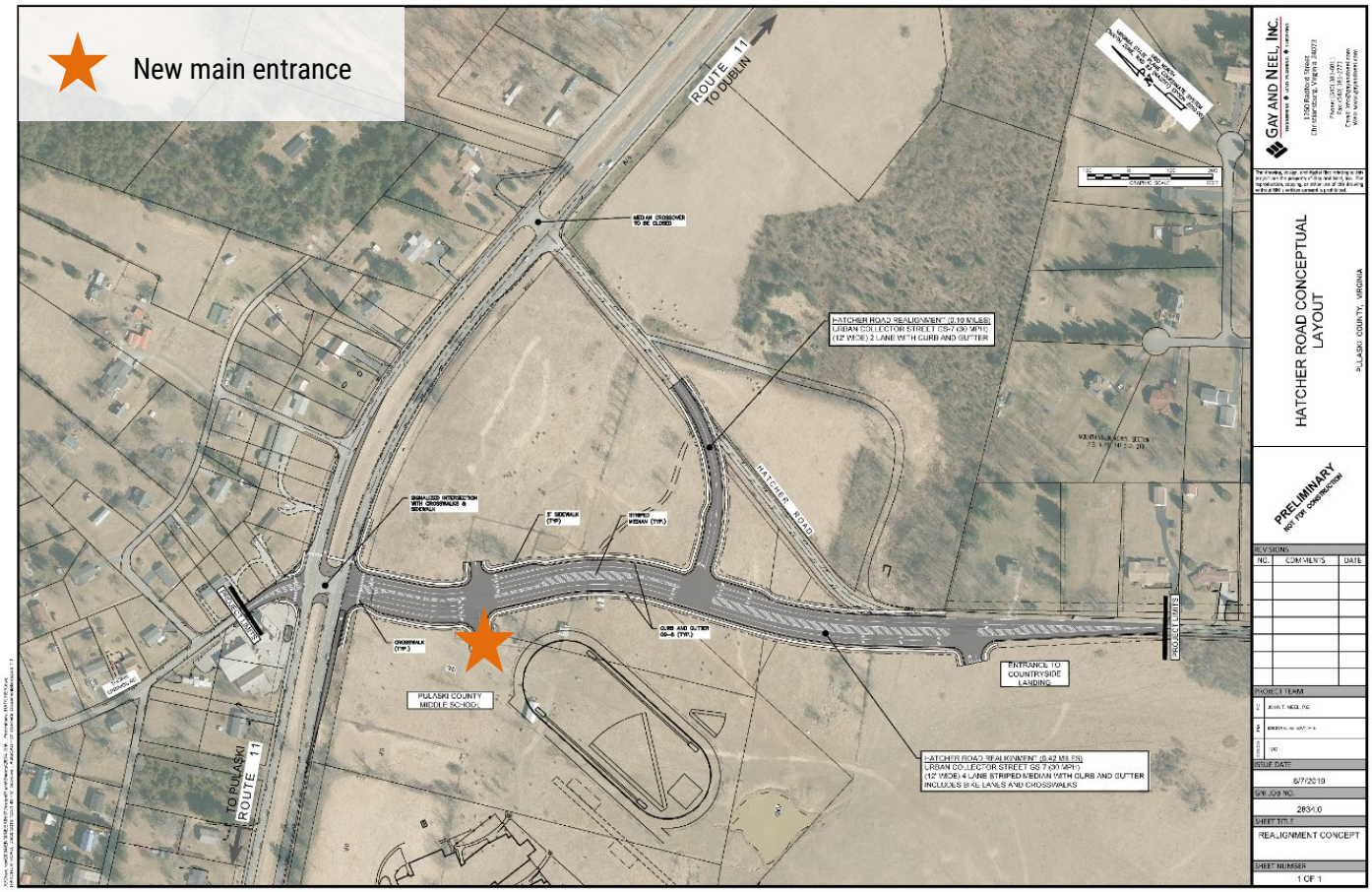

Figure 17. Proposed Hatcher Road re-alignment.

Issue: Motor vehicle speeds and volumes

Figure 18. Facing southeast on Hatcher Road; future Countryside Landing development on the right.

Currently, Hatcher Road is narrow with variable speed limits and poor sight lines in some areas. As part of the proposed re-alignment, the speed is designed to be 30 miles per hour with four twelve-foot lanes and a striped median. The road's design should minimize roadway width to visually slow drivers down. Using 11-foot travel lanes instead of 12-foot travel lanes would still be wide enough for school buses and larger vehicles while creating a travel environment that slows vehicle speeds. In addition, the striped median adds additional width to the roadway, giving drivers the perception that they can travel faster. Removing this median can save roadway space for other investments, such as the recommended shared use path on the south side, and further control driver speeds. Lastly, the number of travel lanes can also impact roadway width. Careful consideration should be made to determine whether four travel lanes are truly needed in this context, particularly near the school. Reducing the number of travel lanes, to the extent possible, will help reduce driver speeds and crossing distances for pedestrian and bicyclists.

Short-Term Recommendations (1 to 3 years)

- For the design of the Hatcher Road re-alignment, consider 11-foot travel lanes and removing the striped median. Consider changing design of the Hatcher Road re-alignment to two or three lanes rather than four.
- Install shared use path on south/west side of road that connect to Pulaski Middle School and any future shared use paths or sidewalks in Countryside Landing. Near Bradley's Ridge Apartments and Fairview Home, the path's alignment should be carefully designed to mitigate any safety concerns due to the sharp curve.
- Install high-visibility crossings at the new school entrance and all entrances to Countryside Landing.
- Implement a 25 mph posted speed limit along Hatcher Road. This speed limit is more appropriate for a school environment[4] and creates a safer, more comfortable walking and biking environment as this will be one of the primary routes for those who want to walk or bike to the school. A 25 mph posted speed limit is consistent with the existing speed limit at the southern end of Hatcher Road.
- Install school zone signage (S5-1 and R2-6P with flashing beacons). Signage should be installed near the intersection of Hatcher Road and Route 11 and near the proposed school entrance on Hatcher Road.

Long-Term Recommendation (more than 7 years)

- Investigate the need for pedestrian facilities on the north/east side of the road.

[4] For more information on speed reduction in the school zone, see http://www.virginiadot.org/programs/resources/walkToSchool/2016/zino/2016_08_26_VDOT_LDL_Speed_Reduction_FINAL.pdf

Map ID 5: Intersection of Hatcher Road and Moses Drive

Issue: Difficult crossings

The intersection of Hatcher Road and Moses Drive is currently stop-controlled on Moses Drive. There are no crosswalks at the intersection. A high-visibility crosswalk can both delineate space for pedestrians and provide a visual cue to drivers to watch for people crossing. A crosswalk is essential at this location to connect the future shared use path recommended on Hatcher Road (Map ID 4) and the painted/advisory shoulders recommended along Moses Drive (Map ID 6).

Figure 19. The intersection of Hatcher Road and Moses Drive.

Short-Term Recommendations (1 to 3 years)

- Trim vegetation to improve sight lines for vehicles turning and improve visibility of street signs.

Medium-Term Recommendation (4 to 7 years)

- Install a high-visibility crosswalk across Hatcher Road to connect the proposed shared use path on Hatcher Road (Map ID 4) to the proposed pedestrian facilities on Moses Drive (Map ID 6).
- Install advance crossing signage.

Map ID 6: Moses Drive and Mountain View Drive

Issue: Missing walking/biking facilities

There are no dedicated active transportation facilities on either of these streets. The low speeds and traffic volumes indicate that this residential route could be a comfortable walking and bicycling connection between the middle and high schools. Establishing walking/biking facilities would also be an amenity for nearby residents. Pedestrian facilities on this road must account for the limited right-of-way and various intersections with other streets in the subdivision.

Figure 20. A school bus drops off a student at the intersection of Moses and Mountain View Drives.

Figure 21. The hill on Mountain View Drive leading to the high school.

Short-Term Recommendations (1 to 3 years)

- Install signage (W16-1P) to indicate to motor vehicles that they must share the road with pedestrians and bicyclists.
- Implement painted or advisory shoulders to designate a prioritized space for pedestrians and bicyclists traveling between the middle and high schools.
    - Roads with advisory shoulders can accommodate the low to moderate volumes of traffic on Moses and Mountain View Drives.
    - Advisory shoulders require little to no widening of the existing paved roadway.[5]
    - Advisory shoulders extend across intersections and increase visibility of people crossing.

Long-Term Recommendation (more than 7 years)

- Investigate the feasibility of and need for sidewalks and high-visibility crossings.

Figure 22. Example of an advisory shoulder in Hanover, New Hampshire. Photo from Western Transportation Institute.

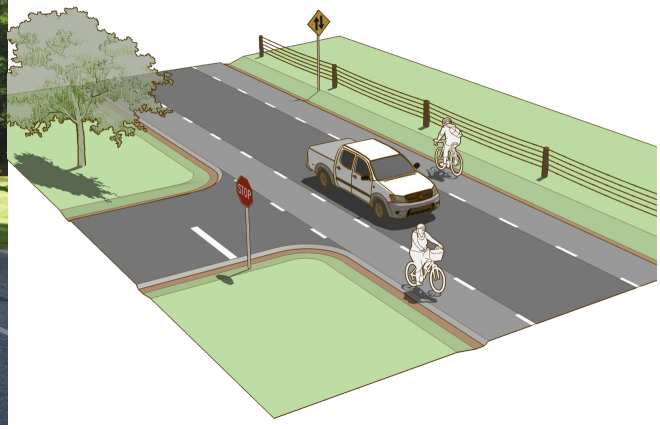

Figure 23. Illustration of advisory shoulders. Image from the Small Town and Rural Design Guide.[6]

[5] https://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/small_towns/fhwahep17024_lg.pdf
[6] https://ruraldesignguide.com/mixed-traffic/advisory-shoulder

Map ID 7: Cougar Trail Road

Issue: Motor vehicle speed and volume

Cougar Trail Road is a key roadway that connects Route 11/Lee Highway and I-81. Volvo Trucks is just to the south. As a result, many large vehicles use this roadway. The speed limit is posted at 45 mph generally but lowers to 25 mph near the high school during school hours. However, there is an absence of signage alerting drivers of the school zone speed limit. The slope and curvature of the roadway also enables speeding. Local law enforcement is regularly present to enforce the 45 mph speed limit. The presence of large vehicles and high speeds does not create a comfortable environment for pedestrians or bicyclists.

Figure 24. Cougar Trail Road is steep, curved, and narrow.

Issue: Lack of walking/biking facilities

There are no shoulders, sidewalks, or bicycle lanes on Cougar Trail Road. In the effort to connect the middle school and high school, Cougar Trail Road is an important part of the walking and bicycling network and these gaps must be addressed to create an environment for safe walking and bicycling.

Short-Term Recommendations (1 to 3 years)

- Install school zone signage (S5-1 and R2-6P with flashing beacons) with a posted speed limit of 25.

Medium-Term Recommendation (4 to 7 years)

- Install traffic calming measures, such as transverse pavement markings, to protect nearby pedestrians and bicyclists, as well as people crossing at the intersection with Hatcher Road (Map ID 9). Traffic calming must accommodate trucks and other large vehicles.

Long-Term Recommendation (more than 7 years)

- Gauge community support and feasibility for a shared use path along the north/northwest side of Cougar Trail Road. A safe and comfortable facility for bicyclists and pedestrians would connect the facilities on Hatcher Road (Map ID 4) and Mountain View Drive (Map ID 6), as well as improve access to the Fairview Home pocket park.

Map ID 8: Intersection of Mountain View Drive and Cougar Trail Road

Issue: Difficult crossing

There are no crossings on Cougar Trail Road to access the high school on foot or by bike. With the proposed advisory shoulder in the subdivision to the west (Map ID 6), a crossing is necessary at this intersection with Mountain View Drive. At this segment of Cougar Trail Road, the posted speed limit is 45 mph. Given the curvature and high speeds of Cougar Trail Road, pedestrian safety and visibility of those crossing must be addressed.

Figure 25. The intersection of Mountain View Drive and Cougar Trail Road is wide and has poor visibility.

Figure 26. View of the covered walkway to Pulaski County High School from Mountain View Drive.

Short-Term Recommendations (1 to 3 years)

- Install a high-visibility crosswalk and additional pedestrian crossing infrastructure from Mountain View Drive to the high school campus.
    - Install school advance crossing signage (S1-1) to warn vehicles of the crossing.
    - Establish curbs on Mountain View Drive to improve pedestrian visibility.
    - Install transverse markings[7] to reduce approach speeds by visually narrowing drivers' perceptions of lane width.
- Extend the paved covered walkway on the high school campus to connect to the crosswalk.

Medium-Term Recommendation (4 to 7 years)

- Gauge community support and feasibility for a raised crossing. A raised crossing is a traffic calming measure that slows drivers and improves visibility of crossing pedestrians. Such a crossing may present challenges for snow removal and large vehicles, including trucks and emergency vehicles.

[7] https://www.dot.state.pa.us/public/pubsforms/Publications/PUB%20383.pdf, pg 76

Map ID 9: Intersection of Hatcher Road and Cougar Trail Road

Issue: Lack of safe crossing opportunities

This intersection is stop controlled on Hatcher Road. There are no crosswalks at this intersection. A crossing would improve access to the high school, the shared use path on Hatcher Road (Map ID 4), the Fairview Home pocket park, Bradley's Ridge Apartments, and homes on the southern portion of Hatcher Road, Godbey Court, and Quail Valley Drive. This intersection is near to the southern driveway of the high school and a safe crossing opportunity may enable high school students to walk to school. Similar to the northern crossing on Cougar Trail Road (Map ID 8), it is important to slow approaching vehicles and warn drivers of people crossing.

Figure 27. The intersection of Hatcher Road and Cougar Trail Road.

Medium-Term Recommendation (4 to 7 years)

- Install a high-visibility crosswalk across Cougar Trail Road.
    - Install school crossing signage (S1-1) to warn vehicles of the crossing.
    - Trim vegetation to improve sign lines for vehicles turning.
- Assess street lighting levels to ensure adequate levels in low-light conditions. Proper lighting levels are important for students walking in the early mornings and during inclement weather.

Programmatic Recommendations

SRTS programmatic recommendations are designed to work in conjunction with each other and the infrastructure recommendations to encourage more students to walk and bicycle to school and instill safe walking, bicycling and driving practices. The recommendations are organized according to a safe systems framework where road users and designers have a shared responsibility for safety. This framework has four main elements: Safe Behaviors, Safe and Supportive Campus, Supportive Culture, and Sustainable Program.

Safe Behaviors

Integrate pedestrian and bicycle safety education into the school curriculum. Pedestrian and bicycle safety education should occur in advance of major walk or bike to school events, so students are adequately prepared and have an opportunity to practice the skills they have learned. Two pedestrian safety resources are listed below. Both are free:

- The *Pedestrian Safer Journey* curriculum was developed by the Federal Highway Administration and features videos, quizzes and additional resources for educators teaching pedestrian safety. http://www.pedbikeinfo.org/pedsaferjourney/el_en.html
- *Bikeology* was developed by SHAPE America and the National Highway Traffic Safety Administration. The curriculum includes both knowledge-building lessons and on-the-bicycle lessons to becoming safe bicyclists. The program also provides a guide for parents to support safe bicycling at home. https://www.shapeamerica.org/publications/resources/teachingtools/qualitype/bicycle_curriculum.aspx

Incorporate information on walking and bicycling to school in communication with parents. For example, communications on arrival and dismissal procedures should highlight procedures and access routes for walkers and bikers.

Provide parents and guardians with safe driving information. This information should stress the importance of driving safely in school zones and being alert for pedestrians and bicyclists during arrival and dismissal. Information can be distributed via email, newsletters, social media, and/or events like back-to-school nights, health and safety fairs, Walk to School Days, or virtual meetings. Several organizations offer free materials on their websites:

- The National Center for Safe Routes to School has a helpful list of "Driving Tips Around Schools: Keeping Children Safe." http://apps.saferoutesinfo.org/lawenforcement/resources/driving_tips.cfm
- The Federal Highway Administration has an entire website devoted to reducing distracted driving, including information and free downloadable materials. http://www.distraction.gov/content/take-action/downloads.html
- The National Safety Council also has a page dedicated to distracted driving resources. Find it here http://www.nsc.org/learn/NSC-Initiatives/Pages/distracted-driving-resources.aspx
- The Virginia Safe Routes to School Program has a Zone In, Not Out school zone safety program which includes a safe driver pledge kit and yard signs. Resources are available on the Virginia SRTS website: http://www.virginiadot.org/programs/srts_zone_in_not_out.asp

Implement speed awareness and enforcement strategies to reduce motor vehicle speeds in the school zone. Yard signs (Figure 28), speed feedback devices, and photo enforcement can be used to encourage slow, cautious driving in the school zone. Photo enforcement has recently been enabled by the state of Virginia (See Appendix D. Key Policies Supporting Recommendations). A school zone enforcement area could be implemented at Pulaski to raise funds for improvements. Yard sign graphics and other school zone safety resources are available on the Virginia SRTS website: http://www.virginiadot.org/programs/srts_zone_in_not_out.asp

Figure 28. Zone In, Not Out Signage Example

Supportive Culture

Participate in International Walk to School Day. Walk to School Day is an excellent opportunity to get students walking, teach the benefits of an active lifestyle, and highlight walking and biking issues. Even if students can't walk to school, a Walk AT School event can help establish a walking culture. Resources to help plan Walk to School Day are available on the Virginia SRTS Program website. http://www.virginiadot.org/programs/srts_all_website_resources.asp

Help organize and support walking school buses. A walking school bus is a group of children walking to school with one or more adults. It can be as informal as two families taking turns walking their children to school or as structured as a planned route with meeting points, a timetable, and a schedule of trained volunteers. For additional information on walking school buses and bicycle trains, see the following Virginia SRTS Program Webinar recording: https://www.virginiadot.org/programs/resources/safeRouteResources/5Es/VDOT_SRTS_-_Walking_School_Bus_and_Bike_Train_Webinar.pdf

Establish a frequent walker program. Frequent walker programs encourage students to walk by offering incentives to students who walk frequently or by establishing a competition between classes. A simple record keeping system must be created to track student walking. The Virginia SRTS Program provides a punch card template that can be used for this purpose. http://www.virginiadot.org/programs/srts_marketing_toolkit.asp

Establish a bike library for both middle and high school students. A bike library allows students to temporarily check out a bicycle and would enable students to ride between Pulaski Middle and Pulaski High schools. Students who do not have a personal bicycle or cannot safely ride their bicycle to school would benefit from a bike library. To create a bike library, the school system should purchase durable bikes that require minimal maintenance and be adjusted for size. Students can use their student ID or a library card-like system to check out a bike; the system should track usage and record the location of the bikes. A waiver may be necessary to protect the school system from liability. To ensure accessibility for all, the program should be free to students. For examples of local bike libraries, refer to the following links. https://smcl.org/blogs/post/bike-to-your-library-day-book-a-bike/
https://letsmovelibraries.org/wp-content/uploads/2018/05/Book-A-Bike-Chapter.pdf
https://www.playcore.com/news/case-study-rural-virginia-community-rediscovers-the-joy-of-bike-riding

Safe and Supportive Campus

Install bicycle parking. Pulaski Middle School does not have any bicycle racks on campus. Bicycle racks should be installed at a convenient location near the main entrances when nearby bicycling facilities are implemented. Students who bicycle to school must be able to lock their bicycles securely. Guidance regarding bicycle rack selection and placement is provided in this tip sheet developed by the Safe Routes to School National Partnership.
https://www.saferoutespartnership.org/sites/default/files/pdf/BikeParkingTipSheet-web.pdf

Revise arrival and dismissal procedures to prioritize students walking and biking. Separation of modes is key to a safe arrival and dismissal process. Other best practices are staff involvement and clear and frequent communications with parents that includes information about walking and bicycling to school. For more information, contact the Charlottesville County Safe Routes to School Coordinator or refer to the Safe Routes Partnership's arrival and dismissal guide:
https://www.saferoutespartnership.org/sites/default/files/resource_files/improving_arrival_and_dismissal_for_walking_and_biking_1.pdf

Sustainable Program

Form a Pulaski Middle School Safe Routes to School team. A SRTS team at Pulaski Middle School will help to increase the number of students walking and bicycling to school, educate the community on safe traveling behaviors, ease nearby traffic congestion, and improve the health and wellbeing of students. SRTS teams can be a subcommittee of the PTA or within another group. It is important to involve the whole community in a successful SRTS team: parents, children, neighborhood groups, schools, community leaders, and transportation and public health professionals can help identify the issues and develop solutions. For more information about beginning a local SRTS program, visit the SRTS Starter Kit.

http://www.vdot.virginia.gov/programs/resources/safeRouteResources/StarterKit/VDOT_LDL_SRTS_Steps_to_Creating_SRTS_Program_120815.pdf

Begin conducting Student Travel Tallies to get baseline data for student travel patterns. In Virginia, schools across the state record how students are getting to school during Student Travel Tally Week. Student Travel Tally Week normally takes place on a week of the school's choosing in September or October. However, due to the ongoing COVID-19 pandemic, Student Travel Tally week has been postponed until 2021. Student Travel Tally data can be used to assess progress toward increasing the number of students who walk and bike to school. For more information about Student Tally Week, go to the Virginia SRTS Program website.
http://www.virginiadot.org/programs/srts_student_travel_tally_week.asp

Administer Parent Surveys to collect information on parents' attitudes towards walking and bicycling and reasons why they may or may not allow their children to walk or bike to school, especially after recommended infrastructure changes are complete. Administering parent surveys at least every other year can help determine whether Safe Routes to School efforts are changing parents' attitudes towards walking and bicycling to school. For tips on administering Parent Surveys, see the Virginia SRTS Program's **Learn it. Do it. Live it!** tip sheet.
https://www.virginiadot.org/programs/resources/safe_routes/2016-2017/Resources/Parent_Survey_LDLv2.pdf

Appendices

A. Walkabout Participants

Name	Organization
Elaine Holeton	Planning Director, Pulaski County (Walkabout Applicant)
Drew Foxx	GIS Coordinator, Pulaski County
Rebeccah Smith	Principal, Pulaski Middle School
Michael Gray	Salem District, VDOT
Katherine Graham	VA SRTS Coordinator, VDOT
Wendy Phelps	VA SRTS Local Technical Assistance Coordinator, Toole Design
Katie Heuser	VA SRTS Local Technical Assistance Coordinator, Toole Design
Ashley Schultz	Planner II, Toole Design
Katy Sawyer	Senior Engineer, Toole Design

B. Road Information Table

Street Name	Posted Speed Limit (mph)	Approximate Road Width	No. of travel lanes in each direction	AADT[8]	Road Classification[9]
Cougar Trail Rd	45/25	20-25 ft	1	6,100	Major Collector
Hatcher Rd	40/25	20 ft	1	910-1,100	Minor Collector
Moses Dr	25	20 ft	1	190-480	Local
Route 11/Lee Highway	55	90-100 ft	2	12,000	Other Principal Arterial

C. Glossary of Infrastructure Terms

The following infrastructure treatments can be used to improve the bicycle and pedestrian environment around Pulaski Middle School. Location-specific recommendations are referenced under the section, Infrastructure (Engineering) Recommendations

Crosswalks

Marked crosswalks highlight the portion of the right-of-way where motorists can expect pedestrians to cross and designate a stopping or yielding location. They also indicate to pedestrians the optimal or preferred locations to cross

[8] Average Annual Daily Traffic (AADT) counts from 2020 VDOT Daily Traffic Volume Estimates, https://www.virginiaroads.org/datasets/traffic-volume

[9] Road classification from VDOT, http://www.virginiadot.org/projects/fxn_class/maps.asp

the street. At midblock or other uncontrolled locations, crosswalks should use a high-visibility pavement marking pattern and be accompanied with pedestrian crossing signs that meet current Manual on Uniform Traffic Control Devices (MUTCD) standards. In addition, crosswalks can be raised on a speed table to be level with the sidewalk. This design helps slow drivers, increase pedestrian visibility and make it easier for pedestrians with mobility limitations to cross the street.

Curb Ramps

Curb ramps provide access between the sidewalk and roadway for people using wheelchairs, strollers, and bicycles. Curb ramps must be installed at all intersections and midblock locations where pedestrian crossings exist, as mandated by the 1990 Americans with Disabilities Act. In most cases, a separate curb ramp for each crosswalk at an intersection should be provided rather than a single ramp at the corner for both crosswalks. Current guidelines for curb ramp designs are included in the Public Right-of-Way Accessibility Guidelines, Chapter R3: Technical Requirements. (http://www.access-boaRoadgov/guidelines-and-standards/streets-sidewalks/public-rights-of-way/proposed-rights-of-way-guidelines/chapter-r3-technical-requirements)

Crossing Islands

Crossing islands are raised median islands placed in the center of the street at intersection approaches or midblock. They allow pedestrians to cross one direction of traffic at a time by enabling them to stop partway across the street and wait for an adequate gap in traffic before crossing the second half of the street. They can reduce crashes between vehicles and pedestrians at uncontrolled crossing locations on higher volume multi-lane roadways where gaps are difficult to find, particularly for slower pedestrians, e.g. disabled, older pedestrians, and children. The application would need to be studied before implementing crossing islands on state roads.

Curb Extensions

Curb extensions extend the curb line into the roadway. They can improve the ability of pedestrians and motorists to see each other, reduce crossing distances (and thus exposure to traffic), provide additional pedestrian queuing space, and slow motor vehicle turning speeds.

High-Visibility Crosswalks

While standard crosswalks use transverse lines (two parallel lines), high-visibility crosswalks also use bar-pairs, ladders, longitudinal lines, or zebra patterns to improve detection of the crosswalk.

In-Street Pedestrian Crossing Signs

In-street pedestrian crossing signs placed in the roadway at pedestrian crossing locations warn drivers and encourage yielding.

Manual on Uniform Traffic Control Devices (MUTCD)

This document produced by the Federal Highway Administration specifies the standards that traffic signals, signs, and roadway markings must adhere to including shapes, colors, fonts, and placement. The *2011 Virginia Supplement to the MUTCD* contains standards and guidance specific to Virginia.

Pedestrian Lighting

Lighting should be provided near transit stops, commercial areas, or other locations where night-time or pre-dawn pedestrian activity is likely. Pedestrian-scale lighting such as street lamps helps illuminate the sidewalk and improves pedestrian safety and security.

Public Right-of-Way Accessibility Guidelines (PROWAG)

The United States Access Board produces guidelines to ensure all pedestrians have equal access to sidewalks and streets, including crosswalks, curb ramps, street furnishings, pedestrian signals, parking, and other components of public rights-of-way.

School Speed Limit Signs

School speed limit signs alert drivers that they are entering a school zone and need to prepare to yield to students that may be crossing the street. School speed limits vary based on local laws and typically range from 15 to 25 mph. School speed limit signs with lights that flash (flashing beacons) during arrival and dismissal times can be more effective on busy streets, however, all school speed limit zones require occasional police enforcement to ensure driver compliance. Refer to the Manual on Uniform Traffic Control Devices (MUTCD) for more guidance.

Sidewalks

Sidewalks provide pedestrians and younger bicyclists a safe place to travel that is separate from motor vehicles. It is important to provide a continuous sidewalk route, connected with high-visibility crosswalks so that pedestrians are not forced to share travel space with motor vehicles. All sidewalks should meet ADA guidelines for width and cross-slope and include curb ramps that meet ADA guidelines at street crossings.

Traffic Calming

Traffic calming measures are designed to improve safety for motorists, pedestrians and bicyclists, usually by altering the physical design of the roadway to reduce motor vehicle speeds. Common traffic calming measures include speed tables, curb extensions, chicanes, and neighborhood roundabouts.

D. Key Policies Supporting Recommendations

VDOT Crosswalk Policy VDOT IIM-TE-384.010
VDOT's crosswalk policy states that potential advantages of marked crosswalks include:

- Providing a visible reminder to motorists that pedestrians may be present.
- Directing pedestrians to the location of the recommended crossing path.
- Reducing the likelihood that drivers will encroach the intersection or block pedestrian traffic when stopping for a STOP or YIELD sign
- Designating the location of approved school crossings or crossings along recommend school routes

For marked crosswalks at stop-controlled intersections, relevant criteria are provided in Section 5.2 of the policy, including:

- The crossing is part of a walking route approximately ¼ mile or less between a residential development of moderate or heavy density and a school or recreational area,

For marked crosswalks at uncontrolled intersections, relevant criteria are provided in Section 5.3 of the policy, including:

- The crossing is on a direct route between significant pedestrian generator(s) and attractor(s), where engineering judgment determines that the crosswalk would likely see a minimum of 20 pedestrians/bicyclists using the crosswalk in an hour. That threshold may be reduced to 10 pedestrians per hour if the crossing is expected to be used by a high number of vulnerable pedestrians (pedestrians who are disabled, age 65 and over, or age 15 and under), or if the reduced volume is met for three consecutive hours.
- The location is 300 feet or more from another marked crosswalk across the same road.
- Drivers will have an unrestricted view of the entire length of the crosswalk, including the waiting areas at either end of the crosswalk.
    - 25mph = 155 feet on level grade
    - 35 mph = 250 feet on level grade
- The required engineering study determines that the introduction of a marked crosswalk will not produce an unacceptable safety hazard.

HB 1442 Photo speed monitoring devices; civil penalty.
Summary as enacted with Governor's recommendation

Photo speed monitoring devices; civil penalty. Authorizes state and local law-enforcement agencies to operate photo speed monitoring devices, defined in the bill, in or around school crossing zones and highway work zones for the purpose of recording images of vehicles that are traveling at speeds of at least 10 miles per hour above the posted school crossing zone or highway work zone speed limit within such school crossing zone or highway work zone when such zone is indicated by conspicuously placed signs displaying the maximum speed limit and that such photo speed

[10] http://www.virginiadot.org/business/resources/IIM/TE-384_Ped_Xing_Accommodations_Unsignalized_Locs.pdf

monitoring devices are used in the area. The bill provides that the operator of a vehicle shall be liable for a monetary civil penalty, not to exceed $100, if such vehicle is found to be traveling at speeds of at least 10 miles per hour above the posted highway work zone or school crossing zone speed limit by the photo speed monitoring device. The bill provides that if the summons for a violation is issued by mail, the violation shall not be reported on the driver's operating record or to the driver's insurance agency, but if the violation is personally issued by an officer at the time of the violation, such violation shall be part of the driver's record and used for insurance purposes. The bill provides that the civil penalty will be paid to the locality in which the violation occurred if the summons is issued by a local law-enforcement officer and paid to the Literary Fund if the summons is issued by a law-enforcement officer employed by the Department of State Police. This bill incorporates HB 621 and HB 1721.

Click here for link to full text of enacted bill.