CAPTAIN JAMES E. DALY ELEMENTARY SCHOOL
Addition Feasibility Study

Prepared for

Montgomery County Public Schools

By

Smolen ▪ Emr ▪ Ilkovitch Architects
Rockville, MD

October 2013

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Captain James E. Daly Elementary School
Addition

20301 Brandermill Drive
Germantown, Maryland 20876

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I. Introduction

Captain James E. Daly Elementary School is located in Germantown at 20301 Brandermill Drive. This feasibility study was conducted for Montgomery County Public Schools (MCPS) by the architectural firm of Smolen ■ Emr ■ Ilkovitch Architects to develop options for adding capacity to Daly Elementary School.

Feasibility Study Participants

The feasibility study participants reviewed, revised, and approved the design options for the addition to James E. Daly Elementary School through a series of work sessions and community meetings. The meetings occurred on March 27, 2012, April 16, 2012, May 1 and May 15, 2012, and May 31, 2012. The proposed options are a result of the participants' suggestions and guidance during the feasibility study process.

Listing of Participants

Nora Dietz	Principal	James E. Daly Elementary School
Muriel Alexander	Staff	James E. Daly Elementary School
Nooshin Amirpour	Facilities Team Leader	Division of Construction - MCPS
John Bible	Community	James E. Daly Elementary School
Monica Bible	Community	James E. Daly Elementary School
Seena Bulmash	Staff	James E. Daly Elementary School
Amy Burnham	Staff	James E. Daly Elementary School
Snobie Davis	Parent	James E. Daly Elementary School
Penny German	Assistant Principal	James E. Daly Elementary School
Jean Gries	Traffic Specialist	Department of Transportation – MCPS

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I. Introduction (Continued)

List of Participants (Continued)

Beth Leo	Staff	James E. Daly Elementary School
Ray Marhamati	Project Manager	Division of Construction - MCPS
Yvonne Matinyi	Community	James E. Daly Elementary School
Julie Morris	Planner	Division of Long - range Planning - MCPS
Shirlie Pinkham	Staff	James E. Daly Elementary School
Joe Pospisil	Traffic Specialist	Department of Transportation – MCPS
Lydia Rivera	Staff	James E. Daly Elementary School
Michael Shpur	Architect	Division of Construction -MCPS
Jeremy Snyder	Staff	James E. Daly Elementary School
Jillian Storms	Architect	Maryland State Department of Education
Debbie Szyfer	Senior Planner	Division of Long - range Planning - MCPS
Tracy Walton	Staff	James E. Daly Elementary School
Laurann Wynn	Staff	James E. Daly Elementary School
Tina Yingling	Staff	James E. Daly Elementary School

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II. Executive Summary

Purpose

The purpose of this feasibility study is to explore options to increase the student capacity at James E. Daly Elementary School. The study evaluated a series of potential options that would satisfy the requirements of the educational specifications and space summary. The intent of this study is to provide Montgomery County Public Schools with specific recommendations and construction costs associated with the implementation of those options.

History

Captain James E. Daly Elementary School was originally constructed in 1989. The school is named in honor of Captain James E. Daly, who served a distinguished 19 year career with the Montgomery County Police Department. He is the highest ranking police officer to die in the line of duty in Montgomery County.

Since the original construction, no additions have been constructed onto the original structure.

Methodology

The existing school was evaluated by the design team to determine the most appropriate and advantageous approach to adding the proposed programmed spaces. Additionally, the study indicates the impact, if any, that can be reasonably expected as a result of each proposed option. The evaluation is based on compliance with Montgomery County Public Schools educational specifications.

The study is based on the following:

- Meetings with the feasibility study participants & Montgomery County Public Schools staff.
- Analysis of the existing facility regarding additional capacity.
- Review of existing construction documents provided by Montgomery County Public Schools .
- Analysis of existing site features and meeting with Montgomery County related to storm water management.
- Review of the educational specifications.
- Research conducted by the design team.

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II. Executive Summary (Continued)

Summary

Captain James E. Daly Elementary School is located on a 10 acre site at 20301 Brandermill Drive in Germantown. The existing facility is 78,210 square feet.

The original 2 - story structure is of non - combustible construction and is fully - protected by a sprinkler system. The walls throughout the building are of masonry, with brick veneer on the exterior walls. The structural system consists of masonry, load - bearing walls, which are constructed on continuous concrete footings. The floors throughout the building are concrete and exist as either concrete slabs - on - grade or framed slabs supported by steel joists. The roof is built - up roofing on corrugated metal decking, supported by steel joists. Virtually all of the interior walls in the building are masonry, although drywall partitions are used to subdivide spaces in the administrative suite.

Vehicular access to the school is currently through three driveways located off of Brandermill Drive. One driveway serves as the main entry point for buses into the site. It also leads to a small parking lot holding 6 reserved spaces for the administrative faculty as well as a loading dock. Another driveway serves as the egress for this traffic loop. The third driveway serves as the main access point, both entry and egress, for all other vehicles and including student drop - off and staff member cars. There are 86 parking spaces in this loop. On - site sidewalks link the pedestrian circulation routes of the facility to the public sidewalks along Brandermill and Scenery Drives.

The program capacity of the school is currently 471 with a master - planned (core) capacity of 640. The current enrollment is 594 students in pre - kindergarten through grade 5. There are 80 people on staff and 14 to 15 buses service the school.

Proposed Options

Three building addition options were developed with input from the feasibility study participants and Montgomery County Public Schools staff. Each of the options meet all of the programmatic requirements set forth by the educational specifications and explores different approaches toward increasing the capacity of the school. All options will impact the existing building and site, however, the school will remain occupied and fully - functional during construction.

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II. Executive Summary (Continued)

Common Design Elements

All three options have the following common elements:

Building

- All pre - kindergarten and kindergarten classrooms have been clustered together and include dedicated lavatories.
- An existing first floor classroom will be renovated to provide a therapy room and storage space.
- The existing kindergarten classroom, located on the first floor adjacent to the existing pre - kindergarten classroom, will be used as a pre - kindergarten classroom.
- The existing classroom on the end of the southwest face of the building, along the kindergarten classroom hallway, will be enlarged and modified as a kindergarten classroom.
- The first floor addition will extend the southwest portion of the building, where the existing relocatable classrooms are currently located.
- The first floor addition will provide replacement classrooms for any spaces that are re - purposed to meet the educational specifications.
- The isolated second floor classroom located in the southeast end of the building will be renovated and repartitioned into a conference room and a Parent and Teacher Association office.
- Classrooms will have access to natural day light.
- Provide adequate space for mechanical and electrical systems.
- Additional staff restrooms and boys and girls bathrooms will be provided.
- Include all spaces and amenities in accordance with the educational specifications and space allocation summary.

Site

- The parking lot will be extended to the south to create a more direct parent drop - off route for better traffic flow.
- Vegetation will be added to the parking lot area to further define the parent drop - off loop and parking as separate spaces.
- The entry and egress to the parking lot will be widened to provide one lane of traffic in and two out for improved traffic flow.
- The existing relocatable classrooms and unutilized Optimal Learning Center is scheduled to be removed from the site to accommodate the addition.
- Kindergarten play areas will be added between the existing play areas and the southeast end of the building; A retaining wall will surround the kindergarten play areas, accounting for the elevation change.
- A ramp will be added from the existing play areas leading to the southeast entrance to the building, surrounding the new kindergarten play areas.

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II. Executive Summary (Continued)

Option 1 Description (Preferred Option)

Option 1 - The proposed 2 - story addition extends the southwest wing of the existing facility. The addition is held tight to the existing building and efficiently utilizes existing corridors to link back to the existing building on the first floor. The addition is compact, adding only a single corridor lined with new classroom spaces.

Design Elements Include

- 2 standard classrooms along the existing kindergarten area will be extended out and renovated to become additional kindergarten classrooms
- The addition will extend the existing southwest portion, with the first floor linking back to the southern face, creating a courtyard.
- A new stair will provide vertical circulation within the stacked 2 - story addition.
- Provides limited renovation and minimal disturbance to the existing building.
- Clusters pre - kindergarten and kindergarten classrooms together and strategically locates replacement classrooms in proximity to the existing classroom wing.
- A circulation loop around a light - filled courtyard connects the existing building to the addition.

Total Construction Cost:	$7,947,000

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II. Executive Summary (Continued)

Option 2 Description

Option 2 - The proposed addition is comprised of two elements. The first portion is a one - story addition to the southwest face of the building. It replaces the existing relocatable classrooms with permanent structure. The addition is held tight to the existing building and utilizes existing corridors to link back to the existing facility. The second portion is an addition to the second floor of the building on the south side, stacked directly above the existing building. In order to complete this addition, the existing portion would have to be renovated.

Design Elements Include

- The second floor addition will connect both corridor ends to complete full circulation.
- The second floor addition will heighten only the central core of the building.
- 2 classrooms along the existing kindergarten corridor will be extended and renovated to become additional kindergarten classrooms.
- The addition will extend the existing southeast portion, with the first floor linking back to the southern face, creating a courtyard.
- A new vegetated roof will cover the two existing classrooms facing the courtyard.

Total Construction Cost:	$10,989,000

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II. Executive Summary (Continued)

Option 3 Description

Option 3 – The proposed addition is a compact 2 - story extension of the southwest face of the building. The addition efficiently stacks two floors of classrooms in the same footprint. The addition extends the existing corridor and adds a perpendicular single corridor lined with new classroom spaces, replacing the existing relocatable classrooms.

Design Elements Include

- A new stair will provide vertical circulation within the stacked 2 - story addition.
- The compact addition minimizes the added footprint.
- Includes minimal renovation and disturbance to the existing building during construction.

Total Construction Cost:	$7,610,000

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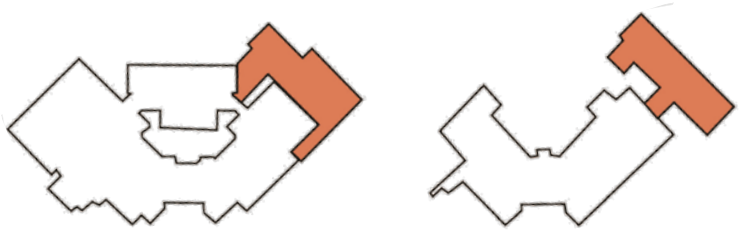
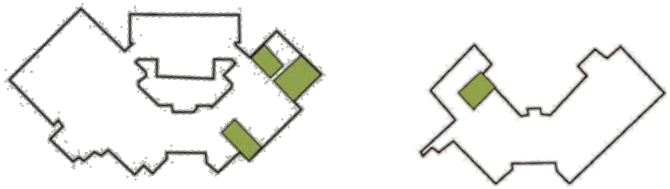
II. Executive Summary (Continued)

OPTION 1 (Preferred)

ADDITIONS

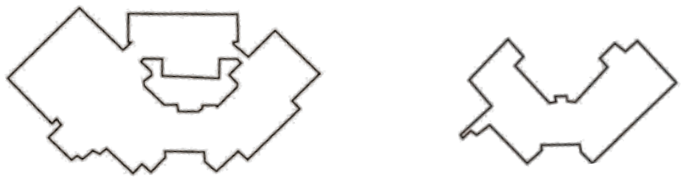


RENOVATION



Existing building =	78,210 SF
Proposed additions =	18,520 SF
Renovation =	3,890 SF
Total Gross =	96,730 SF

FIRST FLOOR **SECOND FLOOR**



EXISTING BUILDING

Existing Building =	78,210 SF

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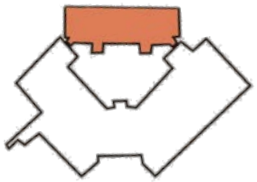
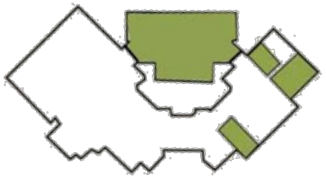
II. Executive Summary (Continued)

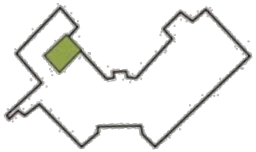
OPTION 2

ADDITIONS



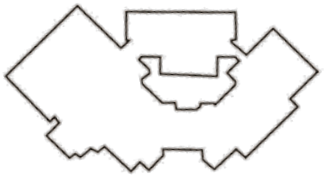
RENOVATION

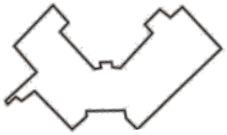




Existing building =	78,210 SF
Proposed additions =	17,852 SF
Renovation =	13,135 SF
Total Gross =	96,062 SF

FIRST FLOOR **SECOND FLOOR**





EXISTING BUILDING

Existing Building =	78,210 SF

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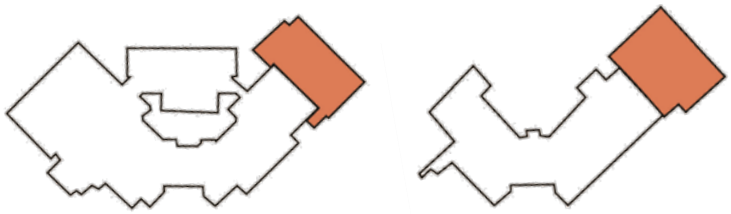
II. Executive Summary (Continued)

OPTION 3

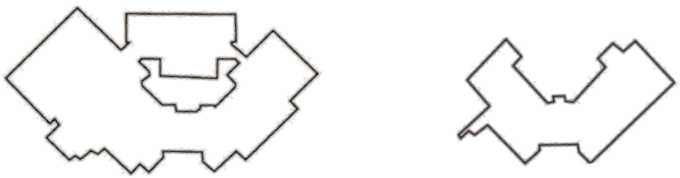
ADDITIONS



RENOVATION

Existing building =	78,210 SF
Proposed additions =	16,664 SF
Renovation =	4,797 SF
Total Gross =	94,874 SF

FIRST FLOOR **SECOND FLOOR**



EXISTING BUILDING

Existing Building =	78,210 SF

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II. Executive Summary (Continued)

Conclusions and Recommendations

Based upon Montgomery County Public Schools standards, program requirements and input received from the feasibility study participants. **Option 1** has been selected as the preferred option.

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III. Scope, Methodology & Goals

Scope and Intent

The purpose of this feasibility study is to explore viable options for increasing the capacity of Captain James E. Daly Elementary School by evaluating a series of possible additions that will satisfy the requirements of the space allocation summary and the educational specifications dated October 21, 2011.

The intent of this feasibility study is to develop options for the proposed school expansion to fulfill the educational requirements of students and staff. Each option will address issues related to the incorporation of additional classroom space, the clustering of kindergarten and pre - kindergarten classrooms and improve site circulation. The scope of work also includes a survey of the physical plant and evaluation of the existing mechanical, electrical and plumbing systems to determine if existing equipment could be extended to serve the proposed addition.

Meetings were held at Daly Elementary School on March 27, 2012, April 16, 2012, May 1 and May 15, 2012, and on May 31, 2012. The design team analyzed the educational specifications and developed several options that maximize the use of the existing facility and address both building addition and site programs. The feasibility study participants reviewed and provided input on the development of the building and site options at each meeting. Their comments and suggestions were discussed at each meeting. The final options are presented in this report. Option 1 was selected as the preferred option by the feasibility study participants at the final meeting on May 31, 2012.

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III. Scope, Methodology & Goals (Continued)

Methodology

The existing school was evaluated by the design team to determine the most advantageous approach to adding program spaces. The evaluation was conducted with the intent of adding to the existing school to comply with the educational specifications and space allocation summary - facility planning study dated October 21, 2011. The evaluation is based on the following:

- Analysis of the existing physical plant and determination of available additional capacity.
- Non - destructive visual evaluations, where possible, of the existing facility and follow - up interviews with Montgomery County Public Schools staff when required.
- Review of existing construction documents provided by Montgomery County Public Schools to understand the existing building construction and systems.
- Analysis of existing site features including existing amenities, utilities and site access were reviewed to determine if they were capable of supporting the proposed options.
- Analysis of geotechnical composition of the site to determine composition of existing soils to identify any rock and/or poor soil conditions.
- Input received from the feasibility study participants & Montgomery County Public Schools staff to establish the needs and goals for the study.
- Review of the educational specifications to establish a thorough understanding of the requirements and objectives of the project.

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III. Scope, Methodology & Goals (Continued)

The following are the goals and objectives established by the feasibility study participants to be addressed by the design team and Montgomery County Public Schools staff in this feasibility study.

Building Goals

The building addition should:

- Provide natural light throughout the new addition while preserving natural light to the existing facility.
- Keep the kindergarten and pre - kindergarten classrooms clustered together.
- Select renovation locations that do not interrupt existing programs.
- Minimize construction disruption for students and staff.
- Maintain the current classroom configurations with convenient circulation connections between the addition and the existing building.
- Minimize additional building footprint.
- Provide new corridors with few turns to allow for visual supervision and enhanced security.

Site Goals

The proposed site should:

- Improve student drop - off traffic flow.
- Improve safety conditions for pedestrians during dismissal through greater visibility within drop - off loop.
- Provide additional play areas specifically for the kindergarten students.
- Increase Americans with Disabilities Act accessibility on site.
- Maintain adequate parking capacity.

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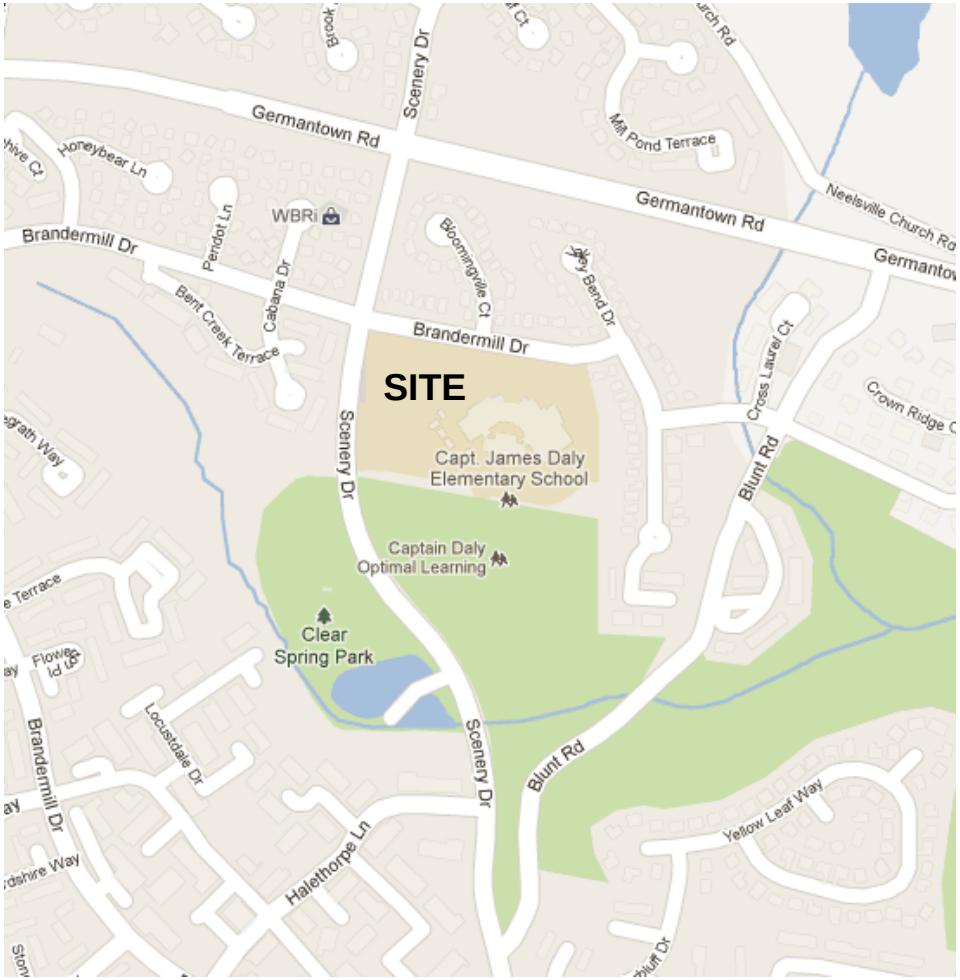
IV. Existing Conditions

Vicinity Map



NOT TO SCALE

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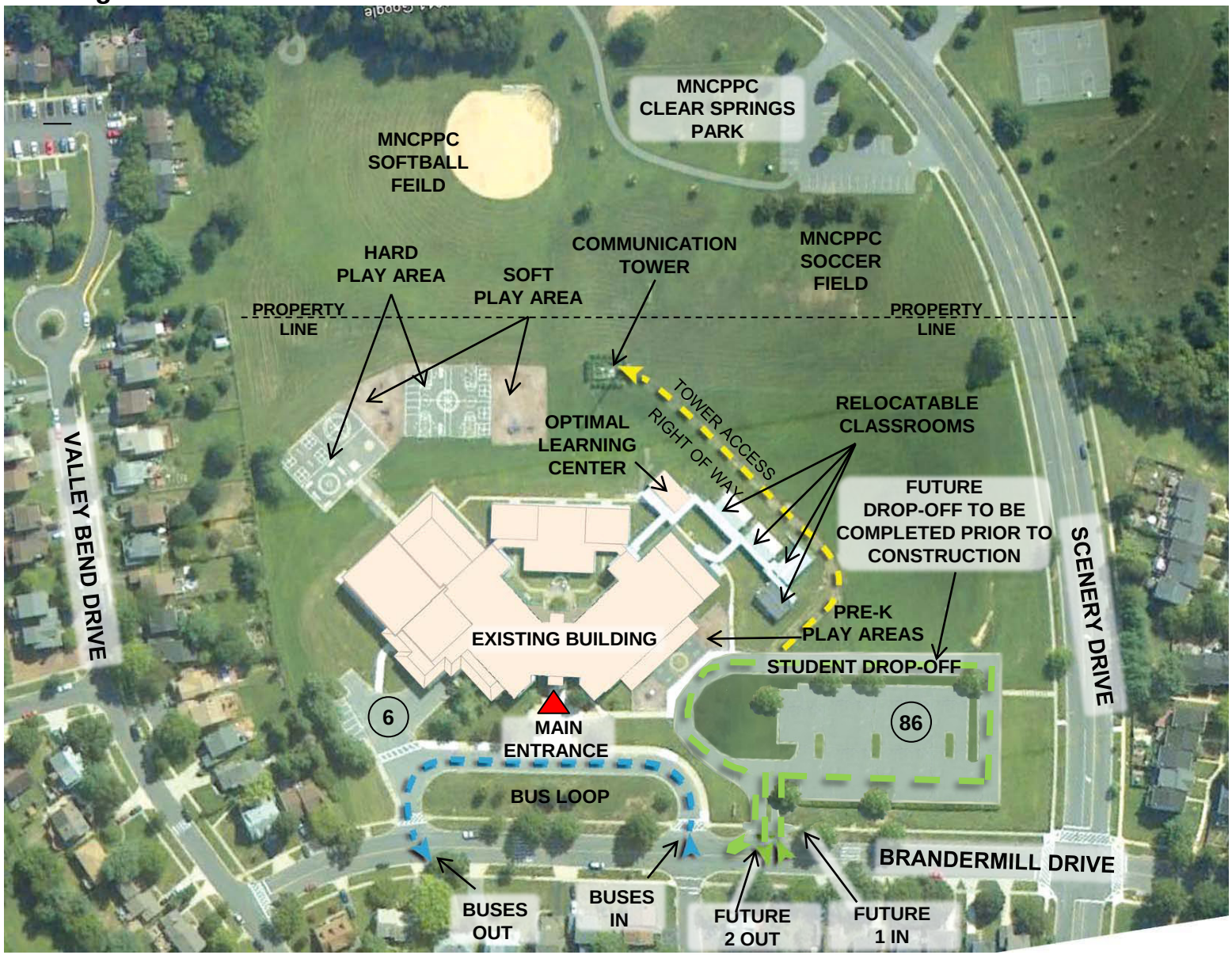
IV. Existing Conditions (Continued)

Existing Site Plan



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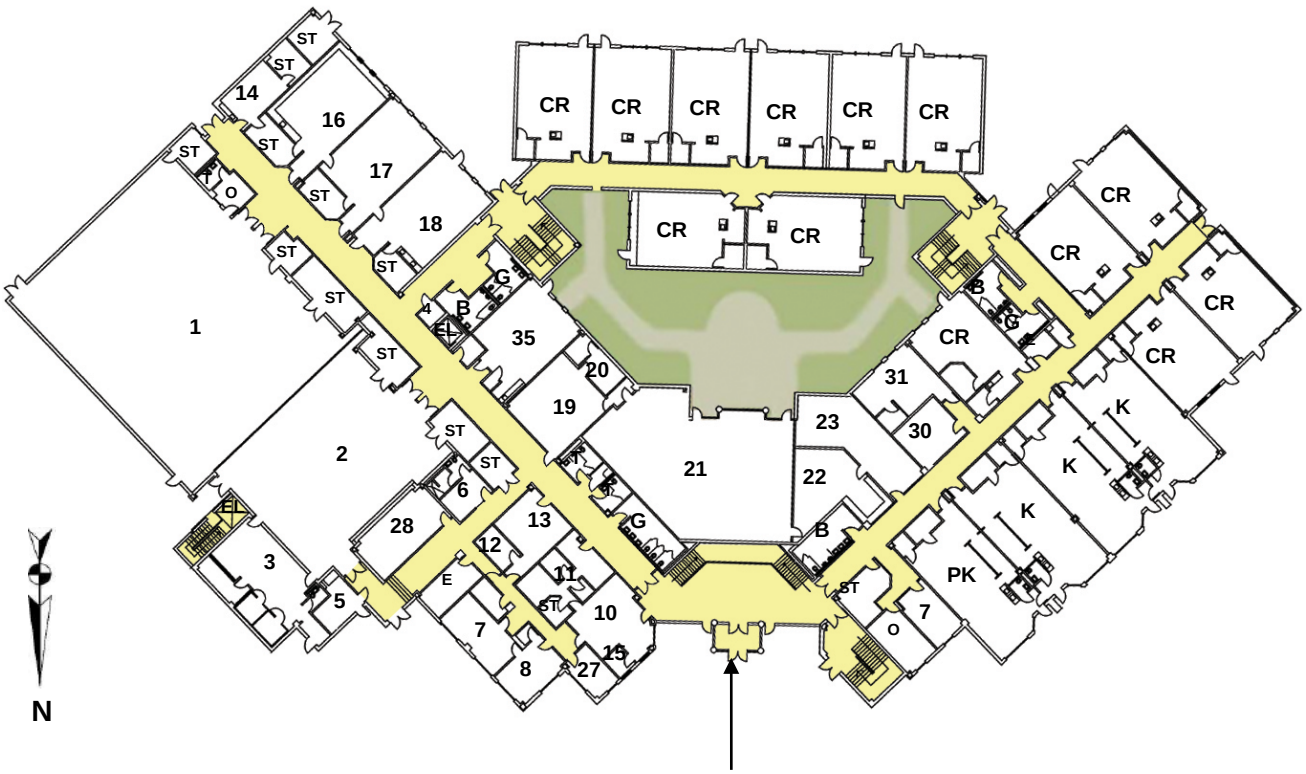
IV. Existing Conditions (Continued)

Existing First Floor Plan



KEY:

1. GYM
2. MULTI-PURPOSE ROOM
3. KITCHEN
4. ELEVATOR CLOSET
5. TRASH ROOM
6. BUILDING SERVICES OFFICE
7. CONFERENCE ROOM
8. PRINCIPAL
9. COUNSELING
10. MAIN OFFICE
11. HEALTH SUITE
12. RECORDS
13. STAFF WORKROOM
14. INSTRUMENTAL MUSIC ROOM
15. PHONE ROOM
16. MUSIC ROOM
17. DUAL PURPOSE ROOM
18. ART ROOM
19. COMMUNICATIONS CENTER
20. CONTROL ROOM
21. MEDIA CENTER
22. MEDIA WORKROOM
23. MEDIA / TEXTBOOK STORAGE
24. PARENT/VOLUNTEER
25. COMPUTER LAB
26. PHYSICAL THERAPY
27. VICE PRINCIPAL
28. PLATFORM
29. PTA OFFICE
30. RESOURCE ROOM
31. READING ROOM
32. TESTING
33. ESOL
34. MATH ASSESSMENT
35. STAFF LOUNGE

CR CLASSROOM
PK PRE-KINDERGARTEN
K KINDERGARTEN
EL ELEVATOR
ST STORAGE
E ELECTRICAL
O OFFICE
B BOYS' RESTROOM
G GIRLS' RESTROOM
T TOILET
M MECHANICAL

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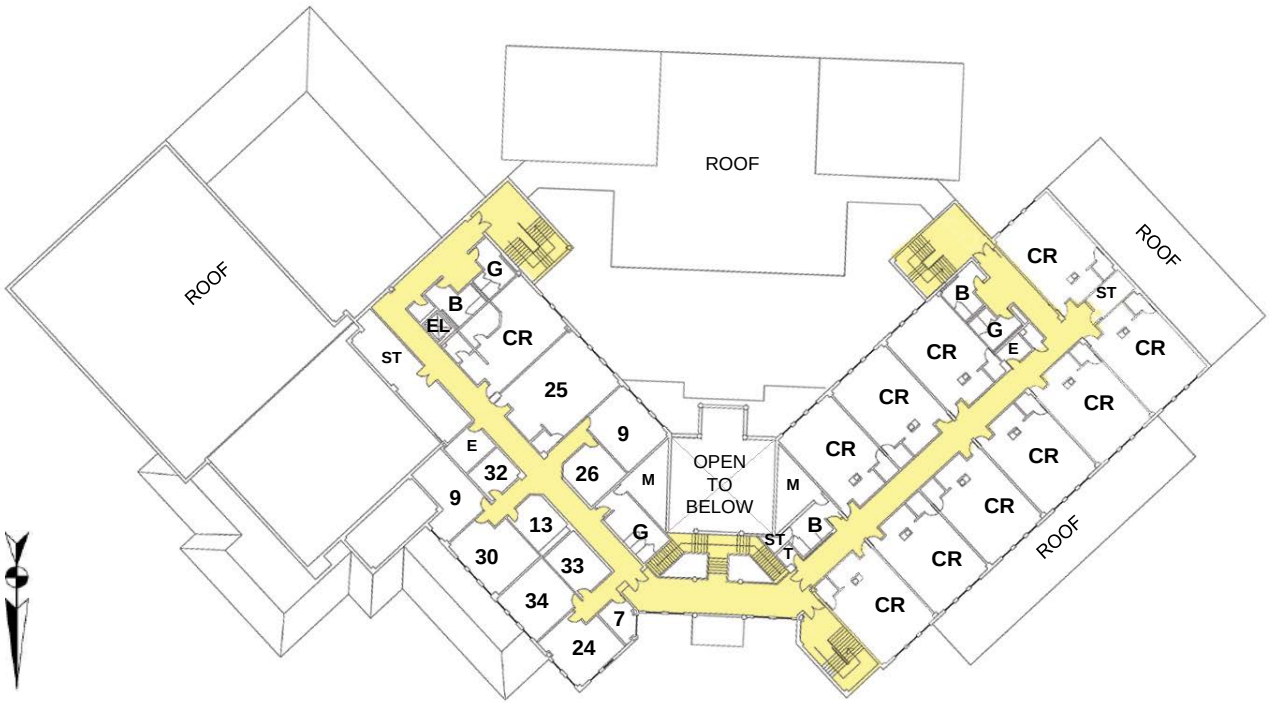
IV. Existing Conditions (Continued)

Existing Second Floor Plan



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PK PRE-KINDERGARTEN
K KINDERGARTEN
EL ELEVATOR
ST STORAGE
E ELECTRICAL
O OFFICE
B BOYS' RESTROOM
G GIRLS' RESTROOM
T TOILET
M MECHANICAL

LEGEND

- EXISTING SPACES
- CIRCULATION

0 20' 40' 80'

GRAPHIC SCALE

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IV. Existing Conditions (Continued)

Existing Site (Continued)

Refer to Appendix (B) Existing Conditions Survey & Photos for more detailed analysis of existing site and building.

General Site Information

The James E. Daly Elementary School facility is situated on a 10.0 acre lot, Parcel P679, at 20301 Brandermill Drive, Germantown, Maryland (although tax records differ) within Election District 02. The site is zoned R-90 and is bounded on the north and east by detached single - family homes, on the south by park property (Clear Spring Park/ M-NCPPC) and to the west by the 80 - foot Scenery Drive right - of - way and attached single - family townhomes beyond.

Adjoining Streets

The site is bounded along its northern property line by the 70 - foot Brandermill Drive right - of - way. Brandermill Drive is a 2 - lane residential street with on - street parking and a speed limit of 15-mph. Traffic calming devices are utilized in front of the school as well. The right - of - way currently has sidewalks and street trees lining both sides. The sidewalks and pavement of this right - of - way appear to be in decent condition, although the handicap ramps do not appear to be up to current Americans with Disabilities Act guidelines. Along the western boundary of the site lies the 80 - foot Scenery Drive right - of - way. This street is a 2 - way, 2 - lane street with a center left turn lane and on - street parking. Sidewalks line both sides of the right - of - way along with the occasional street tree. The pavement and sidewalks along this right - of - way appear to be in good condition. The crosswalks and handicap ramps appear to be in compliance with the most recent Americans with Disabilities Act guidelines.

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V. Description of Options

General

Three design options for expanding James E. Daly Elementary School have been developed in response to the Montgomery County Public Schools educational specifications. Each option addresses the incorporation of instructional requirements and the physical impact to the school in a different manner.

All 3 options propose a first floor addition to the southwest face, with different configurations for each option. All 3 options include a second story addition in varying locations. Connecting the proposed addition to the existing building and its systems will require different degrees of renovation work within the existing building. Additional renovation work, with regard to relocating or reorganizing programs within the existing building, differs slightly for all three options. Modifications to the existing school have been kept to a minimum in options 1 and 3, such that it will not interfere with the occupancy of the school.

It is anticipated that the proposed scope of work will take 18 months of construction utilizing two summers when the school is at recess.

Common Design Elements

Building

The following renovations and proposed additions are common to all three options.

- All pre-kindergarten and kindergarten classrooms have been clustered together and include separate lavatories.
- An existing first floor classroom will be renovated to provide a therapy room and storage space.
- The existing kindergarten classroom, located on the first floor adjacent to the existing pre-kindergarten classroom, will be modified as a pre-kindergarten classroom.
- The existing classroom on the end of the southwest corner of the building, along the kindergarten classroom hallway, will be enlarged to satisfy the area requirements of the educational specifications.
- The first floor addition will extend the southwest portion of the building, replacing the existing relocatable classrooms.
- The first floor addition will provide replacement classrooms for any spaces that are modified to meet the educational specifications.
- The second floor classroom located in the southeast end of the building will be renovated and repartitioned into a conference room and a Parent and Teacher Association room.

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V. Description of Options (Continued)

Common Design Elements (Continued)

Building (Continued)

- All classrooms will have access to natural light.
- Provide adequate space for mechanical and electrical systems.
- Staff restrooms and additional boys and girls bathrooms are provided.
- The addition will feature a vegetated roof, satisfying the storm - water management requirement.
- Include all spaces in accordance with the educational specifications.

Site Modifications

Currently four relocatable classrooms are located on the school site. These four relocatable classrooms will be removed from the site and replaced by the new addition. If required in the future relocatable classrooms would be located on the south side of the building between the existing structure and the existing play areas.

Parking and Site Circulation

The current bus loop has been verified to be adequate in functionality, allowing enough space for buses to pass each other and enough visibility for student drop - off. The current primary parking lot is adequate in capacity, but also serves as the student drop - off loop. In its current state, the narrow entry and egress ways for vehicles into this loop restrict sufficient traffic flow. The existing drop - off pattern interrupts parking access as well, further disrupting the flow of traffic in this space. Overgrown vegetation hinders visibility at the student drop - off site, creating a safety hazard. The student drop - off has been reconfigured and expanded to provide one entry lane and two egress lanes for vehicles. The loop has been widened and separated from the parking area using low vegetation to divide the two functions of the space and increase traffic flow. New Americans with Disabilities Act sidewalks and ramps will be utilized to provide access to parking lots, bus loop and play fields.

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V. Description of Options (Continued)

Common Design Elements (Continued)

It is recommended that site circulation be modified for all options as follows:

- Provide an additional egress lane for the student drop - off loop. This will alleviate the congestion that occurs in the morning and afternoons for drop - off and dismissal.
- Widen student drop - off loop to increase traffic flow and safety for students.
- Renovate vegetation in parking lot to increase visibility of pedestrians and divide the parking and drop - off areas.

By expanding the current parking lot both at the entry and to the south and by increasing visibility, drop - off traffic congestion will be reduced and overall site safety for all users will be improved.

Play Areas

The existing play areas are in good condition and will remain, as is, in their current location. Based upon input from the feasibility study participants, additional play area is proposed in all three options to be located between the existing play areas and the southeast face of the building. Additional Improvements include the following:

- A new Americans with Disabilities Act access ramp linking the existing play areas to the southeast entrance to the building.
- A new retaining wall at the kindergarten play area addition to provide a safe level site for the proposed play area.
- Both soft and paved play areas for the kindergarten addition.

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V. Description of Options (Continued)

Common Design Elements (Continued)

Building Structural System

The 2 - story addition proposed in all options will be of steel frame construction with masonry walls. The addition will be supported by a network of steel columns and beams, which will sit on concrete spread footings. Where the new addition lies adjacent to the existing building, the new building will be supported by a steel frame on continuous concrete footings. The ground floor will be concrete slab - on - grade, and the main floor will be a composite concrete slab on metal deck, supported by steel joists and/or beams, and the steel superstructure. The roof will be a built - up roof on metal decking, supported by steel joists and/or beams. The horizontal elements of the roof structure will be sloped at a minimum of 1/4" per 1'-0", so as to provide adequate roof drainage. Exterior walls will be insulated masonry cavity walls, consisting of a CMU backup on the interior side, and a masonry veneer such as brick on the exterior side. Interior masonry walls will be single - wythe CMU walls. All masonry walls will be internally reinforced, both horizontally and vertically.

Mechanical

HVAC System

A similar mechanical solution is recommended for supporting the three proposed addition options. The existing building's 2 - pipe distribution system lends itself to potential space temperature concerns during both the spring and fall seasons, due to its heating - only or cooling - only limitations. To overcome these limitations, the addition would be provided with a new heating, ventilation, and air conditioning system capable of providing independent heating or cooling to each space throughout the year.

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V. Description of Options (Continued)

Common Design Elements (Continued)

MECHANICAL (Continued)

Installing a water source heat pump system to support the proposed addition provides each space with the ability to have either heating or cooling year - round. Vertical heat pump units would be utilized and located within mechanical closet areas adjacent to the classroom served. Doors for these mechanical closets would be from the corridor for maintenance access, to minimize noise and to avoid classroom disruption. Mechanical infrastructure for supporting classroom heat pump units would be housed within a new mechanical room in the new addition and include a small boiler, distribution pumps, and a plate - and - frame heat exchanger. A life - cycle cost evaluation between an electric boiler and gas - fired boiler will be conducted at the design phase. A cooling tower would also be provided at the addition's roof level to support the system's cooling requirements.

Considerations should be provided during the design phase to allow the new addition system to function as a geothermal water source heat pump system in the future. These considerations include utilizing extended range heat pump units, sizing the heat pump unit compressors to accommodate future geothermal entering water conditions, and insulating all heat pump loop piping systems. Controls and programming modifications would also be required, and can be accommodated during the future building renovation stage.

Conditioned outdoor air would be supplied to all occupied spaces by a rooftop dedicated outdoor air system, complete with water-cooled compressors for heating and cooling, and an enthalpy type energy recovery wheel for preconditioning of the outdoor air. Airflow supplied from this unit will be dehumidified, conditioned, and delivered directly to each space at a room neutral temperature. Toilet rooms, storage rooms, and other heating - only areas will utilize electric wall heaters. Controls for the new addition will be direct digital controls. This type of system provides the most sustainable and energy efficient solution and delivers the most flexibility at the lowest cost for both current and future needs.

Replacement of the heating, ventilation, and air conditioning system serving the existing building is not anticipated under the scope of the building addition project. However, improvements to the existing heating, ventilation, and air conditioning system are recommended for refining the performance of the existing system. To provide improvements to the existing system, the following functional testing and improvement items are recommended:

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V. Description of Options (Continued)

Common Design Elements (Continued)

MECHANICAL (Continued)

• Functional testing of the existing control systems associated with all classroom unit ventilators. Testing procedures should verify both the operation and condition of the existing face and bypass dampers, as well as the calibration of the existing wall - mounted thermostats. All deficient control devices discovered during functional testing should be replaced.

• Rebalancing of the existing chilled/heating water flow rates at all classroom unit ventilators.

• Provide three - way 2 - position control valves for all second floor classroom unit ventilator systems. Valves would divert heating water flow either through or around the unit ventilators heating coils, helping to avoid overheating of spaces served. Second floor unit ventilator systems are specifically recommended, as a majority of the building's temperature concerns were observed and noted at this level.

• Add supplemental direct expansion cooling at the second floor computer lab and data closet areas. Ceiling mounted ductless split system with remote air - cooled condensing unit s are recommended.

• Relocate the existing thermostats serving the two rear stairwell areas to an interior wall surface. Relocating these devices will alleviate improper space temperature readings and help avoid overheating of these areas.

• The installation of a new exhaust fan for the outdoor storage area, eliminating odor migration between this room and the adjacent music area. All wall penetrations between the music area and outdoor storage area should be eliminated.

• The installation of a exhaust fan for the health suite should be included.

PLUMBING

The existing cold water piping system can be extended to support the new addition. Based on the proximity and capacity of the existing water heater, a new electric water heater is recommended for supporting the addition. New plumbing fixtures will be designed to meet the Americans with Disabilities Act and will utilize water conservation features. Floor - mounted water closets will utilize dual - flush type valves, capable of providing either 1.6 or 1.0 gallons per flush. Urinals will be wall - hung and provided with pint flush valves. Wall - hung cast - iron lavatories will utilize self - closing faucets that supply 0.5 gallons per minute. The water consumption figures noted are equal to or less than what is required by both current plumbing code and LEED water conservation requirements.

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V. Description of Options (Continued)

Common Design Elements (Continued)

PLUMBING (Continued)

Fire Protection System

The present fire protection system for the existing school building will be extended to handle the new addition area. It is anticipated that the existing sprinkler coverage can be extended from adjacent areas to support the addition. Also, any air - handling unit or dedicated outdoor air system supplying 2,000 cubic feet per minute or more of airflow will be equipped with smoke detectors in both the supply and return air ductwork.

ELECTRICAL

Power Distribution

The existing service switchboard is not adequate to serve the new construction. The existing demand load may be low enough to allow for the capacity needed for the new addition, however, the physical size and age of the main switchboard may not allow adequate additional breakers to be added. It is proposed to maintain the existing switchboard in the main electrical room. The switchboard may be tapped to feed a new breaker that will serve the new addition. This breaker can be located in the main electrical room where it can be within the code - required 25 feet for a bus tap. The new breaker would serve a distribution panel board located in a closet in the new addition. This panel board would then serve lighting panel - boards and dry type transformers for receptacle and computer power panel - boards.

A new electrical closet will be required in the new addition for the branch circuit panel - boards and dry - type transformers.

The panel - boards and associated feeders located throughout the existing building will remain. New 277/480-volt panel - boards will serve lighting and mechanical loads in the new addition. A K-rated dry - type transformer in the electrical closet in the addition will feed the 120/208-volt panel board for computer power in the new addition. Designated receptacles in all new classrooms will be connected to the computer power panel - boards.

General receptacles in the addition will be connected to a new “normal” 120/208-volt panel board that is fed from a standard dry type transformer. New conduits will be concealed in new walls. Where existing walls remain, surface metal raceway will be used to conceal wiring.

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V. Description of Options (Continued)

Common Design Elements (Continued)

ELECTRICAL (Continued)

Emergency Power

The current Montgomery County Public Schools standard is to provide emergency power for life safety systems and standby power for the heating system to keep the building from freezing. The existing building generator system provides this capability for the existing building. The existing generator has the capacity and can be used to serve the life safety emergency lighting and fire alarm system for the addition. A larger or additional generator will be required to accommodate both the life safety and the heating loads of the addition. A separate automatic transfer switch will need to be added in the addition to serve the new life safety loads. An additional automatic transfer switch will be required to serve the standby heating loads if they are included. Separate switches are a requirement of the National Electrical Code so that life safety systems are separated from standby and other types of loads.

Lighting

Montgomery County Public Schools standard classroom lighting will be provided in the classrooms of the new addition. This will consist of high efficiency fluorescent pendant fixtures. Lighting controls will include occupancy sensors and multiple levels of lighting.

Fire Alarm System

The existing fire alarm control panels will remain. A new addressable fire alarm system will be provided for the addition. The new and old panels will be interconnected. Initiation devices and notification devices will be located to meet code requirements.

Intercom and Sound Systems

New intercom devices will be provided throughout the addition including call switches and speakers. The existing Telecenter head-end console will be upgraded to increase the capacity for the new spaces.

Voice, Data, and Video Systems

The existing voice, data, and video cabling system will be expanded to the new addition. The number of outlets in each room will comply with Montgomery County Public Schools and Maryland State requirements. A new telecommunications closet will be required in the addition to serve the new classrooms.

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V. Description of Options (Continued)

Common Design Elements (Continued)

ELECTRICAL (Continued)

Security System

The existing security system will be expanded for the addition. Intrusion detection will include motion sensors and door contacts.

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V. Description of Options (Continued)

Option 1 (Preferred)

Description

Option 1 achieves the program requirements with the construction of a 2 - story addition located on the southwest face of the existing facility, as noted previously. Characteristics of this option are as follows:

Proposed Addition

Option 1 achieves the program requirements by the construction of one 2 - story addition located on the southwest face of the existing building. The addition consists of a 2 - story single loaded corridor. The first floor of the addition consists of 3 classrooms and 3 kindergarten classrooms. The first floor includes the necessary mechanical and electrical space to support the addition. The first floor also features an extension of 2 classrooms at the corner of the northwest and southwest faces. Option 1 provides loop circulation improving traffic flow. The second floor of the addition contains five new classrooms, as well as student and staff restrooms. One new stair is provided located near the existing line of south facing classrooms to provide vertical circulation for the addition, meeting emergency egress requirements. A light well between the addition and the existing building provides existing spaces with natural light.

Existing Facility Modifications

In order to satisfy the demand for increased pre-kindergarten space, option 1 modifies the current kindergarten classroom adjacent to the pre-kindergarten classroom to become an additional pre-kindergarten classroom. An existing classroom on the southwest end of the building is to be renovated and repartitioned as a new therapy room and supporting storage space for the pre-kindergarten and kindergarten students. Two existing classrooms at the southwest end are to be enlarged to become kindergarten classrooms to meet the area requirements of the educational specifications.

Renovation on the second floor is limited to the modification of an existing classroom into a Parent and Teacher Association and conference room. Since the eastern portion of the existing second story consists of administrative and educational support space, the location of the Parent and Teacher Association and conference room provides necessary relational adjacencies. The existing classroom will then be replaced as a new space in the second story addition in proximity to other classroom spaces.

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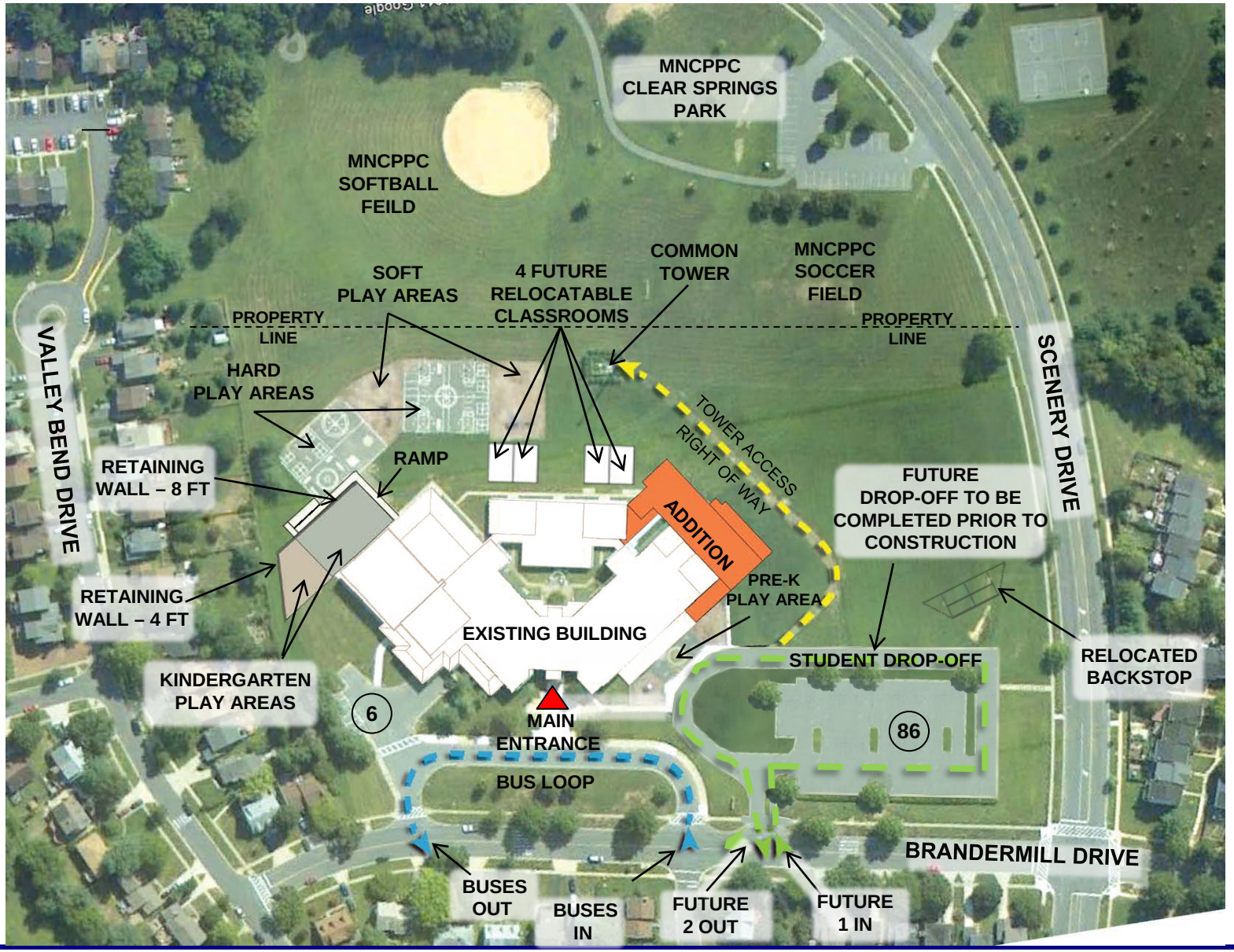
V. Description of Options (Continued)

Option 1 Site Plan



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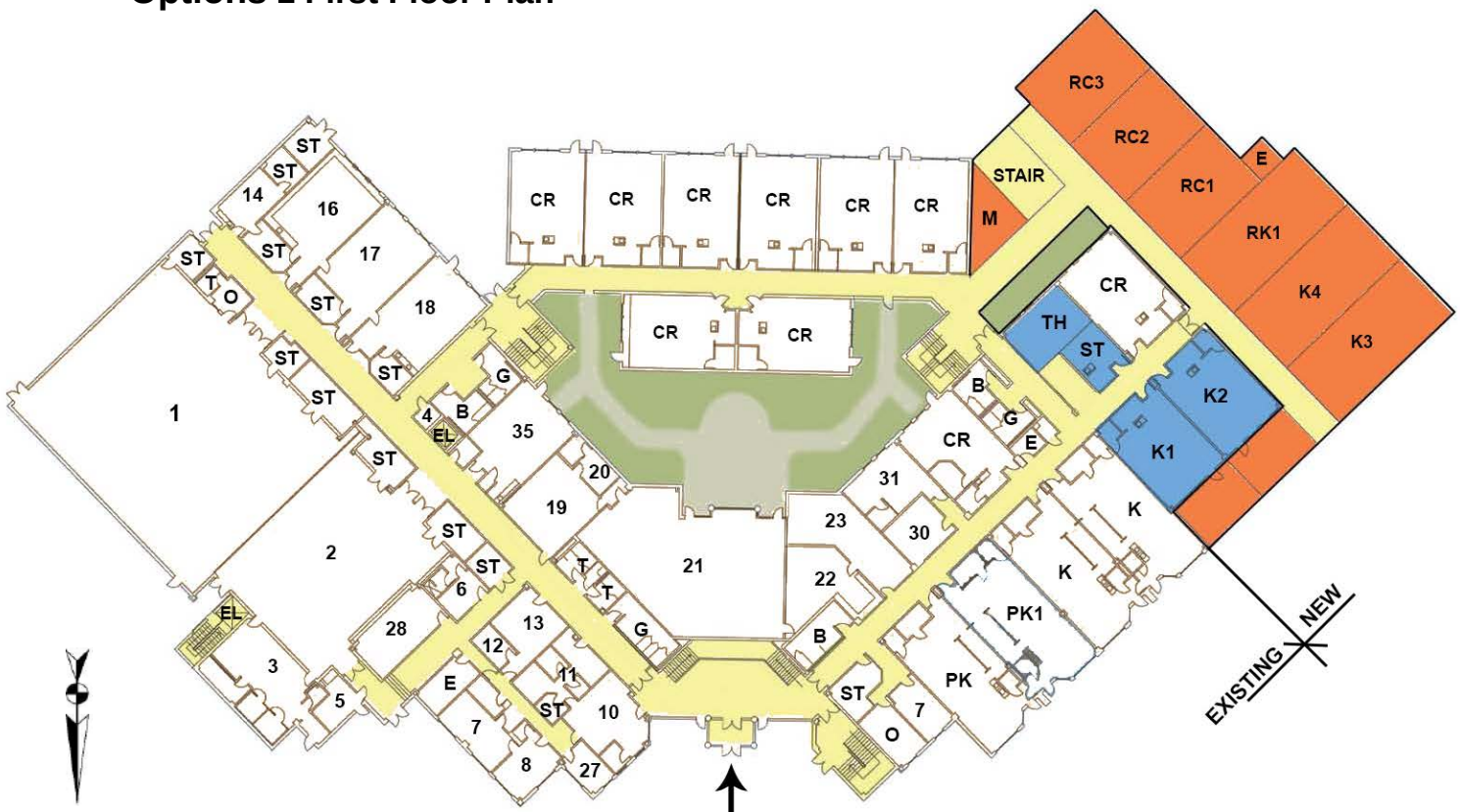
V. Description of Options (Continued)

Options 1 First Floor Plan



LEGEND

- EXISTING SPACES
- CIRCULATION
- ADDITION
- COURTYARD
- RENOVATION

KEY:

1. GYM
2. MULTI-PURPOSE ROOM
3. KITCHEN
4. ELEVATOR CLOSET
5. TRASH ROOM
6. BUILDING SERVICES OFFICE
7. CONFERENCE ROOM
8. PRINCIPAL
9. COUNSELING
10. MAIN OFFICE
11. HEALTH SUITE
12. RECORDS
13. STAFF WORKROOM
14. INSTRUMENTAL MUSIC ROOM
15. PHONE ROOM
16. MUSIC ROOM
17. DUAL PURPOSE ROOM
18. ART ROOM
19. COMMUNICATIONS CENTER
20. CONTROL ROOM
21. MEDIA CENTER
22. MEDIA WORKROOM
23. MEDIA AND TEXTBOOK STORAGE
24. PARENT/VOLUNTEER
25. COMPUTER LAB
26. PHYSICAL THERAPY
27. VICE PRINCIPAL
28. PLATFORM
29. PTA OFFICE
30. RESOURCE ROOM
31. READING ROOM
32. TESTING
33. ESOL
34. MATH ASSESSMENT
35. STAFF LOUNGE

CR CLASSROOM
PK PRE-KINDERGARTEN
K KINDERGARTEN
EL ELEVATOR
ST STORAGE
E ELECTRICAL
O OFFICE
B BOYS' RESTROOM
G GIRLS' RESTROOM
T TOILET
M MECHANICAL

0 20' 40' 80'

GRAPHIC SCALE

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V. Description of Options (Continued)

Option 1 Second Floor Plan

LEGEND

- EXISTING SPACES
- CIRCULATION
- ADDITION
- RENOVATION

KEY:

1. GYM
2. MULTI-PURPOSE ROOM
3. KITCHEN
4. ELEVATOR CLOSET
5. TRASH ROOM
6. BUILDING SERVICES OFFICE
7. CONFERENCE ROOM
8. PRINCIPAL
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E ELECTRICAL
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B BOYS' RESTROOM
G GIRLS' RESTROOM
T TOILET
M MECHANICAL

0 20' 40' 80'

GRAPHIC SCALE

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V. Description of Options (Continued)

Option 1 (Continued)

Advantages

- Compact footprint.
- Kindergarten and pre-kindergarten classrooms are clustered and adjacent to each other as preferred.
- No additional relocatable classrooms required during construction.
- New therapy room is conveniently located on first floor for pre-kindergarten and kindergarten use.
- Minimal disturbance to the existing building is required.
- Natural light is provided in all classrooms.

Disadvantages

- Has the largest square footage of all the options.

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V. Description of Options (Continued)

Option 2

Description

Option 2 achieves the program requirements with the construction of a 1 - story addition on the southwest face of the first floor as well as an addition to the second floor above the existing single - story line of south facing classrooms. Characteristics of this option are as follows:

Proposed Addition

Option 2 achieves the program requirements by the construction of a 1 - story addition, with a single - loaded corridor, located on the southwest face of the existing building. The first floor of the addition consists of 3 classrooms and 3 kindergarten classrooms. All necessary mechanical and electrical is provided in the addition. Similar to option 1, the kindergarten classrooms in the southwest part of the building have been extended to meet the area requirements of the educational specifications. A second story has been added to the existing first floor classroom cluster facing the media center courtyard. The addition is centrally located connecting proposed classrooms with the existing building. In addition to classroom spaces, the second story provides student and staff restrooms as well as a vegetated roof facing the existing media center. The visibility of the green roof can provide learning opportunities for students and allow light to the existing courtyard. The second story addition will utilize existing stairwells. No additional vertical circulation is required.

Existing Facility Modifications

In order to satisfy the demand for increased pre-kindergarten space, option 2 modifies the current kindergarten classroom adjacent to the pre-kindergarten classroom to become an additional pre-kindergarten classroom. An existing classroom on the southwest end of the building is to be renovated and repartitioned as a new therapy room and supporting storage space for the pre-kindergarten and kindergarten students. Two existing classrooms at the southwest end are to be enlarged to become kindergarten classrooms to meet the area requirements of the educational specifications. Renovation on the second floor is limited to the modification of an existing classroom into a Parent and Teacher Association and conference room. Since the eastern portion of the existing second story consists of administrative and educational support space, the location of the Parent and Teacher Association and conference room provides necessary relational adjacencies. The existing classroom will then be replaced as a new space in the second story addition in proximity to other classroom spaces. In addition, as option 2 calls for a second floor addition over the south wing of the building, the existing classrooms in that space would have to be rebuilt to support the addition.

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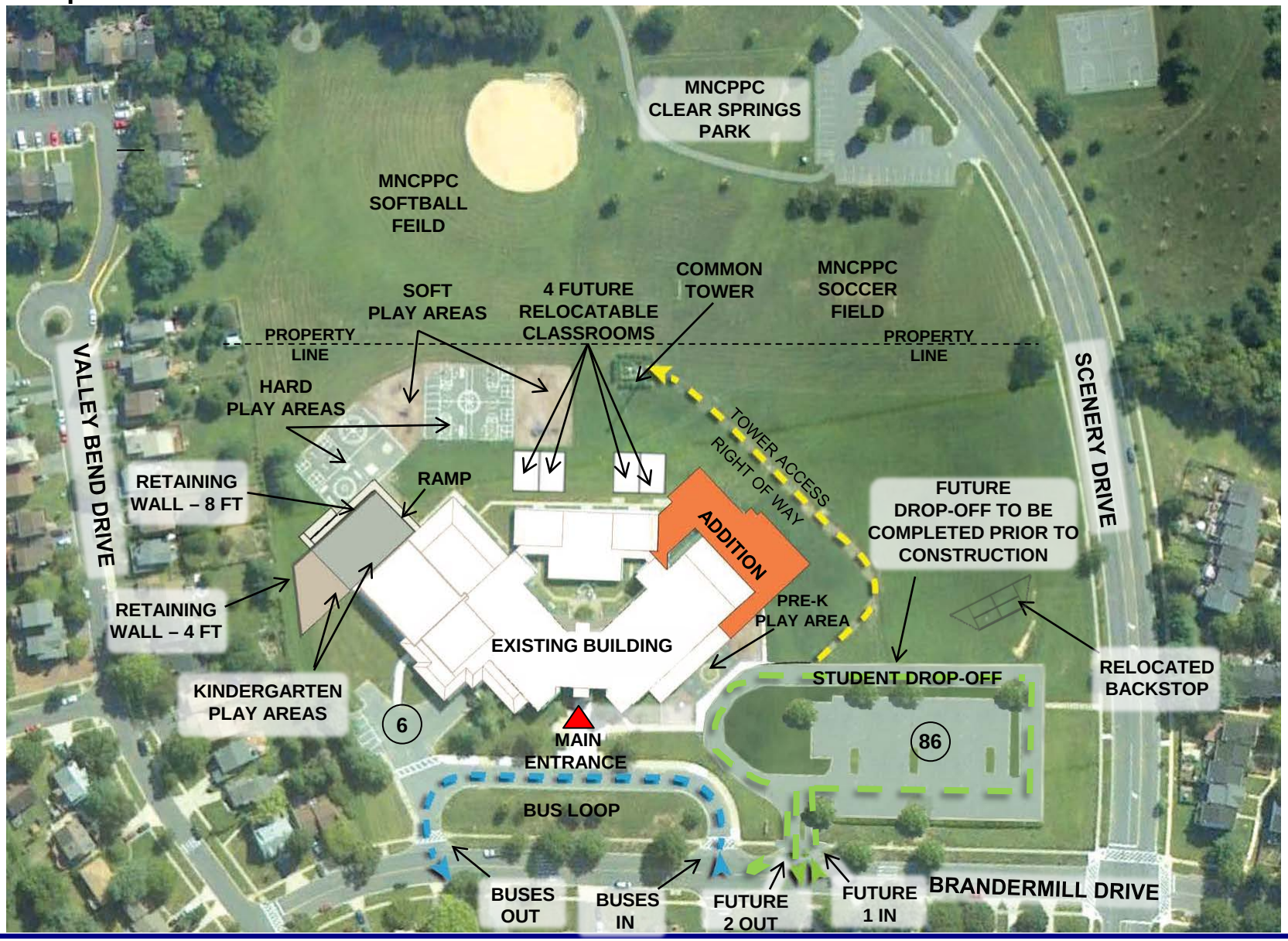
V. Description of Options (Continued)

Option 2 Site Plan



0 40' 80' 160'

GRAPHIC SCALE

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V. Description of Options (Continued)

Option 2 First Floor Plan

LEGEND

- EXISTING SPACES
- CIRCULATION
- ADDITION
- COURTYARD
- RENOVATION

KEY:

1. GYM
2. MULTI-PURPOSE ROOM
3. KITCHEN
4. ELEVATOR CLOSET
5. TRASH ROOM
6. BUILDING SERVICES OFFICE
7. CONFERENCE ROOM
8. PRINCIPAL
9. COUNSELING
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E ELECTRICAL
O OFFICE
B BOYS' RESTROOM
G GIRLS' RESTROOM
T TOILET
M MECHANICAL

0 20' 40' 80'

GRAPHIC SCALE

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V. Description of Options (Continued)

Option 2 Second Floor Plan

LEGEND

- EXISTING SPACES
- CIRCULATION
- ADDITION
- RENOVATION

KEY:

1. GYM
2. MULTI-PURPOSE ROOM
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GRAPHIC SCALE

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V. Description of Options (Continued)

Option 2 (Continued)

Advantages

- Kindergarten and pre-kindergarten classrooms are clustered and adjacent to each other as preferred.
- Replacing existing modular classrooms with more permanent design.
- Provides a better use of the second floor.
- New therapy room is conveniently located on first floor for pre-kindergarten and kindergarten use.
- Visual access to a vegetated roof provides learning opportunities for students.

Disadvantages

- Most disruptive to school during construction.
- Second floor classrooms have no relationship to second floor administration area.
- Second floor will block light and open feeling to media center and media center courtyard.
- Relocation of students from first floor classrooms while constructed will require additional relocatable classrooms.
- Will need to rebuild first floor classrooms on the south end where the proposed second floor addition is constructed.
- Location of staff bathrooms is not preferred.
- Will require 8 additional relocatable classrooms during construction.
- Low single story roof.

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V. Description of Options (Continued)

Option 3

Description

Option 3 achieves the program requirements with the construction of one large 2 - story addition located on the southwest face of the existing facility. Characteristics of this option are as follows:

Proposed Addition

Option 3 achieves the program requirements by the construction of one large 2 - story addition located on the southwest face of the existing building. The first floor of the addition consists of 1 classroom and 4 kindergarten classrooms. All necessary mechanical and electrical support is provided in the addition. The first floor features an extension of the existing classroom at the corner of the northwest and southwest faces.

The circulation of both floors is an efficient single corridor lined with classrooms along the southwest face of the building. The second floor of the addition contains 6 classrooms, as well as student and staff restrooms. One new stair provides vertical circulation for the addition, meeting emergency egress requirements.

Existing Facility Modifications

In order to satisfy the demand for increased pre-kindergarten space, option 3 modifies the current kindergarten classroom adjacent to the pre-kindergarten classroom to become an additional pre-kindergarten classroom. A classroom at the southwest end is to be enlarged to become a kindergarten classroom, meeting the area requirements of the educational specifications.
The existing classroom on the southwest end of the building, adjacent to the classroom intended to be renovated as a kindergarten classroom, is to be renovated and repartitioned as a new therapy room and supporting storage space for the pre-kindergarten and kindergarten students. A new corridor between the kindergarten classrooms is provided in order to alleviate circulation traffic during dismissal. The corridor will require additional supervision.

Renovation on the second floor is limited to the modification of an existing classroom into a Parent and Teacher Association and conference room. Since the eastern portion of the existing second story consists of administrative and educational support space, the location of the Parent and Teacher Association and conference room provides necessary relational adjacencies. The existing classroom will then be replaced as a new space in the second story addition in proximity to other classroom spaces.

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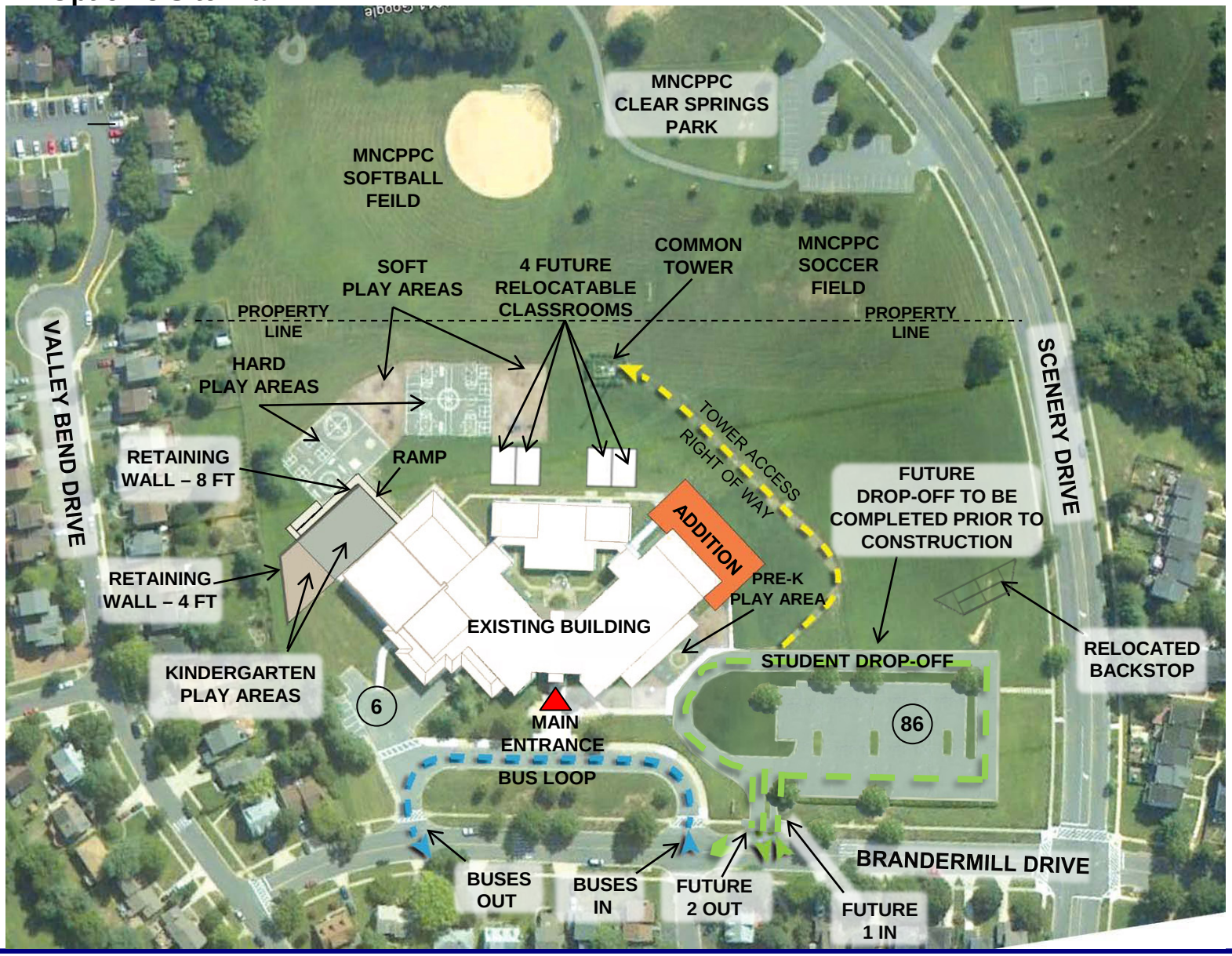
V. Description of Options (Continued)

Option 3 Site Plan



0 40' 80' 160'

GRAPHIC SCALE

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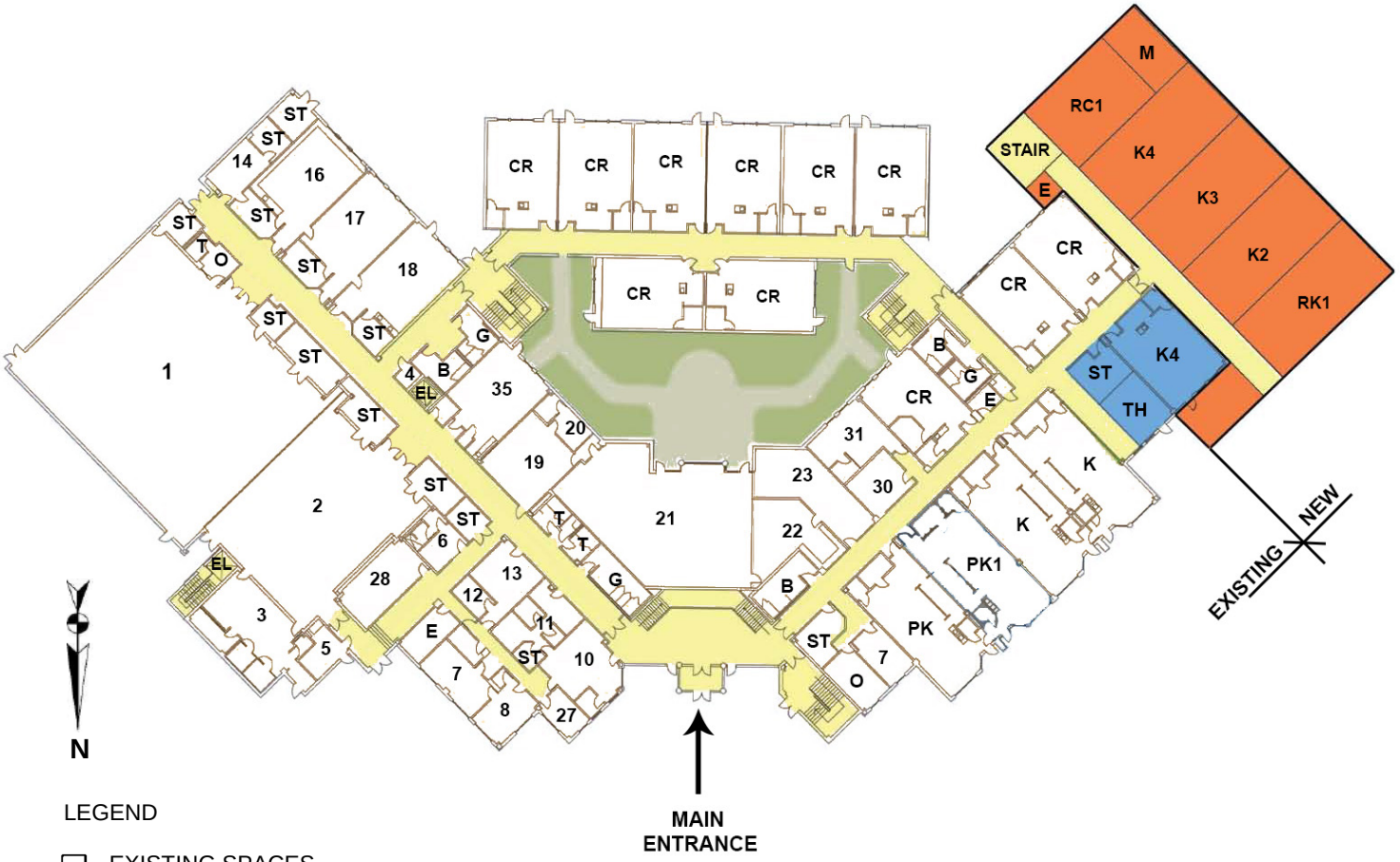
V. Description of Options (Continued)

Option 3 First Floor Plan



LEGEND

- EXISTING SPACES
- CIRCULATION
- ADDITION
- COURTYARD
- RENOVATION

KEY:

1. GYM
2. MULTI-PURPOSE ROOM
3. KITCHEN
4. ELEVATOR CLOSET
5. TRASH ROOM
6. BUILDING SERVICES OFFICE
7. CONFERENCE ROOM
8. PRINCIPAL
9. COUNSELING
10. MAIN OFFICE
11. HEALTH SUITE
12. RECORDS
13. STAFF WORKROOM
14. INSTRUMENTAL MUSIC ROOM
15. PHONE ROOM
16. MUSIC ROOM
17. DUAL PURPOSE ROOM
18. ART ROOM
19. COMMUNICATIONS CENTER
20. CONTROL ROOM
21. MEDIA CENTER
22. MEDIA WORKROOM
23. MEDIA AND TEXTBOOK STORAGE
24. PARENT/VOLUNTEER
25. COMPUTER LAB
26. PHYSICAL THERAPY
27. VICE PRINCIPAL
28. PLATFORM
29. PTA OFFICE
30. RESOURCE ROOM
31. READING ROOM
32. TESTING
33. ESOL
34. MATH ASSESSMENT
35. STAFF LOUNGE

CR CLASSROOM
PK PRE-KINDERGARTEN
K KINDERGARTEN
EL ELEVATOR
ST STORAGE
E ELECTRICAL
O OFFICE
B BOYS' RESTROOM
G GIRLS' RESTROOM
T TOILET
M MECHANICAL

0 20' 40' 80'

GRAPHIC SCALE

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V. Description of Options (Continued)

Option 3 Second Floor Plan

LEGEND

- EXISTING SPACES
- CIRCULATION
- ADDITION
- RENOVATION

KEY:

1. GYM
2. MULTI-PURPOSE ROOM
3. KITCHEN
4. ELEVATOR CLOSET
5. TRASH ROOM
6. BUILDING SERVICES OFFICE
7. CONFERENCE ROOM
8. PRINCIPAL
9. COUNSELING
10. MAIN OFFICE
11. HEALTH SUITE
12. RECORDS
13. STAFF WORKROOM
14. INSTRUMENTAL MUSIC ROOM
15. PHONE ROOM
16. MUSIC ROOM
17. DUAL PURPOSE ROOM
18. ART ROOM
19. COMMUNICATIONS CENTER
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CR CLASSROOM
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O OFFICE
B BOYS' RESTROOM
G GIRLS' RESTROOM
T TOILET
M MECHANICAL

0 20' 40' 80'

GRAPHIC SCALE

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V. Description of Options (Continued)

Option 3 (Continued)

Advantages

- Compact footprint.
- Efficient student drop - off corridor.
- No additional relocatable classrooms required during construction.
- Minimal disturbance to the existing building is required.

Disadvantages

- Replacement classroom on first floor is disconnected.
- Adjacency to classrooms on first floor is not as flexible as option 1.
- More doors to exterior that require supervision.
- Location of therapy room interrupts cluster of kindergarten classrooms.

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VI. Summary Table and Cost Comparison

Square Footage:	OPTION 1 (PREFERRED)	OPTION 2	OPTION 3
Existing	78,210	78,210	78,210
New Construction	18,520	17,852	16,664
Modernization	0	0	0
Renovation	3,890	13,135	4,797
Demolition (total)	0	0	0
Total Gross Square Feet	96,730	96,062	94,874
Total Construction Cost	**$7,947**	**$10,989**	**$7,610**

Project Description Fund Feasibility Study Cost Outline (000's) - OPTION 1 (PREFERRED)

Construction Cost Estimate	$6,422
Planning Costs	$756
Contingency and Related Costs	$769
Totals	**$7,947**

This cost estimate in this feasibility study is based on current construction market conditions for both building and site.

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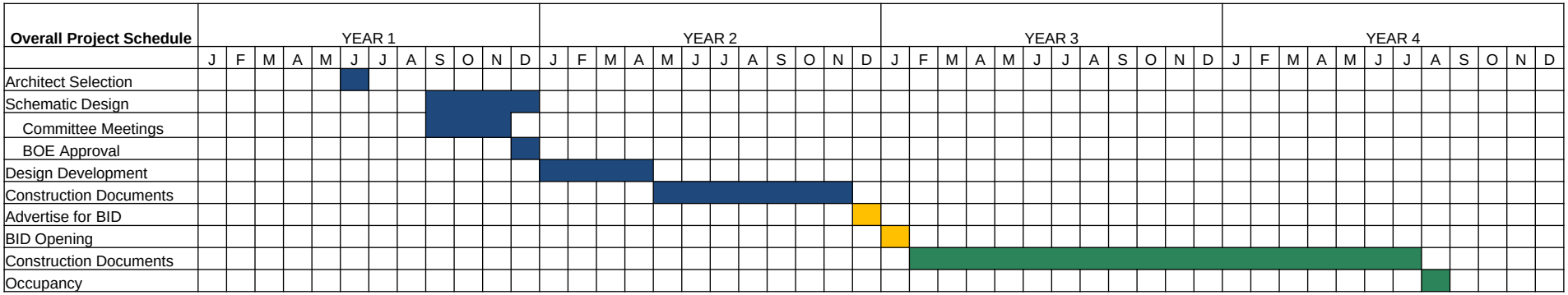
VII. Proposed Project Implementation Schedule



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VIII. Appendix

(A) – Square Foot Space Summary & Educational Specification

Building Structure

The existing two story structure, built in 1989, is of non - combustible construction and is fully protected by a sprinkler system. The walls throughout the building are of masonry, with brick veneer on the exterior walls. The structural system consists of masonry load - bearing walls, which are constructed on continuous concrete footings, and steel columns and beams supporting steel bar joists. The floors throughout the building are concrete and exist as either concrete slabs - on - grade or framed slabs supported by steel joists. The slab on grade was designed to be 4" thick with 6x6 W1.4xW1.4 WWF on 4" gravel and vapor barrier. The upper level framing is composed of 2 ½" concrete on 9/16x28GA. Galvanized steel form deck with 6x6 W1.4xW1.4 centered in slab. The roof is pitched roofing on 1 ½" corrugated metal deck, which is supported by steel joists. Virtually all of the interior walls in the building are masonry, although drywall partitions are used to subdivide spaces in the administrative areas and classrooms.

Long span joists and beams were observed in the media center and the gymnasium. The main entrance canopy is supported by wrapped steel columns and features a pitched roof.

Building Observations

Exterior

The exterior of Captain James E. Daly is currently in good condition. The existing roof was recently replaced and is currently functioning. It was noted that several roof drains spill water on the egress sidewalks, creating a potential icing hazard. No other drainage problems were observed around the building. Slope around the facility are predominantly flat and slopes away from the building onto grass fields. The glazed block on the exterior appears to be crazing and there is minor damage to the brick wall at the loading dock. No screen wall is provided around the generator to screen the generator for both safety and noise.

VIII. Appendix (Continued)

(A) – Square Foot Space Summary & Educational Specification (Continued)

Building Observations (Continued)

Interior

Ceiling

The acoustical ceiling tiles in the building appeared to be currently functioning. The only exception is in the multi - purpose room; ceiling tiles are excessively dusty especially around the supply ducts. Paint is peeling from the metal deck ceiling in the main entrance's vestibule.

Walls

Interior masonry walls are currently functioning. Drywall in the corridor at the eight classrooms on the first floor have damage; it is recommended that corner guards be provided. Several operable windows were noted to have broken jamb hardware. No security protection to lower level boiler room is provided.

Floors

The overall floor in the building appeared to be currently functioning. The gymnasium's wood flooring at the entrance door from the corridor, as well as at the 36" exterior door, exhibit water damage and should be sanded flush and refinished.

Life Safety

In general, the facility has no apparent life safety items except for the following: The security gate near room 108, creates a dead end corridor greater than 50' on the secure side. There are no egress signs or panic hardware from the courtyard back into the facility.

VIII. Appendix (Continued)

(A) – Square Foot Space Summary & Educational Specification (Continued)

Building Observations (Continued)

Americans with Disabilities Act

The school has several non - compliant Americans with Disabilities Act components. The school's playground is not Americans with Disabilities Act accessible. The ramp leading to stair 3 does not have proper landing clearance. The school bathrooms, in general, do not have Americans with Disabilities Act compliant toilets and sinks. The Americans with Disabilities Act approach to Room 125 is not compliant with Americans with Disabilities Act standards. Room signage height at doors is not Americans with Disabilities Act compliant and does not have brail. Door handles in almost all rooms are not lever - type and are not in compliance. The kitchen's serving line is not compliant due to an existing column. Access to stage in the multi - purpose room is from a rear ramp that is not in keeping with current Americans with Disabilities Act standards. In addition the stage ramp's handrails at the top of the ramp do not extend 12 - inches.

VIII. Appendix (Continued)

(A) – Square Foot Space Summary & Educational Specification (Continued)

Captain Daly Elementary School Addition
Square Foot Summary

When this project is complete, the following spaces are to be provided:
Capacity after the addition is built will be 660 with a 640 core.

Updated 4/13/11

New Spaces in Addition	#	Description	Net Sq. Ft.	Total Net Sq. Ft.
Classrooms				
PreKindergarten Collaboration	1	Includes 250 s.f. storage	1300	**1300**
Kindergarten	4	Includes 250 s.f. storage	1300	**5200**
Grades 1-5	4	Includes 150 s.f. storage	900	**3600**
Support Rooms				
Therapy/Support Room	1		250	**250**
Parent/PTA Room	1		500	**500**
Conference Room	1		450	**450**
Building Service Facilities				
General Storage	1		250	**250**
Total	**9**		**4700**	**11550**

Capt. James E. Daly Elementary School Addition

Educational Specifications

Feasibility Study

March 22, 2011
Updated October 21, 2011

Montgomery County Public Schools
Rockville, Maryland 20850

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Space Summary

Captain Daly Elementary School Addition
Square Foot Summary

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Updated 4/13/11

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Conference Room	1		450	**450**
Building Service Facilities				
General Storage	1		250	**250**
Total	**9**		**4700**	**11550**

Introduction

☐ This document describes the facilities that are needed for the Captain James E. Daly Elementary School Addition educational program. The descriptions provide the architect with important guidelines and will be used by staff representatives when reviewing drawings for the facility.

☐ The program capacity for this school will be 660 with a master-planned (core) capacity for 640.

☐ The educational specifications are divided into three sections.

- The first section, the space summary, lists the type of spaces and square footage required when the project is complete.
- The second section describes the general design, location, and specific requirements for each type of interior and exterior space required in accordance with Montgomery County Public Schools (MCPS) standards.
- The third section identifies any additional program requirements for the school that were identified by the Facility Advisory team.

☐ The architect should show the location for relocatable classrooms, should they be required in the future. These units should be sited in a location where it will not cause conflict with the constructability of a future addition. The necessary utility connections, i.e. electrical power, fire alarm, public address, and data should be provided near the future location of relocatable classrooms.

☐ The architect will provide a space summary comparison between the programmed space requirements and the proposed after each phase of the project including but not limited to the feasibility study, schematic design, design development, and final design phase.

☐ For all new schools and modernizations, the project will be designed for LEED Silver certification by the United States Green Building Council (USBGC) under the LEED for Schools guidelines. If this project is a classroom addition, the certification requirement applies only if the addition doubles the existing building footprint. If this project is a building renovation, the certification requirement applies only if the renovation alters more than fifty percent of the existing building gross floor area.

General Planning Considerations

In the general planning of this building, special consideration is to be given to the following comments and instructions:

☐ The architect is expected to be compliant with all national, state and local fire safety, life safety, and health code regulations and to follow applicable rules of the State Interagency Committee on School Construction.

☐ The building is to be accessible to the disabled within the meaning of the latest edition of the Americans with Disabilities Act and to conform to all the latest requirements of the Americans with Disabilities Act Accessibility Guidelines (ADAAG) as published by the U.S. Architectural and Transportation Barriers Compliance Board. (The regulation can be found at http://www.access-board.gov/adaag/html/adaag.htm). In addition to the ADAAG, the *Maryland Accessibility Code* (COMAR.05.02.02) revised in 2002 also is required for public schools. (The regulation can be found at http://mdcodes.umbc.edu/dhcd2/Title05.pdf)

☐ The facility is to reflect an appealing visual, acoustic, and thermal environment and is to be properly furnished and equipped. Well chosen colors and textures are to be used. Lighting must meet current standards and provide adequate levels.

☐ High quality materials are to be used in the construction. The architect should refer to the MCPS Design Guidelines.

☐ The first impression of a building is important. The main entrance to the school should have a clear and inviting identity, and the entrance area should be designed and landscaped to emphasize its importance. A covered walkway from the bus loading area to the front door is desirable. The design of the main lobby area needs to convey a feeling of warmth and welcome. The inclusion of a lighted showcase in which children's work can be displayed is recommended.

☐ The design of the building and grounds must provide for a secure environment for students and staff. Isolated areas should be minimized and natural surveillance encouraged by eliminating visual barriers.

☐ For security purposes, all doors into classrooms, conference rooms, offices etc. must have a sidelight window with shades.

☐ Water coolers should be provided throughout the school.

☐ Every teaching station, support space, and core area must be wired for computer, CCTV, and telephone, along with adequate electrical supply in compliance with Maryland Sate design guidelines for Technology in Schools and the MCPS Office of the Chief Technology Office (OCTO) guidelines. Facilities must be adaptable to accommodate rapid development in high technology and its equipment since educational program and organization in this field are dynamic. Space and power supply must be flexible to meet these changing needs.

- ☐ Core spaces such as the cafeteria, gymnasiums, and instructional media center should be easily accessible for community use and secure from the rest of the building after school hours.

- ☐ An MCPS-designed alarm system will provide security for this facility. The architect will provide for this system in consultation with the Division of Construction staff.

- ☐ Building code requirements call for less than fifty percent of interior corridor space to be used for displaying flammable materials. Display areas can be provided by a 5' x 5' bulletin board per classroom or an equivalent amount of space in a larger area. Please refer to the Division of Construction for specific standards.

- ☐ Students should have ADA compliant access to the play areas from the multipurpose room. Play areas are to be protected from any vehicular traffic. Unobstructed supervision of play areas from one central area is desirable.

- ☐ The school is to be air conditioned except for the gymnasium and kitchen. Careful placement of glass is required to avoid excess heat gain in occupied areas.

- ☐ Some windows must be operable in each space in the building. Transmission of radiation through windows into various portions of the plant is to be considered in relation to heating and ventilating and in relation to planning the building for air conditioning. All instructional spaces should have windows, preferably exterior windows. If the design does not permit exterior windows, windows onto corridors should be provided.

- ☐ Zoning the plant for heating and air conditioning should be related to after-hours use of various areas such as offices, gymnasium, multipurpose room, and the instructional media center. Appropriate location of parking, corridor barriers, and toilet rooms is necessary for after-hours use. Some classrooms nearby the multipurpose room should be zoned for after hour use as well.

- ☐ The architect should refer to MSDE's 2006 *Classroom Acoustic Guidelines* to address the acoustical qualities for classrooms. In addition, the architect should refer to *American National Standard, Acoustical Performance Criteria, Design Requirements, and Guidelines for Schools* (ANSI S12.60-2002) for additional information.

- ☐ Noise and distracting sounds are to be minimized. In areas such as the multipurpose room and classrooms, which may be used for meetings and adult education, the sound of operating fans for ventilation should not interfere with instruction.

- ☐ Adult restrooms should be provided in accordance with the latest code requirements. Adult restrooms in elementary schools will be unisex.

- ☐ Spaces that serve no real educational function, such as corridors, should be limited while at the same time assuring an easy to supervise and smooth flow of pupil traffic to and from the instructional media center, multipurpose room, gymnasium, specialized centers, and support rooms.

- ☐ Carpeting should be limited to the principal's office, assistant principal's office and conference room in the administration suite and the main reading room of the instructional media center.

- ☐ All instructional, resource, or office spaces that students may occupy should be designed with either a sidelight or glass panel in the door and must be able to be supervised from the corridor or an adjacent space. Doors should be provided between classrooms whenever possible, however, expensive folding walls should be carefully considered as they are rarely utilized.

- ☐ The classrooms should be designed to accommodate various size groups. Each classroom should be readily adaptable for group work, various presentation formats, and should have maximum connectivity to outside resources.

- ☐ The shape of the classroom and the design of built in features and storage areas should provide optimum net usable floor area. Elongated rooms and features that protrude into floor area, limiting flexibility, are to be discouraged. Rectangular shaped classrooms are preferred.

- ☐ Metal adjustable shelving is to be provided in all building storage closets.

- ☐ All plan reviews will be coordinated through the Division of Construction.

- ☐ Special consideration must be given to energy conservation including total life-cycle costs. The current Maryland State Department of General Service (DGS) requirements will be applied as design criteria. Life-cycle cost accounting in accordance with DGS criteria is required.

Description of Facilities

Please refer to the summary of spaces in the front of this document for the square foot requirements for each space described below. Square foot allocations should be considered the standard to be followed, although minor deviations are permitted.

Prekindergarten/Kindergarten Classroom

- ☐ If the school has a Head Start program, the classroom should be designed as a prekindergarten/kindergarten classroom.
- ☐ Each room should allow flexibility in creation of activity areas and to provide for individualized instruction through arrangement of the "centers" approach.
- ☐ An area should be designated for placement of a 12' by 15' area rug over the finished floor.
- ☐ A 100 square foot walk-in storage closet and 150 square feet of general storage (casework throughout the classroom) is needed.
- ☐ When possible there should be interconnecting interior doors between all kindergarten and pre-kindergarten rooms.
- ☐ All prekindergarten rooms should have an outside door or be directly accessible to the outside and convenient to the main entrance of the school building.
- ☐ The prekindergarten classrooms require a separate and fenced outdoor play area that must be adjacent to the classroom. If the school does not have a prekindergarten program than the outdoor play area should be master planned so that it can be added on at a later time. The prekindergarten play area should include a 40'x40' paved play area and a 40'x40' mulched area.
- ☐ The computers should not be located next to a whiteboard where magnets might damage the hardware and software. Glare from the windows on the computer screens should be eliminated as much as possible. Security for the computers should be planned in consultation with the MCPS Division of Construction (DOC). Computer/technology wiring must be in accordance with MSDE/MCPS standards.
- ☐ Every classroom must have computer outlets for five student workstations and one teacher workstation. The building information and communications distribution system and other aspects of the building design must comply with the February 2002 revision of the MSDE *Maryland Public School Standards for Telecommunications Distribution Systems*.
- ☐ The main teaching wall layout should be in accordance to DOC construction standards.
- ☐ A sink with a drinking fountain must be provided, with cabinets above and below.

- ☐ This is a class-size reduction school so the built in student wardrobe area must provide 24 individual compartments to store students' belongings. The architect is to refer to the DOC construction standards for a typical cubby design. Lockers in the classroom may be considered for the kindergarten classrooms.
- ☐ A total of 20 feet of tackboard and 10 feet of magnetic whiteboard should be installed at eye-level height for small children, with tack stripping along walls for display of student work.
- ☐ Each room must have a toilet room that is accessible from within the room and easily accessible from outside. The toilet room will contain a standard height toilet, a sink with child-height mirror, and soap and towel dispensers that are accessible to small children. The light switch should automatically turn on the vent fan.
- ☐ Each classroom should be equipped with window blinds per the MCPS design guidelines.
- ☐ Battery operated clocks will be installed. The clock should not be mounted behind the projection screen.
- ☐ All classrooms should be equipped with a handicapped accessible sink with drinking bubbler.
- ☐ A full-length mirror should be installed.

Standard Classroom

- ☐ Each room must have an open classroom area with moveable furniture.
- ☐ 150 square feet of casework storage is needed in the classroom.
- ☐ The computers should not be located next to a whiteboard where magnets might damage the hardware and software. Glare from the windows on the computer screens should also be eliminated as much as possible. Security for the computers should be planned in consultation with the MCPS Division of Construction (DOC). Computer/technology wiring must be in accordance with DOC/MSDE/OSTA standards.
- ☐ Every classroom must have computer outlets for 5 student workstations and 1 teacher workstation. The building information and communications distribution system and other aspects of the building design must comply with the latest edition of MSDE *Maryland Public School Standards for Telecommunications Distribution System.*
- ☐ Approximately 30 to 35 linear feet of magnetic white board and 20 to 24 linear feet of tackboard, both with tack strips and map rails above the boards, should be installed in each classroom. White boards should be located so as to reduce glare. Tack strip is needed on all available walls. The architect should refer to the DOC construction standards for the main teaching wall layout.
- ☐ Thirty built in individual compartments in the wardrobe area for storing student personal property are required. The architect should refer to the DOC construction standards for a typical cubby design for grades K-1 and grades 2-5. Lockers in the hallway may be used in place of the classroom cubbies.
- ☐ If lockers are designed for storing individual student property, the architect should design the facility with 700 lockers if the core capacity is 640.
- ☐ All classrooms should be equipped with a handicapped accessible sink with drinking bubbler.
- ☐ A storage area is needed to hold at least two science kits (approximate 27" x 17" x 12" each) and one math kit in each classroom.
- ☐ General storage space must be built in and must accommodate 24- by 36-inch paper and a 4-drawer file cabinet. Each classroom must include 48 linear feet of built-in adjustable shelving.
- ☐ A small lockable teacher's wardrobe must be provided, as per DOC construction standards.
- ☐ Designated shelf space, not near a window, for an aquarium/terrarium with nearby electrical outlet, is desirable.
- ☐ Each classroom should be equipped with window blinds. The specifications for the window blinds will be provided by DOC.

- ☐ Each classroom should be equipped with a retractable projection screen (7' x 7'). The projection screen should not be mounted near any emergency lighting tracks. All areas of the screen should be illuminated and readable when the lights are dimmed.
- ☐ Electrical and data outlets should be provided in the ceiling for a ceiling mounted LCD projector.
- ☐ Battery operated clocks will be installed. The clock should not be mounted behind the projection screen.
- ☐ Shelving or cabinetry should be provided in every teaching station for the VCR and television. A school may choose to place the television and VCR on a cart. Appropriate CCTV receptacles and a duplex outlet should be provided nearby for the operation of the TV and VCR. Placement of the TV should be to maximize student viewing and not be unduly influenced by exterior or interior extraneous light.
- ☐ A school may consider reducing the size of each classroom to create small break-out rooms in the school. The number and design of these breakout rooms may be determined by school and MCPS staff.

Support Rooms

Spatial Needs
Occupational Therapy/Physical Therapy (OT/PT) Room
Parent/PTA Room
Conference Room

Occupational Therapy/Physical Therapy (OT/PT) Room

- ☐ Each room must have whiteboard that is mounted two feet off the floor.
- ☐ A tack board, open and closed lockable storage, open shelving, and a lockable teacher wardrobe are required.
- ☐ A sink with counter space is required in the OT/PT room.
- ☐ Room for a teacher's desk, lockable file cabinet, and assorted sized furniture with adjustable legs should be provided.
- ☐ The OT/PT rooms should be wired for access to one computer workstation each.
- ☐ The OT/PT requires a ceiling mounted hook for a swing.

  The OT/PT room requires lockable storage with sufficient area to house large gross motor equipment (minimum of 35 square feet) such as therapy balls, scooter boards, walkers, balance beams, ramps, etc.

Parent/ PTA Room

- ☐ This room should be located near the main entrance to the school.
- ☐ This room should include locking cabinets and open shelving.
- ☐ The room will be used as both a work area and for storage.

Conference/Training Room

- ☐ The conference room should be carpeted.
- ☐ The room should be able to comfortably accommodate up to 12 participants seated around a conference table.
- ☐ The conference room is to have a whiteboard, a tack board, and one bookcase.
- ☐ The conference room should be equipped with a telephone jack.

- ☐ Casework should be provided on one wall with two, two-drawer file cabinets for confidential records, letters forms, etc.
- ☐ The wiring for an overhead LCD projector and computer drops should be provided.

Site Requirements

Physical Education Instructional Site Requirements

- ☐ The site should be designed to provide a clear view of all play areas and to facilitate supervision from one location.
- ☐ Protective fencing may need to be provided near heavily wooded areas, busy streets, steep hills, parking lots and turnaround areas.
- ☐ Metal drains/grates should not be located in the playing fields and paved play.
- ☐ Paved areas and fields must be as level as possible. Water should not collect on paved areas
- ☐ The items described below are for a school with a site meeting the 12-acre requirement. At schools with smaller sites, the architect is to work with MCPS staff, including the Physical Education Curriculum Coordinator, Safety Director, and school staff to determine layout of the play areas. The outdoor physical educational instructional space should not be compromised for playground equipment.

Softball Fields

- ☐ Two softball fields should be provided with the following design requirements:
- ☐ 250' radius, with a soccer field superimposed should be provided if possible. See below for the soccer field dimensions.
- ☐ The site size will determine the number and dimension of the softball fields.
- ☐ Softball fields should have metal benches protected by fencing for each team's use.
- ☐ The fencing and benches should not interfere with soccer field usage.
- ☐ The softball backstops (2) shall be in diagonal corners of the field or in corners on the same side. See diagram in Architect's Guide provided by Division of Construction.
- ☐ Softball infields are not skinned for elementary schools. However, one field may be skinned if it does not significantly impact the soccer playing area.

Soccer

- ☐ The site size will determine the size of the soccer fields. The elementary school size soccer field is 150'x240' however the minimum size field should be 105' x 180'.
- ☐ No permanent goals or temporary goals should be installed on the soccer fields.

Paved Play Areas

- ☐ Two paved areas, 80' x 100' should be provided if the site permits. On small sites, one paved play area
- ☐ If located adjacent to one another, a grassy strip of at least 20' should be between the two paved areas.
- ☐ One area should have four basketball goals with appropriate striping (see diagram in Architect's Guide available from the Division of Construction).
- ☐ A second area, designated for primary use, shall be striped according to drawings provided in the Architect's Guide available from the Division of Construction.

Kindergarten Paved Play Area

- ☐ A third paved area, at least 40'x 60' but preferably 80' x 100', is needed for the Kindergarten students.
- ☐ This area needs to be located adjacent to the Kindergarten playground (mulched) area and close to the other paved play areas.
- ☐ This area requires a fence around it or adequate separation from the other paved play areas.
- ☐ The area will be striped according to drawings provided in the Architect's Guide available from the Division of Construction.

Playground Equipment Areas (mulched areas)

- ☐ One or two areas shall be provided near the playing fields and large paved play area for playground equipment. Each area should be approximately 40'x40'. The size and shape of the play area will be developed during the design process in consultation with MCPS staff.
- ☐ The area shall be level, bare ground, unseeded, and no sod. MCPS will provide equipment dimensions for these areas.
- ☐ An underground drainage system must be provided.
- ☐ The loose-fill surfacing material (engineered wood fiber) must meet ADA requirements. A border must be provided to contain the filler. The surfacing materials must meet or exceed safety specifications for shock absorbing qualities as outlined by US CPSC.

Kindergarten Play Area (mulched area)

- ☐ A mulched kindergarten play area of 40' x 60' should be located adjacent to the kindergarten paved play area described in the physical education section for playground equipment. The size and shape of the play area will be developed during the design process in consultation with MCPS staff.
- ☐ The area shall be level bare ground, unseeded, and no sod. MCPS will provide equipment dimensions for this area.
- ☐ Protective fencing should enclose the area.
- ☐ An underground drainage system must be provided.
- ☐ The loose-fill surfacing material (engineered wood fiber) must meet ADA requirements. A border must be provided to contain the filler. The surfacing materials must meet or exceed safety specifications for shock absorbing qualities as outlined by US CPSC.

Site Requirements

- ☐ The site should be designed to provide a clear view of all play areas and to facilitate supervision from one location.
- ☐ A minimum of 80 parking spaces should be designed initially for a school with regular staffing allocations, with future expansion possible. At schools with class-size reduction, 100 parking spaces should be provided.
- ☐ Protective fencing may need to be provided near heavily wooded areas, busy streets, steep hills, parking lots and turnaround areas.
- ☐ Metal drains/grates should not be located in the playing fields, paved play areas and mulched playground equipment areas.
- ☐ Paved areas and fields must be as level as possible. Water should not collect on paved areas or in mulched areas.
- ☐ Playground equipment areas should not be located at the bottom of hills unless a provision is made to channel water away from the equipment areas.

Driveway and Service Drive

- ☐ The driveway must be 24' wide, 50' radius for turnaround, for buses, with a separate entrance and exit or turnaround is required.
- ☐ Bus traffic should be separated from car traffic at all times, when possible. Bus loading zones should be able to accommodate the entire student body.
- ☐ All driveways must be arranged so that children do not cross them to get to the play areas. Access to the Head Start and future day care areas must be considered.
- ☐ Pedestrian access to the school facilities should be designed to make the best use of community rights-of-way and should not require students to cross in loading zone areas.
- ☐ The design must follow ADAAG 4.1.2(5)c, which stipulates that when a passenger loading zone is provided, a portion of it shall comply with ADAAG 4.6.6. At a minimum, the established car loop for passenger drop off should not interfere with the accessible parking spaces.
- ☐ Driveway aprons are to be perpendicular to the centerline of the street; and if there is an intersecting street on the opposite side from the proposed driveways, the driveway apron is to line up with the intersecting street.
- ☐ The grade of the driveways shall not exceed eight percent and should provide for a minimum centerline radius of 50 feet to provide adequate turning space for buses.
- ☐ A service drive 15' wide with an adequate turnaround is required to service the kitchen, boiler room, and general delivery area.

- ☐ Where necessary, oil filler pipes, with adequate overflow pipes, are to be easily accessible for a tractor-trailer.

Landscaping

- ☐ Planting should include screen planting and other planting needed for erosion control.
- ☐ Existing plant stock, if on site, is to be evaluated for use and protected accordingly.
- ☐ Landscaping to support energy conservation and to relate the building to the site with aesthetic appeal must be included.
- ☐ Planting areas along sidewalks and wooded and flowered areas are to be situated to enable the physical education program to be carried on without undue disturbance to the classrooms.
- ☐ Provision for outdoor watering must be included.
- ☐ The landscaping plan should include areas for outdoors environmental education programs.
- ☐ Areas should be identified where plowed snow could easily be piled.

Additional Program Requirements for Daly ES

Building

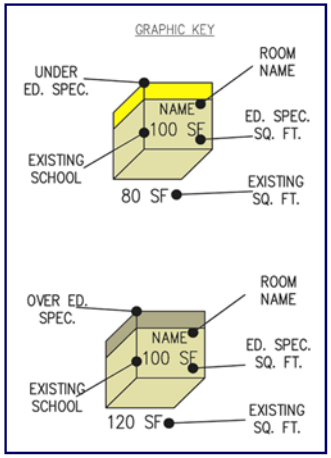
- ☐ The design team should assess the existing HVAC system and determine whether improvements can be made.
- ☐ The architect should explore the feasibility of building a second story wing above the existing first story rear wing to improve circulation on the second floor.
- ☐ The architect should assess the walk-in freezer to see if it can be expanded.
- ☐ The architect should investigate the air flow between the outside storage and the music room and determine whether there are any improvements that can be made in addition to the fan that was installed.
- ☐ The school may consider repurposing the staff developer's office or another space near the main entrance into a parent/PTA room and rebuilding that space as part of the addition.
- ☐ PreKindergarten and Kindergarten classrooms must be on the first floor.
- ☐ It is very important to keep the Kindergarten team together.
- ☐ The architect should consider expanding rooms 136-139 into Kindergarten classrooms and adding toilets.
- ☐ The PreKindergarten collaboration room needs to be designed with a grooming room, observation room, and kitchenette.
- ☐ PreKindergarten collaboration may become an Add Alternate if space on site is limited.
- ☐ Staff restrooms are needed in the addition.

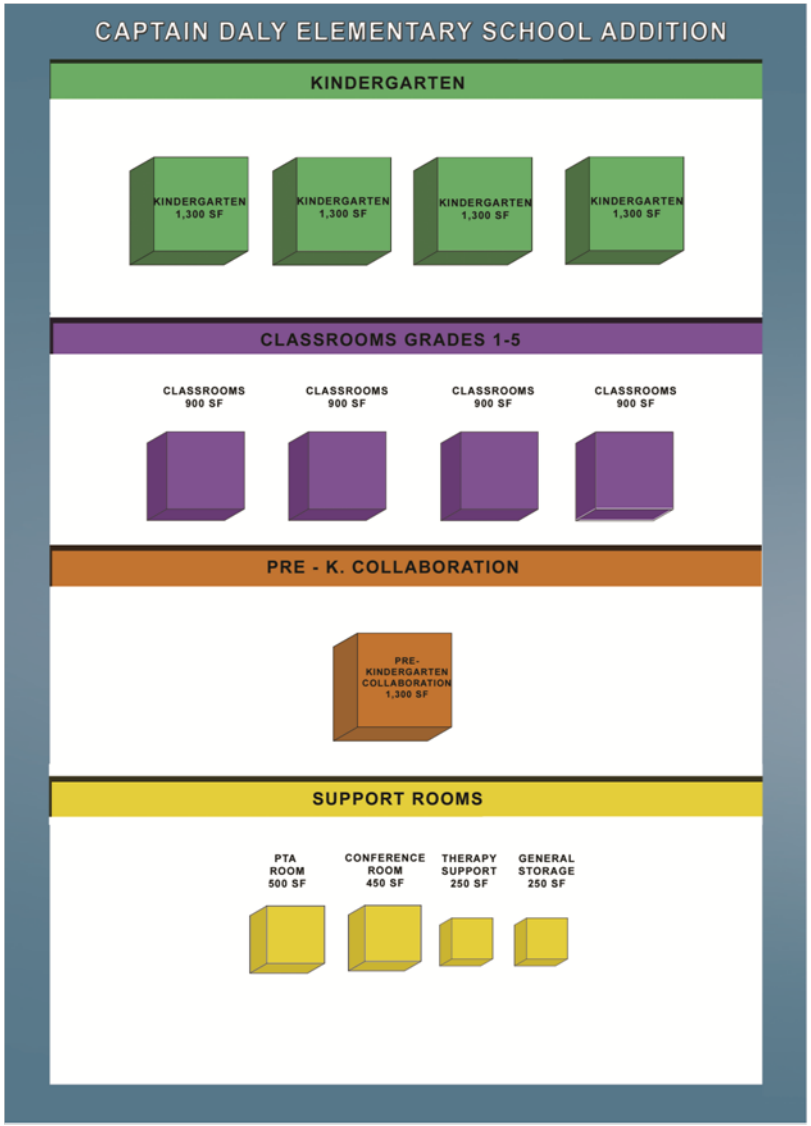
Site

- ☐ The Architect should involve the Optimal Learning Center in the process and minimize any impacts to their building on site.

VIII. Appendix (Continued)

(B) – Existing Conditions Survey and Photos





VIII. Appendix (Continued)

(B) – Existing Conditions Survey and Photos (Continued)

Site Access, Parking and Circulation:

On - Site Pedestrian and Vehicular Access

Vehicular access is currently divided into two areas along Brandermill Drive. The student drop - off and main parking lot are accessed by the westernmost, 2 - way driveway which leads to a one - way student drop - off loop and the main parking lot. The pavement of this driveway is in decent condition; however, as previously mentioned the handicap ramps of the crosswalk do not appear to meet current code. Site distance to the west is less than ideal due to low - branching street trees and on - street parking; however, traffic calming devices likely mitigate these inherent dangers. The remaining two driveways comprise the one - way bus loop; the exit for which acts as access to the loading area and reserve parking spaces. Each of these driveways also offer pedestrian access to the right - of - way as well. Lastly, a staircase on the western side of the site connects the Scenery Drive right - of - way to the facility. This staircase, which is absent of handrails and with longer than average treads, is not conducive to the natural human gait.

It should also be noted that the property contains a cell phone tower which requires access for maintenance. Currently, vehicular access is provided through a depressed curb along the student drop - off loop with a non - paved pathway to the tower.

Driveway Entrances

The westernmost driveway comprising the entrance and exit to the drop - off loop and parking lot is asphalt and is approximately 24 - feet in width. The one - way, 24 - foot bus loop entrance is located just 50 - feet to the east from the aforementioned main entrance. This asphalt driveway is located across from Bloomingville Court; however, the proximity to the 2 - way main entrance is not desirable. Lastly, the bus loop exit and loading access driveway is located approximately 275 - feet to the east from the bus loop entrance. This 21 - foot asphalt driveway is likely too narrow to serve as a bus loop exit or primary delivery access.

In all, asphalt driveway pavement appears to be in good condition free of significant cracking. Site distance to the east from the two exits needs to be evaluated even though the regulated speed of the roadway and traffic calming devices likely minimize the associated risks. Lastly, the curb ramps do not appear to meet Americans with Disabilities Act compliance and should be considered for potential upgrades.

VIII. Appendix (Continued)

(B) – Existing Conditions Survey and Photos (Continued)

Bus Loop

The school's bus loop consists of a 24 - foot one - way drive aisle along the northern side of the facility, which also acts as the main on - site fire lane. With approximately 340 - linear feet of queuing space and enough room for buses to pass one another, it appears that the size of the bus loop is sufficient for the five routes currently serving the school.

Overall, the pavement and associated sidewalks in and around the bus loop appear to be in good condition. Much of the entry way looks recently poured, and the asphalt appears to be holding up well. However, the sidewalk width following the bus loop does not meet current Montgomery County Public Schools design guidelines (12 - feet wide).

Student Drop - off Loop

The student drop - off loop consists of a tear - drop shaped, 20 - foot, one - way loop off of the main entrance drive. The center of the loop is mounded with semi - dense vegetation making way - finding difficult upon entry into the site. The queuing area provided accommodates approximately 9 vehicles, but does not utilize the space as efficiently as it could. A sidewalk could be extended to provide more queuing space if needed. The surrounding sidewalk is 8 - feet wide at most places, but tapers down to 5 - feet at the handicap ramp.

In terms of Americans with Disabilities Act accessibility, there is handicap access from the drop - off loop in the form of the depressed curb which provides access to the cell phone tower; however, an Americans with Disabilities Act passenger loading zone is not currently provided.

Overall, the pavement and associated sidewalks in and around the drop - off loop appear to be in fair condition. The major shortcomings with the loop occur in the form of Americans with Disabilities Act compliance (lack of a passenger loading zone), and layout. Because half of the loop is shared as a parking lot access, vehicular conflicts are likely common. Furthermore, in order to efficiently move vehicles in and out of the site, it should be visually evident which way they should go to unload students.

VIII. Appendix (Continued)

(B) – Existing Conditions Survey and Photos (Continued)

On-Site Parking:

The main parking area consists of 82 standard parking spaces and 4, 11 - foot parking spaces marked for handicap usage. Although the main parking lot offers an adequate ratio of handicap parking spaces, the handicap spaces offered do not conform to current Americans with Disabilities Act guidelines due to lack of access aisles and a visible accessible route to or from the spaces to the facility.

The loading area also offers six standard parking spaces which are reserved for various employees in the facility. This parking lot currently provides no handicap spaces, although at least one van accessible space is required by current code.

The striping and overall configuration of the parking lot efficiently utilizes the space and the site seems to have an adequate number of total spaces. The only remaining deficiencies included some cracking on portions of the asphalt and the layout confusion brought on by sharing a driveway with the one - way drop - off loop. Ideally, improvements to the site would reconfigure the vehicular circulation to distinguish the drop - off loop from the main parking lot and make all necessary Americans with Disabilities Act upgrades.

On-Site Loading:

The loading area is located on the eastern side of the building and is accessed by the eastern driveway/bus loop exit. The loading area is approximately 35 - feet wide and 70 - feet in length with a separate tee - turnaround for maneuvering. There are two separate docks for deliveries, although at the time of inspection one was utilized for the dumpsters and the other was being used for additional parking. The pavement in this area appeared to be in good condition. Noted deficiencies include lack of Americans with Disabilities Act access and the need for a separate space for dumpsters.

Sidewalks:

Although not completely compliant with Americans with Disabilities Act standards, the site provides a thorough system for pedestrian circulation around the site. Sidewalks link the Scenery Drive right - of - way to the facility and from the bus loop to the Brandermill right - of - way. Around the rear of the facility, a sidewalk is provided around the entire perimeter of the building, with the exception of linking the eastern wing to the remainder of the site. Sidewalks also link the building to the lower play areas through the use of a large staircase which is located at the gymnasium egress.

VIII. Appendix (Continued)

(B) – Existing Conditions Survey and Photos (Continued)

In general, the concrete sidewalks along the front and sides of the school are in fair shape, while the play areas could use re-surfacing. In terms of Americans with Disabilities Act compliance, there is no access provided to the play fields from the facility.

Fire Access:

Currently, the bus loop is delineated by signage as the only on - site fire lane. This drive aisle is approximately 24 - feet wide and appears to satisfy all fire code dimensional requirements. There is an on - site fire hydrant located off the eastern end of the bus loop as well. Without access to the rear of the building and the only fire lane being located at the front of the school, it is likely that building additions will require additional fire access.

Site Topography:

The site generally slopes from the northwest corner of the property to the east and southeast. The school sits on a plateau, with steep slopes from the building to the rear play areas. The lowest elevations on the property are located in the southeastern corner of the site, whereas the highest elevations are seen in the main parking lot, west of the building. Low spots were noticed in the athletic fields to the west and around the play fields in the rear.

Vegetation:

Although there are multiple, attractive shade trees in various areas around the parking lots and along Brandermill Drive, there are no areas on the property likely to be classified as forest under M-NCPPC definitions. Furthermore, initial investigations preclude the classification of any of the on - site trees as significant. While this allows a great deal of flexibility from a site planning perspective, an approximate total of 1.5 acres will need to be forested in order to meet M-NCPPC's afforestation requirements for this site.

Water and Sewer:

The existing building appears to be served by an 8 - inch sanitary sewer main in the Brandermill Drive right - of - way, WSSC contract number 804752B. It is assumed that the sanitary sewer service is sufficiently meeting the current needs of the building and should also meet the needs of any prospective improvements.

VIII. Appendix (Continued)

(B) – Existing Conditions Survey and Photos (Continued)

The existing facility is served by a lateral off the existing 12 - inch water main, WSSC contract number 804752B, in the Brandermill Drive right - of - way which was built in 1980. It is assumed that the existing water service is of sufficient capacity to meet the needs of the prospective improvements.

According to WSSC, the site is in a 660A pressure zone with a high hydraulic gradient of approximately 670 and a Low Hydraulic Gradient of approximately 617. On that basis, per WSSC prescribed calculations, the water pressure at the existing connection to the water main in Brandermill Drive is approximated to be between 81 p.s.i. and 119 p.s.i. The exact pressures and flows should be confirmed via field testing at the time of design.

Gas, Electric and Telephone, Etc.:

All dry utility service connections are made with the main service lines in the Brandermill Drive right - of - way. Electric service comes to the building via underground lines from the transformer located in the loading dock area. A gas meter is located on the eastern side of the building where it is fed from the main in Brandermill Drive. There are no known overhead lines or utility poles on or around the site.

Storm Drainage and Storm Water Management:

Currently, the storm water from the site is directed into two directions. Runoff from the parking lot and surrounding athletic fields is directed to the southeastern corner of the property and outfalls via 36" RCP on M-NCPPC property. The runoff from the parking lot is treated utilizing a three chamber oil/grit separator located in the fields on the western side of facility. Runoff from the bus loop, loading dock and building is directed to a three chamber oil/grit separator near the bus loop exit before it outfalls into the public storm drain system in Brandermill Drive.

Because existing impervious areas do not constitute 40% of the site area, construction work will not be classified as a “redevelopment” project. It is anticipated that site improvements will be required to include Environmental Site Design to the maximum extent practicable in order to treat all areas inside the limits of disturbance. After all Environmental Site Design efforts are exhausted and if the disturbed area has still not been able to reach a hydrologic state of “woods in good condition,” then structural practices may be permitted as determined by the Montgomery County Department of Permitting Services.

VIII. Appendix (Continued)

(B) – Existing Conditions Survey and Photos (Continued)

Potential Environmental Site Design storm water management practices for the site include both micro - scale practices and alternative surfaces. Micro - scale facilities could include the utilization of bio-swales and micro - bioretention facilities in pockets of unused open space. Alternative surfaces will be considered where required to meet state and county storm water management regulations.

Site Soils (Geotechnical):

Per the Soil Survey of Montgomery County, Maryland, the predominant soils on the site are in the Brinklow - Blocktown series. According to the USDA, the depth to bedrock in these soils is generally around 2 ½ - feet. However, this estimated depth is based upon virgin soils. Because the site was previously disturbed, bedrock could be encountered at shallower depths.

The existing fill of stratum A, as indicated by the boring tests below and some additional fill may be present near the existing building. The fill appears to have been placed in a controlled manner for the existing buildings; however, significantly more in depth studies should be done to properly assess the fill to determine if it can be used for support of the new building. Based on the current study the proposed building additions can most likely be supported on regular spread footing foundations bearing on approved soils of strata A and B or new compacted structural fill. The design bearing pressure may be anticipated between 2,000 and 3,000 psf. However, if the fill lacks adequate compaction and/or contains deleterious material then geopiers in conjunction with spread footings or alternate foundation systems may be required.

Stratum A: This man made deposit of soil was encountered from under the surficial topsoil layer to depths of 13.5 feet and 8.5 feet. The soil of this stratum has been classified as “FILL”;

Stratum B: This naturally occurring soil stratum underlies stratum A to the depth of exploration of 20 - feet.

In terms of hydrology, soils in this series are characteristically known to provide good drainage and allow adequate infiltration. These soils have a hydrologic soil group classification of 'B', and typical groundwater depths in excess of 5 - feet.

Groundwater:

No groundwater was encountered during the drilling operation in both borings. Groundwater level readings are considered to be a reliable indication of the water levels at the time indicated. Fluctuations of groundwater levels, as well as perched water, may be expected with variations in precipitation, evaporation, surface runoff, and related factors.

VIII. Appendix (Continued)

(B) – Existing Conditions Survey and Photos (Continued)

Flood Plains, Stream Valley Buffers and Non-Tidal Wetlands:

Initial investigations reveal that the site is located outside of a floodplain in a zone "X" on FEMA Flood Insurance Rate Map number 24031C0180D. Also, it should be noted that the U.S. Fish and Wildlife Mapping services indicates no wetlands or environmentally vulnerable areas on the property.

MECHANICAL

General

James E. Daly Elementary School was originally constructed in 1989. It appears that most of the mechanical equipment that currently exists within the building dates back to the original construction, with the exception of select boiler room equipment. As a result, most of the mechanical equipment that currently exists within the building dates back to the original construction, with the exception of select boiler room equipment.

The following is a detailed description of the existing mechanical, plumbing, and fire protection systems.

Heating Systems

Two scotch - marine three - pass gas - fired boilers produce heating water for the building. These boilers were installed as part of the original building construction and appear to be in good working condition. Manufactured by Burnham Commercial Boilers (Model 4FW-277-50-GO-GP), this equipment has a gross output rating of 1,855 MBH per boiler. While the existing boilers are functioning adequately to satisfy the existing school, there does not appear to be surplus capacity available to support any additions to the building without losing standby capacity in the event one boiler fails. Currently each boiler is provided with one low - water cut - off. There is no automatic low - water cut - off back - up provided. Flues from each boiler connect to a common breeching within the boiler room. Each boiler's burner is manufactured by Gordon - Piatt and rated for an inlet gas pressure of 3.3 inches WC. The gas train for each boiler is provided with only one gas shutoff valve. To comply with CSD-1 requirements used by the State of Maryland boiler inspectors, present day assemblies are required to have two shut - off valves. The combustion air opening, located high on the exterior boiler room wall, does not comply with current code requirements for combustion air.

VIII. Appendix (Continued)

(B) – Existing Conditions Survey and Photos (Continued)

MECHANICAL (Continued)

Heating water is supplied to the building's 2 - pipe chilled/heating water system through two base - mounted end suction pumps. These pumps are arranged in a lead/lag setup with only one pump operating at any time. Similar to the heating water system, the chilled/heating water system is equipped with 2 base - mounted end suction pumps for distribution of chilled or heating water throughout the building. These pumps are provided with a lead/lag set - up, similar to the heating water pumps. The 2 pipe chilled/heating water distribution system is equipped with an air separator, shot feeder, and an air - charged expansion tank.

Cooling Systems

Two 100 - ton air - cooled scroll compressor chillers manufactured by Trane (Model CGAD100) are located at the roof level adjacent to the cafeteria and gymnasium areas. These machines were installed as part of the original building construction and appear to be in fair condition. Operation of this equipment could not be confirmed during the project's site visit. Each chiller utilizes R-22 refrigerant, is mounted on structural dunnage, and provided with vibration isolators between the steel structure and chiller base rails.

There is no excess chiller capacity to support any additions to the building. Two base - mounted end suction pumps, located within the boiler room, distribute chilled water between each chiller and 2 - pipe chilled/heating water system. There is no apparent air separator, expansion tank, or shot feeder dedicated to this chilled water loop. Outdoor chilled water piping is provided with insulation; however, no heat tracing cables are installed for additional freeze protection.

In addition to chilled water, direct expansion type cooling is provided for the administration area and select split system units located throughout the school. Spaces served by direct expansion space conditioning typically require cooling operation at times when chilled water is not available.

HVAC Systems

The heating, ventilating, and air conditioning (HVAC) systems vary slightly throughout the building. These systems were installed as part of the original building construction and appear to be in fair working condition. The following is a breakdown of the various spaces and their associated heating, ventilating, and air conditioning system:

VIII. Appendix (Continued)

(B) – Existing Conditions Survey and Photos (Continued)

MECHANICAL (Continued)

• Typical Classroom: Classrooms are heated and cooled through unit ventilators connected to the building's 2 - pipe chilled/heating water system. Each unit ventilator has a direct outdoor air connection through a louver mounted in the exterior wall. An exhaust register is provided for each classroom to maintain proper room pressurization. Exhaust air from several classrooms is ducted to rooftop relief points. Second floor interior classrooms and corridor areas are provided with ventilation though rooftop and indoor air - handling units. Each unit is equipped with a combination chilled/heating water coil for space conditioning. Unit ventilators and air - handling units were installed as part of the original building construction and appear to be in fair working condition. Temperature concerns were noted at many of the second floor areas, both through general site observations obtained during the project's multiple site visits, as well as from faculty and staff input. Concerns appear to stem from several causes, including both deficiencies and/or improper calibration of control devices such as valves and sensors, and incorrect zoning of interior and exterior office areas. Recommendations for addressing these deficiencies are addressed in later sections of this study.

• Computer Lab: Similar to the typical classroom areas, the second floor computer lab is heated and cooled through a unit ventilator connected to the building's 2 - pipe chilled/heating water system. The unit ventilator has a direct outdoor air connection through a louver mounted in the exterior wall, with an exhaust register provided for maintaining proper room pressurization. The unit ventilator was installed as part of the original building construction and appears to be in fair working condition. Temperature concerns were noted within the computer lab area during both of the project's site visits. Temperature concerns appear to stem from a lack of year - round cooling, as well as deficiencies and/or improper calibration of control devices such as valves and sensors. Recommendations for addressing these deficiencies are addressed in later sections of this study.

• Administration and Health Suite: A packaged direct expansion rooftop unit, located at the roof level adjacent to the air-cooled chillers, serves the administration and health suite area. The use of direct expansion cooling allows for year round cooling independent of chiller operation. This unit was installed as part of the original building construction and appears to be in fair working condition. Duct mounted heating coils provide zone level heating and space temperature control for the individual offices, conference area, and health suite. No switch operated exhaust fan is provided for the health suite area. This fan is recommended for situations when odors need to be purged from the health suite.

VIII. Appendix (Continued)

(B) – Existing Conditions Survey and Photos (Continued)

MECHANICAL (Continued)

- Gymnasium: Heating only air - handling unit serving the gymnasium area is located at the roof level adjacent to the air-cooled chillers. This unit was installed as part of the original building construction and appears to be in fair working condition. Supply air is ducted between the roof trusses and distributed through overhead air devices. Multiple outdoor air louvers are located along the perimeter wall, with four exhaust fans provided at the roof level for ventilation during the summer months.

- Media Center: The air - handling unit serving the media center is housed within a second floor mechanical closet, located adjacent to the media center area. This unit is equipped with a chilled/heating water coil for space conditioning. Supply ductwork extends from the air - handling unit and is routed exposed above the media center entrance doors. Return air grilles are both wall - mounted and located within the room's intermediate ceiling area. This unit was installed as part of the original building construction and appears to be in good working condition.

- Cafeteria: The air - handling unit serving the cafeteria and stage areas is located at the roof level adjacent to the air - cooled chillers. This unit is equipped with a combination chilled/heating water coil for conditioning the areas served. This unit was installed as part of the original building construction and appears to be in fair working condition.

- Kitchen: A 2 - pipe fan coil unit, located above the kitchen ceiling, provides space conditioning for the kitchen area. This unit appears to be in fair working condition based on discussions with building services personnel. Major kitchen equipment includes two stacked convection ovens and a two-burner gas range. There is no hood installed above this equipment, which does not meet current health code requirements.

- Art and Art Storage Rooms: The art room is currently equipped with a single kiln. Local exhaust is provided through an overhead capture hood located above the kiln equipment. This arrangement offers an effective means of providing local exhaust for this equipment. Heating, cooling, and ventilation are accomplished through a 2 - pipe unit ventilator, similar to the typical classroom areas listed above.

- Stairwell Areas: Stairwells are conditioned through cabinet unit heaters, located at the first floor level of each stair. Thermostats for the rear stairwell areas are flat - plate type sensors, recessed within the perimeter wall. The current installation of these thermostats does not allow them to accurately measure and control the space temperature within these areas, resulting in overheating of the space. Recommendations for addressing this overheating concern are addressed in later sections of this study.

VIII. Appendix (Continued)

(B) – Existing Conditions Survey and Photos (Continued)

MECHANICAL (Continued)

• Building Exhaust Systems: A combination of roof - mounted and inline fans remove exhaust air throughout the building. These fans were installed as part of the original building construction and appear to be in good working condition. There are select fans that have damage to their external housing; however, these fans appear to still be operating.

Temperature Control System

The existing control system for the school is a combination of direct digital control and pneumatic control systems. Major valve and damper components are provided with pneumatic operation; while other system components are provided with electronic operation. Building control components are interfaced with the central Montgomery County Public Schools energy management control system for occupied/unoccupied settings. A duplex type air compressor system, complete with horizontal storage tank, is located within the boiler room and serves the building's pneumatic control components. Air supplied from this compressor system is fed through a refrigerated dryer system. Based on discussions with building services personnel, this system was recently replaced and appears to be in excellent working condition.

PLUMBING

Plumbing System

The building is served from the county water system through a 6 - inch combination fire and water service, entering the building within the boiler room area. A 3 - inch domestic water main extends from this service to support the building's domestic water requirements. Currently, no backflow preventer is provided at the domestic water service entrance. While this may have been acceptable at the time this system was installed, it does not meet current plumbing code requirements. It is anticipated that limited surplus capacity exists for the existing 3 - inch domestic cold water main.

Domestic hot water is generated by a State brand gas - fired 100 - gallon water heater (Model SBD100199NES). This heater is equipped with a 199 MBH gas burner that produces 193 gallons per hour recovery. There is no date on the heater that would tell us when it was manufactured; however, it appears to be recently replaced and in good working condition. A dedicated flue extends to the chimney entrance near the boiler breeching. The system is not equipped with a domestic water circulation pump, expansion tank, or mixing valve. It is anticipated that limited surplus capacity exists for the hot water heater.

VIII. Appendix (Continued)

(B) – Existing Conditions Survey and Photos (Continued)

PLUMBING (Continued)

Plumbing System (Continued)

Plumbing fixtures appear to be in good condition and were installed as part of the original building construction. The water closets are floor - mounted, urinals are wall - hung, and the lavatories are individual wall - hung type. The school is equipped with plumbing fixtures that meeting the Americans with Disabilities Act requirements.

Fire Protection System

The building is currently provided with sprinkler coverage throughout. Located within the boiler room, a 6 - inch fire line extends from the incoming water service and is provided with a 6 - inch double - check type backflow preventer. This fire line serves two zone valve assemblies, each located within the boiler room. Sprinkler mains extend from each zone valve assembly and serve sprinkler heads located throughout their respective zone. Sprinkler system components appear in good condition. The existing 6 - inch fire service appears adequately sized to support the planned additions to the school.

ELECTRICAL

Power Distribution

The school is fed from a pad mounted PEPCO transformer located outside the building. The main distribution switchboard, located in the Main Electrical Room, is rated 1600-amp, 277/480 volts, 3 - phase, 4 - wire with a single main 1600 amp fused load break switch in the switchboard. The switchboard is manufactured by Square D and was installed in 1989 as part of the original building construction. There are 3 switchboard sections that contain the power company CT section, the main fused switch, and a distribution section with molded case circuit breakers. The switchboard is approximately 24 years old and in good to average condition. The anticipated reliable life of the switchboard is another 6 to 10 years.

The distribution section serves the two chillers, the 480Y/277 volt distribution panel - boards in the electrical closets, and branch circuit panel - boards for the kitchen and the boiler room. There is also a circuit breaker without a label that may be for the existing relocatable classrooms. The switchboard also serves the automatic transfer switch that is located within the main electrical room.

VIII. Appendix (Continued)

(B) – Existing Conditions Survey and Photos (Continued)

ELECTRICAL (Continued)

Power Distribution (Continued)

The 480Y/277 volt distribution panel - boards, located in two of the electrical closets on the first floor, serve the lighting and power panel - boards in the same closet and an adjacent 112.5 Kva dry - type transformer. This transformer feeds the 208Y/120 volt branch circuit panel board that in turn feeds receptacles and other 120 volt circuits in the area around the closet. panel boards and transformers in the main electrical room and the electrical closets were manufactured by Square D around 1988. This equipment is in good to average condition. Typical classrooms have as many as six duplex receptacles, 2 on each of the front and rear walls, and 1 on each of the side walls. There is also a GFCI receptacle over the counter next to the sink. There is no dedicated computer power distribution system in the school.

Emergency Power

There is an outdoor emergency generator that provides power through the automatic transfer switch for life safety and standby systems such as emergency lighting, fire alarm system, elevator, heaters in several of the AHU's, pumps including the sump pump, and telephone. The generator is a 100 kW, made by Kohler, and is propane gas fueled unit. The propane tank is located below ground and was very recently replaced. The generator appears to be in good condition although it is 24 years old. The automatic transfer switch is a Kohler unit, rated 225 amps, 277/480-volt. The transfer switch serves panel board ELM and EMP in the main electrical room. Panel EMP is fed from a 15 Kva dry type transformer.

Lighting

Fluorescent lighting is used throughout the school. The standard fixture is a 2' x 4' recessed lensed fixture. These fixtures are used in classrooms, corridors, cafetorium, kitchen, media center and offices. The stage area has one row of track lights in front of the stage that is controlled by dimmer switches, and a row of lensed fluorescent fixtures over the main portion of the stage. The high ceiling areas of the main stairway and the media center have suspended square linear fluorescent fixtures. The fluorescent lamps used throughout the building appear to be generally T-8 type. The gymnasium lighting is metal halide high bay fixtures.

VIII. Appendix (Continued)

(B) – Existing Conditions Survey and Photos (Continued)

ELECTRICAL (Continued)

Fire Alarm System

The main fire alarm panel is a Pyrotronics System 3, zoned Panel. A Radionics digital communicator is also present. Fire alarm devices include manual pull stations, duct and area smoke detectors, and audible and visual notification devices. The existing panel is outdated and not expandable.

Intercom and Sound Systems

The school intercom system is located in a storage room off the main office area. The system is the Telecenter system, manufactured by Rauland. The system has the capability to transfer select local calls to classrooms or paging throughout the school. Each classroom area has a Rauland speaker and call switch. Speakers are also located throughout the corridors. The expandability of the system is limited at best.

Telephone System

The telephone system is a separate key system for telephones in the school offices. The telephone company demarcation point is in the main electrical room. The telephone switch is also located in the electrical closet. The system is by Comdial.

Cable TV System

Cable TV outlets are located in rooms throughout the school. The Jerrold head - end equipment is rack mounted and located in the data closet in the rear of the book storage room. Televisions' are generally mounted on carts and not permanently mounted in classrooms. Smart boards have been added in many of the classrooms, however several classrooms still lack this technology.

VIII. Appendix (Continued)

(B) – Existing Conditions Survey and Photos (Continued)

ELECTRICAL (Continued)

Security System

The security system consists of an intrusion detection system. The intrusion detection system includes keypads and motion sensors in the corridors and door switches on the exterior doors. The main panel is a Gemini system with keypads located in the main office and other locations.

Data Wiring System

A Category 5 wiring system is installed throughout the school. This system provides connectivity for the computer lab, media center, offices, and classrooms. Each typical classroom has both student and teacher outlets. Computer power for classrooms is from the normal receptacle circuits. Separate computer power receptacles have not been provided. The main file server is located in the storage room at the west end of the second floor. The room's equipment includes a Dell file server cabinet and the racks that contain the patch panels and system hubs.

Minor damages to exterior wall.

VIII. Appendix (Continued)

(B) – Existing Conditions Survey and Photos (Continued)

Existing roof.

Roof drain spill onto egress sidewalks create icing hazard.

Crazing glazed blocks.

Minor damages to exterior wall.

VIII. Appendix (Continued)

(B) – Existing Conditions Survey and Photos (Continued)

No screen wall around generator.

Multi - purpose room's ceiling excessively dirty.

Window sash failure.

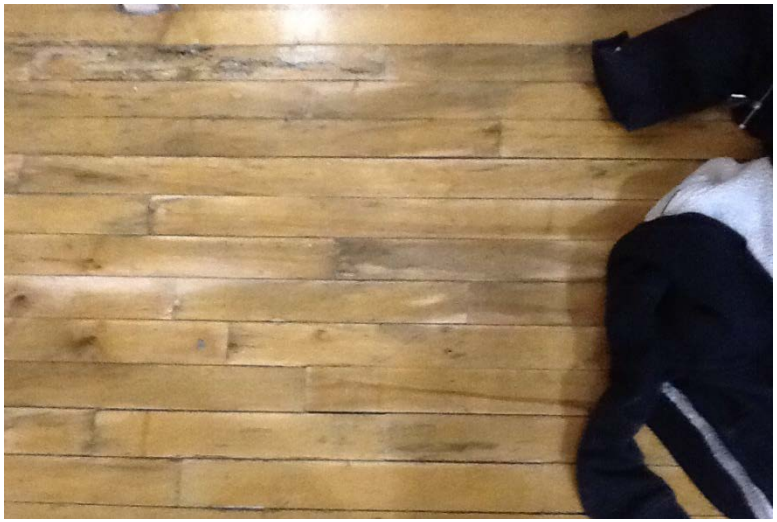
Minor damages to drywall within corridors.

VIII. Appendix (Continued)

(B) – Existing Conditions Survey and Photos (Continued)

Vestibule ceiling's paint peeling.

Roof leaking.



Water damaged at gymnasium floor.

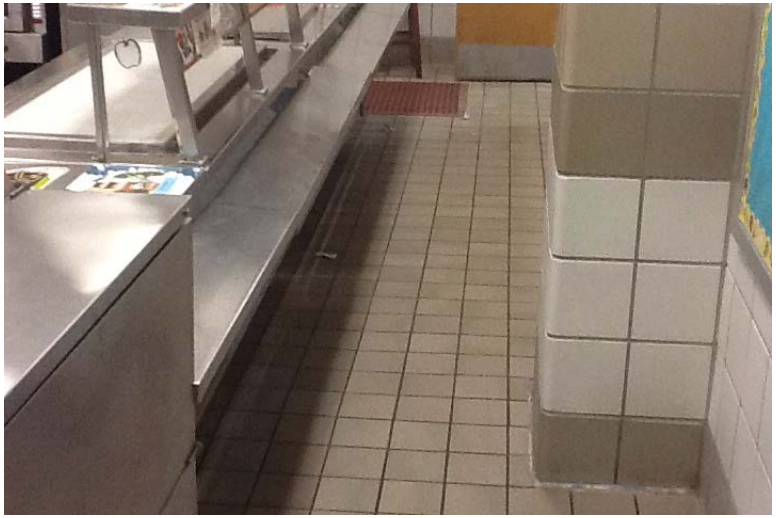
Floor is cracking and broken from settlement.

VIII. Appendix (Continued)

(B) – Existing Conditions Survey and Photos (Continued)

Door handles not ADA compliant.

Play area equipment not ADA accessible.



Kitchen's serving line is not ADA compliant due to existing column.

Bathrooms not ADA compliant.