kcba Architects

Lower Moreland Township School District

District-Wide Facilities Study

May 3, 2019

Eight East Broad Street
Hatfield, PA 19440-2401
215.368.5806

LOWER MORELAND TOWNSHIP SCHOOL DISTRICT
DISTRICT-WIDE FACILITIES FEASIBILITY STUDY
May 3, 2019

SCHOOL BOARD

Dr. Murray Cohen – President

Ms. Camille Baker – Vice President
Mr. Howard Patent – Secretary
Mr. Steve Geiger
Mr. Yuri Khalif
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Mr. Michael Berardi
Mr. Robert Howard
Mr. Lance Wolbransky

DISTRICT ADMINISTRATION

Dr. Scott Davidheiser – Superintendent

Mr. Mark McGuinn – Business Manager
Ms. Cheryl Galdo, Esq. – Dir. of H.R./P.R.
Mr. Frank Giordano – Dir. of Special Education
Mr. Mark Sufleta – Dir. of Maint. & Oper.
Ms. Jennifer Dilks – Murray Ave. M.S. Principal
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Mrs. Julie O'Malley – Sup. of Student Services
Dr. Jason Hilt – Dir. of Technology
Mr. Bill Miles – Lower Moreland H.S. Principal
Mr. Brian Swank – Pine Road E.S. Principal

PROJECT TEAM

KCBA Architects

Michael Kelly, AIA, LEED AP – Principal-in-Charge
Jamie Bortz – Project Manager
Michael Aument, PE – Structural Engineer
James Clough, AIA – Project Administrator
Eric Gianelle, AIA – QA/QC Principal
Mary Schoenharl – Interior Designer

Consolidated Engineers

Christopher VanCampen, PE, LEED AP – Electrical Engineer
Adam Moser, PE, LEED AP – Mechanical Engineer

Terraform Engineering

Terry DeGroot, PE – Civil Engineer

FutureThink

Tracy Healy, REFP – Enrollment Consultant

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The team of KCBA Architects, Consolidated Engineers, Terraform Engineering, and FutureThink would like to thank the board, administration, faculty, and community of the Lower Moreland Township School District for the opportunity to undertake this district-wide facilities study. We are proud of the results of our collective efforts and hope this report will be a helpful tool in implementing an optimal long-term strategy for your facilities.

Purpose of Study

At the outset of this effort, Lower Moreland Township School District identified three primary factors that drove the pursuit of this study:

1. Student enrollment has increased and further growth is anticipated in the future; an analysis of district-wide building capacity and determination of capability to accommodate growth was needed.
2. The three existing school buildings are aging and demonstrating varied needs associated with building infrastructure and operations as well as capability to support the district's modern educational program.
3. Before initiating any type of building repair or upgrade scenario, the district desired a holistic analysis and development of an optimal long-term master plan.

This report is also structured and of sufficient detail to comply with the applicable PA Department of Education standards for such a study.

Process

Information was gathered via three primary sources to explore the condition of facilities, suitability to meet the district's program, and viability of different long-term scenarios: meetings with district administrators and faculty members, in-person architectural/engineering analysis of the three existing school buildings, and local demographics research. The outcome of this work formed the foundation of this report which presents analyses of different facets of the facilities (tabs 3 – 6) and a series of potential long-term upgrade options (tab 7).

KCBA feels strongly that a successful planning process is one that is collaborative. We look forward to continuing our dialogue with LMTSD as you study the report's findings and work toward identifying the best long-term course for your district and community.

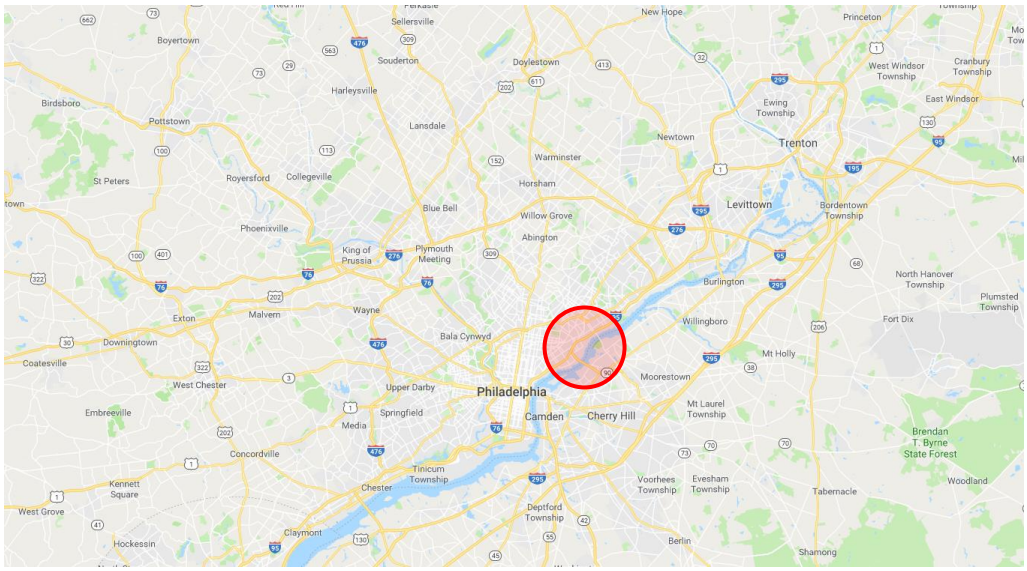
Lower Moreland Township School District

District Overview

Located in the northeastern corner of Montgomery County Pennsylvania, Lower Moreland Township School District encompasses 7.3 square miles and draws students from the municipality of Lower Moreland Township. The school district is located in the Philadelphia-Camden-Wilmington Metropolitan Statistical Area as defined by the U.S. Census Bureau, currently the 8th largest in the country. Total 2017 population within the school district boundary was 13,186.

According to the U.S. Census Bureau American Community Survey 5-year data profile for 2012-2017, median household income in the district is $104,286, 4.5% of residents live below the poverty line, the median age is 45.7, and 55.5% of the adult population hold a bachelor's degree or higher.

Located less than 30 minutes to Center City Philadelphia by train, the school district features a mix of suburban and walkable neighborhood homes such as those in the historic village of Bethayres. Residents have access to a wide array of recreational, cultural, and outdoor amenities as well as diverse higher education opportunities.



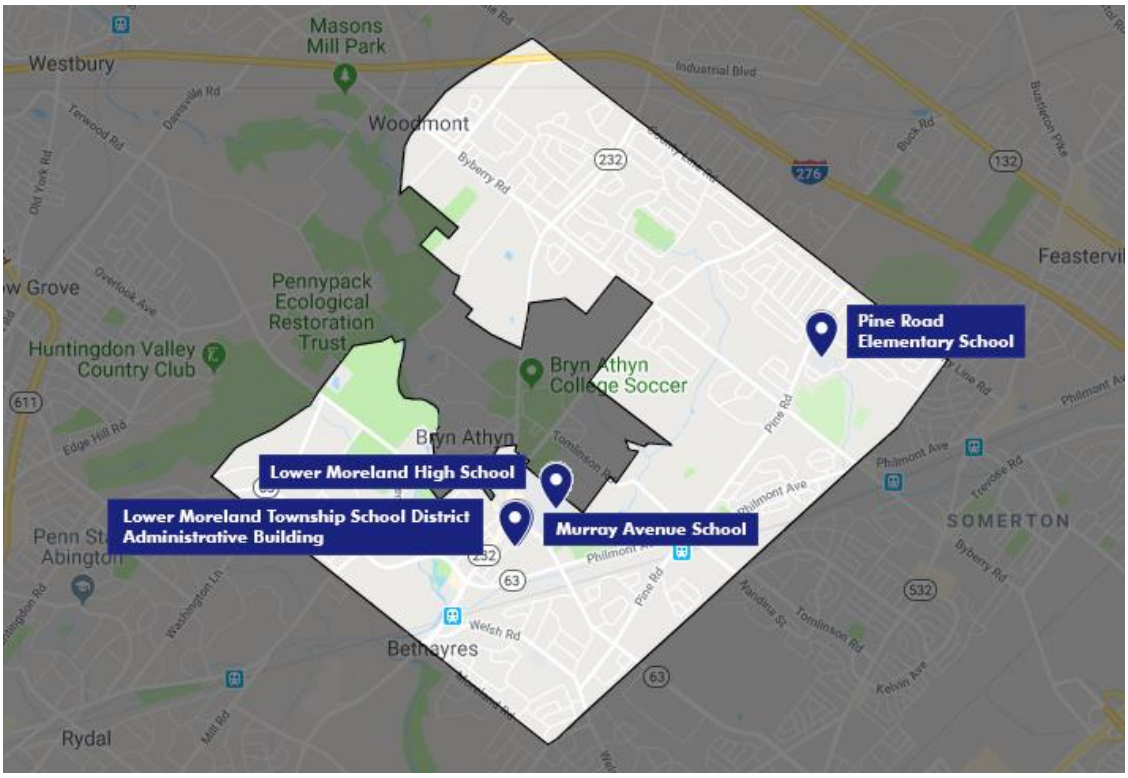
Map Identifying Location of LMTSD and Regional Context

Lower Moreland Township School District

District Overview

The mission of Lower Moreland Township School District is, "to foster individual excellence in a nurturing environment by integrating a dedicated staff, an innovative curriculum, and community resources, while promoting respect for self and others."

The district operates one K-5 elementary school (Pine Road Elementary School), one grade 6-8 middle school (Murray Avenue School), and the grade 9-12 Lower Moreland High School. The district, which served a total student enrollment of 2,323 for the 2018-2019 school year, is an academic leader with the #6 ranked high school in Pennsylvania for 2018 per US News and World Report. The high school's class of 2017 received over $4 million in scholarships and 93 percent of students pursued post-secondary education.



Map of District-Owned Facilities

The following pages feature an Enrollment Projections Report for the Lower Moreland Township School District completed by the firm FutureThink. The report provides district-wide by grade projections for each year through 2028-2029, as well as historical data for the past ten years.

In summary, the projections indicate continuation of the recent growth trend with an increase of 350 total students (15%) from the 2018-2019 school year to 2028-2029.

FutureThink
Formerly DeJONG-HEALY

FINAL REPORT

Lower Moreland Township School District

Enrollment Projection Study
January 29, 2019

INTRODUCTION

FutureThink was contracted to develop enrollment projections for the Lower Moreland Township School District.

This report contains ten-year enrollment projections, which were developed for the Lower Moreland Township School District by analyzing the following data:

- Live birth data
- Historical enrollment
- Cyber/Charter school enrollment
- Non-public school enrollment
- Community demographics
- Housing information

The projections presented in this report are meant to serve as a planning tool for the future and represent the most likely direction of the District.

NATIONAL TRENDS IN ENROLLMENT

Tracing the landscape of the country's public school enrollment back over the past 70+ years reveals demographic, economic, and social changes. The United States as a whole continues to undergo major shifts in public student enrollment. The baby boom of the late 1940s and 50s was followed by the baby bust of the 1960s and 70s. An "echo" baby boom occurred in the 1980s, which then was followed by the echo baby bust from 1990 to 2000. There was a slight uptick from 2000 to 2010. Since 2011, the total number of births has been relatively flat.

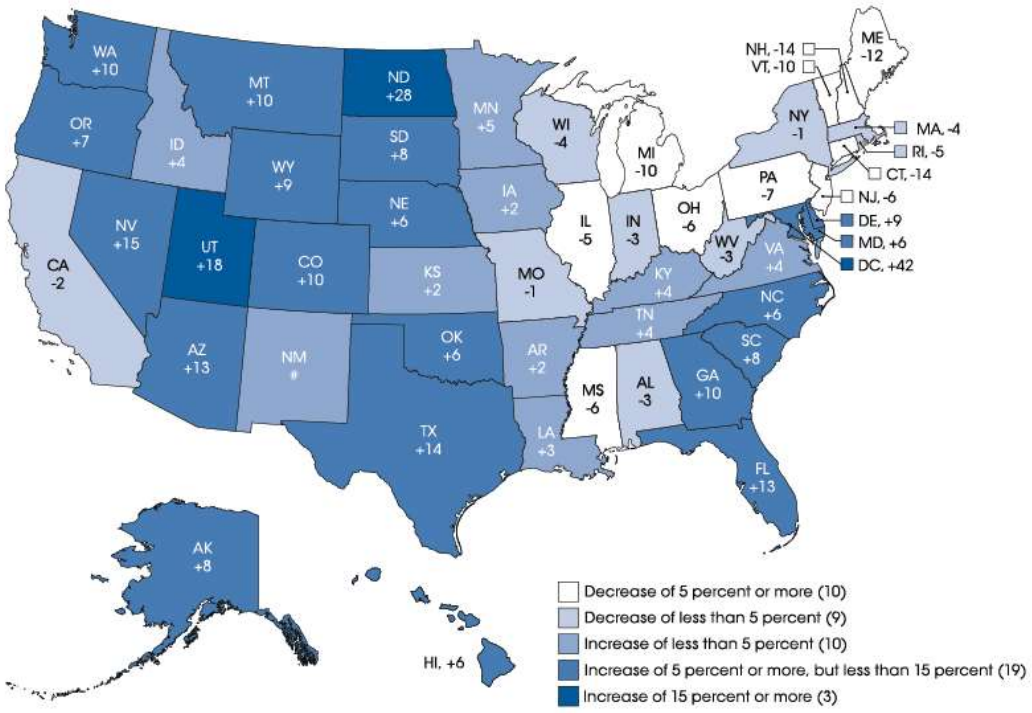
Source: CDC, National Vital Statistics Reports, Vol. 66 No.1, January 5, 2017

Source: CDC, National Vital Statistics System

With the live birth rate, there was an increase for the first time in several years in 1998. Other increases occurred in 2000, 2006, and 2007. Since 2007, the birth rate has resumed a descending pattern, reaching an all-time low in 2013. In 2014, there was a slight uptick, but declined again in 2015.

In 2013-14, approximately 55.4 million students were enrolled in grades Pre-K-12 in the United States. From 2006-07 to 2013-14, enrollment increased by 100,000 students. Overall, enrollment is projected to increase by approximately 2 percent by the 2025-26 school year.

The figure below illustrates the projected change in Pre-K-12 public school enrollment from the 2014-15 to the 2026-27 school year. Growth is expected to continue primarily in the southeast and west. Washington, D.C.; North Dakota; and Utah are projected to experience the most growth. Pennsylvania is projected to experience a decrease of 7 percent.



SOURCE: U.S. Department of Education, National Center for Education Statistics, Common Core of Data CCD),"State Nonfiscal Survey of Public Elementary/Secondary Education," 2014-15; and Public State Elementary and Secondary Enrollment Model: 1980–2026. See *Digest of Education Statistics 2016*, table 203.20.

HISTORICAL ENROLLMENT

Over the past ten years, student enrollment in the Lower Moreland Township School District has increased by 250 students in grades K – 12. Total enrollment for the 2018-19 school year is 2,323 students. The following tables illustrate the District's enrollment history from 2009-10 through 2018-19.

Lower Moreland Township School District
Historical Enrollment

Grade	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
K	129	130	144	152	132	114	134	110	145	149
1	142	139	136	149	160	132	128	149	124	171
2	145	146	145	153	150	172	152	141	158	135
3	153	148	153	154	156	155	187	167	158	169
4	149	156	148	152	167	162	165	193	168	169
5	176	156	160	150	165	166	176	183	208	170
6	170	190	167	167	158	168	176	190	182	221
7	150	183	193	170	171	164	182	191	194	194
8	159	158	183	199	174	178	173	188	192	197
9	192	170	162	186	199	176	176	185	199	189
10	171	192	175	165	185	200	183	182	182	195
11	175	175	194	179	166	186	197	189	185	177
12	162	174	181	204	186	179	186	204	190	187
K - 12 Total	2,073	2,117	2,141	2,180	2,169	2,152	2,215	2,272	2,285	2,323

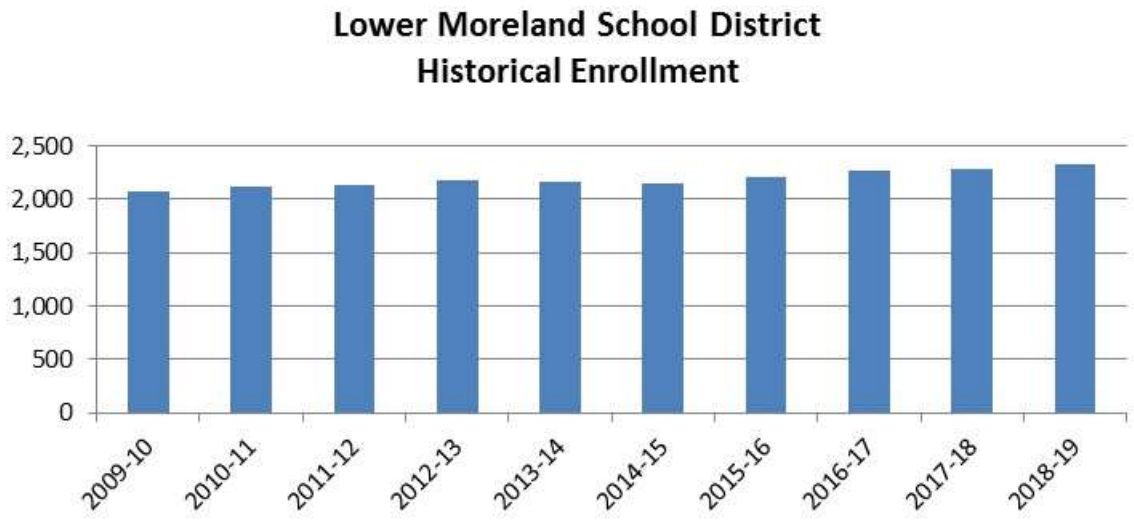
Source: Pennsylvania Department of Education, Lower Moreland Township School District

Lower Moreland Township School District
Historical Enrollment by Grade Group

Grade	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
K - 5	894	875	886	910	930	901	942	943	961	963
6 - 8	479	531	543	536	503	510	531	569	568	612
9 - 12	700	711	712	734	736	741	742	760	756	748
K - 12 Total	2,073	2,117	2,141	2,180	2,169	2,152	2,215	2,272	2,285	2,323

Source: Pennsylvania Department of Education, Lower Moreland Township School District

The following graph illustrates the District's K – 12 enrollment history from 2009-10 through 2018-19.



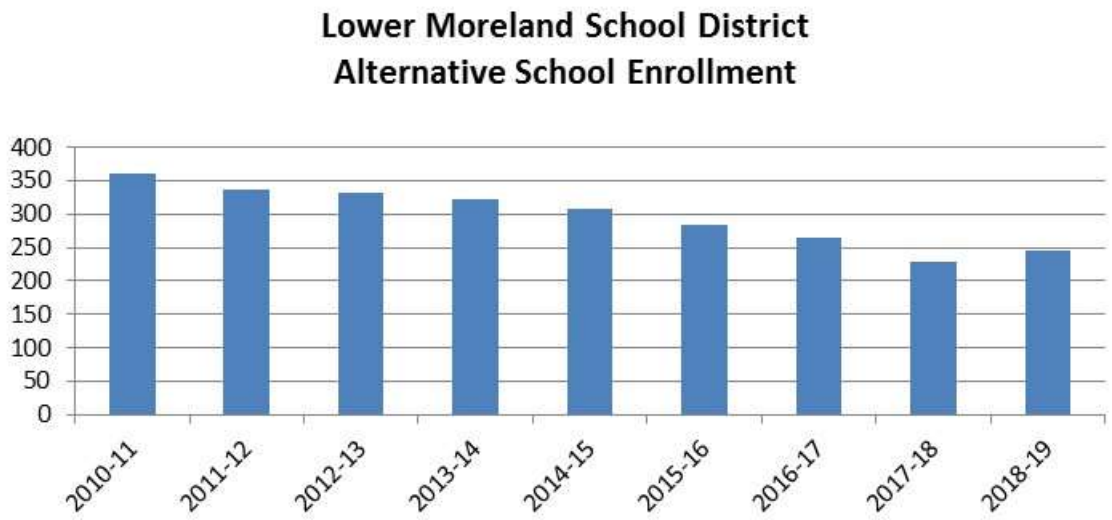
ALTERNATIVE SCHOOL ENROLLMENT

Since 2010-11, the number of Lower Moreland Township School District students attending private, home or cyber/charter schools has decreased from 361 to 245 students or approximately 32 percent. Private school enrollment accounts for the entire decrease. Both homeschool and cyber/charter school enrollment have increased from 2010-11 to 2018-19, which some fluctuation over the years.

Lower Moreland Township School District
Alternative School Historical Enrollment

Grade	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Private School	332	319	318	302	286	263	249	204	209
Homeschool	18	11	10	13	11	13	10	17	21
Cyber/Charter School	11	7	4	6	10	7	6	7	15
Total	361	337	332	321	307	283	265	228	245

Source: Lower Moreland Township School District



LIVE BIRTH DATA

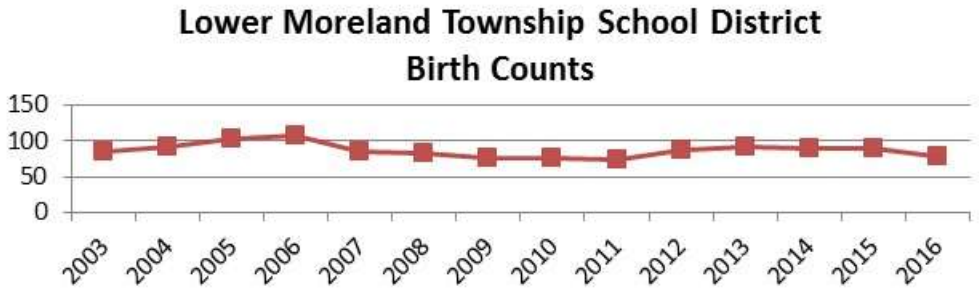
Utilization of live birth data is recommended when projecting future kindergarten enrollments as it provides a helpful overall trend. The live birth counts are used in determining a birth-to-kindergarten survival ratio. This ratio identifies the percentage of children born in a representative area who attend kindergarten in the District five years later. The survival ratios for birth-to-kindergarten as well as grades 1-12 can be found later in this report.

Data is arranged by the residence of the mother. The following table and graph include the live birth counts for Lower Moreland Township.

Lower Moreland Township School District
Birth Counts
2003-2016

Year	Birth Counts
2003	86
2004	91
2005	103
2006	107
2007	85
2008	83
2009	77
2010	76
2011	74
2012	87
2013	92
2014	90
2015	89
2016	78

Source: Pennsylvania Department of Health, Birth Statistics



DEMOGRAPHICS

The Lower Moreland Township School District is comprised of Lower Moreland Township in Montgomery County. General demographic data is included in the following tables for the areas located completely or partially in the District.

General Demographic Information

	Montgomery County	Pennsylvania
Per Capita Income	$45,048	$31,476
Median Household Income	$84,791	$56,951
Persons Below Poverty	6.4%	13.1%

Source: US Census, American Community Survey, 2017 5-Year Estimates

Total Population

	2000 Census	2010 Census
Montgomery County	750,097	799,874
Lower Moreland Township	11,281	12,982

Source: Census Summary File 1, 2000 and 2010

Also included are block group estimates and projections provided by ESRI. ESRI uses a time series of estimates from the U.S. Census Bureau that includes the latest estimates and inter-censual estimates adjusted for error of closure. The Census Bureau's time series is consistent, but testing has revealed improved accuracy by using a variety of sources to track county population trends.

ESRI also employs a time series of building permits and housing starts plus residential deliveries. Data sources are integrated and then analyzed by Census Block Groups.

Sources of data include:

- Supplementary Surveys of the Census Bureau
- Bureau of Labor Statistics' (BLS) Local Area Unemployment Statistics
- BLS Occupational Employment Statistics
- *Info*USA
- U.S. Bureau of the Census' Current Population Survey
- National Planning Association Data Service

Below is a list of definitions as they appear on the U.S. Census Bureau website, to aid in interpretation of the following tables and maps.

Household:
A household includes all the people who occupy a housing unit as their usual place of residence.

Average family size:
A measure obtained by dividing the number of members of families by the total number of families (or family householders).

Family household (Family):
A family includes a householder and one or more people living in the same household who are related to the householder by birth, marriage, or adoption. All people who are related to the householder are regarded as members of his or her family. A family household may contain people not related to the householder, but those people are not included as part of the householder's family in census tabulations. Thus, the number of family households is equal to the number of families, but family households may include more members than do families. A household can contain only one family for purposes of census tabulations. Not all households contain families since a household may comprise a group of unrelated people or one person living alone.

Householder:
The person, or one of the people, in whose name the home is owned, being bought, or rented. If there is no such person present, any household member 15 years old and over can serve as the householder for the purposes of the census. Two types of householders are distinguished: a family householder and a nonfamily householder. A family householder is a householder living with one or more people related to him or her by birth, marriage, or adoption. The householder and all people in the household related to him are family members. A nonfamily householder is a householder living alone or with nonrelatives only.

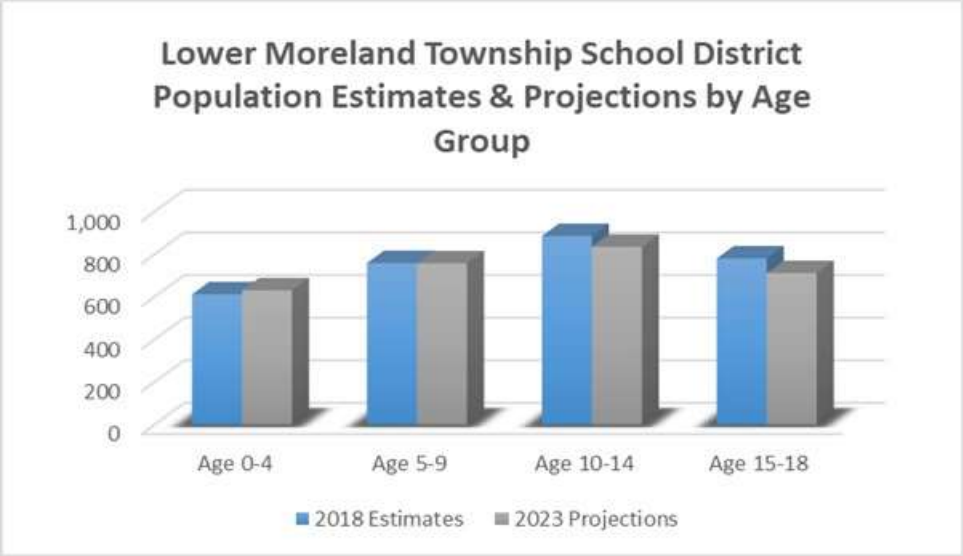
Lower Moreland Township School District

The following tables illustrate the current estimates and 5-year population projections based on block groups that comprise the school district, indicating areas of current and projected growth. The tables have been developed to determine selected age group projections and projections for household income, family size, and total households.

The total population in the District is 13,625. This population is projected to increase by 356 people, or approximately 3% over a 5-year period. The 0-18 year-old population in the District currently totals 3,038. This population is projected to decrease by 102 people, or approximately 3 percent. The median age is projected to increase by approximately 2%, from 47.5 to 48.2 years of age.

Lower Moreland Township School District	2018 Estimates	2023 Projections	Change 2018-23	Change 2018-23 (%)
Total Population	13,625	13,981	356	2.6%
Age 0-4	612	631	19	3.1%
Age 5-9	759	758	-1	-0.1%
Age 10-14	886	835	-51	-5.8%
Age 15-18	781	712	-69	-8.8%
Total Age 0-18	3,038	2,936	-102	-3.4%
Median Age	47.5	48.2	0.7	1.5%

Source: ESRI



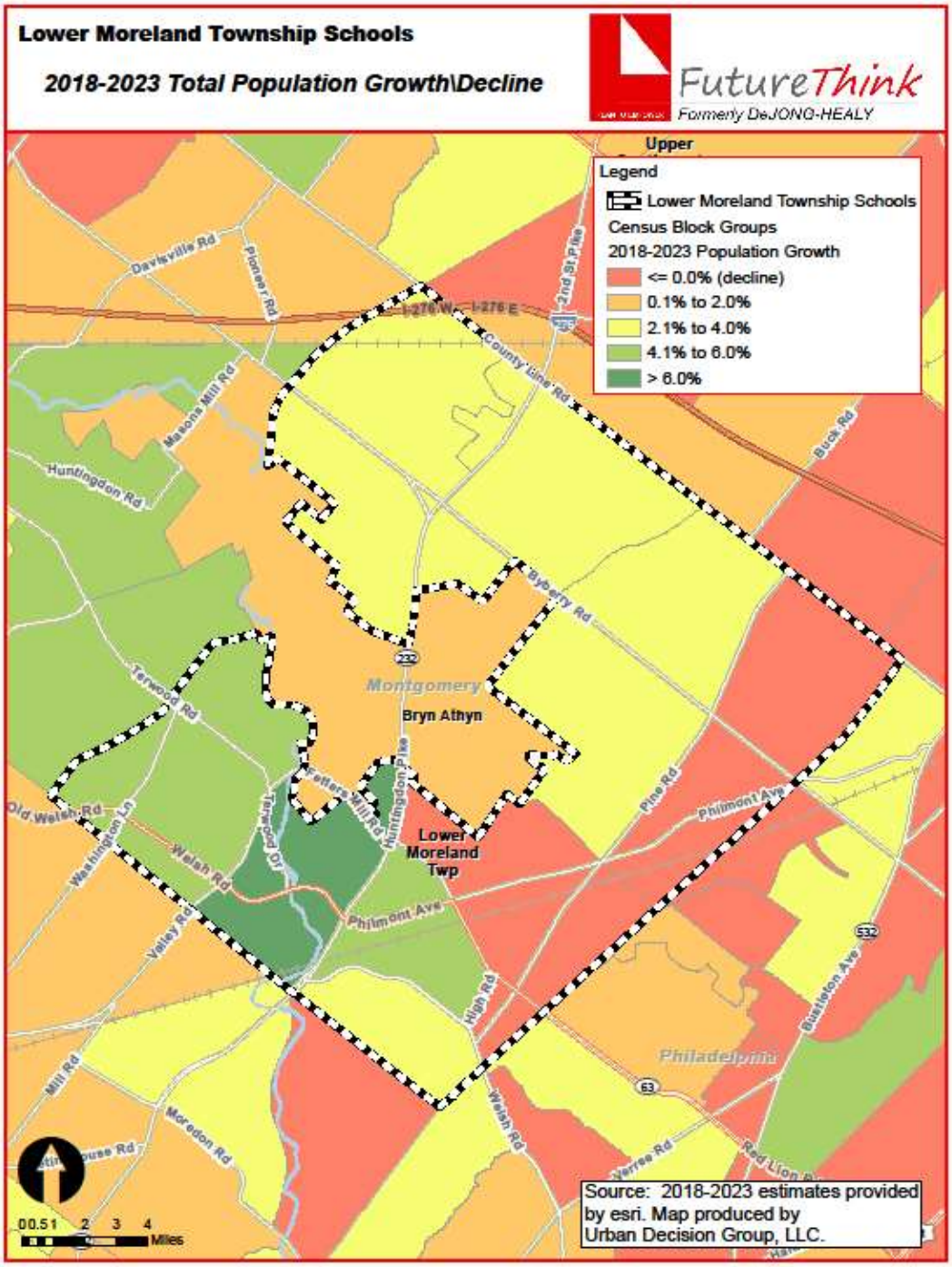
Median and average household incomes in the District are projected to increase by approximately 4% and 7%, respectively over a 5-year period. The average family size is projected to increase slightly, and the number of family households is projected to increase by approximately 2 percent.

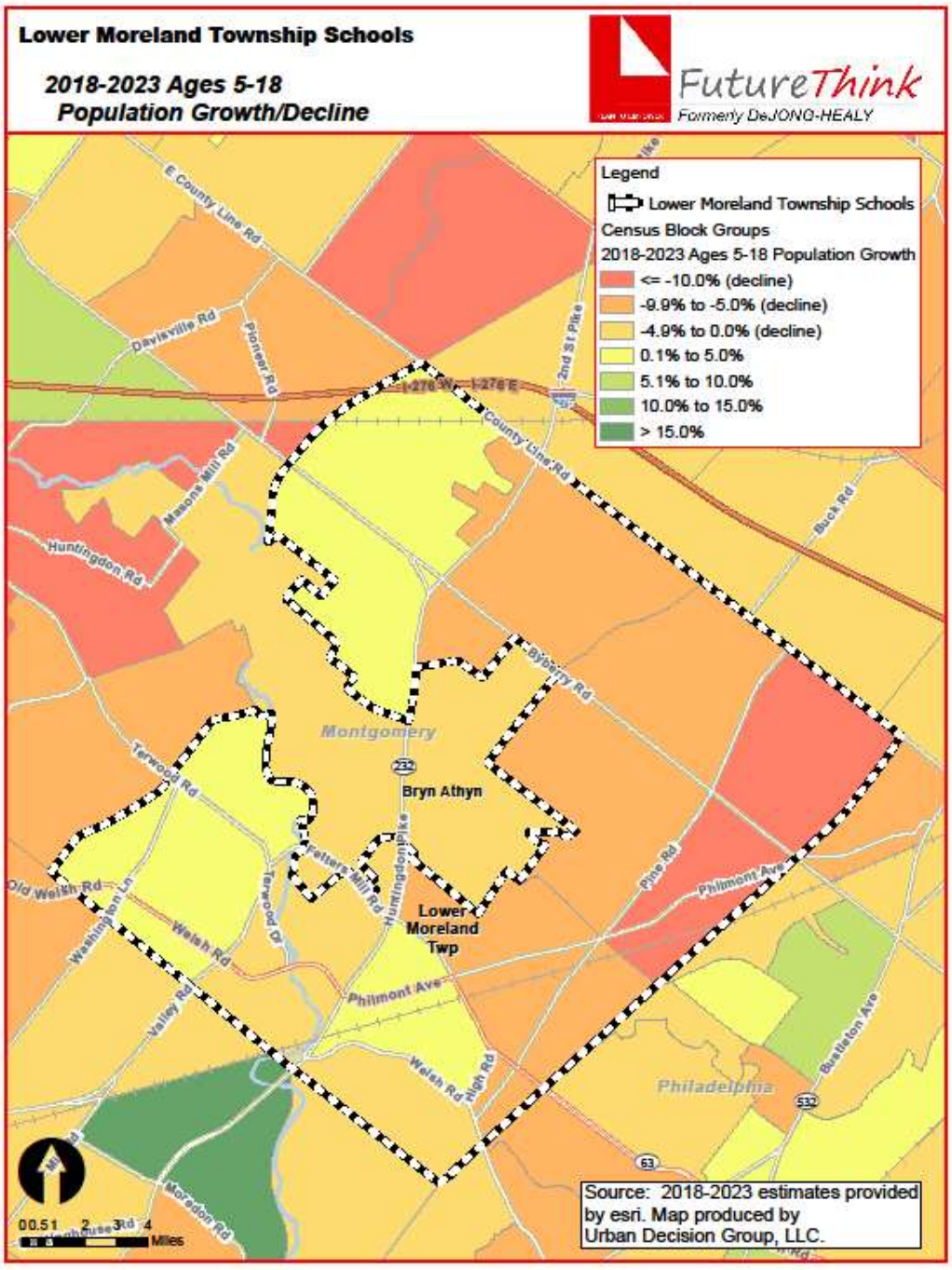
Lower Moreland Township School District	2018 Estimates	2023 Projections	Change 2018-23	Change 2018-23 (%)
Median Household Income	$107,547	$112,002	$4,455	4.1%
Average Household Income	$141,592	$151,655	$10,063	7.1%
Average Family Size	3.24	3.26	0.02	0.6%
Total Family Households	3,761	3,827	66	1.8%

Source: ESRI

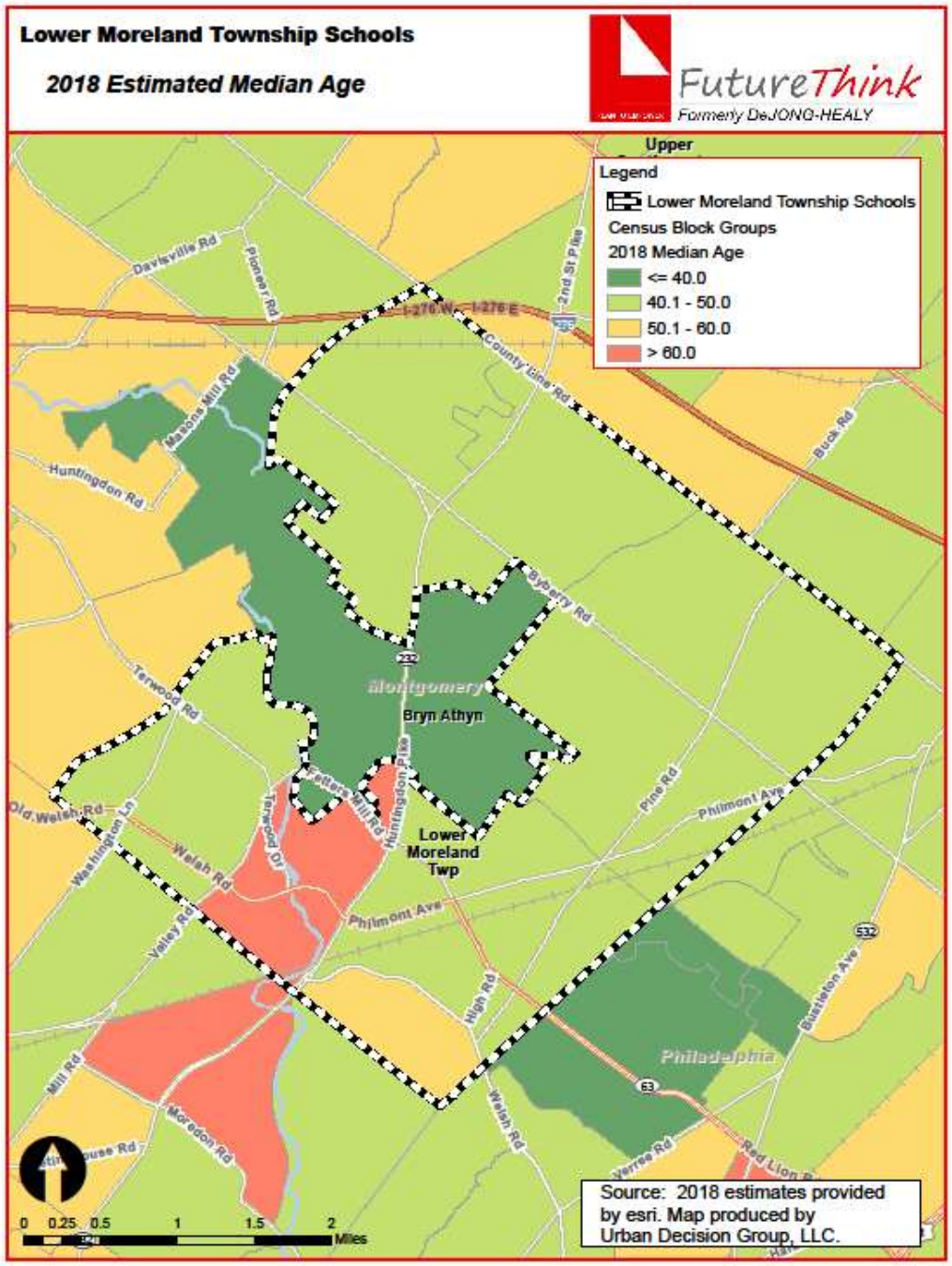
The maps on the following pages illustrate the data identified in the tables. The color coding identifies areas within the District that may be increasing or decreasing at different rates than others.

Lower Moreland Township School District

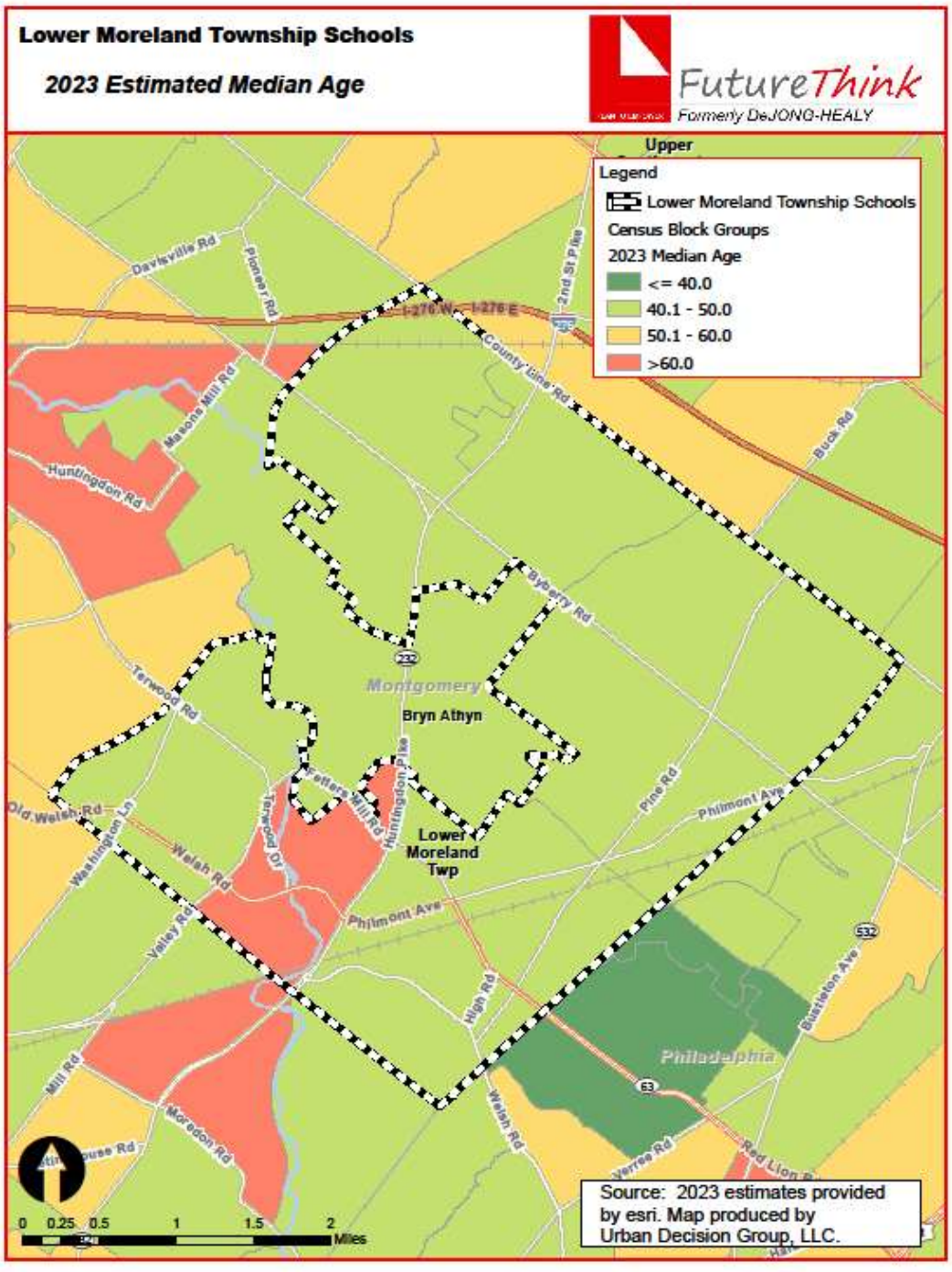



Lower Moreland Township Schools
2018-2023 Ages 5-18
Population Growth/Decline
FutureThink
Formerly DeJONG-HEALY
Legend
Lower Moreland Township Schools
Census Block Groups
2018-2023 Ages 5-18 Population Growth
<= -10.0% (decline)
-9.9% to -5.0% (decline)
-4.9% to 0.0% (decline)
0.1% to 5.0%
5.1% to 10.0%
10.0% to 15.0%
> 15.0%
E County Line Rd
Davisville Rd
Pioneer Rd
I-276 W
I-276 E
2nd St Pike
County Line Rd
Buck Rd
Mason Mill Rd
Huntingdon Rd
Byberry Rd
Montgomery
Terwood Rd
232
Bryn Athyn
Fetters Mill Rd
Huntingdon Pike
Old Welsh Rd
Washington Ln
Terwood Dr
Welsh Rd
Lower Moreland Twp
Pine Rd
Philmont Ave
Valley Rd
Welsh Rd
High Rd
Philadelphia
Bustleton Ave
532
63
Moredon Rd
0 0.5 1 2 3 4
Miles
Source: 2018-2023 estimates provided by esri. Map produced by Urban Decision Group, LLC.

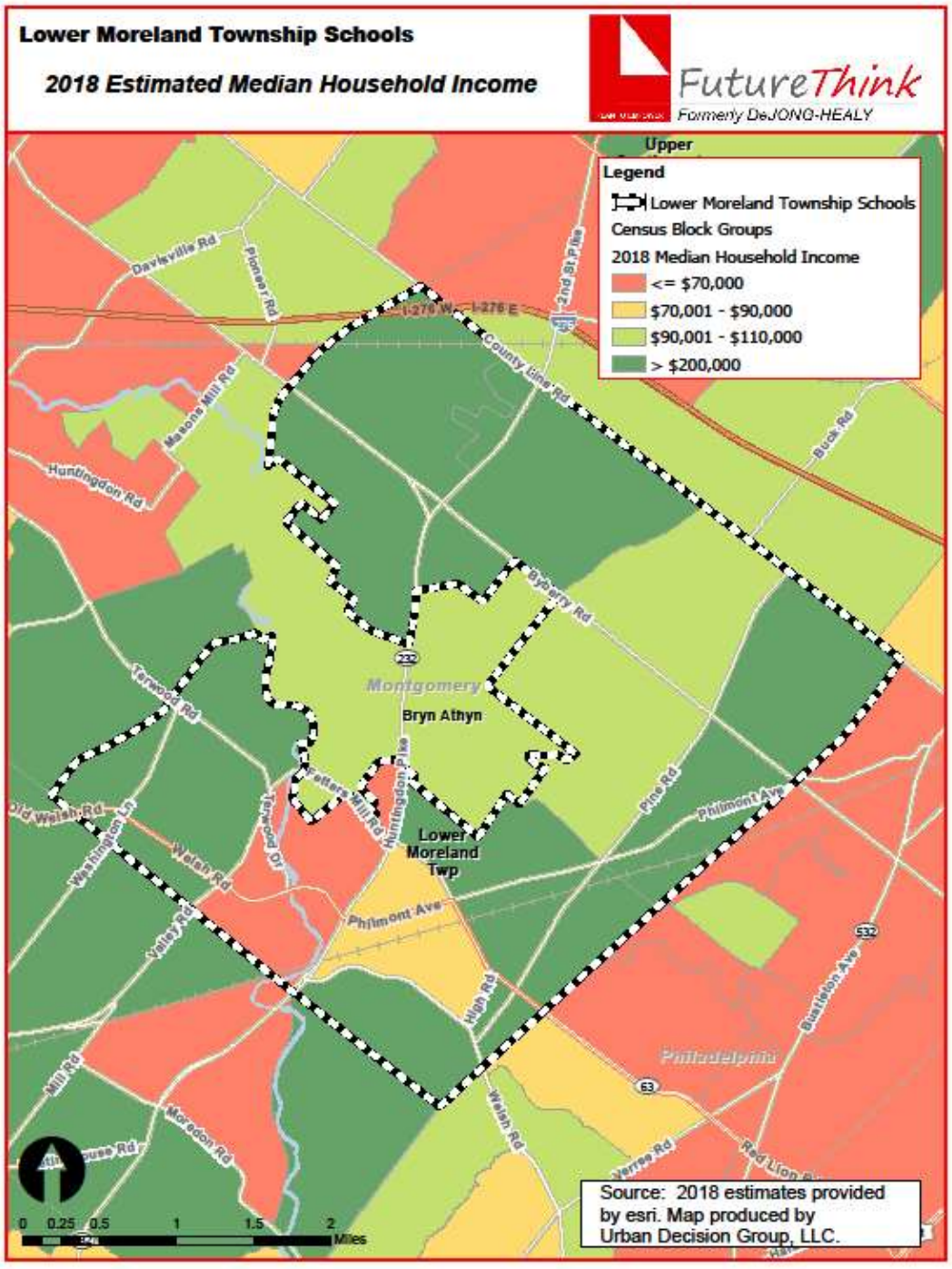
Lower Moreland Township School District



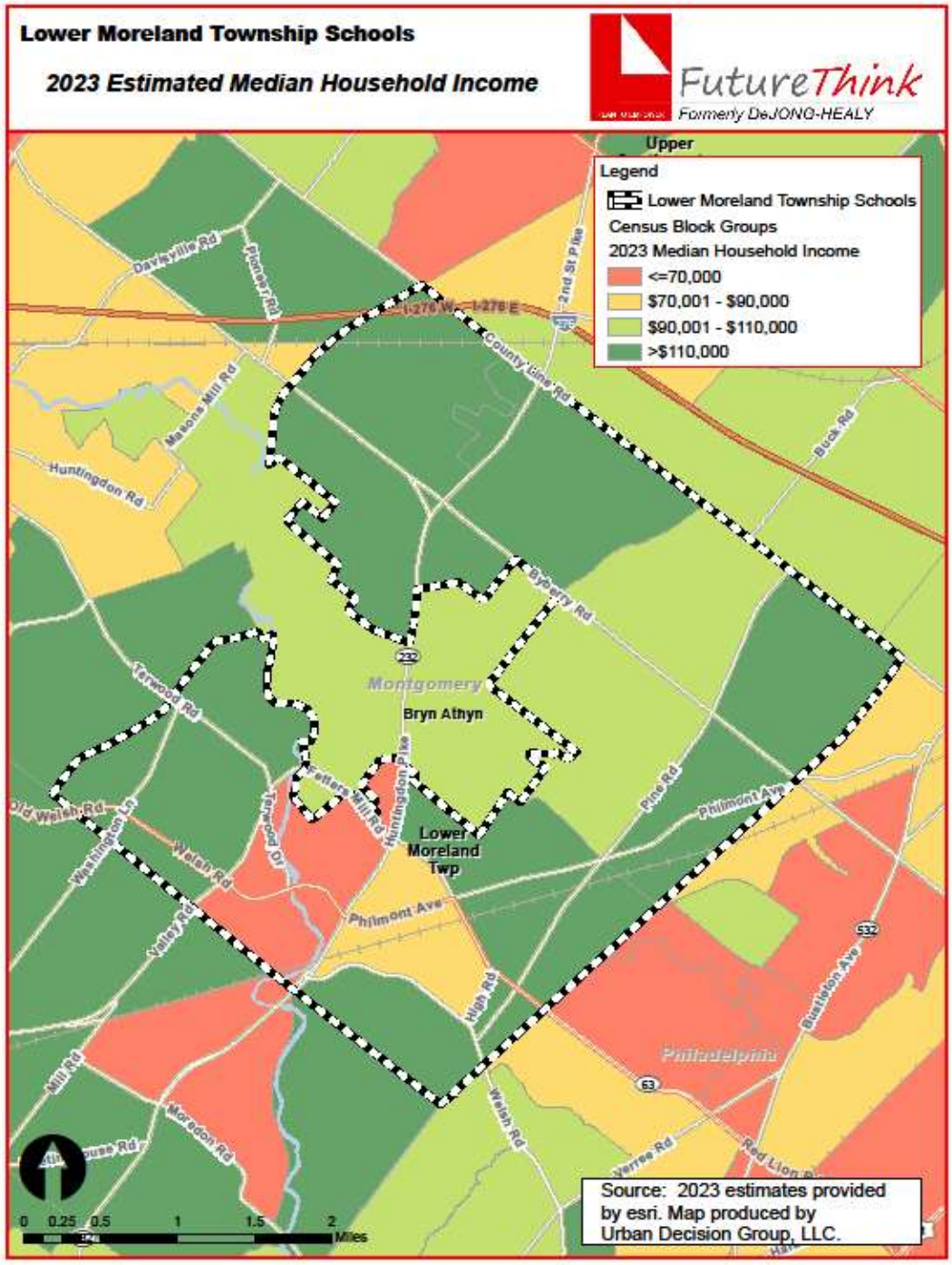
Lower Moreland Township School District



Lower Moreland Township School District



Lower Moreland Township School District



HOUSING INFORMATION

The chart below illustrates the number of single-family dwelling building permits issued each year in Lower Moreland Township and Montgomery County.

# of Building Permits Issued for Single Family Dwellings

Year	Lower Moreland Township	Montgomery County
2008	32	1,274
2009	20	643
2010	13	879
2011	3	668
2012	24	915
2013	4	1,000
2014	10	892
2015	2	1,006
2016	1	1,153
2017	0	1,089
2018*	1	816

Source: SOCDS Building Permits Database

* through October 2018

Lower Moreland Township identified the following potential housing developments, totaling approximately 629 units. (The number is approximate due to the unknown number of units at the 3530 Buck Road property.) Please note that the Philmont Country Club is planned to be age-restricted. The Philmont & Tomlinson TOD will be subject to some revisions based on density. The Township has not had much direction from the property owner or developer at this time. There are no specific plans for Byberry & Meadowlark or the Morrisey Tract, and there is no active plan for 1200 Calvin Road.

Housing Developments in Lower Moreland Township School District

Project	Total Units	Type of Unit	Status
The Greens at Huntingdon Valley	56	SFD	Under Construction
Stone Mill at Huntingdon Valley	60	SFD	Under Construction
Philmont Country Club	176	SFA	Very Likely/Age Restricted
Philmont & Tomlinson TOD	143	MF	Potential
1200 Calvin Road	28	SFA	Potential
Byberry & Meadowlark	63	SFA	Potential
Morrisey Tract	93	SFA	Potential
3530 Buck Road	less than 7	SFD	Potential
3636 Pine Road	2	lot split	Potential
3357 Huntingdon Pike	2	lot split	Potential
Total	629		

Source: Montgomery County Planning Commission; Lower Moreland Township

SURVIVAL RATIOS

The chart below demonstrates the changes in enrollment as students move through the system. Percentages greater than 100 indicate that there are more students than there were in the previous grade the previous year. In other words, there was growth and new students entered the system. Percentages less than 100 indicate that there was decline with students leaving the system.

- Birth to Kindergarten: This ratio indicates the number of children born in the area who attend kindergarten in the District 5 years later. Percentages less than 100% result from movement out of the district, attendance at a non-public or charter school, or residence in another district within the same area.

The following table illustrates the survival ratios for the Lower Moreland Township School District. On average, the survival ratios for grades K>1 through 11>12 exceed 100 percent.

from	to	birth -> K	K->1	1->2	2->3	3->4	4->5	5->6	6->7	7->8	8->9	9->10	10->11	11->12
2009	2010	126.2%	107.8%	102.8%	102.1%	102.0%	104.7%	108.0%	107.6%	105.3%	106.9%	100.0%	102.3%	99.4%
2010	2011	134.6%	104.6%	104.3%	104.8%	100.0%	102.6%	107.1%	101.6%	100.0%	102.5%	102.9%	101.0%	103.4%
2011	2012	178.8%	103.5%	112.5%	106.2%	99.3%	101.4%	104.4%	101.8%	103.1%	101.6%	101.9%	102.3%	105.2%
2012	2013	159.0%	105.3%	100.7%	102.0%	108.4%	108.6%	105.3%	102.4%	102.4%	100.0%	99.5%	100.6%	103.9%
2013	2014	148.1%	100.0%	107.5%	103.3%	103.8%	99.4%	101.8%	103.8%	104.1%	101.1%	100.5%	100.5%	107.8%
2014	2015	176.3%	112.3%	115.2%	108.7%	106.5%	108.6%	106.0%	108.3%	105.5%	98.9%	104.0%	98.5%	100.0%
2015	2016	148.6%	111.2%	110.2%	109.9%	103.2%	110.9%	108.0%	108.5%	103.3%	106.9%	103.4%	103.3%	103.6%
2016	2017	166.7%	112.7%	106.0%	112.1%	100.6%	107.8%	99.5%	102.1%	100.5%	105.9%	98.4%	101.6%	100.5%
2017	2018	162.0%	117.9%	108.9%	107.0%	107.0%	101.2%	106.3%	106.6%	101.5%	98.4%	98.0%	97.3%	101.1%
	average	155.59%	108.360%	107.56%	106.2%	103.42%	105.0%	105.1%	104.8%	102.9%	102.482%	100.946%	100.833%	102.769%
	standard deviation	16.845%	5.290%	4.388%	3.332%	3.083%	3.854%	2.698%	2.811%	1.838%	3.143%	2.073%	1.809%	2.590%

ENROLLMENT PROJECTION

Enrollment projections were developed after analyzing the data collected in this report. The projections indicate an increase of 350 students (or approximately 15%) from the 2018-19 to the 2028-29 school year. The following tables and graph illustrate projected enrollments by grade and by grade group through the 2028-29 school year.

Lower Moreland Township School District
Projected Enrollment

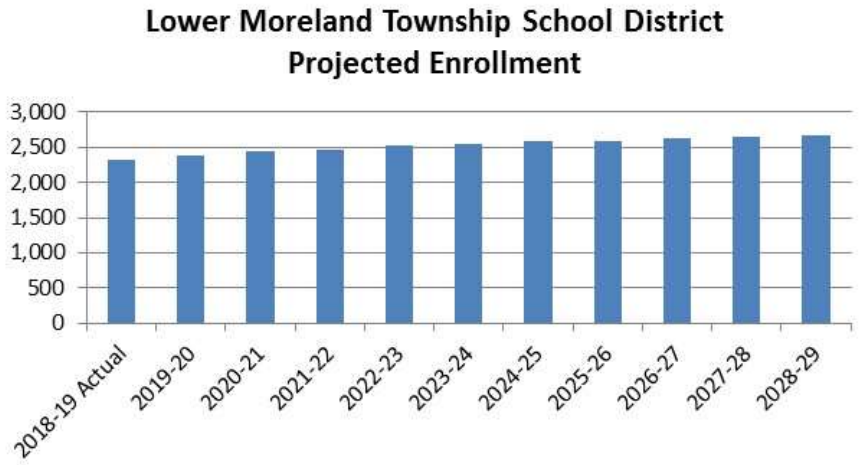
Grade	2018-19 Actual	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
K	**149**	148	147	129	139	140	140	140	140	140	140
1	**171**	170	168	166	146	157	159	159	159	159	159
2	**135**	186	184	182	180	158	170	172	172	172	172
3	**169**	147	202	199	198	196	172	185	186	186	186
4	**169**	175	152	208	206	204	202	177	191	192	192
5	**170**	179	185	161	220	218	216	214	187	202	204
6	**221**	181	191	197	171	234	232	230	228	200	215
7	**194**	234	192	202	208	181	248	245	243	241	211
8	**197**	198	239	195	206	212	184	253	250	248	245
9	**189**	200	201	242	198	209	215	187	256	253	251
10	**195**	189	200	201	242	198	208	215	187	256	253
11	**177**	196	190	200	201	242	198	209	216	187	256
12	**187**	180	198	192	203	204	245	201	212	218	189
K - 12 Total	**2,323**	2,383	2,449	2,474	2,518	2,553	2,589	2,587	2,627	2,654	2,673

Source: FutureThink

Lower Moreland Township School District
Projected Enrollment by Grade Group

Grade	2018-19 Actual	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
K - 5	**963**	1,005	1,038	1,045	1,089	1,073	1,059	1,047	1,035	1,051	1,053
6 - 8	**612**	613	622	594	585	627	664	728	721	689	671
9 - 12	**748**	765	789	835	844	853	866	812	871	914	949
K - 12 Total	**2,323**	2,383	2,449	2,474	2,518	2,553	2,589	2,587	2,627	2,654	2,673

Source: FutureThink



ACTUAL VS. PREVIOUS PROJECTED ENROLLMENT

In December 2016, a set of enrollment projections was developed for the Lower Moreland Township School District by the Pennsylvania Department of Education (PDE). The table below illustrates the difference between the actual and projected enrollment by grade for the 2018-19 school year. Overall, the difference was 43 students or approximately 2 percent.

Lower Moreland Township School District
Actual vs. PDE Projected Enrollment, 2015-16

Grade	2018-19 Actual	2018-19 EP	Difference	Percentage
K	149	154	-5	-3.36%
1	171	149	22	12.87%
2	135	138	-3	-2.22%
3	169	149	20	11.83%
4	169	153	16	9.47%
5	170	174	-4	-2.35%
6	221	213	8	3.62%
7	194	195	-1	-0.52%
8	197	206	-9	-4.57%
9	189	199	-10	-5.29%
10	195	193	2	1.03%
11	177	174	3	1.69%
12	187	183	4	2.14%
K - 12 Total	2,323	2,280	43	1.85%

Source: Lower Moreland Township School District, PDE, Division of Data Quality

In April 2016, a set of enrollment projections was developed for the Lower Moreland Township School District by the Montgomery County Planning Commission. The table below illustrates the difference between the actual and projected enrollment by grade for the 2018-19 school year. Overall, the difference was 45 students or approximately 2 percent.

Lower Moreland Township School District
Actual vs. MCPC Projected Enrollment, Option 3

Grade	2018-19 Actual	2018-19 EP	Difference	Percentage
K	149	155	-6	-4.03%
1	171	137	34	19.88%
2	135	139	-4	-2.96%
3	169	162	7	4.14%
4	169	153	16	9.47%
5	170	176	-6	-3.53%
6	221	214	7	3.17%
7	194	188	6	3.09%
8	197	200	-3	-1.52%
9	189	194	-5	-2.65%
10	195	194	1	0.51%
11	177	179	-2	-1.13%
12	187	187	0	0.00%
K - 12 Total	2,323	2,278	45	1.94%

Source: Lower Moreland Township School District, MCPC April 2016 Report

Both sets of projections were well within the "good" range of enrollment projections while both being slightly less than the actual enrollment. The biggest difference was at the 1st grade for both sets of projections. This difference will have a significant impact on future years of the enrollment projections as this large class size of 171 students moves through the grades over the next 10 years.

The following table illustrates the differences between the PDE, MCPC, and FutureThink enrollment projections for the 2025-26 school year (the latest year available for the PDE and MCPC projections). The FutureThink projections exceed the other two projections by approximately 7% and 9%, respectively.

Lower Moreland Township School District
Comparison of Projections in the 2025-26 School Year

Grade	PDE	MCPC	FutureThink
K	141	169	140
1	145	166	159
2	160	171	172
3	170	171	185
4	181	171	177
5	190	174	214
6	200	170	230
7	222	215	245
8	218	188	253
9	188	178	187
10	195	202	215
11	189	184	209
12	214	212	201
K - 12 Total	2,413	2,371	2,587

Source: PDE, MCPC, FutureThink

CONCLUSION

As with any projection, the District should pay close attention to birth counts, enrollment in elementary schools, charter school enrollment, non-public school enrollment, and any housing growth. Each of these factors will have an impact on future student enrollment. Continue to watch for changing enrollment trends especially at the elementary level, faster than expected new housing starts, sharp increases or decreases in charter school and non-public school enrollment, and significant changes in the economy.

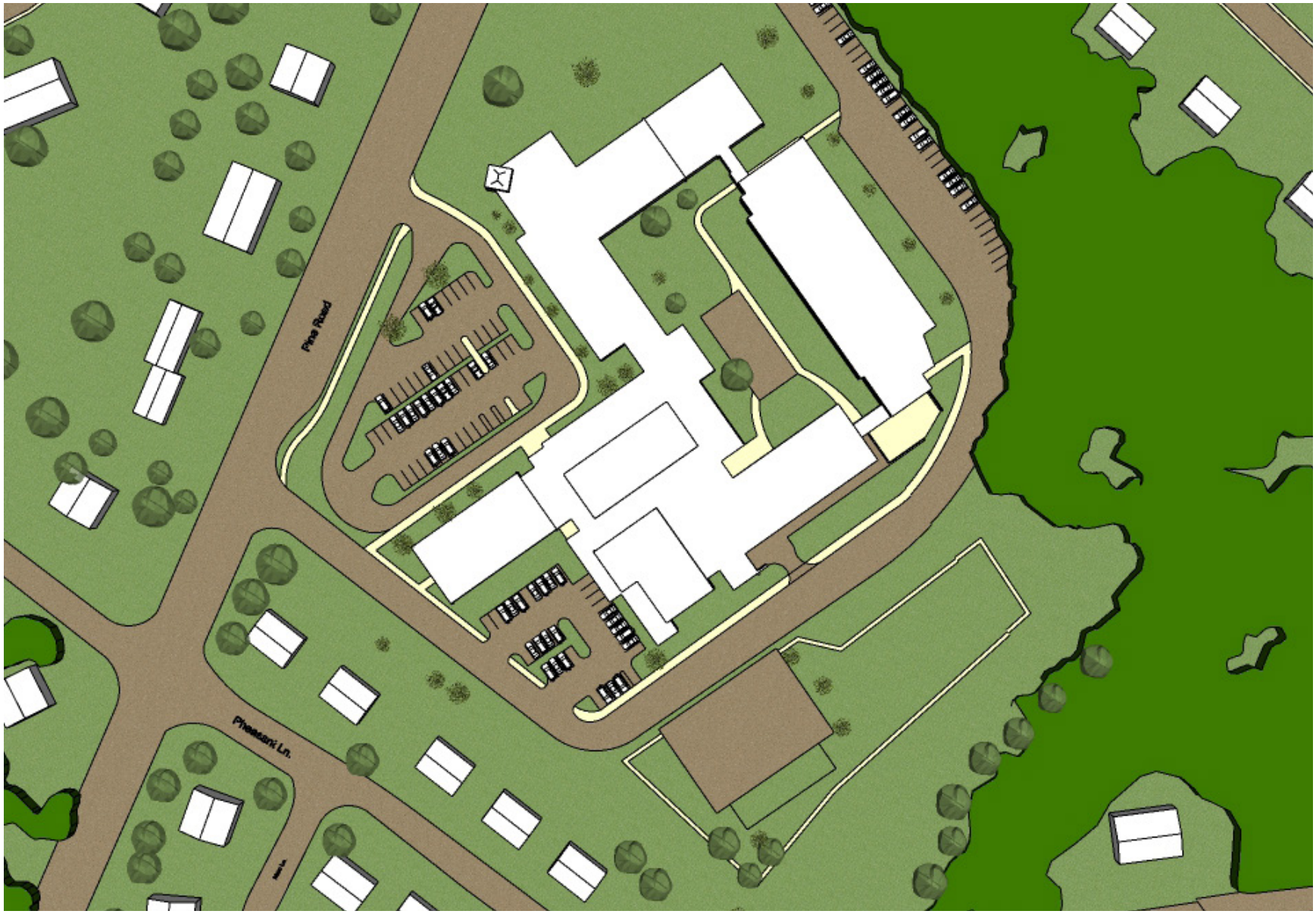
FutureThink is pleased to have had the opportunity to provide the District with enrollment projection services. We hope this document will provide the necessary information to make informed decisions about the future of the Lower Moreland Township School District.

During the course of this study, members from KCBA Architects, Consolidated Engineers, and Terraform Engineering toured the buildings and grounds of the three existing schools. Our work entailed an evaluation of any problems identified by the school district as well as any other issues observed by our team.

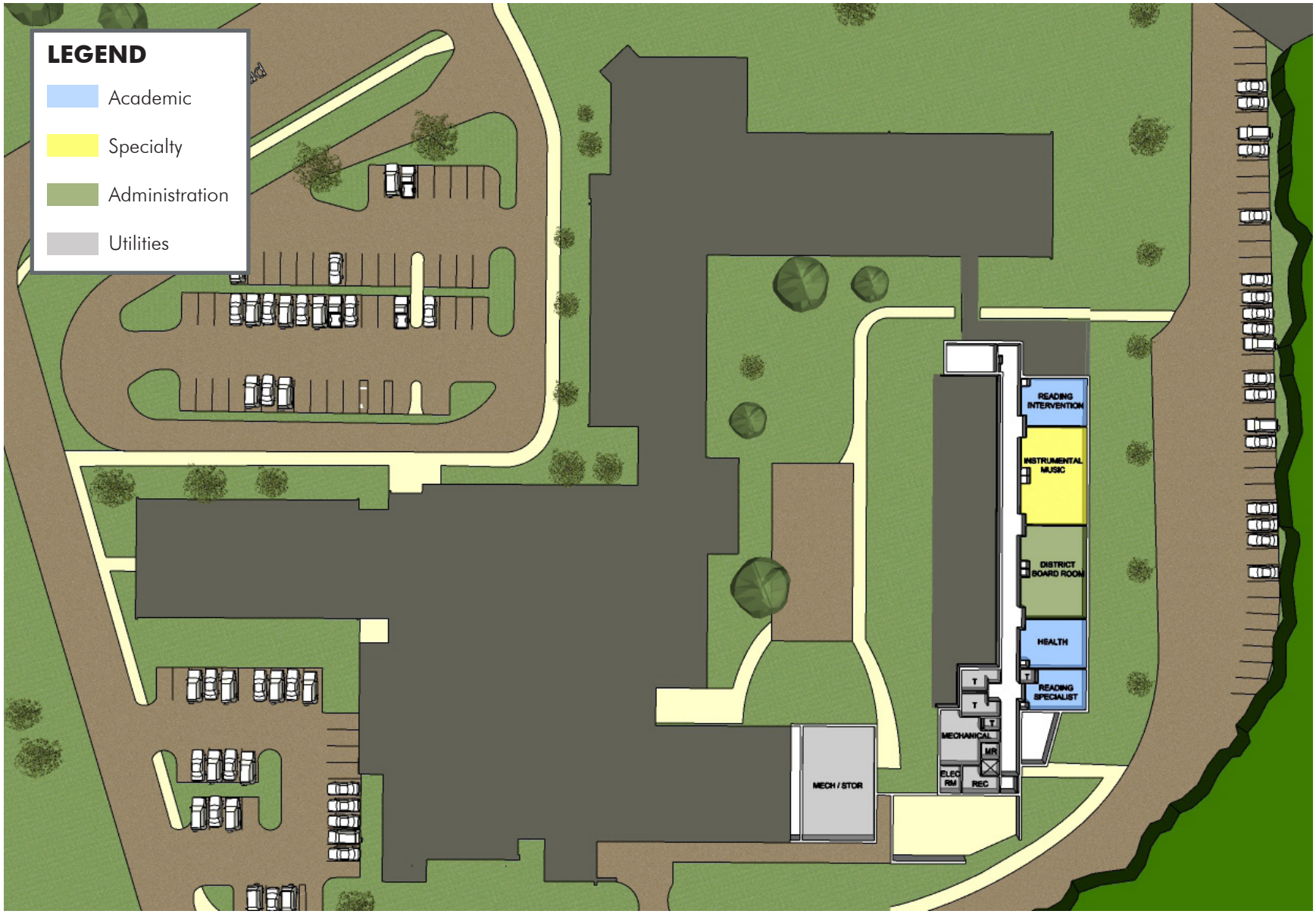
The findings from these tours are presented in this section. Each of the three schools is presented first with existing site and floor plans, then a narrative report, and finally an Energy Star report for the building.

Each narrative report begins with a brief description of the facility's history and key statistics followed by a description and evaluation of all major campus and building systems. In the course of each narrative, items that had been identified as deficient or inadequate are noted as "Items to Consider". Strategies to address these items were then explored during the subsequent development of different long-term upgrade options.

PINE ROAD E.S.: EXISTING SITE PLAN

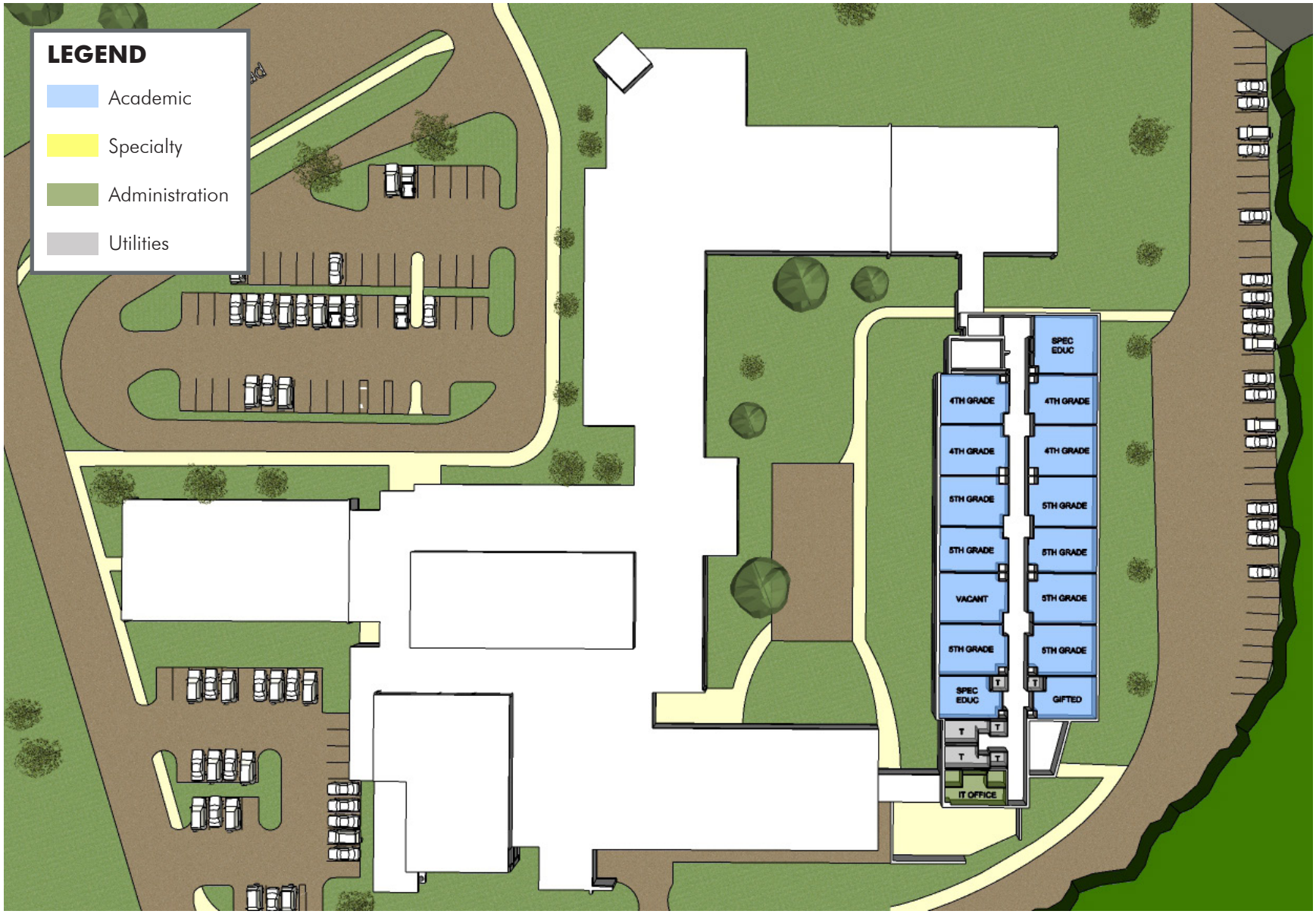


PINE ROAD E.S.: EXISTING GROUND FLOOR PLAN



PINE ROAD E.S.: EXISTING FIRST FLOOR PLAN

PINE ROAD E.S.: EXISTING SECOND FLOOR PLAN



HISTORY

Pine Road Elementary School was built in 1958, with additions to the building in 1962, 2002, and 2010. The most recent renovation to the school added a three-story wing (F-wing) to the building. This allowed grades 4 and 5 to move out of Murray Avenue Middle School and into Pine Road Elementary School to alleviate capacity issues in Murray Avenue.

Front entrance to the building

BUILDING STATISTICS

Size of Building: 135,663 sq. ft. (three-story building)

Size of Site: 17.8 acres

Grades

The school currently educates students from grades Kindergarten through 5. January 2019 total enrollment was 949 students: 146 in Kindergarten, 169 in 1st grade, 132 in 2nd grade, 167 in 3rd grade, 167 in 4th grade, and 168 in 5th grade.


Aerial view of site

SITE

Vehicular Circulation & Parking

There are two parking lots on site for the school. The main parking lot holds the majority of parking for visitors and staff, as well as the parent drop-off area. There is an additional parking lot and parking spots along the access road that is used for bus loading at the back of the building. This road circles the entire school. Parking is at capacity on site, and there is ample area left to expand parking on site.


Parent drop-off area

The district has 18 buses and one van. Buses pick up students at the high school and drop them off at home. This sequence is then repeated for the middle and elementary schools. The transportation of students to school works in a similar way. This timing sequence allows for a clear separation of age groups, but it can cause increased wait and/or travel time for elementary students if delays occur on the high school or middle school routes. Buses queue at the back of the building by the cafeteria on the access road. Bus loading and parent pick-up and drop-off is separated, which is the ideal scenario for vehicular circulation on a school site.

Exterior ramp and stairs


Playground for Younger Students


Exterior windows

Sidewalks and Paving

The sidewalks and site stairs around the site are old but in decent condition. In some areas, joints are coming up and curbs are crumbling. The balustrade and handrails at the ramp and stairs by the library are in good condition. The main parking lot was renovated, milled, and resurfaced in 2010. The access road and additional parking lot also was added in 2010. Lion paw prints are painted on the access road entrance from Pine Road, which guides visitors to the front entrance and visitor parking.

Issues to consider:

Repair areas of sidewalk and curbing where the joints are coming up and curbs are crumbling.

Play Areas

There are two playgrounds on site. The playground for older students is opposite the cafeteria at the back of the site. The playground for younger students became enclosed in a courtyard when the three-story classroom wing was added onto the school in 2010. The courtyard has no protection from the access road though. Teachers and administrators feel that the playground for younger students can be a distraction to the classrooms that face the courtyard. However, they appreciate that the younger students are in an enclosed space.

Issues to consider:

Add fencing or bollards to provide protection from cars in the playground for younger students.

BUILDING EXTERIOR

Façade

The façade is masonry brick veneer with concrete accents at the floor line and columns. The original building's exterior was stripped and rebuilt in 2003; new windows were installed at this time. Some leaks occur by the window flashing, and these are repaired as needed.

Issues to consider:

Continue to repair leaks as needed.


Main hallway


Corridor in the original building


Corridor in the newest addition


Ceiling in classroom that was art room

Fenestration
The windows and doors throughout the building are in good condition. All exterior windows in the original building were replaced in 2003, and the windows in both the original building and the 2010 addition are properly insulated units.

Roof
The main school building has an EPDM roof that is out of warranty. This section has solar arrays, which cover about 50% of the roof. The 2010 addition and renovation (F & G wings) has a thermoplastic polyolefin (TPO) finish that is under warranty until 2030. This section has a roof leak by the elevator, and this leak should be fixed.

Issues to consider:
Replace the EPDM roof system with a similar system or a TPO system in warranty.

Fix roof leak by the elevator in the 2010 addition.

BUILDING INTERIOR

Flooring
The flooring in the main hallway of the building is stone tile. The remainder of corridor hallways has VCT with a paw print pattern in some of the tiles along the corridor walls. Classrooms also have VCT, and the library and administrative offices have carpet. The gymnasium and cafeteria floors have poured rubber floors that have been repaired for bubbling. The flooring throughout the building is in good condition.

Walls
The partition walls in the original building are comprised of CMU block, and the 2010 addition has steel stud and gypsum partitions. Corridor walls in the original section have a glazed tile wainscot while the corridor walls in the 2010 have gypsum for the full height of the wall. The walls in both sections are in good condition.

Ceilings
The ceilings throughout the building are comprised of acoustical ceiling tile, except in the cafeteria and gymnasium multi-purpose rooms where the rafters are exposed. The


Kitchen serving line


Entry and exit into serving lines

Non-compliant door clearances

acoustical ceiling tiles all were replaced when sprinklers were installed during the 2010 addition and renovation and are in good condition. A couple of rooms that were reconfigured for a different classroom type should have the lighting fixtures revised in that room. This specifically occurs in the old art room, which became a classroom. The track lighting installed for the old art room is still in the now-classroom and is not conducive to learning.

Issues to consider:
Consider changing the track lighting in the old art room to light fixtures appropriate for classroom learning.

Food Service

There are currently three serving lines with the point of sale inside the serving line. Lunches are staggered every 15 minutes by grade, with about 130 kids per lunch served.

The kitchen equipment is in good condition. Some kitchen equipment was replaced during the 2002 renovations, and the remaining ones were replaced during the 2010 renovations. The maintenance staff repairs the equipment as needed.

The location of the loading dock at the school is optimal for food and kitchen deliveries. However, it is not optimal for general school deliveries, as there is no way to access the loading dock without walking through the kitchen.

Issues to consider:
Consider sending general school deliveries to a different location than the loading dock to avoid bringing items through the kitchen.

Continue maintenance repairs on kitchen equipment.

Code Compliance

Overall the building meets code compliance, though there are some minor issues. A key compliance issue is door clearances at many locations. To be code compliant, each door needs 18" on the pull side of a door and 12" on the push side of a door. There are a few instances where the doors do not meet this requirement. Another compliance issue are the water fountains, which project into the corridor. Code states that items cannot

Bullet-resistant glass box security office from the main office

project more than 4" into the corridors, and the water fountains are recessed but project farther than 4". They also are not at the correct heights to meet ADA requirements.

Issues to consider:
All doors without push/pull clearances should be revised to meet modern building safety codes.

All corridor water fountains should be replaced with fixtures compliant with current ADA and code requirements.

Security
The school has many security features. Visitors enter a large secure vestibule. A security officer is in a large, bullet-resistant glass box within the secure vestibule. The security officer checks the identification of visitors, provides them with a badge to wear for the duration of their visit, and permits them access to the administration office. There are several security cameras throughout the building and at various exterior locations. The security office, main office, and the principal's office have large screen monitors that display live views of the security feed. Card access at each entrance to the building restricts admission to approved individuals.

HVAC

System Summary
The building is heated and cooled by a four-pipe hydronic system. The majority of the school is heated, cooled, and ventilated. Stairs, corridors, and similar areas are provided with heating by the use of cabinet heaters and fin-tube terminal units. There are a number of exhaust systems serving toilet areas and other exhaust systems in the kitchen.

Central Components

Boilers
There are three flexible tube heating boilers located in a mechanical room. The boilers are dual-fuel-fired, capable of operating on natural gas or number 2 fuel oil, and provide heating for the building. Two of the boilers were installed during the 2002 renovation. The other boiler was installed during the 2010 renovation and addition. All three boilers are in good

condition. There are two base-mounted circulating pumps to distribute the heating water to all areas of the building.

Underground Oil Storage Tanks

There is an existing 15,000-gallon underground fuel oil storage tank located outside on the school grounds and adjacent to the building exterior. The tank and a new tank monitoring system were installed during the 2010 renovation. Due to the type and age of the tank, it is likely to be in fair condition.

Chillers

Two existing air-cooled chillers provide chilled water for the majority of the building. The minority of the building is provided with cooling from DX equipment; spaces served from DX equipment are listed later in the study. One chiller unit was installed during the 2001 renovation and addition, the other was installed during the 2010 renovation and additions. Both units have remote evaporators. The 2010 chiller is in good condition, but the 2001 chiller is approaching the end of its expected useful service life. There also are two base-mounted pumps that circulate chilled water throughout the building. These pumps were installed during the 2010 renovations and are in good condition.

Building Systems

2010 Addition Classrooms

The classrooms that were added during the 2010 renovations are provided with heating, cooling, and ventilation by vertical-packaged air handling units that are located in a closet in the corner of each classroom. The air handling units have a hydronic heating coil, a chilled water cooling coil, and a supply fan. Outside air for the classroom wing addition is introduced through a roof-mounted energy recovery unit. The energy recovery units have a supply fan, exhaust fan, energy recovery wheel, and reheat coil.

Original Building Classrooms

The remainder of the classrooms throughout the building are provided with heating, cooling, and ventilation by a unit ventilator located on the exterior wall of each classroom. The units each contain a heating coil, cooling coil, supply fan, and dampers. Outside air is introduced through an exterior louver behind each unit.

Administration

The administration area of the building is provided with heating, cooling, and ventilation by a rooftop air handling unit. The unit has DX cooling and gas heat and discharges conditioned air through a ducted distribution system with variable air volume terminal units. Each terminal unit has an air damper and hot water reheat coil to provide individual temperature control. The system was installed during the 2002 renovations and appears to be in good condition. However, it is nearing the end of its expected useful service life.

Library

The library area of the building is provided with heating, cooling, and ventilation by a rooftop air handling unit. The unit has DX cooling, gas heat, and an energy recovery wheel. The unit discharges conditioned air through a ducted distribution system. The system was installed during the 2002 renovations and appears to be in good condition. However, it is nearing the end of its expected useful service life.

Multi-purpose Room (B145)

The gymnasium is provided with heating, cooling and ventilation by a rooftop air handling unit. The unit has DX cooling and gas heat and discharges conditioned air through a ducted distribution system. The system was installed during the 2002 renovations and appears to be in good condition. However, it is nearing the end of its expected useful service life.

Multi-purpose Room (G100)

The multi-purpose room is provided with heating, cooling and ventilation by a rooftop air handling unit. The unit has chilled water cooling, hydronic heat, and an energy recovery wheel. The unit discharges conditioned air through a ducted distribution system. The system was installed during the 2010 renovations and appears to be in good condition.

Issues to consider:
Consider adding occupancy sensors to the classrooms served by unit ventilators. The sensor could send a signal to the unit to close the outside air damper and cycle the supply fan to meet the space load instead of running continuously.

The existing Assistant Principal office is currently served by a variable air volume terminal unit that is served from an air handling unit that has chilled water cooling only. The rest of the areas that are used during the summer are served by DX cooling. Therefore, cooling is not currently available to this office in the summer. Consider adding a DX terminal unit to serve this space so that cooling can be provided when the chiller is not operational.

PLUMBING

System Summary

The building is connected to a municipal water system and there appears to be adequate water pressure to serve the building. A gas-fired storage type water heater located in the Boiler Room generates domestic hot water. The existing domestic water piping distribution system was replaced or installed in the 2002 renovations.

All sanitary waste is collected and routed to a municipal sanitary system. There is an existing grease trap outside the building, and it was installed during the 2010 renovation. Some of the underground sanitary and storm water piping appears to be original to the building. The condition of this original sanitary and storm water piping, located under slab, is unknown. Consideration should be given to video scoping and cleaning all existing underground sanitary piping.

Some plumbing fixtures were replaced during the 2002 renovations, and the remaining ones were installed or replaced during the 2010 renovations. They have manual faucets and appear to be in good condition.

The 2010 addition received fire protection throughout during its construction. The remainder of the building received a complete fire protection system during a 2015 upgrade project.

ELECTRICAL

System Summary

This building is fed from a utility transformer located outside the electrical room. The electric service enters the building at 120/208V to a 2000A Square D Company QED style switchboard installed during the 2010 renovation with a 2000A main breaker. Power is then distributed throughout the building at 120/208V for HVAC, lighting, and all plug loads. The equipment is in good condition.

120/208V electric panels are located throughout the building. The electric panels were manufactured by the Square D Company and are the NQOD style panelboard. These panels were installed during the 2002 and 2010 renovations and are in good condition. Most of the wiring was installed during the 2002 and 2010 construction or later. Due to the 2002 renovation, it is unlikely there is wiring that is older, but there is no guarantee. As long as the panelboards remain in good operating condition, any older wiring should be safe.

Transient Voltage Surge Suppression (TVSS) is present at the service entrance through the use of a Thor Systems TSRC-200 series unit. Integrated 100kA TVSS units are also installed at selected panels feeding computer loads.

A Cummins 60kW natural gas-fired emergency generator is located outside the electric room. Output voltage of the emergency generator is 120/208V, 3-phase, 4-wire. There are two Cummins automatic transfer switches, both rated at 225A, 120/208V, 3-phase, 4-wire. The generator was installed during the 2002 renovation and relocated during the 2010 renovation. One of the transfer switches was installed during the 2002 renovation and is used for life safety loads, while the other transfer switch was installed during the 2010 renovation and is used to feed mechanical loads. The generator is in good condition.

Exit signs have LED lamps and are in good condition and appear to be code compliant. Emergency lighting is handled via 24-hour connected normal emergency fixtures with emergency only lighting at the exterior exits and in selected spaces such as the multi-purpose room or exterior. Quantity

and locations of emergency lighting appear to satisfy applicable codes.

Lighting throughout the building is provided mostly by 4' fluorescent T-8 lamps with electronic switched ballasts, installed during the 2002 renovation and digital dimming ballasts installed during the 2010 renovation. Fluorescent and metal halide fixtures are used in multi-purpose rooms. The interior lights are in good condition overall.

The parking lot is illuminated with 100W high pressure sodium shoebox type pole-mounted type light fixtures. The building exterior is illuminated with 100W and 70W high pressure sodium wall-mounted fixtures. The site fixtures meet IESNA requirements for full-cutoff, dark sky requirements. Exterior light fixtures are in fair to good condition.

Classrooms upgraded during the 2002 renovation are controlled using two switches and an occupancy sensor override in the event the instructor forgets to turn the lights off. Offices are controlled using a single switch. Classrooms from the 2010 renovation are part of an integrated lighting control system using the DALI protocol. The lighting is controlled with daylight harvesting cells, occupancy sensors, and two levels of dimming. Corridors are controlled utilizing a central relay system, while both multi-purpose rooms are controlled via local relay systems. The multi-purpose room in the original building has a second set of quartz lighting, stage lighting, and front spot lights controlled via a theatrical dimming system. Exterior lighting is also controlled using a central relay system. The lighting control system is functional and controlling the lights. As with all control systems, it could undergo a recommissioning by the manufacturer, but the benefits are likely to be minimal.

The fire alarm system head end was recently upgraded to a Simplex 4100es series system that is the current addressable type fire alarm system from Simplex. The majority of the annunciation and initiation system devices were installed during the 2002 renovations and the remaining ones installed during the 2010 additions. There are smoke detectors in the corridors and storage spaces and other code required areas. ADA-compliant audible and visual appliances are installed throughout the building, including in the corridors, large

instructional spaces, classrooms, restrooms and other code required areas. ADA-compliant pull stations are located at the exits and stairwells. Based on locations of devices, it appears that the system meets current fire alarm codes and satisfies ADA requirements, and the system in general is in good condition. However, as components fail, they will need to be replaced with current devices, which may require additional wiring from the head end.

There is an existing area of rescue assistance system installed in the building during the 2010 renovation.

The paging / intercom / master clock system is a Rauland Telecenter system installed during the 2002 renovations. The control console is located at the main office and has an AM/FM radio. Classrooms, offices, and corridors have ceiling-mounted speakers. The system is in fair condition. While the system appears to be functional, clocks are failing, the bell schedule is tough to manage, and the integration with the phone system needs to be repaired.

There is a newer Grandstream IP based district-wide phone system, which is in good condition.

The remote sound systems in the multi-purpose rooms are all functional and meet the current needs of the school. There are no reported issues with the systems.

A coaxial cable distribution system exists for the transmission of television signals to the classrooms and other areas of the building. There is a television distribution cart in the library allowing local channel origination.

The majority of the computer network was recently replaced and consists of plenum rated category 6 UTP to the desktop and 6A to wireless access points. Fiber optic cable (10 gig 50 micron multi-mode) connects the IDFs to the MDF. There are Ethernet switches in the data racks. The system is in good condition.

The building currently has an access control system, existing security system, and IP-based CCTV system with DVR's. The building has an AiPhone intercom system at the front door for both the school and district administration, as well as additional

electrified hardware into the district office and into the corridors from the vestibule that is controlled via security greeter to provide additional security measures. While all systems are in satisfactory to good condition, it was reported that the CCTV system does not provide adequate coverage in the corridors.

Issues to consider:

To provide some additional savings with the lighting control, additional UL924 listed relay panels should be added to control the emergency lighting. This will allow for a completely dark building when the security system is armed. All relay systems shall be interconnected to the building management system to allow for additional control.

The site lighting should be replaced with LED to allow for energy savings and prolonged time between fixture maintenance.

During the next major renovation, the lighting should be replaced with LED lighting to help save energy and prolonged time between fixture maintenance.

To provide some savings with the lighting control, the existing digital lighting control system should be expanded throughout the rest of the building. Due to recent code changes, if expanded, the entire system would be required to be a daylight harvesting which will help lengthen the life of LED fixtures and save energy.

The paging / intercom system head end should be replaced, and the entirety of the clock system be replaced with a wirelessly correcting system.

ENERGY STAR® Statement of Energy Performance

58

ENERGY STAR® Score[1]

Pine Road ES

Primary Property Type: K-12 School
Gross Floor Area (ft²): 135,663
Built: 1958

For Year Ending: March 31, 2019
Date Generated: May 01, 2019

1. The ENERGY STAR score is a 1-100 assessment of a building's energy efficiency as compared with similar buildings nationwide, adjusting for climate and business activity.

Property & Contact Information

Property Address	Property Owner	Primary Contact
Pine Road ES 3737 Pine Road Huntingdon Valley, Pennsylvania 19006	_____ , (____)____-_____	____ _____ , (____)____-_____ _____

Property ID: 2516058

Energy Consumption and Energy Use Intensity (EUI)

Site EUI
62.3 kBtu/ft²

Source EUI
109.5 kBtu/ft²

Annual Energy by Fuel	
Natural Gas (kBtu)	3,857,000 (46%)
Electric - Solar (kBtu)	865,447 (10%)
Fuel Oil (No. 2) (kBtu)	828,000 (10%)
Electric - Grid (kBtu)	2,905,230 (34%)

National Median Comparison	
National Median Site EUI (kBtu/ft²)	67.6
National Median Source EUI (kBtu/ft²)	118.8
% Diff from National Median Source EUI	-8%

Annual Emissions	
Greenhouse Gas Emissions (Metric Tons CO2e/year)	615

Signature & Stamp of Verifying Professional

I _____ (Name) verify that the above information is true and correct to the best of my knowledge.

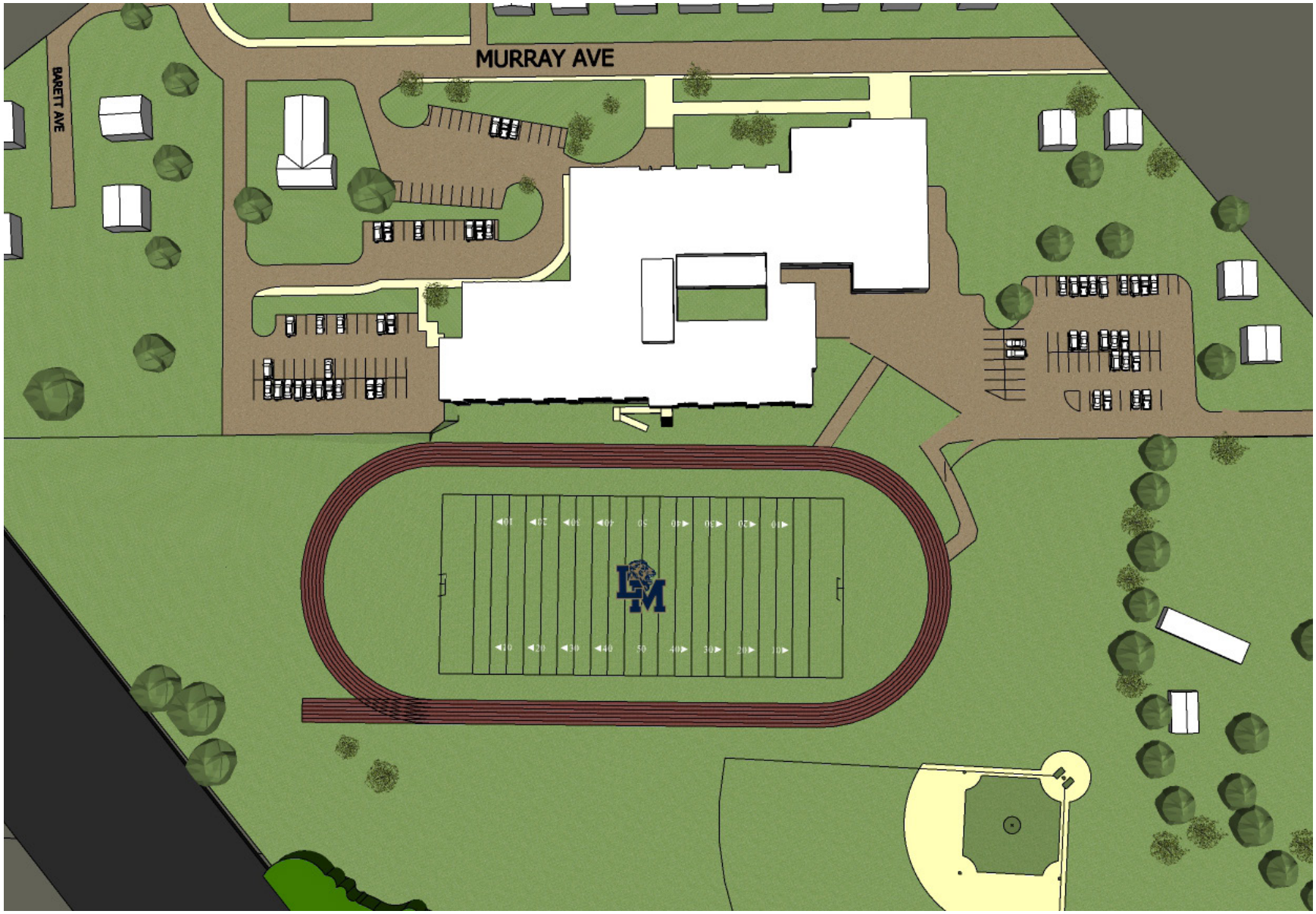
Signature: _____Date: _____

Licensed Professional

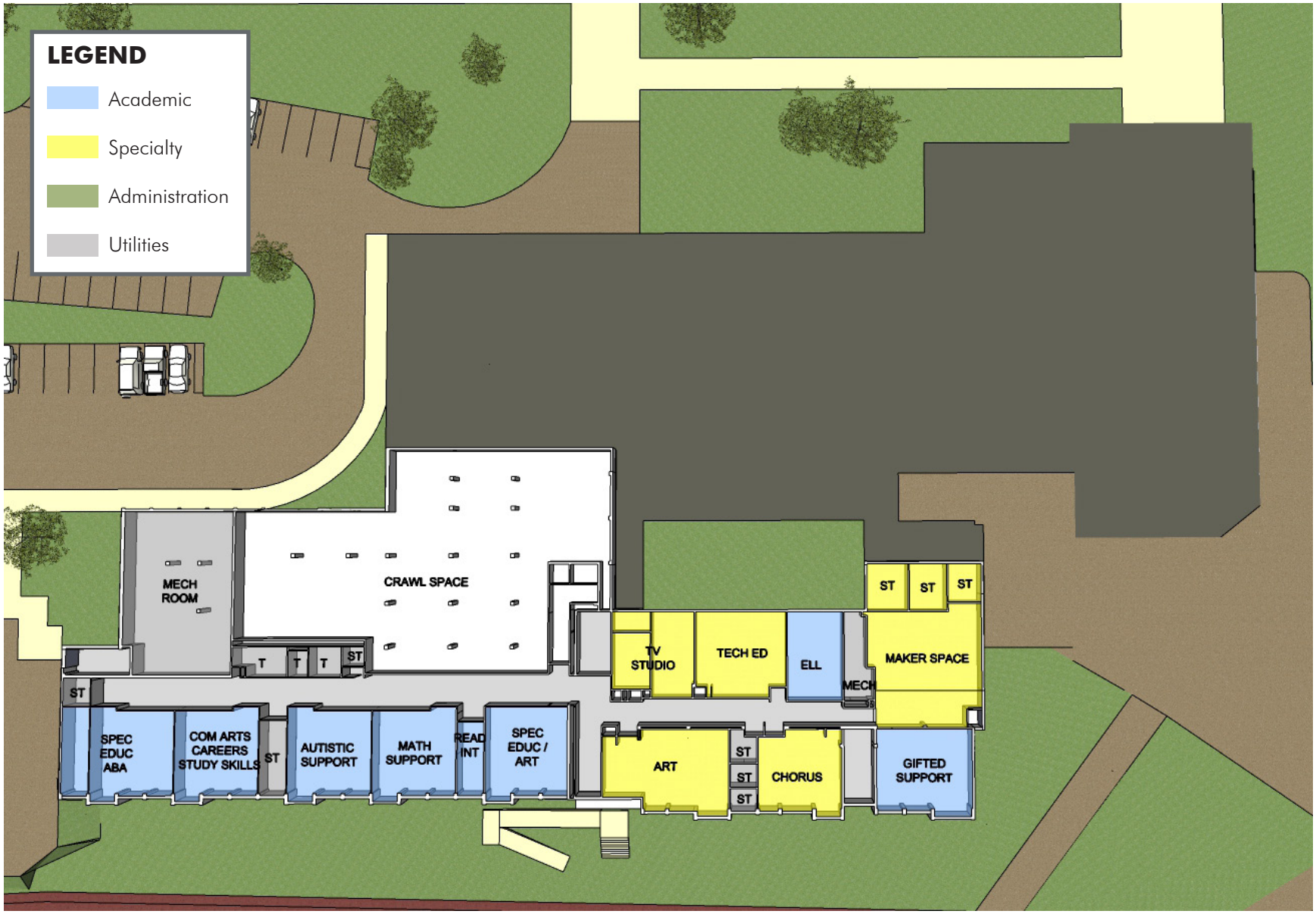
____ _____
,
(____)____-_____
_____

Professional Engineer Stamp (if applicable)

MURRAY AVENUE M.S.: EXISTING SITE PLAN



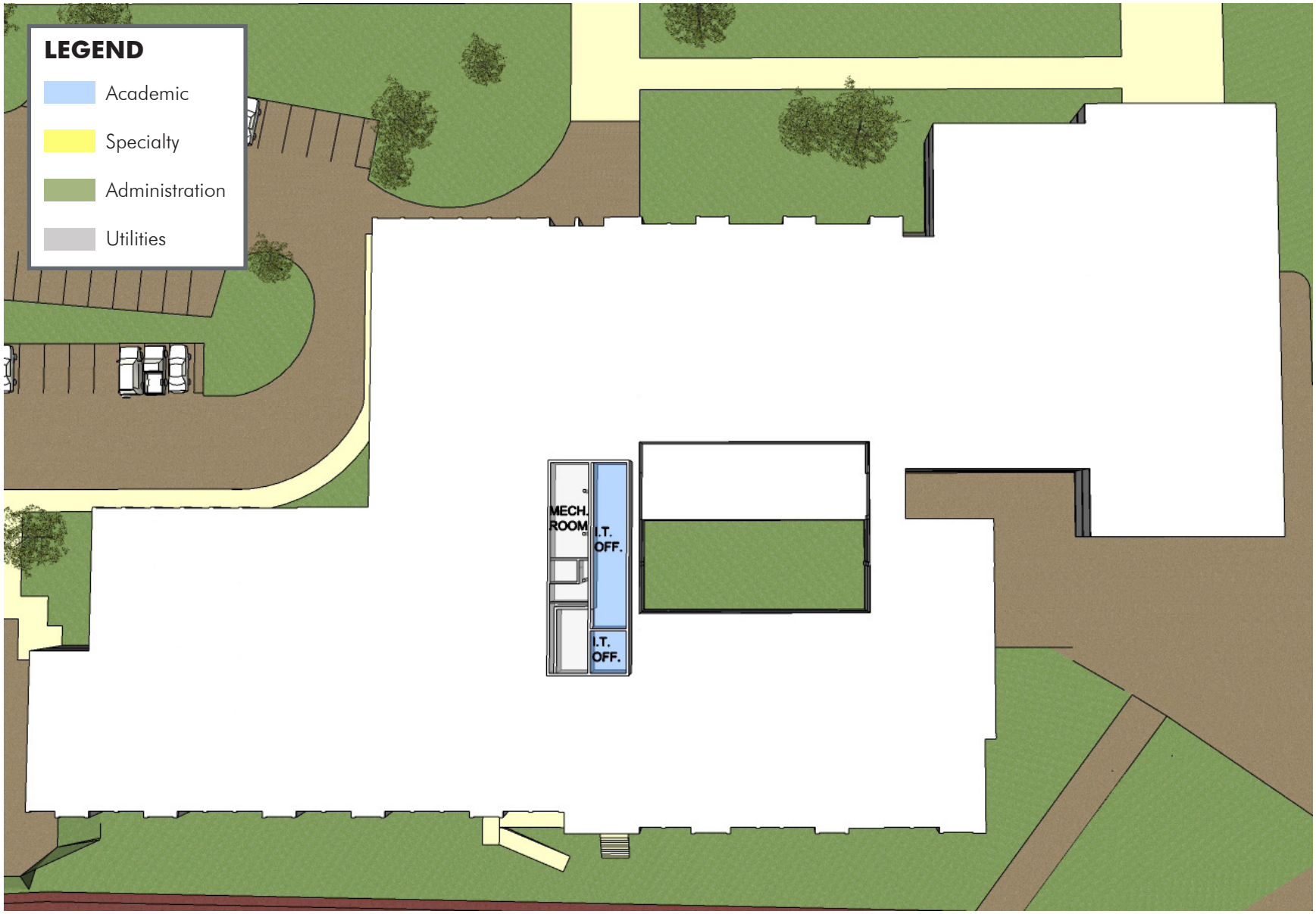
MURRAY AVENUE M.S.: EXISTING BASEMENT FLOOR PLAN



MURRAY AVENUE M.S.: EXISTING FIRST FLOOR PLAN

MURRAY AVENUE M.S.: EXISTING SECOND FLOOR PLAN

MURRAY AVENUE M.S.: EXISTING THIRD FLOOR PLAN



HISTORY

Murray Avenue Middle School was built in 1892 as the Moreland Public School. An addition was constructed in 1916 and the gymnasium in 1940. Subsequent additions were built between 1960 and 1970. Many renovations have occurred since 1970, with the recent one in 2018. The building also houses the District Administration Offices for the school district.

Concrete plaques for original building

BUILDING STATISTICS

Size of Building: 139,900 sq. ft. (four-story building)

Size of Site:17 acres

Grades

The school currently educates students from grades 6 through 8. January 2019 total enrollment was 612 students (221 in 6th grade, 194 in 7th grade, and 197 in 8th grade).

Main entrance to the school

SITE

Vehicular Circulation & Parking

There are multiple parking lots around the building. Visitor parking is located to the right of the school building, near the front entrance. The adjacent parking lot behind visitor parking accommodates staff vehicles. Additional staff parking is located on the opposite side of the building next to the gymnasium.

The district has 18 buses and one van. Buses pick up students at the high school and drop them off at home. This sequence is then repeated for the middle and elementary schools. The transportation of students to school works in a similar way. This timing sequence allows for a clear separation of age groups, but it can cause increased wait and/or travel time for middle school students if delays occur on the high school route. Buses queue up two at a time by the front entrance in the visitor parking area. Parents also drop off and pick up students at the same location, and this causes congestion. Due to traffic, two buses usually are waiting in the entrance driveway to the school, to the left of First Baptist Church.


Aerial view of site

Issues to consider:

Consider separate parent and bus pick up/drop off loops.


Sidewalk looking down Murray Avenue


View of the stadium and baseball field


Exterior of original gymnasium


Exterior windows

Sidewalks and Paving

A sidewalk along Murray Avenue and one along the entrance driveway to the gymnasium provide pedestrian access to the site. A bridge connects the Murray Avenue sidewalk to the upper entrance of the building. There also is a sidewalk along the pick-up/drop-off lane. Finally, sidewalks from the rear of the building connect the school to the stadium. All sidewalks are in good condition, except for the deteriorating exterior stairs that provide access to the stadium.

The entrance driveway off Murray Avenue and the visitor parking lot are in fair condition, but they will be due soon for resurfacing. The staff parking lot behind the visitor parking lot, the staff parking lot by the gymnasium, and the entrance driveway off Red Lion Road are in good condition.

Issues to consider:

Resurface the entrance driveway off Murray Avenue and visitor parking lot.

Replace stairs from the school to the stadium.

Play Areas

The main stadium for the district is located at the middle school. It consists of one set of bleachers, a grass football field, and a 6-lane running track. There are also two baseball / softball fields and grass areas for practice. A playground also is located on site, but it is used by the community and not the district. The practice fields, bleachers, and playground are all located towards the bottom of the sloped site, which holds moisture.

Issues to consider:

Replace grass field at stadium with a turf field for more opportunities for use by all district students.

BUILDING EXTERIOR

Façade

The façade of the building is comprised of a masonry brick veneer with concrete accents at the floor line and columns at the new sections of building. There is stone veneer along the first floor of the exterior of the original gymnasium.

Portion of exterior classroom window

Noticeable signs of water infiltration are apparent at flashings, mortar joints, and caulk joints around the building. The district reported that leaks also are occurring between the third and fourth floors, with water damage seen on the acoustical ceiling tiles.

Issues to consider:
Re-caulk control joints and window surrounds as part of regular maintenance.

Fenestration

Most of the windows throughout the building have aluminum storefront frames. Some windows in the original gymnasium are casement windows while others have been replaced with aluminum storefront frames. The windows are in good condition, though the caulking on some windows needs to be replaced.

Classroom windows have blackout shades to prevent light from entering the classroom. These windows are equipped with operable hoppers at the bottom. The operable hoppers do not have screens, but they only open slightly.

In many rooms, unit ventilators are underneath the windows. However, second floor rooms often are hot during the winter, so the windows are open. This directs cold air into the unit ventilator, which generates more heat to raise the temperature.

Issues to consider:
Replace unit ventilators below windows to help the climate control of classrooms on the second floor.

Re-caulk windows as part of regular maintenance.

Consider replacing the blackout shades with 1% or 3% open shades to allow natural light into the classrooms.


Flat roof with solar array

Roof

The main school building has a thermoplastic polyolefin (TPO) finish, and the original gymnasium has a high sloped roof with asphalt shingles. There are solar arrays on the main portion of the building. Currently, there are no reported roof leaks on the building. The asphalt roof's warranty expires in 2019, and all other roof areas are under warranty until 2022.

Issues to consider:
Replace the asphalt shingles with a system in warranty, and prepare to replace the remaining roof systems in 2022.

BUILDING INTERIOR


Corridor

Flooring

The flooring throughout the building consists of terrazzo, vinyl composite tile (VCT), carpet, and wood. Most corridors have terrazzo, which is in good condition. The remaining corridors and classrooms have VCT, which is also in good condition. Carpet in the library, offices, and district offices is in good condition. The original gymnasium, the auxiliary gymnasium, and the fitness lab have wood floors that are old but in good condition.

Walls

The partition walls in the school are comprised of CMU block with gypsum or plaster above the lockers. The walls are in good condition, and the lockers are in fair condition.

Ceilings

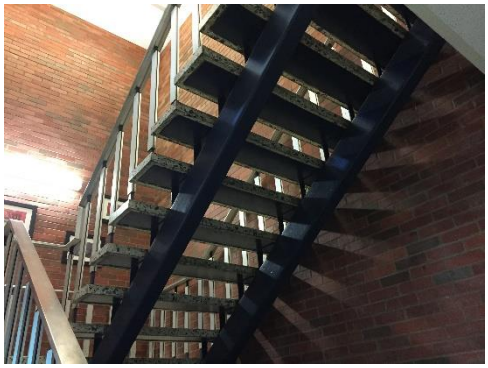
Ceilings through most of the corridors and classrooms are comprised of acoustical ceiling tiles. Most of the lighting in these spaces is recessed 2x4 fluorescent fixtures. The acoustical ceiling tiles are in fair condition overall but show signs of aging. In some locations, such as the locker rooms, the tiles are damaged and in need of replacement.

Issues to consider:
Replace damaged ceiling tiles.

View of kitchen

Not compliant classroom sink

Not compliant stair handrail / guard



Open risers in main stair

Food Service

The school serves about 200 students per lunch by two lines, with the point of sale inside the serving line. The current 6th grade has 221 students, and these additional students create longer lines. There is a desire to create an additional line to reduce wait times.

The kitchen equipment was installed at various points. Some of the equipment has been replaced in the last five years, while others were replaced in the last 10 to 15 years. There also is some equipment that is original to the building and needs to be replaced. There are ongoing repairs to some of the equipment.

Issues to consider:

Replace the original kitchen equipment.

Reconfigure the kitchen and serving areas to accommodate a third serving line.

Code Compliance

Most plumbing fixtures in in the building are not ADA-compliant. Many of the toilet rooms do not provide a handicap toilet stall. Water fountains and sinks in the classrooms are not ADA-compliant, and many of the water fountains project into the corridor.

All stair railings do not meet code requirements. They are not high enough at landings or between stringers. Also, the monumental stair by the front entrance has open risers, which is not code-compliant.

The elevator provides access to the four stories. However, the main system is original to the building and may not be compliant. The elevator has been renovated in parts though.

The building does not have a building-wide fire suppression system (sprinklers). If the district chooses to pursue renovations of this building, the building-wide fire suppression system will need to be installed.

Non-compliant door clearances

Finally, a critical compliance issue are door clearances at many locations. To be code-compliant, each door needs at least 18" on the pull side of a door and at least 12" on the push side of a door. Many of the bathrooms and some classroom doors do not meet this requirement.

Issues to consider:
All instructional areas should be made fully ADA-accessible.

All plumbing fixtures in toilet rooms, locker rooms, and instructional spaces should be replaced with fixtures compliant with current ADA requirements.

Stair railings should be replaced to meet modern building safety codes.

Any future renovations should consider including a building-wide fire suppression system.

All doors without push/pull clearances should be revised to meet modern building safety codes.

Bullet-resistant glass box security office

Security
The school has many security features. Visitors enter a large secure vestibule. A security officer is in a large, bullet-resistant glass box within the secure vestibule. The security officer checks the identification of visitors, provides them with a badge to wear for the duration of their visit, and escorts them through the double doors of the vestibule into the main hallway of the building. The administration area is across the hallway and not connected to the main vestibule. The administration cannot see activity in the corridor.

There are several security cameras at key locations throughout the building and on the exterior. The security system was upgraded in 2018. The security office, main office, and district offices have large screen monitors that display live views of the security feed. Card access at each entrance to the building restricts admission to approved individuals.

Classroom security meets modern standards in some aspects and is inconsistent in others. The door hardware into the

Classroom door

Classroom door

classrooms is sufficient for modern security standards. However, most doors have large windows in them. Some have wide sidelights and a pull-down shade, while others have a bank of windows around the corner and are open to the corridor.

Issues to consider:
Address connection between secure vestibule and main office.

Doors at classroom entrances should be revised to achieve more consistency for security.

HVAC

System Summary

The building is heated, cooled, and ventilated by a combination air and water (hydronic) system. Two boilers generate hot water to provide heat, and one chiller generates chilled water for building cooling. In addition to the chiller, there are areas in the building that are cooled with direct expansion (DX) cooling units. Ventilation is provided in all occupied areas of the building. There are several roof mounted exhaust fans serving toilet rooms and other areas requiring exhaust systems.

Central Components

Boilers

Two heating boilers are located in a mechanical room on the lower level of the building. The boilers are of a flex-tube design, and each boiler can burn natural gas or fuel oil. The boilers were installed during the 2002 renovations of the building.

Main Chiller

A water-cooled chiller is located in the main boiler room. The chiller rejects heat from the condenser to a roof-mounted cooling tower. The chiller was installed during the 2002 renovations of the building. Regular maintenance, service, and good water treatment can greatly affect the useful life of this type of chiller.

Cooling Tower

A centrifugal type cooling tower located on the roof provides heat rejection from the main chiller. The tower was installed during the 2002 renovations of the building. The associated

indoor remote cooling tower sump was installed at the same time as the cooling tower. The remote sump is currently operational but has deteriorated significantly. Regular maintenance, service, and good water treatment can greatly affect the useful life of a cooling tower.

Summer Chiller

A nominal 40-ton air-cooled chiller is used to provide chilled water to the administration, library and third floor IT areas. The chiller is located on the roof, and the associated remote evaporator is located on the third floor. The refrigerant used in this machine is R-22, which has been phased out of production. The chiller was installed during the 2002 renovations.

Circulating Pumps and Systems

There are several base-mounted and in-line pumps located in the lower level mechanical room. The heating system water is circulated by one of two redundant base-mounted pumps. The chilled water system is circulated by one of two redundant base-mounted pumps. Condenser water is circulated from the chiller to the cooling tower by one of two redundant base-mounted pumps. The distribution system is a four-pipe system, which can provide chilled water and heating water to terminal units connected to the distribution system. The pumps, piping, and other portions of the circulating system were installed during the 2002 renovations of the building.

Oil Storage

There is an existing underground oil storage tank located outside on the school grounds and adjacent to the boiler room. The tank is a 10,000-gallon double wall with tank monitoring. The underground tank and monitoring system were installed during the 2002 renovations of the building.

Building Systems

Classrooms

Classrooms are heated, cooled, and ventilated by unit ventilators located on the exterior wall of each classroom. The units were installed during the 2002 renovations and appear to be in good condition.

Computer Labs
These spaces are heated, cooled, and ventilated by unit ventilators located on the exterior wall of each classroom. The units were installed during the 2002 renovations and appear to be in good condition. Additional DX split system units provide cooling when chilled water is not available. These units were not replaced during the 2002 renovations.

Administration
The administration area is heated, cooled, and ventilated by a rooftop air handling unit that distributes air to a variable air volume system. The air handling unit contains a chilled water coil, heating coil, and filters. The system was installed during construction the 2002 renovations and appears to be in good condition.

Library / Office Area
The library and adjacent office areas are heated, cooled, and ventilated by a rooftop air handling unit that distributes air to a variable air volume system. The air handling unit contains a chilled water coil, heating coil, and filters. The system was installed during the 2002 renovations and appears to be in good condition.

Kitchen and Serving Area
The kitchen is heated by a series of hydronic unit heaters located within the occupied space. Ventilation is provided by roof-mounted exhaust fans. Makeup air is transferred from the adjacent cafeteria. None of the existing unit heaters and exhaust fans were replaced during the 2002 renovation and have therefore passed their expected useful lifecycle.

Cafeteria
The cafeteria is heated, cooled, and ventilated by a single zone, rooftop air handling unit. The unit contains a chilled water-cooling coil, re-heat coil, filters, and a supply fan. A duct system distributes air to the space. The system was installed during the 2002 renovations.

Gymnasium

The gym is heated, cooled, and ventilated by an air handling unit located in an adjacent mechanical loft. The air handling unit contains a hot water heating coil, DX cooling coil, and supply fan. There is a duct distribution system to supply air to the space and an associated air-cooled condensing unit located outdoors that serves the cooling coil. The system was installed during a 2017 renovation and is in good condition.

Multi-Purpose Room

The multi-purpose room is heated and ventilated by a rooftop air handling unit. The unit contains a heating coil and a supply fan. A duct system distributes air throughout the space. The system was installed during the 2002 renovations and appears to be in good condition.

Locker Rooms

The locker rooms are heated and ventilated by rooftop air handling units. The units contain heating coils and supply fans. A duct system distributes air throughout the locker room areas. There are exhausts system to provide the code-required exhaust in certain areas of each locker room. The system was installed during the 2002 renovations and appears to be in good condition.

Issues to consider:

Consider adding demand control ventilation to systems with a large occupant diversity by monitoring the indoor carbon dioxide (CO^2) level and limiting the amount of ventilation air introduced into the room when there are fewer than the designed number of occupants in the space.

Consider adding occupancy sensors to the classrooms served by unit ventilators. The sensor could send a signal to the unit to close the outside air damper and cycle the supply fan to meet the space load instead of running continuously.

Consider adding cooling to the multi-purpose room. This cooling system could be served by the existing chilled water system or a separate air-cooled DX condensing unit.

Although the 40-ton air-cooled chiller is currently fully operational, it should be considered for replacement in the next 5 to 10 years. Unlike the water-cooled unit, this chiller operates throughout the entire cooling season and into milder weather seasons. This chiller is the only source of cooling for the critical IT area. The R-22 refrigerant that it utilizes has been phased out of product.

The roof-mounted cooling tower should be closely monitored over the next 5 to 10 years. At the time of our visit, we did not see any signs of deterioration of the basin or drive package. A factory-qualified technician should inspect the unit annually from this point out. A problem that is spotted early can often be repaired simply. If let go, it can lead to a major overhaul or replacement.

The remote sump associated with the cooling tower is in poor condition. Consider replacing this unit within the next 5 to 10 years.

The kitchen heating and ventilation system were not replaced during any of the renovations in the last 10 years. The exhaust fans are most likely past their expected service life. Many changes have been made in the technology and code requirements of kitchen ventilation

PLUMBING

Domestic Water Service

The building is connected to a municipal domestic water system. The service enters the building in the lower level mechanical room. The existing water pressure is adequate to serve the building.

Domestic Hot Water

There is one storage-type dual-fuel domestic water heater, and it has two burner modules. The first module is natural gas-fired. The second is a water-to-water heat exchanger that is served by the main heating boilers. This system provides the domestic hot water for the building. The heated water is distributed throughout the building by a pipe system with a circulating pump for a recirculation system. The system was installed in 2017 and is in good condition.

Sanitary System
All sanitary waste is collected and routed to a connection point at the exterior of the building.

Miscellaneous
The plumbing fixtures in the school are part of the 2002 renovations and appear to be in good condition. Lavatories are equipped with manual faucets. The flush valves on the water closets and urinals are also manually operated. There is no fire protection system currently in the building.

Issues to consider:
Consideration should be given to install a wet-type fire protection sprinkler system. The sprinkler system would provide fire protection coverage for the entire building. In order to install this system, though, a new dedicated water main will need to be installed from the municipal main to the building. If the existing pressure is not adequate, a fire pump will need to be added.

ELECTRICAL

System Summary:
The building is fed with a primary 13.2kV electric service from the utility. The electric service enters the unit substation and is transformed to 120/208V via 750kVA dry-type transformer. The low voltage section is provided with a main breaker and distribution breakers to provide 120/208V throughout the building for HVAC, lighting, and all plug loads. The gear is manufactured by Siemens and was installed during the 2002 renovations. The main unit substation is routinely inspected, cleaned, and in satisfactory condition.

120/208V electric panels are located throughout the building. Most of the electric panels were manufactured by Siemens and are the S1 style panelboard. Most panels were installed during the 2002 renovations and are in good condition. Most of the wiring was installed during the 2002 renovations or later and is very likely in good condition. Due to the 2002 renovation, it is unlikely there is wiring that is older, but there is no guarantee. As long as the panelboards remain in good operating condition, any older wiring should be safe.

Transient Voltage Surge Suppression (TVSS) is present at the service entrance using a Current Technology TG150 series unit. TVSS units are also installed at select panels feeding computer loads.

A Katolight 85kW natural gas-fired emergency generator is located inside the boiler room. Output voltage of the emergency generator is 120/208V, 3-phase, 4-wire. There is a single Katolight automatic transfer switch is rated at 400A, 120/208V, 3-phase, 4-wire. The generator was installed during the 2002 renovations. The generator is not properly ducted to the exterior of the building, and this creates a very hot boiler room when in operation.

Exit signs have LED lamps and are in good condition and appear to be code compliant. Emergency lighting is typically handled via 24-hour connected normal emergency fixtures with emergency only at the exterior exits and in selected spaces. Quantity and locations of emergency lighting appear to satisfy applicable codes.

Lighting is provided mostly by four-foot fluorescent T-8 lamps with electronic-switched ballasts. LED fixtures are used in the original gymnasium and in the district administration area. Lighting in the corridors is in fair to poor condition, while the lighting in the stair towers is in poor condition. All other lighting that was not replaced during the 2002 renovations is in satisfactory condition.

The main parking lot is illuminated by high-pressure sodium shoebox-type pole-mounted type light fixtures in the west end and LED ones on the east end. Most of the exterior wall-mounted lighting was replaced with LED fixtures in 2017. The front walk area is lit with lower shoebox-type pole-mounted light fixtures. All site lighting meets IESNA requirements for full-cutoff, dark sky requirements. The exterior lighting is in satisfactory to good condition.

Classrooms are controlled using two switches and an occupancy sensor override in the event the instructor forgets to turn off the lights. Offices are controlled using a single switch or dimmer. Corridors are controlled utilizing keyed switches. The main gymnasium is controlled via local digital control system.

The multi-purpose room has switches for the fluorescent fixtures and a full dimming system for the incandescent lighting. Exterior lighting is controlled using contactors and timeclocks.

The fire alarm system head end was recently upgraded to a Simplex 4100es series system, which is the current addressable type fire alarm system from Simplex. Most of the annunciation and initiation system devices were installed during the 2002 renovations. There are smoke detectors in the corridors and storage spaces and other code required areas. ADA-compliant audible and visual appliances have been installed throughout the building, including in the corridors, large instructional spaces, classrooms, restrooms, and other code-required areas. ADA-compliant pull stations are located at the exits and stairwells. Based on locations of devices, it appears that the system meets current fire alarm codes and satisfies ADA requirements, and the system in general is in good condition. However, as components fail, they will need to be replaced with current devices, which may require additional wiring from the head end.

There is an existing area of rescue assistance system installed in the building. There are no reported issues.

The paging / intercom / master clock system is a Simplex system installed during the 2002 renovations. The control console is located at the main office and has an AM/FM radio. Classrooms, offices, and corridors have ceiling-mounted speakers. The system is in fair condition. While the system appears to be functional, clocks are failing, the bell schedule is tough to manage, and the integration with the phone system needs to be repaired.

There is a newer Grandstream IP based district-wide phone system, which is in good condition.

The remote sound systems in the multi-purpose room, cafeteria, and original gymnasium are functional. However, both systems need replacement. The district reports that the cafeteria and multi-purpose system have priority for replacement.

A coaxial cable distribution system exists for the transmission of television signals to the classrooms and other areas of the building.

Most of the computer network was replaced in 2017 and consists of plenum rated category 6 UTP to the desktop and 6A to wireless access points. Fiber optic cable (10 gig 50 micron multi-mode) connects the IDFs to the MDF. There are Ethernet switches in the data racks. The system is in good condition.

The building currently has an access control system, existing security system, and IP-based CCTV system with DVR's. The building has an AiPhone intercom system at the front door for both the school and district administration. There is additional electrified hardware into the district office and into the corridors from the vestibule that is controlled by the security greeter to provide additional security measures. While all systems are in satisfactory to good condition, it was reported that the CCTV system does not provide adequate coverage in the corridors.

Issues to consider:
During the next major renovation, the lighting should be replaced with LED lighting to help save energy and prolonged time between fixture maintenance.

Consider replacing the lighting in the corridors and stair towers since they are in fair to poor condition and poor condition, respectively.

To provide some savings with the lighting control, a new digital lighting control system should be added. Due to recent code changes, if added, this system would be required to be a daylight harvesting system, which will help lengthen the life of LED fixtures and save energy.

The paging / intercom system head end should be replaced, and the entirety of the clock system be replaced with a wirelessly correcting system.

The intercom system in the cafeteria/gymnasium should be replaced. The original gymnasium can wait but should also be scheduled for replacement in the future.

ENERGY STAR® Statement of Energy Performance

62

ENERGY STAR® Score[1]

Murray Avenue School

Primary Property Type: K-12 School
Gross Floor Area (ft²): 139,900
Built: 1970

For Year Ending: February 28, 2018
Date Generated: May 01, 2019

1. The ENERGY STAR score is a 1-100 assessment of a building's energy efficiency as compared with similar buildings nationwide, adjusting for climate and business activity.

Property & Contact Information

Property Address	Property Owner	Primary Contact
Murray Avenue School 2551 Murray Ave Huntingdon Valley, Pennsylvania 19006	_____ , (____)____-_____	____ _____ , (____)____-_____ _____

Property ID: 2516049

Energy Consumption and Energy Use Intensity (EUI)

Site EUI
53.3 kBtu/ft²

Source EUI
94.5 kBtu/ft²

Annual Energy by Fuel

Electric - Grid (kBtu)	2,626,953 (35%)
Fuel Oil (No. 2) (kBtu)	0 (0%)
Electric - Solar (kBtu)	550,888 (7%)
Natural Gas (kBtu)	4,275,000 (57%)

National Median Comparison

National Median Site EUI (kBtu/ft²)	60.4
National Median Source EUI (kBtu/ft²)	107.2
% Diff from National Median Source EUI	-12%

Annual Emissions

Greenhouse Gas Emissions (Metric Tons CO2e/year)	540

Signature & Stamp of Verifying Professional

I _____ (Name) verify that the above information is true and correct to the best of my knowledge.

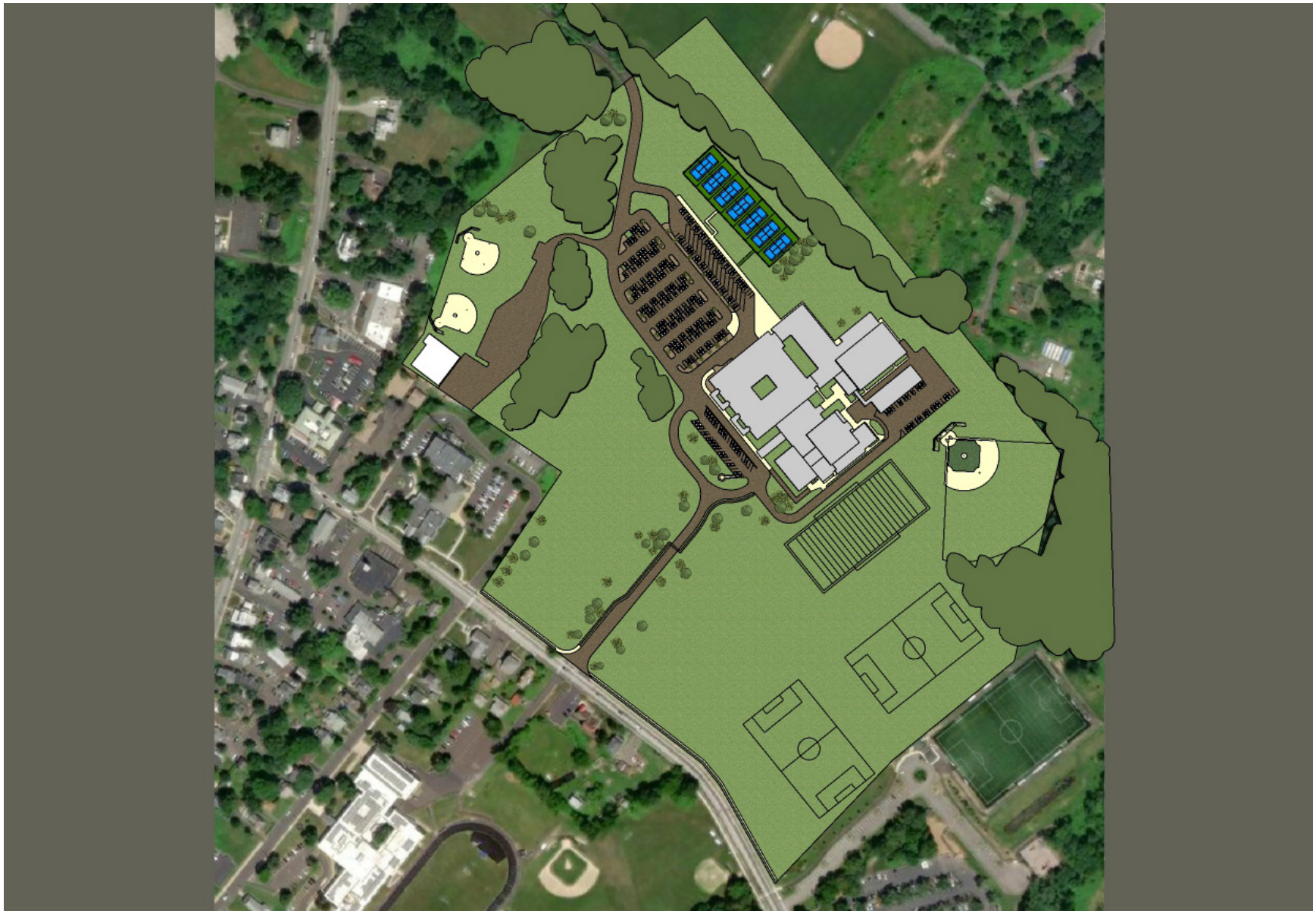
Signature: _____Date: _____

Licensed Professional

____ _____
,
(____)____-_____
_____

Professional Engineer Stamp (if applicable)

LOWER MORELAND H.S.: EXISTING SITE PLAN



LOWER MORELAND H.S.: EXISTING FIRST FLOOR PLAN

LOWER MORELAND H.S.: EXISTING SECOND FLOOR PLAN

HISTORY

The main two-story building of the high school was built in 1967. A small one-story classroom wing addition was constructed in 1969, and the auditorium and lobby were built in 1970. In 2003, the district constructed the pool, gymnasium, wrestling room, and fitness center. In 2013, 6 modular classrooms were added to the building due to increasing student enrollment.

Main entrance to high school

BUILDING STATISTICS

Size of Building: 172,160 sq. ft. (two-story building)

Size of Site: 58 acres

Grades

The school currently educates students from grades 9 through 12. January 2019 total enrollment was 748 students (189 in 9^{h} grade, 195 in 10th grade, 177 in 11th grade and 187 in 12^{h} grade).

School building and parking/bus parking

SITE

Vehicular Circulation & Parking

There are multiple parking lots around the building. Visitor parking and parent drop off/pick up is in the lot at the front of the building. Staff parking is accommodated in the lot to the right rear of the building and in front left lot. Students also park in the front left lot. Staff park in rows closer to the building while students park in the rows behind the staff-designated ones. Additional parking is desired, as there is a waiting list for student parking. Bus parking spaces are located in the rear left lot by the tennis courts; buses queue here during drop off and pick up.

The district has 18 buses and one van. Buses pick up students at the high school and drop them off at home. This sequence is then repeated for the middle and elementary schools. The transportation of students to school works in a similar way. This timing sequence allows for a clear separation of age groups, but it can cause increased wait and/or travel time for middle and elementary school students if delays occur on the high school route.


Covered sidewalk between band and auditorium

Sidewalks and Paving

Sidewalks on site are in good condition. Pedestrian access is provided from Red Lion Road via an asphalt path and sidewalk along the entrance driveway. Sidewalk is provided along the front of the building and the parent drop off/pick up lane, as well as along the bus drop off/pick up parking lot. A covered sidewalk connects the auditorium lobby to the band room.

All paving on site has been milled or resurfaced within the last 5-8 years and is in good condition. Lion paw prints are painted on the entrance driveway from Red Lion Road to guide visitors to the front entrance and visitor parking. An asphalt path leads from the school to the baseball field.

Play Areas

There are 7 tennis courts, two softball fields, one baseball field, and several practice fields on site at the high school. The softball, baseball, and practice fields are older and in need of overall upgrades. A higher fence also is needed at the softball fields next to the bus garage. The main football field and stadium is located at Murray Avenue Middle School; please see that existing conditions report for more information about the football field and stadium.

Issues to consider:

Upgrade softball, baseball, and practice fields.

Install a higher fence at the softball fields.


Portion of concrete structure at exterior

BUILDING EXTERIOR

Façade

The façade of the building is comprised of a masonry brick veneer with concrete accents at the floor line of the two-story section of the building and at columns. A lack of flashing between brick and concrete at certain areas allows for water infiltration and mortar disintegration. Brick is efflorescing in areas at the front of the building. Some exterior walls leak during storms with heavy winds.

Issues to consider:

Repoint brick in areas of heavy efflorescence and mortar disintegration.

Effloresing on brick veneer

Exterior at classroom window

Leaks from roof on ceiling tile in corridor

Fenestration

All windows throughout the building have aluminum storefront frames. They are in good condition, though the caulking on some windows needs to be replaced.

Classroom windows have blackout shades to prevent light from entering the classroom. These windows are equipped with operable hoppers at the bottom. The operable hoppers do not have screens, but they only open slightly.

In many rooms, unit ventilators are underneath the windows. However, second floor rooms often are hot during the winter, so the windows are open. This directs cold air into the unit ventilator, which generates more heat to raise the temperature.

Issues to consider:

Replace unit ventilators below windows to help the climate control of classrooms on the second floor.

Re-caulk control joints and window surrounds as part of regular maintenance.

Consider replacing the blackout shades with 1% or 3% open shades to allow natural light into the classrooms.

Roof

The school has an EPDM roof installed at various dates. The two-story portion, main lobby, band room, and pool roofs were replaced between 2002 and 2004. The remainder of the building's roofs was installed between 2010 and 2011. The 2002 and 2004 roofs are nearing the end of the warranty. Frequent leaks occur where the two-story building meets the one-story building and over the cafeteria and gymnasium. There are solar arrays on the two-story portion of the building.

Issues to consider:

Replace the roof sections installed between 2002 and 2004 since their warranties are expiring soon.

Repair roofs and flashing where leaks are frequent between the two-story and one-story sections as well as over the cafeteria and gymnasium.


Corridor on second floor

BUILDING INTERIOR

Flooring

The flooring throughout the building consists of terrazzo, vinyl composite tile (VCT), carpet, and wood. All corridors have terrazzo, while classroom floors have VCT. Carpet is in the library and main offices. The flooring in these areas is in good condition. The gymnasium has an old wood floor that can no longer be refinished due to its age.

Issues to consider:
Consider replacing gym floor.

Walls

The partition walls in the school are comprised of CMU block with gypsum or plaster above the lockers. The walls are in good condition, and the lockers are in fair condition.

Ceilings

Ceilings through most of the corridors and classrooms are comprised of acoustical ceiling tiles. Most of the lighting in these spaces is recessed 2x4 fluorescent fixtures. The acoustical ceiling tiles are in fair condition overall but show signs of aging. There are locations throughout the building where the tiles are damaged and in need of replacement.

Issues to consider:
Replace damaged ceiling tiles.


View of serving line from cafeteria

Food Service

The school serves four lunches, with 175 to 225 students per lunch. There are currently two serving lines with the point of sale inside the line. The entrances to the serving lines are at opposite ends of the cafeteria, which spreads out congestion. There is a desire to add different food delivery options to the serving area and to revise the format to a scatter serve.

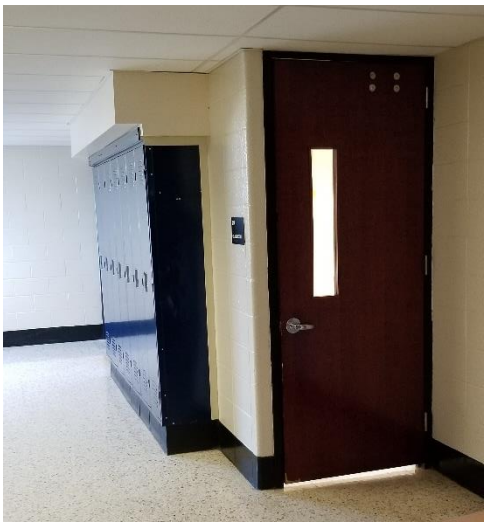

View to cafeteria expansion

The cafeteria was recently expanded. Two classrooms adjacent to the cafeteria were renovated to create more seating. Unfortunately, the cafeteria and seating annex combined is still too small a space to accommodate the number of students it serves. Seating and flexibility are limited.

The kitchen equipment was replaced in 2004. There are ongoing repairs to some of the equipment.

Issues to consider:
Consider reconfiguring serving for scatter serve and replacing the kitchen equipment as needed to accommodate this new serving style.

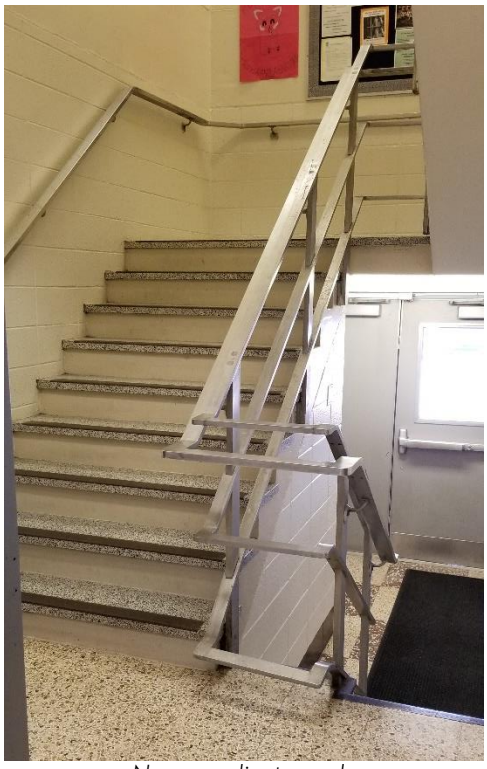
Consider purchasing different seating types in cafeteria or allowing students to take lunch elsewhere in the building.


Non-compliant door clearances

<u>Code Compliance</u>
All stair railings do not meet code requirements. They are not high enough at landings or between stringers.

The building does not have a building-wide fire suppression system (sprinklers). If the district chooses to pursue renovations of this building, the building-wide fire suppression system will need to be installed.

Finally, a critical compliance issue are door clearances at many locations. To be code-compliant, each door needs at least 18" on the pull side of a door and at least 12" on the push side of a door. Some classroom doors do not meet this requirement.

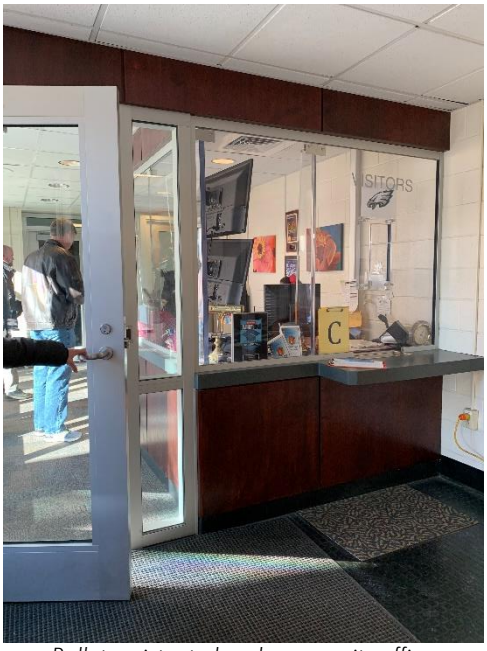

Non-compliant guards

Issues to consider:
Stair railings should be replaced to meet modern building safety codes.

Any future renovations should consider including a building-wide fire suppression system.

All doors without push/pull clearances should be revised to meet modern building safety codes.

<u>Security</u>
The school has many security features. Visitors enter a large secure vestibule. A security officer is in a large, bullet-resistant glass box within the secure vestibule. The security officer checks the identification of visitors, provides them with a badge to wear for the duration of their visit, and escorts them through the double doors of the vestibule into another vestibule. This vestibule provides the visitors access into the main office.



Bullet-resistant glass box security office

There are several security cameras at key locations throughout the building and on the exterior. Some exterior camera views are blocked by trees. The security office and main office have large screen monitors that display live views of the security feed. Card access at four entrances to the building restricts admission to approved individuals; the other exterior doors are manually locked by key.

Classroom security meets modern standards. The door hardware into the classrooms and the interior glazing is sufficient for modern security standards.

Issues to consider:
Clear blocked views of the exterior cameras.

HVAC

System Summary

The building is heated and cooled by a four-pipe hydronic system. Most of the school is heated, cooled, and ventilated. Stairs, corridors and similar areas are provided with heating using cabinet heaters and fin-tube terminal units. There are several exhaust systems serving toilet areas and other exhaust systems in the kitchen. Most of the HVAC equipment was installed during an extensive renovation in 2003.

System Components

Boilers

There are three flexible tube heating boilers located in a mechanical room. The boilers are dual fuel-fired, capable of operating on natural gas or number 2 fuel oil and provide heating for the building. One of the three boilers is much smaller than the other two; the smaller boiler is intended to be used in the summer time to generate hot water for reheat and domestic hot water. The boilers were installed in 2003 and are in good condition. There are three base-mounted circulating pumps used to distribute the heated water to all areas of the building. These pumps all have variable frequency drives.

Aboveground Oil Storage Tank

There is an existing double wall 6,000-gallon aboveground oil storage tank located outside in the area adjacent to the existing boiler room. The tank and associated monitoring system were installed during the 2003 renovations. There are no signs of previous leaks or repairs, and the owner reported no previous or current issues.

Chillers

The chilled water plant consists of two 150-ton nominal and 72-ton nominal air-cooled chillers. All machines are located on the roof and have remote evaporators located in the main mechanical room. All units have been in use for approximately 16 years and appear to be in satisfactory condition. However, the units utilize R-22 refrigerant. As of January 2020, R-22 refrigerant is no longer permitted to be produced or imported. The availability of this refrigerant in the future is unknown but will be limited.

The chilled water is distributed throughout the building with three base-mounted chilled water pumps, each of which have variable frequency drives.

Controls

The controls system is a digital Johnson Controls Metasys system with electronic actuators. Most of the system was installed during the 2003 renovations. However, the unit controllers are no longer manufactured or supported by the company. Repairing these controllers is becoming increasingly difficult.

Classrooms

Classrooms are heated, cooled, and ventilated by either unit ventilators located on the exterior wall of the classroom or packaged air handling units located above the ceiling. The units were installed during the 2003 renovations and appear to be in good condition.

Cafeteria

The cafeteria is heated, cooled, and ventilated by a single zone, indoor air handling unit. The unit contains a chilled water-cooling coil, re-heat coil, filters, and a supply fan. A duct system distributes air into the space. The system was installed during the 2003 renovations.

Kitchen
The kitchen is ventilated and heated by packaged roof-mounted makeup air and exhaust units. The packaged exhaust and make up air systems were installed during the 2003 renovations.

Library
The library is heated, cooled, and ventilated by an indoor air handling unit. The air handling unit contains a cooling coil, a heating coil, and filters. The system was installed during the 2003 renovations.

Band / Choral Area
The band room, choral room, and associated rooms are heated, cooled, and ventilated by an indoor air handling unit located in an adjacent mechanical room. The air handling unit contains a chilled water-cooling coil for space cooling and a heating coil to provide heat. Each room has a variable air terminal unit with reheat coil to provide individual room temperature control. The system was installed during the 2003 renovations.

Audion
The audion is heated, cooled, and ventilated by an indoor air handling unit. The air handling unit contains a cooling coil, a heating coil, and filters. The system was installed during the 2003 renovations.

Auditorium
The auditorium is heated, cooled, and ventilated by a roof-mounted energy recovery unit. The unit was installed during the 2003 renovations, and it appears the duct distribution system was re-used at that time. As it is expected that the ductwork was cleaned at the time, there are no issues with re-using ductwork.

Stage
The stage is heated, cooled, and ventilated by an indoor air handling unit. The air handling unit contains a cooling coil, a heating coil, and filters. The system was installed during the 2003 renovations.

Administration and Office Areas
The administration and office areas are heated, cooled, and ventilated by indoor air handling units that distribute air to a variable air volume system. The air handling unit contains a chilled water coil, heating coil, and filters. The system was installed during the 2003 renovations and appears to be in good condition.

Gymnasium
The gymnasium is heated, cooled and ventilated by an indoor air handling unit containing a chilled water coil, heating coil, and filters. There is a duct distribution to system to supply air to the space. Each system was installed during the 2003 renovations.

Fitness Center
This space is heated, cooled, and ventilated by a roof-mounted air handling unit. The air handling unit contains a cooling coil, heating coil, and filters. There is a duct distribution to system to supply air to the space. The system was installed during the 2003 renovations.

Wrestling
This space is heated, cooled, and ventilated by a roof-mounted air handling unit. The air handling unit contains a cooling coil, heating coil, and filters. There is a duct distribution to system to supply air to the space. The system was installed during the 2003 renovations.

Locker Rooms
The locker rooms are heated, cooled, and ventilated by an indoor energy recovery unit. The unit contains an energy recovery wheel, supply fan, exhaust fan, cooling coil, and heating coil. A duct system distributes air throughout the locker room areas. There is an exhaust system to provide the code required exhaust in certain areas of each locker room. The locker rooms systems were installed during the 2003 renovations.

Natatorium

The natatorium is heated, cooled, ventilated, and dehumidified by an indoor pool dehumidification unit. The unit has a DX cooling coil with an associated air-cooled condensing unit located on the adjacent roof. The unit also has a hot water reheat coil, supply fan, exhaust fan, and energy recovery wheel. The district reports that the humidity increases in the natatorium when there is a lot of activity in the pool area, which may indicate a problem with the ventilation system. The district stated that this problem was being addressed by the maintenance department; please see the Natatorium section at the end of this report for further recommendations.

Lobby

This space is heated, cooled, and ventilated by a roof-mounted air handling unit. The air handling unit contains a cooling coil, heating coil, and filters. There is a duct distribution to system to supply air to the space. The system was installed during the 2003 renovations.

TV Studio

This space is heated, cooled, and ventilated by a roof-mounted air handling unit. The air handling unit contains a cooling coil, heating coil, and filters. There is a duct distribution to system to supply air to the space. The system was installed during the 2010 renovations.

Issues to consider:

Although the three existing chillers are currently meeting the needs of the building, R-22 refrigerant will become more difficult and expensive to purchase. For this reason, consider replacing these chillers in the future. When replacement is planned, consideration will need to be given to the freeze protection of the new chillers. The use of remote evaporators in new chillers is limited because of the operational differences of the new refrigerants. Remote evaporators will most likely not be a feasible option.

The existing Johnson Controls Metasys system unit controllers are no longer manufacturered or supported by the company. Repairing these controllers is becoming increasingly difficult. Consider replacing all unit controllers to avoid failures of the existing obsolete controllers.

Although the smaller summer boiler is in good working condition, consideration should be given to replace it with a more efficient gas-fired condensing boiler. Programming could be added to make this smaller boiler the primary boiler for all times that it can meet the building's heating needs.
Consider adding demand control ventilation to systems with a large occupant diversity by monitoring the indoor carbon dioxide (CO^2) level and limiting the amount of ventilation air introduced into the room when there are fewer than the designed number of occupants in the space.

Consider adding occupancy sensors to the classrooms served by unit ventilators. The sensor could send a signal to the unit to close the outside air damper and cycle the supply fan to meet the space load instead of running continuously.

PLUMBING

System Summary

The building is connected to a municipal water system, and there appears to be adequate water pressure to serve the building. Two storage-type domestic water heaters located in the boiler room generate domestic hot water. The water heaters generate hot water through an internal heating coil utilizing hot water from the boiler plant. The majority of the existing domestic water piping mains were replaced in the 2003 renovations; some branch piping to the health suite and auditorium was replaced in 2017.

All sanitary waste is collected and routed to a municipal sanitary system. There is an existing grease trap outdoors. The grease interceptor is precast concrete and was installed during the 2003 renovations. The condition of the sanitary and storm water piping, located under slab, is unknown.

Most of the plumbing fixtures were replaced during the 2003 renovations and are in good condition.

There is no fire protection system currently in the building.

Issues to consider:
Consideration should be given to installing a wet type fire protection sprinkler system. The sprinkler system shall provide fire

protection coverage for the entire building. A new dedicated water main will need to be installed from the municipal main to the building. If the existing pressure is not adequate, a fire pump will need to be added.

ELECTRICAL

System Summary

The building is fed from a 750kVA utility transformer located outside the boiler room. The electric service enters the building at 120/208V to a 3000A Square D Company QED style switchboard installed during the 2004 renovations with a GFCI protected 3000A main breaker. Power is then distributed throughout the building at 120/208V for HVAC, lighting, and all plug loads. The entrance equipment is in satisfactory condition.

120/208V electric panels are located throughout the building. The majority of the electric panels were manufactured by the Square D Company and are the NQOD style panelboard. Most panels were installed during the 2003 renovations and are in good condition. Some panels were installed prior to the 2003 renovations, and other were part of later construction projects. Most of the wiring was installed during the 2003 renovations or later and is very likely in good condition. Due to the 2003 renovation, it is unlikely there is wiring that is older, but there is no guarantee. As long as the panelboards remain in good operating condition, any older wiring should be safe.

Transient Voltage Surge Suppression (TVSS) is present at the service entrance using a Current Technology TG250 series unit. Current Technology EGPE2 80 series TVSS units are also installed at selected panels feeding computer loads.

A Kohler 80kW natural gas-fired emergency generator is located outside the boiler room. Output voltage of the emergency generator is 120/208V, 3-phase, 4-wire. There is a single Kohler automatic transfer switch is rated at 400A, 120/208V, 3-phase, 4-wire. The generator was installed during the 2003 renovations and is in good condition. However, it is a little small.

Exit signs have LED lamps and are in good condition and appear to be code compliant. Emergency lighting is typically handled via 24-hour connected normal emergency fixtures with emergency

only at the exterior exits and in selected spaces. Quantity and locations of emergency lighting appear to satisfy applicable codes.

Lighting is provided mostly by four-foot fluorescent T-8 lamps with electronic switched ballasts. Metal halide fixtures are used in gymnasium, and LED is used in the pool area. Fixtures throughout the building appear to be in satisfactory condition.

The parking lot is illuminated with LED shoebox-type pole-mounted type light fixtures, while the drive is lit with 400W high pressure sodium ones. The building exterior is illuminated with 400W and 70W high pressure sodium wall-mounted fixtures. The site fixtures meet IESNA requirements for full-cutoff, dark sky requirements. Exterior light fixtures are in fair to good condition.

Classrooms are controlled using two switches, front rows independent of back rows, and occupancy sensor override in the event the instructor forgets to turn the lights off. Offices are controlled using a single switch. Corridors are controlled utilizing a central relay system. The gymnasium is controlled via local contactors connected to switches. The auditorium has a full dimming system for the incandescent lighting. Exterior lighting is also controlled using a central relay system.

The tennis courts to the northeast of the building and the soccer field down the southern hill of the high school are currently lit. The tennis courts are lit from two poles, approximately 25′ high. Each pole has two HID flood lights. The poles and lights themselves are in fair condition but do not meet IESNA guidelines for high school level tennis court lighting. The soccer field is lit with eight 30′ wood telephone poles with a total of 12 HID flood lights. The poles and lights are in poor condition and do not meet IESNA guidelines for high school level soccer field lighting. None of the other fields have any type of lighting.

The fire alarm system head end was recently upgraded to a Siemens XLS series system that is the current addressable type fire alarm system from Siemens. Most of the annunciation and initiation system devices were installed during the 2003 renovations; the remaining devices were installed during later construction projects. There are smoke detectors in the corridors, storage spaces, and other code required areas. ADA-compliant

audible and visual appliances are installed throughout the building, including in the corridors, large instructional spaces, classrooms, restrooms, and other code required areas. ADA-compliant pull stations are located at the exits and stairwells. Based on locations of devices, it appears that the system meets current fire alarm codes and satisfies ADA requirements, and the system in general is in good condition. However, as components fail, they will need to be replaced with current devices, which may require additional wiring from the head end.

There is an existing area of rescue assistance system installed in the building with no reported issues.

The paging / intercom / master clock system is a Rauland Telecenter system installed during the 2003 renovations. The control console is located at the main office and has an AM/FM radio. Classrooms, offices, and corridors have ceiling-mounted speakers. The system is in fair condition. While the system appears to be functional, clocks are failing, the bell schedule is tough to manage, and the integration with the phone system needs to be repaired.

There is a newer Grandstream IP based district-wide phone system, which is in good condition.

The remote sound systems in the cafeteria and gymnasium were replaced or upgraded in 2003 and are in good condition. The systems in the gymnasium is in fair condition; however, the speakers are failing. The system in the natatorium is in poor condition.

A coaxial cable distribution system exists for the transmission of television signals to the classrooms and other areas of the building. There is a television distribution cart in the library allowing local channel origination.

Most of the computer network was replaced in 2017 and consists of plenum rated category 6 UTP to the desktop and 6A to wireless access points. Fiber optic cable (10 gig 50 micron multi-mode) connects the IDFs to the MDF. There are Ethernet switches in the data racks. The system is in good condition.

The building currently has an access control system, existing security system, and IP-based CCTV system with DVR's. The building has an AiPhone intercom system at the front door for both the school and district administration. There is additional electrified hardware into the district office and into the corridors from the vestibule that is controlled via security greeter to provide additional security measures. While all systems are in satisfactory to good condition, it was reported that the CCTV system does not provide adequate coverage in the corridors.

Issues to consider:

Additional UL924 listed relay panels should be added to control the normal emergency lighting. This will allow for a completely dark building when the security system is armed.

The remainder of the site lighting should be replaced with LED to allow for energy savings and prolonged time between fixture maintenance.

During the next major renovation, the lighting should be replaced with LED lighting to help save energy and prolonged time between fixture maintenance.

To provide some savings with the lighting control, a new digital lighting control system should be provided. Due to recent code changes, if added, this system would be required to be a daylight harvesting system which will help lengthen the life of LED fixtures and save energy.

The paging / intercom system head end should be replaced, and the entirety of the clock system should be replaced with a wirelessly correcting system.

The intercom system in the cafeteria/gymnasium should be replaced. The main gymnasium can wait but should also be scheduled for replacement in the future.

The lighting for both the tennis courts and soccer field are in poor condition and provide inadequate light. Also, there is no lighting at the baseball field or football field. It is recommended that all sports field lighting be replaced to meet IESNA guidelines and lighting be added to the baseball and football fields as

necessary for their activities. Providing lighting will allow for additional home games through the seasons.

NATATORIUM

The pool at the high school has 6 lanes, with 6 diving blocks and 2 diving boards on the deep end. The pool depth ranges from four to 12 feet. The pool has a perimeter drainage system that is of older technology.

Acoustically, the pool space has wall panels around the perimeter, as well as acoustical ceiling baffles suspended above the pool. The vents in the exposed ductwork point towards the wall, causing the wall panels to become dirty. The humidity increases when there is a lot of activity in the pool area, which may indicate a problem with the ventilation system. The district stated that this problem was being addressed by the maintenance department.

To access the locker rooms that are shared with the gymnasium, students need to go through the gym, or go onto the pool deck to go into the locker rooms. There is no elevated spectator area in the pool space. Fans need to sit on the pool deck, which could be wet and slippery. Also, there is minimal storage for pool equipment, and this makes the pool deck cluttered. The timer's booth is not handicap accessible.

Issues to consider:
Consider replacing the perimeter drainage system. Newer systems can help alleviate the humidity problems that the natatorium currently experiences.

ENERGY STAR® Statement of Energy Performance

52

ENERGY STAR® Score[1]

Lower Moreland HS

Primary Property Type: K-12 School
Gross Floor Area (ft²): 164,600
Built: 1967

For Year Ending: March 31, 2019
Date Generated: May 01, 2019

1. The ENERGY STAR score is a 1-100 assessment of a building's energy efficiency as compared with similar buildings nationwide, adjusting for climate and business activity.

Property & Contact Information

Property Address	Property Owner	Primary Contact
Lower Moreland HS 555 Red Lion Road Huntingdon, Pennsylvania 19006	_____ , (____)____-_____	____ _____ , (____)____-_____ _____

Property ID: 2516036

Energy Consumption and Energy Use Intensity (EUI)

Site EUI
83.4 kBtu/ft²

Source EUI
149.7 kBtu/ft²

Annual Energy by Fuel	
Electric - Grid (kBtu)	5,762,784 (42%)
Fuel Oil (No. 2) (kBtu)	0 (0%)
Electric - Solar (kBtu)	139,582 (1%)
Natural Gas (kBtu)	7,824,200 (57%)

National Median Comparison	
National Median Site EUI (kBtu/ft²)	85
National Median Source EUI (kBtu/ft²)	152.5
% Diff from National Median Source EUI	-2%

Annual Emissions	
Greenhouse Gas Emissions (Metric Tons CO2e/year)	1,008

Signature & Stamp of Verifying Professional

I _____ (Name) verify that the above information is true and correct to the best of my knowledge.

Signature: _____Date: _____

Licensed Professional

____ _____
,
(____)____-_____
_____

Professional Engineer Stamp (if applicable)

This section includes an analysis of each school's ability to support the district's modern instructional program. These findings are based on a series of meetings with district administrators as well as observations and interactions conducted during our team's tour of each of the buildings.

A number of factors were evaluated as part of this process. Overall accommodation and facilitation of specialty disciplines and programs such as science, arts/music, athletics, and special education was assessed. In classrooms and individual learning spaces, overall size and shape, spatial flexibility, technological equipment and infrastructure, and qualitative condition were studied.

Similar to the existing conditions analysis in the prior section, the outcome of this analysis helped shape the subsequent exploration of long-term capital project options.


Classroom that used to be an Art Room

EDUCATIONAL

Classrooms

Classrooms are at a good size at roughly 900 square feet per room, and the furniture is organized in the traditional classroom arrangement. The district has implemented one-to-one for 4th and 5th grade students, with each student using a Chromebook. All classrooms have a combination of Smartboards, projectors and screens, and white boards in the classrooms. Some classrooms have plentiful built-in storage, while have movable storage. Some classrooms were retrofitted from a specialty class.

The classrooms lack a level of flexibility that is desired by the teachers and administration at the school. The technology has evolved over the years, but there are limited spaces in the school to support that technology and any collaboration between classes.

Issues to consider:
Project classrooms/labs should be created to provide modern STEM curriculum opportunities.

Group Instruction

There are no spaces in the building for large or small group instruction.

Issues to consider:
Accessible group instruction rooms should be provided.

Create a large flexible space for collaboration that is accessible to many disciplines.

Special Education

There are a wide variety of special education programs currently offered in the school for students with learning disabilities or for speech and language instruction. These classrooms are spread throughout the building and easily accessible to students that need them. This quantity and organization of special education rooms meet the district's needs.


Art classroom


Stage off the gymnasium


Technology Lab

Music/Art

Students at the elementary school participate in band and orchestra starting in the 3rd grade with only orchestra and both band and orchestra in 4th and 5th grade.

The instrumental music room is on the ground floor of the three-story classroom addition. The room is comprised of two classrooms with the folding partition open between them. The acoustics in the room are not ideal for an instrumental music room environment; it was converted from a general classroom and the acoustics are not tuned for playing instruments. There is some storage for instruments in the classroom, but not much. The general music classroom is located on the first floor, next to the autistic support classroom. This is not ideal for the students in the autistic support classroom.

The art classroom is located on the first floor at the end of the 2nd grade classroom wing. This location is not ideal because of the student traffic coming through the classroom wings to get to the art classroom. The art room storage is plentiful but not accessible through the room, with some of the storage only accessible off the corridor.

The stage is off of the gymnasium, but the gymnasium space is too small to accommodate the entire school for assemblies. The stage is also too small for the band to fit (the band has 115 students this year) so all performances are at the high school auditorium.

Issues to consider:

Acoustical improvements should be made to the instrumental music room and general music classroom.

Consider adding more instrument storage.

Science/Technology

The district has the tools to implement science and technology education into the program for elementary school students, but the flexibility and space is not there to use those tools correctly. The building lacks large group instruction spaces or project-based labs for STEM projects outside of the traditional classroom setting.

Cafeteria multipurpose floor

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Main Office

Office suite for professionals

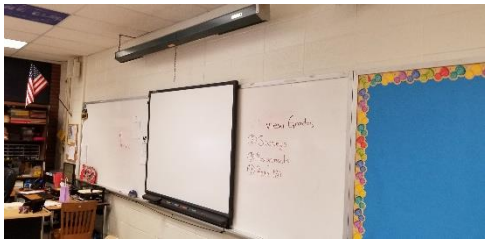
Issues to consider:
Create a large flexible space for collaboration that is accessible to many disciplines throughout the building.

Physical Education

The physical education program spatial needs are met by two multi-purpose rooms. The cafeteria and the gymnasium are set up as multi-purpose rooms, with the gymnasium having the stage attached to it. Both areas have one main court and two cross courts for basketball. The cafeteria is only used as a gymnasium by the community athletic groups. Before and after school care is in the cafeteria, with parents using the side door to the cafeteria as an entrance to pick up and drop off their kids. The built-in cafeteria seats in the gymnasium are still in good condition.

Administration

The main administration office, which houses the main secretaries and the principal, is located next to the secure vestibule at the main entrance to the building. Attached to the principal's office is a conference room, which is available for building use when the principal is not using it. The assistant principal and their secretary are down the hall next to the bus loading area. There is an office suite for the guidance counselors, school psychiatrist, and IST that is accessible to students. The principal would like to see all administration staff in one area. There is also a conference room and book room off the cafeteria that was a faculty dining room. The offices for district instructional coaches also are located at the elementary school.


Classroom with smart board and projector with screen


Traditional classroom layout


Makerspace in the library

EDUCATIONAL

Classrooms

Classrooms are at a good size at roughly between 800 and 900 square feet per room, and the furniture is organized in the traditional classroom arrangement. The district has implemented one-to-one, with each student using a Chromebook. This is paired classroom technology: Smartboards, projectors and screens, and white boards. There is very little storage in the classrooms. Some classrooms have shared storage rooms between them, but overall the storage is not sufficient. The unit ventilators in the classrooms produce a lot of ambient noise, and it is difficult to hear student responses while teaching.

The classrooms lack a level of technological flexibility that is desired by the teachers and administration at the school. The technology has evolved over the years, but there are limited spaces in the school to support that flexibility.

Issues to consider:
Project classrooms/labs should be created to provide modern STEM curriculum opportunities.

Consider offering more storage in the classrooms.

Group Instruction

There are no spaces in the building for large or small group instruction. Currently, the makerspace is in the library, but there is a desire for this program to be housed in a larger, more flexible space.

Issues to consider:
Accessible group instruction rooms should be provided.

Create a large flexible space for the makerspace accessible to all disciplines.

Special Education

There is a wide variety of special education programs currently offered in the school for students with learning disabilities or speech and language instruction needs. They are all currently grouped together in the same area, but these rooms could be interspersed throughout the building to integrate them with the


Instrument storage in music area

wider student population. There is an ABA program for students up to age 21 that will be moving up to the high school in the 2019-2020 school year.

Issues to consider:
Consider spreading special education rooms throughout the school to integrate them with the wider student population.

Music/Art
Students at the middle school either receive general music education or participate in the band, chorus, or orchestra. All the music rooms are in the same location on the second floor; the exception is chorus, which is on the first floor.

The band and chorus rooms have tiered platforms. The chorus room is ADA accessible since an occupant enters the room at the bottom of the tiered platforms. However, the band room is not ADA accessible since an occupant enters the room at the top tier. The teachers do not prefer the tiered rooms for instruction due to a lack of flexibility.

There are acoustic problems in the general music classroom. The walls and ceilings are hard surfaces, so there is no sound attenuation.

There is ample storage for instruments in the music area. However, there are climate control issues that cause raised humidity levels and warp the instruments over summer months.

The band, orchestra, and choral groups are large, with about 100 students per group. At this size, these groups are not able to fit on the stage. Performances are held in the high school. The middle school stage is located between the cafeteria and auxiliary gym and faces the cafeteria. An old accordion partition in poor repair separates the auxiliary gym from the stage, but it has not been opened in years. A wheelchair lift was installed at the stage to provide ADA access, but dressing rooms were lost with the renovation. The district rents a sound system and stage lighting to use for theatrical performances, but these rented systems do not always integrate well.

The art program is supported by two classrooms. This is sufficient space for the program, which is up to the district standards.

However, there is a desire for more collaboration with STEM disciplines. The kiln is located in one the classrooms and cannot be run during the school day because the exhaust system releases fumes into the classroom.

Issues to consider:
Acoustical improvements should be made to the general music classroom.

The band room should provide an ADA-accessible entrance should the tiered rooms not be modified.

Consider permanently closing the stage off from the auxiliary gym.

Install proper sound system and stage lighting for use on the stage.

Consider addition of a new performance space to accommodate the larger band, orchestra, and choral groups.

Address proper location and ventilation for the kiln.

Science lab


Eye wash station and sink in science lab

<u>Science/Technology</u>
The district has integrated STEM activities into the curriculum of the school. However, the science labs offer limited flexible furniture arrangements and spatial organizations. The labs have built in demonstration and lab tables, which limits the flexibility of the space. In order to continue to develop the STEM curriculum, more flexible space and furniture is needed. Additionally, the chemical storage areas in the science labs do not have the correct required ventilation system.

The school has a makerspace located in the library on the second floor. The location of the makerspace makes it difficult to integrate with the science labs, as most of the science labs are located on the third floor. The TV studio programmatically aligns with the makerspace and STEM classrooms. However, the TV studio is located on the first floor.

Issues to consider:
Consider moving the TV studio to a location that is in closer proximity to the makerspace and STEM classrooms.


"Upper Gym" – Main Gymnasium


Fitness Lab


Auxiliary Gym


Boys locker room

Physical Education

The physical education program spaces are sufficient for the program. The main gymnasium, fitness center, and locker rooms are on the opposite side of the building from the auxiliary gymnasium. As a result, the auxiliary gym is underutilized. The gymnasium, fitness center, and auxiliary gym have wood floors that are old but in good condition. The district recently replaced the lockers in the locker room. However, other areas in the locker room still need attention: bathrooms are not ADA compliant and the tile floors are showing signs of wear and tear.

Issues to consider:

Consider permanently closing the stage off from the auxiliary gym.

Renovate locker rooms for ADA compliance.

Consider replacing the tile floor in the locker room within the next five years.

Administration

The main administration offices are located across from the secure vestibule on the second floor. The administration offices are adjacent to the nurse's suite, which is ideal for parents and guardians picking up their sick children. One guidance counselor's office is in the suite, and another is across the hall. The administration office suite meets the district's needs, except that they need more large and small group meeting rooms. A classroom is used for additional meeting space across the hall from the main office.

Issues to consider:

Renovate classrooms space to accommodate additional meeting space for large group and small groups of staff.


Typical classroom

EDUCATIONAL

Classrooms

Classrooms are at a good size at roughly between 800 and 900 square feet per room, and the furniture is organized in the traditional classroom arrangement. The district has implemented one-to-one, with each student using a Chromebook. This is paired classroom technology: Smartboards, projectors and screens, and white boards. There is very little storage in the classrooms. The unit ventilators in the classrooms produce a lot of ambient noise, and it is difficult to hear student responses while teaching.

The classrooms lack a level of technological flexibility that is desired by the teachers and administration at the school. The technology has evolved over the years, but there are limited spaces in the school to support that flexibility.

Issues to consider:

Project classrooms/labs should be created to provide modern STEM curriculum opportunities.

Flexible furniture should replace the older desk-with-chair units currently in use.

Consensus on a district policy regarding technology in the classroom should be established and then integrated throughout the school.

Group Instruction

There are three large group instruction rooms in the building, all located on the second floor. Recently a makerspace was added to the library for STEM curriculum. There is a desire for more integration of the makerspace program into other disciplines to enhance STEM education.

Issues to consider:

Add additional small group instruction spaces to increase student collaboration.

Create a large flexible space for the makerspace that is accessible to many disciplines.


Band room


Auditorium


Ceramics classroom

Special Education

There is a wide variety of special education programs currently offered in the school for students with learning disabilities or speech and language instruction needs. There is an ABA program for students up to age 21 that will be coming to the high school in the 2019-2020 school year.

Music/Art

The band/strings, chorus, and practice rooms meet the musical program's current needs. Additional music programs are desired, but the space to house them is lacking. The band/strings room has tiered platforms with a ramp that provides ADA access to the bottom of the room. It is connected to a larger tiered practice room. Chorus is in a tiered room down the hall and next to the auditorium. Both rooms do not provide ADA access. The band/strings, chorus, and practice rooms have hard surfaces, which are not ideal acoustics for playing musical instruments or singing. There are no small dedicated practice rooms for band, strings, or chorus. Storage for instruments is in the back of the room, with many instruments not fitting in the cabinets. The auditorium is in great condition, with a renovation in 2017.

There are three art rooms in the building. One of the classrooms is dedicated to ceramics and has two large kilns and one small kiln that are all aged and in need of replacement. The other art rooms provide instructional space for painting, drawing, and computer art. Ample storage is available for the art program, but it is not efficient. Some of the storage is accessed off the corridor in small closets not connected to the art rooms. Also, there is a desire to integrate more of the technology and engineering programs into the art program.

Issues to consider:

Improve acoustics in band/strings, chorus, and practice rooms.

Renovate chorus and practice rooms to provide ADA access.

Increase flexible storage for instruments.

Replace existing kilns.

Renovate art classrooms to provide more efficient storage in classroom and flexibility for additional collaboration.

Science Lab

Makerspace in the library

Science/Technology

The science labs, renovated in 1997, are in good condition. However, they are limited in flexibility because the lab tables are affixed to the walls. Most of the labs are connected to a prep room. There is desire from the district to add additional lab spaces.

The makerspace is located in the back of the library. The finishes and furniture in this area were renovated recently. The district would like to expand the makerspace to integrate a fab lab in a larger group instruction room. They also would like to add spaces for a vocational program, engineering, robotics, and a TV/recording studio, but there is no available space in the building currently.

The library has two computer labs. There is a traditional computer lab adjacent to the library, as well as a bank of Mac desktops within the library.

Issues to consider:

Add additional large and small group instruction spaces to increase student collaboration.

Create a large flexible space for the makerspace that is accessible to many disciplines throughout the building.

"Upper Gym" – Main Gymnasium

Fitness Lab

Physical Education

The physical education program is supported a gymnasium, wrestling room, fitness center, natatorium, and locker rooms. The main gymnasium has one main court and two side courts. It has a wood floor that is nearing the end of its lifespan. Also, there are no volleyball standards in the floor. Players on the main court have minimal run-off space on one side and run off space that goes into a hallway on the other side. The bleachers, which can hold up to 1,500 occupants, are old, not ADA compliant, and are repaired often. There are no aisles in the bleachers, which is not code compliant.

The fitness center and wrestling room can only be accessed by walking through the gymnasium. Yet the fitness room does not have any interior windows to connect it visually with the gym. The floor has carpet, which is not ideal for a fitness environment. The wrestling room wall pads are showing signs of wear.


Locker Room

Aspects of the locker room were recently renovated. The lockers and floor were replaced, as was the floor in the trainer's room. The floor finish in both spaces was not installed correctly, and this makes it difficult to clean. The floor in the trainer's room is separating from the wall base. There are not enough lockers to accommodate current number of students in the gym classes. There are no team rooms. The locker rooms are only accessible through the gym or the pool deck.

Issues to consider:
Renovate gymnasium with a gym floor replacement and new bleachers to meet athletic standards and code.

Schedule wrestling room wall pads for replacement in the next five to ten years.

Replace locker room floor and add more lockers to increase capacity.

Administration
The administration and staff are accommodated in spaces throughout the building. The main administration offices are located adjacent to the front entrance and secure vestibule. Assistant principals are located throughout the building, with three on the first floor and one on the second floor. The nurse's suite was renovated in 2017. The building has limited space to accommodate outside professionals. There are not enough meeting rooms.

Issues to consider:
Consider renovating administration area to consolidate all offices into one administration area and to provide additional needed spaces.

This section includes a size and student capacity spreadsheet for each of the three school buildings. It includes a breakdown of the number and square foot size of all individual spaces and then assigns student capacity to applicable spaces, figures which are then calculated together to determine the total building capacity.

Pine Road Elementary School

Program of Existing Education Spaces

		Proposed			Capacity		Comments
		No.	NSF	Total	Per Room	Total	
ACADEMIC CENTER							
Core Programs							
Kindergarten		6	965	5,790	25	150	
First Grade		7	985	6,895	25	175	
Second Grade		6	985	5,910	25	150	
Third Grade		7	875	6,125	25	175	
Fourth Grade		6	900	5,400	25	150	
Fifth Grade		7	880	6,160	25	175	
Vacant Classrooms		2	905	1,810	25	0	no capacity due to vacany
Health		1	910	910	25	25	
	Subtotal	**42**		**39,000**		**1000**	
SPECIAL EDUCATION							
Reading Intervention		1	895	895	25	25	
Reading Specialist		2	840	1680	25	50	
Speech		1	910	910	0	0	
Sensory		1	115	115	0	0	
OT/PT		1	670	670	25	25	
ESOL		3	915	2745	25	75	
Special Education Rooms		7	840	5880	25	175	
Gifted		1	680	680	25	25	
Math Support		1	325	325	25	25	
	Subtotal	**18**		**13,900**		**400**	
CAREER FOCUSED LEARNING							
Art							
Art Classroom		1	995	995	0	0	
	Subtotal	**1**		**995**		**0**	

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Pine Road Elementary School

Program of Existing Education Spaces

		Proposed			Capacity		Comments
		No.	NSF	Total	Per Room	Total	
Music							
Instrumental Music Classroom		1	1,431	1,431	0	0	
General Music Classroom		1	1,020	1,020	0	0	
	Subtotal	2		2,451		0	
Library / Media Center							
Library		1	4,690	4,690	0	0	
	Subtotal	1		4,690		0	
PHYSICAL EDUCATION							
Gymnasium		1	3,440	3,440	0	0	
Stage		1	804	804	0	0	
	Subtotal	2		4,244		0	
ACADEMIC TOTAL		66		65,280		1,400	Total Student Capacity
SCHOOL COMMONS							
Food Services							
Cafeteria		1	4,550	4,550			
Kitchen		1	3,500	3,500			
	Subtotal	2		8,050			
COMMONS TOTAL		2		8,050			

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Pine Road Elementary School

Program of Existing Education Spaces

		Proposed			Capacity		Comments
		No.	NSF	Total	Per Room	Total	
INSTRUCTIONAL PLANNING CENTERS							
Department Offices							
Faculty Planning		1	640	640			
	Subtotal	**1**		**640**			
ADMINISTRATIVE CENTER							
Health Office							
Nurse Suite		1	840	840			
	Subtotal	**1**		**840**			
Administration Offices							
Main Office Area		1	1,425	1,425			Assist Principal @ cafeteria entry
Guidance		1	360	360			
Psycologist		1	190	190			
IST		1	300	300			
Conference Room		1	265	265			
Instructional Coaches		1	300	300			
Instructional Assistants Office		1	299	299			
District Board Room		1	1,731	1,731			
	Subtotal	**8**		**4,870**			

ADMIN. CENTER TOTAL 5,710

ACADEMIC TOTAL				65,280			
COMMONS TOTAL				8,050			
INSTRUCTIONAL PLANNING				640			
ADMINISTRATION TOTAL				5,710			
BUILDING NET TOTAL				79,680			does not include mechanical space
BUILDING GROSS TOTAL				135,663			

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Murray Avenue Middle School

Program of Existing Education Spaces

		Proposed			Capacity		Comments
		No.	NSF	Total	Per Room	Total	
ACADEMIC CENTER							
Core Programs - 6th Grade							
Sixth Grade Classrooms		7	955	6,685	25	175	
Core Programs- 7th / 8th Grade							
English		3	897	2,691	25	75	
Math		3	902	2,706	25	75	
Social Studies		3	905	2,715	25	75	
World Language		3	909	2,728	25	75	
	Subtotal	**19**		**17,524**		**475**	
Sciences							
Science Labs		5	1,005	5,025	20	100	Does not include Prep / Storage
	Subtotal	**5**		**5,025**		**100**	
SPECIAL EDUCATION							
Reading Specialists		1	1,066	1066	25	25	
Reading Intervention		1	245	245	25	25	
Speech Therapist		1	151	151	0	0	
School Psychologist		1	151	151	0	0	
ELL Room		1	616	616	25	25	
Emotional Support		1	1,166	1166	25	25	
Special Education Room		1	911	911	25	25	
Special Education ABA		1	1,220	1220	25	25	
Learning Support		1	904	904	25	25	
Math Support		1	910	910	25	25	
Autistic Support		1	910	910	25	25	
Gifted Support		1	1,000	1000	25	25	
	Subtotal	**12**		**9,250**		**250**	
CAREER FOCUSED LEARNING							
Art							
Art Classroom		1	1,190	1,190	20	20	
Art Classroom		1	920	920	20	20	
	Subtotal	**2**		**2,110**		**40**	

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Murray Avenue Middle School

Program of Existing Education Spaces

	Proposed			Capacity		Comments
	No.	NSF	Total	Per Room	Total	
Technology						
Tech Ed	1	940	940	20	20	
Tech Ed	1	2,265	2,265	20	20	
TV Studio	1	840	840	20	20	
Subtotal	**3**		**4,045**		**60**	
Music						
Band Room	1	1,451	1,451	25	25	
Orchestra	1	1,005	1,005	0	0	
General Music Classroom	1	904	904	25	25	
Chorus	1	885	885	25	25	
Subtotal	**4**		**4,245**		**75**	
Library / Media Center						
Library	1	3,009	3,009	0	0	
Computer Arts, Careers, and Study Skills	1	910	910	20	20	
Subtotal	**2**		**3,919**		**20**	
PHYSICAL EDUCATION						
Gymnasium (6500+ SQ FT)	1	7,431	7,431	66	66	
Fitness Center	1	1,226	1,226	33	33	
Auxiliary Gymnasium	1	3,012	3,012	33	33	
Boys Locker Room	1	2,007	2,007	0	0	
Girls Locker Room	1	1,963	1,963	0	0	
Health Classroom	1	870	870	25	25	
Subtotal	**6**		**16,509**		**157**	
ACADEMIC TOTAL	**50**		**58,582**		**1,117**	Total Student Capacity
					949	PDE Utilization at 0.85%
SCHOOL COMMONS						
Food Services						
Cafeteria	1	5,130	5,130			
Kitchen	1	3,576	3,576			
Subtotal	**2**		**8,706**			
Assembly						
Stage / Storage	1	1,464	1,464			
Subtotal	**1**		**1,464**			
COMMONS TOTAL	**3**		**10,170**			

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Murray Avenue Middle School

Program of Existing Education Spaces

	Proposed			Capacity		Comments
	No.	NSF	Total	Per Room	Total	
INSTRUCTIONAL PLANNING CENTERS						
Department Offices						
Faculty Planning	1	151	151			
Faculty Dining	1	502	502			
Subtotal	2		653			
ADMINISTRATIVE CENTER						
Health Office						
Nurse Suite	1	757	757			
Subtotal	1		757			
Administration Offices						
Main Office Area	1	1,300	1,300			
Guidance	2	267	534			
Tech Office	1	902	902			
Prof. Development / Conf. Room	1	888	888			
Subtotal	5		3,624			
ADMIN. CENTER TOTAL			4,381			
DISTRCIT ADMINISTRATION OFFICE						
Administration Offices						
Offices	8	175	1,400			
Conference Rooms	2	310	619			
Super Intendant's Office	1	288	288			
Assistant Director's Office	1	154	154			
Director's Office	1	302	302			
Waiting	1	549	549			
Work Room	1	194	194			
Shred Room	1	152	152			
Secretary	1	522	522			
Subtotal	17		4,179			

ACADEMIC TOTAL				58,582			
COMMONS TOTAL				10,170			
INSTRUCTIONAL PLANNING				653			
ADMINISTRATION TOTAL				4,381			
DAO TOTAL				4,179			
BUILDING NET TOTAL				77,965			does not include mechanical space
BUILDING GROSS TOTAL				139,900			

		Proposed			Capacity		Comments
		No.	NSF	Total	Per Room	Total	
ACADEMIC CENTER							
Core Programs							
Math/ Spanish 111		1	873	873	25	25	
Math 115		1	865	865	25	25	
Math 212		1	853	853	25	25	
Math 214		1	925	925	25	25	
Math 215		1	907	907	25	25	
Math 216		1	795	795	25	25	
Math 117		1	844	844	25	25	
Social Studies 119		1	946	946	25	25	
Social Studies 120		1	907	907	25	25	
English/Social Studies 217		1	833	833	25	25	
English/Social Studies 218		1	1,027	1,027	25	25	
English/Social Studies 220		1	899	899	25	25	
Social Studies/English 221		1	841	841	25	25	
Social Studies/English 222		1	847	847	25	25	
English 223		1	846	846	25	25	
Social Studies/ English 224		1	853	853	25	25	
Social Studies/ English 225		1	1,089	1,089	25	25	
World Language 123		1	972	972	25	25	
World Language 124		1	944	944	25	25	
World Language 125		1	944	944	25	25	
World Language 126		1	944	944	25	25	
World Language 127		1	944	944	25	25	
Business Technology 100		1	1,516	1,516	25	25	Includes TV Studio
Business Technology 102		1	757	757	25	25	
	Subtotal	**24**		**22,169**		**600**	
Sciences							
Science 201		1	1,256	1,256	20	20	Does not include Prep / Storage
Science 202		1	1,302	1,302	20	20	
Science 205		1	1,507	1,507	20	20	
Science 206		1	1,350	1,350	20	20	
Science 211		1	827	827	20	20	
Science 209		1	1,416	1,416	20	20	
Science 208		1	851	851	20	20	
Science 210		1	842	842	20	20	
Science 226		1	1,226	1,226	20	20	
	Subtotal	**9**		**10,577**		**180**	
SPECIAL EDUCATION							
Remediation Room 101		1	765	765	25	25	
Special Education 105		1	873	873	25	25	
Special Education 112		1	874	874	25	25	
Special Education 114		1	874	874	25	25	
Special Education 116/118		1	1,726	1726	25	25	
Gifted Supported 128		1	1,024	1024	25	25	
ESL/English 113		1	865	865	25	25	
	Subtotal	**7**		**7,001**		**175**	

		Proposed			Capacity		Comments
		No.	NSF	Total	Per Room	Total	
CAREER FOCUSED LEARNING							
Art							
Art Classroom 106		1	1,299	1,299	20	20	
Art Classroom 108		1	1,451	1,451	20	20	
Computer Art 103		1	934	934	20	20	
	Subtotal	**3**		**3,684**		**60**	

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Lower Moreland High School

Program of Existing Education Spaces

		Proposed			Capacity		Comments
		No.	NSF	Total	Per Room	Total	
Music							
Band Room		1	3,368	3,368	25	25	
Band Practice Room		1	1,170	1,170	0	0	
Choral Room 121		1	1,321	1,321	25	25	
Music 122		1	1,061	1,061	25	25	
	Subtotal	**4**		**6,919**		**75**	
Library / Media Center							
Library		1	3,864	3,864	0	0	
Library Computer Room		1	714	714	0	0	
	Subtotal	**2**		**4,578**		**0**	
PHYSICAL EDUCATION							
Gymnasium (6500+ SQ FT)		1	9,949	9,949	66	66	
Fitness Center		1	2,776	2,776	33	33	
Wrestling Room		1	2,350	2,350	0	0	
Natatorium		1	6,674	6,674	0	0	
Boys Locker Room		1	1,800	1,800	0	0	
Girls Locker Room		1	1,856	1,856	0	0	
Health Classroom 109		1	939	939	25	25	
Health Classroom 110		1	831	831	25	25	
Trainer's Suite		1	755	755	0	0	
Instructor's Office		2	188	376	0	0	
	Subtotal	**11**		**28,307**		**149**	
	ACADEMIC TOTAL	**60**		**83,235**		**1,239**	Total Student Capacity
						1,053	PDE Utilization at 0.85%
SCHOOL COMMONS							
Food Services							
Cafeteria		1	7,500	7,500			
Kitchen		1	4,000	4,000			
Kitchen Storage		1	600	600			
Serving Area		3	600	1,800			
	Subtotal	**6**		**13,900**			
Assembly							
Auditorium		1	10,319	10,319			
Stage / Storage		1	3,355	3,355			
	Subtotal	**2**		**13,674**			
	COMMONS TOTAL	**8**		**27,574**			

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Lower Moreland High School

Program of Existing Education Spaces

	Proposed			Capacity		Comments
	No.	NSF	Total	Per Room	Total	
INSTRUCTIONAL PLANNING CENTERS						
Department Offices						
Faculty	1	421	421			
Faculty	1	443	443			
Faculty	1	411	411			
Faculty	1	212	212			
Foreign Language Office	1	438	438			
Subtotal	**5**		**1,925**			
ADMINISTRATIVE CENTER						
Health Office						
Nurse Suite	1	927	927			
Subtotal	**1**		**927**			
Administration Offices						
Main Office Area	1	3,018	3,018			
Additional HS / District Offices	1	2,902	2,902			
Subtotal	**2**		**5,920**			
ADMIN. CENTER TOTAL			6,847			

ACADEMIC TOTAL				83,235			
COMMONS TOTAL				27,574			
INSTRUCTIONAL PLANNING				1,925			
ADMINISTRATION TOTAL				6,847			
BUILDING NET TOTAL				119,581			does not include mechanical space
BUILDING GROSS TOTAL				172,160			

This section presents a number of long-term capital project options that the district may consider to address identified operational, programmatic, and student capacity deficiencies.

As detailed in Section 5 of this report, Pine Road is generally in good condition and does not warrant any major renovation and/or addition work. In contrast, Murray Avenue School and Lower Moreland High School are well maintained buildings, but have substantial operational and programmatic needs.

Based on this analysis, KCBA developed a series of potential capital project options of varying nature and scope. Presented on the following pages, each option is presented first via a narrative overview, then with conceptual plans depicting the work, then a conceptual project budget sheet, and lastly with an Energy Star predictive utility report.

For both Murray Avenue School and Lower Moreland High School, the first "Option A" represents a baseline building systems and code renovation with limited programmatic enhancements. Then a series of options of increasing scope and cost were developed for each school.

Two options related to the existing stadium are also presented. In Stadium Option A, the existing stadium is relocated to the high school football practice field to make way for a potential new Murray Avenue School (Murray Avenue Option E). In Stadium Option B, selected upgrades are implemented at the existing stadium to address deficiencies and increase parking for events.

Murray Avenue Middle School Option A

Overview:

This option is limited to interior renovations to the building and addresses some of the programmatic and capacity issues at the school. To gain group collaboration areas for Science and Technology, the existing Auxiliary Gym that is underutilized is converted into a STEM center with two labs to service desired STEM programs at the school. To increase capacity further, the District Administration Office is moved out of the building, and that area is converted into four classrooms. The remainder of the building would have limited renovations.

For building systems, this option would replace unit-ventilators in the classrooms, replace all lighting with LED lights, replace all existing piping in the building, and install a fire suppression system that would be required with a building-wide renovation.

This renovation scheme will address programmatic and capacity issues staying within the existing footprint of the building. It should be understood that any renovation scheme will not address all facility or programmatic issues due to the constraints of working within the existing building and site.

Phasing:

Design and construction of renovations to the Middle School would run over the course of approximately 36 months.

Pros:

- Renovation of the underutilized Auxiliary Gym adds desired STEM program to the building.
- Conversion of the District Administration Offices adds four classrooms to the building needed with growing enrollment.
- Building systems renovations will provide more energy efficient systems to keep the building running.

Cons:

- Loss of an athletic teaching space with the loss of the Auxiliary Gym.

- District Administration Office must find a new location if moved from the Middle School.
- Any building-wide renovation project will require installation of a building wide fire suppression system.
- Does not address all facility and programmatic issues identified at the school.

TOTAL CONSTRUCTION COST:
$18,063,658

TOTAL PROJECT COST:
$23,229,573

FIRST FLOOR PLAN

SECOND FLOOR PLAN

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Lower Moreland Township School District

Proposed Project Estimate

Murray Avenue School Opt A

Areas of Work				*Comments*
Building Renovations	Size	$/sq. foot		
Building Renovations (existing DAO)	4,750	$125	$593,750	convert classrooms
Building Renovations (exg. aux gym)	2,920	$125	$365,000	STEM center
Building Renovations (limited)	127,993	$50	$6,399,650	limited renovations
Roof Replacement	20,000	$26	$520,000	replace gym roof
Bituminous Paving	0	$5	$0	not at this time
Security Cameras	135,663	$1	$135,663	replace/adjust exg.
Code Compliance Allowance			$100,000	
		Sub Total	$8,114,063	
Building Systems Budget		$/sq. foot		*Renovation Level*
Mechanical	135,663	$32	$4,341,216	replace unit-vents
Electrical	135,663	$18	$2,441,934	new LED lighting
Plumbing	135,663	$12	$1,627,956	replace exg. pipes
Fire Protection	135,663	$5	$678,315	required
		Sub Total	$9,089,421	MEP cost per SF
				$67
Proposed New Construction		$/sq. foot		
N/A	0	$270	$0	
N/A	0	$270	$0	
• Site work required for new additions			$0	
		Sub Total	$0	
Design/Bidding Contingency - 5%			$860,174	
				reno cost per SF
TOTAL CONSTRUCTION COST			$18,063,658	$133
Construction Contingency - 10%			$1,806,366	
Soft Costs - 15% (Fees, Permits, etc.)			$2,709,549	
Budget: FF&E			$650,000	650
TOTAL PROJECT COST			$23,229,573	

ENERGY STAR® Statement of Energy Design Intent (SEDI)[1]

Murray Avenue School

Option A

75

ENERGY STAR® Design Score[2]

Primary Property Type: K-12 School
Gross Floor Area (ft²): 139,900
Estimated Date of Certification of Occupancy: _____

Date Generated: May 02, 2019

1. This form is required when applying for Designed to Earn the ENERGY STAR recognition. It was generated from ENERGY STAR Portfolio Manager.
2. The ENERGY STAR 1 – 100 Score is based on total annual Source Energy. To be eligible for Designed to Earn the ENERGY STAR recognition you must score at least 75.

Property & Contact Information for Design Project

Property Address	**Project Architect**	**Owner Contact**
Murray Avenue School 2551 Murray Ave Huntingdon Valley, Pennsylvania 19006	____ _____ , (____)____-_____ _____	____ _____ , (____)____-_____ _____
Property ID: 2516049	**Architect Of Record**	**Property Owner**
	_____ _____ _____, ____ _____ (____)____-_____	_____ , (____)____-_____

Estimated Design Energy

Fuel Type	Usage	Energy Rate ($/Unit)
Electric - Grid	2,388,620 kBtu (thousand Btu)	Not Provided
Natural Gas	4,191,600 kBtu (thousand Btu)	Not Provided

Estimated Design Use Details

This Use Detail is used to calculate the 1-100 ENERGY STAR Score.

K-12 School	
Number of Workers on Main Shift	108
Percent That Can Be Cooled	90
Number of Computers	481
Gymnasium Floor Area	0 Sq. Ft.
Number of Walk-in Refrigeration/Freezer Units	2
Cooking Facilities	Yes
School District	
Student Seating Capacity	1,390
Weekend Operation	No
High School	No
Gross Floor Area Used for Food Preparation	0 Sq. Ft.
Percent That Can Be Heated	All of it - 100%
Gross Floor Area	139,900 Sq. Ft.
Months in Use	12

Design Energy and Emission Results

Metric	Design Project	Median Property	Estimated Savings
ENERGY STAR Score (1-100)	**75**	50	N/A
Energy Reduction (from Median)(%)	**-24.4**	0	N/A
Source Energy Use Intensity (kBtu/ft²/yr)	**79**	104	25
Site Energy Use Intensity (kBtu/ft²/yr)	**47**	62	15
Source Energy Use (kBtu/yr)	**11,089,317**	14,663,934	3,574,617
Site Energy Use (kBtu/yr)	**6,580,221**	8,701,341	2,121,120
Energy Costs ($)	**96,231**	127,251	31,020
Total GHG Emissions (Metric Tons CO2e)	**464**	614	150

Designed to Earn the ENERGY STAR: Application Checklist

This section is only required if you are using this document to apply for Designed to Earn the ENERGY STAR. All design projects that achieve an EPA energy performance score of 75 or higher are eligible for this certification.

1) Does your property type match the function or use of a property that's eligibility to receive an ENERGY STAR design score? ☐ **Yes** ☐ **No/Not Sure**

If you are not sure your project is eligible for an ENERGY STAR design score, please describe the property's major functions or use:

2) Is the design project at least 95% complete with construction documents? ☐ **Yes** ☐ **No**

If no, please explain:

3) Is the property currently unoccupied and not yet generating energy bills? ☐ **Yes** ☐ **No**

4) Do energy calculations account for the whole building intended operations and all energy sources? ☐ **Yes** ☐ **No**

5) Is the Architect of Record (AOR) applying for ENERGY STAR partnership? ☐ **Yes** ☐ **No**

6) Was the design record created in the owner's Portfolio Manager account? ☐ **Yes** ☐ **No**

7) Are you seeking other qualifications for this design project? ☐ **Yes** ☐ **No**

If so, please select all that apply:

- ☐ AIA 2030 Commitment
- ☐ Architecture 2030 Challenge
- ☐ Federal, State or Local Disclosure Ordinance
- ☐ Green Globes
- ☐ LEED
- ☐ Other, please indicate: _____

Murray Avenue Middle School Option B

Overview:

This option expands on Murray Avenue Middle School Option A and adds additional interior renovations to modernize the existing Library and TV Studio. The renovation moves the existing Nurse Suite to the Professional Development/Conference Room. The existing space can then be incorporated into a new larger Library with a dedicated Makerspace and TV Studio across the hall with the appropriate storage needed for that space. Small Group Instruction spaces are also included in the new Library space.

As with Option A, the converted STEM Center and converted classrooms are included in this option as well as limited interior renovations to the remainder of the building. For building systems, this option would replace unit-ventilators in the classrooms, replace all lighting with LED lights, replace all existing piping in the building, and install a fire suppression system that would be required with a building-wide renovation.

This renovation scheme will address programmatic and capacity issues staying within the existing footprint of the building. It should be understood that any renovation scheme will not address all facility or programmatic issues due to the constraints of working within the existing building and site.

Phasing:

Design and construction of renovations to the Middle School would run over the course of approximately 36 months.

Pros:

- Renovation of the underutilized Auxiliary Gym adds desired STEM program to the building.
- Conversion of the District Administration Offices adds four classrooms to the building needed with growing enrollment.
- New Library accommodates new larger Makerspace and Small Group Instruction rooms desired by the District.
- Renovation and reconfiguration of Library allows for addition of TV Studio space and new direct corridor circulation.

- Building systems renovations will provide more energy efficient systems to keep the building running.

Cons:

- Loss of an athletic teaching space with the loss of the Auxiliary Gym.
- District Administration Office must find a new location if moved from the Middle School.
- Any building-wide renovation project will require installation of a building wide fire suppression system.
- Does not address all facility and programmatic issues identified at the school.

TOTAL CONSTRUCTION COST:
$19,076,908

TOTAL PROJECT COST:
$24,496,135

FIRST FLOOR PLAN

kcba Architects

Lower Moreland Township School District

Proposed Project Estimate

Murray Avenue Opt B

Areas of Work				*Comments*
Building Renovations	Size	$/sq. foot		
Building Renovations (existing DAO)	4,750	$125	$593,750	convert classrooms
Building Renovations (exg. aux gym)	2,920	$125	$365,000	STEM center
Building Renovations (Library / Nurse)	5,000	$125	$625,000	Nurse / Library / TV
Building Renovations (limited)	127,993	$50	$6,399,650	limited renovations
Roof Replacement	20,000	$26	$520,000	replace gym roof
Bituminous Paving	0	$5	$0	not at this time
Security Cameras	140,663	$1	$140,663	replace/adjust exg.
Code Compliance Allowance			$100,000	
		Sub Total	$8,744,063	
Building Systems Budget		$/sq. foot		*Renovation Level*
Mechanical	140,663	$32	$4,501,216	replace unit-vents
Electrical	140,663	$18	$2,531,934	new LED lighting
Plumbing	140,663	$12	$1,687,956	replace exg. pipes
Fire Protection	140,663	$5	$703,315	required
		Sub Total	$9,424,421	MEP cost per SF
				$67
Proposed New Construction		$/sq. foot		
N/A	0	$270	$0	
N/A	0	$270	$0	
• Site work required for new additions			$0	
		Sub Total	$0	
Design/Bidding Contingency - 5%			$908,424	
				reno cost per SF
TOTAL CONSTRUCTION COST			$19,076,908	$136
Construction Contingency - 10%			$1,907,691	
Soft Costs - 15% (Fees, Permits, etc.)			$2,861,536	
Budget: FF&E			$650,000	650
TOTAL PROJECT COST			$24,496,135	

ENERGY STAR® Statement of Energy Design Intent (SEDI)[1]

Murray Avenue School

Option B

75

ENERGY STAR® Design Score[2]

Primary Property Type: K-12 School
Gross Floor Area (ft²): 139,900
Estimated Date of Certification of Occupancy: _____

Date Generated: May 02, 2019

1. This form is required when applying for Designed to Earn the ENERGY STAR recognition. It was generated from ENERGY STAR Portfolio Manager.
2. The ENERGY STAR 1 – 100 Score is based on total annual Source Energy. To be eligible for Designed to Earn the ENERGY STAR recognition you must score at least 75.

Property & Contact Information for Design Project

Property Address	**Project Architect**	**Owner Contact**
Murray Avenue School 2551 Murray Ave Huntingdon Valley, Pennsylvania 19006	____ _____ , (____)____-_____ _____	____ _____ , (____)____-_____ _____
Property ID: 2516049	**Architect Of Record**	**Property Owner**
	_____ _____ _____, ____ _____ (____)____-_____	_____ , (____)____-_____

Estimated Design Energy

Fuel Type	Usage	Energy Rate ($/Unit)
Natural Gas	4,178,720 kBtu (thousand Btu)	Not Provided
Electric - Grid	2,381,280 kBtu (thousand Btu)	Not Provided

Estimated Design Use Details

This Use Detail is used to calculate the 1-100 ENERGY STAR Score.

K-12 School	
Number of Workers on Main Shift	108
Percent That Can Be Cooled	90
Number of Computers	481
Gymnasium Floor Area	0 Sq. Ft.
Number of Walk-in Refrigeration/Freezer Units	2
Cooking Facilities	Yes
School District	
Student Seating Capacity	1,390
Weekend Operation	No
High School	No
Gross Floor Area Used for Food Preparation	0 Sq. Ft.
Percent That Can Be Heated	All of it - 100%
Gross Floor Area	139,900 Sq. Ft.
Months in Use	12

Design Energy and Emission Results

Metric	Design Project	Median Property	Estimated Savings
ENERGY STAR Score (1-100)	**75**	50	N/A
Energy Reduction (from Median)(%)	**-24.6**	0	N/A
Source Energy Use Intensity (kBtu/ft²/yr)	**79**	104	25
Site Energy Use Intensity (kBtu/ft²/yr)	**46**	62	16
Source Energy Use (kBtu/yr)	**11,055,241**	14,663,934	3,608,693
Site Energy Use (kBtu/yr)	**6,560,000**	8,701,341	2,141,341
Energy Costs ($)	**95,935**	127,251	31,316
Total GHG Emissions (Metric Tons CO2e)	**463**	614	151

Designed to Earn the ENERGY STAR: Application Checklist

This section is only required if you are using this document to apply for Designed to Earn the ENERGY STAR. All design projects that achieve an EPA energy performance score of 75 or higher are eligible for this certification.

1) Does your property type match the function or use of a property that's eligibility to receive an ENERGY STAR design score? ☐ **Yes** ☐ **No/Not Sure**

If you are not sure your project is eligible for an ENERGY STAR design score, please describe the property's major functions or use:

2) Is the design project at least 95% complete with construction documents? ☐ **Yes** ☐ **No**

If no, please explain:

3) Is the property currently unoccupied and not yet generating energy bills? ☐ **Yes** ☐ **No**

4) Do energy calculations account for the whole building intended operations and all energy sources? ☐ **Yes** ☐ **No**

5) Is the Architect of Record (AOR) applying for ENERGY STAR partnership? ☐ **Yes** ☐ **No**

6) Was the design record created in the owner's Portfolio Manager account? ☐ **Yes** ☐ **No**

7) Are you seeking other qualifications for this design project? ☐ **Yes** ☐ **No**

If so, please select all that apply:

- ☐ AIA 2030 Commitment
- ☐ Architecture 2030 Challenge
- ☐ Federal, State or Local Disclosure Ordinance
- ☐ Green Globes
- ☐ LEED
- ☐ Other, please indicate: _____

Murray Avenue Middle School Option C

Overview:

This option expands on Murray Avenue Middle School Option B and adds the demolition and reconstruction of the existing Gymnasium. Below the Gymnasium would be new team locker rooms to service the stadium, as well as the district maintenance area and building receiving. A new Gymnasium would provide a full-size basketball court with more spectator seating than is currently available in the existing building. It would also have a new spectator entrance, ticketing, and storage area.

As with Options B, the converted STEM Center, converted classrooms, and renovated Nurse Suite and Library are included in this option as well as limited interior renovations to the remainder of the building. For building systems, this option would replace the unit-ventilators in classrooms, replace all lighting with LED lights, replace all existing piping in the building, and install a fire suppression system that would be required with a building-wide renovation.

This renovation scheme will address programmatic and capacity issues staying within the existing footprint of the building. It should be understood that any renovation scheme will not address all facility or programmatic issues due to the constraints of working within the existing building and site.

Phasing:

Design and construction of renovations to the Middle School would run over the course of approximately 36 months.

Pros:

- Renovation of the underutilized Auxiliary Gym adds desired STEM program to the building.
- Conversion of the District Administration Offices adds four classrooms to the building needed with growing enrollment.
- New Library accommodates new larger Makerspace and Small Group Instruction rooms desired by the District.
- Renovation and reconfiguration of Library allows for addition of TV Studio space and new direct corridor circulation.

- New Gymnasium replaces undersized existing Gymnasium with full size basketball court and substantial spectator seating.
- Addition adds new team locker rooms to service teams using the stadium at the Middle School.
- Building systems renovations will provide more energy efficient systems to keep the building running.

Cons:

- Loss of an athletic teaching space with the loss of the Auxiliary Gym.
- District Administration Office must find a new location if moved from the Middle School.
- Demolition and reconstruction of the existing gym in place represents a significant cost.
- Any building-wide renovation project will require installation of a building wide fire suppression system.
- Does not address all facility and programmatic issues identified at the school.

TOTAL CONSTRUCTION COST:
$26,692,138

TOTAL PROJECT COST:
$34,015,173

FIRST FLOOR PLAN

SECOND FLOOR PLAN

kcba Architects

Lower Moreland Township School District

Proposed Project Estimate

Murray Avenue Opt C

Areas of Work				*Comments*
Building Renovations	Size	$/sq. foot		
Building Renovations (existing DAO)	4,750	$125	$593,750	convert classrooms
Building Renovations (exg. aux gym)	2,920	$125	$365,000	STEM center
Building Renovations (Library / Nurse)	5,000	$125	$625,000	Nurse / Library / TV
Building Renovations (limited)	127,993	$50	$6,399,650	minimal
Roof Replacement	20,000	$26	$520,000	replace gym roof
Bituminous Paving	0	$5	$0	not at this time
Security Cameras	135,663	$1	$135,663	replace/adjust exg.
Code Compliance Allowance			$100,000	
		Sub Total	$8,739,063	
Building Systems Budget		$/sq. foot		*Renovation Level*
Mechanical	140,663	$32	$4,501,216	replace unit-vents
Electrical	140,663	$18	$2,531,934	new LED lighting
Plumbing	140,663	$12	$1,687,956	replace exg. pipes
Fire Protection	140,663	$5	$703,315	required
		Sub Total	$9,424,421	MEP cost per SF
				$67
Proposed New Construction		$/sq. foot		
New Gymnasium	24,000	$270	$6,480,000	new full size gym
N/A	0	$270	$0	
• Site work required for new additions			$777,600	
		Sub Total	$7,257,600	
Design/Bidding Contingency - 5%			$1,271,054	
				reno cost per SF
TOTAL CONSTRUCTION COST			$26,692,138	$136
Construction Contingency - 10%			$2,669,214	
Soft Costs - 15% (Fees, Permits, etc.)			$4,003,821	
Budget: FF&E			$650,000	650
TOTAL PROJECT COST			$34,015,173	

ENERGY STAR® Statement of Energy Design Intent (SEDI)[1]

Murray Avenue School

Option C

76

ENERGY STAR® Design Score[2]

Primary Property Type: K-12 School
Gross Floor Area (ft²): 146,900
Estimated Date of Certification of Occupancy: _____

Date Generated: May 02, 2019

1. This form is required when applying for Designed to Earn the ENERGY STAR recognition. It was generated from ENERGY STAR Portfolio Manager.
2. The ENERGY STAR 1 – 100 Score is based on total annual Source Energy. To be eligible for Designed to Earn the ENERGY STAR recognition you must score at least 75.

Property & Contact Information for Design Project

Property Address	**Project Architect**	**Owner Contact**
Murray Avenue School 2551 Murray Ave Huntingdon Valley, Pennsylvania 19006	____ _____ , (____)____-_____ _____	____ _____ , (____)____-_____ _____
Property ID: 2516049	**Architect Of Record**	**Property Owner**
	_____ _____ _____, ____ _____ (____)____-_____	_____ , (____)____-_____

Estimated Design Energy

Fuel Type	Usage	Energy Rate ($/Unit)
Natural Gas	4,304,430 kBtu (thousand Btu)	Not Provided
Electric - Grid	2,452,920 kBtu (thousand Btu)	Not Provided

Estimated Design Use Details

This Use Detail is used to calculate the 1-100 ENERGY STAR Score.

K-12 School	
Number of Workers on Main Shift	108
Percent That Can Be Cooled	90
Number of Computers	481
Gymnasium Floor Area	5,000 Sq. Ft.
Number of Walk-in Refrigeration/Freezer Units	2
Cooking Facilities	Yes
School District	
Student Seating Capacity	1,390
Weekend Operation	No
High School	No
Gross Floor Area Used for Food Preparation	0 Sq. Ft.
Percent That Can Be Heated	All of it - 100%
Gross Floor Area	146,900 Sq. Ft.
Months in Use	12

Design Energy and Emission Results

Metric	Design Project	Median Property	Estimated Savings
ENERGY STAR Score (1-100)	**76**	50	N/A
Energy Reduction (from Median)(%)	**-25.4**	0	N/A
Source Energy Use Intensity (kBtu/ft²/yr)	**77**	103	26
Site Energy Use Intensity (kBtu/ft²/yr)	**46**	61	15
Source Energy Use (kBtu/yr)	**11,387,828**	15,264,990	3,877,162
Site Energy Use (kBtu/yr)	**6,757,350**	9,057,995	2,300,645
Energy Costs ($)	**98,822**	132,467	33,645
Total GHG Emissions (Metric Tons CO2e)	**477**	639	162

Designed to Earn the ENERGY STAR: Application Checklist

This section is only required if you are using this document to apply for Designed to Earn the ENERGY STAR. All design projects that achieve an EPA energy performance score of 75 or higher are eligible for this certification.

1) Does your property type match the function or use of a property that's eligibility to receive an ENERGY STAR design score? ☐ **Yes** ☐ **No/Not Sure**

If you are not sure your project is eligible for an ENERGY STAR design score, please describe the property's major functions or use:

2) Is the design project at least 95% complete with construction documents? ☐ **Yes** ☐ **No**

If no, please explain:

3) Is the property currently unoccupied and not yet generating energy bills? ☐ **Yes** ☐ **No**

4) Do energy calculations account for the whole building intended operations and all energy sources? ☐ **Yes** ☐ **No**

5) Is the Architect of Record (AOR) applying for ENERGY STAR partnership? ☐ **Yes** ☐ **No**

6) Was the design record created in the owner's Portfolio Manager account? ☐ **Yes** ☐ **No**

7) Are you seeking other qualifications for this design project? ☐ **Yes** ☐ **No**

If so, please select all that apply:

- ☐ AIA 2030 Commitment
- ☐ Architecture 2030 Challenge
- ☐ Federal, State or Local Disclosure Ordinance
- ☐ Green Globes
- ☐ LEED
- ☐ Other, please indicate: _____

Murray Avenue Middle School Option D

Overview:

This option expands on Murray Avenue Middle School Option C and adds a 5-classroom addition to the existing building. Configured as STEM labs, these 5 classrooms would address the district's goal of increasing the number of environments for science and technology education.

As with Options A, B, and C, the converted STEM Center, converted classrooms, renovated Library, Nurse Suite, and TV Studio, and New Gymnasium addition are included in this option as well as limited interior renovations to the remainder of the building. For building systems, this option would replace unit-ventilators in the classrooms, replace all lighting with LED lights, replace all existing piping in the building, and install a fire suppression system that would be required with a building-wide renovation.

This renovation scheme will address programmatic and capacity issues staying within the existing footprint of the building. It should be understood that any renovation scheme will not address all facility or programmatic issues due to the constraints of working within the existing building and site.

Phasing:

Design and construction of renovations to the Middle School would run over the course of approximately 36 months.

Pros:

- Renovation of the underutilized Auxiliary Gym adds desired STEM program to the building.
- Conversion of the District Administration Offices adds four classrooms to the building needed with growing enrollment.
- New Library accommodates new larger Makerspace and Small Group Instruction rooms desired by the District.
- Renovation and reconfiguration of Library allows for addition of TV studio Space and new direct corridor circulation.
- New Gymnasium replaces undersized existing Gymnasium with full size basketball court and substantial spectator seating.

- Addition adds new team locker rooms to service teams using the stadium at the Middle School.
- Classroom addition adds 5 STEM labs to provide spaces for programs desired at school.
- Building systems renovations will provide more energy efficient systems to keep the building running.

Cons:

- Loss of an athletic teaching space with the loss of the Auxiliary Gym.
- District Administration Office must find a new location if moved from the Middle School.
- Demolition of the existing gym to replace in place with a bigger space is a large cost.
- Any building-wide renovation project will require installation of a building wide fire suppression system.
- Does not address all facility and programmatic issues identified at the school.

TOTAL CONSTRUCTION COST:
$29,867,338

TOTAL PROJECT COST:
$37,984,173

BASEMENT FLOOR PLAN

FIRST FLOOR PLAN

SECOND FLOOR PLAN

kcba Architects

Lower Moreland Township School District

Proposed Project Estimate

Murray Avenue Opt D

Areas of Work				*Comments*
Building Renovations	Size	$/sq. foot		
Building Renovations (existing DAO)	4,750	$125	$593,750	convert classrooms
Building Renovations (exg. aux gym)	2,920	$125	$365,000	STEM center
Building Renovations (Library / Nurse)	5,000	$125	$625,000	Nurse / Library / TV
Building Renovations (limited)	127,993	$50	$6,399,650	minimal
Roof Replacement	20,000	$26	$520,000	replace gym roof
Bituminous Paving	0	$5	$0	not at this time
Security Cameras	135,663	$1	$135,663	replace/adjust exg.
Code Compliance Allowance			$100,000	
		Sub Total	$8,739,063	
Building Systems Budget		$/sq. foot		*Renovation Level*
Mechanical	140,663	$32	$4,501,216	replace unit-vents
Electrical	140,663	$18	$2,531,934	new LED lighting
Plumbing	140,663	$12	$1,687,956	replace exg. pipes
Fire Protection	140,663	$5	$703,315	required
		Sub Total	$9,424,421	MEP cost per SF
				$67
Proposed New Construction		$/sq. foot		
New Gymnasium	24,000	$270	$6,480,000	new full size gym
Classroom Addition	10,000	$270	$2,700,000	additional classrooms
• Site work required for new additions			$1,101,600	
		Sub Total	$10,281,600	
Design/Bidding Contingency - 5%			$1,422,254	
				reno cost per SF
TOTAL CONSTRUCTION COST			$29,867,338	$136
Construction Contingency - 10%			$2,986,734	
Soft Costs - 15% (Fees, Permits, etc.)			$4,480,101	
Budget: FF&E			$650,000	650
TOTAL PROJECT COST			$37,984,173	

ENERGY STAR® Statement of Energy Design Intent (SEDI)[1]

Murray Avenue School

Option D

77

ENERGY STAR® Design Score[2]

Primary Property Type: K-12 School
Gross Floor Area (ft²): 149,900
Estimated Date of Certification of Occupancy: _____

Date Generated: May 02, 2019

1. This form is required when applying for Designed to Earn the ENERGY STAR recognition. It was generated from ENERGY STAR Portfolio Manager.
2. The ENERGY STAR 1 – 100 Score is based on total annual Source Energy. To be eligible for Designed to Earn the ENERGY STAR recognition you must score at least 75.

Property & Contact Information for Design Project

Property Address	**Project Architect**	**Owner Contact**
Murray Avenue School 2551 Murray Ave Huntingdon Valley, Pennsylvania 19006	____ _____ , (____)____-_____ _____	____ _____ , (____)____-_____ _____
Property ID: 2516049	**Architect Of Record**	**Property Owner**
	_____ _____ _____, ____ _____ (____)____-_____	_____ , (____)____-_____

Estimated Design Energy

Fuel Type	Usage	Energy Rate ($/Unit)
Natural Gas	4,254,062 kBtu (thousand Btu)	Not Provided
Electric - Grid	2,424,215 kBtu (thousand Btu)	Not Provided

Estimated Design Use Details

This Use Detail is used to calculate the 1-100 ENERGY STAR Score.

K-12 School	
Number of Workers on Main Shift	108
Percent That Can Be Cooled	90
Number of Computers	481
Gymnasium Floor Area	5,000 Sq. Ft.
Number of Walk-in Refrigeration/Freezer Units	2
Cooking Facilities	Yes
School District	
Student Seating Capacity	1,390
Weekend Operation	No
High School	No
Gross Floor Area Used for Food Preparation	0 Sq. Ft.
Percent That Can Be Heated	All of it - 100%
Gross Floor Area	149,900 Sq. Ft.
Months in Use	12

Design Energy and Emission Results

Metric	Design Project	Median Property	Estimated Savings
ENERGY STAR Score (1-100)	**77**	50	N/A
Energy Reduction (from Median)(%)	**-27.5**	0	N/A
Source Energy Use Intensity (kBtu/ft²/yr)	**75**	103	28
Site Energy Use Intensity (kBtu/ft²/yr)	**44**	61	17
Source Energy Use (kBtu/yr)	**11,254,565**	15,522,569	4,268,004
Site Energy Use (kBtu/yr)	**6,678,275**	9,210,839	2,532,564
Energy Costs ($)	**97,665**	134,702	37,037
Total GHG Emissions (Metric Tons CO2e)	**471**	650	179

Designed to Earn the ENERGY STAR: Application Checklist

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1) Does your property type match the function or use of a property that's eligibility to receive an ENERGY STAR design score? ☐ **Yes** ☐ **No/Not Sure**

If you are not sure your project is eligible for an ENERGY STAR design score, please describe the property's major functions or use:

2) Is the design project at least 95% complete with construction documents? ☐ **Yes** ☐ **No**

If no, please explain:

3) Is the property currently unoccupied and not yet generating energy bills? ☐ **Yes** ☐ **No**

4) Do energy calculations account for the whole building intended operations and all energy sources? ☐ **Yes** ☐ **No**

5) Is the Architect of Record (AOR) applying for ENERGY STAR partnership? ☐ **Yes** ☐ **No**

6) Was the design record created in the owner's Portfolio Manager account? ☐ **Yes** ☐ **No**

7) Are you seeking other qualifications for this design project? ☐ **Yes** ☐ **No**

If so, please select all that apply:

- ☐ AIA 2030 Commitment
- ☐ Architecture 2030 Challenge
- ☐ Federal, State or Local Disclosure Ordinance
- ☐ Green Globes
- ☐ LEED
- ☐ Other, please indicate: _____

Murray Avenue Middle School Option E

Overview:
This option builds a new Middle School on top of the existing stadium on the campus and demolishes the existing Middle School for parking and site circulation.

This option was presented because of the difficulty and expense of solving many programmatic and capacity issues in the existing building. Building a new school for grades 6-8 for 750 students alleviates the capacity issues at the existing school and provides the desired program for the Middle School. A new building will also contain ideal energy efficient building systems. After demolishing the new building, parking and site circulation can be reconfigured to separate parents from buses and faculty parking to achieve an ideal site circulation at the campus.

Phasing:
Design and construction of a new Middle School, as well as demolition of the existing Middle School and reconfiguration of site circulation, would run over the course of approximately 48 months.

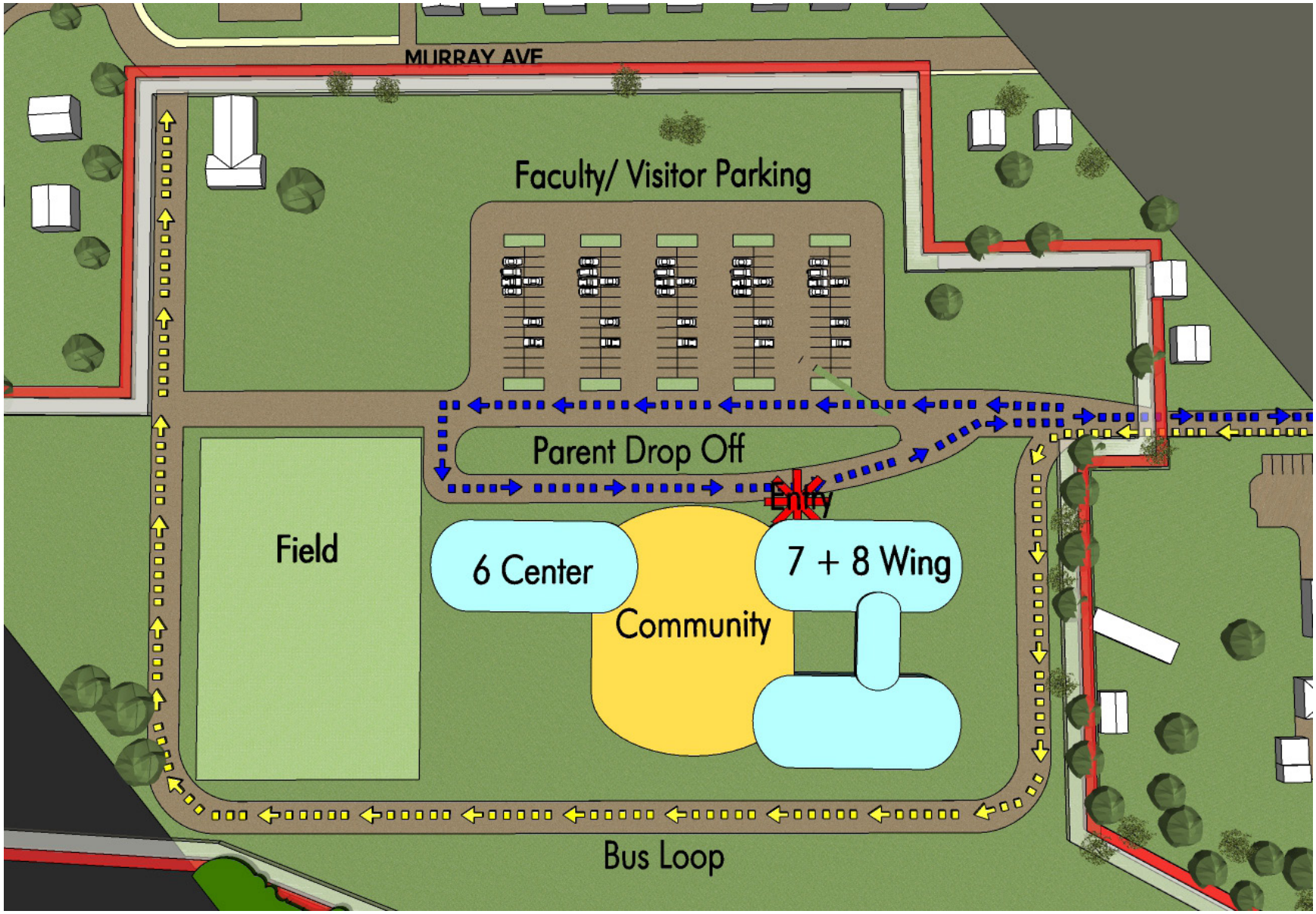
Pros:
- New Middle School resolves all facility and programmatic issues at current building.
- New Middle School addresses all building systems issues at current building and provides new energy efficient systems for potential cost savings.
- New site layout provides ideal site circulation for traffic on site.

Cons:
- Cost of a new building.
- Forces district into moving stadium to High School Campus.

TOTAL CONSTRUCTION COST:
$44,542,985

TOTAL PROJECT COST:
$54,951,581

CONCEPTUAL SITE PLAN



kcba Architects

Lower Moreland Township School District

Proposed Project Estimate

Murray Avenue Opt E - Proposed New Middle School
(Grades 6-8. Student Capacity of 750)

Areas of Work				*Comments*
Proposed New Construction		$/sq. foot		
New School Building	135,000	$270	$36,450,000	180sf / student
• Site work required for new			$5,467,500	
Demo of Existing School	139,900	$8	$1,119,200	
		Sub Total	$43,036,700	
Design/Bidding Contingency - 3.5%			$1,506,285	
		TOTAL CONSTRUCTION COST	$44,542,985	
Construction Contingency - 7%			$3,118,009	
Soft Costs - 13% (Fees, Permits, etc.)			$5,790,588	
Budget: FF&E			$1,500,000	750
		TOTAL PROJECT COST	$54,951,581	

ENERGY STAR® Statement of Energy Design Intent (SEDI)[1]

Murray Avenue School

Option E

84

ENERGY STAR® Design Score[2]

Primary Property Type: K-12 School
Gross Floor Area (ft²): 125,000
Estimated Date of Certification of Occupancy: _____

Date Generated: May 02, 2019

1. This form is required when applying for Designed to Earn the ENERGY STAR recognition. It was generated from ENERGY STAR Portfolio Manager.
2. The ENERGY STAR 1 – 100 Score is based on total annual Source Energy. To be eligible for Designed to Earn the ENERGY STAR recognition you must score at least 75.

Property & Contact Information for Design Project

Property Address	**Project Architect**	**Owner Contact**
Murray Avenue School 2551 Murray Ave Huntingdon Valley, Pennsylvania 19006	____ _____ , (____)____-_____ _____	____ _____ , (____)____-_____ _____
Property ID: 2516049	**Architect Of Record**	**Property Owner**
	_____ _____ _____, ____ _____ (____)____-_____	_____ , (____)____-_____

Estimated Design Energy

Fuel Type	Usage	Energy Rate ($/Unit)
Natural Gas	3,269,177 kBtu (thousand Btu)	Not Provided
Electric - Grid	1,862,969 kBtu (thousand Btu)	Not Provided

Estimated Design Use Details

This Use Detail is used to calculate the 1-100 ENERGY STAR Score.

K-12 School	
Number of Workers on Main Shift	108
Percent That Can Be Cooled	90
Number of Computers	481
Gymnasium Floor Area	0 Sq. Ft.
Number of Walk-in Refrigeration/Freezer Units	2
Cooking Facilities	Yes
School District	
Student Seating Capacity	750
Weekend Operation	No
High School	No
Gross Floor Area Used for Food Preparation	0 Sq. Ft.
Percent That Can Be Heated	All of it - 100%
Gross Floor Area	125,000 Sq. Ft.
Months in Use	12

Design Energy and Emission Results

Metric	Design Project	Median Property	Estimated Savings
ENERGY STAR Score (1-100)	**84**	50	N/A
Energy Reduction (from Median)(%)	**-35.4**	0	N/A
Source Energy Use Intensity (kBtu/ft²/yr)	**69**	107	38
Site Energy Use Intensity (kBtu/ft²/yr)	**41**	63	22
Source Energy Use (kBtu/yr)	**8,648,949**	13,384,578	4,735,629
Site Energy Use (kBtu/yr)	**5,132,146**	7,942,192	2,810,046
Energy Costs ($)	**75,054**	116,149	41,095
Total GHG Emissions (Metric Tons CO2e)	**362**	560	198

Designed to Earn the ENERGY STAR: Application Checklist

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If you are not sure your project is eligible for an ENERGY STAR design score, please describe the property's major functions or use:

2) Is the design project at least 95% complete with construction documents? ☐ **Yes** ☐ **No**

If no, please explain:

3) Is the property currently unoccupied and not yet generating energy bills? ☐ **Yes** ☐ **No**

4) Do energy calculations account for the whole building intended operations and all energy sources? ☐ **Yes** ☐ **No**

5) Is the Architect of Record (AOR) applying for ENERGY STAR partnership? ☐ **Yes** ☐ **No**

6) Was the design record created in the owner's Portfolio Manager account? ☐ **Yes** ☐ **No**

7) Are you seeking other qualifications for this design project? ☐ **Yes** ☐ **No**

If so, please select all that apply:

- ☐ AIA 2030 Commitment
- ☐ Architecture 2030 Challenge
- ☐ Federal, State or Local Disclosure Ordinance
- ☐ Green Globes
- ☐ LEED
- ☐ Other, please indicate: _____

Stadium Option A

Overview:
Murray Avenue Option E constructs a new middle school building on the existing stadium; therefore this option builds a new stadium at the High School campus. This includes a 6-lane track and full D-Zone to accommodate track and field events; a turf field; a Field House with concessions, storage, and toilets to service the Stadium; ticket booths; and grandstands to seat 1,000 spectators.

Due to the +/- 30-foot grade change over the site of the existing fields, grading will need to be done to achieve a larger flat area to accommodate the new stadium construction. However, the stadium can be located close to the school to allow easy access to locker and athletic facilities inside the building. Existing parking on site will be adequate to service the stadium as well.

Phasing:
Design and construction of a new Stadium and Field House would run over the course of approximately 20 months.

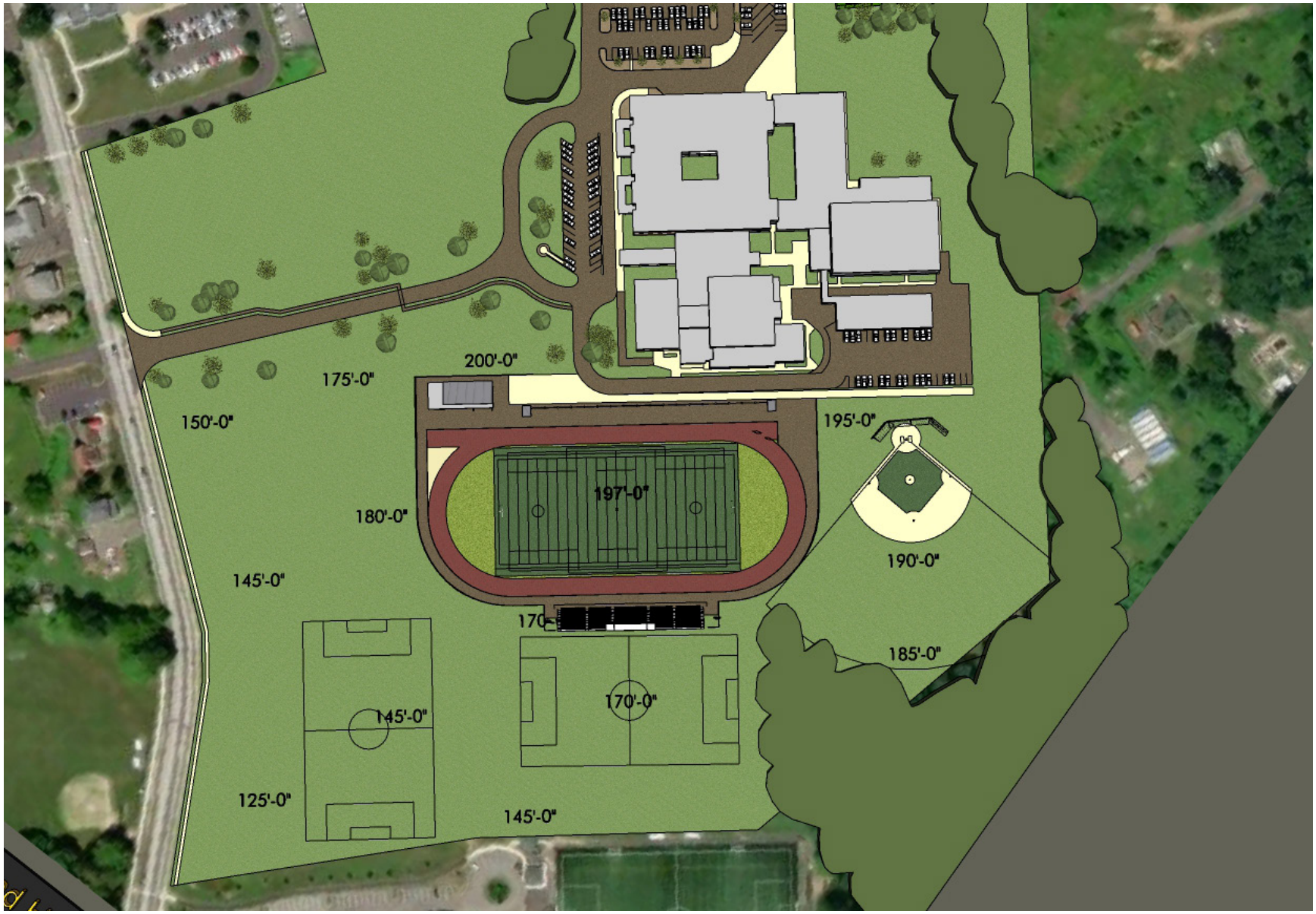
Pros:
- Stadium primarily used for High School sports will now be on campus and not across the street.
- Provides concession, storage, and toilet facilities for the stadium without entering the school.
- Stadium at the high school provides more parking for spectators than at the middle school.

Cons:
- High school site slopes greatly, adding more earthwork costs to the budget.
- District loses football practice field where new stadium would be located.

TOTAL CONSTRUCTION COST:
$3,994,200

TOTAL PROJECT COST:
$4,793,064

SITE PLAN


200'-0"
175'-0"
150'-0"
195'-0"
197'-0"
180'-0"
190'-0"
145'-0"
170'
185'-0"
170'-0"
145'-0"
125'-0"
145'-0"

kcba Architects

Lower Moreland Township School District

Proposed Project Estimate

Stadium Opt A

Areas of Work				*Comments*
New Stadium at HS Campus		$/sq. foot		
Turf Field			$850,000	
6 Lane Track w/ Full D Zone and throwing events			$975,000	
Grandstand / Scoreboards			$115,000	
New Field House	3,345	$270	$903,150	
Concessions, toilets, storage				
New Ticket Booths	330	$200	$66,000	
Site Work			$950,000	
		Sub Total	$3,859,150	
Design/Bidding Contingency - 3.5%			$135,070	
		TOTAL CONSTRUCTION COST	$3,994,220	
Construction Contingency - 7%			$279,595	
Soft Costs - 13% (Fees, Permits, etc.)			$519,249	
		TOTAL PROJECT COST	$4,793,064	

Stadium Option B

Overview:
From the Murray Avenue Middle School analysis, it was discerned that the Stadium should be upgraded to accommodate future Junior Varsity sports. There is also not enough parking on site for faculty during the school day as well as events at the Stadium. This option entails renovations to install a new turf field at the stadium with new grandstands and scoreboard, and new parking which would include a bus loop for the Middle School.

To add a new bus loop to the site and additional parking for staff and spectators at the stadium, a long drive is proposed to connect to the parking lot off Red Lion Road, giving a long bus queue behind the building next to the stadium. This would remove the buses from the parent pick up/drop off area and keep site traffic separate on the site. At the end of the bus queue, a turnaround would be added to send buses back out to Red Lion Road. The turnaround could be connected to the parking lot adjacent to it for more overflow parking for community events at the school. Additional parking spaces would be added along the bus queue line.

However, to add this bus loop, and not shift the location of the existing field, the 6-lane track would be eliminated around the field and replaced with a walking path to act as a boundary between the turf and the grass. This field could be renovated in conjunction with Stadium Option A, if there was a possibility for a new Middle School in the future, but not in the next 5-10 years. This newly renovated field would be suitable for Middle School and Junior Varsity Sports.

Phasing:
Design and construction of a renovated turf field and bus loop would run over the course of approximately 20 months.

Pros:

- Renovations at the stadium fulfill improvements needed at the current stadium.
- Bus loop separates parents from buses and adds additional parking to the site.

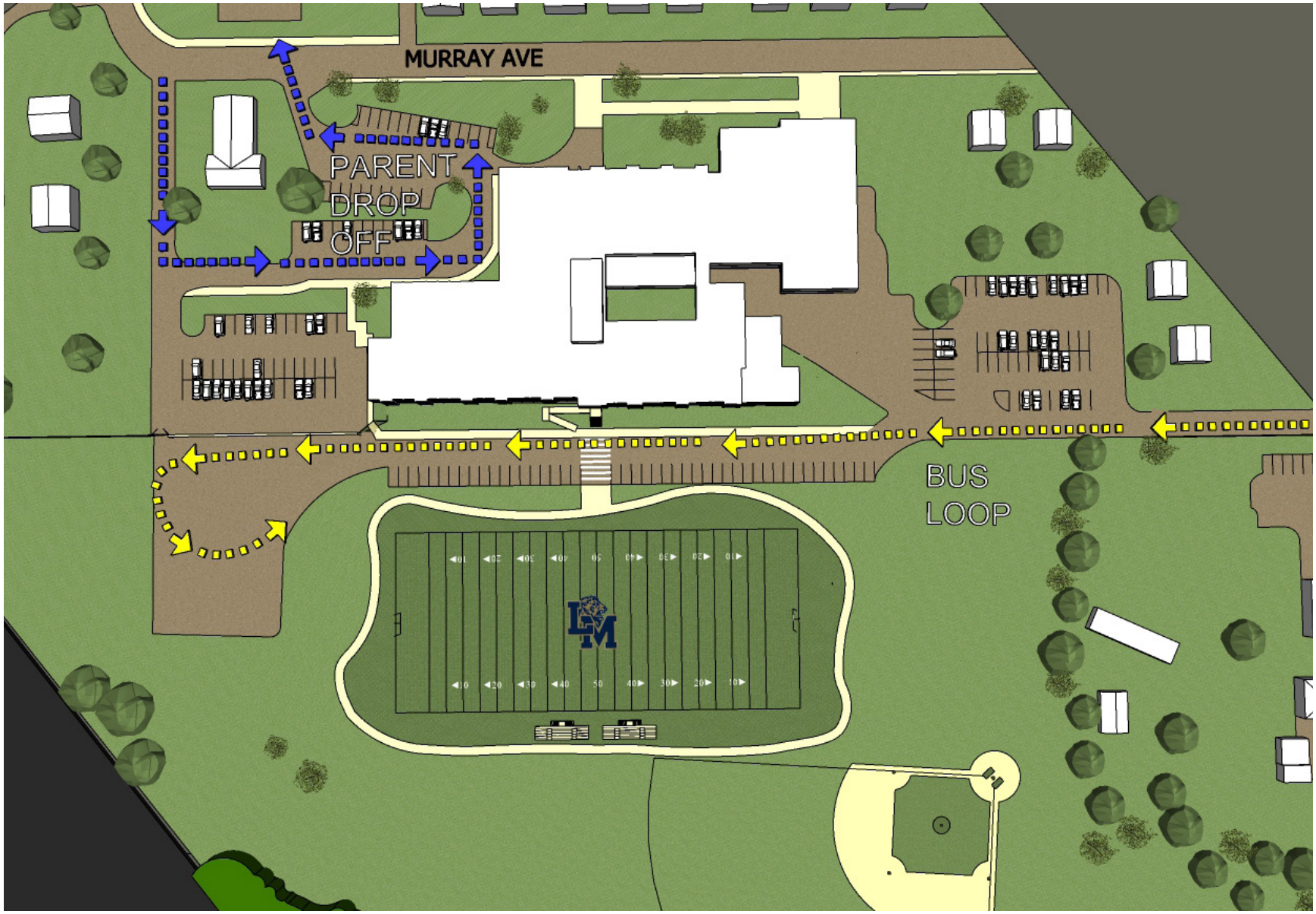
Cons:

- Bus loop design would require removal of the 6-lane track and would be contingent on new stadium construction and future Middle School on site.

TOTAL CONSTRUCTION COST:
$2,243,430

TOTAL PROJECT COST:
$2,804,288

SITE PLAN



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Lower Moreland Township School District

Proposed Project Estimate

Stadium Opt B

Areas of Work				*Comments*
Renovation at Middle School Stadium		$/sq. foot		
Turf Field			$850,000	
Grandstand / Scoreboards			$100,000	
Fence - 8ft			$60,000	
Bituminous Paving	57,660	$5	$288,300	parking/bus loop
Concrete Paving / Curb			$50,000	sidewalk
Site Work (includes demo of existing track)			$1,000,000	
		Sub Total	$2,348,300	
Design/Bidding Contingency - 5%			$117,415	
		TOTAL CONSTRUCTION COST	$2,465,715	
Construction Contingency - 10%			$246,572	
Soft Costs - 15% (Fees, Permits, etc.)			$369,857	
		TOTAL PROJECT COST	$3,082,144	

Lower Moreland High School Option A

Overview:
This option is limited to interior renovations throughout the building and areas needing roof replacement as well as replacement or adjustment of security cameras around the perimeter of the building.

For building systems, this option would replace unit-ventilators in the classrooms, replace all lighting with LED lights, fix any piping that requires revision, and install a fire suppression system that would be required with a building-wide renovation.

This renovation scheme does not address any programmatic issues at the building, but only building systems and some facilities issues. If nothing else is done, this option should be considered in the next 2-4 years.

Phasing:
Design and construction of renovations to the High School would run over the course of approximately 36 months.

Pros:

- Option resolves facility issues at the High School.
- Building to receive fire suppression system for future projects.
- Building systems renovations will provide more energy efficient systems to keep the building running.

Cons:

- Option does not address any programmatic issues at the High School.

TOTAL CONSTRUCTION COST:
$19,004,496

TOTAL PROJECT COST:
$24,755,620

kcba Architects

Lower Moreland Township School District

Proposed Project Estimate

Lower Moreland High School Opt A

Areas of Work				*Comments*
Building Renovations	Size	$/sq. foot		
Building Renovations (high)	0	$75	$0	
Building Renovations (limited)	172,160	$35	$6,025,600	limited renovations
Roof Replacement	50,000	$26	$1,300,000	replace portion roof
Bituminous Paving	0	$5	$0	not at this time
Security Cameras	172,160	$1	$172,160	replace/adjust exg.
Code Compliance Allowance			$100,000	
		Sub Total	$7,597,760	
Building Systems Budget		$/sq. foot		*Renovation Level*
Mechanical	172,160	$32	$5,509,120	replace unit-vents
Electrical	172,160	$18	$3,098,880	new LED lighting
Plumbing	172,160	$6	$1,032,960	limited scope
Fire Protection	172,160	$5	$860,800	required
		Sub Total	$10,501,760	MEP cost per SF
				$61
Proposed New Construction		$/sq. foot		
N/A	0	$270	$0	
N/A	0	$270	$0	
• Site work required for new additions			$0	
		Sub Total	$0	
Design/Bidding Contingency - 5%			$904,976	
				reno cost per SF
TOTAL CONSTRUCTION COST			$19,004,496	$110
Construction Contingency - 10%			$1,900,450	
Soft Costs - 15% (Fees, Permits, etc.)			$2,850,674	
Budget: FF&E			$1,000,000	1000
TOTAL PROJECT COST			$24,755,620	

ENERGY STAR® Statement of Energy Design Intent (SEDI)[1]

Lower Moreland HS

Option A

72

ENERGY STAR® Design Score[2]

Primary Property Type: K-12 School
Gross Floor Area (ft²): 164,600
Estimated Date of Certification of Occupancy: _____

Date Generated: May 02, 2019

1. This form is required when applying for Designed to Earn the ENERGY STAR recognition. It was generated from ENERGY STAR Portfolio Manager.
2. The ENERGY STAR 1 – 100 Score is based on total annual Source Energy. To be eligible for Designed to Earn the ENERGY STAR recognition you must score at least 75.

Property & Contact Information for Design Project

Property Address	**Project Architect**	**Owner Contact**
Lower Moreland HS 555 Red Lion Road Huntingdon, Pennsylvania 19006	____ _____ , (____)____-_____ _____	____ _____ , (____)____-_____ _____
Property ID: 2516036	**Architect Of Record**	**Property Owner**
	_____ _____ _____, ____ _____ (____)____-_____	_____ , (____)____-_____

Estimated Design Energy

Fuel Type	Usage	Energy Rate ($/Unit)
Natural Gas	6,522,700 kBtu (thousand Btu)	Not Provided
Electric - Grid	3,717,000 kBtu (thousand Btu)	Not Provided

Estimated Design Use Details

This Use Detail is used to calculate the 1-100 ENERGY STAR Score.

K-12 School	
Number of Workers on Main Shift	127
Percent That Can Be Cooled	90
Number of Computers	722
Gymnasium Floor Area	5,000 Sq. Ft.
Number of Walk-in Refrigeration/Freezer Units	2
Cooking Facilities	Yes
School District	
Student Seating Capacity	1,646
Weekend Operation	Yes
High School	Yes
Gross Floor Area Used for Food Preparation	2,000 Sq. Ft.
Percent That Can Be Heated	All of it - 100%
Gross Floor Area	164,600 Sq. Ft.
Months in Use	12

Design Energy and Emission Results

Metric	Design Project	Median Property	Estimated Savings
ENERGY STAR Score (1-100)	**72**	50	N/A
Energy Reduction (from Median)(%)	**-21.4**	0	N/A
Source Energy Use Intensity (kBtu/ft²/yr)	**104**	133	29
Site Energy Use Intensity (kBtu/ft²/yr)	**62**	79	17
Source Energy Use (kBtu/yr)	**17,256,433**	21,944,296	4,687,863
Site Energy Use (kBtu/yr)	**10,239,699**	13,021,405	2,781,706
Energy Costs ($)	**149,749**	190,429	40,680
Total GHG Emissions (Metric Tons CO2e)	**723**	919	196

Designed to Earn the ENERGY STAR: Application Checklist

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1) Does your property type match the function or use of a property that's eligibility to receive an ENERGY STAR design score? ☐ **Yes** ☐ **No/Not Sure**

If you are not sure your project is eligible for an ENERGY STAR design score, please describe the property's major functions or use:

2) Is the design project at least 95% complete with construction documents? ☐ **Yes** ☐ **No**

If no, please explain:

3) Is the property currently unoccupied and not yet generating energy bills? ☐ **Yes** ☐ **No**

4) Do energy calculations account for the whole building intended operations and all energy sources? ☐ **Yes** ☐ **No**

5) Is the Architect of Record (AOR) applying for ENERGY STAR partnership? ☐ **Yes** ☐ **No**

6) Was the design record created in the owner's Portfolio Manager account? ☐ **Yes** ☐ **No**

7) Are you seeking other qualifications for this design project? ☐ **Yes** ☐ **No**

If so, please select all that apply:

- ☐ AIA 2030 Commitment
- ☐ Architecture 2030 Challenge
- ☐ Federal, State or Local Disclosure Ordinance
- ☐ Green Globes
- ☐ LEED
- ☐ Other, please indicate: _____

Lower Moreland High School Option B

Overview:

This option addresses some of the programmatic and capacity issues at the school by building an addition in front of the existing school. This would be a 2-story addition in front of the existing 2-story segment of the building, connecting to the existing corridors. This would add an additional 10 classrooms (5 on each floor). A small part of the addition would expand the administration area to bring the main visitor entrance forward and closer to the street. Opposite of the administration, an additional lab space is added to house desired STEM programs at the school. This also includes new toilet rooms for the Gymnasium.

Inside the building, and next to the addition, the existing office spaces are renovated to support the programs around it. Part of the space is renovated into a larger guidance suite across from the administration area. Additional support space and a classroom are added for the existing library, as well as a Cyber Café that can be accessed from the library and the cafeteria. Last, a Fab-Lab is added with access to the library and the Cyber Café. This space will house the existing maker space program that is desired to be expanded in the existing school.

This renovation scheme would allow for the removal of the existing modular at the end of construction. It also addresses the needed roof replacement, security camera revisions, and building systems issues in the existing school.

Phasing:

Design and construction of renovations to the High School would run over the course of approximately 48 months.

Pros:

- Option resolves facility issues at the High School.
- Building to receive fire suppression system for future projects.
- Building systems renovations will provide more energy efficient systems to keep the building running.
- Option adds classrooms to existing building to increase capacity with increasing enrollment.

- Option addresses some programmatic issues identified at the school.
- Option allows for removal of modular classrooms.

Cons:

- Option requires visitor parking at front of school to be revised.

TOTAL CONSTRUCTION COST:
$26,294,638

TOTAL PROJECT COST:
$33,868,297

FIRST FLOOR PLAN

kcba Architects

Lower Moreland Township School District

Proposed Project Estimate

Lower Moreland High School Opt B

Areas of Work				*Comments*
Building Renovations	Size	$/sq. foot		
Building Renovations (library area)	11,070	$75	$830,250	area along addition
Building Renovations (limited)	161,090	$35	$5,638,150	minimal
Roof Replacement	50,000	$26	$1,300,000	replace portion roof
Bituminous Paving	10,000	$5	$50,000	repair at mods
Security Cameras	172,160	$1	$172,160	replace/adjust exg.
Code Compliance Allowance			$100,000	
		Sub Total	$8,090,560	
Building Systems Budget		$/sq. foot		*Renovation Level*
Mechanical	172,160	$32	$5,509,120	replace unit-vents
Electrical	172,160	$18	$3,098,880	new LED lighting
Plumbing	172,160	$6	$1,032,960	limited scope
Fire Protection	172,160	$5	$860,800	required
		Sub Total	$10,501,760	MEP cost per SF
				$61
Proposed New Construction		$/sq. foot		
Classroom + New Entry Addition	21,330	$270	$5,759,100	
N/A	0	$270	$0	
• Site work required for new additions			$691,092	
		Sub Total	$6,450,192	
Design/Bidding Contingency - 5%			$1,252,126	
				reno cost per SF
		TOTAL CONSTRUCTION COST	$26,294,638	$113
Construction Contingency - 10%			$2,629,464	
Soft Costs - 15% (Fees, Permits, etc.)			$3,944,196	
Budget: FF&E			$1,000,000	1000
		TOTAL PROJECT COST	$33,868,297	

ENERGY STAR® Statement of Energy Design Intent (SEDI)[1]

Lower Moreland HS

Option B

73

ENERGY STAR® Design Score[2]

Primary Property Type: K-12 School
Gross Floor Area (ft²): 167,600
Estimated Date of Certification of Occupancy: _____

Date Generated: May 02, 2019

1. This form is required when applying for Designed to Earn the ENERGY STAR recognition. It was generated from ENERGY STAR Portfolio Manager.
2. The ENERGY STAR 1 – 100 Score is based on total annual Source Energy. To be eligible for Designed to Earn the ENERGY STAR recognition you must score at least 75.

Property & Contact Information for Design Project

Property Address	**Project Architect**	**Owner Contact**
Lower Moreland HS 555 Red Lion Road Huntingdon, Pennsylvania 19006	____ _____ , (____)____-_____ _____	____ _____ , (____)____-_____ _____
Property ID: 2516036	**Architect Of Record**	**Property Owner**
	_____ _____ _____, ____ _____ (____)____-_____	_____ , (____)____-_____

Estimated Design Energy

Fuel Type	Usage	Energy Rate ($/Unit)
Natural Gas	6,540,338 kBtu (thousand Btu)	Not Provided
Electric - Grid	3,727,065 kBtu (thousand Btu)	Not Provided

Estimated Design Use Details

This Use Detail is used to calculate the 1-100 ENERGY STAR Score.

K-12 School	
Number of Workers on Main Shift	127
Percent That Can Be Cooled	90
Number of Computers	722
Gymnasium Floor Area	5,000 Sq. Ft.
Number of Walk-in Refrigeration/Freezer Units	2
Cooking Facilities	Yes
School District	
Student Seating Capacity	1,646
Weekend Operation	Yes
High School	Yes
Gross Floor Area Used for Food Preparation	2,000 Sq. Ft.
Percent That Can Be Heated	All of it - 100%
Gross Floor Area	167,600 Sq. Ft.
Months in Use	12

Design Energy and Emission Results

Metric	Design Project	Median Property	Estimated Savings
ENERGY STAR Score (1-100)	**73**	50	N/A
Energy Reduction (from Median)(%)	**-22.4**	0	N/A
Source Energy Use Intensity (kBtu/ft²/yr)	**103**	133	30
Site Energy Use Intensity (kBtu/ft²/yr)	**61**	78	17
Source Energy Use (kBtu/yr)	**17,303,138**	22,287,421	4,984,283
Site Energy Use (kBtu/yr)	**10,267,402**	13,224,994	2,957,592
Energy Costs ($)	**150,154**	193,407	43,253
Total GHG Emissions (Metric Tons CO2e)	**725**	933	208

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1) Does your property type match the function or use of a property that's eligibility to receive an ENERGY STAR design score? ☐ **Yes** ☐ **No/Not Sure**

If you are not sure your project is eligible for an ENERGY STAR design score, please describe the property's major functions or use:

2) Is the design project at least 95% complete with construction documents? ☐ **Yes** ☐ **No**

If no, please explain:

3) Is the property currently unoccupied and not yet generating energy bills? ☐ **Yes** ☐ **No**

4) Do energy calculations account for the whole building intended operations and all energy sources? ☐ **Yes** ☐ **No**

5) Is the Architect of Record (AOR) applying for ENERGY STAR partnership? ☐ **Yes** ☐ **No**

6) Was the design record created in the owner's Portfolio Manager account? ☐ **Yes** ☐ **No**

7) Are you seeking other qualifications for this design project? ☐ **Yes** ☐ **No**

If so, please select all that apply:

- ☐ AIA 2030 Commitment
- ☐ Architecture 2030 Challenge
- ☐ Federal, State or Local Disclosure Ordinance
- ☐ Green Globes
- ☐ LEED
- ☐ Other, please indicate: _____

Lower Moreland High School Option C

Overview:

This option expands on Option B and adds a renovation of the existing Gymnasium. The existing Gymnasium has the basketball court running in the north/south direction, with seating on either side of the space. Currently, there is little to no run off space behind each main backstop. In this scenario, the basketball court is rotated, and the run off space behind each backstop is increased. This also allows for some visibility to be added between the Gymnasium and the Fitness Center, which currently does not exist.

This renovation scheme also addresses the needed roof replacement, security camera revisions, and building systems issues in the existing school.

Phasing:

Design and construction of renovations to the High School would run over the course of approximately 36 months.

Pros:

- Option resolves facility issues at the High School.
- Building to receive fire suppression system for future projects.
- Building systems renovations will provide more energy efficient systems to keep the building running.
- Option adds classrooms to existing building to increase capacity with increasing enrollment.
- Option addresses some programmatic issues identified at the school.
- Option allows for removal of modular classrooms.
- Option creates a more adequate teaching environment for athletics.

Cons:

- Option requires visitor parking at front of school to be revised.
- Option would eliminate some bleacher seating in the Gymnasium.
- During renovation, use of Gymnasium space is lost.

TOTAL CONSTRUCTION COST:
$26,971,468

TOTAL PROJECT COST:
$34,714,335

FIRST FLOOR PLAN

kcba Architects

Lower Moreland Township School District

Proposed Project Estimate

Lower Moreland High School Opt C

Areas of Work				*Comments*
Building Renovations	Size	$/sq. foot		
Building Renovations (library area)	11,070	$75	$830,250	area along addition
Building Renovations (existing gym)	16,115	$75	$1,208,625	new floor+seating
Building Renovations (limited)	144,975	$35	$5,074,125	minimal
Roof Replacement	50,000	$26	$1,300,000	replace portion roof
Bituminous Paving	10,000	$5	$50,000	repair at mods
Security Cameras	172,160	$1	$172,160	replace/adjust exg.
Code Compliance Allowance			$100,000	
		Sub Total	$8,735,160	
Building Systems Budget		$/sq. foot		*Renovation Level*
Mechanical	172,160	$32	$5,509,120	replace unit-vents
Electrical	172,160	$18	$3,098,880	new LED lighting
Plumbing	172,160	$6	$1,032,960	limited scope
Fire Protection	172,160	$5	$860,800	required
		Sub Total	$10,501,760	MEP cost per SF
				$61
Proposed New Construction		$/sq. foot		
Classroom + New Entry Addition	21,330	$270	$5,759,100	
N/A	0	$270	$0	
• Site work required for new additions			$691,092	
		Sub Total	$6,450,192	
Design/Bidding Contingency - 5%			$1,284,356	
				reno cost per SF
TOTAL CONSTRUCTION COST			$26,971,468	$117
Construction Contingency - 10%			$2,697,147	
Soft Costs - 15% (Fees, Permits, etc.)			$4,045,720	
Budget: FF&E			$1,000,000	1000
TOTAL PROJECT COST			$34,714,335	

ENERGY STAR® Statement of Energy Design Intent (SEDI)[1]

Lower Moreland HS

Option C

73

ENERGY STAR® Design Score[2]

Primary Property Type: K-12 School
Gross Floor Area (ft²): 167,600
Estimated Date of Certification of Occupancy: _____

Date Generated: May 02, 2019

1. This form is required when applying for Designed to Earn the ENERGY STAR recognition. It was generated from ENERGY STAR Portfolio Manager.
2. The ENERGY STAR 1 – 100 Score is based on total annual Source Energy. To be eligible for Designed to Earn the ENERGY STAR recognition you must score at least 75.

Property & Contact Information for Design Project

Property Address	**Project Architect**	**Owner Contact**
Lower Moreland HS 555 Red Lion Road Huntingdon, Pennsylvania 19006	____ _____ , (____)____-_____ _____	____ _____ , (____)____-_____ _____
Property ID: 2516036	**Architect Of Record**	**Property Owner**
	_____ _____ _____, ____ _____ (____)____-_____	_____ , (____)____-_____

Estimated Design Energy

Fuel Type	Usage	Energy Rate ($/Unit)
Natural Gas	6,522,700 kBtu (thousand Btu)	Not Provided
Electric - Grid	3,717,000 kBtu (thousand Btu)	Not Provided

Estimated Design Use Details

This Use Detail is used to calculate the 1-100 ENERGY STAR Score.

K-12 School	
Number of Workers on Main Shift	127
Percent That Can Be Cooled	90
Number of Computers	722
Gymnasium Floor Area	5,000 Sq. Ft.
Number of Walk-in Refrigeration/Freezer Units	2
Cooking Facilities	Yes
School District	
Student Seating Capacity	1,646
Weekend Operation	Yes
High School	Yes
Gross Floor Area Used for Food Preparation	2,000 Sq. Ft.
Percent That Can Be Heated	All of it - 100%
Gross Floor Area	167,600 Sq. Ft.
Months in Use	12

Design Energy and Emission Results

Metric	Design Project	Median Property	Estimated Savings
ENERGY STAR Score (1-100)	**73**	50	N/A
Energy Reduction (from Median)(%)	**-22.6**	0	N/A
Source Energy Use Intensity (kBtu/ft²/yr)	**103**	133	30
Site Energy Use Intensity (kBtu/ft²/yr)	**61**	78	17
Source Energy Use (kBtu/yr)	**17,256,433**	22,287,421	5,030,988
Site Energy Use (kBtu/yr)	**10,239,699**	13,225,010	2,985,311
Energy Costs ($)	**149,749**	193,407	43,658
Total GHG Emissions (Metric Tons CO2e)	**723**	933	210

Designed to Earn the ENERGY STAR: Application Checklist

This section is only required if you are using this document to apply for Designed to Earn the ENERGY STAR. All design projects that achieve an EPA energy performance score of 75 or higher are eligible for this certification.

1) Does your property type match the function or use of a property that's eligibility to receive an ENERGY STAR design score? ☐ **Yes** ☐ **No/Not Sure**

If you are not sure your project is eligible for an ENERGY STAR design score, please describe the property's major functions or use:

2) Is the design project at least 95% complete with construction documents? ☐ **Yes** ☐ **No**

If no, please explain:

3) Is the property currently unoccupied and not yet generating energy bills? ☐ **Yes** ☐ **No**

4) Do energy calculations account for the whole building intended operations and all energy sources? ☐ **Yes** ☐ **No**

5) Is the Architect of Record (AOR) applying for ENERGY STAR partnership? ☐ **Yes** ☐ **No**

6) Was the design record created in the owner's Portfolio Manager account? ☐ **Yes** ☐ **No**

7) Are you seeking other qualifications for this design project? ☐ **Yes** ☐ **No**

If so, please select all that apply:

- ☐ AIA 2030 Commitment
- ☐ Architecture 2030 Challenge
- ☐ Federal, State or Local Disclosure Ordinance
- ☐ Green Globes
- ☐ LEED
- ☐ Other, please indicate: _____

Lower Moreland High School Option D

Overview:

This option expands on Options B and C and adds renovations to the Art and Music Rooms. The existing Band room and Practice rooms are disconnected from the other Music rooms and the Auditorium. The Option builds an addition behind the existing Music rooms to move Band and Practice rooms with the other Music spaces next to the Auditorium. The addition and renovation provides larger, more efficient storage for those programs. When the Band and Practice Rooms move, the space would be renovated into multiple STEM labs or large group collaborative spaces at the front of the school.

The Art renovation stays within the boundary of the Art rooms but reorganizes the spaces to provide a larger space for ceramics, and more efficient and organized storage rooms for the other two Art rooms. This scheme also addresses the needed roof replacement, security camera revisions, and building systems issues in the existing school.

Phasing:

Design and construction of renovations to the High School would run over the course of approximately 48 months.

Pros:

- Option resolves facility issues at the High School.
- Building to receive fire suppression system for future projects.
- Building systems renovations will provide more energy efficient systems to keep the building running.
- Option adds classrooms to existing building to increase capacity with increasing enrollment.
- Option puts all Music spaces closer to Auditorium.
- Option addresses some programmatic issues identified at the school.
- Option allows for removal of modular classrooms.
- Option creates a more adequate teaching environment for athletics.

Cons:

- Option requires visitor parking at front of school to be revised.
- Option would eliminate some bleacher seating in the Gymnasium.
- During renovation, use of Gymnasium space is lost.

TOTAL CONSTRUCTION COST:
$28,981,453

TOTAL PROJECT COST:
$37,226,817

FIRST FLOOR PLAN

kcba Architects

Lower Moreland Township School District

Proposed Project Estimate

Lower Moreland High School Opt D

Areas of Work				*Comments*
Building Renovations	Size	$/sq. foot		
Building Renovations (library area)	11,070	$75	$830,250	area along addition
Building Renovations (existing gym)	16,115	$75	$1,208,625	new floor+seating
Building Renovations (exg. music)	8,700	$75	$652,500	music + new STEM
Building Renovations (exg. art rms.)	4,910	$75	$368,250	high reno of art
Building Renovations (limited)	131,365	$35	$4,597,775	minimal
Roof Replacement	50,000	$26	$1,300,000	replace portion roof
Bituminous Paving	10,000	$5	$50,000	repair at mods
Security Cameras	172,160	$1	$172,160	replace/adjust exg.
Code Compliance Allowance			$100,000	
		Sub Total	$9,279,560	
Building Systems Budget		$/sq. foot		*Renovation Level*
Mechanical	172,160	$32	$5,509,120	replace unit-vents
Electrical	172,160	$18	$3,098,880	new LED lighting
Plumbing	172,160	$6	$1,032,960	limited scope
Fire Protection	172,160	$5	$860,800	required
		Sub Total	$10,501,760	MEP cost per SF
				$61
Proposed New Construction		$/sq. foot		
Classroom + New Entry Addition	21,330	$270	$5,759,100	
Music Wing Addition	4,530	$270	$1,223,100	
• Site work required for new additions			$837,864	
		Sub Total	$7,820,064	
Design/Bidding Contingency - 5%			$1,380,069	
				reno cost per SF
TOTAL CONSTRUCTION COST			$28,981,453	$121
Construction Contingency - 10%			$2,898,145	
Soft Costs - 15% (Fees, Permits, etc.)			$4,347,218	
Budget: FF&E			$1,000,000	1000
TOTAL PROJECT COST			$37,226,817	

ENERGY STAR® Statement of Energy Design Intent (SEDI)[1]

Lower Moreland HS

Option D

73

ENERGY STAR® Design Score[2]

Primary Property Type: K-12 School
Gross Floor Area (ft²): 169,600
Estimated Date of Certification of Occupancy: _____

Date Generated: May 02, 2019

1. This form is required when applying for Designed to Earn the ENERGY STAR recognition. It was generated from ENERGY STAR Portfolio Manager.
2. The ENERGY STAR 1 – 100 Score is based on total annual Source Energy. To be eligible for Designed to Earn the ENERGY STAR recognition you must score at least 75.

Property & Contact Information for Design Project

Property Address	**Project Architect**	**Owner Contact**
Lower Moreland HS 555 Red Lion Road Huntingdon, Pennsylvania 19006	____ _____ , (____)____-_____ _____	____ _____ , (____)____-_____ _____
Property ID: 2516036	**Architect Of Record**	**Property Owner**
	_____ _____ _____, ____ _____ (____)____-_____	_____ , (____)____-_____

Estimated Design Energy

Fuel Type	Usage	Energy Rate ($/Unit)
Natural Gas	6,587,463 kBtu (thousand Btu)	Not Provided
Electric - Grid	3,745,320 kBtu (thousand Btu)	Not Provided

Estimated Design Use Details

This Use Detail is used to calculate the 1-100 ENERGY STAR Score.

K-12 School	
Number of Workers on Main Shift	127
Percent That Can Be Cooled	90
Number of Computers	722
Gymnasium Floor Area	5,000 Sq. Ft.
Number of Walk-in Refrigeration/Freezer Units	2
Cooking Facilities	Yes
School District	
Student Seating Capacity	1,676
Weekend Operation	Yes
High School	Yes
Gross Floor Area Used for Food Preparation	2,000 Sq. Ft.
Percent That Can Be Heated	All of it - 100%
Gross Floor Area	169,600 Sq. Ft.
Months in Use	12

Design Energy and Emission Results

Metric	Design Project	Median Property	Estimated Savings
ENERGY STAR Score (1-100)	**73**	50	N/A
Energy Reduction (from Median)(%)	**-22.7**	0	N/A
Source Energy Use Intensity (kBtu/ft²/yr)	**102**	132	30
Site Energy Use Intensity (kBtu/ft²/yr)	**60**	78	18
Source Energy Use (kBtu/yr)	**17,403,730**	22,516,162	5,112,432
Site Energy Use (kBtu/yr)	**10,332,781**	13,368,086	3,035,305
Energy Costs ($)	**151,009**	195,369	44,360
Total GHG Emissions (Metric Tons CO2e)	**729**	943	214

Designed to Earn the ENERGY STAR: Application Checklist

This section is only required if you are using this document to apply for Designed to Earn the ENERGY STAR. All design projects that achieve an EPA energy performance score of 75 or higher are eligible for this certification.

1) Does your property type match the function or use of a property that's eligibility to receive an ENERGY STAR design score? ☐ **Yes** ☐ **No/Not Sure**

If you are not sure your project is eligible for an ENERGY STAR design score, please describe the property's major functions or use:

2) Is the design project at least 95% complete with construction documents? ☐ **Yes** ☐ **No**

If no, please explain:

3) Is the property currently unoccupied and not yet generating energy bills? ☐ **Yes** ☐ **No**

4) Do energy calculations account for the whole building intended operations and all energy sources? ☐ **Yes** ☐ **No**

5) Is the Architect of Record (AOR) applying for ENERGY STAR partnership? ☐ **Yes** ☐ **No**

6) Was the design record created in the owner's Portfolio Manager account? ☐ **Yes** ☐ **No**

7) Are you seeking other qualifications for this design project? ☐ **Yes** ☐ **No**

If so, please select all that apply:

- ☐ AIA 2030 Commitment
- ☐ Architecture 2030 Challenge
- ☐ Federal, State or Local Disclosure Ordinance
- ☐ Green Globes
- ☐ LEED
- ☐ Other, please indicate: _____

Lower Moreland High School Option E

Overview:

This option includes the 2-story classroom and front entry addition and renovation, the new Music room addition and renovation, the STEM lab/group collaborative space renovation, and adds the renovation and expansion of the existing athletic areas. The option renovates the existing locker rooms and trainers' rooms and creates an access corridor in between the lockers and the existing Gymnasium. The existing Gymnasium is renovated to become a smaller Auxiliary Gym, with a new Weight Room and new Wrestling Room off the Auxiliary Gym. The existing fitness room is renovated into two smaller fitness areas.

The existing wrestling room on the side of the existing Gymnasium is demolished to construct a new Gymnasium with a full-size main court, two cross courts, and spectator seating for 1,000. Team rooms are accessible off the new Gymnasium, as well as a new corridor that would connect to the Auditorium Lobby. This completes the circulation to go directly from the Auditorium to the Gymnasium. This renovation scheme also addresses the needed roof replacement, security camera revisions, and building systems issues in the existing school.

Phasing:

Design and construction of renovations to the High School would run over the course of approximately 48 months.

Pros:

- Option resolves facility issues at the High School.
- Building to receive fire suppression system for future projects.
- Building systems renovations will provide more energy efficient systems to keep the building running.
- Option adds classrooms to existing building to increase capacity with increasing enrollment.
- Option puts all Music spaces closer to Auditorium.
- Option addresses some programmatic issues identified at the school.
- Option allows for removal of modular classrooms.

- Option creates a more adequate teaching environment for athletics, with two Gymnasium spaces.

Cons:

- Option requires visitor parking at front of school to be revised.
- Option would eliminate somebleacher seating in the Gymnasium.
- During renovation, use of Gymnasium space is lost.
- Parking is lost with new Gymnasium Addition.

TOTAL CONSTRUCTION COST:
$33,802,108

TOTAL PROJECT COST:
$43,252,635

FIRST FLOOR PLAN

kcba Architects

Lower Moreland Township School District

Proposed Project Estimate

Lower Moreland High School Opt E

Areas of Work				*Comments*
Building Renovations	Size	$/sq. foot		
Building Renovations (library area)	11,070	$75	$830,250	area along addition
Building Renovations (exg. gym/lock)	18,505	$75	$1,387,875	new floor+seating
Building Renovations (exg. music)	8,700	$75	$652,500	music + new STEM
Building Renovations (exg. art rms.)	4,910	$75	$368,250	high reno of art
Building Renovations (limited)	128,975	$35	$4,514,125	minimal
Roof Replacement	50,000	$26	$1,300,000	replace portion roof
Bituminous Paving	10,000	$5	$50,000	repair at mods
Security Cameras	172,160	$1	$172,160	replace/adjust exg.
Code Compliance Allowance			$100,000	
		Sub Total	$9,375,160	
Building Systems Budget		$/sq. foot		*Renovation Level*
Mechanical	172,160	$32	$5,509,120	replace unit-vents
Electrical	172,160	$18	$3,098,880	new LED lighting
Plumbing	172,160	$6	$1,032,960	limited scope
Fire Protection	172,160	$5	$860,800	required
		Sub Total	$10,501,760	MEP cost per SF
				$61
Proposed New Construction		$/sq. foot		
Classroom + New Entry Addition	21,330	$270	$5,759,100	
Music Wing Addition	4,530	$270	$1,223,100	
New Gymnasium Addition	16,650	$270	$4,495,500	
• Site work required for new additions			$837,864	
		Sub Total	$12,315,564	
Design/Bidding Contingency - 5%			$1,609,624	
				reno cost per SF
TOTAL CONSTRUCTION COST			$33,802,108	$121
Construction Contingency - 10%			$3,380,211	
Soft Costs - 15% (Fees, Permits, etc.)			$5,070,316	
Budget: FF&E			$1,000,000	1000
TOTAL PROJECT COST			$43,252,635	

ENERGY STAR® Statement of Energy Design Intent (SEDI)[1]

Lower Moreland HS

Option E

75

ENERGY STAR® Design Score[2]

Primary Property Type: K-12 School
Gross Floor Area (ft²): 169,600
Estimated Date of Certification of Occupancy: _____

Date Generated: May 02, 2019

1. This form is required when applying for Designed to Earn the ENERGY STAR recognition. It was generated from ENERGY STAR Portfolio Manager.
2. The ENERGY STAR 1 – 100 Score is based on total annual Source Energy. To be eligible for Designed to Earn the ENERGY STAR recognition you must score at least 75.

Property & Contact Information for Design Project

Property Address	**Project Architect**	**Owner Contact**
Lower Moreland HS 555 Red Lion Road Huntingdon, Pennsylvania 19006	____ _____ , (____)____-_____ _____	____ _____ , (____)____-_____ _____
Property ID: 2516036	**Architect Of Record**	**Property Owner**
	_____ _____ _____, ____ _____ (____)____-_____	_____ , (____)____-_____

Estimated Design Energy

Fuel Type	Usage	Energy Rate ($/Unit)
Natural Gas	6,349,131 kBtu (thousand Btu)	Not Provided
Electric - Grid	3,618,107 kBtu (thousand Btu)	Not Provided

Estimated Design Use Details

This Use Detail is used to calculate the 1-100 ENERGY STAR Score.

K-12 School	
Number of Workers on Main Shift	127
Percent That Can Be Cooled	90
Number of Computers	722
Gymnasium Floor Area	7,000 Sq. Ft.
Number of Walk-in Refrigeration/Freezer Units	2
Cooking Facilities	Yes
School District	
Student Seating Capacity	1,676
Weekend Operation	Yes
High School	Yes
Gross Floor Area Used for Food Preparation	2,000 Sq. Ft.
Percent That Can Be Heated	All of it - 100%
Gross Floor Area	169,600 Sq. Ft.
Months in Use	12

Design Energy and Emission Results

Metric	Design Project	Median Property	Estimated Savings
ENERGY STAR Score (1-100)	**75**	50	N/A
Energy Reduction (from Median)(%)	**-25.4**	0	N/A
Source Energy Use Intensity (kBtu/ft²/yr)	**99**	132	33
Site Energy Use Intensity (kBtu/ft²/yr)	**58**	78	20
Source Energy Use (kBtu/yr)	**16,797,287**	22,516,162	5,718,875
Site Energy Use (kBtu/yr)	**9,967,238**	13,360,726	3,393,488
Energy Costs ($)	**145,764**	195,392	49,628
Total GHG Emissions (Metric Tons CO2e)	**703**	943	240

Designed to Earn the ENERGY STAR: Application Checklist

This section is only required if you are using this document to apply for Designed to Earn the ENERGY STAR. All design projects that achieve an EPA energy performance score of 75 or higher are eligible for this certification.

1) Does your property type match the function or use of a property that's eligibility to receive an ENERGY STAR design score? ☐ **Yes** ☐ **No/Not Sure**

If you are not sure your project is eligible for an ENERGY STAR design score, please describe the property's major functions or use:

2) Is the design project at least 95% complete with construction documents? ☐ **Yes** ☐ **No**

If no, please explain:

3) Is the property currently unoccupied and not yet generating energy bills? ☐ **Yes** ☐ **No**

4) Do energy calculations account for the whole building intended operations and all energy sources? ☐ **Yes** ☐ **No**

5) Is the Architect of Record (AOR) applying for ENERGY STAR partnership? ☐ **Yes** ☐ **No**

6) Was the design record created in the owner's Portfolio Manager account? ☐ **Yes** ☐ **No**

7) Are you seeking other qualifications for this design project? ☐ **Yes** ☐ **No**

If so, please select all that apply:

- ☐ AIA 2030 Commitment
- ☐ Architecture 2030 Challenge
- ☐ Federal, State or Local Disclosure Ordinance
- ☐ Green Globes
- ☐ LEED
- ☐ Other, please indicate: _____

Lower Moreland Township School District

Construction Options Summary

This section features two tables that summarize each of the construction options introduced in the prior section. One table presents the high school and stadium options and the other contains Murray Avenue options.

These tables are intended to be used as a tool as the district continues the process of determining the most optimal long-term scenario for your community.

kcba Architects

Lower Moreland Township School District
Construction Options Summary

	DESCRIPTION	PROJECT COST
Murray Avenue Opt A	Conversion of an existing auxiliary gym into a STEM center with two STEM labs. Conversion of the existing district administration offices into four classrooms. Limited renovations to the remainder of the building. Building updates including new mechanical systems, new lighting, new piping, and installation of a fire suppression system.	$ 23,229,573
Murray Avenue Opt B	Murray Avenue Opt A + renovation of existing professional development/ conference room into nurse suite and renovation/expansion of existing library into larger makerspace and TV studio.	$24,496,135
Murray Avenue Opt C	Murray Avenue Opt A + B + demolition and addition of a new gymnasium with spectator seating, team locker rooms, and district maintenance area.	$34,015,173
Murray Avenue Opt D	Murray Avenue Opt A + B + C + addition of a 3-story, 5-classroom addition to the building.	$37,984,173
Murray Avenue Opt E	Build a new Middle School for 750 students grades 6-8 on the existing stadium location. Demolish the existing building and replace with new parking and parent drop off area.	$54,951,581

kcba Architects

Lower Moreland Township School District
Construction Options Summary

	DESCRIPTION	PROJECT COST
Stadium Opt A	Construct a new Stadium on the High School campus with a 6-lane track, turf field, fieldhouse, and ticket booths.	$4,793,064
Stadium Opt B	Renovate the stadium at the Middle School with a new turf field, elimination of 6-lane track, and addition of bus loop.	$3,082,144
Lower Moreland High School Opt A	Limited renovations to the entire school building. Roof replacement for those areas out of warranty. Building updates including new mechanical systems, new lighting, piping fixes, and installation of a fire suppression system.	$24,755,620
Lower Moreland High School Opt B	Lower Moreland High School Opt A + 2-story classroom and new entry addition at the front of the building, library support space and fabrication lab renovation, and administration and guidance renovation.	$33,868,297
Lower Moreland High School Opt C	Lower Moreland High School Opt A + B + renovation of existing gymnasium to rotate the basketball court and add new spectator seating.	$34,714,335
Lower Moreland High School Opt D	Lower Moreland High School Opt A + B + C + addition behind existing music rooms by auditorium to centralize all music spaces, renovation of existing band and practice rooms into STEM and/or ground collaboration labs, and renovation of existing art rooms.	$37,226,817
Lower Moreland High School Opt E	Lower Moreland High School Opt A + B + D + conversion of existing gymnasium into auxiliary gym, fitness room, and locker rooms; build a new main gymnasium addition.	$43,252,635

This district-wide facilities study was a collaborative effort between the administration and school board of Lower Moreland Township School District and an architectural/engineering team led by KCBA Architects. Below and on the following pages we provide brief resumes of the leaders of our architectural/engineering team.

Firm Principal

13 years with KCBA; 8 with other firms

Syracuse University - Bachelor of Architecture, 1998

Registered Architect, 2006; LEED Accredited Professional, 2006

KCBA Architects

Michael Kelly, AIA, LEED AP - Principal-in-Charge

Mike is a KCBA principal, expert in educational space analysis and planning, and a skilled facilitator of public school facility master plans. He worked closely with Lower Moreland Township School District stakeholders to review the condition, capacity, spatial utilization, and delivery of education in district facilities and explored a range of potential long-term upgrade scenarios.

Mike's public school portfolio is broad and includes a number of studies as well as large-scale and complex projects. He recently acted as Project Principal for KCBA's district-wide facilities studies at Central Bucks, Haverford Township, and Altoona Area School Districts. Capital projects on his resume include the new Lynnewood Elementary School for Haverford Township SD, the new Northampton Area Middle School, and the renovation/expansion of Central Bucks High School East. Mike is also very active with public school advocacy groups and currently serves as the architect representative on Governor Wolf's School Safety and Security Committee as well as a member of the AIA Pennsylvania Subcommittee for Education.

Firm Principal

43 years with KCBA; 4 with other firms

University of Michigan - Bachelor of Architecture, 1970

Registered Architect

James Clough, AIA - Project Administrator

Jay is a talented and knowledgeable architect with over 40 years of experience in the analysis, planning, design, and construction of public schools in Pennsylvania. For this study he served as Project Administrator and contributed to the development of both renovation/expansion and new construction options.

Jay has acted as administrator for the majority of KCBA's facilities studies and school construction projects over the last 30 years. Examples include district-wide studies for Downingtown Area, Wilson, and Boyertown Area School Districts and construction projects such as the renovation/expansion of Slatington Elementary School for Northern Lehigh School District, the new Daniel Boone Middle School, and the renovation/expansion of Boyertown Area Senior High School. Beyond his project experience, Jay has acted in a number of professional capacities related to educational facility construction including as a sustainable design panelist and design competition judge.

Firm Principal

17 years with KCBA; 13 with other firms

Syracuse University - Bachelor of Architecture, 1991

Registered Architect, 1997

Eric Gianelle, AIA – Quality Assurance/Quality Control

As KCBA's Principal of Project Management, Eric's primary responsibility is to ensure the firm maintains the highest level of service and quality to every client. For this study, he conducted a quality assurance review of each component that was produced – the existing conditions analysis, development of potential construction options, and cost estimates.

Eric's educational experience is vast and includes a number of facilities studies as well as complex new and renovated/expanded public schools. A few selected examples include district-wide facility studies for Cheltenham SD, Southern Lehigh SD, and Selinsgrove Area SD; the renovation/expansion of Slatington Elementary School for Northern Lehigh SD; the new Northampton Area Middle School; and the currently in design new Colonial Middle School.

5 years with KCBA; 4 with other firms

Bachelor of Architecture - School of Architecture at Syracuse University, 2012

NCARB Enrolled

Jamie Bortz - Project Manager

Every project at KCBA is assigned a single project manager who acts as the central hub of the project team. Jamie brings many years of experience of successful team management for both educational facilities studies and building projects and filled this role on this initiative. She provided a secondary point of contact to Lower Moreland Township School District along with Mike Kelly and was responsible to ensure the end result met your needs.

Jamie's work with public schools is expansive. She worked on two recent district-wide facilities studies – for Upper Moreland and Wyoming Area School Districts – that similarly evaluated all aspects of their delivery of education and building utilization and student capacity. Capital projects on her resume include a new elementary school for Parkland School District, a new elementary school for Northampton Area School District, and the new Avon Grove High School.

22 years with KCBA; 5 with other firms

Pennsylvania State University - Bachelor of Science in Structural Engineering, 1991

Professional Engineer

Michael Aument, PE – Structural Engineer

The head of KCBA's in-house structural engineering group, Mike evaluted the structural viability of all potential construction options. He has more than 20 years of architectural, transportation, institutional, and industrial structural design expertise. His work with school districts is particularly broad and includes a number of facility studies and design projects.

In addition to KCBA's prior work at Pine Road Elementary School, other notable examples of Mike's public school work include district-wide facility studies for Altoona Area SD and Selinsgrove Area SD, the renovation and reconstruction of Altoona Area High School, the new Hopewell Elementary School for Southern Lehigh SD, the new Northampton Area Middle School, and the renovation of Downingtown STEM Academy.

Firm Associate

18 years with KCBA; 13 with other firms

Drexel University - Bachelor of Science in Interior Design, 1989

Mary Schoenharl – Interior Designer

The head of KCBA's in-house interior design team, Mary reviewed existing fixtures, finishes, and materials in school buildings to determine their overall condition and viability to support the educational program. Mary has experience in all aspects of interior analysis and design for public schools and works closely with our clients to ensure they are exposed to the latest instructional tools, furniture, and technology.

Mary's educational experience includes a diverse array of facilities studies and capital projects where she has created warm and inviting environments for learners. Recent examples include district-wide facility studies for Cheltenham SD, Central Bucks SD, and Southern Lehigh SD; the renovation and reconstruction of Altoona Area High School; the renovation/expansion of Penns Valley High School; and the new Springton Manor and Pickering Valley Elementary Schools for Downingtown Area SD.

13 years with Consolidated

Pennsylvania State University - Bachelor of Architectural Engineering, 2003

Professional Engineer; LEED Accredited Professional

Consolidated Engineers
Christopher VanCampen, PE, LEED AP - Electrical Engineer

Christopher managed the evaluation and planning for electrical and technology systems. He has broad experience with all types of power systems and lighting layouts as well as low voltage systems such as fire alarms, telephone/data communications, lighting control, clock, access control, security, television, and multimedia control systems.

A specialist in integrated building design and green design strategies, Christopher has an expansive history with KCBA including the expansion of Pine Road Elementary School, a district-wide facilities audit at Upper Moreland School District, and the design of a new Operations Center for Wilson School District.

18 years with Consolidated

Pennsylvania State University - Bachelor of Science in Industrial Engineering, 2000

Professional Engineer; LEED Accredited Professional

Adam Moser, PE, LEED AP - Mechanical Engineer

Adam led the analysis and planning for HVAC and plumbing systems in LMTSD buildings. With 17 years of professional experience including many new and renovated public schools, he conducted analyses of existing building systems and utilized his expertise with building modeling software to compare heating and cooling loads and long-term energy costs of HVAC system options.

Adam has worked with KCBA on a number of public school facilities plans and building projects for districts such as Wilson, Wilson Area, and Upper Moreland. Other clients where he's provided facilities studies and/or engineering services include Rose Tree Media, Hamburg Area, Great Valley, and Conrad Weiser Area school districts.

Firm Principal

11 years with Terraform; 21 with other firms

Penn State University - Bachelor of Science in Civil Engineering, 1985

Professional Engineer, 1993

Terraform Engineering
Terry DeGroot, PE – Civil Engineer

Terry contributed to the assessment of district properties including site safety, site circulation and functionality, stormwater management, and athletic facilities. He also worked with KCBA to evaluate the site-related implications of potential upgrade options. Terry has a strong background in site analysis and land development for educational projects in the area including recent initiatives at LMTSD and an understanding of local standards and permitting requirements.

Terry's local portfolio is extensive and includes many partnerships with KCBA. Examples of our work together include the currently in design Avon Grove High School, a new elementary school for Parkland School District currently under construction, the reconstructed Wilson Area Intermediate School, new Northampton Area Middle School, and the renovation/expansion of Pottsgrove High School.

Firm President

13 years with Future Think; 8 with other firms

The Ohio State University - Master of Arts, English: Rhetoric & Composition, 1990; The Ohio State University - Bachelor of Arts, English, 1988

Recognized Educational Facility Professional

Future Think

Tracy Healy, REFP - Enrollment Study Consultant

The President of Future Think, Tracy has an expansive background in the preparation of student enrollment studies for school districts. To date, Future Think has worked with over 1,000 school districts across the United States. Tracy has a master's degree in English, experience in city and regional planning, time spent teaching in the classroom, and is very active in the Association for Learning Environments organization. As part of the project team, she studied the Lower Moreland Township School District community and produced the enrollment projections report.

Tracy's work with Pennsylvania public school districts is extensive. Recently, she partnered with KCBA in district-wide facilities studies at Southern Lehigh and Forest City Regional School Districts. Other past clients in Pennsylvania include Cheltenham, Coatesville, Conestoga Valley, Lower Merion, Penn Manor, Peters Township, Philadelphia, Phoenixville Area, and Pottsgrove School Districts.

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