Montoursville Area School District

District-Wide Facility Study

May 2020 PROGRESS DRAFT

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Forward

Crabtree, Rohrbaugh & Associates is pleased to present this Facilities Study Report to the Montoursville Area School District. This report has been developed to assist the School District Board of Directors, staff and community in the decision-making process regarding the utilization and disposition of its educational facilities.

This study is designed to be utilized as a comprehensive planning tool for school boards and administrators. The study provides decision makers with comprehensive analysis and information which they can use to make operational, financial, and most importantly educational decisions related to facilities.

The primary goal is to help the district best assure that their buildings and grounds are a physical representation of a district's educational vision, a reflection of what is best about the community they serve and are a sound investment for taxpayers. In pursuit of this goal this study documents existing conditions and pertinent information, analyzes the data and information, establishes needs within the district facilities, and generates options to meet those needs. The components of the study are as follows:

- General overview of the district
- Overview of the Educational Program
- Analysis of each facilities ability to adequately accommodate the educational program, functional operations, and student enrollment
- Analysis of the anticipated growth/decline in enrollment in the district and at each school and its impact to each facility
- Analysis of the existing conditions of the buildings and grounds for each facility
- Cost to upgrade each facility to current standards
- Analysis of construction options to meet the established need

This study includes all of the elements required by the Pennsylvania Department of Education (PDE) to meet the criteria established in the PlanCon district-wide facility study guidelines. Adhering to these guidelines is necessary for submittal to PDE if the district is pursuing reimbursement from the Commonwealth. The full requirements to meet PlanCon district-wide facility study guidelines is found in *Appendix A: Department of Education Requirements* at the end of the study.

Goals and Objectives

Goals for the study describe the Montoursville Area School District vision for its buildings and grounds. They describe what the Montoursville Area School District requires and aspires their schools be. The following goals were established for this study:

- Provide equity among elementary grade students.
- Improve the existing facility infrastructure at Loyalsock Valley Elementary School and Lyter Elementary School.
- Improve the efficiency and consistency of resources and continuity of educational delivery.
- Provide 21st Century educational spaces and experiences at the Middle School and Elementary Schools that reflect the curriculum.
- Address safety and security concerns at Loyalsock Valley Elementary School
- Provide air conditioning at all schools.
- Develop fiscally responsible solutions that address costs of capital projects, transportation, staffing, and operations.

Executive Summary

The main goal of the study is to address the needs at the Elementary school level. The Montoursville Area High School was renovated and added on to in 2017 and meets the needs of the district. The C.E. McCall Middle school was renovated and added onto in 2010 and as such the majority of the existing facility conditions are in good condition and meet the district's needs. Lyter Elementary School last was renovated in 1998 and some of the existing facility components are at or nearing the end of their useful life. Loyalsock Valley Elementary School is the facility with the greatest need from an infrastructure standpoint with the last renovation occurring in 1983. The majority of systems are in need of complete replacement.

The educational program of the district has evolved over the years and accordingly at the Elementary Schools the configuration of spaces does not meet the current needs of the district. Spaces lack for proper instruction of STEM and science programs, appropriate special education space does not exist, and the proper security provisions are not in place for today's environment. These are all key components that should be addressed along with the existing infrastructure.

Over the years, the district has been experiencing a gradual decline in enrollment. This can be expected for the immediate future. As a result, accommodating additional capacity is not a factor that needs incorporated into construction options. On the contrary, efficient use of facilities given the excess capacity should be evaluated.

Based on the above analysis, the following needs matrix has been developed. This is used to focus and develop the construction options.

	MAJOR NEED	MODERATE NEED	MINOR/NO NEED
Existing Building Capacity			Loyalsock Valley Elementary School Lyter Elementary School C.E. McCall Middle School Montoursville Area High School
Projected Enrollment Capacity			Loyalsock Valley Elementary School Lyter Elementary School C.E. McCall Middle School Montoursville Area High School
Educational & Functional Deficiencies	Loyalsock Valley Elementary School	Lyter Elementary School C.E. McCall Middle School	Montoursville Area High School
Existing Facility Conditions	Loyalsock Valley Elementary School	Lyter Elementary School	C.E. McCall Middle School Montoursville Area High School
Operational Efficiencies		Lyter Elementary School Loyalsock Valley Elementary School	C.E. McCall Middle School Montoursville Area High School

Contributors:

Crabtree, Rohrbaugh & Associates is grateful for the support of the administration, staff, and members of the Board of School Directors who partnered with our team to complete this analysis. That team included, but was not limited to guidance and input from:

Core Administrators Group

David Shimmel | School Board President
Christina Bason | Superintendent
Joe Gnoffo | Buildings & Grounds Administrator
Darrin Feerrar | Lyter ES Principal
Dan Taromina | High School Principal
Dottie Mathers | School Board Vice President
Brandy Smith | Business Manager
Sebastian Piepher | Lead Network Admin.
Amy Breon | Loyalsock Valley ES Assist. Principal
Curtis Myers | Middle School Principal

Board of School Directors

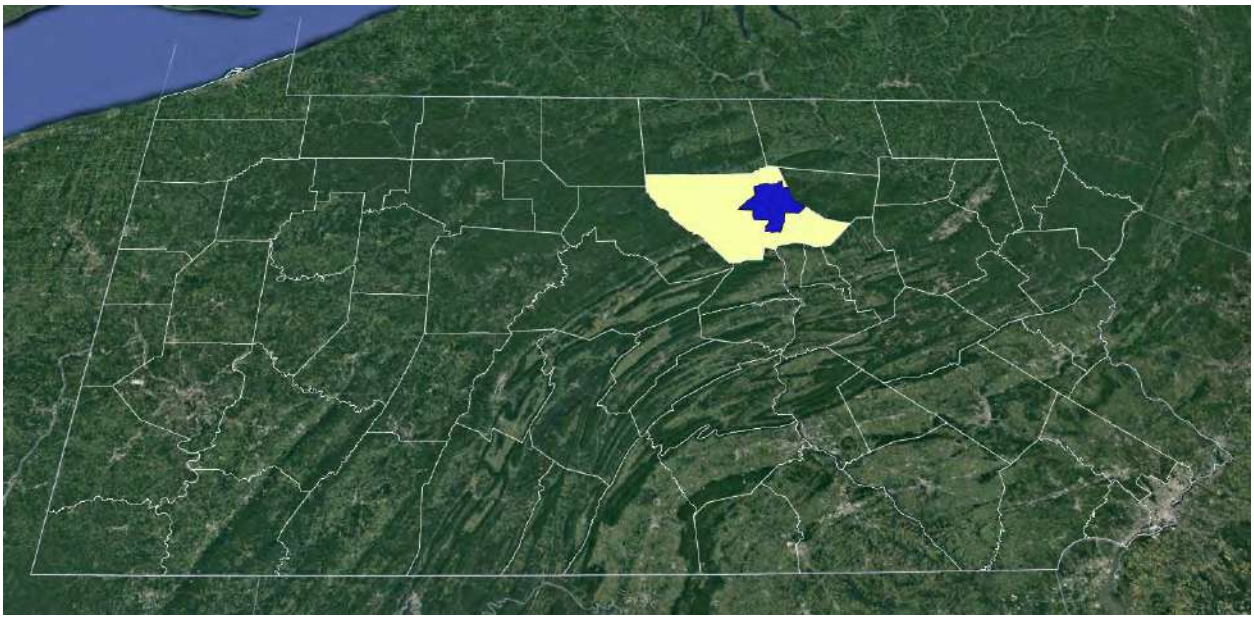
Daniel Albert | School Board Member
Ronald Snell | School Board Member
Jennifer Marriott | School Board Member
David Shimmel | School Board President
William Ruffing | School Board Member
Dale Ulmer | School Board Member
Susan Beery | School Board Member
Dottie Mathers | School Board Vice President
Scott Konkle | School Board Member

DISTRICT GEOGRAPHIC OVERVIEW

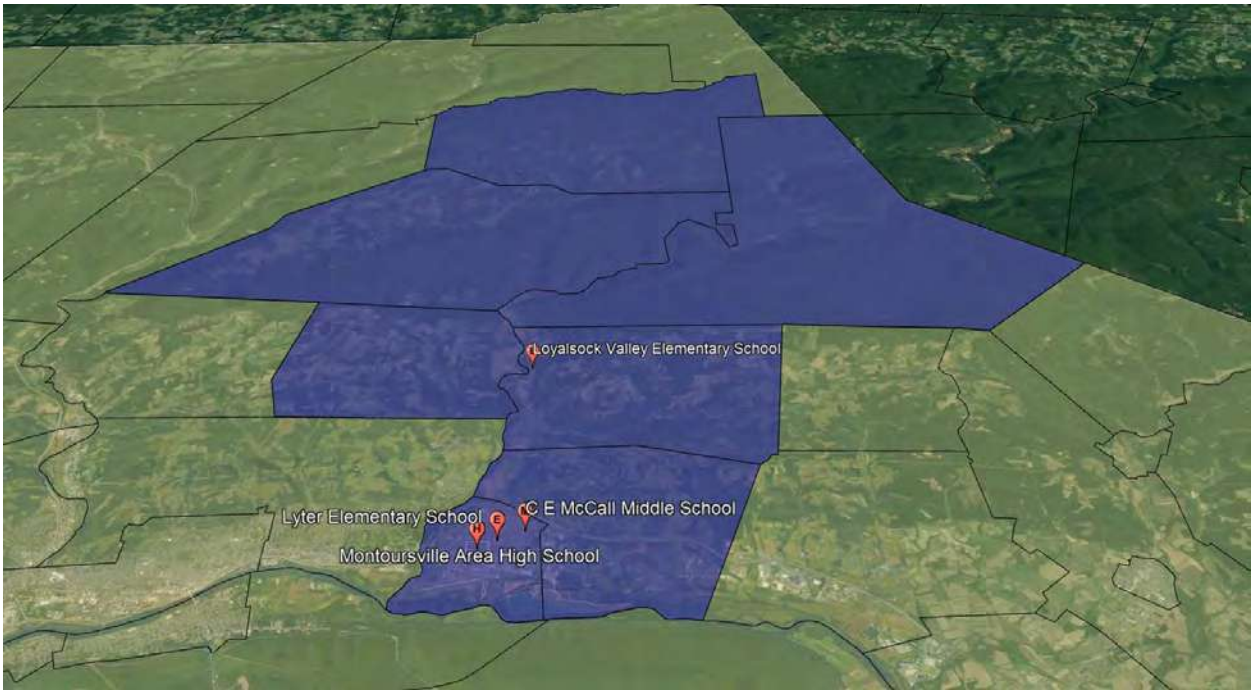
2 | District Overview

District Geography & Distinguishing Characteristics

Montoursville Area School District is located in Lycoming County. Surrounding school districts include Canton Area School District to the north; Sullivan County, East Lycoming and Muncy School Districts to the east; Montgomery Area and South Williamsport Area School Districts to the south; and Loyalsock Township and Williamsport Area School Districts to the west. There are four school locations and parcels within Montoursville Area School District, serving students from the communities of Montoursville Borough, Fairfield Township, Upper Fairfield Township, Eldred Township, Gamble Township, Plunketts Creek and Cascade Township.



Map of Pennsylvania, highlighting Lycoming County and Montoursville School District



Map of Montoursville Area School District and schools with Municipal Boundaries

Properties in Montoursville Area School District

ELEMENTARY SCHOOLS			
Loyalsock Valley Elementary School		Lyter Elementary School'	
Grade Alignment:	K-4	Grade Alignment:	K-4
Current Enrollment	257	Current Enrollment	440
Street Address of District:	3790 PA-87	Street Address of District:	900 Spruce Street
City, State, and Zip Code	Montoursville, PA 17754	City, State, and Zip Code	Montoursville, PA 17754
SECONDARY SCHOOLS			
C.E. McCall Middle School		Montoursville Area High School	
Grade Alignment:	5-8	Grade Alignment:	9-12
Current Enrollment	643	Current Enrollment	610
Street Address of District:	600 Willow Street	Street Address of District:	700 Mulberry Street
City, State, and Zip Code	Montoursville, PA 17754	City, State, and Zip Code	Montoursville, PA 17754
OTHER DISTRICT FACILITIES			
District Administrative Offices			
Street Address of District:	50 North Arch Street		
City, State, and Zip Code	Montoursville, PA 17754		

Population Statistics

Population Size, Median Age, and Growth

As shown in the table below, in 2010 Lycoming County had an estimated population of 116,299 people with a median age of 41 years. Between 2010 and 2019 the population of Lycoming County declined from 2010 to 113,299, a decline rate of -2.47%.

Population Size, Median Age, and Growth		
Lycoming County	Median Age	Population
July 2019	41	113,299
Prior Estimate Date	April 2010	116,102
	Population Percent Change	-2.47%
U.S. Census Department,	*July 2019*	

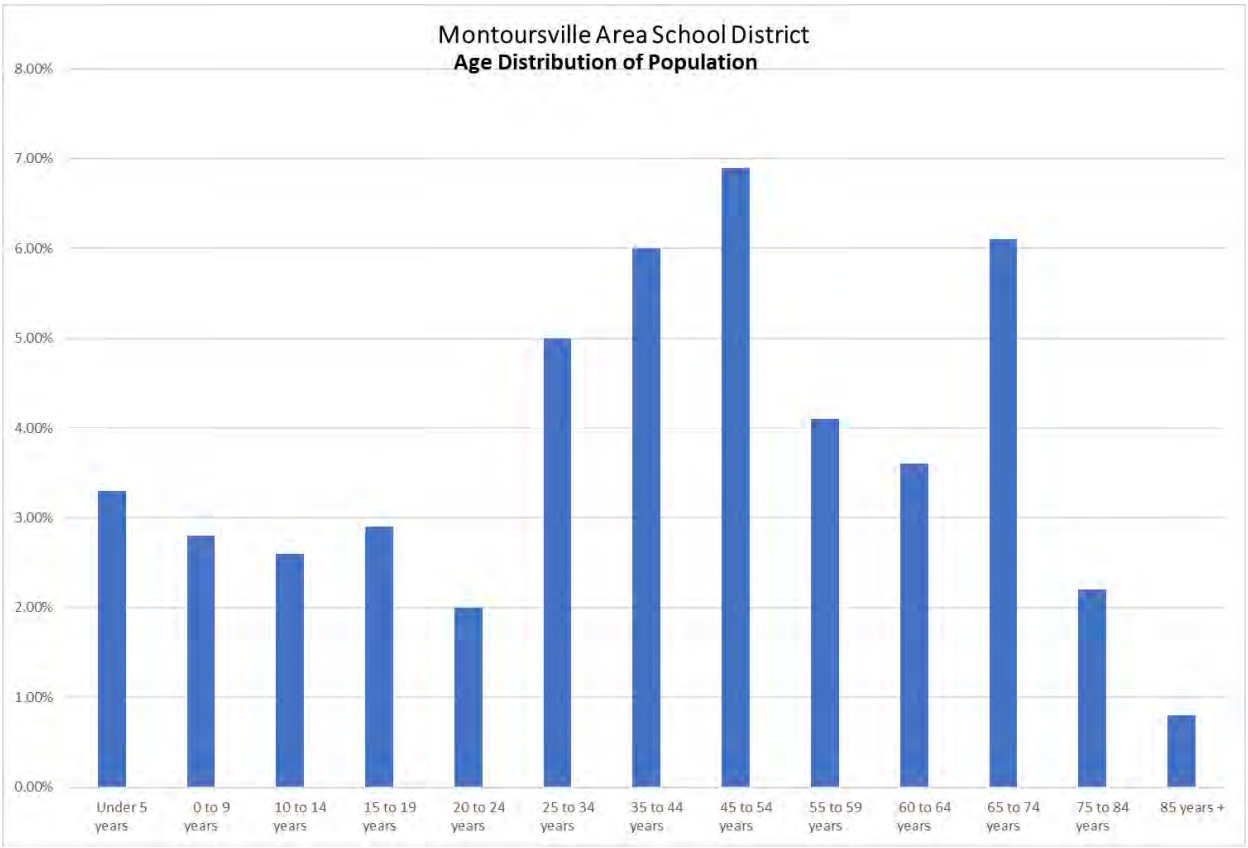
As shown in the table below, in 2018 the Montoursville Area School District had an estimated population of 13,045 people with a median age of 45 years.

Population Size and Median Age		
Montoursville Area School District	Median Age	Population
2018	45	13,045
U.S. Census Department,	*2018*	

Age Distribution

As shown in the table and chart below %11.6 of the population of the Montoursville Area School District is under 19 years of age and potentially attending or are recent graduates of the district. %24 of the population are adults in age bands that can be acting as single or joint heads of households with children attending public schools and %12.7 of the population represent adults who are supporting public schools intergenerationally.

AGE DISTRIBUTION		
Montoursville Area School District		Data Set Year
Population Distribution	% of Population	2018
Under 5 years	3.30%	% of Children Potentially Attending Public Schools
0 to 9 years	2.80%	
10 to 14 years	2.60%	
15 to 19 years	2.90%	11.60%
20 to 24 years	2.00%	% of Adults Potentially in Households with Students Attending Public Schools
25 to 34 years	5.00%	
35 to 44 years	6.00%	
45 to 54 years	6.90%	
55 to 59 years	4.10%	24.00%
60 to 64 years	3.60%	% of Adults in Households Supporting Public Schools Intergenerationally
65 to 74 years	6.10%	
75 to 84 years	2.20%	
85 years +	0.80%	12.70%
U.S. Census Department, 2018		



Race / Ethnicity

As reported by the U.S. Census Bureau 2018, White residents represented 90.6% of the population of Lycoming County. The remaining 9.4% of the population consisted of minority groups with residents identifying as Black and Hispanic representing 4.7% and 2% of the population respectively.

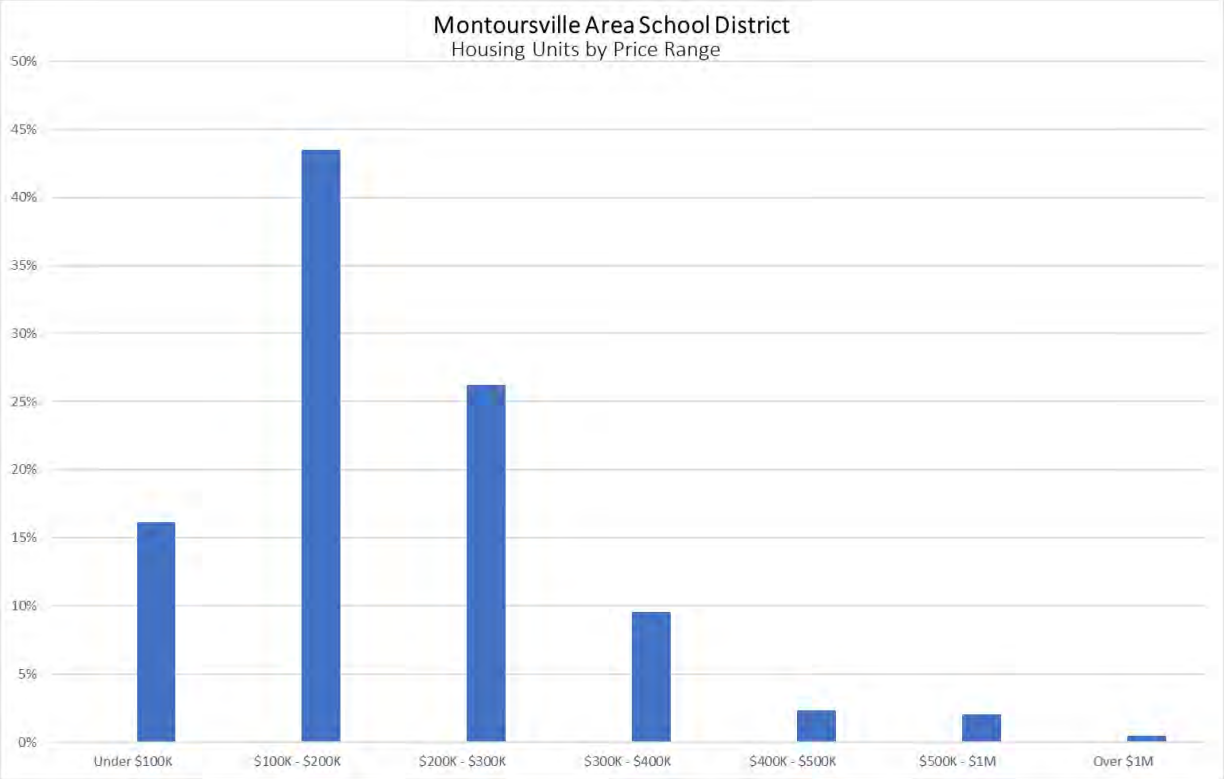
As reported by the Pennsylvania Department of Education, in 2018 students identifying as White comprised 92.8% of the student body in the Montoursville Area School District. The majority of the remaining students identified as Hispanic and Black representing 2.6% and 0.7% of the population respectively.

ETHNICITY AND RACE OF COUNTY AND SCHOOL DISTRICT		
Lycoming County	County Population:	113,664
Montoursville Area School District	District Population :	130,445
Ethnicity/Race	% of County Population	% of District Population
White	90.60%	92.80%
Black or African American	4.70%	0.80%
American Indian and Alaska Native	0.20%	0.10%
Asian	0.40%	0.70%
Native Hawaiian and Other Pacific Islander	0.00%	0.20%
Hispanic or Latino	2.00%	2.60%
Two or More Races	1.60%	2.70%
U.S. Census Department, 2018		
Pennsylvania Department of Education, 2018		

Housing Statistics

The following information is provided by the U.S. Census Bureau. In 2018, the median property value in Montoursville Area School District was $178,100.

HOUSING UNITS AND HOUSEHOLDS		
Montoursville Area School District		2018
Median Home Value	$178,100	
Number of Housing Units	6,063	
Number of Households	5,441	% of Units in Range
Under $100K		16.10%
$100K - $200K		43.40%
$200K - $300K		26.20%
$300K - $400K		9.50%
$400K - $500K		2.30%
$500K - $1M		2.00%
Over $1M		0.40%
U.S. Census Department, 2018		

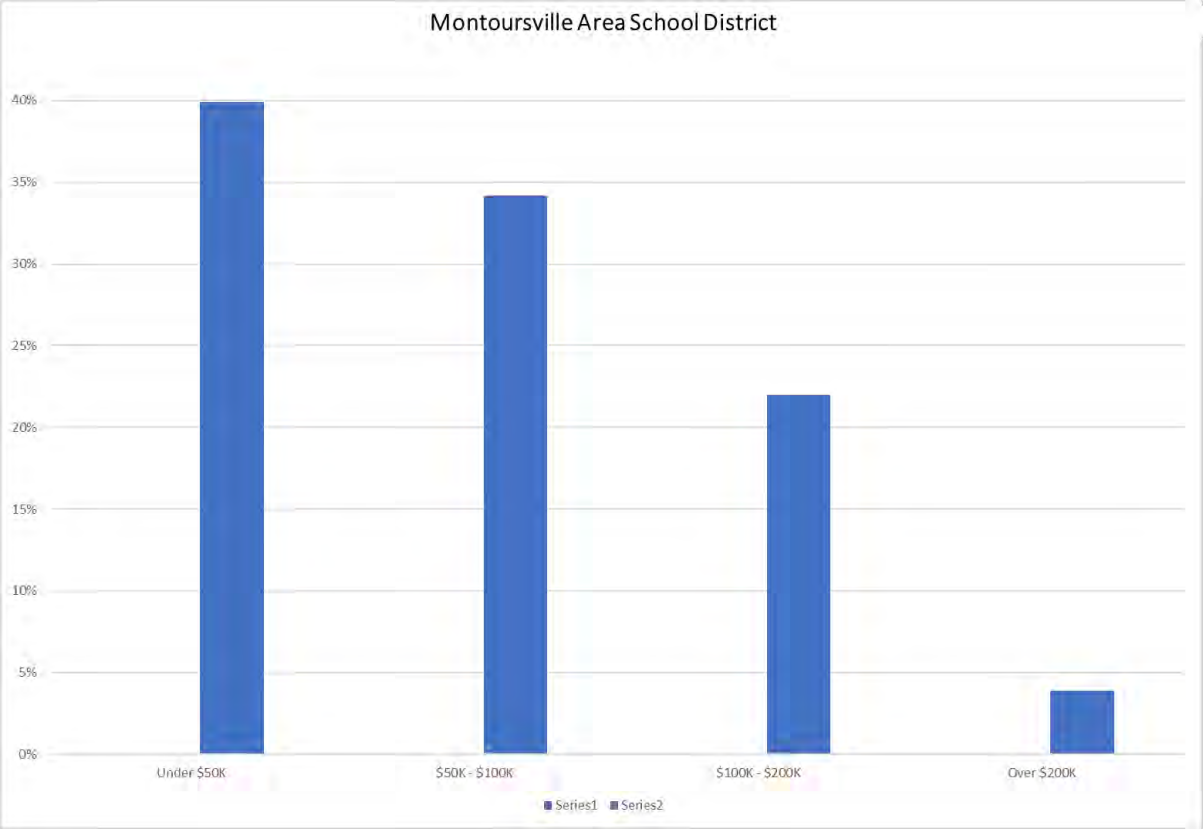


Wealth Statistics

Income

As shown in the table and chart below, the median per capita income in Montoursville Area School District was $31,862. The median income of the 5,441 households was $61,954. 39.9% of the households had incomes less than $50,000. 74.1% of the households had incomes less than $100,000.

INCOME AND HOUSEHOLDS		
Montoursville Area School District	Median PerCapita Income	$31,862
	Median Houshold Income	$61,954
	Number of Households	5,441
		% of Household Income in Range
Under $50K		39.90%
$50K - $100K		34.20%
$100K - $200K		22.00%
Over $200K		3.90%
U.S. Census Department, 2018		

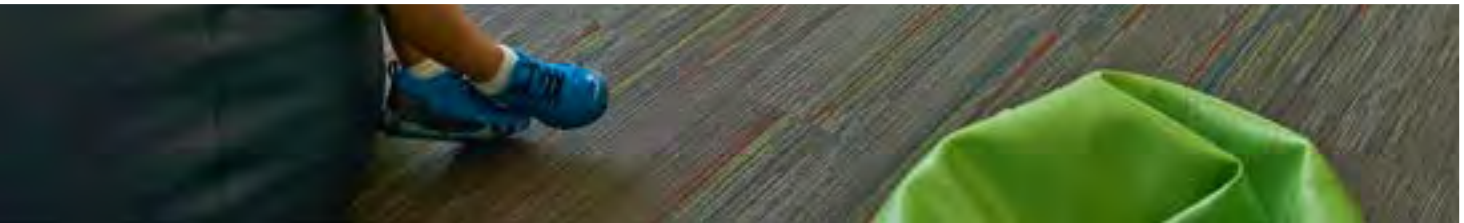


District Financial Data

Utilized for the fiscal year 2019/2020 and based on 2020 data, properties in the Montoursville Area School District had a total market value of $953,447,123 and the revenue personal income tax was estimated to be generated from a base of $359,153,450. The current financial aid ratios as determined by the Pennsylvania Department of Education were calculated and reported as follows:

PDE FINANCIAL DATA ELEMENTS	
Fiscal Year	2019/20
AUN	117415103
LEA Name	Montoursville Area SD
County	Lycoming
2017 Market Value	$953,447,123
2017 Personal Income	$359,153,450
2017-18 Weighted Average Daily Membership	2,357.452
Market Value per Weighted Average Daily Membership	$404,439
Market Value Aid Ratio	0.5334
Persinal Income per Weighted Average Daily Membership	$152,348
Personal Income Aid Ratio	0.5823
Market Value / Personal Income Aid Ratio	0.5529
Pennsylvania Department of Education, 5/22/2020	

DISTRICT EDUCATIONAL OVERVIEW



3 | District Educational Overview

Overview

This section analyzes the School District's Educational program/curriculum as it relates to the spaces, rooms and facilities required to implement the curriculum and highlights any special facility needs including any instructional practices or planned curriculums that will require special design features.

Educational Standards

- Kindergarten to Grade 4 = Elementary
- Grades 5 - 8 = Middle School
- Grades 9 – 12 = High School

Mission Statement

The mission of the Montoursville Area School District is to provide comprehensive programs that emphasize the Pennsylvania and National Academic Standards. This will empower all students to use their individual abilities and capabilities to be lifelong learners and successful contributors to a global society.

Educational Program

The district is organized around three grade groupings. Elementary consists of grades K-4 in two buildings, Middle School grades 5-8, and High School grades 8-12.

Elementary Education

Elementary classrooms are organized/grouped by grade level. The core subject taught are English Language Arts (ELA), Math, Science and Social Studies. The specials that students participate in on a daily cycle rotation are Art, Music, Physical Education, Coding, Library-Technology and Library-Book.

Learning support is implemented by teachers pushing into classrooms as well as teachers pulling student out of classrooms. Special education services are provided through BLaST Intermediate Unit (IU17) and include on-site services for full-time learning support, autistic support and multiple disability students. These classrooms also include student from other districts.

Secondary Education

Secondary classrooms are organized/grouped by teams from grades 5-6 and core subjects for grades 7-12. The core subject taught are English Language Arts (ELA), Math, Science, Social Studies and Foreign Language (grades 9-12). The related arts that students participate in are Art, Music – Choral/Band/Jazz, Physical Education, Industrial Arts – Wood/Metal/Agriculture (STEM at grades 5/6), and Family Consumer Sciences.

Learning support is implemented by teachers pushing into classrooms as well as teachers pulling student out of classrooms. Special education services are provided through BLaST Intermediate Unit (IU17) and include on-site services for full-time learning support, life skills, autistic support and multiple disability students. These classrooms also include student from other districts.

EXISTING EDUCATIONAL BUILDING CAPACITY

4 | Existing Educational Building Capacity

Overview

The educational programs offered in schools today require flexible and varied spaces. Depending on the program usage, spaces may have different capacities even though they may be similar in size.

The capacity for each space is determined by:

1. Current space utilization.
2. Maximum class size guidelines from the School Board and/or recommendations of the Pennsylvania Department of education.
3. Spaces which are used for all students for specialized instruction, such as art or music on the elementary level; or specialized services such as reading support or instructional support team (IST), are not counted as part of the instructional capacity of a building.
4. Special education spaces are not included in the capacity of the building.
5. Spaces which fall below the PDE recommended classroom size of 660 square feet are not counted as part of the instructional capacity of the facility.

Historically school districts throughout North America have determined the capacity of school by counting the number of classrooms in a building and multiplying by an average class size. In facility planning terminology we have used the term “design capacity” to describe this methodology. Even though at first glance this seems only to be common sense, this methodology does not consider the programmatic implications of school facilities. In an elementary school there is a need for libraries/media centers, administrative areas, special education classrooms, and specialized spaces for specific program areas such as science, art and music.

With the varying student population from one grade grouping to the next it is not feasible to plan for every classroom to be able to be occupied at full capacity all the time. In a secondary school, in theory it may be possible to use every classroom every period of every day, but from a practical perspective it is not likely.

Taking these program issues into consideration, it should be assumed that the actual capacity the building can handle is less than the calculated capacity. When comparing the calculated capacity to the actual enrollment you can determine the percentage the building is utilized, or “utilization rate.” For planning purposes, the recommended maximum utilization rate at the elementary level is 85%. At the secondary level where students are changing classrooms and can occupy multiple spaces simultaneously, the recommended maximum utilization rate is 90%.

Building Capacities

The Pennsylvania Department of Education has established standards to calculate the capacity of a school facility. In these standards a unit student capacity is assigned to various areas of the facility. However, special and support spaces, distribution of students by grade levels, course selections on the middle and high school levels and attendance areas create situations in which it is not possible for a school district to place as many students in each unit of the facility as identified in the PDE standards.

Therefore, for educational planning purposes a "functional" capacity should be calculated for each school. The functional capacity shall be a percentage of the PDE capacity which represents the number of students the building can realistically accommodate.

The following are the recommended "Functional Capacity" percentages:

The "Functional Capacity" at the Elementary Level is 90% of the PDE capacity

The "Functional Capacity" at the Middle School Level is 85% of the PDE capacity

The "Functional Capacity" at the High School Level is 80% of the PDE capacity

The following are the "Functional Capacity" of each school :

The "Functional Capacity" of Loyalsock Elementary School is 293 and current enrollment is 257

The "Functional Capacity" of Lyter Elementary School is 518 and current enrollment is 440

The "Functional Capacity" of C.E. McCall Middle School is 802 and current enrollment is 643

The "Functional Capacity" of Montoursville Area High School is 924 and current enrollment is 610

Summary

Based on current building usage, all of the schools within the district have adequate capacity to serve the current enrollment.

Existing Utilization Floor Plan

FLOOR PLANS OMITTED FOR SECURITY PURPOSES

EDUCATIONAL BUILDING CAPACITY | Assessed February 2019

	LOYALSOCK VALLEY ELEMENTARY SCHOOL		
	No. of Rooms	PDE Unit FTE Cap	Sub-Total
Standard Classrooms	13	25	325
Unassigned Classrooms		25	0
Science Classrooms		25	0
Learning Support Classrooms	1		
Learning Support Small Group Intruction			
Special Education Classrooms	1		
Small Group Instruction	1		
Reading Support	1		
Computer Labs	1		
Music Classrooms	1		
Art Classrooms	1		
STEM Classroom			
Large Group Instruction			
Library	1		
Auditorium			
Gymnasium			
Cafeteria			
Multi-Purpose Room	1		

PDE Building Capacity:		325
Functional Building Capacity:	90%	293
Total 2019-20 Enrollment:		257

Existing Utilization Floor Plan

FLOOR PLANS OMITTED FOR SECURITY PURPOSES

EDUCATIONAL BUILDING CAPACITY | Assessed February 2019

	LYTER ELEMENTARY SCHOOL		
	No. of Rooms	PDE Unit FTE Cap	Sub-Total
Standard Classrooms	21	25	525
Unassigned Classrooms	2	25	50
Science Classrooms		25	0
Learning Support Classrooms	1		
Learning Support Small Group Intruction			
Special Education Classrooms	1		
Small Group Instruction	3		
Reading Support	1		
Computer Labs	2		
Music Classrooms	1		
Art Classrooms	1		
STEM Classroom			
Large Group Instruction			
Library	1		
Auditorium			
Gymnasium			
Cafeteria			
Multi-Purpose Room	1		

PDE Building Capacity:		575
Functional Building Capacity:	90%	518
Total 2019-20 Enrollment:		440

Existing Utilization Floor Plan

FLOOR PLANS OMITTED FOR SECURITY PURPOSES

EDUCATIONAL BUILDING CAPACITY | Assessed February 2019

Types of Educational Spaces	C.E. MCCALL MIDDLE SCHOOL		
	No. of Rooms	PDE Unit FTE Cap	Sub-Total
Standard Classrooms	23	25	575
Learning Support Classroom	2		0
Learning Support Small Group Instruction	2		0
Special Education Classroom	3		0
Computer Labs		20	0
STEM Classrooms	2	25	50
Science Classrooms	2	25	50
Science Labs	1	20	20
Large Group Instruction			0
Small Group Instruction			0
Business Classroom		25	0
Business Labs		20	0
Art Classrooms	2	20	40
Music Classroom	1	25	25
Band Room		25	0
Orchestra Room	1	25	25
Choral Room		25	0
Family Consumer Science Room	1	20	20
Tech Ed / CTE Lab	2	20	40
Library	1		0
Gymnasium	1	66	66
Auxiliary Gymnasium	1	33	33
Weight/Fitness Room	1		0
Wrestling Room	2		0
Cafeteria	1		0

PDE Building Capacity:		944
Functional Building Capacity:	85%	802
Total 2019-20 Enrollment:		643

Existing Utilization Floor Plan

FLOOR PLANS OMITTED FOR SECURITY PURPOSES

Existing Utilization Floor Plan

FLOOR PLANS OMITTED FOR SECURITY PURPOSES

EDUCATIONAL BUILDING CAPACITY | Assessed February 2019

Types of Educational Spaces	MONTOURSVILLE AREA HIGH SCHOOL		
	No. of Rooms	PDE Unit FTE Cap	Sub-Total
Standard Classrooms	23	25	575
Learning Support Classroom			
Learning Support Small Group Instruction	6		
Special Education Classroom	5		
Special Education Small Group Instruction			
Computer Labs	4	20	80
STEM Classrooms		25	0
Science Classrooms		25	0
Science Labs	7	20	140
Large Group Instruction	1		
Small Group Instruction			
Business Classroom		25	0
Business Labs	1	20	20
Art Classrooms	2	20	40
Music Classroom	1	25	25
Band Room	1	25	25
Orchestra Room		25	0
Choral Room	1	25	25
Family Consumer Science Room		20	0
Tech Ed / CTE Lab	3	20	60
Library	1		
Gymnasium	1	132	132
Auxiliary Gymnasium	1	33	33
Weight/Fitness Room	2		
Wrestling Room			
Cafeteria	1		

PDE Building Capacity:		1155
Functional Building Capacity:	80%	924
Total 2019-20 Enrollment:		610

DISTRICT PROJECTED ENROLLMENT

5 | District Projected Enrollment

Overview

Enrollment projections through mathematical modeling are a critical part of developing, prioritizing, efficiently operating, and maintaining funding for school buildings and grounds. Regardless if a school district is increasing, decreasing, or maintaining enrollment, establishing and planning for an anticipated number of students at each grade level, grade alignment, in each attendance unit, and the district as a whole critical. The purpose of the enrollment modeling process is to:

1. determine the most likely future enrollment for a school district, school, grade alignment, and/or attendance unit in order to compare the anticipated size of a student body against school(s) capacity given the district's educational program and objectives.

2. provide the Board and administration data to develop a capital improvement plan necessary to meet the on-going physical needs of the students they serve and the community that supports them.

3. provide the Pennsylvania Department of Education with data to calculate reimbursement for school construction. Reimbursement, in part, is dependent on enrollment projections and may require a referendum for school construction if a district acts outside of established thresholds.

The Pennsylvania Department of Education provided the Montoursville Area School District with enrollment projections based on recent historic trends in births and trends in the progression of students form one grade to the next. The PDE model uses enrollment data reported annually through the Pennsylvania Information Management System (PIMS) and resident live birth data provided by the Pennsylvania Department of Health. Grade progression is determined by calculating retention rates for grades 2 to 12 using the most recent five years of enrollment data. Retention rates for kindergarten are determined by births five years earlier and for first grade from births six years earlier. These rates are evaluated to determine if a pattern is discernable, or if any retention rates are unusual. If a pattern is found, the pattern is continued in making the projections. Unusual retention rates are discarded, and the average of the remaining rates is used in making the projections.

Crabtree Rohrbaugh and Associates (CRA) provides enrollment projections based on the concept that the recent progression of students through the district's different grade bands best represent the progression of students through the district over the next five to ten years. This model uses enrollment data reported by grade alignment, determines a three- and five-year average rate of growth within each grade band, and projects the size of the student body based on current enrollments. Rather than utilize live birth rates six years prior, this model assumes that the five-year average rate of growth for the district as a whole will continue into the near future and applies that rate to incoming kindergarten classes. This model is much more sensitive to changes to in- and out-migration, changes in policy, program, and state and federal statutes than models that utilize birth and cohort retention rates.

CRA further analyzes our enrollment projections against modeling provided by the Pennsylvania Department of Education to develop "Best Fit Modeling". This modeling is based on the concept that each of the different methodologies represent a legitimate mathematic possibility and that an "average" of those models can represent the most likely of all possibilities.

Montoursville Area School District Projections (K-12)

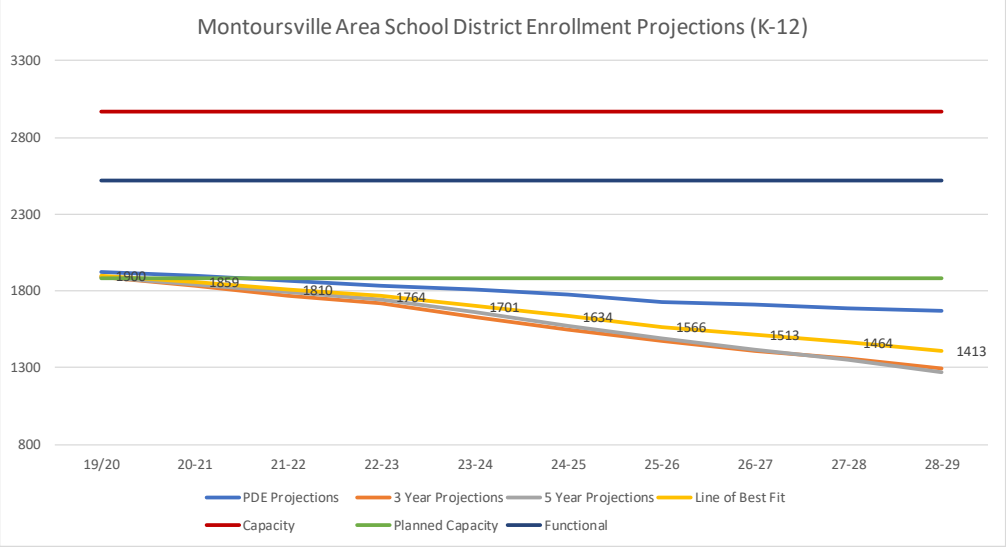
Utilizing three different sets of enrollment projections and a line-of-best-fit the Montoursville Area School District enrollment projections for the district (K-12) demonstrate a good degree of consistency. Over the next decade, the models are all reflecting similar numbers and producing the same enrollment trend. The level of agreement in both the number of students over the next five years and in the trend over the next decade provides validity to the projections.

The models, all which show a gradual decline in the size of the student body, differ by 225 students, 17 students per grade level, or the equivalent of 0.68 classrooms per grade level over the next five years. In other words, from the high to the low prediction the impact on any one grade level annually will be small, but over time the compounding effect will produce greater changes in facility utilization.

It seems logical that different models built on variables from a single school district would be similar. However, in school districts and particularly in smaller ones rapid changes in the rates of in- and outmigration, changes in the housing market, and even students moving back and forth between public and private, parochial, and cyber/charter schools result in far less, and sometimes no, agreement in the projections made by different models. With one important exception, the consistency in the modeling reflects the consistency in enrollment trends and retention rates experienced by the District over the last five years. The exception comes with the recognition that while kindergarten enrollment has remained consistent as an average, there have been sizable annual swings. Over the last five years the of incoming kindergartens averaged 138 students a class. However, during that period the smallest in-coming kindergarten was 125 students and the largest was 166 students. This is creating "bubbles", both highs and lows, in enrollment as the students' progress through the grade bands over the next decade.

As shown in the table below, the projections based on actual enrollments for past three years completed by CRA indicate that the district's enrollment will decline on average by 2.21% annually and based on the previous five years decrease 1.37% annually.

Three Year Growth Rates			Five Year Growth Rates	
K	-3.42%		K	-5.90%
K-4	-2.68%		K-4	-2.23%
5-8	-2.41%		5-8	-0.43%
9-12	-1.56%		9-12	-1.39%
K-12	-2.21%		K-12	-1.37%

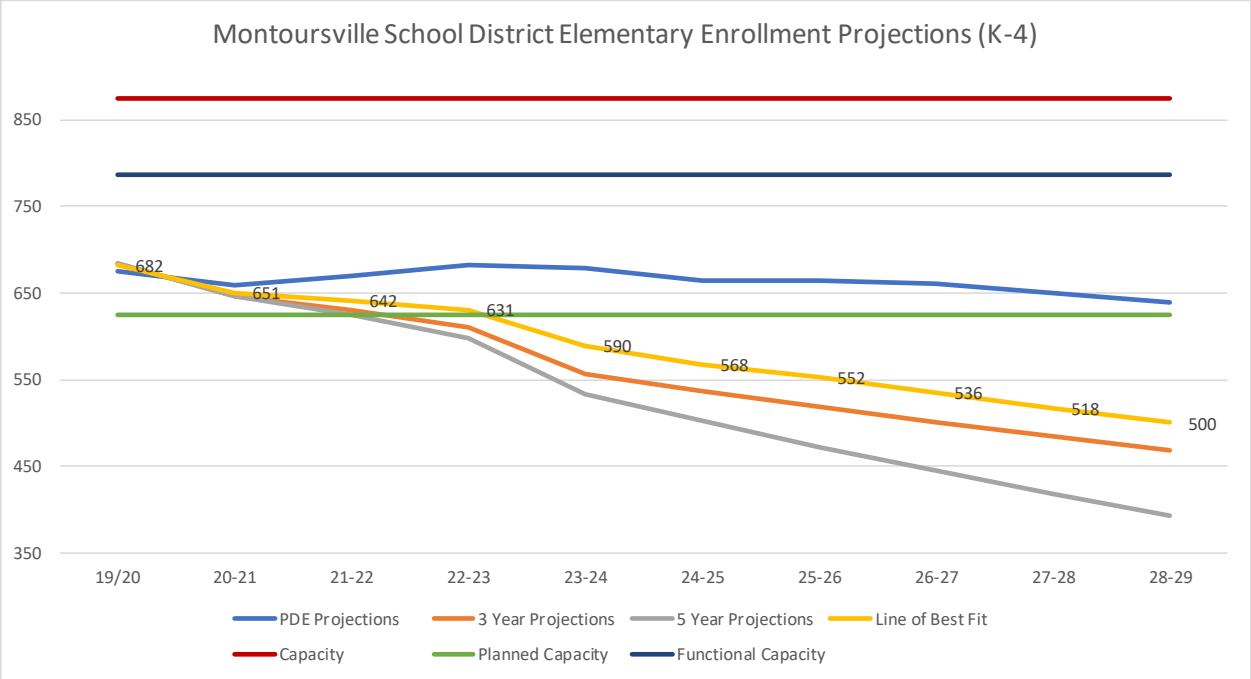


Elementary Projections

Utilizing the Pennsylvania Department of Education standards, the two Montoursville Area School District elementary schools have a combined capacity for 875 students. The capacities for each of the elementary schools are shown in the table below.

School	Capacity
Loyalsock Valley Elementary School	325
Lyter Elementary School	550
Total	**875**

Best practices for elementary school planning establish that elementary schools should allow for 10% space beyond anticipated enrollment. As shown in the graph below, given the 2019/20 elementary enrollment of 685 students, the planned capacity for the two schools would require the district utilize 86% of the combined capacity of Loyalsock Valley and Lyter elementary schools. In 2024/25 the average of the enrollment projections would require a planned capacity to support the equivalent of 625 students and utilize the use of 71% of the combined capacity of the schools. Again, it should be noted that the margin of error in ant enrollment modeling increases greatly beyond five years. If the average of the enrollment projections do hold true, the required planned capacity would be for the equivalent of 550 students utilizing 62.9% of the capacity of the two elementary schools.

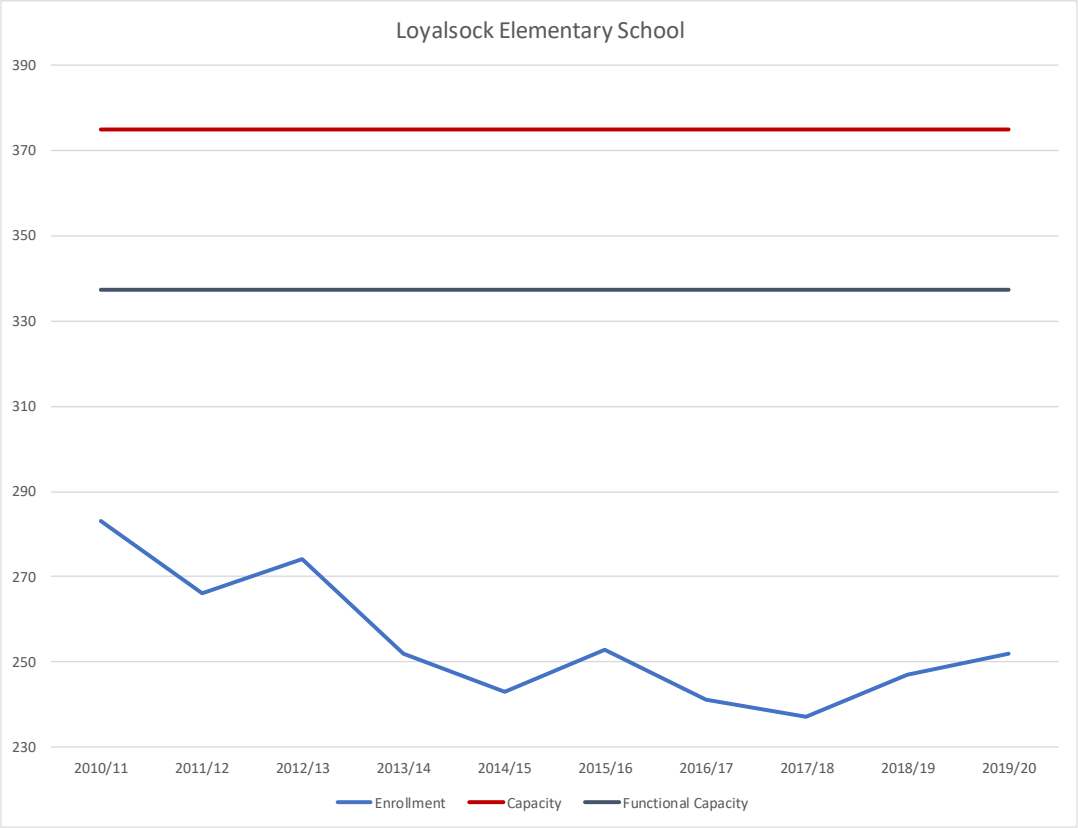


Elementary Attendance Unit Analysis

Individually each of the elementary attendance units have student populations too small to produce valid enrollment projections. The margins of error, even when using a decade worth of attendance data for each school, are beyond an acceptable tolerance. In order to gain perspective on each of the two attendance units, the historical data was reviewed for antidotal trends.

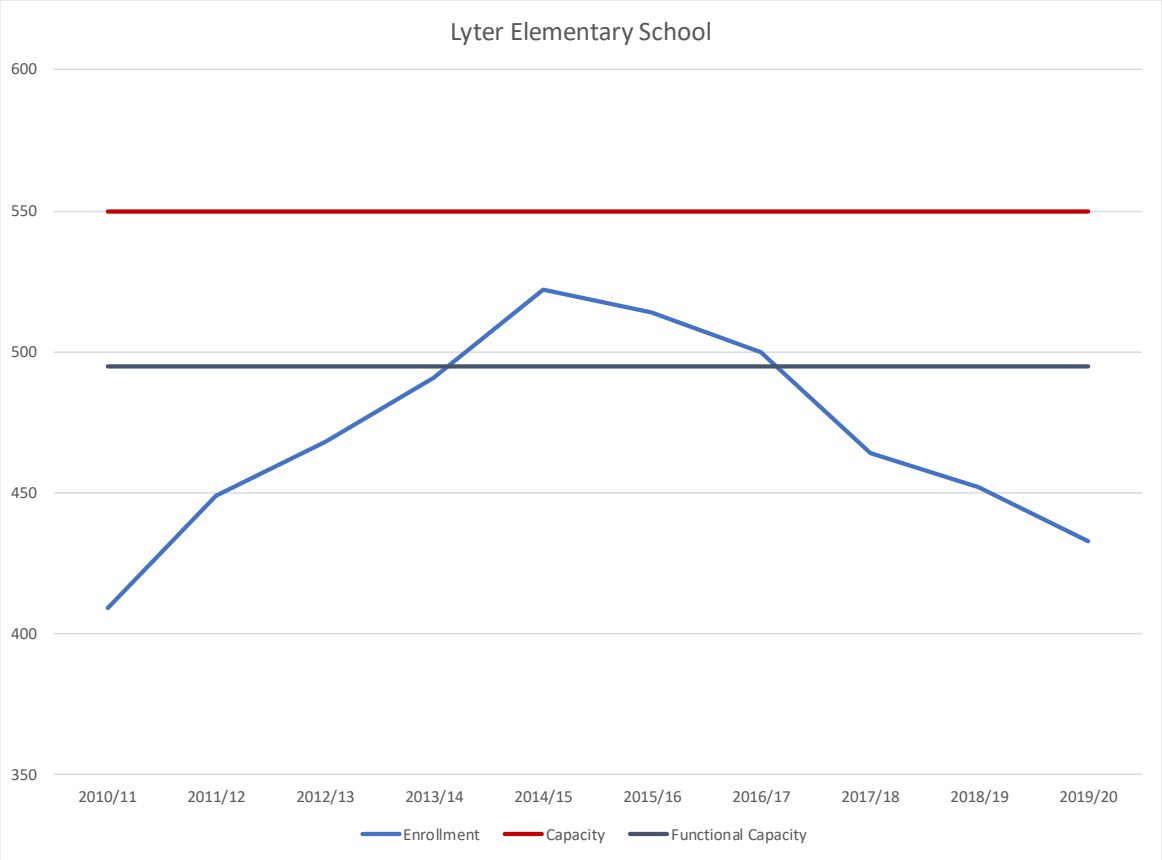
Loyalsock Elementary School

Over the last decade Loyalsock Elementary School has had an average annual decline in enrollment -1.4%. The increases and decreases in enrollment were intermittent, and the attendance unit is currently on an upward trend. Overall, six out of the last ten years saw a decline in enrollment while the remaining four years recorded an increase. As a result, thirty-one fewer students attend Loyalsock Elementary School today then in 2010/11. In 2010/11 the student body required 84% of the instructional capacity of the school. In 2019/20 that had decreased to 75% of the educational capacity.



Lyter Elementary School

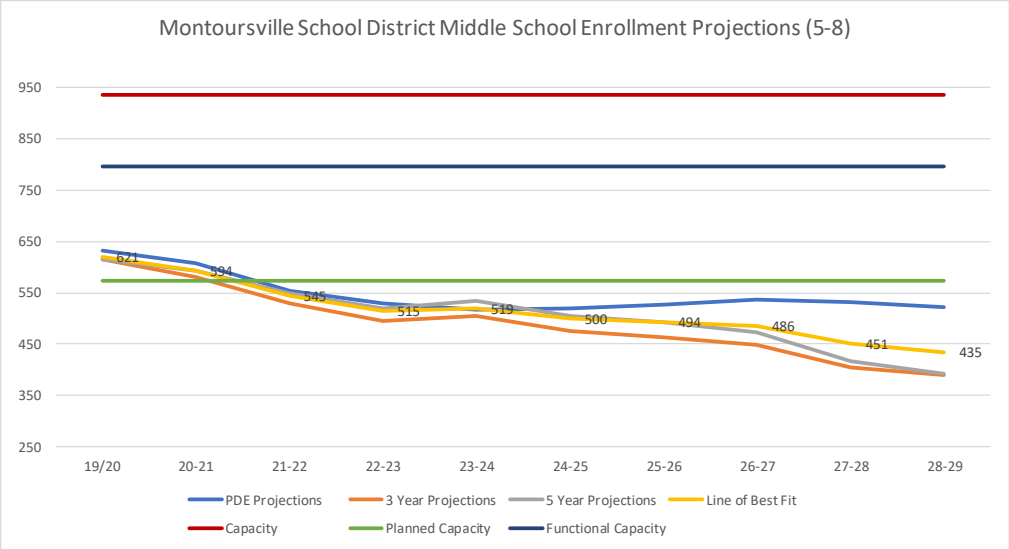
Over the last decade Lyter Elementary School has had an average annual increase in enrollment 0.49%. There are 24 more students attending Lyter today than in 2010/11. However, those totals are not representative of the trends. From 2010-2015 enrollment increases carried the student body to 105% of the functional capacity of the school. From 2015 and through 2020 enrollment declined. Currently the student body and the programs delivered require 87% of the capacity of the school.



Middle School School Projections

Utilizing the Pennsylvania Department of Education standards, the Montoursville Area School District has a capacity for 936 students. The October 1, 2019 report made to PIMS records the 2019/20 enrollment in grades five to eight to be 616 students.

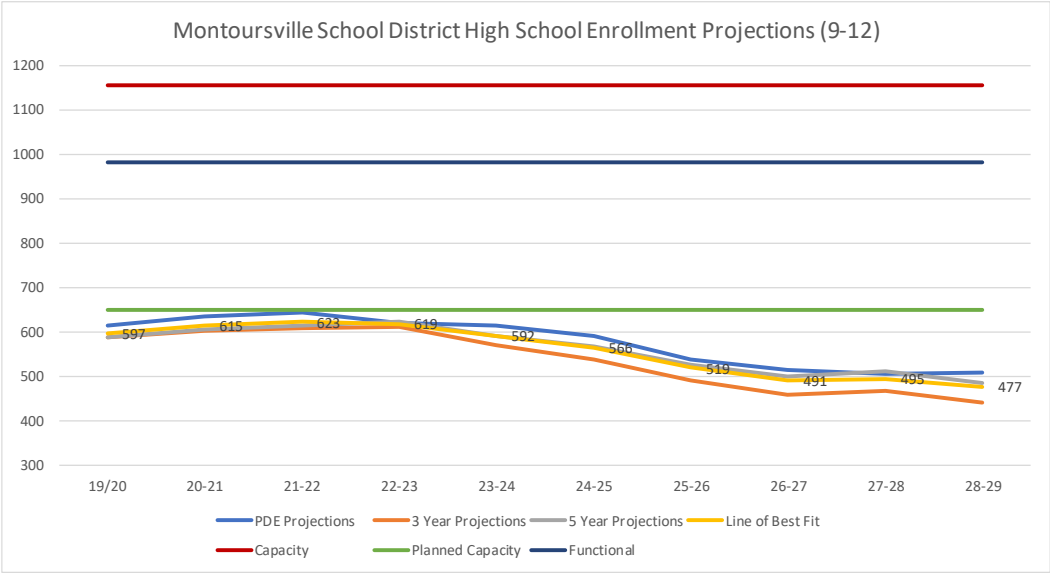
Best practices for secondary school planning targets 15% space beyond the anticipated enrollment in order to schedule the school efficiently and effectively. Given the 2019/20 enrollment the planned capacity for the middle school requires the utilization of 76% of capacity of the school. In 2024/25 enrollment projections require a planned capacity to support the equivalent of 575 students utilizing 61% of the existing capacity. At the end of the decade enrollment is anticipated to be only 65 students fewer than in 2024/25 requiring a planned capacity to support 500 students utilizing 53% of the school's capacity.



High School School Projections

Utilizing the Pennsylvania Department of Education standards, the Montoursville High School has a capacity for 1151 students. The October 1, 2019 report made to PIMS records the 2019/20 enrollment in grades nine to twelve to be 587 students.

Best practices for secondary school planning targets 15% space beyond the anticipated enrollment in order to schedule the school efficiently and effectively. Given the 2019/20 enrollment the planned capacity for the high school requires the utilization of 58% of capacity of the school. In 2024/25 enrollment projections require a planned capacity to support the equivalent of 651 students utilizing 56% of the existing capacity. The average of the enrollment models predicts a slight increase and leveling of enrollment during the first half of the decade; peaking at 623 students. However, the second half of the decade the average of the models demonstrates a decline in enrollment to 477 students; 119 fewer than current enrollment. Again, it is critical to understand that enrollment projections beyond five years have an increasing margin of error. While ten-year enrollment projections should not be ignored, they should not be considered more than a potential future trend.



FACILITY EDUCATIONAL & FUNCTIONAL ADEQUACY

6 | Facility Educational & Functional Adequacy

Overview

The Existing Building adequacy is used to understand the functional deficiencies of a facility particularly with respect to the educational program and space needs. This section evaluates the degree to which the facility meets the needs of teaching and learning and overall function. Academic spaces, support spaces, site amenities, and safety/security are evaluated.

Refer to section 7 for an overview of the analysis of existing components of the building and site for each facility.

Educational Adequacy

Building should meet the intent of the educational program and the long range or strategic plan. Spaces should be of adequate size, quantity, configuration, and adjacency to properly support general education, special education, and extracurricular needs of the school. Refer to the educational program overview in section 3 for more detailed requirements.

In general, buildings shall meet the following criteria.

Elementary School Criteria	
Layout	The elementary schools should support the educational programs and contain sufficient space to accommodate specialized support programs and services.
Site	The elementary schools should be located on a site adequately sized to provide for safe student pick-up and drop-off, visitor and staff parking, and athletic fields for student and community use. According to the Pennsylvania Department of Education guidelines, an elementary school site should contain a minimum of 10 acres, plus one additional acre for each 100 students.
Core Spaces	Core spaces for special subjects and support spaces should be centrally located and easily accessible. Core spaces shall meet or exceed Pennsylvania Department of Education guidelines. All schools should have rooms designed for art and music instruction. All schools should have a space suitable for physical education. Schools with a capacity in excess of 250 students should have a separate room suitable for physical education or have a multi-purpose room large enough to allow for simultaneous use of each side of the multi-purpose room.
Middle School Criteria	
Layout	The middle school should support the educational programs and contain sufficient space to accommodate specialized support programming and services.

Site	The middle school should be located on a site adequately sized to provide for safe student pick-up and drop-off, visitor and staff parking and athletic fields for students and community use. According to the Pennsylvania Department of Education guidelines, a middle school site should contain a minimum of 20 acres, plus one additional acre for each 100 students.
Core Spaces	Core spaces for special subjects and support spaces should be centrally located and easily accessible. Core spaces shall meet or exceed Pennsylvania Department of Education guidelines.
High School Criteria	
Layout	The high school should facilitate specialization by students to achieve their future educational career goals. The high school should support the educational program and contain sufficient space to accommodate specialized support programming and services.
Site	The senior high school should be located on a site adequately sized to provide for safe student pick-up and drop-off; visitor, staff and student parking and athletic fields for student and community use. According to the Pennsylvania Department of Education guidelines, a high school site should contain a minimum of 30 acres plus one additional acre for each 100 students.
Core Spaces	Core spaces for the special subjects and supporting spaces used by all students should be centrally located and easily accessible. Core spaces shall meet or exceed Pennsylvania Department of Education guidelines.

Educational and Functional Adequacy

Academic Spaces:

Overall general classrooms are of adequate size and configuration; however, proper accommodations do not exist for storage of materials and supplies. Proper space does not exist for teaching of STEM program.

In general, special education spaces are of adequate size and configuration. A room is not available for individual student sensory use. Learning support is adequately accommodated for the permanent staff on-site, however, adequate space does not exist for the itinerant staff serving the building. This is both from a teaching students' aspect and an office space for the staff. Itinerant staff includes emotional support, gifted, speech, PT/OT, and others.

The library is undersized and does not conducive to a 21st century learning environment. The cafeteria also functions as the gymnasium. This space is not large enough to serve both functions simultaneously. In addition, the space does not have the proper ceiling height or equipment to accommodate the physical education program.

Recommendations:

- Provide proper classroom storage
- Provide STEM Lab
- Provide additional library space of appropriate configuration
- Provide space for itinerant staff (Small group instruction rooms and offices)
- Provide sensory room
- Provide adequate size dedicated gymnasium

Support Spaces:

The main entrance does not provide for a proper secure vestibule and there is poor visibility for administrative staff. There is no space for visitor waiting and conference space is inadequate. The nurse suite is undersized and not functional. The kitchen is undersized for the population the building serves. Building storage space is inadequate. Custodial, and other general support spaces are adequate.

Recommendations:

- Provide secure vestibule and proper reception area.
- Provide waiting space for visitors.
- Provide space for conference rooms.
- Provide adequate nurse suite.
- Provide additional kitchen space.
- Provide additional building storage.

Site:

The vehicular circulation is does not allow for separation of bus and car traffic. Adequate space exists for outdoor play; however, the play areas are not fenced.

Recommendations:

- Reconfigure bus circulation.
- Fence outdoor play areas.

Educational and Functional Adequacy

Academic Spaces:

Overall general classrooms are of adequate size and configuration. Proper space does not exist for teaching of STEM program.

Learning support is adequately accommodated for the permanent staff on-site, however, adequate space does not exist for the itinerant staff serving the building. This is both from a teaching students' aspect and an office space for the staff. Itinerant staff includes emotional support, gifted, speech, PT/OT, and others.

In general, special education spaces are of adequate size and configuration. A room is not available for individual student sensory use.

The gymnasium is properly sized and contains appropriate amenities.

Recommendations:

- Provide STEM Lab
- Provide space for itinerant staff (Small group instruction rooms and offices)
- Provide sensory room

Support Spaces:

The main administrative suite is properly sized and configured, however adequate conference space is not available.

The kitchen and cafeteria are adequately sized and configured.

Building storage space is inadequate.

Custodial, and other general support spaces are adequate.

Recommendations:

- Provide space for conference rooms.
- Provide additional building storage.

Site:

Parent drop-off does not occur on-site and is handled on Spruce Street. Adequate space exists for outdoor play; however, the play areas are not fenced.

Recommendations:

- Provide on-site parent drop-off (if feasible).
- Fence outdoor play areas.

Educational and Functional Adequacy

Academic Spaces:

General classrooms are of adequate size. Science and STEM are also adequately served. Special education needs are met within the spaces provided. A space does not exist for large group instruction.

The library is antiquated and does not reflect the 21st century educational program of the district.

Proper space exists for most of the related Arts, however, there is no dedicated space for Choral and the stage is used for that purpose.

Some physical education functions are located in the basement, which represents a security concern.

Recommendations:

- Provide an LGI.
- Incorporate 21st century environment in the Library
- Provide Choral Room.
- Secure areas in basement for student phys ed use or provide first floor phys ed space.

Support Spaces:

Support sizes are adequate.

Site:

Sperate bus and car areas exist, however the majority of students are car riders. Site circulation is not ideal with 3 separate areas for parent drop off and pickup.

The site does not have any defined spaces for outdoor learning and integration of curriculum. Proper play equipment does not exist for 5th and 6th grade students.

Recommendations:

- Reconfigure site vehicular circulation.
- Provide outdoor learning spaces.
- Provide outdoor play equipment for 5th and 6th grade students

Educational Program

Academic Spaces:

Educational program needs are met throughout the facility.

The quantity of student lockers are not adequate for the current enrollment.

Recommendations:

- Provide additional student lockers

Support Spaces:

Support sizes are adequate.

Site:

Separate bus and parent traffic exist. Adequate parking is not available.

Recommendations:

- Provide additional parking.

District Administrative Offices

Offices are generally properly sized; however, space does not exist for the entire district administrative staff.

Adequate space does not exist for records storage.

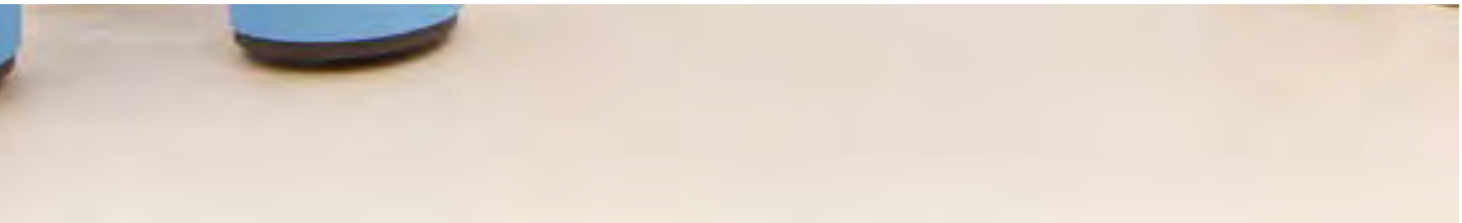
The configuration of the entrance does not allow for proper secure entry circulation and public toilet restroom facilities are not available. Visitors must use the staff toilet rooms which have direct access to the High School.

Adequate parking is not available.

Recommendations:

- Provide additional office space.
- Provide secure vestibule.
- Provide records storage space.
- Provide public toilet rooms or secure staff use toilet rooms.
- Provide additional parking.

EXISTING FACILITY CONDITIONS



7 | Existing Facility Conditions

Evaluation Methodology and Approach

In order to adequately assess the district facilities, it is imperative that a baseline, or benchmark be established, from which evaluations and any subsequent recommendations are based upon. In completing the facilities assessment and evaluation, Crabtree, Rohrbaugh & Associates, working with School District staff, developed and utilized several tools to assist in the process. They include the following:

1. Building surveys and documentation
2. Meetings with staff
3. Use of an Evaluation Criteria as a benchmarking tool
4. Lifespan of Building Components

Overview

The Facility Condition assessment is used to understand the condition of existing components of the site and building and determine what upgrades to the existing are needed to meet today's standards. It is conducted by a team of architects and engineers of various disciplines. The evaluation is performed using existing data, facility staff interviews, facility walk-through assessments, and analysis.

The following categories were used to assess each building:

- Site
- Interior Building
- Exterior Building
- Systems – Electrical
- Systems – Plumbing & Fire Protection
- Systems – HVAC

Evaluation Criteria

The criteria are based on the educational program needs as well as life cycle costs and life span expectations, maintenance needs, energy efficiency, and current applicable accessibility, life safety and building code considerations. The following building codes are applicable:

1. International Building Code of 2015
2. International Existing Building Code of 2015
3. Chapter 11 of the International Building Code of 2015
4. International Mechanical Code of 2015
5. International Fuel Gas Code of 2015
6. International Plumbing Code of 2015
7. International Fire Code of 2015
8. International Energy Conservation Code of 2015
9. Accessible and Usable Buildings and Facilities - ICC / ANSI A117.1 of 2015
10. International Electrical Code of 2015
11. ASHRAE Standards
12. PA Uniform Construction Code Amendments to the above listed model codes
13. Local municipal amendments, if any, to the above listed model codes

NOTE: Existing facilities meet codes applicable at the time of their construction. Code issues identified in this report are those that would be required to meet current codes. Some of the code required upgrades are considered safety issues and should be addressed by the school district.

Building Condition Criteria

Site	
Paving	Asphalt paving should be in good condition, showing no signs of deterioration or cracking. Storm water should be diverted to drainage inlets with no ponding.
Walkways	Concrete sidewalks should be in good condition, showing no signs of deterioration, major cracks or tripping hazards.
Play Equipment	Play equipment should be located in a safe area of the site with no broken or rusted equipment. It should be age appropriate.
Service Area	The service area should be properly located near food services, mechanical rooms and receiving/ storage areas. The service area should be separate from pedestrian and play areas, with trash and recycling containers away from the building and properly screened.
Student Loading	Adequate space should be provided for bus loading, as well as staff and visitor parking. Vehicular and pedestrian traffic are to be separated as much as possible.
Landscaping	Landscaping should be attractive, conducive to activity and well- maintained.
Exterior Building Envelope	
Foundations	All footings shall bear on suitable soil; concrete slabs on compact grade.
Structural System	Structural systems should be intact with no uncertified modifications. There should be no evidence of cracking or settling of structural components.
Energy	Buildings should meet or exceed ASHRAE 90.1 Standards.
Roofing System	Roofing systems should be in maintainable condition with adequate slope to roof drains or gutters and no ponding, roof leaks or visible damage.
Exterior Envelope	Exterior walls should be masonry cavity wall on masonry backup with adequate insulation or masonry cavity wall on metal stud and reinforced gypsum drywall with adequate insulation.
Exterior Trim	Exterior trim should be heavy gauge metal or wood with no rotted areas, completely painted and properly fastened.
Windows	Windows should be clear or tinted glass units, in thermally broken aluminum frames, or aluminum clad wood with undamaged finish. Windows should be easily operable and have proper caulking.
Exterior Doors	Exterior doors and frames should be galvanized hollow metal or finished aluminum. In addition, they must swing in the direction of egress travel, and be accessible.

Interior Elements	
Interior Walls	Interior partitions should be structurally sound, free of finish defects and have adequate acoustical properties.
Interior Doors	Interior doors should be solid core wood in painted metal frames. Doors should have undamaged finish and swing in the direction of egress.
Interior Glass	Interior glass should be 1/4' tempered or safety glass, or wire glass where required.
Kitchen Equipment	Equipment should be properly located to accommodate both safety and traffic. Equipment should be stainless steel in good working condition and in compliance with all applicable codes.
Athletic Equipment	Athletic equipment and bleachers should be in good working condition and meet the minimum code safety requirements. Basketball backstops and related equipment should be in good working condition with appropriate safety measures for operation.
Terrazzo	Floors should contain no large cracks and have smooth transition to adjacent floor surfaces with no stains or deteriorated areas.
Resilient Flooring	Resilient floor surfaces should be free of defects, with no cracks, open seams or missing tiles. Asbestos containing floor tiles should be identified and be included in the School District's operation and maintenance plan.
Carpeting	Carpet should have tight seams, with no unraveling or exposed/frayed ends. They should have anti-microbial treatment and be stain resistant where applicable. Area rugs should be non-slip type with no tripping hazards.
Ceramic Tile	Ceramic tile should be free of cracked, loose, missing or broken tiles with adequate waterproof grout.
Wood Flooring	Wood floors should have appropriate finish and smooth transition to adjacent floor surfaces. They must allow for movement without buckling or spreading. There should be no squeaky or soft spots.
Ceiling Tile	Ceilings should contain no stained, broken or warped tiles, and the grid should be adequately tied to structure.
Gypsum Wallboard	Wallboard should have smooth, clean surface with no damage or stains and appropriate transition to adjacent ceiling materials. Wallboard should not be used in areas subject to high student use or abuse.
Paint	Painted surfaces should have a smooth finish, with no peeling or stains. Appropriate colors should be chosen for reduction of glare, for light reflectivity and overall compatibility with use of space. Lead based paint should not be present.
Casework	Cabinets should have a solid wood or particleboard core with a high-density plastic laminate finish. Chemical resistant countertops should be provided in science labs where appropriate. Surfaces should be undamaged with properly functioning hardware.

<table>
<tr><td>Toilet Partitions</td><td>Partitions should be painted, galvanized metal or solid phenolic construction. Partitions should be floor supported or overhead braced. Panel surfaces should not be dented, bent or rusted and all hardware should be present and in good working condition.</td></tr>
<tr><td>Lockers</td><td>Lockers should be heavy gauge metal with painted finish. Athletic lockers should be extra-heavy duty or all welded construction, property vented. Lockers should be in good physical condition with no dents or rust and all hardware should be present and in good operating condition.</td></tr>
<tr><td>Operable Partitions</td><td>Partitions should be secured properly to the building structure. They should be easy and safe to operate. The sound transmission rating is to be suitable for its intended use.</td></tr>
<tr><td>Acoustics</td><td>Acoustic separation should be provided between assembly spaces and instructional areas. Large assembly areas, such as gymnasiums, multi-purpose rooms, cafeterias, music rooms and libraries should be designed to properly attenuate and distribute sound in order to reinforce the program use.</td></tr>
<tr><td colspan="2">Systems – Plumbing & Fire Protection</td></tr>
<tr><td>Distribution</td><td>Sanitary drainage, domestic water and gas piping should be in good condition and operating within system design. Hot water supply shall be provided to every hand sink within classrooms and restrooms.</td></tr>
<tr><td>Plumbing Fixtures</td><td>Plumbing fixtures should be well maintained and in good working condition to operate within the system design. They shall accommodate the adult or child dimensions and anthropometrics, respectively for their users.</td></tr>
<tr><td>Equipment</td><td>Plumbing equipment should be well maintained and in good working condition to operate within the system design.</td></tr>
<tr><td colspan="2">Systems – Electrical</td></tr>
<tr><td>Interior Fixtures</td><td>Light fixtures should have energy efficient long life lamps with non-PCB ballasts. Fixtures should have undamaged finishes and lens with no cracked or discolored items.

Illumination levels should meet the minimum criteria based on foot-candle (fc) levels established by the Illuminating Engineers Society (IES). Applicable parameters are as follows:
<table>
<tr><td>Space</td><td>Foot Candles</td></tr>
<tr><td>Classrooms</td><td>50 – 100 fc</td></tr>
<tr><td>Libraries</td><td>20 – 50 fc</td></tr>
<tr><td>Offices</td><td>20 – 50 fc</td></tr>
<tr><td>Office Task</td><td>50 – 100 fc</td></tr>
</table>
</td></tr>
</table>

	Toilets	10 – 20 fc
	Corridors	10 – 20 fc
	Cafeterias	10 – 20 fc
	Kitchens	50 – 100 fc
	Laboratories	50 – 100 fc
	M.P. Rooms	30 fc
	Parking	1 – 2 fc
Exterior Lighting	There should be LED wall mounted lights around the perimeter of building and the lights should be photocell or time clock controlled. There should be lights mounted on 35' high light poles providing 1 to fc to all parking areas.	
Power Supply	Power supply should be 480/277 volts, 3 phase, 4 wire from power company. The transformer should be located in a safe isolated area.	
Service	Service box should have a functional panel cover and lock, available replacement branch devices and expansion capacity.	
Distribution	Equipment should have functional panel covers and locks with 480 volts, 3 phase for power to HVAC and other heavy equipment; 277 volts, 3 phase for interior or lighting distribution; available replacement parts. All panel schedules shall be accurately labeled.	
Transformers	There should be 480 120/208 volts, 3 phase step-down transformers for power to receptacles and other small 12 volt equipment.	
Wiring	There should be no signs of deteriorating insulation or loose connections.	
Receptacles	Receptacles should be grounded type with no broken covers. They should be appropriately located for program needs. Shutter type safety receptacles should be provided in play areas; Ground fault interrupters are required at wet areas.	
Emergency Generator / Battery Packs	Emergency generators should be property located and sized to meet desired emergency load requirements	
Public Address System	System should be fully automatic; main power should control all speakers and provides signals to bell system for fire drills and alarms.	
Speakers/ Call Intercom System	Speakers should be provided in every classroom for two-way communications and safety.	

Clocks/ Bells	Analog or digital clocks should be installed in each instructional space and should also be connected to the master clock system. Clocks and bells should be on the automatic system.
Telephone System	A telephone system should be provided and available within the capabilities of the Public Address System. Specific functioning and use of the system should be programmed from the central control unit.
Television/ AV CATV System	There should be empty conduits or cable trays to instructional areas to allow for television cables. Wiring and installation of a television system should be per the educational specifications. Every instructional space should be served by the system.
Data Transfer System	Data systems should be implemented to meet the educational needs of the facilities and a long-range technology plan. Systems should be flexible and adaptable for future technological changes. A building-wide cable distribution system should be provided for installation of present and future low voltage special systems cable. Provide racks for LAN distribution equipment at designated network hub locations.
Systems – Heating, Ventilation and Air Conditioning (HVAC)	
System Design	HVAC System installed should be one that is the most ideal and current for the type of building. Equipment and air distribution should contain fire protection devices such as fire dampers and duct smoke detectors to meet current local code and life safety requirements.
Ventilation	Outside air quantities should be designed per local code requirements.
Exhaust	Proper quantities of exhaust air should be provided in toilet rooms, science rooms, mechanical rooms, kitchen, maintenance closets, storage rooms and copy rooms.
Distribution	HVAC piping and ductwork should be in good condition.
Equipment	HVAC equipment should be well maintained and in good working condition to operate within the system design. Equipment should be designed to meet local building code requirements.
Energy	Automatic temperature control systems should be current and have energy management capabilities

Accessibility and Building Code Criteria

Recommendations in this report regarding upgrades related to the Americans with Disabilities Act are made when buildings or areas of a building can be made accessible without "undue burden". "Section 35.150 requires that each service, program, or activity conducted by a public entity, when viewed in its entirety, be readily accessible to and usable by individuals with disabilities." ADA Regulation for Title II, as printed in the Federal Register (7/26/91).

<table>
<tr><td colspan="3">Site</td></tr>
<tr><td>Vehicular Circulation</td><td colspan="2">Safe drop-off facilities should be provided for each bus, automobile, and service vehicle traffic. Cross traffic between vehicles and pedestrians should be eliminated or minimized.</td></tr>
<tr><td>Parking</td><td colspan="2">Vehicular parking shall be designed to meet local municipal authority requirements. An adequate amount of parking should be available for students, staff and visitors.</td></tr>
<tr><td>Drainage</td><td colspan="2">Storm water management shall be designed to meet local municipal authority requirements. Walks and drives shall be properly drained.</td></tr>
<tr><td>Pedestrian Circulation</td><td colspan="2">At least one accessible route shall be provided within the boundary of the site from accessible parking spaces, passenger loading areas and public streets and walks to an accessible building entrance.</td></tr>
<tr><td rowspan="12">Parking</td><td colspan="2">Property configured and marked accessible parking spaces shall be provided per code requirements.</td></tr>
<tr><td>Total Parking in Lot</td><td>Required Minimum Number of Accessible Spaces</td></tr>
<tr><td>1 to 25</td><td>1</td></tr>
<tr><td>26 to 50</td><td>2</td></tr>
<tr><td>51 to 75</td><td>3</td></tr>
<tr><td>76 to 100</td><td>4</td></tr>
<tr><td>101 to 150</td><td>5</td></tr>
<tr><td>151 to 200</td><td>6</td></tr>
<tr><td>201 to 300</td><td>7</td></tr>
<tr><td>301 to 400</td><td>8</td></tr>
<tr><td>401 to 500</td><td>9</td></tr>
<tr><td>501 to 1000</td><td>2 Percent of Total</td></tr>
<tr><td>Exterior Signage</td><td colspan="2">Proper signage shall be provided on-site to designate handicapped accessible route(s) to the building and related facilities.</td></tr>
<tr><td colspan="3">Interior Code Compliance</td></tr>
<tr><td>Means of Egress</td><td colspan="2">Interior elements comprising means of egress shall be continuous and unobstructed from any space within the building to the exit discharge in accordance with local building codes.</td></tr>
<tr><td>Fire Extinguishers</td><td colspan="2">Fire extinguishers shall be an approved type to meet local building code criteria for number and spacing and shall be mounted at the proper height. Fire extinguishers shall be annually serviced by licensed personnel and inspected monthly by building operations employees.</td></tr>
<tr><td colspan="3">Interior Accessibility</td></tr>
</table>

<table>
<tr><td>Interior Routes</td><td>At least one accessible route shall connect accessible building or facility entrances with available programs within the building. The path of travel to an altered area and the restrooms, telephones, and drinking fountains serving the altered area, shall be readily accessible to and usable by individuals with disabilities.</td></tr>
<tr><td>Railings</td><td>Handrails and railings on stairs and/or ramps shall be designed to meet code requirements. Ramps shall have a maximum slope of 1 to 12.</td></tr>
<tr><td>Elevator</td><td>One passenger elevator shall serve each level providing programs to the public including mezzanines, in all multi-story buildings.</td></tr>
<tr><td>Doors</td><td>At each accessible entrance to a building, at least one door shall meet code width and maneuvering clearances. Door openings are to be a minimum clear width of 32” and a minimum clearance of 4’-0” shall exist between pairs of entrance doors in vestibules. Each door that is an element of an accessible route or means of egress shall meet the width and maneuvering clearances per code requirements.</td></tr>
<tr><td>Egress/ Area of Rescue Assistance</td><td>Areas of Rescue Assistance shall be provided where there is no direct egress to grade. The total number of areas per story shall be not less than 1 for every 200 persons of calculated occupant load served by the area of rescue assistance. Area of Rescue Assistance may not be required if the building is fully sprinklered.</td></tr>
<tr><td>Interior Signage</td><td>Proper signage shall be placed throughout the building to adequately identify accessible routes and areas of rescue assistance. Room identification signs throughout the building shall be in compliance with ADA.</td></tr>
<tr><td>Hardware</td><td>Door locksets to all accessible spaces should be lever-type accessible units. Door closers should meet pull load requirements.</td></tr>
<tr><td>Toilet Rooms</td><td>Existing toilet room facilities on each level of a building shall be accessible or an accessible toilet room shall be provided near the existing facilities. Additional toilet facilities shall be accessible when required by the program or service provided.</td></tr>
<tr><td>Drinking Fountains</td><td>At least one accessible drinking fountain should be provided on each level of a building and 50% of the total number of drinking fountains provided shall be accessible. Two drinking fountains mounted side by side or on a single post, are usable by people with disabilities and people who find it difficult to bend over. Knee clearances shall not be required at units used primarily by children ages 12 and younger where clear floor space for a parallel approach is provided and where the spout is no higher than 30 in, measured from the floor or ground surface to the spout outlet.</td></tr>
<tr><td>Seating</td><td>In places of assembly with fixed seating, accessible wheelchair locations shall be provided. At least one companion fixed seat shall be provided next to each wheelchair seating area. When the seating capacity exceeds 300, wheelchair spaces shall be provided in more than one location.
<table>
<tr><td>Capacity of Seating in Assembly Area</td><td>Number of Required Wheelchair Locations</td></tr>
<tr><td>4 to 25</td><td>1</td></tr>
<tr><td>26 to 50</td><td>2</td></tr>
<tr><td>51 to 300</td><td>4</td></tr>
<tr><td>301 to 500</td><td>6</td></tr>
<tr><td>over 500</td><td>6 plus 1 additional space for each total seating capacity increase of 100</td></tr>
</table></td></tr>
</table>

Workstations	Accessible workstations in core spaces in the elementary school level such as art rooms, the library/media center, computer labs and other core subject spaces in the secondary level should be provided.
Performance Areas	An accessible route shall connect wheelchair-seating locations with performing areas, including stages and spaces used by the performers such as dressing rooms or locker rooms. An Assistive Listening System (ALS) should be provided and located within 50 feet viewing distance of the stage or performing area and shall have a complete view of the stage.
Systems Code Compliance	
Fire Alarm System	There should be a NFPA 70 panel, connected to the local fire department for alarm with localized alarm stations as required with available spare parts and maintenance service.
Annunciator	There should be a NFPA 70 remote panel in an easily accessed area, well protected, with available parts and maintenance service.
Fire Suppression System	An automatic fire suppression system shall be installed throughout all buildings in accordance with local building codes.
Systems Accessibility	
Fire Alarm	Visual strobe alarms are to be provided in toilet rooms and other general use areas. (Meeting rooms, lobbies, corridors and common use areas.)

Typical Life Expectancy of Building Materials & Components

General Building Systems	Range of Years				
	10 - 20	20 - 30	30 - 40	40 - 50	50 +
Site Work					
Concrete pads & sidewalks					
Bituminous paving					
Site water lines					
Site sewer lines					
Site stormwater systems					
Site sewage system					
Site electrical lines					
Fencing					
Playground equipment					
Foundations & Structure					
Foundation walls / footings					
Concrete slab on grade					
Concrete floor & metal deck					
Steel floor structure					
Steel roof structure					
Building Envelope Systems					
Exterior wall - masonry					
Exterior wall - wood cladding					
Aluminum windows					
Aluminum / hollow metal doors					
Trim - soffit, fascia, etc.					
Roofing - build-up system					
Roofing - single-ply EPDM					
Roofing - asphalt shingles					
Roofing - seamed metal					
Skylights					
Rainwater gutters / spouting					
Rainwater downspouts					

Typical Life Expectancy of Building Materials & Components

General Building Systems	Range of Years				
	10 - 20	20 - 30	30 - 40	40 - 50	50 +
Interiors					
Walls - masonry					
Walls - drywall / plaster and stud					
Floors - terrazzo					
Floors - wood					
Floors - vinyl					
Floors - ceramic					
Floors - carpet					
Ceilings - drywall / plaster					
Ceilings - acoustical tile					
Wall / ceiling paint					
Doors - wood w/metal frame					
Interior door hardware					
Operable partitions					
Specialties, Equipment, & Furnishings					
Casework - wood					
Casework - plastic laminate					
Chalkboards & tackboards					
Projection screens					
Lockers					
Kitchen equipment					
Toilet partitions					
Toilet accessories					
Cafeteria tables					
Auditorium seating					
Library furniture					
Gymnasium bleachers					

Mechanical, Plumbing & Electrical	Range of Years				
	10 - 20	20 - 30	30 - 40	40 - 50	50 +
Heating, Ventilation, & Air Conditioning					
Steel Boilers					
Cast Iron Boilers					
Unit ventilators					
Fan coil units					
Steam heat system					
Gas heat system					
Oil heat system					
Central air conditioning system					
Local (window) air conditioning system					
Ductwork, diffusers, grilles, etc					
Dampers					
Burners					
Expansion tanks					
Water source / geothermal heat pumps					
Rooftop air conditioners					
Hot water unit heaters					
VAV boxes					
Centrifugal exhaust fans					
Water cooled centrifugal chillers					
Air cooled chillers					
Galvanized cooling towers					
Evaporative coolers					
HVAC insulation					
Base mounted pumps					
In-line pumps					
Controls					
Valve actuators					

Mechanical, Plumbing & Electrical	Range of Years				
	10 - 20	20 - 30	30 - 40	40 - 50	50 +
Plumbing Systems					
Domestic water piping - copper					
Domestic water piping - PVC					
Sanitary piping - cast iron					
Sanitary piping - PVC					
Gas-fired tanks					
Electric-fired tanks					
Steam-fired tanks					
Backflow preventers					
Pumps - constant pressure					
Pumps - recirculation					
Pumps - sewer					
Neutralization tanks					
Expansion loops					
Mixing valves					
Gas piping (low pressure)					
Gas meter / regulator					
Sprinklers					
Standpipe					
Fixtures - toilets, urinals, lavatories					
Fixtures - water coolers, drinking fountains					
Electrical Systems					
Power Supply					
Power service					
Distribution panels					
Wiring, receptacles, & switches					
Transformers					
Lighting - exterior					
Lighting - interior					
Generator					
Exit signs					
Fire alarm panel					
Fire alarm - graphic annunciator					
Smoke / heat detection system					
Public address system					
Telephone system					
Television system					
Security system					
Clock / bell system					
Speakers					
Communication wiring					
Electric motors					
Motor starters					

7 | LOYALSOCK VALLEY ELEMENTARY SCHOOL

Address:	3790 State Rt. 87 Montoursville, PA 17754
Construction Timeline:	Original Construction - 1961 Alterations & Additions – 1983
Building Size:	40,920 SF 1-Story
Site Size:	13.6 Acres

Site Conditions

Paving & Walkways:

The drives and parking are bituminous material which are showing significant signs of wear and are in poor condition.

Walkways are and are in fair condition.

Play Areas & Equipment:

The hard surface playground is in poor condition. The playground equipment is in good to fair condition and should be re-evaluated in 5 years.

Recommendations:

- Mill and Resurface all bituminous paving including hard surface play area.

Exterior Building Conditions

Exterior Walls:

Exterior walls are comprised of brick and stucco. These materials are in fair condition.

Water infiltration is occurring in the below grade exterior walls of the water storage tank room.

Humidity issues have also been reported along the classrooms to the rear of the school (along the tree line). This could be due to exterior envelop integrity, adjacent ground water issues, building orientation, HVAC Systems, or a combination of two or more of these factors. A more in-depth analysis needs to occur to determine the exact cause of the humidity.

Roofing:

Roofing is built-up asphalt and is in good condition.

Doors & Windows:

Exterior doors are a combination of aluminum framed storefront with glazing and hollow metal. Aluminum frames are in fair condition. Hollow metal doors are in poor condition. Exterior windows are aluminum clad vinyl windows with insulated glazing. Windows are in fair condition and should be re-evaluated in 5 years.

Recommendations:

- Correct humidity issues in classrooms
- Replace exterior doors

Interior Building Conditions

Structure:

The building is comprised of load bearing masonry walls and steel framed roofs with concrete slab on grade floors. The structure is in good condition.

A portion of the floor is elevated crawl space. This space has no means for mechanical ventilation and in turn has consistent humidity issues.

Finishes:

Interior walls consist of painted concrete masonry units, glazed masonry units, and painted plaster. Wall finishes are in fair to poor condition.

Floors consist of terrazzo, VCT, VAT, and ceramic tile, and carpet. Terrazzo floors and newly installed VCT is in good condition. VAT, ceramic tile, and carpeted floors are in poor condition.

Ceilings are primarily suspended ceiling tiles. Ceilings are in fair to poor condition. Recently replaced ceilings are in good condition.

Corridors & Stairs:

Corridors are of adequate width and meet current codes.

Toilet Rooms:

Toilet rooms do not meet current accessibility standards and are generally in poor condition.

Doors:

Doors are primarily solid wood core with aluminum frames. Doors are in fair to poor condition. Door hardware is in poor condition and the majority do not meet current codes.

Casework & Built-in Equipment:

Casework is a combination of plastic laminate and metal. The plastic laminate is delaminating from the majority of the surfaces and the metal casework is in poor condition.

Specialty Equipment:

Food service equipment is outdated, in poor condition, and not functional for today's standards. The stage rigging and curtains are in fair condition.

Hazardous Materials:

Per the district staff, the majority of the vinyl floor tile contains asbestos. This tile should be properly abated. Refer to district asbestos reports for more information.

Recommendations:

- Install crawl space ventilation system.
- Patch/repair and paint interior plaster walls.
- Replace flooring except terrazzo and newly installed VCT.
- Replace all ceilings except newly installed ACT.
- Renovate/reconfigure toilet rooms.
- Replace interior doors and hardware.
- Replace classroom casework.
- Replace food service equipment
- Abate asbestos floor tile.

Building Systems

HVAC

The building utilizes a hot water heating system for space heating. The existing heating system consists of floor mounted unit ventilators in each classroom. The unit ventilators have an outside air intake louver for ventilation air. Offices and storage rooms utilize terminal heating units (finned tube and cabinet unit heaters) as a source of heat. The offices and storage rooms do not have ventilation air being introduced into the spaces.

Classroom Unit Ventilators

The multipurpose room is served by a central air handling unit located in the crawl space. Ventilation air could not be verified at the time of survey.

Central Heating Boilers

There are two hot water heating boilers located in the mechanical room. The boilers utilize #2 fuel oil as a source of fuel. The boilers do not have adequate capacity to provide heat and ventilation air to the facility. The boilers struggle to maintain space temperatures during periods of extreme cold weather. The boilers are over 30 years old and in need of replacement. A set of pumps distribute heating hot water throughout the facility. The pumps are over 20 years old. The piping consists of copper and steel. Majority of the piping is steel and original to the building. The piping is starting to have frequent leaks. The piping needs to be replaced.

Heating Boilers

HVAC control System

The control system utilizes pneumatic controls that where installed when the building was constructed. At the time of survey, the existing system was functioning, however, spaces throughout the facility where either overheating or not hot enough. The control system has reached the end of its useful life.

HVAC Controls

Building Air conditioning

The building does not have a central air conditioning system. Several areas of the building have window air conditioners. Some offices have mini split systems. These systems are over 20 years old and in need of replacement.

Building Exhaust

Toilet rooms have exhaust fans. The fans are over 20 years old. At the time of survey there was very little exhaust air being exhausted from the main toilet rooms. The majority of the building has a crawl space. The crawl space is not vented or have a dedicated exhaust system to remove the moisture laden air from the crawl space. There are issues with high humidity levels in various classrooms. These classrooms have residential portable dehumidifiers.

Recommendations:

- The entire HVAC system needs replaced. A new HVAC system should incorporate full building air conditioning as well as heating.

Plumbing

Domestic Water

The building domestic water system consists of two wells that supply water to the building, a 2000 gallon water storage tank, 3 pressure tanks and a chlorinator. The system is not on emergency power, but the School District requested that at least one of the well pumps be connected to an emergency power circuit. The School District is required to have someone trained on operation and maintenance of the well system.

Piping connected to the well system is PVC and transitions to copper. Copper pipe is run throughout the building and looks to be original.

Sanitary

The sanitary system is a cast iron and is original. Piping is in poor condition and needs replaced. The sanitary waste is piped to an on-site system with tanks that are pumped out twice per year.

Storm Drainage

Roof drains are original and in poor condition. Piping is cast iron and original. Piping is in poor condition and needs replaced. A sump pump is located in the room with the well equipment to pump out groundwater when the room floods during heavy rains.

Fuel System

A 200 gallon propane tank serves the emergency generator. Fuel oil serves the boilers and water heater.

Plumbing Fixtures

Water closets are vitreous china floor mounted, flushometer type with manual flushometers. There both wall hung and floor mounted vitreous china urinals located throughout the building. Floor mounted urinals no longer meet code. Lavatories are mostly vitreous china wall hung type. Lavatory faucets consist of two handle metering and non-metering faucets. ASSE 1017 mixing valves are missing at the lavatories. Floor drains are located in most toilet rooms. Both refrigerated electric water coolers and non-refrigerated drinking fountains are located in the corridors.

Some of the classrooms have stainless steel drop-in sinks with bubblers. The kindergarten classrooms have a toilet rooms with the low kindergarten height water closets and wall hung lavatories.

The nurse's suite and administration area have toilet rooms with floor mounted tank type water closets and wall hung lavatories. There are also stainless-steel drop-in sinks located in the teacher's break room and library.

An enameled cast iron service sink is located in the janitor's closet. The older faucets don't have a vacuum breaker installed on them. The new faucets do.

Fixture, original to the building are in poor condition. Fixture installed as part of the 1983 addition are in fair condition.

Exposed wall hydrants are located around the exterior of the building and look to be in fair condition.

Kitchen

A grease interceptor is not provided to collect grease laden waste. The dishwasher booster heater is electric. Waste from the three-bowl sink is hard piped to the sewer system. These sinks are usually required to be indirectly connected through a floor sink.

Water Heating

The existing water heater is an oil-fired tank type heater with approximately 80 gallons of storage. The oil burner was recently replaced. A circulator pump circulates hot water throughout the building. The pump is not on a time clock.

Oil fired water heater

Floor mounted urinals

Fire Protection

The building is non-sprinklered.

Recommendations:

- Replace the entire plumbing system including domestic water distribution piping, sanitary and storm drainage system both above and below slab, plumbing fixtures, water heater and circulator pumps. The well system may remain as well as the on-site sanitary sewer system. One of the well pumps should be connected to emergency power per the School Districts request. The School District may want to consider replacing the fuel oil system with propane.

Electrical

The Elementary School is served by a 208/120V 600 Amp Main distribution panelboard (MDP). Branch devices are circuit breakers. The unit was installed during the 1960's. Spare space is available. Typical usable life for this type of switchboard is 30-40 years. The MDP is fed from overhead transformers. The MDPS feeds various building 208V distribution equipment via conduit and wire feeders. Branch circuit panels were in poor condition with limited spare circuits available.

Main Distribution Panelboard

Main Circuit Breaker

The building is served with a 12 kW Generac residential grade generator and transfer switch. The generator powers life-safety equipment including emergency lighting and the fire alarm system. The generator is not code compliant for Life Safety.

General lighting in the facility consists of T8 Fluorescent fixtures in average condition. The District is currently in the process of a LED lamp replacement.

Emergency lighting is sparse and needs upgraded in the building. Exit signs were in satisfactory condition.

Typical Lighting

Site lighting consisted of Metal-Halide type in average to poor condition. The district is converting to LED

General wiring devices are in average-poor condition.

The main building is served by a Simplex system from the 1960s in poor condition and not code compliant. Alarms only consist of Bells. The intercommunications system is in poor condition. Cat-5 data structured cabling is provided throughout the building and is in average condition. A Video surveillance is installed throughout the building and is in good condition. An Access Control system is installed in the building and is in good condition.

Fire Alarm Panel

Clock Control System

Recommendations:

- Replace the entire power system and emergency power system. Size for future additions and air conditioning.
- Provide new LED lighting and controls meeting current energy standards.
- Provide new intercommunications systems (PA,Clock,Bell).
- Provide new fire alarm system.
- As part of a complete building renovation provide a complete new structured cabling system with horizontal cat-6 cabling data distribution rack(s) and fiber riser cabling between racks. Provide in-classroom audio/visual and sound reinforcement wiring/systems.

7 | LYTER ELEMENTARY SCHOOL

Address:	900 Spruce Street Montoursville, PA 17754
Construction Timeline:	Original Construction - 1958 Alterations & Additions – 1962, 1998
Building Size:	69,000 SF
Site Size:	7.56 Acres

Site Conditions

Paving & Walkways:

Paving for parking and drive is bituminous and is in fair condition. Sidewalks are concrete in fair to poor condition. Sidewalks in the front of the building are deteriorating.

Play Areas & Equipment:

The ballfields on the property are in good to fair condition. The hard surface play area is bituminous and in fair condition. Both are in need on ongoing maintenance. The playground equipment is outdated and nearing the end of its useful life.

Exterior Building Conditions

Exterior Walls:

Exterior walls are primarily brick. Brick is in good to fair condition. Some areas need cleaning and repointing and can be corrected with ongoing maintenance.

Soffits are comprised of painted exterior grade sheathing and wood. The paint is failing in many areas.

Roofing:

Roofing is built-up asphalt with some sections of metal roofing. Roofing is in good to fair condition. Leaking is reported from the gutters and downspouts surrounding the gymnasium roof. Additionally, the snow guard from this roof do not retain snow and ice adequately.

Doors & Windows:

Exterior doors are aluminum and hollow metal and are in fair condition.

Exterior windows are aluminum clad vinyl double pane glass with integral blinds. Windows are in fair to poor condition and nearing the end of useful life. It should also be noted that windows are not sealed 1-inch insulated glass units and therefore not efficient.

Recommendations:

- Replace concrete walkways in front of building.
- Replace the playground equipment.
- Refinish soffits.
- Replace gymnasium gutter, downspouts, and snow guards.
- Replace exterior windows.

Interior Building Conditions

Structure:

The structure is a combination of load bearing masonry walls and steel framing and concrete slab on grade. Portions of the structure are wood framed. In general, the structure is in good condition.

Finishes:

Interior walls consist of painted concrete masonry units, glazed masonry units, and painted plaster. Wall finishes are in fair condition.

Floors consist of terrazzo, VCT, ceramic tile, and carpet. Terrazzo floors are in good condition. VCT and ceramic tile floors are in fair condition and ongoing maintenance is required. Carpet is in poor cond

Ceilings are a combination of suspended ceiling tiles and gypsum board. It was noted that some original plaster ceilings remain in place above the more recent installed suspended ceilings. These plaster ceilings should be removed in the future when the acoustical ceilings are replaced. The kitchen ceiling is porous ACT and not appropriate for the function of the space.

Corridors & Stairs:

Corridors are of adequate width and configuration. The only stair is a service stair to the lower level.

Toilet Rooms:

The majority of the toilet rooms are of adequate size and configuration. Some of the single occupancy toilet rooms in the classrooms do not meet required clearances for accessibility.

Doors:

Interior doors are a combination of wood with wood frames and wood with hollow metal frames. The doors and hardware are in fair to poor condition.

Casework & Built-in Equipment:

Casework is a combination of plastic laminate and wood and is in fair condition.

Specialty Equipment:

Food Service, Gymnasium, and Stage equipment is in good to fair condition. The walk-in refrigerator and freezer are nearing the end of useful life.

Recommendations:

- Patch/Repair and paint plaster walls.
- Replace carpet.
- Replace kitchen acoustical ceiling tile with mylar faced tile
- Renovate non-compliant toilet rooms.
- Replace original construction doors, frames, and hardware.
- Replace door hardware in addition.
- Replace kitchen walk-in cooler and freezer.

Building Systems

HVAC

The building heating ventilation and air conditioning system was upgraded during the renovation in 1998. The HVAC system is nearing the end of its useful life. These types of systems have life spans of 20-30 years. The classrooms utilize unit ventilators for space conditioning. The classroom unit ventilators are heating only and have no air conditioning. The corridors, entry vestibules utilize cabinet unit heaters and ceiling mounted unit ventilators.

Office with ceiling mini split AC

The multipurpose/gym utilizes central air handling units for providing heating and ventilation. There are multiple units that serve the space. The gym does not have air conditioning.

Administration offices utilize split systems for air conditioning. The offices utilize ductless ceiling and wall mounted units. The condensers are located on the roof. The library utilizes a central air handling unit with a remote air-cooled condenser to serve the space. The central air handling unit provides air conditioning to the library. The condensing unit is located on the roof.

Heating system

The hot water heating system utilizes two cast iron boilers. These boilers where installed in 1998. They each have a capacity of 3800 MBH. They have adequate capacity to heat the building. A set of floor mounted pumps circulate hot water throughout the building. The piping system is a combination of copper and steel. The piping system appears to be in good condition.

Temperature Control System

The building is controlled through a pneumatic control system. The control system is not adequate. Classrooms, offices, etc., are not able to maintain space temperatures. They are either too warm or too cold. The building control system is not able to set back temperatures during the unoccupied periods.

Typical Pneumatic Thermostat

Exhaust Systems

Toilet rooms throughout the facility have exhaust registers that remove air from these spaces. The exhaust rates are adequate; however, they could be increased. At the time of survey several smaller toilet rooms the exhaust fans where not operating.

Recommendations:

- New temperature control system. Energy Management Control System to provide space temperature control and save energy.
- Replace classroom unit ventilators with new units (same type, includes electrical costs).
- Replace Gym AHU's (provide AC, includes electrical costs).
- Replace Library AHU and ACCU (includes electrical costs).
- Provide Variable Refrigerant Flow (VRF) air conditioning for classrooms, corridors, multipurpose. (includes electrical upgrades)
- Provide new heating hot water boilers (high efficiency condensing type boilers) and circulating pumps (includes electrical costs).
- Replace the existing exhaust fans with new exhaust fans (includes electrical costs).
- The above recommendations summarized budget: $3,065,000-$3,675,000.
- Option: In leu of the above recommendations, the district can replace entire HVAC system with completely new HVAC system (new boilers, piping, controls, full building air conditioning, electrical upgrades, etc.). Budget-$3,200,000-$3,800,000.

Plumbing

Domestic Water

A 4 inch domestic water service enters the building. A meter followed by a backflow preventer with a by-pass is located at the service. Pressure is between 44 and 53 psi. Piping is in good condition.

Sanitary

The sanitary system is a combination of cast iron and PVC. The piping is in fair condition. A concrete grease interceptor is located outside and gets pumped out once per year. No problems were reported with the grease interceptor.

Storm Drainage

The roof drains on the original building are in poor condition. Horizontal piping has been replaced and some of the vertical piping has been replaced. Original cast iron piping is buried in the walls, and will most likely need replaced. There are also sloped roof areas with gutters and downspouts.

Gas

Natural gas serves the building and is piped to the water heaters, boilers and kitchen. The piping is in good condition.

Plumbing Fixtures

There is a combination of both vitreous china floor mounted and wall hung, flushometer type water closets throughout the building. Urinals are vitreous china wall hung type. Lavatories are mostly vitreous china wall hung type. Lavatory faucets consist of metering, two handle and single handle faucets. The new gang toiler rooms have counters outside the toilet room with integral lavatory bowls and metering

faucets. ASSE 1017 mixing valves are missing at the lavatories. Fixtures in the original building are in fair condition. Fixtures in the 1998 addition / renovation are in good condition.

Some of the classrooms have stainless steel drop-in sinks with bubblers. Drop-in sinks are also located in the library and nurses suite. A stainless steel double bowl sink is located in the art rooms. This sink does not have a plaster trap installed on the waste.

An enameled cast iron service sink is in the janitor's closet. The faucet does not have a vacuum breaker installed on it.

Exposed wall hydrants are located around the exterior of the building and look to be in fair condition.

Kitchen

The steamer is gas fired. All other kitchen equipment including the dishwasher booster heater is electric.

Water Heating

The existing PVI gas fired water heater is being replaced with two new Lochinvar water heating boilers and a storage tank similar to what is installed at the high school. Circulator pumps are also being replaced and will be connected to the DDC system.

Fire Protection

The building is non-sprinklered and there are not standpipes on the stage.

Recommendations:

- Replace original cast iron storm drainage piping inside walls where feasible.
- Replace fixtures not replaced in the 1998 renovation.
- Provide ASSE 1017 mixing valves on lavatories used for public handwashing. (Code requirement.)
- Provide insulation trap and supplies on lavatories designated to be ADA compliant. (Code requirement.)
- Replace faucet on janitor's service sink. New faucet shall have a vacuum breaker to prevent backflow of any chemicals into the domestic water system. (Code requirement.)

Electrical

The Elementary School is served by a 480/277 volt, 3 phase, 4 wire 1200 amp main distribution switchboard (MDS). Branch devices are fused switches. The unit was installed during the 1990's renovation. Spare switches are available. Typical usable life for this type of switchboard is 30-40 years. The MDS is fed from an outdoor pad mounted transformer. The MDS feeds various building 480V distribution equipment via conduit and wire feeders. Branch circuit panels were in good condition and have spare circuits available.


Switchboard

The main building is served with a 125kW Caterpillar generator installed during the 1990's renovation. The generator powers life-safety equipment including emergency lighting and the fire alarm system. The generator is in good condition, typical usable life for this type of switchboard is 30-40 years.

General lighting in the facility consists of T8 Fluorescent fixtures in average condition. The District is currently in the process of a LED lamp replacement. Occupancy sensors are provided in the classrooms and are due for replacement. Emergency lighting is sparse and needs upgraded in the building. Exit signs were in satisfactory condition. Site lighting consisted of Metal-Halide type in average to poor condition. The district is converting to LED


Site Lighting Fixture


Typical Classroom Lighting

General wiring devices are in average condition and installed during the 1990's renovation/additions and due for replacement.

The main building is served by a Simplex 4020 fire alarm system installed during the 1990's renovations/additions in average condition, but due for replacement. Note that system upgrade will require a voice notification system.


Fire Alarm Panel

The intercommunications system is in average condition installed during the 1990's renovations/additions, due for replacement. Cat-5 data structured cabling is provided throughout the building and is in good condition. A Video surveillance is installed throughout the building and is in good condition. An Access Control system is installed in the building and is in good condition.

Recommendations:

- Replace existing fire alarm panel/system.
- Replace existing intercommunications system (clock/bell/intercom)
- Replace the remaining T-8 fixtures with LED.
- Install lighting controls in the remaining spaces in the building and replace existing.
- Replace the existing T5HO gymnasium fixtures with new LED highbay fixtures.

7 | C.E. McCALL MIDDLE SCHOOL

Address:	600 Willow Street Montoursville, PA 17754
Construction Timeline:	Original Construction - 1972 Alterations & Additions – 2010
Building Size:	146,500 SF
Site Size:	30.4 Acres

Site Conditions

Paving & Walkways:

Drives and parking areas are bituminous, and sidewalks are concrete. Both are in fair condition with some areas of cracking. Ongoing maintenance is required.

Athletic Fields:

The High School soccer, softball, and baseball fields along with the tennis courts are located on this property. Overall the fields are in good to fair condition. The soccer fields are consistently saturated and do not drain properly.

Recommendations:

- Install under field drainage system for soccer fields.

Exterior Building Conditions

Exterior Walls:

Exterior walls are face brick. The brick is in good condition.

On-site storage buildings are in fair to poor condition.

Roofing:

The roofing is a built-up asphalt system and is in relatively good condition. Ongoing maintenance is required.

Doors & Windows:

Exterior doors and windows are aluminum frame with 1-inch insulated glazing. Some exterior doors are hollow metal. Windows and doors are in good to fair condition. High traffic doors should be re-evaluated as needed.

Recommendations:

- Paint exterior walls of storage building and replace roof.

Interior Building Conditions

Structure:

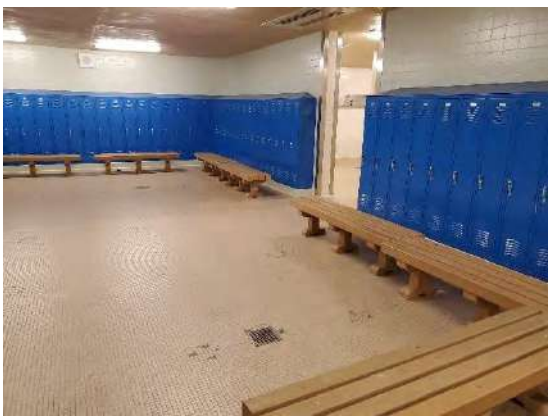
The structure is a mixture of load bearing masonry with steel joists and concrete deck with areas of steel framing. The structure is in good condition.

Finishes:

Flooring consists of terrazzo, VCT, ceramic tile and carpet. Terrazzo floors are in good condition. VCT and carpet floors are in good to fair condition. Some rooms have sheet vinyl flooring. Seams of the sheet vinyl are failing and should be repaired or replaced as ongoing maintenance. Ceramic floor tile in the toilet rooms is in fair condition. Ceramic tile in the locker rooms is in poor condition.

Ceilings are primarily acoustical ceiling tile and are in good to fair condition. High end specialty ceiling systems are present in the library.

Walls are a combination of painted CMU, painted gypsum board, and specialty tile. Walls are in good condition.



Corridors & Stairs:

Corridors and stair are of adequate size and configuration and meet current codes.

Toilet Rooms:

Toilet rooms contain the appropriate number of fixtures and meet current codes.

Doors:

Interior doors are primarily solid wood core with hollow metal frames and are in good to fair condition.

Casework & Built-in Equipment:

Casework is plastic laminate and is in good to fair condition.

Specialty Equipment:

Food service and stage equipment is in good condition. Gymnasium equipment is outdated and nearing the end of its useful life. The TV studio equipment has failed and is in need of repair or replacement. Lockers are in poor condition.

Recommendations:

- Replace ceramic tile in locker rooms.
- Replace gymnasium equipment.
- Replace TV studios AV equipment
- Refurbish or Replace student lockers

HVAC

The HVAC system consists of a geothermal ground source heat pump system. The system was installed during the 2012 renovation. There are heat pumps in the classrooms, air handling units serving the gymnasium, cafeteria, kitchen and media center. The classrooms utilize a heat pump installed in a closet in each classroom. The heat pumps appear to be in good condition.

Classroom Heatpump

The rooftop units are manufactured by AAON and appear to be in good operating condition. The classrooms are supplied ventilation air from Dedicated Outdoor Air System (DOAS) AAON rooftop units. The units precondition the air to room neutral air conditions. These units are in good operating condition.

The geothermal heat pump system utilizes schedule 40 steel piping for heat pump loop water piping. The piping was installed when the building was renovated. The piping is in good condition.

Heat pump loop water is circulated through the building with two 100 hp circulating pumps. The pumps utilize a variable speed drive to match the building load. The pumps and speed drives are in good operating condition.

A pair of hot water heating boilers are utilized for heating the corridors, entrance vestibules and storage rooms. The boilers are set up with both natural gas and fuel oil. The boilers are in good operating condition.


Heating Hot Water Boilers

The HVAC system is controlled through an Energy Management Control System (EMCS). The controls are manufactured by Tour Andover Controls (TAC). This system was installed during the renovation. The system is in good operating condition. All the HVAC equipment is controlled through the EMCS. During unoccupied periods the building HVAC system space temperatures are able to be set back or lowered to save energy.

Toilet rooms, locker rooms and storage rooms have building exhaust systems. At the time of survey these systems where in good operating condition.

Plumbing

Domestic Water

Piping throughout the building is copper and is insulated. Piping is in good condition. A booster pump is connected to the system but is not used because water pressure is adequate.

Sanitary

The sanitary system is a combination of cast iron and PVC. The piping is in fair condition. A concrete grease interceptor is located outside and gets pumped out once per year. No problems were reported with the grease interceptor.

Storm Drainage

Roof drains are located on the roof and are piped to interior rainwater conductors. No problems were reported with the storm drainage system.

Gas

Natural gas serves the building and is piped to the water heaters, boilers, kitchen and science rooms. An emergency gas shutoff is located in each science room served with gas. The piping is in good condition.

Plumbing Fixtures

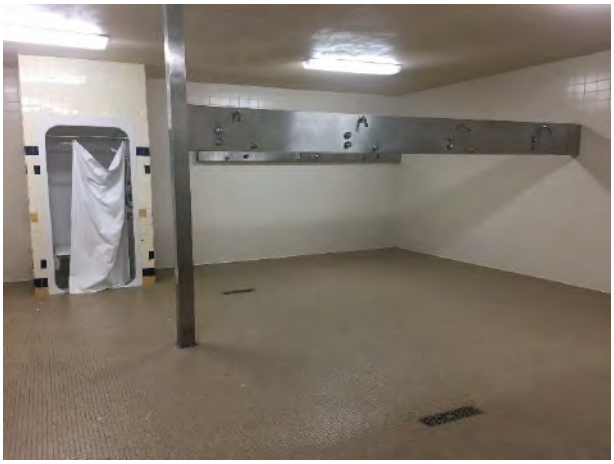
Most of the water closets are vitreous china wall hung, flushometer type water closets with manual flushometers. Urinals are vitreous china wall hung type with manual flushometers. Lavatories are vitreous china wall mounted lavatories or vitreous china drop-in lavatories with two handle metering faucets. Split level electric water coolers are located in the corridors.

Water closets and urinals in the locker room are similar to what is installed in the rest of the building. Three station solid surface wash fountains with metering faucets are located outside the toilet rooms. Stainless steel surface mounted showers are located in the gang showers. Floor drains in the gang shower areas are located in the middle of the room which does not meet code. Acrylic showers enclosers are provided to meet the ADA requirement. Vitreous china wall hung drinking fountains are also located in the locker rooms.

Foot operated solid surface wash stations are located in the shop areas.

Stainless steel drop-in sinks with gooseneck faucets are located in the art and STEM classrooms. A solids interceptor is located under these sinks.

The science classrooms have epoxy counters with integral sinks. Both hot and cold water lab faucets are located at the lab sinks. The faucets are equipped with a vacuum breaker. Counter mounted eyewash stations are located in each room. Dual gas outlets are also located at the lab stations.


Locker room gang showers

Kitchen

Gas fired equipment is located in the kitchen. The dishwasher booster heater is electric.

Water Heating

Two 120 gallon, Weil McLain indirect water heater tanks supply hot water to the building. The tanks are connected to the two 5,250 mbh gas fired heating system boilers. In the summer, when the heating boilers are shut down, a 570 mbh gas fired Raypak water heater provides hot water. Four circulator pumps circulate domestic hot water throughout the building. A master mixing valve tempers the water to around 120 degrees. The Raypak heater is in poor condition and needs replaced.

Fire Protection

The building has a limited area sprinkler system. The boiler room and basement are protected with an automatic wet-pipe sprinkler system. The rest of the building is non-sprinklered.

A standpipe system is not located at the stage.

Recommendations:

- Replace the summer domestic hot water heater.
- Move floor drains in the gang shower areas to the perimeter of the rooms to meet code. Moving drains can be done when locker rooms are renovated.

Electrical

The High School is served by a 480/277 volt, 3 phase, 4 wire 2500 amp main distribution switchboard (MDS). Branch devices are circuit breakers. The unit was installed during the 2012 renovation. Spare breakers and space are available. Typical usable life for this type of switchboard is 30-40 years. The MDS is fed from an outdoor pad mounted transformer. The MDS feeds various building 480V distribution equipment via conduit and wire feeders. Branch circuit panels were in good condition and have spare circuits available.


Switchboard

The main building is served with a Caterpillar emergency generator installed during the 2012 renovation. The generator is in good condition. The generator powers life-safety equipment including emergency lighting and the fire alarm system. The generator is in good condition, typical usable life for this type of switchboard is 30-40 years.

General lighting in the facility consists of T-8 fluorescent fixtures in good condition. The gymnasium was illuminated by T5HO high bay fixtures in good condition. Occupancy sensors are provided in the classrooms. The district has been converting the T-8 fixtures to LED. Approximately 50% have been replaced.

Emergency lighting is in-sufficient throughout the building. Exit signs were LED type.

Site lighting consisted of Metal Halide fixtures type in good condition. The district is converting the fixtures to LED.

Library Lighting

Typical Classroom Lighting

General wiring devices are in good condition and installed during the 2012 renovation/additions.

The main building is served by a Simplex 4010 fire alarm system installed during the 2012 renovations/additions in good condition. Note that any additions/alterations to the building may require an upgrade to this panel/system due to current code requirements of voice notification systems.

Fire Alarm Panel

The intercommunications system is in good condition installed during the 2012 renovations/addition. Structured cabling is provided throughout the building and is in good condition. A Video surveillance is installed throughout the building and is in good condition. An Access Control system is installed in the building and is in good condition.

Recommendations:

- Replace the remaining T-8 fixtures with LED.
- Install lighting controls in the remaining spaces in the building.
- Replace the existing T5HO gymnasium fixtures with new LED highbay fixtures.

7 | MONTOURSVILLE AREA HIGH SCHOOL

Address:	700 Mulberry Street Montoursville, PA 17754
Construction Timeline:	Original Construction - 1931 Alterations & Additions – 1949, 1963, 1974, 1993, 2017
Building Size:	208,173 SF
Site Size:	15.4 Acres

Site Conditions

Paving & Walkways:

Drives and parking areas are bituminous and in good condition. Concrete walks are also in good condition.

A section of grass area between the main building and the Tech Ed building is wearing due to student traffic. Traffic can be diverted to avoid this.

Athletic Fields:

A stadium with a synthetic turf field and synthetic running track exists on the property. The field and track are in good condition. Aluminum bleachers are used for spectator seating. The aluminum bleachers are in good condition. A concrete masonry structure exists under the bleachers and contains space for toilet rooms, storage, and concessions. This building is in fair condition.

A grass practice field exists for phys ed and team use. This field is in good condition. All other athletic fields serving the High School are located at C.E. McCall Middle School.

Recommendations:

- Paint the stadium concessions/storage building.
- Install railing to divert Tech Ed traffic from the grass field.

Exterior Building Conditions

Exterior Walls:

Exterior walls are primarily comprised of face brick which is in good condition.

Roofing:

Roofing on the main buildings is a built-up asphalt system and is in good condition. Roofing on the maintenance building is in fair to poor condition.

Doors & Windows:

Exterior doors and windows are primarily aluminum frame with 1" insulted glazing. Windows and doors are in good condition.

Recommendations:

- Replace maintenance building roof.

Interior Building Conditions

Structure:

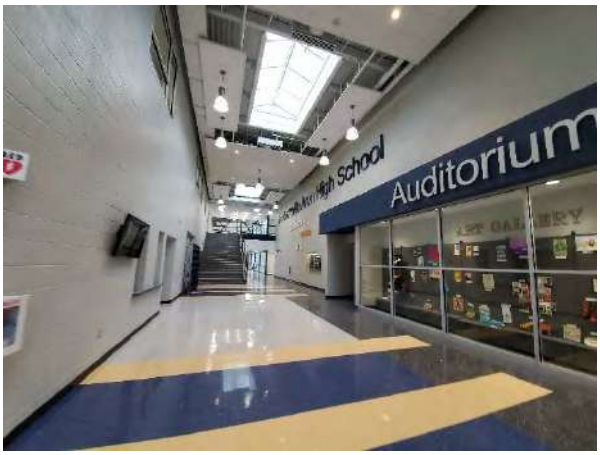
Much of the structure is load bearing masonry with metal joists and concrete deck. Some areas of gypsum deck exist. The structure is in good condition.

Finishes:

Flooring consists of terrazzo, VCT, quartz tile, carpet tile and resinous. Overall the flooring is in good condition and on-going maintenance is recommended. The stained concrete floor in the auditorium is showing signs of wear.

Walls are primarily painted concrete block with some painted gypsum wall board. Walls are in good condition. The paint on the main gymnasium walls and ceiling are in fair condition.

Ceilings are a combination of ACT and gypsum board. Ceilings are in good condition.



Corridors & Stairs:

Corridors are stairs are of adequate width and configuration. Stair guardrails and railings meet current codes.

Toilet Rooms:

Adequate toilet rooms exist. Configurations meet current codes.

Doors:

Doors are primarily solid wood core with hollow metal frames. Doors, frames, and hardware are in good condition and code compliant.

Casework & Built-in Equipment:

Casework is plastic laminate and is in good condition.

Specialty Equipment:

Food Service, Auditorium/Stage, Gymnasium equipment is up to date and in good condition. Lockers are also in good condition.

Recommendations:

- Paint main gymnasium.
- Re-seal auditorium flooring or install VCT flooring.

Building Systems

HVAC

The high school tech ed building is served by JCI rooftop units. The units have natural gas heating and Direct eXpansion (DX) cooling. Outside ventilation air is provided for all spaces. The outside ventilation air is provided through the rooftop units.

The wood shop utilizes a dust collection system. Equipment is ducted to a central dust collector. The dust collector is located outside in the parking lot adjacent to the building.

The metal shop has individual welding fume extractors to serve desktop welding stations. There are main exhaust hoods serving welding applications for larger projects needing to be able to work from the floor.

The agricultural program space utilizes dedicated exhaust fans.

The administration area is served by a separate rooftop unit. During the summer months other portions of the building can be turned off when not occupied. The administration area can operate independent of the rest of the building.

Toilet rooms and general storage areas are exhausted through roof mounted exhaust fans.

Data closet is served by a mini split system.

An Energy Management Control System (EMCS) provides control to the building functions, equipment and provide maintenance service reminders on HVAC equipment. The EMCS consists of an all-electric Direct Digital Control (DDC) logic to serve all the HVAC equipment.

Plumbing

Piping

Most of the plumbing piping was replaced during the recent renovation. A new 2" domestic water service was installed. The interior domestic water piping is copper. Sanitary and storm drainage piping is PVC. A new natural gas service was also installed. The building has its own gas meter, separate from the High School. Gas piping serves unit heaters, roof top units, the water heater, the forge and furnace. A compressed air loop serves the laboratories and is connected to an air compressor located in the maintenance shop. Piping is in good condition.

Plumbing Fixtures

Fixtures are relatively new and in good condition. Water closets and urinals are vitreous china with sensor operated flushometers. Lavatories at the gang bathrooms are solid surface type with push button, air valve. Stainless steel sinks and eyewashes are located in laboratories. Trench drains are located in front of the laboratory garage doors. The only problem reported was with the solid surface lavatories. The soap dispensers no longer work and the tubing to the faucets gets plugged.

Water Heating

A tank type gas water heater is located in the loft space and provides hot water. A pump circulates hot water throughout the building. Both the water heater and circulator pump are relatively new.

Sprinkler

The building is non-sprinklered.

Recommendations:

- Replace the faucets on the solid surface lavatories. $600 per station.

Electrical

The High School Tech Ed Building is served by a 480/277 volt, 3 phase, 4 wire 600 amp main distribution panelboard (MDP). Branch devices are circuit breakers. The unit was installed in 2014. Spare breakers and space are available. Typical usable life for this type of switchboard is 30-40 years. The MDP is fed from the adjacent High School Main Distribution Switchboard. The MDP feeds various building panelboards via a stepdown transformer and low voltage distribution panelboard. Branch circuit panels were in good condition and have spare circuits available.

General lighting in the facility consists of LED fixtures in good condition.

Emergency lighting is in-sufficient throughout the building. Exit signs were LED type.

General wiring devices are in good condition and installed during the 2014 renovation/additions.

The building is served by the High School Simplex 4100ES fire alarm system installed during the 2014 renovations/additions in good condition. The intercommunications system served by the High School Rauland system in good condition installed during the 2014 renovations/addition. Cat-6 data structured cabling is provided throughout the building and is in good condition. A Video surveillance is installed throughout the building and is in good condition. An Access Control system is installed in the building and is in good condition.

7 | MONTOURSVILLE AREA SCHOOL DISTRICT OFFICE

Address:	50 North Arch Street Montoursville, PA 17754
Construction Timeline:	Original Construction - 1931 Alterations & Additions – 1949, 1963, 1974, 1993, 2017
Building Square Footage:	SF

Site

Refer to High School narrative.

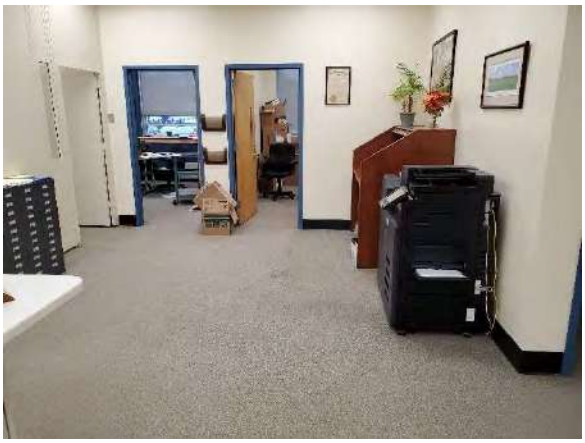
Building Exterior

Refer to High School narrative.

Interior Building Conditions

Finishes:

Flooring is carpet and VCT. Flooring is in poor condition. Walls are painted gypsum wallboard and are in fair condition. Ceilings are acoustical tile and are in good to fair condition.



Toilet Rooms:

Toilet rooms are of adequate size and configuration and meet current codes.

Doors:

Doors are solid wood core with hollow metal frames and are in fair condition.

Casework & Built-in Equipment:

Casework is plastic laminate and is in fair condition.

Recommendations:

- Provide new flooring.

Building Systems

Refer to High School narrative.

EXISTING FACILITY COST TO UPGRADE

8 | Existing Facility Cost to Upgrade

Estimated Costs for Each Criteria

The estimated costs listed for each item of work are preliminarily based on visual observation of the condition present during the site inspections. In general, the costs are allowances for the construction cost associated with the improvement and do not include total project costs. For example, providing a sprinkler system does not include allowances for ceiling removal and replacement, cutting and patching, supplying water to the site, and reconfiguring space to provide the equipment. In addition, costs are construction only and do not include any additional soft costs which may be required, such as design fees, financing fees, contingency, etc. COSTS SHOULD BE ADJUSTED FOR INFLATION FROM THE DATE OF THIS REPORT.

It should be noted that the cost to upgrade addresses general existing facility conditions that need addressed to bring the building to current standards. It does not incorporate ongoing yearly maintenance items that can be expected at each building. These ongoing maintenance items should be budgeted in addition to the cost to upgrade.

Note the cost to upgrade does not address the deficiencies noted in the Facility Educational & Functional Needs Assessment section.

Refer to proposed construction options regarding estimates and scope of work for comprehensive projects.

Loyalsock Valley Elemantary School

ESTIMATED COSTS TO UPGRADE TO CURRENT STANDARDS

The following cost estiamte includes upgrades to bring the existing components of the facility to current standards

Educational and functional deficiencies are not included in the below costs

	EXISTING BUILDING AREA			40,920 SF		
	Unit	Quant	Cost	Cost Range		
Existing Facility Upgrades						
Sitework						
Paved Drives & Parking	SF	65,500	$ 5.50	$360,250	-	$414,288
Building Exterior						
Exterior Walls - Water/Humidity Issues	LS	1	$ 45,000	$45,000	-	$51,750
Exterior Doors & Hardware	EA	13	$ 3,500	$45,500	-	$52,325
Building Interior						
Asbestos Abatement	LS	1	$ 45,000	$45,000	-	$51,750
Selective Demolition	SF	40,920	$ 4.00	$163,680	-	$188,232
Finishes - Flooring	SF	32,736	$ 5.50	$180,048	-	$207,055
Finishes - Ceilings	SF	24,552	$ 6.75	$165,726	-	$190,585
Finishes - Walls	SF	40,920	$ 2.50	$102,300	-	$117,645
Interior Doors & Hardware	EA	95	$ 1,300	$123,500	-	$142,025
Casework	LS	1	$ 185,000	$185,000	-	$212,750
Toilet room renovations	SF	1200	$ 180	$216,000	-	$248,400
Crawl Space Ventilation	LS	1	$ 12,500	$12,500	-	$14,375
Specialties & Equipment						
Food Service Equipment	LS	1	$ 175,000	$175,000	-	$201,250
Gymnasium Equipment	LS	1	$ 35,000	$35,000	-	$40,250
Building Systems - HVAC						
HVAC System Replacement	SF	40,920	$ 35.00	$1,432,200	-	$1,647,030
Building Systems - Plumbing / Fire Protection						
Plumbing & Fire Protection	SF	40,920	$ 8.75	$358,050	-	$411,758
Building Systems - Electrical						
Power Distribution & Emergency Power	SF	40,920	$ 13.50	$552,420	-	$635,283
Lighting & Controls	SF	40,920	$ 9.75	$398,970	-	$458,816
Fire Alarm	SF	40,920	$ 3.00	$122,760	-	$141,174
Telecomm/Data Systems	SF	40,920	$ 3.25	$132,990	-	$152,939
Clock & Intercom Systems	SF	40,920	$ 2.50	$102,300	-	$117,645
SUBTOTAL				$4,954,194	-	$5,697,323
Estimating Contingency		10%		$495,419	-	$569,732
TOTAL ESTIMATED CONSTRUCTION COST TO UPGRADE				**$5,449,613**	-	**$6,267,055**
Cost/SF				$133	-	$153

The above costs are for construction only and do not include additional project related soft costs.

Add 3% escalation factor for each year beyond the current year for projected inflation.

Lyter Elementary School
ESTIMATED COSTS TO UPGRADE TO CURRENT STANDARDS

The following cost estiamte includes upgrades to bring the existing components of the facility to current standards

Educational and functional deficiencies are not included in the below costs

EXISTING BUILDING AREA 70,270 SF

	Unit	Quant	Cost	Cost Range		
Existing Facility Upgrades						
Sitework						
Sidewalks	SF	3,500	$ 5.75	$20,125	-	$23,144
Play Areas & Equipment	LS	1	$ 175,000	$175,000	-	$201,250
Building Exterior						
Soffit Repair	SF	600	$ 22.00	$13,200	-	$15,180
Exterior Windows	EA	55	$ 4,500	$247,500	-	$284,625
Gutters & Downspouts	LS	1	$ 18,500	$18,500	-	$21,275
Building Interior						
Finishes - Flooring	SF	5000	$ 9.00	$45,000	-	$51,750
Finishes - Walls	SF	70,270	$ 1.50	$105,405	-	$121,216
Interior Doors & Hardware	EA	68	$ 1,300.00	$88,400	-	$101,660
Toilet room renovations	SF	850	$ 180	$153,000	-	$175,950
Specialties & Equipment						
Food Service Equipment	LS	1	$ 120,000	$120,000	-	$138,000
Building Systems - HVAC						
Provide Air Conditioning	SF	70,270	$ 15.00	$1,054,050	-	$1,212,158
Terminal Equipment	LS	1	$ 140,000	$140,000	-	$161,000
Gymnasium AHU	LS	1	$ 140,000	$140,000	-	$161,000
Library AHU	LS	1	$ 70,000	$70,000	-	$80,500
Replae Boilers	LS	1	$ 175,000	$175,000	-	$201,250
Exhaust Systems	LS	1	$ 25,000	$25,000	-	$28,750
Controls	SF	70,270	$ 5.00	$351,350	-	$404,053
Building Systems - Plumbing / Fire Protection						
Sanitary & Storm Piping	LS	1	$ 30,000	$30,000	-	$34,500
Plumbing Fixtures & Trim	LS	1	$ 58,000	$58,000	-	$66,700
Building Systems - Electrical						
HVAC Upgrades & Air Conditioning (Keep Ex Htg system)	SF	70,270	$ 10.75	$755,403	-	$868,713
Lighting & Controls	SF	70,270	$ 5.25	$368,918	-	$424,255
Fire Alarm	SF	70,270	$ 3.00	$210,810	-	$242,432
Clock & Intercom Systems	SF	70,270	$ 1.50	$105,405	-	$121,216
SUBTOTAL				$4,470,065	-	$5,140,575
Estimating Contingency		10%		$447,007	-	$514,057
TOTAL ESTIMATED CONSTRUCTION COST TO UPGRADE				**$4,917,072**	-	**$5,654,632**
Cost/SF				$70	-	$80

The above costs are for construction only and do not include additional project related soft costs.

Add 3% escalation factor for each year beyond the current year for projected inflation.

C.E. McCall Middle School

ESTIMATED COSTS TO UPGRADE TO CURRENT STANDARDS

The following cost estiamte includes upgrades to bring the existing components of the facility to current standards

Educational and functional deficiencies are not included in the below costs

	EXISTING BUILDING AREA			146,500 SF		
	Unit	Quant	Cost	Cost Range		
Existing Facility Upgrades						
Sitework						
Fields - Drainage	LS	1	$ 250,000	$250,000	-	$287,500
Building Exterior						
Storage Buliding - Roof/Walls	LS	1	$ 25,000.00	$25,000	-	$28,750
Building Interior						
Finishes - Flooring - Locker Rooms	SF	3500	$ 12.00	$42,000	-	$48,300
Specialties & Equipment						
Replace Gymnasium Equipment	LS	1	$ 85,000	$85,000	-	$97,750
Replace Lockers	LS	1	$ 125,000	$125,000	-	$143,750
TV Studio AV	LS	1	$ 40,000	$40,000	-	$46,000
Building Systems - HVAC						
No Upgrades Noted				$0	-	$0
Building Systems - Plumbing / Fire Protection						
Domestic Water System	LS	1	$ 50,000.00	$50,000	-	$57,500
Sanitary & Storm Piping - Locker Room Drains	LS	1	$ 12,000.00	$12,000	-	$13,800
Building Systems - Electrical						
Lighting & Controls	LS	1	$ 425,000	$425,000	-	$488,750
SUBTOTAL				$1,054,000	-	$1,212,100
Estimating Contingency		10%		$105,400	-	$121,210
TOTAL ESTIMATED CONSTRUCTION COST TO UPGRADE				**$1,159,400**	-	**$1,333,310**
Cost/SF				$8	-	$9

The above costs are for construction only and do not include additional project related soft costs.

Add 3% escalation factor for each year beyond the current year for projected inflation.

Montoursville Area High School

ESTIMATED COSTS TO UPGRADE TO CURRENT STANDARDS

The following cost estiamte includes upgrades to bring the existing components of the facility to current standards

Educational and functional deficiencies are not included in the below costs

		EXISTING BUILDING AREA		208,173 SF	
	Unit	Quant	Cost	Cost Range	
Existing Facility Upgrades					
Sitework					
Railing at Tech Ed Path	LS	1	$ 6,000	$6,000	- $6,900
Building Exterior					
Exterior Walls - Stadium Concessions	LS	1	$ 18,000	$18,000	- $20,700
Roofing - Maintenance Building	SF	4,080	$ 18.00	$73,440	- $84,456
Building Interior					
Finishes - Flooring - Auditorium	SF	5700	$ 4.50	$25,650	- $29,498
Finishes - Walls - Main Gymnasium	SF	13,680	$ 2.50	$34,200	- $39,330
Specialties & Equipment					
No Upgrades Noted				$0	- $0
Building Systems - HVAC					
No Upgrades Noted				$0	- $0
Building Systems - Plumbing / Fire Protection					
Plumbing Fixtures & Trim - Solid Surface Faucets	EA	14	$ 600	$8,400	- $9,660
Building Systems - Electrical					
No Upgrades Noted				$0	- $0
SUBTOTAL				$165,690	- $190,544
Estimating Contingency		10%		$16,569	- $19,054
TOTAL ESTIMATED CONSTRUCTION COST TO UPGRADE				**$182,259**	**- $209,598**
Cost/SF				$1	- $1

The above costs are for construction only and do not include additional project related soft costs.

Add 3% escalation factor for each year beyond the current year for projected inflation.

District Administrative Offices

ESTIMATED COSTS TO UPGRADE TO CURRENT STANDARDS

The following cost estiamte includes upgrades to bring the existing components of the facility to current standards

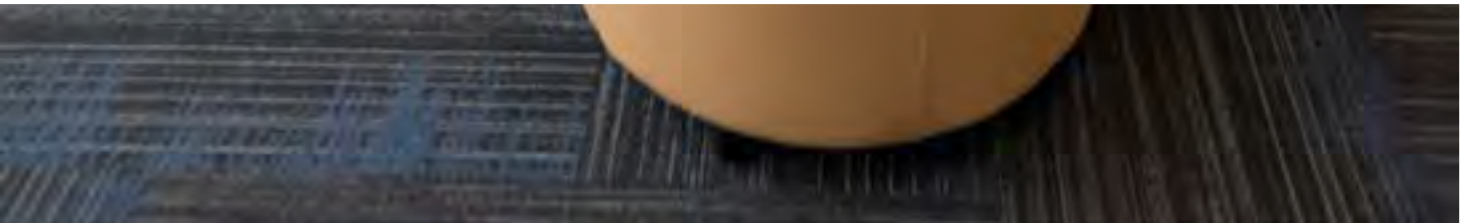
Educational and functional deficiencies are not included in the below costs

	EXISTING BUILDING AREA			3,500 SF		
	Unit	Quant	Cost	Cost Range		
Existing Facility Upgrades						
Sitework						
No Upgrades Noted				$0	-	$0
Building Exterior						
No Upgrades Noted				$0	-	$0
Building Interior						
Finishes - Flooring	SF	3500	$ 9.00	$31,500	-	$36,225
Specialties & Equipment						
No Upgrades Noted				$0	-	$0
Building Systems - HVAC						
No Upgrades Noted				$0	-	$0
Building Systems - Plumbing / Fire Protection						
No Upgrades Noted				$0	-	$0
Building Systems - Electrical						
No Upgrades Noted				$0	-	$0
SUBTOTAL				$31,500	-	$36,225
Estimating Contingency		10%		$3,150	-	$3,623
TOTAL ESTIMATED CONSTRUCTION COST TO UPGRADE				**$34,650**	-	**$39,848**
Cost/SF				$10	-	$11

The above costs are for construction only and do not include additional project related soft costs.

Add 3% escalation factor for each year beyond the current year for projected inflation.

CONSTRUCTION OPTIONS



PROPOSED FACILITY ENERGY PORTFOLIO

AUTHOR'S CREDENTIALS

Scott Cousin, AIA, LEED AP

Principal | Senior Project Manager

Scott Cousin has more than 19 years experience and has worked with the firm since 2005. He is responsible for all aspects of the design phase. He will meet with our client to discuss and gain an understanding of the overall function and aesthetic design goals. Scott will also meet with additional client staff to discuss the needs of individual spaces of the building. Scott coordinates the design concepts and detail with consultants and maintains the project budget.

> The art of architecture is the making of forms and the creation of spaces. Only when these ideals align with the function of the building and the vision of the client does it become Architecture.

Education
Bachelor of Architecture, The Pennsylvania State University, 1999

Registered Architect
Pennsylvania

Affiliations
American Institute of Architects

ASHE (American Society of Healthcare Engineers)

USGBC Member

U.S. Green Building Council

Green Building Council of Central PA

Relevant Project Experience

Dover Area High School

New Construction / 200,000 SF / $56,000,000

This new high school will replace the current out-dated high school and will meet the educational program as well as create a 21st Century Learning Environment. The academic portion of the building consists of a two story classroom design organized in a loop with a central courtyard. The sections of the loop are organized by department. Integrated within the academic portion and throughout the new school are a multitude of flexible 21st century learning environments which promote collaboration as well as independent learning.

Middletown Area High School

New Construction / 202,700 SF / $33,723,109

The design of the new school features a Central Commons area with public access space to include library/media center, gymnasium and administration. The student resource center holds several breakout workrooms and the design allows for flexible classrooms throughout the corridors. All students are equipped with ipads.

Spring Grove Area High School

New Construction / $44,070,044 / 333,810 SF

The new high school is a blend of academic and extra-curricular facilities, as the new space includes state-of-the-art technology and systems integration including a security system, broadcasting provisions and a wireless internet system, a 1,400 seat auditorium, one gymnasium and an auxiliary gym, an elevated indoor track, an indoor swimming pool, an outdoor amphitheater, a practice softball field and a competitive soccer field.

Montoursville Area High School

Addition & Renovation / $29,601,000 / 210,000 SF

The addition and renovation project will include demolition of approximately 125,000 SF of the existing structure to make way for a 136,000 SF addition and 80,000 SF of renovation. This project was complete with an accelerated design and construction schedule.

Frederick S. Withum, III, Ed.D

Director of Educational PLanning

Dr. Withum has more than 35 years of experience and joined the firm in 2019. As Director of Educational Planning, Fred works with our clients to plan and design environments that support your educational program and assist in the design of 21st Century Learning environments.

> Educational specifications are the vehicle by which a district's educational vision is transformed into a physical place for children to grow academically, socially, and emotionally.

Education

Duquesne University- 2006

- Interdisciplinary Doctoral Program in Educational Leadership

Shippensburg University- 1995

- Superintendent's Letter of Eligibility
- Secondary Principal Certificate (1990)
- Master of Education--- Educational Administration (1988)

Bloomsburg University-1983

- Bachelor of Science- Education (Earth and Space Science)

Professional Experience

Superintendent---Cumberland Valley School District, Mechanicsburg, PA- 10/01/13 to Present

Adjunct Professor---Shippensburg University, Shippensburg, PA- 9/08-Present
Temple University, Harrisburg, PA- 1/03-8/08
Duquesne University, Pittsburgh, PA – Spring 2007
Wilkes University, Wilkes-Barre, PA – Summers 2006-2008

Assistant Superintendent---South Middleton School District, Boiling Springs, PA- 2012 to 2013

Principal---South Middleton School District, 1995 to 2012
Boiling Springs Junior/Senior High School and Yellow Breeches Middle School

Assistant to the Superintendent/Assistant Principal--South Middleton School District, 1993-1995
South Middleton School District Central Office and Boiling Springs Junior/Senior HS

Assistant Principal---South Middleton School District, 1990 to 1995
Boiling Springs Junior/Senior High School

Science Department Chair---South Middleton School District, 1988 to 1990
Boiling Springs Junior Senior High School

Science Teacher---South Middleton School District, 1985 to 1990
Boiling Springs Junior Senior High School

Honors and Appointments

Board of Directors Whitaker Center for the Arts and Sciences – 2018-Present
Eagle Foundation Board Member – 2013-Present
Governor Appointed Trustee of Thaddeus Stevens College of Technology – 2014- 2017
South Middleton School District Strategic and Comprehensive Planning Chair – (2012)
Pennsylvania Department of Education Program Manual Review for Teacher Evaluation (2013)
PA Middle School Association (PMSA) Executive Board/ East Region Board- (2009-2014)
National Forum to Accelerate Middle Grades Reform, PA State Evaluation Team- (2009-2013)
PA Department of Education Middle School Certification Program Reviewer- (2008-2013)
Council of Educational Facility Planners International, Exhibition of School Planning and Architecture Jury- (2007)

Frederick S. Withum, III, Ed.D (continued)

Director of Educational PLanning

Dissertation Research Highlighted by School Planning and Management Magazine- (2006)
South Middleton Strategic Planning, Professional Development, Technology, and Wellness Committees- (2006-2011)
Recipient of Research Grant from the Council of Educational Facility Planners International - (2005-2006)
Pennsylvania Chapter 354 Review Board- (2001-2004)
Pennsylvania Certification Appeals Committee- (1999-2001)
Pennsylvania Science Certification Review- (1999)
Governor's School for Education Selection Committee- (1998)
Pennsylvania Association of Elementary and Secondary School Principals- (1997)
South Middleton School District Facilities Planning Committee- (1995 to 2012)
Distinguished Teacher of Honors Students- (1993)
PDE Eisenhower Grant Review Committee- (1992)
PDE Science and Technology Advisory Committee- (1990-1992)
Educator Finalist for Carlisle Area's Finest Educator- (1989)

Publications

Withum III, Frederick S. (2006, December). (http://etd1.library.duq.edu/theses/available/etd-12122006-090600/unrestricted/WithumDissertation.pdf). Educational Facilities Planning: A Systems Model. (Duquesne University)

Withum III, Frederick S. (2006, August). Developing a Systems Model for Planning of Educational Facilities. (Editorial). School Planning and Management

Lowe, Ochoa, and Withum. International Scholarly Learning: Another Team Perspective Leadership in Schools: Self-Governing Schools: A Decade of Systematic Reform and Practitioner Experience The Norham Centre for Leadership Studies, University of Oxford 1999

Abrams, Levin, Palmer and Withum. On-Line With Accu-Weather Instructional Modules in Meteorology, Dubuque, Iowa: Kendall/Hunt Publishing, 1989.

Professional/Community Organizations

Pennsylvania Association of School Administrators – Member- 2012-Present
Pennsylvania Middle School Association —Member-- 2001- Present, Region and State Executive Boards 2009-present
Council of Educational Facility Planners International—Member, Jury Member—2006 to 2008
Carlisle Area Summerfair Committee–Member--1998--2005, Chairman--2003
Boiling Springs Lions Club---Member--1997 to 2001
Carlisle Area Science Advisory Committee---Member, Vice President---1986 to Present
PA Association of Secondary School Principals---Member, Convention Chair---1990 to 2012
Pennsylvania Middle Schools Association---Member--1996 to Present
Pennsylvania Science Teachers Association---Member, Convention Chair--1985 to 1990
South Middleton Education Association---Member, Vice President, Membership Chair, Negotiations--1985-1990
United Way of Carlisle and Cumberland County--- Loaned Employee---2009

Jessie Ellis, Associate AIA

Project Manager

Ms. Harder joined the firm in 2014 and serves as Architectural Coordinator. Ms. Harder is responsible for tracking the project's progress by maintaining project schedules and budgets and working alongside our team to ensure the design meets your expectations as well as ensuring the budget and schedule expectations are met.

> It is vital to every project to collaborate with my clients to create a space that not only is esthetically pleasing, but also meets the project goals, requirements and vision set forth by the client.

Education

Bachelor of Architecture, Philadelphia University

Affiliations

American Institute of Architects

A4LE, Association for Learning Environments (Formerly CEFPI)

National Council of Architectural Registration Boards

Harrisburg Young Professionals

Volunteerism

ACE Mentor Program

Community Design Collaborative

P.U.M.P-UP Program

Awards

2014 AIA Citation Award- Middleburg Elementary School

2014 USGBC Green School of the Year- Sudlersville Middle School

2012 USGBC Maryland "Public Project Of the Year"- Sudlersville Middle School

Relevant Project Experience

School District of Philadelphia- Classroom Modernization Projects

Renovation / 5 Schools

CRA Architects is currently working on classroom modernization projects for W.C. Bryan, Mitchell Elementary Schools and the John H. Taggart School, William H. Hunter School and John H. Webster School. Modernization projects include new flooring, paint, ceiling repairs/ replacement, window shades, doors and door hardware, electrical and data outlets, cubbies, coat hooks, tackboards, and markerboards as well as new finishes, ceilings and lighting.

Solomon-Solis Cohen Elementary School

New Construction / 130,000 SF / $50M / LEEDv4

The design for the new school is organized to have two primary zones within the building, Public (Assembly) and Private (Classroom Grade Houses). The public zone incorporates the assembly spaces of the program including gymnasium, cafeteria and auditorium. Shared specialty program spaces including media center, art and music are adjacent to the public zone too access to these spaces is controlled.

Brandywine Heights Area School District Feasibility Study

The study provides a framework for the administration and school board to make informed decisions to improve their facilities. As a result of the study, we are working on cost estimates and construction schedules for various additions/renovation projects to Brandywine Heights Elementary, Middle and High School.

Spring-Ford Area High School

Addition & Renovation / 34,830 SF / $8,300,000

Scope includes the expansion of their specialty academics and extracurricular activity space including Performing Arts and physical eduction. The performing arts addition includes a large band room that can contain up to 150 students and the physical education addition includes a 3-story addition directly adjacent to their existing gymnasiums.

Spring Creek Elementary School

New Construction / 72,072 SF / $15,693,000 / LEED Platinum Certified

Based upon our comprehensive assessment of four elementary school facilities,the decision was made to consolidate the schools and build a new Spring Creek ES and modernize two other schools. The new construction will house approximately 400 students from K – 5th Grade.

Sean R. Douty, AIA, LEED AP

Project Coordinator

Mr. Douty has more than 12 years of experience and joined the firm in 2018. As Project Architect, he will be responsible with all aspects of technical documentation including coordination of all disciplines. He will actively participate in all in-house design review meetings with the Principal In Charge and Senior Project Manager.

> Design begins with the client's core beliefs fully understood so they can be transformed into an environment which provides an enriching and safe place for learning, work and community growth.

Education

Masters, Architecture, Urban Design, University of Maryland College Park, 2011

Bachelors of Science in Architecture, University of Maryland College Park, 2006

Relevant Project Experience

Brandywine Heights Area School District Feasibility Study

The study provides a framework for the administration and school board to make informed decisions to improve their facilities. As a result of the study, we are working on cost estimates and construction schedules for various additions/renovation projects to Brandywine Heights Elementary, Middle and High School.

Middleburg Elementary School, Midd-West School District

Addition & Renovation / 109,820 SF / $20,550,766 / LEED Gold Certified

Middleburg Elementary School's design is divided into both public and private areas and houses three grade levels, each divided into "grade houses". The three interior grade houses are further broken down into grade pods consisting of a ring of classrooms centered around a communal daylit central activity space or open classroom.

Connellsville Area Senior High School, Connellsville Area School District

Addition & Renovation / $45,163,708 / 318,546 SF / LEED Gold Certified

Modifications included daylighting the existing internal classrooms and creating open teaching areas to foster large group instruction, technical education geared to science, technology, engineering and math (STEM) and teamed organization of core curriculum programs.

Sudlersville Middle School, Queen Anne's County Public Schools

100,884 SF/ $23,203,000 / LEED Gold Certified

The new building includes administration offices, located directly inside the front entrance, surrounding this administration area are the teacher support spaces. The program includes special education classrooms as well as music, art, and science rooms. Sudlersville houses a media center, complete with computer lab and reading areas. The kitchen and cafeteria are adjacent to the gymnasium. The gymnasium is complete with coach offices and locker rooms.

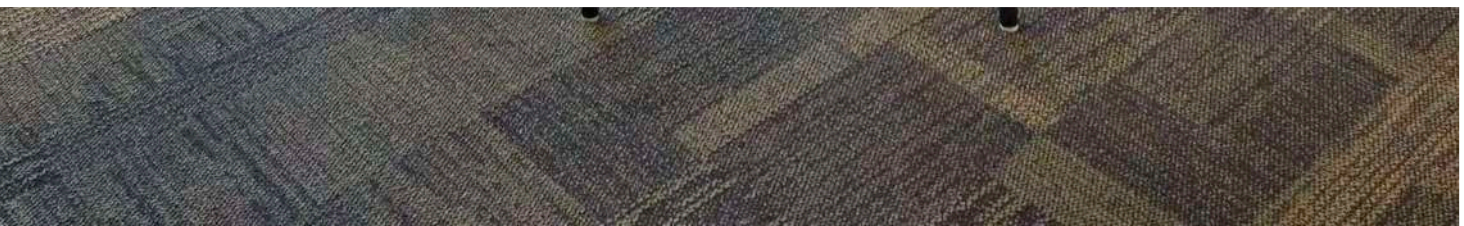
Manheim Central

100,884 SF/ $23,203,000 / LEED Gold Certified

PS 11 Queens, NY - Kathryn M. Phelan School*

Role: Project Architect | Add/Reno | Green Schools Guide

APPENDIX



A | Appendix

Pennsylvania Department of Education Requirements

The following elements are included in this study to meet PlanCon district-wide facility study guidelines. The study must have been completed within the preceding two years of the Department's receipt of the Part A submittal for this project building if the district is pursuing reimbursement.

1. An overview of the school district that considers such factors as geography, population, wealth. The overview must include:
    a. Population and wealth statistics
    b. A map showing the general location of the school district in the state or geographic region
    c. A map of the school district showing the general location of all existing buildings and owned sites in the school district
    d. Information on any distinguishing characteristics, such as geographically separate population centers, that will have an impact on facilities
2. An overview of the school district's educational program. The overview must address for all grades (K-12):
    a. Instructional practices for planned curriculums by grade structure (elementary, middle, secondary, etc.)
    b. Special facility needs, if applicable, needed to support planned curriculums.
3. An analysis of projected enrollment. The analysis must include:
    a. The likely enrollment for each grade structure ten years into the future
    b. A discussion of the reliability of the enrollment projections
4. An analysis of each building's capacity as it relates to the educational program. The analysis must address:
    a. How many students a building can house
    b. The types of educational spaces required by the educational program described above
    c. Grade alignments
    d. Length of the school day and number of classes per day, if applicable
    e. Size of particular rooms and adequacy of those rooms, if applicable
5. An analysis of each building's condition. The analysis must address:
    a. The building's physical condition
    b. The projected useful life of each building's major components (electrical, HVAC, plumbing, etc.)
    c. Code violations
    d. Universal accessibility
    e. Energy Portfolio surveys
    f. The cost to upgrade each building to current standards
6. An analysis of construction options. The analysis must address:
    a. The alternatives available to the school district based on the above analysis
    b. Cost estimates for each alternative
    c. The pros and cons for each alternative
    d. A summary page depicting options and costs
    e. Energy Portfolio surveys

7. Documentation regarding the authors' credentials. This section must include the education, registration or licensure and experience for each author. To be completed at the finalization of this report once options are developed.

B | Appendix

Understanding Capacity in Educational Feasibility Studies

Physical Capacity

Physical Capacity is the maximum number of people an educational space can safely hold. The calculation for physical capacity is primarily driven by building and fire codes. It is dependent on a variety of factors including, but not limited to, square footage, the number and location of exits, whether the building has a sprinkler system, fixed furniture and equipment, and if any hazardous materials are present.

All educational and support spaces including general classrooms, science labs, small group rooms, vocational/technical spaces, maker spaces, libraries, auditoriums, gymnasiums, and cafeterias have physical capacities which are unique to their size, layout, location within a building, and the governmental boundaries in which they reside. When determining physical capacity your architect or facilities manager in consultation with the local fire marshal and codes officer can provide that calculation. In general, physical capacities are far greater than what would be appropriate educationally. For example, a kindergarten room may be physically rated for 45 people, but a kindergarten class of 45 students is not educationally appropriate.

Physical capacities are established beyond the control of the Board of School Directors or administration and under no circumstances should be exceeded. It is important that all involved with facility design, scheduling, administration, and management know the physical capacities. However, it is not as critical to feasibility studies as educational capacity.

Educational Capacity

Educational capacity is the number of students and staff deemed appropriate for instruction in an educational space or to receive service in a support area. Educational capacity is a function of academic programming, educational goals, and operations of the school district. It is driven by the curriculum, needs of the students, instructional strategies, equipment and technology utilized, services provided, number of adults required to provide instruction and manage instructional space, and budgetary considerations. The capacity of support spaces is determined by factors such as the type of services provided, number of lunches served, fixed seating, age appropriate groupings, or schedule. All educational and support spaces including general classrooms, science labs, small group rooms, vocational/technical spaces, maker spaces, libraries, auditoriums, gymnasiums, and cafeterias have different educational capacities.

Most educational capacities are established by the Board of School Directors and/or administration through best practice, past practice, by school district policy, or through contractual obligations. Typically, they are established based on the age and needs of the students, academic offering, supervision and safety, and technology and instructional strategies utilized. In some cases, educational capacity may be state or federally mandated as in special education. The only caveat being is that educational capacity may never exceed physical capacity.

Utilization Rate

Utilization rate is the average number of students and staff typically scheduled to occupy a school. It is expressed as a percent of the educational capacity.

In a perfect scenario the utilization of support spaces would allow every instructional space to be scheduled to its educational capacity every instructional period of the day all school year long. That perfect scenario would reflect a 100% utilization rate. However, that is never the case as the number and suitability of instructional and support spaces, the size, distribution, and rate of growth/decline of the student body, the availability of professional and support staff, the instructional strategies and technology utilized, academic programs being offered, grade advancement/retention and graduation requirements, transportation schedules, and even the unique needs of a single student or small group of students are all part of a complex set variables that impact the likelihood of ever reaching a utilization rate of 100%.

In practice, schools represent a collection of instructional spaces, some scheduled above their educational capacity and some below and that varies over time. Schools that function well have the instructional and operational flexibility to allow management of that variation over time. In more challenging situations the educational capacity of all instructional spaces in a school are consistently exceeded or greatly underutilized.

Best practices for educational facility planning establish utilization rates in elementary schools at 90% of their educational capacity and 85% at the secondary level. Those rates are often adjusted based on the programs and experiences of each school district. Typically, they are adjusted down closer to 85% at the elementary level and 80% at the secondary level. When planning capacity, the utilization rate is often expressed in terms of the additional educational capacity required to efficiently schedule the anticipated enrollment. For example, as a basis for planning an elementary school with an anticipated enrollment of 500 students and a utilization rate of 90% plans for an educational capacity of 550 students. A middle school with an anticipated enrollment of 500 students and a utilization rate of 85% plans for an educational capacity of 575 students. Again, a district may choose to adjust that rate. If a district determines based on the way it groups its middle school teams, it may choose to plan a capacity for 590 using a utilization rate of 82%.

It is critical in planning and design that a school district establishes both an educational capacity for instructional spaces and for their schools as a whole given the academic and co-curricular programs that it offers and apply a utilization rate that it reasonably anticipates experiencing.

For reimbursement purposes, the Pennsylvania Department of Education establishes utilization rates for schools below 1500 students at 90% and 85% for schools above 1500 students regardless of grade alignment.

Planned Capacity

Planned Capacity is the educational capacity of a school given changes in way it is being academically programmed and operated adjusted by anticipated enrollments and multiplied by its desired utilization rate. It is calculated as the sum of the anticipated educational capacity of each instructional space in a school (increased or decreased from current capacity based on anticipated enrollment) multiplied by the targeted utilization rate. As a matter of best practice, planned capacities should not exceed educational capacities established by the district and planned for based on enrollment projections the district has accepted.

Renovations, additions, or new construction of educational space typically take 36 to 60 months to move through planning, approvals, financing, permitting, construction, and opening. Given the lead time of 36-60 months to plan, design, obtain Pennsylvania Department of Education and community approval, finance, permit, construct, and open new elementary instructional space, school districts with elementary enrollments trending upward should begin to plan when a student body surpasses 90% of a school's utilization capacity.

- Enrollment projections have the highest degree of validity within 60 months of being calculated; beyond 60 months their margin of error increases greatly.
- As a baseline the capacity of an educational facility should be planned for 100% of the projected enrollment five years from point when planning begins plus an additional 10% at the elementary level and 15% at the secondary level to allow for:
    1. scheduling inefficiencies,
    2. future growth, and
    3. PDE will not reimburse a district for work on that school for 20 years.
- The baseline for capacity is often adjusted by clients based on how aggressively enrollment is trending, historical experiences of a school district, and how a district believes their schools are best programmed and scheduled for the students they serve. Typically, they are adjusted by 5% to 15% beyond projected at the elementary level and up to 20% at the secondary level.

PDE Reimbursement Factor

The Pennsylvania Department of Education (PDE) utilizes a weighted number of students to calculate reimbursement. PDE, at times, refers to the weighted number of students as "capacity." However, it is important to note that the weighting of students is for reimbursement purposes and does NOT reflect the way elementary and secondary school buildings are programmed or scheduled.

Prior to Act 77 of 2019 PDE's calculations for capacity and reimbursement was based on a reasonable application of how elementary, middle, and high schools operated in the Commonwealth and how mandated programs like special education and non-instructional spaces impact those operations. However, it did not provide adequate reimbursement for educational spaces that were more costly than general classrooms to construct.

As in the past, non-instructional spaces such as hallways, cafeterias, offices, and mechanical areas are not reimbursable. Additionally, maintenance buildings, bus garages, athletic stadiums, and district offices are considered operational and co-curricular spaces that do not qualify for school construction reimbursement. It should also be noted that when a school district receives reimbursement for a school project, that school is not eligible for additional state subsidies for additions, renovations, or alterations for twenty-years.

PDE capacities are established by the Pennsylvania Department of Education and are beyond the control of the Board of School Directors or administration. However, school districts may establish Educational Capacities at, below, or above PDE capacities if they do not exceed Physical Capacity.

C | Appendix

Limitations of Enrollment Modeling used in the Study

Basic Limitations of the Pennsylvania Department of Education (PDE) Model

1. Internal policy changes that can affect the accuracy of projections
    a. policy on how old a child must be before being admitted into kindergarten and first grade
    b. policy on when and how a student is evaluated for special education services
    c. policy on how many students the area vocational-technical school is to receive
    d. policy on who provides full-time special education programs e. policy on scholastic retention and acceleration
2. External factors that can affect the accuracy of projections
    a. the opening or closing of a nonpublic school
    b. a significant increase or decrease in new home building
    c. a shift in migration patterns
3. Other considerations
    a. Enrollment projections for school districts with less than 1,000 students tend to be less reliable.
    b. Actual live birth data for the most recent year are added annually. However, enrollment projections beyond five years are subject to errors in the lower grades resulting from inconsistencies between actual and projected live births and should be reviewed closely.

Basic Limitations of Crabtree, Rohrbaugh & Associates

1. The model is sensitive to changes of internal and external factors which may only have a short-term impact, be an anomaly, a function of data reporting, or so recent they do not reflect in the model. Such factors may include:
    a. changes in policy such as a reduction in credits required for graduation, on-line programs that allow students to accelerate through the curriculum, increasing numbers of students enrolled but spending less than a full day/year in the district's programs.
    b. a "bubble class" entering the system.
    c. an unexpected return of students from other educational institutions.
    d. a change in attendance boundaries
    e. a significant increase in home building with a lag in occupancy permits.
    f. enrollment projections beyond five years are subject to errors as a result of sudden changes in the economy, housing market, migration, educational programming, and state and federal legislation.