



July 14, 2008

MEMORANDUM

TO: Montgomery County Planning Board

VIA: Glenn Kreger, Acting Chief, Community-Based Planning Division *AK*
Callum Murray, Potomac/Rural Area West Team Leader *CM*

FROM: Mary Beth O'Quinn, Planner Coordinator (301.495.1322)
Community-Based Planning Division

SUBJECT: Mandatory Referral No. 08401-MCPS-1: Carderock Springs Elementary School -
School Replacement Project, 7401 Persimmon Tree Lane, Bethesda, R-200 Zone,
Potomac Subregion Master Plan

STAFF RECOMMENDATION: Approval to transmit the following comments to
Montgomery County Public Schools (MCPS):

1. Stormwater Management
Comply with conditions of Stormwater Management Concept Approval issued by the
Montgomery County Department of Permitting Services, dated April 30, 2008.
2. Transportation
 - a. Any future mandatory referral submission for improvements at the school by MCPS must include a traffic study for Adequate Public Facilities (APF) purposes if those improvements will increase core capacity at the school from the currently planned 644 students.
 - b. MCPS should coordinate with the Montgomery County Department of Transportation (DOT) to construct a five-foot wide sidewalk extension along Persimmon Tree Lane between the northern school boundary and Comanche Court (within Carderock Springs Subdivision) to the north (approximately 220 feet) to provide a continuous off-street pedestrian connection between the school and Comanche Court.
 - c. MCPS should discourage any parent drop-off/pick-up of students along Persimmon Tree Lane and other neighboring streets.
3. Environmental
Approval of Final Forest Conservation Plan consistent with the approved Preliminary Forest Conservation Plan. (See Mandatory Referral 08401-MCPS-1, Forest Conservation Plan, Agenda Item 6A.)

4. Site Design, Landscaping and Lighting

The Landscape Plan should be revised to provide the following additional plantings:

- a. Fourteen shade trees to be planted next to the roadway pavement along the Persimmon Tree Lane street frontage, extending to Comanche Court to enhance pedestrian safety (reducing vehicular-pedestrian conflicts);
- b. Three additional shade trees to be planted within the south parking area islands;
- c. Replace ornamental trees at the main entrance and within the south parking area with shade trees to reduce pavement temperatures and heat island effects;
- d. Provide two clusters of three shade trees near the three paved play areas;
- e. Provide five additional shade trees along the east property line adjacent to the Stone Trail Drive residential lots;
- f. Provide tree specifications for large leaf species such a red oak, and a size of 2.5-3.0 inch caliper at the time of planting;
- g. Provide an offset sidewalk (separated from the curb line by a grass panel) along the drive aisles of the north parking area;
- h. Provide cut-off shield lighting; pole lighting should not exceed a mounted height of 20 feet; reduce lighting levels to 0.01 foot-candles at the north property line where residential lots are adjoined.

5. Building Design

Considerations during the bidding process should strive to retain these Add-Alternate building design elements:

- a. Geo-thermal heating and cooling system;
- b. A pedestrian ramp at the front door to provide additional path choice for handicapped persons;
- c. Terracing for the outdoor amphitheater to increase the functional use of the space;
- d. Canopies at the bus loop and main entry for weather protection.



Aerial photograph of the existing Carderock Springs Elementary School, as viewed from the south-southwest. Note the site's forestation that adjoins the Capital Beltway right-of-way on the south.

INTRODUCTION

Project Summary

The applicant, the Montgomery County Public Schools (MCPS) proposes to replace the existing Carderock Springs Elementary School located at 7401 Persimmon Tree Lane in Bethesda. The subject site, featuring 350 feet of frontage on the east side of Persimmon Tree Lane, lies at an equal distance of about three miles from River Road to the east and MacArthur Boulevard to the west.

The existing school property comprises nine acres and adjoins Persimmon Tree Lane on its east side. The site is surrounded by single-family detached housing on the north, east, and west site boundaries. The facility is part of the Walt Whitman Cluster that includes the Thomas Pyle Middle School as the receiving facility. Enrollment for the 2007-2008 academic years reached 290 students. There are currently two portable classrooms at the school. One portable is used for music with 25 students and is used part-time for 3.5 days a week, and the second was used during the past year as a third grade classroom for 25 students.

The existing structure is built to 32,639 square feet. Constructed in 1966, the building's structural system was fabricated as masonry, bearing-wall structure that supports a wood truss roof framing system and a steel joist, re-enforced slab floor system. Fenestration consists of single-glazed windows with minimal insulation. The building was evaluated for the feasibility of renovation or additions to eliminate the use of portable classrooms and to bring the structure into compliance with the building code and Montgomery County's Education Facility Specifications. Specific attention was directed to providing new energy efficient mechanical and electrical systems with adequate floor-to-ceiling height required for such systems. Within the consideration of a 35-year life cycle cost analysis (that evaluated modernization of the existing facility compared with a totally new facility) the analysis demonstrated an approximate savings of over \$1,600,000 in favor of the new replacement facility.

Classes at Carderock Springs Elementary School will be relocated to Radnor Center prior to the beginning of construction; therefore, the proposed modernization will have no impact on school operations.

Subject Site

Carderock Springs Elementary School is surrounded by the single-family detached residential neighborhoods of Carderock Springs, Glengarry, and Evergreen, zoned R-200. The neighborhoods feature large lots with mature tree stands and attractive understory vegetation. Two extensive land tracts of the Congressional County Club are located within ½ mile of the school.

The site, nearly trapezoidal in shape, slopes generally from west to east, and north to south; the outdoor play fields on the eastern half of the site lie 10-12 feet lower in elevation than the grade of the street frontage. Like the surrounding residential properties, the site is zoned R-200. The 9.0-acre property features .20 acres of forestation. Impervious area constitutes 1.68 acres, or 18.6 percent of the site. Three paved areas for vehicular service are provided: one, a dedicated "horseshoe" loop with two curb cuts for one-way bus and auto traffic, drop-off, and pick-up that serves the building entrance. There is a small surface parking area for 15 cars connected to the north side of the traffic loop; this area includes the two accessible parking spaces. Two other connected parking areas link to the south side of the traffic loop, providing 41 spaces.

The widened open space to the rear of the lot is utilized for outdoor play; this area is further defined by its topography, with the northern plateau elevated approximately 10-12 feet above the lower southernmost play field. The upper portion is currently used for a soccer field, while the lower field accommodates both formal and informal outdoor activities. These fields were created by gentle grading of the site, which, as a result, rises approximately six feet at the edge to the residential properties on the east. The primary forestation area is located along the southwest property boundary, hugging the Capital Beltway right-of-way at the site's lowest topography. The stand contains mature trees of varied species: red maple, black cherry, tulip poplar, sycamore, red oak, and locust. A number of significant trees, primarily red maples 24-34 inches in caliper, flank the rear and north lot lines.

Description of the Project

MCPS proposes to replace the existing school and provide teaching spaces to support functions for an initial enrollment of 399 students that will expand to accommodate 644 students under the full master planned capacity. The proposed structure, with program spaces for Pre-kindergarten through fifth grade, includes two full stories and a partial third story. The building design that includes “reserve” space on the third floor addresses future increases in student capacity. This design provision avoids future building coverage expansion and its effects on impervious surface and loss of green space. Future costs of expansion will be greatly minimized.

Carderock Springs Elementary School: Current and Future Capacity		
Development Data	Existing Facility	Replacement School
Lot Acreage	9 acres	9 acres
Lot Square Footage	392,040 sf	392,040 sf
Impervious Area	1.68 acres	3.32 acres
Building Square Footage	32,639 sf	68,528 sf
Student Enrollment	290	TBD
Student Capacity	251	399 ²
Full Time Staff	24	24
Part Time Staff	14	14
Volunteers - part time, daily	20-30 parents	20-30 parents
Parking:		
Staff/Student/Visitor	56	72
Parking: Handicapped	3	4
Bus Full Size:	6	6
Bus Special Education	0	0
Hours of Operation		
School Day	M-F 8:50am - 3:15pm	M-F 8:50am - 3:15pm
Evening	None	M-F 3:15pm - 8:00pm
Weekends ¹	Community Use	Community Use

1 Site amenities are used two weekends per month for religious groups for full days Saturday/Sunday. The community uses site amenities.

2 Master Plan capacity with build out of the 3rd floor is 644 students.

Architectural Program

The new addition will provide for 18 new teaching stations: 14 classrooms for grades 1-5, two Kindergarten classrooms and one Pre-Kindergarten classroom. The school philosophy of adaptable classrooms seeks to achieve maximum flexibility for forming varied-size groups of students, presentation formats, and access to alternative media and resources, music and art, special education facilities, and student counseling space. Staff and administrative support spaces are distributed appropriately throughout the two floors. The proposed expansion design provides for these key interior program spaces:

Carderock Springs Elementary School Replacement Project 2008

Teaching Stations and Educational Space

<u>Classrooms</u>	18	<u>Support Space</u>	
Pre-Kindergarten	1	Special Education Resource Room	1
Kindergarten	1	ESOL	1
Classrooms Grades 1-5	14	Therapy/Support Room	1
Special Education Classrooms	1	Speech and Language	1
Computer lab	1	Reading Initiative	1
Music	1	Workroom	2
Instrumental Music	1	Reading & Language Arts	1
Art	1	Reading Resource Room	1
<u>Core Facilities</u>		Testing/Conference Room	1
Administrative Suite	1	Instructional Data Assistant	1
Health Suite	1	Staff Offices	4
Multi-purpose Room	1	Staff Lounge	1
Kitchen	1	Facilities Management	1
Instructional Media Center	1	Building Services	1
Gymnasium	1	Trash Compactor Room	1
		General Storage	3
		Recycling Room	1

Site Design

Site design for the replacement school features a linear building—essentially a rotated “L” shape—that places its “hinge” at the center point of the lot’s street frontage. The hinge articulates the building’s main entrance, formally addressing the street and effectively engaging the landscaping through skillfully handled grading and placement of the attractively detailed canopy. More importantly, this arrangement successfully achieves the critical program task of separating the school bus traffic from the parent auto traffic, and safely sorting the pedestrian movement toward the main points of entry.

The scheme’s greatest strength is seen in its relationship to the ground—that is, its place in the landscape. The building rests comfortably on its sloping site. The building form, the two-story “L,” embraces the site’s topography, setting its two wings optimally in relation to the ground—the north wing set with the grade, while the south wing crosses the grades—thus, creating a natural amphitheater accessed from the walk-out lower level. This facilitates the movement of the younger students, with direct access to play and physical activity, while achieving desirable solar orientation and noise attenuation. The outdoor basketball courts are located near the sheltered amphitheater, providing seating for spectators and direct access to the adjoining indoor gymnasium.

Efficient site design utilizes significant areas of paving, such as the surface parking, basketball courts, and hardscape play areas for underground stormwater conveyance; geothermal drilling locations are also considered with respect to the site layout. Softscaped, mulched play areas are proposed as well as new ramps that provide ADA to the lower topography at the rear of the building. The site design maintains the existing pedestrian path across the rear of the site. It is recommended that this path be realigned to provide greater tree protection. Loading and service delivery is well located for both the north and south wings.



Architectural Design

The building design features a compact, steel-framed, three-story structure with double loaded corridors, and egress stairs placed at either end and at the center “hinge.” The stair placement facilitates access to the nearby play fields and allows, through the use of glass, generous natural lighting into the internal corridors. With considerable foresight, a third floor has been included within the structural shell design that extends the building height to 37 feet on average. This story will provide for intelligent, efficient expansion of the school capacity in the future at much lower cost and with no increase in building footprint. The site plan provides, in accordance with MCPS policy, adequate area for four outdoor Learning Cottages (portables).

Services, such as bathroom, elevator, computer server room, are located strategically at about the midpoint of each wing, providing ease of access throughout the school day. Primary service areas include the kitchen, pantry, and multipurpose room (also used as the cafeteria). These are located on the lower level of the south wing, and directly served by the loading and delivery zones. This disposition will facilitate catering for outdoor events, picnics, fundraising activities, and ball games, in addition to the usual school lunch program.

In summary, this is a building that exhibits a thoughtful, well-considered design process—a building that promises to achieve its potential, both aesthetically and functionally. The architectural proportions, its massing, height, lot coverage, and street elevation, all work in concert not only within the building itself, but, more importantly, in relation to its site. The functional organization of the plan is enhanced by the engaging facades, which paint a skillful contrast of brick and glass, solid and void, vertical and horizontal, all in dialogue with its setting. The interesting fenestration—which, of course admits generous light to the interior—also expresses the architectural program to great effect and explains to the street what happens within. In other words, this is a building that gives something to those both inside and out.

Building Design: Add-Alternate Program Elements

The proposed design contains a number of program elements that are incorporated as Add Alternates, contingent upon funding available after completion of the bid set drawings:

1. Indoor Gymnasium on lower level
2. Site entry ramp at the front of the school
3. Canopy at the main entrance
4. Canopy at the bus loop
5. Additional landscaping
6. Site signage upgrade
7. Habitat Garden seating
8. Amphitheater seating terrace at basketball courts
9. Terrazzo flooring at main entrance
10. Gymnasium floor graphics
11. Flat screen bulletin board at entry vestibule
12. Multi-purpose room batons (for stage lighting)
13. Lockers in PTA storage closet

Planning staff strongly recommends the inclusion of the gymnasium despite cost considerations because the gym will provide:

- Exercise opportunities for students during inclement weather;
- A second large program space (in addition to the multi-purpose room) that will offer more varied activity choices;
- A venue for activity that is less impacted by significant outdoor noise levels;
- A useful organizing space in the event of emergency warnings.

The building design proposes the use of geothermal heating and cooling. The applicant proposes to eliminate this type of mechanical system if future costs exceed current estimates. Planning staff strongly recommend the incorporation of the geothermal system to achieve the highest level of efficiency with respect to energy use and building longevity.

Building Elevations

The proposed building exterior features a contrasting brick veneer pattern that articulates the massing and identifies the functional spaces of the interior. Well-placed window openings establish the façade rhythm, broken by larger expanses of glass at the stairwells that serve to bring natural lighting into the internal circulation areas. Clerestory windows are employed to provide natural lighting to locker corridors. Interesting program spaces located at the “hinge,” such as the Media Room and Reading Initiative Room are treated with full glass facades that enliven the space and extend the rooms’ visual reach outdoors.

Schematic Site Plan

The schematic plan below illustrates the general disposition of building area and outdoor uses. The vehicular circulation is noted, as is the pedestrian circulation (yellow). Tree protection areas at the site edges are denoted in dark green, while the play fields are depicted in gray. The red area near the Persimmon Tree Lane frontage denotes the area of forest clearing. The pedestrian system is shown in yellow, tree save areas in dark green.

The proposed plan reserves space for four Learning Cottages (portable classrooms), shown located between the fire access lane and the playfield. Construction of the third floor would not be triggered until the school is 92 seats over the modernized 399 capacity at which point at least four portables would be on site. At that time, MCPS may elect to partition the third floor space into classroom and support spaces, add mechanical and lighting systems and make upgrades to the life safety systems.

The Habitat Garden outdoor teaching area (circular pink area), proposed for the area just east of the north parking lot is an alternate design to be included if funding permits. Likewise, the indoor gymnasium (blue) is also an alternate design contingent on funding.



Utilities and Energy Efficiency

The proposed structure will be registered and certified for silver or higher rating in conformance with LEED (Leadership in Energy and Environmental Design) standards for sustainable design. One of the primary factors pursued via design decisions addresses conservation of energy, as seen in the following: selection of building materials, configuration and orientation of the external shell and internal spaces, and mechanical/electrical systems employed. Direct digital automatic temperature control will monitor all new HVAC equipment. The mechanical design will incorporate ANSI/ASHRAE/IWA Energy Efficiency Design for New Buildings. Most importantly, the design utilizes geothermal heating and cooling.

The building design features an upgraded power feed, public address system, fire suppression system, fiber-optic cable system, switching system, data/voice network/Ethernet system, and a bidirectional broadband system for full spectrum broadcast. Site utilities upgrades include a new stormwater management system for both quantity and quality control; all services will be upgraded, including new gas line connections, electrical lines and gas feeds. Water mains will be replaced, and as upgraded will supply the site from a point just north of the south curb cut. Exact locations for drillings serving the geothermal heating/cooling system will be detailed in the mechanical and electrical bid set.

Landscape and Lighting

The submitted Landscape Plan proposes tree save throughout the site; the Landscape Plan should be revised to provide the following additional plantings:

- a. Fourteen shade trees to be planted next to the roadway pavement along the Persimmon Tree Lane street frontage, extending to Comanche Court to enhance pedestrian safety (reducing vehicular-pedestrian conflicts);
- b. Three additional shade trees to be planted within the south parking area islands;
- c. Replace ornamental trees at the main entrance and within the south parking area with shade trees to reduce pavement temperatures and heat island effects;
- d. Provide two clusters of three shade trees near the three paved play areas;
- e. Provide five additional shade trees along the east property line adjacent to the Stone Trail Drive residential lots;
- f. Shade trees should be a large leaf species such a red oak, and a size of 2.5-3.0 inch caliper at the time of planting.

The lighting plan proposed standard single shoebox fixtures on 20-foot high poles. Photocell fixtures are proposed as wall mounted lighting on the exterior walls. The lighting plan shows no light spill at the south and east property boundaries; however, it is recommended that the lighting fixtures near the north property ROW at the entrance be equipped with cut-off shields to prevent light spillage beyond the site boundaries. Photometric readings should be provided for light levels of 0.01 foot-candles at residential property boundaries.

Hours of Operation

School hours are from 8:15 a.m. to 3:15 p.m.; staff hours are from 7:30 a.m. to 4:00 p.m. After school activities extend to 8:00 p.m., for primary use of the outdoor facilities and gymnasium. These facilities are also available for community use. After hours activities scheduled through the Montgomery County Use of Public Facilities program generally conclude by 9:30 p.m.

Vehicular and Pedestrian Circulation

The site design intends to improve vehicular and pedestrian circulation to and from the school by creating two separate means of ingress/egress to the site. This scheme effectively partitions the bus drop-off/pick-up by incorporating the bus circulation loop within the north parking area reserved for faculty parking (14 spaces). The south parking area functions as the parent/student drop-off, also providing 58 parking spaces. Two entrance curb cuts are separated by the central landscape area (160' street frontage) that, with the staggered building articulation forms the street façade. Each of the counter-clockwise one-way vehicular loops offers direct building access to its respective wings.

Pedestrian access from Persimmon Tree Lane is provided via lead sidewalks that parallel each of the entry drive aisles (the bus loop/faculty parking and the parent drop-off/parking). Planning staff recommends that the sidewalks at the bus service loop be offset from the curb line, separated by a planting panel to further separate the vehicular and pedestrian movements, increase visibility of pedestrians, and provide a more direct pedestrian route to the building entrance for those walking from the neighborhood. (See Traffic Queuing Plan, Attachment 9.) Transportation staff also recommends the extension of the public sidewalk from the school site to Comanche Court. (See Transportation Planning memorandum, Attachment 11.)

Noise

The project is in compliance with the Montgomery County Noise Ordinance, Section 31(b) of the County Code and should not impose objectionable noise levels upon the surrounding area.

Stormwater Management (SWM)

The site design proposed provides for on-site channel protection measures via underground detention; on-site water quality control via a stormfilter, a biofilter, and a grass channel, with onsite recharge via a grass channel. (See Attachment 13, letter from the Department of Permitting Services dated April 30, 2008.)

ANALYSIS

Relationship to the Master Plan

The *2002 Approved and Adopted Potomac Subregion Master Plan* recognizes that:

Public schools are an essential component of community life and an integral part of community structure. Montgomery County's public schools are divided into clusters of elementary, middle, and high schools, with cluster boundaries drawn to serve their surrounding residential communities, while maintaining a balanced socio-economic student population.

Likewise, the plan continues:

The Board of Education programs funds for school modernizations through its capital budget, with funds set aside to improve the quality of existing schools and to building new schools. The Board of Education also modifies service areas to balance enrollment with facility space. As growth has varied in each of the Subregion's four community areas, so has school capacity.

The plan carries no specific recommendations regarding Carderock Springs Elementary School, nor for the Elementary School classification in general.

Development Standards in the R-200 Zone – Regulatory Analysis

<u>Section</u>	<u>Development Standard</u>	<u>Required</u>	<u>Proposed</u>
59-C-1.322	<u>Lot size - minimum</u>		392,040 sf [9.0 ac.]
	Lot Area - minimum	20,000 sf	
	Lot Width at Street - min.	100 feet	~ 380+/- feet
	Lot frontage	25 feet	~ 527 +/- feet
59-C-1.322	<u>Building Setbacks -minimum</u>		
	Front yard setbacks	40 feet	99.3 feet ¹
	Side yard - one side	12 feet	143 feet ¹
	Side yard - sum of both sides	25 feet	77.8 feet ¹
	Rear yard	30 feet	327.3 feet ¹
59-C-1.322	Building Height - max	50 feet	37 feet average 10.7% [41,923 sf]
59-C-1.322	Building Coverage -max	25% [101,277 sf]	
59-C-2.81	<u>Parking Setbacks</u>		
	Front	40 feet	37.7 feet ^{1,2}
	Side/sum of both sides	12/25 feet	25 feet/61.8 feet ¹
	Rear	30 feet	304 feet ¹
	Green space - parking	5%	see ³
	Green space - Lot	n/a	68%
	Number of parking spaces	75 typical	73 ⁴ (4 HC)
1 scaled from drawing submissions			
2 existing conditions, no change proposed			
3 staff recommendation to increase planting in surface parking areas			
4 MCPS parking recommendation			

Transportation Analysis

Transportation Planning staff reviewed the Mandatory Referral traffic study for APF purposes for the proposed plan and recommends approval with conditions. Relevant comments are excerpted below. (See Transportation Planning Memorandum, Attachment 11.)

The consultant for the applicant submitted a traffic study that presented traffic-related impacts of the new school with a core capacity for 644 students (an additional 354 students over current enrollment of 290 students) during the weekday morning and afternoon peak-periods. Staff review of the above traffic study indicated that the study complied with the requirements of the LATR/PAMR Guidelines and the traffic study scope provided by the staff.

Analysis presented in the traffic study indicates that under Total Traffic (i.e., Build) Conditions, CLV at the study intersections would be below the applicable congestion standard for the respective policy areas. Mandatory Referral No. 08401-MCPS-1 therefore satisfies the LATR and PAMR requirements of the APF test.

Forest Conservation

The plan proposes to clear 0.02 acres of forest and to retain 0.18 acres of forest on site, as located along the southern property boundary. The existing woodland in this area, at the lowest topographical point, consists primarily of red maples, with some tulip poplars. A significant number of trees measure greater than 24 inches in caliper. No conservation easements are proposed. The forest planting requirements will be met by 1.17 acres of canopy coverage credit from new native tree planting.

Community Outreach

MCPS developed the plans for the replacement facility based on specific education facility specifications. MCPS staff conducted four work sessions beginning in May 2007 with members of the Carderock Springs Facility Advisory Committee that included parents, neighborhood residents, Carderock Elementary School officials and staff, and PTA members. Minutes from the Advisory Committee meetings were distributed and reviewed. Advisory Committee meetings were held on the following dates:

- May 3, 2007
- May 23, 2007
- June 6, 2007
- June 20, 2007
- July 24, 2007
- August 15, 2007
- August 29, 2007
- September 18, 2007

No public comments were received at the time of the writing of this memorandum.

CONCLUSION

Staff recommends approval of the Mandatory Referral to replace the existing Carderock Elementary School with a new facility. Staff recommends that the Planning Board approve transmittal of the comments summarized on pages 1 and 2 of this memorandum to Montgomery County Public Schools.

MBOQ:ha: m:\o'quinn\carderock final staff report and carderock staff report attachments

Attachments

Attachments:

1. Schematic Design Floor Plans
2. Building Elevations (Design Development)
3. Building Floor Plans (Design Development)
4. Add-Alternate Plan
5. Solar Studies
6. Vicinity Map
7. Oblique Aerial Photography
8. Existing Conditions Site Plan
9. Traffic Queuing Plan
10. Tree Canopy Plan
11. Transportation Planning Memorandum
12. Department of Public Works and Transportation Memorandum
13. Department of Permitting Services, Stormwater Concept Approval
14. Public Notice

ATTACHMENT 1

Schematic Design Floor Plans

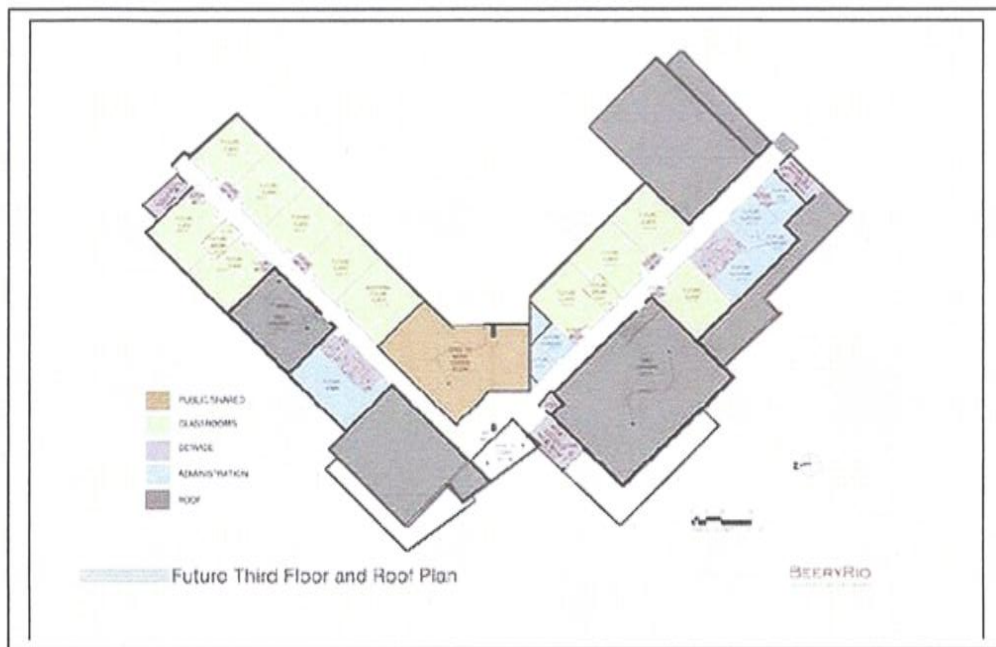
Schematic design drawings issued in 2007, prior to design development, show the two-story building that accommodates 399 students. The third floor structure will be completed without interior finishing for future expansion of student capacity to 640 students. Rendered plans for the current stage of design development were not available at the time of publication of this report. The most recent design incorporates the layout shown below to a substantial degree.



Lower Level

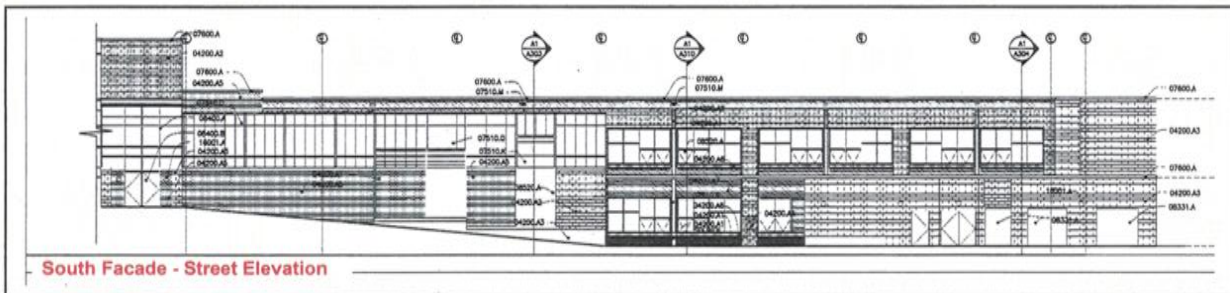
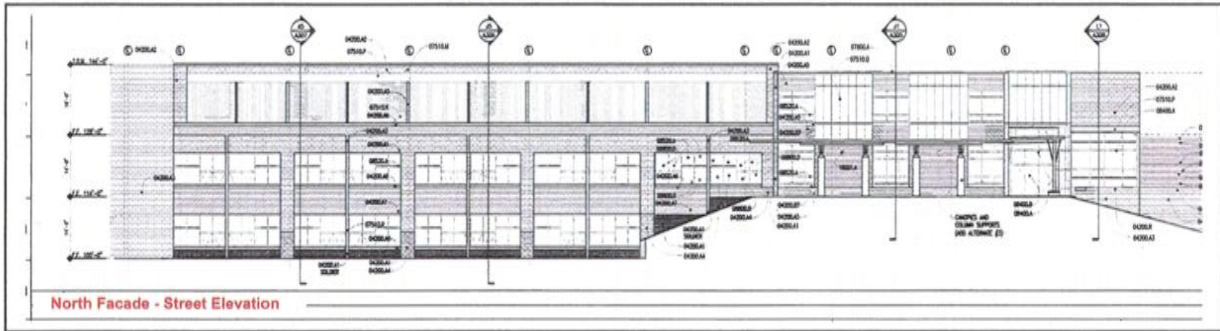


Future Expansion

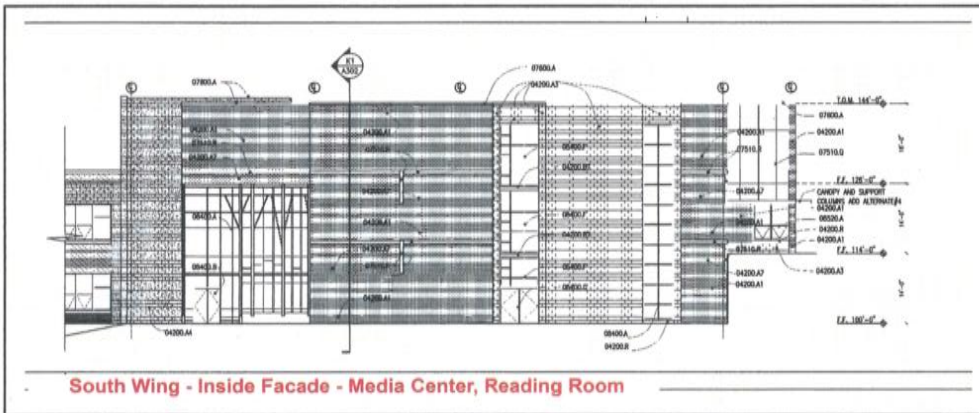


ATTACHMENT 2

Building Elevations (Design Development)

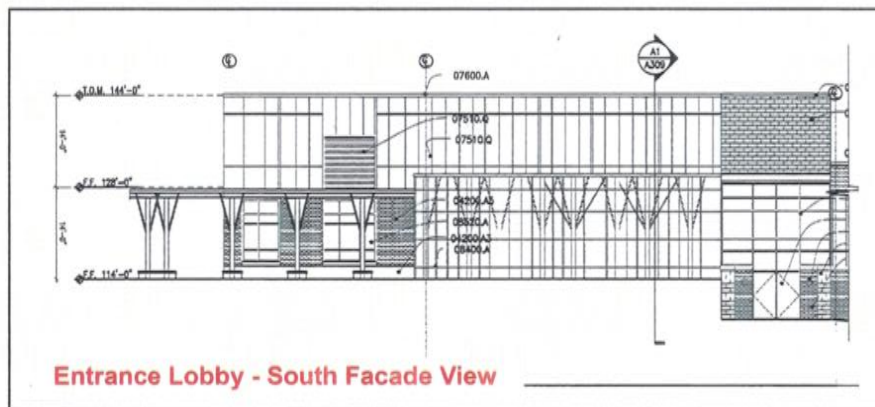


Elevation, above: Street façade for the North Wing. Note the building form that complements the natural slope; Below: Street façade for the South Wing show the Multipurpose Room, kitchen, loading and delivery.

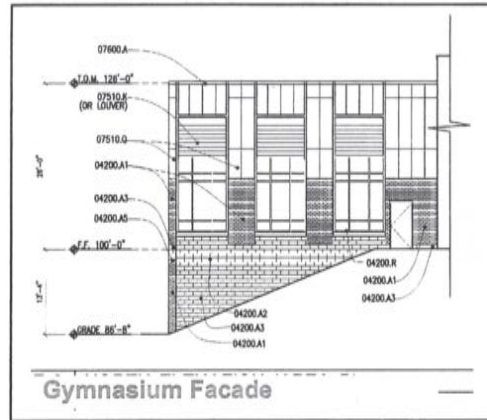


Above: view from inside the site showing the Media Room and Reading Center.

Right: Entrance Lobby and Canopy that extends to the Bus drop-off.

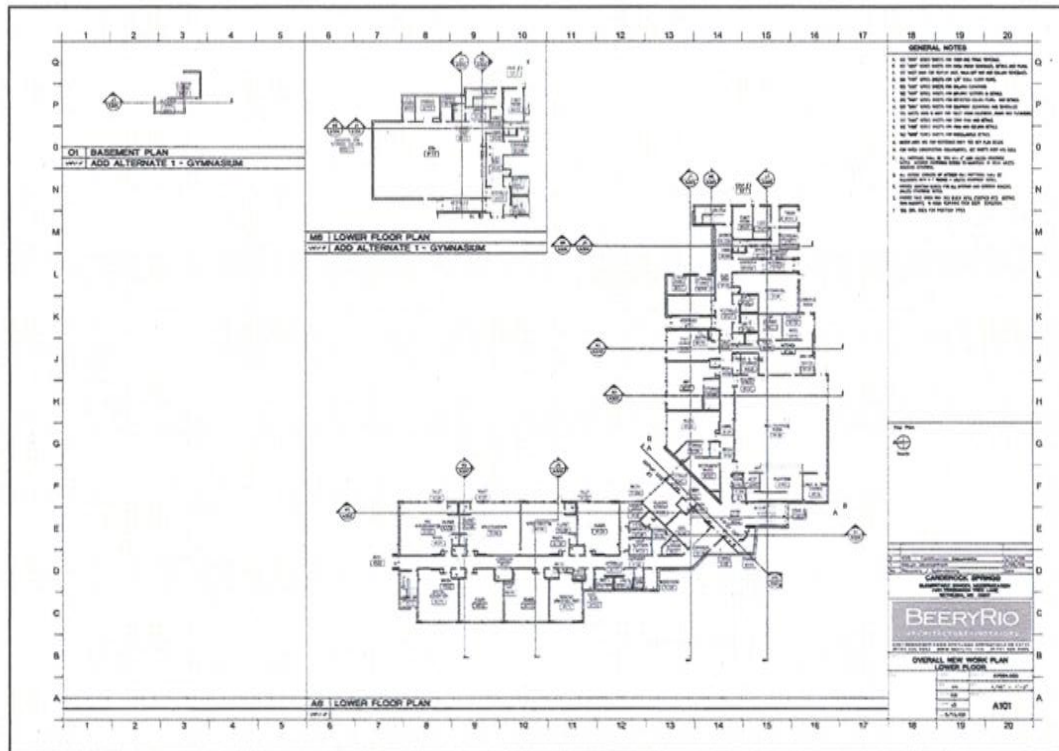
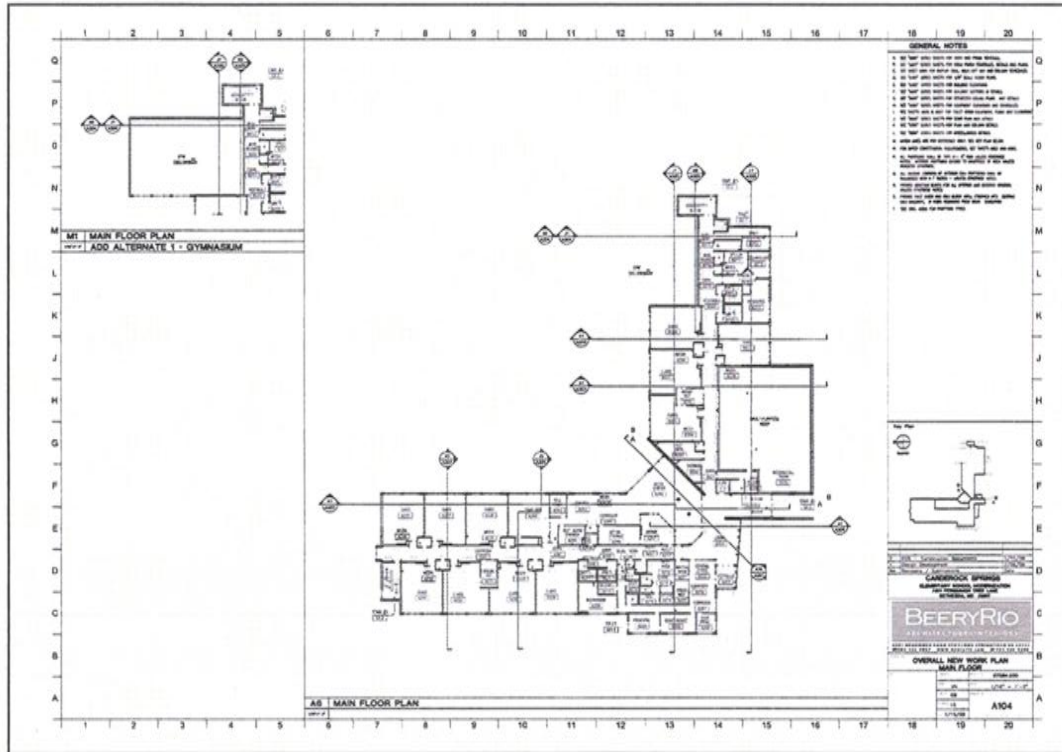


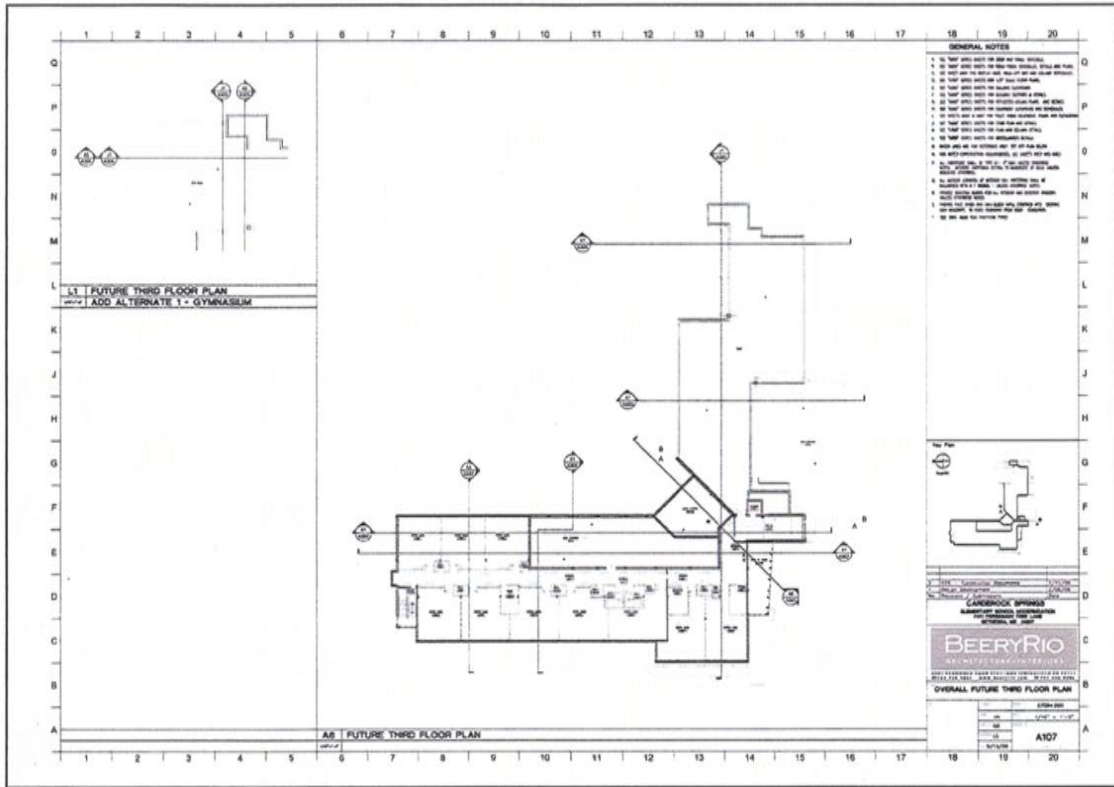
Below: Gymnasium façade show a mix of materials.



ATTACHMENT 3

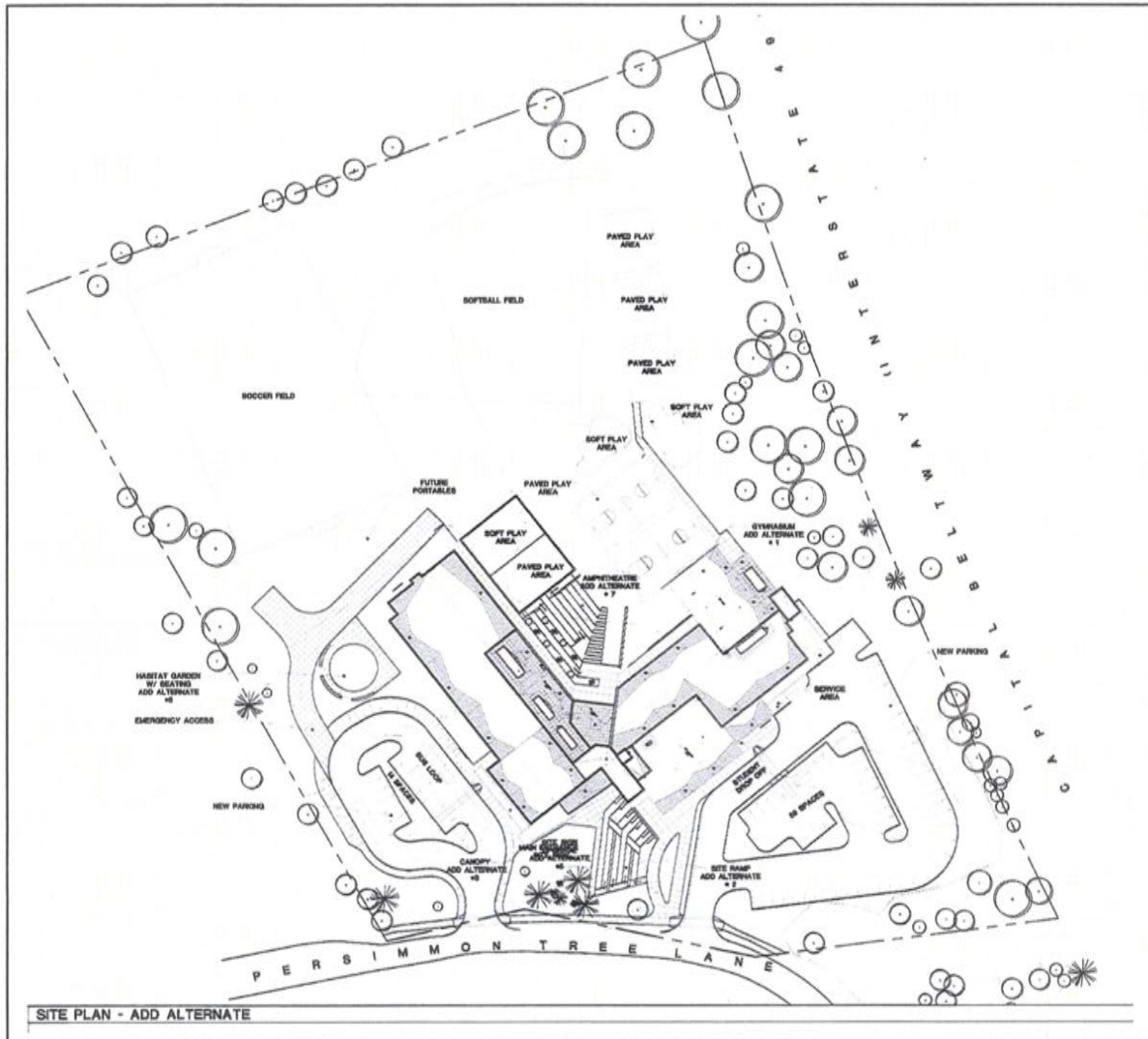
Building Floor Plans (Design Development)





ATTACHMENT 4

Add-Alternate Plan



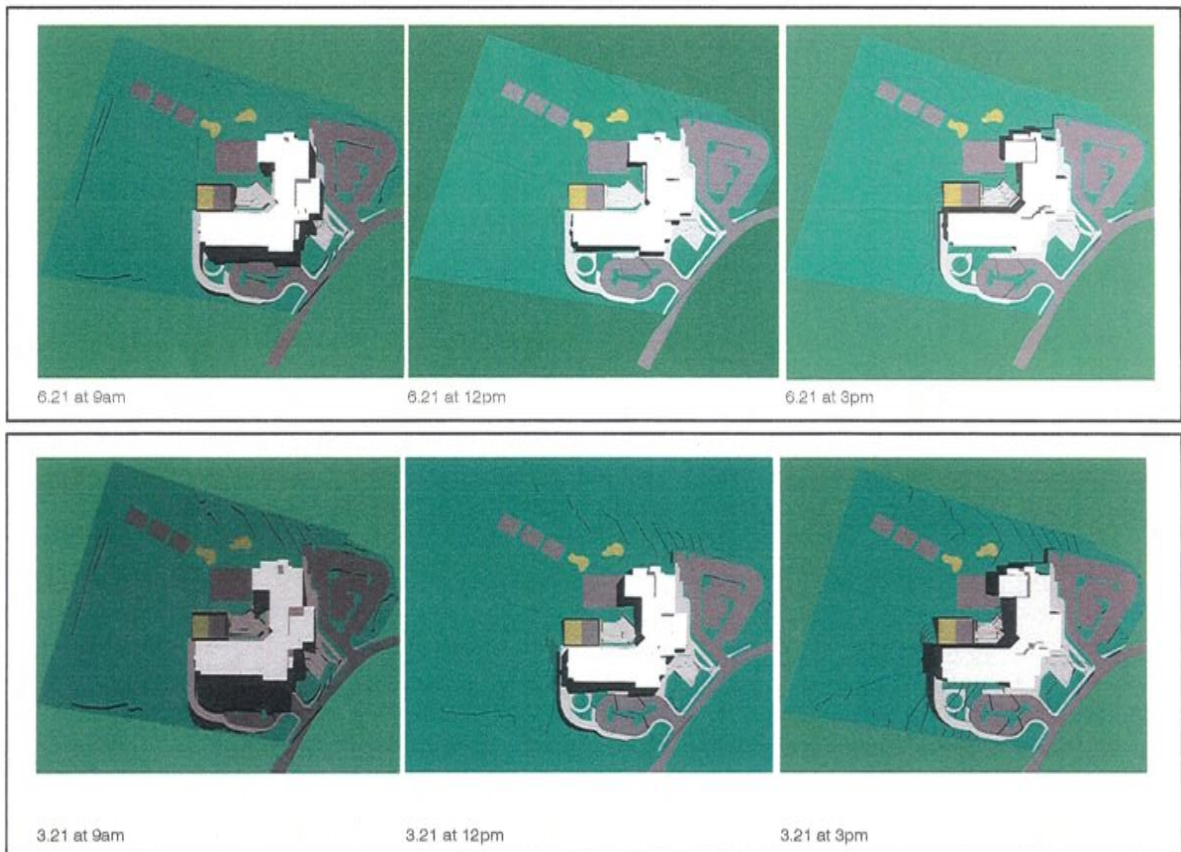
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ATTACHMENT 5

Solar Studies

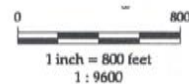
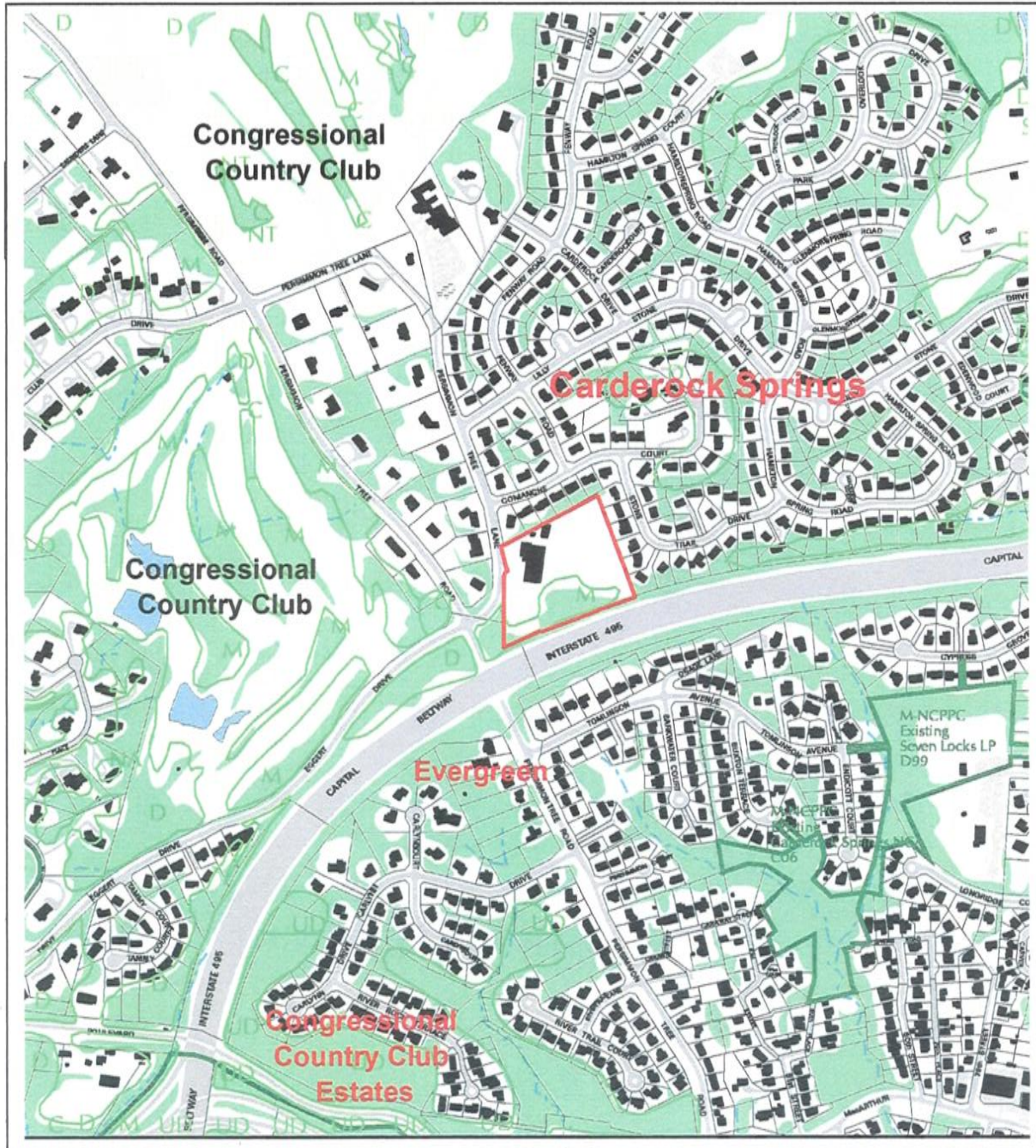


At Left: December shadows extend toward the playing fields in late afternoon. Middle: In Summer (June), shadows are minimized. Bottom: Spring shadows (March) are moderate.



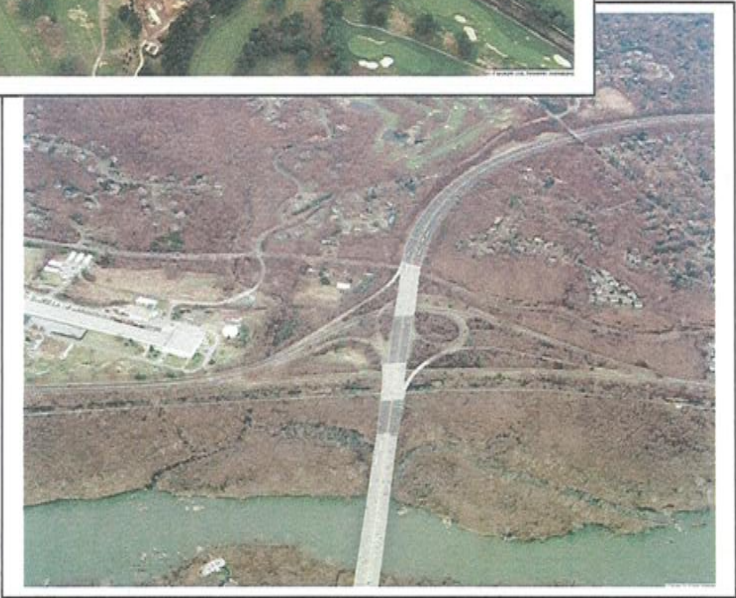
ATTACHMENT 6

Vicinity Map



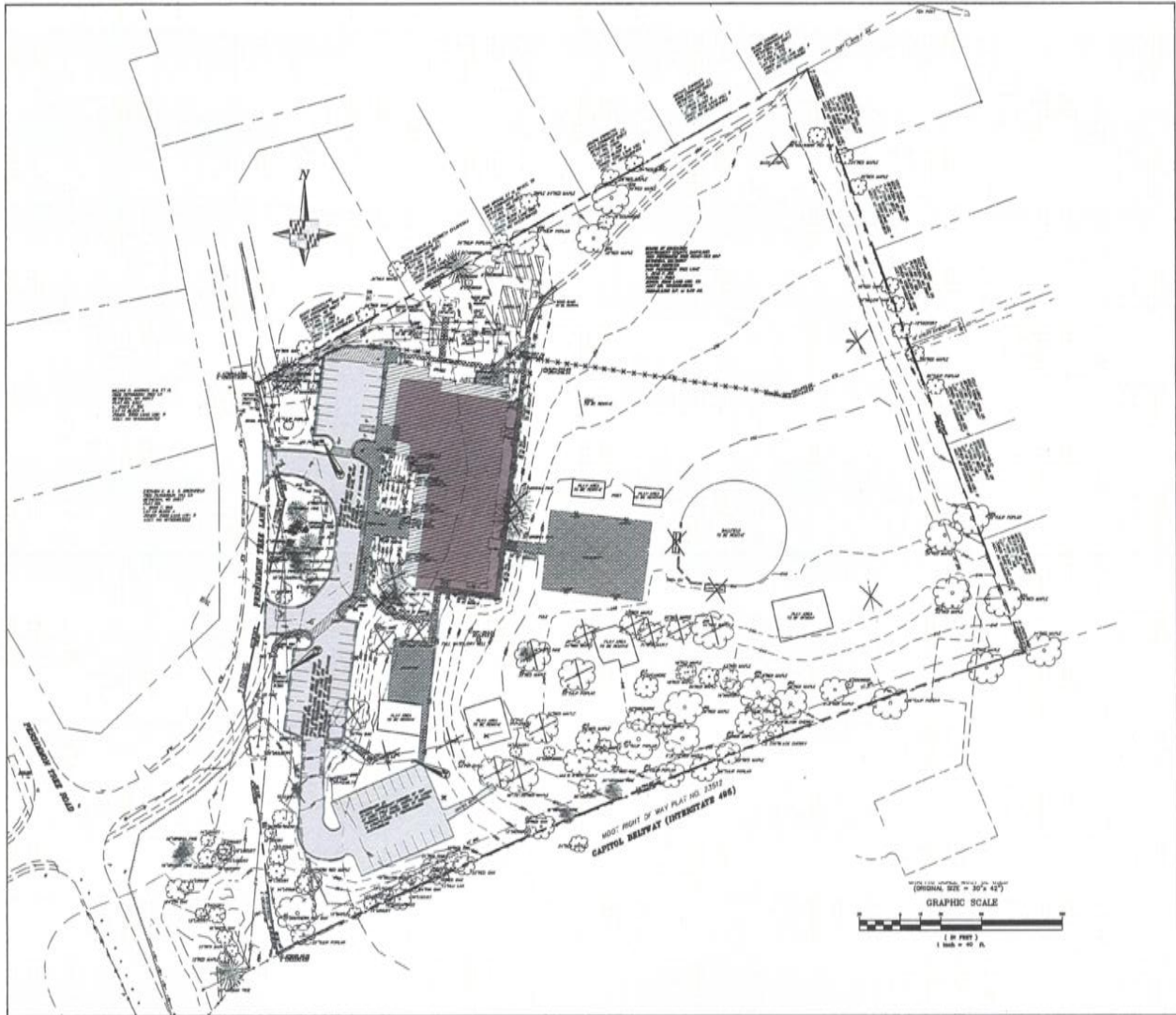
ATTACHMENT 7

Oblique Aerial Photography



ATTACHMENT 8

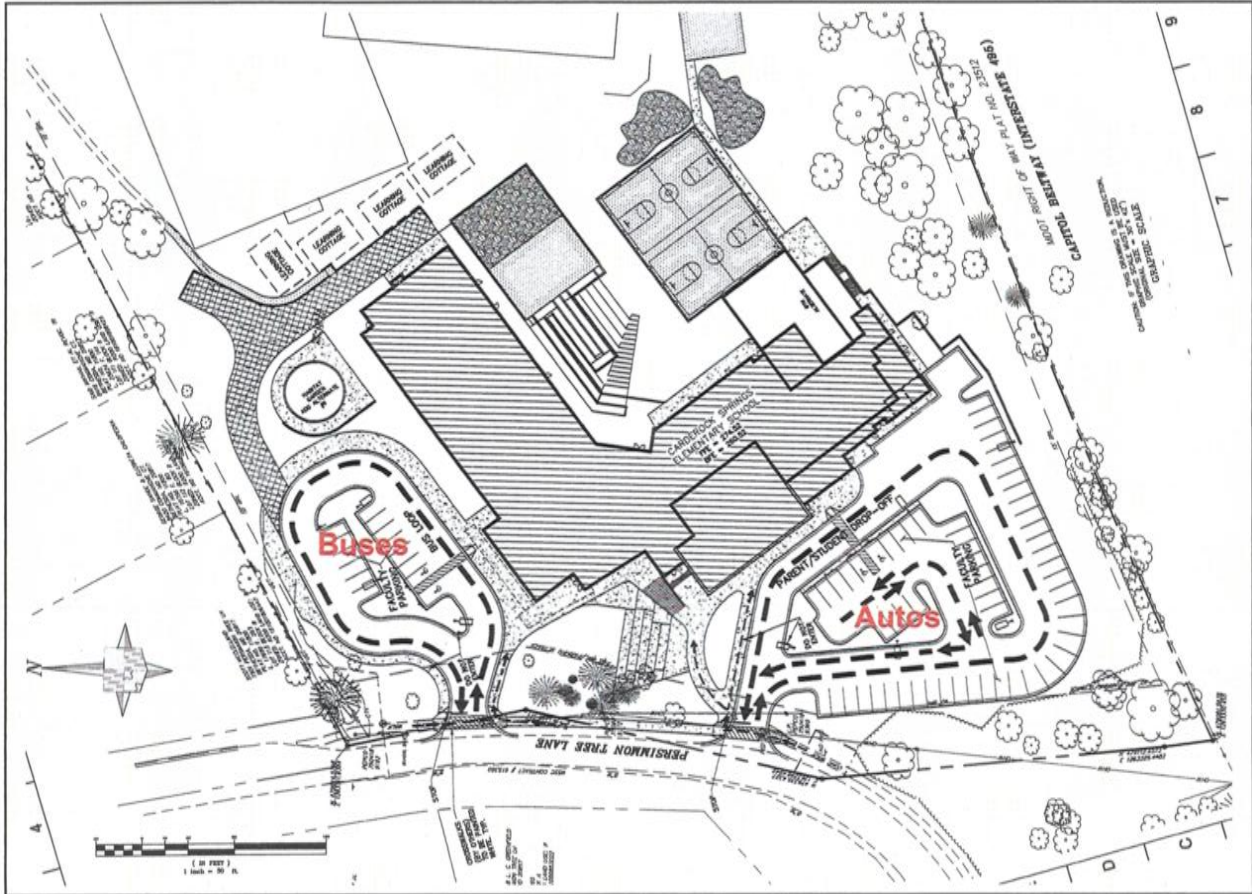
Existing Conditions Site Plan



The existing school building was constructed in 1966 as a steel frame, wood trussed structure. Note the shared vehicular entry point that serves buses and automobiles. The extensive forest stand on the south will be preserved.

ATTACHMENT 9

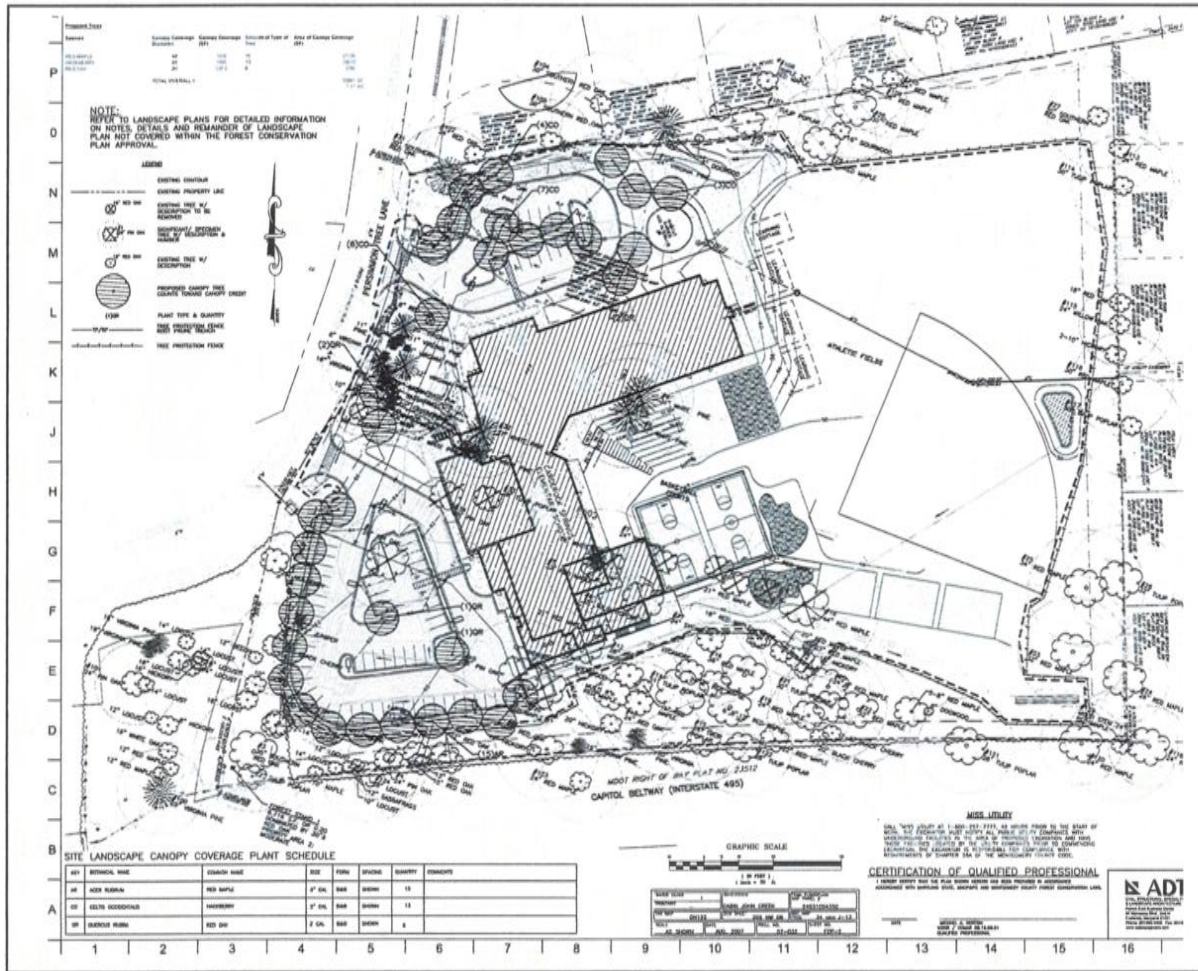
Traffic Queuing Plan



The proposed design skillfully separates the school buses on the north from the automobile drop off and parents' parking on the south. Pedestrian entry to the building is evenly distributed among the three primary entrances. Handicapped entry is served from the south queuing area. Note the substantial queuing capacity.

ATTACHMENT 10

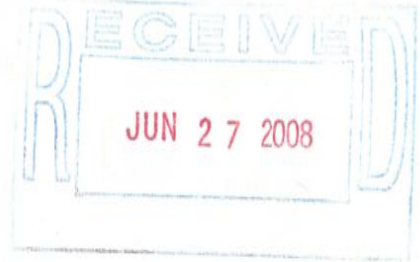
Tree Canopy Plan





MONTGOMERY COUNTY PLANNING DEPARTMENT
THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION

June 27, 2008

**MEMORANDUM**

TO: Mary Beth O'Quinn
Community-Based Planning Division

VIA: Shahriar Etemadi, Supervisor *DKH for*
Transportation Planning

FROM: Cherian Eapen, Planner/Coordinator *CE*
Transportation Planning
301-495-4525

SUBJECT: Mandatory Referral 08401-MCPS-1
Proposed Modernization of Carderock Springs Elementary School
7401 Persimmon Tree Lane
Potomac Policy Area

This memorandum presents Transportation Planning staff's review of the subject mandatory referral for Carderock Springs Elementary School modernization project. The school is located at 7401 Persimmon Tree Lane in Potomac within the Potomac Policy Area.

RECOMMENDATIONS

We have completed our review of the materials submitted for the subject mandatory referral and recommend that the Planning Board transmit the following comments to Montgomery County Public Schools (MCPS):

1. Any future mandatory referral submission for improvements at the school by MCPS must include a traffic study for Adequate Public Facilities (APF) purposes if those improvements will increase core capacity at the school from currently planned 644 students.
2. MCPS must coordinate with Montgomery County Department of Transportation (DOT) to construct a five-foot wide sidewalk extension along Persimmon Tree Lane between the northern school boundary and Comanche Court (within Carderock Springs Subdivision) to the north (approximately 220 feet) to provide a continuous off-street pedestrian connection between the school and Comanche Court.

3. MCPS must discourage any parent drop-off/pick-up of students along Persimmon Tree Lane and other neighboring streets.

DISCUSSION

School Location, Access, Pedestrian Facilities, Parking, and Public Transportation

Carderock Springs Elementary School is located along Persimmon Tree Lane near its intersection with Persimmon Tree Road in Potomac. Capital Beltway (I-495) is along the southern school boundary.

The existing school, with an enrollment of approximately 290 students, is open between 8:50 a.m. and 3:05 p.m. Access to the school is currently from Persimmon Tree Lane via two driveways. Lead-in sidewalks are provided to the school from Persimmon Tree Lane along both driveways. Parking at the school is currently provided to the north and south of the school building. A total of 56 parking spaces, including two handicapped spaces are currently provided at the school. Staff (including some parents) currently use both northern and southern driveways to access the parking lots. Both parent vehicles and school buses currently enter the school via the southern driveway; the buses looping north in a counter-clockwise direction to drop-off/pick-up students and the parent vehicles looping south into the south parking lot to drop-off/pick-up children.

Persimmon Tree Lane functions as a north-south two-lane secondary residential street with a posted speed limit of 25 mph. Its southern approach to Persimmon Tree Road is STOP-sign controlled. The roadway has a sidewalk along its eastside between Persimmon Tree Road and the southern driveway to the school. A small section of sidewalk also exists along the eastside of Persimmon Tree Lane to the north of the northern school driveway. RideOn Route 32 provides morning and evening service along Persimmon Tree Road and Eggert Drive.

The proposed modernization project consists of demolishing the existing school and constructing a new school at the current location. The new school will be built with a core capacity for 644 students. The project will separate the parent drop-off/pick-up area from that for the buses, each served by separate full access driveways to Persimmon Tree Lane by removing the internal connection between the two driveways. The bus loop will be located to the north of the proposed new school building and the parent loop will be located to the south of the proposed new school building. The proposed circulation scheme will help better manage on-site queuing/stacking of buses and parent vehicles and will improve student safety. A total of 73 parking spaces, including four handicapped spaces will be provided at the school, and will be located to the north and south of the school.

Master Plan Roadway

The 2002 Approved and Adopted *Potomac Subregion Master Plan* describes the following nearby master-planned roadway:

- Persimmon Tree Road, as a two-lane arterial road (A-77) with a recommended minimum right-of-way width of 80-feet, between Capital Beltway to the south and River Road to the north, and a shared use path (PB-8; SP-5 in the *2005 Countywide Bikeways Functional Master Plan*; currently existing along the west side of the roadway).

Adequate Public Facilities Review

A traffic study was required for the mandatory referral since the school generated **30** or more total peak-hour trips during the typical weekday morning (6:30 a.m. – 9:30 a.m.) peak period. Under Section II.C.1 of the *LATR/PAMR Guidelines*, a full traffic study is required for uses within the Potomac Policy Area only if the use will impact specific intersections that are identified in the *Guidelines*. Since school related traffic would affect one of the above intersections (River Road and Bradley Boulevard), a full traffic study was required for this MCPS project.

The consultant for the applicant submitted a traffic study that presented traffic-related impacts of the new school with a core capacity for 644 students (an additional 354 students over current enrollment of 290 students) during the weekday morning and afternoon peak-periods. Staff review of the above traffic study indicated that the study complied with the requirements of the *LATR/PAMR Guidelines* and the traffic study scope provided by the staff.

• Local Area Transportation Review

A summary of the capacity/Critical Lane Volume (CLV) analysis results for the study intersections for the weekday morning and afternoon peak-hours is presented in Table 1.

As shown in Table 1, capacity analysis presented in the traffic study indicated that under Total Traffic (i.e., Build) Conditions, CLV at the study intersections would be below the applicable congestion standard for the respective policy areas. The mandatory referral therefore satisfies the LATR requirements of the APF test.

• Policy Area Mobility Review

To satisfy the PAMR requirements of the APF test, the Potomac Policy Area requires mitigation of 40 percent of new trips generated by a use. Since data included in the traffic study indicated that the per student trip rate at the school is approximately 42 percent lower than the per student trip rate for private schools with Grades K through 8 included in the *LATR/PAMR Guidelines*, staff finds that MCPS is achieving over 40 percent trip mitigation at the school. The mandatory referral therefore satisfies the PAMR requirements of the APF test.

TABLE 1
SUMMARY OF CAPACITY CALCULATIONS
CARDEROCK SPRINGS ELEMENTARY SCHOOL MODERNIZATION PROJECT

Intersection	Traffic Conditions					
	Existing		Background		Total	
	AM	PM	AM	PM	AM	PM
River Rd/Bradley Blvd	1,346	1,150	--	--	1,350	1,151
Persimmon Tree Rd/Persimmon Tree Ln	371	258	--	--	424	302
MacArthur Blvd/Persimmon Tree Rd	323	438	--	--	333	443
Persimmon Tree Ln/North School Drwy	76	52	--	--	127	88
Persimmon Tree Ln/South School Drwy	176	91	--	--	312	158

Source: Carderock Springs Elementary School Traffic Study. STS, Inc., May 13, 2008.

Note: Background Conditions is same as Existing Conditions.

Congestion Standard for Potomac Policy Area: 1,450 CLV

Congestion Standard for Bethesda/Chevy Chase Policy Area: 1,600 CLV

Off-site Sidewalk Extension Request

As part of this mandatory referral, staff is recommending that MCPS coordinate with DOT to construct a five-foot wide sidewalk extension between the school property boundary to the north and Comanche Court (within Carderock Springs Subdivision, approximately 300 feet length). Construction of this sidewalk link would provide a continuous off-street pedestrian connection between Persimmon Tree Road and Comanche Court, and will provide additional walk access to the school from Comanche Court and other areas within the Carderock Springs Subdivision.

SE:CE:tc

- cc: ✓ Callum Murray
 Jim Tokar
 Ki Kim
 Greg Leck
 Sarah Navid
 Jean Gries
 Corren Giles



DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION

Isiah Leggett
County Executive

June 25, 2008

Arthur Holmes, Jr.
Director

Mr. Cherian Eapen
Planner Coordinator
Transportation Planning
The Maryland-National Capital Park and Planning Commission
8787 Georgia Avenue
Silver Spring, MD 20910

Re: LATR and PAMT Reviews of Mandatory Referral for Carderock
Springs Elementary School -Proposed Enlarged School
Potomac Policy Area

Dear Mr. Eapen:

We have reviewed the proposed replacement and expansion of Carderock Springs Elementary School at 7401 Persimmon Tree Lane to increase the core capacity to 644 students to add 354 students to its existing core capacity.

The consultant projected that the proposed enlarged Carderock Springs Elementary School will add 196 more AM trips and 99 additional PM trips. His calculation indicated that all critical intersections are expected to have Total Peak Hour CLVs below the Potomac Policy Area standard of 1450 CLVs or 1600 for the Bethesda-Chevy Chase Policy Area. 60% of students use school buses which more than meets the PAMR 40% reduction.

We find that the proposed expanded Carderock Springs Elementary School will pass both LATR and PAMR components of Mandatory Referral easily.

Sincerely,

David C. Adams, Engineer III
Development Review Group
Traffic Engineering and Operations Section

Cc: Callum Murray, MNCPPC
Mike Nalepa, Street Traffic Studies
Jean Gries
Bruce Mangum
Greg Leck

MR-MCPS-CarderockSpsEISch.25June2008.doc

Division of Operations

101 Orchard Ridge Drive, 2nd Floor • Gaithersburg, Maryland 20878
240-777-6000 • 240-777-6013 TTY • 240-777-6030 FAX
www.montgomerycountymd.gov

ATTACHMENT 13



DEPARTMENT OF PERMITTING SERVICES

Isiah Leggett
County Executive

April 30, 2008

Carla Reid Joyner
Director

Ms. Teresa Wright
Adtek Engineers, Inc.
97 Monocacy Boulevard, Unit H
Frederick, MD 21701

Re: Stormwater Management **CONCEPT** Request
for Carderock Springs Elementary School
Preliminary Plan #:
SM File #: 232904
Tract Size/Zone: 9 acres/R-200
Total Concept Area: 9 acres
Lots/Block:
Parcel(s): P503
Watershed: Rock Run

Dear Ms. Wright:

Based on a review by the Department of Permitting Services Review Staff, the stormwater management concept for the above mentioned site is **acceptable**. The stormwater management concept consists of on-site channel protection measures via underground detention; on-site water quality control via a Stormfilter, a biofilter and a grass channel; and onsite recharge via a grass channel.

The following **items** will need to be addressed **during** the detailed sediment control/stormwater management plan stage:

1. You have still not accounted for the CpV at the storm drain outfall. This outfall combines 2 drainage areas. I understand the constraints of the site. Please provide CpV control within the biofilter for the area which drains to the biofilter.
2. The biofilter can not have a drainage area of over 1 acre. Please be aware of this as you work the final design the site. Your current drainage area to the biofilter does not look practical.
3. For future reference, please remember that storm drains are considered channel flow in the Time of Concentration (Tc) calculations. Your Tc calculations for SP-1 do not reflect this fact.
4. Please design a rip rap channel/swale as the outfall for the grass swale. Vegetative level spreaders usually can not be built correctly, and ultimately fail.
5. Prior to permanent vegetative stabilization, all disturbed areas must be topsoiled per the latest Montgomery County Standards and Specifications for Topsoiling.
6. A detailed review of the stormwater management computations will occur at the time of detailed plan review.
7. An engineered sediment control plan must be submitted for this development.
8. All filtration media for manufactured best management practices, whether for new development or redevelopment, must consist of MDE approved material.

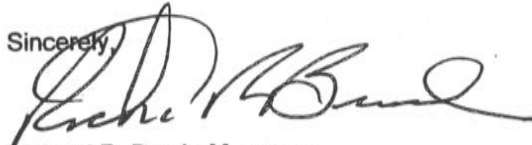
This list may not be all-inclusive and may change based on available information at the time.

Payment of a stormwater management contribution in accordance with Section 2 of the Stormwater Management Regulation 4-90 is not required.

This letter must appear on the sediment control/stormwater management plan at its initial submittal. The concept approval is based on all stormwater management structures being located outside of the Public Utility Easement, the Public Improvement Easement, and the Public Right of Way unless specifically approved on the concept plan. Any divergence from the information provided to this office; or additional information received during the development process; or a change in an applicable Executive Regulation may constitute grounds to rescind or amend any approval actions taken, and to reevaluate the site for additional or amended stormwater management requirements. If there are subsequent additions or modifications to the development, a separate concept request shall be required.

If you have any questions regarding these actions, please feel free to contact Nadine Vurdelja Piontka at 240-777-6334.

Sincerely,



Richard R. Brush, Manager
Water Resources Section
Division of Land Development Services

RRB:dm CN232904

cc: C. Conlon
S. Federline
SM File # 232904

QN -onsite; Acres: 9
QL - onsite; Acres: 9
Recharge is provided

ATTACHMENT 14



MONTGOMERY COUNTY PLANNING DEPARTMENT THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION

June 26, 2008

Dear Resident:

This is to notify you that the Montgomery County Planning Board has received a mandatory referral application, pursuant to Section 7-112 of the state law, for the following project, tentatively scheduled for a hearing before the Planning Board on the date below. Mandatory referral law requires all federal, state and local governments and public utilities to submit proposed projects in the regional district for review and approval by the Planning Board. The Board's approval and comments are advisory in that the statute allows the applicant to overrule the Planning Board's decision and proceed.

The hearing date listed in this notice is tentative and subject to change; no further notices will be sent out. The final notice of hearing will be published in the planning Board's weekly agenda, which can be viewed on the Board's web page at www.mc-mncppc.org. Any further information can be obtained by contacting the project manager listed below.

Please notify your neighbors and community homeowner's association members of this notice. The Planning Board encourages community input on all its projects including mandatory referrals, and welcomes citizen participation in its review processes. If you or other members of your community have any concerns or comments, please contact the project manager listed in this notice.

PROJECT: Mandatory Referral 08401-MCPS-1
Preliminary Forest Conservation Plan
Carderock Springs Elementary School Replacement
APPLICANT: Montgomery County Public Schools
ADDRESS: 7401 Persimmon Tree Lane, Bethesda, MD 20817

MASTER PLAN: Potomac Subregion Master Plan

SCHEDULED FOR: July 31, 2008
HEARING SITE: Montgomery County Planning Board
8787 Georgia Avenue
Silver Spring, MD 20910

CONTACT: Mary Beth O'Quinn
301-495-1322
Marybeth.oquinn@mncppc-mc.org

or

Callum Murray, Potomac and Rural Area West Team Leader
301-495-4733
Callum.Murray@mncppc-mc.org