

**Potomac Elementary School, Mandatory Referral, MR2018017**

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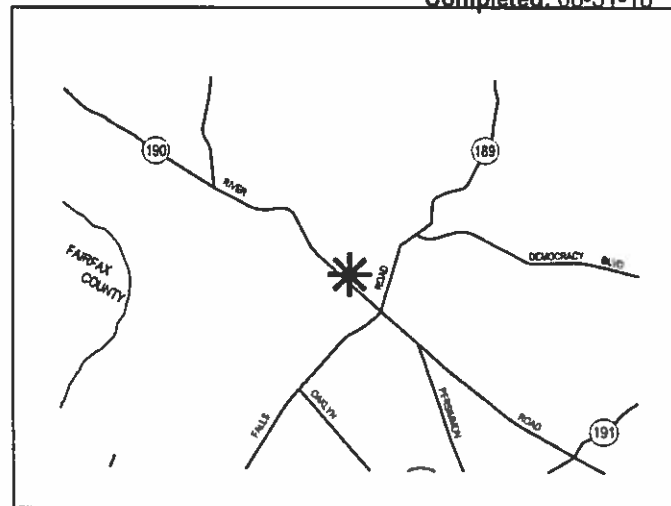
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**Description**

- 10311 River Road, Potomac
- 9.64 acres, RE-2 zone
- 2002 Potomac Subregion Master Plan
- Applicant: Montgomery County Public Schools
- Submitted: January 17, 2018
- Part B - Mandatory Referral: Modernization of Potomac Elementary School

**Staff Recommendation: Approval to Transmit Comments**

**Completed: 08-31-18**



- The review of this Mandatory Referral is in two parts:
  - **Part A – Preliminary/Final Forest Conservation Plan MR2018017, and**
  - **Part B - Mandatory Referral MR2018017, discussed in a separate staff report.**
- Construction of a new 86,500 square foot energy efficient Elementary School.
- Daylighting of a natural stream channel and enhanced planting.

Staff recommends **approval** to transmit the following comments to the Montgomery County Public Schools:

1. Reconfigure internal circulation of the staff and visitor parking lots to improve safety and circulation or provide signage plan to ensure circulation pattern is clear for all users.
2. Coordinate with MD SHA to ensure there is 75 feet of dedication to right-of-way from the centerline of River Road to the proposed boundary line.

## INTRODUCTION

### Site Description

The Potomac Elementary School Site consists of 9.64 acres, Parcel 937, at 10311 River Road, Potomac ("Site"), zoned RE-2. The Site is generally flat with the low spot located in the middle of the Site. The Site contains some individual trees, a wooded area in the northeast corner, Stream Valley Buffer (SVB), and 100-year floodplain. The neighboring properties are mostly residential except for a religious institution to the southeast. The Site is bounded on the south by River Road. The Site is within the boundaries of the 2002 Potomac Subregion Master Plan and is part of the Potomac area of the Subregion.



Figure 1: Aerial Photograph of Vicinity



Figure 2: Aerial Photograph of the Site

### Project Description

Montgomery County Public Schools (MCPS or Applicant) is proposing to tear down and rebuild the Potomac Elementary School. When completed, the new facility will have an increased capacity of 472 students, with core spaces designed for 740 students. A seven-classroom addition will be master planned in the project and included as shell space. MCPS designs its multipurpose rooms, auditoriums, and gymnasiums to accommodate 740 kids, even if that's more than the expected enrollment. Also, by master planning the addition, MCPS won't need another mandatory referral if the extra classrooms are needed in the future. The proposed work includes traffic circulation improvements along River Road, a new entrance to accommodate a separate bus loop, improved parent drop-off queuing, and improved pedestrian circulation. Site development will also include development of standard MCPS site amenities for elementary schools.

## **Building Design**

The new facility will provide approximately 32 classrooms and 21 support and core facility areas within the 86,550 square foot complex. Adaptable classrooms will achieve flexibility for varied-size groups of students, presentation formats, and access to alternative media and resources.

The proposed project replaces the existing aging facility with a modernized state of the art facility. The proposed building is a two-story, steel-framed structure with a combination of brick veneer and architectural metal panels over masonry block exterior walls. Interior walls are primarily masonry block. All aspects of the plan are designed to meet the most current educational specifications, life-safety, health, and fire code requirements as well as compliance with the Americans with Disabilities Act. The building materials are in accordance with the Montgomery County Public Schools facility design guidelines and designed with a focus on the sustainability and maintainability of the school.

The building is oriented on the southwest side of the Site with the identifiable main entrance of the building facing River Road. The administrative suite is located at the front of the building to allow supervision of the main entrance, lobby, and student drop-off loop. Secondary entrances are located by the bus loop and student drop-off. The academic areas are organized around a large courtyard space to maximize natural light into the classrooms and promote an efficient interior circulation system. The kindergarten and first grade classrooms are located on the ground floor level for security and safety reasons. The remainder of the classrooms for grades two through five are located on the second-floor. Stairways are located at each end of the building with a centrally located stair in the lobby, along with an elevator provide vertical circulation within the building. The core support spaces of the building, consisting of the multi-purpose room, gymnasium, and media center, meet the standards of the elementary school program and are designed to support community use by grouping the spaces together on the main floor of the building with controlled access. Secondary entrances with a canopy provide a sheltered entry from the bus loop, and student drop-off.

### **Classroom Technology:**

The classrooms will be designed to support interactive educational technology that includes controlled, wireless computer access and interactive whiteboard systems. The wireless technology throughout the building allows mobility of computer system and increased flexibility in classroom utilizations. Individual classrooms are designed to provide a student seating arrangement that can be organized into small groups for project-oriented teaching, or students can face the teacher in a traditional method.

The building and site design will include the following:

- The design of the new building creates loop circulation on the first floor and “U” circulation on the second floor with stairs at each end. This layout allows for ease of travel throughout the building.
- The layout further increases passive security by allowing ease of monitoring of all corridors.
- The building is designed in a compact layout due to site limitations.



Figure 3: Artist Rendering



Figure 4: Front Elevation Drawing (southeast elevation)

### Site Design

The Potomac Elementary School is located on a 9.6-acre property on the North side of River Road in Potomac, Maryland. The Site is bounded on the north and west by single-family homes and on the east by the Potomac Presbyterian Church and single-family homes. The Site slopes down from the west to the east with an approximate eight-foot difference in elevation. The Site is bound on the south side by River Road with a stream buffer to the northwest and a large existing tree stand to the northeast.

The proposed site plan situates the new building on the southwest portion of the Site. The main parking lot is located on the southern edge of the Site adjacent to River Road. The student drop-off loop and additional parking are located on the eastern portion of the Site. The bus loop is located on the western edge of the Site, separate from the student drop-off. The ball fields and play areas are located to the northern half of the Site.

All vehicular entry and exit will use River Road. On-site vehicular traffic circulation is designed to provide safe access to the school for pedestrians while providing approximately 87 parking spaces. The student drop-off and bus loop are designed to provide maximum queuing spaces on-site to minimize the traffic backup onto River Road. Other infrastructure requirements include providing a storm-water management system in compliance with the requirements of state and local regulations, necessary utilities to support the needs of the new facility, and exterior lighting for safety and security purposes.

### Sections and Elevations

The proposed building exterior features a contrasting brick veneer pattern that articulates and reduces the apparent massing and identifies the functional spaces of the interior. Well-placed window openings establish the façade rhythm and bringing natural lighting into the internal circulation areas.

### Energy Efficiency

The project will be designed and constructed with an emphasis on the environmental sustainability. The architecture and engineering systems will align with Montgomery County Public Schools facility management sustainability principles to ensure long term operational effectiveness. The project will be in compliance with Leadership in Energy and Environmental Design (LEED) standards. The new facility will also meet the 2012 International Green Construction Code (IgCC).

Key features related to sustainability include the following:

- Encouraging alternative transportation to the new facility by providing bike racks.
- Managing stormwater to both reduce runoff quantity and improve quality.
- Using highly-reflective roof surfaces to reduce heat gain.
- Installing water-conserving, low flow plumbing fixtures in the new facility.
- Optimizing the energy performance of the facility by providing a highly energy-efficient building envelope, lighting system, heating, ventilation, air conditioning systems.
- Optimizing equipment selection, installation, and operation of new HVAC equipment through commissioning of the facility's energy systems.
- Adhering to construction indoor air quality management plans and using low emitting building materials to safeguard occupant health.
- Providing a high level of occupant control over individual lighting and thermal comfort to promote an enhanced indoor environment in the new facility.
- Using construction materials that are recycled and regionally manufactured.
- Maximizing natural light in classrooms.
- Minimizing background noise level from heating, ventilation, and air conditioning systems in classrooms and control reverberation time with sufficient sound absorptive materials.

One of the primary design factors required to achieve a sustainable facility is the conservation of energy. The importance and consideration placed on energy conservation will be reflected in the configuration and orientation of the building, the selection of materials, and the mechanical/electrical systems utilized. In addition, a direct digital automatic temperature control system will be provided to monitor and control all new heating, ventilation, and air conditioning equipment from a central building management system. The new facility will be designed to meet or exceed the 2015 International Energy Conservation Code (IECC), as well as Montgomery County energy conservation codes. The design will incorporate the ANSI/ASHRAE/IES Standard 90.1-2016, Energy Efficiency Standard for New Buildings.

### Landscape and Lighting

The submitted Landscape Plan (Attachment D) proposes tree and ornamental shrub plantings throughout the Site, ornamental trees bounding the stormwater filtration areas, and foundation planting along the building line. Shade trees and ornamental trees are proposed for the surface parking areas. The lighting plan proposes a mixture of lighting types including fixtures on 20-foot high poles and various wall mounted lighting. The lighting plan (Attachment E) shows no light spill

at the Site boundaries; however, it is recommended that the lighting fixtures near the right-of-way at the entrance be equipped with cut-off shields to limit spill beyond the Site boundaries.

The exterior lighting of the school will be designed to shield adjacent residences from intrusive light glare while maintaining light levels for safety and security. The light fixtures will be 100% down-lighting, dark sky compliant, to minimize light pollution into the night sky. The exterior light fixtures at canopies, building, security and parking lots will be light emitting-diode type fixtures that are long lasting and energy efficient.

### Operating Hours

The school's hours of operation vary and comply with the standard MCPS school schedule. The school also has a year-round program and is operated throughout the summer as well as the general school year. On typical school days, students begin arriving at 7:30 am and leave by 4:00pm.

### Parking

Staff and visitor parking along with a student drop-off loop will be accessed from River Road along the east side of the Site and will provide convenient, Americans with Disabilities Act-compliant access to the main entrance of the building. The proposed site design provides on-site staging areas for 10 buses, 87 parking spaces, and on-site student drop-off queuing. There are no standard parking rates for elementary schools and final determination of parking adequacy is at the discretion of MCPS. The proposed parking, while adequate for faculty and staff, may cause limited visitor parking.

## **ANALYSIS**

### **Neighborhood Compatibility**

The Site is currently occupied by the existing Potomac Elementary School and will be replaced with the same use at a slightly larger scale. The character of the proposed building will create an attractive and inviting school building for the community. The Potomac Elementary School community strongly preferred that this school site was part of the community and that the school should remain in the same location.

### **Master Plan Conformance**

The Potomac Elementary School Site is not specifically mentioned in the 2002 Potomac Subregion Master Plan, however the Plan does state "Public schools are an essential component of community life and an integral part of community structure." Maintaining Potomac Elementary School in its existing location and modernizing it into a new inviting and attractive school building not only maintains the community structure it also increases the quality of the community life. The proposed project is in substantial conformance with the 2002 Potomac Subregion Master Plan.

## **TRANSPORTATION ANALYSIS**

### Access, Circulation, Queueing, and Parking



The school will maintain its current full-movement access onto River Road for staff, parents, and visitors and add one full-movement entrance further north on River Road to enable access to a new separate bus loop. The separation of bus and staff/parent access will reduce conflicts, create separate queueing areas for each group of vehicles, and significantly increase on-site queueing space.

Vehicular circulation will be directed into a one-way loop through a parking lot and parent queueing area on the south side of the school. This loop will link to a parking lot along the front of the school which will be connected to the one-way loop by a one-way drive aisle. While the one-way drive aisle connection between the parking in front of the school and the remainder of the parking and parent drop-off area is adequate, it is not ideal and may prevent some confusion for drivers who do not frequently visit the Site or are searching for parking quickly. The Applicant proposes that stop signs/bars, Do Not Enter signs, One-Way signs, and pavement markings will be added to ensure proper circulation. The new bus loop is located separately on the north side of the building.

Pedestrian circulation within the Site is adequate and efficient. Sidewalks provide pedestrian connections from the proposed shared use path on River Road to the building entrances, between parking/queueing areas and the building entrances, and between the building and on-site amenities. All pedestrian sidewalks will be ADA compliant.

The traffic study notes that ten buses will continue to serve the enlarged school and shows that there is adequate space for queueing of the ten buses. While it is unknown how many parents will be dropping off and picking up students, the increase in queueing space should provide improvements over existing conditions.

The current parking on the Site will be increased from approximately 74 spaces to 87 spaces. There are no standard parking rates for elementary schools and final determination of parking adequacy is at the discretion of MCPS. The proposed parking, therefore, while adequate for faculty and staff, may cause limited visitor parking.

#### Pedestrian, Bicycle, and Transit Facilities

The current school Site has sidewalk connections into and within the site from the 8-foot-wide shared use path along River Road. While most of the surrounding local streets do not have sidewalks, River Road has a shared use path or sidewalk on the north side of the road from Swains Lock Terrace (beyond Piney Meetinghouse Road) on the west to Clewerwall Drive/Fenway Drive on the east (beyond Bradley Boulevard) and a sidewalk on the south side of the road from Norton Road on the west to around Falls Road on the east.

WMATA Bus service (Route T2) is provided along River Road (MD 190) and Falls Road (MD 189) in the general area of the school, but the route does not continue along River Road in front of the school. The T2 route provides weekday peak period service with approximately 30-minute headways.

#### Master-Planned Roadways and Bikeways

According to the Potomac Subregion Master Plan, River Road is designated as a two-lane, major highway (M-2) with a 150-foot-wide right-of-way. The Applicant is proposing to dedicate right-of-way so that there is approximately 75 feet of right-of-way between the centerline of River Road and the proposed

school property boundary. The approximate width of right-of-way dedication is not known because it is not clearly shown on the plans.

The 2005 Countywide Bikeways Functional Master Plan recommended a shared use path on the north side of River Road and the Draft Bicycle Master Plan recommends both a 10-foot wide sidepath on the north side of River Road and bikeable shoulders. The Applicant is proposing to reconstruct the existing sidepath in front of the Site to a 10-foot-wide path, but is not proposing to implement the bikeable shoulders at this time because of conflicts with a existing 60 inch water main within the River Road right-of-way. The School is also proposing to provide short-term bike racks in the front of the building.

Local Area Transportation Review

The Mandatory Referral application included a traffic study due to the large increase in students expected with the expansion (approximately 295 additional person trips). The study followed the 2016-2020 Subdivision Staging Policy (SSP) and related Local Area Transportation Review Guidelines. The traffic study analyzed the existing and proposed school driveways, the intersection of River Road and Falls Road to the east, and the intersection of River Road and Piney Meetinghouse Road to the west. All intersections were less than both the Potomac Policy Area Critical Lane Volume (CLV) standard of 1450 and under the SSP threshold of 1350 CLV for the existing, background, and future conditions. Therefore, additional delay analysis was not required and the LATR test was passed. Additionally, based on the mode split factors for the Potomac Policy Area, the school would not generate 50 or more transit, pedestrian, or bicycle trips to require further analysis of any of these modes.

Intersection	Critical Lane Volume (CLV)	
	AM Peak Hour	PM Peak Hour
River Road at Falls Road	1020	1238
River Road at Piney Meetinghouse Road	752	952
River Road at Existing School Driveway	1054	1018
River Road at Proposed Bus Loop	1108	1005

**ENVIRONMENT**

Environmental Guidelines

A Natural Resources Inventory and Forest Stand Delineation (NRI/FSD) #420160980 was approved by Staff on February 9, 2016 (Attachment A). The Site is within the Rock Run watershed, a Use I-P designation. The Countywide Stream Protection Strategy rates the water quality in this watershed as poor. The Site contains Stream Valley Buffer (SVB) and 100-year Floodplain. The 100-year Floodplain is not shown on the NRI/FSD because there are no mapped floodplains on the Site. At time of the

submission of the stormwater management concept, MCDPS required the Applicant to provide a more accurate delineation based on hydrologic/hydraulic computations and detailed topography or field survey.

Development of the project requires no forest removal and proposes to daylight a previously piped stream channel. See the Forest Conservation staff report (Part A) for a complete analysis.

### Forest Conservation

The Application meets the requirements of Chapter 22A of the Montgomery County Forest Conservation Law. See the Forest Conservation staff report (Part A) for a complete analysis.

### **COMMUNITY OUTREACH AND NOTIFICATION**

Representatives from Moseley Architects and Montgomery County Public Schools held multiple public meetings at Potomac Elementary School to discuss the impact of the project with the surrounding community. There was also a presentation to the public and the PTSA on February 10, 2018.

### **CONCLUSION**

Based on information provided by the Applicant and the analysis contained in this report, Staff concludes that the proposed Mandatory Referral for the Potomac Elementary School will be compatible within its Site context and meets the applicable standards and guidelines for the environment.

Staff recommends approval of the Mandatory Referral with comments listed at the front of this report to be transmitted to the Montgomery County Public Schools.

### Attachments:

- A. Proposed site plans
- B. Traffic Study
- C. Circulation Plan
- D. Landscape Plans
- E. Photometric Plan