ROCK CREEK SCHOOL
FEASIBILITY STUDY

FREDERICK COUNTY PUBLIC SCHOOLS
AUGUST 2016

GRIMM AND PARKER

BOARD OF EDUCATION OF FREDERICK COUNTY

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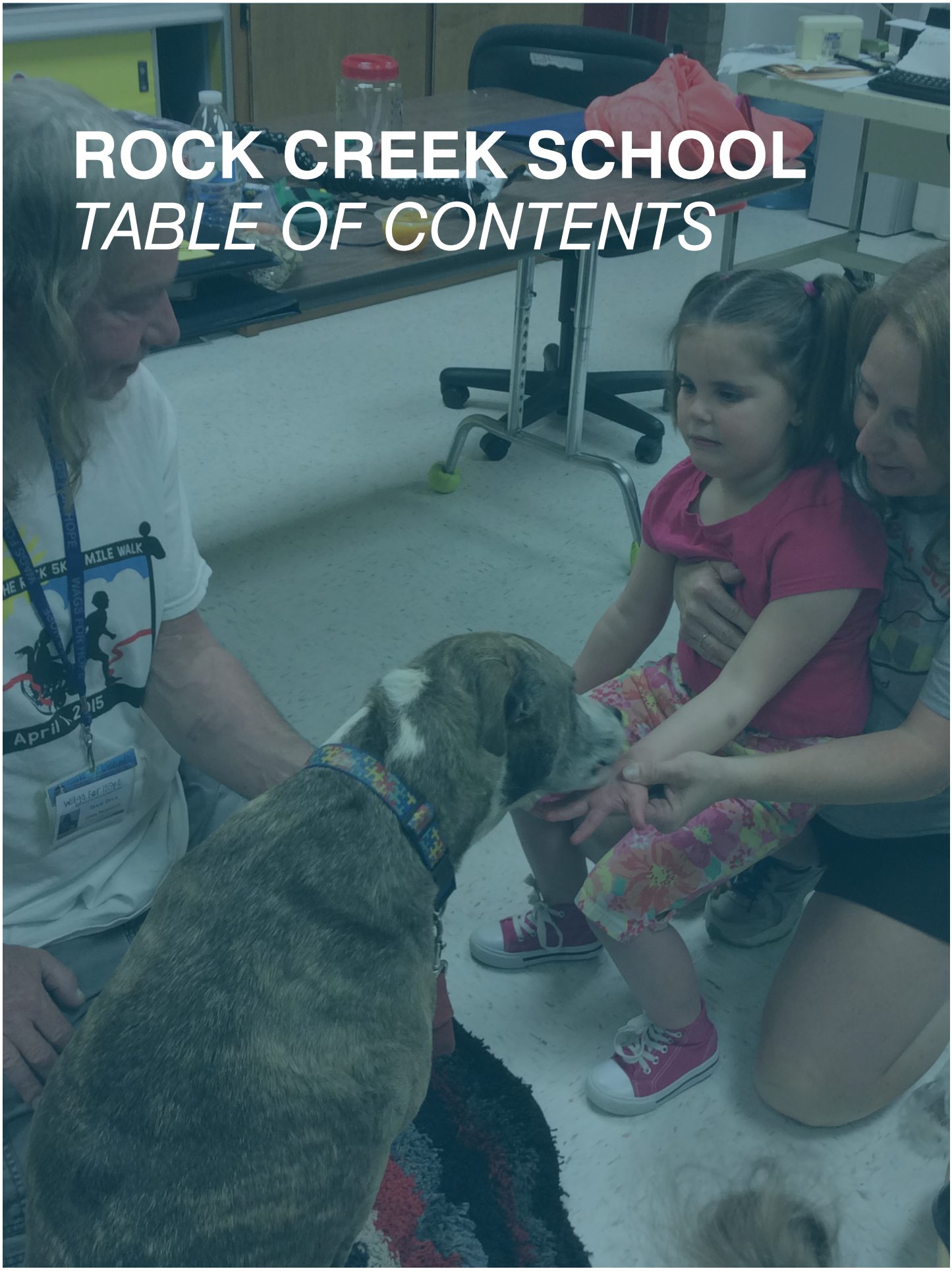

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SECTION 1:
EXECUTIVE SUMMARY

The purpose of this feasibility study is to determine the viability of various options to ensure Rock Creek School meets the goals and requirements established for the project.

INTRODUCTION

This feasibility study represents the second of two phases of a comprehensive plan to envision and develop a modern Rock Creek School, one that will provide access and equity for Frederick County's students with complex medical conditions and severe intellectual, physical, emotional, hearing, vision and learning disabilities from ages 3 through 21. The first phase of this plan produced the educational specifications that established guiding principles, program requirements and facility design goals, while the second phase is a feasibility study to determine the optimal strategy to satisfy the specifications. The educational specifications were approved by the Board of Education of Frederick County in November 2015, and are referenced in the narrative of this study. Excerpts from the educational specifications (ed specs) are included in the Appendix of this document for reference.

The purpose of this feasibility study is to determine the viability of various options to ensure Rock Creek School meets the goals and requirements established for the project. This study includes evaluation of the physical condition of the existing building and surrounding site, analysis of the adaptability of the existing building to meet the educational requirements, and analysis of the value and limitations these conditions impose upon the various approaches to this redeveloped project. Options were developed to consider the viability of modernization of the existing building and of modernization and additions to the existing building as well as exploration of new construction both on the current site and other sites owned by Frederick County Public Schools. Each option was then evaluated on its ability to provide the required program and to deliver on the vision, guiding principles and spatial requirements of the educational specifications developed during the first phase.

The results of the study will provide Frederick County Public Schools an essential tool to make an informed and substantiated determination of the best approach to support the unique needs of Rock Creek School and its community. The study provides a comparison of the relative costs of each of the options, and the opportunities and compromises of each option developed by the feasibility study team in consultation with other Frederick County Public Schools central office staff, Rock Creek School staff, MSDE, and numerous parent and community stakeholders.

This recommendation is consistent with feedback gathered from community and staff stakeholder groups, each of whom universally preferred the off-site replacement option.

OPTIONS CONSIDERED

The consultant team examined four categories of options during the feasibility study process in order to explore a full spectrum of interventions, both on the current site and on alternate sites in the surrounding community. The exploration included options for modernization of the existing building; modernization of the existing building with additions; a new replacement school on the existing Rock Creek site; and a new replacement school off-site.

Each option was presented to the feasibility study team for review and comments, then refined and re-evaluated until a consensus on the final version of each option was reached for inclusion in this document. Graphics of each option, along with narrative descriptions and lists of differentiating opportunities and challenges, are included in Section 4 of this report. Earlier versions of the options can be found in the Appendix for reference. Brief outlines of the scope of each of the options follows:

1. **MODERNIZATION**: Modernization of the existing Rock Creek School, with no space added to the building. The building would remain occupied during phases of the modernization.

2. **MODERNIZATION AND ADDITION:** Modernization of the existing Rock Creek School, along with new additions to enlarge the building area to meet spatial requirements of the educational specifications. The building would remain occupied during phases of the modernization and new additions.

3. **REPLACEMENT ON-SITE:** New building on the existing Rock Creek School/ Waverley Elementary School (ES) site that meets all spatial requirements of the educational specifications. The existing Rock Creek School would remain occupied during new construction, and would then be demolished after completion.

4. **REPLACEMENT OFF-SITE:** New building on an alternate site that meets all requirements of the educational specifications. The existing Rock Creek School would remain occupied during new construction and would not be demolished after construction, but would be available for another use.

The feasibility study team identified student safety and health concerns during construction as paramount criteria during the evaluation process, and were able to eliminate Options 1 and 2 on these reasons alone.

RECOMMENDATION

After extensive study and discourse on the various options investigated, the feasibility study team unanimously recommended Option 4, Off-Site Replacement, as the optimal choice for delivering the program, guiding principles and overall vision presented in the educational specifications. This recommendation is consistent with feedback gathered from community and staff stakeholder groups, each of whom universally preferred the off-site replacement option.

Each of the other feasibility study options, modernization, modernization plus addition and replacement on-site, presented significant challenges and compromises that exceedingly outweighed the potential opportunities. The feasibility study team identified student safety and health concerns during construction as paramount criteria during the evaluation process of the options. The overriding concerns for the students served to eliminate Option 1, Modernization, and Option 2, Modernization and Additions, independent of the numerous programmatic compromises also found in each of these options. Option 3, On-Site Replacement, addressed some of these concerns, but due to various site constraints and cost impacts, this option was also rejected. Additionally, Options 1, 2 and 3 all present significant logistical challenges for operations of the Rock Creek School during construction. Each of these options will require complex phasing over a two to three-year duration of construction, which will prove especially difficult for Rock Creek, which operates as a year-round program. Construction phase site logistics, including access for construction vehicles and staging areas for materials, will be difficult to accommodate while maintaining safe, simultaneous operation of the existing Waverley ES and Rock Creek School. On-site construction will also involve prolonged durations of noisy construction activities, constant movement of unfamiliar personnel and equipment, as well as significant amounts of dust and debris. These conditions present a significant potential health risk to Rock Creek's students, many of whom are medically fragile and would have extreme difficulty acclimating to such adverse circumstances and stimuli.

In addition to these core safety and health concerns, Options 1, 2 and 3 also failed to meet essential programmatic criteria required in the educational specifications and presented further site logistic issues. Option 1, the modernization of the existing Rock Creek School building, provides only 59% of the net program area required by the educational specifications for the Rock Creek School, allows for none of the additional programs or alternates requested in the educational specifications, fails to improve on the size and relationships of existing program areas, requires compromises to technology and other core systems, and does not address many of the functional challenges present in the existing school. Option 2, the modernization and addition of the existing Rock Creek School building, requires several complex additions to increase building area, yet still falls short in its ability to deliver all required Rock Creek School program spaces, has minimal space for the optional additional programs, only provides uncompromised technology in the areas of new construction, and fails to improve on the many functional and operational compromises in the existing building. Option 3, the on-site replacement, includes a new school building, but presents limited ability for future expansion, construction access, challenging perimeter and service access, and displaces play fields to a remote area of the site that is unsafe to access for both Rock Creek School and Waverley ES students. In addition, Option 3 will limit the ability to provide the much needed planned future addition to Waverley ES.

Option 4 provides the most viable educational facility for the Rock Creek School. A replacement school off-site allows the opportunity for a new building that can deliver on all aspects of the educational specifications, without compromising the operations of the existing building or creating an unsafe condition for Rock Creek School students during construction. The new school building will provide all required program areas, and will afford ideal relationships and adjacencies that will enhance the opportunities to deliver on the project's guiding principles. A freestanding new building will not only allow for optimal site circulation for pedestrians, cars and buses, but will also enable direct connections from the school to various outdoor learning and play spaces. This option will allow for co-located programs, while also providing the potential for future additions and community parks and recreation programs.

In order to ensure that Option 4 was a viable scenario, the team reviewed multiple site locations on which to locate a new school. Several sites were determined to be viable and provided the desired relationship with neighboring schools, but additional detailed investigation is required to determine the most appropriate location. Therefore, as part of the feasibility study team's recommendation of Option 4, the team also suggests that the design phase of the project begin with site selection to determine the most appropriate location. As this site selection process moves forward, priority consideration should be given to sites that provide the largest number of educational opportunities, offering access and equity with neighboring schools. Other key considerations should include a central location to minimize bus ride times, availability and access to community services, and proximity to municipal transit lines, which will offer students mobility options and choices for independent travel.

ROCK CREEK SCHOOL FEASIBILITY STUDY	OPTION 1 Existing Building Modernization	OPTION 2 Modernization and Addition	OPTION 3 Replacement On-Site	OPTION 4 Replacement Off-Site
SPACE NEEDS				
TOTAL AREA DEMOLISHED (GSF*)	**0**	**14,289**	**55,214**	**0**
TOTAL AREA MODERNIZED (GSF*)	**55,214**	**40,925**	**0**	**0**
TOTAL AREA NEW CONSTRUCTION (GSF*)	**0**	**34,622**	**81,103**	**81,103**
TOTAL AREA PROVIDED (GSF*)	**55,214**	**75,547**	**81,103**	**81,103**
TIME AND PROGRAM				
CONSTRUCTION TIME	**36 MONTHS**	**36 MONTHS**	**24 MONTHS**	**18 MONTHS**
PERCENT OF NET ROCK CREEK PROGRAM PROVIDED	**59%**	**84%**	**100%**	**100%**
CONSTRUCTION COSTS				
TOTAL ROCK CREEK SCHOOL BUILDING AND SITE COSTS	**$18,566,039**	**$26,753,655**	**$31,183,622**	**$31,156,731**
TOTAL PROJECT BUDGET	**$32,043,658**	**$44,937,031**	**$47,402,677**	**$42,062,028**
MOST SIGNIFIGANT OPPORTUNITIES AND COMPROMISES				
SIGNIFIGANT OPPORTUNITIES				
	• Construction is least expensive due to smallest scope of work		• All required base bid program can be provided	• All required program and optimal adjacencies can be met • Shortest construction time • Good access to opportunities for engagement with other FCPS students • Best opportunity to deliver on project guiding principles
SIGNIFIGANT COMPROMISES				
	• Construction while the school is occupied could be a health threat to medically fragile students • Long construction time and difficult phasing • Many key spaces from ed spec are not provided, most spaces are undersized per the ed specs • Educational technology is compromised	• Construction while the school is occupied could be a health threat to medically fragile students • Long construction time and difficult phasing • Many key spaces are undersized, some are not provided per the ed specs • Educational technology is compromised	• Construction will happen within very close proximity to the existing school • No space will be left for a future Waverley ES expansion/addition • Playgrounds/fields for Rock Creek and Waverley ES will not be adjacent to school. Site circulation will be difficult • There is not enough space for a Future Expansion Alternate • Most expensive option	• Final site selection may present challenges

*GSF = Gross Square Footage

**For a full list of opportunities and compromises, see Section 4

SECTION 2:
INTRODUCTION

Methodology

Overview

Frederick County Public Schools' Mission and Strategic Plan

Rock Creek School's Vision

Rock Creek School Feasibility Study Guiding Principles

1. Access and Equity
2. Communication
3. Student Engagement
4. Movement
5. Sensory Stimulation
6. Independence
7. Responsive
8. Continuous Learning

Feasibility Study Process

An inclusive process of collaboration was critical to create a forum where all voices and perspectives were heard.

METHODOLOGY

Frederick County Public Schools (FCPS) is committed to the collaborative involvement of educational, administrative and community stakeholders in the planning process. Moreover, the direct involvement of parents and staff from the Rock Creek School community is essential to providing advocacy for the specific needs and aspirations of students. Therefore, an inclusive process of collaboration was critical to create a forum where all voices and perspectives were heard.

FCPS hired the firm of Grimm + Parker Architects as a consultant to facilitate the process and develop the required documents involved with both the educational specifications and the feasibility study. Teams were established for each phase of the project to guide the consultant's work and prepare recommendations. In addition, FCPS established a steering committee to oversee the development of these documents and their suitability to serve FCPS' and Rock Creek School's vision and goals for the future. The steering committee met monthly throughout the development of the feasibility study, participated in the feasibility study team meetings and also developed a community engagement plan for each phase of the project.

The steering committee includes:

- Linda Chambers, Supervisor, Compliance PreK-12, Special Education & Psychological Services
- Heather Clabaugh, Construction Accountant
- Michael Doerrer, Director, Communication Services
- Dr. Michael Markoe, Deputy Superintendent
- Dan Martz, Director, Special Education & Psychological Services

The consultant team met with building officials, staff and the community to engage them in the process and discuss current issues with the building.

- Beth Pasierb, Supervisor of Facilities Planning
- Jenifer Waters, Health Services Specialist
- Keith Harris, Ed. D., Executive Director of Accelerated Achievement and Equity
- Ray Barnes, Chief Operating Officer

The feasibility study team was established to execute each phase of the project with the support of the consultants, and gathered in bi-weekly meetings and workshops facilitated by the consultant team. The feasibility study team, representing a cross-section of important perspectives, includes the following:

- Rachel Ablondi, Parent of Rock Creek Student
- Brad Ahalt, Senior Project Manager, Facilities Services
- Andrea Blair, Special Education Instructional Assistant, Rock Creek School
- Amy Boehman-Pollitt, Special Education Teacher/ Augmentative Communication and Technology Team Leader
- Nancy Boyenton, Assistant Principal, Brunswick High School
- Carol Breeze, Supervisor of Speech/Language and Child Find Services
- Steve Buckley, Supervisor of OTs and PTs, Frederick County Health Department
- Sharon Buntman, Chair, Special Education Citizens Advisory Committee (SECAC)
- Bill Derbyshire, Social Worker, Rock Creek School
- Tracey Frank, Special Education Coordinator for Specialized Programs
- Richard Gue, Area 3 Supervisor, Maintenance and Operations
- Tiana Haile, Community Engagement Coordinator
- Kathleen Horner, Special Education Coordinator of Specialized Programs
- Anita Kent, Retired Special Education Instructional Assistant, Rock Creek School
- Meghan Mackay-Little, Assistant Principal, Rock Creek School
- Mary Malone, Principal, Rock Creek School
- Robyn McMynne, Special Education Teacher, Rock Creek School
- Gloria Mikolajczyk, School Facilities Architect Supervisor, MSDE
- Thomas Mulligan, Project Manager III, Construction Management
- Holly Nelson, Facilities Planner
- Therese Pelicano, FCPS Special Transportation Manager
- Sara Scovitch, Physical Therapist, Health Department
- Jennifer Waltrip, Teacher Specialist, Secondary Specialized Programs
- Robert Walsh, Past-Chair, Special Education Citizens Advisory Committee (SECAC)
- Janice Szymanski, Grimm + Parker Architects (consultant team)
- Melissa Wilfong, Grimm + Parker Architects (consultant team)
- Kieran Wilmes, Grimm + Parker Architects (consultant team)

The feasibility study began with a thorough investigation of the existing building and site by architects and engineers from the consultant team, as well as a review of existing documents and previous building evaluations. The building was analyzed for the existing condition of its structure, finishes and various building systems and their potential for reuse, as well as its ability to meet the educational specifications for the proposed school. The consultant team met with building officials, staff and the community to engage them in the process and discuss current issues with the building.

The Vision, Mission and Goals of the system serve as a frame of reference for all design and construction projects.

The consultant team then developed multiple options for the building and site to achieve the scope of the project. As the options were advanced and presented to the feasibility study team throughout the process, the team made comments and suggestions that were incorporated into the schemes as they were developed and refined. Multiple schemes were developed for each feasibility study option, with the final versions included in this report.

Cost estimates are included in Section 5 of this report for each option. The cost estimates are based upon the current Maryland state funding formula adapted to the local conditions and current bidding climate as observed by the consultant team. We have included a cost per square foot for new construction, modernization and site development as well as a category for exceptional costs. The estimate reflects the requirements of constructing a building consistent with the approved educational specifications that can deliver a state-of-the-art education for students with severe special needs, and function for a minimum life span of 40 years in Frederick County.

OVERVIEW

Frederick County Public Schools is a growing educational system in northern Maryland comprised of 65 schools. FCPS serves over 40,000 enrolled students countywide and employs over 5,000 faculty and staff. The vision, mission and goals of the system serve as a frame of reference for all design and construction projects.

Rock Creek is committed to supporting students with special needs while embodying the overarching vision of Frederick County Public Schools.

FREDERICK COUNTY PUBLIC SCHOOLS' MISSION AND STRATEGIC PLAN

It is paramount that the Rock Creek School educational specifications and guiding principles be aligned with Frederick County Public Schools' Mission and Goals. Rock Creek is committed to supporting students with special needs while embodying the overarching vision of Frederick County Public Schools.

Our mission is to:
Reach our students with exceptional teaching and caring support,
Challenge them to achieve their potential, and
Prepare them for success in a global society.

Frederick County depends on the opportunities that our schools guarantee. Public education keeps our community moving forward. It prepares our future community leaders, our business leaders, and our work forces.

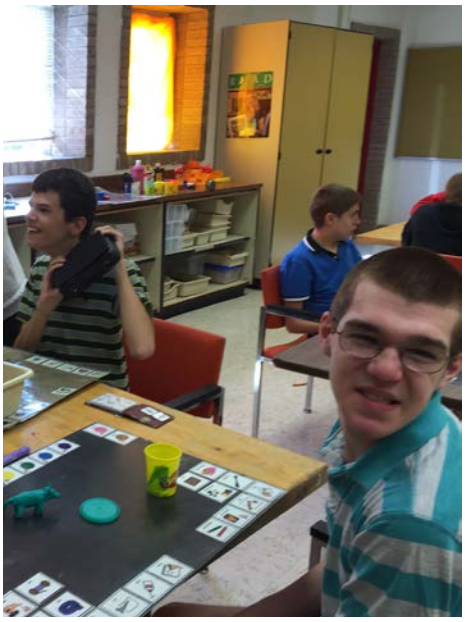
We have worked to develop a strategic plan that will achieve our mission. Our strategic goals are to:

1. Equip each and every student to be an empowered learner and an engaged citizen to achieve a positive impact in the local and global community.
2. Hire, support, and retain staff who champion individual, professional, and student excellence.
3. Pursue and utilize all resources strategically and responsibly to achieve identified outcomes and inspire public confidence.
4. Nurture relationships with families and the entire community, sharing responsibility for student success and demonstrating pride in all aspects of our school system.
5. Promote a culture fostering wellness and civility for students and staff.

ROCK CREEK SCHOOLS' VISION

Rock Creek School provides special education programs for Frederick County students with complex medical conditions and severe intellectual, physical, emotional, hearing, vision and learning disabilities, from ages 3 through 21. The mission of Rock Creek School is to provide a safe, respectful, caring and enjoyable learning environment in which students can develop communication and independent-living skills to achieve their full potential at school, at home and in their communities.

Rock Creek School offers a life-skills curriculum with emphasis on functional academic skills, social skills, training, community-based instruction, personal management, and communication skills. Older students participate in vocational training, supported employment and work study programs. Related services include adapted art and music, adapted physical education including access to a pool, hearing and vision services, assistive technology services, physical and occupational therapy, speech and language therapy, special transportation services and health services.



ROCK CREEK SCHOOL'S VISION

Rock Creek School meets the individual needs of all students by collaborating with families, staff members, service providers, curriculum specialists, and community members. Students are actively focused on rigorous standards implemented through engagement and intervention in order to create a culture of high achievement for all students in an inclusive setting. Expectations for every student are to achieve academic goals, functional living skills, increase mobility and communication skills; this will allow them to be able to apply and generalize environments. Rock Creek School will provide an authentic setting to our students which incorporates current research-based adapted tools, materials, and technology. Students will develop social competencies, increase independence, and become contributing members of a global society.

Rock Creek School is committed to identifying and meeting the diverse and specific needs of each student through educational programming by working with families, students, colleagues, the community, and other professionals in order to promote each student's success and well-being as they prepare for future endeavors. The facilities at Rock Creek School are an essential component required to accomplish this goal. This feasibility study is focused on the development and recommendation of design strategies that best enable this vision to be realized, and enhance and inspire the lives of Rock Creek School students for years to come.

ROCK CREEK SCHOOL FEASIBILITY STUDY GUIDING PRINCIPLES

Consistent with the goals of Frederick County Public Schools, the Rock Creek School is at the center of the community it serves. Rock Creek School endeavors to provide resources to students and families in a positive and supportive environment, enabling each student to achieve his/her potential. In addition to the mission and goals established by both Frederick County Public Schools and Rock Creek School, the steering committee and feasibility study team identified the following eight guiding principles that are intended to provide a clear understanding of the vision and values that are to govern the design of the new facility. These principles will serve as the benchmark that the options presented in the feasibility study, as well as the final building design, shall strive to achieve and be measured against:

1. **ACCESS AND EQUITY**
   Provide access to opportunities for meaningful engagement with age appropriate peers and supporting communities in order to provide an equitable and appropriate educational experience.

2. **COMMUNICATION**
   Create pervasive opportunities for communication which are integrated throughout the school day.

3. **STUDENT ENGAGEMENT**
   Maximize student engagement in daily life via opportunities for self-expression and individual choice.

The Rock Creek School is at the center of the community it serves.

4. **MOVEMENT**
   Support freedom of movement and ease of movement at all capacities and age groups – within personal space and throughout public space.

5. **SENSORY STIMULATION**
   Provide a multi-sensory, flexible environment that offers students individual control of and access to a full spectrum of sensory engagement in learning.

6. **INDEPENDENCE**
   Foster maximum independence in authentic activities of daily living, in vocational opportunities and in education.

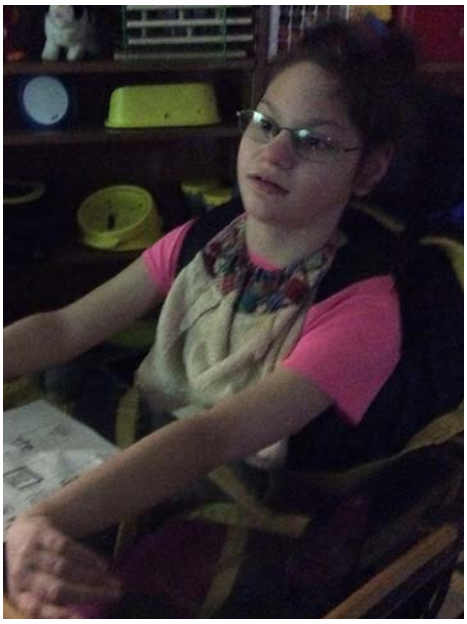
7. **RESPONSIVENESS**
   Accommodate individual learner abilities and needs via a flexible, adaptable learning environment.

8. **CONTINUOUS LEARNING**
   Support continuous improvement in teaching and learning via provisions for professional development, family support and collaboration.

FEASIBILITY STUDY PROCESS

INVESTIGATION

The feasibility study team led a thorough investigation of the physical, functional and aspirational aspects of the Rock Creek School program. Starting with field survey and on-site investigation of the existing 18-acre campus, the team produced a site analysis study to identify the various physical considerations such as environmental



constraints, vehicular circulation patterns, and existing building and site features. This analysis led to the identification of the optimal buildable area of the existing site. Within the existing Rock Creek School, the team conducted an existing conditions assessment to review the primary structure, building envelope, secondary systems, mechanical systems, electrical systems, plumbing systems, energy efficiency, safety, security, technology, and accessibility.

OBSERVATION

To better understand the specific needs of the Rock Creek School, the consultant team spent time at the existing building and at extracurricular events observing the school program at work and the students and staff in action. This observation not only helped identify the physical shortcomings of the existing building, but also highlighted opportunities to improve specific aspects of daily life for the students through design of the renovated and new building options.

COMMUNITY ENGAGEMENT

In an effort to provide an inclusive process, various stakeholders were invited to join. The teams that led both phases of the project included school staff and administration, parents, service providers, FCPS staff, health professionals, and interested citizens. All meetings were open to the public, streamed live on the FCPS web site and FCPS channel 18 as well as recorded and posted on the project website (http://www.fcps.org/facilities/Rock-Creek-School.cfm). A project webpage was created that included information about the project scope, schedule, and community engagement opportunities. The feasibility study team periodically met with the Rock Creek School community to review the process of the feasibility study and the progress made by the team. In addition, the team met with other members of the community and presented findings. Social media was used to engage the community through Facebook, Twitter, email, and text messaging.

SECTION 3:
EXISTING CONDITIONS ASSESSMENT

Introduction

Site Analysis

Architectural Building Conditions

Building Code Analysis

Mechanical and Plumbing Analysis

Electrical Analysis

Technology Analysis

Educational Assessment

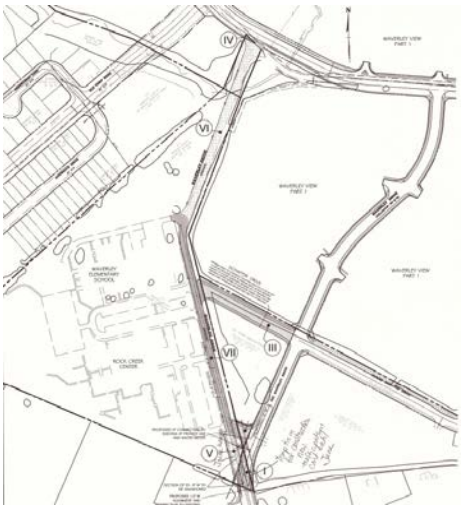
Rock Creek School is situated on an 18.17 acre property comprised of a single parcel and is located at 191 Waverley Drive, Frederick, Maryland.

INTRODUCTION

Rock Creek School opened in 1972 as a special education day school and has continued to serve students with special needs to the present day. The school shares a 18.17 acre campus with Waverley Elementary School at 191 Waverley Drive in Frederick, Maryland. The school provides individualized special education programs for Frederick County students with severe intellectual, physical, emotional, hearing, visual and learning disabilities, from age 3 through the school year they reach 21 by offering a life-skills curriculum with emphasis on functional academic skills, social skills training, community-based instruction, personal management and communication skills.

Rock Creek School is a 55,214 sq. ft., single story building. While there have been occasional systemic improvements to the building, no significant renovations or additions have been made in the past 43 years.

Overall Aerial Map



Plan for new Waverley Drive

SITE ANALYSIS

SITE ASSESSMENT

Rock Creek School, located in Frederick City, is situated on an 18.17 acre property comprised of a single parcel. The school property is located in an IST (Institutional Floating) zoning district. Uses within the IST district are not subject to dimensional standards. Uses are subject to "Design and Improvement Standards" as well as the "Environmental Standards" of the City of Frederick as noted in the Land Management Code. The IST District allows for discretionary review by the City for projects to mitigate impacts on surrounding communities. The property is bounded to the north, south, and west by single family homes and apartments, and to the east by Waverley Drive and vacant parcels currently being developed for residential homes. Waverley Elementary School is also located on the north side of the parcel.

ADJOINING STREETS

Rock Creek School fronts on to Waverley Drive. Waverley Drive is a two-lane private road that has served as a public road. The road has curb, gutter and sidewalks on the school side of the road. The private road ends at the school property line and the sidewalks offer pedestrian access into the school property and surrounding residential and commercial areas. The road pavement is in poor condition; there are a few areas that are exhibiting signs of failure with alligator cracking. The pavement is in need of significant repair.

As of the Spring of 2016, construction is progressing on the construction of a new Waverley Drive. This new street will effectively replace the existing FCPS-owned Waverley Drive that has been utilized by the City for many years. This new street will also change the traffic patterns at the campus by having two connection points to the new Waverley Drive. The old connection to Shookstown Road from FCPS property will also be eliminated. Portions of Waverley Drive (owned by FCPS) will be repaved as part of this project which in effect will alleviate the concerns noted in this narrative related to failing/soon to fail pavement. Lastly, a 10' pedestrian access path may be created on FCPS property to connect to Shookstown Road. This path will be located within the same alignment as the old Waverley Drive road bed.

ON-SITE PEDESTRIAN AND VEHICULAR ACCESS

Access to Rock Creek School is from Waverley Drive with (4) connections to the private street plus one connection for loading at Waverley Elementary. The first access point, heading north on Waverley Drive, serves as the entrance and exit to the student drop-off loop and main parking area for Rock Creek School. The second access point serves as the exit for the bus drop-off loop for both Waverley Elementary and the Rock Creek School. The third access point serves as the entrance for the bus drop-off loop and loading area for both Waverley Elementary and the Rock Creek School, and the fourth serves as the entrance and exit for the northern parking area for Waverley Elementary. Sidewalks run along the private street and provide pedestrian access to the site.

Bus Drop-off Loop

BUS LOOP

The bus loop consists of a one-way, 22-foot drive aisle which occupies the northern portion of the site and pulls east of the building's main entrance. With approximately 270-feet of queuing space, it appears that the size of the bus loop is able to support 6 buses. This configuration allows buses to pass one another. The sidewalk along the bus-drop-off area was compliant with ADA at the time of installation, but the code has changed since its installation, and if any of the sidewalk is impacted by work at the site, the sidewalk should be brought up to current ADA regulations (particularly related to: sidewalk cross slopes, slope of ramps, and drop-off zones). Under any circumstance, it is recommended that a designated passenger loading area be added to conform with current ADA regulations. The bus drop off loop is shared with Waverley Elementary which uses this same loop for parent drop off.

PARENT DROP-OFF LOOP

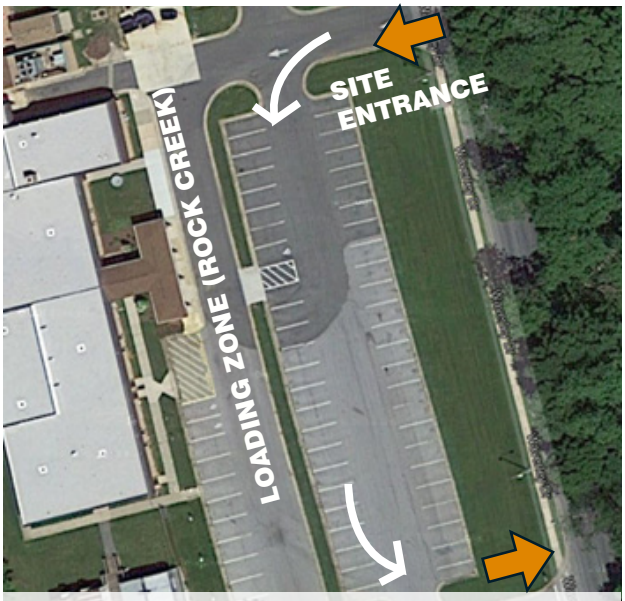
The parent drop-off loop is located along the northern side of the existing building and utilizes the drive aisle of the parking area on site as the drop-off loop. The parent drop-off consists of a 100-foot long curb, and a two way, 22-foot drive aisle. This configuration allows vehicles to pass one another. In terms of ADA accessibility, there is a curb ramp located on the sidewalk along the student drop-off loop. Current ADA compliance is required for inclusion to site improvements, including a passenger loading area and accessible curb ramps.

ON-SITE PARKING

Currently, on-site parking is provided by four (4) parking areas (see aerial image on page 22) that occupy the north, east, south, and northwest portions of the site. The north parking area provides 30 spaces, of which three (3) are designated ADA accessible spaces. These spaces are shared with Waverley Elementary. The east parking area provides 28 spaces, of which there are no accessible spaces. The south parking area provides 60 spaces, of which three (3) are designated ADA accessible spaces. The northwest parking area provides 22 spaces, of which there are no accessible spaces. The northwest parking is located within the hard play surface area. This space is primarily used by visitors to the Judy Center and for special events at both Rock Creek and Waverley Elementary.

The school provides a total of 140 spaces shared by Rock Creek, International Office, Judy Center, Family Literacy program, and Waverley Elementary. While this meets Rock Creek's needs, it is not sufficient to meet the needs of the entire campus.

The current number of accessible spaces appears to meet the minimum number required per current ADA regulations. The dimensions, signage, and accessibility of these spaces, however, do not meet current ADA regulations. The school provides a total of 140 spaces shared by Rock Creek, International Office, Judy Center, Family Literacy program and Waverley Elementary. While this meets Rock Creek School's needs, it is not sufficient to meet the needs of the entire campus. During the design phase, accessible spaces should be added to every parking area per ADA regulations. Over all, the drive aisles and parking areas are in poor condition.



Parking Area/Loading Area

ON-SITE LOADING

The loading area is located along the eastern side of the building to the north of the parent drop-off. This location is visible from the parking areas and the Waverley Drive right-of-way.

SIDEWALKS

The site provides sidewalk along Waverley Drive to the Rock Creek School. The existing on-site sidewalks are in poor shape. Access to the athletic field on park property should be provided to accommodate accessibility required by ADA.

FIRE ACCESS

The existing site layout meets current perimeter access requirements for fire access. In addition, 60% of all new doors for any new additions to the building are required to provide an accessible egress to the public way.

SITE TOPOGRAPHY

The site is relatively flat and drains from a high point at the northwestern portion of the site and generally flows to the south. There appears to be no off-site drainage area that enters the site from the adjacent residences and roadways around the site. The northern portion of the site (north of Waverley Elementary) is steep and would need to be regraded to be deemed usable for play activities.

STORM DRAINAGE AND STORMWATER MANAGEMENT

Any new construction will be required to meet the requirements established by the Stormwater Act of 2007. These guidelines establish a process by which new construction must utilize sustainable or environmental site design (ESD) to the maximum extent possible to satisfy water quality requirements. ESDs include, but are not limited to, micro-bioretention, dry and/or wet swales, rain gardens, etc. Attempts should be made to provide for impervious disconnects and to allow for adequate open space to construct multiple smaller facilities throughout the site to satisfy these requirements. Based on our preliminary review of the soils information, it appears that infiltration of stormwater should be achievable on site and cursory conceptual layouts have been reviewed to provide areas for ESDs to the maximum extent possible.

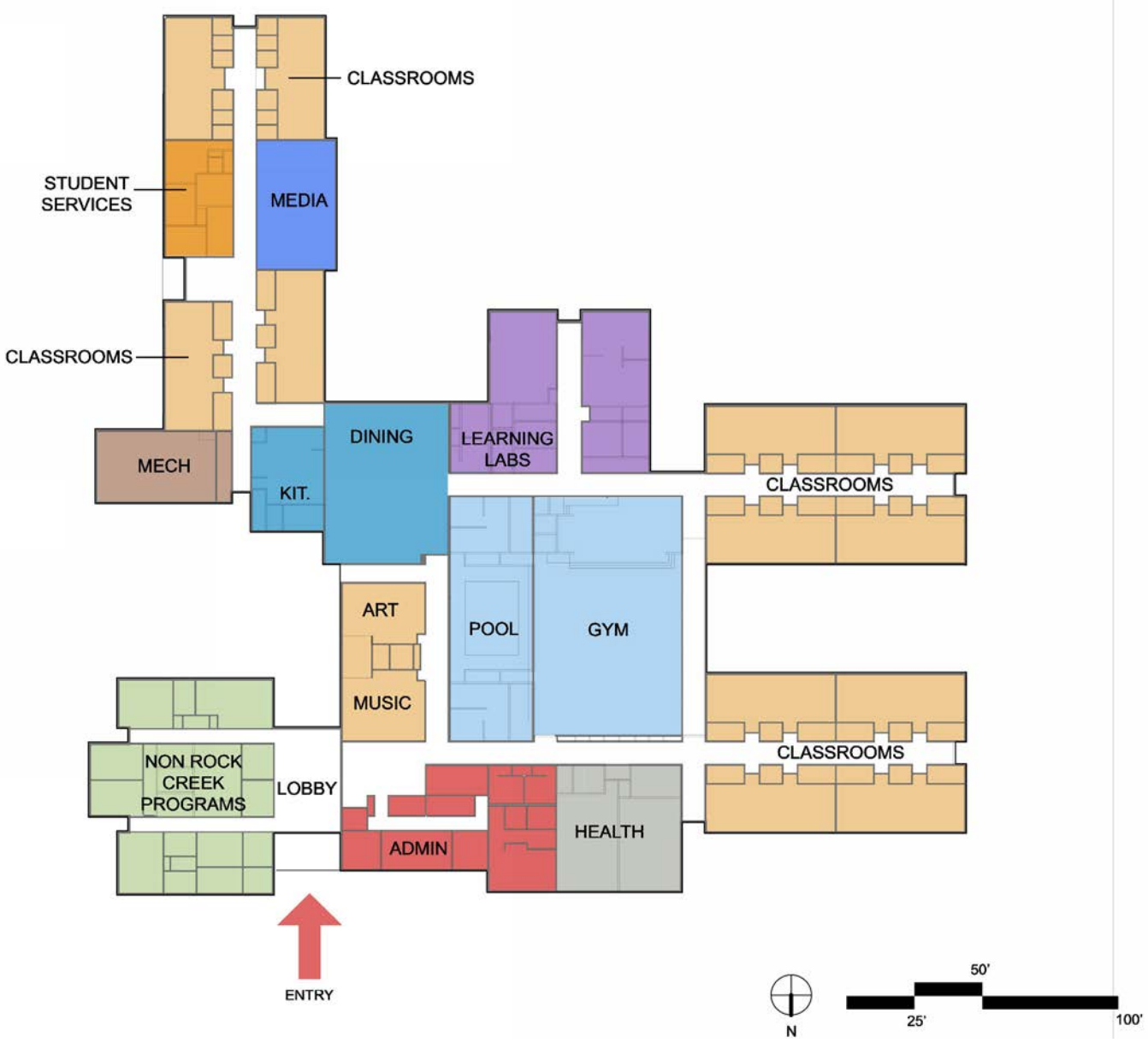
SITE SOILS

Per the soil conservation map, the predominant soils on the site are in the Springwood-Morven-Urban Land Complex. According to the USDA, the depth to bedrock is usually greater than six (6) feet. If soils are imported to the site for construction purposes, they should consist of non-expansive, well-draining material. In terms of hydrology, the on-site soil groups are of hydrologic soil group 'C'. Hydrologic soil group 'C' have a poor infiltration rate; therefore, future site expansions must take these factors into account for the location of best management practices (BMP) facilities.

FLOODPLAINS, STREAM VALLEY BUFFERS AND NON-TIDAL WETLANDS

Initial investigations reveal that the site is located outside of mapped floodplain in Zone "X" as shown per FEMA Flood Insurance Rate Map number 24021C0287D. Furthermore, according to the U.S. Fish and Wildlife Mapping services, there are no nationally recognized wetlands located on or around the site.

Soils Map: SrB Springwood-Morven-Urban Land Complex, 3 to 8 percent slopes



First Floor Plan of existing Rock Creek School

ARCHITECTURAL BUILDING CONDITIONS

The building comprises 55,214 square feet over a single story. The building has three distinct double-loaded classroom wings, extending from the centralized core areas, which include the gym, pool and dining area. A loop corridor circulates around the gym and pool with various support programs such as music and arts connected to this loop. Service, mechanical spaces and receiving are consolidated to the western side of the facility with adjacency to the kitchen. The building is masonry wall bearing with limited interstitial space in areas. The northeast wing of the building is a non-Rock Creek program area and currently houses the county's Family Literacy support program.

EXTERIOR WALLS AND WINDOWS

The building envelope consists typically of exterior brick veneer with concrete masonry unit (CMU) backup. The exterior walls are completed at the roof with a wood framed mansard section with composite shingles. Per the as-built drawings, the exterior walls have 1" insulation board in the wall cavity space, but no insulation is indicated in the mansard section. This envelope construction does not meet current energy standards.

The exterior walls, uninsulated mansard section, and single pane window units contribute to a very energy inefficient building envelope.

Damaged Special Shaped Brick

Damaged Special Shaped Brick

Several areas of brick work require repointing and/or masonry repairs for cracking or damage .

Overall, the exterior masonry is generally in fair to good condition. Several areas of brick work require repointing and/or masonry repairs for cracking or damage. In some locations, previous repointing repair was noted. It is anticipated that more extensive work, including replacement of cracked brick, will be required to prevent possible water infiltration into the building envelope. There are several locations where cracking and 'popping' of mortar has occurred (specifically at lintel bearing conditions and at louver lintels) due to water infiltration and rusting of the masonry lintels. At typical window openings the perimeter jamb and head conditions include a special shaped brick. In many locations, these special shaped units have been damaged or

Main Entrance Canopy

Exterior Conditions

have cracked. Repair of these conditions will require special orders to replicate the detail. Masonry cleaning is warranted for portions of the existing building. Weep holes are provided at the base of wall conditions and as-built drawings indicate flashing in this location as well.

Through-wall condensate drains from interior units need to be sealed to the surrounding veneer. A soffit condition extends around the building perimeter as part of the mansard section. These soffits, as well as the entrance canopy soffits, are finished with prefinished metal ventilated panels which appear to be in good condition. There is some evidence however, of minor sagging in some of the entrance canopy soffit panels. Typically around the perimeter of the building, sealant in control joints and around exterior wall louvers is failing and is in need of replacement.

ENTRANCES / EXTERIOR DOORS / WINDOWS

The main entrance to the building has painted steel doors with ADA compliant door hardware. The sidewalks leading to the entrance are concrete and are in overall good

Exterior Main Entrance

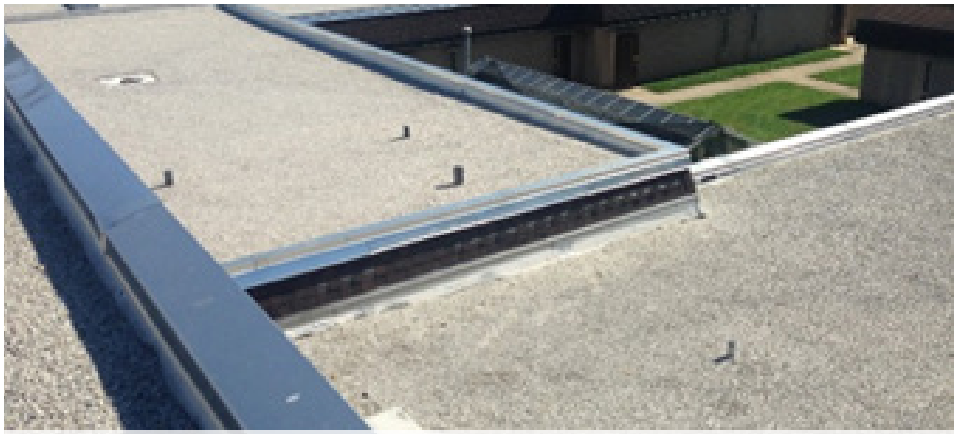
Accessible Entrances

The existing built-up roof system was recently installed in 2011-2012 and is in overall good condition.

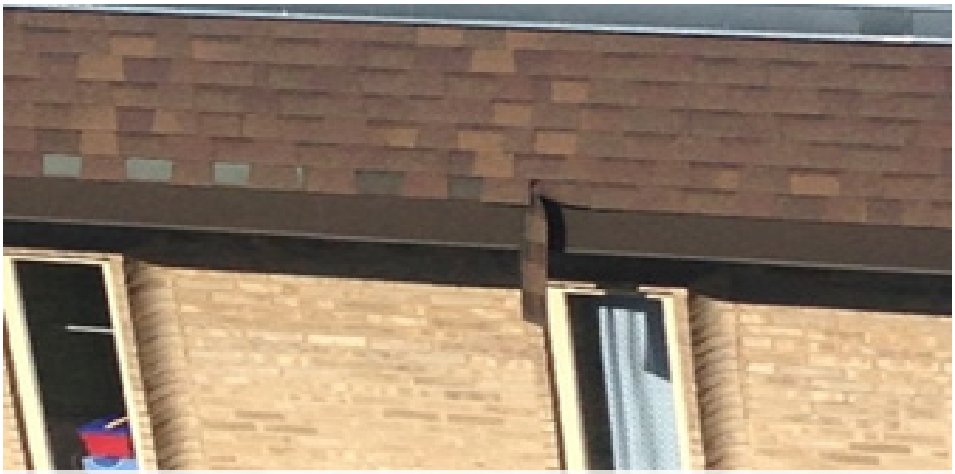
condition. Entrances and sidewalks around the building are typically compliant with ADA accessibility requirements for access, however, not all door hardware is ADA compliant. Perimeter door openings consist of painted hollow metal doors and hollow metal frames. Generally, these frames and the paint are in good condition. However, there is some rust evident at the bottom of the frames in various locations. Exterior windows are painted steel frame with single pane glazing. These units have exceeded their useful life. The windows are inefficient and do not provide adequate insulation value to the exterior envelope. The perimeter sealant around the exterior wall openings has typically deteriorated and is in need of replacement.

ROOF

The existing built-up roof system was recently installed in 2011-2012 and is in overall good condition. The roof system at the existing building is a low-slope, multi-ply built up roofing system with aggregate cover, with base flashing and aluminum coping system at the typical low parapet sections. The roofing systems, including built-up, flashing, coping and fascia, are fairly new and overall appear to be in good condition. A new roof hatch has been installed. However, accessing this roof hatch from the



Building Roof



Mansard Section

Currently the corridors accommodate overflow storage, which is a condition that needs to be addressed.

interior of the building is not ideal. There are areas in which the minimum required base flashing height (typically 8" minimum) has not been provided. This could be due to an increase in roof insulation or tapered insulation, which may have been incorporated when the re-roofing was done. Positive drainage has been provided to roof drains and overflow scuppers at the parapets are provided. No ponding or uneven distribution of ballast was noted. Shingles at the mansard section are in fair to good condition, but there are several areas in which shingles have apparently been blown off or have come loose.

INTERIOR / CIRCULATION - GENERAL

Spaces within the building are generally well maintained and clean. The classroom wings are organized along double loaded corridors. Currently the corridors accommodate storage of the students' adaptive equipment, which is a condition that needs to be addressed. While most of the walls are generally in good condition, the original masonry work in a few locations was only fair – units were not laid evenly and mortar joint striking was poor. The school does not have adequate room signage. In addition, corridors widths do not meet the needs of the student population at Rock Creek and wayfinding can be very difficult.

Existing Corridor

FLOOR FINISHES (GENERAL)

Typical floor finishes in classrooms and corridors include 12"x12" vinyl composition tile (VCT), which is in fair to good overall condition. There are several locations in corridors where cross corridor cracking occurs in the VCT. Replacement of damaged tile units is also required in various locations. Some classroom spaces have had newer installed and this is overall in good condition. The entrance lobby to the facility has a ceramic tile floor pattern which is in good condition. The gymnasium and platform have wood flooring. Toilet rooms, locker rooms and the pool have ceramic tile flooring, which has some cracking in places and is generally in fair to good condition. Utility spaces are typically exposed concrete or painted concrete.

The school does not have adequate room signage.

Main Entrance Lobby

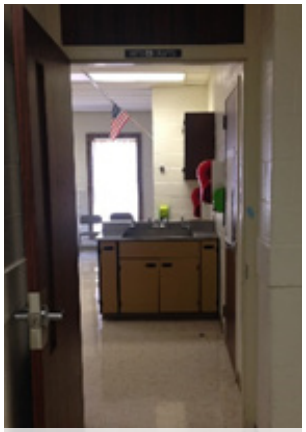
Damaged VCT Floor Tile

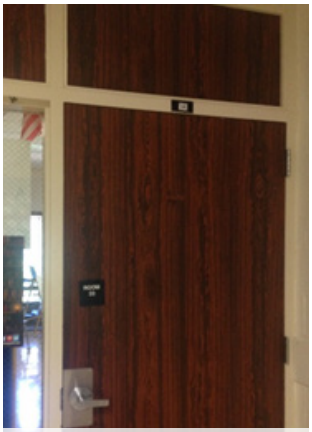
Typical Toilet Room Floor Finish

Interior corridor walls are typically painted concrete masonry units (CMU) floor to ceiling with wood guard rails installed.

INTERIOR DOORS & HARDWARE

Typical interior doors are solid core wood in painted hollow metal frames and appear to be original to the building – overall these doors are in fair to good condition. Door hardware is ADA compliant, however, door lites have wire glass which does not comply with current codes for safety glazing. Many of the door configurations and alcoves do not comply with ADA requirements for access clearances. The entrances to the eastern wing of the building are aluminum storefront and are in good condition.





Many doors do not comply with ADA

INTERIOR WALLS

Interior corridor walls are typically painted CMU floor to ceiling with wood guard rails installed.

Typical classroom walls have painted CMU as well. Overall ,the paint finish throughout these rooms is fair to good. The entrance lobby walls are finished with exposed brick.

CEILINGS

The ceilings are mainly acoustic ceiling tile in commonly occupied spaces, gypsum board in bathrooms, and exposed structure in utility spaces. Lighting fixtures are primarily 2x4 recessed fluorescent fixtures. There are several areas which have stained or damaged ceiling tiles. The pool has 12x12 acoustical tile. This material is not ideal in this high humidity environment.

There were several areas throughout the building where bowing in the ceiling tiles were observed which suggests humidity control issues.

TOILET ROOMS

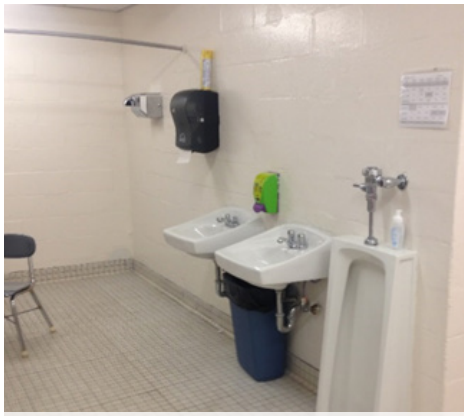
Toilet rooms are typically finished with original ceramic tile on the floors. Some single use toilet rooms do have VCT as the floor finish. Walls are either painted CMU floor to ceiling or have ceramic tile wainscoting and painted CMU above. Ceilings are either gypsum board or suspended acoustical tile. The building's bathrooms have had minor renovations over their lifetime, but all rooms do not fully meet current accessibility standards. Several toilet accessories throughout the school have been replaced

The building's bathrooms have had minor renovations over their lifetime, but all rooms do not fully meet current accessibility standards.

Pool Ceiling

Acoustic Ceiling Tile

Toilet Rooms



The majority of the original casework is wood with plastic laminate counters.

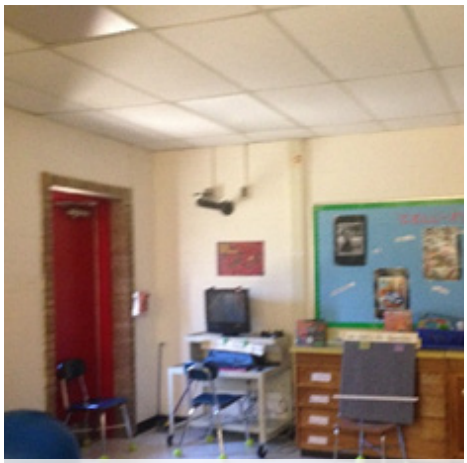
recently and are in very good condition. Toilet rooms are undersized, making it hard for Rock Creek students to use and maneuver within the space. Storage within the toilet rooms is lacking and changing students can be very difficult.

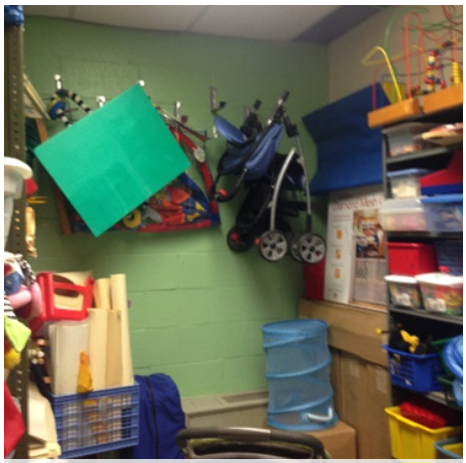
Casework

CASEWORK AND APPURTENANCES

The casework throughout the building is a mix of original equipment and newer replaced units in certain locations. Finishes and materials are not consistent in the facility. The majority of the original casework is wood with plastic laminate counters and is in fair condition. Newer casework and countertops are either wood or plastic laminate and are generally in good condition. ADA compliance for hardware and approach is not provided consistently. In general, classroom storage is not adequate. Condition of the display boards throughout the school is varied – for the most part, these are original to the building. Typically, display boards range from fair to good condition, with chalk and tack boards in most teaching spaces.

Window treatments on the windows are 1" venetian blinds and are original to the building. Overall condition and function is fair.





Typical Classroom and Storage Area

Many classrooms have minimal windows and natural daylighting. Typical classrooms have VCT flooring, vinyl base, painted CMU walls and suspended acoustical tile ceilings.

CLASSROOMS

Many classrooms have minimal windows and natural daylighting. Typical classrooms have VCT flooring, vinyl base, painted CMU walls and suspended acoustical tile ceilings. The finishes in the classrooms are in fair to good condition. Condition of casework varies throughout the classrooms – storage accommodation in these rooms needs to be improved.

MUSIC AND ART

The art and music programs occupy two larger rooms separated by individual storage areas. The room finishes include VCT flooring in fair to good condition. Walls are painted CMU with structural glazed facing tile base. Ceilings are suspended acoustical tile with fluorescent lighting. The built-in equipment and fixtures in the Art room are in poor condition and need upgrading. Storage is provided in miscellaneous casework in each room and also in the adjoining storage areas. Display is inadequate and not in compliance with current educational specifications standards. The music room does not provide adequate acoustic treatment.

Music Room

ADMINISTRATION

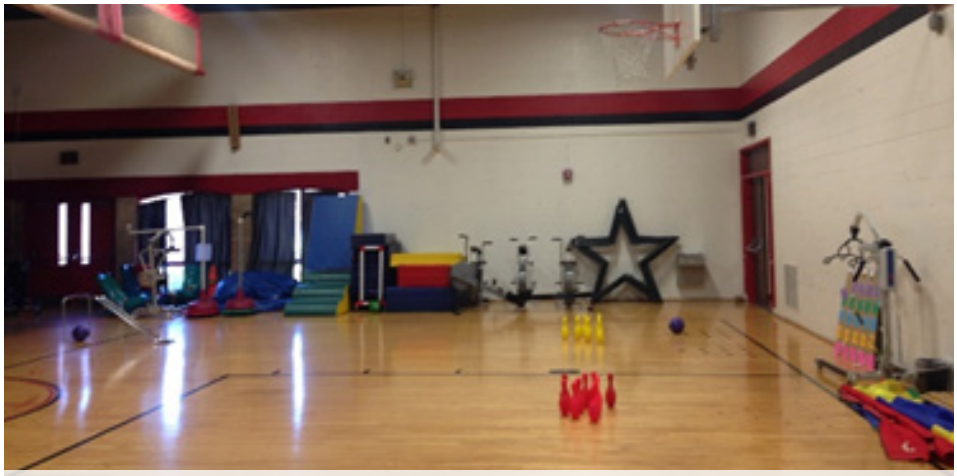
The main office area does not have adequate supervision of student and visitor arrivals to the building. Finishes in the administration area are carpet in offices and VCT elsewhere. Ceilings are suspended acoustical tile. Both flooring and ceiling materials are in fair to good condition. Casework in workrooms is plastic laminate and is in poor condition.

MEDIA CENTER

The media center and computer room share a large double classroom space which is separated by an operable partition. Finishes include VCT floors, painted CMU walls and suspended acoustic tile ceilings which are all in fair to good condition. Storage and equipment for these program areas is not adequate.

The core of the building houses the gymnasium, stage, locker rooms and the pool area.

Gymnasium Stage



Gymnasium

GYMNASIUM (GYM)

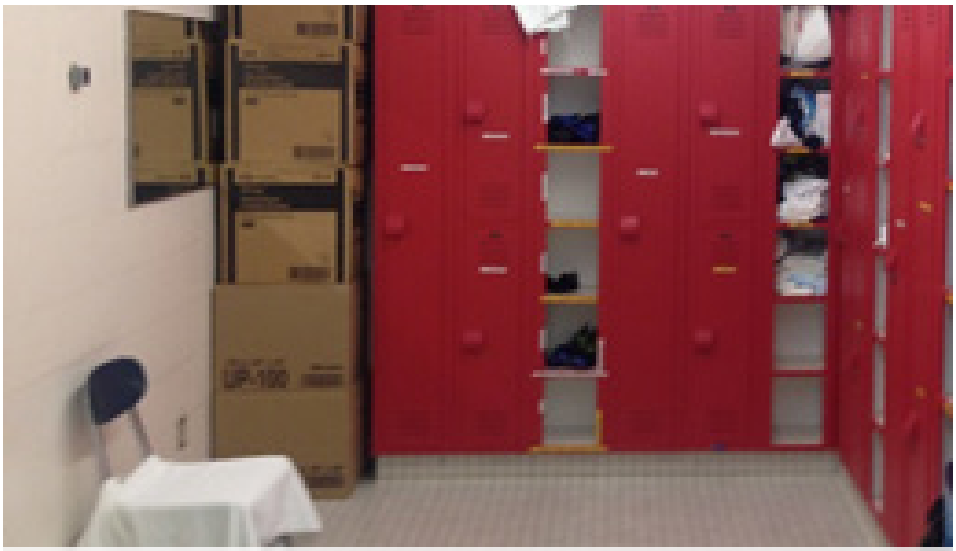
The core of the building houses the gymnasium, stage, locker rooms and the pool area. Overall supervision by staff of these areas is not ideal due to poor sight lines. The gym has the original wood flooring, painted CMU walls and painted exposed structure - overall the finishes are in fair condition. A divider curtain separates the gym into two teaching areas. Acoustic treatment is not provided on the walls in this space. The gym has adequate floor space but does not provide sufficient storage. Access to the stage is via stepped wood risers. Ramps have been provided to the stage from the corridor and from the gym as well. The wood flooring on the platform and the theatrical curtains are in fair to good condition.

POOL

Students whose individual education program (IEP) includes adapted physical education service require pool access to support mobility and other physical needs. These same students may also have occupational and physical therapy goals in their

IEP that require access to the pool. The pool is designed for Rock Creek students with significant disabilities to be able to access it. The pool has ceramic tile decks that are in fair condition. The walls consist of ceramic tile wainscot and painted CMU. The ceiling is 12"x12" acoustical tile and is in fair to good condition. The perimeter deck area around the pool is too narrow and provides inadequate staging space. Accessible storage areas are not provided. Lifts are provided in the pool area, but there is an inadequate amount due to the high usage of pool by Rock Creek students throughout the day. There is also a lack of privacy and space for changing students. Changing stations are located off the pool deck, but no privacy curtains are provided.

Pool



Pool Locker Room

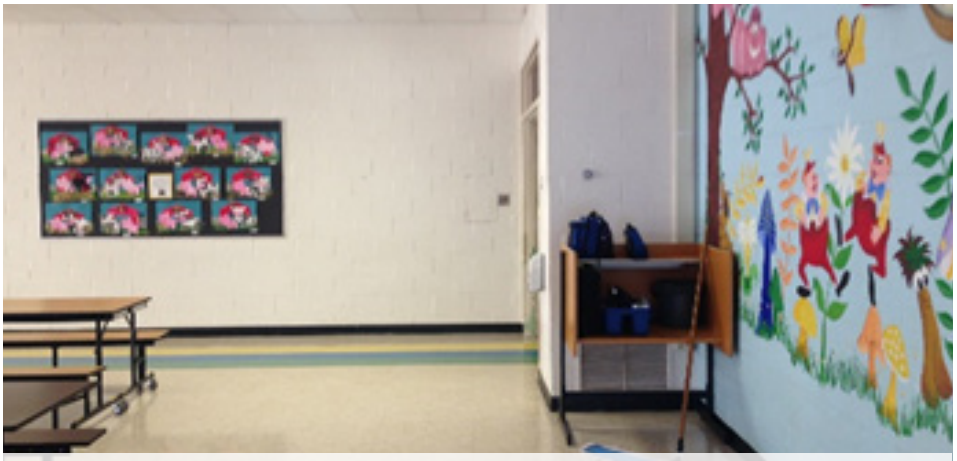
The dining area is currently a throughway to move from one portion of the school to another, which is very disruptive.

LOCKERS

The lockers in the pool locker room have been recently replaced and are in very good condition. Due to the inadequacy of storage provided for the pool, however, the locker rooms and shower areas are also being used for storage purposes.

FOOD SERVICES

The dining hall and kitchen are in fair to good condition. The dining area is currently a throughway to move from one portion of the school to another, which is very disruptive. Finishes in these spaces are well maintained but aged. The finishes in the dining hall are VCT, painted CMU and suspended acoustical tile ceiling. There is no additional acoustic treatment around the perimeter of the space. The kitchen has quarry tile flooring, painted CMU walls and a combination of gypsum board and acoustical ceiling tile. Kitchen finish materials are in generally good condition. Stainless steel counters and equipment are included throughout the work space. The dishwasher does not work and the kitchen equipment does not support the special dietary needs required by many Rock Creek students. The kitchen and support spaces, including storage and walk-in capacity, are undersized for the projected school capacity. Food services lines are not ADA accessible or adapted to Rock Creek student needs.



Dining Room

Serving Line

The design of the existing Rock Creek School does not allow for passive design measures that would promote the safety and security of the building occupants.

HEALTH SUITE

The health suite is in fair to good condition. This space is not in a location original to the building. A double classroom was renovated into what is now being used as the health suite. The finishes in the health suite are VCT, painted CMU and suspended acoustical tile ceiling. The toilet room has ceramic tile floors. The casework has been recently replaced and is in good condition. There is a lack of private space for sick children. The layout is very open.

BUILDING CODE ANALYSIS

The existing building does not have an automatic sprinkler system. Installing a sprinkler system is highly recommended for several reasons, including: 1) Safety of the building occupants, 2) Protection of property, and 3) Dramatic reduction in the cost of other fire protection measures needed throughout the building to comply with current code. Without a sprinkler system, the building exceeds allowable building code area restrictions.

BUILDING ACCESSIBILITY ANALYSIS

Accessibility at the existing Rock Creek School is analyzed through two perspectives: first, compliance with current ADA Standards for accessible design, and second, presence of building features and best practices that provide a more-accessible environment for specific needs of the Rock Creek School students. Over the life of the existing building, specific renovations to the Rock Creek School have addressed many accessibility issues, however, full compliance with current ADA requirements is not provided throughout the facility. Existing non-compliant ADA conditions include:

Non-compliant ADA site conditions:

- No accessible passenger loading area
- Many accessible curb ramps missing
- Several areas of parking lot do not provide handicap-accessible parking
- Dimensions, width and signage at handicap-accessible parking areas are insufficient
- No accessible route to athletic fields
- No accessible sidewalk completely around the perimeter
- No depth perception strips on the playground
- Not every door is accessible from the exterior

Non-compliant ADA building conditions:

- Not all door hardware is ADA compliant
- Interior room signage is not ADA compliant and is not provided at all spaces
- Toilet rooms do not fully meet current ADA requirements. Fixture type and mounting, accessories and clearances require correction in many locations.
- The stage in the gym does not have ADA compliant railings
- Many door approaches throughout the building do not provide ADA compliant clearances. In some instances, walls will need to be moved to achieve required clearances.
- ADA compliant benches are not provided at all locker areas
- Casework does not have ADA compliant hardware and approach clearances
- Handicap accessible security door that can be activated by the secretary
- Many spaces do not have handicapped accessible sinks

Generally, system controls work poorly and building temperature and humidity control need improvement. Mechanical systems are predominately aged and from the original construction.

Existing shortfalls in accessibility features and best practices include:

- Pool does not have a ramp
- Entrance doors do not have automatic push-button opening mechanisms
- There are no automatic soap dispensers or automatic paper towel dispensers
- There are no handicapped accessible hair dryers in locker areas
- There are no automatic hand dryers in locker rooms
- Needs an additional lift to pool area
- Needs additional lifts in classrooms and throughout the school
- No fenced in playground
- Needs a more extensive bus canopy for the unloading and loading of students
- No accessible track or continuous walking area
- No adapted swings on playground

PASSIVE SECURITY

The design of the existing Rock Creek School does not allow for passive design measures that would promote the safety and security of the building occupants. The limitations include:

- Access control: Main lobby configuration makes it difficult to contain and control visitor's movement upon entrance
- Sight lines & Circulation: Complex building circulation does not allow for clear supervision and oversight by administration
- Transparency: Few interior spaces have glass into the corridors allowing for oversight and connectivity of program areas in addition to safety of room occupants
- Target hardening: Layout of building corridors does not allow for creating logical safe zones within the school to help limit intruder access

MECHANICAL AND PLUMBING ANALYSIS

GENERAL

The original building construction was completed in 1972 and consists of approximately 55,214 square feet. The building is a single story structure. The five principle areas include three classroom wings, a wing containing counseling and other special services, and a central core area containing the media center, office/ administration area, gym, and cafeteria/kitchen.

Generally, system controls work poorly, and building temperature and humidity control need improvement. Mechanical systems are from the original construction and are predominately aged with the exceptions below.

- A project was under construction at the time of the building survey to replace aging and leaking piping in the corridors throughout the school. This was slated to be completed before the 2015/2016 school year began. In addition, several horizontal unit ventilators in the corridors and timeout rooms were being replaced, about 7 total.
- The chillers were replaced with one water-cooled chiller in 2002. At that time, the cooling tower and condenser water pump were replaced as well.

The boilers are heavy mass type, very robust, but not the most energy efficient. The boilers have a median life expectancy of 35 years and have exceeded their expected useful life.

- The 10,000 gallon fuel oil tank was replaced in 2006 and included updated monitoring systems. This included new fuel oil piping systems to the existing boilers. It was noted by staff on the walk through that fuel oil has not been used as the primary fuel source in approximately fourteen (14) years.
- The roof system, including roof drains, was replaced in 2011.

EXISTING MECHANICAL AND PLUMBING SYSTEMS

Utilities

Water: The existing building is served by a four (4") public water service.

Fire Protection: There are limited area sprinklers for the stage and an old incinerator in the mechanical room which is no longer installed. The 3" fire service taps off the domestic service in the mechanical room and includes appropriate backflow preventer protection.

Sanitary: The existing building is served by (2)–5" and (1)-6" sanitary lines connected to the public sanitary system on the east side of the building.

Stormwater: Stormwater is via roof drains and internal leaders collecting on the north and east sides of the building via multiple connections primarily 4" in size.

Natural Gas: It appears that sometime after the boilers were replaced in 2006, a new 6" low pressure gas service was brought to the site by Washington Gas and the boiler burners where converted to dual fuel. The new natural gas service also serves the domestic water heaters.

Heating System

Boilers: The existing boilers are forty-five (45) years old. They were originally designed to burn fuel oil. Each of the existing boilers is a HB Smith 450 Mills cast-iron, 13 section, with a 2,295.7 MBH Net IBR water output. At some point after 2006, the boilers were converted to dual fuel and new gas service was brought to the building. The burners have a capacity of 3,300 MBH gas and 23.0 GPH No. 2 fuel oil. The boilers are heavy mass type and very robust, but not energy efficient. The boilers have a median life expectancy of 35 years and have exceeded their expected useful life.

Distribution: The dual temperature system is constant speed/constant volume, which via two (2) pumps does not meet today's energy requirement. The pumps appear to be original and in poor condition. Pumps are rated for 512 GPM, 65 FT HD, 15 HP. A 4-pipe system will provide better performance than the existing 2-pipe system during spring and fall moderate weather conditions.

Cooling System

Chiller: The existing chiller, rated at approximately 133 tons, is thirteen (13) years old and utilizes an environmentally acceptable R134A refrigerant. The chiller has a median life expectancy of twenty-five (25) years. Similarly, the cooling tower and condenser water pump are thirteen (13) years old. The cooling tower has a shorter life expectancy,

Many unit ventilators and fan coil units are reported as inoperable.

but all seem to be in good condition and well maintained. The existing chiller does not meet today's more stringent energy requirement, ASHRAE 90.1-2013 and/or IECC 2015, which the State of Maryland has adopted.

The chiller is reported as over-sized making part load performance and control an issue. This contributes to the inability to control humidity as desired. The chiller capacity of approximately 133 tons equates to about 415 SF/Ton. Typically, a comparable elementary school has been requiring approximately 315 SF/Ton. Therefore, the chiller may be cycling due to control issues, pump configuration, low delta-T syndrome, or the lack of load due to inoperable equipment. A full HVAC systemic upgrade would likely increase loads in the building due to code ventilation rate requirements and replacement of inoperable equipment. New pumping and control strategies would also help improve chiller operation.

Dual Temperature System

Distribution: Two (2) constant speed dual temperature pumps (primary and standby) distribute dual temperature water overhead through a 2-pipe distribution system. The system pumps were manufactured by Taco and are rated for 512 GPM at 65 feet of head. Pumps are close-coupled model CC1501 with 8.7" impellers. Two (2) three-way heating cooling switchover valves are installed in the 2-pipe system to allow/isolate flow to the boiler or chiller. The boilers are located on the suction side of the dual temperature pumps while the chiller is located on the discharge side of the dual temperature pumps. This is an industry standard configuration.

Air Handlers and Terminal Units

Classrooms: Vertical, blow-through unit ventilators (manufactured by Modine) are located at the perimeter wall. Unit ventilators are in poor condition with internal corrosion, particularly in the drain pans. Outside air is introduced in the back of the unit ventilators through a wall-mounted louver and controlled via a pneumatically actuated mixing damper. Ventilation air is relieved from each space (or toilet room) by power roof exhaust fans located over corridor areas and serving multiple rooms. Many unit ventilators and fan coil units are reported as inoperable.

Kitchen: The kitchen is heated and ventilated by a dedicated heating and ventilating rooftop unit.

Cafeteria: Served by a central station air handling unit (with dual temperature coil) located on the mechanical mezzanine adjacent to the stage.

Gym: Served by a central station air handling unit (with dual temperature coil) located on the mechanical mezzanine adjacent to the stage.

Office/Administration Area: Served by a central station air handling unit (with dual temperature coil) located on the mechanical mezzanine adjacent to the stage.

The boilers are original and despite being retrofitted with dual fuel burners, should be replaced with more efficient boilers.

Pool: Served by a central station air handling unit (with dual temperature coil) located on the mechanical mezzanine adjacent to the stage.

Science Rooms: Served by a central station air handling unit (with dual temperature coil) located on the mechanical mezzanine adjacent to the stage.

Counseling Wing (Area A): Served by a central station air handling unit (with dual temperature coil) located in the mechanical room above the space.

Note: Mezzanine ducts have mold growth from duct condensation.

Corridors: Cabinet unit heaters.

Toilet Rooms: Finned tube radiation.

Main Entrance: Fan-coil unit(s).

Miscellaneous: Several spaces are served by horizontal unit ventilators with exposed bottom access or in bulkheads. Other spaces served by fan-coil units.

Automatic Temperature Controls

The building's control system primarily consists of local self-contained Robert Shaw pneumatic controls. A time clock in the boiler room controls occupied/unoccupied modes. Summer-winter modes are manually changed in the boiler room. Many thermostats do not function properly.

Plumbing Systems

Cold Water: A four (4") inch cold water service originates in the boiler room and is distributed primarily overhead.

Hot Water/Hot Water Recirculation: Domestic hot water is generated by two (2), high efficiency A.O. Smith Cyclone gas-fired hot water heaters. Domestic hot water is circulated via a pump and thermostatic control set for 100F.

Fixtures: Existing fixtures include urinals, water closets, lavatories and classroom sinks. Many fixtures are original and are not water-conserving type.

Sanitary Piping: The existing sanitary piping is original to the building construction.

Storm Drainage: Drainage is via roof drains and conductors located within the building and piped to multiple connections on-site. Roof drains were replaced with the roof in 2011. Piping is original to the building. Some roof drain sumps are not insulated.

Fire Protection

There are limited area sprinklers for the stage and an old incinerator in the mechanical room which is no longer installed. Adequacy of the water supply for full sprinkler coverage is unknown. Likely, full sprinkler coverage would require a service upgrade to a 6" service size.

Old pneumatic controls exist throughout and are not working in many areas. Controls need to be replaced with modern direct digital controls and an energy management system.

SYSTEM EQUIPMENT EVALUATION

Heating Plant

Boilers: The boilers are original and, despite being retrofitted with dual fuel burners, should be replaced with more efficient boilers. Due to the fact that fuel oil has not been utilized since the dual fuel burners were installed, a systemic upgrade could make use of high efficiency condensing gas boilers.

Distribution: The dual temperature system is constant speed/constant volume which does not meet today's energy codes. The pumps are past their service life and in need of replacement, as well as some of the piping in the mechanical room. A 4-pipe system will provide better performance than the existing 2-pipe system during spring and fall moderate weather conditions.

Cooling Plant

Chillers: The existing chiller, cooling tower, and condenser water pump are thirteen (13) years old and the chiller utilizes an environmentally acceptable R134A refrigerant. The chiller has a median life expectancy of twenty-five (25) years. Similarly the cooling tower and condenser water pumps are thirteen (13) years old. The cooling tower has a shorter life expectancy, but all seem to be in good condition and well maintained. The existing chiller does not meet today's more stringent energy requirement, ASHRAE 90.1-2013, which the State of Maryland has adopted.

Air Distribution

The air handling equipment is forty-three (43) years old and beyond its useful life expectancy. Despite being well maintained, these units have signs of corrosion and are in need of replacement. Additionally these units do not control humidity and, in fact, create high humidity conditions during the cooling mode as currently designed. Temperature and humidity issues were reported to be problematic in the building.

Terminal Units

All the existing terminal type devices are original and are at the end of their useful life. Therefore, it is recommended that all unit ventilators, convectors, fan-coils, exhaust fans, and unit heaters be replaced in their entirety.

ATC Controls

Old pneumatic controls exist throughout and are not working in many areas. Controls need to be replaced with modern direct digital controls and an energy management system.

Plumbing Systems

Distribution: Despite the age of the building, observed domestic water piping was copper and appeared to be in good condition. Piping in the corridors is currently being replaced.

The existing sanitary lines are original and with condition unknown should be evaluated for reuse.

In the event of a utility outage, there is currently no backup power available for any of the loads that are necessary for the care and well-being of the special needs students at this facility.

Fixtures

The existing fixtures are original, do not meet current standards, and are recommended to be replaced.

Cold Water

A new public 6" minimum incoming water service will be required for combined fire protection and domestic water usage if the building is to be fully sprinklered. Due to the physical needs of students in the facility, and the need to allow extra time for emergency egress in case of a fire, a fully-sprinkled building is recommended.

Natural Gas

The gas service is fairly new and supports heating and domestic hot water uses.

ELECTRICAL ANALYSIS

ELECTRICAL DISTRIBUTION

The main service consists of a 1000A enclosed circuit breaker feeding a 1200A, 480/277V, 3 phase, 4 wire, main lug only distribution panel located in the main mechanical room. It is manufactured by Square D and is original to the building, dating to 1971. A utility pad-mounted transformer is located outside of the mechanical room in a common enclosure with the cooling tower. The meter is located at the transformer.

The chiller is fed directly from the main distribution panel. A 225A, 480/277V, 3 phase, 4 wire motor control center and a 208/120V panel "BR", fed from a local dry-type transformer, serves the HVAC equipment in the main mechanical room. Each is fed from the main distribution panel, as are the portable classrooms. A recessed mounted panel in the kitchen is fed from panel BR.

The main distribution panel serves panels located strategically in the building. The building has been segmented into three areas, each of which is served by an "L" 480/277V panel for lighting and a 208/120V "P" receptacle panel. Many of the original panels, all manufactured by Square D, are recessed mounted in corridors or in closets directly off of the corridors.

The receptacle panel is fed from the lighting panel via a local dry-type transformer. The transformers are usually mounted suspended in adjacent closets or spaces. One of the transformers is mounted at the rear of the stage. The original dry type transformers are manufactured by Westinghouse.

Three additional panels, manufactured by Cutler-Hammer, were added to support technology improvements in 2001. These panels are fed from a 75kVA K-13 rated transformer located in the boiler room. The panels are equipped with 200% rated neutral buses as well as isolated ground buses. Panel RCA, fed directly from the transformer secondary, is surface mounted just outside the boiler room in the corridor. It is equipped with a surge protection device. The other two panels, each located in telecom closets, are sub-fed from this panel. Receptacles fed from these panels are located adjacent to data drops and are isolated ground type.

Dual head emergency battery lighting units have been installed for egress lighting in corridors. The Cafeteria did not have emergency egress lighting.

The majority of the original branch circuit conduits are routed below the slab. The number of receptacles in the school was noted as inadequate by staff. The building was not originally designed to accommodate the technology that is typically used today. The students at this facility, in particular, are heavily dependent upon technology as a means to communicate. Many students require power for supplemental equipment. A Square D load center was installed in the mechanical room adjacent to the pool for a pool lift as well as to supply additional branch circuits.

Receptacles are not tamper-resistant type required by current codes.

EMERGENCY DISTRIBUTION

Emergency electrical service is derived from a tap ahead of the service disconnect. Dedicated emergency disconnects serve exit signs and the fire alarm system (via a dry type transformer.) This was a code-recognized emergency source when the building was constructed. The fire alarm system and dual head emergency lighting units are equipped with batteries as the code-required standby power source. In the event of a utility outage, there is currently no backup power available for any of the loads that are necessary for the care and well-being of the special needs students at this facility. These would include receptacles for equipment such as food pumps, refrigerators, changing tables, nebulizers and other medical equipment, as well as supplemental lighting and climate control.

INTERIOR LIGHTING

Lighting in classrooms, offices, and corridors consists primarily of recessed mounted troffers with acrylic lenses and T8 lamps. The age and style – recessed and flush lenses - of the fixtures vary, although most are in at least fair condition. Four lamp 2'x4' are typical for classrooms and the cafeteria. Two lamp U-tube 2'x2' fixtures are utilized in corridors and offices. Surface mounted wraparound type fixtures are common in storage spaces. Strip fixtures are utilized in the mechanical penthouses. (The kitchen lighting had been removed at the time of the site visit in order to accommodate piping installation.)

Fiberglass sealed and gasketed 3-lamp fixtures appear to have been recently installed in the pool area around the perimeter of the pool above the deck. The gymnasium also has new surface mounted 6-lamp fluorescent high bay fixtures with integral wireguard, utilizing T5HO lamps. Fresnel spotlights and red/green/blue border lighting on the stage appear to be in very good condition or have been replaced. The dimmers by Theatre Techniques Incorporated are located behind stage adjacent to the sound system cabinet. The lighting controls appear to be original.

Lighting control throughout the building is manual only. Classroom lighting is switched every other fixture in a checkerboard pattern. FCPS staff indicated that the fluorescent lighting was not a problem for the students, although some spaces have makeshift covers over the fixtures to reduce the light output.

Dual head emergency battery lighting units have been installed for egress lighting in corridors. The cafeteria did not have emergency egress lighting. LED exit signs with integral battery backup are located throughout the school.

EXTERIOR LIGHTING

Building mounted lighting is limited to surface mounted wet location wrap around fluorescent fixtures under the canopy and high-intensity discharge (HID) wall packs at the loading dock. Fixtures were noted at the exterior doors off the corridors.

Flood lights are utilized for the parking areas, mounted to the cobra head fixture poles serving the roadway. Neither the building mounted wall packs nor flood lights are cut-off type fixtures. There is no exterior egress lighting at building exits.

The flood lights, fed from the main distribution panel, are controlled via time clock. The wall packs have integral photocells.

FIRE ALARM SYSTEM

The fire alarm system was installed in 2002. It consists of manual pull stations with lexan covers, wall mounted voice evacuation speakers and strobe lights, with smoke detectors for activation of corridor door hold open devices. Additional smoke detectors are provided in mechanical penthouses, larger storage and otherwise unoccupied spaces. Heat detectors are utilized in the main mechanical room in lieu of smoke detectors to prevent nuisance alarms. Sprinkler system flow and tamper switches are monitored, as is the kitchen hood fire suppression system. MC type fire alarm wiring is utilized above accessible ceilings.

An Edwards EST2 control panel is located in IDF Closet 2 along with a 411UDAC fire alarm communicator. The original Simplex system panel, located in the main mechanical room, appears to be abandoned. A graphic annunciator is located in the main lobby, with a remote alphanumeric display type annunciator in the reception area off the main lobby.

LIGHTNING PROTECTION SYSTEM

Air terminals are located at the top of the boiler stack with down conductors. There is no other lightning protection system associated with the building.

TECHNOLOGY ANALYSIS

GENERAL

The IT/AV/Security Systems Site Assessment was conducted by Educational Systems Planning at the Rock Creek School building on July 16, 2015 and September 23, 2015 as part of the feasibility study. The voice, video and data communications infrastructure is of the vintage of the Technology in Maryland Schools (TIMS) installed in 1990's. The communications infrastructure is designed in the traditional star configuration with a central Telecommunication Equipment Room (TER) and three (3) Telecommunication Rooms (TR's). Corridor pathways for communications cabling in the one story building

Most classrooms have 2 data drops at the teaching station with multiple drops in the rear of the classroom for student workstations as per the old TIMS standards.

is bundled above the ceiling tile. The overall installation of rack, cabinets, cabling and pathways in all telecommunications rooms appears to be well conditioned and maintained.

EXISTING CONDITIONS

Telecom Spaces

The TER is located in a side room off the corridor near the dining area. The 8' x 15' room is air conditioned and consists of two floor data racks, a wall board for voice cable terminations, and the Telecore 125 phone floor cabinet.

One floor rack contains:

- 24-port fiber distribution center
- 5-48 port patch panel
- 3-24 port patch panels
- 1 Nortel networking Baystack with Management
- 8-24 port Nortel 10/100 switches
- Floor UPS

Telecommunications Equipment Room (TER)

The second floor rack contains:

- Fiber patch panel to Rack 1
- Fastron WS switch for wireless
- 48-port patch panel
- 2 Aruba 3200 switches
- Foundry Fastron Edge switch
- Cajan P33R
- Lucent Cajan M770

Telecommunications Room #1

TR#1 is located in a storage room (5' x 9') near administration offices and contains a wall mounted board with fire protection equipment, a wall mounted board with rack and coax entrance, Telecor 125 phone switch, and one floor rack. The TR is warm and shared with storage items. The floor rack contains:

- 1-24 port fiber patch panel
- 4-48 port patch panels
- 1 Nortel networking Baystack with Management
- 8-24 port Nortel 10/100 switches
- Avaya VoIP
- Brocade FWS 624G-DOE for wireless
- Tru Vision DVR 50
- Altronix
- Cyberpower 1500 AVR

TR#2 is located in a wall cabinet in the teacher's lounge.

DATA NETWORK

The existing data network was installed under the TIMS program of 1998/99, and consists of category 5E UTP cabling in the horizontal and fiber optic backbone cabling. Switches provide 10/100 to the desktop and gigabit ethernet in the backbone. Most classrooms have 2 data drops at the teaching station with multiple drops in the rear of the classroom for student workstations as per the old TIMS standards. Wall-to-wall wifi was installed in the entire building around 2011.

SECURITY SYSTEM

For the security system, the school uses motion sensors, door access swipe cards, and video surveillance security cameras. Security cameras are limited to eight exterior and no interior cameras. Access control is limited to only a few exterior doors. Additional exterior and interior cameras and additional doors with access control are required in the new design.

INTERCOM SYSTEM

The intercom system is operated from a Telecor XL Communication Center located in TR#1 in the administrative suite. Communications to classrooms are through telephones.

CLASSROOM AUDIO-VISUAL

All classrooms have wall mounted ActivBoard electronic whiteboards with ceiling mounted projectors.

VIDEO DISTRIBUTION SYSTEM

An analog coaxial "tap and drop" distribution system is currently in place in all sections of the building. Amps have been located in telecom spaces. The head-end equipment is located in a floor mounted cabinet in the TER. The video demarc is located on an exterior wall adjacent to the office.

TELEPHONE SYSTEM

The telephone network enters the building in the mechanical room. School personnel report that the system is operational. Fax lines and an emergency plain old telephone service (POTS) line have been extended to the office area. The cable plant consists of category 5E horizontal cabling and multi-pair UTP for backbone supported by an Avaya system.

EDUCATIONAL ASSESSMENT

The spreadsheet on the following page compares the requirements of the educational specifications against what is provided in the existing school. Areas with yellow numbers are spaces that exist in the current school, but are not within 15% of the required size. Areas in red are spaces that do not exist in the current school, but are required per the educational specifications. There are some existing spaces not reflected in the spreadsheet. These are spaces provided in the current school that are not required in the new educational specifications, such as the non-Rock Creek programs.

The analysis performed by the consultant team and the existing knowledge provided by members of the feasibility study team, FCPS staff, administration, and community unanimously concluded that the existing school does not meet the programmatic space needs outlined in the educational specifications for optimal operations of the Rock Creek School program. Furthermore, the existing building falls short on delivering on the guiding principles established by the feasibility study team.

The educational specifications require 81,103 square feet to meet the Rock Creek program requirements. The existing school building is only 55,214 square feet. In addition to the majority of required spaces either missing entirely or significantly undersized, many of these spaces do not meet the needs of the educational specifications in terms of adjacencies, location, circulation, and storage.

EDUCATIONAL ASSESSMENT (EXISTING SPACES COMPARED TO THE EDUCATIONAL SPECIFICATIONS)

ROOM/SPACE	NUMBER EACH (NEW)	SF EACH (NEW)	SUBTOTAL (NEW)	TALLY (NEW)	NUMBER EACH (EXISTING)	SF EACH (EXISTING)	SUBTOTAL (EXISTING)	TALLY (EXISTING)
ADMINISTRATION				1,460				1,624
GENERAL-RECEPTION	1	400	400		1	550	550	
LARGE CONFERENCE	1	350	350		2	158	316	
WORKROOM / MAILROOM	1	150	150		1	329	329	
SECRETARY AND SECURE STORAGE	1	150	150		1	85	85	
PRINCIPAL	1	180	180		1	176	176	
ADMIN. TOILET	1	60	60		0	0	0	
COAT CLOSET	1	20	20		1	13	13	
ASSISTANT PRINCIPAL	1	150	150		1	155	155	
PROFESSIONAL SUPPORT				1,340				645
PROFESSIONAL LEARNING ROOM/PLANNING	1	800	800		0	0	0	
TEACHER SITTING AREA	1	100	100		0	0	0	
TEACHER LOUNGE PANTRY/STORAGE	1	20	20		1	11	11	
TEACHER LOUNGE	1	300	300		1	498	498	
TEACHER LOUNGE TOILET	2	60	120		**2**	**68**	136	
HEALTH SUITE				900				1,049
WAITING AREA AND REST AREAS	1	500	500		1	815	815	
NURSE'S OFFICE	1	200	200		1	91	91	
STORAGE	1	30	30		1	91	91	
STUDENT TOILET - LARGE	1	150	150		1	52	52	
COAT CLOSET	1	20	20		0	0	0	
SUPPORT SERVICES				3600				733
SOCIAL WORKER / GUIDANCE OFFICE	1	150	150		1	169	169	
STORAGE	1	60	60		1	20	20	
RESOURCE ROOM	1	600	600		0	0	0	
RESOURCE ROOM OFFICE	1	100	100		0	0	0	
MULTI-PURPOSE MEETING ROOM	1	250	250		0	0	0	
MOVEMENT ROOM (SOFT PLAY AREA)	1	800	800		0	0	0	
SENSORY ROOM	1	300	300		1	200	200	
HEARING & VISION SPECIALIST	1	180	180		1	168	168	
OT/PT OFFICE & STORAGE	1	800	800		1	150	150	
STAFF TOILET	2	60	120		1	26	26	
PERSONAL CARE SUITE	2	120	240		0	0	0	
STUDENT SERVICES				80				0
SCHOOL STORE & STORAGE	1	80	80		0	0	0	
CLUSTER A				8,355				3,718
CLASSROOM & TOILET	5	1200	6000		4	815	3260	
CLASSROOM STORAGE	5	150	750		4	68	272	
SHARED LEARNING AREA	1	1200	1200		0	0	0	
CLUSTER STORAGE	1	200	200		1	21	21	
SECLUSION ROOM	1	25	25		1	35	35	
SPEECH LANGUAGE PATHOLOGIST OFFICE/STOR.	1	180	180		1	130	130	
CLUSTER B				8,355				3,588
CLASSROOM & TOILET	5	1200	6000		4	815	3260	
CLASSROOM STORAGE	5	150	750		4	68	272	
SHARED LEARNING AREA	1	1200	1200		0	0	0	
CLUSTER STORAGE	1	200	200		1	21	21	
SECLUSION ROOM	1	25	25		1	35	35	
SPEECH LANGUAGE PATHOLOGIST OFFICE/STORAGE	1	180	180		0	0	0	
CLUSTER C				9,066				4,423
CLASSROOM & TOILET	5	1200	6000		4	815	3260	
CLASSROOM STORAGE	5	150	750		4	68	272	
SHARED LEARNING AREA	1	1200	1200		0	0	0	
CLUSTER STORAGE	1	200	200		1	21	21	
SECLUSION ROOM	1	36	36		1	35	35	
INSTRUCTIONAL KITCHEN/LIVING AREA	1	400	400		1	331	331	
DAILY LIVING SUITE	1	200	200		1	494	494	

ROOM/SPACE	NUMBER EACH (NEW)	SF EACH (NEW)	SUBTOTAL (NEW)	TALLY (NEW)	NUMBER EACH (EXISTING)	SF EACH (EXISTING)	SUBTOTAL (EXISTING)	TALLY (EXISTING)
DAILY LIVING SUITE STORAGE	1	100	100		1	10	10	
SPEECH LANGUAGE PATHOLOGIST OFFICE/STORAGE	1	180	180		0	0	0	
LEARNING LABS				2,600				1,306
VOCATIONAL TRAINING LAB & TOILET	1	1200	1200		1	765	765	
TECHNOLOGY LAB & TOILET	1	1100	1100		1	485	485	
LEARNING LAB STORAGE	2	150	300		1	56	56	
FINE ARTS				2,400				1,308
MAKER LAB & TOILET	1	1000	1000		1	650	650	
MAKER LAB STORAGE / KILN	1	200	200		1	65	65	
MUSIC AND MOVEMENT ROOM & TOILET	1	1000	1000		1	546	546	
MUSIC STORAGE	1	200	200		1	47	47	
MEDIA AND INFORMATION				1,675				735
OFFICE / WORKROOM	1	175	175		0	0	0	
OPEN RESOURCE AREA	1	1200	1200		1	735	735	
STORAGE	1	150	150		0	0	0	
TV STATION / LAB	1	150	150		0	0	0	
GYMNASIUM				5,965				3,826
GYMNASIUM	1	4800	4800		1	3579	3579	
GYMNASIUM INDOOR STORAGE	1	500	500		1	200	200	
GYMNASIUM OUTDOOR STORAGE	1	250	250		0	0	0	
TOILET ROOM	2	100	200		0	0	0	
PE OFFICE	1	125	125		1	47	47	
PE OFFICE LOCKERS/TOILET	1	90	90		0	0	0	
AQUATIC THERAPY				3,750				2,019
POOL	1	900	900		1	500	500	
POOL DECK & CHANGING	1	1500	1500		1	493	493	
LOCKER ROOMS	2	500	1000		2	441	882	
STORAGE & LAUNDRY	1	350	350		1	144	144	
SOCIAL AREA				4,900				3,094
DINING	1	3000	3000		1	2,262	2262	
COMMONS	1	800	800		0	0	0	
STAGE	1	800	800		1	832	832	
CHAIR STORAGE	1	100	100		0	0	0	
TABLE STORAGE	1	200	200		0	0	0	
NUTRITION SERVICES				1,510				891
KITCHEN/SERVING	1	900	900		1	475	475	
DISHWASHING AREA	1	150	150		1	100	100	
DRY FOOD STORAGE	1	150	150		1	60	60	
NON-FOOD STORAGE	1	50	50		0	0	0	
OFFICE	1	80	80		1	122	122	
LOCKER / TOILET	1	120	120		2	48	96	
RECEIVING	1	60	60		1	38	38	
				1,975				765
OPERATIONS STORAGE	1	300	300		1	94	94	
OPERATIONS OFFICE	1	150	150		0	0	0	
LOCKER ROOM/SHOWER/TOILET (WOMEN)	1	90	90		1	136	136	
LOCKER ROOM/SHOWER/TOILET (MEN)	1	90	90		1	136	136	
CUSTODIAL CLOSETS	6	50	300		3	20	60	
OPERATIONS OUTDOOR STORAGE	1	350	350		1	239	239	
MAINTENANCE OFFICE	1	120	120		0	0	0	
MAINTENANCE STORAGE	1	400	400		0	0	0	
MAIN DISTRIBUTION FRAME ROOM	1	175	175		1	100	100	
ADDITIONAL SPACE IN EXISTING BUILDING								4,900
Rock Creek Net Program Total:								
Total NET Rock Creek Program			**New: 57,931**				Existing:	**34,624**
Percentage of Program provided in the existing building								**59.8%**


SNOW

SECTION 4:
CONCEPT PLANS

The feasibility study team considered a spectrum of four options for the development of a modern Rock Creek School.

INTRODUCTION

The feasibility study team considered a spectrum of four options for the development of a new Rock Creek School. The options include modernization of the existing building; modernization of the existing building with additions; a new replacement school on-site; and a new replacement school off-site. Each option was presented to the feasibility study team for review and comment, then refined and re-evaluated until the final version of each option was reached upon consensus from the group for inclusion in this document. Each option is presented in this section with descriptive narratives, graphic diagrams and lists of opportunities and challenges representative of each that ultimately factor into the final recommendation.

All on-site options consider the existing and projected condition of the current Rock Creek School, and its ability to meet the requirements of the educational specifications. Off-site options consider new buildings that can take advantage of opportunities for access and equity. These considered sites typically share available property with existing FCPS schools near the heart of Frederick County. The goal of each option is to propose renovations, additions and new building strategies that can deliver not only on the spatial components of the educational specifications, but also the potential to deliver on the guiding principles which were developed in the programming process, as well as on the overall vision for the project.

OPTION 1: MODERNIZATION

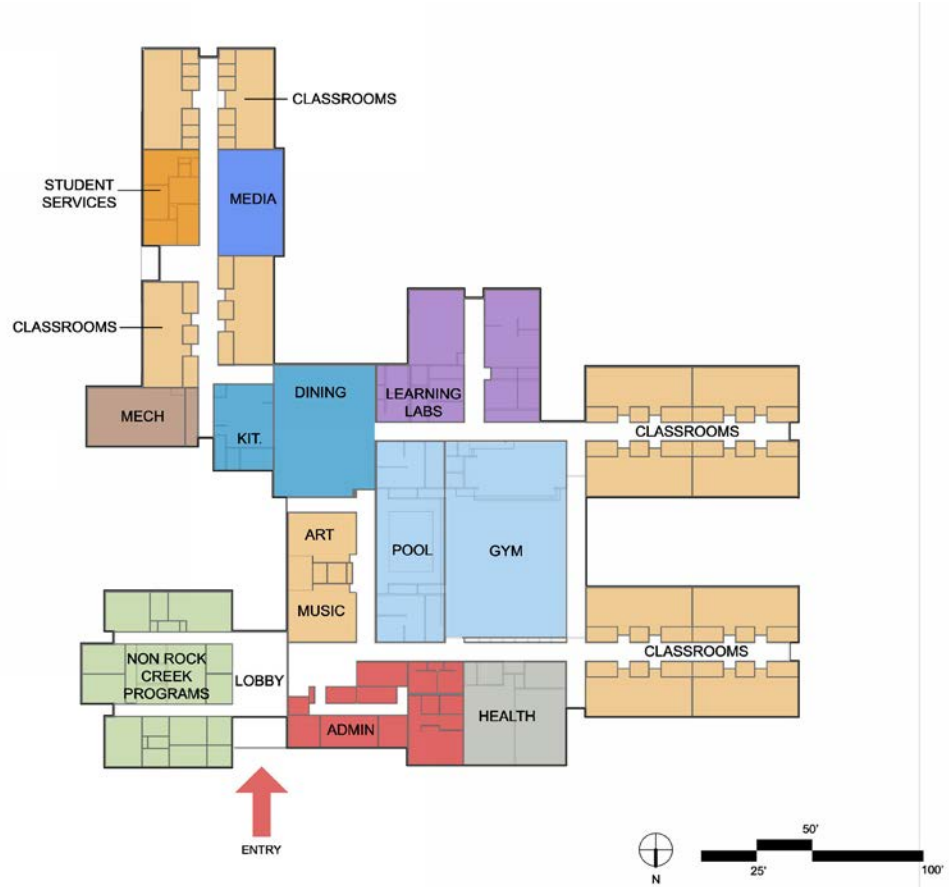
Option 1 proposes to modernize and improve the existing Rock Creek School without enlarging the current 55,214 sf footprint of the building. Modernization strategies will focus on interior finishes, building systems, and technology. The cost estimate assumed replacing all flooring, ceilings, accommodating new systems work, etc.

Option 1 proposes to modernize and improve the existing Rock Creek School without enlarging the current 55,214 sf footprint of the building.

These improvements will not include relocation of existing interior walls; therefore current room sizes, locations and adjacencies will not be improved. While interior improvements made to the facility under this option are minimal, they will enhance the appearance of the existing facility and provide a refreshed, bright and clean learning environment.

The modernization approach will also include an overhaul of the building's major operating systems. These systemic improvements will include replacements of the existing mechanical, electrical, plumbing, fire safety, telecommunications, IT and security systems. The existing pool will also be modernized to provide updated finishes and equipment.

Since the existing building footprint will not be expanded in this option, site features may remain in their current locations. Existing car and bus drives, parking areas and outdoor recreation areas serving Rock Creek School and Waverley ES will remain in their existing configuration, with updates made to address accessibility issues on the site. Because approximately 4,900 sf is currently used for non-Rock Creek purposes, that space can be used to help make up for deficits in the required program should this option be pursued.



First Floor Plan: Option 1

This option will fall short of delivering on the guiding principles of the project and overall educational specifications because it does not improve the size and relationships of program spaces and does not address many of the fundamental challenges of the existing building.

OPPORTUNITIES

- Least cost for project scope
- Least impact to existing school site
- Interior finishes will be upgraded
- Building systems will be upgraded
- Some accessibility issues will be addressed to the extent possible

COMPROMISES

- Phased on-site construction activities during school operation may pose major challenges to the health and well-being of medically fragile students
- This option will fall short of delivering on the guiding principles of the project and overall educational specifications because it does not improve the size and relationships of program spaces and does not address many of the fundamental challenges of the existing building
- The existing building is 55,214 sf and the full build-out of the proposed Rock Creek School per the educational specifications is 113,406 sf for a total deficit of 58,192 sf. The overall program is short 58,192 sf because nearly all of the core spaces remain either severely undersized or not provided at all in the modernization option. See the educational assessment in Section 3 for a complete list of spaces and sizes in the original Rock Creek Building
- Some of the spaces that are provided, but undersized per the educational specifications, include but are not limited to:
  - Classrooms (including toilet room and storage): 957 sf existing vs. 1200 sf required
  - Gymnasium: 3579 sf existing vs. 4800 sf required
  - Dining: 2262 sf existing vs. 3000 sf required
  - Kitchen: 805 sf existing vs. 1510 sf required
  - Music: 593 sf existing vs. 1200 sf required
  - Art: 715 sf existing vs. 1200 sf required
  - Pool and deck: 993 sf existing vs 2400 sf required
  - Administration: 2331 sf existing vs. 2800 sf required
  - Technology Lab: 485 sf existing vs. 1100 sf required
  - Media center: 735 sf existing vs. 1675 sf required
- Some of the spaces that are not provided per the educational specifications include but are not limited to:
  - Public commons
  - Shared learning areas
  - Teaching cluster storage
  - Movement room
  - Resource room
  - Multi-Purpose meeting room
  - Professional learning room/planning
  - Toilet rooms in the art, music, technology lab, and vocational labs
  - Personal care suites
  - Alternative specialized program
  - Co-located programs

The existing Rock Creek School has a number of limiting factors that impact the modernization schemes in several key areas.

  - Future capacity
  - Parks and recreation spaces
- Opportunities for access and equity are not improved with this option
- This option would take the longest amount of time to construct, approximately 3 years to complete
- Rock Creek School is a year-round program, making it difficult to execute construction phasing
- Because no new swing space is created, the construction phasing and isolation of students from construction activities would be the most challenging of all the options
- Corridors are only 8' wide in most places with students' personal equipment lining the corridor walls. Because classroom storage is not increased in the classrooms, equipment would remain in the corridors, making it difficult to circulate around the building
- There are limited opportunities for navigating the building without adult supervision due to narrow widths and winding corridors
- The majority of the core spaces have poor natural daylight and views. Many of the typical existing exterior windows are less than 2' wide
- The vehicular congestion at the drop-off loop between Rock Creek and Waverley ES will continue to be a problem

OPTION 2: MODERNIZATION + ADDITION

Option 2, the "Modernization + Addition" approach, proposes to improve the Rock Creek School in order to bring the existing building as close to compliance with the educational specifications as is feasible. Through construction of a series of targeted additions and extensive interior renovations, this option will provide improvements to the teaching and learning environment while making the least physical impact on the existing building as possible. The Modernization + Addition approach will meet State requirements by systematically improving the existing mechanical, electrical, plumbing, fire safety, telecommunications, IT and security systems. The proposed approach also includes a thorough overhaul of all the existing interior finishes (paint, ceilings, floors, etc.) and enhancement, both aesthetic and functional, of the entire exterior envelope of the building (new windows, existing brick point-up, etc.). This approach will improve the existing building by correcting most life safety, building code and ADA deficiencies and will also address many programmatic deficiencies through several additions to the school.

The existing Rock Creek School has a number of limiting factors that impact the modernization schemes in several key areas. The existing building has a one-story footprint with an overall area of approximately 55,000 gsf, inclusive of both the current Rock Creek School programs and non-Rock Creek School programs. This existing building area falls short of the target base bid building area of 89,000 gsf required by the educational specifications, and furthermore the 113,000 gsf target building area inclusive of all add-alternates. This area discrepancy necessitates several separate building additions that expand the available program area of the building footprint.

Each scheme presented in the Modernization + Addition option will require numerous separate additions and extensive renovations to bring the existing buildings closer to meeting program requirements.

The configuration of spaces in the existing building will require major relocations of vital program areas. For instance, the existing gymnasium and pool are centrally located in the building, which not only limits the ability of these spaces to be expanded, but also relegates important shared functions to more remote and difficult to access areas of the building. The existing building is primarily composed of load-bearing wall construction, which makes relocation of walls and reconfiguration and resizing of spaces extremely difficult and not cost-effective. This condition limits the feasibility of addressing many of the program shortfalls of the existing building such as classroom sizes and corridor widths.

The site around the existing building also limits possibilities for expansion. To maintain safe vehicular circulation patterns on the site, the building footprint cannot extend into the existing parking areas and driveways. New additions must also be located within established property lines and avoid associated setbacks. The existing playground area and memorial garden are located in an area of the site that is optimal for one of the required building additions; these site elements will need to be carefully relocated elsewhere on the site.

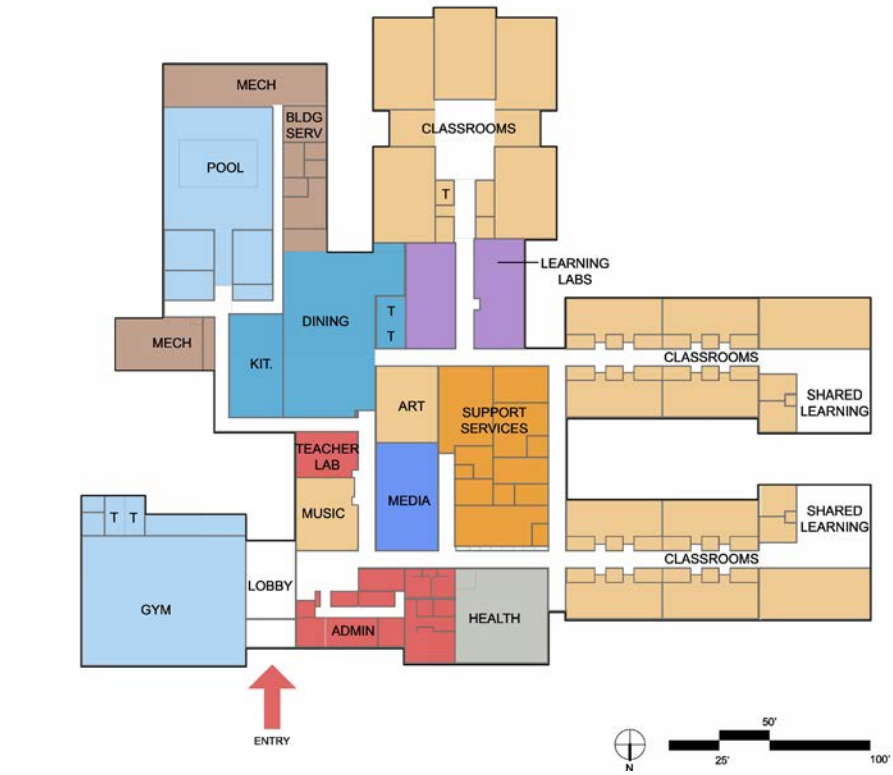
The scheme presented in the Modernization + Addition option will require numerous separate additions and extensive renovations to bring the existing building closer to meeting program requirements. This scope of work will require multiple phases and involve complex logistics of moving students around the building to avoid construction activities as each phase progresses. The sequence of construction will present constant disruption and potential health risks to Rock Creek's medically-fragile student population. Even when fully completed, this option will not be able to deliver all of the spaces and program areas required by the educational specifications; the program deficiencies can be found in the compromises list of the option below.

PLAN DESCRIPTION

Option 2 proposes to relocate the centrally-located gymnasium and pool, creating an area in the center of the floor plan for essential shared spaces such as the media center, student services and support services. A new corridor provides views into the courtyard and connectivity to the two existing classroom wings. Directly south of these core spaces will be two learning labs and a corridor connecting a new addition containing the third teaching cluster. The two existing west classroom wings are expanded with additional classrooms and a shared learning area. These classroom wings do not connect to each other, resulting in an exterior courtyard space that is open to the western portion of the site.

The existing southeast classroom wing will be demolished for a new addition containing the pool and building services suite. The main entrance and administration suite remain in their current location; the health suite is enlarged to meet program requirements. The northeast wing of the building, currently housing non-Rock Creek School programs, will be demolished to provide space for a new Gymnasium addition.

Option 2: Moderization Diagram



Option 2: Floor Plan

OPPORTUNITIES

- All three classroom clusters are separated. Access to each cluster is direct and will not require circulating through an adjacent cluster
- One of the base bid classroom clusters is appropriately sized and in an optimal location for allowing classrooms to use the shared learning space
- A new pool suite is provided and meets the requirements of the educational specifications
- A newly constructed gym that meets the requirements of the educational specifications, not including alternates
- Support Services is centrally located within the building and close to the classrooms.
- All additions provide new corridors that are at least 12' wide, which is enough room for students in wheelchairs with aides to pass each other in the halls

COMPROMISES

- On-site construction activities may pose major compromises to the health and well-being of medically fragile students
- Rock Creek School is a year round program, making it difficult to execute construction phasing
- Some of the spaces that are provided, but undersized, per the educational specifications include, but are not limited to:
  - (8) Classrooms (including toilet room and storage): 957 sf existing vs. 1200 sf required
  - Music: 1075 sf existing vs. 1200 sf required
  - Administration: 2331 sf existing vs. 2800 sf required
  - Technology lab: 485 sf existing vs. 1100 sf required
  - Professional learning room/planning: 660 sf existing vs. 800 sf required
- Some of the spaces that are not provided per the educational specifications include, but are not limited to:
  - Public commons
  - Stage
  - Co-located programs
  - IEP conference room
  - Administration toilet room
  - Chair storage
  - Table storage
  - Toilet rooms in the art, music, technology lab, and vocational labs
  - Personal care suites
  - Alternative specialized program (Alternate)
  - Future capacity classroom cluster (Alternate)
  - Parks and rec gymnasium (Alternate)
- Many existing corridors remain only 8' wide with students' personal equipment lining the corridor walls. Because classroom storage is not increased in 8 of the classrooms, equipment would remain in the corridors, making it difficult to circulate around the building
- There are limited opportunities for navigating the building without adult supervision due to narrow widths and corridors without a clear path

Option 3, the "New Replacement School On-Site" approach, proposes to provide an entirely new facility on the current site between the existing Rock Creek School and Waverley Elementary School buildings.

- 8 classrooms are undersized by more than 200 sf each. The linear layout of the existing classrooms do not allow for the optimal use of the shared learning area
- The majority of the core educational spaces have poor natural daylight and views. All of the typical exterior windows are less than 2' wide
- The additions to the existing building are located against the property line, making it difficult for emergency vehicles to access the full perimeter of the building
- The vehicular congestion at the loop between Rock Creek School and Waverley ES will continue to be a problem
- Stormwater quantity control is going to be a significant cost item due to conditions of drainage and size of site

OPTION 3: NEW REPLACEMENT SCHOOL ON-SITE

Option 3, the "New Replacement School On-Site" approach, proposes to provide an entirely new facility on the current site between the existing Rock Creek School and Waverley ES buildings. After construction and occupancy of the new building, the existing Rock Creek School will be demolished and replaced with the balance of site program elements including parking and fields. The new building will be located on the existing play field and hard play surface/parking pad and, when completed, will share the existing bus loop with Waverley ES. The new building and site elements will be designed to deliver on all aspects of the educational specifications.

This site option allows for the existing building to remain occupied during construction. With the existing building remaining in operation, careful site phasing and scheduling will be required to coordinate operations of the existing Rock Creek School, as well as neighboring Waverley ES, along with logistics of construction activities. The location of the new building between the two existing schools will require significant temporary measures to reroute bus and car drop-off traffic to allow for an adequate staging and laydown area adjacent to the construction site. The new building location also limits future expansion of both buildings due to close proximity to the property lines and required setbacks. Proximity to the existing Rock Creek School and Waverley ES buildings will limit access routes for emergency and service vehicles around the perimeter of the building. Perimeter access drives will be provided with consideration given to the students' ability to access adjacent outdoor learning and play areas. After the existing Rock Creek School is demolished, the new adaptive play area will be installed in addition to a new play field to serve Waverley ES. The new play field will be located across the existing parking lot from Waverley ES requiring students to cross the parking lot to access the fields, which is not a preferred scenario.

In this option, the proposed Rock Creek School building is comprised of four major program zones: the public zone at the main entrance; the semi-public and semi-private zones which house support spaces and auxiliary functions; and private zones which contain the instructional clusters. The sequence of these zones supports the desired adjacencies of program areas in the educational specifications and also allows for a building footprint that fits within the specific constraints of the available site. Multiple floor plan options were initially studied for consideration, with the final scheme described below.

The main entrance corridor terminates in a central courtyard space, which will be lined with glazing to allow natural daylight to flood the surrounding corridors and adjacent spaces.

PLAN DESCRIPTION

Because of the limited land available on the existing site, this option locates the new building between the existing Rock Creek School and Waverley ES, with its main entrance located at the west end of the shared bus loop. The entrance vestibule leads to administration and health suites to the north and the media suite and support services to the south. The gymnasium is located at the north end of the public zone. Due to constraints of the site and proximity to Waverley ES, there is not adequate space for the community parks and recreation program and expanded gymnasium.

The main entrance corridor connects all program zones of the building with a clear and simple circulation path that will provide ease of navigation for students. The dining and commons area, flanked by the music room and maker lab, are centrally-located to provide an active and vibrant central core that is easy to access from all wings of the building. The kitchen and building services suite are located south of dining and provide direct access for delivery and service vehicles. The pool and adjacent learning labs are located to the north of the dining area.

The west end of the building houses three distinct instructional clusters, which will be differentiated by age and educational level. Each cluster is comprised of five classrooms organized around a central collaborative learning area, with support spaces such as storage and speech resource rooms. The north and south clusters are identical in their composition and spaces provided; the west cluster is dedicated to older students and provides a daily living suite and instructional kitchen for hands-on learning experiences.

Due to the constraints of the site and compact building footprint, space is not available

First Floor Plan: Option 3

Due to the constraints of the site and a compact building footprint, space is not available on the main level for the co-located educational services.

on the main level for the co-located educational services. If these add alternate spaces are built, a second floor zone will be built above the administration, media and support services areas to accommodate the additional program area. Each of these first floor spaces will have a ceiling height that can easily accommodate a second floor above. The second floor addition will also require two fire stairs and an elevator to provide access from the main entrance.

OPPORTUNITIES

- All Rock Creek School spaces are provided as required by the educational specifications
- Support services and the gym are in the front of the building. A second story addition can be built in the front for co-located services
- Dining is centrally located and can be opened up to the circulation for a more active space
- Approximately 80,000 sf footprint can be accommodated for the Rock Creek School program as well as co-located services, assuming that the co-located services and other acceptable programs can be located on the second floor

Site Plan: Option 3

COMPROMISES

- The new building is located against the property line in multiple locations, making it difficult for emergency vehicles to access the complete perimeter of the building
- Proximity to existing Waverley ES and the existing Rock Creek School is extremely close, in some areas the distance is less than 35'. The close distance makes deliveries and truck access to the kitchen area very difficult, especially before the existing Rock Creek is demolished
- There is inadequate space and access for construction and staging. Entry points to the site for construction must be shared with Waverley ES and Rock Creek School's existing entrances
- There is no space for Waverley ES to expand in the future, which is a need listed in FCPS' Educational Facilities Master Plan
- There is inadequate space for a parks and recreation addition until the existing Rock Creek School is demolished
- There is inadequate space for future capacity
- The music room and one learning lab do not have access to natural light via an exterior wall
- Site circulation will be complex due to the new Rock Creek School and Waverley ES being very close
- Outdoor programs will not be in an ideal location with respect to the new Rock Creek School and Waverley ES. Students will have to cross the parking area to reach play areas
- Stormwater quantity control will be costly due to conditions of drainage
- The bus loop must be shared with Waverley ES to meet the needs in the educational specifications.
- There is no designated secure walking path or garden near the new building

Option 4, the "New Replacement School Off-site" option, involved a comprehensiv e review of potential project sites throughout Frederick County that were identified by FCPS' Planning Department.

OPTION 4: NEW REPLACEMENT SCHOOL OFF-SITE

The off-site replacement option presents a scenario that allows for many of the challenging compromises of Options 1, 2 and 3 to be overcome by considering alternate properties in central Frederick County. Additionally, Option 4 creates the opportunity to co-locate the Rock Creek School with another existing FCPS school and generate further prospects for access and equity, adding potential value and meaning to both instructional programs.

In order to ensure that this option is viable, a comprehensive review of potential project sites throughout Frederick County, identified by FCPS' Facilities Planning Department, was conducted. The sites were reviewed through a series of evaluative criteria that included site location, utility access, buildable site area, and access and equity opportunities. These evaluations resulted in the selection of five sites that were explored by the consultant team for accommodating the new Rock Creek School and site program required by the educational specifications. Each of the selected potential sites is adjacent to an existing or planned FCPS school facility to leverage access and equity opportunities between Rock Creek School students and their typical peers. Refer to Appendix A for the off-site rubric, site analysis, and detailed descriptions of the five schemes that demonstrate a new Rock Creek School off-site on a property shared with an existing FCPS school.

The co-located relationship is achievable through two planning strategies: a new Rock Creek School that is built as an addition connected to an existing school; or a new, freestanding Rock Creek School building built near or adjacent to an existing school on the same site. Building the Rock Creek program as an addition to an existing building presented many planning challenges, such as:

- Rock Creek Schools' program requires a building area of 81,000 gsf (113,000 gsf including additional programs); even utilizing some shared space with an existing school building would result in a large one-story addition that could prove difficult to accommodate with a successful outcome for both schools
- The Rock Creek School addition would require an appropriate "connection point" to the existing building that allows for easy circulation between the two schools
- The Rock Creek School addition would overtake a large area of property adjacent to the existing building, which may require significant redesign of the vehicle and pedestrian circulation and outdoor spaces serving the existing building
- The Rock Creek School addition is large enough that it would require either a dedicated physical plant, or a major renovation to increase the size and capacity of the existing building's physical plant to accommodate the addition
- The Rock Creek School educational specifications require many specialized program spaces that will be difficult to share. Those spaces that can be shared would require scheduling scenarios that met the demands of both schools' student populations
- A large addition to an existing school would likely eliminate a certain percentile of exterior windows, which would compromise access to daylight and views

Due to these limitations of a planning a large addition to an existing building, the off-site design option focuses on planning a new freestanding replacement building for the Rock Creek School on the campus of an existing FCPS school.

The building layouts tested within the off-site options are similar to those of Option 3 to allow for comparison of the same construction footprint between the existing site and selected alternate properties. The replacement Rock Creek School plan is comprised of four major program zones: the public zone at the main entrance; the semi-public and semi-private zones which houses support spaces and auxiliary functions; and private zones which contain the instructional clusters. The processional sequence of these zones supports the desired adjacencies of program areas described in the educational specifications. This zoning strategy also allows for a building footprint that fits within the specific constraints of the investigated sites.

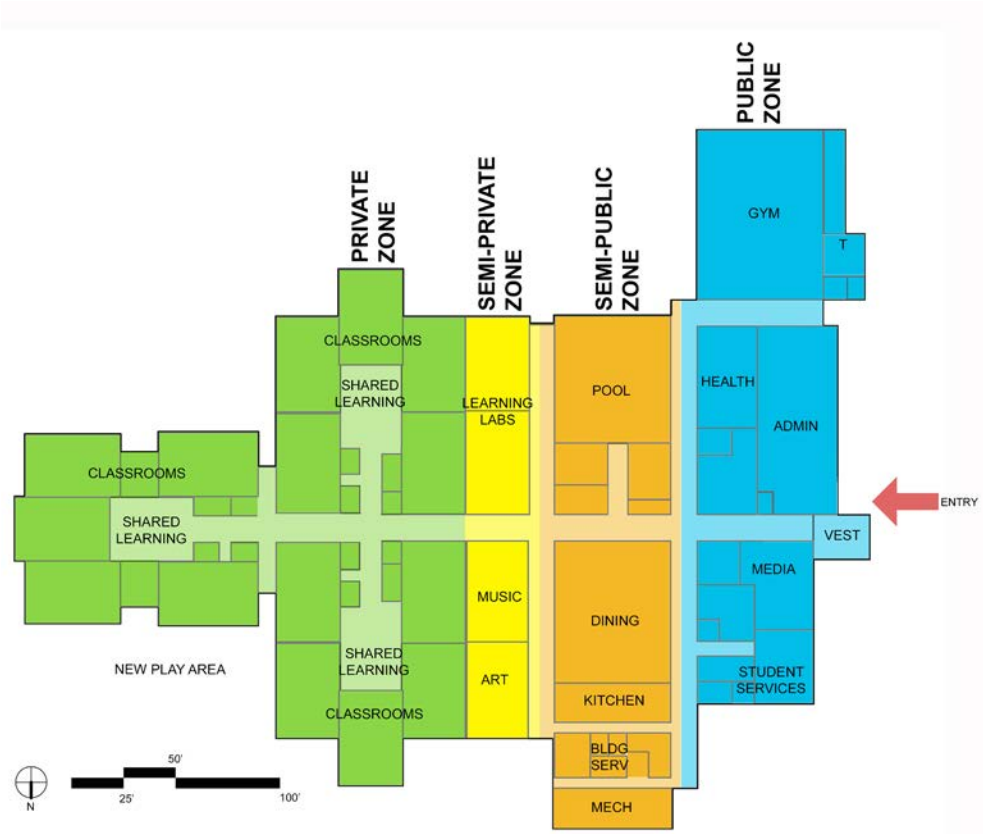


Diagram of Public, Semi-Public, Semi-Private, Private Zones

The off-site replacement option brings a unique series of opportunities and compromises that were compiled and analyzed by the feasibility study team. The lists below are general in nature and are applicable to the off-site replacement planning scenario categorically; they do not relate to one specific potential site. Refer to Appendix A for the specific sites that were evaluated in more detail, with each containing their own set of opportunities and compromises unique to that particular existing site condition.

After thorough review of the potential opportunities and challenges identified for off-site replacement, compared with the other options investigated, it was clear to the feasibility study team that Option 4 provides the most viable options for a modern Rock Creek School.

OPPORTUNITIES WITH OFF-SITE REPLACEMENT

- Off-site construction will not pose health hazards for Rock Creek students, which is a major compromise of Options 1, 2 and 3
- Accommodating all of the program requirements from the educational specifications
- Accommodating all of the site program features
- Delivering on the project's guiding principles and overall vision
- Potential space for alternates and future expansion of the Rock Creek program
- Locating the new Rock Creek School in a more centralized location within Frederick County
- Additional opportunities for access and equity with co-located FCPS schools
- Potential access to transit options
- The programmatic, functional, and operational shortfalls of the existing building can all be overcome and remedied with new off-site construction
- Does not compromise the daily operations and vehicular circulation of Waverley ES
- Does not compromise the viability of a future addition to Waverley ES
- Co-located services will not be relegated to a second floor; all programs may be accommodated on one contiguous floor plan
- Lower construction costs than Option 2: Modernization + Addition and Option 3: Replacement On-Site
- Construction will not impact operations at existing Rock Creek School
- Summer relocation of Rock Creek students will not be required during construction
- Shortest length of construction of all feasibility study options

COMPROMISES WITH OFF-SITE REPLACEMENT

- Selected site will require land acquisition if FCPS does not currently own the property
- Further investigation required with potential off-site schools to confirm the viability of eliminating existing fields and green space required for new Rock Creek School construction
- Selection of one of the off-site replacement options will require further feasibility study analysis to investigate the physical limitations and environmental constraints of the selected property.

After thorough review of the potential opportunities and challenges identified for off-site replacement, compared with the other options investigated, it was clear to the feasibility study team that Option 4 provides the most viable options for a modern Rock Creek School. A new school facility off-site allows the opportunity for a new building that can deliver on all aspects of the educational specifications, without compromising the operations of the existing building or creating an unsafe condition for Rock Creek School students during construction.


Difference!

SECTION 5:
COST COMPARISON

Cost Estimate

Cost Estimate Notes and Definitions

COST ESTIMATE

ROCK CREEK SCHOOL FEASIBILITY STUDY COST ESTIMATE	OPTION 1 Existing Building Modernization			OPTION 2 Modernization and Addition			OPTION 3 Replacement On Site			OPTION 4 Replacement Off Site		
	GSF or %	$/SF or %	Total	GSF or %	$/SF or %	Total	GSF or %	$/SF or %	Total	GSF or %	$/SF or %	Total
CONSTRUCTION COSTS												
TOTAL PROPOSED AREA	**55,214**			**75,547**			**81,103**			**81,103**		
ROCK CREEK SCHOOL PROGRAM												
Hazardous Material Abatement	55,214	$3.50	$193,249	55,214	$3.50	$193,249	55,214	$3.50	$193,249	0	$3.50	$0
Selective Building Demolition	0	$20	$0	14,289	$20	$285,780	0	$20	$0	0	$20	$0
Whole Building Demolition	0	$8	$0	0	$8	$0	55,214	$8	$441,712	0	$7	$0
New Construction	0	$285	$0	34,622	$285	$9,867,270	81,103	$285	$23,114,355	81,103	$285	$23,114,355
Modernization	55,214	$285	$15,735,990	40,925	$285	$11,663,625	0	$285	$0	0	$285	$0
Equipment in Construction Contract	55,214		$1,100,000	75,547	$10	$1,755,470	81,103	$10	$1,811,030	81,103	$10	$1,811,030
12 Classroom Portable Relocation			$750,000			$750,000						
SUBTOTAL ROCK CREEK SCHOOL PROGRAM			**$17,779,239**			**$23,765,394**			**$25,560,346**			**$24,925,385**
Site Construction		5%	$786,799.50		5%/19%	$2,988,260.64		22%	$5,623,276		25%	$6,231,346
TOTAL ROCK CREEK SCHOOL BUILDING AND SITE COSTS			**$18,566,039**			**$26,753,655**			**$31,183,622**			**$31,156,731**
Construction Management	10%		$1,856,604	10%		$2,675,365	8%		$2,494,690	7%		$2,180,971
Construction Contingency	9%		$1,670,943	9%		$2,407,829	7%		$2,182,854	5%		$1,557,837
Design Contingency	7%		$1,299,623	7%		$1,872,756	6%		$1,871,017	5%		$1,557,837
Phasing Costs	15%		$2,784,906	15%		$4,013,048	10%		$3,118,362			$0
SUBTOTAL CONSTRUCTION COSTS			**$26,178,114**			**$37,722,653**			**$40,850,545**			**$36,453,376**
ADDITIONAL COSTS												
Furniture and Equipment			$2,100,000			$2,100,000			$2,100,000			$2,100,000
Project Planning Costs			$1,604,962			$2,096,219			$2,281,017			$2,204,404
SUBTOTAL PROJECT COSTS			**$29,883,077**			**$41,918,872**			**$45,231,562**			**$40,757,779**
Escalation to midpoint of construction (4.8% annual)	7.2%		$2,151,582	7.2%		$3,018,159	4.8%		$2,171,115	3.2%		$1,304,249
TOTAL PROJECT BUDGET			**$32,034,658**			**$44,937,031**			**$47,402,677**			**$42,062,028**
ADDITIONAL PROGRAM AND ALTERNATES (Inclusive of all associated costs)												
Co-located Programs			NA			NA	8,848		$4,047,082	8,848		$4,047,082
Greenhouse			NA	800		$496,482	800		$496,482	800		$496,482
Parks and Rec Addition			NA			NA	4,452		$2,731,380	4,452		$2,731,380
Future Capacity			NA	8,415		$5,499,652			NA	8,415		$5,499,652
Alternative Education Program			NA			NA	3,086		$1,978,397	3,086		$1,978,397
TOTAL COST WITH ALTERNATES			**$32,034,658**			**$50,933,165**			**$56,656,019**			**$56,815,022**
NOTES AND ASSUMPTIONS												
Length of Construction	36 Months			36 Months			24 Months			18 Months		
Summer Relocation for RCS to Waverley	3 Summers			3 Summers			Not Required			Not Required		
Phasing Costs	Phased Occupied Renovation			Phased Occupied Renovation			Phased Site Work			Not Required		

COST ESTIMATE NOTES AND DEFINITIONS

- All areas are presented in GSF = Gross Square Footage
- Total Program Area - GSF provided for Rock Creek School
- Hazardous Material Abatement – Abatement of asbestos containing products from the existing school
- Selective Building Demolition – Demolition in which parts of the building must be removed without damage to adjacent areas
- Whole Building Demolition – Considerably easier then selective demolition, whole building demolition is removal without need for the protection of adjacent structures
- New Construction – New building area
- Modernization – Comprehensive renovation that includes removal and update of all building systems including HVAC, electrical, plumbing, technology and alarm systems as well as extensive interior revisions and updates
- Equipment in Construction Contract – Additional assistive equipment required as part of the Rock Creek School, but not typically included in a school and not accounted for in the typical cost per square foot for school construction
- 12 Classroom Portable Relocation – Cost to move one of the three 12 classroom portable units FCPS currently owns on site for use for this project. Cost to relocate the portable after construction is complete is not included
- Construction Management – Include costs for a construction management agency contract to assist in design phase planning and to manage the construction phase of the project.
- Construction Contingency – Changes that result in additional cost to the contracts as the result of unknown or on foreseen conditions.
- Design Contingency – Design changes required by FCPS either due to unforeseen conditions or as the result of changes to required programs or standards
- Phasing Costs – The additional costs to contractor for mobilization and demobilization at the start and end of each phase, cost of expedited summer work, cost of protections required due to the occupied site or building, costs of temporary construction to secure project phases and other such costs associated with the complexity of phased occupied renovation projects.
- Furniture and Equipment – Non-built in furniture and equipment typically provided for school construction projects by FCPS as part of the typical budget
- Project Planning Costs – Includes architectural/engineering design fees, printing expenses, utilities and permits, surveys, geotechnical investigation, traffic study, environmental impact study and other design phase services

GRIMM AND PARKER

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Sustainable Solutions
Engaging Environments

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