Building the Future

CCPS

Carroll County Public Schools

EAST MIDDLE SCHOOL

FEASIBILITY STUDY

Carroll County Public Schools | May 15, 2019

hord | coplan | macht

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Study Team | 01

East Middle School

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Introduction

East Middle School (EMS) is located on a 19-acre parcel along Longwell Avenue in Westminster, Maryland in Carroll County. The site is bound by residential properties to the southwest, the school parking lot to the northwest, school play fields to the northeast, and commercial properties to the southeast. Also, a track and field area owned by Carroll County is located to the northeast of the school playfields.

The art deco style building was constructed in 1936 as Westminster High School to replace the 1898 Westminster High School located at Green and Center Streets. A gym addition was constructed in 1941, a 2-story classroom addition was constructed in 1950, and a separate one-story annex building; originally constructed for technical education programs and now used for the middle school BEST program; was constructed in 1964. In 1971, when the new Westminster High School on Washington Road opened, the building became the home for East Middle School. In 1976, the building was completely renovated to better serve the middle school program. The school currently includes sixth through eighth grade students including the middle school BEST students. The state rated capacity of the school is 869 and the local capacity is 790. The current enrollment is 710 students.

The site is accessed via North Street to Key Street and via Longwell Avenue. Longwell Avenue continues through the site between the school parking lot and the school building. Bus traffic typically enters from Longwell Avenue and park and load/discharge students along the northwest side of the building. Buses continue onto Tuc Road to exit the site. It is difficult for the buses to navigate North Street to Key Street due to the narrow width of Key Street. Key Street serves as an area for parents to que for student drop-off and pick-up. Deliveries enter the site via a service drive connected to Key Street that leads to the loading dock in the back of the building.

Parking is accessed from Longwell Avenue and Tuc Road. The parking lot is separated by these roads, requiring crossing of the road to access the building. The main school entry is not ADA accessible. A non-compliant ramp along Key Street at the gymnasium provides limited ADA access, however once in the building, mobility is limited due to the multiple interior level changes and no elevator present in the building.

Play fields are located to the northeast side of the building and a paved play area is located next to the BEST annex building. A track and grass field are located next to the school play fields. This area is owned by the County and is occasionally used by the school.

The existing school suffers from outdated systems and insufficient space to accommodate the proposed educational program and the building is not ADA accessible. The facility is aging and suffers from a combination of mechanical, electrical, plumbing, accessibility, and educational deficiencies. With broad and accelerated change that continues to influence learning and instruction, the current East Middle School cannot keep pace with the facility demands of today's educational imperatives. In short, the school no longer reflects a standard for middle school facilities that is consistent with the Board of Education's vision for Carroll County and requires modernization or replacement.

Purpose

The purpose of this feasibility study, commissioned by Carroll County Public Schools (CCPS), was to direct the Study Team to assess the condition of the existing building and site, offer recommendations for improvements or replacement of current facilities, and present five options for consideration by the Board of Education. The scope of the study includes analysis of both the current East Middle School site and the Friendship Valley Elementary School site and a study of a middle school model and a K-8 school model to combine East Middle School and William Winchester Elementary School.

A program inventory was developed collaboratively by Carroll County Public Schools and Hord Coplan Macht and was used as a baseline for the proposed options in this study. The proposed program requirements and space summary identified in this study are based upon a model middle school (grades six through eight) and includes the middle school BEST program. The middle school program was based on the most recent middle school constructed in the County, Mt. Airy Middle School. The K-8 School combined the middle school program with the program from the most recent elementary school constructed in the County, Ebb Valley Elementary School. The elementary school program also includes the elementary school BEST program. Each design option presented in this document reflects an approach to the proposed educational program:

- Option A renovates the existing building, demolishes the existing 2-story addition and the BEST annex and constructs a new 2-story addition.
- Option B is a two-story replacement middle school northeast of the existing building on the East Middle School site.
- Option C is a two-story replacement middle school northeast of the existing building and a one-story elementary school at the southwest corner of the East Middle School site to form a K-8 Campus.
- Option D is a two-story replacement middle school southwest of the existing Friendship Valley Elementary School.
- Option E is a one-story elementary school southwest of the existing Friendship Valley Elementary School and a 2-story middle school next to the proposed elementary school to form a K-8 campus at the Friendship Valley Elementary School site comprised of 3 schools.

All options have been planned to allow students to remain on site during construction. Option A will require temporary facilities to accommodate the phasing of the project. Options B and C will require students to be without most of the play fields during construction because the new middle school building will be constructed on the existing play fields. Options C and D are constructed at the Friendship Valley Elementary School Site while the existing building is fully operational and unaffected during construction.

The Feasibility Study Team worked diligently to determine the most reasonable approach to each option. This study includes a photographic and narrative assessment of the existing facility, including a preliminary evaluation of compliance with current building and life safety codes. Descriptive summaries and illustrations are provided for each option, followed by appendices that include proposed costs and life cycle cost data.

East Middle School Site

Friendship Valley Elementary School Site

Findings

The existing school has insufficient space to accommodate the proposed educational program, outdated systems, and inefficient adjacencies. The building is not ADA accessible, lacks an elevator, and building levels do not align requiring stairs within the corridors to connect between the original building and the 2-story addition. It is an aging facility that suffers from a combination of mechanical, electrical, plumbing, and accessibility deficiencies and needs to be modernized. These deficiencies include:

Site:

- Bus loading/unloading occurs along Longwell Avenue and does not have a designated bus loop.
- There is limited car loading/unloading for students on site.
- The site is not ADA accessible for entry into the building or to the playfields.
- Parking lot access is across Longwell Avenue.
- Service drive location requires students to cross the drive to access the paved play area.
- Parking lots need resurfacing.
- Site storm drainage issues occasionally flood the portions of the building that are located below grade.

Building:

- The existing boilers have reached the end of their useful life (age = 54 years) and need to be replaced.
- Existing steam and condensate piping distribution system needs to be replaced.
- Chiller needs to be replaced. It is beyond its useful life and uses R11 refrigerant which was phased out years ago.
- Convectors, unit ventilators, unit heaters, heating and ventilating units, and baseboard radiators are original and need to be replaced.
- Air Handling Equipment is multi-zone and is no longer allowed by Code and needs to be replaced.
- Electrical distribution has reached the end of its useful life, has limited capacity, and the manufacturer is no longer in business, making it difficult to obtain parts. Electrical Distribution should be replaced.
- Emergency generator has reached the end of its useful life, has limited capacity, and needs to be replaced.
- Wood roof deck will limit new roof top equipment and does not meet fire code.
- Kitchen equipment is outdated and does not meet current health codes.
- Kitchen is not properly ventilated.

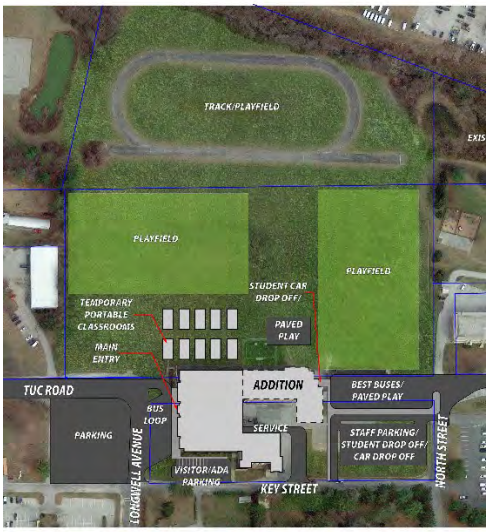
- Building is not accessible for physically disabled people including no elevator in the building.
- Administration suite lacks storage for general use and records.
- Building needs a secure vestibule. Administration does not have a clear view of the front entry and is located up a partial flight of stairs and across the corridor from the main entry. This creates confusion for visitors to determine where to go once they enter the building and the ability to access the building before being checked-in at the main office.
- Administration has no exterior windows, limiting ability to view what is occurring outside.
- Health suite does not meet COMAR requirements and does not have a waiting area.
- Accessible toilets are needed on all levels of the building.
- There is limited conference space.
- There are limited teacher workrooms.
- Gymnasium has no air conditioning.
- Gymnasium is the only place to hold assemblies, but this conflicts with gym classes and the size limits it to one grade level at a time.
- There is no stage in the school.
- Science Labs do not have any Prep Rooms.
- Storage throughout the building is limited (only 1 storage room per floor).
- It is difficult to get supplies from one floor to another (i.e. copier paper). Supplies must be carried up the stairs.
- There is limited space for Intervention Rooms.
- Windows are operable, but they are heavy to lift and are dangerous when open- they have been reported to fall from the open position, creating a hazardous condition.
- Windows are single pane glass and not energy efficient.
- Folding partitions between classrooms have chalk surface- surface is peeling and needs to be replaced.
- Leakage on exterior Media Center wall has been observed and a new gypsum board surface was installed recently.
- Media Center book stacks are too high and need to be lower for better supervision.
- Student circulation goes through the Media Center to allow faster access between classes from one side of the building to the other. This creates disruption within the Media Center.
- Areaways at below grade classrooms have drains that often clog, causing water back-ups into classrooms. The Art Room recently was flooded out due to this issue.
- Choral Classroom has leaks at door and at unit ventilator.
- Cafeteria has line of sight issues to projection screen due to multiple structural columns throughout the space. This prevents the space from being used for assemblies.

- The kitchen freezer and cooler are accessed through the Dry Storage Room, creating inefficient work flow.
- The gym locker rooms do not have lockers.
- Boy's Locker Room is accessed through the fitness room and storage room creating an awkward flow to and from the locker room.
- There is poor ventilation in the wood shop for dust collection.
- Glass block windows on exterior walls create bad glare for projector.
- The levels of the 2-story addition do not align with the original building creating awkward and non-ADA accessible routes between the sections of the building.
- BEST classrooms have been retrofitted into an old technical classroom building and do not have adequately sized and configured spaces for this program.
- Existing BEST floors have awkward slopes from old technical spaces.
- BEST corridors are too narrow for the needs of this program.
- The BEST program is physically separated from the rest of the school and does not feel like they are part of the school.

Proposed Design Options

The development of the following design options included an assessment of the East Middle School building and conclude that the building has educational and functional limitations. The study also analyzed the Friendship Valley Elementary School site to examine the possibility of locating a middle school and a K-8 School on that site. The proposed design options were reviewed through a series of design meetings with members of the Study Team and are summarized as follows:

OPTION A



Option A – Major Renovation & Additions

Major Renovation & Additions (Option A) includes renovating the existing building, demolishing the existing 2-story addition and BEST annex, and constructing a new 2-story classroom addition. The scope of work accommodates the proposed program including square footage and proper spatial and educational relationships. The work brings the entire building into conformance with current building and life safety codes. The site design addresses traffic patterns, play areas, and relocatable classroom requirements during construction. Maintaining building occupancy and operation will require a multi-phase construction process.

OPTION B

Option B – Replacement Middle School – East Middle School Site

Full Replacement (Option B) includes a design of a new facility on the existing campus in compliance with the proposed program; including square footage and proper spatial and educational relationships. The existing building remains operational during construction of the new building and is demolished when the new building is completed. The site design addresses traffic patterns, parking, bus loop, and replacement athletic fields.

OPTION C

Option C – Replacement Middle School and New Elementary School – East Middle School Site

Full Replacement (Option C) includes design of a new middle school and a new elementary school on the existing campus in compliance with the proposed program; including square footage and proper spatial and educational relationships. The existing building remains operational during construction of the new middle school building and is demolished when the new building is completed. The new elementary school is constructed once the existing building is demolished. The site design addresses traffic patterns, parking, and replacement athletic fields and playgrounds.

OPTION D

Option D – Replacement Middle School – Friendship Valley Elementary School Site

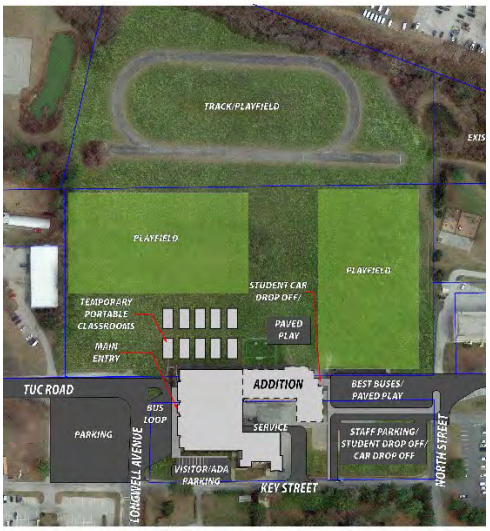
Full Replacement (Option D) includes a design of a new facility on the Friendship Valley Elementary School campus in compliance with the proposed program; including square footage and proper spatial and educational relationships. The existing building remains operational during construction of the new building and is either demolished or repurposed when the new building is completed. The site design addresses traffic patterns, parking, bus loop, and replacement athletic fields.

OPTION E

Option E – Replacement Middle School & New Elementary School-Friendship Valley Elementary Site

Full Replacement (Option E) includes design of a new middle school and a new elementary school on the Friendship Valley Elementary School campus in compliance with the proposed program; including square footage and proper spatial and educational relationships. The existing building remains operational during construction of the new middle school building and either demolished or repurposed when the new building is completed. The site design addresses traffic patterns, parking, and replacement athletic fields and playgrounds.

OPTION A –
MAJOR RENOVATION & ADDITIONS



OPTION A	
Area of Existing Building	*120,400 GSF*
Area of Demolition	*33,014 GSF*
Area of Modernization	*87,386 GSF*
Area of New Construction	*42,890 GSF*
Total Area	***130,276 GSF***
Total Estimated Project Cost	***$60,326,382***

OPTION B –
REPLACEMENT MIDDLE SCHOOL – EAST MIDDLE SCHOOL SITE

OPTION B	
Area of Existing Building	*120,400 GSF*
Area of Demolition (entire school)	*120,400 GSF*
Area of New Const. - Middle School	*123,088 GSF*
Total Area	***123,088 GSF***
Total Estimated Project Cost	***$59,958,175***

OPTION C –
REPLACEMENT MIDDLE & ELEMENTARY SCHOOLS –
EAST MIDDLE SCHOOL SITE

OPTION C

Area of Existing Building	*120,400 GSF*
Area of Demolition (entire school)	*120,400 GSF*
Area of New Const. - Middle School	*123,088 GSF*
Area of New Const. Elementary School	*78,419 GSF*
Total Area	***201,507 GSF***
Total Estimated Project Cost	***$97,330,490***

OPTION D –
REPLACEMENT MIDDLE SCHOOL – FRIENDSHIP
VALLEY ELEMENTARY SCHOOL SITE

OPTION D

Area of Existing Building	*120,400 GSF*
Area of Demolition	*0 GSF*
Area of New Const. - Middle School	*123,088 GSF*
Total Area	***123,088 GSF***
Total Estimated Project Cost	***$55,992,239***

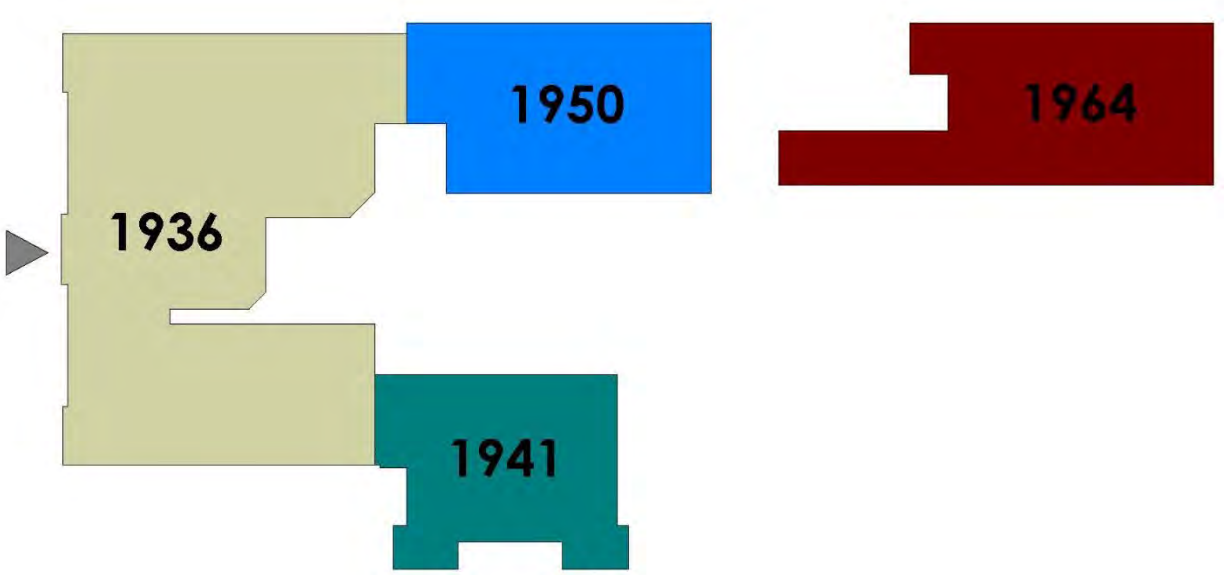
OPTION E –
REPLACEMENT MIDDLE & ELEMENTARY SCHOOLS –
FRIENDSHIP VALLEY ELEMENTARY SCHOOL SITE

OPTION E

Area of Existing Building	*120,400 GSF*
Area of Demolition	*0 GSF*
Area of New Const. - Middle School	*123,088 GSF*
Area of New Const. Elementary School	*78,419 GSF*
Total Area	***201,507 GSF***
Total Estimated Project Cost	***$91,664,728***

Historical Summary

The existing building, constructed in 1936, consists of 3 levels connected by stairways, but no elevator. A gymnasium was added in 1941. A 2-story wing was added in 1950, however the floor levels do not align with the 1936 floor levels. In 1964 an annex building was constructed for career and technical education programs. The Maryland Historic Trust has been contacted to evaluate the historical significance of the building. The original 1936 building was designed in the art deco style and may need to be preserved or commemorated in some manner. Further discussions with MHT will occur before any decisions on demolition are made.



Years of Construction Plan

Maintenance, repair, and replacement projects have occurred throughout the life of the building. Projects performed in the last 43 years include:

1976 – Full Building Renovation

1994 – Roof Replacement (1936 Building)

1998 – TIMS Project

2000 – Convert Boilers

2000 – Gym Bleacher Replacement

2002 – Energy Management System Installation

2008 – Interior Door Asbestos Abatement

2014 – EEI Lighting Project

2014 – Security Initiative (Access Control)

Educational Program

The primary goal of this study is to analyze the educational adequacy of the existing building to determine if it can accommodate the proposed educational program and if not, determine what is required to achieve the educational goals put forth by the Study Team. This includes accommodating the current student enrollment of sixth through eighth grade students and the middle school BEST program. In addition to the middle school program this study analyzes a kindergarten through eighth grade school utilizing the middle school program and an elementary school program. This study looks at both middle school and K-8 school options on two sites (East Middle School site and Friendship Valley Elementary School site).

A proposed program was created collaboratively by Carroll County Public Schools and Hord Coplan Macht and was used as a baseline for the proposed options in this study. The proposed program requirements and space summary identified in this study are based upon a model middle school facility and utilizes the Mt. Airy Middle School program with BEST program spaces added as the basis for the proposed building. The Ebb Valley Elementary School program, also with BEST added, is utilized for the elementary school portion of the K-8 school. Mt. Airy Middle School and Ebb Valley Elementary School were chosen because they are the most recent middle and elementary schools constructed by CCPS. When a modernization project moves forward, a detailed educational specification will be prepared at that time.

The Middle School program is organized into the eleven major categories:

- Administration
- Guidance
- Nurse's Suite
- Instruction – 6^{th} – 8^{th} Grades
- Instruction – Specials/ Shared
- Instruction – Special Education/Resource
- Media Center
- Physical Education
- Cafeteria
- Building Services
- BEST Program

The analysis of the existing building revealed many educational program deficiencies within the existing building that will require reconfiguration and expansion of the existing building.

A partial list of program deficiencies is as follows:

- Building needs a secure vestibule. Administration does not have a clear view of the front entry and is located up a partial flight of stairs and across the corridor from the main entry. This creates confusion for visitors to determine where to go once they enter the building and the ability to access the building before being checked-in at the main office.

- Health suite does not meet COMAR requirements and does not have a waiting area.
- Accessible toilets are needed on all levels of the building.
- There is limited conference space.
- There are limited teacher workrooms.
- Administration suite lacks storage for general use and records.
- Gymnasium is the only place to hold assemblies, but this conflicts with gym classes and the size limits it to one grade level at a time.
- There is no stage in the school.
- Science Labs do not have any Prep Rooms.
- Storage throughout the building is limited (only 1 storage room per floor).
- There is limited space for Intervention Rooms.
- Media Center book stacks are too high and need to be lower for better supervision.
- Cafeteria has line of sight issues to projection screen due to multiple structural columns throughout the space. This prevents the space from being used for assemblies.
- The kitchen freezer and cooler are accessed thought the Dry Storage Room, creating inefficient work flow.
- The gym locker rooms do not have lockers.
- Boy's Locker Room is accessed through the fitness room and storage room creating an awkward flow to and from the locker room.
- BEST classrooms have been retrofitted into an old technical classroom building and do not have adequately sized and configured spaces for this program.
- BEST corridors are too narrow for the needs of this program.
- The BEST program is physically separated from the rest of the school and does not feel like they are part of the school.

The following table summarizes the existing middle school program and compares it to the proposed middle school program. The programs in the table are organized by the eleven (11) major categories noted above.

Program Summary Table – Middle School

MIDDLE SCHOOL PROGRAM

PROGRAM SPACE	PROPOSED - per CCPS				EXISTING			
	Size (SF)	Quant.	TOTAL	TOTALS	Size (SF)	Quant.	TOTAL	TOTALS
ADMINISTRATION								
Central Administration				**1,920**				**2,046**
Reception/Waiting/Office	600	1	600			1	558	
Principal	200	1	200			1	217	
Assistant Principal	150	1	150			2	391	
Itinerant/Financial Office	120	1	120			1	212	
Student Support Room	200	1	200			0	0	
Workroom/ Mailroom	300	1	300			1	82	
Conference Room	300	1	300			1	520	
Adult Toilets	50	1	50			2	66	
Guidance				**570**				**748**
Counselor Office	100	2	200			2	365	
Reception	150	1	150			1	383	
Testing Material Storage Room	120	1	120			0	0	
Records Storage	100	1	100			0	0	
Nurse's Suite				**835**				**460**
Waiting/Reception	100	1	100			1	164	
Treatment/Screening	150	1	150			0	0	
Specialized Treatment	75	1	75			0	0	
Rest Area	150	2	300			2	264	
Toilet	50	1	50			1	32	
Storage	40	1	40			0	0	
Nurse Office	120	1	120			0	0	
INSTRUCTIONAL SPACES								
6th Grade				**10,200**				**13,333**
Reading & Language Arts (RLA)	800	4	3,200			3	3,425	
Social Studies	800	2	1,600			2	2,103	
Mathematics	800	2	1,600			3	3,536	
Science Classroom	1,200	2	2,400			2	2,628	
Science Prep	200	1	200			0	0	
Breakout Room	150	2	300			1	764	
Conference / Work Room	500	1	500			1	398	
Storage	300	1	300			1	398	
Toilet Room	50	2	100			2	81	
7th Grade				**10,200**				**12,107**
Reading & Language Arts (RLA)	800	4	3,200			2	2,244	
Social Studies	800	2	1,600			3	3,232	
Mathematics	800	2	1,600			2	2,057	
Science Classroom	1,200	2	2,400			3	3,707	
Science Prep	200	1	200			0	0	
Breakout Room	150	2	300			0	0	
Conference / Work Room	500	1	500			1	781	
Storage	300	1	300			0	0	
Toilet Room	50	2	100			2	86	
8th Grade				**10,200**				**13,162**
Reading & Language Arts (RLA)	800	4	3,200			4	4,041	
Social Studies	800	2	1,600			2	2,294	
Mathematics	800	2	1,600			3	3,253	
Science Classroom	1,200	2	2,400			2	2,715	
Science Prep	200	1	200			0	0	
Breakout Room	150	2	300			0	0	
Conference / Work Room	500	1	500			1	770	
Storage	300	1	300			0	0	
Toilet Room	50	2	100			2	89	

PROGRAM SPACE	PROPOSED - per CCPS				EXISTING			
	Size (SF)	Quant.	TOTAL	TOTALS	Size (SF)	Quant.	TOTAL	TOTALS
Instruction - Specials/Shared				**11,950**				**10,494**
Instrumental Music Classroom	1,600	1	1,600			1	1,714	
General Music Classroom	1,600	1	1,600			1	1,234	
Instrument Storage	300	1	300			1	211	
Practice Room	100	2	200			2	282	
Practice Room	50	1	50			0	0	
Art Classroom	1,500	1	1,500			1	1,398	
Art Storage	200	1	200			2	283	
Art Kiln Room	100	1	100			0	0	
Foods and Nutrition	1,450	1	1,450			0	0	
Family and Consumer Science	1,000	1	1,000			1	1,172	
Storage Room	200	2	400			2	377	
Office	100	1	100			0	0	
Tech Ed Classroom	1,000	1	1,000			1	1,595	
Production/Fabrication	1,600	1	1,600			1	1,891	
Storage	350	1	350			1	337	
Office	100	1	100			0	0	
Unified Arts Workroom	400	1	400			0	0	
Instruction - Special Education/Resource				**5,150**				**2,098**
Spec. Ed Classroom	400	3	1,200			1	584	
Learning for Independence (LFI)	1,000	1	1,000			0	0	
Structured Learning	800	1	800			1	853	Spanish
Office/ Work Room	500	1	500			2	345	
Storage Room	50	1	50			0	0	
Conference Room	300	1	300			0	0	
Speech & Language	200	1	200			1	162	
Reading Resource	800	1	800			0	0	
Breakout Room	200	1	200			1	154	ESOL
Book Storage Room	100	1	100			0	0	
MEDIA CENTER								
Media Center				**5,875**				**5,568**
Reading / Stacks	3,800	1	3,800			1	3,400	
Materials Preparation/Office	250	1	250			1	296	
Media Storage Room	75	1	75			0	0	
Print Production Room	350	1	350			1	240	
Video Production Room	350	1	350			1	549	
Tele/Data Equipment Closet	50	1	50			1	423	
Computer Lab	1,000	1	1,000			1	660	
PHYSICAL EDUCATION								
Physical Education				**15,000**				**19,884**
Gymnasium	6,800	1	6,800			1	9,036	
Activity Room	2,000	1	2,000			2	1,970	
Weight Training Room	1,500	1	1,500			1	1,281	
Locker Rooms	1,150	2	2,300			2	5,083	
Storage Room	1,000	1	1,000			6	896	
Faculty Office	150	2	300			0	0	
Student Toilet	100	2	200			2	577	
Laundry Room	100	1	100			1	249	
Health Classroom	800	1	800			1	792	

PROGRAM SPACE	PROPOSED - per CCPS				EXISTING			
	Size (SF)	Quant.	TOTAL	TOTALS	Size (SF)	Quant.	TOTAL	TOTALS
CAFETERIA								
Food Service				**8,020**				**10,182**
Student Dining	3,900	1	3,900			1	7,060	
Dry Storage	200	1	200			1	226	
Kitchen	800	1	800			1	1,566	
Kitchen - Serving	300	1	300				Incl. Above	
Dishwashing	300	1	300			1	314	
Office	120	1	120			1	110	
Cooler/Freezer	200	1	200			1	376	
Kitchen Staff Toilet	50	1	50			1	38	
Kitchen Staff Lockers	100	1	100			1	87	
Table Chair Storage	300	1	300				0	
Platform	1,000	1	1,000				0	
Theater Storage (Accessed from Stage)	150	1	150				0	
Staff Lounge	600	1	600			1	405	
BUILDING SERVICES								
Building Services				**550**				**631**
Bldg. Serv. Office	100	1	100			1	293	
Toilet/Lockers	75	1	75			0	0	
Receiving/Central Storage	200	1	200			0	0	
Workroom	100	1	100			0	0	
Custodial Closets (multiple)	25	3	75			6	338	
BEST Program				**10,000**				**8,812**
BEST Classroom	500	8	4,000			7	4,917	
BEST Learning for Independence (LFI)	1,000	1	1,000			0	0	
BEST Arts/ Music	500	1	500			0	0	
BEST Pullout Room	200	3	600			1	306	
BEST Counselor Office	150	1	150			1	225	
BEST Crisis Interventionist Office	150	1	150			0	0	
BEST Group Counseling Office	200	1	200			0	0	
BEST School Psychologist	150	1	150			0	0	
BEST Conference Room	300	1	300			0	0	
BEST Support/Time Out Room	250	1	250			0	0	
BEST Seclusion Room	150	1	150			1	215	
BEST Cafeteria	300	1	300			0	0	
BEST Toilets	150	2	300			2	453	
BEST Activity Room	1,500	1	1,500			1	2,475	
BEST Mindfulness Room	150	1	150			0	0	
BEST Faculty Room/Workroom	300	1	300			1	221	
TOTAL NET PROGRAM SF				**90,470**				**99,525**
GROSSING FACTOR				1.36				1.21
TOTAL GROSS SF				**123,088**				**120,400**

The Elementary School program is included for the K-8 school options and is combined with the Middle School program noted above. The Elementary School program is organized into the twelve major categories:

- Administration
- Guidance
- Nurse's Suite
- Instruction – PreK and Kindergarten
- Instruction – 1st to 5th Grades
- Instruction – Specials/ Shared
- Least Restrictive Environment Setting/Resource
- Media Center
- Physical Education
- Cafeteria
- Building Services
- BEST Program

The following table summarizes the existing middle school program and compares it to the proposed middle school program. The programs in the table are organized by the eleven (11) major categories noted above.

Program Summary Table – Elementary School

PROGRAM SPACE	PROPOSED - per CCPS			
	Size (SF)	Quant.	TOTAL	TOTALS
ADMINISTRATION				
Central Administration				**1,240**
Reception/Waiting/Office	400	1	400	
Principal	200	1	200	
Assistant Principal	150	1	150	
Workroom/ Mailroom	250	1	250	
Conference Room	200	1	200	
Adult Toilets	40	1	40	
Guidance				**275**
Counselor Office	175	1	175	
Learning Support/ Conference	100	1	100	
Nurse's Suite				**680**
Waiting/Reception	200	1	200	
Office/Exam Room	150	1	150	
Rest Area	250	1	250	
Toilet	50	1	50	
Storage	30	1	30	

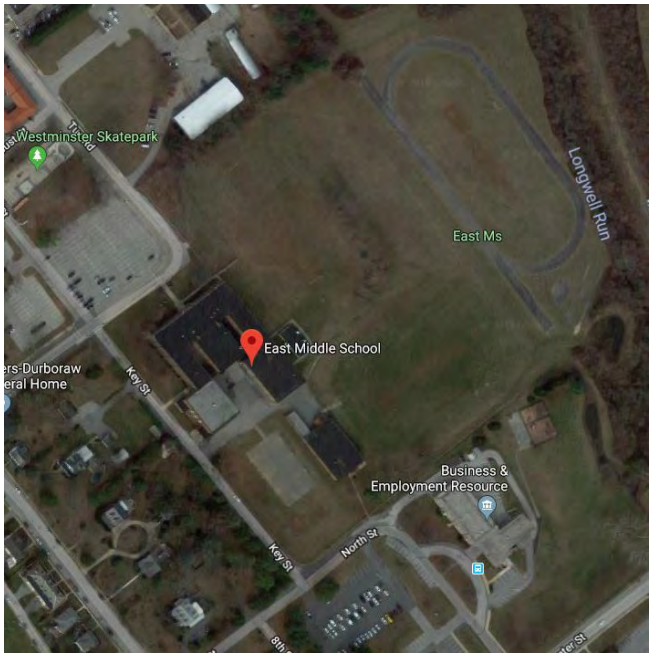
PROGRAM SPACE	PROPOSED - per CCPS			
	Size (SF)	Quant.	TOTAL	TOTALS
INSTRUCTIONAL SPACES				
Pre-K & Kindergarten				**5,140**
Pre-Kindergarten Classroom	900	1	900	
Pre- Kindergarten Toilet	40	2	80	
Pre-Kindergarten Storage	50	1	50	
Kindergarten Classroom	950	4	3,800	
Kindergarten Work Room/Storage/Kitchenette	150	1	150	
Kindergarten Toilet	40	4	160	
Classroom (Grades 1 - 5)				**18,155**
Classrooms (1 - 5)	825	21	17,325	
Staff Toilets	40	2	80	
Teacher Workroom (1 per Grade Level)	150	5	750	
Instruction - Specials/Shared				**2,450**
Instrumental Music Classroom	500	1	500	
Vocal Music Classroom	900	1	900	
Art Classroom	900	1	900	
Art Storage	150	1	150	
Least Restrictive Environment Setting/Resource				**2,050**
Itinerant Resource Room	300	2	600	
Speech and Language	200	1	200	
Storage	150	1	150	
G&T	200	1	200	
ESOL	200	1	200	
OT/PT Room	300	1	300	
Reading Resource	400	1	400	
MEDIA CENTER				
Media Center				**5,800**
Reading / Stacks	3,000	1	3,000	
Media and Instructional Material Production	300	1	300	
Storage (Media & School-wide)	450	1	450	
Office	250	1	250	
Video Production/Editing	200	1	200	
Computer Lab	825	1	825	
Telecommunications Rooms	175	1	175	
Health Classroom with Storage	600	1	600	
PHYSICAL EDUCATION				
Physical Education				**4,575**
Gymnasium	4,000	1	4,000	
Gym Storage (Interior/Exterior)	400	1	400	
PE Office	175	1	175	

PROGRAM SPACE	PROPOSED - per CCPS			
	Size (SF)	Quant.	TOTAL	TOTALS
Food Service				**5,630**
Student Dining	2,500	1	2,500	
Dry/Cold Storage	400	1	400	
Kitchen / Serving Lines	1,100	1	1,100	
Dishwashing	250	1	250	
Kitchen Staff toilet/lockers	100	1	100	
Table Chair Storage	120	1	120	
Platform	600	1	600	
Extended Day Care Program Storage	80	1	80	
Faculty Dining/Lounge	400	1	400	
Faculty Toilets	40	2	80	
BUILDING SERVICES				
Building Services				**220**
Bldg. Serv. Office	120	1	120	
Toilet/Lockers	100	1	100	
BEST Program				**8,700**
BEST Classroom	400	8	3,200	
BEST Alternative Learning Classrooms	400	2	800	
BEST Counselor Office	150	1	150	
BEST Crisis Interventionist Office	150	1	150	
BEST Group Counseling Office	200	1	200	
BEST School Psychologist	150	1	150	
BEST Flex Office	150	3	450	
BEST Support Room	250	2	500	
BEST Calming Room	250	2	500	
BEST Seclusion Room	150	3	450	
BEST Toilets	50	4	200	
BEST Multi-Purpose / Activity Room	1,500	1	1,500	
BEST Mindfulness/Sensory Room	150	1	150	
BEST Faculty Room/Workroom	300	1	300	
TOTAL NET PROGRAM SF				**54,915**
GROSSING FACTOR				1.43
TOTAL GROSS SF				**78,419**

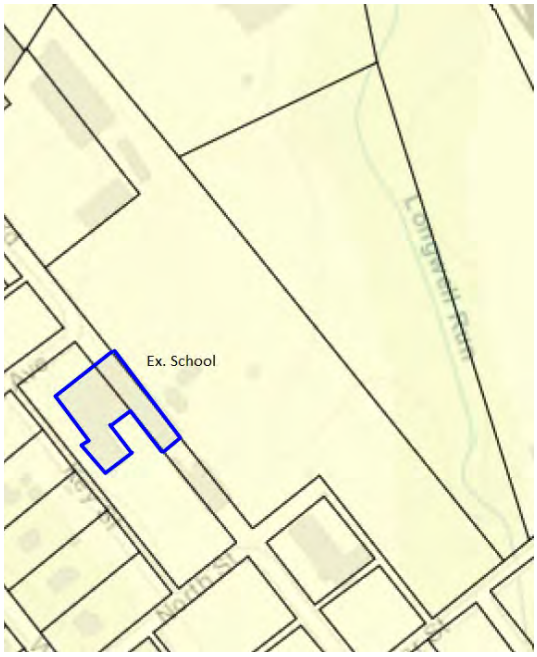
EXISTING CONDITIONS

SITE DESCRIPTION – EAST MIDDLE SCHOOL SITE

The existing East Middle School is located at 121 Longwell Avenue, Westminster, Maryland. The site is approximately 19 acres (parcel records indicate multiple parcels. SDAT searches show two listings 1.38 acres and 17.62 acres). The property is irregularly shaped. The property is also known as Map 104, Grid 12, Parcel 1151.The site is owned by the Board of Education of Carroll County. The existing school is located on the south west side of the property and there are no portable classrooms situated on the site. There are single family homes directly across from the school on Key Street.



Existing East Middle School Site Aerial



Carroll County Parcel Map

SITE CIRCULATION AND PARKING

Vehicular:

The building is situated between North Street, Key Street, Longwell Avenue, and Tuc Road. There is a parking lot connected to the school at the intersection of Tuc Road and Longwell Avenue and is used for staff and visitor parking. The location of the parking lot requires crossing Longwell Avenue to access the building. The parking lot requires resurfacing. A loading area can be accessed from Key Road and divides the building from the student hard court play area. Buses load and unload in front of the school along Longwell Avenue and there is no dedicated bus loop. Also, there is no designated bus drop-off for the BEST program students.

Pedestrian:

There are sidewalks along the side of the school adjacent to Longwell Avenue. The sidewalk continues southwest down Longwell Avenue until Main Street, at which point it diverges down Main Street.

ZONING INFORMATION

The site is located within a C zoning district in Westminster, Maryland.

Lot and Yard requirements for buildings in a C district are as follows:

Lot Width and Yard Requirements

- Lot Width at Building Line: 300 feet
- Front Yard Depth: 50 feet
- Side Yard Width: 50 feet
- Rear Yard Depth: 50 feet

SITE SOILS

According to information obtained from the United States Department of Agriculture Natural Resources Conservation Service, the site falls into three (3) distinct soil groups:

SpB: Spoolsville-Urban land complex, 0 to 8 percent slopes.
SoC: Spoolsville loam, 8 to 15 percent slopes.
MaB: Manor loam, 3 to 8 percent slopes.

Additional information regarding these soils is identified below:

Map Unit	Percent of Site Area	Hydrologic Soils Group	AASHTO Classification	Hydric Soils
SpB	42%	B/D	A-4	No
SoC	23%	B	A-4	No
MaB	35%	B	A-4	No

SITE TOPOGRAPHY

The existing buildings are on a hill, the elevation varies from 772 to 760 +/-. The grade at the back of the building slopes away from it towards a swale running alongside Baltimore Boulevard.

UTILITIES

Water
Based on our review of existing city records, it appears that the existing building is currently served by a 6-inch water connection (DWG#2426-F). The connection is coming from Longwell Avenue.

Sanitary Sewer
Record drawings indicate the building addition has a 10-inch sanitary connection.

Storm Drains
Water runs downhill northeast of site into a storm pond.

Gas, Electric, Cable and Telephone
Refer to the mechanical, electrical, plumbing section for additional information regarding gas, electric and data.

STORMWATER MANAGEMENT

Runoff from the existing site travels northeast behind the school to an existing pond on the back portion of parcel 1151 which is a parcel adjacent to the school property.

Any site development must be completed in accordance with the Maryland Department of the Environment's (MDE) 2010 Stormwater Management Guidelines and the Stormwater Management Regulations indicated by Carroll County.

FLOODPLAINS, WETLANDS, AND WATERWAYS

The site is not located within the 100-year floodplain as delineated on FEMA flood insurance rate map 24013C0203D.

A review of the Merlin (Maryland Environmental Resources & Land Information Network) mapping indicates that no wetlands or streams exist on the site.

The site is also not within 1,000 feet of the Chesapeake Bay and therefore is not located with the Chesapeake Bay Critical Area.

LANDSCAPE, TREES, AND FOREST CONSERVATION

There is a stand of mature trees located behind the school between the school and the track and field circuit. There is a line of trees northeast of the school serving as a buffer between it and neighboring properties, including a buffer between it and Baltimore Boulevard.

ATHLETIC FIELDS / ATHLETIC COURTS / PLAY AREAS

A track is located behind the school. Between the school and the track, there is an empty field. The track is owned by Carroll County, not the Board of Education.

SITE DESCRIPTION – FRIENDSHIP VALLEY ELEMENTARY SCHOOL SITE

The existing Friendship Valley Elementary School is located at 1100 Gist Road, Westminster, Maryland. The site is approximately 49.42 acres. The property is irregularly shaped. The property is also known as Map 51, Grid 06, Parcel 635, Deed Reference 1239/758. The site is owned by the Board of Education of Carroll County. The existing school is located on the east side of the property. One quad portable is located adjacent to the school. The property is located between Kate Wagner Road and Hook Road. There are single family homes north of the school and across Gist Road.

Existing Friendship Valley Elementary School Site Aerial

Carroll County Parcel Map

SITE CIRCULATION AND PARKING

Vehicular:

There is one existing vehicular access point onto the site via curb cut located on Gist Road. This access point provides access to two existing surface parking lots, delivery, and dumpster area and a student pick up and drop off loop.

Pedestrian:

There is a sidewalk along the frontage of the school. To the northeast the sidewalk continues from the entrance to Gist Road. The sidewalk is continuous along Gist Road with a crosswalk at Hook Road.

ZONING INFORMATION

The site is located within a R 20000 Residential zoning district in Carroll County, Maryland.

Setbacks and parking requirements for buildings in a R 20000 district are as follows:

Setbacks

- Lot Width at Building line: 150 feet
- Front Yard Depth: 100 feet
- Side Yard Depth: 100 feet
- Rear Yard Depth: 50 feet

SITE SOILS

According to information obtained from the United States Department of Agriculture Natural Resources Conservation Service, the site falls into four (4) distinct soil groups:

WhB: Wheaton-Glenelg complex, 0 to 8 percent slopes.
UrB: Urban land-Udorthents complex, 0 to 8 percent slopes.
BaB: Baile silt loam, 3 to 8 percent slopes.
GeC: Glenelg channery loam, 8 to 15 percent slopes.

Additional information regarding these soils is identified below:

Map Unit	Percent of Site Area	Hydrologic Soils Group	AASHTO Classification	Hydric Soils
WhB	70%	B	A-4	No
UrB	20%	D	Not Rated	No
BaB	5%	C/D	A-4	Yes
GeC	5%	B	Not Rated	No

SITE TOPOGRAPHY

The existing buildings sits on a plateau at approximately elevation 722 +/-. The grade at the front of the building slopes towards Gist Road. A slight elevation change occurs to the south west of the building rising to elevation 724 +/-. Drainage from this area makes its way into Gist Road Storm drain system.

UTILITIES

Water

Based on our review of existing city records, it appears that the existing building is currently served by a 10-inch water connection (DWG#158810H-RH-4).

Sanitary Sewer

Record drawings indicate the building addition has an 8-inch gravity sewer at the side of the existing building.

Storm Drains

On-site storm drains pick up runoff in the entrance way. These then drain into a system in Gist Road.

Gas, Electric, Cable and Telephone

Refer to the mechanical, electrical, plumbing section for additional information regarding gas, electric and data.

STORMWATER MANAGEMENT

An existing stormwater facility is located along Gist road in front of the school's parking area on the east side of the entrance road. The facility drains under the entrance road to the west.

Any site development must be completed in accordance with the Maryland Department of the Environment's (MDE) 2010 Stormwater Management Guidelines and the Stormwater Management Regulations indicated by Carroll County.

FLOODPLAINS, WETLANDS, AND WATERWAYS

The site is not located within the 100-year floodplain as delineated on FEMA flood insurance rate map 24013C0192D.

A review of the Merlin (Maryland Environmental Resources & Land Information Network) mapping indicates that no wetlands or streams exist on the site.

The site is also not within 1,000 feet of the Chesapeake Bay and therefore is not located with the Chesapeake Bay Critical Area.

LANDSCAPE, TREES, AND FOREST CONSERVATION

There is a stand of mature trees located at the side of the building separating the play area and the fields. There is a loose line of trees forming a buffer against Kate Wagner Road, Gist Road, and the houses adjacent to Morning Star Way. In addition, there are trees behind the building forming a buffer between the site and open fields.

ATHLETIC FIELDS / ATHLETIC COURTS / PLAY AREAS

The play fields are located northeast and southeast of the school. There are softball and baseball fields adjacent to the site to the southwest. Playgrounds are located on the southwest and northeast sides of the building. A hard-court play area is located next to the northeast playground.

EXISTING SITE PLANS

East Middle School Site

Friendship Valley Elementary School Site

ARCHITECTURAL

Existing Building

The art deco style building was constructed in 1936 as Westminster High School to replace the 1898 Westminster High School located at Green and Center Streets. A gym addition was constructed in 1941, a 2-story classroom addition was constructed in 1950, and a separate one-story annex building; originally constructed for technical education programs and now used for the middle school BEST program; was constructed in 1964. In 1971, when the new Westminster High School on Washington Road opened, the building became the home for East Middle School. In 1976, the building was completely renovated to better serve the middle school program. The school currently includes sixth through eighth grade students including the middle school BEST students. The building is 120,400 square feet.

The school currently includes sixth through eighth grade students. The state rated capacity of the school is 869 (local rated capacity is 790). The current enrollment is 710 students.

Entry to the building is on the West side via a lobby located a half story below the main level of the building. A secure vestibule is located here but with limited visibility from the administration office located a half story above this area. This makes it difficult for the administrative staff to supervise the main entry and for visitors to understand where to go upon entry to the building. There is no accessible route into the building from the main entrance. There is no elevator in the building.

Main Entry Lobby

The nurse's suite is undersized and has cots in separate areas (including one in the storage room) and provides limited privacy. Also, an isolation area and additional storage are needed. There is no area for students waiting to see the nurse. It does not meet current COMAR standards for Health Suites.

Nurse's Suite

Roof

The roof of the 1936 portion of building was replaced in 1994 and is 25 years old. Records indicate that the roof on the remainder of the building dates to 1976 and is over 40 years old. Roofs are built-up with roof drainage via internal drains. No overflow drains, as currently required by Code, were observed in the areas served by internal roof drains. Also, roof decks are wood.

Active Roof Leak

Exterior Wall

The exterior walls are a combination of precast and brick with concrete masonry back-up. Existing drawings were limited, and no destructive testing was performed, however it appears there is little to no insulation in the exterior walls. Also, portions of the building are located below grade resulting in flooding within the building.

Exterior drainage slopes to building at below grade rooms ***Areaways fill with debris causing flooding***

Exterior Windows and Doors

Exterior windows are aluminum windows with single pane glazing. The frames of these windows are not thermally broken. In addition, the operable portions of the windows have failed and will not stay in the open position. The window sashes are heavy and could cause injury if they fall on someone.

Typical Windows

Building – Interior

Floors

Multiple floor types at the school are as follows:

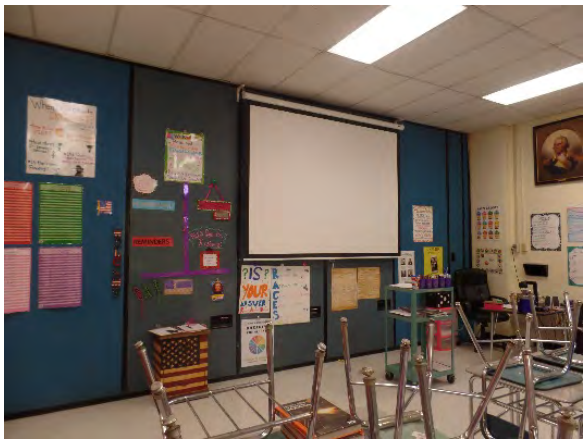
- Vinyl Tile (VCT): Main Lobby, Corridors, Classrooms, Cafeteria
- Quarry Tile: Kitchen
- Wood: Gymnasium
- Ceramic Tile: Toilet Rooms

The vinyl tile, ceramic tile, and quarry tile floors should be replaced as part of a building wide renovation.

Partitions

Interior partitions are typically painted concrete masonry units (CMU). Where program spaces have been modified to meet changing program needs, gypsum board on metal stud partitions have been used. Vinyl cove based is used at all interior partition types. Ceramic tile is applied to the partitions in the locker room showers. Folding partitions are located between some classrooms and are left in the closed position. They have a chalk surface that is peeling and needs to be replaced.

Typical Classroom



Folding Partition Between Classrooms

Science Labs

Science Labs are cramped and lack proper storage. There are no teacher demonstration tables and student work areas are limited. There are no prep rooms for the science labs either.

Typical Science Lab

Ceilings

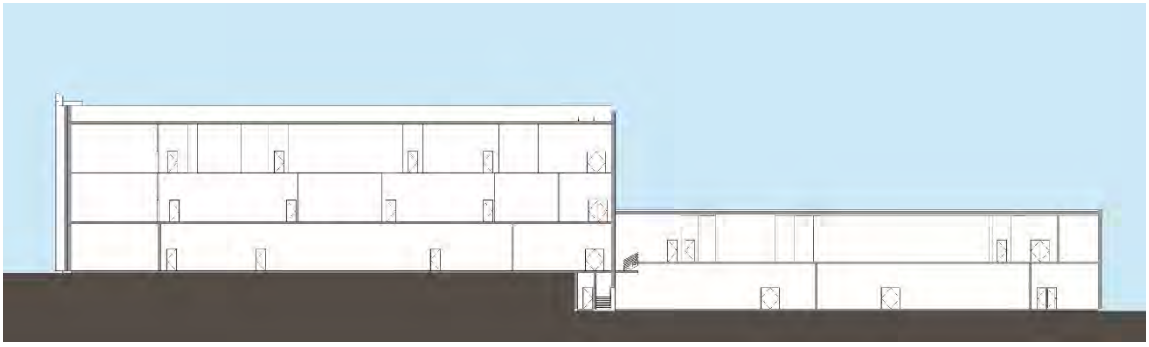
Ceilings are a combination of acoustical lay-in tiles, painted drywall, and exposed painted structure. Corridors, classrooms, toilets, and staff spaces utilize 2x4 acoustical ceiling tile and require replacement throughout the building. The kitchen ceiling is 2x4 acoustical ceiling tile and does not appear to be a clean type ceiling tile typically required by the health department. The gymnasium is exposed structure with exposed fiber roof deck.

Doors/ Hardware

Interior doors are typically wood unless located in a high abuse area that benefits from the use of hollow metal doors. Hardware types vary, and many doors do not meet current accessibility standards and will need to be upgraded to provide a lever handle design. Door thresholds need to be replaced with a style that meets accessibility requirements.

Corridors/ Circulation

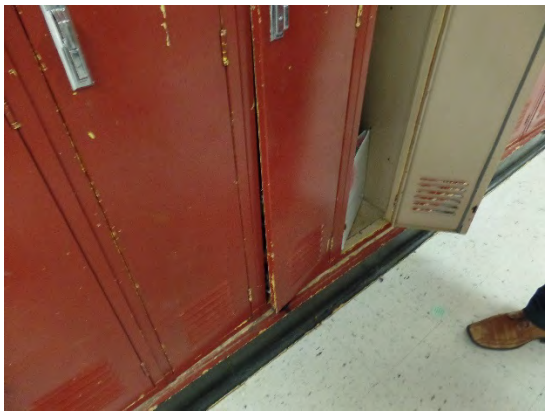
The building floor levels are not ADA accessible. Entry to the building is via a half-flight of stairs to get to the main level of the building. Access between floors is only possible via stairs – there is no elevator in the building. The levels of the 2-story addition do no align with the floors of the original building and require circulation via stairs in the corridors to access between levels. Also, the 'U' shaped configuration of the building makes circulation from the end of one wing to another cumbersome. Often students take a shortcut through the media center, however this causes disruption to media center instruction.



Building Section between 1936 Building on Left and 1950 2-story addition on right. Note that levels do not align between section of the building.

Corridor Connecting 1936 and 1950 buildings

Typical Corridor

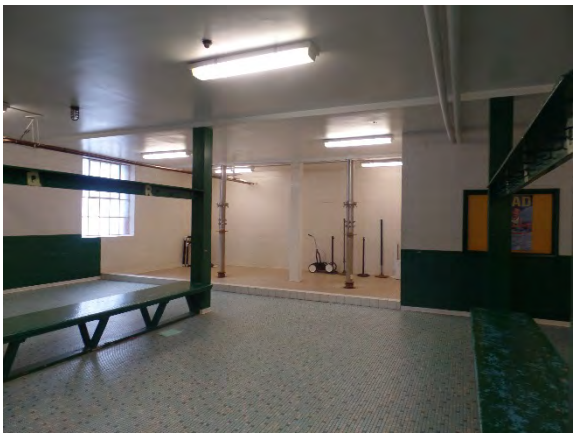


Typical Corridor Locker

Toilet Rooms/Locker Rooms

Toilet rooms are too few in number based on current code requirements for quantity of plumbing fixtures of a building this size. The layout of the toilet rooms does not meet ADA guidelines for clear space. Also, locker rooms are located below the gymnasium and with no ADA accessible route to access the locker rooms. There are no lockers in the locker rooms for students to lock their belongings.

Non-ADA Compliant Toilet Room



Typical Locker Room

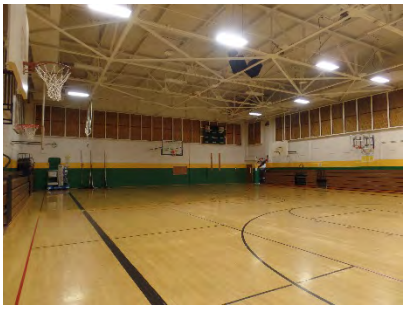
Casework

Generally, the casework is stained or painted wood and is in fair condition. Some spaces have added mobile or less durable storage that would not be worthy of salvage through a renovation.


Classroom Casework

Assembly Space

There is limited space for school assemblies. There is no stage. The gymnasium is currently used for assemblies; however, it is limited to one class at a time by code and interferes with physical education classes. The cafeteria has limited sight lines due to the numerous structural columns and does not serve well as an assembly space. Also, the gymnasium is not air conditioned.



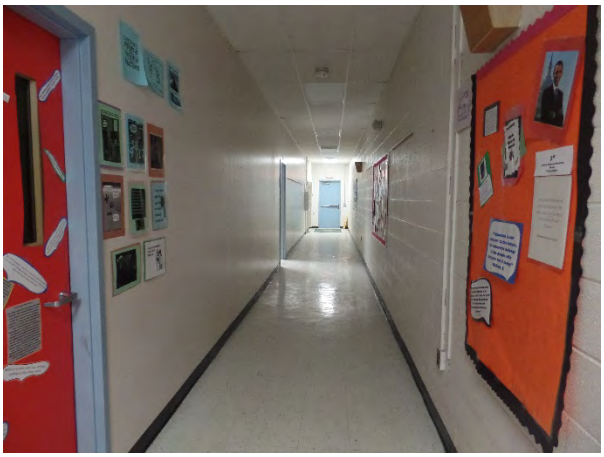
Gymnasium

Gymnasium Capacity

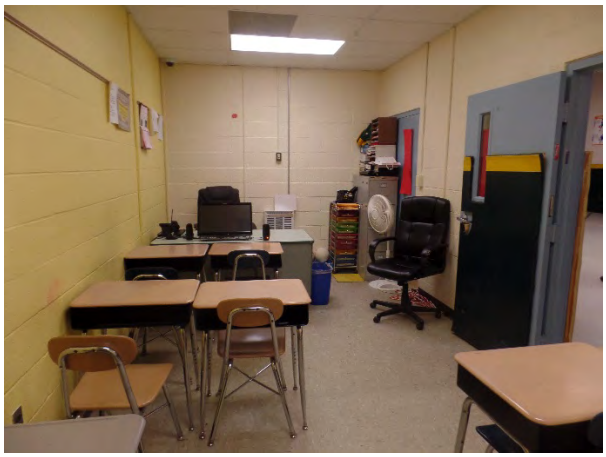
Cafeteria

BEST Program

The BEST Program is in the Annex building that has been converted from a Technology Education Building to instructional space for the BEST students. This creates a separation from the rest of the school, creating a sense of separation and isolation. Also, the corridors are too narrow for the programmatic needs of the students.



BEST narrow corridor



BEST Instructional Space

Hazardous Materials

Based on the year of construction, it is assumed that there are hazardous materials in the building construction in the form of asbestos, lead based paint, etc. The hazardous materials report maintained by CCPS will be reviewed as part of the final report.

STRUCTURAL

Structural drawings provided to our office for the existing building are limited to alternations completed in 1976.

We visited East Middle School on February 14, 2019 and performed a walk-through of the existing buildings with guidance of the principal. Our walk-through of the existing building was for general review of the existing conditions, to the extent visible without demolition, and to gather information from school personnel regarding known issues and remedial work undertaken.

Based on our review of the documents and on-site observations, the following is a summary of our observations:

Original School Building:

- Structural framing of the original building was generally not visible at the time of our visit. Limited areas observed appeared to reflect the use of cast-in-place concrete floor framing.
- No signs of distress were noted in interior walls visible at the time of our visit.

Northeast Two-Story Addition

- Roof framing consists of wood plank decking on open-web steel bar joists.
- Joists are assumed to be supported on structural steel spandrel beams and interior masonry bearing walls.
- No signs of distress were noted in interior walls visible at the time of our visit.

Gymnasium

- Roof framing consists of what we assume to be tongue and groove gypsum panels supported on structural steel purlins and long-span open web steel joists or trusses.
- Masonry pilasters are located at truss bearing points in the exterior walls.
- Cracking of masonry at truss and purlin support points was noted.
- Cracking of exterior walls was noted. It appears prior repairs or pointing was performed.

Freestanding Annex Building

- Roof framing consists of metal deck supported on open-web steel joists.
- Joists are assumed to be supported on masonry bearing walls.
- No signs of distress were noted in interior walls visible at the time of our visit.

FOOD SERVICE

GENERAL DESCRIPTION:

The East Middle School kitchen contains approximately 1,500 square feet and operates as a cooking facility equipped to produce and serve meals to the students and staff. Most of the equipment is original to the 1976 kitchen renovation. Much of the equipment, although maintained, is old, outdated, inefficient, non-compliant with current codes and has seen its useful life.

FINISHES

Floors: Kitchen and serving areas are quarry tile with integral cove base. Aside from normal wear and tear they appear to be in stable condition but do not have any traction and possibly slippery when wet.


Overall Kitchen showing floors and cooking equipment

Walls: Partially painted drywall, FRP panels and painted CMU up to the finish ceiling. Some piping and conduit are run exposed on walls.

Ceilings: 2x4 drop-in ceiling tiles. Dirty, grease-laden especially around cooking battery. 9’-0” ceiling height throughout.

Lighting: 48-inch long surface-mounted (2) twin-tube light fixtures with lens covers. Light levels throughout space appear below current code standards requiring 50-foot candles throughout. Additional lighting will be required.

AREAS

Receiving: Receiving corridor is very tight and has a 3’-0” door. Deliveries must maneuver around several turns and doors before getting into the Kitchen proper. Recommend that a more direct passage to the kitchen is created and install a fly fan at the 42-inch wide receiving door.

Receiving Area

Bulk Storage: Dedicated Dry Storage Room is none existent. Products are stored on some wire and wooden shelving. We recommend a dedicated Dry Storage Room with new shelving and dunnage racks including can rack for efficient use of space.

Bulk Storage

Refrigerated Storage: A brand new walk-in cooler & freezer directly off main kitchen were installed in 2018 however there is a limited number of interior shelving. Also lacking are dunnage racks to properly store bulk items.

Refrigerated Storage

Kitchen: Production space appears to be adequately sized. Area is poorly ventilated and extremely hot during warmer months, cold during winter months, adding to worker stress and fatigue. Additional cooking equipment is needed to properly prepare current menu items. The kitchen is dimly lit and promotes a depressing atmosphere. The kitchen lacks the necessary quantity of pass-thru heated or refrigerated cabinets to back-up the serving line. The exhaust hood has no dedicated make-up air and is outdated and must be replaced to comply with latest Mechanical Code. There is an insufficient quantity of hand washing sinks.

Kitchen Hood

Serving: Serving Area is remotely located from the Kitchen and it is inconvenient for the staff to navigate around the students during serving hours to supply food from the Kitchen to the Servery. Serving area consists of one straight-line "institutional looking" cafeteria counter with provisions for hot food items only. Area is uninviting and extremely plain resulting in an unpleasant dining experience. Area lacks necessary quantity of pass-thru hot and cold cabinets to support serving operation.

Serving Line

Dishwashing: A pot and pan washing sink is located at the back end of the kitchen. The equipment appears original. There is a tray return and Dishroom to the left of the Kitchen. It is original to the 1976 renovation. The existing Dishmachine is outdated and is an energy hog.

Dishwashing Equipment

Office: Approximately 90 square feet; very cramped. Conveniently located to observe production areas.

Kitchen Office

EQUIPMENT

Exhaust Hood: Made of stainless steel with baffle- type filters. Insufficient light levels. No make-up air.

Kitchen Hood

Fire Protection System: There is an existing system, however it needs to be upgraded to meet current standards.

Current Cooking Equipment:

- (1) Blodgett Single-Deck Convection Oven
- (1) Blodgett Double Deck Oven
- (1) Intek Boilerless, Single Deck Steamer

Worktables, Prep Sinks, Pot Sinks: Other items appear original to building. Worktables with stainless tops are a mix of different sizes and styles. Pot sink appears in fair condition, however most of the fabricated items have galvanized leg sets.

CONCLUSION

The kitchen is poorly ventilated and is an uncomfortable and difficult working environment. Most of the equipment has either seen its useful life or is in violation of current health codes. Replace all outdated inefficient equipment with new energy saving appliances according to CCPS current menu. The kitchen areas are returning to full/prep production kitchens as healthier eating programs are being established in schools throughout Carroll County Public Schools.

Currently the space is a mainly uninviting and uncomfortable dining experience. Select bright colorful attractive finishes to promote a friendly inviting atmosphere. Improve lighting and ventilation throughout space. The total square footage of the existing foodservice area(s) is below County and State recommendations. The areas are poorly laid out with wasted space resulting in increased labor to perform basic tasks. Increase size and reconfigure overall kitchen and serving areas to better maximize space.

KITCHEN SPATIAL REQUIREMENTS:

MSDE School Food & Nutrition Standards Design Manual for a school of this size and recently built facility is as follows:

Area	S.F. Required
• Walk-in Cooler/Freezer Storage	200
• Dry Storage	240
• Manager's Office	80
• Preparation/Cooking Area	640
• Serving – (2) Line	500
• Dishwashing/Pot & Pan Washing Area	250
• Utility Closet/Soap Storage	80
• Staff Toilet/Locker	150
Total	**2,140 S.F.**

EQUIPMENT BUDGET

As stated above, most of the equipment is old and outdated. Therefore, aside from miscellaneous mobile carts and various countertop items, the kitchen will receive new equipment selected to optimize current operator's menu requirements. Based on similar school projects recently completed adjusted for inflation, we estimate a Total Kitchen Equipment Cost of $525,000.00. This represents equipment delivered and set-in-place ready for final connections by mechanical/electrical/plumbing trades.

This study was conducted looking at the broad picture of the foodservice operation. We recommend a thorough comprehensive equipment analysis be conducted as part of the next phase of work to determine the extent of items that can be reused.

MECHANICAL/PLUMBING

GENERAL

The original building was constructed in 1936 and consisted of approximately 87,386 square feet. Additions occurred in 1950 consisting of 18,658 square feet and 1964 consisting of 14,356 square feet. The total building area is approximately 120,400 square feet all of which was renovated in 1976. In the year 2000, the boiler burners were converted from fuel oil to natural gas and in 2002 the automatic temperature control system was upgraded to tie into the countywide energy management system (EMS). The building is a multi- three (3) story structure. The roof (and other areas) are wood construction and the use of rooftop type units may not be feasible.

EXISTING MECHANICAL SYSTEMS:

HEATING PLANT

Generation: The original steam boiler burners were converted from fuel oil to natural gas in 2000. The two (2) existing boilers are low pressure steam with burners, gas pilots, Scotch Marine type. The boilers, model number SPL54-125, were manufactured by York Shipley in 1960.The burners were manufactured by Gordon Piatt. Two (2) duplex condensate receiver pump sets return the condensate to the boilers. The existing fuel oil system was removed, and the boilers utilize natural gas only as their fuel source.

Distribution: Steam and condensate piping is located in the boiler room, which utilizes a steam to water converter to generate heating water to the heating only hydronic loop as well as the dual temperature loop.

Annex D: Annex D is heated by an independent single gas fired hot water boiler as manufactured by Burnham (507,000 BTU capacity).

COOLING PLANT

A central water-cooled chiller generates chilled water when the dual temperature system operates in the cooling mode. The chiller has a rated capacity of 184 tons cooling 410 gpm from 55°F to 45°F. The chiller utilizes refrigerant R-11, is a centrifugal type and was manufactured by Borg Warner-York, Model B3 B1 OG B.

Heat rejection is via a centrifugal style cooling tower as manufactured by Baltimore Air Coil. The cooling tower is located at grade and adjacent to the mechanical equipment room. The cooling tower is rated to cool 530 gpm from 95°F to 85°F. A circulation pump located in the mechanical equipment room adjacent to the chiller circulates condenser water from the cooling tower to the chiller.

The central chilled water system serves the classroom areas.

Independent air-cooled condensing units provide cooling/heat rejection for the media center/support/office admin and the balcony area adjacent to the media center. Additionally, direct expansion cooling systems including window a/c units, are used for Annex D.

HYDRONIC DISTRIBUTION SYSTEMS

There are two (2) independent hydronic systems that serve the building. One is a heating only loop which serves the gym, locker rooms and cafeteria areas. Two (2) base mounted end suction pumps are located in the boiler room. The heating water pumps are rated for 110 gpm at 20 feet of head utilizing a 1 horse power motor. The pumps were manufactured by Taco.

A 2-pipe dual temperature system serves the rest of the building. The (2) base mounted end suction pumps are located in the boiler room. The dual temperature pumps are rated for 425 gpm at 60 feet of head utilizing a 10-horse power motor. The pumps were manufactured by Taco.

A common steam to water shell and tube type heat exchanger is used to heat both the heating water loop and the dual temperature loop. A modulating 3-way control valve allows the supply water temperature to be reset on the heating water loop.

2 position summer – winter switchover valves isolate the steam to water heat exchanger or the chiller depending on its mode of operation (cooling or heating).

AIR DISTRIBUTION SYSTEMS

Air Handling Units:

AHU-1: Serves the lower level cafeteria. The air handling unit is a 2-pipe central station type located in the main mechanical equipment space and hung from the structure (over the existing chiller). Air handling units are no longer allowed to be installed in mechanical equipment rooms which house chillers. The unit is a single zone constant volume type as manufactured by AAF. The unit is heating and ventilating only and does not have any type of humidity control (i.e. dehumidification).

AHU-2: Serves the media center. The air handling unit is located in a small equipment room on the second floor. A roof mounted air-cooled condensing unit located on the roof provides cooling to the unit's evaporator coils for summer use. The unit also has a conventional water coil connected to the central 2-pipe dual temperature system. The unit is a single zone constant volume air handling unit as manufactured by AAF. The unit does not have any type of humidity control (i.e. dehumidification).

AHU-3: Serves the office/admin suite. The air handling unit is located in a small equipment room on the second floor. A roof mounted air-cooled condensing unit located on the roof provides cooling to the unit's evaporator coils for summer use. The unit also has a conventional water coil connected to the central 2-pipe dual temperature system. The unit is a multi-zone (9 zones) constant volume air handling unit as manufactured by AAF. The hot deck is bypass air only (i.e. no coil). The unit does not have any type of humidity control (i.e. dehumidification).

AHU-4 (typical of 2): Serves the gym. The air handling units are heating and ventilating type and are suspended in each of the two exterior corners within the gym itself. Return air enters through the bottom of the unit while the supply is via a ducted distribution system. The units heating coil is connected to the heating only water loop which also serves the locker room area.

Terminal Units:

Most of the building (i.e. classroom areas) is heated and cooled by 2-pipe unit ventilators which are connected to the dual temperature loop. There is a combination of both horizontal (ceiling) and vertical (floor) types. The units were manufactured by AAF. The unit ventilators are connected to outdoor air louvers to provide the code required outdoor air as well as free cooling outside air economizer cycle. These units do not have any type of humidity control (i.e. dehumidification). Outside air louvers for the lower level are typically located in areaways which also is the location where condensate is discharged.

AUTOMATIC TEMPERATURE CONTROLS

The building is primarily local pneumatic controls with pneumatic air compressor and air dryer located in the boiler room. An existing Siebe Control System has been abandoned. The heating plant and some time clock features are controlled by a Johnson Metasys Direct Digital Control (DDC) System. This was installed in 2002 when the heating plant equipment was replaced.

SYSTEM/EQUIPMENT EVALUATION - MECHANICAL

HEATING PLANT:

Boilers: The existing boilers are fifty-four (54) years old, are low pressure steam type, and are at/beyond the end of their useful life. The existing burners were manufactured by a company (Gordon Piatt) that is no longer in business.

Distribution: The existing steam and condensate piping distribution system is in poor condition and at/beyond the end of its useful life.

It is recommended that all steam and condensate piping be removed in its entirety. The existing heating water piping and dual temperature water piping is original to the 1975 project and is over 40 years old. The condition of the piping and remaining life expectancy is unknown.

COOLING PLANT/EQUIPMENT:

Chiller: The existing chiller is very old and utilizes refrigerant R11. This type of refrigerant was phased out many years ago. The chiller is not energy efficient compared to newer models. The chiller is well beyond the end of its useful life.

TERMINAL EQUIPMENT:

All existing terminal type devices are original and are at the end of their useful life. Therefore, it is recommended that all convectors, unit ventilators, unit heaters, heating and ventilating units, and baseboard radiation units be replaced in their entirety.

ELECTRICAL

The electric service is derived from utility pad-mount transformer with a secondary voltage of 480/277V, 3 phase, 4 wire. The service switchboard, installed during the 1976 renovation, is manufactured by Federal Pacific. It serves both the Middle School and the Annex Building. The switchboard consists of an integral utility C/T section with a 1200A main and a distribution section. Two fused switches, from taps ahead of the main, serve exit signs and the fire alarm system, respectively. This was a code recognized emergency source when the building was constructed.

The switchboard is located within the Mechanical Room. The chiller and other 480V equipment in the Mechanical Room are fed directly from the switchboard. 208/120V panels SDA and SDB, also located within the mechanical room, serve smaller HVAC equipment. Air Handling Units and associated condensers are fed from the nearest local lighting panel.

A 12.5kW, 208/120V, 3 phase, 4 wire natural gas generator, manufactured by Onan, is also located within the Mechanical Room. The associated ATS and panel EM is located between the generator and main switchboard. Panel EM serves egress lighting in the building.

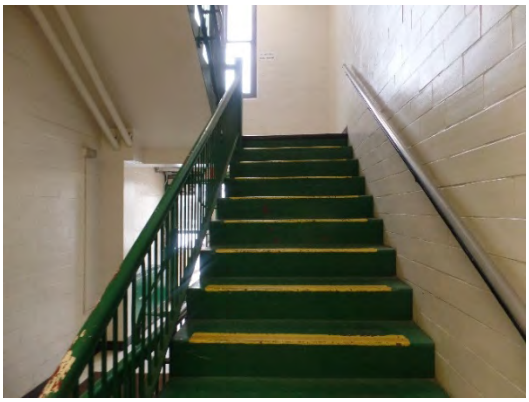
SYSTEM/EQUIPMENT EVALUATIONS - ELECTRICAL

The existing electrical distribution system has reached its anticipated useful life. Federal Pacific (FPE) is no longer manufactured, so replacement parts are difficult/costly to obtain. The emergency generator has also reached its anticipated useful life. The capacity of the generator and emergency distribution equipment is very limited.

Life Safety/Accessibility Code Issues:

The design of East Middle School complied with the building codes enacted at the time of original construction and the subsequent additions. However, the school is not compliant with current codes. Renovation of the existing building will require the following items be addressed to meet current code requirements.

- There is no elevator connecting the three levels of the building or the offset levels of the 1950 addition.
- The main entry is a half-flight of stairs below the main entry with no accessible elevator or lift to provide ADA access to the building.
- Building Mechanical Systems do not meet Current Energy Codes.
- Electrical and lighting systems do not meet Current Energy Codes.
- Current Life Safety Codes are not met. The building does not have a fire sprinkler system and has limited fire alarm capabilities.
- Door handles are not ADA compliant lever design.
- Water fountains are not accessible.
- Exterior doors are not accessible with code compliant ramps.
- Toilet rooms are not accessible.
- There is not an accessible path from the building to the playfields.
- A fire wall is needed to separate the existing building from the new addition and the main stair will need to be a rated enclosure based on allowable area code requirements.
- Stairwells do not meet current codes for railing heights and handrails
- Wood Roof Deck will require fireproofing or replacement to meet fire code requirements.



DESIGN GOALS

The Study Team has refined five proposed design concepts to provide Carroll County Public Schools with a range of options that best accommodate the program requirements of East Middle School and a possible K-8 School. This section presents the five proposed site options. Key advantages and disadvantages are listed for each option. All of the options proposed herein have been taken into consideration in the development of the cost estimate presented in section 08.

Option A – Major Renovation & Additions

- Addresses the program requirements by utilizing most of the existing building which requires extensive renovation and a two-story building addition.
- Modernizes/replaces all major building systems to ensure compliance with all current building, life safety, energy, and accessibility code requirements.
- Improves the interior environmental quality level and educational experience by providing improved comfort systems and new finishes. Natural light is added in limited areas of the existing building where possible.
- Removes Annex building and 2-story addition and replaces them with a new 2-story addition that is above grade and aligns with existing 1936 building levels. BEST program becomes more integrated with the rest of the school.

Option B – Replacement Middle School – East Middle School Site

- Demolishes the existing building and creates a replacement building on the existing school site to accommodate the program requirements with proper adjacencies between program elements.
- Provides a facility that addresses the requirements of the proposed educational program and supports 21st century learning environments.
- Provides new building systems to ensure compliance with all current building, life safety, energy, and accessibility code requirements.
- Improves the interior environmental quality level and educational experience by providing natural light, improved comfort systems and new finishes.

Option C – Replacement Middle School and New Elementary School – East Middle School Site

- Demolishes the existing building and creates two replacement buildings on the East Middle School site to accommodate the program requirements of both the middle school and elementary school programs with proper adjacencies between program elements.
- Provides facilities that address the requirements of the proposed educational program and supports 21st century learning environments.
- Provides new building systems to ensure compliance with all current building, life safety, energy, and accessibility code requirements.

- Improves the interior environmental quality level and educational experience by providing natural light, improved comfort systems and new finishes.

Option D – Replacement Middle School – Friendship Valley Elementary School Site

- Creates a replacement building on the Friendship Valley Elementary School site to accommodate the program requirements with proper adjacencies between program elements. The existing building is either demolished or repurposed.
- Provides a facility that addresses the requirements of the proposed educational program and supports 21st century learning environments.
- Provides new building systems to ensure compliance with all current building, life safety, energy, and accessibility code requirements.
- Improves the interior environmental quality level and educational experience by providing natural light, improved comfort systems and new finishes.

Option E – Replacement Middle School & New Elementary School-Friendship Valley Elementary Site

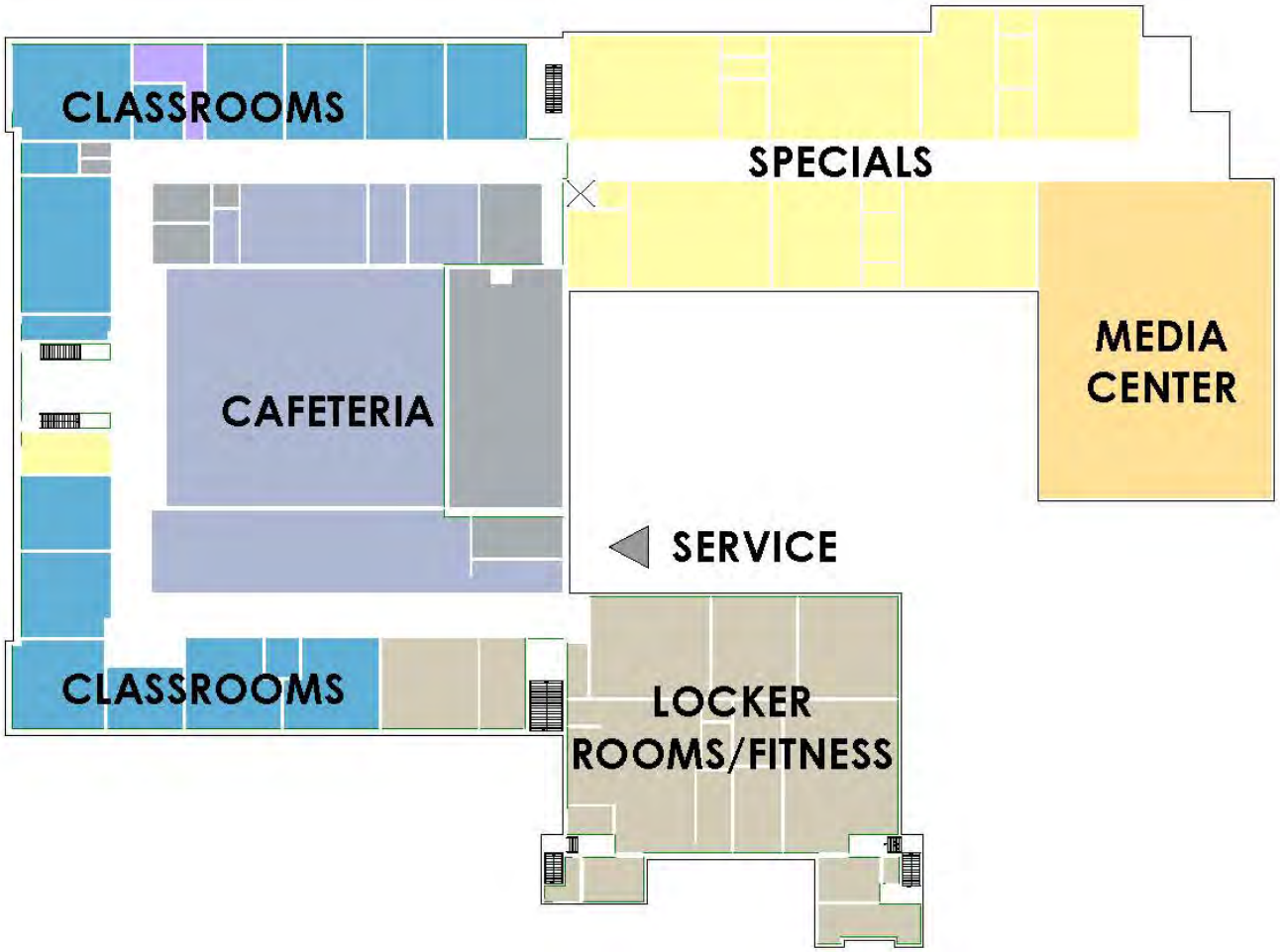
- Two replacement buildings on the Friendship Valley Elementary School site to accommodate the program requirements of both the middle school and elementary school programs with proper adjacencies between program elements. The existing East Middle and William Winchester Elementary School buildings will be demolished or repurposed.
- Provides facilities that address the requirements of the proposed educational program and supports 21st century learning environments.
- Provides new building systems to ensure compliance with all current building, life safety, energy, and accessibility code requirements.
- Improves the interior environmental quality level and educational experience by providing natural light, improved comfort systems and new finishes.

Floor Plan Diagrams

Three floor plan options were developed to test fit plan options on both the East Middle School and Friendship Valley Elementary School sites. The floor plans are conceptual for sizing of buildings on the site and once an option is advanced to the design stage it will be fully designed based on user input and additional parameters outside the scope of this study. The three plans are as follows:

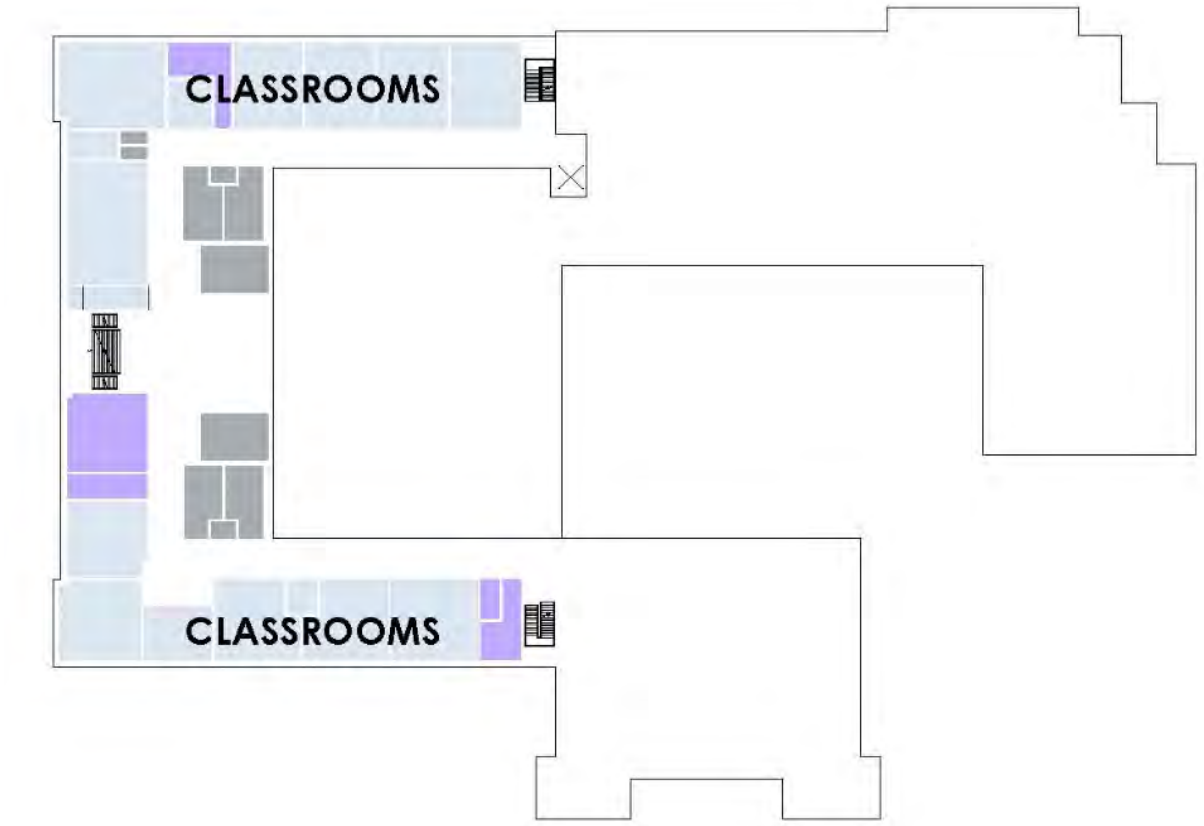
- Renovation/Addition to the Existing East Middle School Site
- New 2-story middle school with BEST program (based on Mt. Airy Middle School program and floor plans)
- New 1-story elementary school with BEST program (based on Ebb Valley Elementary School program).

Ground Floor Plan- Renovation/Addition of Existing East Middle School

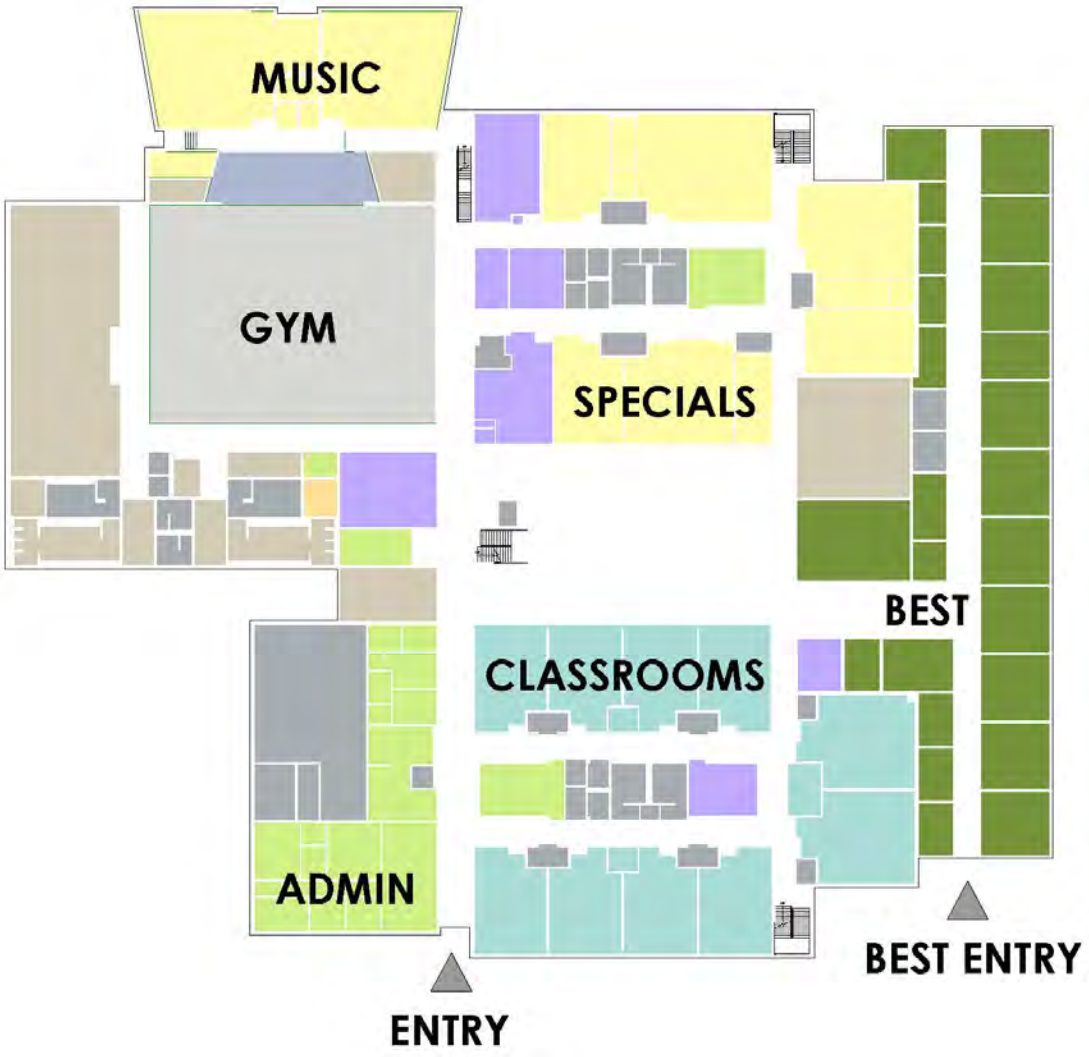


First Floor Plan- Renovation/Addition of existing East Middle School

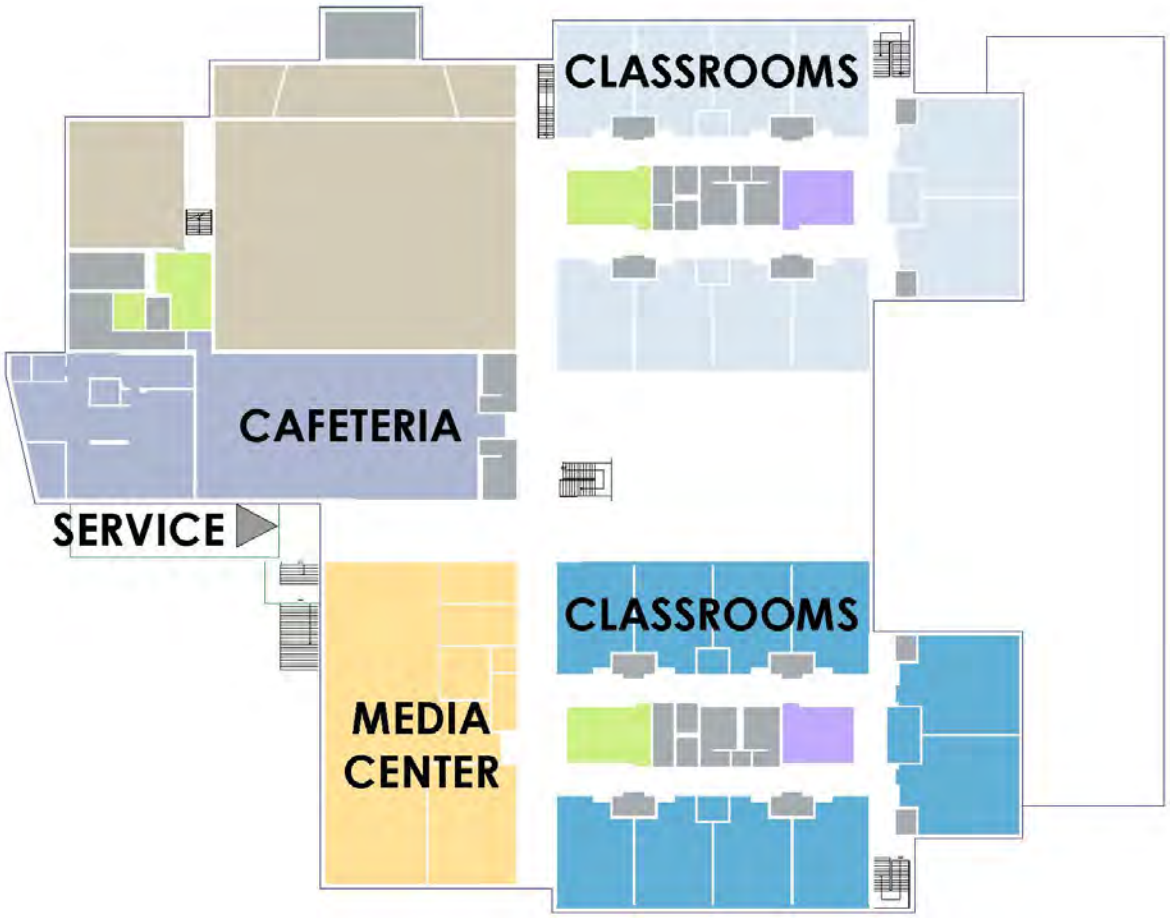
Second Floor Plan- Renovation/Addition of existing East Middle School



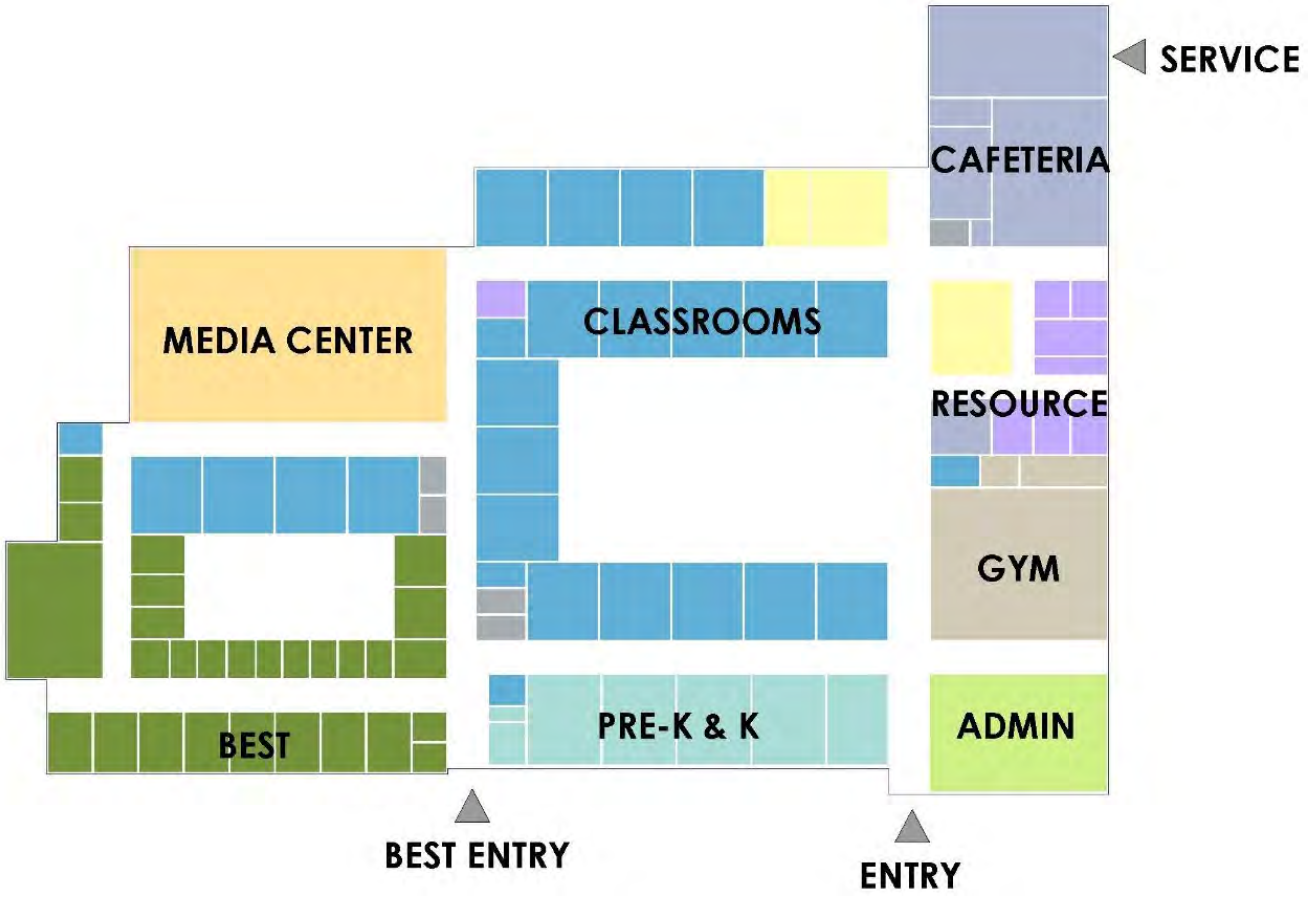
First Floor Plan- Two-Story Middle School



Second Floor Plan- Two-Story Middle School



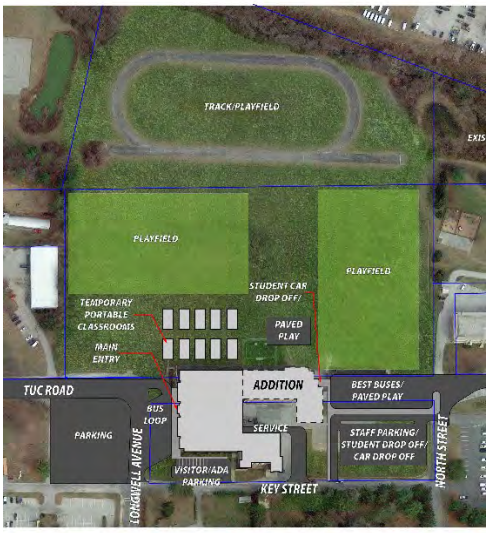
One-Story Elementary School



Proposed Design Options | 07

Option A – Major Renovation & Additions– East Middle School Site

Site Plan



Option A – Major Renovation & Addition

Major Renovation & Additions (Option A) includes renovating the existing building, demolishing the existing 2-story addition and BEST annex, and constructing a new 2-story classroom addition. The scope of work accommodates the proposed program including square footage and proper spatial and educational relationships. The work brings the entire building into conformance with current building and life safety codes. The site design addresses traffic patterns, play areas, and relocatable classroom requirements during construction. Maintaining building occupancy and operation will require a multi-phase construction process.

Advantages:

- Type, quantity and size of spaces in program requirements are accommodated but limited by use of existing building footprint.
- Least impact to the existing site upon completion of project.
- Least significant addition of stormwater management (smallest increase of impervious areas).
- Improvement of site circulation including bus loop.
- BEST Program is connected to school.

Disadvantages:

- Longest construction duration.
- Most expensive Middle School option.
- Higher phasing costs due to multiple phases required.
- Multiple relocatable classrooms are needed to accommodate substantial phasing.
- Largest Impact to School Occupants due to multiple construction phases.
- Largest square footage – Inefficient Plan fitting program into 80+ year old building.
- Loss of play fields during construction.
- Least energy efficient option.
- Preferred functional adjacencies of program are not fully addressed.
- Does not provide building circulation efficiency.
- Existing Wood Roof Deck will be limiting for new roof top equipment and Code related fireproofing.
- Exterior of building is only updated at additions, so there is little opportunity to create a new building face.

Option B – Replacement Middle School – East Middle School Site

Site Plan

Option B – Replacement Middle School – East Middle School Site

Full Replacement (Option B) includes a design of a new facility on the existing campus in compliance with the proposed program; including square footage and proper spatial and educational relationships. The existing building remains operational during construction of the new building and is demolished when the new building is completed. The site design addresses traffic patterns, parking, bus loop, and replacement athletic fields.

Advantages:

- Accommodates type, quantity and size of spaces as indicated in program requirements.
- Accommodates preferred functional adjacencies.
- Efficient use of space and provides building circulation efficiency.
- Provides energy efficient design.
- New face of school is created.
- Improvement of site circulation.
- Central location of main entry between bus drop-off and staff parking.
- Existing school remains operational during construction.

Disadvantages:

- Loss of playfields during construction.
- Moderate impact on school operations (site use is limited during construction).
- New bus loop cannot be constructed until existing building is demolished.
- Additional cost for site phasing.

Option C – Replacement Middle School and New Elementary School – East Middle School Site

Site Plan

Option C – Replacement Middle School and New Elementary School – East Middle School Site

Full Replacement (Option C) includes design of a new middle school and a new elementary school on the existing campus in compliance with the proposed program; including square footage and proper spatial and educational relationships. The existing building remains operational during construction of the new middle school building and is demolished when the new building is completed. The new elementary school is constructed once the existing building is demolished. The site design addresses traffic patterns, parking, and replacement athletic fields and playgrounds.

Advantages:

- Accommodates type, quantity and size of spaces as indicated in program requirements.
- Accommodates preferred functional adjacencies.
- Efficient use of space and provides building circulation efficiency.
- Provides energy efficient design.
- Improvement of site circulation with central location of main entries between bus drop-off and staff parking lots.
- Bus loop is shared between the 2 schools.

Disadvantages:

- Most expensive option.
- Longest Project Duration.
- Most impact to the existing site.
- Loss of playfields during construction.
- Decommissioning of existing structures and construction of new buildings, parking and infrastructure will require new stormwater management.
- Two buildings cannot be constructed at the same time due to existing school and will need to be phased.
- Limited site area upon project completion for the required playfields and playgrounds needed to serve a middle school and elementary school with 2 BEST programs.
- Access from the elementary school to the play fields is awkward and requires a long distance to walk to the fields.
- Large increase of impervious area requiring more stormwater management on site.
- Limited area on site for required reforestation.

Option D – Replacement Middle School – Friendship Valley Elementary School Site

Site Plan

Option D – Replacement Middle School – Friendship Valley Elementary School Site

Full Replacement (Option D) includes a design of a new facility on the Friendship Valley Elementary School campus in compliance with the proposed program; including square footage and proper spatial and educational relationships. The existing building remains operational during construction of the new building and is either demolished or repurposed when the new building is completed. The site design addresses traffic patterns, parking, bus loop, and replacement athletic fields.

Advantages:

- Least expensive construction option.
- Shortest construction duration at 24 months.
- No building phasing costs.
- Existing East Middle School and site operations are not affected during construction.
- Minimal impact to Friendship Valley Elementary School during construction.
- Utilizes existing building pad.
- Provides energy efficient design.
- Accommodates preferred functional adjacencies.
- Accommodates type, quantity and size of spaces as indicated in program requirements.
- Efficient use of space and provides building circulation efficiency.
- Replacement building creates a new face for the school.
- Central location of main entry between bus drop-off and staff parking.
- Site allows for future expansion of Friendship Valley Elementary School if needed.
- Existing stormwater management facility has room for expansion.

Disadvantages:

- Loss of some Recreation & Parks playfields during and after construction. However, Friendship Valley Elementary School playfields are not affected.
- Increase of impervious area on site.
- Redistricting would be required.
- Impact on Transportation.

Option E – Replacement Middle School & New Elementary School- Friendship Valley Elementary Site

Site Plan

Option E – Replacement Middle School & New Elementary School-Friendship Valley Elem. Site

Full Replacement (Option E) includes design of a new middle school and a new elementary school on the Friendship Valley Elementary School campus in compliance with the proposed program; including square footage and proper spatial and educational relationships. The existing building remains operational during construction of the new middle school building and either demolished or repurposed when the new building is completed. The site design addresses traffic patterns, parking, and replacement athletic fields and playgrounds.

Advantages:

- Accommodates type, quantity and size of spaces as indicated in program requirements.
- Accommodates preferred functional adjacencies.
- Efficient use of space and provides building circulation efficiency.
- Provides energy efficient design.
- Central location of main entry between bus drop-off and staff parking lots.
- Service is shared between the 2 new schools.
- Existing East Middle School and site operations are not affected during construction.

Disadvantages:

- Second most costly option.
- Most impact to the Friendship Valley Elementary School site.
- Loss of Recreation & Parks playfields during construction.
- Loss of Recreation & Parks playfields permanently when project is complete.
- Large increase of impervious area requiring more stormwater management on site.
- Access from the new elementary school to the play fields is awkward and requires a long distance to walk to the fields.
- Limited site area upon project completion for the required playfields and playgrounds needed to serve 2 elementary schools, middle school, and 2 BEST programs
- Limited area on site for required reforestation.
- Increased traffic for arrival and dismissal of 3 schools.
- Increased traffic will likely result in offsite road improvements.

Appendix A: Cost Estimate

	OPTIONS					
	A	B	C	D	E	Comments
Existing Building	120,400	120,400	120,400	120,400	120,400	
Demolition	33,014	120,400	120,400	120,400	120,400	
New/Replacment Middle School	42,890	123,088	123,088	123,088	123,088	
New/Replacment Elementary School	0	0	78,419	0	78,419	
Total SF	130,276	123,088	201,507	123,088	201,507	
BUILDING CONSTRUCTION						
Demolition	$495,210	$1,806,000	$1,806,000	$0	$0	Assume $15/sf
Renovation	$21,846,500	$0	$0	$0	$0	Assume $250/sf
Addition/New	$12,952,780	$37,172,576	$60,855,114	$37,172,576	$60,855,114	Assume $302/sf
TOTAL BLDG CONST.**	$35,294,490	$38,978,576	$62,661,114	$37,172,576	$60,855,114	
SITE CONSTRUCTION						
Site Costs	$7,556,008	$7,139,104	$11,687,406	$7,139,104	$11,687,406	Assume $58/sf
TOTAL CONSTRUCTION	$42,850,498	$46,117,680	$74,348,520	$44,311,680	$72,542,520	
PHASING COSTS						
Additional Phasing Costs	$5,294,174	$1,559,143	$3,133,056	$0	$0	Extended Schedule, etc
TOTAL PHASING	$5,294,174	$1,559,143	$3,133,056	$0	$0	
TOTAL W/ PHASING	$48,144,672	$47,676,823	$77,481,576	$44,311,680	$72,542,520	
SOFT COSTS						
A/E Fees	$3,428,040	$3,228,238	$5,204,396	$3,101,818	$5,077,976	Assume 7% for new, 8% for Ren
FFE & Technology	$2,999,535	$3,228,238	$5,204,396	$3,101,818	$5,077,976	Assume 7%
Owner Contingency	$1,285,515	$1,383,530	$2,230,456	$1,329,350	$2,176,276	Assume 3%
TOTAL SOFT COSTS	$7,713,090	$7,840,006	$12,639,248	$7,532,986	$12,332,228	
TOTAL PROJECT COSTS	$55,857,761	$55,516,829	$90,120,824	$51,844,666	$84,874,748	
Escalation / Inflation	$4,468,621	$4,441,346	$7,209,666	$4,147,573	$6,789,980	Assume 2 yrs. @ 4% / yr
TOTAL w/ ESCALATION	$60,326,382	$59,958,175	$97,330,490	$55,992,239	$91,664,728	

**Renovation Breakout Costs (No Programmatic Improvements)

ADA/ Code Upgrades Only	$4,500,000
MEP System Upgrades / Roof / Windows Only	$18,000,000