Penn Manor
School District

...looking to the future

Penn Manor High School

Facility Master Plan Study

May 11, 2015

Crabtree, Rohrbaugh & Associates
Architects

VISION & MISSION STATEMENTS

Mission Statement

The Penn Manor School District shall strive for academic and personal excellence by fostering a democratic environment which motivates students, teachers, administrators and parents to work collaboratively to improve the instructional program.

Penn Manor Philosophy

The Penn Manor School District recognizes, develops, and nurtures the intelligence and sensitivities of its children and adults. It provides a positive and supportive atmosphere where staff and students work collaboratively to define and accomplish goals. A great school district emphasizes academic achievement, promotes cultural awareness, and offers opportunities for personal growth; it is a place where teachers enjoy teaching and students enjoy learning.

Penn Manor Vision

Our good Penn Manor schools will become great schools by fostering an environment which motivates students, teachers, administrators, and parents to accept responsibility for their own behavior and cooperate to improve the instructional program.

Belief Statements

- Every person has value.
- Students learn in different ways.
- Students must be prepared to meet the challenges of a changing world.
- Each individual has the potential and the responsibility to contribute to society.
- Education supports the intellectual, social, emotional, and physical needs of the student.
- Individuals must learn to be responsible for their actions.
- Individuals deserve to live and to learn in a safe and secure environment.
- Education should empower all persons to reach their full potential.
- Education is the shared responsibility of student, family, school, and community.
- A qualified and dedicated staff, sensitive to student needs, is essential to the learning process.
- The public school must operate in a fiscally prudent manner.
- Quality public education is essential for a democratic society.
- The appreciation of diversity enriches a community.
- Ethical conduct is the foundation of productive relationships.
- Communication promotes understanding.
- Learning is lifelong.

TABLE OF CONTENTS

INTRODUCTION

Crabtree, Rohrbaugh & Associates is pleased to present this Penn Manor High School Facility Master Plan Study to the Penn Manor School District. This report has been developed to assist the Penn Manor School District Board of Directors, staff and community in the decision making process regarding the future utilization and disposition of the Penn Manor High School facility, with respect to facility improvements and/or new construction.

This report should be viewed as a starting point, or benchmark; providing the framework from which discussion can be undertaken regarding the desirable improvements at the Penn Manor High School. Any future facility improvements, renovations, or new construction should be developed to align with the Penn Manor School District's Mission, Beliefs and Educational Programs.

Principles of the Report

In the Commonwealth of Pennsylvania, the Departments of Education, Environmental Protection and Labor & Industry have established guidelines for school programs, school sites, buildings and supporting facilities needed to provide a well-rounded, complete and safe educational experience for the students. These guidelines include:

- Curriculum regulations, including the ESEA (Elementary & Secondary Education Act), and "No Child Left Behind" requirements on the federal level, and the state "Chapter 4" academic and assessment standards will continue to impact facilities.

- School sites must be of adequate size to provide for the safety of the students, provide outdoor play areas, bus loading and unloading and parking for staff and visitors.

- Learning environments should be learner-centered, developmentally and age appropriate, safe, comfortable, accessible, flexible, and equitable, in addition to being cost effective.

- School facilities should meet the educational, physical, intellectual, social and emotional needs of students and create an environment that will encourage students to learn.

Key Planning Considerations

- Schools should be safe and accessible to students and adults, adequately sized to meet educational "best practices" planning standards, and provide a comfortable environment to facilitate year-round use and ubiquitous technology.

- School sites should be safe, accessible and provide for efficient and safe movement of vehicular and pedestrian traffic. Adequate parking, as well as parent and bus drop-off areas should be provided and separated to insure safety and efficiency. Athletic fields, support facilities and playgrounds should be provided to reinforce the programs.

- Flexibility in design, including providing spaces for 21st century collaborative and hands-on learning opportunities, is critical and essential for educational facilities.

Key Planning Considerations

- With the ability to communicate globally and the information explosion that technology has facilitated, schools will need to remain flexible and adaptable to respond to twenty first century educational technology, as well as teaching and learning styles.

- School facilities should include a variety of learning spaces such as instructional classrooms, small and large group learning areas, specialized instruction space and laboratories, as well as personalized space for social interaction.

- High schools are dedicated to the concept of group instruction, however must have the facilities to reinforce the emphasis on individualized learning that has emerged. New courses of study and expansion and development of educational curriculum offerings in the high school have created the need for more specialized rooms, requiring learning spaces of various sizes, and more flexible space.

- In order to accommodate large numbers of students, in an efficient and safe manner, high school facilities should be efficiently designed, with clearly delineated paths of travel.

- Research shows that student learning styles have changed. In the design of current educational facilities, therefore we need learning spaces to accommodate a new generation who:

    - Prefer multitasking and quick, non linear access to information;
    - Are visually-oriented;
    - Are highly networked, interactive and social;
    - Increasingly mobile;
    - Have a low tolerance for lecture style teaching;
    - Prefer active learning rather than passive learning;
    - Rely heavily on communications technologies to access information and to carry out social and professional interactions.

- The appearance of school buildings provides a first and lasting impression of the school system to both children and adults. The quality of the educational opportunities is inferred. Continuing efforts should be made to maintain the interior and exterior of all school facilities.

- The Penn Manor High School is a valuable long-term resource for the School District. The design of its individual spaces needs to be:

    - **Flexible** – to accommodate both current and evolving pedagogies;
    - **Future-proofed** – to enable space to be re-allocated and reconfigured;
    - **Bold** – to look beyond tried and tested technologies and pedagogies;
    - **Creative** – to energize and inspire learners and tutors;
    - **Supportive** – to develop the potential of all learners;
    - **Enterprising** – to make each space capable of supporting different purposes.

BACKGROUND

Introduction

The Penn Manor School District, in response to a dynamic and changing educational pedagogy and the increasing influence of educational technology on the teaching and learning process, is looking to the future of the Penn Manor High School. The School Board is interested in an analysis of the existing high school facility, in order to chart a practical, responsible and efficient pathway for future improvements, targeted to:

- Maintain a safe, secure, comfortable and appropriate learning environment for students and staff;
- Maximize the operating efficiency and extend the lifespan of the existing physical plant;
- Address the changing educational pedagogy and the increasing effect of technology.

The Approach & Methodology used for the development of this facility study included:

- **DISCOVERY -** Fine-tuning the process & understanding your "givens".
- **VISIONING -** Establishing the "Big Idea" and Guiding Principles for the high school.
- **SYNTHESIS -** Translating Guiding Principles into ideas and strategies for the facility.
- **PRE-DESIGN -** Team Collaboration to begin translating the vision into reality.
- **COMMUNICATION -** Sharing the visioning outcomes.

In order to provide a framework for the development of facility recommendations and concepts for the future of the Penn Manor High School facility, the following were key discussion items among the planning meetings:

- Penn Manor SD Vision, Mission Statement & Shared Values
- Educational Pedagogy
- Planning Assumptions
- Existing Challenges
- Goals & Highest Hopes for the Penn Manor High School

The following guiding principles evolved as a result of the review of the key discussion items:

- **Community –** PMHS should serve as the center of the community, an active hub of educational, social, physical and entertainment activity.
- **Transparency –** The learning environment should result from a planning / design process involving all stakeholders.
- **Focused Learning –** The learning environment should enhance teaching and learning by providing hands-on, collaborative and real-world experiences, accommodating the needs of ALL students.
- **Flexibility –** The learning environment should allow for Flexibility and Adaptability to meet changing needs.
- **Safety & Security –** The learning environment should provide for Health, Safety & Security.
- **Technology –** Technology should be ubiquitous and used to create opportunities for students for learning, networking and collaboration.
- **School Environment –** The school environment should be welcoming, comfortable and appealing, instilling a sense of pride in the students, staff and community.

Educational Visioning

The core business of the Penn Manor High School is to provide engaging, appropriate experiences for students so that they learn and are able to apply their knowledge in ways that will enrich their lives and ensure their well-being. A strong Educational Vision will serve to inform the Penn Manor High School planning strategies, promoting close alignment of the educational vision with the physical facility recommendations.

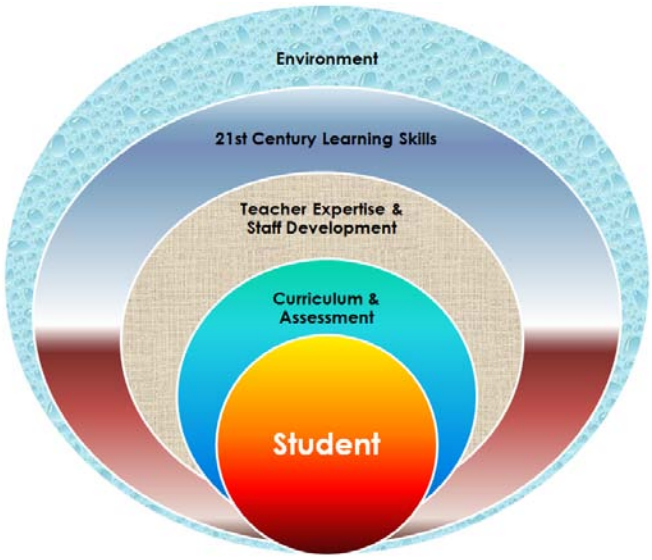
The ability to meet the diverse needs of students in an increasingly digital environment demands new learning strategies and creative approaches to teaching. Visioning is a powerful tool to making this happen.

The visioning process explored multiple interrelated educational components such as:

- 21st Century skills development
- Curriculum goals & delivery models
- Technology goals
- Virtual & Off-Site Learning
- Flexibility goals
- District-Wide continuity & program alignment
- Special programs (STEM, STEAM, SpEd, etc.)
- Professional Development
- Community & after-hours use
- Partnership opportunities
- Projected future needs

A strong educational vision can ultimately be incorporated into the **Educational Specifications,** developed to help define the characteristics of the Penn Manor High School facility, intended to support that vision. The Educational Specifications should become the framework for any future facility modifications and/or improvements, targeted to create a 21st-century educational environment that is flexible and adaptable; facilitating multiple modes of learning.

The planning for improvements to the Penn Manor High School facility should be student centered:



Process

The following schedule of meetings was used to incorporate the Visioning strategies for the development of the Facility Master Plan options:

1 DISCOVERY — Sep - 2014

- **Planning Meeting #1**

  Fine-tuning the process & understanding your "givens"

  - ✓ PMSD Vision and Core Beliefs
  - ✓ Educational Pedagogy / Benchmarking
  - ✓ Goals & Highest Hopes for the High School
    - General
    - Educational
    - Physical Plant
  - ✓ Existing Challenges… *(facility tour)*

2 VISIONING — Nov - 2014

- **Planning Meeting #2**

  Establishing the "Big Idea' and Guiding principles

  - ✓ Synthesis of Ideas and Goals
  - ✓ Preliminary Programming Discussions
  - ✓ Implementation Scenarios / Master Planning

3 SYNTHESIS — Jan - 2015

- **Planning Meeting #3**

  Translating Guiding Principles into ideas and strategies for facilities

  - ✓ Draft Space Program
  - ✓ Initial Concept Ideas
  - ✓ Questions / Input / Discussion
  - ✓ Identify Desirable Strategies

4 PRE-DESIGN — Mar - 2015

- **Planning Meeting #4**

  Collaborating with your team to begin translating your vision into reality

  - ✓ Concept Review / Discussion
  - ✓ Review of Actionable Strategies
  - ✓ Bringing it all together

5 COMMUNICATION — May - 2015

- **Planning Meeting #5**

  Sharing the visioning outcomes with the School Board

  - ✓ Planning & Background Information
  - ✓ Synthesis of Ideas / Concepts
  - ✓ Options / Recommendations

Summary

As a result of the established methodology and process, it was determined that the current Penn Manor High School facility is outdated educationally, having been designed and constructed during a different era and under a different set of educational assumptions and parameters. Technology has been the driver for a changing educational pedagogy, one that puts the student at the center of the educational planning process, with the understanding that all students do not learn *the same thing, at the same time, in the same place.*

The layout of the current high school building presents challenges and obstacles to learning that need to be addressed to improve the long term effectiveness of the delivery of the educational programs at the current Penn Manor High School facility.

In an attempt to address the educational inadequacy of the current high school, and present facility concepts that would transform the educational environment and address the needs of a 21st century education, the following facility options have been explored and developed for consideration by the School Board and the community.

❖ OPTION 1 — $52,093,800

Long term capital renewal and systemic renovations to the existing building.
This option does not address educational program related needs.

- Comprehensive renovations to the existing building, intended to extend the lifespan of the building and main operational systems.

❖ OPTION 2 — $79,890,430

Renovations and additions to the existing building.

- Through a phased approach, the majority of the existing building would be replaced.
- Existing academic wings would be reorganized and realigned to support the educational programs.

❖ OPTION 3 — $87,050,172

Renovations and additions to the existing building.

- Through a phased approach, the majority of the existing building would be replaced.
- New academic wings would replace the existing 1959 wing, and would be realigned to support the educational programs.

❖ OPTION 4 — $90,948,000

Construction of a new High School at the Manor Middle School / Hambright ES campus.

- A new high school facility would be programmed and designed to accommodate the specific needs of the Penn Manor School District.

A High School facility is a valuable, long-term resource for a community, and it is understood that any decision related to the long term performance of the Penn Manor High School, should be part of a long range master plan, and be aligned with the strategic mission and planning goals of the Penn Manor School District. The participation and input from the community, students and staff is critical to the success of future improvements to the Penn Manor High School.

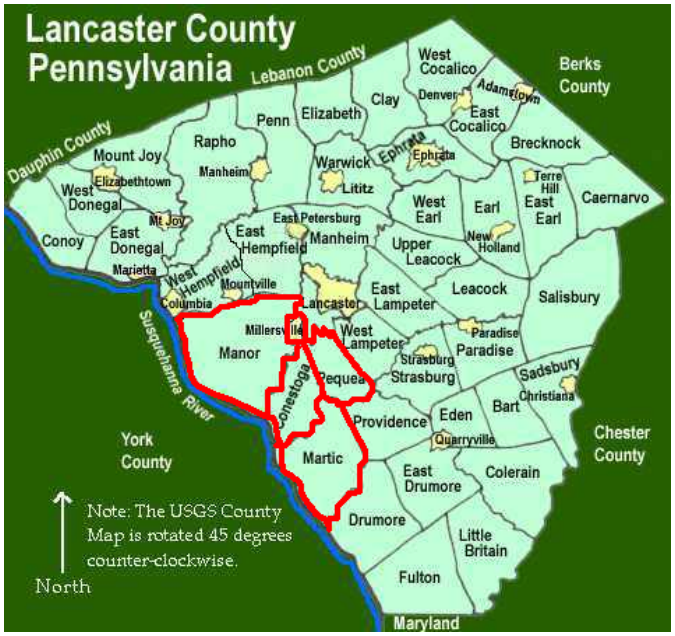
EDUCATIONAL PROGRAMMING

Demographics / Enrollment

Geography / Overview

- The Penn Manor School District spans over 100 rural square miles to the east of the Susquehanna River, in Lancaster County, PA. Penn Manor School District encompasses five political entities: Millersville Borough, and Conestoga, Martic, Manor, and Pequea Townships with a total district population in the 2010 census of 41,354.

- Penn Manor School District is recognized as one of the largest school districts in Lancaster County. Over the past 20 years, student enrollments have grown approximately 8.75%. However, this growth has occurred in the first 10 years of this 20 year period, with the past 10 years remaining relatively level in terms of student enrollment growth, even though the district population has continued to increase.



Map of Lancaster County Municipalities showing the relationship of the political entities of the Penn Manor School District: Millersville Borough, and Conestoga, Martic, Pequea and Manor Townships, in relationship to other municipalities in the County.

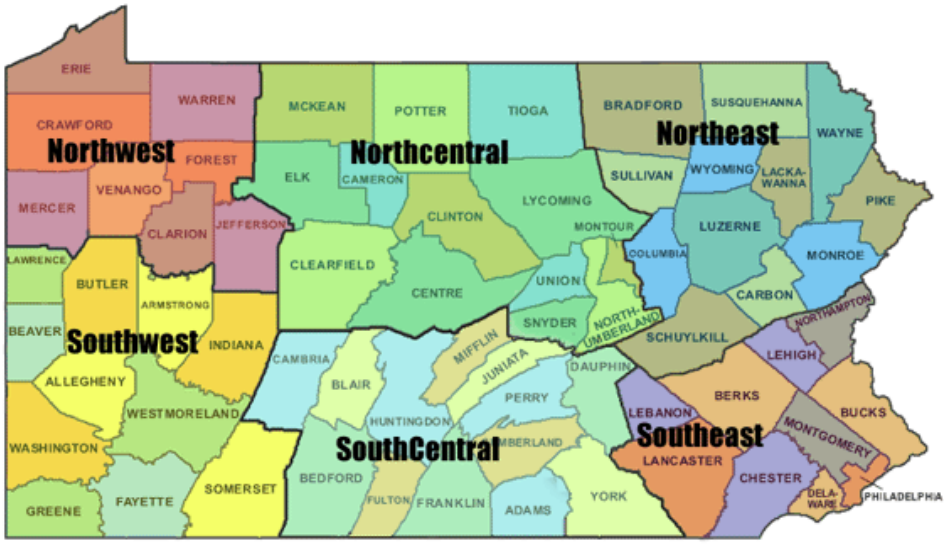
Population

- Total population in the district has increased at a rate of 19.1% from 1980 to 1990 and at a rate of 8.1% from 1990 to 2000. From 2000 to 2010, the district population increased 10.7%. The projected rate of growth in total district population is expected to increase through the year 2030; however the rate of increase is projected to decrease.

- Most of the development and growth has occurred in the north and eastern sections of the school district, within established Urban Growth boundaries in the borough of Millersville and Manor and Pequea Townships. Urban growth and development outside the established urban growth boundaries are strongly discouraged due to costly sprawl and loss of prime farmland.

EDUCATIONAL PROGRAMMING

Map of Pennsylvania showing relationship of Lancaster County to surrounding Counties.



Wealth

- All townships except Conestoga Township in the Penn Manor School District were reported in the 2010 Census data as having median household income that exceeded both the County and State median household income levels. Conestoga Township was just beneath the County level, but exceeded the State median income level. In Millersville Borough, the median household income, at $42,536.00, was beneath the State and County median income levels.

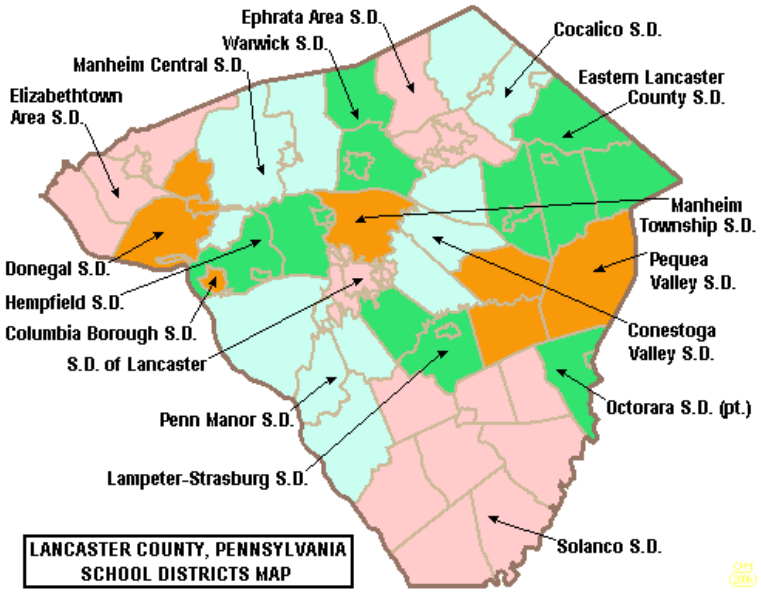
- The 2010 census data indicated that all of the townships reported a percentage of residents living below the poverty level that was less than the State percentage. All townships except Conestoga reported a percentage of residents living below the poverty level that was less than the County percentage. The percentage of citizens living below the poverty level in Millersville Borough (due to MSU students) was greater than both the County and State percentages.

State Financial Aid

- The current Market Value Aid Ratio (MVAR) for the Penn Manor School District, as determined by the Pennsylvania Department of Education is .4574.

EDUCATIONAL PROGRAMMING

Map of Lancaster County showing relationship of Penn Manor School District to surrounding School Districts



School Facilities

- With a current student population of approximately 5,131 in 2011-12, Penn Manor School District is recognized as one of the largest school districts in Lancaster County. Penn Manor School District occupies seven elementary buildings, two middle schools, and one high school. Nestled in Millersville Borough, Penn Manor High School is located beside the campus of Millersville University. The corporate headquarters of both Armstrong World Industries and Turkey Hill Dairy are located within Penn Manor School District's boundaries.

- Penn Manor School District is a three-layer district with instruction organized into an elementary division, middle level division, and high school division. Curricular design has been aligned with a K-3, 4-6, 7-8, and 9-12 configurations. All seven elementary schools house Grades K-6. The two middle schools serve Grades 7 and 8 and utilize a team approach designed around a team of core teachers for math, English, reading, social studies, and science. The high school initiated a program of intensive or "block" scheduling in the 1995-1996 school year and serves students in Grades 9-12.

- The school district currently employs approximately 375 teachers and 200 non-instructional support staff. PMSD students have consistently scored above both the state and federal averages on the SAT exam. Over the past 5 years over 70% of PMSD seniors have pursued post secondary education.

- The School District total population has increased since 1970 and is expected to continue to increase, however the rate of increase is expected to decrease.

EDUCATIONAL PROGRAMMING

PA Department of Education Enrollment Projections

Penn Manor SD **1-13-36-520-3**

YEAR	K	1	2	3	4	5	6	7	8	9	10	11	12	Total
2007-2008	293	337	367	414	362	395	410	372	446	480	485	490	455	5306
2008-2009	324	337	354	393	429	384	402	419	371	457	470	477	390	5207
2009-2010	357	348	342	369	401	435	390	420	432	383	465	461	366	5169
2010-2011	348	384	353	356	381	408	437	401	420	440	404	476	361	5169
2011-2012	356	349	396	371	363	382	422	447	408	440	440	401	356	5131
P R O J E C T I O N S														
2012-2013	399	375	359	416	381	372	389	432	452	421	446	438	310	5190
2013-2014	365	422	385	377	427	390	379	398	437	466	426	444	339	5255
2014-2015	391	386	434	405	387	437	397	388	403	450	472	424	343	5317
2015-2016	358	413	397	456	416	396	445	407	392	415	456	470	328	5349
2016-2017	361	379	424	417	468	426	403	456	412	404	420	454	364	5388
2017-2018	364	382	390	446	428	479	434	413	461	425	409	418	351	5400
2018-2019	367	385	393	410	458	438	488	445	418	475	430	407	323	5437
2019-2020	370	388	396	413	421	469	446	500	450	431	481	428	315	5508
2020-2021	373	391	399	416	424	431	477	457	506	464	437	479	331	5585
2021-2022	376	394	402	419	427	434	439	489	462	522	470	435	371	5640

Various Grade Groupings of the Enrollment Projections

YEAR	K-4	K-5	K-6	K-7	K-8	K-9	K-12	5-8	6-8	7-8	6-9	7-9	7-12	8-12	9-12	10-12
2011-2012	1835	2217	2639	3086	3494	3934	5131	1659	1277	855	1717	1295	2492	2045	1637	1197
2016-2017	2049	2475	2878	3334	3746	4150	5388	1697	1271	868	1675	1272	2510	2054	1642	1238
2021-2022	2018	2452	2891	3380	3842	4364	5640	1824	1390	951	1912	1473	2749	2260	1798	1276
2011-2012 to 2021-2022																
Change	183	235	252	294	348	430	509	165	113	96	195	178	257	215	161	79
Percent	10.0	10.6	9.5	9.5	10.0	10.9	9.9	9.9	8.8	11.2	11.4	13.7	10.3	10.5	9.8	6.6

- The Birth rate in the school district has increased from 2002 through 2009, however has begun to moderate since. The birth rate will fluctuate if planned developments continue to flourish in the district.

- Total student population increased from 4,788 to 5,320, an increase of 11.1% over the year period from 1990-2000. From 2000 through the 2011-12 school year the district student population has decreased from 5,320 to 5,131, a decrease of 3.55%.

- Between 2000 and 2005 the high school population increased by approximately 15.9% from 1,654 to 1,917 students. Between 2005 and the 2011-12 school year, the population decreased at a rate of 14.6% to a total of 1,637 students.

- The PA Department of Education enrollment projections indicate a projected increase of High School enrollment from the 2011-12 total of 1,637 to a projected 1,798 in 2012-22; an projected increase of 9.8%.

EDUCATIONAL PROGRAMMING

CRA Cohort Survival Projection

CRA reviewed the birth rate and cohort survival ratios for the most recent five year reporting period between 2009-10 and 2014-15. CRA calculated 3 year, 4 year and 5 year mean averages for the retention and birth rates. CRA then projected enrollment through the 2024-25 school year utilizing the 5 year mean average for the first five years of projection and the 3 year mean average for the second five year projection period.

K-12 Enrollment Forecast

(Utilizing 5 year mean for 2015-16 through 2019-20 and 3 year mean for 2020-21 through 2024-25)

Year	2015-16	2016-17	2017-18	2018-19	2019-20
K	372	341	344	346	349
1	353	393	360	363	372
2	362	361	401	368	371
3	388	375	374	416	381
4	425	398	384	383	427
5	380	427	400	386	385
6	415	386	434	407	392
7	394	420	391	439	412
8	369	403	430	400	449
9	414	375	410	437	407
10	428	418	379	414	441
11	469	434	424	384	420
12	388	420	389	380	344
Total	**5,157**	**5,151**	**5,119**	**5,123**	**5,150**

Year	2020-21	2021-22	2022-23	2023-24	2024-25
K	330	331	331	330	331
1	373	352	353	354	353
2	379	381	360	361	361
3	382	390	392	370	371
4	391	391	400	402	380
5	427	391	392	401	402
6	390	433	397	398	406
7	394	392	435	399	399
8	425	407	405	449	412
9	452	428	409	407	452
10	406	451	427	409	407
11	449	413	459	435	416
12	412	441	406	451	427
Total	**5,211**	**5,202**	**5,166**	**5,164**	**5,116**

- The CRA cohort enrollment projections indicate an overall **1.6% decrease in the K-12 enrollment** from the October 2014 enrollment figure of 1,756 to 1,612 in 2019-20.

- The grade 9-12 enrollment figure is projected at 1,702 in 2024-25, a 5.6% increase from the 2019-20 enrollment of 1,612 students. The peak enrollment within the projection period is 1,733 students in the 2021-22 school year.

EDUCATIONAL PROGRAMMING

Conclusion

A review of the population and housing trends as an indicator of future growth, indicate that long term, the School District could experience a slight increase in enrollment, and that the enrollment increase will be generated in the northern end of the school district. The annual birth rate and retention rates should be monitored so that the school district can stay ahead of any changing enrollment trends. At this point in time, barring any major future planned development, no significant enrollment increase is projected.

The Penn Manor High School is almost at maximum recommended functional capacity at the present time. Increases in enrollment, even fluctuating ones, will create difficulties in terms of educational delivery. In order to address the identified needs within this report, and to re-structure the existing high school facility to better meet a changing educational pedagogy and meet 21st century teaching and learning objectives, additional space and/or resturcring of the high school is recommended.

As a planning tool, it is recommended that for planning purposes for any school construction project that the School District undertakes, the enrollment figure of the current enrollment, plus 10% be utilized, which the Department of Education will allow for reimbursement purposes.

BUILDING CAPACITY

Capacity of the School

The educational programs offered in current high school facilities require flexible and varied spaces in order to provide effective and rigorous instruction, tailored to students with varied learning abilities and styles. Depending on the specific program usage, physical spaces may have different student capacities even though they may be similar in size.

Several factors affect a school's capacity in any given year. While certain calculations such as number of classrooms, sizes of core spaces, etc. remain the same over time, other factors can vary from year to year. Instructional curriculum offerings such as special needs programs, schedule, etc., make a difference in the student capacity in a school for a particular year.

The student capacity is determined by:

- Maximum class size guidelines or policies of the School District or recommendations and guidelines of the PA Department of Education, including the school capacity worksheet for the current high school facility.

- Specialized programs such as CTE and special education.

- Push-out and Pull-in Spaces, which are used for all students for specialized instruction and services, are not counted as part of the instructional capacity of a building.

- Current space utilization.

BUILDING CAPACITY

Historically school systems have determined the capacity of schools by counting the number of classrooms in a building and multiplying by an average class size. In facility planning terminology we have used the term, "design capacity", to describe this methodology. Even though at first glance this seems only to be common sense, this methodology does not take into account the programmatic and scheduling implications of a high school facility.

- In a secondary school, in theory it may be possible to use every classroom every period of every day, but from a practical perspective it is not likely. In facility planning terminology, taking program issues into consideration, we use the term, "functional capacity".

- The Pennsylvania Department of Education, in the School Capacity Planning Worksheet, applies a 90% utilization factor to the Maximum Building Capacity figure for High Schools to create a Maximum Operating Capacity figure as a baseline for evaluating school capacity. In order to fully examine the Operating Capacity of the existing school, an evaluation of the schedule and a review of any class-size guidelines should be undertaken. The application of these additional characteristics will create a realistic "Functional Capacity' of the school on a day-to-day basis.

- CEFPI (Council of Educational Facilities Planners International) recommends a utilization factor of 80% for high school facilities.

- Crabtree, Rohrbaugh & Associates, based upon the current physical layout of the Penn Manor high school, as well as the current educational program, recommends a utilization factor of between .75 and .80 be used for calculating Functional Capacity.

A. Capacity of the existing Penn Manor High School:

PDE Capacity	Enrollment	Recommended Utilization	Functional Capacity
2,012	**1,745**	**75 - 80%**	**1,677 – 1,789**

B. Capacity based upon Program Recommendations:

PDE Capacity	Enrollment	Recommended Utilization	Functional Capacity
2,146	**1,745**	**75 - 80%**	**1,907 – 2,026**

Notes:

1. The existing Penn Manor High School has very little additional capacity to accommodate an increase in student enrollment.

2. The addition of, or changes to educational programs and the educational delivery model can affect the capacity of a school building. The actual functional capacity of a school facility should be evaluated as changes are made.

BUILDING CAPACITY

Current Educational Program Utilization Summary

Penn Manor School District

Penn Manor High School - Existing Educational Space Program

Student Grades 9 - 12

PROGRAMMING SUMMARY

	Existing SF	Proposed New SF	Existing Capacity	New Capacity	Total Capacity	Notes
1. Humanities	28,278		850			
2. Science / Technology / Engineering / Math	40,994		815			
3. Economic & Management Sciences	5,434		85			
4. Learning Support	11,953		0			
5. Academic Support Spaces	2,898		0			
6. Visual & Performing Arts	14,755		180			
7. Physical Education	65,528		306			
8. Community / Common Spaces	44,859		0			
9. School Administrative Services	5,996		0			
10. General Building Support	13,206		0			
Total Net Building Area	**233,901**		Max Cap.			
Gross Building Factor	1.40	1.31	2,236			
PDE Building Capacity		0.90	2,012			
Recommended Functional Capacity Range		**.75 - .80**	**1,677 - 1,789**			
Existing Enrollment			**1,745**			
Gross Building Area	**326,312**					
Calculated Gross SF / Student (PDE)		162				
Calculated Gross SF / Student (Functional)		182 - 195				

Notes:

1. PDE rated building capacity is 2,012 students.

2. The recommended functional or operating capacity is between 1,677 and 1,789 students.

BUILDING CAPACITY

Current Educational Program Utilization Detailed Summary

Penn Manor School District

Penn Manor High School - Existing Educational Space Program

Student Grades 9 - 12

PROGRAMMING SUMMARY

		Net SF	# T.S.	Capacity	Notes
1.00	**HUMANITIES**				
1.01	Core Learning Environments	26,948	16	850	English, History, Foreign Language
1.02	Learning Support Spaces	0	2	0	
1.03	Staff Support Spaces	1,330	0	0	
		28,278	**18**	**850**	
2.00	**S.T.E.M.**	**Net SF**	**# T.S.**	**Capacity**	**Notes**
2.01	Core Learning Environments	9,552	12	300	
2.02	Science Learning Environments	15,955	13	325	
2.03	Engineering & Technology	10,056	5	100	
2.04	Agricultural Science	5,431	4	90	
2.05	Learning Support Spaces	0	2	0	
2.06	Staff Support Spaces	0	0	0	
		40,994	**32**	**725**	
3.00	**ECONOMIC & MANAGEMENT**	**Net SF**	**# T.S.**	**Capacity**	**Notes**
3.01	Core Learning Environments	5,434	4	85	
3.02	Learning Support Spaces	0	0	0	
3.03	Staff Support Spaces	0	0	0	
		5,434	**4**	**85**	
4.00	**SPECIAL EDUCATION**	**Net SF**	**# T.S.**	**Capacity**	**Notes**
4.01	Core Learning Environments	6,895	8	0	
4.02	Learning Support Spaces	2,158	2	0	
4.03	Staff Support Spaces	580	0	0	
4.04	Program Support Spaces	2,320	0	0	
		11.953	**10**	**0**	
5.00	**ACADEMIC SUPPORT**	**Net SF**	**# T.S.**	**Capacity**	**Notes**
5.01	Support Spaces	2,898	2	0	
		2,898	**2**	**0**	
6.00	**VISUAL & PERFORMING**	**Net SF**	**# T.S.**	**Capacity**	**Notes**
6.01	Music	7,726	3	60	
6.02	Art	7,029	6	120	
		14.755	**9**	**180**	
7.00	**HEALTH & FITNESS**	**Net SF**	**# T.S.**	**Capacity**	**Notes**
7.01	Physical Education	65,528	0	0	
		65,528	**6**	**231**	
8.00	**COMMUNITY / COMMONS**	**Net SF**	**# T.S.**	**Capacity**	**Notes**
8.01	Instructional Media Center	9,546	0	0	
8.02	Performance	12,613	0	0	
8.03	Food Service / Nutrition	22,700	0	0	
		44,859	**0**	**0**	
9.00	**SCHOOL ADMINISTRATION**	**Net SF**	**# T.S.**	**Capacity**	**Notes**
9.01	Administration	2,718	0	0	
9.02	Student Services / Guidance	2,048	0	0	
9.03	Health Clinic	1,230	0	0	
		5,996	**0**	**0**	
10.0	**BUILDING SUPPORT**	**Net SF**	**# T.S.**	**Capacity**	**Notes**
10.01	Faculty Support	3,989	0	0	
10.02	Technology Support	675	0	0	
10.03	Custodial Support	973	0	0	
10.04	General Support	7,569	0	0	
		13,206	**0**	**0**	

	Net SF	# T.S.	Capacity
NET AREA TOTAL	**233,901**	**77**	**2,071**
			Capacity
PDE Building Capacity		(capacity x .9)	1,864
Functional Capacity		**(capacity x .8)**	**1,657**
Current Enrollment			**1,745**

GROSS AREA ESTIMATE	**326,312**	0.716801711

BUILDING CAPACITY

Recommended Educational Program Space Summary

Penn Manor School District

Penn Manor High School - Recommended Educational Space Program

2000 Student Capacity - Grades 9 - 12

PROGRAMMING SUMMARY

	Existing SF	Programmed SF	Existing Capacity	Programmed Capacity	Notes
1. Humanities	28,278	34,100	850	1050	
2. Science / Technology / Engineering / Math	42,076	54,934	710	850	
3. Economic & Management Sciences	5,659	7,859	85	110	
4. Learning Support	9,905	10,029	0	0	
5. Academic Support Spaces	2,898	5,717	20	20	
6. Visual & Performing Arts	15,888	17,489	180	180	
7. Physical Education	65,153	57,099	240	174	
8. Community / Common Spaces	40,620	44,620	0	0	
9. School Administrative Services	6,097	8,843	0	0	
10. General Building Support	20,132	17,275	0	0	
Total Net Building Area	**236,706**	**257,965**	**21,259**		
Gross Building Factor	1.38	1.38	2,085	2,384	
PDE Building Capacity		0.90	1,877	2,146	
Functional Capacity Range		**.80 - .85**	**1,704 - 1,810**	**1,907 - 2,026**	
Gross Building Area	**326,312**	**355,992**	**29,680**		
Calculated Gross SF / Student (PDE)		174			
Calculated Gross SF / Student (Functional)		182 - 195			

Notes:

1. PDE rated building capacity of the recommended Program Summary is 2,146 students.

2. The recommended functional or operating capacity is between 1,907 and 2,026 students.

BUILDING CAPACITY

Recommended Educational Program Space Detailed Summary

Penn Manor School District

Penn Manor High School - Recommended Educational Space Program

2,000 Student Capacity - Grades 9 - 12

PROGRAMMING SUMMARY

1.00	**HUMANITIES**	**Exist SF**	**Progr SF**	**Diff**	**Programmed Capacity**	**Notes**
	1.01 Core Learning Environments	26,948	29,600		1000	English, History, Foreign Language
	1.02 Learning Support Spaces	0	3,000		50	
	1.03 Staff Support Spaces	1,330	1,500		0	
		28,278	**34,100**	**5,822**	**1050**	
2.00	**S.T.E.M.**	**Exist SF**	**Progr SF**	**Diff**	**Capacity**	**Notes**
	2.01 Core Learning Environments	9,521	10,400		350	
	2.02 Science Learning Environments	15,931	21,400		300	
	2.03 Engineering & Technology	9,934	9,934		80	
	2.04 Agricultural Science	6,278	8,700		70	
	2.05 Learning Support Spaces	0	3,000		50	
	2.06 Staff Support Spaces	412	1,500		0	
		42,076	**54,934**	**12,858**	**850**	
3.00	**ECONOMIC & MANAGEMENT**	**Exist SF**	**Progr SF**	**Diff**	**Capacity**	**Notes**
	3.01 Business & Technology	2,350	3,350		50	
	3.02 Family & Consumer Sciences	3,309	3,309		60	
	3.03 Learning Support Spaces	0	800		0	
	3.04 Staff Support Spaces	0	400		0	
		5,659	**7,859**	**2,200**	**110**	
4.00	**SPECIAL EDUCATION**	**Exist SF**	**Progr SF**	**Diff**	**Capacity**	**Notes**
	4.01 Core Learning Environments	6,895	6,400		0	
	4.02 Learning Support Spaces	1,899	2,599		0	
	4.03 Staff Support Spaces	580	580		0	
	4.04 Program Support Spaces	531	450		0	
		9,905	**10,029**	**124**	**0**	
5.00	**ACADEMIC SUPPORT**	**Exist SF**	**Progr SF**	**Diff**	**Capacity**	**Notes**
	5.01 Support Spaces	2,898	5,717		0	
		2,898	**5,717**	**2,819**	**20**	
6.00	**VISUAL & PERFORMING**	**Exist SF**	**Progr SF**	**Diff**	**Capacity**	**Notes**
	6.01 Music	7,406	7,406		60	
	6.02 Art	8,482	10,083		120	
		15,888	**17,489**	**1,601**	**180**	
7.00	**HEALTH & FITNESS**	**Exist SF**	**Progr SF**	**Diff**	**Capacity**	**Notes**
	7.01 Physical Education	65,153	57,099		174	
		65,153	**57,099**	**-8,054**	**174**	
8.00	**COMMUNITY / COMMONS**	**Exist SF**	**Progr SF**	**Diff**	**Capacity**	**Notes**
	8.01 Instructional Media Center	9,546	9,546		0	
	8.02 Performance	12,613	14,613		0	
	8.03 Food Service / Nutrition	18,461	20,461		0	
		40,620	**44,620**	**4,000**	**0**	
9.00	**SCHOOL ADMINISTRATION**	**Exist SF**	**Progr SF**	**Diff**	**Capacity**	**Notes**
	9.01 Administration	2,868	4,195		0	
	9.02 Student Services / Guidance	2,048	3,193		0	
	9.03 Health Clinic	1,181	1,455		0	
		6,097	**8,843**	**2,746**	**0**	
10.0	**BUILDING SUPPORT**	**Exist SF**	**Progr SF**	**Diff**	**Capacity**	**Notes**
	10.01 Faculty Support	4,899	1,908		0	
	10.02 Technology Support	1,916	2,050		0	
	10.03 Custodial Support	519	519		0	
	10.04 General Support	12,798	12,798		0	
		20,132	**17,275**	**-2,857**	**0**	
		Exist	Prog	Net Difference	Capacity	
	NET AREA TOTAL	**236,706**	**257,965**	**21,259**	**2,384**	
					Capacity	
	PDE Building Capacity		(capacity x .9)		2,146	
	Functional Capacity		**(capacity x .80 - .85)**		**1,907 - 2,026**	
	GROSS AREA ESTIMATE		**355,992**			0.724637681

BUILDING CAPACITY

Recommended Educational Program Space Summary By Department

1.0 HUMANITIES	EXISTING				PROGRAMMED			SF	
1.01 Core Learning Environments	Qty.	Net SF	Capacity		Qty.	Net SF	Capacity	Difference	Notes
.01 Learning Studios - English	14				16				
ADDITIONAL CLASSROOMS					2	800	50		
Classroom	1	755	25		1	800	25		
Classroom	1	779	25		1	800	25		
Classroom	1	781	25		1	800	25		
Classroom	1	766	25		1	800	25		
Classroom	1	757	25		1	800	25		
Classroom	1	740	25		1	800	25		
Classroom	1	758	25		1	800	25		
Classroom	1	751	25		1	800	25		
Classroom	1	756	25		1	800	25		
Classroom	1	776	25		1	800	25		
Classroom	1	1,059	25		1	800	25		
Classroom	1	980	25		1	800	25		
Classroom	1	1,067	25		1	800	25		
Classroom	1	748	25		1	800	25		
		11,473	350			12,000	400	527	
.02 Learning Studios - Social Studies	11				13				
ADDITIONAL CLASSROOMS					2	800	50		
Classroom	1	741	25		1	800	25		
Classroom	1	801	25		1	800	25		
Classroom	1	778	25		1	800	25		
Classroom	1	749	25		1	800	25		
Classroom	1	746	25		1	800	25		
Classroom	1	825	25		1	800	25		
Classroom	1	829	25		1	800	25		
Classroom	1	777	25		1	800	25		
Classroom	1	764	25		1	800	25		
Classroom	1	764	25		1	800	25		
Classroom	1	742	25		1	800	25		
		8,516	275			9,600	325	1,084	
.03 Learning Studios - Foreign Language	11								
ADDITIONAL CLASSROOMS					2	800	50		
Classroom	1	852	25		1	800	25		
Classroom	1	816	25		1	800	25		
Classroom	1	752	25		1	800	25		
Classroom	1	766	25		1	800	25		
Classroom	1	528	25		1	800	25		
Classroom	1	981	25		1	800	25		
Classroom	1	744	25		1	800	25		
Classroom	1	743	25		1	800	25		
Classroom	1	777	25		1	800	25		
		6,959	225			8,000	275	1,041	
1.02 Learning Support Spaces									
.01 Humanities Resource Learning Area(s)	0	0	0			3000	50		Flexible space for hands-on projects &
		0	0			3,000	50	3,000	
1.03 Staff Support Spaces									
.01 Faculty Room (Social Studies)	1	407							
.02 Conference Room	1	355							Use as Work Room
.03 Faculty Room (English)	1	269							*Verify Use*
.04 Faculty Room (Foreign Language)	1	299							
.01 Humanities Faculty Planning & Collaboration	0	0			1	1500	0		Includes faculty toilet rooms, storage room,
		1,330	0			1,500	0	170	
		Exist	Capacity			Prog	Capacity	Additional SF	
Sub - Total		28,278	850			34,100	1,050	5,822	

BUILDING CAPACITY

Recommended Educational Program Space Summary By Department

2.0 S.T.E.M.	EXISTING				PROGRAMMED			SF	
2.01 Core Learning Environments	Qty.	Net SF	Capacity		Qty.	Net SF	Capacity	Difference	Notes
.01 Learning Studios - Math	12				14				
ADDITIONAL CLASSROOMS					2	800	50		
Classroom	1	834	25		1	800	25		
Classroom	1	837	25		1	800	25		
Classroom	1	787	25		1	800	25		
Classroom	1	798	25		1	800	25		
Classroom	1	822	25		1	800	25		
Classroom	1	793	25		1	800	25		
Classroom	1	796	25		1	800	25		
Classroom	1	764	25		1	800	25		
Classroom	1	790	25		1	800	25		
Classroom	1	818	25		1	800	25		
Classroom	1	762	25		1	800	25		
Classroom	1	720	25		1	800	25		
		9,521	300			10,400	350	879	
2.02 Science	11				13				
ADDITIONAL LABS					2	1400	40		
Chemistry	1	1,077	20		1	1,400	20		
Chemistry	1	1,075	20		1	1,400	20		
Chemistry	1	1,069	20		1	1,400	20		
Biology	1	1,226	20		1	1,400	20		
Biology	1	1,270	20		1	1,400	20		
Biology	1	1,059	20		1	1,400	20		
Forensics	1	1,053	20		1	1,400	20		
Ecology	1	1,122	20		1	1,400	20		
Physics	1	1,136	20		1	1,400	20		
Physics	1	1,124	20		1	1,400	20		
Physics	1	1,164	20		1	1,400	20		
Earth Science	1	1,155	20		1	1,400	20		
Earth Science	1	1,201	20		1	1,400	20		
Science Prep / Storage	4	1,200	0		6	1,800	0		
		15,931	260			21,400	300	5,469	
2.03 Engineering & Technology									
.01 Computer / CAD Design Lab	1	2,236	20		1	2,236	20		
.02 Electronics Lab	1	1,932	20		1	1,932	20		
.03 Wood Technology Lab	1	3,012	20		1	3,012	20		
.04 Prototyping Lab	1	2,754	20		1	2,754	20		
		9,934	80			9,934	80	0	
2.04 Agriculutural Science									
.01 Agriculture Exploratory Lab	1	2,737	20		1	3,500	20		(Existing) Includes prototype desigtn lab
.01a Prototype Lab					1	1,200	0		
.02 Agriculture Lab Classroom	1	1,258	0				0		Includes storage
.03 Instructional Classroom	1	666	25		1	800	25		
.04 Instructional Classroom	1	768	25		1	800	25		
.05 Greenhouse	1	849	0		1	2,400	0		
		6,278	70			8,700	70	2,422	
2.05 Learning Support Spaces									
.01 S.T.E.M. Resource Learning Area(s)	0	0	0		1	3,000	50		
		0	0			3,000	50	3,000	
2.06 Staff Support Spaces									
.01 S.T.E.M. Faculty Planning & Collaboration Area	1	412	0		1	1,500			
		412	0			1,500		1,088	
		Exist	Capacity			Prog	Capacity	Additional SF	
Sub - Total		42,076	710			54,934	850	12,858	

BUILDING CAPACITY

Recommended Educational Program Space Summary By Department

3.0 ECONOMIC & MANAGEMENT SCIENCES	EXISTING				PROGRAMMED			SF	
3.01 Business Technology	Qty.	Net SF	Capacity		Qty.	Net SF	Capacity	Difference	Notes
.01 **New Classroom / Lab**					**1**	**1000**	**25**		
.02 Classroom / Lab	1	2,350	25		1	2350	25		
		2,350	**25**			**3,350**	**50**	1,000	
3.02 Family & Consumer	**11**								
.01 Foods & Nutrition Lab		1,065	20		1	1,065	20		
.02 Child Development Lab		1,045	20		1	1,045	20		
.03 Fashion & Design Lab		1,199	20		1	1,199	20		
		3,309	**60**			**3,309**	**60**	0	
3.03 Learning Support Spaces									
.01 Resource Learning Area(s)	0	0	0		1	800	0		
		0	**0**			**800**	**0**	800	
3.04 Staff Support Spaces									
.01 Faculty Planning & Collaboration Area	1	0	0		1	400	0		
		0	**0**			**400**	**0**	400	
		Exist	**Capacity**			**Prog**	**Capacity**	**Additional SF**	
Sub - Total		**5,659**	**85**			**7,859**	**110**	**2,200**	

4.0 LEARNING SUPPORT	EXISTING				PROGRAMMED			SF	
4.01 Core Learning Environments	Qty.	Net SF	Capacity		Qty.	Net SF	Capacity	Difference	Notes
.01 Self Contained Classroom	1	732	0		1	800	0		
.02 Self Contained Classroom	1	755	0		1	800	0		
.03 Self Contained Classroom	1	841	0		1	800	0		
.04 Self Contained Classroom	1	1,411	0		1	800	0		
.05 Self Contained Classroom	1	1,050	0		1	800	0		
.06 Self Contained Classroom	1	804	0		1	800	0		
.07 Self Contained Classroom	1	646	0		1	800	0		
.08 Self Contained Classroom	1	656	0		1	800	0		
		6,895	**0**			**6,400**	**0**	-495	
4.02 Learning Support Spaces									
.01 Special Education Resource		0	0		1	350	0		
.02 Special Education Resource		0	0		1	350	0		
.03 Learning Support (Math)		720	0		1	720	0		
.04 School to Work		1,179	0		1	1179	0		
		1,899	**0**			**2,599**	**0**	700	
4.03 Staff Support Spaces									
.01 Special Education Faculty / Resource Area	1	580	0		1	580	0		
		580	**0**			**580**	**0**	580	
4.04 Program Support Spaces									
.01 Special Education Toilet Room	1	136	0		1	150	0		
.02 Special Education Toilet Room	1	132	0		1	150	0		
.03 Faculty Toilet Room	1	169	0		1	75	0		
.04 Faculty Toilet Room	1	94	0		1	75	0		
		531	**0**			**450**		-81	
		Exist	**Capacity**			**Prog**	**Capacity**	**Additional SF**	
Sub - Total		**9,905**	**0**			**10,029**	**0**	**124**	

BUILDING CAPACITY

Recommended Educational Program Space Summary By Department

5.0 ACADEMIC SUPPORT	EXISTING			PROGRAMMED			SF	
5.01 Support Spaces	Qty.	Net SF	Capacity	Qty.	Net SF	Capacity	Difference	Notes
.01 Testing Room (SGI)	1	331	0	4	1400	0		*(4) rooms at 350 sf*
.02 Computer Room	1	1,067	20	1	1067	20		
.03 TV Studio	1	1,500	0	1	1500	0		
.04 Large Group Instruction	0	0	0	1	1750	0		
		2,898	**20**		**5,717**	**20**	2,819	
		Exist	Capacity		Prog	Capacity	Additional SF	
Sub - Total		2,898	20		5,717	20	2,819	

6.0 VISUAL & PERFORMING ARTS	EXISTING			PROGRAMMED			SF	
6.01 Music	Qty.	Net SF	Capacity	Qty	Net SF	Capacity	Difference	Notes
.01 Band Room	1	3,508	20	1	3,508	20		
.02 Band Office	1	226	0	0	226	0		
.03 Band Room Storage	2	224	0	0	224	0		
.04 Band Room Storage	1	177	0	0	177	0		
.03 Choral Room	1	1,398	20	1	1,398	20		
.04 Orchestra	1	1,008	20	1	1,008	20		
.05 Practice Rooms	3	48	0	0	48	0		
.06 Office	1	240	0	0	240	0		
.07 Storage	1	433	0	0	433	0		
.08 Storage Room	1	144	0	0	144	0		
		7,406	**60**	**3**	**7,406**	**60**	0	
6.02 Art	Qty.	Net SF	Capacity	Qty	Net SF	Capacity		
.01 Art Studio	1	1,060	20	1	1,400	20		
.02 Art Studio	1	1,060	20	1	1,400	20		
.03 Art Studio - Photography	1	1,171	20	1	1,400	20		
.04 Art Studio - Ceramics	1	1,627	20	1	1,627	20		
.05 Computer Visual Arts	1	1,041	20	1	1,400	20		
.06 Jewelry & Metals Lab	1	1,067	20	1	1,400	20		
.07 Material Storage	1	518	0	0	518	0		
.08 Faculty Planning	1	518	0	0	518	0		
.09 Faculty Workroom	1	420	0	0	420	0		
		8,482	**120**	**6**	**10,083**	**120**	1,601	
		Exist	Capacity		Prog	Capacity	Additional SF	
Sub - Total		15,888	180		17,489	180	1,601	

BUILDING CAPACITY

Recommended Educational Program Space Summary By Department

Penn Manor High School - Educational Space Program
2,000 Student Capacity - Grades 9 - 12

7.0 HEALTH &	EXISTING				PROGRAMMED			SF	
7.01 Physical Education	**Qty.**	**Net SF**	**Capacity**		**Qty.**	**Net SF**	**Capacity**	**Difference**	**Notes**
.01 Main Gymnasium	1	15,624	66		1	15,624	66		
.02 Main Gym lobby	1	1,000			0	1,000			
.03 Auxilliary Gym	1	6,678	33		1	7,500	33		
.04 Storage	5	375			1	1,000			Main gym storage
.05 Lobby	1	250			1	200			
.06 Storage Room	1	635			0	0			
.07 Boys Locker Room	1	1,534			2	5,000			(2) @ 2,500
.08 Girls locker Room	1	1,871			2	5,000			(2) @ 2,500
.09 West Gymnasium	1	12,019	66		0	0			
.10 Lobby	1	300			0	0			
.11 Storage Room	1	659			0	0			
.12 Storage Room	1	931			0	0			
.13 Storage Room	1	1,365			0	0			
.14 Storage Room	1	934			0	0			
.15 (Original) Concessions	1	116			0	0			
.16 Office	1	172			2	300			(2) @ 150
.17 Toilet Room	1	179			1	175			
.18 Toilet Room	1	102			1	175			
.19 HC Toilet Room	1	50			0	0			included in above
.20 Boys Locker Room	1	2,179			0	0			
.21 Girls Locker Room	1	1,898			0	0			
.22 Boys Team Room	1	2,128			2	3,500			(2) @ 1,750 each
.23 Girls Team Room	1	1,307			2	3,500			(2) @ 1,750 each
.24 Training Room	1	676			1	900			
.25 Officials Room	1	650			2	900			(2) @ 450 each
.26 Coaches Room	1	417			2	1,200			(2) @ 600 each
.27 Coaches Room	1	471			2	1,200			(2) @ 600 each
.28 Storage Room	1	429			0	0			
.29 Storage Room	1	641			0	0			
.30 Storage Room	1	359			0	0			
.31 Storage Room	1	1,627			1	1,000			Aux gym storage
.32 Weight Room	1	4,602			1	4,000			
.33 Office (Weight Rm)	1	127			1	125			
.34 Wrestling Room	0	0			1	2,000			
		62,305	**165**		**27**	**54,299**	**99**	-8,006	
6.02 Health & Fitness	**Qty.**	**Net SF**	**Capacity**		**Qty.**	**Net SF**	**Capacity**		
.01 Health Classroom	1	803	25		1	800	25		
.02 Health Classroom	1	1,028	25		1	800	25		
.03 Health Classroom	1	1,017	25		1	1200	25		
		2,848	**75**		**3**	**2,800**	**75**	-48	
		Exist	**Capacity**			**Prog**	**Capacity**	**Additional SF**	
Sub - Total		**65,153**	**240**			**57,099**	**174**	**-8,054**	

BUILDING CAPACITY

Recommended Educational Program Space Summary By Department

8.0 COMMUNITY / COMMON	EXISTING			PROGRAMMED			SF	
8.01 Instructional Media Center	**Qty.**	**Net SF**	**Capacity**	**Qty.**	**Net SF**	**Capacity**	**Difference**	**Notes**
.01 Main Library Space	1	8,149	0	1	8,149			
.02 Media Specialist Office	1	112	0	1	112			
.03 Workroom / Storage	1	500	0	1	500			
.04 Lib CR / Student Lounge	1	785	0	1	785			
		9,546	**0**		**9,546**	**0**		
8.02 Performance	**Qty.**	**Net SF**	**Capacity**	**Qty.**	**Net SF**	**Capacity**		
.01 Auditorium	1	9,000	0	1	9,000			
.02 Lobby	1	800	0	1	800			
.03 Stage	1	1,728	0	1	1,728			
.04 Stage Storage Room	1	135	0	1	135			
.05 Storage Room	1	150	0	1	150			
.06 Dressing / Storage	1	800	0	0	0			In loft area , inadequate and not accessible
.07 Dressing Room	0	0	0	2	800			(2) @ 400
.08 Scenery / Prop Storage and Workroom	0	0	0	1	2,000			
		12,613	**0**		**14,613**	**0**	**2,000**	
8.03 Food Services / Nutrition	**Qty.**	**Net SF**	**Capacity**	**Qty.**	**Net SF**	**Capacity**		
.01 Dining Commons / Cafeteria	1	10,000	0	1	10,000			
.02 Food Services Kitchen	1	4,000	0	1	6,000			
.03 Food Court	1	2,694	0	1	2,694			
.04 Faculty Dining	1	800	0	1	800			
.05 Custodial Area / Storage	1	790	0	1	790			
.06 Custodial Office	1	177	0	1	177			
				1				
		18,461	**0**		**20,461**	**0**	**2,000**	
		Exist	**Capacity**		**Prog**	**Capacity**	**Additional SF**	
Sub - Total		**40,620**	**0**		**44,620**	**0**	**4,000**	

BUILDING CAPACITY

Recommended Educational Program Space Summary By Department

9.0 SCHOOL	EXISTING				PROGRAMMED			SF	
9.01 Administration	Qty.	Net SF	Capacity		Qty.	Net SF	Capacity	Difference	Notes
.01 Entrance Lobby	0	0			1	800			
.02 Welcome Center / Waiting Area	1	106			11	250			
.03 Principal Office	1	222			1	225			
.04 Assistant Principal Office	3	426			3	450			(3) @ a150 sf
.05 Workstations / reception	1	1,038			1	1,038			
.06 Storage Room	1	158			1	175			
.07 Secure Storage Room	1	80			1	100			
.08 Office (SRO)	1	102			0	150			
.09 AP Office	1	114			0	150			
.10 Conference Room	1	357			1	357			
.11 Conference Room	0	0			1	175			
.12 Copy / Work Room	1	150			1	175			
.13 Probation Officer Office	1	115			1	150			
		2,868	**0**		**0**	**4,195**	**0**	**1,327**	
9.02 Student Services / Guidance	Qty.	Net SF	Capacity		Qty.	Net SF	Capacity		
.01 Waiting / Secretary Work Area	1	735			1	735			
.02 Office	1	124			1	124			
.03 Attendance Office	1	245			1	245			
.04 Counselor Office	2	270			2	270			(2) @ 135
.05 Counselor Office	2	290			2	290			(2) @ 145
.06 Counselor Office	1	180			1	180			
.07 Office	1	124			1	124			
.08 Office	1	80			1	125			
.09 Career Center	0	0			1	1,000			
.10 Storage Room	0	0			2	100			
		2,048	**0**		**13**	**3,193**	**0**	**1,145**	
9.03 Health Clinic	Qty.	Net SF	Capacity		Qty.	Net SF	Capacity		
.01 Waiting Area	1	50			1	100			
.02 Treatment Area	1	350			1	350			
.03 Office	1	175			1	175			
.04 Cot Area	1	350			0	450			
.05 Toilet Room	1	31			2	80			
.06 Changing / Exam	1	225			1	300			
		1,181				**1,455**	**0**	**1,455**	
		Exist	Capacity			Prog	Capacity	Additional SF	
Sub - Total		**6,097**	**0**			**8,843**	0	**2,746**	

BUILDING CAPACITY

Recommended Educational Program Space Summary By Department

10.0 BUILDING	EXISTING			PROGRAMMED			SF	
10.01 Faculty Support	**Qty.**	**Net SF**	**Capacity**	**Qty.**	**Net SF**	**Capacity**	**Difference**	**Notes**
.01 Instructional Planning	1	1,019		0	0			
.02 Instructional Planning	1	1,042		0	0			
.03 Instructional Planning (Math)	1	930		0	0			
.04 Staff Development Room	1	998		1	998			
.05 Athletic Director	1	465		1	465			
.06 Faculty Room	1	445		1	445			
		4,899	**0**	**3**	**1,908**		-2,991	
10.02 Technology Support	**Qty.**	**Net SF**	**Capacity**	**Qty.**	**Net SF**	**Capacity**		
.01 MDF Room				1	250			
.02 IDF Closets	6	50		6	300			(6) @ 50 sf
.03 Technology Office / Workroom	1	1,866		1	1,500			
		1,916	**0**	**8**	**2,050**		134	
10.03 Custodial Support	**Qty.**	**Net SF**	**Capacity**	**Qty.**	**Net SF**	**Capacity**		
.01 Custodial Office	1	519		1	519			
		519			**519**		0	
10.04 General Building	**Qty.**	**Net SF**	**Capacity**	**Qty.**	**Net SF**	**Capacity**		
.01 Storage Room	1	658		1	658	*lower level*		
.02 Storage Room	1	432		1	432	*lower level*		
.03 Electrical Room	1	378		1	378	*lower level*		
.04 Mechanical Room	1	2,100		1	2,100			adjacent to fac dining
.05 Mechanical Room	1	1,100		1	1,100			adjacent to kitchen
.06 Custodial Closet	12	600		12	600			
.07 Elevator	2	120		2	120			
.08 (Girls) Student Toilet Rooms	13	3,705		13	3,705			
.09 (Boys) Student Toilet Rooms	13	3,705		13	3,705			
		12,798	**0**	**45**	**12,798**		0	
		Exist	**Capacity**		**Prog**	**Capacity**	**Additional SF**	
Sub - Total		**20,132**	**0**	**0**	**17,275**	**0**	**-2,857**	

BUILDING CAPACITY

Conclusion

The current Penn Manor High School facility, based upon the current educational program and the building configuration, has very little flexibility to accommodate additional students, and lacks the flexibility to accommodate and facilitate a 21st-century collaborative, project based learning experience for the students. In order to adequately address both current and anticipated future educational program needs at the facility, it is recommended that options be considered to reorganize the existing space to more effectively support the educational program objectives, and provide a collaborative, project-based learning model to support and enhance 21st century skills development.

Enrollment projections from the Department of education indicate a project slight increase in high school enrollment over the next ten years. Based upon the desire to effectively reorganize the building to support a 21st century, collaborative learning environment, and the need to maintain flexibility to accommodate future changes in educational programming and enrollment fluctuations, a ***Functional Building Capacity*** to accommodate approximately 2,000 students is recommended for facility planning.

FACILITY OVERVIEW

Building	Construction Date	Size	Grade Level
Penn Manor High School	(1958) 1997	326,312 SF	9-12

Location East Cottage Avenue
Millersville, PA 17551

Site Size Approximately 32 acres

Student Capacity
- PDE Capacity *1,877*
-Functional Capacity *1,704 –1,810*

Student Enrollment Approx 1,745

Municipal Jurisdiction: Millersville Borough, Lancaster County

Occupancy Group Group 'B' Educational

Construction Type Non-Combustible

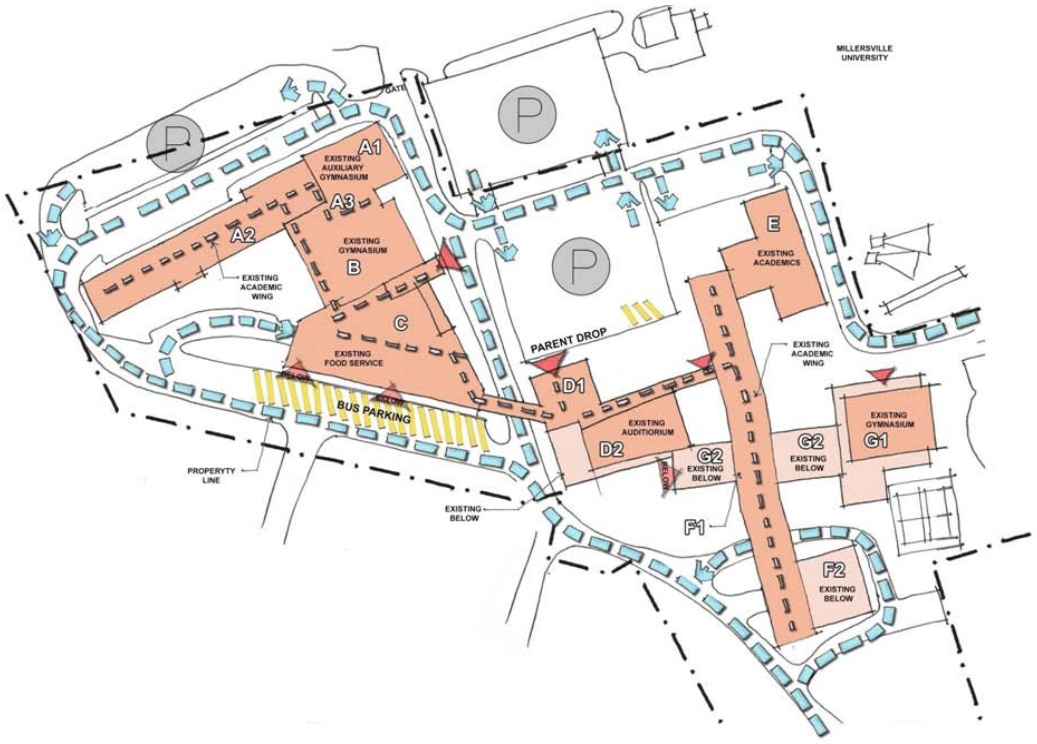
Applicable Building Codes:

- PA Uniform Construction Code (UCC):
  International Existing Building Code / 2009
  International Building Code / 2009 Excluding Chapters 1, 11 & 30
  International Building Code / 2012 Chapter 11 & Appendix 'E'
  National Electric Code–2008
  International Energy Conservation Code 2009 or 2007 ASHRAE 90.1
  International Fire Code 2009
  International Fuel Gas Code 2009
  International Mechanical Code 2009
  International Plumbing Code 2009
  International Urban-Wildland Interface Code 2009
- 2010 ADA Standards

FACILITY OVERVIEW

Existing Aerial Site View

Existing Functional Layout



FACILITY OVERVIEW

Building
The Penn Manor High School was originally constructed in 1958, with a major renovation and construction project occurring in 1997. Recent capital improvements include security and technology upgrades, as well as renovations to the auditorium and student restroom facilities. The School is a multi-level sprawling building, with exterior brick veneer and "dryvit infill and accents. The building structural system is masonry load bearing, with some steel framing and roof joists.

Site
The High school is located in the borough of Millersville on a sloping site, in a residential area adjacent to Millersville University. The main access to the school is from Cottage Ave., with additional access points form Herr Avenue and North George Street. Bus drop off, located on the north side of the building, is separated from vehicular traffic and parking, located mainly on the south side of the building.

The site contains a running track, a JV football field and practice field, as well as tennis courts. Varsity football plays at the adjacent MU football stadium, and all other athletics are played at nearby Comet Field.

Program Spaces
The school is an original 1950's design. The educational delivery model has changed significantly in an increasingly technological society. The original spaces are no longer sufficient in and of themselves to facilitate the delivery of 21st century, student-centered, collaborative based education. The sprawling nature of the building, lack of required program adjacencies, and lack of flexible and academic support spaces, contribute to an overall inefficient and nonfunctional building layout. The main entrance is not welcoming or inviting and is at the rear of the building.

Codes and Constraints
The current building is reasonably code compliant. If the facility were renovated, some ADA improvements are needed, as well as upgrades to the ventilation system. Renovations and/pr new construction would need to comply with current building codes.

Building Systems
HVAC:
- The 4-pipe HVAC System was replaced in 1997. Heating hot water is supplied by (2) fire tube boilers. Chiller water is provided by (2) water cooled centrifugal chillers connected to a cooling tower. All areas of the building are air conditioned except the gymnasiums, corridor, storage, mechanical areas and some shop areas. Heating and cooling is distributed by air handler and unit ventilators. Terminal equipment includes cabinet heaters, convectors, unit heaters, and wall fin radiation. An electronic DDC system provides energy management control.

Plumbing:
- Domestic water piping was upgraded in 1997. Storm water and sanitary piping was generally reused. Domestic hot water is provided by (2) gas-fired water heaters connected to a storage tank with hot water recirculating pumps. Most plumbing fixtures were replaced in 1997, while some have been replaced more recently. The building has public water & sewer. A portion of the building is sprinklered, but not the entire building.

Electrical:
- Main service & distribution equipment was installed in 1997. The equipment can be used for another 30 years and can accommodate some additions to the building. Existing building lighting is in fair condition and is not efficient as LED fixtures used in recent projects. Lighting controls are satisfactory, but would need to be upgraded to meet the current building code during a renovation.

Technology:
- Instructional technology includes wireless devices and interactive boards with short-throw LCD projectors. Enhancements to the technology system are` ongoing.

Overall Recommendations
Overall, the school is in fair - good condition. The lifespan of the major building components and operational systems is in the 20 - 25 year range. Some system components, as well as finishes and equipment are in need of replacement. The biggest challenge is driven by the educational program, facilitated by the outdated layout and sprawling arrangement of the building, which is non-conducive to 21st-century teaching & learning. Strategies should be developed to address the need for improvement in this area.

FACILITY OVERVIEW

Summary of Physical Plant Recommendations:

A. SITE

1. Code Compliance / Safety

- Install detectable warnings on concrete ramps that provide ADA access from the parking lots.
- There are numerous exits and entrances that are not accessible; where feasible, accessibility should be provided.
- Handicapped parking spaces should be provided in proximity to main entrances. A total of eleven (11) spaces are required based on total of 542 daily use parking spaces.
- Handicapped parking signs should be repaired where necessary. Two (2) handicapped parking signs need to be added.
- Upgrade/replace exterior railings to meet current codes.
- Areas which are used or planned for nighttime use should be upgraded with adequate lighting for safety and security.
- There are some limited areas of fencing that need repair or replacement.
- Signs and/or markings should be added to better direct parents and visitors.
- Parking spaces should be set back from building walls to protect the building from vehicle damage, better define building entries, and facilitate snow removal.

2. Physical Plant

- Limited areas of asphalt pavement are in need of repair and overlay immediately, with complete pavement overlay of parking and driveways recommend with the regular renewal cycle (within the next 1-3 years).
- There are a few areas of cracked or mis-aligned curb which should be repaired.
- There are current sidewalks with cracking/displacement and settlement that should be replaced.
- There are a few areas along drives and parking lots where vehicles are creating wear and ruts in the grass. To address this condition, curb is recommended to better define driveways and protect landscape from damage and erosion.
- Tops and face of some cast concrete retaining walls are deteriorating and in need of repair and refinishing.
- Change-over to a consistent and functional style using durable materials/construction is recommended for exterior site furnishings.
- Consolidated trash area with screens and/or fences is recommended for appearance and safety.
- There are a few overgrown trees and shrubs to be removed or thinned out.
- Landscape material is recommended to provided shade, define use areas, and to screen exposed building foundation walls, trash areas and utilities.

FACILITY OVERVIEW

- Low-lying lawn areas and the north entry plaza are in need of drainage improvements.
- The tennis courts should be renovated with new color coat and associated repairs within the next few years.

B. BUILDING

1. Code Compliance / Safety

- At all entry points, transition strips the full width of the opening should be provided to accommodate accessibility.
- All exit ways from educational spaces area should be kept open to meet egress requirements.
- All exit ways from educational spaces should be provided with clear egress signage denoting safe egress.
- In areas of rescue assistance, all call button stations should be properly functioning, repaired or replaced if necessary.
- In any project, the passenger elevators should be reviewed an upgraded if necessary to comply with current ADA requirements.
- Current stairway interior railing and guardrails at landings do not meet current codes. These are currently “grandfathered”, but it is recommended that these railings be replaced during the next renovation project.

2. Educational Program Related

- The main visitor entrance from the rear parking lot is not a welcoming or appealing entrance. Consideration should be given during any future renovations, to address this issue and improve this entrance to the building.
- Eliminate, or replace the existing student lockers with wider, more functional units.
- Provide additional storage and support spaces for the drama program areas.
- Provide additional instructional space to accommodate the enrollment and provide flexibility.
- Provide flexible, pull-out type space for student project work and collaboration.
- Provide adequate space for faculty, academic support and itinerates and collaboration and planning space.
- Look at options to integrate the math and science program areas adjacent to and integrated with the technology based program areas.
- Provide a centralized area for technology support and workspace.
- The art program areas should be renovated to create a more studio-type function.
- Provide space for large group instruction.

FACILITY OVERVIEW

- Additional program space and improvements are recommended for the agricultural program area.

- Improve utilization of the current auxiliary gym (original MS gym).

- Consider options to centralize athletic program areas.

3. Physical Plant

Exterior:

- The exterior masonry is in need of repointing in various areas and should be low-pressure cleaned and sealed. (this project is in the planning stages for summer 2015).

- The exterior insulation and finish system on the exterior of the building is badly stained and in need of crack and damage repair in certain areas. (this work has been partially completed, and is expected to complete in summer 2015).

- The exterior windows should be recaulked and the building expansion joints should be replaced. (this project is in the planning stages for summer 2015).

- In the prop storage room above and behind the stage in the auditorium, there are some damaged roof deck insulation panels that should be patched from the underside to avoid continued deterioration.

Interior:

- The interior of the building is need of painting in various areas.

- There are areas of carpeting and vinyl tile flooring in need of replacement.

- Provide new ceilings throughout as part of lighting and technology upgrades.

- There are various areas where the plastic laminate window sill material is delaminating and needs reattached or replaced.

- There are several areas of terrazzo that are in need of repair or replacement.

- The hollow metal doors and frames at the stair towers are in need of painting.

Specialties

- The folding partition in the auxiliary gym / wrestling room is in poor condition and should be replaced or removed.

- The wall padding in the wrestling room is peeling away from the wall in several areas and should be reattached.

- In the boy's locker room at the auxiliary gym / wrestling room, there are some wood tops missing from the pedestal base.

- The lockers in the locker rooms adjacent to the auxiliary gymnasium / wrestling room are beginning to rust and should be considered for repainting.

- In several toilet rooms the toilet partitions are damaged and should be replaced.

- Replace all classroom casework storage as part of program and building renovations.

FACILITY OVERVIEW

- Provide interior partition demolition and reconstruction as required to meet the educational program recommendations.

C. SYSTEMS

1. HVAC

- Overhaul the existing chillers.
- Overhaul the existing boilers.
- Upgrade the ventilation system in the Ag Shops.
- Add air conditioning for the main gym.
- The existing ATC system should be removed and a new system installed.

2. Plumbing and Fire Protection

- Renovate the existing gang toilets that have not yet been renovated.
- Replace the existing plumbing piping in the areas that were not replaced in the 1997 project.
- Replace broken/damaged water coolers.

3. Electrical

- Replace the fire alarm system.
- Replace interior lighting with LED.
- Replace exterior lighting with LED.
- Provide room lighting controls including occupancy or vacancy sensors and daylight sensors.
- Provide zone switching and dimming control of lighting in instructional spaces.
- Provide lighting reduction controls for corridors.
- Add new circuit breaker panels as required to accommodate renovations and program changes.
- Replace the access control system and integrate it into the Building Automation System.
- Replace the intrusion detection system and integrate it into the Building Automation System.
- Perform preventative maintenance and testing on the existing switch gear, high voltage. transformers and high voltage cables.
- Replace clock system.
- Replace paging system.
- Replace CCTV system and integrate it into the Building Automation System.

FACILITY OVERVIEW

4. Technology

- Install Cabling for wireless infrastructure across the entire facility: CAT 6a Cabling for classrooms - CAT6.
- Provide a dedicated district server room/MDF with sufficient space for 6 cabinets, fire suppression, temperature/humidity control, and tie-in to the building emergency generator backup. Raised flooring should be considered.
- Provide significant fiber upgrades between all closets. At least 24 strands of singe mode fiber between all closets. The fiber should looped to mitigate breaks in one direction.
- Provide dedicated security card access to critical technology areas: Server room, MDF, Technology staff areas, IDF closets, etc.
- Provide dedicated IDFs, connected to emergency generator. Do not share IDF rooms with materials storage.
- Provide centralized technology staff and service space. Office space for 4-6 IT Staff, plus separate workshop space, and storage areas. There is no temperature control or clean storage for technology at this time.
- Provide centralized student help-desk space. This should be an area for students to help support fellow students. This space should be a focal-point for the building.
- Provide a dedicated technology maker space/workroom and training area.
- Provide multimedia/TV production space, technology support, cabling for studio. All future building video should be via steaming.
- Provide local technology for small breakout spaces in every wing/department. Provide screens on wall, USB charging, etc.
- Provide classroom technology similar to Hambright ES: voice amplification, ultra-short-throw projectors on the teaching wall, teacher ports, etc.
- Consider providing fiber plant and pathways to telecom service to the street on East Cottage Ave and connectivity to Millersville University.
- Provide new sound system and projector (possibly a rear projector) in Auditorium. Provide cabling for wireless, cabling to the sound booth, data on stage.
- Provide digital signage cabling, projection, electric projection screen, and better audio in cafeteria.
- Install projection capabilities in gymnasium.

FACILITY OPTIONS

Introduction

Penn Manor School District is committed to its students and to providing an equal opportunity excellent educational program – to explore and implement educational opportunities in the schools.

The information presented in this section details various facility options which the Penn Manor School District can explore to address the identified facility needs, educational program objectives, physical plant issues and anticipated student enrollment.

The information, as outlined in this section, has been developed to:

- Address the facility needs as identified within the study, with the ultimate goal of making recommendations that would extend the physical and functional life of the current Penn Manor High School facility, and more importantly, address the educational adequacy and need to update and transform the current high school building into a relevant, and appropriate learning environment to support a 21st century educational pedagogy.

- Allow for future flexibility to accommodate changes in educational programs and student enrollment.

- Provide preliminary construction and total project cost information for each planning option.

- Provide background and planning information to allow the School Board and Community to make informed decisions regarding the short and long term facility needs at the Penn Manor High School.

Provided with the facility options, are the key advantages, disadvantages and considerations related to each specific option.

- Conceptual floor plans are provided for each option for information and comparative analysis. The future development of any desirable facility option should include the development of detailed educational specifications.

- Construction and total project costs are provided for information and comparative analysis.

FACILITY OPTIONS

❖ OPTION 1 — $52,093,800

– Long term capital renewal and systemic renovations to the existing building. This option does not address educational program related needs.

- Comprehensive renovations to the existing building, intended to extend the lifespan of the building and main operational systems.

❖ OPTION 2 — $79,890,430

– Renovations and additions to the existing building.

- Through a phased approach, the majority of the existing building would be replaced.
- Comprehensive renovations to the existing building sections to remain.
- 2nd Level Main Entrance is Centrally Located for Visitors, Students, Staff, and Parent Drop-Off
- Existing academic wings would be reorganized and realigned to support the educational programs.
- New Primary Circulation Corridor
- Separate Bus from Student / Staff / Visitor Vehicular Circulation & Full Perimeter Roadway
- Athletic areas would be centralized to operate in a more efficient manner.
- The existing, newer Central Complex facilities will remain and be enhanced, becoming more of a community based hub of the building.
- A new Auditorium will be constructed, and be organized off the main community space lobby.
- New 158 Space Parking Deck

❖ OPTION 3 — $87,050,172

– Renovations and additions to the existing building.

- Through a phased approach, the majority of the existing building would be replaced.
- Comprehensive renovations to the existing building sections to remain.
- New academic wings would replace the existing 1959 wing, and would be realigned to support the educational programs.
- Athletic areas would be centralized to operate in a more efficient manner.
- Centrally Located Main Entrance adjacent to Visitor Parking, Parent Drop Off, and Bus Parking
- Clear Concise Primary Circulation Corridor Flex Spaces Between Academic Wings Open to Below
- The existing, newer Central Complex facilities will remain and be enhanced, becoming more of a community based hub of the building.
- A new Auditorium will be constructed, and be organized off the main community space lobby.
- New 158 Space Parking Deck

❖ OPTION 4 — $96,228,000

– Construction of a new High School.

- Construction of a new High School facility at the current Manor Middle School / Hambright Elementary School campus would replace the existing high school facility.
- The use and disposition of the current high school would need to be determined.
- The extent of athletic facilities that the site could accommodate would need to be determined and coordinated with existing facilities at Comet Field.
- The design and development of a stadium with synthetic turf is included in this option.

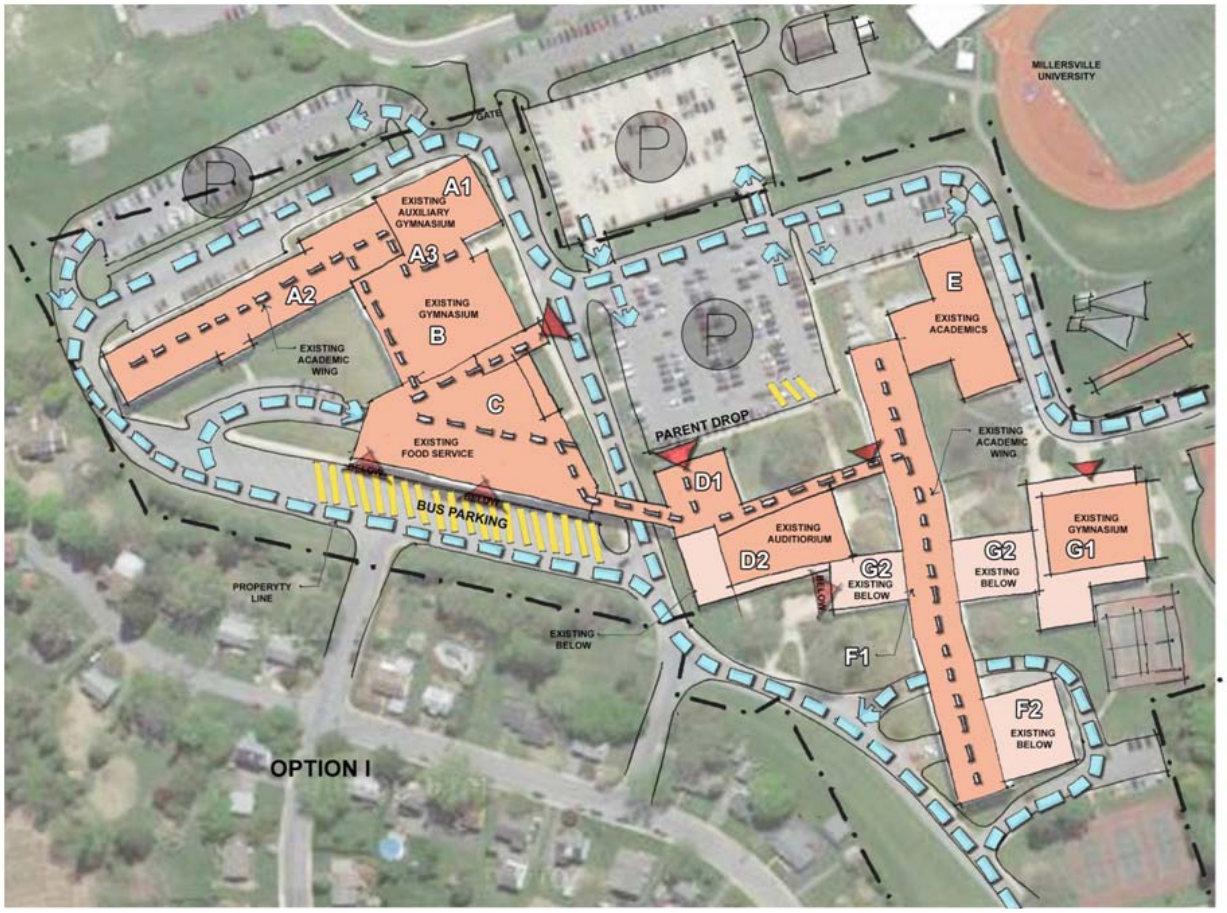
FACILITY OPTIONS

Penn Manor High School
OPTION 1 – Summary

- ✓ **Renovations only to the Existing Building**
- ✓ **New MEP Systems**
- ✓ **New Doors and Windows**
- ✓ **New Roofing Systems**
- ✓ **New Finishes**
- ✓ **Integrated Technology**
- ✓ **Expanded Food Service**

Option 1 – Site Plan

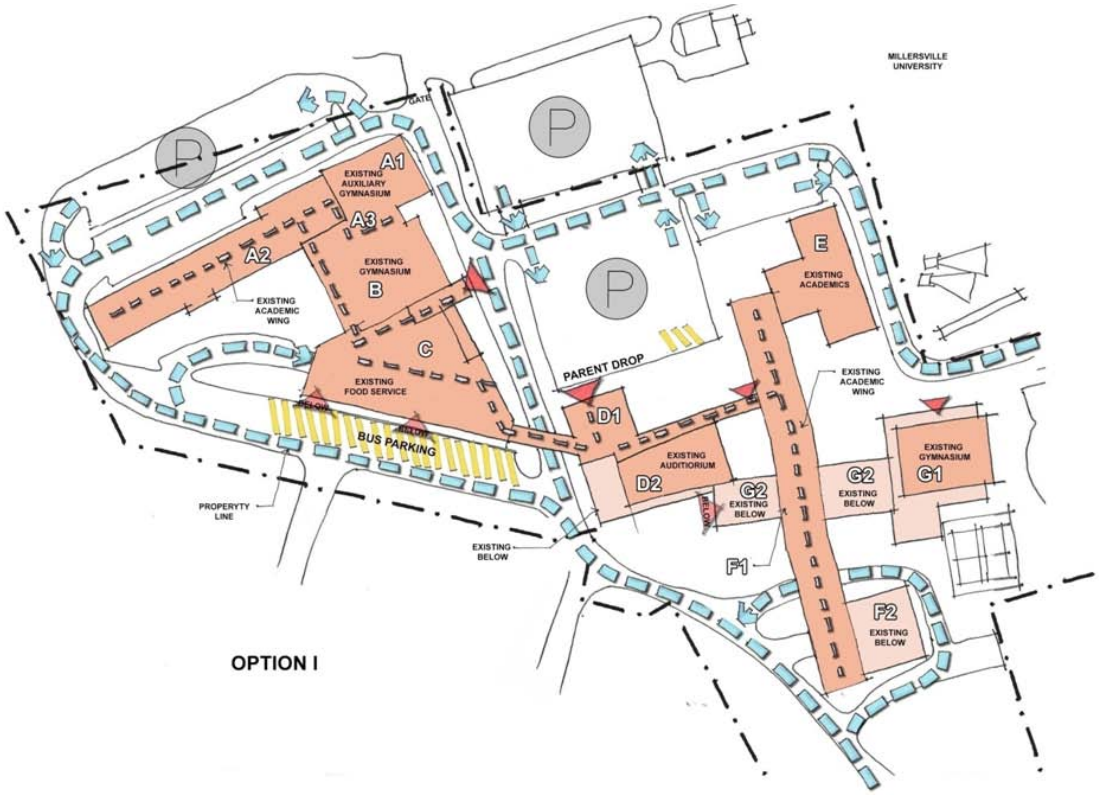
FACILITY OPTIONS



FACILITY OPTIONS

Penn Manor High School
OPTION 1 – Summary

Option 1 – Floor Plan



FACILITY OPTIONS

Penn Manor High School
Option 1 – Summary

Advantages

- Least costly option.
- Continued use of Millersville University stadium.

Disadvantages

- Does not address building program issues.
- Does not address building circulation issues.
- Does not address site circulation issues.
- Significant money would need to be spent on a 1959 era building.
- Building entrance is not easily identified with minimal surveillance of the main entrance.
- Administration is hidden and has no surveillance of main entrance.
- Existing building has multiple entrances, compromising security.
- Visitor parking is remote from site entrance.
- Athletics Department is divided w/ multiple program spaces throughout the building.
- Inadequate flex classroom space for collaborative learning.
- Maintains four floor levels - more difficult to supervise

Considerations

- Develop construction phasing plan to minimize disruption to students & staff.
- Community dialogue regarding facility recommendations
- Life-cycle cost analysis
- Does the project meet the long term goals of the school district?

Estimate of Total Project Construction Costs

- Construction Cost **$43,411,500**
- Total Project Cost **$52,093,800**

FACILITY OPTIONS

Penn Manor High School
OPTION 1 – Summary

Project Cost

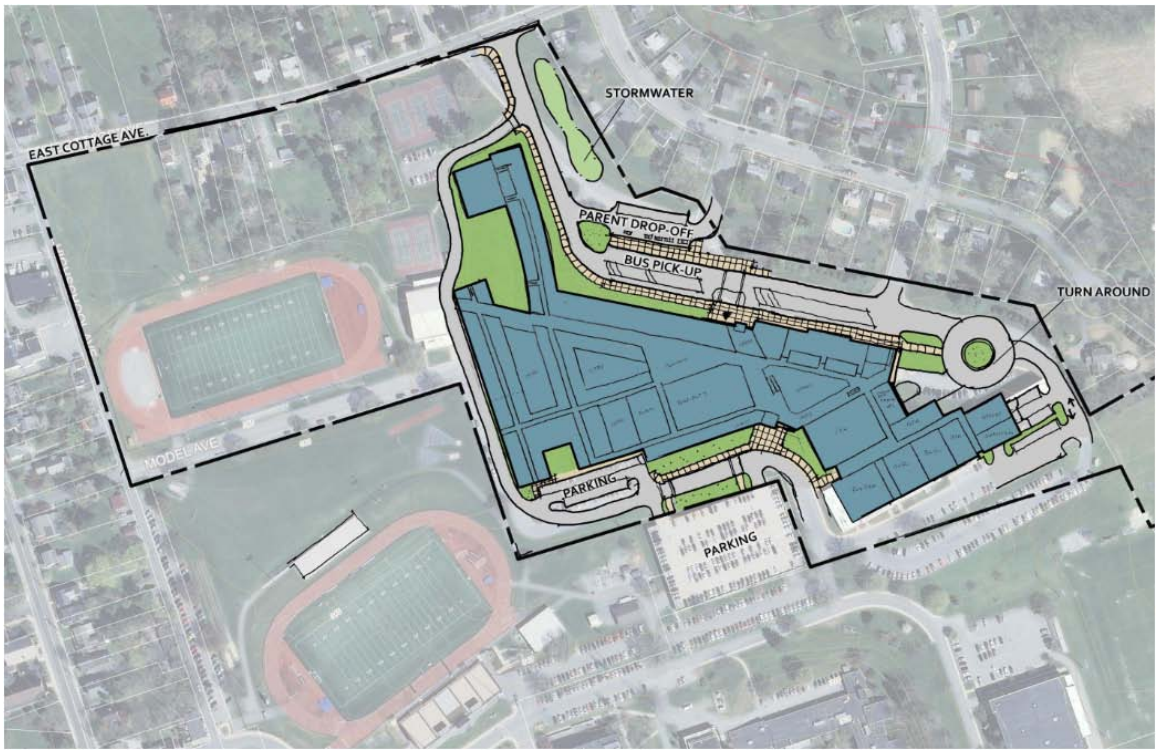
Penn Manor High School				Option 1
Renovations to Existing High School				May 18, 2015
CONSTRUCTION COSTS	**Area**	**Cost / SF**	**Subtotal**	
Existing Building Area	340,500			
Building Demolition				
Existing Site Improvements Allowance			$ 1,500,000	
Extensive Renovation	268,125	$ 120.00	$ 32,175,000	
Moderate Renovation	72,375	$ 80.00	$ 5,790,000	
New Building Construction				
Total Gross Building Area	**340,500**			
Sitework Allowance				
Subtotal			**$ 39,465,000**	
Escalation to Midpoint of Construction @10%			**$ 3,946,500**	
Subtotal			**$ 43,411,500**	
SOFT COSTS @ 20%			**$ 8,682,300**	
TOTAL PROJECT COSTS			**$ 52,093,800**	

FACILITY OPTIONS

Penn Manor High School
OPTION 2 - Summary

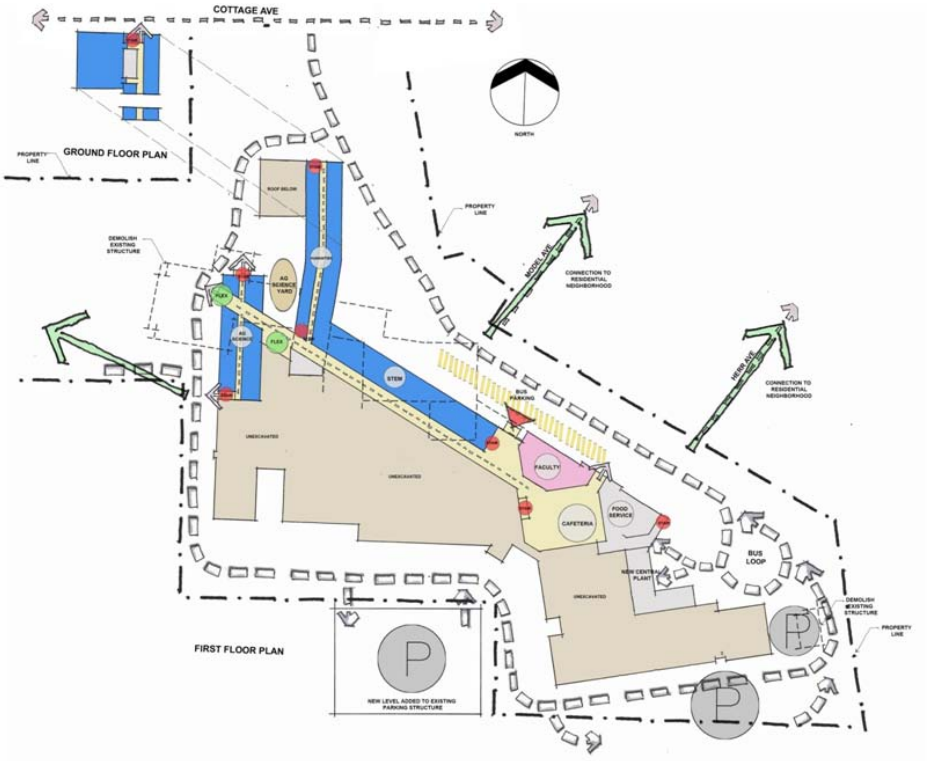
- ✓ **Upper and Lower Primary Entrances**
- ✓ **Upper Entrance includes Administrative Offices and Parent Drop Off**
- ✓ **Retains 152,000 of Existing Building**
- ✓ **New Central Plant at Loading Dock / Service Area**
- ✓ **New Primary Circulation Corridor**
- ✓ **Separate Bus from Student / Staff / Visitor Vehicular Circulation & Full Perimeter Roadway**
- ✓ **Mezzanine /Student Commons Overlooking Dining and Lower Level Entrance**
- ✓ **2nd Level Main Entrance is Centrally Located for Visitors, Students, Staff, and Parent Drop-Off**
- ✓ **Consolidated Athletic Wing**
- ✓ **Centrally Located Primary Circulation Corridor w/ Straightforward Secondary Circulation Corridor**
- ✓ **New 158 Space Parking Deck**

Option 2 – Concept Site Plan

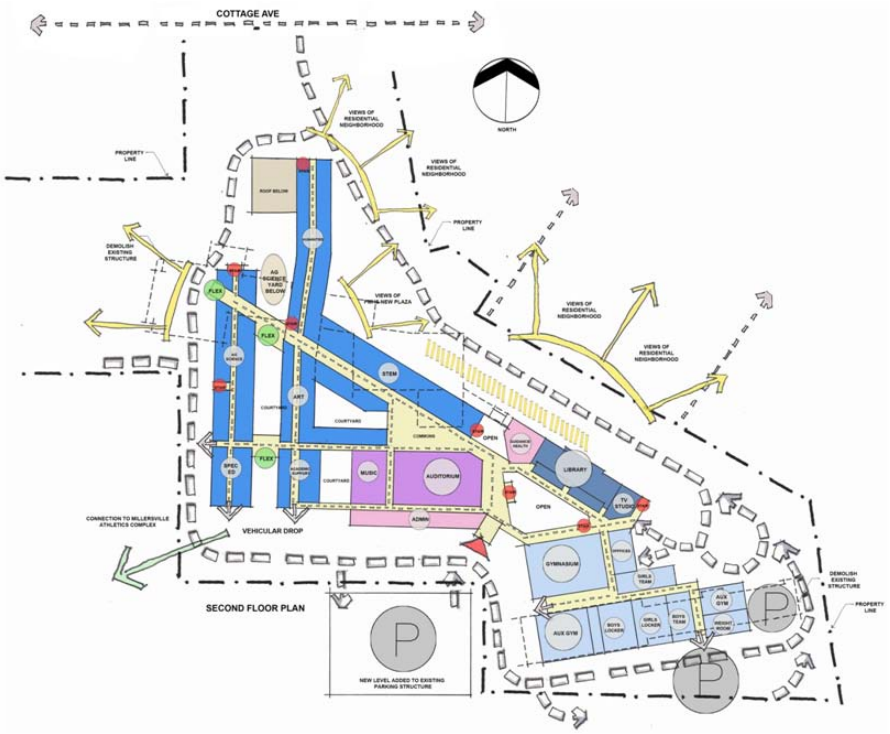


FACILITY OPTIONS

Option 2 – Ground & First Floor Concept Plan



Option 2 – Upper Floor Concept Plan



FACILITY OPTIONS

Penn Manor High School
OPTION 2 - Summary

Advantages

- Reorganizes and improves site circulation
- Busses stage at the lower level and return to exit the site at the main entrance
- Service area and mechanical room access consolidated at the east side loading dock
- Preserves cafeteria and gymnasium wing
- Consolidates Athletics and Phys Ed into a single wing
- Significantly improves internal building circulation / wayfinding
- Expands parking with additional parking deck
- Continued use of MU Stadium
- 2nd least costly option
- No modular classrooms required

Disadvantages

- Retains significant portions of the 1959 academic wings
- Administration and visitor entrance located on the south side
- The main entrance is difficult to access and offers no visual cue upon entering the site

Considerations

- Develop construction phasing plan to minimize disruption to students & staff
- Community dialogue regarding facility recommendations
- Life-cycle cost analysis
- Does the project meet the long term goals of the school district?

Estimate of Total Project Construction Costs

- Construction Cost **$66,575,378**
- Total Project Cost Range **$79,890,420**

FACILITY OPTIONS

Penn Manor High School
OPTION 2 – Summary

Project Cost

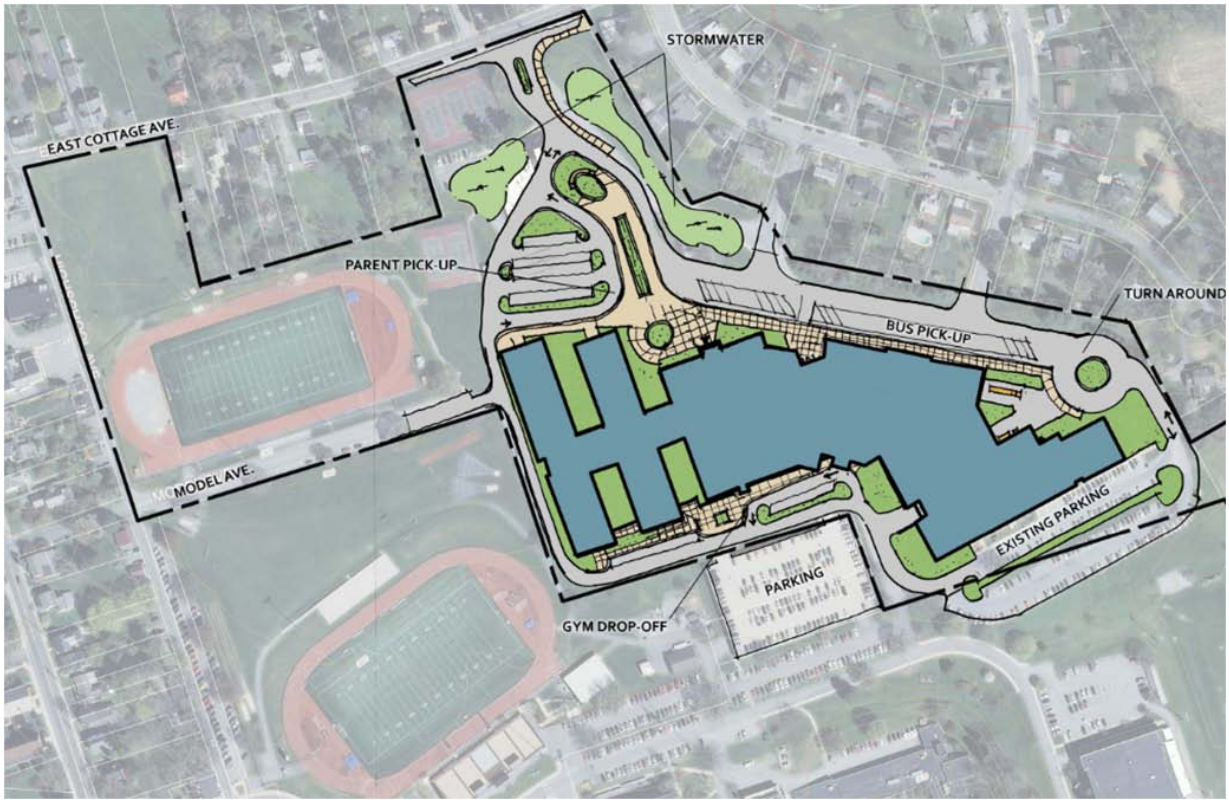
Penn Manor High School				Option 2
Additions & Renovations to Existing High School				May 18, 2015
CONSTRUCTION COSTS	**Area**	**Cost / SF**	**Subtotal**	
Existing Building Area	340,500			
Building Demolition	206,797	$ 4.00	$ 827,188	
Existing Site Improvements Allowance			$ 2,500,000	
Extensive Renovation	80,352	$ 120.00	$ 9,642,240	
Moderate Renovation	72,375	$ 80.00	$ 5,790,000	
New Building Construction	220,135	$ 175.00	$ 38,523,625	
Third Level Parking Deck	54,000	$ 60.00	$ 3,240,000	
Total Gross Building Area	**372,862**			
Subtotal			**$ 60,523,053**	
Escalation to Midpoint of Construction @10%			**$ 6,052,305**	
Subtotal			**$ 66,575,358**	
SOFT COSTS @ 20%			**$ 13,315,072**	
TOTAL PROJECT COSTS			**$ 79,890,430**	

FACILITY OPTIONS

Penn Manor High School
OPTION 3 - Summary

- ✓ **Centrally Located Main Entrance adjacent to Visitor Parking, Parent Drop Off, and Bus Parking**
- ✓ **New Central Plant Adjacent to Loading Dock/Service Area**
- ✓ **New Student Commons**
- ✓ **New Primary Circulation Corridor**
- ✓ **Second Level Primary Entrance to Student Commons**
- ✓ **Consolidated Athletic Dept.**
- ✓ **Separate Academic Wings from Public Venues**
- ✓ **Direct Outside Access for Music Department, Stage Support Spaces**
- ✓ **New Ag Sciences Wing with Adjacent Yards**
- ✓ **Upper Level Mezzanine overlooking First Floor Commons**
- ✓ **Clear Concise Primary Circulation Corridor**
- ✓ **Flex Spaces Between Academic Wings Open to Below**
- ✓ **Add Educations Spaces have Daylight and Views**

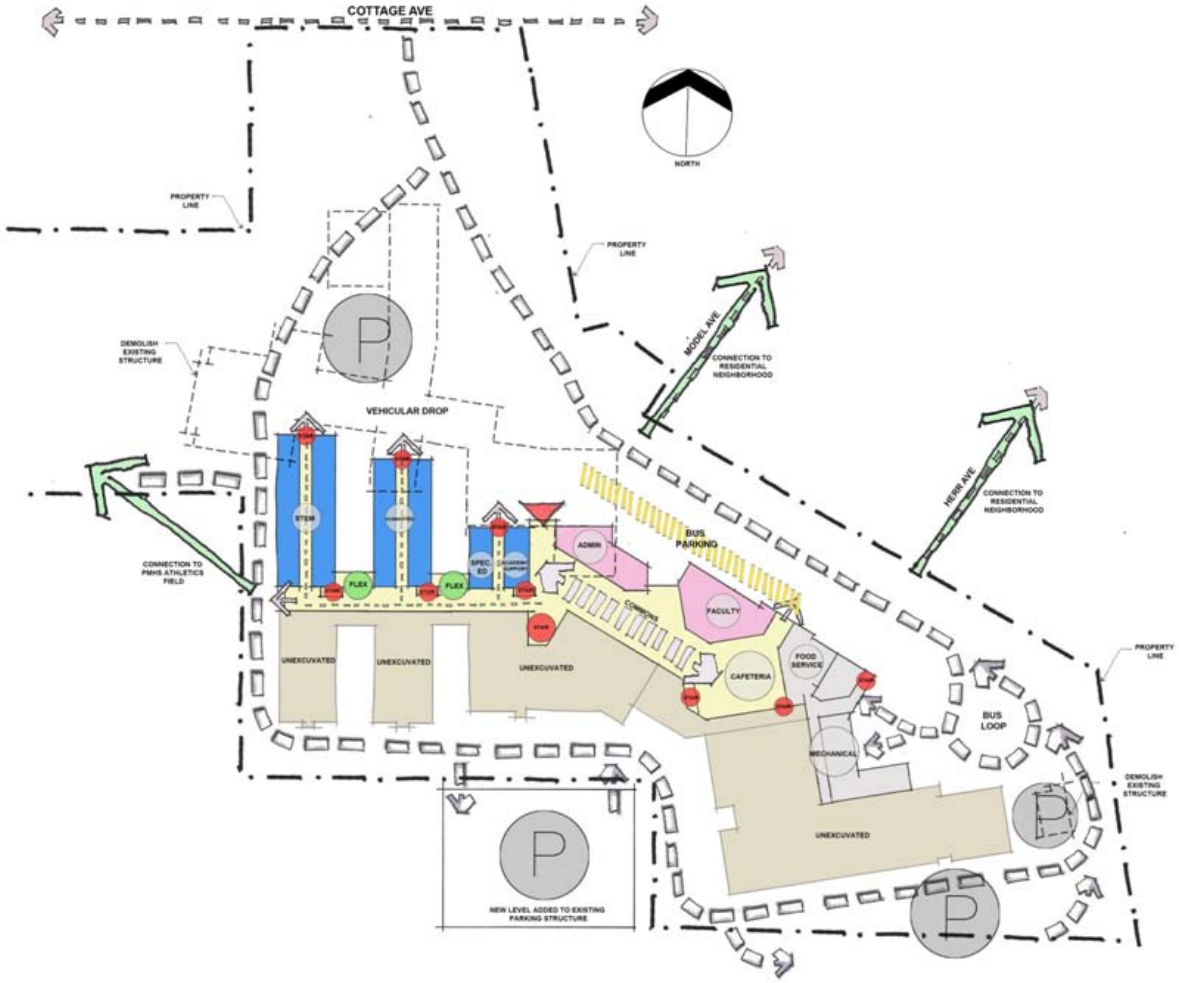
Option 3 - Site Concept Plan



FACILITY OPTIONS

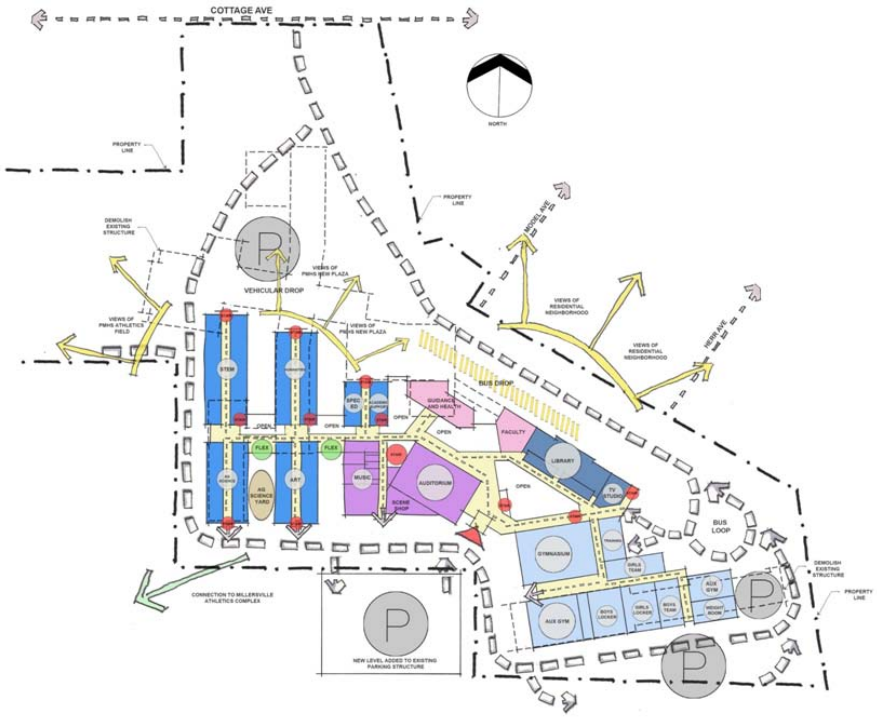
Penn Manor High School
OPTION 3 - Summary

Option 3 – First Floor Concept Plan

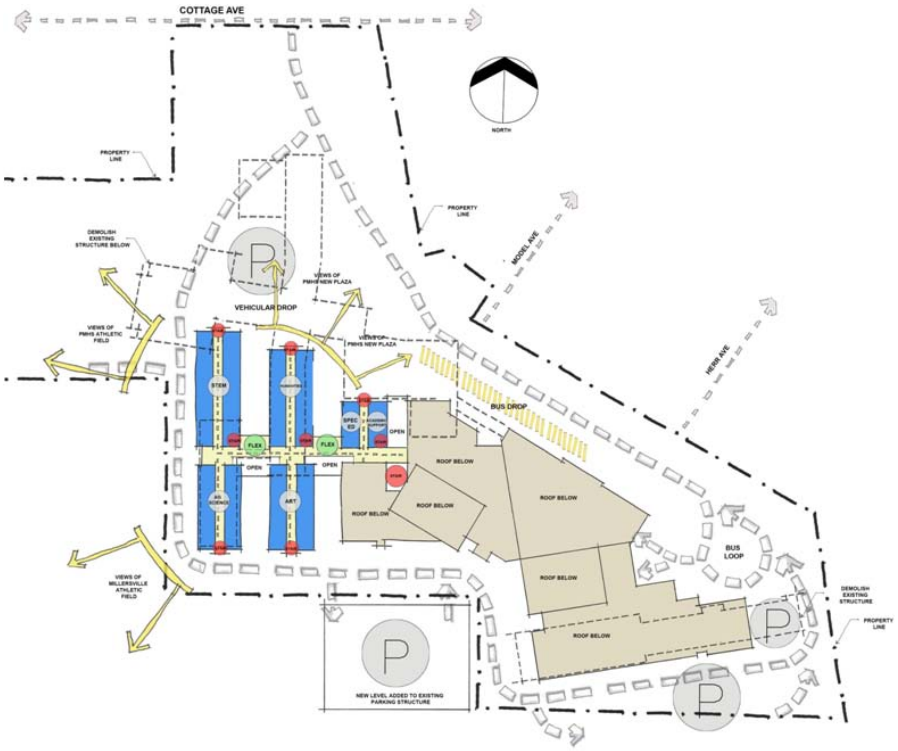


FACILITY OPTIONS

Option 3 – Second Floor Concept Plan



Option 3 – Third Floor Concept Plan



FACILITY OPTIONS

Penn Manor High School
OPTION 3 - Summary

Advantages

- Significantly reorganizes and improves site circulation
- Prominent main entrance upon entering the site
- Busses stage at the lower level and return exit the site at the main entrance
- Reduced student vehicular conflict with busses
- Service area and mechanical room access consolidated at the east side
- Preserves cafeteria and gymnasium wing
- Consolidates Athletics and Phys Ed into a single wing
- Significantly improves internal building circulation / wayfinding
- Expands parking with additional parking deck
- Continued use of MU Stadium
- Significantly improves educational program adjacencies

Disadvantages

- 2nd most costly option – modular classrooms budgeted at $1.0 Million

Considerations

- Develop construction phasing plan to minimize disruption to students & staff.
- Community dialogue regarding facility recommendations
- Life-cycle cost analysis
- Maintenance considerations for the newly created courtyard.
- Does the project meet the long term goals of the school district?

Estimate of Total Project Construction Costs

- Construction Cost **$72,541,810**
- Total Project Cost Range **$87,050,172**

FACILITY OPTIONS

Penn Manor High School
OPTION 3

Project Cost

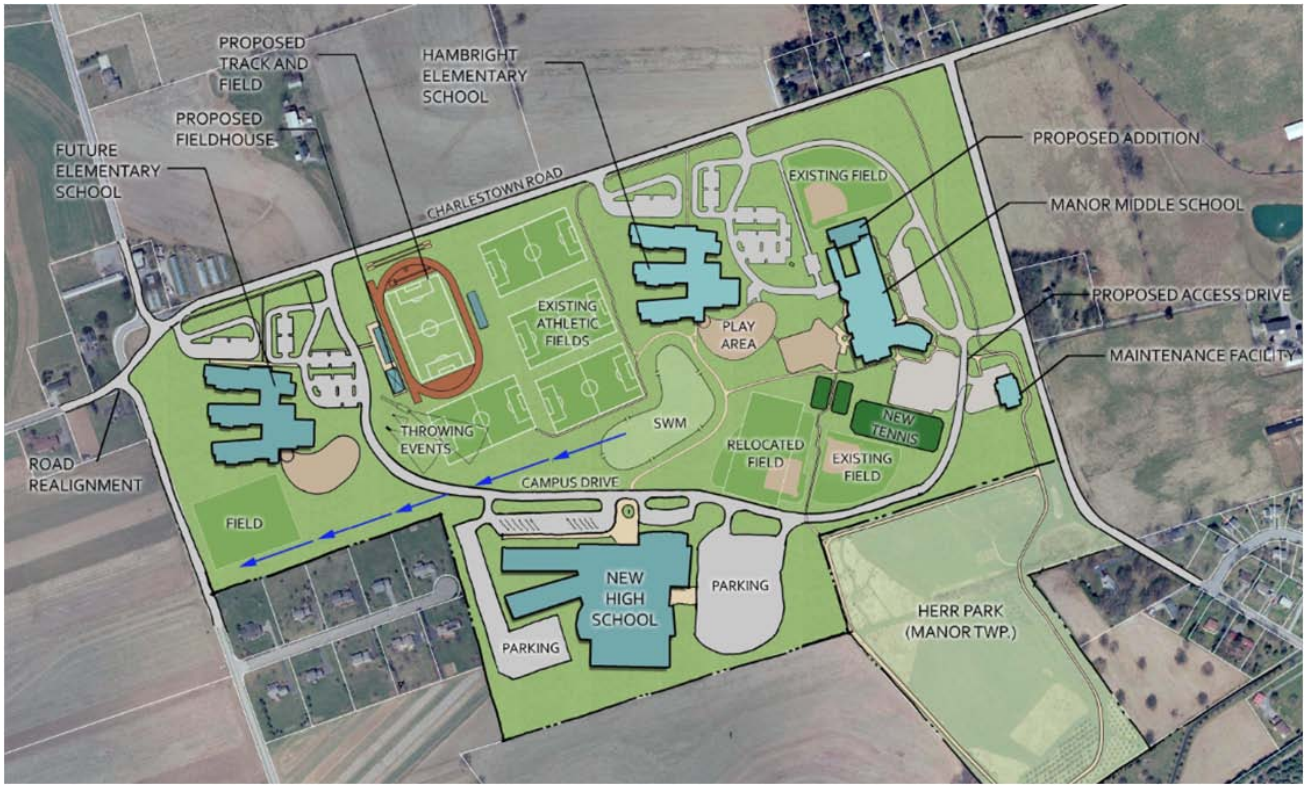
Penn Manor High School				Option 3
Additions & Renovations to Existing High School				May 18, 2015
CONSTRUCTION COSTS	**Area**	**Cost / SF**	**Subtotal**	
Existing Building Area	340,500			
Building Demolition	268,125	$ 4.00	$ 1,072,500	
Existing Site Improvements Allowance			$ 2,500,000	
Extensive Renovation	0	$ 120.00	$ -	
Moderate Renovation	72,375	$ 80.00	$ 5,790,000	
New Building Construction	299,112	$ 175.00	$ 52,344,600	
Third Level Parking Deck	54,000	$ 60.00	$ 3,240,000	
Temporary Modular Classrooms		Allowance	$ 1,000,000	
Total Gross Building Area	**371,487**			
Subtotal			**$ 65,947,100**	
Escalation to Midpoint of Construction @10%			**$ 6,594,710**	
Subtotal			**$ 72,541,810**	
SOFT COSTS @ 20%			**$ 14,508,362**	
TOTAL PROJECT COSTS			**$ 87,050,172**	

FACILITY OPTIONS

Penn Manor High School
OPTION 4 - Summary

- ✓ **Construction of a new School facility to replace the existing school.**
- ✓ **Construction of a new Stadium with synthetic turf field.**

Option 4 - Site Plan



FACILITY OPTIONS

Penn Manor High School
OPTION 4 - Summary

Advantages

- Ideal adjacencies for all educational programs
- Improved site access
- Adjacent playfields
- New competition stadium adjacent to the High School
- Ample parking
- New building systems

Disadvantages

- Cost – most expensive option

Considerations

- Community dialogue regarding facility recommendations
- Life-cycle cost analysis
- Does the project meet the long term goals of the school district?
- What to do with the existing high school?

Estimate of Total Project Construction Costs

- Construction Cost **$80,190,000**
- Total Project Cost Range **$90,948,000**

FACILITY OPTIONS

Penn Manor High School
OPTION 4

Project Cost

Penn Manor High School				Option 4
New High School on a New Site				May 18, 2015
CONSTRUCTION COSTS	**Area**	**Cost / SF**	**Subtotal**	
Existing Building Area	340,500			
Building Demolition				
Existing Site Improvements Allowance				
Building Area to be Renovated				
New Building Construction	370,000	$ 170.00	$ 62,900,000	
Total Gross Building Area	**370,000**			
New Stadium w/ Synthetic Turf Field			$ 4,000,000	
Sitework			$ 6,000,000	
Subtotal			**$ 72,900,000**	
Escalation to Midpoint of Construction @10%			**$ 7,290,000**	
Subtotal			**$ 80,190,000**	
SOFT COSTS @ 20%			**$ 16,038,000**	
TOTAL PROJECT COSTS			**$ 96,228,000**	

Penn Manor High School

FACILITY OPTIONS

FACILITY OPTIONS SUMMARY

Option Cost Summary

PENN MANOR SCHOOL DISTRICT

PENN MANOR HIGH SCHOOL MASTER PLAN

Crabtree, Rohrbaugh & Associates

Concept Plan Cost Summary

2/27/2015

OPTION ONE	Total Building Area	Construction Cost	Total Project Cost
Renovations to Existing High School	340,500 SF	$ 43,411,500	$ 52,093,800
OPTION TWO	**Total Building Area**	**Construction Cost**	**Total Project Cost**
Additions & Renovations to Existing High School	372,838 SF	$ 66,515,358	$ 79,890,430
OPTION THREE	**Total Building Area**	**Construction Cost**	**Total Project Cost**
Additions & Renovations to Existing High School	371,487 SF	$ 72,541,810	$ 87,050,172
OPTION FOUR	**Total Building Area**	**Construction Cost**	**Total Project Cost**
New High School	370,000 SF	$ 80,190,000	$ 96,228,000
- New Stadium			

FACILITY OPTIONS

Penn Manor High School
FACILITY OPTIONS SUMMARY

Summary

Schools must move away from “delivering” an education, to instead, empowering students to become engaged in and participate in organizing their own education. Today’s students expect to learn in an environment that mirrors their lives, and their perception of the future – one that seamlessly integrates today’s digital tools and mobile lifestyle, and one that encourages collaboration and teamwork, in both physical and virtual spaces.

The exploration of the facility options presented within this study is intended to provide possible alternatives that can be explored to address the identified needs at the existing Penn Manor High School, and chart a possible pathway to future improvements and/or new construction.

The term "**21st-century** skills" is generally used to refer to certain core competencies such as collaboration, digital literacy, critical thinking, and problem-solving that schools need to teach to help students thrive in today's world.

Simply stated, these skills are intended to provide our students with:

- **Ways of thinking.** Creativity, critical thinking, problem-solving, decision-making and learning
- **Ways of working.** Communication and collaboration, initiative and entrepreneurialism
- **Tools for working.** Information and communications technology (ICT) and information literacy
- **Skills for living in the world.** Citizenship, life and career, personal and social responsibility, and agility & adaptability

In today’s world, we are living in an unprecedented time of change and opportunity, largely driven by technology. Technology, implemented with vision, can become a powerful part of effective learning in schools. By focusing on defining the student learning experience, and asking, “What will students do?”, and, “How will they do it?”, we can determine the specific facility needs required to insure that the Penn Manor school district students are ready to learn, work and live in a 21st century environment.

PLANNING CONSIDERATIONS

Building Condition Analysis
Planning Considerations

Facility evaluations include estimates of the needed improvements and recommended facility improvements which appear in this report. Key points to consider when planning renovations or new construction are:

- What are the educational goals of the School Division?
- How do the educational facilities fit into the overall short/long term plans of the School Division and Community?
- How big is "too big" in terms of school size for our Communities?
- Can the facility be effectively/efficiently renovated?
- What is the historical significance of the area?
- What is the financial support for the proposed project?
- Is it the goal of the School Division to provide equitable educational facilities at all levels?
- What is the most cost effective use of taxpayer financed improvements?
- What are the ramifications of doing nothing?

The following are terminology and additional considerations to aid in the planning process:

- **Terminology** The terms used to describe changes, updates, reconfiguration of spaces and other improvements made to an existing building are typically used interchangeably. The terminology is less important than the intent of the work described.

- **General Terminology**
  - **Renovation:** A very general term describing almost any type of building improvement. The building function remains the same.
  - **Alteration:** Generally used to describe minor improvements.

- **Specific Terminology**
  - **Conversion:** The conversion of a building or spaces within a building to a different programmed use.
  - **Rehabilitation:** This includes miscellaneous improvements that maintain the original function of the building without reshaping the spaces.
  - **Remodeling:** Remodeling includes improvements that alter the original building components, including the rehabilitation of spaces to accommodate the educational program and specifications.

PLANNING CONSIDERATIONS

- **Modernization:** This term generally is used to describe the most extensive building improvements. This level of work will bring an existing facility's serviceability and adequacy as close as possible to that of a new building.

- **Renovation and New Construction Considerations**
  - **Construction Cost**
    - Is cost the most important consideration?
    - Is it less expensive to change the existing building, or build new?
  - **Functional Adequacy**
    - Will the renovated building meet the needs and expectations of the educational program?...faculty and students? ...community? ...custodial and maintenance staff?
    - Are the compromises acceptable?
    - Can the existing building accommodate the desired changes?
  - **Operating Costs**
    - How much energy is currently being wasted by inefficient mechanical and electrical systems? ...improper insulation in roof, walls, windows? ...no vestibule air locks at main entrance doors?
    - How long will the existing systems last before replacement is required?
    - What do new systems cost and how much energy will they save?
  - **Expandability**
    - Can future building additions be accommodated?
    - Are there site restrictions?
    - Are there building organization restrictions?
    - Can existing core spaces support additional students?
  - **Flexibility**
    - Can walls and structure be moved easily?
    - Are future modifications technically feasible?
  - **Aesthetics**
    - Does the building represent an appropriate image of the community?
    - Does the building provide an atmosphere that is conducive to learning?
    - What is the historical significance of the building?
    - Are the lighting, color schemes and finishes appropriate?
    - Does the school represent the institutional backdrops of the past?
  - **Site Considerations**
    - Do all the planned changes fit on the site?
    - Is there sufficient parking and driveways (faculty, public, bus, visitors)?
    - Is storm water detention required and if so, is it feasible/affordable?
    - Will regulatory agencies allow land use development changes?
    - Do all desired recreational activities fit?

PLANNING CONSIDERATIONS

- **Heath and Safety**
  - Will the existing renovated building meet the expectations on air quality? Hazardous materials? Fire protection and other life safety considerations? Handicapped accessibility and the ADA?

- **Code Restrictions**
  - Codes may require that the renovated building meet current standards. Is this work impractical (too costly for the benefit) for ramps, elevators, chair lifts, fire-rated walls, sprinklers, smoke detection, etc.?
  - Do the codes allow for planned improvements in storm water management, building site coverage, building height or other zoning restrictions?

- **Life-span and Cost**
  - Is initial cost or long-term cost more important?
  - Do current market conditions warrant moving forward with a building project in the immediate future?

- **Student Enrollment**
  - Will there be enough space in the school division to accommodate future enrollments?
  - When should we consider construction / renovation of our facilities to meet enrollment needs? How long does it take to plan and construct school facilities?
  - If our enrollment continues to increase, should we consider grade level changes in our elementary schools to increase building capacity? How does this affect our communities and our students?

ANTICIPATED LIFESPAN OF BUILDING COMPONENTS

COMPONENTS

Site Work
Landscaping ---------- 10-50 years
Building walkways ---------- 20-30 years
Water lines ---------- 30-50 years
Fire lines ---------- 30-50 years
Water supply system ---------- 30 years
Sewer lines ---------- 30-50 years
Sewage disposal system --------- 15 years
Site electrical ---------- 50 years
Storm drainage ---------- 20-30 years
Perimeter fencing ---------- 15-20 years
Parking and bus loop ---------- 20 years
Play and athletic fields ---------- 30 years
Playground equipment ---------- 15 years

Foundation
Basic ---------- 50+ years
Special (fill, piling) ---------- 50+ years

Substructure
Slab on grade ---------- 50+ years

Superstructure
Floor ---------- 50 years
Roof (steel) ---------- 50 years
Roof (wood) ---------- 30 years

Exterior Closure
Exterior wall (masonry) ---------- 50+ years
Exterior wall (wood/EIFS) -------- 5-30 years
Exterior trim ---------- 20-30 years
Exterior soffits ---------- 20-30 years
Windows/frames ---------- 20-30 years
Doors/frames ---------- 20 years

Roofing
Roof structure ---------- 50+ years
Built-up roofing ---------- 20-30 years
Shingle roofing ---------- 25-30 years
Metal roofing ---------- 30 - 40years
Single ply roofing ---------- 10-20 years
Roof insulation (batt) ---------- 50 years
Roof insulation (rigid) ---------- 20-30 years
Roof drains ---------- 20-30 years
Skylights ---------- 20-30 years

Interior walls (paint) ---------- *7-10 years*
Interior walls (structure) ---------- 30 years
Vinyl wall covering ---------- 15 years
Interior doors ---------- 30 years
Interior door hardware ---------- 15-20 years
Terrazzo flooring ---------- 50+ years

Interior Construction
Wood flooring ---------- 30-50 years
Resilient flooring ---------- 15-20 years
Ceramic tile ---------- 50+ years
Carpet ---------- 10-15 years
Ceiling (plaster, wallboard) ------ 50+ years
Acoustical ceiling tile ---------- 20-25 years

Specialties
Casework ---------- 20-25 years
Chalkboards ---------- 20-25 years
Toilet accessories ---------- 15-20 years
Lockers ---------- 20 years
Kitchen equipment ---------- 20 years
Fire extinguishers ---------- 15-20 years
Window treatment ---------- 15-20 years
Stage systems ---------- 15-20 years
Auditorium seating ---------- 25-30 years
Moveable partitions ---------- 25-30 years

HVAC

Heating Plant
Steam systems ---------- 30-40 years
Boilers (cast iron, steel) ---------- 40-50 years
Burners ---------- 20 years
Safety relief valves ---------- 30 years
Expansion tanks ---------- 40 years
Gas/propane fuel system --------- 40 years
Oil fuel systems ---------- 40 years
Stacks/breeching ---------- 50+ years
Fuel oil pumps ---------- 30 years
Water recirc. Pumps ---------- 30 years
Auto. Temp controls ---------- 25-30 years
Pneumatic air compressors ------ 15 years
Refrigerant dryers ---------- 10-15 years
Louvers ---------- 40 years
Dampers ---------- 20 years
Fin tube radiation ---------- 35 years
Cast iron radiators ---------- 50+ years
Unit ventilators ---------- 25-30 years

ANTICIPATED LIFESPAN OF BUILDING COMPONENTS

COMPONENTS

Cooling
Central a/c system ---------- 30 years
Window a/c units ---------- 5-15 years

Air Distribution/ Exhaust
Ductwork, diffusers, grilles ------- 40-50 years
Ceiling fans ---------- 20-25 years

PLUMBING

Sanitary
Cast iron piping ---------- 35 years
PVC piping ---------- 50+ years
Sewage ejector pumps ---------- 50+ years
Neutralization basins ---------- 50+ years

Storm water
Storm water piping ---------- 50+ years
Downspouts ---------- 30 years
Gutters ---------- 50+ years
Sump pumps ---------- 30 years

Domestic Cold Water
HVAC make-up water ---------- 50+ years
Galvanized water piping ---------- 30 years
Copper water piping ---------- 50+ years
Backflow prevention ---------- 20-25 years
Constant pressure pumps -------- 30 years
Hydro pneumatic tanks ---------- 30 years

Domestic Hot Water
Gas-fired storage ---------- 10-15 years
Electric-fired storage ---------- 10-15 years
Steam fired storage ---------- 25-30 years
Water to water source ---------- 50+ years
Expansion loops ---------- 50+ years
Temperature mixing valves ------ 15-20 years
Recirculation pumps ---------- 15-20 years

Insulation
Hot and cold piping ---------- 50+ years
Equipment ---------- 50+ years

Natural Gas System
Natural or low pressure ---------- 50+ years
Meter or pressure regulator ------ 50+ years

Fire Protection
Standpipes (wet/dry) ---------- 50+ years
Sprinklers ---------- 50+ years

Plumbing Fixtures
Toilets, urinals ---------- 25-50 years
Service sinks, mop receptors ---- 40-50 years
Water coolers ---------- 10-20 years

ELECTRICAL

Power and Distribution
Power supply ---------- 30-35 years
Service ---------- 30-35 years
Distribution panels ---------- 25-30 years
Transformers ---------- 20 years
Wiring ---------- 30-35 years
Receptacles ---------- 30-35 years

Lighting
Security lighting ---------- 20-25 years
Parking areas ---------- 20-25 years
Interior Fixtures ---------- 20-26 years

Life-safety Systems ---------- 20-25 years
Battery pack ---------- 10-15 years
Exit signs ---------- 20-25 years
Egress lighting ---------- 20-25 years

Fire Alarm System
Main panel ---------- 20-25 years
Remote annunciator ---------- 20-25 years
Detection system ---------- 20-25 years

Communications
Public address system ---------- 20 years
Speakers/call buttons ---------- 20-25 years
Clocks/bells ---------- 20-25 years
Telephone system ---------- 20 years
Television system ---------- 35-40 years
Technology wiring ---------- 15-20 years
Security alarm ---------- 15-20 years