

BOYERTOWN AREA SCHOOL DISTRICT
BOYERTOWN, PA

DISTRICT-WIDE FEASIBILITY STUDY
21 AUGUST 2012



ARCHITECTURE
ENGINEERING
P L A N N I N G

2001 N. Front St., BLDG. #3
Harrisburg, PA 17102
t: 717.233.4556
f: 717.236.8256
www.eiassoc.com

INDEX

FEASIBILITY STUDY INTRODUCTION..... 1
FEASIBILITY STUDY GUIDELINES..... 26

■ **PART I • DISTRICT OVERVIEW**

DISTRICT OVERVIEW INTRODUCTIONI-1
DISTRICT OVERVIEWI-2

■ **PART II • DEMOGRAPHICS**

DEMOGRAPHIC EXPLORATION INTRODUCTION.....II-1
DEMOGRAPHIC EXPLORATION SUMMARY PART A.....II-9
DEMOGRAPHIC EXPLORATION PART AII-10
DEMOGRAPHIC EXPLORATION SUMMARY PART B.....II-12
EXISTING BUILDING CAPACITYII-15
PROJECTED STUDENT ENROLLMENT.....II-16
STUDENT ENROLLMENT / CAPACITY EVALUATION.....II-20
BUILDING CAPACITY & UTILIZATION OVERVIEWII-22
EXISTING ROOM SCHEDULESII-24
EDUCATIONAL PROGRAM REQUIREMENTS.....II-28

■ **PART III • FACILITIES**

FACILITIES INTRODUCTIONIII-1
FACILITIES SUMMARYIII-2
FACILITIES EVALUATION CRITERIAIII-8

BOYERTOWN ELEMENTARY SCHOOL

▪ GENERAL DATAIII-13
▪ PHOTOGRAPHSIII-14
▪ AERIAL VIEWIII-15
▪ EXISTING PLANS.....III-16
▪ OPERATIONAL COSTS SUMMARYIII-18
▪ SUMMARY – ENERGY STARIII-19
▪ SUMMARY OF BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS.....III-21
▪ BUILDING IMPROVEMENTS AND CONSTRUCTION COSTSIII-22

INDEX

COLEBROOKDALE ELEMENTARY SCHOOL

- GENERAL DATAIII-31
- PHOTOGRAPHSIII-32
- AERIAL VIEWIII-33
- EXISTING PLANS.....III-34
- OPERATIONAL COSTS SUMMARYIII-36
- SUMMARY – ENERGY STARIII-37
- SUMMARY OF BUILDING IMPROVEMENTS AND CONSTRUCTION COSTSIII-39
- BUILDING IMPROVEMENTS AND CONSTRUCTION COSTSIII-40

EARL ELEMENTARY SCHOOL

- GENERAL DATAIII-51
- PHOTOGRAPHSIII-52
- AERIAL VIEWIII-53
- EXISTING PLANS.....III-54
- OPERATIONAL COSTS SUMMARYIII-56
- SUMMARY – ENERGY STARIII-57
- SUMMARY OF BUILDING IMPROVEMENTS AND CONSTRUCTION COSTSIII-59
- BUILDING IMPROVEMENTS AND CONSTRUCTION COSTSIII-60

GILBERTSVILLE ELEMENTARY SCHOOL

- GENERAL DATAIII-69
- PHOTOGRAPHSIII-70
- AERIAL VIEWIII-71
- EXISTING PLANS.....III-72
- OPERATIONAL COSTS SUMMARYIII-74
- SUMMARY – ENERGY STARIII-75
- SUMMARY OF BUILDING IMPROVEMENTS AND CONSTRUCTION COSTSIII-77
- BUILDING IMPROVEMENTS AND CONSTRUCTION COSTSIII-78

INDEX

NEW HANOVER ELEMENTARY SCHOOL

- GENERAL DATAIII-85
- PHOTOGRAPHSIII-86
- AERIAL VIEWIII-87
- EXISTING PLANS.....III-88
- OPERATIONAL COSTS SUMMARYIII-90
- SUMMARY – ENERGY STARIII-91
- SUMMARY OF BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS.....III-93
- BUILDING IMPROVEMENTS AND CONSTRUCTION COSTSIII-94

PINE FORGE ELEMENTARY SCHOOL

- GENERAL DATAIII-103
- PHOTOGRAPHSIII-104
- AERIAL VIEWIII-105
- EXISTING PLANS.....III-106
- OPERATIONAL COSTS SUMMARYIII-108
- SUMMARY – ENERGY STARIII-109
- SUMMARY OF BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS.....III-111
- BUILDING IMPROVEMENTS AND CONSTRUCTION COSTSIII-112

WASHINGTON ELEMENTARY SCHOOL

- GENERAL DATAIII-121
- PHOTOGRAPHSIII-122
- AERIAL VIEWIII-123
- EXISTING PLANS.....III-124
- OPERATIONAL COSTS SUMMARYIII-126
- SUMMARY – ENERGY STARIII-127
- SUMMARY OF BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS.....III-129
- BUILDING IMPROVEMENTS AND CONSTRUCTION COSTSIII-130

INDEX

BOYERTOWN JUNIOR HIGH SCHOOL EAST CENTER

- GENERAL DATAIII-139
- PHOTOGRAPHSIII-140
- AERIAL VIEWIII-141
- EXISTING PLANS.....III-142
- OPERATIONAL COSTS SUMMARYIII-144
- SUMMARY – ENERGY STARIII-145
- SUMMARY OF BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS.....III-147
- BUILDING IMPROVEMENTS AND CONSTRUCTION COSTSIII-148

BOYERTOWN JUNIOR HIGH SCHOOL WEST CENTER

- GENERAL DATAIII-157
- PHOTOGRAPHSIII-158
- AERIAL VIEWIII-159
- EXISTING PLANS.....III-160
- OPERATIONAL COSTS SUMMARYIII-162
- SUMMARY – ENERGY STARIII-163
- SUMMARY OF BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS.....III-165
- BUILDING IMPROVEMENTS AND CONSTRUCTION COSTSIII-166

BOYERTOWN AREA SENIOR HIGH SCHOOL

- GENERAL DATAIII-173
- PHOTOGRAPHSIII-174
- AERIAL VIEWIII-176
- EXISTING PLANS.....III-177
- OPERATIONAL COSTS SUMMARYIII-180
- SUMMARY – ENERGY STARIII-181
- SUMMARY OF BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS.....III-183
- BUILDING IMPROVEMENTS AND CONSTRUCTION COSTSIII-184

INDEX

EDUCATION CENTER

▪ GENERAL DATA	III-203
▪ PHOTOGRAPHS	III-204
▪ AERIAL VIEW	III-205
▪ EXISTING PLANS.....	III-206
▪ OPERATIONAL COSTS SUMMARY	III-208
▪ SUMMARY – ENERGY STAR	III-209
▪ SUMMARY OF BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS.....	III-211
▪ BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS	III-212

SUPPORT SERVICES BUILDING

▪ GENERAL DATA	III-217
▪ PHOTOGRAPHS	III-218
▪ AERIAL VIEW	III-219
▪ EXISTING PLANS.....	III-220
▪ OPERATIONAL COSTS SUMMARY	III-222
▪ SUMMARY – ENERGY STAR	III-223
▪ SUMMARY OF BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS.....	III-225
▪ BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS	III-226

■ PART IV ▪ OPTIONS

INTRODUCTION TO OPTIONS	IV-1
SUMMARY OF OPTIONS.....	IV-2
EXISTING EDUCATIONAL PROGRAM	IV-4

OPTION 1

▪ OPTION SUMMARY	IV-7
▪ OPTION COST SUMMARY	IV-9
▪ PROPOSED ROOM SCHEDULES	IV-10
▪ PROJECTED REIMBURSEMENT	IV-14

OPTION 2

▪ OPTION SUMMARY	IV-17
▪ OPTION COST SUMMARY	IV-19
▪ PROPOSED ROOM SCHEDULES	IV-20
▪ PROJECTED REIMBURSEMENT	IV-24

INDEX

OPTION 3

- OPTION SUMMARY IV-27
- OPTION COST SUMMARY IV-29
- PROPOSED ROOM SCHEDULES IV-30
- PROJECTED REIMBURSEMENT IV-34

OPTION 3A

- OPTION SUMMARY IV-37
- OPTION COST SUMMARY IV-39
- PROPOSED ROOM SCHEDULES IV-40
- PROJECTED REIMBURSEMENT IV-44

OPTION 4

- OPTION SUMMARY IV-47
- OPTION COST SUMMARY IV-49
- PROPOSED ROOM SCHEDULES IV-50
- PROJECTED REIMBURSEMENT IV-54

OPTION 4A

- OPTION SUMMARY IV-57
- OPTION COST SUMMARY IV-59
- PROPOSED ROOM SCHEDULES IV-60
- PROJECTED REIMBURSEMENT IV-64

OPTION 5

- OPTION SUMMARY IV-67
- OPTION COST SUMMARY IV-69
- PROPOSED ROOM SCHEDULES IV-70
- PROJECTED REIMBURSEMENT IV-74

OPTION COST SUMMARY

- INTRODUCTION TO OPTION COSTS SUMMARY IV-77
- OPTIONS COST SUMMARY IV-79

ENERGY PORTFOLIO SURVEY

- ENERGY PORTFOLIO SURVEY IV-81

INDEX

- **PART V • APPENDIX**

DEFINITIONS	V-1
INFORMATION UTILIZED IN THE STUDY	V-4
AUTHORS OF THE STUDY	V-5
NOTES.....	V-9

FEASIBILITY STUDY INTRODUCTION

This Feasibility Study, completed by EI Associates, as commissioned by the Board of School Directors, is intended as a tool in evaluating the Boyertown Area School District's current and future facility needs and expenditures.

The Commonwealth of Pennsylvania requires that School Districts complete a Feasibility Study of all facilities owned by the School District as part of receiving State reimbursement for a PlanCon project. The study must provide an appraisal of the ability of existing schools to meet current and planned educational programs and space needs including an analysis of projected enrollment. The District-wide feasibility study requirements are outlined on the following pages.

This study has been compiled using data gathered at recent meetings with District Administrators. Visits to the buildings have been conducted to evaluate their compliance with Department of Education Standards; International Building Codes; Pennsylvania Department of Labor and Industry Standards; National Plumbing and Electrical Codes; and the American Disability Act Accessibility Standards. The Feasibility Study began with a tour of each existing building to evaluate its size, age, condition, suitability as an educational facility and potential for upgrading or expansion. Discussions took place with the School District, following the building tours, to confirm current and projected building usage and school programs, and also to explore possible future changes in program and developments that might affect the study.

The following topics are covered within the study:

- An overview of the Boyertown Area School District that considers such factors as geography, population, and wealth. Distinguishing characteristics that will have an impact on Boyertown Area School District's facilities are identified such as geographically separate population
- An analysis of Boyertown Area School District's projected enrollment, including population projection charts 10 years into the future for grade groupings K-5; 7-9, 10-12; and K-12.
- An overview of Boyertown Area School District's educational program that highlights special facility needs, including curriculums that would require special design features.
- An analysis of each building's capacity as it relates to the educational program.
- Existing educational trends, future technologies, and future learning strategies/activities are considered as part of this evaluation as criteria to judge a facility and to determine its long-range usefulness as a school.
- An analysis of each building's physical condition includes the following: Current building codes, PA Department of Education Standards, energy conservation measures, and the America Disability Act Accessibility Standards (ADA). The analysis is divided into at least seven major facility components: Site; Exterior of Building; Interior of Building; Heating, Ventilation, and Air Conditioning; Plumbing; Electrical; and Code Evaluation; as well as applicable components including Security, IT and Communications, and Educational Upgrades.
- An analysis of construction options, including cost estimates, and a summary depicting buildings, options, and costs.

FEASIBILITY STUDY SUMMARY

Capacity, Enrollment and Educational Program Findings:

K-6

- Elementary Schools have reached 96% Capacity
Elementary Schools will reach 100% Capacity by 2013-14
- Elementary Capacity is not adequate for the projected student growth
Limited number of full-size classrooms which could be used for growth
Total of 6 full-size support classrooms; 1 at Boyerstown ES, 1 at Gilbertsville ES, 4 at New Hanover ES
No *additional* space available at 6 of 7 schools for Full-day Kindergarten
Computer Labs could be re-allocated for Full-day Kindergarten use
- Elementary Capacity would accommodate maximum of 6 grade levels (K-5)
- 4 larger Schools at 700 capacity & 3 smaller Schools at 350 capacity
Larger schools have separate gym & student dining spaces
Smaller schools share Multi-Purpose space for gym & student dining
- Current Enrollment: Average 535+ per grade = 3,761 Students
3,850 Adjusted Capacity
- Future Enrollment: Highest Average 610+ per grade = 4,270 Students
4,200 Design Capacity = 600 per Grade
4,375 Design Capacity = 625 per Grade
- Alternatives to house projected student growth of students:
Relocate at least one grade level
Additions to the smaller schools
New School

7-9

- Junior High Schools are at 86% Capacity
- Junior High Capacity should be adequate for the projected student growth
- Junior High Capacity would accommodate maximum of 3 grade levels (7-9, 6-8)
- JHS - East had recent Alterations & Additions
Larger of Junior High Schools & has greater capacity
- JHS - West recommended for renovations
Smaller of Junior High Schools & has less capacity
Will require additions for parity of JHS educational programs

FEASIBILITY STUDY SUMMARY

Capacity, Enrollment and Educational Program Findings (con't):

9-12

- 10-12 Senior High School Capacity varies dependent on use of original building
- 10-12 Senior High School is at 95% Capacity (dependent on use)
- 10-12 Senior High School Capacity should be adequate for the projected 10-year growth

Capacity, Enrollment and Educational Program Assumptions:

- 25 students per classroom
- Design for 600-625 students per grade to accommodate future growth
- Maintain half-day Kindergarten; No Pre-School Classrooms
- Need 600-625 additional Capacity to accommodate future growth
Equivalent to 1 grade level
- Capacity of seven Elementary Schools would accommodate 5 grade levels
- Capacity of two Junior High Schools would accommodate 3 Middle/Jr High grade levels
- Capacity of Senior High School would accommodate 3 grade levels
- Options for Elementary Schools required to accommodate the projected student growth:
Relocation of at least one grade level
Additions to the smaller Schools or a New School
- Relocation of 9th Grade to High School would require an addition to accommodate the projected student growth
- K-12 Grade alignments for consideration
K-6, 7-9, 10-12
K-5, 6-8, 9-12

General and Student Population

Population

Data based on the 2000 and 2010 U.S. Census illustrates a net increase in the Total Population as well as Pre-school age children 0-4 years, School age children 5-17 years, Adults age 18-64 years, Adults ages 65+ years, and the Median Age.

Households

Data based on the 2000 and 2010 U.S. Census illustrates a net increase in the Total Housing Units as well as Occupied Housing Units, Owner Occupied Units, Renter Occupied Units, and Vacant Housing Units; and a net decrease in Persons Per Household.

Housing Unit Developments

There is the potential availability of land for development within the School District. Available data for Housing Unit Developments collected from the municipalities illustrates a significant amount of planned and potential development within the School District. (Refer to the 31 October 2011 PEL Demographic Study prepared for the School District for details as listed below)

There are 36 approved subdivisions in the School District for 1,790 new housing units; 13 formally proposed subdivisions for 390 new housing units; six subdivisions known to be under discussion for at least 571 new housing units; and miscellaneous housing construction for an estimated 40 new housing units. The total of 2,791 new housing units represents the planned and potential development within the School District.

Live Birth Data

The Live Birth Data, based on information from the Pennsylvania Department of Education, illustrates a net increase in the number of children entering Kindergarten and First Grade compared to the number of Births.

Students not included in enrollment projections

In 2011-2012, 1,136 students were not attending District Schools on a full-time basis. 545 students attended private or other public schools, 136 were home schooled students, 187 were Charter / Cyber school students, 13 were part-time dual enrolled students, and 160 attended BCTC in the morning and 95 attended BCTC in the afternoon.

Student Population attending District Schools

The student population attending District Schools has increased since the 1990's. In the 1990-91 school-year the K-12 student enrollment was 6,880. The K-12 student enrollment had increased to 7,000 by the mid 2000's. K-12 student enrollment increased to 7,099 in the 2010-11 school-year.

Current student enrollment projections indicate that the 10-year K-12 Student Enrollment will continue to increase to 7,574 for the 2020-21 school-year.

General and Student Population**Students per Household - 2000**

2000: 8,060 Students resided in the School District; 6,825 Students or 85% attended the School District and 1,235 children or 15% did not attend District Schools.

The percentage of Students per Total Housing Units was 0.52 in 2000; the percentage of Students attending the School District was 0.44.

Students per Household - 2010

2010: 8,225 School-age children resided in the School District: 7,099 Students or 86% attended the School District and 1,126 School-age children or 14% did not attend District Schools.

The percentage of Students per Total Housing Units was 0.45 in 2010; the percentage of Students attending the School District for the 2010-11 School year was 0.39.

Data Summary

There has been an increase in both the Total Population and Total Housing Units, however, the number of Persons per Household and Students per Household has decreased. The population shows an increase in residents of all ages, indicating that while the District is experiencing growth, it is also experiencing an aging population.

There is a potential for population growth within the School District by both new Housing Unit Developments and the current vacant housing units.

The percentage of School-age students residing in the District that were not attending District Schools has decreased from 15% in 2000 to 14% in 2010. There is a potential, however, for any portion of the 14% of School-age students residing in the District who are not currently attending District Schools to attend the District Schools in the future.

Assumptions (Method IV -- Projected Student Enrollment Based on Housing Start Data)

Available Data for Housing Unit Developments collected from the municipalities illustrates approximately 2,791 potential new Housing Units. There also are approximately 794 Vacant Housing Units. Given the current rate of 0.39 students per household attending the District Schools, this would approximately equate to an additional 1085 *students* in new Housing Units. If half of the Vacant Housing Units also are occupied, then given the current rate of 0.39 students per household attending the District Schools, this would approximately equate to an additional 155 *students* in the Vacant Housing Units.

Ten year Assumption

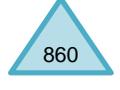
Given the assumption that the timeframe for the additional students is ten years that would equate to approximately 1,240 students / 10 years. Therefore, an additional 124 *students per year* would attend the District Schools.

Five year Assumption

Given the assumption that the timeframe for the additional students is five years that would equate to approximately 1,240 students / 5 years. Therefore, an additional 248 *students per year* would attend the District Schools.

EXISTING EDUCATIONAL PROGRAM

Existing Building Capacity for Grades K-6; 7-9; 10-12; K-12

Building	Existing Grade Alignment	2011-12 Enrollment	** Adjusted Functional Capacity	Total Capacity	Highest Projected Enrollment	
					Methods I,II, III, IV	Current + 10%
 Boyertown Elementary	K-6	668	700	725		
 Colebrookdale Elementary	K-6	366	350	350		
 Earl Elementary	K-6	320	350	350		
 Gilbertsville Elementary	K-6	783	700	725		
 New Hanover-Upper Frederick ES	K-6	741	700	800		
 Pine Forge Elementary	K-6	277	350	350		
 Washington Elementary	K-6	606	700	700		
K-6 TOTAL		3,761	3,850	4,000	4,451 Method IV	4,137 2011-12
 Boyertown Area JHS - East	7-9	843	1,050	1,180		
 Boyertown Area JHS - West	7-9	807	860	970		
7-9 TOTAL		1,650	1,910	2,150	1,908 Method IV	1,815 2011-12
 Boyertown Area Senior High School	10-12	1,733	1,835	2,065		
10-12 TOTAL		1,733	1,835	2,065	1,856 Method I	1,906 2011-12
K-12 TOTAL		7,144	7,595	8,215	8,141 Method IV	7,858 2011-12

* PDE allows Current Enrollment +10% to be used as Highest Projected Enrollment for Project Grades.

** Elementary *Functional Capacity* are Graded Classrooms K-6; *Special Education Capacity* is not included in the Functional Capacity or Total Capacity.

PROJECTED STUDENT ENROLLMENT

METHOD I

Table 14 -- Method I - PDE Projected Student Enrollment

	K	1	2	3	4	5	6	K - 6	7	8	9	7 - 9	10	11	12	10 - 12	K-12
2006-07	490	519	559	482	486	556	540	3632	574	566	559	1699	596	581	539	1716	7047
2007-08	460	513	521	565	500	499	558	3616	554	571	568	1693	558	561	578	1697	7006
2008-09	507	473	521	533	583	513	522	3652	571	561	584	1716	565	535	545	1645	7013
2009-10	495	557	455	530	534	593	516	3680	534	569	563	1666	588	542	514	1644	6990
2010-11	492	527	566	481	549	551	584	3750	520	546	584	1650	574	583	542	1699	7099
RATIOS	1.015	1.12	0.999	1.027	1.035	1.025	1.01		1.008	1.007	1.014		1.005	0.992	0.982		
2011-12	541	559	527	581	498	563	557	3826	589	523	554	1666	587	569	572	1728	7220
2012-13	456	597	559	541	601	511	569	3834	561	593	530	1684	557	582	559	1698	7216
2013-14	493	503	597	574	560	616	516	3859	573	565	601	1739	533	552	571	1656	7254
2014-15	494	544	503	613	594	574	622	3944	520	577	573	1670	604	528	542	1674	7288
2015-16	492	545	544	517	634	609	580	3921	627	523	585	1735	576	599	518	1693	7349
2016-17	490	543	545	559	535	650	615	3937	584	631	530	1745	588	571	588	1747	7429
2017-18	488	541	543	560	579	549	657	3917	620	588	640	1848	533	583	561	1677	7442
2018-19	486	539	541	558	580	594	555	3853	662	624	596	1882	643	528	572	1743	7478
2019-20	484	536	539	556	578	595	600	3888	559	666	633	1858	599	638	518	1755	7501
2020-21	482	534	536	554	575	593	601	3875	605	563	675	1843	636	594	626	1856	7574

METHOD I: The PDE model uses enrollment data reported annually by all local education agencies to the Division of Data Services on the Public School Enrollment Report. Resident live birth data is provided by the Pennsylvania Department of Health. Grade progression is determined by calculating retention rates for grades 2 to 12 using the most recent five years of enrollment data. Retention rates for kindergarten are determined by births five years earlier and for first grade from births six years earlier. These rates are evaluated to determine if a pattern is discernable, or if any retention rates are unusual. If a pattern is found, the pattern is continued in making the projections. Unusual retention rates are discarded and the average of the remaining rates is used in making the projections. Nongraded elementary and secondary students are prorated across grades before retention rates are calculated.

Table 14A compares the PDE Functional Capacity for each school with the Method I, 2010-11 PDE projected enrollment information.

TABLE 14A School	Adjusted Functional Capacity	Student Enrollment 2011-12	5 Year Growth	Projected Student Enrollment 2015-16	10 Year Growth	Projected Student Enrollment 2020-21
Boyertown Elementary	700	668				
Colebrookdale Elementary	350	366				
Earl Elementary	350	320				
Gilbertsville Elementary	700	783				
New Hanover Elementary	700	741				
Pine Forge Elementary	350	277				
Washington Elementary	700	606				
K-6 Total	3,850	3,761	160	3,921	114	3,875
Junior High East	1,050	843				
Junior High West	860	807				
7-9 Total	1,910	1,650	85	1,735	193	1,843
Senior High School	1,835	1,733				
10-12 Total	1,835	1,733	-40	1,693	123	1,856
K-12 Total	7,595	7,144	205	7,349	430	7,574

PROJECTED STUDENT ENROLLMENT

METHOD II

TABLE 15 -- Method II - PEL Projected Student Enrollment (Preferred)

	K	1	2	3	4	5	6	K - 6	7	8	9	7 - 9	10	11	12	10 - 12	K-12
2006-07	490	519	559	482	486	556	540	3632	574	566	559	1699	596	581	539	1716	7047
2007-08	460	513	521	565	500	499	558	3616	554	571	568	1693	558	561	578	1697	7006
2008-09	507	473	521	533	583	513	522	3652	571	561	584	1716	565	535	545	1645	7013
2009-10	495	557	455	530	534	593	516	3680	534	569	563	1666	588	542	514	1644	6990
2010-11	492	527	566	481	549	551	584	3750	520	546	584	1650	574	583	542	1699	7099
RATIOS																	
2011-12	561	532	521	587	490	562	548	3801	593	525	554	1672	592	560	572	1724	7197
2012-13	461	607	526	540	598	502	559	3793	556	599	533	1688	561	577	549	1687	7168
2013-14	490	499	600	546	550	613	500	3798	568	561	608	1737	540	547	566	1653	7188
2014-15	503	530	494	622	556	563	610	3878	508	573	569	1650	616	527	536	1679	7207
2015-16	497	544	524	512	634	570	560	3841	619	513	582	1714	577	601	517	1695	7250
2016-17	497	538	538	543	522	650	567	3855	569	625	521	1715	590	563	589	1742	7312
2017-18	497	538	532	558	553	535	647	3860	576	574	634	1784	528	575	552	1655	7299
2018-19	497	538	532	552	569	567	532	3787	657	581	583	1821	642	515	564	1721	7329
2019-20	497	538	532	552	562	583	564	3828	540	663	590	1793	591	626	505	1722	7343
2020-21	497	538	532	552	562	576	580	3837	573	545	673	1791	598	576	614	1788	7416

METHOD II: Pennsylvania Economy League Primary Period 2010-11 2014-2015 and Alternative Extended Total Enrollment projections by Grade on Births fixed at 487 for 2015-2016 to 2020-2021.

Table 15A compares the PDE Functional Capacity for each school with the Method II projected enrollment information.

TABLE 15A School	Adjusted Functional Capacity	Student Enrollment 2011-12	5 Year Growth	Projected Student Enrollment 2015-16	10 Year Growth	Projected Student Enrollment 2020-21
Boyertown Elementary	700	668				
Colebrookdale Elementary	350	366				
Earl Elementary	350	320				
Gilbertsville Elementary	700	783				
New Hanover Elementary	700	741				
Pine Forge Elementary	350	277				
Washington Elementary	700	606				
K-6 Total	3,850	3,761	80	3,841	76	3,837
Junior High East	1,050	843				
Junior High West	860	807				
7-9 Total	1,910	1,650	64	1,714	141	1,791
Senior High School	1,835	1,733				
10-12 Total	1,835	1,733	-38	1,695	55	1,788
K-12 Total	7,595	7,144	106	7,250	272	7,416

PROJECTED STUDENT ENROLLMENT

METHOD III

TABLE 16 -- PEL Projected Student Enrollment (Alternative B)

	K	1	2	3	4	5	6	K - 6	7	8	9	7 - 9	10	11	12	10 - 12	K-12
2006-07	490	519	559	482	486	556	540	3632	574	566	559	1699	596	581	539	1716	7047
2007-08	460	513	521	565	500	499	558	3616	554	571	568	1693	558	561	578	1697	7006
2008-09	507	473	521	533	583	513	522	3652	571	561	584	1716	565	535	545	1645	7013
2009-10	495	557	455	530	534	593	516	3680	534	569	563	1666	588	542	514	1644	6990
2010-11	492	527	566	481	549	551	584	3750	520	546	584	1650	574	583	542	1699	7099
RATIOS																	
2011-12	561	532	521	587	490	562	548	3801	593	525	554	1672	592	560	572	1724	7197
2012-13	461	607	526	540	598	502	559	3793	556	599	533	1688	561	577	549	1687	7168
2013-14	490	499	600	546	550	613	500	3798	568	561	608	1737	540	547	566	1653	7188
2014-15	503	530	494	622	556	563	610	3878	508	573	569	1650	616	527	536	1679	7207
2015-16	561	544	524	512	634	570	560	3905	619	513	582	1714	577	601	517	1695	7314
2016-17	561	607	538	543	522	650	567	3988	569	625	521	1715	590	563	589	1742	7445
2017-18	561	607	600	558	553	535	647	4061	576	574	634	1784	528	575	552	1655	7500
2018-19	561	607	600	622	569	567	532	4058	657	581	583	1821	642	515	564	1721	7600
2019-20	561	607	600	622	634	583	564	4171	540	663	590	1793	591	626	505	1722	7686
2020-21	561	607	600	622	634	650	580	4254	573	545	673	1791	598	576	614	1788	7833

METHOD III: Pennsylvania Economy League Primary Period 2010-11 2014-2015 and Alternative Extended Total Enrollment projections by Grade on Births fixed at 550 for 2015-2016 to 2020-2021.

Table 16A compares the PDE Functional Capacity for each school with the Method III, 2011-12 projected enrollment information.

TABLE 16A School	Adjusted Functional Capacity	Student Enrollment 2011-12	5 Year Growth	Projected Student Enrollment 2015-16	10 Year Growth	Projected Student Enrollment 2020-21
Boyertown Elementary	700	668				
Colebrookdale Elementary	350	366				
Earl Elementary	350	320				
Gilbertsville Elementary	700	783				
New Hanover Elementary	700	741				
Pine Forge Elementary	350	277				
Washington Elementary	700	606				
K-6 Total	3,850	3,761	144	3,905	493	4,254
Junior High East	1,050	843				
Junior High West	860	807				
7-9 Total	1,910	1,650	64	1,714	141	1,791
Senior High School	1,835	1,733				
10-12 Total	1,835	1,733	-38	1,695	55	1,788
K-12 Total	7,595	7,144	170	7,314	689	7,833

PROJECTED STUDENT ENROLLMENT

METHOD IV

TABLE 17 -- Method IV - Projected Student Enrollment Based on Housing Start Data

	K	1	2	3	4	5	6	K - 6	7	8	9	7 - 9	10	11	12	10 - 12	K-12
2007-08	460	513	521	565	500	499	558	3616	554	571	568	1693	558	561	578	1697	7006
2008-09	507	473	521	533	583	513	522	3652	571	561	584	1716	565	535	545	1645	7013
2009-10	495	557	455	530	534	593	516	3680	534	569	563	1666	588	542	514	1644	6990
2010-11	492	527	566	481	549	551	584	3750	520	546	584	1650	574	583	542	1699	7099
2011-12	512	527	529	574	494	551	574	3761	594	521	535	1650	588	569	576	1733	7144
RATIOS		1.067	1	1.027	1.024	1.019	1.019		1.018	1.008	1.008		1.007	0.975	0.98		
2012-13	522	546	527	543	588	504	561	3791	584	599	525	1709	539	574	558	1670	7170
2013-14	532	557	546	541	556	599	513	3845	571	589	604	1764	529	526	562	1617	7226
2014-15	542	567	557	561	554	567	610	3959	522	576	594	1692	608	516	515	1639	7291
2015-16	552	578	568	572	574	565	578	3987	621	526	581	1729	598	593	506	1697	7413
2016-17	562	589	578	583	586	586	576	4059	588	626	531	1745	585	584	582	1750	7554
2017-18	572	599	589	594	597	597	596	4145	586	593	632	1810	535	571	572	1677	7632
2018-19	582	610	600	605	608	608	608	4221	607	591	598	1796	636	521	559	1717	7734
2019-20	592	621	610	616	619	620	620	4298	619	612	596	1827	602	621	511	1734	7858
2020-21	602	631	621	627	631	631	631	4374	631	624	617	1872	600	587	608	1795	8042
2021-22	612	642	632	638	642	643	643	4451	643	636	629	1908	622	585	576	1782	8141

METHOD IV: Kindergarten enrollment increased by 10 students each year. This is based upon the available housing and future housing data.

Table 17A compares the PDE Functional Capacity for each school with the Method IV projected enrollment information.

TABLE 16A School	Adjusted Functional Capacity	Student Enrollment 2011-12	5 Year Growth	Projected Student Enrollment 2016-17	10 Year Growth	Projected Student Enrollment 2021-22
Boyertown Elementary	700	668				
Colebrookdale Elementary	350	366				
Earl Elementary	350	320				
Gilbertsville Elementary	700	783				
New Hanover Elementary	700	741				
Pine Forge Elementary	350	277				
Washington Elementary	700	606				
K-6 Total	3,850	3,761	298	4,059	690	4,451
Junior High East	1,050	843				
Junior High West	860	807				
7-9 Total	1,910	1,650	95	1,745	258	1,908
Senior High School	1,835	1,733				
10-12 Total	1,835	1,733	17	1,750	49	1,782
K-12 Total	7,595	7,144	410	7,554	997	8,141

TABLE 18 - Projected Student Enrollment (K-6) vs. Current Building Capacity

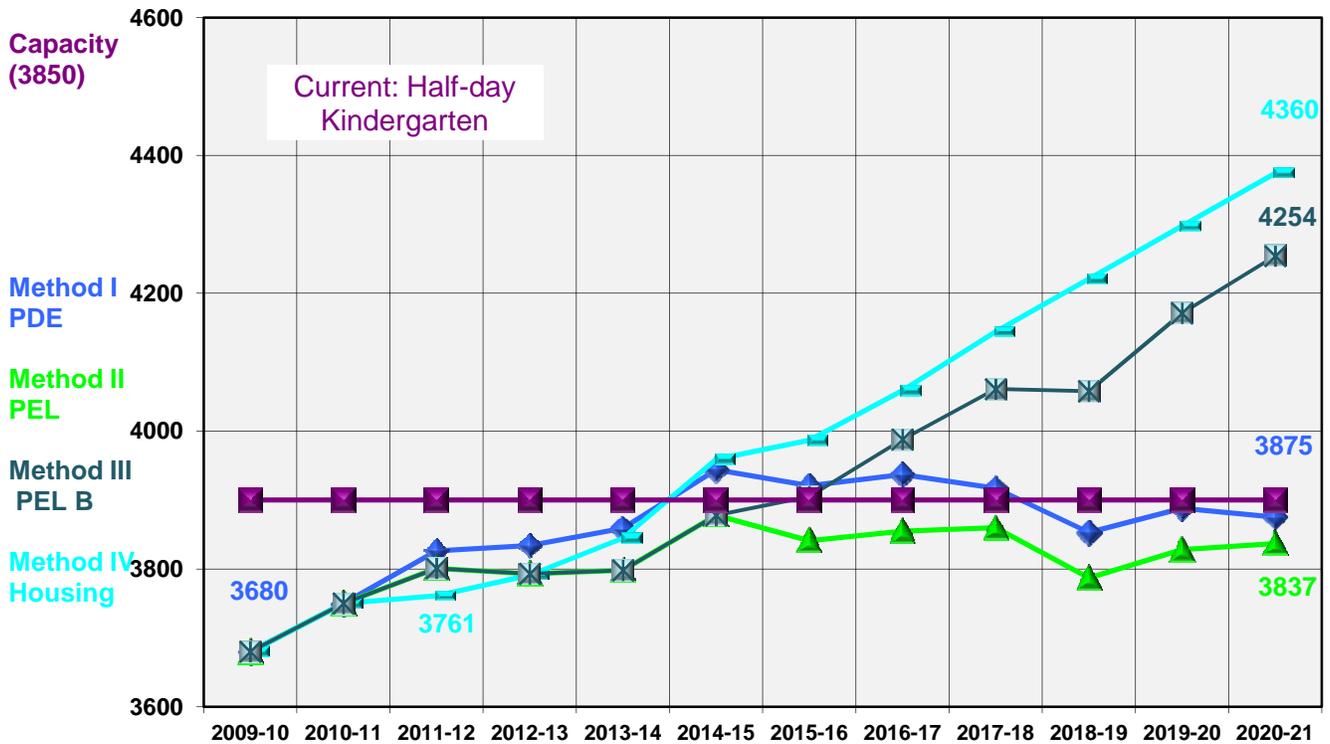


TABLE 19 - Projected Student Enrollment (K-6) vs. Current Building Capacity

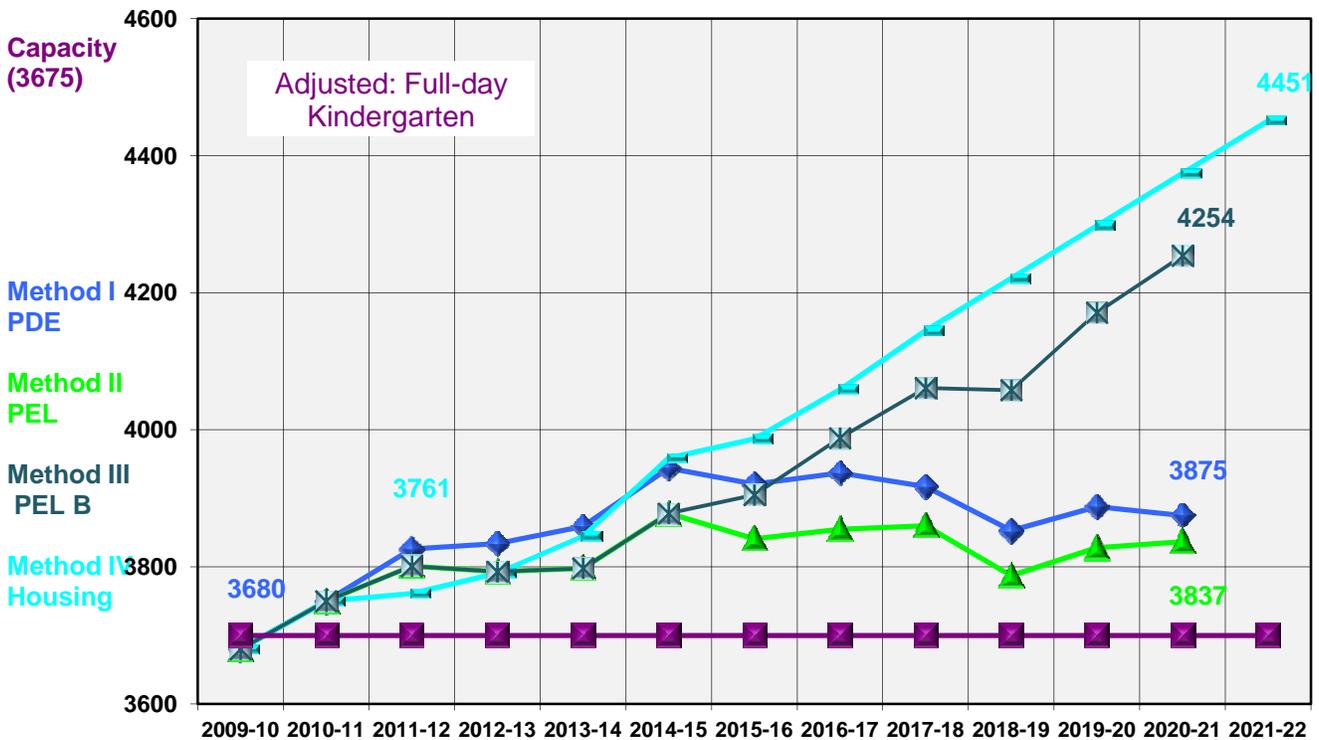


TABLE 20 - Projected Student Enrollment (7-9) vs. Current Building Capacity

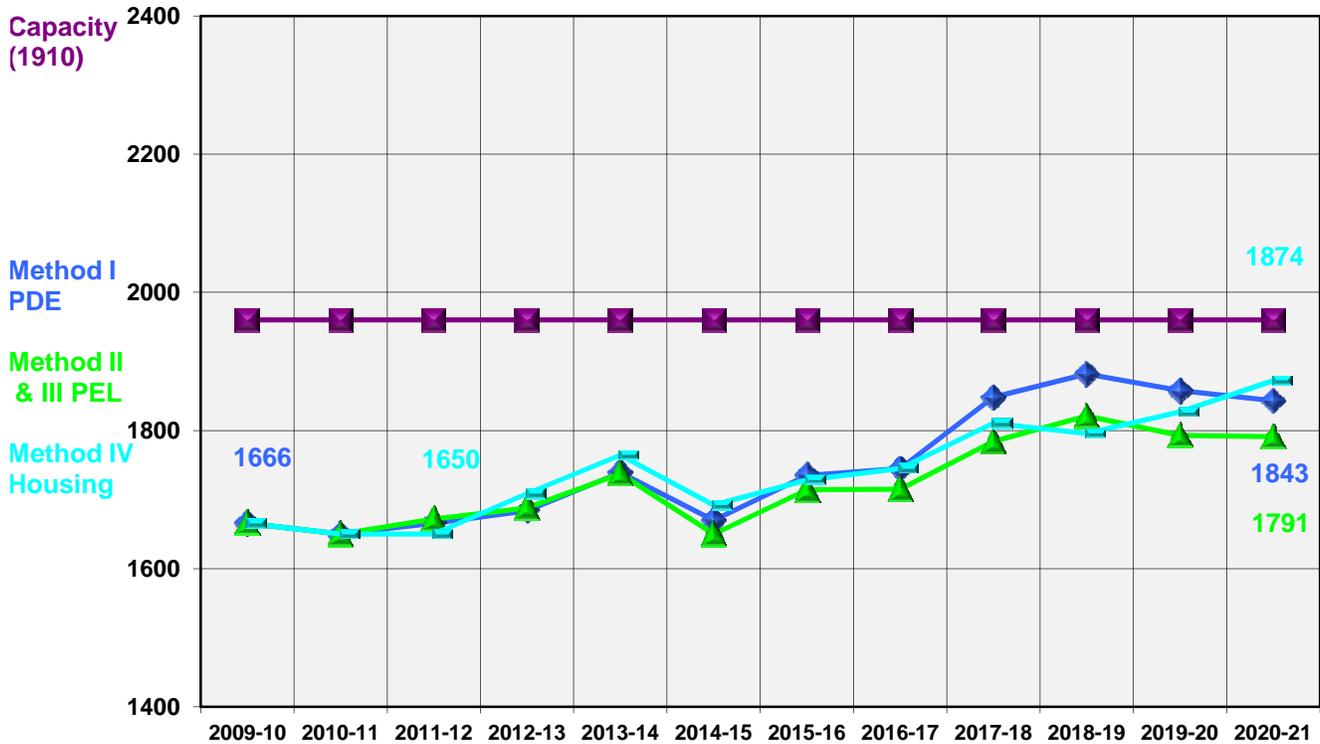
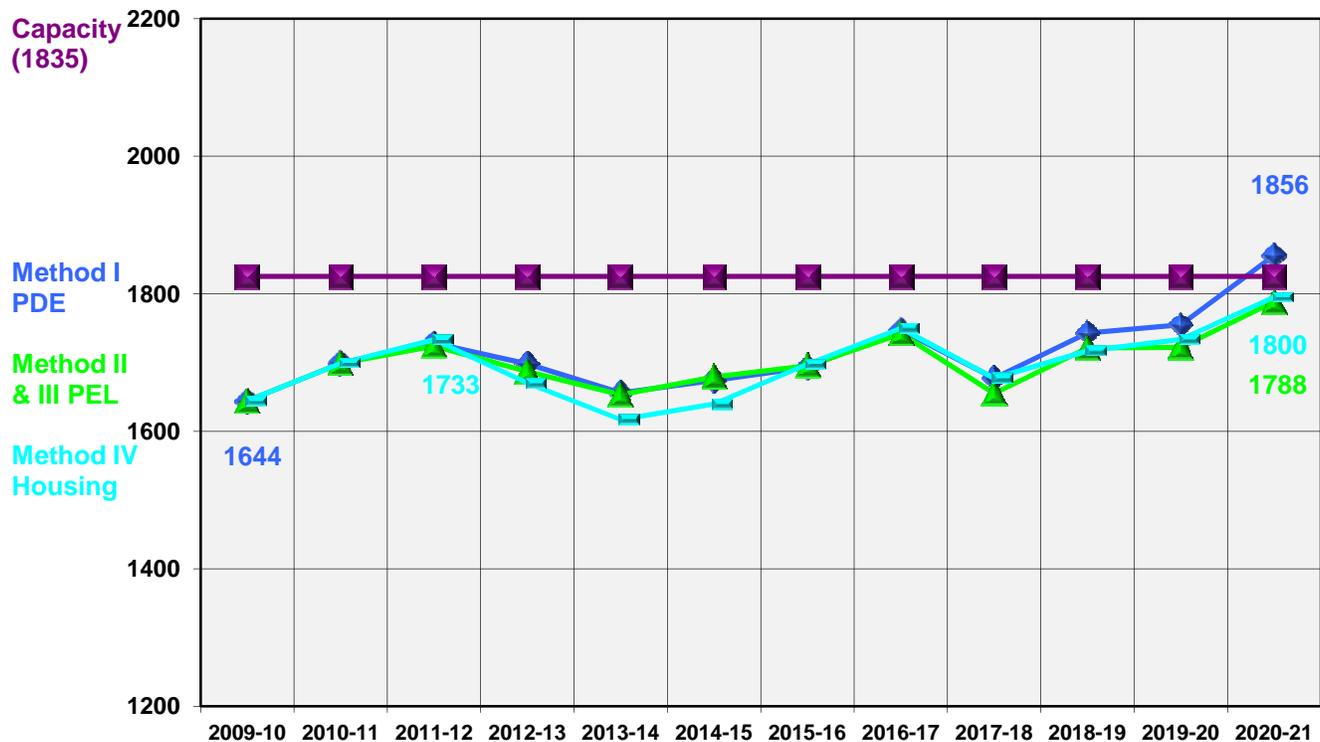


TABLE 21 - Projected Student Enrollment (10-12) vs. Current Building Capacity



EXISTING ELEMENTARY ROOM SCHEDULE

Existing Adjusted Capacity

		K-6 Existing Adjusted Use -- Half-day Kindergarten								
		Boyertown	Colebrookdale	Earl	Gilbertsville	New Hanover	Pine Forge	Washington	K-6 Total	
		No. Capacity	No. Capacity	No. Capacity	No. Capacity	No. Capacity	No. Capacity	No. Capacity	No. Capacity	
CLASSROOMS	Kindergarten 1/2-day	2 100	1 50	1 50	2 100	2 100	1 50	2 100	11 550	CLASSROOMS
	First Grade	4 100	2 50	2 50	4 100	4 100	2 50	4 100	22 550	
	Second Grade	4 100	2 50	2 50	4 100	4 100	2 50	4 100	22 550	
	Third Grade	4 100	2 50	2 50	4 100	4 100	2 50	4 100	22 550	
	Fourth Grade	4 100	2 50	2 50	4 100	4 100	2 50	4 100	22 550	
	Fifth Grade	4 100	2 50	2 50	4 100	4 100	2 50	4 100	22 550	
	Sixth Grade	4 100	2 50	2 50	4 100	4 100	2 50	4 100	22 550	
SUPPORT	Support / Divided	1 25			1 25	4 100			6 150	SUPPORT
	Spec Educ / Interven	5	3	2	3	4		4	21	
	S.E. / I.U. / Gift S.G.I.	3		1	4	1	4	3	16	
	Modular/Clsrm<660 s.f.		1 S.E.						1	
	Seminar / S.G.I.	1	4	4	2	2	1	5	19	
	Large Group / L.G.I.				1				1	
	Computer Lab	1	1	1	1	1	1	1	7	
	Music Classroom	1	1	1	1	1	1 **	1	7	
	Music Seminar / Pract	1	1		1	1		1	5	
	Art Classroom	1	1	1	1	1	** share	1	6	
ANCILIARY / CORE AREAS	Media Center	1	1	1	1	1	1	1	7	ANCILIARY / CORE AREAS
	Gymnasium	1			1	1		1	4	
	Locker Room	2							2	
	Multi-Purpose Room		1	1			1		3	
	Stage / Platform	1	1	1	1	1	1	1	7	
	Student Dining	1			1	1		1	4	
	Kitchen Areas	1	1	1	1	1	1	1	7	
	Administration / Guid	1	1	1	1	1	1	1	7	
	Health Suite	1	1	1	1	1	1	1	7	
	Faculty / I.P.C. / Office	2	1	1	1	1	1	1	8	
	P.E. Office				2		1	1	0	
Capacity		700	350	350	700	700	350	700	3850	
Total Capacity		725	350	350	725	800	350	700	4000	
2011-12 Enrollment		668	366	320	783	741	277	606	3761	

P.D.E. and District Capacity: 25 students per classroom.

Elementary Functional Capacity includes Graded Classrooms, while the Total Capacity also includes Support Classrooms that are needed to support the educational program such as Math and Reading. Special Education and Pre-Kindergarten Capacity are not included in the Functional Capacity or Total Capacity.

The Existing adjusted building capacity has been adjusted to represent the intended or adjusted use of space, therefore, showing respective support classrooms including Pre-Kindergarten and Special Education spaces.

EXISTING ELEMENTARY ROOM SCHEDULE

Full-Day Kindertarten Adjusted Capacity

		K-6 Existing Adjusted Use -- Full-day Kindergarten								
		Boyertown	Colebrookdale	Earl	Gilbertsville	New Hanover	Pine Forge	Washington	K-6 Total	
		No. Capacity	No. Capacity	No. Capacity	No. Capacity	No. Capacity	No. Capacity	No. Capacity	No. Capacity	
CLASSROOMS	Kindergarten full-day	4 100	2 50	2 50	4 100	4 100	2 50	4 100	22 550	CLASSROOMS
	First Grade	4 100	2 50	2 50	4 100	4 100	2 50	4 100	22 550	
	Second Grade	4 100	2 50	2 50	4 100	4 100	2 50	4 100	22 550	
	Third Grade	4 100	2 50	2 50	4 100	4 100	2 50	4 100	22 550	
	Fourth Grade	4 100	2 50	2 50	4 100	4 100	2 50	4 100	22 550	
	Fifth Grade	4 100	2 50	2 50	4 100	4 100	2 50	3 75	21 525	
	Sixth Grade	3 75	1 25	1 25	3 75	4 100	1 25	3 75	16 400	
SUPPORT	Support / Divided					2 50			2 50	SUPPORT
	Spec Educ / Interven	5	3	2	4	4		4	22	
	S.E. / I.U. / Gift S.G.I.	3		1	3	1	4	3	15	
	Modular/Clsrm<660 s.f.		1 S.E.						1	
	Seminar / S.G.I.	1	4	4	3	2	1	5	20	
	Large Group / L.G.I.				1				1	
	Computer Lab	1	1	1	1	1	1	1	7	
	Music Classroom	1	1	1	1	1	1 **	1	7	
	Music Seminar / Pract	1	1		1	1		1	5	
	Art Classroom	1	1	1	1	1	**	1	6	
ANCILIARY / CORE AREAS	Media Center	1	1	1	1	1	1	1	7	ANCILIARY / CORE AREAS
	Gymnasium	1			1	1		1	4	
	Locker Room	2							2	
	Multi-Purpose Room		1	1			1		3	
	Stage / Platform	1	1	1	1	1	1	1	7	
	Student Dining	1			1	1		1	4	
	Kitchen Areas	1	1	1	1	1	1	1	7	
	Administration / Guid	1	1	1	1	1	1	1	7	
	Health Suite	1	1	1	1	1	1	1	7	
	Faculty / I.P.C. / Office	2	1	1	1	1	1	1	8	
	P.E. Office				2		1	1	0	
Capacity		675	325	325	675	700	325	650	3675	
Total Capacity		675	325	325	675	750	325	650	3725	
2010-11 Enrollment		668	366	320	783	741	277	606	3761	

P.D.E. and District Capacity: 25 students per classroom.

Elementary Functional Capacity includes Graded Classrooms, while the Total Capacity also includes Support Classrooms that are needed to support the educational program such as Math and Reading. Special Education and Pre-Kindergarten Capacity are not included in the Functional Capacity or Total Capacity.

The Existing adjusted building capacity has been adjusted to represent the intended or adjusted use of space, therefore, showing respective support classrooms including Pre-Kindergarten and Special Education spaces.

EXISTING 7-9 ROOM SCHEDULE

Existing Adjusted Capacity

		7-9 Existing			
		Junior High East		Junior High West	
CLASSROOMS		No.	Capacity	No.	Capacity
		Classroom	31	775	23
	Science Classroom / Lecture	2	50	3	75
	Science Lab	5	100	3	60
	Classrooms (Other Use)				
SUPPORT	S.E. / Gifted / Interv	6		4	
	S.E. Seminar / S.G.I.	4		1	
	Seminar / S.G.I. < 660 s.f.	3		6	
	Large Group / L.G.I.				
	Business / Computer Lab	3	60	3	60
	Music Classroom				
	Band / Orchestra / Choral	2	50	2	50
	Art Classroom	2	40	2	40
	Family & Consumer Science	2	40	2	40
	T.E. Lab	3	60	3	60
	T.E. Wood / Metal Lab	1	20		
	T.V. Studio	1	20	1	20
ANCILIARY / CORE AREAS	Media Center	1		1	
	Gymnasium	1	99	1	66
	Auxiliary Gym			1	33
	Weight Room / Adaptive Gym	1		1	
	Locker Room	4		2	
	Officials / P.E. Office	2		2	
	Auditorium	1		1	
	Stage / Platform	1		1	
	Student Dining	1		1	
	Kitchen Areas	1		1	
	Administration / Guidance	1		1	
	Health Suite	1		1	
	Faculty / I.P.C. / Office	2		2	
	Capacity (80%)		1050		860
	P.D.E. Capacity (90%)		1180		970
	2011-12 Enrollment		843		807

P.D.E.: 20-25 students per classroom; 90% P.D.E. Utilization Factor and 80% District Utilization Factor.

Secondary Functional Capacity includes all spaces that receive capacity except a Natatorium or District Administration. Special Education Capacity is not included in the Functional Capacity or Total Capacity.

The existing building capacity may have been adjusted to represent the intended or adjusted use of space, therefore, showing respective support classrooms including Art, Music and Computer Education spaces.

EXISTING 10-12 ROOM SCHEDULE

Existing Adjusted Capacity

		10-12 Existing							
		High School		HS Old Wing		Senior High School			
CLASSROOMS		No.	Capacity	No.	Capacity	No.	Capacity	CLASSROOMS	
		Classroom	39	975	9	225	48		1200
		Science Classroom / Lecture	8	200			8		200
		Science Lab	7	140			7		140
		Classrooms (Other Use)	1	25	2	50	3		75
SUPPORT		S.E. / Gifted / Interv	8				8		
		S.E. Seminar / S.G.I.	5				5		
		Modular / Clsrm <660 s.f.			7		7		
		Seminar / S.G.I. < 660 s.f.	2				2		
		Large Group / L.G.I.	1		1		2		
		Business / Computer Lab	4	80			4	80	
		Music Classroom	2	50			2	50	
		Band / Orchestra / Choral	2	50			2	50	
		Art Classroom			4	80	4	80	
		Family & Consumer Science	3	60			3	60	
		T.E. Lab	7	140			7	140	
		T.E. Wood / Metal Lab							
		T.V. Studio	1	20			1	20	
ANCILIARY / CORE AREAS		Media Center	1				1		
		Gymnasium	2	165			2	165	
		Auxiliary Gym			1	33	1	33	
		Weight Room / Adaptive Gym	3				3		
		Locker Room	6				6		
		Officials / P.E. Office	8				8		
		Auditorium	1		1		2		
		Stage / Platform	1		1		2		
		Student Dining	1				1		
		Kitchen Areas	1				1		
		Administration / Guidance	1				1		
		Health Suite	1				1		
		Faculty / I.P.C. / Office	14		1		15		
		Capacity (80%)		1525		310		1835	
	P.D.E. Capacity (90%)		1715		350		2065		
	2011-12 Enrollment						1733		

P.D.E.: 20-25 students per classroom; 90% P.D.E. Utilization Factor and 80% District Utilization Factor.

Secondary Functional Capacity includes all spaces that receive capacity except a Natatorium or District Administration. Special Education Capacity is not included in the Functional Capacity or Total Capacity.

The existing building capacity may have been adjusted to represent the intended or adjusted use of space, therefore, showing respective support classrooms including Art, Music and Computer Education spaces.

DISTRICT OVERVIEW

School District Buildings

The Elementary School program consists of grades K-6 located in Boyertown, Colebrookdale, Earl, Gilbertsville, New Hanover-Upper Frederick, Pine Forge, and Washington Elementary Schools.

The Secondary School program consists of grades 7-9 located in Junior High School - East and Junior High School - West and grades 10-12 located in the Senior High School.

The District's Administrative staff are housed in the Education Center.

Table 1 profiles the School District Buildings and land owned by the District. Refer to Map 1 for a geographic illustration of School District Facilities.

TABLE 1 Boyertown Area S.D. Buildings	Grade Levels	2011-12 Student Enrollment	Building Capacity	Architectural Area Sq. Ft.	Site Size Acres	Construction / Renovation Dates & Recent PlanCon Bid Date
Boyertown Elementary	K-6	668	700	97,800	13	1969 <i>PlanCon Eligibility: Yes</i>
Colebrookdale Elementary	K-6	366	350	41,340	35	1955, 1991 <i>PlanCon Eligibility: Yes</i>
Earl Elementary	K-6	320	350	38,530	16	1954, 1968, 1991 <i>PlanCon Eligibility: Yes</i>
Gilbertsville Elementary	K-6	783	700	96,930	16	1930, 1958, 1987, 1995 <i>PlanCon Eligibility: 2015</i>
New Hanover Elementary	K-6	741	700	90,700	18	1953, 1958, 1964, 1991 <i>PlanCon Eligibility: Yes</i>
Pine Forge Elementary	K-6	277	350	37,570	8	1928, 1957, 1987 <i>PlanCon Eligibility: Yes</i>
Washington Elementary	K-6	606	700	82,030	24	1961, 1987, 1995 <i>PlanCon Eligibility: 2015</i>
Junior High East	7-9	843	1050	159,430	45	1972, 2004 <i>PlanCon Eligibility: 2024</i>
Junior High West	7-9	807	860	145,720	33	1963, 1998 <i>PlanCon Eligibility: 2018</i>
Senior High School	10-12	1733	1835	370,000	70	1920, '30's, '55, '77, '92, ('96) <i>PlanCon Eligibility: Yes</i>
Education Center	N/A	N/A	N/A	11,200	3	1973 <i>PlanCon Eligibility: Yes</i>
Support Services Bldg.	N/A	N/A	N/A	4,450	2	1900's <i>PlanCon Eligibility: No</i>

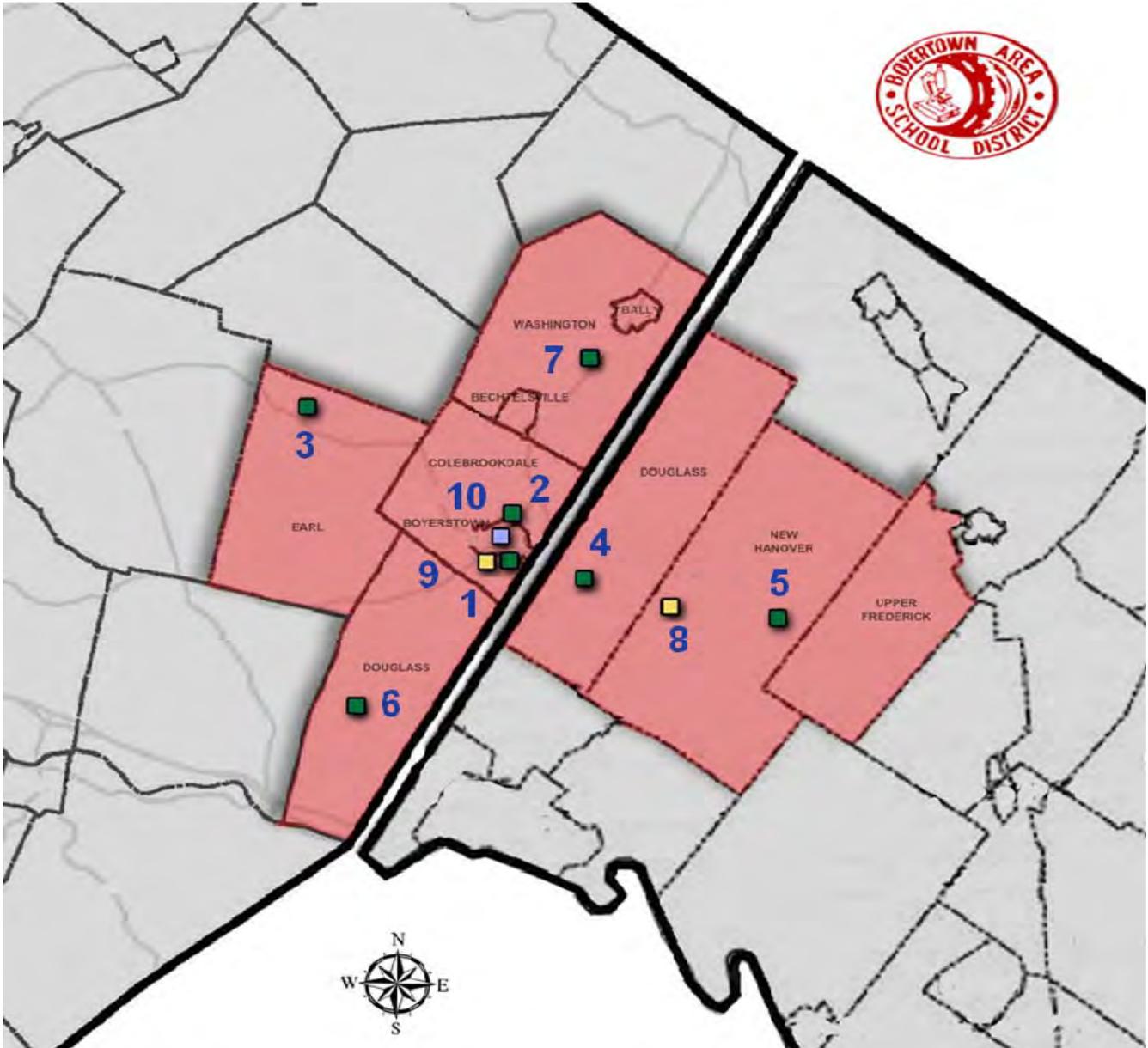
School Board of Directors

The Board of School Directors is made up of nine members. The nine directors are elected from the District's residents as a whole. Elections are held in alternate years in accordance with law. Director's terms last four years. The Superintendent is the chief administrative officer of the School District, with overall responsibility for all aspects of operations, including education, finance and facility planning. The Business Administrator is responsible for budget and financial operations. Both of these officials are selected by the Board of School Directors.

DISTRICT OVERVIEW

Boyertown Area School District - Facilities Location Map

Map 1 illustrates the locations of the Boyertown Area School District Facilities.



LEGEND

- | | |
|--|---------------------------------|
| 1. Boyertown Elementary School | 7. Washington Elementary School |
| 2. Colebrookdale Elementary School | 8. Junior High School - East |
| 3. Earl Elementary School | 9. Junior High School - West |
| 4. Gilbertsville Elementary School | 10. Senior High School |
| 5. New Hanover-Upper Frederick Elementary School | 11. Education Center |
| 6. Pine Forge Elementary School | 12. Support Services |

FACILITIES SUMMARY

Boyertown Area School District's Existing Facilities

The following information is included for each existing Facility: General Data, Exterior and Interior Building Photos, Aerial Site Views, Site Plan and Floor Plans, Room Schedule, Summary of Costs, and Building Improvements and Construction Costs Data.

Boyertown Elementary School



Built:	1969
Eligible for State Reimb:	Yes
Site Size:	13 acres
Architectural Area:	97,800 s.f.
PDE Total Capacity:	725
PDE Replacement Value:	\$11,605,800
20% Rule:	\$2,321,160

Building Improvements and Construction Costs

Total Building:	\$8,670,900
------------------------	-------------

Colebrookdale Elementary School



Built:	1955, 1991
Eligible for State Reimb:	Yes
Site Size:	10.5 acres
Architectural Area:	41,340 s.f.
PDE Total Capacity:	350
PDE Replacement Value:	\$5,602,800
20% Rule:	\$1,120,560

Building Improvements and Construction Costs

Total Building:	\$2,909,200
------------------------	-------------

FACILITIES SUMMARY

Boyertown Area School District's Existing Facilities

Earl Elementary School



Built: 1954, 1968, 1991
Eligible for State Reimb: Yes

Site Size: 16 acres

Architectural Area: 38,530 s.f.

PDE Total Capacity: 350

PDE Replacement Value: \$5,602,800
20% Rule: \$1,120,560

Building Improvements and Construction Costs

Total Building: \$2,952,400

Gilbertsville Elementary School



Built: 1930, 1958, 1987, 1995
Eligible for State Reimb: 2015

Site Size: 16 acres

Architectural Area: 96,930 s.f.

PDE Total Capacity: 725

PDE Replacement Value: \$11,605,800
20% Rule: \$2,321,160

Building Improvements and Construction Costs

Total Building: \$6,914,800

FACILITIES SUMMARY

Boyertown Area School District's Existing Facilities

New Hanover-Upper Frederick Elementary School



Built: 1953, 1958, 1964, 1991
Eligible for State Reimb: Yes

Site Size: 18 acres

Architectural Area: 90,700 s.f.

PDE Total Capacity: 800

PDE Replacement Value: \$12,806,400
20% Rule: \$2,561,280

Building Improvements and Construction Costs

Total Building: \$6,284,000

Pine Forge Elementary School



Built: 1928, 1957, 1987
Eligible for State Reimb: Yes

Site Size: 8 acres

Architectural Area: 37,570 s.f.

PDE Total Capacity: 350

PDE Replacement Value: \$5,602,800
20% Rule: \$1,120,560

Building Improvements and Construction Costs

Total Building: \$3,803,900

FACILITIES SUMMARY

Boyertown Area School District's Existing Facilities

Washington Elementary School



Built: 1961, 1987, 1995
Eligible for State Reimb: 2015

Site Size: 24 acres

Architectural Area: 82,030 s.f.

PDE Total Capacity: 700

PDE Replacement Value: \$11,205,600
20% Rule: \$2,241,120

Building Improvements and Construction Costs

Total Building: \$6,177,900

Boyertown Junior High School East



Built: 1972, 2004
Eligible for State Reimb: 2024

Site Size: 45 acres

Architectural Area: 159,430 s.f.

PDE Total Capacity: 1180

PDE Replacement Value: \$25,254,360
20% Rule: \$5,050,872

Building Improvements and Construction Costs

Total Building: \$1,218,800

FACILITIES SUMMARY

Boyertown Area School District's Existing Facilities

Boyertown Junior High School West



Built:	1963, 1998
Eligible for State Reimb:	2018
Site Size:	70 acres
Architectural Area:	145,720 s.f.
PDE Total Capacity:	970
PDE Replacement Value:	\$20,759,940
20% Rule:	\$4,151,988

Building Improvements and Construction Costs

Total Building: \$22,222,200

Boyertown Area Senior High School



Built:	1920, 1930's, 1955, 1977, 1992, (1996)
Eligible for State Reimb:	Yes
Site Size:	70 acres
Architectural Area:	370,000 s.f.
PDE Total Capacity:	2065
PDE Replacement Value:	\$44,195,130
20% Rule:	\$8,839,026

Building Improvements and Construction Costs

Total Building: \$31,987,600

FACILITIES SUMMARY

Boyertown Area School District's Existing Facilities

Education Center



Built:	1973
Eligible for State Reimb:	Yes
Site Size:	3 acres
Architectural Area:	11,200 s.f.
PDE Total Capacity:	36
PDE Replacement Value:	\$770,472
20% Rule:	\$154,094

Building Improvements and Construction Costs

Total Building: \$780,500

Support Services Building



Built:	1900's
Eligible for State Reimb:	No
Site Size:	2 acres
Architectural Area:	4,445 s.f.
PDE Total Capacity:	0
PDE Replacement Value:	\$0
20% Rule:	\$0

Building Improvements and Construction Costs

Total Building: \$668,800

FEASIBILITY STUDY GUIDELINES

Pennsylvania Department of Education: District-Wide Facility Study Guidelines

"District-Wide Facility Study Guidelines", which are based on the Pennsylvania Department of Education (PDE) PlanCon-A instructions, are outlined below.

Basic Education Circular (BEC) 24 P.S. § 7-733, "School Construction Reimbursement Criteria," explains the requirement for school building district-wide facility studies as a condition for reimbursement.

School districts must develop a complete building facility study of all district educational facilities including the district administration office. The study must be completed prior to, and within two years of, the Department's receipt of the PlanCon Part A, Project Justification, submission. The study must provide an appraisal as to each facility's ability to meet current and planned educational program requirements, the degree to which the present facilities meet reasonably current construction standards, and an estimated cost of necessary repairs and improvements. Facility studies must contain documentation regarding the authors' credentials for producing the document.

The Department no longer requires the entire facility study to be submitted. In lieu of the study, Page A03, District-Wide Facility Study Certification, must be submitted. The Department of Education, however, reserves the right to request a copy of the entire district-wide facility study. Completion of a district-wide facility study is a prerequisite to submission of Part A. A PlanCon project must be one of the options evaluated and considered in the study.

Before the Commonwealth will consider a building project for reimbursement, school districts must demonstrate that they have evaluated all of their facilities. The purpose of the district-wide facility study is to develop a plan for addressing the **entire** school district's facility needs. The study must consider how well each building lends itself to the school district's current and planned educational program, both in terms of the building's **design** (e.g., arrangement, number, layout and size of various spaces relative to current and projected enrollment) and **structure** (e.g., soundness, compliance with codes, access, environmental conditions). When the study indicates some inadequacy or deficiency, it must provide an estimate of the cost to correct the problem.

It is important to remember that PlanCon is designed as an administrative tool with the primary purpose of documenting planning and determining subsidy. It contains assumptions that may not apply to a particular school district. PlanCon, for instance, computes full time equivalent elementary capacity based on the assumption of 25 students per room. Secondary capacity presumes a 90 percent utilization rate. Capacity for special education rooms is calculated only for reimbursement purposes. It is important that facility studies provide a clear explanation of methodologies used to determine such things as capacity and enrollment.

FEASIBILITY STUDY GUIDELINES

Pennsylvania Department of Education: District-Wide Facility Study Guidelines (con't)

District-wide facility studies must contain all of the following elements and include answers to all the of questions asked:

1. An overview of the school district that considers such factors as geography, population, and wealth. The overview must include:
 - a. population and wealth statistics
 - b. a map showing the general location of the school district in the state or geographic region
 - c. a map of the school district showing the general location of all existing buildings and owned sites in the school district.
 - d. information on any distinguishing characteristics, such as geographically separate population centers, that will have an impact on facilities.

2. An overview of the school district's educational program. The overview must address for all grades (K-12):
 - a. instructional practices or planned curriculums by grade structure (elementary, middle, secondary, etc.)
 - b. special facility needs, if applicable, needed to support planned curriculums.

3. An analysis of projected enrollment. The analysis must include:
 - a. the likely enrollment for each grade structure ten years into the future
 - b. a discussion of the reliability of the enrollment projections.

4. An analysis of each building's capacity as it relates to the educational program. The analysis must address:
 - a. how many students a building can house
 - b. the types of educational spaces required by the educational program described above
 - c. grade alignments
 - d. length of school day and number of classes per day, if applicable
 - e. size of particular rooms and adequacy of those rooms, if applicable.

5. An analysis of each building's condition. The analysis must address:
 - a. the building's physical condition
 - b. the projected useful life of each building's major components (electrical, HVAC, plumbing, etc.)
 - c. code violations
 - d. universal accessibility
 - e. Energy Portfolio Surveys
 - f. the cost to upgrade each building to current standards.

FEASIBILITY STUDY GUIDELINES

Pennsylvania Department of Education: District-Wide Facility Study Guidelines (con't)

6. An analysis of construction options. The analysis must address:
 - a. the alternatives available to the school district based on the above analysis
 - b. cost estimates for each alternative
 - c. the pros and cons for each alternative
 - d. a summary page depiction options and costs
 - e. Energy Portfolio Surveys

7. Documentation regarding the authors' credentials. This section must include the education, registration or licensure and experience for each author.

Energy Portfolio Surveys:

Within the District-Wide Facility Study, Energy Portfolio Surveys must be included for each existing building and for each construction option that is being considered. The specific requirements for these Surveys are as follows:

1. Surveys for each Existing Building:

This Survey entails facility benchmarking, using the EPA/DOE Portfolio Manager Tool, identifying the annual site and source energy and annual water consumption.

Portfolio Manager is an interactive energy management tool that helps track and assess a building's energy and water consumption. Portfolio Manager requires the input of existing utility bills and basic facility data.

2. Surveys for each Construction Option (ie: for each New Building, Building Alteration, and/or Building Additions/Alterations)

This Survey entails providing a predictive utility budget, using the EPA/DOE Target Finder tool, identifying the annual site and source energy and annual water consumption.

Target Finder helps establish an energy performance target for new design projects and major building renovations.

PART I
DISTRICT OVERVIEW

DISTRICT OVERVIEW INTRODUCTION

This section of the Feasibility Study is an overview of the Boyertown Area School District that focuses on such factors as geography, population, and wealth. Distinguishing characteristics that will have an impact on Boyertown Area School District's facilities are identified such as geographically separate population centers.

The topics covered in this section of the Feasibility Study include:

- A summary of School District Buildings.
- Geography / Geographic Population Centers including data and respective maps.
- Population / Population Density / Population Distribution by Land Use including data and respective maps.
- Housing Characteristics including Total Housing Units as well as Occupied Housing Units, Vacant Housing Units, and Persons Per Household.
- Economic Characteristics including Income and Occupation data.
- General Population Characteristics.

DISTRICT OVERVIEW

School District Buildings

The Elementary School program consists of grades K-6 located in Boyertown, Colebrookdale, Earl, Gilbertsville, New Hanover-Upper Frederick, Pine Forge, and Washington Elementary Schools.

The Secondary School program consists of grades 7-9 located in Junior High School - East and Junior High School - West and grades 10-12 located in the Senior High School.

The District's Administrative staff are housed in the Education Center.

Table 1 profiles the School District Buildings and land owned by the District. Refer to Map 1 for a geographic illustration of School District Facilities.

TABLE 1 Boyertown Area S.D. Buildings	Grade Levels	2011-12 Student Enrollment	Building Capacity	Architectural Area Sq. Ft.	Site Size Acres	Construction / Renovation Dates & Recent PlanCon Bid Date
Boyertown Elementary	K-6	668	700	97,800	13	1969 <i>PlanCon Eligibility: Yes</i>
Colebrookdale Elementary	K-6	366	350	41,340	35	1955, 1991 <i>PlanCon Eligibility: Yes</i>
Earl Elementary	K-6	320	350	38,530	16	1954, 1968, 1991 <i>PlanCon Eligibility: Yes</i>
Gilbertsville Elementary	K-6	783	700	96,930	16	1930, 1958, 1987, 1995 <i>PlanCon Eligibility: 2015</i>
New Hanover Elementary	K-6	741	700	90,700	18	1953, 1958, 1964, 1991 <i>PlanCon Eligibility: Yes</i>
Pine Forge Elementary	K-6	277	350	37,570	8	1928, 1957, 1987 <i>PlanCon Eligibility: Yes</i>
Washington Elementary	K-6	606	700	82,030	24	1961, 1987, 1995 <i>PlanCon Eligibility: 2015</i>
Junior High East	7-9	843	1050	159,430	45	1972, 2004 <i>PlanCon Eligibility: 2024</i>
Junior High West	7-9	807	860	145,720	33	1963, 1998 <i>PlanCon Eligibility: 2018</i>
Senior High School	10-12	1733	1035	370,000	70	1920, '30's, '55, '77, '92, ('96) <i>PlanCon Eligibility: Yes</i>
Education Center	N/A	N/A	N/A	11,200	3	1973 <i>PlanCon Eligibility: Yes</i>
Support Services Bldg.	N/A	N/A	N/A	4,450	2	1900's <i>PlanCon Eligibility: No</i>

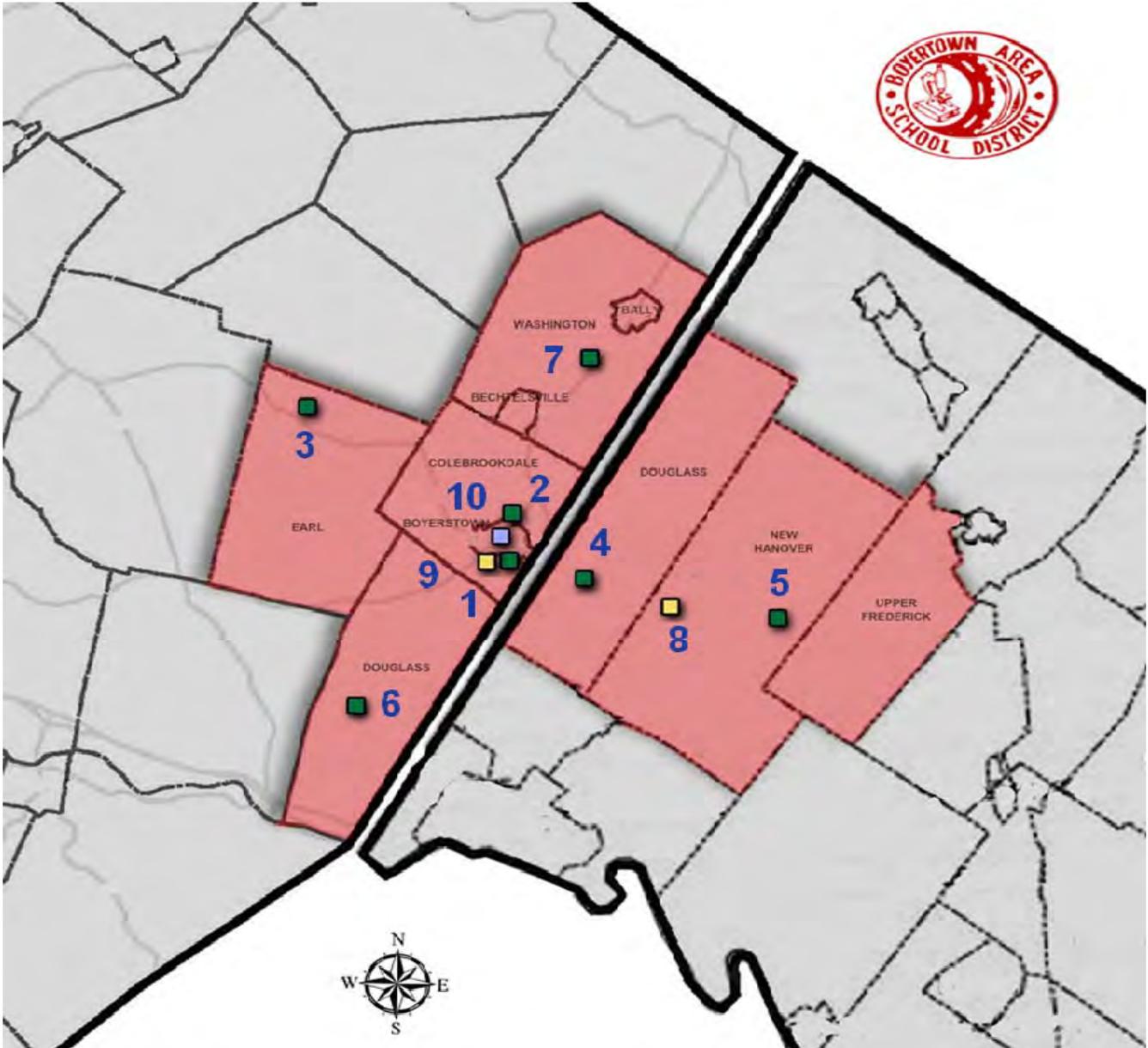
School Board of Directors

The Board of School Directors is made up of nine members. The nine directors are elected from the District's residents as a whole. Elections are held in alternate years in accordance with law. Director's terms last four years. The Superintendent is the chief administrative officer of the School District, with overall responsibility for all aspects of operations, including education, finance and facility planning. The Business Administrator is responsible for budget and financial operations. Both of these officials are selected by the Board of School Directors.

DISTRICT OVERVIEW

Boyertown Area School District - Facilities Location Map

Map 1 illustrates the locations of the Boyertown Area School District Facilities.



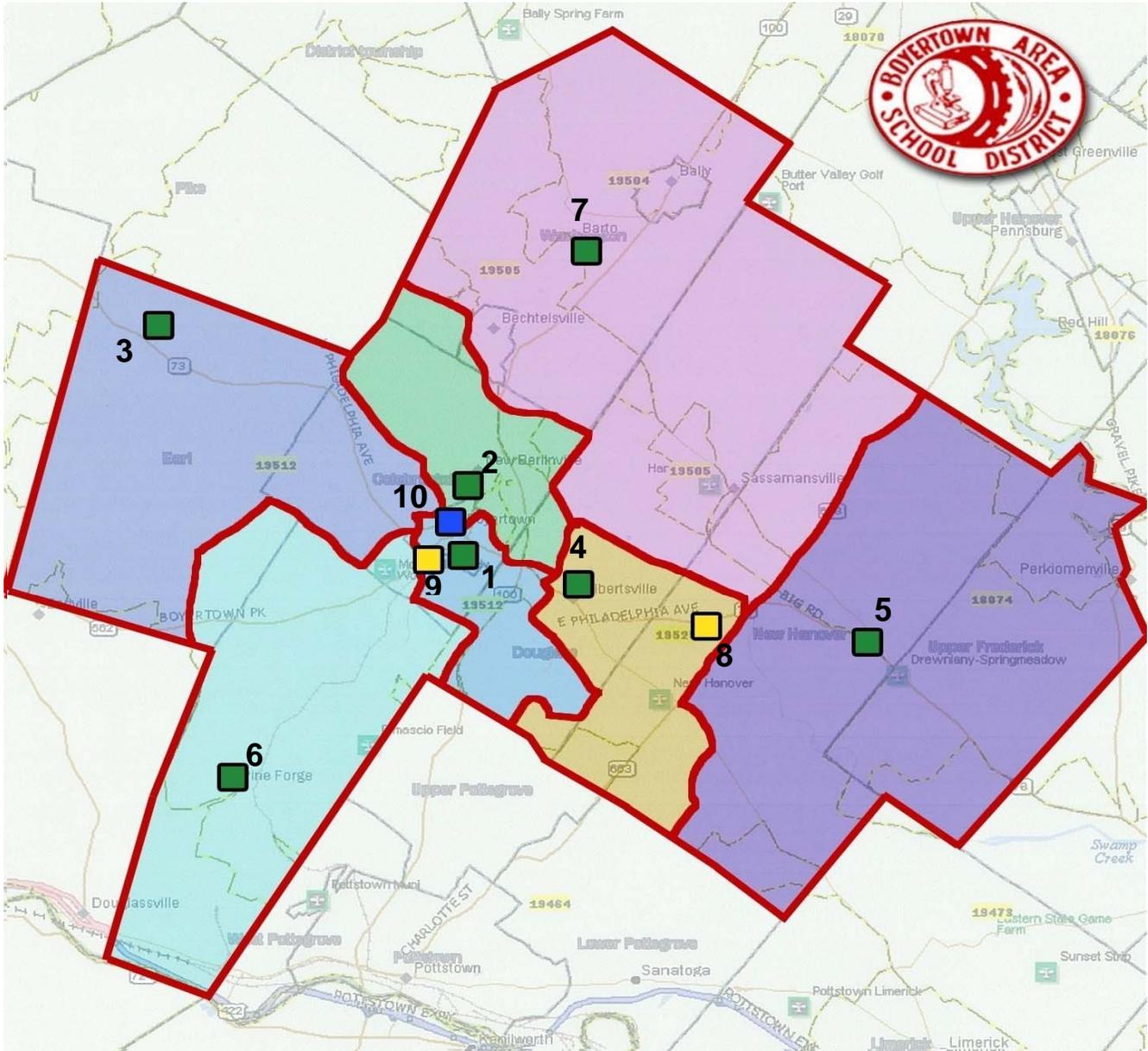
LEGEND

- | | |
|--|---------------------------------|
| 1. Boyertown Elementary School | 7. Washington Elementary School |
| 2. Colebrookdale Elementary School | 8. Junior High School - East |
| 3. Earl Elementary School | 9. Junior High School - West |
| 4. Gilbertsville Elementary School | 10. Senior High School |
| 5. New Hanover-Upper Frederick Elementary School | 11. Education Center |
| 6. Pine Forge Elementary School | 12. Support Services |

DISTRICT OVERVIEW

Boyertown Area School District - Facilities Location Map

Map 2 illustrates the Elementary School Attendance Areas



LEGEND

- | | |
|--|---------------------------------|
| 1. Boyertown Elementary School | 7. Washington Elementary School |
| 2. Colebrookdale Elementary School | 8. Junior High School - East |
| 3. Earl Elementary School | 9. Junior High School - West |
| 4. Gilbertsville Elementary School | 10. Senior High School |
| 5. New Hanover-Upper Frederick Elementary School | 11. Education Center |
| 6. Pine Forge Elementary School | 12. Support Services |

DISTRICT OVERVIEW

Population

The Population age percentages are based on the 2010 U.S. Census, for the School District, are as follows: 6% of residents are Pre-school age children 0 to 4 years; 18% of residents are School age children 5 to 17 years; 62% of residents are Adults age 18 to 64 years; and 14% of residents are Adults age 65+ years.

Table 2 profiles the School District population and percentages by age groupings. The Data is based on the 2010 U.S. Census.

TABLE 2 Population	Number of Residents	Percentage of Residents
Pre-school children 0 to 4 years	2,745	6%
School age children 5 to 17 years	8,225	18%
Adults 18 to 64 years	28,530	62%
Adults 65+ years	6,633	14%
School District Total	46,133	100%

Population Density

The School District serves an approximate population of 46,133 residents within 97.9 square miles. The land use in Berks County is agricultural and residential in Montgomery County. The primary land use in the School District is agricultural. The approximate average Population Density of the School District is 471 persons per square mile, while the Household Average Density is 179 households per square mile.

Table 3 profiles the population density of each Municipality. The Data is based on the 2010 U.S. Census. Refer to Map 4 for a graphic illustration of the Berks & Montgomery County Population Distribution by Data Classes.

TABLE 3 Population Density	Total Area sq. mi.	Number of Residents	Number of Households	No. of Housing Units	Population Density per sq. mi.	Household Avg. Density per sq. mi.
Bally Borough (BC)	0.52	1,090	441	457	2,096	848
Bechtelsville Borough (BC)	0.51	942	362	372	1,847	710
Boyertown Borough (BC)	0.78	4,055	1,927	2,026	5,199	2,471
Colebrookdale Twp. (BC)	8.46	5,078	1,997	2,077	600	236
Douglass Township (BC)	12.65	3,306	1,334	1,478	261	105
Earl Township (BC)	13.82	3,195	1,224	1,277	231	89
Washington Township (BC)	14.14	3,810	1,437	1,508	269	102
Douglass Township (MC)	15.30	10,195	3,612	3,740	666	236
New Hanover Twp. (MC)	21.68	10,939	3,797	3,919	505	175
Upper Frederick Twp. (MC)	10.09	3,523	1,379	1,450	349	137
School District Total	97.94	46,133	17,510	18,304	471	179

DISTRICT OVERVIEW

Geography / Geographic Population Centers

The Boyertown Area School District encompasses approximately 97.94 square miles and is situated on the northwestern edge of the greater Philadelphia suburban sprawl in southeastern Pennsylvania. About 45 miles northwest of the city, it is just 20 miles south of Allentown and 20 miles east of Reading, straddling the Berks-Montgomery County line. Refer to Map 2.

The School District is located in both Berks County and Montgomery County. It encompasses Colebrookdale, Douglass, Earl and Washington Townships and the boroughs of Bally, Bechtelsville and Boyertown in Berks County plus the townships of Douglass, New Hanover and Upper Frederick in Montgomery County.

The School District presently operates seven K-6 Elementary Schools, two 7-9 Junior High Schools, a 10-12 Senior High School facility, a District Administration Office and a District Maintenance facility. The Elementary attendance areas are divided among the seven Elementary Schools, while the secondary population attends the respective Junior High and Senior High Schools.

Population / Population Density / Population Distribution by Land Use

The Population age percentages based on the 2010 U.S. Census for the School District are as follows: 6% of residents are Pre-school age children 0 to 4 years; 18% of residents are School age children 5 to 17 years; 62% of residents are Adults age 18 to 64 years; and 14% of residents are Adults age 65+ years.

The School District serves an approximate population of 46,133 residents within 97.94 square miles. The land use in Berks County is agricultural and residential in Montgomery County. The primary land use in the School District is agricultural. The approximate average Population Density of the School District is 471 persons per square mile, while the Household Average Density is 179 households per square mile.

U.S. Census profiles for the Population of each Municipality that comprise the School District illustrate: a net increase from 2000 to 2010 in the Total Population as well as Pre-school age children 0-4 years, School age children 5-17 years, Adults age 18-64 years and Adults ages 65+ years. The 2010 Census data indicates the Median Age is 42.0, illustrating a net increase in the Median Age.

DISTRICT OVERVIEW

Housing Characteristics

U.S. Census profiles for the Housing data of each Municipality comprising the School District illustrate: a net increase in the Total Housing Units as well as Occupied Housing Units, Owner Occupied Units, Renter Occupied Units, and Vacant Housing Units from 2000 to 2010. The 2010 Census data indicates 2.63 Persons Per Household, illustrating a net decrease in Persons Per Household.

Economic Characteristics

Economic data based on the 2010 U.S. Census for the School District: \$68,245 was the Median Household Income; \$77,710 was the Median Family Income; \$30,866 was the Per Capita Income; 2.6% of Families were Below Poverty Level; 4.1% of the Population were Below Poverty Level; \$248,000 was the Median Owner Occupied Housing Value.

The Occupation data of employed civilian population age 16 years and over based on the 2010 U.S. Census for the School District: 37.7% Management, Business, Science, and Arts; 12.5% Service Occupations; 25.3% Sales & Office; 10% Natural resources, Construction, and Maintenance; 14.5% Production, Transportation, and Material Moving.

General Population Characteristics

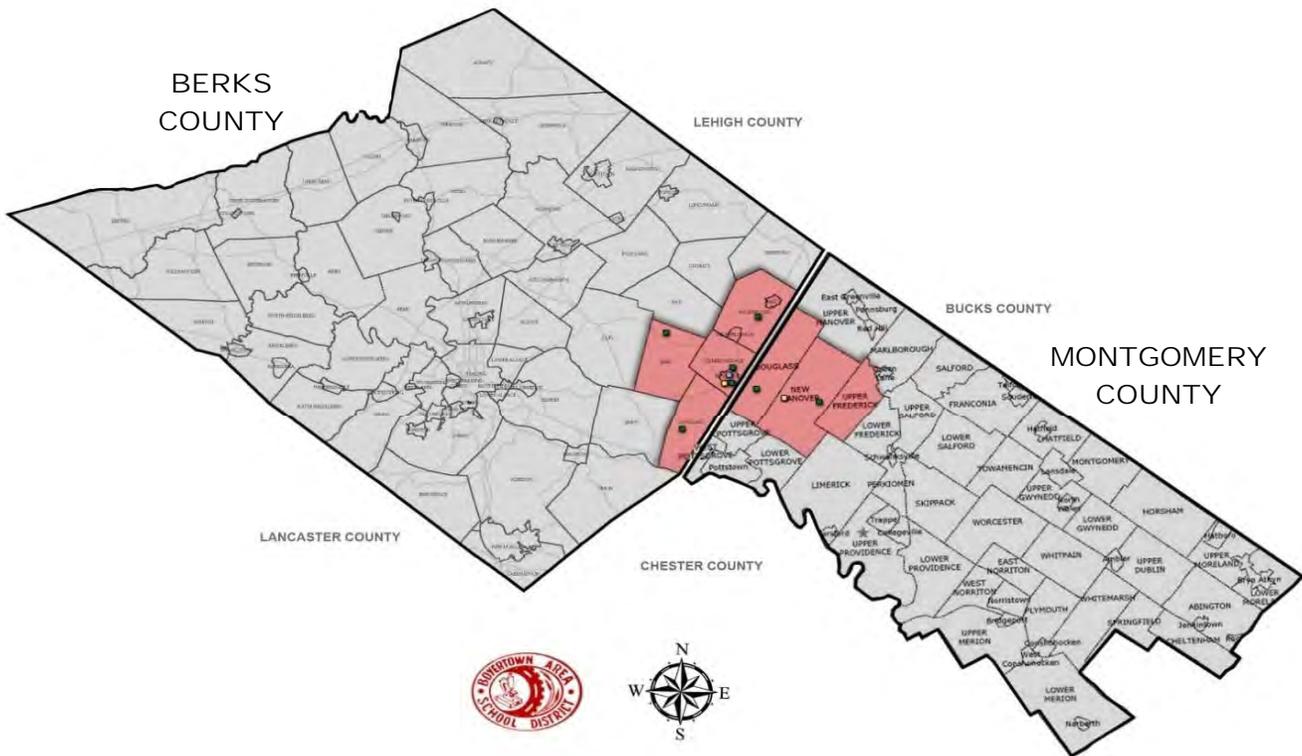
Total population of the School District in 2010: 49.4% Male and 50.6% Female.

The racial makeup of the School District in 2010 was 96.34% White, 1.13% African American, 0.15% Native American, 0.99% Asian, 0.02% Pacific Islander, 0.32% Other Races, and 1.04% from two or more races. Hispanic or Latino of any race were 1.49% of the population.

DISTRICT OVERVIEW

Berks & Montgomery County School Districts - County Map

Map 2 illustrates the School Districts located in Berks & Montgomery Counties. The map source is the respective County Comprehensive Plans. Berks County is approximately 866 square miles with a population of 411,442 as of the 2010 Census. Montgomery County is approximately 487 square miles with a population of 799,874 as of the 2010 Census.

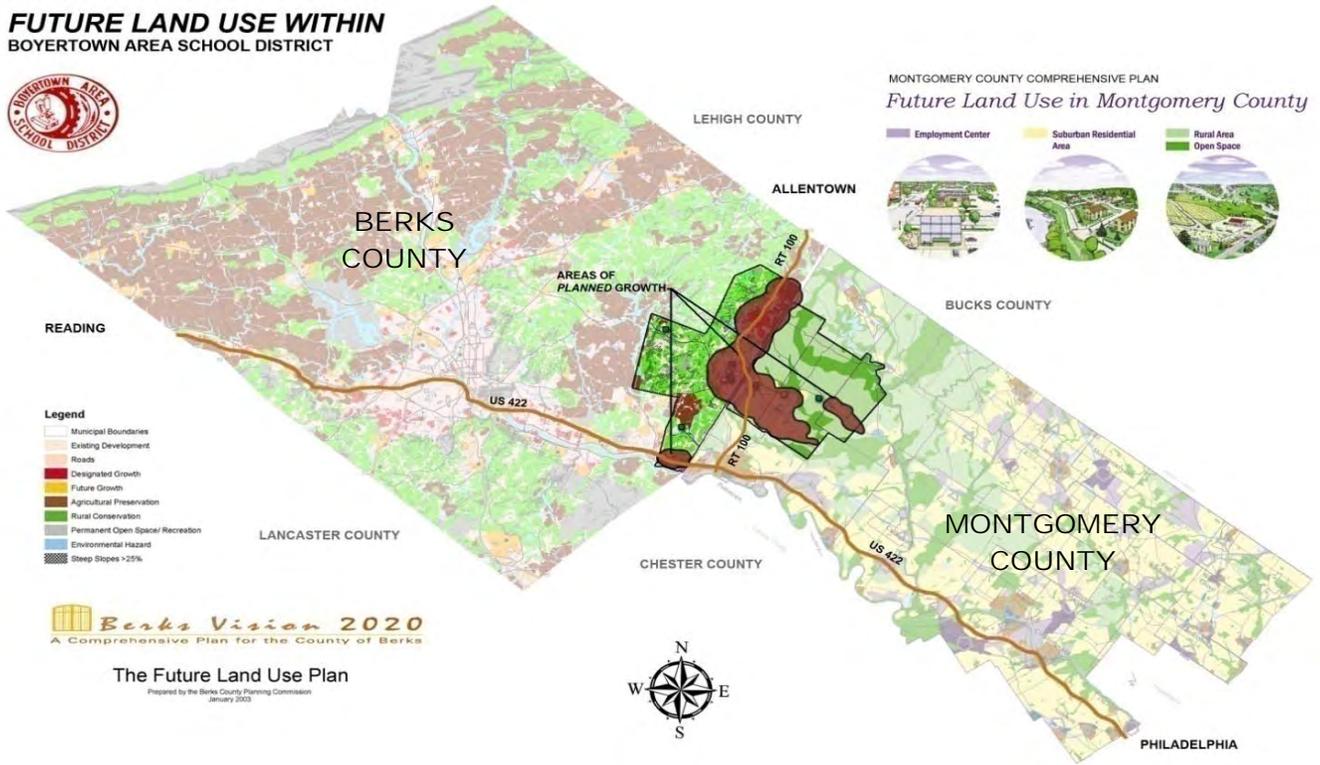


DISTRICT OVERVIEW

Boyertown Area Region Future Land Use - County Map

Map 3 illustrates the Future Land Use in Berks & Montgomery Counties. The map source is the respective County Comprehensive Plans. The land use categories of the County total land areas are listed below.

FUTURE LAND USE WITHIN BOYERTOWN AREA SCHOOL DISTRICT



PART II
DEMOGRAPHICS

DEMOGRAPHIC EXPLORATION INTRODUCTION

This section of the Feasibility Study is divided into two parts. Part A explores demographic data for the General Population and the resulting effects on the Student Population of the Boyertown Area School District including: Population Information; Household Information; Housing Unit Developments; and Live Birth Data. Part B explores demographic data that focuses on the Student Population of the School District including: Projected Student Enrollment Data; Building Capacity Data; Student Enrollment vs. Building Capacity Data; as well as Educational Program Information.

Demographic projections are the basis for making decisions concerning the establishment of facilities, both existing and new. Recognizing that the intent of a school district's physical plan is to house students for the purpose of education, appropriate criteria must be used to determine those projections. Student enrollment projections for this study were supplied by the Department of Education, the School District, and EI Associates. This data also was used to generate future building requirements.

The Projected Student Enrollment Tables show the student enrollment projections by grade level, grade grouping, and year. Future student enrollment has been computed from known live births and interpolated, where necessary, using the cohort survival methodology. The cohort survival method has a record of reliability in relatively stable districts (what has occurred in the past will, to a large extent, continue to occur). However, changes can occur in birth trends, in-migration patterns, internal policies, economic climate, zoning and land use controls, infrastructure considerations, and interest rates that may affect projections. Thus, influencing factors must be monitored and analyzed every year by the School District. Significant changes, therefore, can be quickly identified and appropriate adjustments made.

It is not only the number of students that affect the capability of adequate facilities, the educational program also must be analyzed. Other factors that may affect the ability of the existing facilities to meet the needs of the educational program are:

1. Full-day Kindergarten; Pre-Kindergarten program
2. Grade groupings to remain
3. Future trends in special education
4. Trends in technology-based education
5. Desired classroom size as noted in the study

General and Student Population**Population**

Data based on the 2000 and 2010 U.S. Census illustrates a net increase in the Total Population as well as Pre-school age children 0-4 years, School age children 5-17 years, Adults age 18-64 years, Adults ages 65+ years, and the Median Age.

Households

Data based on the 2000 and 2010 U.S. Census illustrates a net increase in the Total Housing Units as well as Occupied Housing Units, Owner Occupied Units, Renter Occupied Units, and Vacant Housing Units; and a net decrease in Persons Per Household.

Housing Unit Developments

There is the potential availability of land for development within the School District. Available data for Housing Unit Developments collected from the municipalities illustrate a significant amount of planned and potential development within the School District. (Refer to the 31 October 2011 PEL Demographic Study prepared for the School District for details as listed below)

There are 36 approved subdivisions in the School District for 1,790 new housing units; 13 formally proposed subdivisions for 390 new housing units; six subdivisions known to be under discussion for at least 571 new housing units; and miscellaneous housing construction for an estimated 40 new housing units. The total of 2,791 new housing units represents the planned and potential development within the School District.

Live Birth Data

The Live Birth Data, based on information from the Pennsylvania Department of Education, illustrates a net increase in the number of children entering Kindergarten and First Grade compared to the number of Births.

Students not included in enrollment projections

In 2011-2012, 1,136 students were not attending District Schools on a full-time basis. 545 students attended private or other public schools, 136 were home schooled students, 187 were Charter / Cyber school students, 13 were part-time dual enrolled students, and 160 attended BCTC in the morning and 95 attended BCTC in the afternoon.

Student Population attending District Schools

The student population attending District Schools has increased since the 1990's. In the 1990-91 school-year, the K-12 student enrollment was 6,880. The K-12 student enrollment had increased to 7,000 by the mid 2000's. K-12 student enrollment increased to 7,099 in the 2010-11 school-year.

Current student enrollment projections indicate that the 10-year K-12 Student Enrollment will continue to increase to 7,574 for the 2020-21 school-year.

General and Student Population**Students per Household - 2000**

2000: 8,060 Students resided in the School District; 6,825 Students or 85% attended the School District and 1,235 children or 15% did not attend District Schools.

The percentage of Students per Total Housing Units was 0.52 in 2000; the percentage of Students attending the School District was 0.44.

Students per Household - 2010

2010: 8,225 School-age children resided in the School District: 7,099 Students or 86% attended the School District and 1,126 School-age children or 14% did not attend District Schools.

The percentage of Students per Total Housing Units was 0.45 in 2010; the percentage of Students attending the School District for the 2010-11 School year was 0.39.

Data Summary

There has been an increase in both the Total Population and Total Housing Units, however, the number of Persons per Household and Students per Household has decreased. The population shows an increase in residents of all ages, indicating that while the District is experiencing growth, it is also experiencing an aging population.

There is a potential for population growth within the School District by both new Housing Unit Developments and the current vacant housing units.

The percentage of School-age students residing in the District that were not attending District Schools has decreased from 15% in 2000 to 14% in 2010. There is a potential, however, for any portion of the 14% of School-age students residing in the District who are not currently attending District Schools to attend the District Schools in the future.

Assumptions (Method IV -- Projected Student Enrollment Based on Housing Start Data)

Available Data for Housing Unit Developments collected from the municipalities illustrates approximately 2,791 potential new Housing Units. There also are approximately 794 Vacant Housing Units. Given the current rate of 0.39 students per household attending the District Schools, this would approximately equate to an additional 1085 *students* in new Housing Units. If half of the Vacant Housing Units also are occupied, then given the current rate of 0.39 students per household attending the District Schools, this would approximately equate to an additional 155 *students* in the Vacant Housing Units.

Ten year Assumption

Given the assumption that the timeframe for the additional students is ten years, approximately 1,240 additional students will join the District in 10 years. Therefore, an additional 124 *students per year* would attend the District Schools.

Five year Assumption

Given the assumption that the timeframe for the additional students is five years, approximately 1,240 additional students will join the District in 5 years. Therefore, an additional 248 *students per year* would attend the District Schools.

DEMOGRAPHIC EXPLORATION

Population Information

Tables 4-6 profile the Population of each Municipality that comprise the Boyertown Area School District. The Data is based on the 2000 and 2010 U.S. Census. **The Tables illustrate a net increase in the Total Population from 2000 to 2010 as well as Pre-school age children 0-4 years, School age children 5-17 years, Adults age 18-64 years, Adults ages 65+ years, and the Median Age.**

Table 4 profiles data from the 2000 Census and **Table 5** profiles data from the 2010 Census. The Tables profile Total Population as well as various age groupings including: Pre-school age children 0-4 years; School age children 5-17 years; Adults age 18-64 years; and Adults age 65+ years.

TABLE 4 2000 U.S. Census	Total Population	Age 0-4 Yrs.	Age 5-17 Yrs.	Age 18-64 Yrs.	Age 65+ Yrs.	Median Age
Bally Borough (BC)	1,062	55	185	622	200	39.2
Bechtelsville Borough (BC)	931	62	188	565	116	35.0
Boyertown Borough (BC)	3,940	212	619	2,275	834	39.6
Colebrookdale Twp. (BC)	5,270	270	1,001	3,293	706	39.2
Douglass Township (BC)	3,327	157	718	2,035	417	38.8
Earl Township (BC)	3,050	163	534	2,067	286	39.3
Washington Township (BC)	3,354	225	640	2,104	385	38.2
Douglass Township (MC)	9,104	668	1,995	5,471	970	36.6
New Hanover Twp. (MC)	7,369	444	1,582	4,549	794	38.2
Upper Frederick Twp. (MC)	3,141	245	598	1,844	454	37.4
School District Total	40,548	2,501	8,060	24,825	5,162	38.5
School Dist. % Total	100%	6%	20%	61%	13%	

TABLE 5 2010 U.S. Census	Total Population	Age 0-4 Yrs.	Age 5-17 Yrs.	Age 18-64 Yrs.	Age 65+ Yrs.	Median Age
Bally Borough (BC)	1,090	58	172	653	207	41.9
Bechtelsville Borough (BC)	942	48	164	626	104	39.6
Boyertown Borough (BC)	4,055	232	607	2,395	821	41.7
Colebrookdale Twp. (BC)	5,078	275	772	3,293	738	44.0
Douglass Township (BC)	3,306	128	462	2,104	612	47.7
Earl Township (BC)	3,195	162	494	2,131	408	43.9
Washington Township (BC)	3,810	198	666	2,324	622	44.5
Douglass Township (MC)	10,195	598	2,145	6,241	1,211	40.4
New Hanover Twp. (MC)	10,939	809	2,143	6,669	1,318	40.1
Upper Frederick Twp. (MC)	3,523	237	600	2,094	592	40.7
School District Total	46,133	2,745	8,225	28,530	6,633	42.0
School Dist. % Total	100%	6%	18%	62%	14%	

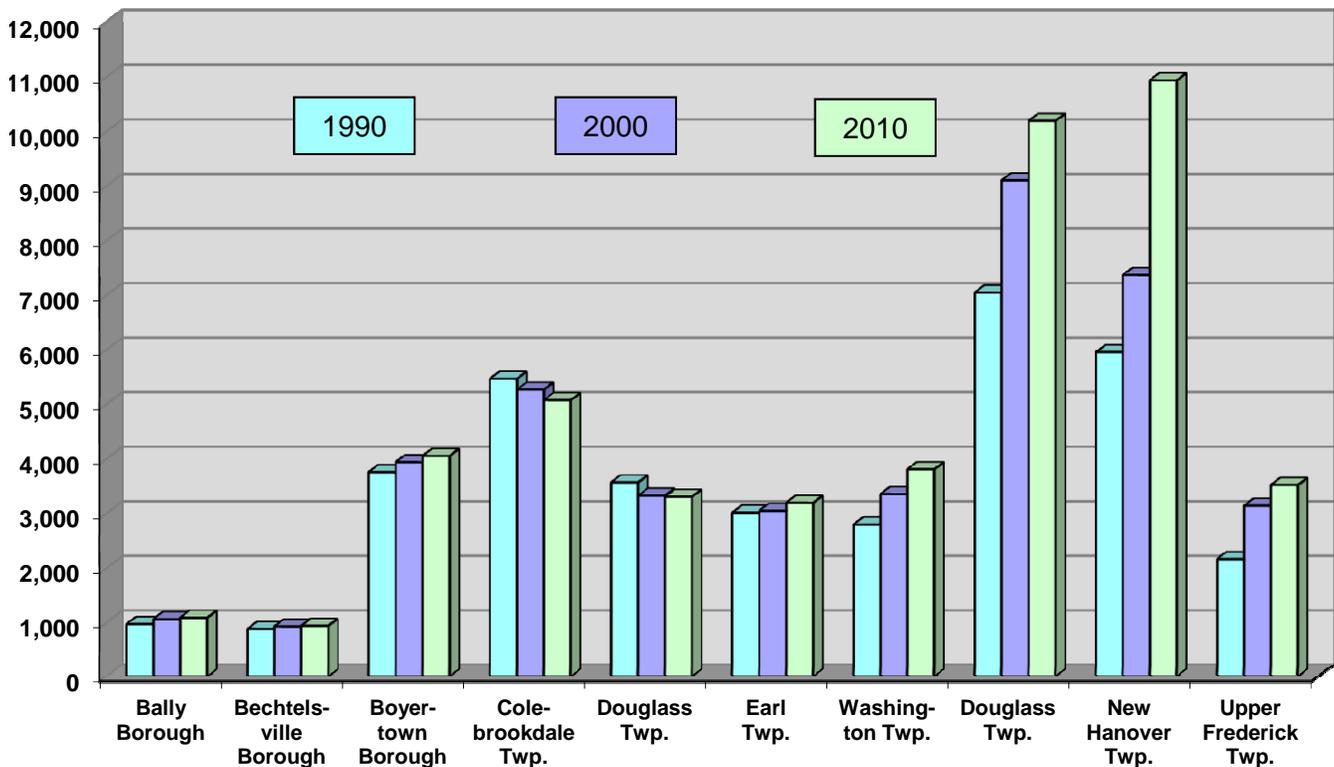
DEMOGRAPHIC EXPLORATION

Population Information

Table 6 profiles the Total population of each municipality for the Census years 2000 and 2010. (Data Source: 2000 and 2010 U.S. Census) **The overall Total Population shows an increase of 5,585 persons or 13.77% from 2000 to 2010.**

TABLE 6 Total Population	1990 Actual Total Popul.	2000 Actual Total Popul.	Value Change 1990 to 2000	% Change 1990 to 2000	2010 Actual Total Popul.	Value Change 2000 to 2010	% Change 2000 to 2010
Bally Borough (BC)	973	1,062	89	9.15%	1,090	28	2.64%
Bechtelsville Borough (BC)	884	931	47	5.32%	942	11	1.18%
Boyertown Borough (BC)	3,759	3,940	181	4.82%	4,055	115	2.92%
Colebrookdale Twp. (BC)	5,469	5,270	-199	-3.64%	5,078	-192	-3.64%
Douglass Township (BC)	3,570	3,327	-243	-6.81%	3,306	-21	-0.63%
Earl Township (BC)	3,016	3,050	34	1.13%	3,195	145	4.75%
Washington Township (BC)	2,799	3,354	555	19.83%	3,810	456	13.60%
Douglass Township (MC)	7,048	9,104	2,056	29.17%	10,195	1,091	11.98%
New Hanover Twp. (MC)	5,956	7,369	1,413	23.72%	10,939	3,570	48.45%
Upper Frederick Twp. (MC)	2,165	3,141	976	45.08%	3,523	382	12.16%
School District Total	35,639	40,548	4,909	13.77%	46,133	5,585	13.77%

TABLE 6 - CHART A



DEMOGRAPHIC EXPLORATION

Household Information

Tables 7-9 profile the Housing Data of each Municipality that comprise the Boyertown Area School District. The Data is based on the 2000 and 2010 U.S. Census. **The Tables illustrate a net increase in the Total Housing Units as from 2000 to 2010, as well as Occupied Housing Units, Owner Occupied Units, Renter Occupied Units, and Vacant Housing Units. The Tables illustrate a net decrease in Persons Per Household.**

Table 7 profiles data from the 2000 Census and **Table 8** profiles Data from the 2010 Census. The Tables profile the Total Housing Units and Occupied Housing Units, as well as Owner Occupied Units, Renter Occupied Units, Vacant Housing Units and Persons Per Household.

TABLE 7 Housing Units 2000 U.S. Census	Total Housing Units	Occupied Housing Units	Owner Occupied Units	Renter Occupied Units	Vacant Housing Units	Persons Per Household
Bally Borough (BC)	426	413	333	80	13	2.57
Bechtelsville Borough (BC)	366	348	251	97	18	2.68
Boyertown Borough (BC)	1,885	1,805	999	806	80	2.17
Colebrookdale Twp. (BC)	2,030	1,994	1,727	267	36	2.64
Douglass Township (BC)	1,239	1,200	1,016	184	39	2.65
Earl Township (BC)	1,202	1,156	1,018	138	46	2.63
Washington Township (BC)	1,250	1,212	1,051	161	38	2.77
Douglass Township (MC)	3,292	3,211	2,556	655	81	2.83
New Hanover Twp. (MC)	2,615	2,532	2,359	173	83	2.91
Upper Frederick Twp. (MC)	1,088	1,045	949	96	43	2.79
School District Total	15,393	14,916	12,259	2,657	477	2.67

TABLE 8 Housing Units 2010 U.S. Census	Total Housing Units	Occupied Housing Units	Owner Occupied Units	Renter Occupied Units	Vacant Housing Units	Persons Per Household
Bally Borough (BC)	457	441	361	80	16	2.47
Bechtelsville Borough (BC)	372	362	264	98	10	2.60
Boyertown Borough (BC)	2,026	1,927	938	989	99	2.10
Colebrookdale Twp. (BC)	2,077	1,997	1,709	288	80	2.54
Douglass Township (BC)	1,478	1,334	1,138	196	144	2.46
Earl Township (BC)	1,277	1,224	1,073	151	53	2.60
Washington Township (BC)	1,508	1,437	1,256	181	71	2.65
Douglass Township (MC)	3,740	3,612	2,975	637	128	2.82
New Hanover Twp. (MC)	3,919	3,797	3,588	209	122	2.88
Upper Frederick Twp. (MC)	1,450	1,379	1,116	263	71	2.51
School District Total	18,304	17,510	14,418	3,092	794	2.63

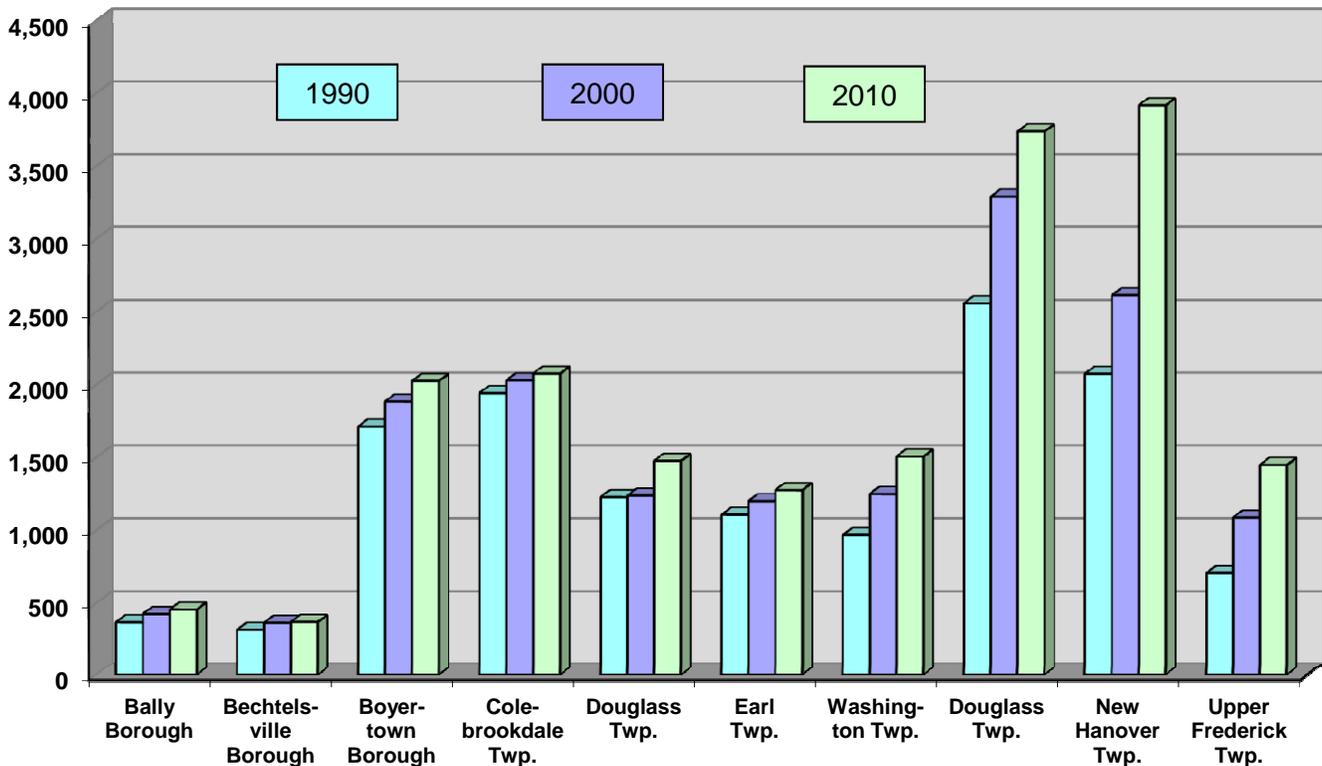
DEMOGRAPHIC EXPLORATION

Household Information

Table 9 profiles the Total Housing Units of each Municipality for the Census years 2000 and 2010 (Data Source: 2000 and 2010 U.S. Census) **The overall Total Housing Units Data shows an increase of 2,911 units or 18.91% from 2000 to 2010.**

TABLE 9 Total Housing Units	1990 Total Housing Units	2000 Total Housing Units	Value Change 1990 to 2000	% Change 1990 to 2000	2010 Total Housing Units	Value Change 2000 to 2010	% Change 2000 to 2010
Bally Borough (BC)	370	426	56	15.14%	457	31	7.28%
Bechtelsville Borough (BC)	318	366	48	15.09%	372	6	1.64%
Boyertown Borough (BC)	1,713	1,885	172	10.04%	2,026	141	7.48%
Colebrookdale Twp. (BC)	1,943	2,030	87	4.48%	2,077	47	2.32%
Douglass Township (BC)	1,228	1,239	11	0.90%	1,478	239	19.29%
Earl Township (BC)	1,108	1,202	94	8.48%	1,277	75	6.24%
Washington Township (BC)	969	1,250	281	29.00%	1,508	258	20.64%
Douglass Township (MC)	2,559	3,292	733	28.64%	3,740	448	13.61%
New Hanover Twp. (MC)	2,076	2,615	539	25.96%	3,919	1,304	49.87%
Upper Frederick Twp. (MC)	707	1,088	381	53.89%	1,450	362	33.27%
School District Total	12,991	15,393	2,402	18.49%	18,304	2,911	18.91%

TABLE 9 - CHART A



Housing Unit Developments -- Summary

Table 10 profiles a summary of the Housing Unit Developments of each Municipality that comprise the Boyertown Area School District. The Data is based on information obtained from the 31 October 2011 PEL Demographic Study prepared for the School District.

TABLE 10 Future Housing Development	** Total Approved New Housing Unit Development	Total Potential New Housing Unit Development	Total Approved & Potential New Housing Unit Development
Bally Borough (BC)	4	3	7
Bechtelsville Borough (BC)	0	5	5
Boyertown Borough (BC)	5	2	7
Colebrookdale Twp. (BC)	0	0	0
Douglass Township (BC)	150	74	224
Earl Township (BC)	7	0	7
Washington Township (BC)	192	0	192
Douglass Township (MC)	209	319	528
New Hanover Twp. (MC)	1,193	513	1,706
Upper Frederick Twp. (MC)	0	115	115
School District Total	1,760	1,031	2,791
Students / Total Housing Units	0.39	0.39	0.39
Total Additional Students	687	403	1,085

** Inclusive of new unoccupied built homes

Live Birth Data

Tables 11-13 profile Live Birth Data for the Boyertown Area School District. The Data is based on information from the Pennsylvania Department of Education. **The Tables illustrate a net increase in the number of children entering Kindergarten and First Grade compared to the number of Births.**

Table 11 profiles the number of Births from the years 2000 through the years 2015. The Live Birth Data from years 2010-2015 are based on projections. The overall live birth data shows a steady projected rate in the number of live births.

Table 12 profiles the number of children entering Kindergarten from the year 2005 through the year 2020. Birth data is known for students entering Kindergarten in 2014; however, the student enrollment data from years 2011-2020 are based on PDE projections. (The assumption is made that the respective children born in 2000 will enter Kindergarten in the year 2005.)

Table 13 profiles the number of children entering First Grade from the year 2006 through the year 2020. Birth data is known for students entering First Grade in 2015; however, the student enrollment data from years 2011-2020 are based on PDE projections. (The assumption is made that the respective children born in 2000 will enter First Grade in the year 2006.)

TABLE 11	
Year of Birth	No. of Births
2000	454
2001	425
2002	460
2003	482
2004	484
2005	499
2006	533
2007	449
2008	486
2009	487
2010	485
2011	483
2012	481
2013	479
2014	477
2015	475

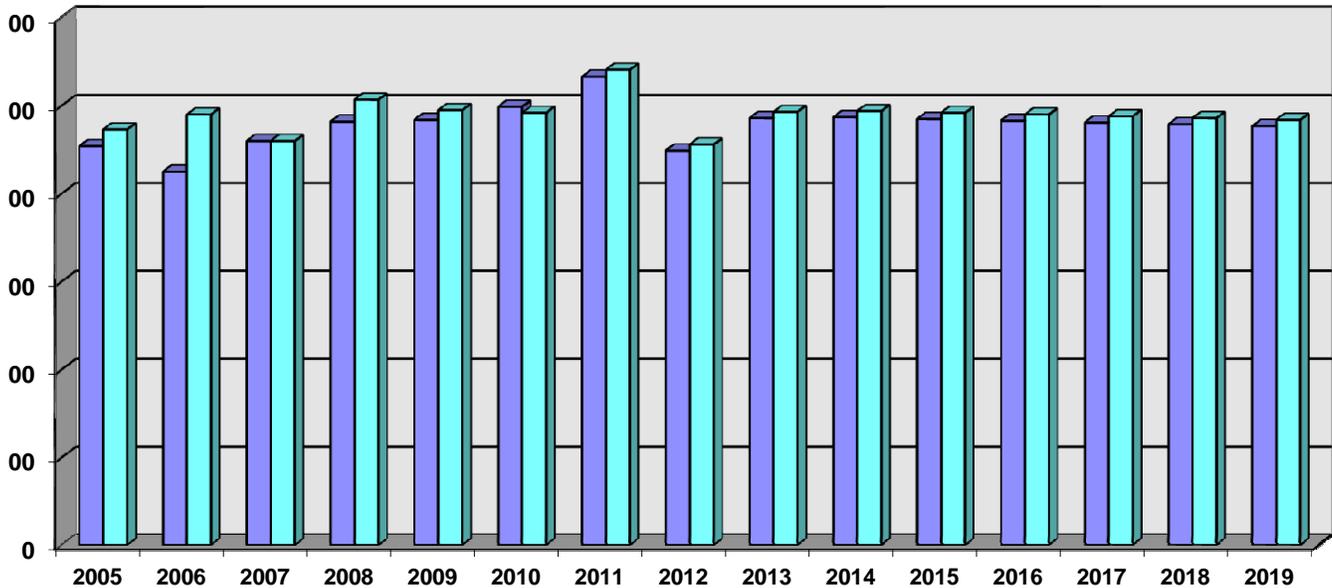
TABLE 12		
Year Entering Kinder	No. Entering Kinder	% Birth to Kinder
2005	473	104.19%
2006	490	115.29%
2007	460	100.00%
2008	507	105.19%
2009	495	102.27%
2010	492	98.60%
2011	541	101.50%
2012	456	101.56%
2013	493	101.44%
2014	494	101.44%
2015	492	101.44%
2016	490	101.45%
2017	488	101.46%
2018	486	101.46%
2019	484	101.47%
2020	482	101.47%

TABLE 13		
Year Entering First Grade	No. Entering First Grade	% Birth to First Grade
2006	519	114.32%
2007	513	120.71%
2008	473	102.83%
2009	557	115.56%
2010	527	108.88%
2011	559	112.02%
2012	597	112.01%
2013	503	112.03%
2014	544	111.93%
2015	545	111.91%
2016	543	111.96%
2017	541	112.01%
2018	539	112.06%
2019	536	111.90%
2020	534	111.95%

Live Birth Data

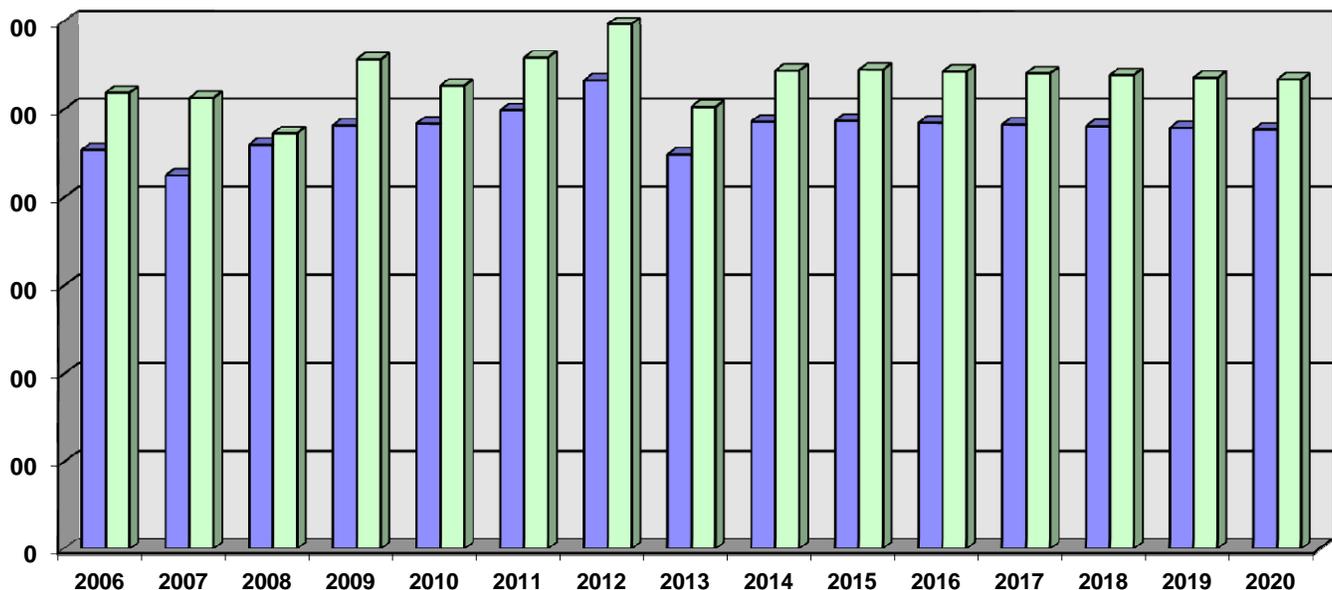
The following Charts compare the Live Birth Data from the preceding Tables with the year entering Kindergarten and the year entering First Grade

TABLE 11 & TABLE 12 - CHART A



Live Birth & Year Entering Kindergarten

TABLE 11 & TABLE 13 - CHART B



Live Birth & Year Entering First Grade

Student Population**Existing Educational Program**

A summary of the School District's existing conditions is profiled by the Existing Educational Program data. The information includes: Existing Grade Alignment; 2009-10 Student Enrollment; PDE Funcional Capacity data; and the Highest Projected Enrollment for each grade grouping.

Projected Student Enrollment

Method I (PDE): Student Enrollment projections supplied by the Pennsylvania Department of Education (PDE). The data shows a projected increase in the overall School District K-12 student population of 475 students between 2010-11 and 2020-21.

- Projections are based on Live Birth Data.
- Projections may not account for in-migration trends of students moving into the School District.

Method II (PEL Projected Student Enrollment - Preferred): Pennsylvania Economy League Primary Period 2010-11 2014-2015 and Alternative Extended Total Enrollment projections by Grade on Births fixed at 487 for 2015-2016 to 2020-2021. The data shows a projected increase in the overall School District K-12 student population of 317 students between 2011-12 and 2021-22.

- Projections are based on the Births fixed at 487.
- Data trends should be evaluated in addition to available and future housing data.

Method III (PEL Projected Student Enrollment - Alternative B): Pennsylvania Economy League Primary Period 2010-11 2014-2015 and Alternative Extended Total Enrollment projections by Grade on Births fixed at 550 for 2015-2016 to 2020-2021. The data shows a projected increase in the overall School District K-12 student population of 734 students between 2011-12 and 2021-22.

- Projections are based on the Births fixed at 550.
- Data trends should be evaluated in addition to available and future housing data.

Method IV: Student Enrollment projections based upon available housing and future housing data. The data shows a projected increase in the overall School District K-12 student population of 997 students between 2011-12 and 2021-22.

- Projections are based on available and future housing data.
- Data should be evaluated in addition to Historical trends.
- Data illustrates that there would be enough projected housing to support the previous three methods.

Student Population**Student Enrollment / Capacity Evaluation**

The Tables graphically illustrate the Projected Student Enrollment for each of the existing grade groupings vs. the current building capacity of the respective grade groupings.

Methods I, II, III and IV profile the District Schools for the following grade groupings: K-6 Half-day Kindergarten and K-6 adjusted for Full-day Kindergarten which includes the Elementary Schools; 7-9 which includes the Junior High Schools; and 10-12 which include the Senior High School.

Existing Building Capacity

Room schedules for the Elementary and Secondary Schools provide data for the Existing Adjusted Building Capacity. Spaces that receive capacity are shown as well as each Building's Functional Capacity, Total Capacity, and Special Educational Capacity.

Building Capacity Overview

The Building Capacity Overview provides an explanation of Building Capacity and adjustments; including Functional Capacity, Total Capacity and Special Education Capacity as defined for the purpose of this study.

Educational Program Requirements

The Educational Program Requirements provide an overview of the Boyertown Area School District's Educational Program. The information was generated by the Boyertown Area School District.

The Educational Program must be analyzed, as well as, the resulting affects of the existing facilities ability to meet the current and future needs of the educational program.

EXISTING EDUCATIONAL PROGRAM

Existing Building Capacity for Grades K-6; 7-9; 10-12; K-12

Building	Existing Grade Alignment	2011-12 Enrollment	** Adjusted Functional Capacity	Total Capacity	Highest Projected Enrollment	
					Methods I,II, III, IV	Current + 10%
 Boyertown Elementary	K-6	668	700	725		
 Colebrookdale Elementary	K-6	366	350	350		
 Earl Elementary	K-6	320	350	350		
 Gilbertsville Elementary	K-6	783	700	725		
 New Hanover-Upper Frederick ES	K-6	741	700	800		
 Pine Forge Elementary	K-6	277	350	350		
 Washington Elementary	K-6	606	700	700		
K-6 TOTAL		3,761	3,850	4,000	4,451 Method IV	4,137 2011-12
 Boyertown Area JHS - East	7-9	843	1,050	1,180		
 Boyertown Area JHS - West	7-9	807	860	970		
7-9 TOTAL		1,650	1,910	2,150	1,908 Method IV	1,815 2011-12
 Boyertown Area Senior High School	10-12	1,733	1,835	2,065		
10-12 TOTAL		1,733	1,835	2,065	1,856 Method I	1,906 2011-12
K-12 TOTAL		7,144	7,595	8,215	8,141 Method IV	7,858 2011-12

* PDE allows Current Enrollment +10% to be used as Highest Projected Enrollment for Project Grades.

** Elementary *Functional Capacity* are Graded Classrooms K-6; *Special Education Capacity* is not included in the Functional Capacity or Total Capacity.

PROJECTED STUDENT ENROLLMENT

METHOD I

Table 14 -- Method I - PDE Projected Student Enrollment

	K	1	2	3	4	5	6	K - 6	7	8	9	7 - 9	10	11	12	10 - 12	K-12
2006-07	490	519	559	482	486	556	540	3632	574	566	559	1699	596	581	539	1716	7047
2007-08	460	513	521	565	500	499	558	3616	554	571	568	1693	558	561	578	1697	7006
2008-09	507	473	521	533	583	513	522	3652	571	561	584	1716	565	535	545	1645	7013
2009-10	495	557	455	530	534	593	516	3680	534	569	563	1666	588	542	514	1644	6990
2010-11	492	527	566	481	549	551	584	3750	520	546	584	1650	574	583	542	1699	7099
RATIOS	1.015	1.12	0.999	1.027	1.035	1.025	1.01		1.008	1.007	1.014		1.005	0.992	0.982		
2011-12	541	559	527	581	498	563	557	3826	589	523	554	1666	587	569	572	1728	7220
2012-13	456	597	559	541	601	511	569	3834	561	593	530	1684	557	582	559	1698	7216
2013-14	493	503	597	574	560	616	516	3859	573	565	601	1739	533	552	571	1656	7254
2014-15	494	544	503	613	594	574	622	3944	520	577	573	1670	604	528	542	1674	7288
2015-16	492	545	544	517	634	609	580	3921	627	523	585	1735	576	599	518	1693	7349
2016-17	490	543	545	559	535	650	615	3937	584	631	530	1745	588	571	588	1747	7429
2017-18	488	541	543	560	579	549	657	3917	620	588	640	1848	533	583	561	1677	7442
2018-19	486	539	541	558	580	594	555	3853	662	624	596	1882	643	528	572	1743	7478
2019-20	484	536	539	556	578	595	600	3888	559	666	633	1858	599	638	518	1755	7501
2020-21	482	534	536	554	575	593	601	3875	605	563	675	1843	636	594	626	1856	7574

METHOD I: The PDE model uses enrollment data reported annually by all local education agencies to the Division of Data Services on the Public School Enrollment Report. Resident live birth data is provided by the Pennsylvania Department of Health. Grade progression is determined by calculating retention rates for grades 2 to 12 using the most recent five years of enrollment data. Retention rates for kindergarten are determined by births five years earlier and for first grade from births six years earlier. These rates are evaluated to determine if a pattern is discernable, or if any retention rates are unusual. If a pattern is found, the pattern is continued in making the projections. Unusual retention rates are discarded and the average of the remaining rates is used in making the projections. Nongraded elementary and secondary students are prorated across grades before retention rates are calculated.

Table 14A compares the PDE Functional Capacity for each school with the Method I, 2010-11 PDE projected enrollment information.

TABLE 14A School	Adjusted Functional Capacity	Student Enrollment 2011-12	5 Year Growth	Projected Student Enrollment 2015-16	10 Year Growth	Projected Student Enrollment 2020-21
Boyertown Elementary	700	668				
Colebrookdale Elementary	350	366				
Earl Elementary	350	320				
Gilbertsville Elementary	700	783				
New Hanover Elementary	700	741				
Pine Forge Elementary	350	277				
Washington Elementary	700	606				
K-6 Total	3,850	3,761	160	3,921	114	3,875
Junior High East	1,050	843				
Junior High West	860	807				
7-9 Total	1,910	1,650	85	1,735	193	1,843
Senior High School	1,835	1,733				
10-12 Total	1,835	1,733	-40	1,693	123	1,856
K-12 Total	7,595	7,144	205	7,349	430	7,574

PROJECTED STUDENT ENROLLMENT

METHOD II

TABLE 15 -- Method II - PEL Projected Student Enrollment (Preferred)

	K	1	2	3	4	5	6	K - 6	7	8	9	7 - 9	10	11	12	10 - 12	K-12
2006-07	490	519	559	482	486	556	540	3632	574	566	559	1699	596	581	539	1716	7047
2007-08	460	513	521	565	500	499	558	3616	554	571	568	1693	558	561	578	1697	7006
2008-09	507	473	521	533	583	513	522	3652	571	561	584	1716	565	535	545	1645	7013
2009-10	495	557	455	530	534	593	516	3680	534	569	563	1666	588	542	514	1644	6990
2010-11	492	527	566	481	549	551	584	3750	520	546	584	1650	574	583	542	1699	7099
RATIOS																	
2011-12	561	532	521	587	490	562	548	3801	593	525	554	1672	592	560	572	1724	7197
2012-13	461	607	526	540	598	502	559	3793	556	599	533	1688	561	577	549	1687	7168
2013-14	490	499	600	546	550	613	500	3798	568	561	608	1737	540	547	566	1653	7188
2014-15	503	530	494	622	556	563	610	3878	508	573	569	1650	616	527	536	1679	7207
2015-16	497	544	524	512	634	570	560	3841	619	513	582	1714	577	601	517	1695	7250
2016-17	497	538	538	543	522	650	567	3855	569	625	521	1715	590	563	589	1742	7312
2017-18	497	538	532	558	553	535	647	3860	576	574	634	1784	528	575	552	1655	7299
2018-19	497	538	532	552	569	567	532	3787	657	581	583	1821	642	515	564	1721	7329
2019-20	497	538	532	552	562	583	564	3828	540	663	590	1793	591	626	505	1722	7343
2020-21	497	538	532	552	562	576	580	3837	573	545	673	1791	598	576	614	1788	7416

METHOD II: Pennsylvania Economy League Primary Period 2010-11 2014-2015 and Alternative Extended Total Enrollment projections by Grade on Births fixed at 487 for 2015-2016 to 2020-2021.

Table 15A compares the PDE Functional Capacity for each school with the Method II projected enrollment information.

TABLE 15A School	Adjusted Functional Capacity	Student Enrollment 2011-12	5 Year Growth	Projected Student Enrollment 2015-16	10 Year Growth	Projected Student Enrollment 2020-21
Boyertown Elementary	700	668				
Colebrookdale Elementary	350	366				
Earl Elementary	350	320				
Gilbertsville Elementary	700	783				
New Hanover Elementary	700	741				
Pine Forge Elementary	350	277				
Washington Elementary	700	606				
K-6 Total	3,850	3,761	80	3,841	76	3,837
Junior High East	1,050	843				
Junior High West	860	807				
7-9 Total	1,910	1,650	64	1,714	141	1,791
Senior High School	1,835	1,733				
10-12 Total	1,835	1,733	-38	1,695	55	1,788
K-12 Total	7,595	7,144	106	7,250	272	7,416

PROJECTED STUDENT ENROLLMENT

METHOD III

TABLE 16 -- PEL Projected Student Enrollment (Alternative B)

	K	1	2	3	4	5	6	K - 6	7	8	9	7 - 9	10	11	12	10 - 12	K-12
2006-07	490	519	559	482	486	556	540	3632	574	566	559	1699	596	581	539	1716	7047
2007-08	460	513	521	565	500	499	558	3616	554	571	568	1693	558	561	578	1697	7006
2008-09	507	473	521	533	583	513	522	3652	571	561	584	1716	565	535	545	1645	7013
2009-10	495	557	455	530	534	593	516	3680	534	569	563	1666	588	542	514	1644	6990
2010-11	492	527	566	481	549	551	584	3750	520	546	584	1650	574	583	542	1699	7099
RATIOS																	
2011-12	561	532	521	587	490	562	548	3801	593	525	554	1672	592	560	572	1724	7197
2012-13	461	607	526	540	598	502	559	3793	556	599	533	1688	561	577	549	1687	7168
2013-14	490	499	600	546	550	613	500	3798	568	561	608	1737	540	547	566	1653	7188
2014-15	503	530	494	622	556	563	610	3878	508	573	569	1650	616	527	536	1679	7207
2015-16	561	544	524	512	634	570	560	3905	619	513	582	1714	577	601	517	1695	7314
2016-17	561	607	538	543	522	650	567	3988	569	625	521	1715	590	563	589	1742	7445
2017-18	561	607	600	558	553	535	647	4061	576	574	634	1784	528	575	552	1655	7500
2018-19	561	607	600	622	569	567	532	4058	657	581	583	1821	642	515	564	1721	7600
2019-20	561	607	600	622	634	583	564	4171	540	663	590	1793	591	626	505	1722	7686
2020-21	561	607	600	622	634	650	580	4254	573	545	673	1791	598	576	614	1788	7833

METHOD III: Pennsylvania Economy League Primary Period 2010-11 2014-2015 and Alternative Extended Total Enrollment projections by Grade on Births fixed at 550 for 2015-2016 to 2020-2021.

Table 16A compares the PDE Functional Capacity for each school with the Method III, 2011-12 projected enrollment information.

TABLE 16A School	Adjusted Functional Capacity	Student Enrollment 2011-12	5 Year Growth	Projected Student Enrollment 2015-16	10 Year Growth	Projected Student Enrollment 2020-21
Boyertown Elementary	700	668				
Colebrookdale Elementary	350	366				
Earl Elementary	350	320				
Gilbertsville Elementary	700	783				
New Hanover Elementary	700	741				
Pine Forge Elementary	350	277				
Washington Elementary	700	606				
K-6 Total	3,850	3,761	144	3,905	493	4,254
Junior High East	1,050	843				
Junior High West	860	807				
7-9 Total	1,910	1,650	64	1,714	141	1,791
Senior High School	1,835	1,733				
10-12 Total	1,835	1,733	-38	1,695	55	1,788
K-12 Total	7,595	7,144	170	7,314	689	7,833

PROJECTED STUDENT ENROLLMENT

METHOD IV

TABLE 17 -- Method IV - Projected Student Enrollment Based on Housing Start Data

	K	1	2	3	4	5	6	K - 6	7	8	9	7 - 9	10	11	12	10 - 12	K-12
2007-08	460	513	521	565	500	499	558	3616	554	571	568	1693	558	561	578	1697	7006
2008-09	507	473	521	533	583	513	522	3652	571	561	584	1716	565	535	545	1645	7013
2009-10	495	557	455	530	534	593	516	3680	534	569	563	1666	588	542	514	1644	6990
2010-11	492	527	566	481	549	551	584	3750	520	546	584	1650	574	583	542	1699	7099
2011-12	512	527	529	574	494	551	574	3761	594	521	535	1650	588	569	576	1733	7144
RATIOS		1.067	1	1.027	1.024	1.019	1.019		1.018	1.008	1.008		1.007	0.975	0.98		
2012-13	522	546	527	543	588	504	561	3791	584	599	525	1709	539	574	558	1670	7170
2013-14	532	557	546	541	556	599	513	3845	571	589	604	1764	529	526	562	1617	7226
2014-15	542	567	557	561	554	567	610	3959	522	576	594	1692	608	516	515	1639	7291
2015-16	552	578	568	572	574	565	578	3987	621	526	581	1729	598	593	506	1697	7413
2016-17	562	589	578	583	586	586	576	4059	588	626	531	1745	585	584	582	1750	7554
2017-18	572	599	589	594	597	597	596	4145	586	593	632	1810	535	571	572	1677	7632
2018-19	582	610	600	605	608	608	608	4221	607	591	598	1796	636	521	559	1717	7734
2019-20	592	621	610	616	619	620	620	4298	619	612	596	1827	602	621	511	1734	7858
2020-21	602	631	621	627	631	631	631	4374	631	624	617	1872	600	587	608	1795	8042
2021-22	612	642	632	638	642	643	643	4451	643	636	629	1908	622	585	576	1782	8141

METHOD IV: Kindergarten enrollment increased by 10 students each year. This is based upon the available housing and future housing data.

Table 17A compares the PDE Functional Capacity for each school with the Method IV projected enrollment information.

TABLE 16A School	Adjusted Functional Capacity	Student Enrollment 2011-12	5 Year Growth	Projected Student Enrollment 2016-17	10 Year Growth	Projected Student Enrollment 2021-22
Boyertown Elementary	700	668				
Colebrookdale Elementary	350	366				
Earl Elementary	350	320				
Gilbertsville Elementary	700	783				
New Hanover Elementary	700	741				
Pine Forge Elementary	350	277				
Washington Elementary	700	606				
K-6 Total	3,850	3,761	298	4,059	690	4,451
Junior High East	1,050	843				
Junior High West	860	807				
7-9 Total	1,910	1,650	95	1,745	258	1,908
Senior High School	1,835	1,733				
10-12 Total	1,835	1,733	17	1,750	49	1,782
K-12 Total	7,595	7,144	410	7,554	997	8,141

TABLE 18 - Projected Student Enrollment (K-6) vs. Current Building Capacity

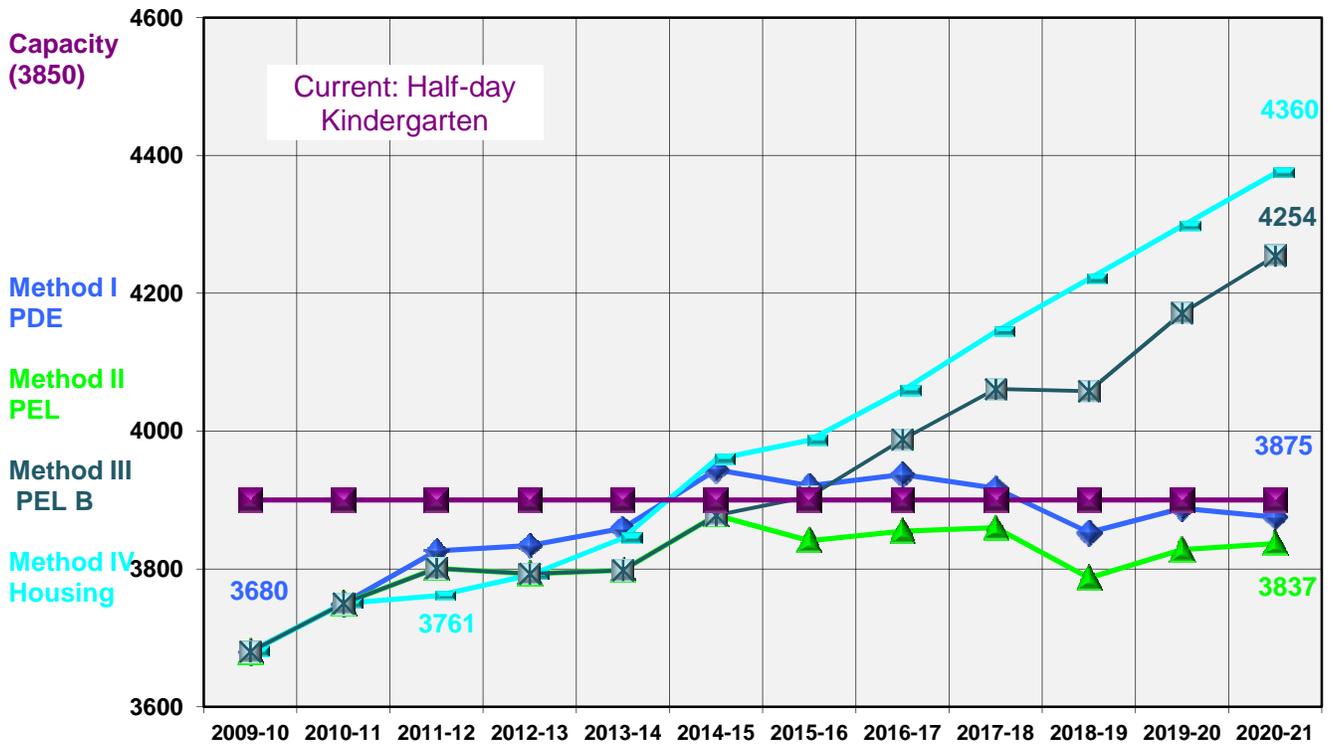


TABLE 19 - Projected Student Enrollment (K-6) vs. Current Building Capacity

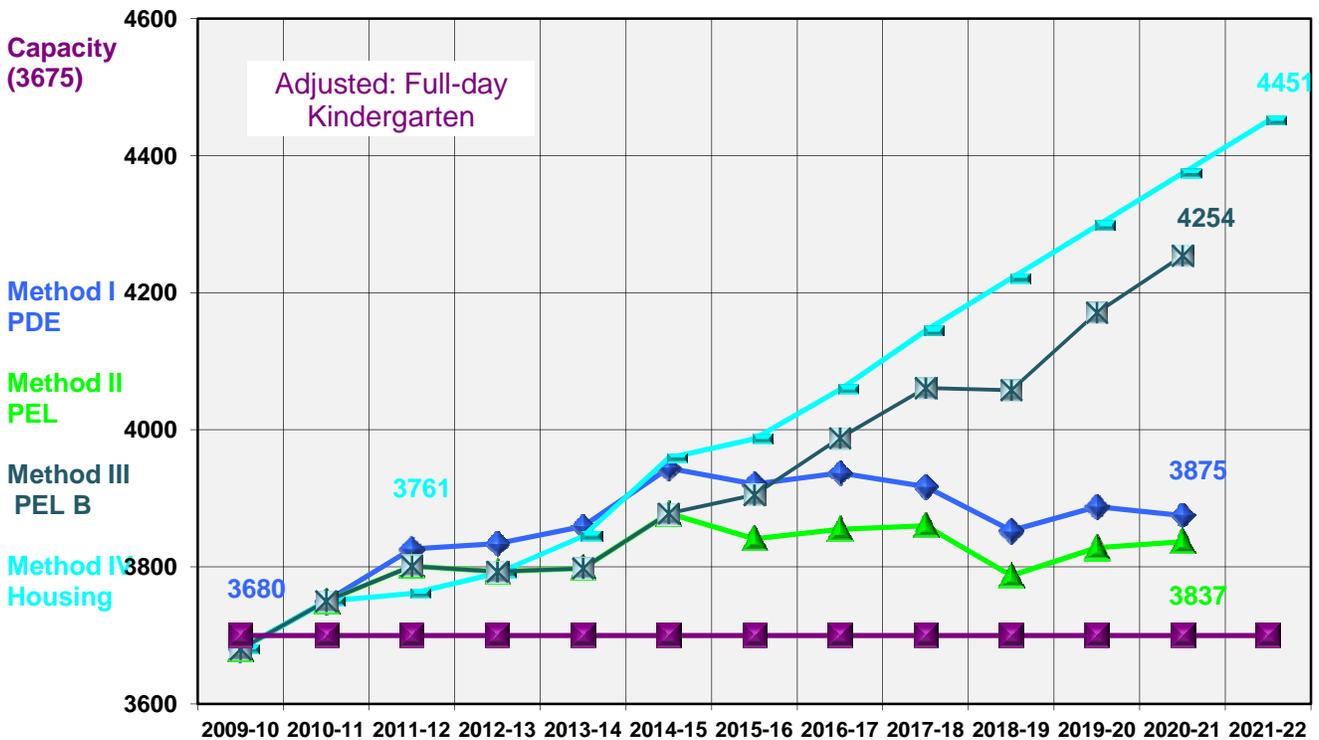


TABLE 20 - Projected Student Enrollment (7-9) vs. Current Building Capacity

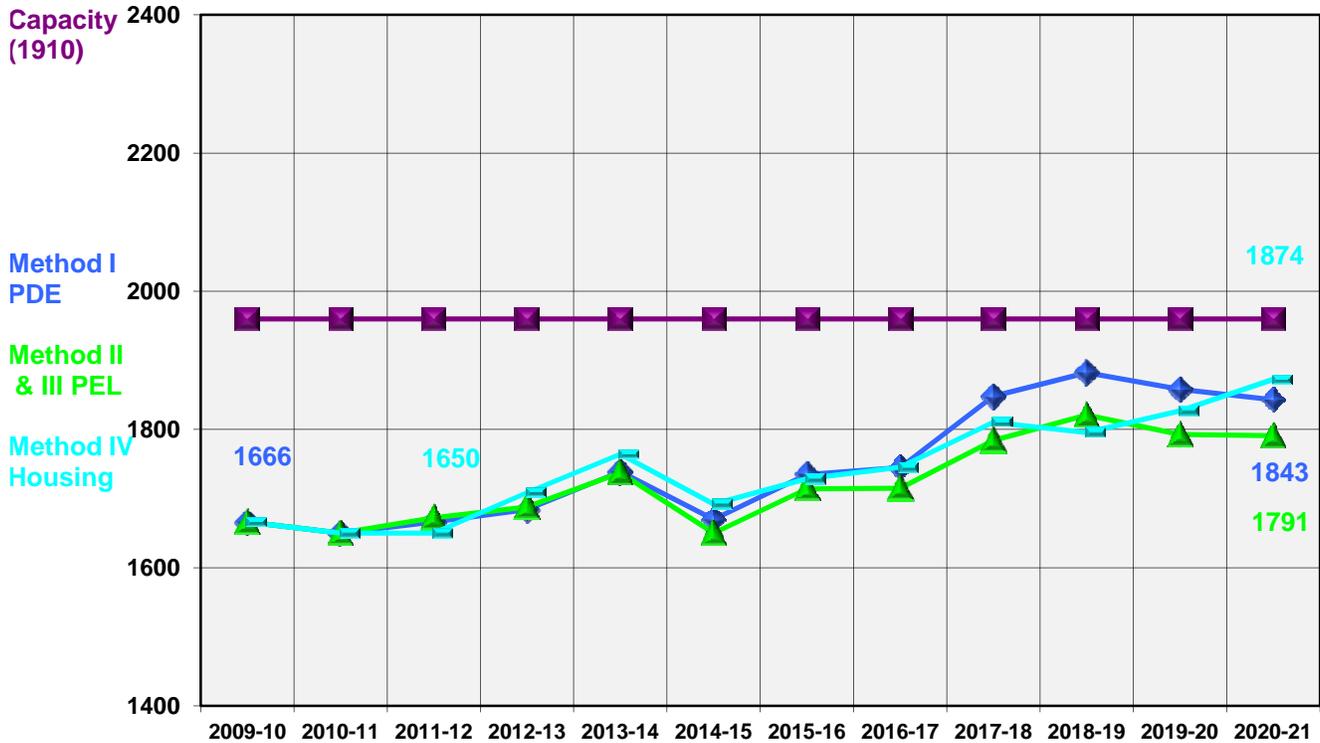
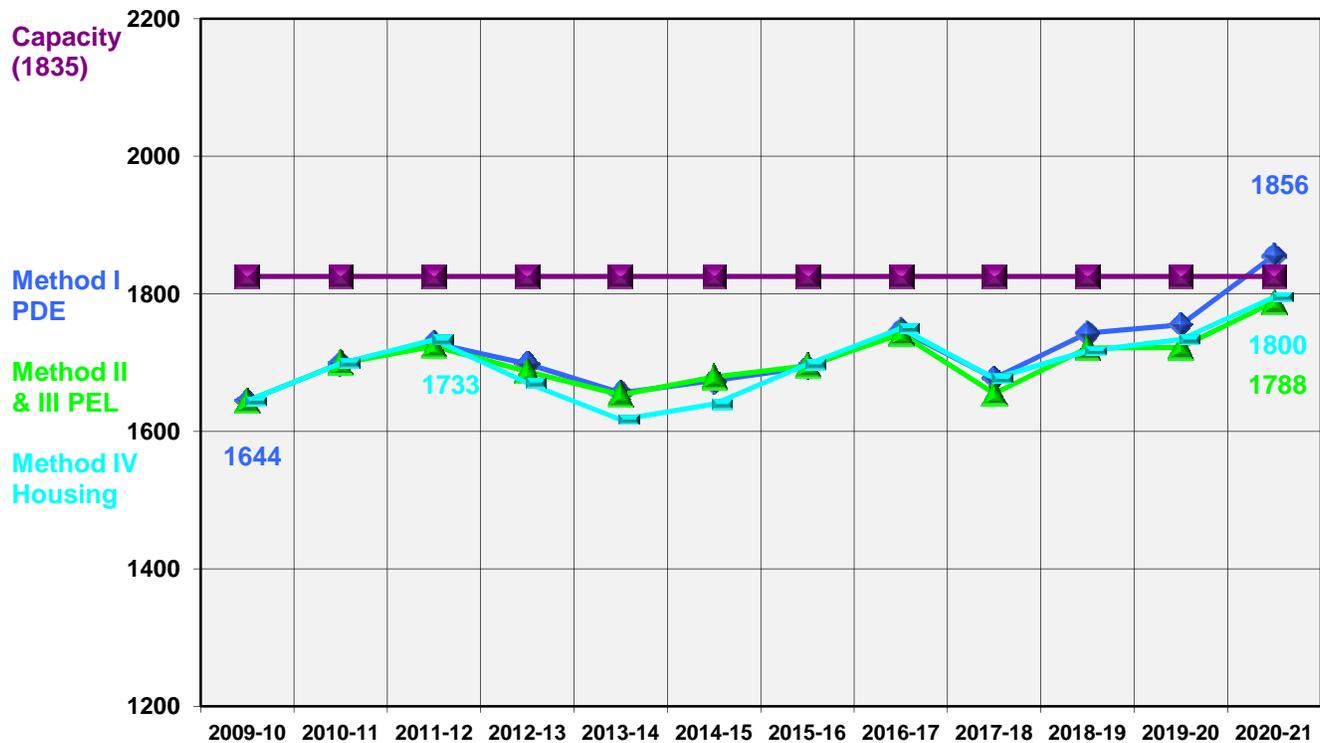


TABLE 21 - Projected Student Enrollment (10-12) vs. Current Building Capacity



BUILDING CAPACITY OVERVIEW

Explanation of Building Capacity and Adjustments

To properly analyze the impact of students on the Boyertown Area School District and its facilities, one must look at the functional capacity of the existing Schools. The Pennsylvania Department of Education had established State standards and guidelines which, coupled with the District's program, can produce a rather straight forward calculation. The current use and State standards have been used to determine the building capacity. These capacities are then compared to the enrollment projections provided in this section of the Study.

The comparison between student projections and building capacities is shown in graphic illustration for the K-6; 7-9; 10-12; and K-12 grade alignments.

The current building capacities have been evaluated and adjusted by the following:

1. Capacity evaluation of current educational spaces against the Pennsylvania Department of Education (P.D.E.) guidelines for room size:
 - a. Classrooms under 660 s.f. receive no capacity.
 - b. Secondary spaces under 1,800 s.f. for Technology Education receive no capacity.
 - c. Spaces must meet respective P.D.E. minimum size requirements to receive capacity.
2. Present use of space for activities other than original intent:
 - a. Areas far too small to permit functional efficiency.
 - b. Media Centers or other core facilities much smaller than recommended by guidelines.
 - c. Absence of space recommended for some functions.
 - d. Use of certain functional areas for general storage.
 - e. Use storage spaces for instructional areas.
3. Evaluation of building on Code requirements of physical facilities (i.e., toilet rooms).
4. Evaluation of specialized instruction beyond basic curriculum (i.e., music, art learning support, speech and language, Chapter 1, gifted and talented, and ancillary facilities for staff).

Future needs must look beyond merely a comparison between population and capacity projections. There is a need to look at curriculum, special programs, classroom size for all programs, and use of space not designed for current use.

BUILDING CAPACITY OVERVIEW

Explanation of Building Capacity and Adjustments

Elementary Level

The Pennsylvania Department of Education (P.D.E.) assigns 25 students per regular classroom greater than 660 s.f. for the purposes of formulating State reimbursement.

There is a tendency at the Elementary level within School Districts that have multiple buildings to assign students from various regions, or neighborhoods. This tendency is compounded by the fact that students do not always come in even increments of 25 students per grade, per classroom; therefore, the student efficiency of classrooms is not always 100%. In addition to this phenomenon, most School Districts prefer smaller classroom sizes at the Elementary level.

District capacities, therefore, also are provided for comparison with enrollment projections. In the case of the Boyertown Area School District, the District prefers not to exceed 25 students per classroom for Kindergarten through Sixth Grades.

For the purpose of this Study, Elementary *Functional Capacity* includes Graded Classrooms, while the *Total Capacity* also includes Regular Support Classrooms that are needed to support the educational program including Math and Reading. These Regular Support Classrooms could temporarily serve as enrollment "bubble" classrooms. Elementary Schools typically do not receive capacity for other support spaces such as Art, Music and Computer Labs because when students are using these spaces their respective classrooms are unoccupied. While Special Education Capacity and Pre-Kindergarten Capacity is listed separately and not included in the Functional Capacity or Total Capacity, they are included in reimbursement calculations.

Secondary Grades

Students typically move between classes at the Secondary Level. Therefore, P.D.E. assigns capacity to specific instructional spaces that meet minimum size requirements. Regular classrooms greater than 660 s.f. receive a capacity of 25 while Laboratory spaces receive a capacity of 20. Since scheduling the facility at 100% is unlikely, a capacity utilization factor is then applied to the total. P.D.E. uses a capacity utilization factor of 90%, a more realistic, nationally recognized capacity utilization factor of 80% has been used for the District capacity for the Middle School and High School.

EXISTING ELEMENTARY ROOM SCHEDULE

Existing Adjusted Capacity

		K-6 Existing Adjusted Use -- Half-day Kindergarten								
		Boyertown	Colebrookdale	Earl	Gilbertsville	New Hanover	Pine Forge	Washington	K-6 Total	
		No. Capacity	No. Capacity	No. Capacity	No. Capacity	No. Capacity	No. Capacity	No. Capacity	No. Capacity	
CLASSROOMS	Kindergarten 1/2-day	2 100	1 50	1 50	2 100	2 100	1 50	2 100	11 550	CLASSROOMS
	First Grade	4 100	2 50	2 50	4 100	4 100	2 50	4 100	22 550	
	Second Grade	4 100	2 50	2 50	4 100	4 100	2 50	4 100	22 550	
	Third Grade	4 100	2 50	2 50	4 100	4 100	2 50	4 100	22 550	
	Fourth Grade	4 100	2 50	2 50	4 100	4 100	2 50	4 100	22 550	
	Fifth Grade	4 100	2 50	2 50	4 100	4 100	2 50	4 100	22 550	
	Sixth Grade	4 100	2 50	2 50	4 100	4 100	2 50	4 100	22 550	
SUPPORT	Support / Divided	1 25			1 25	4 100			6 150	SUPPORT
	Spec Educ / Interven	5	3	2	3	4		4	21	
	S.E. / I.U. / Gift S.G.I.	3		1	4	1	4	3	16	
	Modular/Clsrm<660 s.f.		1 S.E.						1	
	Seminar / S.G.I.	1	4	4	2	2	1	5	19	
	Large Group / L.G.I.				1				1	
	Computer Lab	1	1	1	1	1	1	1	7	
	Music Classroom	1	1	1	1	1	1 **	1	7	
	Music Seminar / Pract	1	1		1	1		1	5	
	Art Classroom	1	1	1	1	1	** share	1	6	
ANCILIARY / CORE AREAS	Media Center	1	1	1	1	1	1	1	7	ANCILIARY / CORE AREAS
	Gymnasium	1			1	1		1	4	
	Locker Room	2							2	
	Multi-Purpose Room		1	1			1		3	
	Stage / Platform	1	1	1	1	1	1	1	7	
	Student Dining	1			1	1		1	4	
	Kitchen Areas	1	1	1	1	1	1	1	7	
	Administration / Guid	1	1	1	1	1	1	1	7	
	Health Suite	1	1	1	1	1	1	1	7	
	Faculty / I.P.C. / Office	2	1	1	1	1	1	1	8	
	P.E. Office				2		1	1	0	
Capacity		700	350	350	700	700	350	700	3850	
Total Capacity		725	350	350	725	800	350	700	4000	
2011-12 Enrollment		668	366	320	783	741	277	606	3761	

P.D.E. and District Capacity: 25 students per classroom.

Elementary Functional Capacity includes Graded Classrooms, while the Total Capacity also includes Support Classrooms that are needed to support the educational program such as Math and Reading. Special Education and Pre-Kindergarten Capacity are not included in the Functional Capacity or Total Capacity.

The Existing adjusted building capacity has been adjusted to represent the intended or adjusted use of space, therefore, showing respective support classrooms including Pre-Kindergarten and Special Education spaces.

EXISTING ELEMENTARY ROOM SCHEDULE

Full-Day Kindertarten Adjusted Capacity

		K-6 Existing Adjusted Use -- Full-day Kindergarten								
		Boyertown	Colebrookdale	Earl	Gilbertsville	New Hanover	Pine Forge	Washington	K-6 Total	
		No. Capacity	No. Capacity	No. Capacity	No. Capacity	No. Capacity	No. Capacity	No. Capacity	No. Capacity	
CLASSROOMS	Kindergarten full-day	4 100	2 50	2 50	4 100	4 100	2 50	4 100	22 550	CLASSROOMS
	First Grade	4 100	2 50	2 50	4 100	4 100	2 50	4 100	22 550	
	Second Grade	4 100	2 50	2 50	4 100	4 100	2 50	4 100	22 550	
	Third Grade	4 100	2 50	2 50	4 100	4 100	2 50	4 100	22 550	
	Fourth Grade	4 100	2 50	2 50	4 100	4 100	2 50	4 100	22 550	
	Fifth Grade	4 100	2 50	2 50	4 100	4 100	2 50	3 75	21 525	
	Sixth Grade	3 75	1 25	1 25	3 75	4 100	1 25	3 75	16 400	
SUPPORT	Support / Divided					2 50			2 50	SUPPORT
	Spec Educ / Interven	5	3	2	4	4		4	22	
	S.E. / I.U. / Gift S.G.I.	3		1	3	1	4	3	15	
	Modular/Clsrm<660 s.f.		1 S.E.						1	
	Seminar / S.G.I.	1	4	4	3	2	1	5	20	
	Large Group / L.G.I.				1				1	
	Computer Lab	1	1	1	1	1	1	1	7	
	Music Classroom	1	1	1	1	1	1 **	1	7	
	Music Seminar / Pract	1	1		1	1		1	5	
	Art Classroom	1	1	1	1	1	**	1	6	
ANCILIARY / CORE AREAS	Media Center	1	1	1	1	1	1	1	7	ANCILIARY / CORE AREAS
	Gymnasium	1			1	1		1	4	
	Locker Room	2							2	
	Multi-Purpose Room		1	1			1		3	
	Stage / Platform	1	1	1	1	1	1	1	7	
	Student Dining	1			1	1		1	4	
	Kitchen Areas	1	1	1	1	1	1	1	7	
	Administration / Guid	1	1	1	1	1	1	1	7	
	Health Suite	1	1	1	1	1	1	1	7	
	Faculty / I.P.C. / Office	2	1	1	1	1	1	1	8	
	P.E. Office				2		1	1	0	
Capacity		675	325	325	675	700	325	650	3675	
Total Capacity		675	325	325	675	750	325	650	3725	
2010-11 Enrollment		668	366	320	783	741	277	606	3761	

P.D.E. and District Capacity: 25 students per classroom.

Elementary Functional Capacity includes Graded Classrooms, while the Total Capacity also includes Support Classrooms that are needed to support the educational program such as Math and Reading. Special Education and Pre-Kindergarten Capacity are not included in the Functional Capacity or Total Capacity.

The Existing adjusted building capacity has been adjusted to represent the intended or adjusted use of space, therefore, showing respective support classrooms including Pre-Kindergarten and Special Education spaces.

EXISTING 7-9 ROOM SCHEDULE

Existing Adjusted Capacity

		7-9 Existing			
		Junior High East		Junior High West	
CLASSROOMS		No.	Capacity	No.	Capacity
		Classroom	31	775	23
	Science Classroom / Lecture	2	50	3	75
	Science Lab	5	100	3	60
	Classrooms (Other Use)				
SUPPORT	S.E. / Gifted / Interv	6		4	
	S.E. Seminar / S.G.I.	4		1	
	Seminar / S.G.I. < 660 s.f.	3		6	
	Large Group / L.G.I.				
	Business / Computer Lab	3	60	3	60
	Music Classroom				
	Band / Orchestra / Choral	2	50	2	50
	Art Classroom	2	40	2	40
	Family & Consumer Science	2	40	2	40
	T.E. Lab	3	60	3	60
	T.E. Wood / Metal Lab	1	20		
	T.V. Studio	1	20	1	20
ANCILIARY / CORE AREAS	Media Center	1		1	
	Gymnasium	1	99	1	66
	Auxiliary Gym			1	33
	Weight Room / Adaptive Gym	1		1	
	Locker Room	4		2	
	Officials / P.E. Office	2		2	
	Auditorium	1		1	
	Stage / Platform	1		1	
	Student Dining	1		1	
	Kitchen Areas	1		1	
	Administration / Guidance	1		1	
	Health Suite	1		1	
	Faculty / I.P.C. / Office	2		2	
	Capacity (80%)		1050		860
	P.D.E. Capacity (90%)		1180		970
	2011-12 Enrollment		843		807

P.D.E.: 20-25 students per classroom; 90% P.D.E. Utilization Factor and 80% District Utilization Factor.

Secondary Functional Capacity includes all spaces that receive capacity except a Natatorium or District Administration. Special Education Capacity is not included in the Functional Capacity or Total Capacity.

The existing building capacity may have been adjusted to represent the intended or adjusted use of space, therefore, showing respective support classrooms including Art, Music and Computer Education spaces.

EXISTING 10-12 ROOM SCHEDULE

Existing Adjusted Capacity

		10-12 Existing						
		High School		HS Old Wing		Senior High School		
CLASSROOMS		No.	Capacity	No.	Capacity	No.	Capacity	CLASSROOMS
	Classroom	39	975	9	225	48	1200	
	Science Classroom / Lecture	8	200			8	200	
	Science Lab	7	140			7	140	
	Classrooms (Other Use)	1	25	2	50	3	75	
SUPPORT	S.E. / Gifted / Interv	8				8		SUPPORT
	S.E. Seminar / S.G.I.	5				5		
	Modular / Clsrm <660 s.f.			7		7		
	Seminar / S.G.I. < 660 s.f.	2				2		
	Large Group / L.G.I.	1		1		2		
	Business / Computer Lab	4	80			4	80	
	Music Classroom	2	50			2	50	
	Band / Orchestra / Choral	2	50			2	50	
	Art Classroom			4	80	4	80	
	Family & Consumer Science	3	60			3	60	
	T.E. Lab	7	140			7	140	
	T.E. Wood / Metal Lab							
T.V. Studio	1	20			1	20		
ANCILIARY / CORE AREAS	Media Center	1				1		ANCILIARY / CORE AREAS
	Gymnasium	2	165			2	165	
	Auxiliary Gym			1	33	1	33	
	Weight Room / Adaptive Gym	3				3		
	Locker Room	6				6		
	Officials / P.E. Office	8				8		
	Auditorium	1		1		2		
	Stage / Platform	1		1		2		
	Student Dining	1				1		
	Kitchen Areas	1				1		
	Administration / Guidance	1				1		
	Health Suite	1				1		
	Faculty / I.P.C. / Office	14		1		15		
	Capacity (80%)		1525		310		1835	
P.D.E. Capacity (90%)		1715		350		2065		
2011-12 Enrollment						1733		

P.D.E.: 20-25 students per classroom; 90% P.D.E. Utilization Factor and 80% District Utilization Factor.

Secondary Functional Capacity includes all spaces that receive capacity except a Natatorium or District Administration. Special Education Capacity is not included in the Functional Capacity or Total Capacity.

The existing building capacity may have been adjusted to represent the intended or adjusted use of space, therefore, showing respective support classrooms including Art, Music and Computer Education spaces.

EDUCATIONAL PROGRAM REQUIREMENTS

Overview of Boyertown Area School District's Educational Program

Organization Description

Organizational Structure: The Boyertown Area School District's educational program is organized

Elementary Schools - Grades K-6
Junior High Schools - Grades 7-9
Senior High School - Grades 10-12

The District is open to considering other grade configurations. In general the schools could be structured a number of different ways.

The Boyertown Area Area School District is comprised of seven Elementary schools, two Junior High Schools and one High School.

Elementary

At the elementary grade level, the preferred design capacity for K-6 is no more than 25 students per classroom.

At the elementary level, grades should be physically grouped together. Currently kindergarten is a half-day program with no Pre-Kindergarten available. Special education areas should be dispersed throughout the building. At a minimum, each Elementary School should provide space for such subjects as remedial reading, math, and speech. In addition to these areas, each of the various Elementary Schools should provide space for District-wide special education programs.

Each Elementary School should provide instructional areas for art, music, and physical education. Due to scheduling, it is preferable to have a separate gym and cafeteria area. The library needs to be adequately sized for the building's population. It should also have the appropriate support areas (i.e. office, work, storage areas). Space for a principal, administrative support, nurse, psychologist, guidance counselor, outside agencies, and conferencing also needs to be provided. The administration area needs to have a controlled entry point that can easily be secured.

Consideration should be given to providing space for full-day Kindergarten programs.

EDUCATIONAL PROGRAM REQUIREMENTS

Overview of Boyertown Area School District's Educational Program

Junior High Schools

At the Junior High School grade level, the preferred number of students in a class is 25. The Junior High Schools operate on a teaming concept. A team is comprised of a science, math, social studies, reading, and English teachers. Instructional areas for art, music, family and consumer science, technology education, world language, computer education, performing arts and physical education also need to be provided.

The Junior High Schools also require a large number of spaces dedicated to special education. The Junior High Schools need space for part-time/special education resource type programs. Consideration should be given to providing space for these programs.

High School

At the High School grade level, the preferred number of students in a class is 25. The High School operate on a departmentalized concept. Subjects include: science, math, social studies, reading, and English teachers. Instructional areas for art, music, family and consumer science, technology education, world language, computer education, performing arts and physical education also need to be provided.

The High School also requires a large number of spaces dedicated to special education. The High School needs space for part-time/special education resource type programs. Consideration should be given to providing space for these programs.

District Administrative Offices

District administrative staff is currently housed in a number of facilities, but primarily in the main District Office.

PART III
FACILITIES

FACILITIES INTRODUCTION

This section of the Feasibility Study is a review of the existing Boyertown Area School District's facilities, as follows; Boyertown, Colebrookdale, Earl, Gilbertsville, New Hanover-Upper Fredrick, Pine Forge and Washington Elementaries; Junior High School East and Junior High School West; Senior High School, Memorial Football Stadium and Bear Baseball Stadium; the Education Center and Support Services building. All facilities include general data, plans, spatial evaluation, and a general investigation.

Following each building's floor plans, which show existing space utilization, is a general investigation identifying deficiencies, recommending solutions, and furnishing estimates of probable construction costs.

This analysis is based upon visits to the buildings and interviews with District personnel, current building codes, Department of Education standards, energy conservation measures, and the American Disability Act Accessibility Standards (ADA). The analysis is divided into seven major facility components: site, exterior, interior, heating/ventilation, plumbing, electrical, and code deficiencies per building with an eighth section concerning educational upgrades. The Facility Evaluation Criteria is outlined on the following pages.

FACILITIES SUMMARY

Boyertown Area School District's Existing Facilities

The following information is included for each existing Facility: General Data, Exterior and Interior Building Photos, Aerial Site Views, Site Plan and Floor Plans, Room Schedule, Summary of Costs, and Building Improvements and Construction Costs Data.

Boyertown Elementary School



Built:	1969
Eligible for State Reimb:	Yes
Site Size:	13 acres
Architectural Area:	97,800 s.f.
PDE Total Capacity:	725
PDE Replacement Value:	\$11,605,800
20% Rule:	\$2,321,160

Building Improvements and Construction Costs

Total Building:	\$8,670,900
------------------------	-------------

Colebrookdale Elementary School



Built:	1955, 1991
Eligible for State Reimb:	Yes
Site Size:	10.5 acres
Architectural Area:	41,340 s.f.
PDE Total Capacity:	350
PDE Replacement Value:	\$5,602,800
20% Rule:	\$1,120,560

Building Improvements and Construction Costs

Total Building:	\$2,909,200
------------------------	-------------

FACILITIES SUMMARY

Boyertown Area School District's Existing Facilities

Earl Elementary School



Built:	1954, 1968, 1991
Eligible for State Reimb:	Yes
Site Size:	16 acres
Architectural Area:	38,530 s.f.
PDE Total Capacity:	350
PDE Replacement Value:	\$5,602,800
20% Rule:	\$1,120,560

Building Improvements and Construction Costs

Total Building:	\$2,952,400
------------------------	-------------

Gilbertsville Elementary School



Built:	1930, 1958, 1987, 1995
Eligible for State Reimb:	2015
Site Size:	16 acres
Architectural Area:	96,930 s.f.
PDE Total Capacity:	725
PDE Replacement Value:	\$11,605,800
20% Rule:	\$2,321,160

Building Improvements and Construction Costs

Total Building:	\$6,914,800
------------------------	-------------

FACILITIES SUMMARY

Boyertown Area School District's Existing Facilities

New Hanover-Upper Frederick Elementary School



Built: 1953, 1958, 1964, 1991
Eligible for State Reimb: Yes

Site Size: 18 acres

Architectural Area: 90,700 s.f.

PDE Total Capacity: 800

PDE Replacement Value: \$12,806,400
20% Rule: \$2,561,280

Building Improvements and Construction Costs

Total Building: \$6,284,000

Pine Forge Elementary School



Built: 1928, 1957, 1987
Eligible for State Reimb: Yes

Site Size: 8 acres

Architectural Area: 37,570 s.f.

PDE Total Capacity: 350

PDE Replacement Value: \$5,602,800
20% Rule: \$1,120,560

Building Improvements and Construction Costs

Total Building: \$3,803,900

FACILITIES SUMMARY

Boyertown Area School District's Existing Facilities

Washington Elementary School



Built: 1961, 1987, 1995
Eligible for State Reimb: 2015

Site Size: 24 acres

Architectural Area: 82,030 s.f.

PDE Total Capacity: 700

PDE Replacement Value: \$11,205,600
20% Rule: \$2,241,120

Building Improvements and Construction Costs

Total Building: \$6,177,900

Boyertown Junior High School East



Built: 1972, 2004
Eligible for State Reimb: 2024

Site Size: 45 acres

Architectural Area: 159,430 s.f.

PDE Total Capacity: 1180

PDE Replacement Value: \$25,254,360
20% Rule: \$5,050,872

Building Improvements and Construction Costs

Total Building: \$1,218,800

FACILITIES SUMMARY

Boyertown Area School District's Existing Facilities

Boyertown Junior High School West



Built:	1963, 1998
Eligible for State Reimb:	2018
Site Size:	70 acres
Architectural Area:	145,720 s.f.
PDE Total Capacity:	970
PDE Replacement Value:	\$20,759,940
20% Rule:	\$4,151,988

Building Improvements and Construction Costs

Total Building: \$22,222,200

Boyertown Area Senior High School



Built:	1920, 1930's, 1955, 1977, 1992, (1996)
Eligible for State Reimb:	Yes
Site Size:	70 acres
Architectural Area:	370,000 s.f.
PDE Total Capacity:	2065
PDE Replacement Value:	\$44,195,130
20% Rule:	\$8,839,026

Building Improvements and Construction Costs

Total Building: \$31,987,600

FACILITIES SUMMARY

Boyertown Area School District's Existing Facilities

Education Center



Built:	1973
Eligible for State Reimb:	Yes
Site Size:	3 acres
Architectural Area:	11,200 s.f.
PDE Total Capacity:	36
PDE Replacement Value:	\$770,472
20% Rule:	\$154,094

Building Improvements and Construction Costs

Total Building: \$780,500

Support Services Building



Built:	1900's
Eligible for State Reimb:	No
Site Size:	2 acres
Architectural Area:	4,445 s.f.
PDE Total Capacity:	0
PDE Replacement Value:	\$0
20% Rule:	\$0

Building Improvements and Construction Costs

Total Building: \$668,800

The evaluation of the existing facilities are based upon visits to the buildings, interviews with District personnel, and our own experience with educational projects.

The following current, applicable codes and standards are used in the evaluation of the building and its systems / components:

- 2009 International Building Code Categories
- ASHRAE
- NFPA
- Americans with Disability Act (ADAAG 1994)
- Municipal Zoning Ordinance
- Other Codes used in the evaluation for compliance are the National Plumbing and Electrical Codes

The evaluation criteria are based upon the following categories: Accessibility / ADA, Building codes / Safety, Aesthetics / Environment, Performance / Energy, and Program and Facility requirements.

■ ACCESSIBILITY / ADA STANDARDS / COMPLIANCE

Facilities should provide access to all program areas and activities for all individuals, per the Americans with Disabilities Act Accessibility Guidelines, 1990 (ADA/ADAAG), as revised 1994. The Americans with Disabilities Act (ADA) is a civil rights act, effective 26 January 1992, enforced by the United States Justice Department and Civil Law, not a building code. It is comprised of five major sections (Titles I – V) as follows:

- TITLE I – Equal Employment Provisions (hiring)
- TITLE II – Nondiscrimination in State and Local Government Services (public buildings)
- TITLE III – Nondiscrimination by Public Accommodations (privately funded facilities)
- TITLE IV – Telecommunications Relay Services
- TITLE V – Miscellaneous Provisions

Public schools are State agencies/local governmental unit and would fall under TITLE II. A public entity must ensure that individuals with disabilities are not excluded from services, programs, and activities because existing buildings are inaccessible. Public entities do not necessarily have to make each of their existing facilities accessible. They may provide program accessibility by a number of methods including alteration of existing facilities, construction of additional facilities, relocation of a service or program to an accessible facility, or provision of services at alternate accessible sites. Structural changes needed for program accessibility must be made as expeditiously as possible, but no later than 26 January 1995. Barrier removal needs to be accomplished only when it is “readily achievable” to do so and technically feasible. Readily achievable means easily accomplishable and able to be carried out without much difficulty or expense. Alternatives may be considered to overcome such barrier or non-compliance.

■ ACCESSIBILITY / ADA STANDARDS / COMPLIANCE (Con't)

Alterations when made should be done in a manner that require compliance with the standards to the maximum extent feasible. An alteration is a change, which affects, or could affect, the usability of the building or facility. It also includes "elements," such as door handles and faucet controls. If alterations are made to an area that contains a primary function, a path of travel to that area should be made accessible. The ADA addresses the issue of accessible design for large assembly areas, with the intent of integrating wheelchair seating with regular seating. That is, individuals in wheelchairs should have a line of sight compatible to the general body. Too often, wheelchair areas are confined to the back or to the front.

As part of the upgrading and alteration of District facilities, the District's requirements for ADA compliance should reflect the overall integration of people who may wish to participate in activities within these facilities, and who may be on staff serving these facilities. The District may wish to review its policy, procedure, and practice, with regard to use at these facilities. The physically challenged person should have the ability to gain entry and be routed to seating easily. The required number of seats for the disabled should be located to allow for a maximum of seating location choices. The following areas are reviewed:

- (1) Provide the appropriate number of accessible parking spaces near entrance to all facilities.
- (2) Provide an accessible route from parking spaces to building entrances.
- (3) Provide accessible entrance at all facilities.
- (4) Provide proper signage both on the exterior, as well as on the interior, designed to guide, direct, and inform individuals with disabilities.
- (5) Provide accessible interior route to all primary activities and program areas.
- (6) Provide building elements (i.e. railings, doors, hardware, restrooms, drinking fountains, elevators, public telephone, seating, work stations, etc.) to allow same opportunities for individuals with disabilities.
- (7) Provide alternate solutions to move activities and program areas to accessible areas.

■ BUILDING CODES / SAFETY

Buildings must meet the codes that are applicable at the time of construction. Existing buildings may not meet the requirements of the most recently adopted codes, but are in compliance with the codes that were in effect at the time of construction or renovation.

Existing buildings as they stand are not required to meet current code simply due to the adoption of newer codes. Any new construction or renovations would be required to comply with the current applicable code.

The type, limit of area of work, and nature of work will be the determining factor as to the required level of compliance with the most recently adopted codes and be categorized under the following levels.

IEBC-SECTION 304 REPAIRS

304.1 **General.** Buildings and structures, and parts thereof, shall be repaired in conformance with Section 301.2. Work on nondamaged components that is necessary for the required *repair* of damaged components shall be considered part of the *repair* and shall not be subject to the requirements for alterations in this chapter. Routine maintenance required by Section 301.2, ordinary repairs exempt from permit in accordance with Section 105.2, and abatement of wear due to normal service conditions shall not be subject to the requirements for repairs in this section.

IEBC-SECTION 403 ALTERATION-LEVEL 1

403.1 **Scope.** Level 1 alterations include the removal and replacement, or the covering, of existing materials, elements, equipment, or fixtures using new materials, elements, equipment, or fixtures that serve the same purpose.

403.2 **Application.** Level 1 alterations shall comply with the provisions of Chapter 5.

IEBC-SECTION 404 ALTERATION-LEVEL 2

404.1 **Scope.** Level 2 alterations include the reconfiguration of space, the addition or elimination of any door or window, the reconfiguration or extension of any system, or the installation of any additional equipment.

404.2 **Application.** Level 2 alterations shall comply with the provisions of Chapter 5 for Level 1 alterations, as well as the provisions of Chapter 6.

IEBC-SECTION 405 ALTERATION-LEVEL 3

405.1 **Scope.** Level 3 alterations apply where the work area exceeds 50 percent of the aggregate area of the building.

405.2 **Application.** Level 3 alterations shall comply with the provisions of Chapters 5 and 6 for Level 1 and 2 alterations, respectively, as well as the provisions of Chapter 7.

Facilities should meet the following health and safety issues:

- (1) Pedestrian and vehicular circulation paths should be well lighted and provide clear site lines and field of views.
- (2) Safe drop-off and pick-up areas should be provided with good separation from other functions.
- (3) Fences should be located at appropriate points to separate pedestrian activities from hazardous elements, and to protect individuals or property from attack.
- (4) Design of site elements should provide good drainage to prevent ponding or icy conditions.
- (5) Entrances and exterior doors should meet appropriate level of security to control unwanted visitors, and reduce risk of threats (key consideration where children are located.)
- (6) Correct any issues driven by user welfare or recognized health hazards.

■ AESTHETIC / ENVIRONMENT UPGRADES

All facilities require on-going maintenance attention at the current level or better. Preventative maintenance and repair will have a major effect on the appearance, while protecting the physical soundness of the facilities.

The facility should be enhanced by finishes and designs that exemplify the “state-of-the-art” in public accommodations. Finishes of walls should reduce reverberation and echo in event areas, and should add to the focal points. Carpet should support comfortable mobility, without creating resistance to equipment supports (i.e., crutches, canes, wheelchairs, moving AV equipment). Hard floor surfaces should be slip-resistant (0.6 coefficient wet/dry). Ceilings should maximize reflectance. Color contrasts between different surfaces should be distinct between floors, walls, and ceilings. Color should guide the eye from dark to light, to the focal points of events. The lightest areas in the lecture hall should be where speakers, presentations, projected images, and events are positioned. Material selection should also consider durability and maintenance.

The facilities should present an environment that is clean, pleasant, and enhances the activities within the space. Facilities should consider the following conditions:

- (1) Well balanced and flexible lighting.
- (2) Appropriate color selection and finish materials.
- (3) Interior finishes and products adequately installed and maintained. Replace worn, torn, or broken products.

■ PERFORMANCE / ENERGY UPGRADES

Beyond Code compliance, aesthetic quality, and nature of the environment, is the performance of the facilities and building systems. Since the installation of many of the building component systems, there have been significant advancements in technology. The design requirements for facilities are at a different standard today, and there is a need to improve the efficiency, where possible, and correct any outdated and obsolete items.

The facilities should operate at an energy efficient level and provide comfortable environment for all users.

An increase in the performance characteristics of several of the buildings’ component systems, due to age and condition of existing system or a need to improve efficiency, causes the following upgrades:

- (1) Correct deficiencies with regard to extending the life of building systems and components.
- (2) Building envelope, lighting, mechanical, and other issues, related to energy conservation, should meet current standards and future concerns.

■ PROGRAM REQUIREMENTS AND UPGRADES

As the School District's student population changes and while facilities become older, the adequacy of building organization and spaces become more critical to meeting the current educational program.

The intent of the educational review is to help support the role of the District in determining the scope of any potential changes, improvements, or enhancements to meet both current standards as well as future visions. The following issues are reviewed that will be supportive of the District's Educational Program for the next 20 years:

- Classrooms that meet State standards for size and functions (provide instructional space that allows several types of teaching and learning activities).
- Current instructional practices require greater hands-on and group activities integrated with technology requiring greater space per school.
- A growing special educational population, coupled with the need for inclusion, requires more space for instruction and support positions.
- The number of meeting spaces for a range of size for conferences, teacher-parent, staff, and other interactions, which are properly located and have privacy.
- Use of technology and presentation space for staff and students (wireless laptops, projection systems, etc.)
- Are there current programs or activities that are located in appropriate rooms or areas due to size, location, or environment?
- Are required features of the learning environment missing, outdated, or not operational?
- Are community needs addressed?
- Review emerging educational offerings and trends.
- Review specialized facilities for Athletics, Performing Arts, or Fine Arts.
- Cafeteria and Food Service functions that meet current standards or desired accommodations.
- Administration and office areas that are adequate for modern educational facilities and provide supportive environment critical for today's population and needs.
- Address student needs that provide opportunities to perform and achieve adequate progress in learning and social development.

GENERAL DATA

Boyertown Elementary School

Built:	1969 Eligible for 20-year State Reimbursement
Site:	641 East Second Street, Boyertown, PA 19512-2298 13 acres; located in a residential area with paved drives and parking areas, athletic fields and play areas.
Structure:	One-story building with concrete floors; metal roof deck; structural steel frame; and masonry and concrete walls. Construction type non-combustible, unprotected in accordance with International Building Code. Built-up roof membrane with metal soffit and fascias.
HVAC System:	Packaged unit ventilators with integral air conditioning and electric heating coils as well as split system air conditioners and heat pumps.
Plumbing Service:	Public water and sewer services
Electrical Service:	2000 amp, 277/480 volt, three phase, 4 wire
Systems:	Fire Alarm Paging/Intercom Master Clock Security Emergency Lighting and Power District Telephone Data Network
Architectural Area:	97,800 s.f.
PDE Replacement Value:	\$11,605,800 (725 FTE x 92 sf = 66,700 x \$174 / sf = replacement cost) \$2,321,160 (20% Rule)
PDE Total Capacity:	725

PHOTOGRAPHS

Boyertown Elementary School



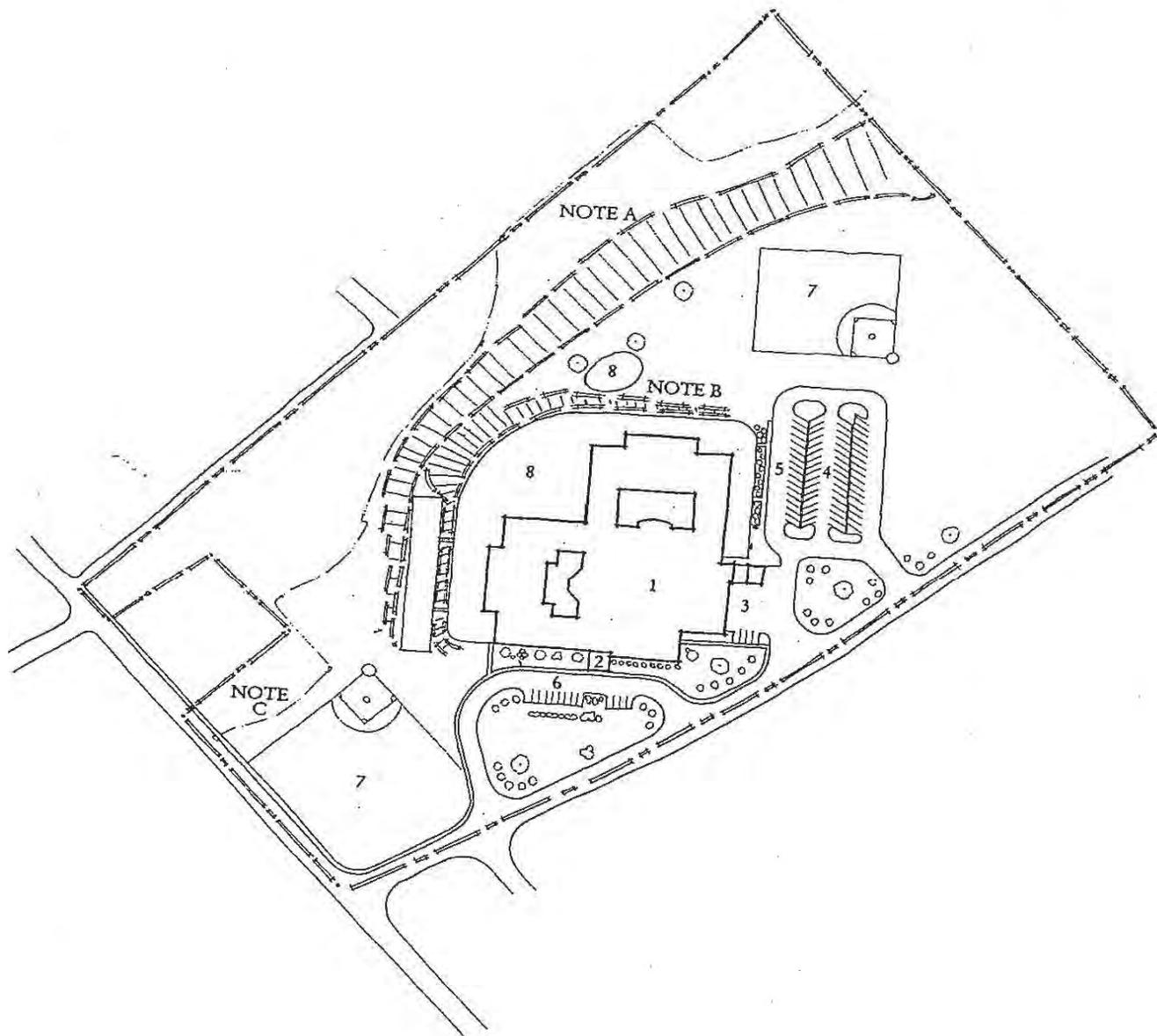
AERIAL VIEW

Boyertown Elementary School



EXISTING SITE PLAN

Boyertown Elementary School



Key:

- 1. School Building
- 2. Public Entrance
- 3. Service Entrance
- 4. Parking

- 5. Bus Drop-Off
- 6. Parent Drop-Off
- 7. Play field
- 8. Playground

Notes:

- A. Hatch pattern indicated area of steep slope.
- B. Area of poor drainage.
- C. Area of erosion.

OPERATIONAL COSTS SUMMARY

Boyertown Elementary School

97,800 s.f.	Annual Cost	Cost per sf
Electric	\$136,551	\$1.40
Natural Gas	NA	NA
Water	\$4,342	\$0.04
Sewer	\$8,162	\$0.08
Utilities Subtotal	\$149,055	\$1.52

SUMMARY - ENERGY STAR

Boyertown Elementary School

OMB No. 2060-0347



STATEMENT OF ENERGY PERFORMANCE Boyertown Area SD Boyertown ES 114060753

Building ID: 3208919
For 12-month Period Ending: May 31, 2011
Date SEP becomes ineligible: N/A

Date SEP Generated: July 20, 2012

Facility
Boyertown Area SD Boyertown ES
114060753
South Madison Street
Boyertown, PA 19512

Facility Owner
Boyertown Area School District
911 Montgomery Avenue
Boyertown, PA 19512

Primary Contact for this Facility
N/A

Year Built: 1969
Gross Floor Area (ft²): 97,795

Energy Performance Rating² (1-100) 59

Site Energy Use Summary³

Electricity - Grid Purchase(kBtu)	4,285,513
Natural Gas - (kBtu) ⁴	0
Total Energy (kBtu)	4,285,513

Energy Intensity⁴

Site (kBtu/ft ² /yr)	44
Source (kBtu/ft ² /yr)	146

Emissions (based on site energy use)

Greenhouse Gas Emissions (MtCO ₂ e/year)	607
---	-----

Electric Distribution Utility

Metropolitan Edison Co [FirstEnergy Corp]

National Median Comparison

National Median Site EUI	48
National Median Source EUI	159
% Difference from National Median Source EUI	-8%
Building Type	K-12 School

Stamp of Certifying Professional

Based on the conditions observed at the time of my visit to this building, I certify that the information contained within this statement is accurate.

Meets Industry Standards⁵ for Indoor Environmental Conditions:

Ventilation for Acceptable Indoor Air Quality	N/A
Acceptable Thermal Environmental Conditions	N/A
Adequate Illumination	N/A

Certifying Professional
N/A

Notes:

1. Application for the ENERGY STAR must be submitted to EPA within 4 months of the Period Ending date. Award of the ENERGY STAR is not final until approval is received from EPA.
2. The EPA Energy Performance Rating is based on total source energy. A rating of 75 is the minimum to be eligible for the ENERGY STAR.
3. Values represent energy consumption, annualized to a 12-month period.
4. Values represent energy intensity, annualized to a 12-month period.
5. Based on Meeting ASHRAE Standard 62 for ventilation for acceptable indoor air quality, ASHRAE Standard 55 for thermal comfort, and IESNA Lighting Handbook for lighting quality.

The government estimates the average time needed to fill out this form is 6 hours (includes the time for entering energy data, Licensed Professional facility inspection, and notarizing the SEP) and welcomes suggestions for reducing this level of effort. Send comments (referencing OMB control number) to the Director, Collection Strategies Division, U.S. EPA (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460.

SUMMARY BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Boyertown Elementary School

		Cost per SF
SITE EVALUATION	\$216,300.00	\$2.21 SF
EXTERIOR EVALUATION	\$238,700.00	\$2.44 SF
INTERIOR EVALUATION	\$260,600.00	\$2.66 SF
HVAC EVALUATION	\$2,934,000.00	\$30.00 SF
PLUMBING EVALUATION	\$831,300.00	\$8.50 SF
ELECTRICAL EVALUATION	\$2,445,000.00	\$25.00 SF
CODE EVALUATION	\$1,500,500.00	\$15.34 SF
MISCELLANEOUS UPGRADES	\$244,500.00	\$2.50 SF
<hr/>		
TOTAL*	\$8,670,900.00	\$88.66 SF

* For the purpose of this Study, a baseline has been established and no design contingency has been utilized. More precise costs can be developed as the District develops specific educational specifications and chooses a desired option.

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Boyertown Elementary School

ARCHITECTURAL SURVEY

Cost

A. Site Evaluation:

- | | | |
|---|---|-----------|
| 1 | The concrete curbing is cracked or damaged at several locations. Remove cracked or damaged sections and replace with new. | \$200 |
| 2 | There is deterioration of concrete sidewalks at several locations and control joint material is missing. Remove the deteriorated areas and replace with new. Install control joint material | \$1,500 |
| 3 | The upper and lower bituminous paved play areas and the south paved play area have a multitude of cracking and deterioration. Repair the deteriorated areas and mill and overlay. | \$158,800 |
| 4 | The paved walking path to Presidential Estates is cracked and deteriorated. Mill and overlay walking path. | \$12,000 |
| 5 | The concrete steps to the lower paved play area are cracking. Remove loose unsound concrete, or rout crack for patching. | \$3,000 |
| 6 | The light pole bases at the south parking lot are rusting. Sand and paint based to match existing. | \$2,300 |
| 7 | The bus loop drive has minor cracking. Repair cracks and seal paving. | \$5,000 |

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Boyertown Elementary School

ARCHITECTURAL SURVEY

Cost

A. Site Evaluation (con't):

8	The site and exterior of building lack identification and directional signage. Install identification and directional signage.	\$1,500
9	The pipe bollards at the service entrance are rusting. Sand bollards and paint.	\$400
10	The brick school sign has horizontal and vertical cracking. Remove loose material, caulk vertical joints and repoint brick.	\$500
11	The bituminous walk adjacent to the curb at the south parking lot leading to the pave walking path is lower than the adjacent curb creating a tripping hazard. Overlay the paved path to the level of the curb.	\$1,300
12	The concrete sidewalk at the bus loop curb has sunk below the level of the curb creating a tripping hazard. Remove and replace concrete sidewalk to be level with curb.	\$29,800
Site Evaluation Sub-Total:		<hr/> \$216,300

B. Exterior of Building Evaluation:

1	The roofs installed are in good condition with only minor areas of concern. Several roof drains are not installed as per the original drawings. Roof drains are needed over east canopy area and some roof drains appear broken and need repair and/or cleaned. A roof hatch should be installed and a wall ladder to access the Multipurpose/Cafeteria roof.	\$30,000
2	The brick work and precast concrete are in fair condition. There is repointing and cleaning required. Replace all damaged areas, repoint all deteriorated mortar joints, and clean all brickwork and concrete.	\$20,000
3	Paint exterior door and frame at maintenance garage.	\$300
4	Trim back landscaping at Stage, Gym and Kitchen exit doors at SW corner of building. Complete with BASD staff.	\$0

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Boyertown Elementary School

ARCHITECTURAL SURVEY

Cost

B. Exterior of Building Evaluation (con't):

5	The existing concrete window sills near the ground have vertical mortar joints that are cracked and are starting to open up. Add joint sealant at window sills.	\$10,800
6	Replace linear soffit in front overhang.	\$400
7	Replace exterior windows.	\$170,000
8	Replace hose bib on west wall; see plumbing item E1.	\$0
9	Replace sill flashing at exterior louvers.	\$5,000
10	Paint steel columns at east canopy.	\$600
11	East Canopy ceiling is showing signs of deteriorated paint. Paint board and batten ceiling at east canopy.	\$1,600
<i>Exterior of Building Evaluation Sub-Total:</i>		<u>\$238,700</u>

C. Interior of Building Evaluation:

1	The terrazzo flooring is cracking in several areas throughout the building. Some areas are severe. Route out cracks and install solid resin filler.	\$10,000
2	A security vestibule is not currently provided. Add internal curtainwall doors and frames at main lobby and a single door entering directly into the office. Provide new flooring within vestibule including new walk off mats.	\$10,000
3	Replace chalkboards with markerboards in 2 classrooms adjacent to courtyard near library.	\$1,900
4	Upgrade all classrooms (32) with new casework, countertops, sink, markerboard and tackboards.	\$145,000
5	Replace corridor tackstrips, 70% of building.	\$12,000

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Boyertown Elementary School

ARCHITECTURAL SURVEY

Cost

C. Interior of Building Evaluation (con't):

6	Replace casework, countertop and sink in Faculty Lunch Room.	\$3,600
7	Replace carpet and base in LGI	\$15,000
8	Replace LGI chalkboards with markerboards and replace existing casework, countertops and projection screen.	\$10,000
9	Minor tile cracking and joint failure in some areas of the Boy's and Girl's Locker Rooms. Repair/Replace chipped tiles and regrout.	\$500
10	Replace acoustical ceilings in Girl's Locker Room.	\$3,000
11	Add acoustical treatments to the walls of the Multi-purpose Room.	\$1,500
12	Replace carpet and base in main office.	\$4,700
13	Paint door frames in main office.	\$400
14	Replace casework, countertop and sink in Nurse's Suite. Provide new beds and curtains.	\$8,000
15	Replace stage curtain per 2009 certified flame retardant report. Add new rigging sets.	\$35,000
<i>Interior of Building Evaluation Sub-Total:</i>		<hr/> \$260,600

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Boyertown Elementary School

ARCHITECTURAL SURVEY

Cost

D. Heating, Ventilation and Air Conditioning (HVAC) Evaluation:

1	Install a new centralized HVAC system with ducted HVAC and outdoor air through the roof.	\$2,934,000
2	New gas fired boilers.	\$0
3	New centralized cooling systems.	\$0
4	Eliminate OA intakes at ground level.	\$0
5	New exhaust systems throughout.	\$0
6	Eliminate utilization of the corridor as a plenum.	\$0
7	Ducted units for lower noise and better distribution.	\$0
8	Provide systems with adequate maintenance clearances.	\$0
9	New centralized control system.	\$0
	<i>HVAC Evaluation Sub-Total:</i>	<hr/> \$2,934,000

E. Plumbing Evaluation:

1	The majority of the plumbing systems are generally original and in need of replacement or upgrade.	\$831,300
2	Replace accessible galvanized drainage piping.	\$0
3	Replace plumbing fixtures throughout.	\$0
4	Replace the water coolers throughout.	\$0
5	Replace old valves to provide for routine system maintenance.	\$0
6	Install exterior grease trap.	\$0
7	Replace electric water heaters with gas water heaters.	\$0
	<i>Plumbing Evaluation Sub-Total:</i>	<hr/> \$831,300

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Boyertown Elementary School

ARCHITECTURAL SURVEY

Cost

F. Electrical Evaluation:

- | | | |
|---|-----------------------------|-------------|
| 1 | Replace electrical systems. | \$2,053,800 |
| 2 | Replace technology systems. | \$391,200 |

Electrical Evaluation Sub-Total:

\$2,445,000

G. Code Evaluation:

The IBC, Americans with Disabilities Act, and recommendations by the Department of Education require all buildings during the renovation process to be updated to meet current standards and codes. The following building system will need to be updated during the renovation process in order to meet current standards and codes.

The following items may be required depending on the level of work completed.

- | | | |
|---|---|-----------|
| 1 | Not all entrances and exits to the building are accessible to disabled persons. Upgrade entrances and exits as required. | \$2,000 |
| 2 | Doors throughout the building have non-compliant door hardware. Replace knobs with ADA compliant hardware and levers. | \$52,500 |
| 3 | The entrances to instructional areas and other areas lack the proper clearances and do not meet disabled persons code. Upgrade the entrances to meet code. | \$111,000 |
| 4 | The electric water coolers protrude into the clear walking space. Install barrier partitions at the electric water coolers. | \$3,500 |
| 5 | The 30" pair of doors at the LGI, the adjacent classroom, and corridor doors into the kitchen do not provide the required width for a single leaf. Replace with uneven pair of door leaves. | \$16,000 |
| 6 | The fire extinguishers exceed the 48" maximum reach height requirement per code. Lower the fire extinguishers to meet code. | \$2,800 |
| 7 | The risers in the L.G.I. Room are not accessible to disabled persons. Remove the risers and install a level floor. | \$35,000 |

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Boyertown Elementary School

ARCHITECTURAL SURVEY

Cost

G. Code Evaluation (con't):

8	The Locker Rooms do not meet the current disabled persons code. Upgrade the lockers and benches to meet code. (Cost listed under gang toilet renovation)	\$0
9	The gang toilets throughout the building do not meet current disabled persons code. Upgrade the toilets to meet code.	\$420,000
10	The individual use toilet rooms do not meet code. Upgrade the toilet rooms to meet code.	\$105,000
11	The butcher block kitchen counter does not meet code. Remove and replace with code compliant surfaces counter.	\$500
12	There are many counters with sinks that do not meet the ADA code. Reprmove and replace counter, cabinets, and sink to meet code.	\$105,000
13	Several of the classroom sinks do not have wrist faucet blades to meet code. Replace faucet handles with wrist blades to meet code.	\$500
14	The existing glass in some doors, partitions, display cases etc. does not meet code. Remove the existing glass and replace with safety glass.	\$5,000
15	The current ADA requires signage to meet 48" reach height maximum. Several signs in the building appear to be slightly high. No work is required at this time.	\$0
16	The existing corridor glass wall system at the Administration Office does not meet the required fire rating. Remove and replace with a code compliant entry system.	\$12,000
17	The stage is not accessible to disabled persons from the Gym. Install a chair lift to meet code.	\$35,000
18	The kitchen door at the serving line has a ramp system that does not meet code. Rework ramp to meet code.	\$7,500
19	The existing stair railings from the corridor to the rear of the stage do not meet code. Remove and replace with a code compliant guardrail/handrail system.	\$1,800

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Boyertown Elementary School

ARCHITECTURAL SURVEY

Cost

G. Code Evaluation (con't):

20	The ADA parking signs do not meet current ADA code. Replace with new signs to meet code.	\$1,200
21	Playground mulch areas do not meet accesibility code. Remove mulch at the playground areas and install a rubber mat system to meet code.	\$121,800
22	The handrails at the concrete steps to the lower paved play area do not meet code. Remove and replace with code compliant aluminum rail system.	\$14,300
23	The kitchen has a step from the corridor down to the kitcken floor level which is not clearly marked and requires a handrail. Install a ramp or barrier guard for safety.	\$7,500
24	Curb cuts do not have warning protection. Install truncated domes.	\$500
25	The International Building Code requires all facilities used for educational purposes to be equipped with a fire suppression system. Install a fire suppression system throughout the entire building.	\$440,100

Code Evaluation Sub-Total:

\$1,500,500

H. Miscellaneous Upgrades:

1	Miscellaneous upgrades.	\$244,500
---	-------------------------	-----------

Miscellaneous Upgrades Sub-Total:

\$244,500

Building Evaluation Total:

\$8,670,900

Asbestos Comment:

Asbestos Mitigation would require input from the District's consultant; therefore, no cost estimates are included in this study. It is our understanding the District has used Suburban Energy & Environmental Consultants for AHERA Management.

GENERAL DATA

Colebrookdale Elementary School

Built:	1955, 1991 Eligible for 20-year State Reimbursement
Site:	1001 Montgomery Avenue, Boyertown, PA 19512 35 acres; located in a residential area with paved drives and parking areas, athletic fields and play areas.
Structure:	One-story building with concrete floors; metal roof deck; structural steel frame; and masonry and concrete walls. Construction type non-combustible, unprotected in accordance with International Building Code. Built-up roof membrane.
HVAC System:	A single boiler provides hot water to unit heaters, air handlers, and fan coils. Packaged rooftop units are utilized to provide cooling for the library, offices, and computer room. The modular classrooms utilize packaged terminal through the wall heat pumps and electric heat.
Plumbing Service:	Public water and sewer.
Electrical Service:	1600 amp, 120/208 volt, three phase, 4 wire
Systems:	Fire Alarm Paging/Intercom Master Clock Security Emergency Lighting and Power District Telephone Data Network
Architectural Area:	41,340 s.f.
PDE Replacement Value:	\$5,602,800 (350 FTE x 92 sf = 32,200 x \$174 / sf = replacement cost) \$1,120,560 (20% Rule)
PDE Total Capacity:	350

PHOTOGRAPHS

Colebrookdale Elementary School



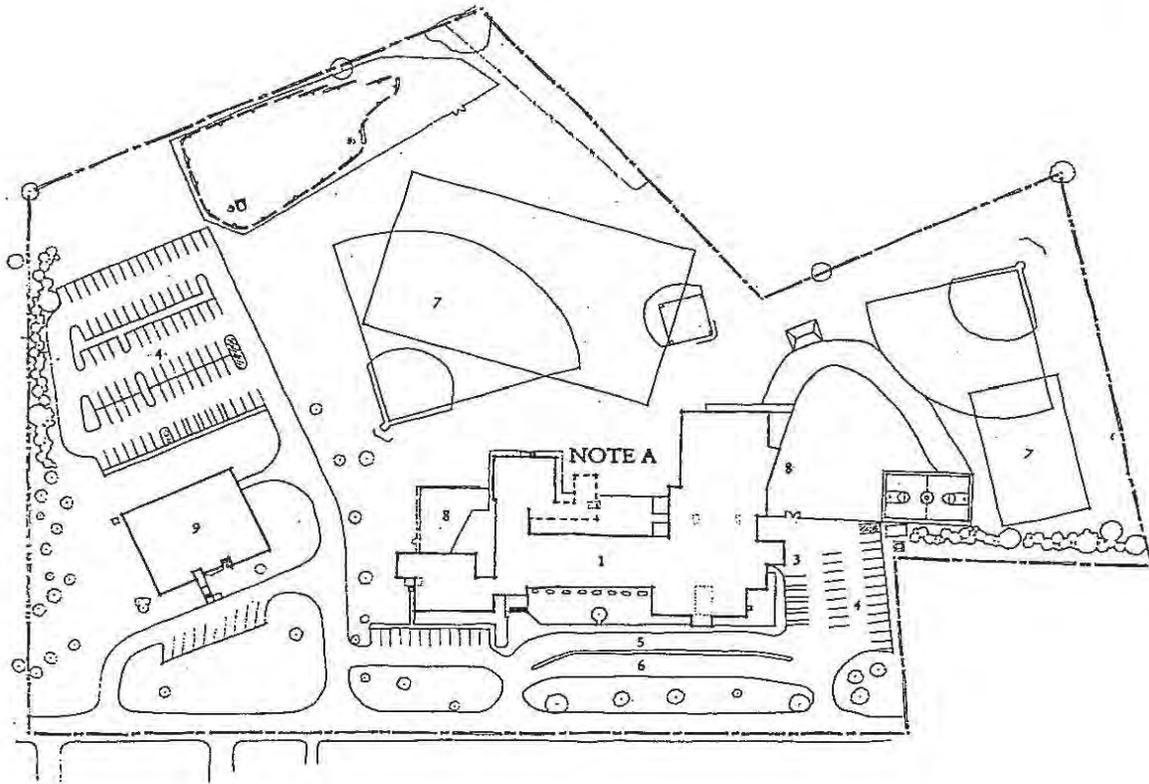
AERIAL VIEW

Colebrookdale Elementary School



EXISTING SITE PLAN

Colebrookdale Elementary School



Key:

- 1. School Building
- 2. Public Entrance
- 3. Service Entrance
- 4. Parking
- 5. Bus Drop-Off

- 6. Parent Drop-Off
- 7. Play field
- 8. Playground
- 9. District Administration

Notes:

- A. Modular Classrooms

OPERATIONAL COSTS SUMMARY

Colebrookdale Elementary School

41,340 s.f.	Annual Cost	Cost per sf
Electric	\$28,481	\$0.69
Natural Gas	\$18,112	\$0.44
Water	\$3,802	\$0.09
Sewer	Not Provided	Not Provided
Utilities Subtotal	\$50,395	\$1.22

SUMMARY - ENERGY STAR

Colebrookdale Elementary School

OMB No. 2060-0347



STATEMENT OF ENERGY PERFORMANCE Boyertown Area SD Colebrookdale ES 114060753

Building ID: 3208948
For 12-month Period Ending: May 31, 2011¹
Date SEP becomes ineligible: N/A

Date SEP Generated: July 20, 2012

Facility Boyertown Area SD Colebrookdale ES 114060753 1001 Montgomery Avenue New Berlin, PA 19545-9999	Facility Owner Boyertown Area School District 911 Montgomery Avenue Boyertown, PA 19512	Primary Contact for this Facility N/A
---	---	---

Year Built: 1954
Gross Floor Area (ft²): 41,342

Energy Performance Rating² (1-100) 98

Site Energy Use Summary³

Electricity - Grid Purchase(kBtu)	890,941
Natural Gas (kBtu) ⁴	159,094
Total Energy (kBtu)	1,050,035

Energy Intensity⁴

Site (kBtu/ft ² /yr)	25
Source (kBtu/ft ² /yr)	76

Emissions (based on site energy use)

Greenhouse Gas Emissions (MtCO ₂ e/year)	135
---	-----

Electric Distribution Utility

Metropolitan Edison Co [FirstEnergy Corp]

National Median Comparison

National Median Site EUI	58
National Median Source EUI	173
% Difference from National Median Source EUI	-56%
Building Type	K-12 School

Stamp of Certifying Professional

Based on the conditions observed at the time of my visit to this building, I certify that the information contained within this statement is accurate.

Meets Industry Standards⁵ for Indoor Environmental Conditions:

Ventilation for Acceptable Indoor Air Quality	N/A
Acceptable Thermal Environmental Conditions	N/A
Adequate Illumination	N/A

Certifying Professional
N/A

Notes:

1. Application for the ENERGY STAR must be submitted to EPA within 4 months of the Period Ending date. Award of the ENERGY STAR is not final until approval is received from EPA.
2. The EPA Energy Performance Rating is based on total source energy. A rating of 75 is the minimum to be eligible for the ENERGY STAR.
3. Values represent energy consumption, annualized to a 12-month period.
4. Values represent energy intensity, annualized to a 12-month period.
5. Based on Meeting ASHRAE Standard 62 for ventilation for acceptable indoor air quality, ASHRAE Standard 55 for thermal comfort, and IESNA Lighting Handbook for lighting quality.

The government estimates the average time needed to fill out this form is 6 hours (includes the time for entering energy data, Licensed Professional facility inspection, and notarizing the SEP) and welcomes suggestions for reducing this level of effort. Send comments (referencing OMB control number) to the Director, Collection Strategies Division, U.S. EPA (2&22T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460.

SUMMARY BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Colebrookdale Elementary School

		Cost per SF
SITE EVALUATION	\$44,200.00	\$1.07 SF
EXTERIOR EVALUATION	\$64,500.00	\$1.56 SF
INTERIOR EVALUATION	\$60,200.00	\$1.46 SF
HVAC EVALUATION	\$1,365,400.00	\$33.03 SF
PLUMBING EVALUATION	\$268,000.00	\$6.48 SF
ELECTRICAL EVALUATION	\$245,000.00	\$5.93 SF
CODE EVALUATION	\$758,500.00	\$18.35 SF
MISCELLANEOUS UPGRADES	\$103,400.00	\$2.50 SF
<hr/>		
TOTAL*	\$2,909,200.00	\$70.37 SF

* For the purpose of this Study, a baseline has been established and no design contingency has been utilized. More precise costs can be developed as the District develops specific educational specifications and chooses a desired option.

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Colebrookdale Elementary School

ARCHITECTURAL SURVEY

Cost

A. Site Evaluation:

- | | | |
|---|--|----------|
| 1 | The concrete curbing is crumbling or cracked at several sections. Remove and replace concrete curbing. | \$3,600 |
| 2 | There is cracking concrete at the sidewalk adjacent to the north parking lot and building entrances. Remove the deteriorated areas and replace with new. | \$2,400 |
| 3 | The bituminous parking area at the south side of the building has random cracking and has settled adjacent to the catch basin. Repair the random cracking and settled paved area at the catch basin. Mill and overlay with new bituminous and repaint parking lines. | \$15,300 |
| 4 | The bituminous walkway adjacent to the kindergarten play area is deteriorating and cracking. Mill and overlay the bituminous walkway. | \$5,400 |
| 5 | The bituminous walkway from the north parking lot to the service maintenance building has deteriorated. Remove deteriorated bituminous and overlay with new bituminous. | \$2,600 |
| 6 | The shed adjacent to the north end of the paved basketball court has deteriorated wood siding and roofing shingles. Replace wood siding and paint to match existing. Remove and replace roof shingles. | \$800 |

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Colebrookdale Elementary School

ARCHITECTURAL SURVEY

Cost

A. Site Evaluation (con't):

7	The vinyl soffit of the picnic shelter structure has been dislodged in several locations. Reposition the vinyl soffit to the correct position.	\$100
8	The fence post at the playground chain link fence have peeling or missing paint. Remove peeling paint and repaint posts.	\$500
9	The concrete cold joint between the concrete slab and the steps wall at the Music Room steps is cracking. Rout the joint and caulk.	\$100
10	The infields of the softball fields have areas of growing grass. Rake and remove the grass and apply diamond tex to the infield.	\$500
11	Many of the curb joints and sidewalk joints are missing joint material. Replace missing joint material at curb and sidewalk joints.	\$1,500
12	Soil erosion has occurred along the sidewalk of the south entrance. Replace soil and seed.	\$300
13	Seal and repaint parking lines at the paved drives and north parking lot.	\$10,600
14	The pipe bollards have peeling paint and are rusting. Remove peeling paint and rust from bollards and repaint.	\$500
15	The site and exterior of building lack identification and directional signage. Install identification and directional signage	\$1,000
	Site Evaluation Sub-Total:	<hr/> \$44,200

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Colebrookdale Elementary School

ARCHITECTURAL SURVEY

Cost

B. Exterior of Building Evaluation:

- | | | |
|---|--|----------|
| 1 | The roofs installed are in good condition. No specific roof work is required. A roof hatch should be installed and a wall ladder to access the multipurpose/cafeteria roof. | \$4,000 |
| 2 | The brick work and precast concrete are in fair condition. There is repointing and cleaning required. Replace all damaged areas, repoint all deteriorated mortar joints, and clean all brickwork and concrete. | \$16,300 |
| 3 | Doors on the original building and the additions are fair. No work is needed at this time | \$0 |
| 4 | The existing windows and curtain wall systems with doors in the original building and additions are aluminum with double glazing and show signs of UV deterioration. No work is required at this time. | \$0 |
| 5 | The existing windows at the kitchen and boiler room are single glazed and deteriorated. Remove the existing windows and replace with new thermo-break energy efficient aluminum window systems and doors. | \$7,700 |
| 6 | The vertical and horizontal joints within the precast concrete window sills are cracked or missing. Repoint and caulk all vertical and horizontal joints around entire building. | \$3,000 |
| 7 | EIFS is installed directly to grade and below at the Kitchen freezer and refrigerator without the ability to drain. Install a drainable EIFS system at Kitchen Cold Storage. | \$5,000 |
| 8 | Vertical caulk joints in EIFS at edge of brick are beginning to shrink and crack. Recaulk all vertical joints at EIFS window infills. | \$1,500 |

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Colebrookdale Elementary School

ARCHITECTURAL SURVEY

Cost

B. Exterior of Building Evaluation (con't):

9	An old asphalt walkway near rear of modular classrooms is sloping toward the building and could cause foundation issues. Remove asphalt and regrade this area.	\$1,400
10	The caulk at the mechanical wall louvers has deteriorated or is missing at most locations around building. Remove deteriorated caulk and recaulk entire perimeter of all louvers.	\$7,700
11	Several steel lintels around the perimeter of the building are beginning to show signs of rust. Scrape and paint all exposed steel lintels.	\$2,000
12	Plaster soffit is deteriorated in several locations around the building. Replace entire masonry soffit around entire building with a vinyl vented system.	\$15,600
13	A u-shaped painted metal plate on the exterior wall is beginning to rust. Scrape away rust, clean, caulk and paint wall plate.	\$300
<i>Exterior of Building Evaluation Sub-Total:</i>		<hr/> \$64,500

C. Interior of Building Evaluation:

1	Existing windows hinge inward and are a potential hazard. A limiter should be installed on all windows to keep projection no further than the plane of the wall.	\$1,500
2	Replace carpet and base in Computer Room	\$1,900
3	Provide flat file storage in Art Room.	\$700
4	Replace Kitchen ceiling tile.	\$3,600
5	Replace VCT in corridor section from Boiler Room to Art Room.	\$5,000

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Colebrookdale Elementary School

ARCHITECTURAL SURVEY

Cost

C. Interior of Building Evaluation (con't):

6	A security vestibule is not currently provided. Add a single door entering directly into the office.	\$5,000
7	Replace carpet and base in Main office.	\$5,300
8	In Multipurpose/Cafeteria at Kitchen wall, minor wall cracking in CMU is occurring. Clean out cracks of loose material, fill with caulking and paint wall area.	\$300
9	Refinish steps at Stage/Platform.	\$500
10	Replace VCT in the Multipurpose/Cafeteria.	\$13,000
11	Replace VCT in Waiting Room and Nurses area.	\$3,600
12	Paint interior HM door frames throughout building.	\$1,800
13	Replace VCT in the corridor section from Main Office to modular classrooms	\$8,000
14	New marker boards (All Classrooms that have chalkboards).	\$10,000
15	Remove all remaining asbestos; no work required at this time.	\$0
<i>Interior of Building Evaluation Sub-Total:</i>		<hr/> \$60,200

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Colebrookdale Elementary School

ARCHITECTURAL SURVEY

Cost

D. Heating, Ventilation and Air Conditioning (HVAC) Evaluation:

1	Maintain the existing boiler, but install a second boiler to act as the backup for the School.	\$90,000
2	Replace the circulation pumps based on age. Install with VFD's for energy savings.	\$50,000
3	Replace the oil transfer pump with a duplex system for backup and a drain pan to contain any leaks.	\$7,500
4	Replace the older air handlers and unit ventilators based on age and efficiency. Provide ducted systems with filtered outdoor for better air distribution, lower noise, and better indoor air quality.	\$413,400
5	Replace the rooftop air conditioning units based on age and efficiency.	\$50,000
6	Replace the PTAC units in the relocatables with more efficient and appropriate HVAC systems.	\$25,000
7	Replace the damaged grilles in the Gym/Cafeteria.	\$2,000
8	Upgrade the Kitchen ventilation systems.	\$35,000
9	Upgrade the exhaust systems throughout the School.	\$51,700
10	New temperature control system.	\$165,400
11	Consideration should be given to providing building wide air conditioning. The cost listed is in addition to the items outlined above. All UV's will need to be replaced with this option.	\$475,400
<i>HVAC Evaluation Sub-Total:</i>		<hr/> \$1,365,400

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Colebrookdale Elementary School

ARCHITECTURAL SURVEY

Cost

E. Plumbing Evaluation:

1	Replace the fixtures in the older gang toilet rooms.	\$48,000
2	Replace the water coolers throughout.	\$24,000
3	Replace old valves to provide for routine system maintenance.	\$62,000
4	Replace and repair the drain lines that have been problematic.	\$124,000
5	Install drainage in the water meter pit.	\$10,000
<i>Plumbing Evaluation Sub-Total:</i>		<hr/> \$268,000

F. Electrical Evaluation:

1	Upgrade existing theatrical lighting system.	\$20,000
2	Replace Bulldog electric panel in kitchen. Provide groundfault breakers for all 1P.20 amp breakers as required by NEC.	\$8,000
3	Add second automatic transfer switch and panel to separate required and non-required loads per NEC.	\$25,000
4	Add groundfault receptacles/breakers for all 1P.20 amp receptacles in kitchen per NEC.	\$5,000
5	Add occupancy sensors in the rooms without to comply with the International Building Code.	\$12,000
6	Install Electric as required for HVAC upgrades.	\$175,000
<i>Electrical Evaluation Sub-Total:</i>		<hr/> \$245,000

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Colebrookdale Elementary School

ARCHITECTURAL SURVEY

Cost

G. Code Evaluation:

The IBC, Americans with Disabilities Act, and recommendations by the Department of Education require all buildings during the renovation process to be updated to meet current standards and codes. The following building system will need to be updated during the renovation process in order to meet current standards and codes.

The following items may be required depending on the level of work completed.

- | | | |
|---|--|-----------|
| 1 | Curb cuts do have have truncated dome warning blocks. Install truncated domes at curb cuts to meet code. | \$1,300 |
| 2 | The Multi-purpose Room exterior egress doors and exit do not meet code. Install code compliant doors and ramp with handrails to meet code. | \$12,600 |
| 3 | The guardrail at the Music Room egress steps does not meet code and the Kindergarten entry steps as well as the main entry steps require 2 additional center handrails to meet code. Remove and replace guardrail/handrail at the Music steps with a code compliant aluminum rail system and add 2 additional aluminum handrails at the Kindergarten and main entry entry steps. | \$23,400 |
| 4 | The existing ADA parking signs are not mounted at the correct height to meet code. Raise the existing signs to meet code. | \$300 |
| 5 | Playground mulch areas do not meet accessibility code. Remove mulch and install a rubber mat system to meet code. | \$131,800 |
| 6 | The Library has only one means of egress. Install a second means of egress to meet code. | \$6,800 |
| 7 | The current disabled persons code requires exterior signage. Provide exterior signage to meet code. | \$1,500 |
| 8 | The individual use Toilet Rooms or the 2 occupant use Toilet Rooms at classrooms do not meet code. Upgrade the Toilet Rooms to meet code. | \$135,000 |
| 9 | The gang and faculty toilet facilities do not meet current disabled persons code. Upgrade the toilets to meet code. | \$105,000 |

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Colebrookdale Elementary School

ARCHITECTURAL SURVEY

Cost

G. Code Evaluation (con't):

10	The 4 sets of double egress doors from the Multi-purpose into the Lobby do not meet code. Remove and replace with doors to meet egress code.	\$6,000
11	The Lobby doors leading into the corridor adjacent to the Boiler Room create a dead end corridor and the door width does not meet code. Remove doors and install new doors and frame at the west end of the corridor.	\$4,000
12	The stage in the Multi-purpse is not accessible to disabled persons. Install chair lift to meet code.	\$35,000
13	The spray booth counter in the Art Room does not meet the accessibility code. Install new base cabinet to meet code.	\$900
14	The water coolers throughout the building do not meet the current disabled persons code. Construct side barrier partitions to meet code.	\$2,000
15	The existing glass in some doors, partitions etc. do not meet code. Remove the existing glass and replace with safety glass.	\$5,000
16	The current disabled persons code requires signage within a 48" reach range. Provide new signage to meet code.	\$7,100
17	Many doors do not have code compliant door hardware. Remove door hardware and replace with lever hardware. (Delete this item if new hardware is selected under Interiors)	\$6,000
18	The lav in the exam room does not have the piping below the lav insulated. Install insulated wrap at pipes.	\$100
19	The sink in the Library Workroom, Faculty Room, and Health Suite does not meet the accessibility code. Remove and replace sink, counter, and cabinets to meet code.	\$10,500
20	The stair railing at the rear steps of the Stage does not meet code. Install new handrail at code height.	\$200
21	The faucet handles on sinks in classrooms do not meet the accessibility code. Remove faucet handles and install 4" wrist blades to meet code.	\$1,800

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Colebrookdale Elementary School

ARCHITECTURAL SURVEY

Cost

G. Code Evaluation (con't):

22	Existing fire extinguisher cabinets do not meet reach requirements of ADA code . Remove and replace fire extinguisher cabinets with code compliant cabinet.	\$1,200
23	Install a backflow preventer on the water service.	\$8,500
24	The International Building Code requires all facilities used for educational purposes to be equipped with a fire suppression system. Install a fire suppression system throughout the entire building.	\$186,000
25	The chain-link fence at the modular classrooms do not have panic hardware for egress. Install panic hardware on chain-link gates.	\$3,000
26	Two exits of the 1992 addition are not accessible. Install ramps and handrails to meet code.	\$15,000
27	The 5 ft. wide exterior doors in the Music corridor do meet egress width and the exit is not accessible. Replace with new doors to meet code and install a ramp for accessibility.	\$15,000
28	Replace fire alarm system with code compliant system.	\$33,500
Code Evaluation Sub-Total:		<hr/> \$758,500

H. Miscellaneous Upgrades:

1	Miscellaneous upgrades.	\$103,400
Miscellaneous Upgrades Sub-Total:		<hr/> \$103,400

Building Evaluation Total:

\$2,909,200

Asbestos Comment:

Asbestos Mitigation would require input from the District's consultant; therefore, no cost estimates are included in this study. It is our understanding the District has used Suburban Energy & Environmental Consultants for AHERA Management.

GENERAL DATA

Earl Elementary School

Built:	1954, 1968, 1991 Eligible for 20-year State Reimbursement
Site:	22 Schoolhouse Road, Boyertown, PA 19512-7926 16 acres; located in a rural area with paved drives and parking areas, athletic fields and play areas.
Structure:	One-story building with concrete floors; metal roof deck; structural steel frame; and masonry and concrete walls. Construction type non-combustible, unprotected in accordance with International Building Code with foam and balasted roof membranes.
HVAC System:	Hot water boilers feeding classroom unit ventilators, air handlers, and fan coils. Air conditioning is provided for library, offices, and computer room through packaged rooftop AC units.
Plumbing Service:	Well system and onsite sewage treatment facility
Electrical Service:	1000 amp, 120/208 volt, three phase, 4 wire
Systems:	Fire Alarm Paging/Intercom Master Clock Security Emergency Lighting and Power District Telephone Data Network
Architectural Area:	38,530 s.f.
PDE Replacement Value:	\$5,602,800 (350 FTE x 92 sf = 32,200 x \$174 / sf = replacement cost) \$1,120,560 (20% Rule)
PDE Total Capacity:	350

PHOTOGRAPHS

Earl Elementary School



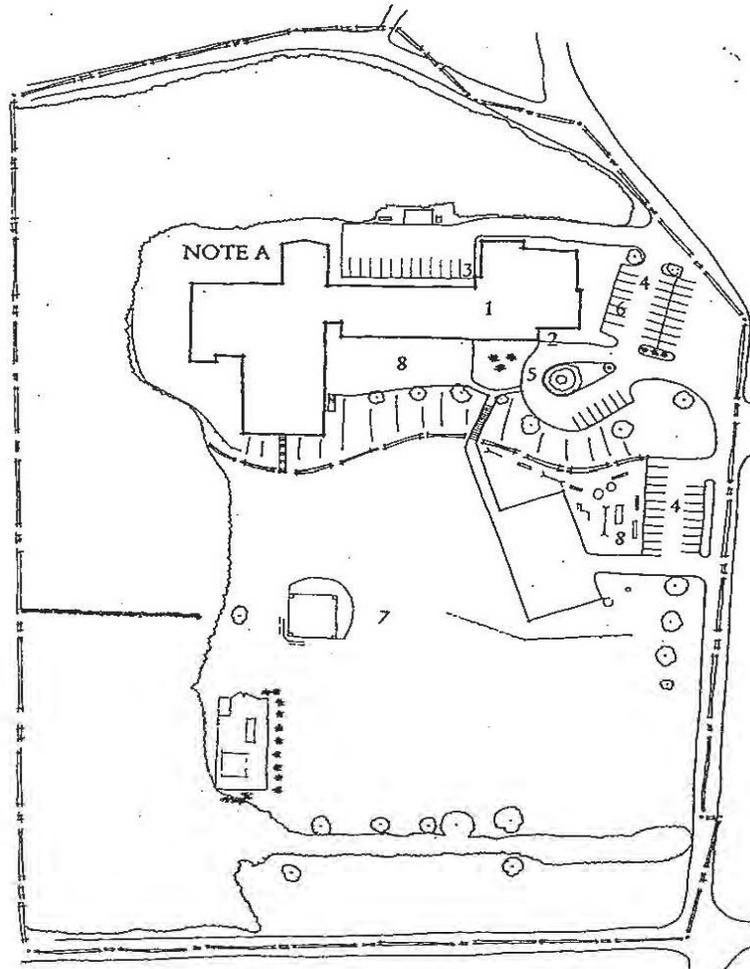
AERIAL VIEW

Earl Elementary School



EXISTING SITE PLAN

Earl Elementary School



Key:

- 1. School Building
- 2. Public Entrance
- 3. Service Entrance
- 4. Parking

- 5. Bus Drop-Off
- 6. Parent Drop-Off
- 7. Play field
- 8. Playground

Notes:

- A. Area of poor drainage

OPERATIONAL COSTS SUMMARY

Earl Elementary School

38,530 s.f.	Annual Cost	Cost per sf
Electric	\$23,989	\$0.62
Natural Gas	\$24,891	\$0.65
Water	On Site	NA
Sewer	On Site	NA
Utilities Subtotal	\$48,880	\$1.27

SUMMARY - ENERGY STAR

Earl Elementary School

OMB No. 2060-0347



STATEMENT OF ENERGY PERFORMANCE Boyertown Area SD Earl ES 114060753

Building ID: 3212241
For 12-month Period Ending: May 31, 2011¹
Date SEP becomes ineligible: N/A

Date SEP Generated: July 20, 2012

Facility
Boyertown Area SD Earl ES 114060753
22 Schoolhouse Road
Boyertown, PA 19512-7926

Facility Owner
Boyertown Area School District
911 Montgomery Avenue
Boyertown, PA 19512

Primary Contact for this Facility
N/A

Year Built: 1954
Gross Floor Area (ft²): 38,532

Energy Performance Rating² (1-100) 75

Site Energy Use Summary³

Electricity - Grid Purchase(kBtu)	747,637
Fuel Oil (No. 2) (kBtu)	1,364,298
Natural Gas - (kBtu) ⁴	0
Total Energy (kBtu)	2,111,935

Energy Intensity⁴

Site (kBtu/ft ² /yr)	55
Source (kBtu/ft ² /yr)	101

Emissions (based on site energy use)

Greenhouse Gas Emissions (MtCO ₂ e/year)	206
---	-----

Electric Distribution Utility

Metropolitan Edison Co [FirstEnergy Corp]

National Median Comparison

National Median Site EUI	71
National Median Source EUI	130
% Difference from National Median Source EUI	-22%
Building Type	K-12 School

Stamp of Certifying Professional

Based on the conditions observed at the time of my visit to this building, I certify that the information contained within this statement is accurate.

Meets Industry Standards⁵ for Indoor Environmental Conditions:

Ventilation for Acceptable Indoor Air Quality	N/A
Acceptable Thermal Environmental Conditions	N/A
Adequate Illumination	N/A

Certifying Professional

N/A

Notes:

1. Application for the ENERGY STAR must be submitted to EPA within 4 months of the Period Ending date. Award of the ENERGY STAR is not final until approval is received from EPA.
2. The EPA Energy Performance Rating is based on total source energy. A rating of 75 is the minimum to be eligible for the ENERGY STAR.
3. Values represent energy consumption, annualized to a 12-month period.
4. Values represent energy intensity, annualized to a 12-month period.
5. Based on Meeting ASHRAE Standard 62 for ventilation for acceptable indoor air quality, ASHRAE Standard 55 for thermal comfort, and IESNA Lighting Handbook for lighting quality.

The government estimates the average time needed to fill out this form is 6 hours (includes the time for entering energy data, Licensed Professional facility inspection, and notarizing the SEP) and welcomes suggestions for reducing this level of effort. Send comments (referencing OMB control number) to the Director, Collection Strategies Division, U.S., EPA (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460.

SUMMARY BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Earl Elementary School

		Cost per SF
SITE EVALUATION	\$160,500.00	\$4.17 SF
EXTERIOR EVALUATION	\$136,500.00	\$3.54 SF
INTERIOR EVALUATION	\$266,100.00	\$6.91 SF
HVAC EVALUATION	\$1,030,900.00	\$26.76 SF
PLUMBING EVALUATION	\$278,500.00	\$7.23 SF
ELECTRICAL EVALUATION	\$300,600.00	\$7.80 SF
CODE EVALUATION	\$683,000.00	\$17.73 SF
MISCELLANEOUS UPGRADES	\$96,300.00	\$2.50 SF
<hr/>		
TOTAL*	\$2,952,400.00	\$76.63 SF

* For the purpose of this Study, a baseline has been established and no design contingency has been utilized. More precise costs can be developed as the District develops specific educational specifications and chooses a desired option.

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Earl Elementary School

ARCHITECTURAL SURVEY

Cost

A. Site Evaluation:

- | | | |
|---|---|-----------|
| 1 | The concrete curbing is crumbling or cracked at several sections. Remove and replace concrete curbing. | \$4,500 |
| 2 | There is cracking concrete at various sidewalk locations. Remove the deteriorated areas and replace with new. | \$2,800 |
| 3 | The bituminous parking area at Township Road, the rear parking lot, and the paved play area adjacent to the building have minor cracks. Repair cracks and seal bituminous. Repaint lines. | \$106,500 |
| 4 | The lower bituminous play area deteriorating and cracking. Mill and overlay the bituminous play area. | \$46,700 |

Site Evaluation Sub-Total:

\$160,500

B. Exterior of Building Evaluation:

- | | | |
|---|--|----------|
| 1 | The foam roofs installed approximately ten-years ago are in fair condition. Miscellaneous patching required. | \$1,300 |
| 2 | The ballasted roofs installed approximately twenty-years ago are in poor condition. Replace roof areas accordingly. | \$91,500 |
| 3 | No internal roof access points are provided. Install new roof hatch. | \$4,000 |
| 4 | The brick work is in fair condition. There is minor repointing and cleaning required. Replace all damaged areas, repoint all deteriorated mortar joints, and clean all brickwork and concrete sills. | \$18,000 |

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Earl Elementary School

ARCHITECTURAL SURVEY

Cost

B. Exterior of Building Evaluation (con't):

5	Plaster soffit is deteriorated in several locations around the building. Replace entire masonry soffit around entire building with a vinyl vented system.	\$7,200
6	Severe efflorescent and water streaking at Multipurpose room precast concrete coping. Clean brick, repoint all deteriorated mortar joints and install new metal cap flashing over existing.	\$4,000
7	Metal edge at 1980's classroom addition is failing and starting to rust at screw holes. Replace entire section and patch along roof edge.	\$1,600
8	Brick chimney is severely decayed with major joint failure. Stabilize as required and install coating system over existing brick.	\$1,000
9	Some areas of existing EIFS have exposed mesh. Complete miscellaneous repairs to the EIFS around entire building.	\$800
10	Clean old roofing sealant from Brick at rear kitchen.	\$200
11	Paint CMU exterior of maintenance garage (24'x30' allowance, 9' high).	\$6,500
12	Infill exterior window at maintenance garage with a painted plywood panel and sealant. Repair existing plywood panel infill at opposite window.	\$400
<i>Exterior of Building Evaluation Sub-Total:</i>		<hr/> \$136,500

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Earl Elementary School

ARCHITECTURAL SURVEY

Cost

C. Interior of Building Evaluation:

1	A security vestibule is not currently provided. Add internal curtainwall doors and frames at main lobby and a single door entering directly into the office. Provide new flooring within vestibule including new walk off mats.	\$25,000
2	Replace Kitchen ceiling tile.	\$2,000
3	Replace carpet & base in all classrooms with carpet.	\$42,000
4	New casework, counters and sink in all classrooms.	\$108,000
5	New markerboards (All Clsrm's).	\$18,000
6	Ceiling tiles are sagging throughout the entire building, no work is required. Monitor condition for replacement.	\$0
7	Replace tack strips in corridors.	\$7,000
8	Replace carpet & base in Itinerant room.	\$1,100
9	Replace chalkboard with markerboard in Itinerant Room.	\$800
10	Replace Faculty Room carpet & base .	\$1,200

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Earl Elementary School

ARCHITECTURAL SURVEY

Cost

C. Interior of Building Evaluation (con't):

11	Replace Faculty Room casework, counters and sink.	\$3,600
12	Replace Media Center carpet & base.	\$10,200
13	Replace Media Center check-in desk.	\$3,000
14	Paint interior HM door frames throughout building.	\$1,300
15	Replace Music Room casework, counters and sink.	\$3,600
16	Add acoustic panels in Music Room.	\$1,300
17	Replace casework, counters and sink in Media Center Workroom.	\$3,000
18	Replace Stage curtain per 2009 certified flame retardant report. Add new rigging sets.	\$35,000
19	Remove all remaining asbestos; no work required at this time.	\$0
<i>Interior of Building Evaluation Sub-Total:</i>		<hr/> \$266,100

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Earl Elementary School

ARCHITECTURAL SURVEY

Cost

D. Heating, Ventilation and Air Conditioning (HVAC) Evaluation:

1	Install VFD's on the hot water pumps for energy savings.	\$15,000
2	Replace the older unit ventilators and air handlers throughout the facility based on age and efficiency.	\$192,700
3	Upgrade the exhaust systems throughout the School.	\$48,200
4	Replace the rooftop AC units.	\$42,500
5	New temperature control system.	\$154,100
6	Consideration should be given to providing building wide air conditioning. The cost listed is in addition to the items outlined above. All UV's will need to be replaced with this option.	\$578,400

HVAC Evaluation Sub-Total:

\$1,030,900

E. Plumbing Evaluation:

1	Upgrade the domestic water system to meet current standards - In progress by the District.	\$0
2	Miscellaneous repairs and upgrades to the sewer treatment plant - Piping, sand, comminutor, etc. Further detailed evaluations are needed to finalize cost. A budget estimate has been provided at this time.	\$200,000
3	Replace the older plumbing fixtures throughout to meet current standards.	\$48,000
4	Replace the water coolers.	\$24,000
5	Replace damaged roof drains.	\$6,000
6	Install splash blocks under condensate drains on the roof.	\$500

Plumbing Evaluation Sub-Total:

\$278,500

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Earl Elementary School

ARCHITECTURAL SURVEY

Cost

F. Electrical Evaluation:

- | | | |
|---|---|-----------|
| 1 | Add occupancy sensors in the rooms without to comply with the International Building Code. | \$8,000 |
| 2 | Replace Paging/Intercom system. | \$29,300 |
| 3 | Replace master clock system. | \$24,300 |
| 4 | Add groundfault receptacles for all receptacles in kitchen per NEC. | \$6,000 |
| 5 | Add second automatic transfer switch and panel to separate required and non-required loads per NEC. | \$25,000 |
| 6 | Install electric as required for HVAC upgrades. | \$208,000 |

Electrical Evaluation Sub-Total:

\$300,600

G. Code Evaluation:

The IBC, Americans with Disabilities Act, and recommendations by the Department of Education require all buildings during the renovation process to be updated to meet current standards and codes. The following building system will need to be updated during the renovation process in order to meet current standards and codes.

The following items may be required depending on the level of work completed.

- | | | |
|---|---|---------|
| 1 | Not all entrances and exits to the building are accessible to disabled persons. Upgrade the south entrance/exit to meet code. | \$6,000 |
| 2 | Several doors throughout the building have non-compliant door hardware. Replace knobs with ADA compliant hardware and levers. | \$4,200 |

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Earl Elementary School

ARCHITECTURAL SURVEY

Cost

G. Code Evaluation (con't):

3	The entrances to instructional areas and other areas lack the proper clearances and do not meet disabled persons code. Upgrade the entrances to meet code.	\$24,500
4	The single use toilet rooms do not meet the current disabled persons code. Upgrade the toilets to meet code.	\$90,000
5	30" pair of doors throughout the building do not provide the required egress width for a single leaf. Replace with uneven pair of door leaves.	\$20,000
6	The glass and wood frame corridor entry frame system at the administration office does not meet the required fire rating. Remove and replace with a code compliant door and corridor entry frame system.	\$20,000
7	The faucet handles at several classroom sinks do not meet the ADA code. Remove and replace with code compliant wrist blade handles.	\$1,200
8	The toilet facilities throughout the building do not meet current disabled persons code. Upgrade the toilets to meet code.	\$140,000
9	The electric water coolers protrude into the clear walking space. Install barrier partitions at electric water coolers.	\$1,500
10	The existing glass in some doors, partitions, display cases etc. does not meet code. Remove the existing glass and replace with safety glass.	\$5,000
11	The current ADA requires signage to meet 48" reach height maximum. Several signs in the building appear to be slightly high. No work is required at this time.	\$0

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Earl Elementary School

ARCHITECTURAL SURVEY

Cost

G. Code Evaluation (con't):

12	The screen doors at the Kitchen exterior egress door do not swing with the means of egress. Remove the screen doors.	\$100
13	The Stage is not accessible to disabled persons from the Multi-purpose Room. Install a chair lift to meet code.	\$35,000
14	The return dish counter exceeds ADA height. Lower counter to meet code.	\$1,500
15	The existing stage stair railing at the rear steps does not meet code and there are no railings at the stage steps. Remove and replace railing with a code compliant aluminum guardrail/handrail system and install handrails at the stage steps.	\$1,200
16	The railing system in the Library does not meet code. Remove and replace with code compliant aluminum handrails and guardrails.	\$10,500
17	The Library requires two means of egress. Install second egress door to the exterior.	\$6,000
18	Upgrade fire alarm system in original portion of the building.	\$15,000
19	Reception counter does not meet the ADA code. Remove and replace with code compliant copunter.	\$2,500
20	Curb cuts do not have warning protection. Install truncated domes.	\$1,300
21	The exterior steps leading to the lower paved play area has only one center handrail that does not meet code. Remove center handrail and install aluminum handrails at 5'-0" centers to meet code.	\$12,000
22	The exterior steps adjacent to 1968 classroom addtion has handrails that do not meet code. Remove and replace with aluminum code compliant handrails.	\$2,700

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Earl Elementary School

ARCHITECTURAL SURVEY

Cost

G. Code Evaluation (con't):

23	The rail system at the exterior concrete steps from the 1968 Addition does not meet code. Remove and install aluminum code compliant handrail at 5'-0" centers.	\$21,800
24	The playground mulch does not meet the accessibility code. Remove mulch and replace with a code compliant rubber mat system.	\$68,300
25	The International Building Code requires all facilities used for educational purposes to be equipped with a fire suppression system. Install a fire suppression system throughout the entire building.	\$192,700
26	Fire extinguisher cabinets do not meet current ADA reach height. Remove and replace.	\$1,500

Code Evaluation Sub-Total:

\$683,000

H. Miscellaneous Upgrades:

1	Miscellaneous upgrades.	\$96,300
1	Door hardware is problematic and keying is not uniform throughout the District. Replace door hardware throughout.	\$37,500

Miscellaneous Upgrades Sub-Total:

\$96,300

Building Evaluation Total:

\$2,952,400

Asbestos Comment:

Asbestos Mitigation would require input from the District's consultant; therefore, no cost estimates are included in this study. It is our understanding the District has used Suburban Energy & Environmental Consultants for AHERA Management.

GENERAL DATA

Gilbertsville Elementary School

Built:	1930, 1958, 1987, 1995 Eligible for 20-year State Reimbursement in 2015
Site:	36 Congo Road, Gilbertsville, PA 19525-9205 16 acres; located in a residential area with paved drives and parking areas, athletic fields and play areas.
Structure:	One-story building with concrete floors; metal roof deck; structural steel frame; and masonry and concrete walls. Construction type non-combustible, unprotected in accordance with International Building Code with Foam and Built-up roof membranes.
HVAC System:	Cast iron steam boilers. The boilers directly feed some equipment and also feed a steam to hot water heat exchanger that provides hot water to classroom unit ventilators, air handlers, and fan coils. Air conditioning is provided for limited spaces through packaged rooftop and split system air conditioners.
Plumbing Service:	Onsite water and public sewer
Electrical Service:	2000 amp, 120/208 volt, three phase, 4 wire
Systems:	Fire Alarm Paging/Intercom Master Clock Security Emergency Lighting and Power District Telephone Data Network
Architectural Area:	96,930 s.f.
PDE Replacement Value:	\$11,605,800 (725 FTE x 92 sf = 66,700 x \$174 / sf = replacement cost) \$2,321,160 (20% Rule)
PDE Total Capacity:	725

PHOTOGRAPHS

Gilbertsville Elementary School



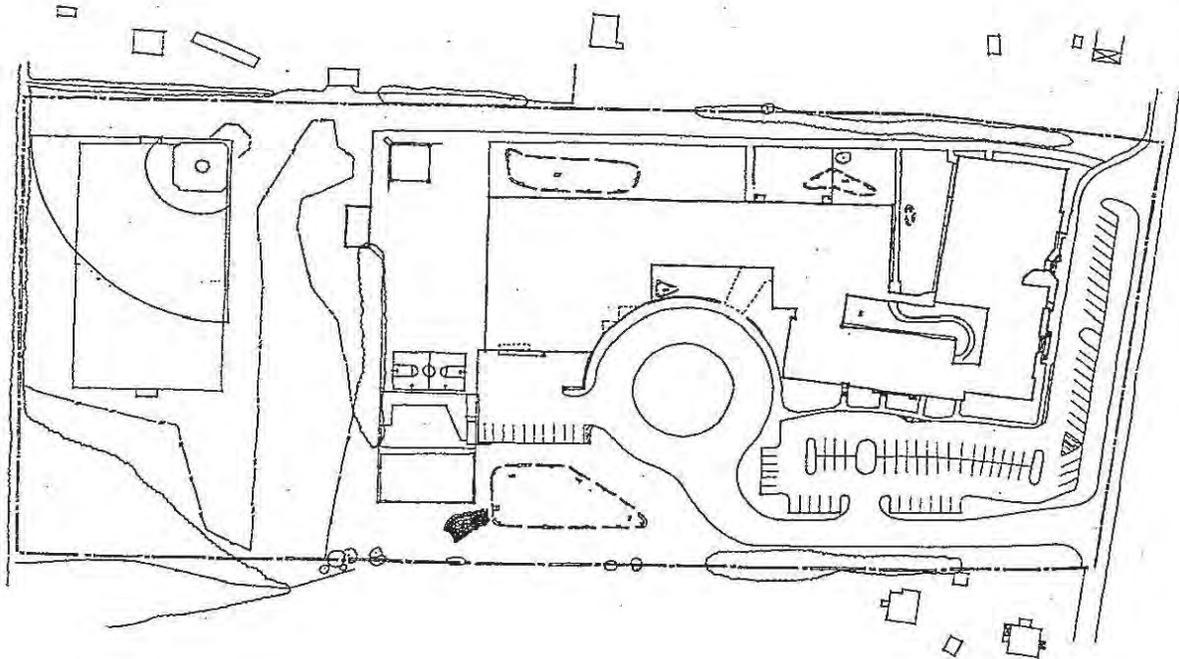
AERIAL VIEW

Gilbertsville Elementary School



EXISTING SITE PLAN

Gilbertsville Elementary School



Key:

- 1. School Building
- 2. Public Entrance
- 3. Service Entrance
- 4. Parking

- 5. Bus Drop-Off
- 6. Parent Drop-Off
- 7. Play field
- 8. Playground

Notes:

- A. Hatch pattern indicated area of steep slope
- B. Area of poor drainage
- C. Area of erosion

OPERATIONAL COSTS SUMMARY

Gilbertsville Elementary School

96,930 s.f.	Annual Cost	Cost per sf
Electric	\$48,600	\$0.50
Natural Gas	\$42,832	\$0.44
Water	Onsite	Onsite
Sewer	Onsite	Onsite
Utilities Subtotal	\$91,432	\$0.94

SUMMARY - ENERGY STAR

Gilbertsville Elementary School

OMB No. 2060-0347



STATEMENT OF ENERGY PERFORMANCE Boyertown Area SD Gilbertsville ES 114060753

Building ID: 3212305
For 12-month Period Ending: May 31, 2011¹
Date SEP becomes ineligible: N/A

Date SEP Generated: July 20, 2012

Facility Boyertown Area SD Gilbertsville ES 114060753 36 Congo Road Gilbertsville, PA 19525-9205	Facility Owner Boyertown Area School District 911 Montgomery Avenue Boyertown, PA 19512	Primary Contact for this Facility N/A
---	---	---

Year Built: 1930
Gross Floor Area (ft²): 95,929

Energy Performance Rating² (1-100) 98

Site Energy Use Summary³

Electricity - Grid Purchase(kBtu)	1,452,147
Natural Gas (kBtu) ⁴	387,223
Total Energy (kBtu)	1,839,370

Energy Intensity⁴

Site (kBtu/ft ² /yr)	19
Source (kBtu/ft ² /yr)	55

Emissions (based on site energy use)

Greenhouse Gas Emissions (MtCO ₂ e/year)	226
---	-----

Electric Distribution Utility

Metropolitan Edison Co [FirstEnergy Corp]

National Median Comparison

National Median Site EUI	41
National Median Source EUI	117
% Difference from National Median Source EUI	-53%
Building Type	K-12 School

Stamp of Certifying Professional

Based on the conditions observed at the time of my visit to this building, I certify that the information contained within this statement is accurate.

Meets Industry Standards⁵ for Indoor Environmental Conditions:

Ventilation for Acceptable Indoor Air Quality	N/A
Acceptable Thermal Environmental Conditions	N/A
Adequate Illumination	N/A

Certifying Professional

N/A

Notes:

1. Application for the ENERGY STAR must be submitted to EPA within 4 months of the Period Ending date. Award of the ENERGY STAR is not final until approval is received from EPA.
2. The EPA Energy Performance Rating is based on total source energy. A rating of 75 is the minimum to be eligible for the ENERGY STAR.
3. Values represent energy consumption, annualized to a 12-month period.
4. Values represent energy intensity, annualized to a 12-month period.
5. Based on Meeting ASHRAE Standard 62 for ventilation for acceptable indoor air quality, ASHRAE Standard 55 for thermal comfort, and IESNA Lighting Handbook for lighting quality.

The government estimates the average time needed to fill out this form is 6 hours (includes the time for entering energy data, Licensed Professional facility inspection, and notarizing the SEP) and welcomes suggestions for reducing this level of effort. Send comments (referencing OMB control number) to the Director, Collection Strategies Division, U.S., EPA (2822T), 1200 Pennsylvania Ave., N.W., Washington, D.C. 20460.

SUMMARY BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Gilbertsville Elementary School

		Cost per SF
SITE EVALUATION	\$362,000.00	\$3.73 SF
EXTERIOR EVALUATION	\$525,200.00	\$5.42 SF
INTERIOR EVALUATION	\$334,900.00	\$3.46 SF
HVAC EVALUATION	\$3,303,800.00	\$34.08 SF
PLUMBING EVALUATION	\$569,400.00	\$5.87 SF
ELECTRICAL EVALUATION	\$564,000.00	\$5.82 SF
CODE EVALUATION	\$1,013,200.00	\$10.45 SF
MISCELLANEOUS UPGRADES	\$242,300.00	\$2.50 SF
<hr/>		
TOTAL*	\$6,914,800.00	\$71.34 SF

* For the purpose of this Study, a baseline has been established and no design contingency has been utilized. More precise costs can be developed as the District develops specific educational specifications and chooses a desired option.

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Gilbertsville Elementary School

ARCHITECTURAL SURVEY

Cost

A. Site Evaluation:

- | | | |
|----|---|-----------|
| 1 | The concrete curbing at the catch basin of the circular drive has settled. Remove the settled section and replace with new. | \$3,000 |
| 2 | There is a portion of settled concrete sidewalk at the curb line of the north parking lot. A concrete section of the playground ramp is cracked and deterioration has occurred at sections of the north exit sidewalk. Remove the settled concrete walk, cracked playground ramp, and deteriorated concrete sections and replace. | \$4,700 |
| 3 | Several of the concrete wheel stops are damaged or missing. Replace damaged or missing wheel stops. | \$400 |
| 4 | Ponding is occurring at the northwest corner of the parking lot adjacent to Congo Street. Unclog inlet to drain pipe. | \$200 |
| 5 | The bituminous paved drive and paved play area have random cracking and deterioration. Repair deteriorated areas and cracking, mill and overlay with new paving and paint lines. | \$340,600 |
| 6 | The chain link fence at the parking spaces adjacent to the play equipment and the picnic shelter is damaged. Remove and replace chain link fence. | \$5,600 |
| 7 | The picnic shelter roof shingles are deteriorating; gutters and downspouts are missing. Remove and replace roof shingles. Install gutter and downspouts. | \$6,000 |
| 8 | Several of the concrete steps at the Congo Road entrances and the concrete steps on the north side have spalled areas and rebar is exposed. Remove loose material, sand rebar and coat with epoxy paint. Repair tread. | \$1,500 |
| 9 | The curb and sidewalk joint material is missing. Replace missing control joint material. | \$1,500 |
| 10 | The site and exterior of building lack identification and directional signage. Install identification and directional signage | \$1,000 |

Site Evaluation Sub-Total:

\$362,000

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Gilbertsville Elementary School

ARCHITECTURAL SURVEY

Cost

B. Exterior of Building Evaluation:

1	The newer built-up roof areas and newer foam roof areas are in good condition. No specific roof work is required in these areas.	\$0
2	The built-up roofs installed in 1996 are in poor condition. Replace roof areas with built-up roof to match.	\$273,000
3	Plaster soffit is deteriorated in several locations around the building. Replace entire masonry soffit around entire building with a vinyl vented system.	\$19,200
4	Recaulk perimeter joint around mechanical louver at front classroom, adjacent to drop off circle in original building.	\$400
5	Brick has staining and dirt accumulation, clean brick.	\$27,600
6	Repair mortar joints and cracks in the brick at several locations around the original building.	\$5,000
7	Clean rust off brick at basement Boiler Room. Scrape and paint rusted pipe.	\$800
8	The windows in the original building are showing signs of wear and deterioration. Replace exterior windows within original building.	\$156,000
9	Repoint the precast concrete sill horizontal and vertical joints.	\$7,200
10	Clean and repoint limestone banding on original building.	\$3,000
11	Replace sloped glazing at Art room.	\$5,000
12	The joints in the brick wall cap at all stand-alone brick walls are starting to fail. Remove all top brick, install flashing and reinstall brick wall cap.	\$16,000
13	Some exterior doors are failing, replace door and frame.	\$12,000
	<i>Exterior of Building Evaluation Sub-Total:</i>	<hr/> \$525,200

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Gilbertsville Elementary School

ARCHITECTURAL SURVEY

Cost

C. Interior of Building Evaluation:

1	A security vestibule is not currently provided. Add a single door entering directly into the office and reconfigure the office as required.	\$10,000
2	VCT in corridor of 1995 addition is worn. Replace all VCT.	\$18,000
3	Replace carpet and base in main office.	\$2,700
4	Repair drywall damage at front skylight.	\$500
5	Replace wall surfaces of dividing partition in Gymnasium/Multipurpose Room.	\$6,000
6	Replace VCT and base in gymnasium/multipurpose room.	\$34,200
7	Replace blinds in 1995 classrooms (14).	\$33,600
8	Replace chalkboards with markerboards in all classrooms (35).	\$35,000
9	Replace casework, countertops and sink at all original building classrooms.	\$157,500
10	Paint all door frames within original building.	\$2,400
11	Ceiling tiles are sagging throughout the entire building, no work is required. Monitor condition for replacement.	\$0
12	Remove all remaining asbestos, no work required at this time.	\$0
13	Replace Stage curtain per 2009 certified flame retardant report. Add new rigging sets.	\$35,000
<i>Interior of Building Evaluation Sub-Total:</i>		<hr/> \$334,900

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Gilbertsville Elementary School

ARCHITECTURAL SURVEY

Cost

D. Heating, Ventilation and Air Conditioning (HVAC) Evaluation:

1	Replace the boilers based on age and efficiency. Convert the entire facility to a hot water heating system.	\$130,000
2	Replace the older air handlers and unit ventilators based on age and efficiency as well as all the steam heating units. Provide ducted systems with filtered outdoor for better air distribution, lower noise, and better indoor air quality.	\$1,163,200
3	Replace the rooftop air conditioning units based on age and efficiency.	\$72,000
4	Upgrade the exhaust systems in the School.	\$96,900
5	New temperature control system.	\$387,700
6	Consideration should be given to providing building wide air conditioning. The cost listed is in addition to the items outlined above. Most of the existing equipment will need to be replaced with this option.	\$1,454,000
<i>HVAC Evaluation Sub-Total:</i>		<u>\$3,303,800</u>

E. Plumbing Evaluation:

1	Replace the fixtures in the older gang toilet rooms.	\$48,000
2	Replace the water coolers throughout.	\$36,000
3	Replace old valves to provide for routine system maintenance.	\$145,400
4	Repair corroded pipe on the water supply system.	\$5,000
5	Install a VFD on the domestic water booster pump system.	\$7,500
6	Consider extending the public water system to feed the facility. Cost based on information provided by the District.	\$320,000
7	Replace the water softener resin.	\$7,500
<i>Plumbing Evaluation Sub-Total:</i>		<u>\$569,400</u>

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Gilbertsville Elementary School

ARCHITECTURAL SURVEY

Cost

F. Electrical Evaluation:

- | | | |
|---|--|-----------|
| 1 | Add occupancy sensors in the rooms without to comply with the International Building Code. | \$9,000 |
| 2 | Add groundfault receptacles/breakers for all 1P.20 amp receptacles in kitchen per NEC. | \$10,000 |
| 3 | Add second automatic transfer switch and panel to separate required and non-required loads per NEC. | \$25,000 |
| 4 | Main electrical service and emergency generator located in the same room. Normal and emergency systems shall be located in separate rooms per NEC. | \$100,000 |
| 5 | Install Electric as required for HVAC upgrades. | \$420,000 |

Electrical Evaluation Sub-Total:

\$564,000

G. Code Evaluation:

The IBC, Americans with Disabilities Act, and recommendations by the Department of Education require all buildings during the renovation process to be updated to meet current standards and codes. The following building system will need to be updated during the renovation process in order to meet current standards and codes.

The following items may be required depending on the level of work completed.

- | | | |
|---|--|-----------|
| 1 | Not all entrances and exits to the building are accessible to disabled persons. Upgrade the Gymnasium and northwest egress doors to the playground for accessibility with bituminous paving having a slope less than 5%. | \$3,000 |
| 2 | Doors throughout the building have non-compliant door hardware. Replace knobs with ADA compliant hardware and levers. | \$5,300 |
| 3 | The individual use Toilet Rooms do not meet code. Upgrade the Toilet Rooms to meet code. | \$142,500 |
| 4 | The gang toilets do not meet the current ADA code. Upgrade the toilets to meet code. | \$120,000 |

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Gilbertsville Elementary School

ARCHITECTURAL SURVEY

Cost

G. Code Evaluation (con't):

5	The 30" pair of doors at egress vestibule adjacent to the Audio/Visual Room and the corridor doors adjacent to the Boiler Room stair do not provide the required width for a single leaf. Replace with uneven pair of door leaves.	\$8,000
6	Several counters with sinks do not meet the accessibility code. Remove and replace sink, counter, and cabinets to meet code.	\$17,500
7	There are several locations of glass block in the corridor walls which do not meet the fire rating requirement. Remove glass block and close opening with 1 hour rated construction.	\$6,000
8	Several of the classroom sink faucets do not have wrist blades to meet code. Replace faucet handles with wrist blades to meet code.	\$900
9	The platform in the Small Group Instruction does not have accessibility to the platform. Install a chair lift to meet code.	\$35,000
10	A dead end corridor is existing adjacent to the Boiler Room stair. Remove, replace with "S" type doors, or relocate doors to the west end of the corridor.	\$6,000
11	The ramp at the connector exceeds the allowable 30' maximum length per code. Other access is provide within the building.	\$0
12	The electric water coolers protrude into the clear walking space. Install barrier partitions at electric water coolers.	\$6,000
13	The existing glass in some doors, the hollow metal partition of the Faculty/Lounge, or display cases does not meet code. Remove the existing glass and replace with rated or safety glass.	\$5,000
14	The site and exterior of building lack identification and directional signage. Install identification and directional signage	\$0
15	The roof hatch does not have an extension pole to meet code. Install extension pole.	\$500
16	The fire extinguisher exceed the 48" maximum reach height requirement. Lower the fire extinguishers to meet code.	\$1,400
17	The ADA parking signs do not meet current ADA code. Replace with new signs to meet code.	\$1,500

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Gilbertsville Elementary School

ARCHITECTURAL SURVEY

Cost

G. Code Evaluation (con't):

18	Curb cuts do not have warning protection. Install truncated domes.	\$3,500
19	Playground mulch areas do not accessibility code. Remove mulch and install a rubber mat system to meet code.	\$8,700
20	The exterior north steps require a center handrail, the rails at the two north doors to the lower storage do not meet code, steps at the east steps on Congo Road require a handrail. Install aluminum center handrail, remove and replace rail system at the lower storage room doors, and instal handrails at east steps.	\$5,500
21	The ramp at the west entry at Congo Road does not meet the required code width and does not have the required level transition area. Remove and install code compliant ramp.	\$25,000
22	Vertical grab bars are required at water closets to meet ADA. Install vertical grab bars.	\$300
23	The International Building Code requires all facilities used for educational purposes to be equipped with a fire suppression system. Install a fire suppression system throughout the entire building. Partial sprinkler system exists.	\$78,500
24	Eliminate the use of the corridor as a return air plenum	\$145,400
25	Consider installing a code compliant fire sprinkler system throughout.	\$387,700

Code Evaluation Sub-Total:

\$1,013,200

H. Miscellaneous Upgrades:

1	Miscellaneous upgrades.	\$242,300
---	-------------------------	-----------

Miscellaneous Upgrades Sub-Total:

\$242,300

Building Evaluation Total:

\$6,914,800

Asbestos Comment:

Asbestos Mitigation would require input from the District's consultant; therefore, no cost estimates are included in this study. It is our understanding the District has used Suburban Energy & Environmental Consultants for AHERA Management.

GENERAL DATA

New Hanover-Upper Frederick Elementary School

Built:	1953, 1958, 1964, 1991 Eligible for 20-year State Reimbursement
Site:	2547 Big Road, Frederick, PA 19435-9701 18 acres; located in a rural area with paved drives and parking areas, athletic fields and play areas.
Structure:	One-story building with concrete floors; metal roof deck; structural steel frame; and masonry and concrete walls. Construction type non-combustible, unprotected in accordance with International Building Code with foam, balasted and built-up roof membranes.
HVAC System:	New hot water boilers serve classroom unit ventilators, air handlers, and fan coils. Air conditioning is provided for miscellaneous areas through packaged rooftop units and split system air conditioners.
Plumbing Service:	Onsite well and sewer systems
Electrical Service:	2500 amp, 120/208 volt, three phase, 4 wire
Systems:	Fire Alarm Paging/Intercom Master Clock Security Emergency Lighting and Power District Telephone Data Network
Architectural Area:	90,700 s.f.
PDE Replacement Value:	\$12,806,400 (800 FTE x 92 sf = 73,600 x \$174 / sf = replacement cost) \$2,561,280 (20% Rule)
PDE Total Capacity:	800

PHOTOGRAPHS

New Hanover-Upper Frederick Elementary School



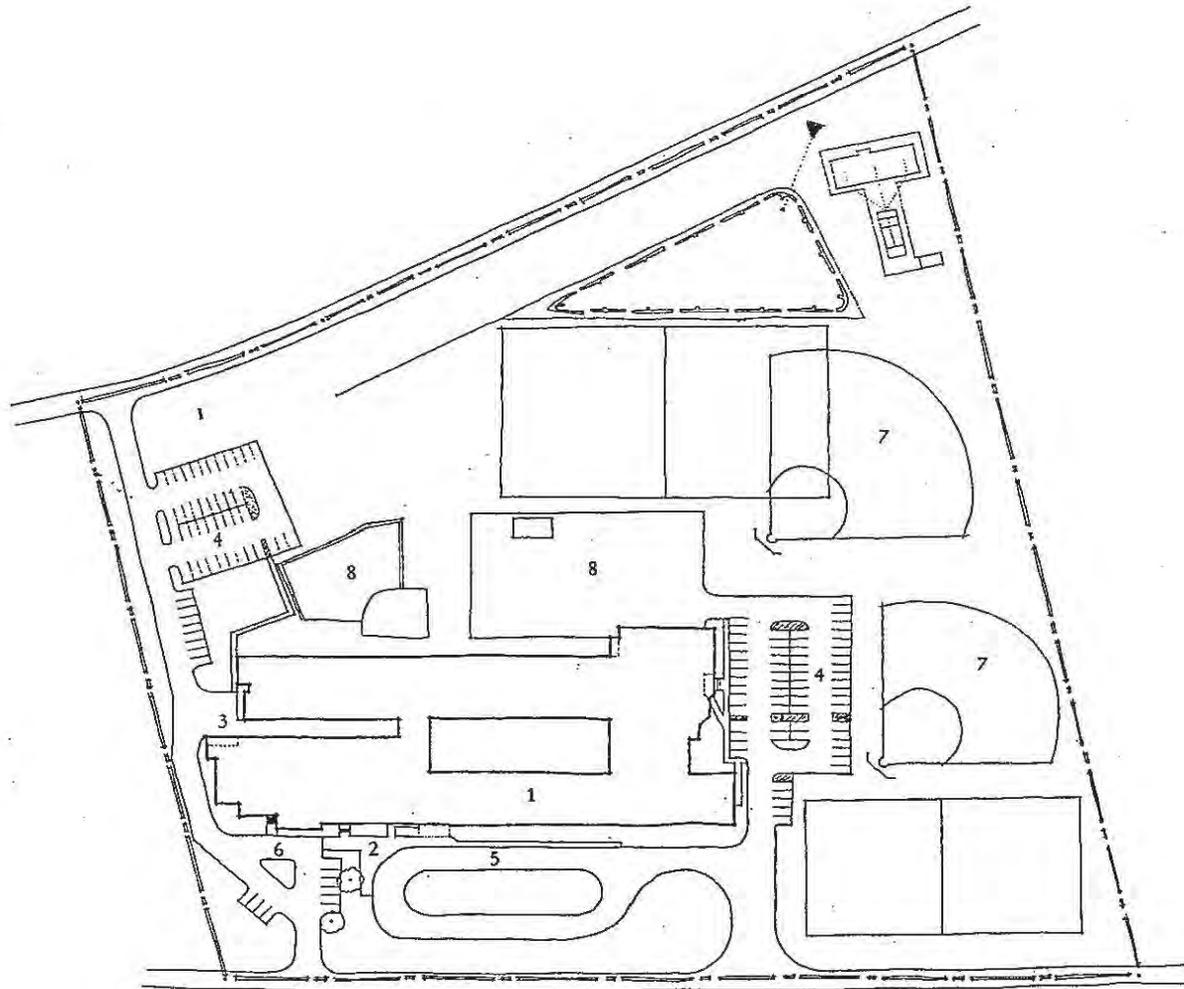
AERIAL VIEW

New Hanover-Upper Frederick Elementary School



EXISTING SITE PLAN

New Hanover-Upper Frederick Elementary School



Key:

- 1. School Building
- 2. Public Entrance
- 3. Service Entrance
- 4. Parking
- 5. Bus Drop-Off

- 6. Parent Drop-Off
- 7. Play field
- 8. Playground
- 9. District Administration

Notes:

- A. Modular Classrooms

OPERATIONAL COSTS SUMMARY

New Hanover-Upper Frederick Elementary School

90,700 s.f.	Annual Cost	Cost per sf
Electric	\$59,198	\$0.65
Natural Gas	\$53,167	\$0.59
Water	Onsite	NA
Sewer	Onsite	NA
Utilities Subtotal	\$112,365	\$1.24

SUMMARY - ENERGY STAR

New Hanover-Upper Frederick Elementary School

OMB No. 2060-0347



STATEMENT OF ENERGY PERFORMANCE Boyertown Area SD New Hanover-Upper Frederick 114060753

Building ID: 3212378
For 12-month Period Ending: May 31, 2011¹
Date SEP becomes ineligible: N/A

Date SEP Generated: July 20, 2012

Facility
Boyertown Area SD New Hanover-Upper
Frederick 114060753
2547 Big Road
Frederick, PA 19435-9701

Facility Owner
Boyertown Area School District
911 Montgomery Avenue
Boyertown, PA 19512

Primary Contact for this Facility
N/A

Year Built: 1955
Gross Floor Area (ft²): 90,700

Energy Performance Rating² (1-100) 76

Site Energy Use Summary³

Electricity - Grid Purchase(kBtu)	1,550,699
Fuel Oil (No. 2) (kBtu)	3,096,127
Natural Gas - (kBtu) ⁴	0
Total Energy (kBtu)	4,646,826

Energy Intensity⁴

Site (kBtu/ft ² /yr)	51
Source (kBtu/ft ² /yr)	92

Emissions (based on site energy use)

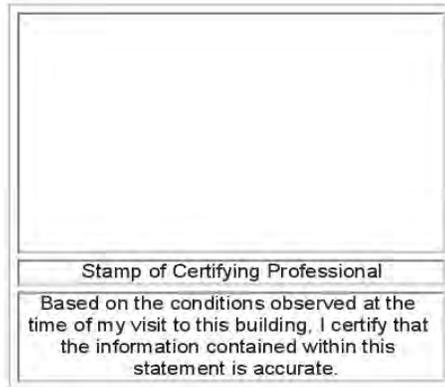
Greenhouse Gas Emissions (MtCO ₂ e/year)	447
---	-----

Electric Distribution Utility

Metropolitan Edison Co [FirstEnergy Corp]

National Median Comparison

National Median Site EU ¹	66
National Median Source EU ¹	119
% Difference from National Median Source EU ¹	-23%
Building Type	K-12 School



Meets Industry Standards⁵ for Indoor Environmental Conditions:

Ventilation for Acceptable Indoor Air Quality	N/A
Acceptable Thermal Environmental Conditions	N/A
Adequate Illumination	N/A

Certifying Professional
N/A

Notes:

1. Application for the ENERGY STAR must be submitted to EPA within 4 months of the Period Ending date. Award of the ENERGY STAR is not final until approval is received from EPA.
2. The EPA Energy Performance Rating is based on total source energy. A rating of 75 is the minimum to be eligible for the ENERGY STAR.
3. Values represent energy consumption, annualized to a 12-month period.
4. Values represent energy intensity, annualized to a 12-month period.
5. Based on Meeting ASHRAE Standard 62 for ventilation for acceptable indoor air quality, ASHRAE Standard 55 for thermal comfort, and IESNA Lighting Handbook for lighting quality.

The government estimates the average time needed to fill out this form is 6 hours (includes the time for entering energy data, Licensed Professional facility inspection, and notarizing the SEP) and welcomes suggestions for reducing this level of effort. Send comments (referencing OMB control number) to the Director, Collection Strategies Division, U.S., EPA (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460.

SUMMARY BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

New Hanover-Upper Frederick Elementary School

		Cost per SF
SITE EVALUATION	\$498,500.00	\$5.50 SF
EXTERIOR EVALUATION	\$155,000.00	\$1.71 SF
INTERIOR EVALUATION	\$108,900.00	\$1.20 SF
HVAC EVALUATION	\$2,827,100.00	\$31.17 SF
PLUMBING EVALUATION	\$263,200.00	\$2.90 SF
ELECTRICAL EVALUATION	\$861,000.00	\$9.49 SF
CODE EVALUATION	\$1,343,500.00	\$14.81 SF
MISCELLANEOUS UPGRADES	\$226,800.00	\$2.50 SF
<hr/>		
TOTAL*	\$6,284,000.00	\$69.28 SF

* For the purpose of this Study, a baseline has been established and no design contingency has been utilized. More precise costs can be developed as the District develops specific educational specifications and chooses a desired option.

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

New Hanover-Upper Frederick Elementary School

ARCHITECTURAL SURVEY

Cost

A. Site Evaluation:

- | | | |
|---|---|-----------|
| 1 | The concrete curbing at the north parking lot is leaning away from the sidewalk. A large gap exists at the joint and a tripping hazard is evident. Remove and replace concrete curb and sidewalk. | \$5,000 |
| 2 | There is deterioration of concrete sidewalks at the two (2) west entry sidewalks of the building and various other areas. Remove the deteriorated areas and replace with new. | \$2,100 |
| 3 | The concrete curbing and walk at the bus loop have a large exposed joint and the uneven surfaces are creating a tripping hazard. Remove and replace concrete sidewalk. | \$1,200 |
| 4 | The bituminous parking, driveways and paved play areas are deteriorating and have multiple cracks. Mill and overlay with new bituminous and paint lines. | \$334,600 |
| 5 | The paved play area is deteriorated and has multiple cracking. Mill and overlay with new bituminous and paint lines. | \$125,000 |
| 6 | The concrete sidewalk joint material is missing. Replace sidewalk joint material. | \$1,500 |
| 7 | The site and exterior of building lack identification and directional signage. Install identification and directional signage. | \$0 |
| 8 | The concrete steps adjacent to the loading dock, the concrete steps at the Gym steps, and the concrete pad adjacent to the outdoor Storage Room are alligating and have open fissures. Monitor condition for replacement. | \$0 |

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

New Hanover-Upper Frederick Elementary School

ARCHITECTURAL SURVEY

Cost

A. Site Evaluation (con't):

9	The infield of the softball field has weeds and grass growing. Remove grass and weeds and treat infield with diamond tex.	\$500
11	The concrete curbing in the parking area to south of the building has deteriorated sections. Remove all deteriorated sections and replace with new. Seal the parking area and repaint lines.	\$7,200
13	The roof shingles on the pavillion are showing signs of deterioration. Remove and replace shingles.	\$6,400
14	The retaining wall at the ramp from the lower level mechanical room is alligating and cracking. Remove and replace wall and guardrail.	\$15,000
Site Evaluation Sub-Total:		<hr/> \$498,500

B. Exterior of Building Evaluation:

1	The built-up roof replacement areas and foam roof replacement areas are in good condition. No specific roof work is required in these areas.	\$0
2	The ballasted roofs over Kindergarten are in poor condition. Replace roof areas accordingly.	\$67,500
3	Plaster soffit is deteriorated in several locations around the building. Replace entire masonry soffit around entire building with a vinyl vented system.	\$29,300
4	Replace all exterior windows at the kindergarten classrooms located near loading dock.	\$16,600
5	Cracking and fissures in the concrete peir have developed at the north center lobby. Monitor condition for replacement.	\$0

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

New Hanover-Upper Frederick Elementary School

ARCHITECTURAL SURVEY

Cost

B. Exterior of Building Evaluation (con't):

6	Brick has staining and dirt accumulation, clean brick.	\$33,100
7	Scrape and paint all exposed lintels.	\$2,000
8	Repoint vertical and horizontal joints at the precast concrete sills.	\$1,800
9	Replace mechanical louvers, see item D5.	\$0
10	Caulk Vertical joints at EIFS and brick all locations.	\$1,200
12	Add metal wall cap to brick wall and pair at western exit.	\$1,500
13	Cut down tree at corner of Gymnasium.	\$2,000

Exterior of Building Evaluation Sub-Total:

\$155,000

C. Interior of Building Evaluation:

1	Existing windows hinge inward and are a potential hazard. A limiter should be installed on all windows to keep projection no further than the plane of the wall.	\$1,500
2	A security vestibule is not currently provided. Add a single door entering directly into the office and reconfigure the office.	\$25,000
3	Significant bubbling under VCT floors outside of the Multipurpose Room. The existing slabs must be tested for moisture content for approval by flooring manufacturer prior to repairs or replacement.	\$0
4	Replace VCT and base in LGI and Special Ed. Rooms	\$11,100
5	Replace carpet and base in Music Room.	\$5,000

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

New Hanover-Upper Frederick Elementary School

ARCHITECTURAL SURVEY

Cost

C. Interior of Building Evaluation (con't):

6	Install new countertops in Art Room.	\$7,500
7	Ceiling tiles are sagging throughout the entire building, no work is required. Monitor condition for replacement.	\$0
8	Replace several areas of bookshelving and casework within classrooms having the long angled entry.	\$5,000
9	The angled wall entries into the classrooms (15) are all wood and are not providing proper 1 hour fire separation from the corridor and the classrooms. See code items G6.	\$0
10	Clean and seal walls at Boiler Room basement. Install drainage plane and sump pump as required.	\$2,500
11	Replace chalkboard at Reading Room with markerboard.	\$800
12	Replace carpet and base in Main Office.	\$2,000
13	Replace VCT and base in Nurse's Suite.	\$2,000
14	Repair crack in wall at Art Room.	\$500
15	Repair crack in wall at Cafeteria.	\$500
16	Repair crack in VCT at receiving hallway.	\$500
17	Repair expansion joints	\$10,000
18	Remove all remaining asbestos; no work required at this time.	\$0
19	Replace Stage curtain per 2009 certified flame retardant report. Add new rigging sets.	\$35,000
<i>Interior of Building Evaluation Sub-Total:</i>		<hr/> \$108,900

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

New Hanover-Upper Frederick Elementary School

ARCHITECTURAL SURVEY

Cost

D. Heating, Ventilation and Air Conditioning (HVAC) Evaluation:

1	Install drain pan below oil pumps set to contain oil drips.	\$1,000
2	Replace the rooftop air conditioning units based on age and efficiency.	\$96,000
3	Upgrade the exhaust systems throughout the School.	\$99,800
4	New temperature control system.	\$362,800
5	Consideration should be given to providing building wide air conditioning. The cost listed is in addition to the items outlined above. All heating UV's and AH's will need to be replaced with this option. The new boilers, pumps, and HW pipe can mainly be retained.	
		\$2,267,500

HVAC Evaluation Sub-Total:

\$2,827,100

E. Plumbing Evaluation:

1	Replace the domestic water tanks.	\$36,000
2	Replace the water softener resin.	\$7,500
3	Install clay traps in the art room sinks.	\$6,600
4	Replace the water coolers throughout.	\$36,000
5	Replace old valves to provide for routine system maintenance.	\$136,100
6	Replace sinks and faucets in the rear classrooms.	\$6,000
7	Modify water line to the treatment plant to avoid winter draining requirement.	\$35,000

Plumbing Evaluation Sub-Total:

\$263,200

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

New Hanover-Upper Frederick Elementary School

ARCHITECTURAL SURVEY

Cost

F. Electrical Evaluation:

- | | | |
|---|---|-----------|
| 1 | Add groundfault receptacles/breakers for all 1P.20 amp receptacles in kitchen per NEC. | \$6,000 |
| 2 | Add second automatic transfer switch and panel to separate required and non-required loads per NEC. | \$25,000 |
| 3 | Add occupancy sensors in the rooms without to comply with the International Building Code. | \$8,000 |
| 4 | Ground flammable storage cabinets per NEC. | \$2,000 |
| 5 | Install Electric as required for HVAC upgrades. | \$820,000 |

Electrical Evaluation Sub-Total:

\$861,000

G. Code Evaluation:

The IBC, Americans with Disabilities Act, and recommendations by the Department of Education require all buildings during the renovation process to be updated to meet current standards and codes. The following building system will need to be updated during the renovation process in order to meet current standards and codes.

The following items may be required depending on the level of work completed.

- | | | |
|---|---|----------|
| 1 | Curb cuts do not have warning protection. Install truncated domes. | \$1,000 |
| 2 | Many doors do not have code compliant hardware. Remove door hardware and replace with lever hardware. (Delete this item if new hardware is selected under Interiors). | \$21,700 |
| 3 | The Media Center requires two means of egress. Rework door and steps to ramp to meet code. | \$10,000 |

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

New Hanover-Upper Frederick Elementary School

ARCHITECTURAL SURVEY

Cost

G. Code Evaluation (con't):

4	The individual use or the 2 occupant use Toilet Rooms do not meet code. Upgrade the Toilet Rooms to meet code.	\$217,500
5	The 30" pair of doors at the Cafeteria/Auditorium, one classroom, and corridor adjacent to the Gym Lobby do not provide the required width for a single leaf. Replace with uneven pair of door leaves.	\$20,000
6	The angled classroom corridor walls do not meet the required one hour fire rating. Remove wall and door assembly and replace with wall and door assembly to meet code.	\$52,500
7	A dead end corridor exists adjacent to the Kindergarten classrooms and also in the corridor at the angled classrooms. Remove doors or install "S" type doors.	\$24,000
8	The Stage in the Cafeteria/Auditorium is not accessible to disabled persons. Install a chair lift.	\$35,000
9	The gang toilet (4) facilities do not meet current disabled persons code and the gang toilets in the 1992 need a vertical grab bar at the ADA stall. Remove all of the lav in the ADA stalls and add a urinal screen in the Boy's Room. Upgrade the Toilets to meet code.	\$120,000
10	The corridor ramp adjacent to the rear Media Center door exceeds the allowable length per code. Remove ramp and install code compliant ramp.	\$9,000
11	The faucets handles on sinks in classrooms do not meet the accessibility code. Remove faucet handles and install 4: wrist blades to met code.	\$3,500
12	The 30" pair of doors at two egress doors do not provide the required width for a single leaf. Replace with the doors with doors to meet code.	\$12,000
13	The exterior steps of the multi-purpose room do meet ADA accessibility for egress. Remove and replace steps with a code compliant ramp system.	\$21,600

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

New Hanover-Upper Frederick Elementary School

ARCHITECTURAL SURVEY

Cost

G. Code Evaluation (con't):

14	The water coolers throughout the building do not meet the current disabled persons code. Construct side barrier partitions to meet code.	\$2,000
15	Several corridor doors have plate glass or louvers which do not meet the required fire rating. Remove the existing glass and replace with fire rated safety glass and replace the louvered doors with new doors to meet code.	\$6,600
16	The current ADA requires signage to meet 48" reach height maximum. Several signs in the building appear to be slightly high. No work is required at this time.	\$0
17	The Stage is not accessible to disabled persons from the Auditorium. Upgrade the Stage to make it accessible to disabled persons and to meet code.	\$35,000
19	The existing ADA parking signs are not mounted at the correct height to meet code and 3 additional signs are required.	\$1,800
20	Playground mulch areas do not meet accessibility code. Remove mulch and install a rubber mat system to meet code.	\$178,500
21	The International Building Code requires all facilities used for educational purposes to be equipped with a fire suppression system. Install a fire suppression system throughout the entire building.	\$453,500
22	Replace fire alarm system with code compliant system.	\$73,500
23	The sink and countertop in the Health, Faculty Dining, Faculty Planning, and Media Workroom are not code compliant. Replace with accessible sink cabinet assemblies.	\$15,500

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

New Hanover-Upper Frederick Elementary School

ARCHITECTURAL SURVEY

Cost

G. Code Evaluation (con't):

25	Existing fire extinguisher cabinets do not meet ADA code. Remove and replace fire extinguisher cabinets with code compliant cabinets.	\$3,000
26	The rail systems at the exterior concrete steps are missing a center handrail or the rail system does not meet code. Install center aluminum handrails and remove and replace rail systems with code compliant aluminum guardrail/handrails.	\$15,000
27	The roof hatch does not have an extension pole to meet code. Install extension pole.	\$500
28	The classroom courtyard lacks ADA access and the double doors width does not meet the required code. Install a code compliant ramp and replace doors with code compliant assembly.	\$10,800

Code Evaluation Sub-Total:

\$1,343,500

H. Miscellaneous Upgrades:

1	Miscellaneous upgrades.	\$226,800
---	-------------------------	-----------

Miscellaneous Upgrades Sub-Total:

\$226,800

Building Evaluation Total:

\$6,284,000

Asbestos Comment:

Asbestos Mitigation would require input from the District's consultant; therefore, no cost estimates are included in this study. It is our understanding the District has used Suburban Energy & Environmental Consultants for AHERA Management.

GENERAL DATA

Pine Forge Elementary School

Built:	1928, 1957, 1987 Eligible for 20-year State Reimbursement
Site:	8 Glendale Road, Boyertown, PA 19512 8 acres; located in a rural area with paved drives and parking areas, athletic fields and play areas.
Structure:	One-story building with concrete floors; metal roof deck; structural steel frame; and masonry and concrete walls. Construction type non-combustible, unprotected in accordance with International Building Code with foam roof membranes.
HVAC System:	Hot water boilers serving unit ventilators, air handlers, and fan coils. Air conditioning is provided in several spaces through rooftop packaged air conditioning units.
Plumbing Service:	Onsite water and sewer systems.
Electrical Service:	800 amp, 120/240 volt, three phase, 3 wire
Systems:	Fire Alarm Paging/Intercom Master Clock Security Emergency Lighting and Power District Telephone Data Network
Architectural Area:	37,570 s.f.
PDE Replacement Value:	\$5,602,800 (350 FTE x 92 sf = 32,200 x \$174 / sf = replacement cost) \$1,120,560 (20% Rule)
PDE Total Capacity:	350

PHOTOGRAPHS

Pine Forge Elementary School



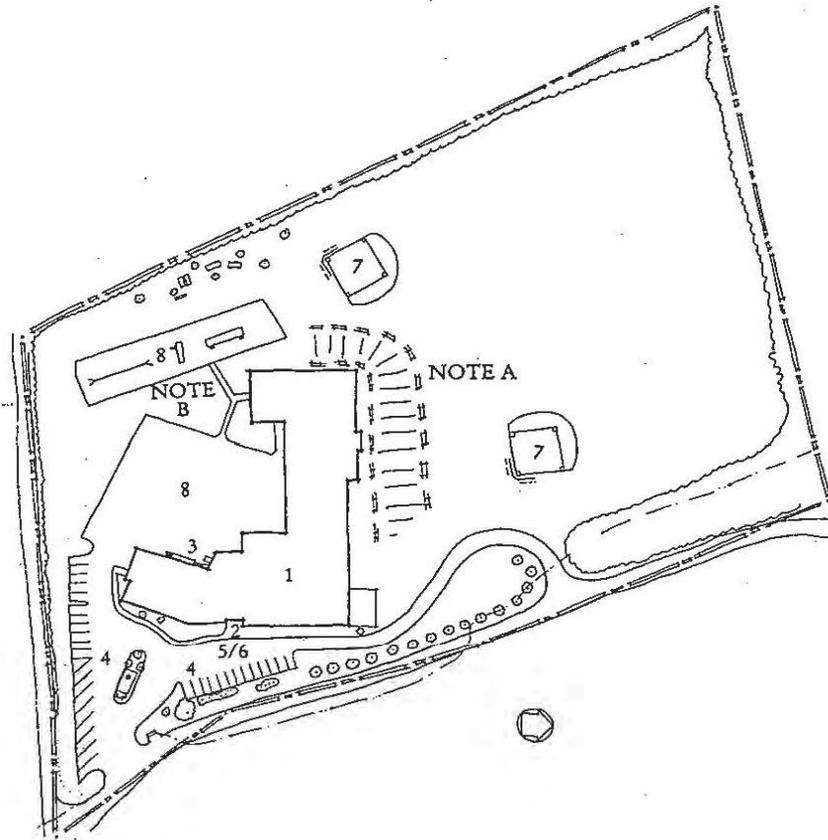
AERIAL VIEW

Pine Forge Elementary School



EXISTING SITE PLAN

Pine Forge Elementary School



Key:

- 1. School Building
- 2. Public Entrance
- 3. Service Entrance
- 4. Parking

- 5. Bus Drop-Off
- 6. Parent Drop-Off
- 7. Play field
- 8. Playground

Notes:

- A.
- B.
- C.
- D.

OPERATIONAL COSTS SUMMARY

Pine Forge Elementary School

37,570 s.f.	Annual Cost	Cost per sf
Electric	\$23,048	\$0.61
Natural Gas	\$37,967	\$1.01
Water	Onsite	NA
Sewer	Onsite	NA
Utilities Subtotal	\$61,015	\$1.62

SUMMARY - ENERGY STAR

Pine Forge Elementary School

OMB No. 2060-0347



STATEMENT OF ENERGY PERFORMANCE Boyertown Area SD Pine Forge ES 114060753

Building ID: 3212356
For 12-month Period Ending: May 31, 2011¹
Date SEP becomes ineligible: N/A

Date SEP Generated: July 20, 2012

Facility
Boyertown Area SD Pine Forge ES
114060753
Pine Forge and Glendale Roads
Pine Forge, PA 19548-9999

Facility Owner
Boyertown Area School District
911 Montgomery Avenue
Boyertown, PA 19512

Primary Contact for this Facility
N/A

Year Built: 1932
Gross Floor Area (ft²): 37,568

Energy Performance Rating² (1-100) 74

Site Energy Use Summary³

Electricity - Grid Purchase(kBtu)	675,579
Fuel Oil (No. 2) (kBtu)	2,059,138
Natural Gas - (kBtu) ⁴	0
Total Energy (kBtu)	2,734,717

Energy Intensity⁴

Site (kBtu/ft ² /yr)	73
Source (kBtu/ft ² /yr)	115

Emissions (based on site energy use)

Greenhouse Gas Emissions (MtCO ₂ e/year)	247
---	-----

Electric Distribution Utility

Metropolitan Edison Co [FirstEnergy Corp]

National Median Comparison

National Median Site EUI	92
National Median Source EUI	146
% Difference from National Median Source EUI	-21%
Building Type	K-12 School

Stamp of Certifying Professional

Based on the conditions observed at the time of my visit to this building, I certify that the information contained within this statement is accurate.

Meets Industry Standards⁵ for Indoor Environmental Conditions:

Ventilation for Acceptable Indoor Air Quality	N/A
Acceptable Thermal Environmental Conditions	N/A
Adequate Illumination	N/A

Certifying Professional
N/A

Notes:

1. Application for the ENERGY STAR must be submitted to EPA within 4 months of the Period Ending date. Award of the ENERGY STAR is not final until approval is received from EPA.
2. The EPA Energy Performance Rating is based on total source energy. A rating of 75 is the minimum to be eligible for the ENERGY STAR.
3. Values represent energy consumption, annualized to a 12-month period.
4. Values represent energy intensity, annualized to a 12-month period.
5. Based on Meeting ASHRAE Standard 62 for ventilation for acceptable indoor air quality, ASHRAE Standard 55 for thermal comfort, and IESNA Lighting Handbook for lighting quality.

The government estimates the average time needed to fill out this form is 6 hours (includes the time for entering energy data, Licensed Professional facility inspection, and notarizing the SEP) and welcomes suggestions for reducing this level of effort. Send comments (referencing OMB control number) to the Director, Collection Strategies Division, U.S., EPA (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460.

EPA Form 5900-16

SUMMARY BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Pine Forge Elementary School

		Cost per SF
SITE EVALUATION	\$31,700.00	\$0.84 SF
EXTERIOR EVALUATION	\$191,700.00	\$5.10 SF
INTERIOR EVALUATION	\$69,500.00	\$1.85 SF
HVAC EVALUATION	\$1,214,300.00	\$32.32 SF
PLUMBING EVALUATION	\$315,500.00	\$8.40 SF
ELECTRICAL EVALUATION	\$865,600.00	\$23.04 SF
CODE EVALUATION	\$1,021,700.00	\$27.19 SF
MISCELLANEOUS UPGRADES	\$93,900.00	\$2.50 SF
<hr/>		
TOTAL*	\$3,803,900.00	\$101.25 SF

* For the purpose of this Study, a baseline has been established and no design contingency has been utilized. More precise costs can be developed as the District develops specific educational specifications and chooses a desired option.

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Pine Forge Elementary School

ARCHITECTURAL SURVEY

Cost

A. Site Evaluation:

1	The bituminous entry drive is showing signs of wear. Monitor cracking condition for replacement.	\$0
2	The shed adjacent to the mulched playground has deteriorated. Remove shed and repair seeding.	\$800
3	The north side of the addition has a swale that traps water and does not drain. The water runs across the paved parking area and erodes the embankment along Pine Forge Road. Correct water issues.	\$25,000
4	The paved bituminous play area was placed on a soft base. Monitor condition for replacement.	\$0
5	The concrete ramp at the paved play area entrance has spalled concrete. Repair spalled concrete on ramp.	\$800
6	The concrete retaining wall to the Boiler Room is deteriorating and is leaning towards the building. Remove and replace concrete retaining wall and install a code compliant aluminum guardrail at the top of the wall. See item B10.	\$0
7	The site and exterior of building lack identification and directional signage. Install identification and directional signage.	\$1,500
8	The roof shingles on the blue storage shed at the end of the parking spaces are deteriorating. Remove and replace shingles.	\$600
9	The site and exterior of the building lack identification and directional signage. Install identification and directional signage.	\$1,500
10	The joint material is missing at the curb/sidewalk joint and also at the sidewalk joints. Install joint material.	\$1,500
Site Evaluation Sub-Total:		<hr/> \$31,700

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Pine Forge Elementary School

ARCHITECTURAL SURVEY

Cost

B. Exterior of Building Evaluation:

1	The foam roofs installed approximately 2003 are in good condition. Only Miscellaneous patching needed by maintenance. No work required. A roof hatch should be installed and a small wall ladder to access the multipurpose/cafeteria roof.	\$4,000
2	Replaced downspouts at two locations.	\$500
3	The existing windows are UV damaged and deteriorated. Remove the existing windows and replace with new thermo-break energy efficient aluminum window systems and doors.	\$149,500
4	The horizontal joint under some precast concrete sill are failing. Clean out and repoint joint under sill.	\$2,400
5	Brick has staining and dirt accumulation; clean brick.	\$14,400
6	Clean all concrete sills.	\$700
7	The brick joints are failing at the east face of the old school where the old entry was filled in. Repoint all joints in this location.	\$800
8	Add vents to Crawl space.	\$2,000
9	Repoint old boiler chimney stack.	\$2,400
10	The rear stairwell access to the Boiler Room is severely deteriorated. Entire sections of the block have disintegrated. A potential wall collapse is imminent and should be addressed. Remove and replace back stairwell in its entirety with engineered retaining wall and steps. Repair paving as required.	\$15,000
<i>Exterior of Building Evaluation Sub-Total:</i>		<hr/> \$191,700

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Pine Forge Elementary School

ARCHITECTURAL SURVEY

Cost

C. Interior of Building Evaluation:

1	A security vestibule is not currently provided. Add internal curtainwall doors and frames at main lobby and a single door entering directly into the office. Provide new flooring within vestibule including new walk off mats.	\$25,000
2	Replace chalkboard with marker board in classrooms (13).	\$13,000
3	Replace base at ramp near Library.	\$200
4	Replace misc. broken tile at base near upper classroom addition.	\$400
5	Ceiling tiles are sagging throughout the entire building, no work is required. Monitor condition for replacement.	\$0
6	Restrip gymnasium floor lines.	\$2,000
7	Replace broken wall and base tile at dishwash counter.	\$500
8	Replace VCT and base in Special Ed Room.	\$3,800
9	Replace VCT and base in Small Guidance Room.	\$1,300
10	Replace VCT and base in Multipurpose Room.	\$9,000
11	Replace VCT and base on Stage/platform.	\$2,900
12	Replace VCT and base in Reading Room.	\$1,400
13	Dishwasher is in poor working condition. Replace dishwashing unit.	\$10,000
14	Remove all remaining asbestos; no work required at this time.	\$0
<i>Interior of Building Evaluation Sub-Total:</i>		<hr/> \$69,500

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Pine Forge Elementary School

ARCHITECTURAL SURVEY

Cost

D. Heating, Ventilation and Air Conditioning (HVAC) Evaluation:

1	Install drain pan below oil pumps to collect oil drips.	\$800
2	Fire seal the boiler room pipe penetrations.	\$2,000
3	Replace the older air handlers and unit ventilators based on age and efficiency. Provide ducted systems with filtered outdoor for better air distribution, lower noise, and better indoor air quality. Provide adequate maintenance access.	\$375,700
4	Modify the relief air system to avoid the use of the corridor as a return plenum.	\$65,700
5	Replace the older HW distribution piping due to age.	\$47,000
6	Replace the kitchen hood and fans.	\$40,000
7	Upgrade the exhaust systems.	\$47,000
8	Replace the rooftop air conditioners due to age.	\$35,000
9	New temperature control system.	\$150,300
10	Consideration should be given to providing building wide air conditioning. The cost listed is in addition to the items outlined above. All UV's will need to be replaced with this option.	\$450,800
	<i>HVAC Evaluation Sub-Total:</i>	<hr/> \$1,214,300

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Pine Forge Elementary School

ARCHITECTURAL SURVEY

Cost

E. Plumbing Evaluation:

1	Replace the fixtures in the older gang toilet rooms.	\$32,000
2	Replace the water coolers throughout.	\$24,000
3	Replace old valves to provide for routine system maintenance.	\$56,400
4	Replace and repair the older drain lines.	\$75,100
5	Replace the domestic water storage tank due to age.	\$28,000
6	Upgrade the sanitary system serving the facility. Exact scope needs to be developed based on additional survey information. A budget number is included for reference.	\$100,000

Plumbing Evaluation Sub-Total:

\$315,500

F. Electrical Evaluation:

1	Add occupancy sensors in the rooms without to comply with the International Building Code.	\$9,000
2	Replace electrical distribution system.	\$563,600
3	Add groundfault receptacles/breakers for all 1P.20 amp receptacles in kitchen per NEC.	\$8,000
4	Add second automatic transfer switch and panel to separate required and non-required loads per NEC.	\$25,000
5	Main electrical service and emergency generator located in the same room. Normal and emergency systems shall be located in separate rooms per NEC.	\$100,000
6	Install Electric as required for HVAC upgrades.	\$160,000

Electrical Evaluation Sub-Total:

\$865,600

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Pine Forge Elementary School

ARCHITECTURAL SURVEY

Cost

G. Code Evaluation:

The IBC, Americans with Disabilities Act, and recommendations by the Department of Education require all buildings during the renovation process to be updated to meet current standards and codes. The following building system will need to be updated during the renovation process in order to meet current standards and codes.

The following items may be required depending on the level of work completed.

- | | | |
|---|--|-----------|
| 1 | Not all entrances and exits to the building are accessible to disabled persons. Upgrade the front and south entrances for accessibility. | \$60,200 |
| 2 | Doors throughout the building have non-compliant door hardware. Replace knobs with ADA compliant hardware and levers. | \$5,300 |
| 3 | The individual use toilet rooms do not meet code. Upgrade the toilet rooms to meet code. | \$37,500 |
| 4 | The gang toilets do not meet the current ADA code. Upgrade the toilets to meet code. | \$210,000 |
| 5 | The 30" Kindergarten exterior door does not meet the required egress width per code and is not accessible to the play surface. Remove and replace with a code compliant door and construct a ramp to the play surface. | \$13,000 |
| 6 | Several counters with sinks do not meet the accessibility code. Remove and replace sink, counter, and cabinets to meet code. | \$11,500 |

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Pine Forge Elementary School

ARCHITECTURAL SURVEY

Cost

G. Code Evaluation (con't):

7	The main entry lobby does not meet the accessibility code due to the steps. Install chair lift.	\$25,000
8	Several of the classroom sink faucets do not have wrist blades to meet code. Replace faucet handles with wrist blades to meet code.	\$1,400
9	The platform in the Multi-purpose Room does not have accessibility to the platform. Install a chair lift to meet code.	\$35,000
10	The entrances to instructional areas and other areas lack the proper clearances and do not meet the disabled persons code or the required fire rating. Upgrade the entrances to meet code.	\$45,000
11	The ramps are missing handrails to meet code. Install code compliant handrails.	\$3,000
12	The two pairs of 30" egress doors from the multi-purpose room do not meet the required egress width. Remove and replace doors with code compliant door assemblies.	\$8,000
13	The platform steps do not have handrails. Install code compliant handrails.	\$400
14	The electric water coolers protrude into the clear walking space. Install barrier partitions at electric water coolers.	\$6,000
15	The existing glass in some doors, the hollow metal partition of the faculty/lounge, or display cases does not meet code. Remove the existing glass and replace with rated or safety glass.	\$5,000
16	The current ADA requires signage to meet 48" reach height maximum. Several signs in the building appear to be slightly high. No work is required at this time.	\$0
17	The fire extinguisher exceed the 48" maximum reach height requirement. Lower the fire extinguishers to meet code.	\$1,400
18	The doors do not have hardware do meet code. Remove hardware and install lever handles to meet code.	\$24,900

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Pine Forge Elementary School

ARCHITECTURAL SURVEY

Cost

G. Code Evaluation (con't):

19	The south corridor egress door do not meet the required egress width. Remove and replace with code compliant doors.	\$6,000
20	The dishwash return counter does not meet ADA requirements, Lower counter to meet code requirements.	\$1,500
21	The corridor ramp adjacent to the multi-purpose platform exceeds the allowable 1" in 12" slope. Rework ramp to meet code.	\$45,000
22	Several corridor doors contain louvers and do not meet the fire rating. Remove and replace doors with code compliant doors.	\$2,500
23	The steps inside the main entry need rails to meet code. Instal 2 aluminum handrails to meet code.	\$600
25	Eliminate the use of the corridor as an air plenum.	\$75,100
26	Provide code compliant dryer exhaust vent.	\$1,000
27	The International Building Code requires all facilities used for educational purposes to be equipped with a fire suppression system. Install a fire suppression system throughout the entire building.	\$281,800
28	Replace fire alarm system with code compliant system.	\$30,400
29	The parking lot does not contain ADA parking spaces. Add one ADA space at the front parking lot and two ADA spaces adjacent to the ramp at the boiler room. Install code compliant ADA parking signs.	\$900
30	Curb cuts do not have warning protection. Install truncated domes.	\$300
31	Playground mulch areas do not accessibility code. Remove mulch and install a rubber mat system to meet code.	\$84,000
Code Evaluation Sub-Total:		<hr/> \$1,021,700

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Pine Forge Elementary School

ARCHITECTURAL SURVEY

Cost

H. Miscellaneous Upgrades:

1	Miscellaneous upgrades.	\$93,900
---	-------------------------	----------

	<i>Miscellaneous Upgrades Sub-Total:</i>	<hr/> \$93,900
--	---	-----------------------

	<i>Building Evaluation Total:</i>	<hr/> \$3,803,900
--	--	--------------------------

Asbestos Comment:

Asbestos Mitigation would require input from the District's consultant; therefore, no cost estimates are included in this study. It is our understanding the District has used Suburban Energy & Environmental Consultants for AHERA Management.

GENERAL DATA

Washington Elementary School

Built:	1961, 1987, 1995 Eligible for 20-year State Reimbursement in 2015
Site:	1406 Route 100, Barto, PA 19504-8704 24 acres; located in a rural area with paved drives and parking areas, athletic fields and play areas.
Structure:	One-story building with concrete floors; metal roof deck; structural steel frame; and masonry and concrete walls. Construction type non-combustible, unprotected in accordance with International Building Code with foam and built-up roof membranes.
HVAC System:	Hot water boilers serve classroom unit ventilators, air handlers and fan coils. Air conditioning is provided for miscellaneous areas through packaged rooftop and split system air conditioners.
Plumbing Service:	Public water and sewer
Electrical Service:	1600 amp, 120/208 volt, three phase, 4 wire
Systems:	Fire Alarm Paging/Intercom Master Clock Security Emergency Lighting and Power District Telephone Data Network
Architectural Area:	82,030 s.f.
PDE Replacement Value:	\$11,205,600 (700 FTE x 92 sf = 64,400 x \$174 / sf = replacement cost) \$2,241,120 (20% Rule)
PDE Total Capacity:	700

PHOTOGRAPHS

Washington Elementary School



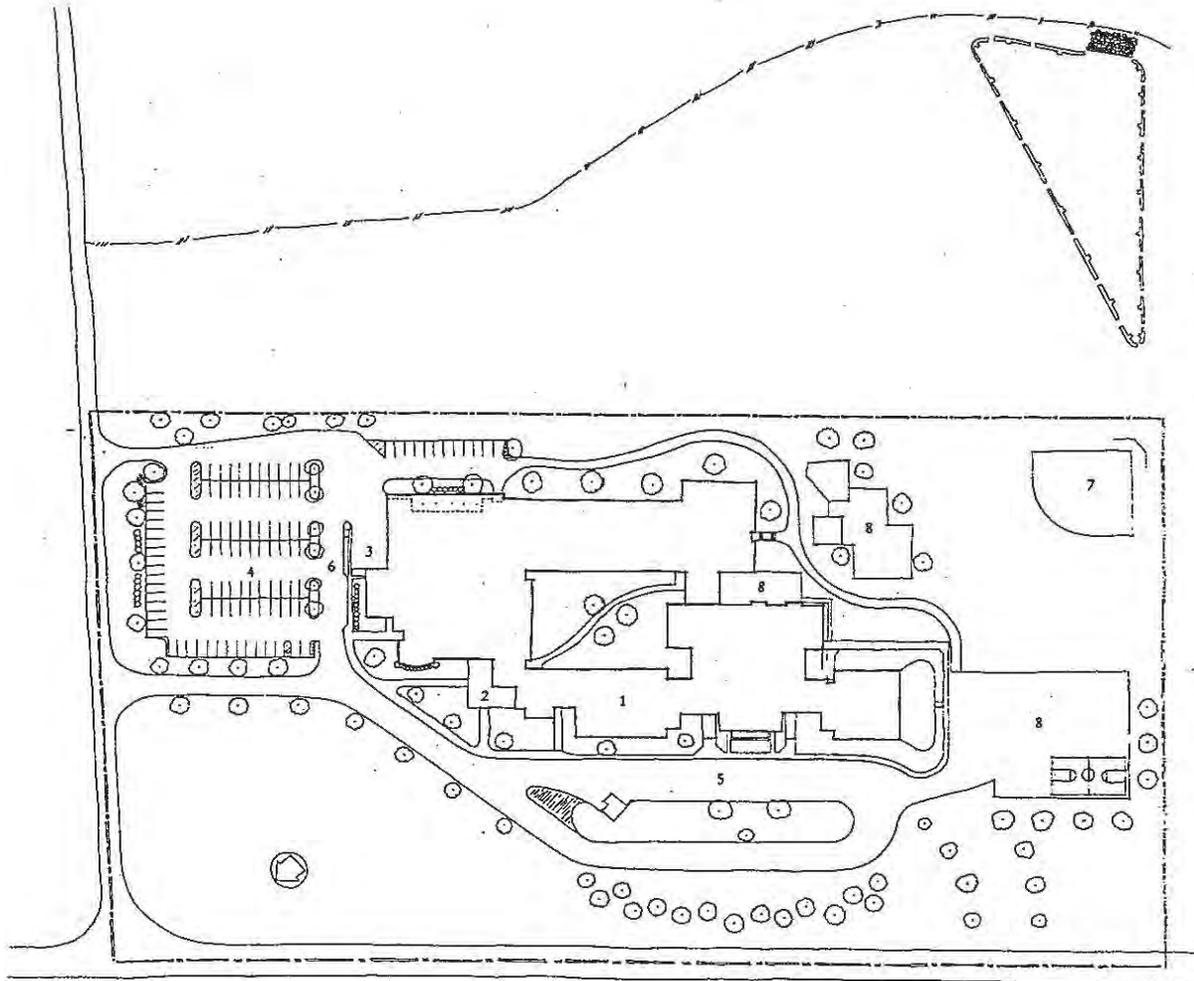
AERIAL VIEW

Washington Elementary School



EXISTING SITE PLAN

Washington Elementary School



Key:

- 1. School Building
- 2. Public Entrance
- 3. Service Entrance
- 4. Parking
- 5. Bus Drop-Off

- 6. Parent Drop-Off
- 7. Play field
- 8. Playground
- 9. District Administration

Notes:

- A. Modular Classrooms

OPERATIONAL COSTS SUMMARY

Washington Elementary School

82,030 s.f.	Annual Cost	Cost per sf
Electric	\$49,144	\$0.60
Natural Gas	\$35,144	\$0.43
Water	\$3,279	\$0.04
Sewer	\$20,348	\$0.25
Utilities Subtotal	\$107,915	\$1.32

SUMMARY - ENERGY STAR

Washington Elementary School

OMB No. 2060-0347



STATEMENT OF ENERGY PERFORMANCE Boyertown Area SD Washington Elementary 114060753

Building ID: 3213274
For 12-month Period Ending: May 31, 2011¹
Date SEP becomes ineligible: N/A

Date SEP Generated: July 20, 2012

Facility Boyertown Area SD Washington Elementary 114060753 1406 Route 100 Barto, PA 19504-8704	Facility Owner Boyertown Area School District 911 Montgomery Avenue Boyertown, PA 19512	Primary Contact for this Facility N/A
---	---	---

Year Built: 1961
Gross Floor Area (ft²): 82,033

Energy Performance Rating² (1-100) 96

Site Energy Use Summary³

Electricity - Grid Purchase(kBtu)	1,532,534
Natural Gas (kBtu) ⁴	317,220
Total Energy (kBtu)	1,849,754

Energy Intensity⁴

Site (kBtu/ft ² /yr)	23
Source (kBtu/ft ² /yr)	66

Emissions (based on site energy use)

Greenhouse Gas Emissions (MtCO ₂ e/year)	234
---	-----

Electric Distribution Utility

Metropolitan Edison Co [FirstEnergy Corp]

National Median Comparison

National Median Site EUI	45
National Median Source EUI	133
% Difference from National Median Source EUI	-50%
Building Type	K-12 School

Stamp of Certifying Professional

Based on the conditions observed at the time of my visit to this building, I certify that the information contained within this statement is accurate.

Meets Industry Standards⁵ for Indoor Environmental Conditions:

Ventilation for Acceptable Indoor Air Quality	N/A
Acceptable Thermal Environmental Conditions	N/A
Adequate Illumination	N/A

Certifying Professional
N/A

Notes:

1. Application for the ENERGY STAR must be submitted to EPA within 4 months of the Period Ending date. Award of the ENERGY STAR is not final until approval is received from EPA.
2. The EPA Energy Performance Rating is based on total source energy. A rating of 75 is the minimum to be eligible for the ENERGY STAR.
3. Values represent energy consumption, annualized to a 12-month period.
4. Values represent energy intensity, annualized to a 12-month period.
5. Based on Meeting ASHRAE Standard 62 for ventilation for acceptable indoor air quality, ASHRAE Standard 55 for thermal comfort, and IESNA Lighting Handbook for lighting quality.

The government estimates the average time needed to fill out this form is 6 hours (includes the time for entering energy data, Licensed Professional facility inspection, and notarizing the SEP) and welcomes suggestions for reducing this level of effort. Send comments (referencing OMB control number) to the Director, Collection Strategies Division, U.S., EPA (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460.

SUMMARY BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Washington Elementary School

		Cost per SF
SITE EVALUATION	\$373,700.00	\$4.56 SF
EXTERIOR EVALUATION	\$1,215,100.00	\$14.81 SF
INTERIOR EVALUATION	\$146,800.00	\$1.79 SF
HVAC EVALUATION	\$2,307,800.00	\$28.13 SF
PLUMBING EVALUATION	\$207,000.00	\$2.52 SF
ELECTRICAL EVALUATION	\$703,000.00	\$8.57 SF
CODE EVALUATION	\$956,900.00	\$11.67 SF
EDUCATIONAL UPGRADES	\$267,600.00	\$3.26 SF
<hr/>		
TOTAL*	\$6,177,900.00	\$75.31 SF

* For the purpose of this Study, a baseline has been established and no design contingency has been utilized. More precise costs can be developed as the District develops specific educational specifications and chooses a desired option.

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Washington Elementary School

ARCHITECTURAL SURVEY

Cost

A. Site Evaluation:

1	The concrete curbing adjacent to the paved play area is damaged. Remove the deteriorated sections and replace with new.	\$400
2	There is deterioration of concrete sidewalks at various locations around the building. Remove the deteriorated areas and replace with new.	\$2,600
3	The bituminous parking areas, drives, and paved play shows signs of deterioration. Mill and overlay with new bituminous paving.	\$347,500
4	The curb and sidewalk joints are missing the control joints. Replace control joints.	\$1,500
5	The doors of the refuse building are deteriorating at the bottom. Remove and replace doors.	\$6,000
6	The brick school sign adjacent to route 100 has missing or spalled brick. Replace missing brick or spalled brick, repoint as required.	\$800
7	The site and exterior of building lack identification and directional signage. Install identification and directional signage.	\$1,500
8	The refuse roof has deteriorated and is not under warranty. Remove and replace roof with new EPDM.	\$9,400
9	The shingles on the picnic pavillion adjacent to the paved play area have deteriorated. Remove and replace roof shingles.	\$4,000
Site Evaluation Sub-Total:		<hr/> \$373,700

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Washington Elementary School

ARCHITECTURAL SURVEY

Cost

B. Exterior of Building Evaluation:

1	The existing windows at the pre-1995 areas are failing and deteriorated. Remove the existing windows and replace with new thermo-break energy efficient aluminum window systems and doors.	\$156,000
2	The foam roofs installed approximately 1995 are in fair condition. Miscellaneous patching required. The built-up roofs installed in 1995 are in need of replacement.	\$1,000,000
4	Courtyard walls and stand-alone brick walls have significant efflorescing and cracked mortar joints in the brick. The wall cap has to be removed, brick cleaned and replaced. Then top of wall flashing to be installed.	\$11,800
5	The brick has staining and dirt accumulation, clean the brick.	\$33,100
6	Replace soffit at southwestern vestibule exit with vinyl soffit system.	\$800
7	Replace Sloped glazing at Art Rooms.	\$12,000
8	Replace edge metal at South Vestibule exit at Gym and repair edge of roofing.	\$900
9	Paint doors at the kitchen and boiler.	\$500
	<i>Exterior of Building Evaluation Sub-Total:</i>	<hr/> \$1,215,100

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Washington Elementary School

ARCHITECTURAL SURVEY

Cost

C. Interior of Building Evaluation:

1	Replace carpet and base in Main Office.	\$2,600
2	A security vestibule is not currently provided. Add internal curtainwall doors and frames at main lobby and a single door entering directly into the office. Provide new flooring within vestibule including new walk off mats.	\$10,000
3	Replace all walk-off mats at entry's	\$3,500
4	Replace chalkboard with markerboard in Music Room.	\$1,200
5	Replace chalkboard with markerboard in classrooms (12).	\$12,000
6	Replace carpet and base in Music Room.	\$4,300
7	Clean Kitchen grout and reseal.	\$2,400
8	Replace carpet and base in classrooms (5).	\$18,500
9	Replace counter and sink in classroom 144.	\$9,000
10	Replace VCT and base in Special Education Room.	\$4,100
11	Replace carpet and base in Library.	\$12,900
12	Replace mini-blinds in all 1995 classrooms with fabric shades.	\$24,000
13	Paint all interior door frames in the original building.	\$2,200
14	Replace VCT and base in classroom at original front entry.	\$5,000
15	Replace carpet and base in Conference Room.	\$2,300
16	Replace countertops, sinks and casework in Art Room at each sloped glazing sections.	\$10,000
17	Replace chalkboard in Art Room with markerboard.	\$1,000
18	Replace chalkboard in Kindergarten and Special Education Rooms	\$2,000

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Washington Elementary School

ARCHITECTURAL SURVEY

Cost

C. Interior of Building Evaluation (con't):

19	Add new rubber treads and risers at stair from Kindergarten to original main entry.	\$800
20	Ceiling tiles are sagging throughout the entire building; no work is required. Monitor condition for replacement.	\$0
21	Replace chalkboard with markerboard in classroom 219.	\$1,000
22	Remove all remaining asbestos, no work required at this time.	\$0
23	Replace VCT and base in 4 classrooms at southwest end of original building.	\$18,000
<i>Interior of Building Evaluation Sub-Total:</i>		<u>\$146,800</u>

D. Heating, Ventilation and Air Conditioning (HVAC) Evaluation:

1	Upgrade the exhaust systems in the School	\$90,200
2	Replace the older unit ventilators based on age and efficiency. Provide ducted systems with filtered outdoor for better air distribution, lower noise, and better indoor air quality.	\$350,000
3	Replace the rooftop air conditioning units based on age and efficiency.	\$63,000
4	New temperature control system.	\$328,100
5	Consideration should be given to providing building wide air conditioning. The cost listed is in addition to the items outlined above. All UV's and AH's will need to be replaced with this option. HW Boilers could be maintained.	\$1,476,500
<i>HVAC Evaluation Sub-Total:</i>		<u>\$2,307,800</u>

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Washington Elementary School

ARCHITECTURAL SURVEY

Cost

E. Plumbing Evaluation:

1	Replace the fixtures in the older gang toilet rooms.	\$48,000
2	Replace the water coolers throughout.	\$36,000
3	Replace old valves to provide for routine system maintenance.	\$123,000
<i>Plumbing Evaluation Sub-Total:</i>		<hr/> \$207,000

F. Electrical Evaluation:

1	Upgrade electrical panels not replaced in the original building.	\$30,000
2	Add groundfault receptacles/breakers for all 1P.20 amp receptacles in kitchen per NEC.	\$6,000
3	Add occupancy sensors in the rooms without to comply with the International Building Code.	\$5,000
4	Ground flammable storage cabinets.	\$2,000
5	Add second automatic transfer switch and panel to separate required and non-required loads per NEC.	\$25,000
6	Main electrical service and emergency generator located in the same room. Normal and emergency systems shall be located in separate rooms per NEC.	\$100,000
7	Install Electric as required for HVAC upgrades.	\$535,000
<i>Electrical Evaluation Sub-Total:</i>		<hr/> \$703,000

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Washington Elementary School

ARCHITECTURAL SURVEY

Cost

G. Code Evaluation:

The IBC, Americans with Disabilities Act, and recommendations by the Department of Education require all buildings during the renovation process to be updated to meet current standards and codes. The following building system will need to be updated during the renovation process in order to meet current standards and codes.

The following items may be required depending on the level of work completed.

- | | | |
|---|--|-----------|
| 1 | The pair of 30" exterior egress doors adjacent to the Mechanical Room do not meet the required egress width per code. Remove and replace with code compliant doors. | \$7,500 |
| 2 | Doors throughout the building have non-compliant door hardware. Replace knobs with ADA compliant hardware and levers. | \$6,300 |
| 3 | The entrances to instructional areas and other areas lack the proper clearances and do not meet disabled persons code. Upgrade the entrances to meet code. | \$39,000 |
| 4 | The individual use toilet rooms do not meet code. Upgrade the toilets to meet code. | \$75,000 |
| 5 | The exterior egress door from the classrooms to the fenced paved playground area does not meet the egress width per code and is not accessible. Remove and replace with a code compliant door and construct a code compliant ramp to the playground. | \$14,000 |
| 6 | Existing fire extinguisher cabinets do not meet ADA code. Remove and replace fire extinguisher cabinets with code compliant cabinets. | \$2,100 |
| 7 | The Multi-purpose Room platform is not accessible to disabled persons. Install a chair lift. | \$35,000 |
| 8 | Several of the gang toilet facilities throughout the building do not meet current disabled persons code. Upgrade the toilets to meet code. | \$140,000 |
| 9 | The gang toilets ADA stall requires a vertical grab bar. Install vertical grab bar. | \$400 |

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Washington Elementary School

ARCHITECTURAL SURVEY

Cost

G. Code Evaluation (con't):

10	The dish return and canteen counters do not meet the height requirement per code. Lower counters to meet code.	\$2,500
11	Several counters with sinks do not meet the accessibility code. Remove and replace sink, counter, and cabinets to meet code.	\$11,500
12	The kitchen has a screen door that swings into the means of egress at the exit door. Remove screen door.	\$100
13	The electric water coolers protrude into the clear walking space. Install barrier partitions at electric water coolers.	\$1,000
14	Some corridor doors have existing glass in doors, partitions, or display cases that do not meet code. Remove the existing glass and replace with rated or safety glass.	\$5,000
15	The current ADA requires signage to meet 48" reach height maximum. Several signs in the building appear to be slightly high. No work is required at this time.	\$0
16	Two classrooms have a step in front of the sink cabinet which does not meet code. Remove step.	\$200
17	The roof hatch does not have an extension pole to meet code. Install extension pole.	\$500
18	Several corridor doors have plate glass or louvers which do not meet the required fire rating. Remove the existing glass and replace with rated safety glass and replace the louvered doors with new doors to meet code.	\$4,800

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Washington Elementary School

ARCHITECTURAL SURVEY

Cost

G. Code Evaluation (con't):

19	The existing exterior concrete steps leading to the play area require center handrails per code. Install center aluminum hanrails.	\$1,200
20	Several of the classroom sinks do have faucet handles that meet code. Remove and replace with wrist blade handles to meet code.	\$1,400
21	The handrails at the Mechanical Room steps do not meet code and a center rail is required at the corridor steps. Remove and replace mechanical room handrails.	\$5,400
22	A dead end corridor exists adjacent to the Science classrooms. The 30" pair of doors in the corridor adjacent to the Science Room and the Kindergarten classroom do not meet the required egress width per code. Remove or relocate code compliant doors in the corridor and install code compliant doors at the Kindergarten classroom.	\$8,000
23	The corridor partition and door at the Instructional Support Team Room does meet the required fire rating. Remove and replace with a code compliant system.	\$2,500
24	Curb cuts do not have warning protection. Install truncated domes.	\$1,800
25	The existing ADA parking signs are not mounted at the correct height to meet code or are missing. Install ADA parking signs to meet code.	\$2,700

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Washington Elementary School

ARCHITECTURAL SURVEY

Cost

G. Code Evaluation (con't):

26	Playground mulch areas do not meet the accessibility code. Remove mulch and install a rubber mat system to meet code.	\$172,900
27	The mulch at the masonry wall enclosed play area does not meet the accessibility code. Remove mulch and install a rubber mat system to meet code.	\$29,000
28	The International Building Code requires all facilities used for educational purposes to be equipped with a fire suppression system. Install a fire suppression system throughout the entire building.	\$369,100
29	Upgrade fire alarm system in areas where it is not code compliant	\$18,000
Code Evaluation Sub-Total:		<hr/> \$956,900

H. Miscellaneous Upgrades:

1	Miscellaneous upgrades.	\$205,100
2	Door hardware is problematic and keying is not uniform throughout the district. Replace door hardware throughout.	\$62,500
Miscellaneous Upgrades Sub-Total:		<hr/> \$267,600

Building Evaluation Total:

\$6,177,900

Asbestos Comment:

Asbestos Mitigation would require input from the District's consultant; therefore, no cost estimates are included in this study. It is our understanding the District has used Suburban Energy & Environmental Consultants for AHERA Management.

GENERAL DATA

Boyertown Junior High School East Center

Built:	1972, 2004 Eligible for 20-year State Reimbursement in 2024
Site:	2020 Big Road, Gilbertsville, PA 19525-0609 45 acres; located in a rural area with paved drives and parking areas, athletic fields and play areas.
Structure:	One-story building with concrete floors; metal roof deck; structural steel frame; and masonry and concrete walls. Construction type non-combustible, unprotected in accordance with International Building Code with built-up roof membrane and various standing seam areas.
HVAC System:	Four pipe HVAC system with firetube boilers, air cooled chillers, centralized air handlers, and fan powered VAV boxes.
Plumbing Service:	Public water and sewer
Electrical Service:	3000 amp, 277/480 volt, three phase, 4 wire
Systems:	Fire Alarm Paging/Intercom Master Clock Security Emergency Lighting and Power District Telephone Data Network
Architectural Area:	159,430 s.f.
PDE Replacement Value:	\$25,254,360 (1180 FTE x 123 sf = 145,140 x \$174 / sf = replacement cost) \$5,050,872 (20% Rule)
PDE Total Capacity:	1,180

PHOTOGRAPHS

Boyertown Junior High School East Center



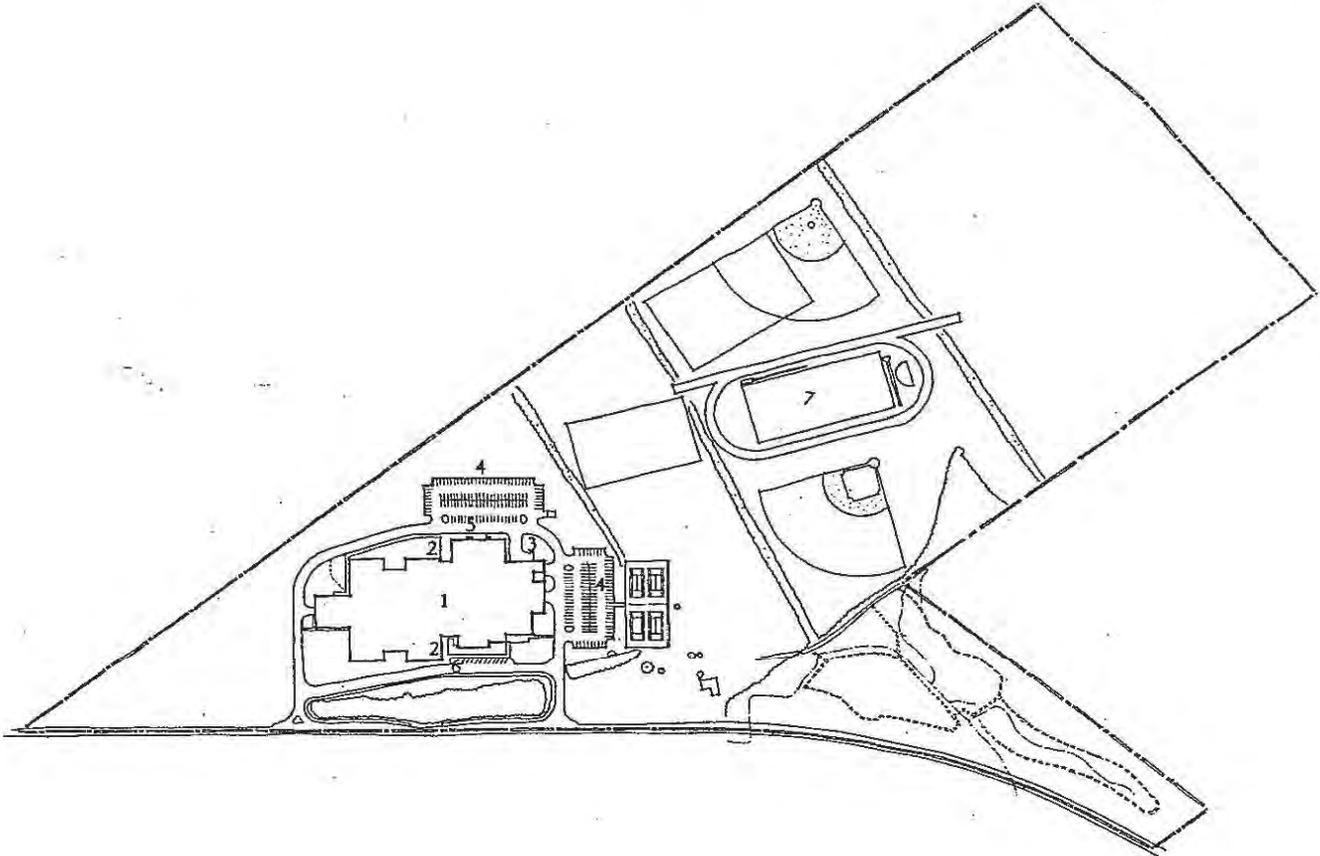
AERIAL VIEW

Boyertown Junior High School East Center



EXISTING SITE PLAN

Boyertown Junior High School East Center



Key:

- | | |
|---------------------|--------------------|
| 1. School Building | 5. Bus Drop-Off |
| 2. Public Entrance | 6. Parent Drop-Off |
| 3. Service Entrance | 7. Play field |
| 4. Parking | |

OPERATIONAL COSTS SUMMARY

Boyertown Junior High School East Center

159,430 s.f.	Annual Cost	Cost per sf
Electric	\$156,835	\$0.98
Natural Gas	\$46,174	\$0.29
Water	\$6,297	\$0.04
Sewer	\$4,996	\$0.03
Utilities Subtotal	\$214,302	\$1.34

SUMMARY - ENERGY STAR

Boyertown Junior High School East Center

OMB No. 2060-0347



STATEMENT OF ENERGY PERFORMANCE Boyertown Area SD JH East Center 114060753

Building ID: 3213734
For 12-month Period Ending: May 31, 2011¹
Date SEP becomes ineligible: N/A

Date SEP Generated: July 20, 2012

Facility Boyertown Area SD JH East Center 114060753 2020 Big Road, PO Box 609 Gilbertsville, PA 19525-0609	Facility Owner Boyertown Area School District 911 Montgomery Avenue Boyertown, PA 19512	Primary Contact for this Facility N/A
---	---	---

Year Built: 1972
Gross Floor Area (ft²): 159,425

Energy Performance Rating² (1-100) 67

Site Energy Use Summary³

Electricity - Grid Purchase(kBtu)	5,350,296
Natural Gas (kBtu) ⁴	406,723
Total Energy (kBtu)	5,757,019

Energy Intensity⁴

Site (kBtu/ft ² /yr)	36
Source (kBtu/ft ² /yr)	115

Emissions (based on site energy use)

Greenhouse Gas Emissions (MtCO ₂ e/year)	779
---	-----

Electric Distribution Utility

Metropolitan Edison Co [FirstEnergy Corp]

National Median Comparison

National Median Site EUI	43
National Median Source EUI	136
% Difference from National Median Source EUI	-15%
Building Type	K-12 School

Stamp of Certifying Professional

Based on the conditions observed at the time of my visit to this building, I certify that the information contained within this statement is accurate.

Meets Industry Standards⁵ for Indoor Environmental Conditions:

Ventilation for Acceptable Indoor Air Quality	N/A
Acceptable Thermal Environmental Conditions	N/A
Adequate Illumination	N/A

Certifying Professional
N/A

Notes:

1. Application for the ENERGY STAR must be submitted to EPA within 4 months of the Period Ending date. Award of the ENERGY STAR is not final until approval is received from EPA.
2. The EPA Energy Performance Rating is based on total source energy. A rating of 75 is the minimum to be eligible for the ENERGY STAR.
3. Values represent energy consumption, annualized to a 12-month period.
4. Values represent energy intensity, annualized to a 12-month period.
5. Based on Meeting ASHRAE Standard 62 for ventilation for acceptable indoor air quality, ASHRAE Standard 55 for thermal comfort, and IESNA Lighting Handbook for lighting quality.

The government estimates the average time needed to fill out this form is 6 hours (includes the time for entering energy data, Licensed Professional facility inspection, and notarizing the SEP) and welcomes suggestions for reducing this level of effort. Send comments (referencing OMB control number) to the Director, Collection Strategies Division, U.S., EPA (2622T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460.

EPA Form 5900-16

SUMMARY BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Boyertown Junior High School East Center

		Cost per SF
SITE EVALUATION	\$279,800.00	\$1.76 SF
EXTERIOR EVALUATION	\$55,000.00	\$0.34 SF
INTERIOR EVALUATION	\$49,600.00	\$0.31 SF
HVAC EVALUATION	\$409,500.00	\$2.57 SF
PLUMBING EVALUATION	\$0.00	\$0.00 SF
ELECTRICAL EVALUATION	\$10,000.00	\$0.06 SF
CODE EVALUATION	\$414,900.00	\$2.60 SF
MISCELLANEOUS UPGRADES	\$0.00	\$0.00 SF
<hr/>		
TOTAL*	\$1,218,800.00	\$7.64 SF

* For the purpose of this Study, a baseline has been established and no design contingency has been utilized. More precise costs can be developed as the District develops specific educational specifications and chooses a desired option.

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Boyertown Junior High School East Center

ARCHITECTURAL SURVEY

Cost

A. Site Evaluation:

- | | | |
|---|--|-----------|
| 1 | The sidewalk and the curb at the front of the building have a large open joint and the the walk has settlement. Monitor the walk for possible replacement. | \$1,500 |
| 2 | There is cracking or spalled concrete at the sidewalks in several locations around the site. Remove the deteriorated areas and replace with new. | \$1,900 |
| 3 | The brick screen wall adjacent to the Art Room has missing or deteriorated grout. Remove deteriorated grout and Repoint (Wall to be cleaned per item Exterior of Building Evaluation). | \$2,000 |
| 4 | The drain at the Art Room plaza sidewalk is clogged. Unclog drain at Art Plaza. | \$500 |
| 5 | The bituminous drive at the rear of the building has an area of spalling. Repair bituminous spalled area. | \$800 |
| 6 | The existing truncated warning domes at curb cuts are broken, cracked, or missing. Remove and replace truncated warning domes. | \$1,000 |
| 7 | Many of the curb joints and sidewalk joints are missing joint material. Replace missing joint material at curb and sidewalk joints. | \$1,500 |
| 8 | The existing tennis courts have multiple areas of random cracking and the chain link fence is deteriorating. Remove and replace tennis courts and chain link fence. | \$265,000 |

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Boyertown Junior High School East Center

ARCHITECTURAL SURVEY

Cost

A. Site Evaluation (con't):

9	The base plates of (8) light standards are rusting and missing the protective cover. Sand and paint base plates and install new protective cover.	\$1,600
10	The shed adjacent to the tennis court has deteriorating wood doors and shingles and the paint is showing signs of age. Replace wood doors and shingles. Repaint shed.	\$1,500
11	The storage building at the west end of the football field has wall crack on the west face. Clean loose material from crack and caulk.	\$500
12	The site and exterior lack identification and directional signage. Install identification and directional signage.	\$1,500
13	The well pump house doors are rusting and have peeling paint. Sand doors and paint to match existing.	\$500
Site Evaluation Sub-Total:		\$279,800

B. Exterior of Building Evaluation:

1	Around the perimeter of the building the dirt is exposed. When water splashes down onto ground it is causing mud/dirt staining to the precast. Lay down new grass seed around building perimeter and clean precast banding at ground level.	\$2,000
2	The roof is generally in good condition. Some bubbling is occurring in roof over kitchen area and some roof drain covers are missing. The roof membrane is not adhered at one overflow pocket on the north side of the building. Additional roof hatches are needed and ladder access to the roofs over the original mechanical mezzanines should be installed.	\$10,000
3	The metal louver wall panel system at the mechanical mezzanines have peeling paint. Repaint areas peeled areas and exposed.	\$3,000
4	Significant rust and apparent water infiltration is occurring at the small doors to the original mechanical mezzanines. Replace doors, thresholds and flashing.	\$4,000

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Boyertown Junior High School East Center

ARCHITECTURAL SURVEY

Cost

B. Exterior of Building Evaluation (con't):

5	Replace double glazed clerestory windows at the rear of the old auditorium partition. Install a venting system to relieve the UV and heat affect in this elevated area.	\$5,000
6	The brick has staining and dirt accumulation; clean the brick.	\$10,000
7	Repair expansion joint fillers at 4 locations.	\$600
8	Repair cracks in plaster soffit and fascia banding.	\$1,000
9	Window joint sealants in south face of original building are beginning to crack. Remove sealants and replace.	\$5,000
10	Major cracking at the exterior courtyard wall and efflouressing is occurring. The entire wall should be removed and replaced with proper cap flashing and new brick.	\$8,000
11	Clean roof and sidewalls of kitchen freezer and refrigerator units.	\$500
12	Seal failure has occurred in a window in the classroom adjacent to the main entrance and in the Art Room. Replace exterior window glass at these areas.	\$2,000
13	A small rust stain is appearing on the precast banding at the north classroom. Clean precast of all rust and resolve source of rusting.	\$400
14	The door hinges on the doors from the new mechanical mezzanine to the roof are rusting. Replace hinges with new stainless steel hinges.	\$2,000
15	A significant rust problem is occuring on the north and west faces of the new mechanical mezzanine. Remove and replace drain line and rust.	\$1,500
<i>Exterior of Building Evaluation Sub-Total:</i>		<hr/> \$55,000

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Boyertown Junior High School East Center

ARCHITECTURAL SURVEY

Cost

C. Interior of Building Evaluation:

1	Minor porcelain tile cracking occurring; no work required at this time.	\$0
2	Mirror in Boy's 128, adjacent to Library, is delaminating. Replace entire mirror.	\$200
3	Remove all remaining asbestos; no work required at this time.	\$0
4	The ceiling tiles in Girl's 339, adjacent to cafeteria are damaged. Replace entire acoustical ceiling tile system.	\$1,000
5	Replace countertop and sink in Faculty kitchen.	\$400
6	Add acoustical panels in gymnasium to improve acoustics.	\$2,000
7	Add acoustical panels in auditorium to improve acoustics.	\$3,000
8	Replace stage rigging and complete remaining curtain fireproofing per BASD capital projects report.	\$43,000
<i>Interior of Building Evaluation Sub-Total:</i>		<hr/> \$49,600

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Boyertown Junior High School East Center

ARCHITECTURAL SURVEY

Cost

D. Heating, Ventilation and Air Conditioning (HVAC) Evaluation:

1	Replace the 40 year old boilers with new more efficient boilers.	\$400,000
2	Repair the hail damage to the coil fins on the chiller.	\$2,000
3	Repair the VFD on the HW pump	\$7,500
	<i>HVAC Evaluation Sub-Total:</i>	<hr/> \$409,500

E. Plumbing Evaluation:

1	None.	\$0
	<i>Plumbing Evaluation Sub-Total:</i>	<hr/> \$0

F. Electrical Evaluation:

1	Install Electric as required for Boilers.	\$10,000
	<i>Electrical Evaluation Sub-Total:</i>	<hr/> \$10,000

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Boyertown Junior High School East Center

ARCHITECTURAL SURVEY

Cost

G. Code Evaluation:

The IBC, Americans with Disabilities Act, and recommendations by the Department of Education require all buildings during the renovation process to be updated to meet current standards and codes. The following building system will need to be updated during the renovation process in order to meet current standards and codes.

The following items may be required depending on the level of work completed.

- | | | |
|---|--|----------|
| 1 | Many doors do not have code compliant hardware. Remove door hardware and replace with lever handles. | \$700 |
| 2 | The return dishwash counter and the School Store counter do not meet the required ADA reach height. Lower counters to comply with ADA code. | \$7,000 |
| 3 | There are many counters with sinks that do not meet the ADA code. Remove and replace counter, cabinets, and sink to meet code. | \$26,000 |
| 4 | The circulation desk in the Media does not meet ADA height requirement. Remove & replace with code compliant circulation desk. | \$3,500 |
| 5 | The mechanical stair and platform rails do not meet code. Remove and replace handrail with code compliant guardrail/handrail system. | \$4,800 |
| 6 | The gang toilet facilities and many of the single use toilet rooms throughout the building are missing a vertical grab bar at the ADA stall and urinal screens are required do not meet current disabled persons code. Upgrade the toilets to meet code. | \$7,200 |
| 7 | The electric water coolers protrude into the clear walking space. Install barrier partitions at electric water coolers. | \$21,000 |

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Boyertown Junior High School East Center

ARCHITECTURAL SURVEY

Cost

G. Code Evaluation (con't):

8	The fire extinguisher cabinets do not meet current reach height per ADA code. Remove and replace cabinets to meet code.	\$6,300
9	The existing Locker Rooms do not meet the current disabled persons code. Upgrade the toilets, showers, lockers, and benches to meet code.	\$70,000
10	The Gymnasium bleachers do not meet current code. Remove and replace with code compliant bleachers.	\$70,400
11	The ADA compliant sinks at the Science Labs do not have faucet handles that are code compliant. Remove and replace with wrist blades to meet code.	\$400
12	The teachers demonstration table in the Science Labs do not meet ADA code. Remove and replace demonstration tables with code compliant cabinetry.	\$12,000
13	The student sinks in the science rooms do not meet ADA code. Replace sinks with code compliant assembly or use a mobile student cart to meet code.	\$48,000
14	In various locations of the building, the existing glass in doors or display cases does not meet code. Remove the existing glass and replace with safety glass.	\$5,000
15	The ADA parking signs are not the correct height to meet code. Install new compliant ADA parking signs.	\$2,100
16	The current ADA requires signage to meet 48" reach height maximum. Several signs in the building appear to be slightly high. No work is required at this time.	\$0
17	Corridor lockers are existing and do not provide accessible locker locations. Remove existing lockers and install new dispersed lockers with compliant control, shelf, and coat hook height.	\$11,300
18	Curb cuts do not have warning protection. Install truncated domes.	\$2,300

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Boyertown Junior High School East Center

ARCHITECTURAL SURVEY

Cost

G. Code Evaluation (con't):

- | | | |
|----|--|-----------|
| 19 | The existing handrails at the loading dock stair does not meet code requirements. Remove existing rails and install new aluminium guardrails/handrails to meet code. | \$3,000 |
| 20 | The guardrail at the mechanical penthouses does not meet code. Remove and replace with aluminum guardrail/hanrail system to meet code. | \$108,000 |
| 23 | The auditorium does not have assistive listening devices. Furnish the required headsets. | \$2,400 |
| 24 | There are no accessible seating areas, transfer arms, or aisle lighting at the Auditorium seating area. Remove and replace seats for code compliance, and add lighting (under Electrical). | \$3,500 |

Code Evaluation Sub-Total:

\$414,900

H. Miscellaneous Upgrades:

- | | | |
|---|-------------------------|-----|
| 1 | Miscellaneous upgrades. | \$0 |
|---|-------------------------|-----|

Miscellaneous Upgrades Sub-Total:

\$0

Building Evaluation Total:

\$1,218,800

Asbestos Comment:

Asbestos Mitigation would require input from the District's consultant; therefore, no cost estimates are included in this study. It is our understanding the District has used Suburban Energy & Environmental Consultants for AHERA Management.

GENERAL DATA

Boyertown Junior High School West Center

Built:	1963, 1998 Eligible for 20-year State Reimbursement in 2018
Site:	380 South Madison Street, Boyertown, PA 19512-2299 33 acres; located in a residential area with paved drives and parking areas, athletic fields and play areas.
Structure:	One-story building with concrete floors; metal roof deck; structural steel frame; and masonry and concrete walls. Construction type non-combustible, unprotected in accordance with International Building Code with Built-up roof membrane and various standing seam areas.
HVAC System:	Hot water heating system with dual fuel boilers, classroom unit ventilators and air handlers. Air conditioning is provided in limited locations via packaged rooftop units.
Plumbing Service:	Public water and sewer
Electrical Service:	1600 amp, 277/480 volt, three phase, 4 wire
Systems:	Fire Alarm Paging/Intercom Master Clock Security Emergency Lighting and Power District Telephone Data Network
Architectural Area:	145,720 s.f.
PDE Replacement Value:	\$20,759,940 (970 FTE x 123 sf = 119,310 x \$174 / sf = replacement cost) \$4,151,988 (20% Rule)
PDE Total Capacity:	970

PHOTOGRAPHS

Boyertown Junior High School West Center



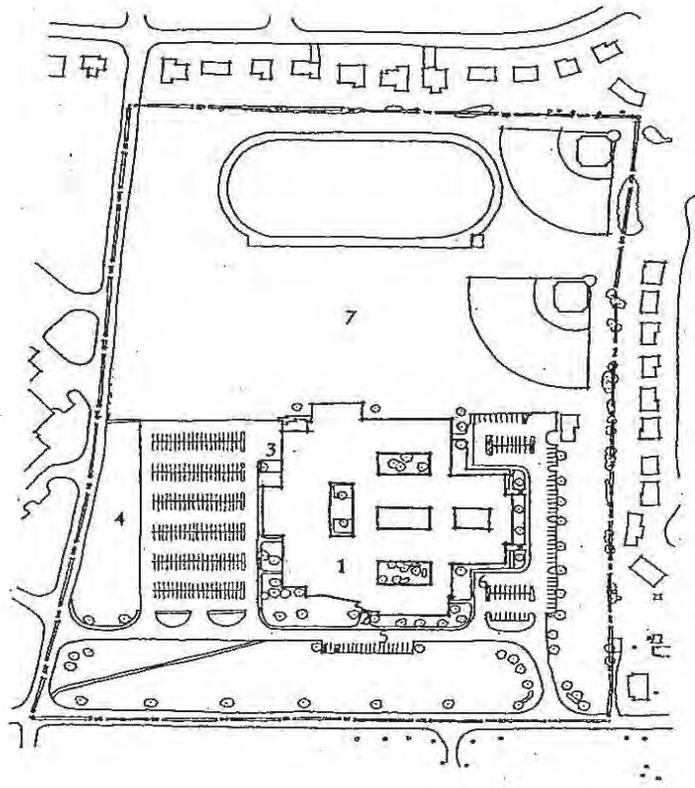
AERIAL VIEW

Boyertown Junior High School West Center



EXISTING SITE PLAN

Boyertown Junior High School West Center



Key:

- 1. School Building
- 2. Public Entrance
- 3. Service Entrance
- 4. Parking

- 5. Bus Drop-Off
- 6. Parent Drop-Off
- 7. Play field

OPERATIONAL COSTS SUMMARY

Boyertown Junior High School West Center

145,720 s.f.	Annual Cost	Cost per sf
Electric	\$78,801	\$0.54
Natural Gas	\$70,880	\$0.49
Water	\$3,632	\$0.02
Sewer	\$6,788	\$0.05
Utilities Subtotal	\$160,101	\$1.10

SUMMARY - ENERGY STAR

Boyertown Junior High School West Center

OMB No. 2060-0347



STATEMENT OF ENERGY PERFORMANCE Boyertown Area SD JH West Center 114060753

Building ID: 3213715
For 12-month Period Ending: May 31, 2011¹
Date SEP becomes ineligible: N/A

Date SEP Generated: July 20, 2012

Facility
Boyertown Area SD JH West Center
114060753
200 S Madison Street
Boyertown, PA 19512-2299

Facility Owner
Boyertown Area School District
911 Montgomery Avenue
Boyertown, PA 19512

Primary Contact for this Facility
N/A

Year Built: 1965
Gross Floor Area (ft²): 145,721

Energy Performance Rating² (1-100) 91

Site Energy Use Summary³

Electricity - Grid Purchase(kBtu)	2,490,900
Natural Gas (kBtu) ⁴	714,743
Total Energy (kBtu)	3,205,643

Energy Intensity⁴

Site (kBtu/ft ² /yr)	22
Source (kBtu/ft ² /yr)	62

Emissions (based on site energy use)

Greenhouse Gas Emissions (MtCO ₂ e/year)	391
---	-----

Electric Distribution Utility

Metropolitan Edison Co [FirstEnergy Corp]

National Median Comparison

National Median Site EUJ	36
National Median Source EUJ	103
% Difference from National Median Source EUJ	-40%
Building Type	K-12 School

Stamp of Certifying Professional

Based on the conditions observed at the time of my visit to this building, I certify that the information contained within this statement is accurate.

Meets Industry Standards⁵ for Indoor Environmental Conditions:

Ventilation for Acceptable Indoor Air Quality	N/A
Acceptable Thermal Environmental Conditions	N/A
Adequate Illumination	N/A

Certifying Professional
N/A

Notes:

1. Application for the ENERGY STAR must be submitted to EPA within 4 months of the Period Ending date. Award of the ENERGY STAR is not final until approval is received from EPA.
2. The EPA Energy Performance Rating is based on total source energy. A rating of 75 is the minimum to be eligible for the ENERGY STAR.
3. Values represent energy consumption, annualized to a 12-month period.
4. Values represent energy intensity, annualized to a 12-month period.
5. Based on Meeting ASHRAE Standard 62 for ventilation for acceptable indoor air quality, ASHRAE Standard 55 for thermal comfort, and IESNA Lighting Handbook for lighting quality.

The government estimates the average time needed to fill out this form is 6 hours (includes the time for entering energy data, Licensed Professional facility inspection, and notarizing the SEP) and welcomes suggestions for reducing this level of effort. Send comments (referencing OMB control number) to the Director, Collection Strategies Division, U.S., EPA (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460.

EPA Form 5900-16

SUMMARY BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Boyertown Junior High School West Center

		Cost per SF
SITE EVALUATION	\$2,185,800.00	\$15.00 SF
EXTERIOR EVALUATION	\$2,914,400.00	\$20.00 SF
INTERIOR EVALUATION	\$6,557,400.00	\$45.00 SF
HVAC EVALUATION	\$4,663,000.00	\$32.00 SF
PLUMBING EVALUATION	\$1,238,600.00	\$8.50 SF
ELECTRICAL EVALUATION	\$3,643,000.00	\$25.00 SF
CODE EVALUATION	\$655,700.00	\$4.50 SF
MISCELLANEOUS UPGRADES	\$364,300.00	\$2.50 SF
<hr/>		
TOTAL*	\$22,222,200.00	\$152.50 SF

* For the purpose of this Study, a baseline has been established and no design contingency has been utilized. More precise costs can be developed as the District develops specific educational specifications and chooses a desired option.

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Boyertown Junior High School West Center

ARCHITECTURAL SURVEY

Cost

A. Site Evaluation:

- | | | |
|---|---|-------------|
| 1 | The building requires extensive renovations to various site work, refer to items 2-7. | \$2,185,800 |
| 2 | There is deterioration of concrete sidewalks at the two (2) west entry sidewalks of the building and various other areas. Remove the deteriorated areas and replace with new. | \$0 |
| 3 | The two bituminous parking areas at the north side of the building shows signs of deterioration. Repair the deteriorated areas and resurface. | \$0 |
| 4 | The four tennis courts at the rear of the building are in poor condition and lack drainage. Remove and replace tennis courts. | \$0 |
| 5 | The fence at the tennis courts is in poor condition. Remove the existing fence and replace with new fencing. | \$0 |
| 6 | The bituminous paved drive and parking drive at the front of the building have random cracking. Repair deteriorated areas and cracking overlay with new paving and paint lines. | \$0 |
| 7 | The site and exterior of building lack identification and directional signage. Install identification and directional signage. | \$0 |

Site Evaluation Sub-Total:

\$2,185,800

B. Exterior of Building Evaluation:

- | | | |
|---|--|-------------|
| 1 | The building requires extensive renovations to the exterior of the building including exterior doors and windows (new roof installation underway) and miscellaneous wall repairs and flashing. | \$2,914,400 |
|---|--|-------------|

Exterior of Building Evaluation Sub-Total:

\$2,914,400

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Boyertown Junior High School West Center

ARCHITECTURAL SURVEY

Cost

C. Interior of Building Evaluation:

- | | | |
|---|---|-------------|
| 1 | The building requires extensive renovations including interior finishes, cabinetry and classroom entrances throughout the building. | \$6,557,400 |
|---|---|-------------|

Interior of Building Evaluation Sub-Total:

\$6,557,400

D. Heating, Ventilation and Air Conditioning (HVAC) Evaluation:

- | | | |
|----|--|-------------|
| 1 | Install a new centralized HVAC system with ducted HVAC and outdoor air through the roof. | \$4,663,000 |
| 2 | New boilers and hot water distribution system. | \$0 |
| 3 | New centralized cooling system for the entire facility. | \$0 |
| 4 | Eliminate OA intakes at ground level. | \$0 |
| 5 | New exhaust systems throughout. | \$0 |
| 6 | Eliminate utilization of the corridor as a plenum. | \$0 |
| 7 | Ducted units for lower noise and better distribution. | \$0 |
| 8 | Provide systems with adequate maintenance clearances. | \$0 |
| 9 | New centralized control system. | \$0 |
| 10 | Variable speed pumping systems and energy efficient components. | \$0 |
| 11 | Systems in the recently constructed Gym addition would be integrated with the new systems. | \$0 |

HVAC Evaluation Sub-Total:

\$4,663,000

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Boyertown Junior High School West Center

ARCHITECTURAL SURVEY

Cost

E. Plumbing Evaluation:

- | | | |
|---|--|-------------|
| 1 | The majority of the plumbing systems are generally original and in need of replacement or upgrade. | \$1,238,600 |
| 2 | Upgrade or replace the sewer lift station. | \$0 |
| 3 | Replace older plumbing fixtures throughout. | \$0 |
| 4 | Replace the older water coolers throughout. | \$0 |
| 5 | Replace old valves to provide for routine system maintenance. | \$0 |
| 6 | Install exterior grease trap. | \$0 |

Plumbing Evaluation Sub-Total:

\$1,238,600

F. Electrical Evaluation:

- | | | |
|---|-----------------------------|-------------|
| 1 | Replace electrical systems. | \$3,060,100 |
| 2 | Replace technology systems. | \$582,900 |

Electrical Evaluation Sub-Total:

\$3,643,000

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Boyertown Junior High School West Center

ARCHITECTURAL SURVEY

Cost

G. Code Evaluation:

The IBC, Americans with Disabilities Act, and recommendations by the Department of Education require all buildings during the renovation process to be updated to meet current standards and codes. The following building system will need to be updated during the renovation process in order to meet current standards and codes.

The following items may be required depending on the level of work completed.

- | | | |
|---|--|-----|
| 1 | Not all entrances and exits to the building are accessible to disabled persons. Upgrade entrances and exits as required. | \$0 |
| 2 | Doors throughout the building have non-compliant door hardware. Replace knobs with ADA compliant hardware and levers. | \$0 |
| 3 | The entrances to instructional areas and other areas lack the proper clearances and do not meet disabled persons code. Upgrade the entrances to meet code. | \$0 |
| 4 | Doors at Toilet Areas and Offices do not provide the required width for a single leaf. Reconfigure door opening for proper width door and frame. | \$0 |
| 5 | 30" pair of doors at Media, Cafeteria, Auditorium and Music Areas do not provide the required width for a single leaf. Replace with uneven pair of door leaves. | \$0 |
| 6 | There are no accessible seating areas, transfer arms, or aisle lighting at the Auditorium seating area. Remove and replace seats for code compliance, and add lighting (under Electrical). | \$0 |
| 7 | In the addition, the risers in the L.G.I. Room are not accessible to disabled persons. Remove the risers and install a level floor. | \$0 |
| 8 | The toilet facilities throughout the building do not meet current disabled persons code. Upgrade the toilets to meet code. | \$0 |

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Boyertown Junior High School West Center

ARCHITECTURAL SURVEY

Cost

G. Code Evaluation (con't):

9	The existing Locker Rooms do not meet the current disabled persons code. Upgrade the toilets and showers to meet code.	\$0
10	The water coolers throughout the building do not meet the current disabled persons code. Remove the existing water coolers and replace with new to meet code.	\$0
11	The existing glass in doors, partitions etc. does not meet code. Remove the existing glass and replace with safety glass.	\$0
12	The current disabled persons code requires signage. Provide signage to meet code.	\$0
13	The Stage is not accessible to disabled persons from the Auditorium. Upgrade the stage to make it accessible to disabled persons and to meet code.	\$0
14	The bleachers in the original Gymnasium do not meet current codes. Remove the existing bleachers and replace with new.	\$0
15	Dark Rooms in the Graphics Arts Areas are not accessible to disabled persons. Upgrade the Dark Rooms to provide access to disabled persons.	\$0
16	Corridor lockers are existing and do not provide accessible locker locations. Remove existing lockers and install new lockers with compliant control, shelf, and coat hook height.	\$0
17	Curb cuts do not have warning protection. Install truncated domes.	\$0
18	The International Building Code requires all facilities used for educational purposes to be equipped with a fire suppression system. Install a fire suppression system throughout the entire building.	\$655,700
Code Evaluation Sub-Total:		<hr/> \$655,700

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Boyertown Junior High School West Center

ARCHITECTURAL SURVEY	Cost
H. Miscellaneous Upgrades:	
1 Miscellaneous upgrades.	\$364,300
<i>Miscellaneous Upgrades Sub-Total:</i>	\$364,300
<i>Building Evaluation Total:</i>	\$22,222,200

Asbestos Comment:

Asbestos Mitigation would require input from the District's consultant; therefore, no cost estimates are included in this study. It is our understanding the District has used Suburban Energy & Environmental Consultants for AHERA Management.

GENERAL DATA

Boyertown Area Senior High School

Built:	1920, 1930's, 1955, 1977, 1992, (1996) Eligible for 20-year State Reimbursement
Site:	120 North Monroe Street, Boyertown, PA 19512-1299 70 acres; located in a residential area with paved drives and parking areas, tennis courts, and athletic fields.
Structure:	Parital two-story building with partial basement, concrete floors; metal roof deck; structural steel frame; and masonry and concrete walls. Construction type non-combustible, unprotected in accordance with International Building Code. Flat rubber roofs.
HVAC System:	Hot water and chilled water from central boilers and chillers serving classroom unit ventialtors, air handlers, fan coils, etc.
Plumbing Service:	Public water and sewer
Electrical Service:	13,200 Primary Electric Service
Systems:	Fire Alarm Paging/Intercom Master Clock Security Emergency Lighting and Power District Telephone Data Network
Architectural Area:	370,000 s.f.
PDE Replacement Value:	\$44,195,130 (2065 FTE x 123 sf = 253,995 x \$174 / sf = replacement cost) \$8,839,026 (20% Rule)
PDE Total Capacity:	2065

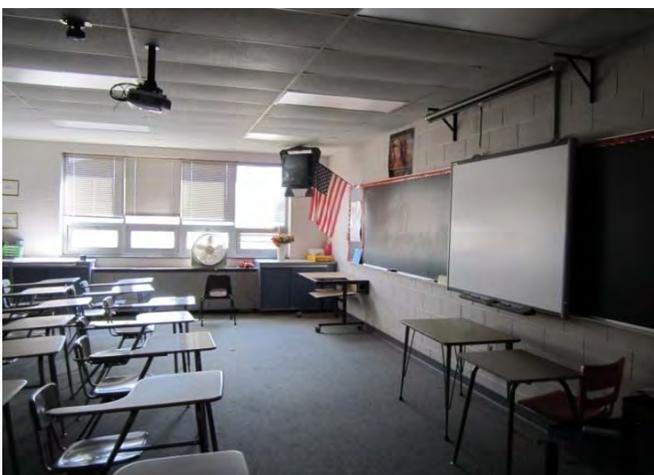
PHOTOGRAPHS

Boyertown Area Senior High School



PHOTOGRAPHS

Boyertown Area Senior High School



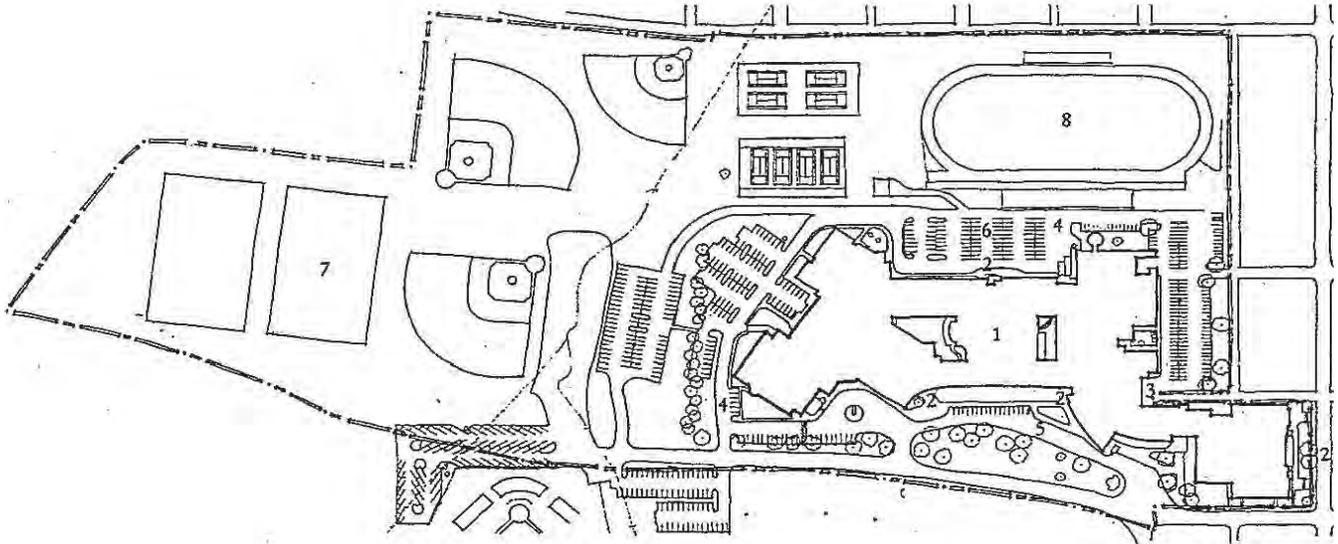
AERIAL VIEW

Boyertown Area Senior High School



EXISTING SITE PLAN

Boyertown Area Senior High School



Key:

- | | |
|---------------------|---------------------|
| 1. School Building | 5. Bus Drop-Off |
| 2. Public Entrance | 6. Parent Drop-Off |
| 3. Service Entrance | 7. Play field |
| 4. Parking | 8. Memorial Stadium |

OPERATIONAL COSTS SUMMARY

Boyertown Area Senior High School

370,000 s.f.	Annual Cost	Cost per sf
Electric	\$279,093	\$0.75
Natural Gas	\$123,865	\$0.33
Water	\$14,657	\$0.04
Sewer	\$30,228	\$0.08
Utilities Subtotal	\$447,843	\$1.21

SUMMARY - ENERGY STAR

Boyertown Area Senior High School

OMB No. 2060-0347



STATEMENT OF ENERGY PERFORMANCE Boyertown Area SD Senior High School 114060753

Building ID: 3212563
For 12-month Period Ending: May 31, 2011¹
Date SEP becomes ineligible: N/A

Date SEP Generated: July 20, 2012

Facility Boyertown Area SD Senior High School 114060753 Fourth and Monroe Streets Boyertown, PA 19512-1299	Facility Owner Boyertown Area School District 911 Montgomery Avenue Boyertown, PA 19512	Primary Contact for this Facility N/A
---	---	---

Year Built: 1923
Gross Floor Area (ft²): 370,000

Energy Performance Rating² (1-100) 90

Site Energy Use Summary³

Electricity - Grid Purchase(kBtu)	10,133,708
Natural Gas (kBtu) ⁴	1,119,346
Total Energy (kBtu)	11,253,054

Energy Intensity⁴

Site (kBtu/ft ² /yr)	30
Source (kBtu/ft ² /yr)	95

Emissions (based on site energy use)

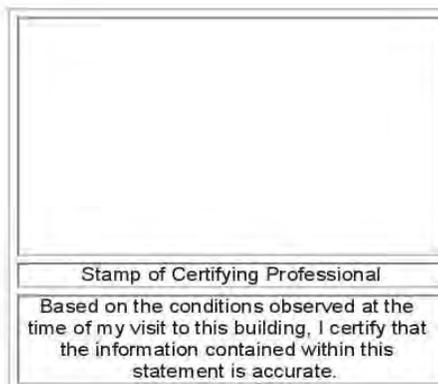
Greenhouse Gas Emissions (MtCO ₂ e/year)	1,495
---	-------

Electric Distribution Utility

Metropolitan Edison Co [FirstEnergy Corp]

National Median Comparison

National Median Site EUI	50
National Median Source EUI	156
% Difference from National Median Source EUI	-39%
Building Type	K-12 School



Meets Industry Standards⁵ for Indoor Environmental Conditions:

Ventilation for Acceptable Indoor Air Quality	N/A
Acceptable Thermal Environmental Conditions	N/A
Adequate Illumination	N/A

Certifying Professional
N/A

Notes:

1. Application for the ENERGY STAR must be submitted to EPA within 4 months of the Period Ending date. Award of the ENERGY STAR is not final until approval is received from EPA.
2. The EPA Energy Performance Rating is based on total source energy. A rating of 75 is the minimum to be eligible for the ENERGY STAR.
3. Values represent energy consumption, annualized to a 12-month period.
4. Values represent energy intensity, annualized to a 12-month period.
5. Based on Meeting ASHRAE Standard 62 for ventilation for acceptable indoor air quality, ASHRAE Standard 55 for thermal comfort, and IESNA Lighting Handbook for lighting quality.

The government estimates the average time needed to fill out this form is 6 hours (includes the time for entering energy data, Licensed Professional facility inspection, and notarizing the SEP) and welcomes suggestions for reducing this level of effort. Send comments (referencing OMB control number) to the Director, Collection Strategies Division, U.S., EPA (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460.

EPA Form 5900-16

SUMMARY BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Boyertown Area Senior High School

		Cost per SF
SITE EVALUATION	\$728,600.00	\$1.97 SF
EXTERIOR EVALUATION	\$4,657,700.00	\$12.59 SF
INTERIOR EVALUATION	\$966,200.00	\$2.61 SF
HVAC EVALUATION	\$9,929,500.00	\$26.84 SF
PLUMBING EVALUATION	\$896,000.00	\$2.42 SF
ELECTRICAL EVALUATION	\$3,829,000.00	\$10.35 SF
CODE EVALUATION	\$3,744,600.00	\$10.12 SF
MISCELLANEOUS UPGRADES	\$7,236,000.00	\$19.56 SF
<hr/>		
TOTAL*	\$31,987,600.00	\$86.45 SF

MEMORIAL FOOTBALL STADIUM	\$374,900.00
----------------------------------	---------------------

BEAR BASEBALL STADIUM	\$141,700.00
------------------------------	---------------------

* For the purpose of this Study, a baseline has been established and no design contingency has been utilized. More precise costs can be developed as the District develops specific educational specifications and chooses a desired option.

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Boyertown Area Senior High School

ARCHITECTURAL SURVEY

Cost

A. Site Evaluation:

- | | | |
|---|---|-----------|
| 1 | The concrete curbing is crumbling or cracked at several sections. Remove and replace concrete curbing. | \$800 |
| 2 | There is cracking or spalled concrete at the sidewalks in several locations around the site. Remove the deteriorated areas and replace with new. | \$1,200 |
| 3 | The bituminous parking area at the west (Administration, south parking lot, and the paved lot at the former tennis courts location of the building have random cracking. Repair the random cracking and seal bituminous and repaint parking lines | \$85,300 |
| 4 | The bituminous parking area at the north and east sides of the building exhibit a multitude of cracking. Mill and overlay the bituminous paving, repaint parking lines. | \$294,500 |
| 5 | The brick planter wall adjacent to the gymnasium entry exhibits lateral displacement. Remove and replace brick wall. Install drain tile at backside of wall to daylight outlet. | \$1,000 |
| 6 | A section of the concrete retaining wall leading to the basement storage area is spalled and deteriorateing. Romove spalled, deteriorated section and replace. | \$15,000 |
| 7 | The steel support members of the loading dock canopy and the dock edge angle have areas of rust and scaling paint. Remove scaling paint, sand rusted areas, and paint to match existing. | \$500 |

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Boyertown Area Senior High School

ARCHITECTURAL SURVEY

Cost

A. Site Evaluation (con't):

8	The concrete steps at the east entry of the 1930 building exhibit a multitude of cracking on the treads and risers as well as the endwalls. The joint material between treads and risers is missing or deteriorated. Remove and replace concrete steps and endwalls.	\$10,000
9	The stone wall at the south side of the 1930 building has missing or deteriorated mortar joints. Remove loose material and regrout stone joints.	\$500
10	The steps, walks, and handrails at the three (3) west exits of the 1930 building are deteriorated, cracked, or settled. Remove concrete steps, sidewalks, and handrails and replace for safety and to meet code.	\$31,800
11	Many of the curb joints and sidewalk joints are missing joint material. Replace missing joint material at curb and sidewalk joints.	\$1,500
12	The grate outside of the west classroom wing is rusted, bent and broken. Replace with new galvanized grate.	\$500
13	The stone lot adjacent to baseball stadium needs repair per capital improvements list	\$20,000
14	The site and exterior of building lack identification and directional signage. Install identification and directional signage	\$1,000
15	The existing tennis courts have random cracking. Remove and replace tennis courts.	\$265,000
	Site Evaluation Sub-Total:	<hr/> \$728,600

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Boyertown Area Senior High School

ARCHITECTURAL SURVEY

Cost

B. Exterior of Building Evaluation:

- | | | |
|---|--|-------------|
| 1 | The roof over the 1992 additions are in poor condition and should be replaced. | \$2,750,000 |
| 2 | The roof over the 1977 additions are in poor condition and should be replaced. | \$1,750,000 |
| 3 | The brick work and concrete structure are in fair condition. There is repointing and cleaning required. Replace all damaged areas, repoint all deteriorated mortar joints, and clean all brickwork and concrete. | \$109,400 |
| 4 | Egress doors at the north of the main gym are rusted and the paint is peeling. Remove the existing 4 sets of double doors and frames. Replace with new doors, frames, and hardware. | \$24,000 |
| 5 | The brick piers of the Administration building have rusted beams ends protruding from the wall. Scrap and remove rust from paint, and coat with an epoxy paint to match the face brick. | \$1,400 |
| 6 | The face brick at the inside corner of one administration brick pier has a vertical crack. Remove loose material and grout. | \$400 |
| 7 | The lintels are showing signs of rust and deterioration. Scrape and paint the lintels. | \$10,000 |
| 8 | Several corners of the precast face panels at the gymnasium and auditorium entrances have damaged, broken, or missing precast sections. Repair precast panels to match existing. | \$800 |

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Boyertown Area Senior High School

ARCHITECTURAL SURVEY

Cost

B. Exterior of Building Evaluation (con't):

- | | | |
|----|--|---------|
| 9 | The auditorium has a vertical crack thru the face brick and precast band. Remove all loose deteriorated material and caulk . | \$400 |
| 10 | The northeast corner of the team room building, the wall of the kindergarten play area, the wall at ramp wall outside the rehearsal room, and the east wall of the 1930 building have brick cracking or deteriorated mortar. Remove loose material and repair brick. | \$1,600 |
| 11 | The wood frame window system over the receiving room overhead door has peeling and deteriorateing paint. Scrape and sand wood and repaint to match existing. | \$400 |
| 12 | The soffit of the 1919 building at the south elevation has peeling and deteriorated paint. Scrap peeling paint, sand and paint to match existing. | \$1,300 |
| 13 | Seal failure has occurred in several windows throughout the building, including locations at the 1992 Auditorium, Science Classrooms, Wieght Room and Cafeteria. Replace exterior window glass at these areas. | \$8,000 |

Exterior of Building Evaluation Sub-Total:

\$4,657,700

C. Interior of Building Evaluation:

- | | | |
|---|--|----------|
| 1 | Replace carpet and base in main office. | \$11,600 |
| 2 | Minor paint touchups are needed within the faculty room at the drywalled column. | \$200 |
| 3 | Replace VCT and base in Instrumental and choral rooms. | \$22,400 |
| 4 | Replace carpet and base in student assistance office adjacent to main office. | \$12,900 |
| 5 | Add acoustical panels in instrumental and choral rooms. | \$5,000 |
| 6 | Replace chalk boards in classrooms (40) with marker boards. | \$40,000 |
| 7 | Paint door frames throughout entire building. | \$12,500 |

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Boyertown Area Senior High School

ARCHITECTURAL SURVEY

Cost

C. Interior of Building Evaluation (con't):

8	Patch and paint damaged soffits above Cub gymnasium entry doors from lobby.	\$500
9	Ceiling tiles are sagging throughout the entire building, no work is required. Monitor condition for replacement.	\$0
10	Repair CMU cracking in Cub gymnasium wall at gym storage area.	\$300
11	The wall padding in the Cub gymnasium is worn and should be replaced.	\$12,500
12	Significant bubbling under Terrazzo floors outside of 1992 science classrooms. The existing slabs must be tested for moisture content for approval by flooring manufacturer prior to repairs or replacement.	\$0
13	The Auxillary gymnasium adjacent to the Cub gym is cramped and overcrowded with equipment, no work required.	\$0
14	Replace ceiling tile in Boys and Girls Locker room adjacent to Cub gymnasium.	\$12,300
15	The lockers in the Boys and Girls Locker rooms adjacent to Cub gymnasium are damaged in several locations. The lockers should be replaced with more durable grade lockers.	\$30,000
16	Repair cracked terrazzo at entry door of auditorium lobby.	\$500
17	At the side exit from Auditorium there is efflorescing occuring. Repairs to the wall are needed.	\$5,000
18	Replace ceiling tile in Boys and Girls Locker room adjacent to Bear gymnasium.	\$10,600
19	Cracking in Quarry tile floor of Girls locker room adjacent to Bear gym should be repaired.	\$500
20	Replace VCT and base in Phys. Ed. I.P.C.	\$2,000

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Boyertown Area Senior High School

ARCHITECTURAL SURVEY

Cost

C. Interior of Building Evaluation (con't):

21	Replace ceiling tile in Team rooms adjacent to Bear gymnasium.	\$10,500
22	Resin counters in science classrooms have significant UV damage. Replace damaged/deteriorated sections.	\$63,000
23	Minor cracks are occurring in the exterior CMU wall at 2 biology rooms and 1 bio-tech room. Repair cracks in CMU and repaint.	\$1,000
24	Replace VCT and base in TV Room and control room.	\$5,000
25	Replace ceiling tile in AV Storage room.	\$2,400
26	Replace carpet and base in Library.	\$38,800
27	Repair water infiltration problem at both double doors into courtyard.	\$2,000
28	Replace carpet and base in LGI adjacent to Library.	\$12,600
29	Replace carpet and base in double classroom adjacent to LGI.	\$7,600
30	Replace carpet and base in upper balcony above library.	\$4,400
31	Replace carpet and base in special education suite waiting area.	\$2,200

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Boyertown Area Senior High School

ARCHITECTURAL SURVEY	Cost
32 Replace carpet and base in math classrooms (2) adjacent to library balcony entry.	\$9,200
33 Replace carpet and base in Tech Ed IPC and Design Drawing rooms.	\$29,000
34 Repair and replace cracked VCT in passageway, outside of Tech. Ed Suite and several small areas throughout Tech Ed. Suite.	\$500
35 Repair and replace cracked VCT in Cafeteria at line of addition.	\$600
36 Repair damaged and cracked tile in three locations within Cafeteria.	\$1,500
37 Repair cracked quarry tile flooring in kitchen.	\$600
38 Replace ceiling tile in kitchen.	\$16,500
39 Replace all VCT or Carpet, Base, Casework, Counters and Sinks in FCS (3) rooms.	\$45,000
40 Replace stage curtain per 2009 certified flame retardant report.	\$35,000
41 Replace stage rigging in main auditorium.	\$500,000
42 Remove all remaining asbestos, no work required at this time.	\$0
<i>Interior of Building Evaluation Sub-Total:</i>	<hr/> \$966,200

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Boyertown Area Senior High School

ARCHITECTURAL SURVEY

Cost

D. Heating, Ventilation and Air Conditioning (HVAC) Evaluation:

1	Replace the older boiler with a new more efficient boiler	\$350,000
2	Replace the chillers and upsize as required to handle the entire facility	\$600,000
3	Replace the cooling tower due to age and life expectancy	\$160,000
4	Replace the Unit Ventilators with new units that include face and bypass dampers to improve performance of the moisture removal process.	\$807,500
5	All new HVAC in the 1914 and 1934 sections of the HS	\$2,584,000
6	New backup HVAC for the server room	\$10,000
7	Install new temperature control system	\$1,176,000
8	Install new variable speed drives on the circulation pumps throughout	\$75,000
9	Replace older pumps in the boiler room	\$50,000
10	Consideration should be given to replacing the two pipe system with a four pipe system. The existing two pipe system would be converted to cooling only and a new HW distribution would be provided to new equipment throughout.	\$4,116,000
11	Secure the diffuser cores in the main gym. Some appear to be loose and could pose a safety threat.	\$1,000
<i>HVAC Evaluation Sub-Total:</i>		<u>\$9,929,500</u>

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Boyertown Area Senior High School

ARCHITECTURAL SURVEY

Cost

E. Plumbing Evaluation:

1	Complete plumbing system renovations to the 1914 and 1934 buildings.	\$646,000
2	Most of the central system components are nearing the end of their 20 year life cycle. These systems should be considered for replacement before they fails and include water heaters, softeners, tanks, etc.	\$250,000
Plumbing Evaluation Sub-Total:		\$896,000

F. Electrical Evaluation:

1	Replace electrical systems in the existing 1914 & 1934.	\$1,596,000
2	Replace technology systems in the existing 1914 & 1934.	\$456,000
3	Add groundfault receptacles for all receptacles in science rooms.	\$10,000
4	Add occupancy sensors in the rooms without to comply with the International Building Code.	\$50,000
5	Add groundfault receptacles/breakers for all 1P.20 amp receptacles in kitchen per NEC.	\$12,000
6	Add second automatic transfer switch and panel to separate required and non-required loads per NEC. 3 locations.	\$100,000
7	Add emergency shutoff switches in the Tech Lab.	\$5,000
8	Electrical service and emergency generator located in the same room by the Gym. Normal and emergency systems shall be located in separate rooms per NEC.	\$100,000
9	Install Electric as required for HVAC upgrades.	\$1,500,000
Electrical Evaluation Sub-Total:		\$3,829,000

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Boyertown Area Senior High School

ARCHITECTURAL SURVEY

Cost

G. Code Evaluation:

The IBC, Americans with Disabilities Act, and recommendations by the Department of Education require all buildings during the renovation process to be updated to meet current standards and codes. The following building system will need to be updated during the renovation process in order to meet current standards and codes.

The following items may be required depending on the level of work completed.

- | | | |
|---|--|-----------|
| 1 | Various doors throughout the building have non-compliant door hardware. Replace knobs with ADA compliant hardware and levers. | \$7,000 |
| 2 | The entrances to instructional areas and other areas lack the proper clearances and do not meet disabled persons code. Upgrade the entrances to meet code. | \$54,000 |
| 3 | Dead end corridor condition exists at Building "A" corridor, Building "B" corridors (3), Building "E" corridor, and Building "F" corridor. Remove doors, relocate doors, or install "S" type swinging doors. | \$60,000 |
| 4 | 30" or 32" pair of doors throughout the building do not provide the required width for a single leaf. Replace with uneven pair of door leaves. | \$195,000 |
| 5 | There are many counters with sinks that do not meet the ADA code. Remove and replace counter, cabinets, and sink to meet code. | \$37,600 |
| 6 | The risers in the Music Room are not accessible to disabled persons. Remove the risers and install a level floor and concrete steps at exterior door. | \$40,000 |
| 7 | The (2) stair tower handrails and tread nosing in Building "B" do not meet code. Remove and replace handrail with code compliant guardrail/handrail system and install nosing blocks. | \$36,000 |
| 8 | The gang toilet facilities throughout the building do not meet current disabled persons code. Upgrade the toilets to meet code. | \$420,000 |
| 9 | The single use toilet rooms do not meet the current disabled persons code. Upgrade the toilets to meet code. | \$210,000 |

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Boyertown Area Senior High School

ARCHITECTURAL SURVEY

Cost

G. Code Evaluation (con't):

10	The electric water coolers protrude into the clear walking space. Install barrier partitions at electric water coolers.	\$16,500
11	The boys locker room has a 2" high step at the entrance door. Remove existing doors, remove a section of floor to allow for installing a 2' long ramp and relocate the entrance door to the locker room.	\$5,000
12	The existing Locker Rooms in Building "C" and "E" do not meet the current disabled persons code. Upgrade the toilets, showers, lockers, and benches to meet code.	\$210,000
13	Building "B" and Building "C" connection do not have accesibility. Install an incline chair lift at the steps in Building "B".	\$25,000
14	The ticket booth counter heights and the concession counter at Building "C" and "D" do not meet code requirements. Lower the ticket booth and concession counters to meet code.	\$8,000
15	The handicapped seating at the end of the bleachers in Building "C" does not allow access to the raised seats. Rework bleachers to allow seating on the gym floor.	\$3,000
16	The men and womens toilet in Building "D" do not meet code. Remove lavs in the ADA stall and install a vertical grab bar. Install urinual screens and rework womens partitions for an ambulatory stall installation to meet code.	\$6,900
17	The teachers demonstration table in the science rooms and the fume hoods do not meet ADA code. Remove and replace demonstration tables with code compliant cabinetry.	\$45,000
18	The student sinks in the science rooms do not meet ADA code. Replace sinks with code compliant assembly or use a mobile student cart to meet code.	\$48,000
19	In various locations of the building, the existing glass in doors or display cases does not meet code. Remove the existing glass and replace with safety glass.	\$5,000

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Boyertown Area Senior High School

ARCHITECTURAL SURVEY

Cost

G. Code Evaluation (con't):

20	The LGI room adjacent to the library does not have ADA access to the platform. Install incline chair lift or remove platform.	\$15,000
21	The areas of refuge for disabled persons on upper floors do not have illuminated sign per code. Install illuminated sign.	\$1,500
22	Dark Room and Biodome doors do not meet required door width for ADA. Remove and replace doors to meet code.	\$8,000
23	Roof hatch extension poles are needed at several roof hatches.	\$2,000
24	The current ADA requires signage to meet 48" reach height maximum. Several signs in the building appear to be slightly high. No work is required at this time.	\$0
25	Provide code required combustion air for the boiler room	\$10,000
26	Eliminate the use of the corridor as a relief air plenum	\$588,000
27	Install a backflow preventer on the water service	\$10,000
28	Add additional fire alarm devices to make the system code compliant in the other areas of the building.	\$100,000
29	Add aisle lighting in the auditorium to comply with the IBC.	\$30,000
30	Reception counters at the secretaries office and student assistance office do not meet ADA code. Modify reception counters as required to provide accessible counters.	\$4,200

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Boyertown Area Senior High School

ARCHITECTURAL SURVEY

Cost

G. Code Evaluation (con't):

31	Corridor lockers are existing and do not provide accessible locker locations. Remove existing lockers and install new dispersed lockers with compliant control, shelf, and coat hook height.	\$21,500
32	Curb cuts do not have warning protection. Install truncated domes.	\$2,300
33	The existing guardrails or handrails at ramps, retaining walls, dock area, and steps do not meet code requirements. Required center handrails are also missing at steps. Remove existing rails and install new aluminium guardrails/handrails to meet code.	\$52,800
34	The interior rail systems at the two (2) administration lobby steps, Building "B" steps, Building "F" steps, and Auditorium steps do not meet code. Remove and replace with aluminum handrail system to meet code.	\$9,800
35	The International Building Code requires all facilities used for educational purposes to be equipped with a fire suppression system. Install a fire suppression system throughout the entire building.	\$1,440,000
36	Handicapped parking spaces do not have ADA parking sign to meet code. Install ADA parking sign.	\$4,500
37	The auditorium does not have assistive listening devices. Furnish the required headsets.	\$3,500
38	The fire extinguisher cabinets do not meet current reach height per ADA code. Remove and replace cabinets to meet code.	\$4,500
39	There are no accessible seating areas, transfer arms, or aisle lighting at the Auditorium seating area. Remove and replace seats for code compliance, and add lighting (under Electrical).	\$5,000
Code Evaluation Sub-Total:		<hr/> \$3,744,600

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Boyertown Area Senior High School

ARCHITECTURAL SURVEY	Cost
H. Miscellaneous Upgrades:	
1 Miscellaneous upgrades.	\$925,000
2 Door Hardware is problematic and keying is not uniform throughout the district. Replace door hardware throughout.	\$175,000
3 The 1919 and 1934 buildings require extensive renovations including finishes, building systems, as well as code requirements.	\$6,136,000
<i>Miscellaneous Upgrades Sub-Total:</i>	<u>\$7,236,000</u>
I. Memorial Football Stadium Evaluation:	
1 The door hardware does not meet the accessibility code. Remove and replace with code compliant lever door hardware.	\$4,200
2 The stadium signage does not meet the ADA code. Install new signage to meet code.	\$1,100
3 The concession stands counters on each end of the stadium do not meet ADA code for reach height. Lower one counter at each concession stand to meet ADA code.	\$3,000
4 The door at the concession stand and gang toilets do not meet the accessibility code. Slope paving at doors at less than a 5% slope to meet the floor level at doors.	\$4,000
5 The two concession facilities do not have a hand lav per code. Install code compliant hand lav at each concession.	\$4,000
6 The electric water cooler protrudes into the clear walking path at the stadium. Install barrier walls at electric water cooler.	\$800

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Boyertown Area Senior High School

ARCHITECTURAL SURVEY

Cost

I. Memorial Football Stadium Evaluation (con't):

- | | | |
|----|--|----------|
| 7 | The womens and mens gang toilets do not meet the accessibility code. Upgrade the womens and mens gang toilets to meet code. | \$50,000 |
| 8 | The concrete stadium steps from the concession area to the seating area requires a center handrail and the existing wall railings do not meet code. Remove handrail and install code compliant aluminum handrails and center rail. | \$9,000 |
| 9 | The rails at the vomitorium do not meet code. Remove and install code compliant aluminum guardrails. | \$15,000 |
| 10 | The rail system at the ramp does not meet code. Remove and replace with code compliant aluminum guardrail/handrail handrail system. | \$200 |
| 11 | The chain link fence adjacent to the parking lot is bent rusting or deteriorating. Replace with vinyl coated chain link fence and gates with panic hardware. | \$19,300 |
| 12 | The brick piers supporting the stadium have no protection from traffic in the adjacent parking lot. Install two concrete filled 6" diameter galvanized pipe bollards at each pier. | \$3,600 |
| 13 | Water runoff from the concrete seating deck runs over the edge and down the face of the brick wall adjacent to the track due to no drip edge causing the brick to absorb water. Remove grout material and metal water diverter and install an aluminum drip edge and new grout material at joint between the concrete deck and the brick. There are several areas of brick damage along the front, trackside face of the bleachers, that require immediate repair. Further investigation into repair procedures and pricing should be performed, (refer to structural report). | \$0 |
| 14 | The bleacher seating end guardrail does not meet ADA. Remove and replace with with code compliant aluminum guardrail. | \$200 |

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Boyertown Area Senior High School

ARCHITECTURAL SURVEY

Cost

I. Memorial Football Stadium Evaluation (con't):

15	The handrail at the north steps to the bleachers does not meet code. Remove and replace with code compliant aluminum guardrail/handrail.	\$4,200
16	The bleachers do not have ADA seating spaces. Install 5 ADA seating positions at ground level.	\$1,500
17	The visitors bleachers do not have ADA accessibility or ADA seating area. Install ramp and seating areas to meet code.	\$5,000
18	The visitor bleachers do not have closed risers per code. Install closed risers per code.	\$10,000
19	Provide code compliant ventilation in the Food Service Areas	\$39,000
20	Provide/upgrade general exhaust systems	\$15,800
21	Upgrade the gas vents on the unit heaters	\$7,200
22	Upgrade the Plumbing Systems throughout to meet code and to provide commercial use fixtures	\$89,300
23	Add groundfault receptacles/breakers for all 1P.20 amp receptacles in concession per NEC.	\$3,000
24	Add emergency lighting above exterior doors.	\$5,000
25	Add groundfault receptacles for field side receptacles.	\$500
26	Install electric as required for HVAC and Plumbing upgrades.	\$10,000
27	Add emergency generator and lighting for egress from stadium seating areas if required by occupancy of stadium.	\$70,000
Memorial Football Stadium Sub-Total:		<hr/> \$374,900

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Boyertown Area Senior High School

ARCHITECTURAL SURVEY

Cost

I. Bear Baseball Stadium Evaluation:

- | | | |
|---|---|----------|
| 1 | The joint material between the building and pavement on the concession side of the stadium is missing. Install expansion joint material at joint. | \$1,000 |
| 2 | The concrete ramps exceed the allowable slope per code, and the guardrails do not meet code. ADA seating is provided at ground level along first and third base. | \$0 |
| 3 | The door hardware does not meet the accessibility code. Remove and replace with code compliant lever door hardware. | \$2,800 |
| 4 | The guardrail system at the stadium does not meet code. Remove and replace with code compliant aluminum guardrail system. | \$200 |
| 5 | The stadium signage does not meet the ADA code. Install new signage to meet code. | \$1,100 |
| 6 | The concession stand counters do not meet ADA code for reach height. Lower one counter at concession stand to meet ADA code. | \$3,000 |
| 7 | The ground surface and the floor level at the doors of the gang toilets do not meet the accessibility code. Slope paving at doors at less than a 5% slope to meet the floor level at doors. | \$1,000 |
| 8 | The stadium seating aisles do not have a center handrail. Install code compliant aluminum center handrail. | \$100 |
| 9 | The womens and mens gang toilets do not meet the accessibility code. Upgrade the womens and mens gang toilets to meet code. | \$50,000 |

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Boyertown Area Senior High School

ARCHITECTURAL SURVEY

Cost

I. Bear Baseball Stadium Evaluation:

10	The ticket booth door width does not meet the required width, the booth is not accessible, and the ticket counters exceed the ADA reach height. Remove door and replace with code compliant door. Install a ramp for accessibility and lower one ticket window to meet ADA code.	\$5,000
11	The bleacher seating at the third and first base sides do not have closed risers, the seating and floor boards are deteriorating, guardrails and handrails do not meet code, center handrails are missing, and ADA seating is required.	\$25,000
12	Upgrade the ventilation systems	\$15,000
13	Complete Plumbing upgrade	\$28,500
14	Add groundfault receptacles/breakers for all 1P.20 amp receptacles in concession per NEC.	\$3,000
15	Install electric as required for HVAC and Plumbing upgrades.	\$4,000
16	Add emergency lighting above exterior doors.	\$2,000
<i>Bear Baseball Stadium Sub-Total:</i>		<hr/> \$141,700
<i>Building Evaluation Total:</i>		<hr/> \$31,987,600
<i>Memorial Football Stadium Sub-Total:</i>		\$374,900
<i>Bear Baseball Stadium Sub-Total:</i>		\$141,700

Asbestos Comment:

Asbestos Mitigation would require input from the District's consultant; therefore, no cost estimates are included in this study. It is our understanding the District has used Suburban Energy & Environmental Consultants for AHERA Management.

GENERAL DATA

Education Center

Built:	1973 Eligible for 20-year State Reimbursement
Site:	911 Montgomery Avenue, Boyertown, PA 19512 3 acres; located in a residential area with paved drives and parking areas.
Structure:	One-story building with concrete floors; concrete roof deck; structural steel frame; and masonry, steel stud and concrete walls. Construction type non-combustible, unprotected in accordance with International Building Code with Built-up roof membrane.
HVAC System:	Hot water boiler with rooftop packaged air handler, VAV boxes, and PTAC units.
Plumbing Service:	Public water and sewer
Electrical Service:	600 amp, 120/208 volt, three phase, 4 wire
Systems:	Paging/Intercom Security Emergency Lighting District Telephone Data Network
Architectural Area:	11,200 s.f.
PDE Replacement Value:	\$770,472 (36 FTE x 123 sf = 4,428 x \$174 / sf = replacement cost) \$154,094 (20% Rule)
PDE Total Capacity:	36

PHOTOGRAPHS

Education Center



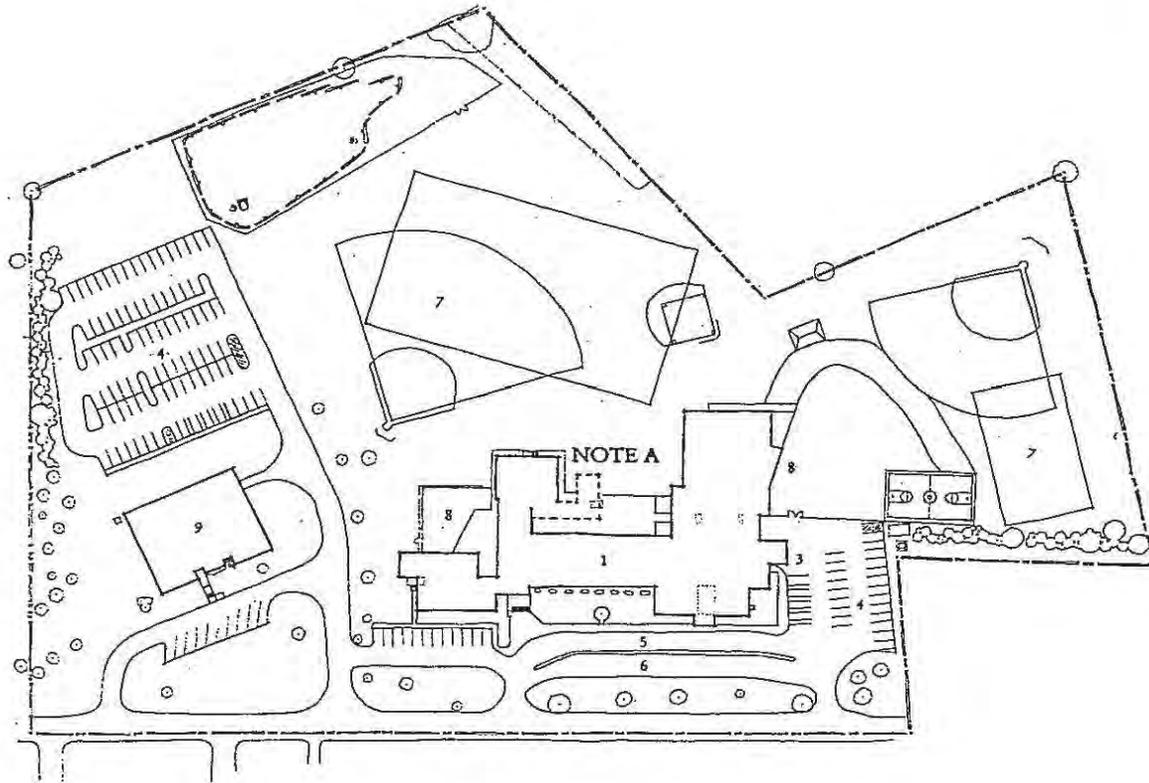
AERIAL VIEW

Education Center



EXISTING SITE PLAN

Education Center



Key:

- 1. School Building
- 2. Public Entrance
- 3. Service Entrance
- 4. Parking
- 5. Bus Drop-Off

- 6. Parent Drop-Off
- 7. Play field
- 8. Playground
- 9. District Administration

Notes:

- A. Modular Classrooms

OPERATIONAL COSTS SUMMARY

Education Center

11,200 s.f.	Annual Cost	Cost per sf
Electric	\$11,424	\$1.02
Natural Gas	\$4,608	\$0.41
Water	Off Colebrookdale ES	NA
Sewer	Off Colebrookdale ES	NA
Utilities Subtotal	\$16,032	\$1.43

SUMMARY - ENERGY STAR

Education Center

OMB No. 2060-0347



STATEMENT OF ENERGY PERFORMANCE Boyertown Area SD Education Center 114060753

Building ID: 3213740
For 12-month Period Ending: May 31, 2011¹
Date SEP becomes ineligible: N/A

Date SEP Generated: July 20, 2012

Facility
Boyertown Area SD Education Center
114060753
911 Montgomery Avenue
Boyertown, PA 19512-9607

Facility Owner
Boyertown Area School District
911 Montgomery Avenue
Boyertown, PA 19512

Primary Contact for this Facility
N/A

Year Built: 1973
Gross Floor Area (ft²): 11,200

Energy Performance Rating² (1-100) 87

Site Energy Use Summary³

Electricity - Grid Purchase(kBtu)	353,756
Natural Gas (kBtu) ⁴	38,022
Total Energy (kBtu)	391,778

Energy Intensity⁴

Site (kBtu/ft ² /yr)	35
Source (kBtu/ft ² /yr)	109

Emissions (based on site energy use)

Greenhouse Gas Emissions (MtCO ₂ e/year)	52
---	----

Electric Distribution Utility

Metropolitan Edison Co [FirstEnergy Corp]

National Median Comparison

National Median Site EUI	59
National Median Source EUI	185
% Difference from National Median Source EUI	-41%
Building Type	Office

Stamp of Certifying Professional

Based on the conditions observed at the time of my visit to this building, I certify that the information contained within this statement is accurate.

Meets Industry Standards⁵ for Indoor Environmental Conditions:

Ventilation for Acceptable Indoor Air Quality	N/A
Acceptable Thermal Environmental Conditions	N/A
Adequate Illumination	N/A

Certifying Professional
N/A

Notes:

1. Application for the ENERGY STAR must be submitted to EPA within 4 months of the Period Ending date. Award of the ENERGY STAR is not final until approval is received from EPA.
2. The EPA Energy Performance Rating is based on total source energy. A rating of 75 is the minimum to be eligible for the ENERGY STAR.
3. Values represent energy consumption, annualized to a 12-month period.
4. Values represent energy intensity, annualized to a 12-month period.
5. Based on Meeting ASHRAE Standard 62 for ventilation for acceptable indoor air quality, ASHRAE Standard 55 for thermal comfort, and IESNA Lighting Handbook for lighting quality.

The government estimates the average time needed to fill out this form is 6 hours (includes the time for entering energy data, Licensed Professional facility inspection, and notarizing the SEP) and welcomes suggestions for reducing this level of effort. Send comments (referencing OMB control number) to the Director, Collection Strategies Division, U.S., EPA (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460.

EPA Form 5900-16

SUMMARY BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Education Center

		Cost per SF
SITE EVALUATION	\$115,100.00	\$10.28 SF
EXTERIOR EVALUATION	\$38,800.00	\$3.46 SF
INTERIOR EVALUATION	\$12,600.00	\$1.13 SF
HVAC EVALUATION	\$293,000.00	\$26.16 SF
PLUMBING EVALUATION	\$28,000.00	\$2.50 SF
ELECTRICAL EVALUATION	\$140,000.00	\$12.50 SF
CODE EVALUATION	\$153,000.00	\$13.66 SF
MISCELLANEOUS UPGRADES	\$0.00	\$0.00 SF
<hr/>		
TOTAL*	\$780,500.00	\$69.69 SF

* For the purpose of this Study, a baseline has been established and no design contingency has been utilized. More precise costs can be developed as the District develops specific educational specifications and chooses a desired option.

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Education Center

ARCHITECTURAL SURVEY

Cost

A. Site Evaluation:

1	A section of concrete curbing is damaged at the front drive. Remove the deteriorated section and replace with new.	\$200
2	There is deterioration of concrete sidewalks at the main entrance steps. Remove the deteriorated areas and replace with new.	\$600
3	The bituminous parking areas at the rear of the building has a multitude of cracking and deterioration. Repair the cracking and deteriorated areas. Mill and overlay.	\$113,800
4	The concrete steps at the front of the building are cracking and deteriorating. Remove and replace concrete steps and handrails. (See ramp recommendation under Code Evaluation).	\$0
5	The bituminous paved drive and parking drive at the front of the building and the paved walk at the rear of the building have random cracking. Repair deteriorated areas and seal the bituminous.	\$0
6	The concrete sidewalk, concrete steps, and ramp at the northeast main entry have deteriorated. Remove and replace concrete sidewalk, steps and ramp. Install new aluminum handrails. (Refer to code evaluation item no. 1)	\$0
7	The site and exterior of building lack identification and directional signage. Install identification and directional signage.	\$500
Site Evaluation Sub-Total:		<hr/> \$115,100

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Education Center

ARCHITECTURAL SURVEY

Cost

B. Exterior of Building Evaluation:

1	Replace exterior windows and doors	\$32,000
2	Repoint brick around louvers	\$800
3	Some rusting and spawling spots are occurring in plaster fascia panels. Small repairs along the perimeter bottom edge are recommended.	\$1,500
4	Minor brick repointed and cleaning.	\$2,500
5	Repair exterior brick planter wall.	\$2,000
6	The balasted roof is in fair condition with some evidence of ponding and shrink cracking at joints and overlaps. Monitor condition for replacement.	\$0

Exterior of Building Evaluation Sub-Total:

\$38,800

C. Interior of Building Evaluation:

1	Ceiling tiles are sagging in the board room, no work is required. Monitor condition for replacement.	\$0
2	Replace carpet and base near instructional supervisor space.	\$900
3	Replace stained or damaged ceiling tiles throughout.	\$9,300
4	Replace casework, countertops and sink in conference room.	\$2,400

Interior of Building Evaluation Sub-Total:

\$12,600

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Education Center

ARCHITECTURAL SURVEY	Cost
D. Heating, Ventilation and Air Conditioning (HVAC) Evaluation:	
1 Replace the hot water boiler due to age and efficiency	\$45,000
2 Install a new central packaged rooftop unit with new VAV boxes to serve the areas that currently have PTAC units.	\$224,000
3 Provide backup pumps for the hot water systems	\$20,000
4 Upgrade the ventilation systems in the toilet rooms	\$4,000
<i>HVAC Evaluation Sub-Total:</i>	<u>\$293,000</u>
E. Plumbing Evaluation:	
1 Upgrade the plumbing fixtures to meet current standards	\$14,000
2 Upgrade the water heating system	\$8,000
3 Replace the water cooler	\$6,000
<i>Plumbing Evaluation Sub-Total:</i>	<u>\$28,000</u>
F. Electrical Evaluation:	
1 Replace Federal Pacific switchboards and panelboards.	\$60,000
2 Install Electric as required for HVAC upgrades.	\$80,000
<i>Electrical Evaluation Sub-Total:</i>	<u>\$140,000</u>

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Education Center

ARCHITECTURAL SURVEY

Cost

G. Code Evaluation:

The IBC, Americans with Disabilities Act, and recommendations by the Department of Education require all buildings during the renovation process to be updated to meet current standards and codes. The following building system will need to be updated during the renovation process in order to meet current standards and codes.

The following items may be required depending on the level of work completed.

- | | | |
|---|--|----------|
| 1 | The main entrance at the front of the building is not accessible. Remove concrete steps and install code compliant ramp with guardrail/handrails to meet code. | \$20,000 |
| 2 | Doors throughout the building have non-compliant door hardware. Replace knobs with ADA compliant hardware and levers. | \$13,300 |
| 3 | The entrances to several offices lack the proper clearances and do not meet disabled persons code. Upgrade the entrances to meet code. | \$4,500 |
| 4 | The front parking spaces do not have an ADA parking space. Install ADA parking space with sign. | \$300 |
| 5 | The curb cuts do not have truncated warning domes at the rear of the building. Install truncated domes at the rear and at the front main entrance sidewalk. | \$2,500 |
| 6 | Reception counters at receptionist office does not meet code. Modify reception counter as required to provide accessible counters. | \$1,500 |
| 7 | The counters with sinks do not meet the accessibility code. Remove and replace with code compliant counter, base cabinets and sink. | \$6,400 |
| 8 | The toilet facilities throughout the building do not meet current disabled persons code. Upgrade the toilets to meet code. | \$20,000 |
| 9 | The counter in the executive secretaries office does not meet the accessibility code reach height. Remove and replace with code compliant counter. | \$3,000 |

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Education Center

ARCHITECTURAL SURVEY

Cost

G. Code Evaluation (con't):

10	The corridor door and frame of the Food service secretaries office does not meet the fire rating. Remove and replace with code compliant door and frame.	\$1,500
11	The corridor glass frame entry of the executive secretaries office does not meet the required fire rating. Remove and replace with a code compliant frame, glass, and door system.	\$7,500
12	The corridor door of the Director of Curriculum office do not meet the fire rating. Remove and replace with code compliant door.	\$500
13	The water cooler does not meet the current disabled persons code. Install barrier walls to meet code.	\$500
14	The current disabled persons code requires signage. Provide signage to meet code.	\$2,900
15	Install an emergency burner shut off switch in the boiler room	\$500
16	Consideration should be given to installing a code compliant fire sprinkler system - cost assumes a fire pump is not required.	\$56,000
17	Provide a code compliant fire alarm system.	\$9,100
18	Add occupancy sensors in the rooms without to comply with the International Building Code.	\$3,000

Code Evaluation Sub-Total:

\$153,000

H. Miscellaneous Upgrades:

1	Miscellaneous upgrades.	\$0
---	-------------------------	-----

Miscellaneous Upgrades Sub-Total:

\$0

Building Evaluation Total:

\$780,500

Asbestos Comment:

Asbestos Mitigation would require input from the District's consultant; therefore, no cost estimates are included in this study. It is our understanding the District has used Suburban Energy & Environmental Consultants for AHERA Management.

GENERAL DATA

Support Services Building

Built:	Early 1900's Not Eligible for 20-year State Reimbursement
Site:	1131 Montgomery Avenue, Boyertown, PA 19512 2 acres; located in a residential area with paved drives and parking areas.
Structure:	One-story building with wood floors, roof and wall construction. Construction type combustible, unprotected in accordance with International Building Code with Asphalt shingled roofs.
HVAC System:	Ducted gas furnaces with split system air conditioning.
Plumbing Service:	Public water and sewer
Electrical Service:	400 amp, 120/240 volt, single phase
Systems:	Security District Telephone Data Network
Architectural Area:	4,450 s.f.

PHOTOGRAPHS

Support Services Building



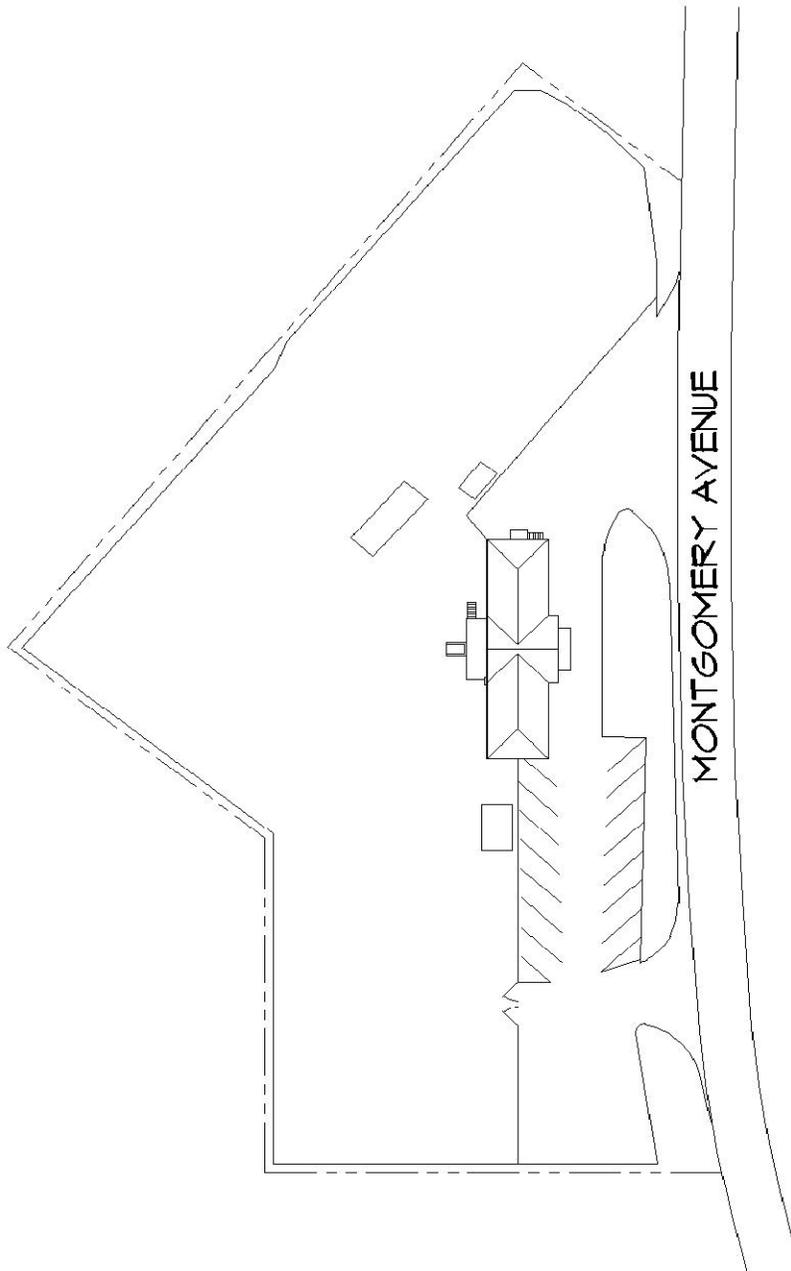
AERIAL VIEW

Support Services Building



EXISTING SITE PLAN

Support Services Building



OPERATIONAL COSTS SUMMARY

Support Services Building

4,450 s.f.	Annual Cost	Cost per sf
Electric	\$5,216	\$0.65
Natural Gas	\$1,783	\$0.22
Water	\$256	\$0.03
Sewer	\$0	\$0.00
Utilities Subtotal	\$7,255	\$0.91

SUMMARY - ENERGY STAR

Support Services Building

OMB No. 2060-0347



STATEMENT OF ENERGY PERFORMANCE Boyertown Area SD Supportive Services Bldg 114060753

Building ID: 3213762
For 12-month Period Ending: May 31, 2011¹
Date SEP becomes ineligible: N/A

Date SEP Generated: July 20, 2012

Facility
Boyertown Area SD Supportive Services
Bldg 114060753
1131 Montgomery Avenue
Boyertown, PA 19512-9606

Facility Owner
Boyertown Area School District
911 Montgomery Avenue
Boyertown, PA 19512

Primary Contact for this Facility
N/A

Year Built: 1973
Gross Floor Area (ft²): 8,000

Energy Performance Rating² (1-100) 95

Site Energy Use Summary³

Electricity - Grid Purchase(kBtu)	158,010
Natural Gas (kBtu) ⁴	13,830
Total Energy (kBtu)	171,840

Energy Intensity⁴

Site (kBtu/ft ² /yr)	21
Source (kBtu/ft ² /yr)	68

Emissions (based on site energy use)

Greenhouse Gas Emissions (MtCO ₂ e/year)	23
---	----

Electric Distribution Utility

Metropolitan Edison Co [FirstEnergy Corp]

National Median Comparison

National Median Site EUI	48
National Median Source EUI	151
% Difference from National Median Source EUI	-55%
Building Type	Office

Stamp of Certifying Professional

Based on the conditions observed at the time of my visit to this building, I certify that the information contained within this statement is accurate.

Meets Industry Standards⁵ for Indoor Environmental Conditions:

Ventilation for Acceptable Indoor Air Quality	N/A
Acceptable Thermal Environmental Conditions	N/A
Adequate Illumination	N/A

Certifying Professional

N/A

Notes:

1. Application for the ENERGY STAR must be submitted to EPA within 4 months of the Period Ending date. Award of the ENERGY STAR is not final until approval is received from EPA.
2. The EPA Energy Performance Rating is based on total source energy. A rating of 75 is the minimum to be eligible for the ENERGY STAR.
3. Values represent energy consumption, annualized to a 12-month period.
4. Values represent energy intensity, annualized to a 12-month period.
5. Based on Meeting ASHRAE Standard 62 for ventilation for acceptable indoor air quality, ASHRAE Standard 55 for thermal comfort, and IESNA Lighting Handbook for lighting quality.

The government estimates the average time needed to fill out this form is 6 hours (includes the time for entering energy data, Licensed Professional facility inspection, and notarizing the SEP) and welcomes suggestions for reducing this level of effort. Send comments (referencing OMB control number) to the Director, Collection Strategies Division, U.S., EPA (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460.

EPA Form 5900-16

SUMMARY BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Support Services Building

		Cost per SF
SITE EVALUATION	\$333,800.00	\$75.01 SF
EXTERIOR EVALUATION	\$0.00	\$0.00 SF
INTERIOR EVALUATION	\$0.00	\$0.00 SF
HVAC EVALUATION	\$41,600.00	\$9.35 SF
PLUMBING EVALUATION	\$94,500.00	\$21.24 SF
ELECTRICAL EVALUATION	\$114,300.00	\$25.69 SF
CODE EVALUATION	\$84,600.00	\$19.01 SF
MISCELLANEOUS UPGRADES	\$0.00	\$0.00 SF
<hr/>		
TOTAL*	\$668,800.00	\$150.29 SF

* For the purpose of this Study, a baseline has been established and no design contingency has been utilized. More precise costs can be developed as the District develops specific educational specifications and chooses a desired option.

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Support Services Building

ARCHITECTURAL SURVEY

Cost

A. Site Evaluation:

- | | | |
|---|--|-----------|
| 1 | The building is in need of significant renovations and alterations. Renovate entire first floors and lower level basement. Includes paved areas and fencing. | \$333,800 |
|---|--|-----------|

<i>Site Evaluation Sub-Total:</i>	<hr/>	\$333,800
--	-------	------------------

B. Exterior of Building Evaluation:

- | | | |
|---|--------------|-----|
| 1 | See Item A1. | \$0 |
|---|--------------|-----|

<i>Exterior of Building Evaluation Sub-Total:</i>	<hr/>	\$0
--	-------	------------

C. Interior of Building Evaluation:

- | | | |
|---|--------------|-----|
| 1 | See Item A1. | \$0 |
|---|--------------|-----|

<i>Interior of Building Evaluation Sub-Total:</i>	<hr/>	\$0
--	-------	------------

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Support Services Building

ARCHITECTURAL SURVEY

Cost

D. Heating, Ventilation and Air Conditioning (HVAC) Evaluation:

1	Replace the older HVAC units serving the one side of the facility.	\$13,500
2	Upgrade the toilet room exhaust systems.	\$2,600
3	Install ventilation systems for the shop.	\$8,000
4	Replace the ductboard with sheetmetal ductwork.	\$17,500

HVAC Evaluation Sub-Total:

\$41,600

E. Plumbing Evaluation:

1	Upgrade the entire plumbing system	\$44,500
2	Replace the gas pumps	\$50,000

Plumbing Evaluation Sub-Total:

\$94,500

F. Electrical Evaluation:

1	Upgrade electrical systems.	\$93,500
2	Upgrade technology systems.	\$17,800
3	Add occupancy sensors in the rooms without to comply with the International Building Code.	\$3,000

Electrical Evaluation Sub-Total:

\$114,300

BUILDING IMPROVEMENTS AND CONSTRUCTION COSTS

Support Services Building

ARCHITECTURAL SURVEY

Cost

G. Code Evaluation:

The IBC, Americans with Disabilities Act, and recommendations by the Department of Education require all buildings during the renovation process to be updated to meet current standards and codes. The following building system will need to be updated during the renovation process in order to meet current standards and codes.

The following items may be required depending on the level of work completed.

1	Upgrade the OA ventilation rates to meet current codes and ASHRAE standards.	\$44,500
2	Consider providing a code compliant fire sprinkler system - cost assumes that a fire pump is not needed	\$24,500
3	Provide a code compliant fire alarm system.	\$3,600
4	Provide emergency lighting throughout the building.	\$12,000
Code Evaluation Sub-Total:		<hr/> \$84,600

H. Miscellaneous Upgrades:

1	Miscellaneous upgrades.	\$0
Miscellaneous Upgrades Sub-Total:		<hr/> \$0

Building Evaluation Total:		<hr/> \$668,800
-----------------------------------	--	------------------------

Asbestos Comment:

Asbestos Mitigation would require input from the District's consultant; therefore, no cost estimates are included in this study. It is our understanding the District has used Suburban Energy & Environmental Consultants for AHERA Management.

INTRODUCTION TO OPTIONS

This section of the Feasibility Study is an overview of the Proposed Options. Each Option includes the following information: Option Summary; Proposed Educational Program; Proposed Room Schedules; Option Cost Summary; and Projected Reimbursement.

The following Options were developed during meetings with the Boyertown Area School District and EI Associates. These Options are provided for the Board of Education to evaluate the needs of the District's facilities. The Options are evaluated using the same information, programming, and facility needs for each Option in order to compare the cost of each Option on an equal basis.

While the information provided for each facility is for the purpose of the Board of Education to review and evaluate the necessary repairs to each building, for the purpose of Option comparison, the entire cost of each facility's improvements has been included as renovation costs. This cost can be refined in meetings held at a later time with the District, when reviewing the actual materials that would be utilized in the construction project.

School Districts should understand that the Pennsylvania Department of Education will provide an additional 10% reimbursement for renovating existing buildings; also an additional 10% reimbursement for obtaining a minimum of Silver Certification from the U.S. Green Building Council's Leadership in Energy and Environmental Design Green Building Rating System (LEED-NC) for high performance and sustainable design standards.

Total Project Costs include 25% of Construction Cost for the following construction-related costs: Movable Fixtures and Equipment; Project Contingency; Construction-Related Costs; Architect/Engineering Fees; Financing Cost; and Project Supervision.

These Options should be evaluated by the Board of Education by a process of elimination, narrowing down to a particular facility Option that best meets the program and budgetary concerns of the Boyertown Area School District.

SUMMARY OF OPTIONS

OPTION 1 Alterations & Additions

K-6	Alterations & Additions to Colebrookdale E.S., Alterations to Pine Forge E.S.; Maintain Existing Elementary Schools
7-9	Alterations & Additions to JHS West; Maintain JHS East
10-12	Alterations to Sr. High School

OPTION 2 New Elementary School

K-6	New Elementary School; Alterations to Colebrookdale E.S. & Pine Forge E.S.; Maintain Existing Elementary Schools
7-9	Alterations & Additions to JHS West; Maintain JHS East
10-12	Alterations to Sr. High School

OPTION 3 New 9th Grade Center Addition to HS

K-5	Alterations to Colebrookdale E.S. & Pine Forge E.S.; Maintain Existing Elementary Schools
6-8	Alterations & Additions to JHS West; Maintain JHS East
9	New 9th Grade Center Addition to High School
10-12	Alterations to Sr. High School

OPTION 3A New 9th Grade Center

K-5	Alterations to Colebrookdale E.S. & Pine Forge E.S.; Maintain Existing Elementary Schools
6-8	Alterations & Additions to JHS West; Maintain JHS East
9	New 9th Grade Center
10-12	Alterations to Sr. High School

SUMMARY OF OPTIONS

OPTION 4 New 11-12th Grade Center Addition to High School

K-5	Alterations to Colebrookdale E.S. & Pine Forge E.S.; Maintain Existing Elementary Schools
6-8	Alterations to JHS West; Maintain JHS East
9-10	Alterations and Additions to Sr. High School as 9-10th Grade Center and 11-12th Grade Center
11-12	Center

OPTION 4A New 11-12th Grade Center

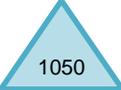
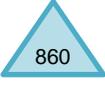
K-5	Alterations to Colebrookdale E.S. & Pine Forge E.S.; Maintain Existing Elementary Schools
6-8	Alterations to JHS West; Maintain JHS East
9-10	Alterations to Sr. High School as 9-10th Grade Center
11-12	New 11-12th Grade Center

OPTION 5 New Elementary School & High School Additions

K-5	New Elementary School; Alterations & Additions to Colebrookdale; Maintain Existing Elementary Schools
6-8	Alterations to JHS West; Maintain JHS East
9-10	Alterations and Additions to Sr. High School as 9-10th Grade Center and 11-12th Grade Center
11-12	Center

EXISTING EDUCATIONAL PROGRAM

Existing Building Capacity for Grades K-6; 7-9; 10-12; K-12

Building	Existing Grade Alignment	2011-12 Enrollment	** Adjusted Functional Capacity	Total Capacity	Highest Projected Enrollment	
					Methods I, II, III, IV	Current + 10%
 Boyertown Elementary	K-6	668	700	725		
 Colebrookdale Elementary	K-6	366	350	350		
 Earl Elementary	K-6	320	350	350		
 Gilbertsville Elementary	K-6	783	700	725		
 New Hanover-Upper Frederick ES	K-6	741	700	800		
 Pine Forge Elementary	K-6	277	350	350		
 Washington Elementary	K-6	606	700	700		
K-6 TOTAL		3,761	3,850	4,000	4,451 Method IV	4,137 2011-12
 Boyertown Area JHS - East	7-9	843	1,050	1,180		
 Boyertown Area JHS - West	7-9	807	860	970		
7-9 TOTAL		1,650	1,910	2,150	1,908 Method IV	1,815 2011-12
 Boyertown Area Senior High School	10-12	1,733	1,835	2,065		
10-12 TOTAL		1,733	1,835	2,065	1,856 Method I	1,906 2011-12
K-12 TOTAL		7,144	7,595	8,215	8,141 Method IV	7,858 2011-12

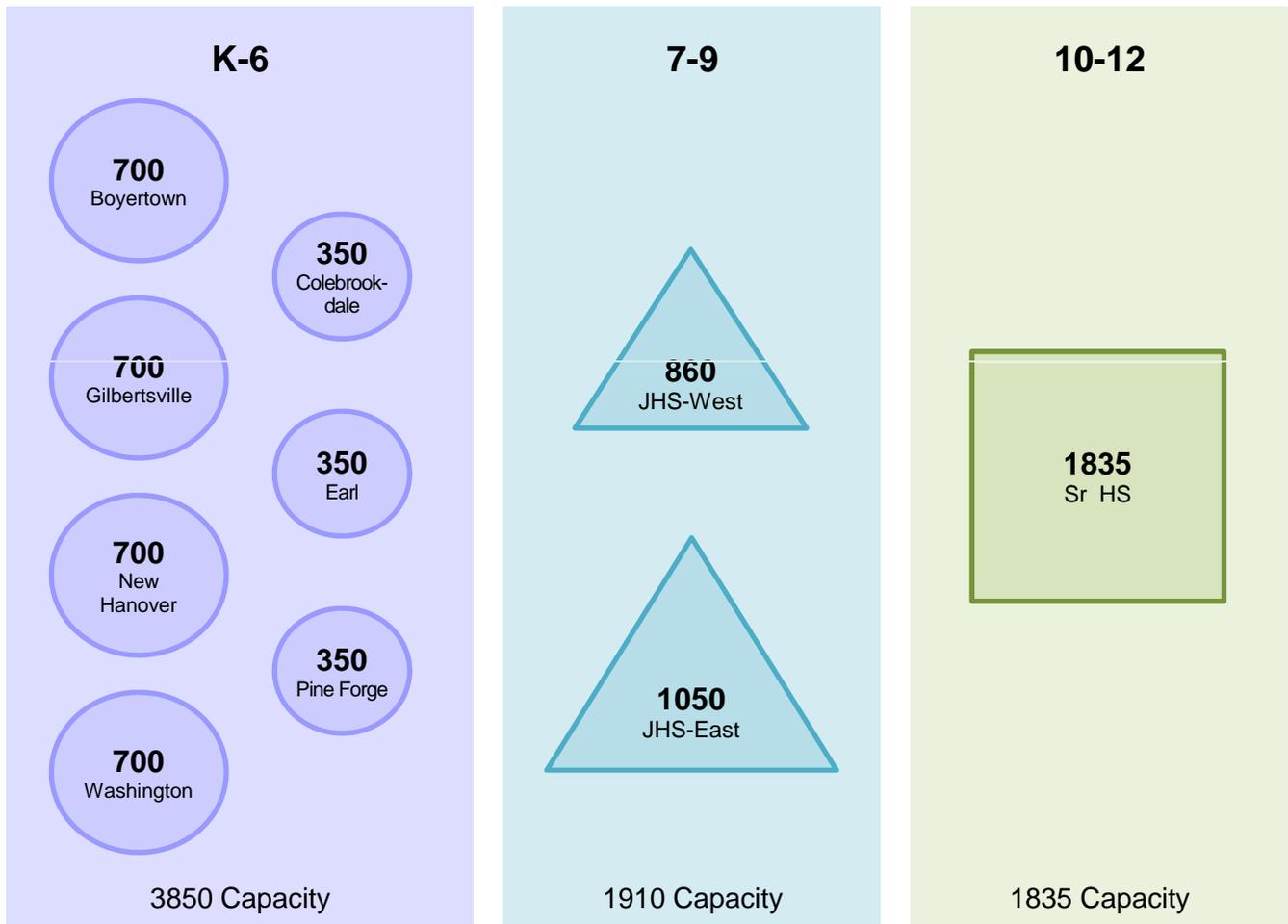
* PDE allows Current Enrollment +10% to be used as Highest Projected Enrollment for Project Grades.

** Elementary *Functional Capacity* are Graded Classrooms K-6; *Special Education Capacity* is not included in the Functional Capacity or Total Capacity.

EXISTING EDUCATIONAL PROGRAM

EXISTING

K-6	Boyertown ES, Colebrookdale ES, Earl ES, Gilbertsville ES, New Hanover ES, Pine Forge ES, Washington ES
7-9	Junior High School - East, Junior High School - West
10-12	Senior High School



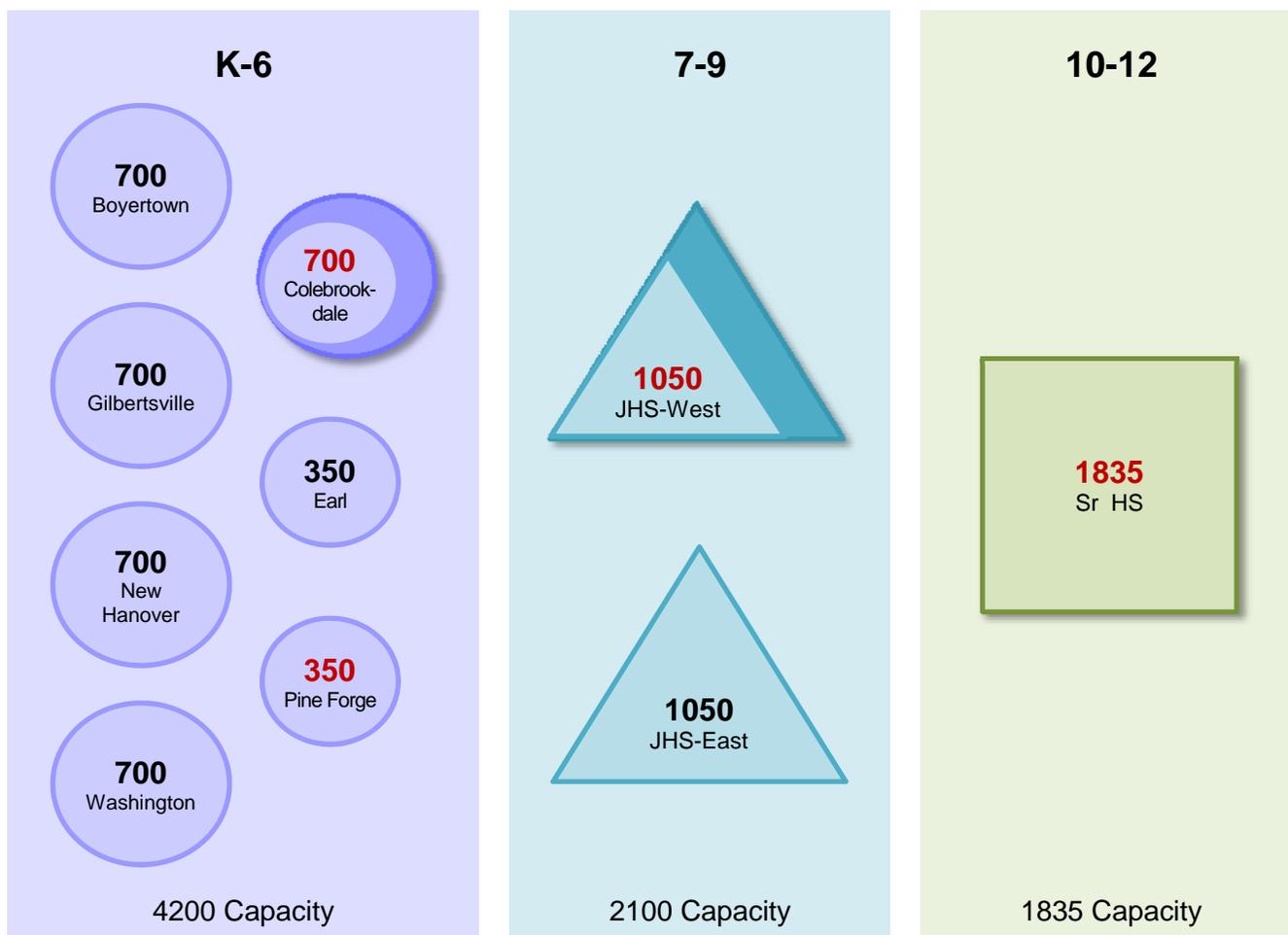
OPTION 1 Alterations & Additions

K-6
7-9
10-12

Alterations & Additions to Colebrookdale E.S., Alterations to Pine Forge E.S.;
Maintain Existing Elementary Schools

Alterations & Additions to JHS West; Maintain JHS East

Alterations to Sr. High School



Pros

- Maintains neighborhood Schools
- Targeted School Upgrades & Energy savings to offset Air Conditioning
- Additional capacity adequate for the projected student growth

Cons

- Additions at the Elementary level limits educational vision at H.S. level
- Additions at more buildings than other options
- Additional capacity may not be best located in student growth areas

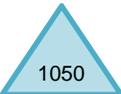
PROGRAM SUMMARY

OPTION 1

OPTION 1 Alterations & Additions

K-6	Alterations & Additions to Colebrookdale E.S., Alterations to Pine Forge E.S.; Maintain Existing Elementary Schools
7-9	Alterations & Additions to JHS West; Maintain JHS East
10-12	Alterations to Sr. High School

OPTION EDUCATIONAL PROGRAM

Building	Proposed Work	Proposed Grade Alignment	Functional Capacity	Total Capacity	Highest Projected Enrollment Methods	Current	+10%
 700	Boyertown ES	Maintain	K-6	700	725		
 700	Colebrookdale ES	Alterations & Additions	K-6	700	725		
 350	Earl ES	Maintain	K-6	350	350		
 700	Gilbertsville ES	Maintain	K-6	700	725		
 700	New Hanover ES	Maintain	K-6	700	750		
 350	Pine Forge ES	Renovations	K-6	350	350		
 700	Washington ES	Maintain	K-6	700	725		
K-6 Total				4,200	4,350	4,360 Method IV	4,137 2011-12
 1050	JHS - East	Maintain	7-9	1,050	1,180		
 1050	JHS - West	Alterations & Additions	7-9	1,050	1,180		
7-9 Total				2,100	2,360	1,882 Method I	1,815 2011-12
 1835	Sr High School	Renovations	10-12	1,835	2,065		
10-12 Total				1,835	2,065	1,856 Method I	1,906 2011-12
K-12 Total				8,135	8,775	8,034 Method IV	7,858 2011-12

OPTION COST SUMMARY

OPTION 1

OPTION 1 Alterations & Additions

K-6	Alterations & Additions to Colebrookdale E.S., Alterations to Pine Forge E.S.; Maintain Existing Elementary Schools
7-9	Alterations & Additions to JHS West; Maintain JHS East
10-12	Alterations to Sr. High School

OPTION COST SUMMARY

	Max Elig. Reimb.	Constr. Cost for Additions	Total Renov. Cost	Total Constr. Cost	Total Project Cost	Aid Ratio	+ Annual State Share	+ Annual Local Share
 Colebrookdale ES	\$5,961,500	\$8,000,000	\$2,909,200	\$10,909,200	\$13,636,500	0.4655	\$200,900	\$786,500
 Pine Forge ES	\$3,023,000	\$0	\$3,803,900	\$3,803,900	\$4,754,900	0.4655	\$101,900	\$242,500
K-6	\$8,984,500	\$8,000,000	\$6,713,100	\$14,713,100	\$18,391,400	0.4655	\$302,800	\$1,029,000
 JHS - West	\$9,173,500	\$2,000,000	\$22,222,200	\$24,222,200	\$30,277,800	0.4655	\$309,200	\$1,883,100
7-9	\$9,173,500	\$2,000,000	\$22,222,200	\$24,222,200	\$30,277,800	0.4655	\$309,200	\$1,883,100
 Sr High School	\$17,519,700	\$0	\$31,987,600	\$31,987,600	\$39,984,500	0.4655	\$590,500	\$2,304,500
10-12	\$17,519,700	\$0	\$31,987,600	\$31,987,600	\$39,984,500	0.4655	\$590,500	\$2,304,500
K-12	\$35,677,700	\$10,000,000	\$60,922,900	\$70,922,900	\$88,653,700	0.4655	\$1,202,500	\$5,216,600

PROPOSED K-6 ROOM SCHEDULE

Existing Adjusted & Proposed Capacity

		Exist	Opt 1	Exist	New	Opt 1	Exist	Opt 1	Exist	Opt 1									
		Boyertown		Colebrookdale			Earl		Gilbertsville										
		No. Capacity	No. Capacity	No. Capacity	No. Capacity	No. Capacity	No. Capacity	No. Capacity	No. Capacity	No. Capacity									
CLASSROOMS	Kindergarten 1/2-day	2	100	2	100	1	50	1	50	2	100	1	50	1	50	2	100	2	100
	Kindergarten 1/2-day adj																		
	First Grade	4	100	4	100	2	50	2	50	4	100	2	50	2	50	4	100	4	100
	Second Grade	4	100	4	100	2	50	2	50	4	100	2	50	2	50	4	100	4	100
	Third Grade	4	100	4	100	2	50	2	50	4	100	2	50	2	50	4	100	4	100
	Fourth Grade	4	100	4	100	2	50	2	50	4	100	2	50	2	50	4	100	4	100
	Fifth Grade	4	100	4	100	2	50	2	50	4	100	2	50	2	50	4	100	4	100
	Sixth Grade	4	100	4	100	2	50	2	50	4	100	2	50	2	50	4	100	4	100
SUPPORT	Support / Divided	1	25	1	25			1	25	1	25					1	25	1	25
	Spec Educ / Interven	5		5		3	1	4		2		2		3		3		3	
	S.E. / Gift / Inter S.G.I.	3		3						1		1		4		4		4	
	Modular/Clrm<660 s.f.					1	S.E.	-1											
	Seminar / S.G.I.	1		1		4		4		4		4		2		2		2	
	Large Group / L.G.I.													1		1		1	
	Computer Lab	1		1		1		1		1		1		1		1		1	
	Music Classroom	1		1		1		1		1		1		1		1		1	
	Music Seminar / Pract	1		1		1		1		1		1		1		1		1	
	Art Classroom	1		1		1		1		1		1		1		1		1	
ANCILLARY / CORE AREAS	Media Center	1		1		1		1		1		1		1		1		1	
	Gymnasium	1	*	1			1	1						1	*	1		1	
	Locker Room	2		2															
	Multi-Purpose Room					1	-1			1		1							
	Stage / Platform	1		1		1		1		1		1		1		1		1	
	Student Dining	1	*	1			1	1						1	*	1		1	
	Kitchen Areas	1		1		1		1		1		1		1		1		1	
	Administration / Guid	1		1		1		1		1		1		1		1		1	
	Health Suite	1		1		1		1		1		1		1		1		1	
	Faculty / I.P.C. / Office	2		2		1		1		1		1		1		1		1	
	P.E. Office						1	1						2		2		2	
Capacity		700		700		350		350		700		350		350		700		700	
Total Capacity		725		725		350		375		725		350		350		725		725	
2011-12 Enrollment		668				366						320				783			
Architectural Area		97,800		97,800		41,340				81,340		38,530		38,530		96,930		96,930	
New Arch. Area				0						40,000				0				0	

OPTION 1

Exist		Opt 1		Exist		Opt 1		Exist		Opt 1							
New Hanover		Pine Forge		Washington		K-6 Total											
No.	Capacity	No.	Capacity	No.	Capacity	No.	Capacity	No.	Capacity	No.	Capacity						
2	100	2	100	1	50	1	50	2	100	2	100	11	550	12	600	Kindergarten 1/2-day	CLASSROOMS
0	0	0	0	2	100	2	100	0	0	0	0	0	0	0	0	Kindergarten full-day	
4	100	4	100	2	50	2	50	4	100	4	100	22	550	24	600	First Grade	
4	100	4	100	2	50	2	50	4	100	4	100	22	550	24	600	Second Grade	
4	100	4	100	2	50	2	50	4	100	4	100	22	550	24	600	Third Grade	
4	100	4	100	2	50	2	50	4	100	4	100	22	550	24	600	Fourth Grade	
4	100	4	100	2	50	2	50	4	100	4	100	22	550	24	600	Fifth Grade	
4	100	4	100	2	50	2	50	4	100	4	100	22	550	24	600	Sixth Grade	
4	100	2	50						1	25	6	150	6	150	Support / Divided	SUPPORT	
4	6			4				4	3	21	23	21	23	23	Spec Educ / Interven		
1	1	4	4	3				3	3	16	16	16	16	16	S.E. / Gift / Inter S.G.I.		
2	2	1	1	5				5	5	1	0	1	0	0	Modular/Clstrm<660 s.f.		
1	1	1	1	1				1	1	19	19	19	19	19	Seminar / S.G.I.		
1	1	1	1	1				1	1	1	1	1	1	1	Large Group / L.G.I.		
1	1	1	**	1	**	1	**	1	1	7	7	7	7	7	Computer Lab		
1	1	1	** share	1	** share	1	** share	1	1	7	7	7	7	7	Music Classroom		
1	1	1	** share	1	** share	1	** share	1	1	5	5	5	5	5	Music Seminar / Pract		
1	1	1	** share	1	** share	1	** share	1	1	6	6	6	6	6	Art Classroom		
1	1	1	1	1	1	1	1	1	1	7	7	7	7	7	Media Center	ANCILLARY / CORE AREAS	
1	1			1	*	1	*	1	*	4	5	4	5	5	Gymnasium		
		1	1							2	2	2	2	2	Locker Room		
		1	1							3	2	3	2	2	Multi-Purpose Room		
1	1	1	1	1	1	1	1	1	1	7	7	7	7	7	Stage / Platform		
1	1			1	*	1	*	1	*	4	5	4	5	5	Student Dining		
1	1	1	1	1	1	1	1	1	1	7	7	7	7	7	Kitchen Areas		
1	1	1	1	1	1	1	1	1	1	7	7	7	7	7	Administration / Guid		
1	1	1	1	1	1	1	1	1	1	7	7	7	7	7	Health Suite		
1	1	1	1	1	1	1	1	1	1	8	8	8	8	8	Faculty / I.P.C. / Office		
		1	1	1	1	1	1	1	1	0	0	5	5	5	P.E. Office		
700	700	350	350	700	700	3850	4200	3850	4200	Capacity							
800	750	350	350	700	725	4000	4350	4000	4350	Total Capacity							
741		277		606		3761		3761		2011-12 Enrollment							
90,700	90,700	37,570	37,570	82,030	82,030	484,900	524,900	484,900	524,900	Architectural Area							
	0		0		0		40,000		40,000	New Arch. Area							

PROPOSED 7-9 ROOM SCHEDULE

OPTION 1

Existing Adjusted & Proposed Capacity

		Exist	Opt 1	Exist	New	Opt 1	Exist	Opt 1								
		Jr High East		Jr High West			7-9 Total									
		No.	Capacity	No.	Capacity	No.	Capacity	No.	Capacity							
CLASSRMS	Classroom	31	775	31	775	23	575	8	200	31	775	54	1350	62	1550	CLASSRMS
	Science Classroom / Lecture	2	50	2	50	3	75	-1	-25	2	50	5	125	4	100	
	Science Lab	5	100	5	100	3	60	2	40	5	100	8	160	10	200	
SUPPORT	S.E. / Gifted / Interv	6		6		4		2		6		10		12	SUPPORT	
	S.E. Seminar / S.G.I.	4		4		1		3		4		5		8		
	Seminar / S.G.I. < 660 s.f.	3		3		6		-3		3		9		6		
	Large Group / L.G.I.											0		0		
	Business / Computer Lab	3	60	3	60	3	60			3	60	6	120	6		120
	Music Classroom											0	0	0		0
	Band / Orchestra / Choral	2	50	2	50	2	50			2	50	4	100	4		100
	Art Classroom	2	40	2	40	2	40			2	40	4	80	4		80
	Family & Consumer Science	2	40	2	40	2	40			2	40	4	80	4		80
	T.E. Lab	3	60	3	60	3	60			3	60	6	120	6		120
T.E. Wood / Metal Lab	1	20	1	20			1	20	1	20	1	20	2	40		
T.V. Studio	1	20	1	20	1	20			1	20	2	40	2	40		
ANCILLARY / CORE AREAS	Media Center	1		1		1				1		2		2	ANCILLARY / CORE AREAS	
	Gymnasium	1	99	1	99	1	66			1	66	2	165	2		165
	Auxiliary Gym					1	33			1	33	1	33	1		33
	Weight Room / Adapt. Gym	1		1		1				1		2		2		
	Locker Room	4		4		2				2		6		6		
	Officials / P.E. Office	2		2		2				2		4		4		
	Auditorium	1		1		1				1		2		2		
	Stage / Platform	1		1		1				1		2		2		
	Student Dining	1		1		1				1		2		2		
	Kitchen Areas	1		1		1				1		2		2		
	Administration / Guidance	1		1		1				1		2		2		
	Health Suite	1		1		1				1		2		2		
	Faculty / I.P.C. / Office	2		2		2				2		4		4		
	Capacity (80%)		1050		1050		860		190		1050		1910			2100
P.D.E. Capacity (90%)		1180		1180		970		210		1180		2150		2360		
2011-12 Enrollment		843				807						1650				
Architectural Area		159,430		159,430		145,720				155,720		305,150		315,150		
New Architectural Area				0						10,000				10,000		

P.D.E.: 20-25 students per classroom; 90% P.D.E. Utilization Factor and 80% District Utilization Factor.

Secondary Functional Capacity includes all spaces that receive capacity except a Natatorium or District Administration. Special Education Capacity is not included in the Functional Capacity or Total Capacity.

The existing building capacity may have been adjusted to represent the intended or adjusted use of space, therefore, showing respective support classrooms including Art, Music and Computer Education spaces.

PROPOSED 10-12 ROOM SCHEDULE

OPTION 1

Existing Adjusted & Proposed Capacity

		Existing & Option 1						
		High School		HS Old Wing		Sr High School		
		No.	Capacity	No.	Capacity	No.	Capacity	
CLASSROOMS	Classroom	39	975	9	225	48	1200	CLASSROOMS
	Science Classroom / Lecture	8	200			8	200	
	Science Lab	7	140			7	140	
	Classrooms (Other Use)	1	25	2	50	3	75	
SUPPORT	S.E. / Gifted / Interv	8				8		SUPPORT
	S.E. Seminar / S.G.I.	5				5		
	Modular / Clsrm <660 s.f.			7		7		
	Seminar / S.G.I. < 660 s.f.	2				2		
	Large Group / L.G.I.	1		1		2		
	Business / Computer Lab	4	80			4	80	
	Music Classroom	2	50			2	50	
	Band / Orchestra / Choral	2	50			2	50	
	Art Classroom			4	80	4	80	
	Family & Consumer Science	3	60			3	60	
	T.E. Lab	7	140			7	140	
	T.E. Wood / Metal Lab							
T.V. Studio	1	20			1	20		
ANCILLARY / CORE AREAS	Media Center	1				1		ANCILLARY / CORE AREAS
	Gymnasium	2	165			2	165	
	Auxiliary Gym			1	33	1	33	
	Weight Room / Adaptive Gym	3				3		
	Locker Room	6				6		
	Officials / P.E. Office	8				8		
	Auditorium	1		1		2		
	Stage / Platform	1		1		2		
	Student Dining	1				1		
	Kitchen Areas	1				1		
	Administration / Guidance	1				1		
	Health Suite	1				1		
	Faculty / I.P.C. / Office	14		1		15		
	Capacity (80%)			1525		310		
P.D.E. Capacity (90%)			1715		350		2065	
2011-12 Enrollment							1733	

P.D.E.: 20-25 students per classroom; 90% P.D.E. Utilization Factor and 80% District Utilization Factor.

Secondary Functional Capacity includes all spaces that receive capacity except a Natatorium or District Administration. Special Education Capacity is not included in the Functional Capacity or Total Capacity.

The existing building capacity may have been adjusted to represent the intended or adjusted use of space, therefore, showing respective support classrooms including Art, Music and Computer Education spaces.

PROJECTED REIMBURSEMENT

	PDE Adj. New FTE	RPC	** Reimb. Factor	Max Elig. Reimb.	Constr. New S.F.	Constr. Cost for Additions	Renov. Exist. S.F.	Renov. Study Cost	Total Constr. Cost
Colebrookdale Elementary	790	1,057	4,700	4,967,900	40,000	8,000,000	41,340	2,909,200	10,909,200
	*Existing	1,057	470	496,790					
	*LEED	1,057	470	496,790					
				5,961,500					
Pine Forge Elementary	383	536	4,700	2,519,200	0	0	37,570	3,803,900	3,803,900
	*Existing	536	470	251,920					
	*LEED	536	470	251,920					
				3,023,000					
K-6 Total				\$8,984,500	40,000	\$8,000,000	78,910	\$6,713,100	\$14,713,100
JHS West	1,116	1,233	6,200	7,644,600	10,000	2,000,000	145,720	22,222,200	24,222,200
	*Existing	1,233	620	764,460					
	*LEED	1,233	620	764,460					
7-9 Total				\$9,173,500	10,000	\$2,000,000	145,720	\$22,222,200	\$24,222,200
Sr. High School	2,131	2,355	6,200	14,599,481	0	0	370,000	31,987,600	31,987,600
	*Existing	2,355	620	1,460,100					
	*LEED	2,355	620	1,460,100					
10-12 Total				\$17,519,700	0	\$0	370,000	\$31,987,600	\$31,987,600
K-12 Total				\$35,677,700	50,000	\$10,000,000	594,630	\$60,922,900	\$70,922,900

* Additional 10% Reimbursement for *Qualifying Existing Building* also Additional 10% Reimbursement for *Qualifying Leed Certification*.

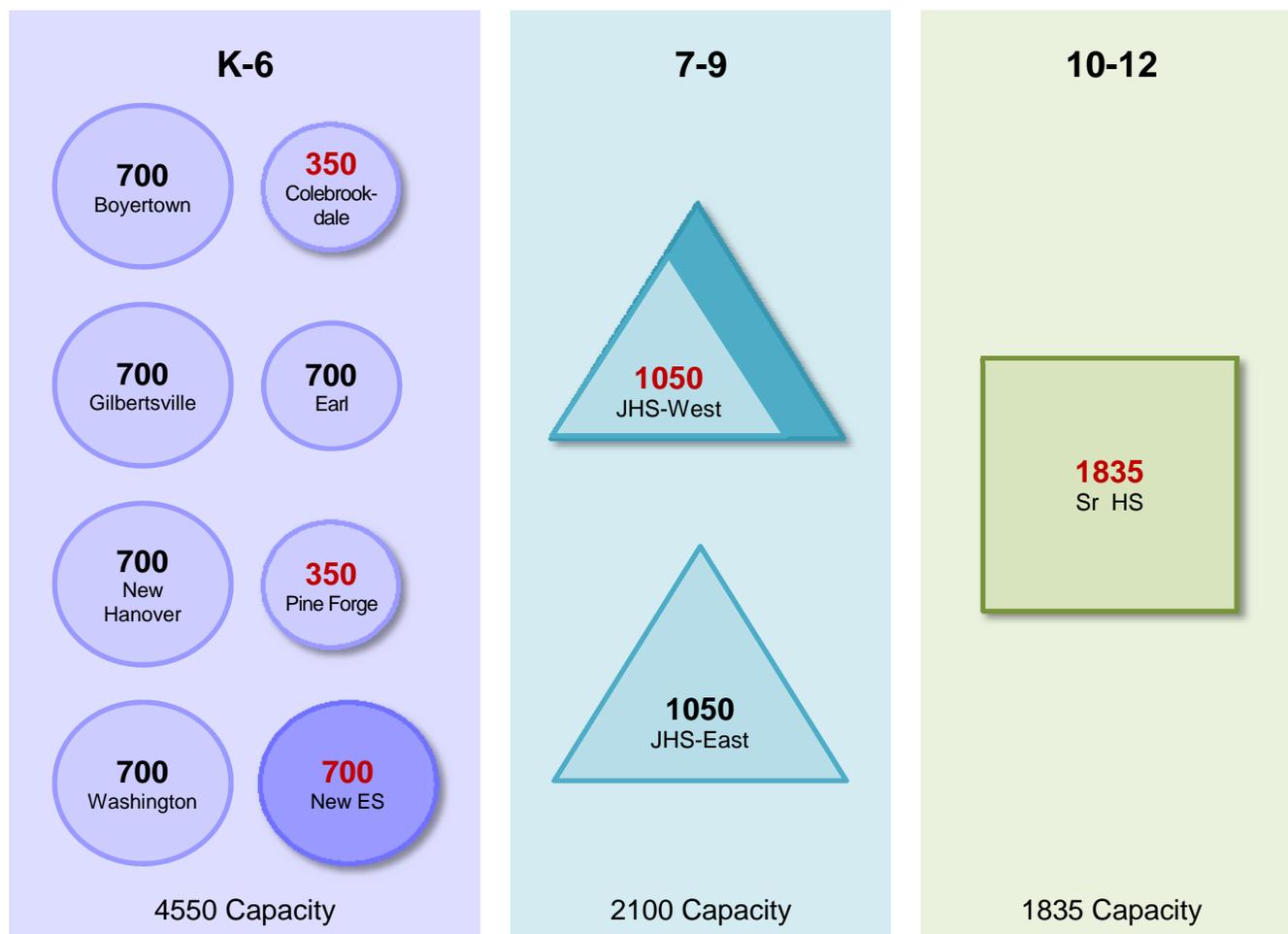
+ 4.0% 20-year bond issue rate

OPTION 1

Total Project Cost	** % M.E.R. to T.P.C.	Aid Ratio	% State Share	% Local Share	+ Annual Total Share	+ Annual State Share	+ Annual Local Share	
13,636,500	0.4372	0.4655	20.35%	79.65%	987,400	200,900	786,500	Colebrookdale Elementary
4,754,900	0.6358	0.4655	29.59%	70.41%	344,400	101,900	242,500	Pine Forge Elementary
\$18,391,400		0.4655			\$1,331,800	\$302,800	\$1,029,000	K-6 Total
30,277,800	0.3030	0.4655	14.10%	85.90%	2,192,300	309,200	1,883,100	JHS West
\$30,277,800		0.4655			\$2,192,300	\$309,200	\$1,883,100	7-9 Total
39,984,500	0.4382	0.4655	20.40%	79.60%	2,895,000	590,500	2,304,500	Sr. High School
\$39,984,500		0.4655			\$2,895,000	\$590,500	\$2,304,500	10-12 Total
\$88,653,700		0.4655			\$6,419,100	\$1,202,500	\$5,216,600	K-12 Total

OPTION 2 New Elementary School

K-6	New Elementary School; Alterations to Colebrookdale E.S. & Pine Forge E.S.; Maintain Existing Elementary Schools
7-9	Alterations & Additions to JHS West; Maintain JHS East
10-12	Alterations to Sr. High School



- Pros**
- Maintains neighborhood Schools
 - Targeted School Upgrades & Energy savings to offset Air Conditioning
 - Additional capacity adequate for the projected student growth

- Cons**
- Additions at the Elementary level limits educational vision at H.S. level
 - Does not provide better parity at Elementary Schools
 - Maintains separation of 9th Grade from High School program

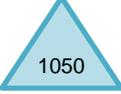
PROGRAM SUMMARY

OPTION 2

OPTION 2 New Elementary School

K-6	New Elementary School; Alterations to Colebrookdale E.S. & Pine Forge E.S.; Maintain Existing Elementary Schools
7-9	Alterations & Additions to JHS West; Maintain JHS East
10-12	Alterations to Sr. High School

OPTION EDUCATIONAL PROGRAM

Building	Proposed Work	Proposed Grade Alignment	Functional Capacity	Total Capacity	Highest Projected Enrollment Methods	Current	+10%
 700	Boyertown ES	Maintain	K-6	700	725		
 350	Colebrookdale ES	Renovations	K-6	350	350		
 350	Earl ES	Maintain	K-6	350	350		
 700	Gilbertsville ES	Maintain	K-6	700	725		
 700	New Hanover ES	Maintain	K-6	700	750		
 350	Pine Forge ES	Renovations	K-6	350	350		
 700	Washington ES	Maintain	K-6	700	725		
 700	New K-6 ES	New Elementary	K-6	700	725		
K-6 Total				4,550	4,700	4,360 Method IV	4,137 2011-12
 1050	JHS - East	Maintain	7-9	1,050	1,180		
 1050	JHS - West	Alterations & Additions	7-9	1,050	1,180		
7-9 Total				2,100	2,360	1,882 Method I	1,815 2011-12
 1835	Sr High School	Renovations	10-12	1,835	2,065		
10-12 Total				1,835	2,065	1,856 Method I	1,906 2011-12
K-12 Total				8,485	9,125	8,034 Method IV	7,858 2011-12

OPTION COST SUMMARY

OPTION 2

OPTION 2 New Elementary School

K-6	New Elementary School; Alterations to Colebrookdale E.S. & Pine Forge E.S.; Maintain Existing Elementary Schools
7-9	Alterations & Additions to JHS West; Maintain JHS East
10-12	Alterations to Sr. High School

OPTION COST SUMMARY

	Max Elig. Reimb.	Constr. Cost for Additions	Total Renov. Cost	Total Constr. Cost	Total Project Cost	Aid Ratio	+ Annual State Share	+ Annual Local Share
 Colebrookdale ES	\$2,825,600	\$0	\$2,909,200	\$2,909,200	\$3,636,500	0.4655	\$95,300	\$168,100
 Pine Forge ES	\$2,825,600	\$0	\$3,803,900	\$3,803,900	\$4,754,900	0.4655	\$95,300	\$249,100
 New ES	\$5,149,300	\$16,000,000	\$0	\$16,000,000	\$20,000,000	0.4655	\$173,600	\$1,274,500
K-6	\$10,800,500	\$16,000,000	\$6,713,100	\$22,713,100	\$28,391,400	0.4655	\$364,200	\$1,691,700
 JHS - West	\$9,173,500	\$2,000,000	\$22,222,200	\$24,222,200	\$30,277,800	0.4655	\$309,200	\$1,883,100
7-9	\$9,173,500	\$2,000,000	\$22,222,200	\$24,222,200	\$30,277,800	0.4655	\$309,200	\$1,883,100
 Sr High School	\$17,519,700	\$0	\$31,987,600	\$31,987,600	\$39,984,500	0.4655	\$590,500	\$2,304,500
10-12	\$17,519,700	\$0	\$31,987,600	\$31,987,600	\$39,984,500	0.4655	\$590,500	\$2,304,500
K-12	\$37,493,700	\$18,000,000	\$60,922,900	\$78,922,900	\$98,653,700	0.4655	\$1,263,900	\$5,879,300

PROPOSED K-6 ROOM SCHEDULE

Existing Adjusted & Proposed Capacity

		Exist	Opt 2										
		Boyertown		Colebrookdale		Earl		Gilbertsville		New Hanover			
CLASSROOMS	Kindergarten 1/2-day	2	100	2	100	1	50	1	50	2	100	2	100
	Kindergarten full-day				2	50							
	First Grade	4	100	4	100	2	50	2	50	4	100	4	100
	Second Grade	4	100	4	100	2	50	2	50	4	100	4	100
	Third Grade	4	100	4	100	2	50	2	50	4	100	4	100
	Fourth Grade	4	100	4	100	2	50	2	50	4	100	4	100
	Fifth Grade	4	100	4	100	2	50	2	50	4	100	4	100
	Sixth Grade	4	100	4	100	2	50	2	50	4	100	4	100
SUPPORT	Support / Divided	1	25	1	25					1	25	1	25
	Spec Educ / Interven	5		5		3	2	2	2	3		4	6
	S.E. / Gift / Inter S.G.I.	3		3			1	1	1	4		1	1
	Modular/Clstrm<660 s.f.					1	S.E.	1	S.E.				
	Seminar / S.G.I.	1		1		4	4	4	4	2		2	2
	Large Group / L.G.I.									1		1	
	Computer Lab	1		1		1		1	1	1		1	1
	Music Classroom	1		1		1	1	1	1	1		1	1
	Music Seminar / Pract	1		1		1	1			1		1	1
	Art Classroom	1		1		1	1	1	1	1		1	1
ANCILLARY / CORE AREAS	Media Center	1		1		1	1	1	1	1		1	1
	Gymnasium	1	*	1						1	*	1	1
	Locker Room	2		2									
	Multi-Purpose Room					1	1	1	1				
	Stage / Platform	1		1		1	1	1	1	1		1	1
	Student Dining	1	*	1						1	*	1	1
	Kitchen Areas	1		1		1	1	1	1	1		1	1
	Administration / Guid	1		1		1	1	1	1	1		1	1
	Health Suite	1		1		1	1	1	1	1		1	1
	Faculty / I.P.C. / Office	2		2		1	1	1	1	1		1	1
	P.E. Office									2		2	
Capacity	700	700	350	350	350	350	700	700	700	700	700	700	
Total Capacity	725	725	350	350	350	350	725	725	800	750	750	750	
2011-12 Enrollment	668		366		320		783		741		741		
Architectural Area	97,800	97,800	41,340	41,340	38,530	38,530	96,930	96,930	90,700	90,700	90,700	90,700	
New Arch. Area		0		0		0		0		0		0	

OPTION 2

Exist	Opt 2	Exist	Opt 2	Exist	Opt 2	Exist	Opt 2		
Pine Forge		Washington		New K-6 ES		K-6 Total			
No. Capacity	No. Capacity	No. Capacity	No. Capacity	No. Capacity	No. Capacity	No. Capacity	No. Capacity		
1 50	1 50	2 100	2 100		2 100	11 550	12 600	Kindergarten 1/2-day	CLASSROOMS
						0 0	2 50	Kindergarten full-day	
2 50	2 50	4 100	4 100		4 100	22 550	26 650	First Grade	
2 50	2 50	4 100	4 100		4 100	22 550	26 650	Second Grade	
2 50	2 50	4 100	4 100		4 100	22 550	26 650	Third Grade	
2 50	2 50	4 100	4 100		4 100	22 550	26 650	Fourth Grade	
2 50	2 50	4 100	4 100		4 100	22 550	26 650	Fifth Grade	
2 50	2 50	4 100	4 100		4 100	22 550	26 650	Sixth Grade	
			1 25		1 25	6 150	6 150	Support / Divided	SUPPORT
4 4	4 4	4 3	3 3		4 4	21 25	25 25	Spec Educ / Interven	
1 1	1 1	5 5	5 5		4 4	16 17	17 17	S.E. / Gift / Inter S.G.I.	
1 1	1 1	1 1	1 1		1 1	1 1	1 1	Modular/Clstrm<660 s.f.	
1 ** 1 **	1 ** 1 **	1 1	1 1		1 1	7 7	7 7	Seminar / S.G.I.	
** share ** share	** share ** share	1 1	1 1		1 1	7 8	8 8	Large Group / L.G.I.	
		1 1	1 1		1 1	7 7	7 7	Computer Lab	
		1 1	1 1		1 1	7 8	8 8	Music Classroom	
		1 1	1 1		1 1	5 6	6 6	Music Seminar / Pract	
		1 1	1 1		1 1	6 7	7 7	Art Classroom	
1 1	1 1	1 1	1 1		1 1	7 8	8 8	Media Center	ANCILLARY / CORE AREAS
		1 *	1 *		1 1	4 5	5 5	Gymnasium	
1 1	1 1				1 1	2 2	2 2	Locker Room	
1 1	1 1				1 1	3 3	3 3	Multi-Purpose Room	
		1 *	1 *		1 1	7 8	8 8	Stage / Platform	
1 1	1 1				1 1	4 5	5 5	Student Dining	
1 1	1 1				1 1	7 8	8 8	Kitchen Areas	
1 1	1 1				1 1	7 8	8 8	Administration / Guid	
1 1	1 1				1 1	7 8	8 8	Health Suite	
1 1	1 1				1 1	8 9	9 9	Faculty / I.P.C. / Office	
1 1	1 1				1 1	4 0	5 5	P.E. Office	
350	350	700	700	0	700	3850	4550	Capacity	
350	350	700	725	0	725	4000	4700	Total Capacity	
277		606		277		3761		2011-12 Enrollment	
37,570	37,570	82,030	82,030	0	80,000	484,900	564,900	Architectural Area	
	0		0		80,000		80,000	New Arch. Area	

PROPOSED 7-9 ROOM SCHEDULE

OPTION 2

Existing Adjusted & Proposed Capacity

		Exist	Opt 2	Exist	New	Opt 2	Exist	Opt 2								
		Jr High East		Jr High West			7-9 Total									
		No.	Capacity	No.	Capacity	No.	Capacity	No.	Capacity							
CLASSRMS	Classroom	31	775	31	775	23	575	8	200	31	775	54	1350	62	1550	CLASSRMS
	Science Classroom / Lecture	2	50	2	50	3	75	-1	-25	2	50	5	125	4	100	
	Science Lab	5	100	5	100	3	60	2	40	5	100	8	160	10	200	
SUPPORT	S.E. / Gifted / Interv	6		6		4		2		6		10		12		SUPPORT
	S.E. Seminar / S.G.I.	4		4		1		3		4		5		8		
	Seminar / S.G.I. < 660 s.f.	3		3		6		-3		3		9		6		
	Large Group / L.G.I.											0		0		
	Business / Computer Lab	3	60	3	60	3	60			3	60	6	120	6	120	
	Music Classroom											0	0	0	0	
	Band / Orchestra / Choral	2	50	2	50	2	50			2	50	4	100	4	100	
	Art Classroom	2	40	2	40	2	40			2	40	4	80	4	80	
	Family & Consumer Science	2	40	2	40	2	40			2	40	4	80	4	80	
	T.E. Lab	3	60	3	60	3	60			3	60	6	120	6	120	
T.E. Wood / Metal Lab	1	20	1	20			1	20	1	20	1	20	2	40		
T.V. Studio	1	20	1	20	1	20			1	20	2	40	2	40		
ANCILLARY / CORE AREAS	Media Center	1		1		1				1		2		2		ANCILLARY / CORE AREAS
	Gymnasium	1	99	1	99	1	66			1	66	2	165	2	165	
	Auxiliary Gym					1	33			1	33	1	33	1	33	
	Weight Room / Adapt. Gym	1		1		1				1		2		2		
	Locker Room	4		4		2				2		6		6		
	Officials / P.E. Office	2		2		2				2		4		4		
	Auditorium	1		1		1				1		2		2		
	Stage / Platform	1		1		1				1		2		2		
	Student Dining	1		1		1				1		2		2		
	Kitchen Areas	1		1		1				1		2		2		
	Administration / Guidance	1		1		1				1		2		2		
	Health Suite	1		1		1				1		2		2		
	Faculty / I.P.C. / Office	2		2		2				2		4		4		
	Capacity (80%)		1050		1050		860		190		1050		1910		2100	
P.D.E. Capacity (90%)		1180		1180		970		210		1180		2150		2360		
2011-12 Enrollment		843				807						1650				
Architectural Area		159,430		159,430		145,720				155,720		305,150		315,150		
New Architectural Area				0						10,000				10,000		

P.D.E.: 20-25 students per classroom; 90% P.D.E. Utilization Factor and 80% District Utilization Factor.

Secondary Functional Capacity includes all spaces that receive capacity except a Natatorium or District Administration. Special Education Capacity is not included in the Functional Capacity or Total Capacity.

The existing building capacity may have been adjusted to represent the intended or adjusted use of space, therefore, showing respective support classrooms including Art, Music and Computer Education spaces.

PROPOSED 10-12 ROOM SCHEDULE

OPTION 2

Existing Adjusted & Proposed Capacity

		Existing & Option 2						
		High School		HS Old Wing		Sr High School		
		No.	Capacity	No.	Capacity	No.	Capacity	
CLASSROOMS	Classroom	39	975	9	225	48	1200	CLASSROOMS
	Science Classroom / Lecture	8	200			8	200	
	Science Lab	7	140			7	140	
	Classrooms (Other Use)	1	25	2	50	3	75	
SUPPORT	S.E. / Gifted / Interv	8				8		SUPPORT
	S.E. Seminar / S.G.I.	5				5		
	Modular / Clsrm <660 s.f.			7		7		
	Seminar / S.G.I. < 660 s.f.	2				2		
	Large Group / L.G.I.	1		1		2		
	Business / Computer Lab	4	80			4	80	
	Music Classroom	2	50			2	50	
	Band / Orchestra / Choral	2	50			2	50	
	Art Classroom			4	80	4	80	
	Family & Consumer Science	3	60			3	60	
	T.E. Lab	7	140			7	140	
	T.E. Wood / Metal Lab							
T.V. Studio	1	20			1	20		
ANCILLARY / CORE AREAS	Media Center	1				1		ANCILLARY / CORE AREAS
	Gymnasium	2	165			2	165	
	Auxiliary Gym			1	33	1	33	
	Weight Room / Adaptive Gym	3				3		
	Locker Room	6				6		
	Officials / P.E. Office	8				8		
	Auditorium	1		1		2		
	Stage / Platform	1		1		2		
	Student Dining	1				1		
	Kitchen Areas	1				1		
	Administration / Guidance	1				1		
	Health Suite	1				1		
	Faculty / I.P.C. / Office	14		1		15		
	Capacity (80%)			1525		310		
P.D.E. Capacity (90%)			1715		350		2065	
2011-12 Enrollment							1733	

P.D.E.: 20-25 students per classroom; 90% P.D.E. Utilization Factor and 80% District Utilization Factor.

Secondary Functional Capacity includes all spaces that receive capacity except a Natatorium or District Administration. Special Education Capacity is not included in the Functional Capacity or Total Capacity.

The existing building capacity may have been adjusted to represent the intended or adjusted use of space, therefore, showing respective support classrooms including Art, Music and Computer Education spaces.

PROJECTED REIMBURSEMENT

	PDE Adj. New FTE	RPC	** Reimb. Factor	Max Elig. Reimb.	Constr. New S.F.	Constr. Cost for Additions	Renov. Exist. S.F.	Renov. Study Cost	Total Constr. Cost
Colebrookdale Elementary	358	501	4,700	2,354,700	0	0	41,340	2,909,200	2,909,200
	*Existing	501	470	235,470					
	*LEED	501	470	235,470					
				2,825,600					
Pine Forge Elementary	358	501	4,700	2,354,700	0	0	37,570	3,803,900	3,803,900
	*Existing	501	470	235,470					
	*LEED	501	470	235,470					
				2,825,600					
New K-6 Elementary	738	996	4,700	4,681,200	80,000	16,000,000	0	0	16,000,000
	*Existing		470	0					
	*LEED	996	470	468,120					
				5,149,300					
K-6 Total				\$10,800,500	80,000	\$16,000,000	78,910	\$6,713,100	\$22,713,100
JHS West	1,116	1,233	6,200	7,644,600	10,000	2,000,000	145,720	22,222,200	24,222,200
	*Existing	1,233	620	764,460					
	*LEED	1,233	620	764,460					
7-9 Total				\$9,173,500	10,000	\$2,000,000	145,720	\$22,222,200	\$24,222,200
Sr. High School	2,131	2,355	6,200	14,599,481	0	0	370,000	31,987,600	31,987,600
	*Existing	2,355	620	1,460,100					
	*LEED	2,355	620	1,460,100					
10-12 Total				\$17,519,700	0	\$0	370,000	\$31,987,600	\$31,987,600
K-12 Total				\$37,493,700	90,000	\$18,000,000	594,630	\$60,922,900	\$78,922,900

* Additional 10% Reimbursement for *Qualifying Existing Building* also Additional 10% Reimbursement for *Qualifying Leed Certification*.

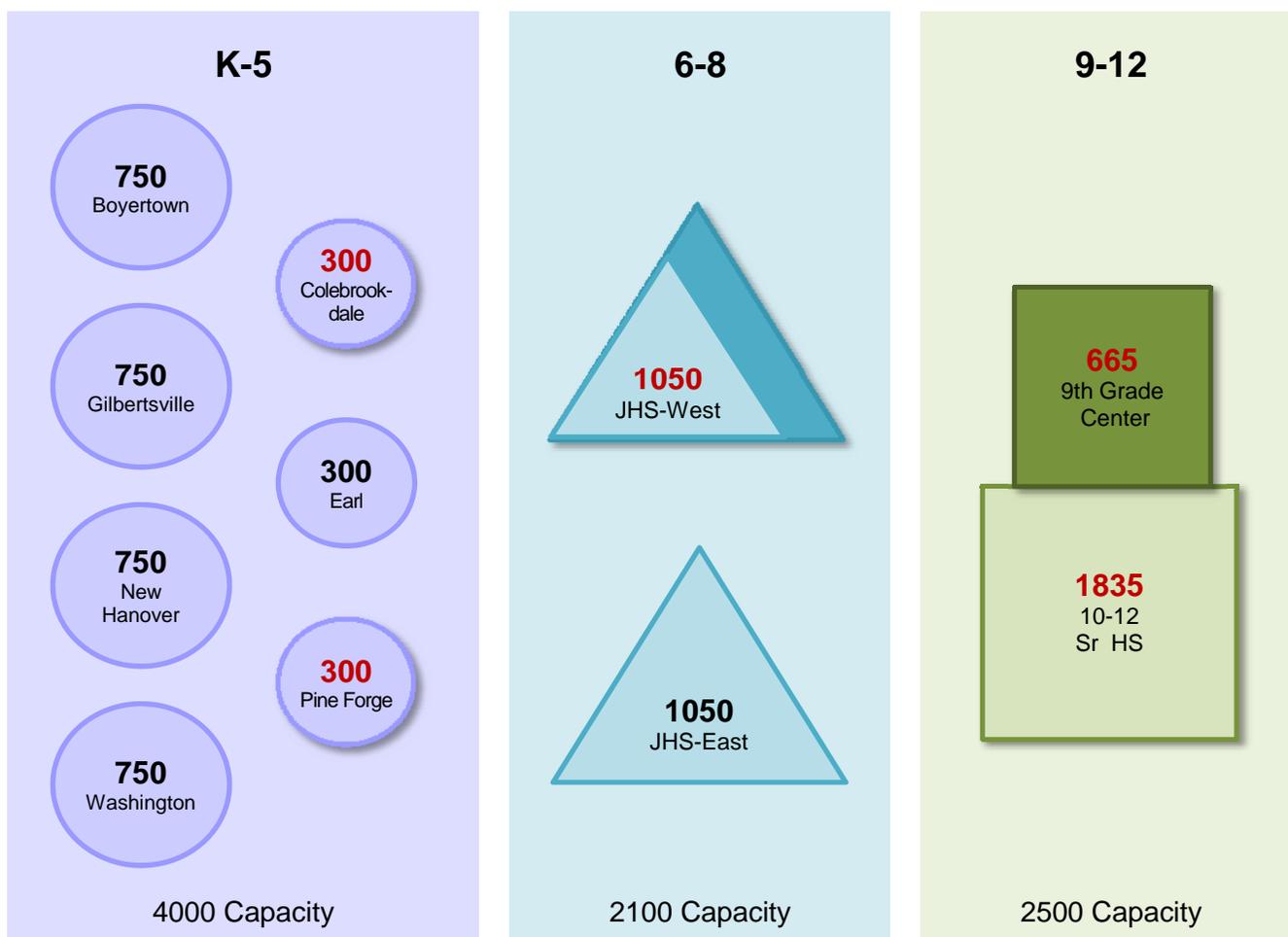
+ 4.0% 20-year bond issue rate

OPTION 2

Total Project Cost	** % M.E.R. to T.P.C.	Aid Ratio	% State Share	% Local Share	+ Annual Total Share	+ Annual State Share	+ Annual Local Share	
3,636,500	0.7770	0.4655	36.17%	63.83%	263,400	95,300	168,100	Colebrookdale Elementary
4,754,900	0.5943	0.4655	27.66%	72.34%	344,400	95,300	249,100	Pine Forge Elementary
20,000,000	0.2575	0.4655	11.98%	88.02%	1,448,100	173,600	1,274,500	New K-6 Elementary
\$28,391,400		0.4655			\$2,055,900	\$364,200	\$1,691,700	K-6 Total
30,277,800	0.3030	0.4655	14.10%	85.90%	2,192,300	309,200	1,883,100	JHS West
\$30,277,800		0.4655			\$2,192,300	\$309,200	\$1,883,100	7-9 Total
39,984,500	0.4382	0.4655	20.40%	79.60%	2,895,000	590,500	2,304,500	Sr. High School
\$39,984,500		0.4655			\$2,895,000	\$590,500	\$2,304,500	10-12 Total
\$98,653,700		0.4655			\$7,143,200	\$1,263,900	\$5,879,300	K-12 Total

OPTION 3 New 9th Grade Center Addition to HS

K-5	Alterations to Colebrookdale E.S. & Pine Forge E.S.; Maintain Existing Elementary Schools
6-8	Alterations & Additions to JHS West; Maintain JHS East
9	New 9th Grade Center Addition to High School
10-12	Alterations to Sr. High School



- Pros**
- Maintains neighborhood Schools
 - Targeted School Upgrades & Energy savings to offset Air Conditioning
 - Additional capacity adequate for the projected student growth
- Cons**
- Does not provide better parity at Elementary Schools
 - Elementary capacity may not be best located in student growth areas

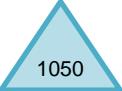
PROGRAM SUMMARY

OPTION 3

OPTION 3 New 9th Grade Center Addition to HS

K-5	Alterations to Colebrookdale E.S. & Pine Forge E.S.; Maintain Existing Elementary Schools
6-8	Alterations & Additions to JHS West; Maintain JHS East
9	New 9th Grade Center Addition to High School
10-12	Alterations to Sr. High School

OPTION EDUCATIONAL PROGRAM

	Building	Proposed Work	Proposed Grade Alignment	Functional Capacity	Total Capacity	Highest Projected Enrollment Methods	Current +10%
	Boyertown ES	Maintain Change to K-5	K-5	750	750		
	Colebrookdale ES	Renovations Change to K-5	K-5	300	325		
	Earl ES	Maintain Change to K-5	K-5	300	325		
	Gilbertsville ES	Maintain Change to K-5	K-5	750	750		
	New Hanover ES	Maintain Change to K-5	K-5	750	775		
	Pine Forge ES	Renovations Change to K-5	K-5	300	300		
	Washington ES	Maintain Change to K-5	K-5	750	750		
K-5 Total				3,900	3,975	3,674 Method III	3,506 2011-12
	JHS - East	Maintain Change to 6-8	6-8	1,050	1,180		
	JHS - West	Alts & Additions Change to 6-8	6-8	1,050	1,180		
6-8 Total				2,100	2,360	1,865 Method I	1,858 2011-12
	9th Gr Center	Additions to HS	9	665	745		
	Sr High School	Renovations	10-12	1,835	2,065		
9-12 Total				2,500	2,810	2,531 Method I	2,511 2011-12
K-12 Total				8,500	9,145	7,833 Method III	7,858 2011-12

OPTION COST SUMMARY

OPTION 3

OPTION 3 New 9th Grade Center Addition to HS

K-5	Alterations to Colebrookdale E.S. & Pine Forge E.S.; Maintain Existing Elementary Schools
6-8	Alterations & Additions to JHS West; Maintain JHS East
9	New 9th Grade Center Addition to High School
10-12	Alterations to Sr. High School

OPTION COST SUMMARY

	Max Elig. Reimb.	Constr. Cost for Additions	Total Renov. Cost	Total Constr. Cost	Total Project Cost	Aid Ratio	+ Annual State Share	+ Annual Local Share
 Colebrookdale ES	\$2,859,500	\$0	\$2,909,200	\$2,909,200	\$3,636,500	0.4655	\$96,400	\$167,000
 Pine Forge ES	\$2,487,200	\$0	\$3,803,900	\$3,803,900	\$4,754,900	0.4655	\$83,900	\$260,500
K-5	\$5,346,700	\$0	\$6,713,100	\$6,713,100	\$8,391,400	0.4655	\$180,300	\$427,500
 JHS - West	\$9,947,300	\$2,000,000	\$22,222,200	\$24,222,200	\$30,277,800	0.4655	\$335,300	\$1,857,000
6-8	\$9,947,300	\$2,000,000	\$22,222,200	\$24,222,200	\$30,277,800	0.4655	\$335,300	\$1,857,000
 9th Grade Addition to HS	\$23,479,700	\$12,000,000	\$31,987,600	\$43,987,600	\$54,984,500	0.4655	\$791,300	\$3,189,700
9-12	\$23,479,700	\$12,000,000	\$31,987,600	\$43,987,600	\$54,984,500	0.4655	\$791,300	\$3,189,700
K-12	\$38,773,700	\$14,000,000	\$60,922,900	\$74,922,900	\$93,653,700	0.4655	\$1,306,900	\$5,474,200

PROPOSED K-5 ROOM SCHEDULE

Existing Adjusted & Proposed Capacity

		Exist	Opt 3	Exist	Opt 3	Exist	Opt 3	Exist	Opt 3							
		Boyertown		Colebrookdale		Earl		Gilbertsville								
CLASSROOMS		No.	Capacity	No.	Capacity	No.	Capacity	No.	Capacity							
		Kindergarten 1/2-day	2	100	2	100	1	50	1	50	2	100	2	100		
	Kindergarten 1/2-day adj			1	25							1	25			
	First Grade	4	100	5	125	2	50	2	50	2	50	4	100	5	125	
	Second Grade	4	100	5	125	2	50	2	50	2	50	4	100	5	125	
	Third Grade	4	100	5	125	2	50	2	50	2	50	4	100	5	125	
	Fourth Grade	4	100	5	125	2	50	2	50	2	50	4	100	5	125	
	Fifth Grade	4	100	5	125	2	50	2	50	2	50	4	100	5	125	
	Sixth Grade	4	100			2	50			2	50	4	100			
SUPPORT	Support / Divided	1	25					1	25			1	25			
	Spec Educ / Interven	5		4		3		3		2		3		3		
	S.E. / Gift / Inter S.G.I.	3		3				1		1		4		4		
	Modular/Clstrm<660 s.f.					1	S.E.									
	Seminar / S.G.I.	1		1		4		5		4		4		2		
	Large Group / L.G.I.											1		1		
	Computer Lab	1		1		1		1		1		1		1		
	Music Classroom	1		1		1		1		1		1		1		
	Music Seminar / Pract	1		1		1		1				1		1		
	Art Classroom	1		1		1		1		1		1		1		
ANCILLARY / CORE AREAS	Media Center	1		1		1		1		1		1		1		
	Gymnasium	1	*	1								1	*	1		
	Locker Room	2		2												
	Multi-Purpose Room					1		1		1		1		1		
	Stage / Platform	1		1		1		1		1		1		1		
	Student Dining	1	*	1								1	*	1		
	Kitchen Areas	1		1		1		1		1		1		1		
	Administration / Guid	1		1		1		1		1		1		1		
	Health Suite	1		1		1		1		1		1		1		
	Faculty / I.P.C. / Office	2		2		1		1		1		1		1		
	P.E. Office											2		2		
	Capacity	700		750		350		300		350		300		700		750
	Total Capacity	725		750		350		325		350		325		725		750
	2011-12 Enrollment	668				366				320				783		
	Architectural Area	97,800		97,800		41,340		41,340		38,530		38,530		96,930		96,930
	New Arch. Area			0				0				0				0

OPTION 3

Exist		Opt 3		Exist		Opt 3		Exist		Opt 3							
New Hanover		Pine Forge		Washington		K-5 Total											
No.	Capacity	No.	Capacity	No.	Capacity	No.	Capacity	No.	Capacity	No.	Capacity						
2	100	2	100	1	50	1	50	2	100	2	100	11	550	Kindergarten 1/2-day	CLASSROOMS		
		1	25					1	25	0	0	4	100	Kindergarten 1/2-day adj			
4	100	5	125	2	50	2	50	4	100	5	125	22	550	26		650	First Grade
4	100	5	125	2	50	2	50	4	100	5	125	22	550	26		650	Second Grade
4	100	5	125	2	50	2	50	4	100	5	125	22	550	26		650	Third Grade
4	100	5	125	2	50	2	50	4	100	5	125	22	550	26		650	Fourth Grade
4	100	5	125	2	50	2	50	4	100	5	125	22	550	26		650	Fifth Grade
4	100			2	50			4	100			22	550	0	0	Sixth Grade	
4	100	1	25									6	150	3	75	Support / Divided	SUPPORT
4		5			1			4	2			21		21		Spec Educ / Interven	
1		1		4	4			3	4			16		18		S.E. / Gift / Inter S.G.I.	
												1		0		Modular/Clsrm<660 s.f.	
2		2		1	1			5	4			19		19		Seminar / S.G.I.	
												1		1		Large Group / L.G.I.	
1		1		1	1			1	1			7		7		Computer Lab	
1		1		1	**	1		1	1			7		7		Music Classroom	
1		1						1	1			5		5		Music Seminar / Pract	
1		1		** share	1			1	1			6		7		Art Classroom	
1		1		1	1			1	1			7		7		Media Center	ANCILLARY / CORE AREAS
1		1						1	*	1		4		4		Gymnasium	
												2		2		Locker Room	
				1	1							3		3		Multi-Purpose Room	
1		1		1	1			1	1			7		7		Stage / Platform	
1		1						1	*	1		4		4		Student Dining	
1		1		1	1			1	1			7		7		Kitchen Areas	
1		1		1	1			1	1			7		7		Administration / Guid	
1		1		1	1			1	1			7		7		Health Suite	
1		1		1	1			1	1			8		8		Faculty / I.P.C. / Office	
				1	1			1	1			4	0	4		P.E. Office	
700	750	350	300	700	750	3850	3900	Capacity									
800	775	350	300	700	750	4000	3975	Total Capacity									
741		277		606		3761		2011-12 Enrollment									
90,700	90,700	37,570	37,570	82,030	82,030	484,900	484,900	Architectural Area									
	0		0		0		0	New Arch. Area									

PROPOSED 6-8 ROOM SCHEDULE

OPTION 3

Existing Adjusted & Proposed Capacity

		Exist		Opt 3		Exist		New		Opt 3		Exist		Opt 3	
		Jr High East				Jr High West						6-8 Total			
		No.	Capacity	No.	Capacity	No.	Capacity	No.	Capacity	No.	Capacity	No.	Capacity	No.	Capacity
CLASSRMS	Classroom	31	775	31	775	23	575	8	200	31	775	54	1350	62	1550
	Science Classroom / Lecture	2	50	2	50	3	75	-1	-25	2	50	5	125	4	100
	Science Lab	5	100	5	100	3	60	2	40	5	100	8	160	10	200
SUPPORT	S.E. / Gifted / Interv	6		6		4		2		6		10		12	
	S.E. Seminar / S.G.I.	4		4		1		3		4		5		8	
	Seminar / S.G.I. < 660 s.f.	3		3		6		-3		3		9		6	
	Large Group / L.G.I.											0		0	
	Business / Computer Lab	3	60	3	60	3	60			3	60	6	120	6	120
	Music Classroom											0	0	0	0
	Band / Orchestra / Choral	2	50	2	50	2	50			2	50	4	100	4	100
	Art Classroom	2	40	2	40	2	40			2	40	4	80	4	80
	Family & Consumer Science	2	40	2	40	2	40			2	40	4	80	4	80
	T.E. Lab	3	60	3	60	3	60			3	60	6	120	6	120
T.E. Wood / Metal Lab	1	20	1	20			1	20	1	20	1	20	2	40	
T.V. Studio	1	20	1	20	1	20			1	20	2	40	2	40	
ANCILLARY / CORE AREAS	Media Center	1		1		1				1		2		2	
	Gymnasium	1	99	1	99	1	66			1	66	2	165	2	165
	Auxiliary Gym					1	33			1	33	1	33	1	33
	Weight Room / Adapt. Gym	1		1		1				1		2		2	
	Locker Room	4		4		2				2		6		6	
	Officials / P.E. Office	2		2		2				2		4		4	
	Auditorium	1		1		1				1		2		2	
	Stage / Platform	1		1		1				1		2		2	
	Student Dining	1		1		1				1		2		2	
	Kitchen Areas	1		1		1				1		2		2	
	Administration / Guidance	1		1		1				1		2		2	
	Health Suite	1		1		1				1		2		2	
	Faculty / I.P.C. / Office	2		2		2				2		4		4	
	Capacity (80%)		1050		1050		860		190		1050		1910		2100
P.D.E. Capacity (90%)		1180		1180		970		210		1180		2150		2360	
2011-12 Enrollment		843				807						1650			
Architectural Area		159,430		159,430		145,720				155,720		305,150		315,150	
New Architectural Area				0						10,000				10,000	

P.D.E.: 20-25 students per classroom; 90% P.D.E. Utilization Factor and 80% District Utilization Factor.

Secondary Functional Capacity includes all spaces that receive capacity except a Natatorium or District Administration. Special Education Capacity is not included in the Functional Capacity or Total Capacity.

The existing building capacity may have been adjusted to represent the intended or adjusted use of space, therefore, showing respective support classrooms including Art, Music and Computer Education spaces.

PROPOSED 9-12 ROOM SCHEDULE

OPTION 3

Existing Adjusted & Proposed Capacity

		Exist		New		Opt 3		Exist		Opt 3		
		High School						9-12 Total				
CLASSROOMS	Classroom	No. 48	Capacity 1200	No. 20	Capacity 500	No. 68	Capacity 1700	No. 48	Capacity 1200	No. 68	Capacity 1700	CLASSROOMS
	Science Classroom / Lecture	8	200			8	200	8	200	8	200	
	Science Lab	7	140	5	100	12	240	7	140	12	240	
	Classrooms (Other Use)	3	75	3	75	6	150	3	75	6	150	
SUPPORT	S.E. / Gifted / Interv	8		4		12		8		12		SUPPORT
	S.E. Seminar / S.G.I.	5				5		5		5		
	Modular / Clsrn <660 s.f.	7		-7		0		7		0		
	Seminar / S.G.I. < 660 s.f.	2				2		2		2		
	Large Group / L.G.I.	2				2		2		2		
	Business / Computer Lab	4	80			4	80	4	80	4	80	
	Music Classroom	2	50	2	50	4	100	2	50	4	100	
	Band / Orchestra / Choral	2	50	1	25	3	75	2	50	3	75	
	Art Classroom	4	80	2	40	6	120	4	80	6	120	
	Family & Consumer Science	3	60	1	20	4	80	3	60	4	80	
	T.E. Lab	7	140	1	20	8	160	7	140	8	160	
T.V. Studio	1	20			1	20	1	20	1	20		
ANCILLARY / CORE AREAS	Media Center	1				1		1		1		ANCILLARY / CORE AREAS
	Gymnasium	2	165			2	165	2	165	2	165	
	Auxiliary Gym	1	33			1	33	1	33	1	33	
	Weight Room / Adaptive Gym	3				3		3		3		
	Locker Room	6				6		6		6		
	Officials / P.E. Office	8				8		8		8		
	Auditorium	2				2		2		2		
	Stage / Platform	2				2		2		2		
	Student Dining	1				1		1		1		
	Kitchen Areas	1				1		1		1		
	Administration / Guidance	1		1		2		1		2		
	Health Suite	1		1		2		1		2		
	Faculty / I.P.C. / Office	15		5		20		15		20		
Capacity (80%)		1835		665		2500		1835		2500		
P.D.E. Capacity (90%)		2065		745		2810		2065		2810		
2011-12 9-12 Enrollment		1733						1733				
Architectural Area		370,000				430,000		370,000		430,000		
New Architectural Area						60,000				60,000		

P.D.E.: 20-25 students per classroom; 90% P.D.E. Utilization Factor and 80% District Utilization Factor.

Secondary Functional Capacity includes all spaces that receive capacity except a Natatorium or District Administration. Special Education Capacity is not included in the Functional Capacity or Total Capacity.

The existing building capacity may have been adjusted to represent the intended or adjusted use of space, therefore, showing respective support classrooms including Art, Music and Computer Education spaces.

PROJECTED REIMBURSEMENT

	PDE Adj. New FTE	RPC	** Reimb. Factor	Max Elig. Reimb.	Constr. New S.F.	Constr. Cost for Additions	Renov. Exist. S.F.	Renov. Study Cost	Total Constr. Cost
Colebrookdale Elementary	362	507	4,700	2,382,900	0	0	41,340	2,909,200	2,909,200
	*Existing	507	470	238,290					
	*LEED	507	470	238,290					
				2,859,500					
Pine Forge Elementary	315	441	4,700	2,072,700	0	0	37,570	3,803,900	3,803,900
	*Existing	441	470	207,270					
	*LEED	441	470	207,270					
				2,487,200					
K-5 Total				\$5,346,700	0	\$0	78,910	\$6,713,100	\$6,713,100
JHS West	369	517	6,200	3,205,400	10,000	2,000,000	145,720	22,222,200	24,222,200
	*Existing	517	620	320,540					
	*LEED	517	620	320,540					
	739	820	6,200	5,084,000					
	*Existing	820	620	508,400					
	*LEED	820	620	508,400					
6-8 Total				\$9,947,300	10,000	\$2,000,000	145,720	\$22,222,200	\$24,222,200
Sr. High School	2,856	3,156	6,200	19,566,456	60,000	12,000,000	370,000	31,987,600	43,987,600
	*Existing	3,156	620	1,956,646					
	*LEED	3,156	620	1,956,646					
9-12 Total				\$23,479,700	60,000	\$12,000,000	370,000	\$31,987,600	\$43,987,600
K-12 Total				\$38,773,700	70,000	\$14,000,000	594,630	\$60,922,900	\$74,922,900

* Additional 10% Reimbursement for *Qualifying Existing Building* also Additional 10% Reimbursement for *Qualifying Leed Certification*.

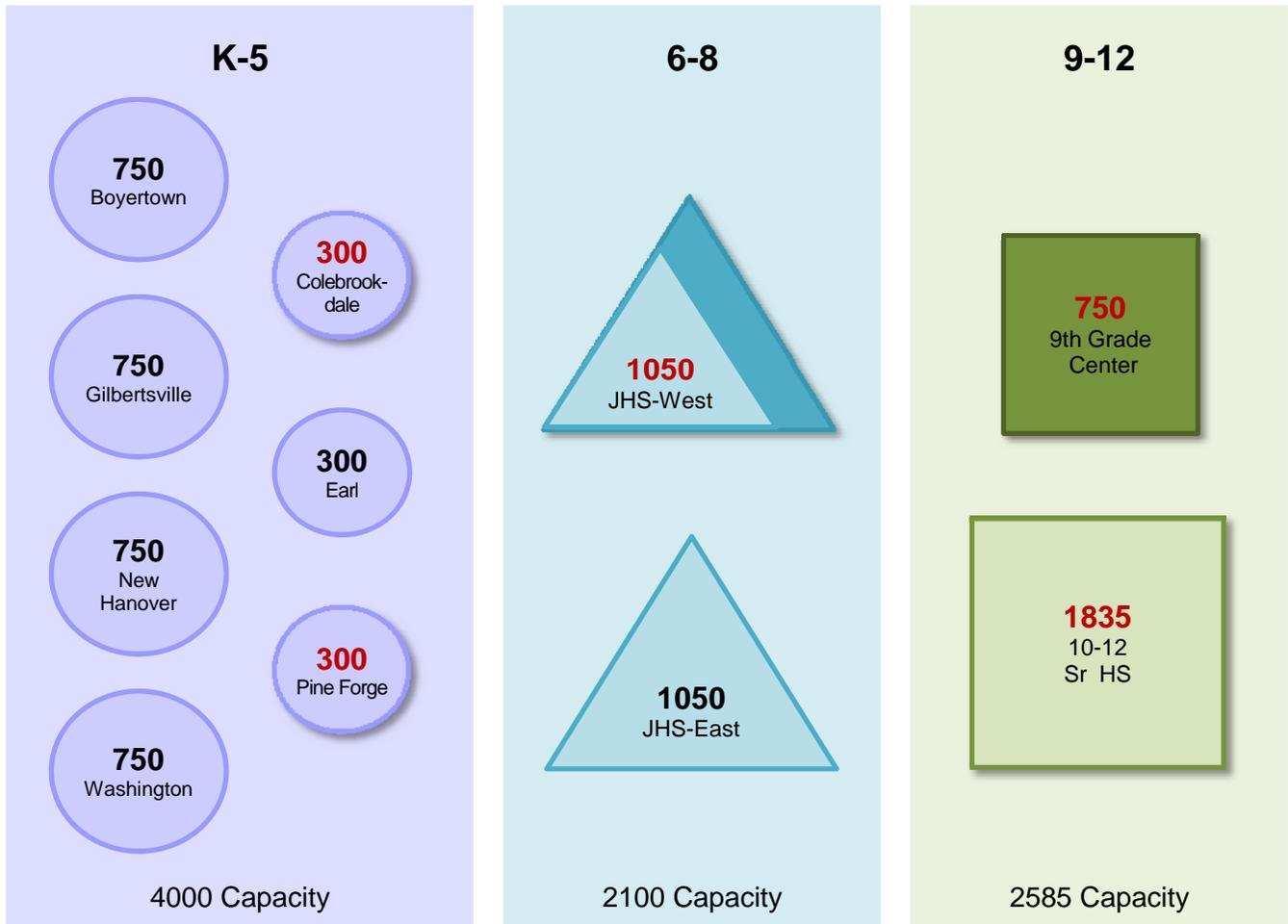
+ 4.0% 20-year bond issue rate

OPTION 3

Total Project Cost	** % M.E.R. to T.P.C.	Aid Ratio	% State Share	% Local Share	+ Annual Total Share	+ Annual State Share	+ Annual Local Share	
3,636,500	0.7863	0.4655	36.60%	63.40%	263,400	96,400	167,000	Colebrookdale Elementary
4,754,900	0.5231	0.4655	24.35%	75.65%	344,400	83,900	260,500	Pine Forge Elementary
\$8,391,400		0.4655			\$607,800	\$180,300	\$427,500	K-5 Total
30,277,800	0.3285	0.4655	15.29%	84.71%	2,192,300	335,300	1,857,000	JHS West
\$30,277,800		0.4655			\$2,192,300	\$335,300	\$1,857,000	6-8 Total
54,984,500	0.4270	0.4655	19.88%	80.12%	3,981,000	791,300	3,189,700	Sr. High School
\$54,984,500		0.4655			\$3,981,000	\$791,300	\$3,189,700	9-12 Total
\$93,653,700		0.4655			\$6,781,100	\$1,306,900	\$5,474,200	K-12 Total

OPTION 3A New 9th Grade Center

K-5	Alterations to Colebrookdale E.S. & Pine Forge E.S.; Maintain Existing Elementary Schools
6-8	Alterations & Additions to JHS West; Maintain JHS East
9	New 9th Grade Center
10-12	Alterations to Sr. High School



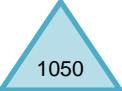
- Pros**
- Maintains neighborhood Schools
 - Targeted School Upgrades & Energy savings to offset Air Conditioning
 - Additional capacity adequate for the projected student growth

- Cons**
- Does not provide better parity at Elementary Schools
 - Elementary capacity may not be best located in student growth areas
 - Maintains separation of 9th Grade from High School program

OPTION 3A New 9th Grade Center

K-5	Alterations to Colebrookdale E.S. & Pine Forge E.S.; Maintain Existing Elementary Schools
6-8	Alterations & Additions to JHS West; Maintain JHS East
9	New 9th Grade Center
10-12	Alterations to Sr. High School

OPTION EDUCATIONAL PROGRAM

	Building	Proposed Work	Proposed Grade Alignment	Functional Capacity	Total Capacity	Highest Projected Enrollment Methods	Current +10%
	Boyertown ES	Maintain Change to K-5	K-5	750	750		
	Colebrookdale ES	Renovations Change to K-5	K-5	300	325		
	Earl ES	Maintain Change to K-5	K-5	300	325		
	Gilbertsville ES	Maintain Change to K-5	K-5	750	750		
	New Hanover ES	Maintain Change to K-5	K-5	750	775		
	Pine Forge ES	Renovations Change to K-5	K-5	300	300		
	Washington ES	Maintain Change to K-5	K-5	750	750		
K-5 Total				3,900	3,975	3,674 Method III	3,506 2011-12
	JHS - East	Maintain Change to 6-8	6-8	1,050	1,180		
	JHS - West	Alts & Additions Change to 6-8	6-8	1,050	1,180		
6-8 Total				2,100	2,360	1,865 Method I	1,858 2011-12
	9th Gr Center	New Building	9	750	840		
9 Total				750	840	675 Method II	642 2010-11
	Sr High School	Renovations	10-12	1,835	2,065		
10-12 Total				1,835	2,065	1,856 Method I	1,906 2011-12
K-12 Total				8,585	9,240	7,833 Method III	7,858 2011-12

OPTION COST SUMMARY

OPTION 3A

OPTION 3A New 9th Grade Center

K-5	Alterations to Colebrookdale E.S. & Pine Forge E.S.; Maintain Existing Elementary Schools
6-8	Alterations & Additions to JHS West; Maintain JHS East
9	New 9th Grade Center
10-12	Alterations to Sr. High School

OPTION COST SUMMARY

	Max Elig. Reimb.	Constr. Cost for Additions	Total Renov. Cost	Total Constr. Cost	Total Project Cost	Aid Ratio	+ Annual State Share	+ Annual Local Share
 Colebrookdale ES	\$2,859,500	\$0	\$2,909,200	\$2,909,200	\$3,636,500	0.4655	\$96,400	\$167,000
 Pine Forge ES	\$2,487,200	\$0	\$3,803,900	\$3,803,900	\$4,754,900	0.4655	\$83,900	\$260,500
K-5	\$5,346,700	\$0	\$6,713,100	\$6,713,100	\$8,391,400	0.4655	\$180,300	\$427,500
 JHS - West	\$9,947,300	\$2,000,000	\$22,222,200	\$24,222,200	\$30,277,800	0.4655	\$335,300	\$1,857,000
6-8	\$9,947,300	\$2,000,000	\$22,222,200	\$24,222,200	\$30,277,800	0.4655	\$335,300	\$1,857,000
 9th Grade Center	\$6,398,400	\$18,000,000	\$0	\$18,000,000	\$22,500,000	0.4655	\$215,700	\$1,413,400
9	\$6,398,400	\$18,000,000	\$0	\$18,000,000	\$22,500,000	0.4655	\$215,700	\$1,413,400
 Sr High School	\$17,519,700	\$0	\$31,987,600	\$31,987,600	\$39,984,500	0.4655	\$590,500	\$2,304,500
10-12	\$17,519,700	\$0	\$31,987,600	\$31,987,600	\$39,984,500	0.4655	\$590,500	\$2,304,500
K-12	\$39,212,100	\$20,000,000	\$60,922,900	\$80,922,900	\$101,153,700	0.4655	\$1,321,800	\$6,002,400

PROPOSED K-5 ROOM SCHEDULE

Existing Adjusted & Proposed Capacity

		Exist	Opt 3A	Exist	Opt 3A	Exist	Opt 3A	Exist	Opt 3A							
		Boyertown		Colebrookdale		Earl		Gilbertsville								
		No.	Capacity	No.	Capacity	No.	Capacity	No.	Capacity							
CLASSROOMS	Kindergarten 1/2-day	2	100	2	100	1	50	1	50	2	100	2	100			
	Kindergarten 1/2-day adj			1	25							1	25			
	First Grade	4	100	5	125	2	50	2	50	2	50	4	100	5	125	
	Second Grade	4	100	5	125	2	50	2	50	2	50	4	100	5	125	
	Third Grade	4	100	5	125	2	50	2	50	2	50	4	100	5	125	
	Fourth Grade	4	100	5	125	2	50	2	50	2	50	4	100	5	125	
	Fifth Grade	4	100	5	125	2	50	2	50	2	50	4	100	5	125	
	Sixth Grade	4	100			2	50			2	50	4	100			
SUPPORT	Support / Divided	1	25							1	25	1	25			
	Spec Educ / Interven	5		4		3		3		2		3		3		
	S.E. / Gift / Inter S.G.I.	3		3				1		1		4		4		
	Modular/Clstrm<660 s.f.					1	S.E.									
	Seminar / S.G.I.	1		1		4		5		4		4		2		
	Large Group / L.G.I.											1		1		
	Computer Lab	1		1		1		1		1		1		1		
	Music Classroom	1		1		1		1		1		1		1		
	Music Seminar / Pract	1		1		1		1				1		1		
	Art Classroom	1		1		1		1		1		1		1		
ANCILLARY / CORE AREAS	Media Center	1		1		1		1		1		1		1		
	Gymnasium	1	*	1								1	*	1		
	Locker Room	2		2												
	Multi-Purpose Room					1		1		1		1				
	Stage / Platform	1		1		1		1		1		1		1		
	Student Dining	1	*	1								1	*	1		
	Kitchen Areas	1		1		1		1		1		1		1		
	Administration / Guid	1		1		1		1		1		1		1		
	Health Suite	1		1		1		1		1		1		1		
	Faculty / I.P.C. / Office	2		2		1		1		1		1		1		
	P.E. Office											2		2		
Capacity		700		750		350		300		350		300		700		750
Total Capacity		725		750		350		325		350		325		725		750
2011-12 Enrollment		668				366				320				783		
Architectural Area		97,800		97,800		41,340		41,340		38,530		38,530		96,930		96,930
New Arch. Area				0				0				0				0

OPTION 3A

Exist		Opt 3A		Exist		Opt 3A		Exist		Opt 3A							
New Hanover				Pine Forge				Washington				K-5 Total					
No.	Capacity	No.	Capacity	No.	Capacity	No.	Capacity	No.	Capacity	No.	Capacity	No.	Capacity				
2	100	2	100	1	50	1	50	2	100	2	100	11	550	11	550	Kindergarten 1/2-day Kindergarten 1/2-day adj First Grade Second Grade Third Grade Fourth Grade Fifth Grade Sixth Grade	CLASSROOMS
		1	25					1	25	1	25	0	0	4	100		
4	100	5	125	2	50	2	50	4	100	5	125	22	550	26	650		
4	100	5	125	2	50	2	50	4	100	5	125	22	550	26	650		
4	100	5	125	2	50	2	50	4	100	5	125	22	550	26	650		
4	100	5	125	2	50	2	50	4	100	5	125	22	550	26	650		
4	100	5	125	2	50	2	50	4	100	5	125	22	550	26	650		
4	100	1	25					4	100			22	550	0	0		
4	100	1	25									6	150	3	75	Support / Divided	SUPPORT
4		5						4		2		21		21		Spec Educ / Interven	
1		1		4		4		3		4		16		18		S.E. / Gift / Inter S.G.I.	
												1		0		Modular/Clsrm<660 s.f.	
2		2		1		1		5		4		19		19		Seminar / S.G.I.	
												1		1		Large Group / L.G.I.	
1		1		1		1		1		1		7		7		Computer Lab	
1		1		1	**	1		1		1		7		7		Music Classroom	
1		1						1		1		5		5		Music Seminar / Pract	
1		1		** share	1			1		1		6		7		Art Classroom	
1		1		1		1		1		1		7		7		Media Center	ANCILLARY / CORE AREAS
1		1						1	*	1		4		4		Gymnasium	
												2		2		Locker Room	
				1		1						3		3		Multi-Purpose Room	
1		1		1		1		1		1		7		7		Stage / Platform	
1		1						1	*	1		4		4		Student Dining	
1		1		1		1		1		1		7		7		Kitchen Areas	
1		1		1		1		1		1		7		7		Administration / Guid	
1		1		1		1		1		1		7		7		Health Suite	
1		1		1		1		1		1		8		8		Faculty / I.P.C. / Office	
				1		1		1		1		4	0	4		P.E. Office	
700	750	350	300	700	750	3850	3900	Capacity									
800	775	350	300	700	750	4000	3975	Total Capacity									
741		277		606		3761		2011-12 Enrollment									
90,700	90,700	37,570	37,570	82,030	82,030	484,900	484,900	Architectural Area									
	0		0		0		0	New Arch. Area									

PROPOSED 6-8 ROOM SCHEDULE

OPTION 3A

Existing Adjusted & Proposed Capacity

		Exist		Opt 3A		Exist		New		Opt 3A		Exist		Opt 3A	
		Jr High East				Jr High West						6-8 Total			
		No.	Capacity	No.	Capacity	No.	Capacity	No.	Capacity	No.	Capacity	No.	Capacity	No.	Capacity
CLASSRMS	Classroom	31	775	31	775	23	575	8	200	31	775	54	1350	62	1550
	Science Classroom / Lecture	2	50	2	50	3	75	-1	-25	2	50	5	125	4	100
	Science Lab	5	100	5	100	3	60	2	40	5	100	8	160	10	200
SUPPORT	S.E. / Gifted / Interv	6		6		4		2		6		10		12	
	S.E. Seminar / S.G.I.	4		4		1		3		4		5		8	
	Seminar / S.G.I. < 660 s.f.	3		3		6		-3		3		9		6	
	Large Group / L.G.I.											0		0	
	Business / Computer Lab	3	60	3	60	3	60			3	60	6	120	6	120
	Music Classroom											0	0	0	0
	Band / Orchestra / Choral	2	50	2	50	2	50			2	50	4	100	4	100
	Art Classroom	2	40	2	40	2	40			2	40	4	80	4	80
	Family & Consumer Science	2	40	2	40	2	40			2	40	4	80	4	80
	T.E. Lab	3	60	3	60	3	60			3	60	6	120	6	120
T.E. Wood / Metal Lab	1	20	1	20			1	20	1	20	1	20	2	40	
T.V. Studio	1	20	1	20	1	20			1	20	2	40	2	40	
ANCILLARY / CORE AREAS	Media Center	1		1		1				1		2		2	
	Gymnasium	1	99	1	99	1	66			1	66	2	165	2	165
	Auxiliary Gym					1	33			1	33	1	33	1	33
	Weight Room / Adapt. Gym	1		1		1				1		2		2	
	Locker Room	4		4		2				2		6		6	
	Officials / P.E. Office	2		2		2				2		4		4	
	Auditorium	1		1		1				1		2		2	
	Stage / Platform	1		1		1				1		2		2	
	Student Dining	1		1		1				1		2		2	
	Kitchen Areas	1		1		1				1		2		2	
	Administration / Guidance	1		1		1				1		2		2	
	Health Suite	1		1		1				1		2		2	
	Faculty / I.P.C. / Office	2		2		2				2		4		4	
	Capacity (80%)		1050		1050		860		190		1050		1910		2100
P.D.E. Capacity (90%)		1180		1180		970		210		1180		2150		2360	
2011-12 Enrollment		843				807						1650			
Architectural Area		159,430		159,430		145,720				155,720		305,150		315,150	
New Architectural Area				0						10,000				10,000	

P.D.E.: 20-25 students per classroom; 90% P.D.E. Utilization Factor and 80% District Utilization Factor.

Secondary Functional Capacity includes all spaces that receive capacity except a Natatorium or District Administration. Special Education Capacity is not included in the Functional Capacity or Total Capacity.

The existing building capacity may have been adjusted to represent the intended or adjusted use of space, therefore, showing respective support classrooms including Art, Music and Computer Education spaces.

PROPOSED 9-12 ROOM SCHEDULE

OPTION 3A

Existing Adjusted & Proposed Capacity

		Exist		Opt 3A		Exist		Opt 3A		Exist		Opt 3A	
		High School				9th Grade				9-12 Total			
CLASSROOMS		No.	Capacity	No.	Capacity	No.	Capacity	No.	Capacity	No.	Capacity	No.	Capacity
		Classroom	48	1200	48	1200		20	500	48	1200	68	1700
	Science Classroom / Lecture	8	200	8	200		3	75	8	200	11	275	
	Science Lab	7	140	7	140		2	40	7	140	9	180	
	Classrooms (Other Use)	3	75	3	75		1	25	3	75	4	100	
SUPPORT	S.E. / Gifted / Interv	8		8			4		8		12		
	S.E. Seminar / S.G.I.	5		5					5		5		
	Modular / Clsrm <660 s.f.	7		7					7		7		
	Seminar / S.G.I. < 660 s.f.	2		2					2		2		
	Large Group / L.G.I.	2		2					2		2		
	Business / Computer Lab	4	80	4	80				4	80	4	80	
	Music Classroom	2	50	2	50		1	25	2	50	3	75	
	Band / Orchestra / Choral	2	50	2	50		1	25	2	50	3	75	
	Art Classroom	4	80	4	80		2	40	4	80	6	120	
	Family & Consumer Science	3	60	3	60		2	40	3	60	5	100	
	T.E. Lab	7	140	7	140		2	40	7	140	9	180	
T.V. Studio	1	20	1	20		1	20	1	20	2	40		
ANCILLARY / CORE AREAS	Media Center	1		1			1		1		2		
	Gymnasium	2	165	2	165		1	66	2	165	3	231	
	Auxiliary Gym	1	33	1	33		1	33	1	33	2	66	
	Weight Room / Adaptive Gym	3		3					3		3		
	Locker Room	6		6			2		6		8		
	Officials / P.E. Office	8		8			2		8		10		
	Auditorium	2		2					2		2		
	Stage / Platform	2		2			1		2		3		
	Student Dining	1		1			1		1		2		
	Kitchen Areas	1		1			1		1		2		
	Administration / Guidance	1		1			1		1		2		
	Health Suite	1		1			1		1		2		
	Faculty / I.P.C. / Office	15		15			5		15		20		
Capacity (80%)		1835		1835		0		750		1835		2585	
P.D.E. Capacity (90%)		2065		2065		0		840		2065		2905	
2011-12 9-12 Enrollment		1733								1733			
Architectural Area		370,000		370,000				100,000		370,000		470,000	
New Architectural Area				0				100,000				100,000	

P.D.E.: 20-25 students per classroom; 90% P.D.E. Utilization Factor and 80% District Utilization Factor.

Secondary Functional Capacity includes all spaces that receive capacity except a Natatorium or District Administration. Special Education Capacity is not included in the Functional Capacity or Total Capacity.

The existing building capacity may have been adjusted to represent the intended or adjusted use of space, therefore, showing respective support classrooms including Art, Music and Computer Education spaces.

PROJECTED REIMBURSEMENT

	PDE Adj. New FTE	RPC	** Reimb. Factor	Max Elig. Reimb.	Constr. New S.F.	Constr. Cost for Additions	Renov. Exist. S.F.	Renov. Study Cost	Total Constr. Cost
Colebrookdale Elementary	362	507	4,700	2,382,900	0	0	41,340	2,909,200	2,909,200
	*Existing	507	470	238,290					
	*LEED	507	470	238,290					
				2,859,500					
Pine Forge Elementary	315	441	4,700	2,072,700	0	0	37,570	3,803,900	3,803,900
	*Existing	441	470	207,270					
	*LEED	441	470	207,270					
				2,487,200					
K-5 Total				\$5,346,700	0	\$0	78,910	\$6,713,100	\$6,713,100
JHS West	369	517	6,200	3,205,400	10,000	2,000,000	145,720	22,222,200	24,222,200
	*Existing	517	620	320,540					
	*LEED	517	620	320,540					
6-8 Total				\$9,947,300	10,000	\$2,000,000	145,720	\$22,222,200	\$24,222,200
9th Grade Center	775	860	6,200	5,332,000	100,000	18,000,000			18,000,000
	*Existing	860	620	533,200					
	*LEED	860	620	533,200					
9 Total				\$6,398,400	100,000	\$18,000,000	0	\$0	\$18,000,000
Sr. High School	2,131	2,355	6,200	14,599,481	0	0	370,000	31,987,600	31,987,600
	*Existing	2,355	620	1,460,100					
	*LEED	2,355	620	1,460,100					
10-12 Total				\$17,519,700	0	\$0	370,000	\$31,987,600	\$31,987,600
K-12 Total				\$39,212,100	110,000	\$20,000,000	594,630	\$60,922,900	\$80,922,900

* Additional 10% Reimbursement for *Qualifying Existing Building* also Additional 10% Reimbursement for *Qualifying Leed Certification*.

+ 4.0% 20-year bond issue rate

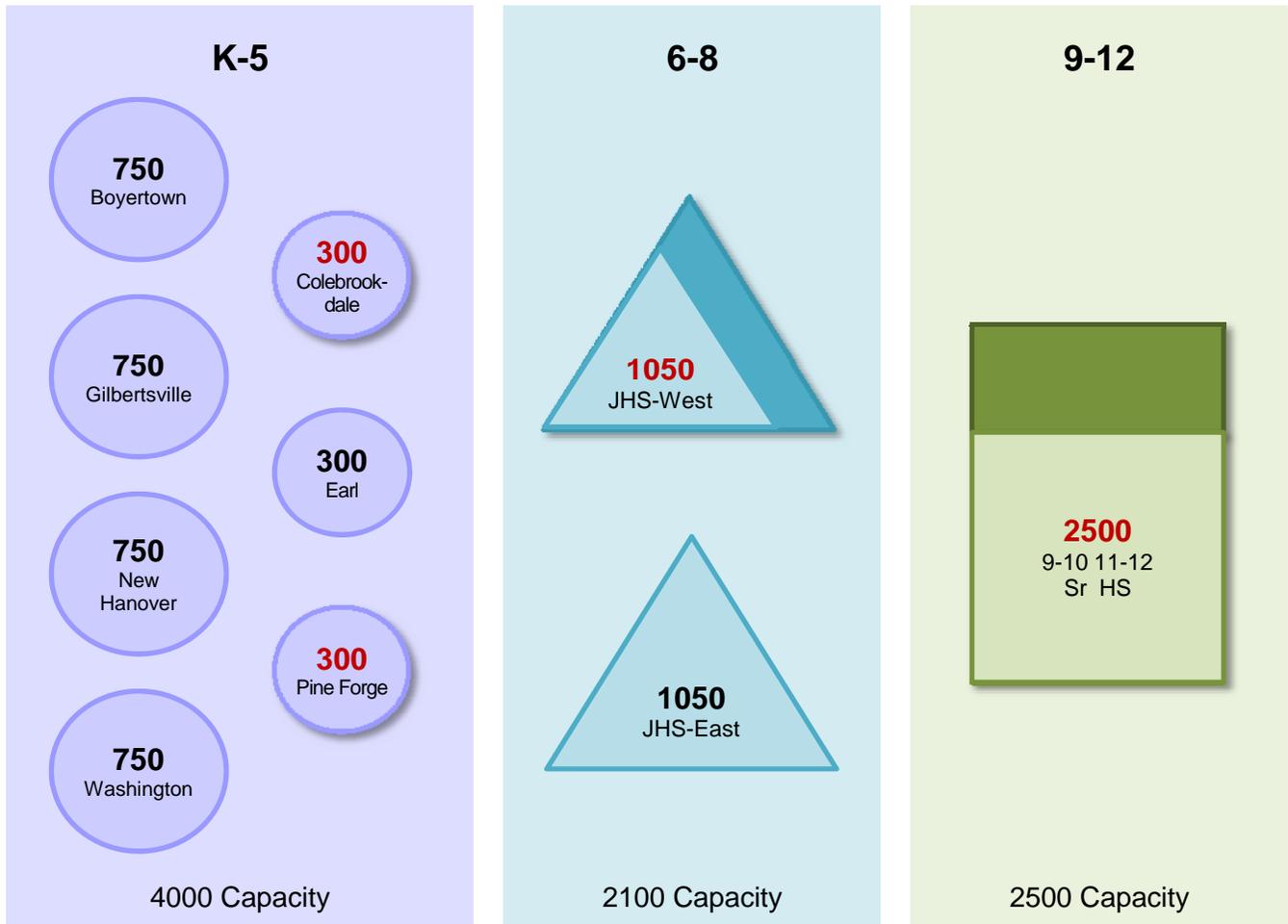
OPTION 3A

Total Project Cost	** % M.E.R. to T.P.C.	Aid Ratio	% State Share	% Local Share	+ Annual Total Share	+ Annual State Share	+ Annual Local Share	
3,636,500	0.7863	0.4655	36.60%	63.40%	263,400	96,400	167,000	Colebrookdale Elementary
4,754,900	0.5231	0.4655	24.35%	75.65%	344,400	83,900	260,500	Pine Forge Elementary
\$8,391,400		0.4655			\$607,800	\$180,300	\$427,500	K-5 Total
30,277,800	0.3285	0.4655	15.29%	84.71%	2,192,300	335,300	1,857,000	JHS West
\$30,277,800		0.4655			\$2,192,300	\$335,300	\$1,857,000	6-8 Total
22,500,000	0.2844	0.4655	13.24%	86.76%	1,629,100	215,700	1,413,400	9th Grade Center
\$22,500,000		0.4655			\$1,629,100	\$215,700	\$1,413,400	9 Total
39,984,500	0.4382	0.4655	20.40%	79.60%	2,895,000	590,500	2,304,500	Sr. High School
\$39,984,500		0.4655			\$2,895,000	\$590,500	\$2,304,500	10-12 Total
\$101,153,700		0.4655			\$7,324,200	\$1,321,800	\$6,002,400	K-12 Total

OPTION 4 New 11-12th Grade Center Addition to High School

K-5
6-8
9-10
11-12

Alterations to Colebrookdale E.S. & Pine Forge E.S.;
 Maintain Existing Elementary Schools
 Alterations to JHS West; Maintain JHS East
 Alterations and Additions to Sr. High School as 9-10th Grade Center and 11-12th Grade Center



- Pros**
- Maintains neighborhood Schools
 - Targeted School Upgrades & Energy savings to offset Air Conditioning
 - Additional capacity adequate for the projected student growth

- Cons**
- Does not provide better parity at Elementary Schools
 - Elementary capacity may not be best located in student growth areas

PROGRAM SUMMARY

OPTION 4

OPTION 4 New 11-12th Grade Center Addition to High School

K-5
6-8
9-10
11-12

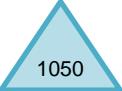
Alterations to Colebrookdale E.S. & Pine Forge E.S.;

Maintain Existing Elementary Schools

Alterations to JHS West; Maintain JHS East

Alterations and Additions to Sr. High School as 9-10th Grade Center and 11-12th Grade Center

OPTION EDUCATIONAL PROGRAM

	Building	Proposed Work	Proposed Grade Alignment	Functional Capacity	Total Capacity	Highest Projected Enrollment Methods	Current +10%
	Boyertown ES	Maintain Change to K-5	K-5	750	750		
	Colebrookdale ES	Renovations Change to K-5	K-5	300	325		
	Earl ES	Maintain Change to K-5	K-5	300	325		
	Gilbertsville ES	Maintain Change to K-5	K-5	750	750		
	New Hanover ES	Maintain Change to K-5	K-5	750	775		
	Pine Forge ES	Renovations Change to K-5	K-5	300	300		
	Washington ES	Maintain Change to K-5	K-5	750	750		
K-5 Total				3,900	3,975	3,674 Method III	3,506 2011-12
	JHS - East	Maintain Change to 6-8	6-8	1,050	1,180		
	JHS - West	Alts & Additions Change to 6-8	6-8	1,050	1,180		
6-8 Total				2,100	2,360	1,865 Method I	1,858 2011-12
	Sr High School	Alts & Additions Change to 9-10 11-12	9-12	2,500	2,810		
9-12 Total				2,500	2,810	2,531 Method I	2,511 2011-12
K-12 Total				8,500	9,145	7,833 Method III	7,858 2011-12

OPTION COST SUMMARY

OPTION 4

OPTION 4 New 11-12th Grade Center Addition to High School

K-5	Alterations to Colebrookdale E.S. & Pine Forge E.S.; Maintain Existing Elementary Schools
6-8	Alterations to JHS West; Maintain JHS East
9-10	Alterations and Additions to Sr. High School as 9-10th Grade Center and 11-12th Grade Center
11-12	

OPTION COST SUMMARY

	Max Elig. Reimb.	Constr. Cost for Additions	Total Renov. Cost	Total Constr. Cost	Total Project Cost	Aid Ratio	+ Annual State Share	+ Annual Local Share
 Colebrookdale ES	\$2,859,500	\$0	\$2,909,200	\$2,909,200	\$3,636,500	0.4655	\$96,400	\$167,000
 Pine Forge ES	\$2,487,200	\$0	\$3,803,900	\$3,803,900	\$4,754,900	0.4655	\$83,900	\$260,500
K-5	\$5,346,700	\$0	\$6,713,100	\$6,713,100	\$8,391,400	0.4655	\$180,300	\$427,500
 JHS - West	\$9,947,300	\$2,000,000	\$22,222,200	\$24,222,200	\$30,277,800	0.4655	\$335,300	\$1,857,000
6-8	\$9,947,300	\$2,000,000	\$22,222,200	\$24,222,200	\$30,277,800	0.4655	\$335,300	\$1,857,000
 9-12 High School	\$23,479,700	\$12,000,000	\$31,987,600	\$43,987,600	\$54,984,500	0.4655	\$791,300	\$3,189,700
9-12	\$23,479,700	\$12,000,000	\$31,987,600	\$43,987,600	\$54,984,500	0.4655	\$791,300	\$3,189,700
K-12	\$38,773,700	\$14,000,000	\$60,922,900	\$74,922,900	\$93,653,700	0.4655	\$1,306,900	\$5,474,200

PROPOSED K-5 ROOM SCHEDULE

Existing Adjusted & Proposed Capacity

		Exist	Opt 4	Exist	Opt 4	Exist	Opt 4	Exist	Opt 4							
		Boyertown		Colebrookdale		Earl		Gilbertsville								
CLASSROOMS		No.	Capacity	No.	Capacity	No.	Capacity	No.	Capacity							
		Kindergarten 1/2-day	2	100	2	100	1	50	1	50	2	100	2	100		
	Kindergarten 1/2-day adj			1	25							1	25			
	First Grade	4	100	5	125	2	50	2	50	2	50	4	100	5	125	
	Second Grade	4	100	5	125	2	50	2	50	2	50	4	100	5	125	
	Third Grade	4	100	5	125	2	50	2	50	2	50	4	100	5	125	
	Fourth Grade	4	100	5	125	2	50	2	50	2	50	4	100	5	125	
	Fifth Grade	4	100	5	125	2	50	2	50	2	50	4	100	5	125	
	Sixth Grade	4	100			2	50			2	50	4	100			
SUPPORT	Support / Divided	1	25					1	25			1	25			
	Spec Educ / Interven	5		4		3		3		2		3		3		
	S.E. / Gift / Inter S.G.I.	3		3				1		1		4		4		
	Modular/Clstrm<660 s.f.					1	S.E.									
	Seminar / S.G.I.	1		1		4		5		4		4		2		
	Large Group / L.G.I.											1		1		
	Computer Lab	1		1		1		1		1		1		1		
	Music Classroom	1		1		1		1		1		1		1		
	Music Seminar / Pract	1		1		1		1				1		1		
	Art Classroom	1		1		1		1		1		1		1		
ANCILLARY / CORE AREAS	Media Center	1		1		1		1		1		1		1		
	Gymnasium	1	*	1								1	*	1		
	Locker Room	2		2												
	Multi-Purpose Room					1		1		1		1		1		
	Stage / Platform	1		1		1		1		1		1		1		
	Student Dining	1	*	1								1	*	1		
	Kitchen Areas	1		1		1		1		1		1		1		
	Administration / Guid	1		1		1		1		1		1		1		
	Health Suite	1		1		1		1		1		1		1		
	Faculty / I.P.C. / Office	2		2		1		1		1		1		1		
	P.E. Office											2		2		
	Capacity	700		750		350		300		350		300		700		750
	Total Capacity	725		750		350		325		350		325		725		750
	2011-12 Enrollment	668				366				320				783		
	Architectural Area	97,800		97,800		41,340		41,340		38,530		38,530		96,930		96,930
	New Arch. Area			0				0				0				0

OPTION 4

Exist		Opt 4		Exist		Opt 4		Exist		Opt 4							
New Hanover		Pine Forge		Washington		K-5 Total											
No.	Capacity	No.	Capacity	No.	Capacity	No.	Capacity	No.	Capacity	No.	Capacity						
2	100	2	100	1	50	1	50	2	100	2	100	11	550	Kindergarten 1/2-day	CLASSROOMS		
		1	25					1	25	0	0	4	100	Kindergarten 1/2-day adj			
4	100	5	125	2	50	2	50	4	100	5	125	22	550	26		650	First Grade
4	100	5	125	2	50	2	50	4	100	5	125	22	550	26		650	Second Grade
4	100	5	125	2	50	2	50	4	100	5	125	22	550	26		650	Third Grade
4	100	5	125	2	50	2	50	4	100	5	125	22	550	26		650	Fourth Grade
4	100	5	125	2	50	2	50	4	100	5	125	22	550	26		650	Fifth Grade
4	100			2	50			4	100			22	550	0	0	Sixth Grade	
4	100	1	25							6	150	3	75	Support / Divided	SUPPORT		
4		5			1			4	2	21		21	Spec Educ / Interven				
1		1		4	4			3	4	16		18	S.E. / Gift / Inter S.G.I.				
										1		0	Modular/Clsrm<660 s.f.				
2		2		1	1			5	4	19		19	Seminar / S.G.I.				
										1		1	Large Group / L.G.I.				
1		1		1	1			1	1	7		7	Computer Lab				
1		1		1	**	1		1	1	7		7	Music Classroom				
1		1						1	1	5		5	Music Seminar / Pract				
1		1		** share	1			1	1	6		7	Art Classroom				
1		1		1	1			1	1	7		7	Media Center	ANCILLARY / CORE AREAS			
1		1						1	*	1		4	4		Gymnasium		
										2		2	2		Locker Room		
				1	1					3		3	3		Multi-Purpose Room		
1		1		1	1			1	1	7		7	7		Stage / Platform		
1		1						1	*	1		4	4		Student Dining		
1		1		1	1			1	1	7		7	7		Kitchen Areas		
1		1		1	1			1	1	7		7	7		Administration / Guid		
1		1		1	1			1	1	7		7	7		Health Suite		
1		1		1	1			1	1	8		8	8		Faculty / I.P.C. / Office		
				1	1			1	1	4	0	4	4	P.E. Office			
700	750	350	300	700	750	3850	3900	Capacity									
800	775	350	300	700	750	4000	3975	Total Capacity									
741		277		606		3761		2011-12 Enrollment									
90,700	90,700	37,570	37,570	82,030	82,030	484,900	484,900	Architectural Area									
	0		0		0		0	New Arch. Area									

PROPOSED 6-8 ROOM SCHEDULE

OPTION 4

Existing Adjusted & Proposed Capacity

		Exist	Opt 4	Exist	New	Opt 4	Exist	Opt 4								
		Jr High East		Jr High West			6-8 Total									
		No.	Capacity	No.	Capacity	No.	Capacity	No.	Capacity							
CLASSRMS	Classroom	31	775	31	775	23	575	8	200	31	775	54	1350	62	1550	CLASSRMS
	Science Classroom / Lecture	2	50	2	50	3	75	-1	-25	2	50	5	125	4	100	
	Science Lab	5	100	5	100	3	60	2	40	5	100	8	160	10	200	
SUPPORT	S.E. / Gifted / Interv	6		6		4		2		6		10		12	SUPPORT	
	S.E. Seminar / S.G.I.	4		4		1		3		4		5		8		
	Seminar / S.G.I. < 660 s.f.	3		3		6		-3		3		9		6		
	Large Group / L.G.I.											0		0		
	Business / Computer Lab	3	60	3	60	3	60			3	60	6	120	6		120
	Music Classroom											0	0	0		0
	Band / Orchestra / Choral	2	50	2	50	2	50			2	50	4	100	4		100
	Art Classroom	2	40	2	40	2	40			2	40	4	80	4		80
	Family & Consumer Science	2	40	2	40	2	40			2	40	4	80	4		80
	T.E. Lab	3	60	3	60	3	60			3	60	6	120	6		120
T.E. Wood / Metal Lab	1	20	1	20			1	20	1	20	1	20	2	40		
T.V. Studio	1	20	1	20	1	20			1	20	2	40	2	40		
ANCILLARY / CORE AREAS	Media Center	1		1		1				1		2		2	ANCILLARY / CORE AREAS	
	Gymnasium	1	99	1	99	1	66			1	66	2	165	2		165
	Auxiliary Gym					1	33			1	33	1	33	1		33
	Weight Room / Adapt. Gym	1		1		1				1		2		2		
	Locker Room	4		4		2				2		6		6		
	Officials / P.E. Office	2		2		2				2		4		4		
	Auditorium	1		1		1				1		2		2		
	Stage / Platform	1		1		1				1		2		2		
	Student Dining	1		1		1				1		2		2		
	Kitchen Areas	1		1		1				1		2		2		
	Administration / Guidance	1		1		1				1		2		2		
	Health Suite	1		1		1				1		2		2		
	Faculty / I.P.C. / Office	2		2		2				2		4		4		
	Capacity (80%)		1050	1050	860	190	1050					1910		2100		
P.D.E. Capacity (90%)		1180	1180	970	210	1180					2150		2360			
2011-12 Enrollment		843		807							1650					
Architectural Area		159,430	159,430	145,720		155,720					305,150		315,150			
New Architectural Area			0			10,000							10,000			

P.D.E.: 20-25 students per classroom; 90% P.D.E. Utilization Factor and 80% District Utilization Factor.

Secondary Functional Capacity includes all spaces that receive capacity except a Natatorium or District Administration. Special Education Capacity is not included in the Functional Capacity or Total Capacity.

The existing building capacity may have been adjusted to represent the intended or adjusted use of space, therefore, showing respective support classrooms including Art, Music and Computer Education spaces.

PROPOSED 9-12 ROOM SCHEDULE

OPTION 4

Existing Adjusted & Proposed Capacity

		Exist		New		Opt 4		Exist		Opt 4		
		High School						9-12 Total				
CLASSROOMS	Classroom	No. 48	Capacity 1200	No. 20	Capacity 500	No. 68	Capacity 1700	No. 48	Capacity 1200	No. 68	Capacity 1700	CLASSROOMS
	Science Classroom / Lecture	8	200			8	200	8	200	8	200	
	Science Lab	7	140	5	100	12	240	7	140	12	240	
	Classrooms (Other Use)	3	75	3	75	6	150	3	75	6	150	
SUPPORT	S.E. / Gifted / Interv	8		4		12		8		12		SUPPORT
	S.E. Seminar / S.G.I.	5				5		5		5		
	Modular / Clsrn <660 s.f.	7		-7		0		7		0		
	Seminar / S.G.I. < 660 s.f.	2				2		2		2		
	Large Group / L.G.I.	2				2		2		2		
	Business / Computer Lab	4	80			4	80	4	80	4	80	
	Music Classroom	2	50	2	50	4	100	2	50	4	100	
	Band / Orchestra / Choral	2	50	1	25	3	75	2	50	3	75	
	Art Classroom	4	80	2	40	6	120	4	80	6	120	
	Family & Consumer Science	3	60	1	20	4	80	3	60	4	80	
	T.E. Lab	7	140	1	20	8	160	7	140	8	160	
T.V. Studio	1	20			1	20	1	20	1	20		
ANCILLARY / CORE AREAS	Media Center	1				1		1		1		ANCILLARY / CORE AREAS
	Gymnasium	2	165			2	165	2	165	2	165	
	Auxiliary Gym	1	33			1	33	1	33	1	33	
	Weight Room / Adaptive Gym	3				3		3		3		
	Locker Room	6				6		6		6		
	Officials / P.E. Office	8				8		8		8		
	Auditorium	2				2		2		2		
	Stage / Platform	2				2		2		2		
	Student Dining	1				1		1		1		
	Kitchen Areas	1				1		1		1		
	Administration / Guidance	1		1		2		1		2		
	Health Suite	1		1		2		1		2		
	Faculty / I.P.C. / Office	15		5		20		15		20		
Capacity (80%)		1835		665		2500		1835		2500		
P.D.E. Capacity (90%)		2065		745		2810		2065		2810		
2011-12 9-12 Enrollment		1733						1733				
Architectural Area		370,000				430,000		370,000		430,000		
New Architectural Area						60,000				60,000		

P.D.E.: 20-25 students per classroom; 90% P.D.E. Utilization Factor and 80% District Utilization Factor.

Secondary Functional Capacity includes all spaces that receive capacity except a Natatorium or District Administration. Special Education Capacity is not included in the Functional Capacity or Total Capacity.

The existing building capacity may have been adjusted to represent the intended or adjusted use of space, therefore, showing respective support classrooms including Art, Music and Computer Education spaces.

PROJECTED REIMBURSEMENT

	PDE Adj. New FTE	RPC	** Reimb. Factor	Max Elig. Reimb.	Constr. New S.F.	Constr. Cost for Additions	Renov. Exist. S.F.	Renov. Study Cost	Total Constr. Cost
Colebrookdale Elementary	362	507	4,700	2,382,900	0	0	41,340	2,909,200	2,909,200
	*Existing	507	470	238,290					
	*LEED	507	470	238,290					
				2,859,500					
Pine Forge Elementary	315	441	4,700	2,072,700	0	0	37,570	3,803,900	3,803,900
	*Existing	441	470	207,270					
	*LEED	441	470	207,270					
				2,487,200					
K-5 Total				\$5,346,700	0	\$0	78,910	\$6,713,100	\$6,713,100
JHS West	369	517	6,200	3,205,400	10,000	2,000,000	145,720	22,222,200	24,222,200
	*Existing	517	620	320,540					
	*LEED	517	620	320,540					
	739	820	6,200	5,084,000					
	*Existing	820	620	508,400					
	*LEED	820	620	508,400					
6-8 Total				\$9,947,300	10,000	\$2,000,000	145,720	\$22,222,200	\$24,222,200
Sr. High School	2,856	3,156	6,200	19,566,456	60,000	12,000,000	370,000	31,987,600	43,987,600
	*Existing	3,156	620	1,956,646					
	*LEED	3,156	620	1,956,646					
			6,200	0					
	*Existing		620	0					
	*LEED		620	0					
9-12 Total				\$23,479,700	60,000	\$12,000,000	370,000	\$31,987,600	\$43,987,600
K-12 Total				\$38,773,700	70,000	\$14,000,000	594,630	\$60,922,900	\$74,922,900

* Additional 10% Reimbursement for *Qualifying Existing Building* also Additional 10% Reimbursement for *Qualifying Leed Certification*.

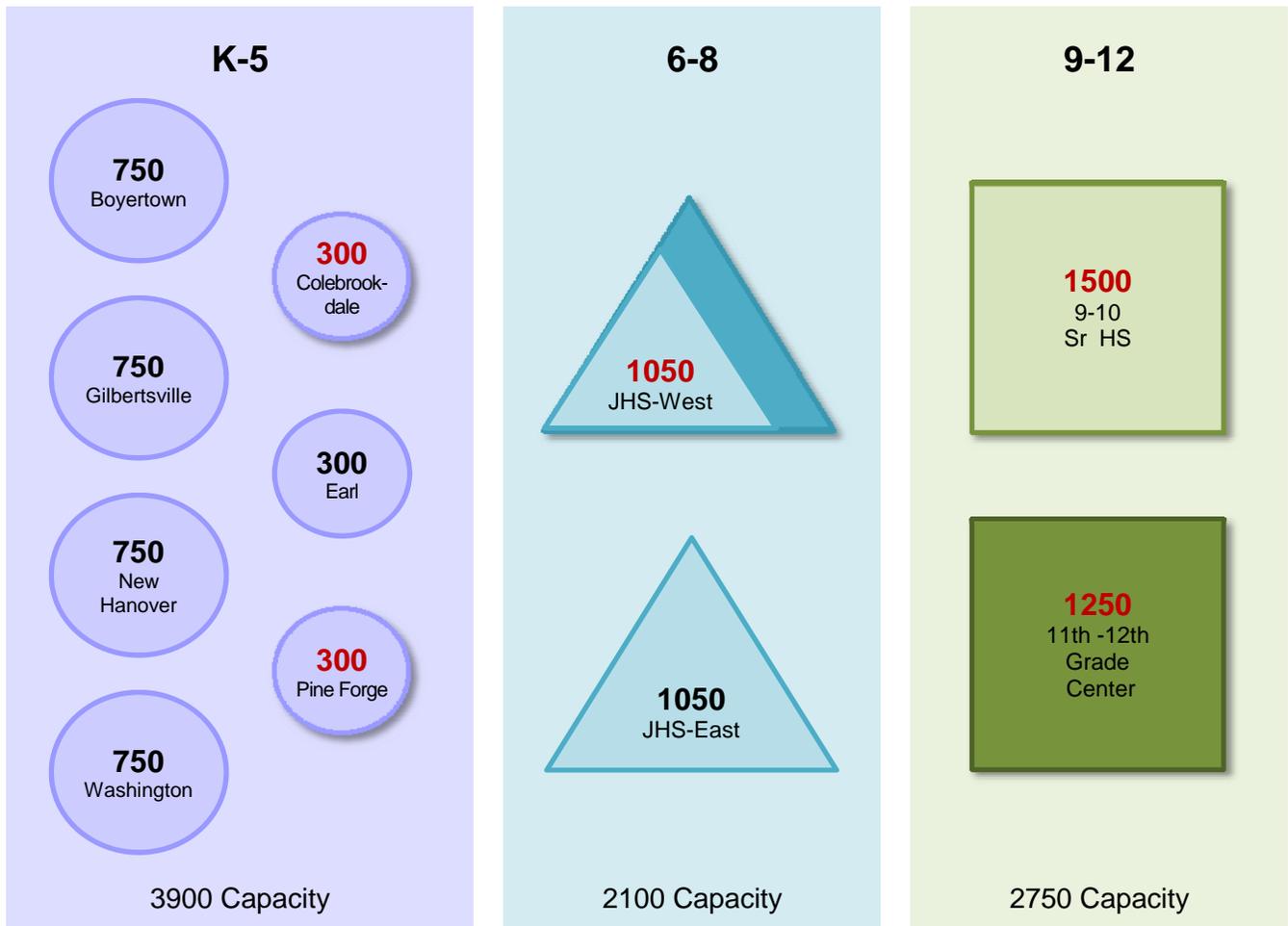
+ 4.0% 20-year bond issue rate

OPTION 4

Total Project Cost	** % M.E.R. to T.P.C.	Aid Ratio	% State Share	% Local Share	+ Annual Total Share	+ Annual State Share	+ Annual Local Share	
3,636,500	0.7863	0.4655	36.60%	63.40%	263,400	96,400	167,000	Colebrookdale Elementary
4,754,900	0.5231	0.4655	24.35%	75.65%	344,400	83,900	260,500	Pine Forge Elementary
\$8,391,400		0.4655			\$607,800	\$180,300	\$427,500	K-5 Total
30,277,800	0.3285	0.4655	15.29%	84.71%	2,192,300	335,300	1,857,000	JHS West
\$30,277,800		0.4655			\$2,192,300	\$335,300	\$1,857,000	6-8 Total
54,984,500	0.4270	0.4655	19.88%	80.12%	3,981,000	791,300	3,189,700	Sr. High School
\$54,984,500		0.4655			\$3,981,000	\$791,300	\$3,189,700	9-12 Total
\$93,653,700		0.4655			\$6,781,100	\$1,306,900	\$5,474,200	K-12 Total

OPTION 4A New 11-12th Grade Center

K-5	Alterations to Colebrookdale E.S. & Pine Forge E.S.; Maintain Existing Elementary Schools
6-8	Alterations to JHS West; Maintain JHS East
9-10	Alterations to Sr. High School as 9-10th Grade Center
11-12	New 11-12th Grade Center



- Pros**
- Maintains neighborhood Schools
 - Targeted School Upgrades & Energy savings to offset Air Conditioning
 - Additional capacity adequate for the projected student growth

- Cons**
- Does not provide better parity at Elementary Schools
 - Elementary capacity may not be best located in student growth areas
 - Creates separation of 9-10th Grade from 11-12th High School program

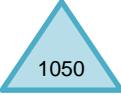
PROGRAM SUMMARY

OPTION 4A

OPTION 4A New 11-12th Grade Center

K-5	Alterations to Colebrookdale E.S. & Pine Forge E.S.; Maintain Existing Elementary Schools
6-8	Alterations to JHS West; Maintain JHS East
9-10	Alterations to Sr. High School as 9-10th Grade Center
11-12	New 11-12th Grade Center

OPTION EDUCATIONAL PROGRAM

	Building	Proposed Work	Proposed Grade Alignment	Functional Capacity	Total Capacity	Highest Projected Enrollment Methods	Current +10%
	Boyertown ES	Maintain Change to K-5	K-5	750	750		
	Colebrookdale ES	Renovations Change to K-5	K-5	300	325		
	Earl ES	Maintain Change to K-5	K-5	300	325		
	Gilbertsville ES	Maintain Change to K-5	K-5	750	750		
	New Hanover ES	Maintain Change to K-5	K-5	750	775		
	Pine Forge ES	Renovations Change to K-5	K-5	300	300		
	Washington ES	Maintain Change to K-5	K-5	750	750		
K-5 Total				3,900	3,975	3,674 Method III	3,506 2011-12
	JHS - East	Maintain Change to 6-8	6-8	1,050	1,180		
	JHS - West	Alts & Additions Change to 6-8	6-8	1,050	1,180		
6-8 Total				2,100	2,360	1,865 Method I	1,858 2011-12
	9-10 Exist. H.S.	Renovations Change to 9-10	9-10	1,500	1,700		
9-10 Total				1,500	1,700	1,311 Method II	1,274 2010-11
	11-12 New H.S.	New Building	11-12	1,250	1,405		
11-12 Total				1,250	1,405	1,220 Method I	1,260 2011-12
K-12 Total				8,750	9,440	7,833 Method III	7,858 2011-12

OPTION COST SUMMARY

OPTION 4A

OPTION 4A New 11-12th Grade Center

K-5	Alterations to Colebrookdale E.S. & Pine Forge E.S.; Maintain Existing Elementary Schools
6-8	Alterations to JHS West; Maintain JHS East
9-10	Alterations to Sr. High School as 9-10th Grade Center
11-12	New 11-12th Grade Center

OPTION COST SUMMARY

	Max Elig. Reimb.	Constr. Cost for Additions	Total Renov. Cost	Total Constr. Cost	Total Project Cost	Aid Ratio	+ Annual State Share	+ Annual Local Share
 Colebrookdale ES	\$2,859,500	\$0	\$2,909,200	\$2,909,200	\$3,636,500	0.4655	\$96,400	\$167,000
 Pine Forge ES	\$2,487,200	\$0	\$3,803,900	\$3,803,900	\$4,754,900	0.4655	\$83,900	\$260,500
K-5	\$5,346,700	\$0	\$6,713,100	\$6,713,100	\$8,391,400	0.4655	\$180,300	\$427,500
 JHS - West	\$9,947,300	\$2,000,000	\$22,222,200	\$24,222,200	\$30,277,800	0.4655	\$335,300	\$1,857,000
6-8	\$9,947,300	\$2,000,000	\$22,222,200	\$24,222,200	\$30,277,800	0.4655	\$335,300	\$1,857,000
 9-10 Grade Center	\$12,008,200	\$0	\$24,000,000	\$24,000,000	\$30,000,000	0.4655	\$404,700	\$1,767,400
9-10	\$12,008,200	\$0	\$24,000,000	\$24,000,000	\$30,000,000	0.4655	\$404,700	\$1,767,400
 11-12 Grade Center	\$11,591,800	\$32,400,000	\$0	\$32,400,000	\$40,500,000	0.4655	\$390,700	\$2,541,500
11-12	\$11,591,800	\$32,400,000	\$0	\$32,400,000	\$40,500,000	0.4655	\$390,700	\$2,541,500
K-12	\$38,894,000	\$34,400,000	\$52,935,300	\$87,335,300	\$109,169,200	0.4655	\$1,311,000	\$6,593,400

PROPOSED K-5 ROOM SCHEDULE

Existing Adjusted & Proposed Capacity

		Exist	Opt 4A	Exist	Opt 4A	Exist	Opt 4A	Exist	Opt 4A
		Boyertown		Colebrookdale		Earl		Gilbertsville	
CLASSROOMS	Kindergarten 1/2-day	No. Capacity	No. Capacity	No. Capacity	No. Capacity	No. Capacity	No. Capacity	No. Capacity	No. Capacity
		Kindergarten 1/2-day adj							
	First Grade								
	Second Grade								
	Third Grade								
	Fourth Grade								
	Fifth Grade								
	Sixth Grade								
SUPPORT	Support / Divided	1 25			1 25		1 25	1 25	
	Spec Educ / Interven	5	4	3	3	2	3	3	3
	S.E. / Gift / Inter S.G.I.	3	3		1	1	1	4	4
	Modular/Clstrm<660 s.f.			1 S.E.					
	Seminar / S.G.I.	1	1	4	5	4	4	2	2
	Large Group / L.G.I.							1	1
	Computer Lab	1	1	1	1	1	1	1	1
	Music Classroom	1	1	1	1	1	1	1	1
	Music Seminar / Pract	1	1	1	1			1	1
	Art Classroom	1	1	1	1	1	1	1	1
ANCILLARY / CORE AREAS	Media Center	1	1	1	1	1	1	1	1
	Gymnasium	1 *	1					1 *	1
	Locker Room	2	2						
	Multi-Purpose Room			1	1	1	1		
	Stage / Platform	1	1	1	1	1	1	1	1
	Student Dining	1 *	1					1 *	1
	Kitchen Areas	1	1	1	1	1	1	1	1
	Administration / Guid	1	1	1	1	1	1	1	1
	Health Suite	1	1	1	1	1	1	1	1
	Faculty / I.P.C. / Office	2	2	1	1	1	1	1	1
	P.E. Office							2	2
Capacity	700	750	350	300	350	300	700	750	
Total Capacity	725	750	350	325	350	325	725	750	
2011-12 Enrollment	668		366		320		783		
Architectural Area	97,800	97,800	41,340	41,340	38,530	38,530	96,930	96,930	
New Arch. Area		0		0		0		0	

OPTION 4A

Exist		Opt 4A		Exist		Opt 4A		Exist		Opt 4A							
New Hanover				Pine Forge				Washington				K-5 Total					
No.	Capacity	No.	Capacity	No.	Capacity	No.	Capacity	No.	Capacity	No.	Capacity	No.	Capacity				
2	100	2	100	1	50	1	50	2	100	2	100	11	550	11	550	Kindergarten 1/2-day	CLASSROOMS
		1	25							1	25	0	0	4	100	Kindergarten 1/2-day adj	
4	100	5	125	2	50	2	50	4	100	5	125	22	550	26	650	First Grade	
4	100	5	125	2	50	2	50	4	100	5	125	22	550	26	650	Second Grade	
4	100	5	125	2	50	2	50	4	100	5	125	22	550	26	650	Third Grade	
4	100	5	125	2	50	2	50	4	100	5	125	22	550	26	650	Fourth Grade	
4	100	5	125	2	50	2	50	4	100	5	125	22	550	26	650	Fifth Grade	
4	100			2	50			4	100			22	550	0	0	Sixth Grade	
4	100	1	25									6	150	3	75	Support / Divided	SUPPORT
4		5			1			4	2			21		21		Spec Educ / Interven	
1		1		4	4			3	4			16		18		S.E. / Gift / Inter S.G.I.	
												1		0		Modular/Clsrm<660 s.f.	
2		2		1	1			5	4			19		19		Seminar / S.G.I.	
												1		1		Large Group / L.G.I.	
1		1		1	1			1	1			7		7		Computer Lab	
1		1		1	**	1		1	1			7		7		Music Classroom	
1		1						1	1			5		5		Music Seminar / Pract	
1		1		** share	1			1	1			6		7		Art Classroom	
1		1		1	1			1	1			7		7		Media Center	ANCILLARY / CORE AREAS
1		1						1	*	1		4		4		Gymnasium	
												2		2		Locker Room	
				1	1							3		3		Multi-Purpose Room	
1		1		1	1			1	1			7		7		Stage / Platform	
1		1						1	*	1		4		4		Student Dining	
1		1		1	1			1	1			7		7		Kitchen Areas	
1		1		1	1			1	1			7		7		Administration / Guid	
1		1		1	1			1	1			7		7		Health Suite	
1		1		1	1			1	1			8		8		Faculty / I.P.C. / Office	
				1	1			1	1			4	0	4		P.E. Office	
700	750	350	300	700	750	3850	3900	Capacity									
800	775	350	300	700	750	4000	3975	Total Capacity									
741		277		606		3761		2011-12 Enrollment									
90,700	90,700	37,570	37,570	82,030	82,030	484,900	484,900	Architectural Area									
	0		0		0		0	New Arch. Area									

PROPOSED 6-8 ROOM SCHEDULE

OPTION 4A

Existing Adjusted & Proposed Capacity

		Exist		Opt 4A		Exist		New		Opt 4A		Exist		Opt 4A	
		Jr High East				Jr High West						6-8 Total			
		No.	Capacity	No.	Capacity	No.	Capacity	No.	Capacity	No.	Capacity	No.	Capacity	No.	Capacity
CLASSRMS	Classroom	31	775	31	775	23	575	8	200	31	775	54	1350	62	1550
	Science Classroom / Lecture	2	50	2	50	3	75	-1	-25	2	50	5	125	4	100
	Science Lab	5	100	5	100	3	60	2	40	5	100	8	160	10	200
SUPPORT	S.E. / Gifted / Interv	6		6		4		2		6		10		12	
	S.E. Seminar / S.G.I.	4		4		1		3		4		5		8	
	Seminar / S.G.I. < 660 s.f.	3		3		6		-3		3		9		6	
	Large Group / L.G.I.											0		0	
	Business / Computer Lab	3	60	3	60	3	60			3	60	6	120	6	120
	Music Classroom											0	0	0	0
	Band / Orchestra / Choral	2	50	2	50	2	50			2	50	4	100	4	100
	Art Classroom	2	40	2	40	2	40			2	40	4	80	4	80
	Family & Consumer Science	2	40	2	40	2	40			2	40	4	80	4	80
	T.E. Lab	3	60	3	60	3	60			3	60	6	120	6	120
T.E. Wood / Metal Lab	1	20	1	20			1	20	1	20	1	20	2	40	
T.V. Studio	1	20	1	20	1	20			1	20	2	40	2	40	
ANCILLARY / CORE AREAS	Media Center	1		1		1				1		2		2	
	Gymnasium	1	99	1	99	1	66			1	66	2	165	2	165
	Auxiliary Gym					1	33			1	33	1	33	1	33
	Weight Room / Adapt. Gym	1		1		1				1		2		2	
	Locker Room	4		4		2				2		6		6	
	Officials / P.E. Office	2		2		2				2		4		4	
	Auditorium	1		1		1				1		2		2	
	Stage / Platform	1		1		1				1		2		2	
	Student Dining	1		1		1				1		2		2	
	Kitchen Areas	1		1		1				1		2		2	
	Administration / Guidance	1		1		1				1		2		2	
	Health Suite	1		1		1				1		2		2	
	Faculty / I.P.C. / Office	2		2		2				2		4		4	
	Capacity (80%)		1050		1050		860		190		1050		1910		2100
P.D.E. Capacity (90%)		1180		1180		970		210		1180		2150		2360	
2011-12 Enrollment		843				807						1650			
Architectural Area		159,430		159,430		145,720				155,720		305,150		315,150	
New Architectural Area				0						10,000				10,000	

P.D.E.: 20-25 students per classroom; 90% P.D.E. Utilization Factor and 80% District Utilization Factor.

Secondary Functional Capacity includes all spaces that receive capacity except a Natatorium or District Administration. Special Education Capacity is not included in the Functional Capacity or Total Capacity.

The existing building capacity may have been adjusted to represent the intended or adjusted use of space, therefore, showing respective support classrooms including Art, Music and Computer Education spaces.

PROPOSED 9-12 ROOM SCHEDULE

OPTION 4A

Existing Adjusted & Proposed Capacity

		Exist	Exist	Opt 4A	Exist	Opt 4A	Exist	Opt 4A	
		High School	HS Old Wing	9-10th	11-12th Grade		9-12 Total		
		No. Capacity	No. Capacity	No. Capacity	No. Capacity	No. Capacity	No. Capacity	No. Capacity	
CLASSROOMS	Classroom	39 975	9 225	35 875		36 900	48 1200	71 1775	CLASSROOMS
	Science Classroom / Lecture	8 200		8 200		6 150	8 200	14 350	
	Science Lab	7 140		7 140		4 80	7 140	11 220	
	Classrooms (Other Use)	1 25	2 50	1 25		2 50	3 75	3 75	
SUPPORT	S.E. / Gifted / Interv	8		8		6	8	14	SUPPORT
	S.E. Seminar / S.G.I.	5		5			5	5	
	Modular / Clsrn <660 s.f.		7				7	0	
	Seminar / S.G.I. < 660 s.f.	2		2			2	2	
	Large Group / L.G.I.	1	1	1			2	1	
	Business / Computer Lab	4 80		4 80			4 80	4 80	
	Music Classroom	2 50		2 50		2 50	2 50	4 100	
	Band / Orchestra / Choral	2 50		2 50		2 50	2 50	4 100	
	Art Classroom		4 80	4 80		2 40	4 80	6 120	
	Family & Consumer Science	3 60		3 60		2 40	3 60	5 100	
	T.E. Lab	7 140		7 140		4 80	7 140	11 220	
T.V. Studio	1 20		1 20		1 20	1 20	2 40		
ANCILLARY / CORE AREAS	Media Center	1		1		1	1	2	ANCILLARY / CORE AREAS
	Gymnasium	2 165		2 165		1 66	2 165	3 231	
	Auxiliary Gym		1 33			1 33	1 33	1 33	
	Weight Room / Adaptive Gym	3		3		1	3	4	
	Locker Room	6		6		4	6	10	
	Officials / P.E. Office	8		8		4	8	12	
	Auditorium	1	1	1		1	2	2	
	Stage / Platform	1	1	1		1	2	2	
	Student Dining	1		1		1	1	2	
	Kitchen Areas	1		1		1	1	2	
	Administration / Guidance	1		1		1	1	2	
	Health Suite	1		1		1	1	2	
	Faculty / I.P.C. / Office	14	1	14		10	15	24	
	Capacity (80%)	1525	310	1500	0	1250	1835	2762	
P.D.E. Capacity (90%)	1715	350	1700	0	1400	2065	3105		
2011-12 9-12 Enrollment						1733			
Architectural Area	300,000	70,000	300,000		180,000	370,000	480,000		
New Architectural Area			0		180,000		180,000		

P.D.E.: 20-25 students per classroom; 90% P.D.E. Utilization Factor and 80% District Utilization Factor.

Secondary Functional Capacity includes all spaces that receive capacity except a Natatorium or District Administration. Special Education Capacity is not included in the Functional Capacity or Total Capacity.

The existing building capacity may have been adjusted to represent the intended or adjusted use of space, therefore, showing respective support classrooms including Art, Music and Computer Education spaces.

PROJECTED REIMBURSEMENT

	PDE Adj. New FTE	RPC	** Reimb. Factor	Max Elig. Reimb.	Constr. New S.F.	Constr. Cost for Additions	Renov. Exist. S.F.	Renov. Study Cost	Total Constr. Cost
Colebrookdale Elementary	362	507	4,700	2,382,900	0	0	41,340	2,909,200	2,909,200
	*Existing	507	470	238,290					
	*LEED	507	470	238,290					
				2,859,500					
Pine Forge Elementary	315	441	4,700	2,072,700	0	0	37,570	3,803,900	3,803,900
	*Existing	441	470	207,270					
	*LEED	441	470	207,270					
				2,487,200					
K-5 Total				\$5,346,700	0	\$0	78,910	\$6,713,100	\$6,713,100
JHS West	369	517	6,200	3,205,400	10,000	2,000,000	145,720	22,222,200	24,222,200
	*Existing	517	620	320,540					
	*LEED	517	620	320,540					
	739	820	6,200	5,084,000					
	*Existing	820	620	508,400					
	*LEED	820	620	508,400					
6-8 Total				\$9,947,300	10,000	\$2,000,000	145,720	\$22,222,200	\$24,222,200
9-10 Existing High School	1,461	1,614	6,200	10,006,800	0	0	370,000	24,000,000	24,000,000
	*Existing	1,614	620	1,000,680					
	*LEED	1,614	620	1,000,680					
9-10 Total				\$12,008,200	0	\$0	370,000	\$24,000,000	\$24,000,000
11-12 New High School	1,410	1,558	6,200	9,659,910	180,000	32,400,000			32,400,000
	*Existing	1,558	620	965,960					
	*LEED	1,558	620	965,960					
11-12 Total				\$11,591,800	180,000	\$32,400,000	0	\$0	\$32,400,000
K-12 Total				\$38,894,000	190,000	\$34,400,000	594,630	\$52,935,300	\$87,335,300

* Additional 10% Reimbursement for *Qualifying Existing Building* also Additional 10% Reimbursement for *Qualifying Leed Certification*.

+ 4.0% 20-year bond issue rate

OPTION 4A

Total Project Cost	** % M.E.R. to T.P.C.	Aid Ratio	% State Share	% Local Share	+ Annual Total Share	+ Annual State Share	+ Annual Local Share	
3,636,500	0.7863	0.4655	36.60%	63.40%	263,400	96,400	167,000	Colebrookdale Elementary
4,754,900	0.5231	0.4655	24.35%	75.65%	344,400	83,900	260,500	Pine Forge Elementary
\$8,391,400		0.4655			\$607,800	\$180,300	\$427,500	K-5 Total
30,277,800	0.3285	0.4655	15.29%	84.71%	2,192,300	335,300	1,857,000	JHS West
\$30,277,800		0.4655			\$2,192,300	\$335,300	\$1,857,000	6-8 Total
30,000,000	0.4003	0.4655	18.63%	81.37%	2,172,100	404,700	1,767,400	9-10 Existing High School
\$30,000,000		0.4655			\$2,172,100	\$404,700	\$1,767,400	9-10 Total
40,500,000	0.2862	0.4655	13.32%	86.68%	2,932,200	390,700	2,541,500	11-12 New High School
\$40,500,000		0.4655			\$2,932,200	\$390,700	\$2,541,500	10-12 Total
\$109,169,200		0.4655			\$7,904,400	\$1,311,000	\$6,593,400	K-12 Total

OPTION 5 New Elementary School & High School Additions

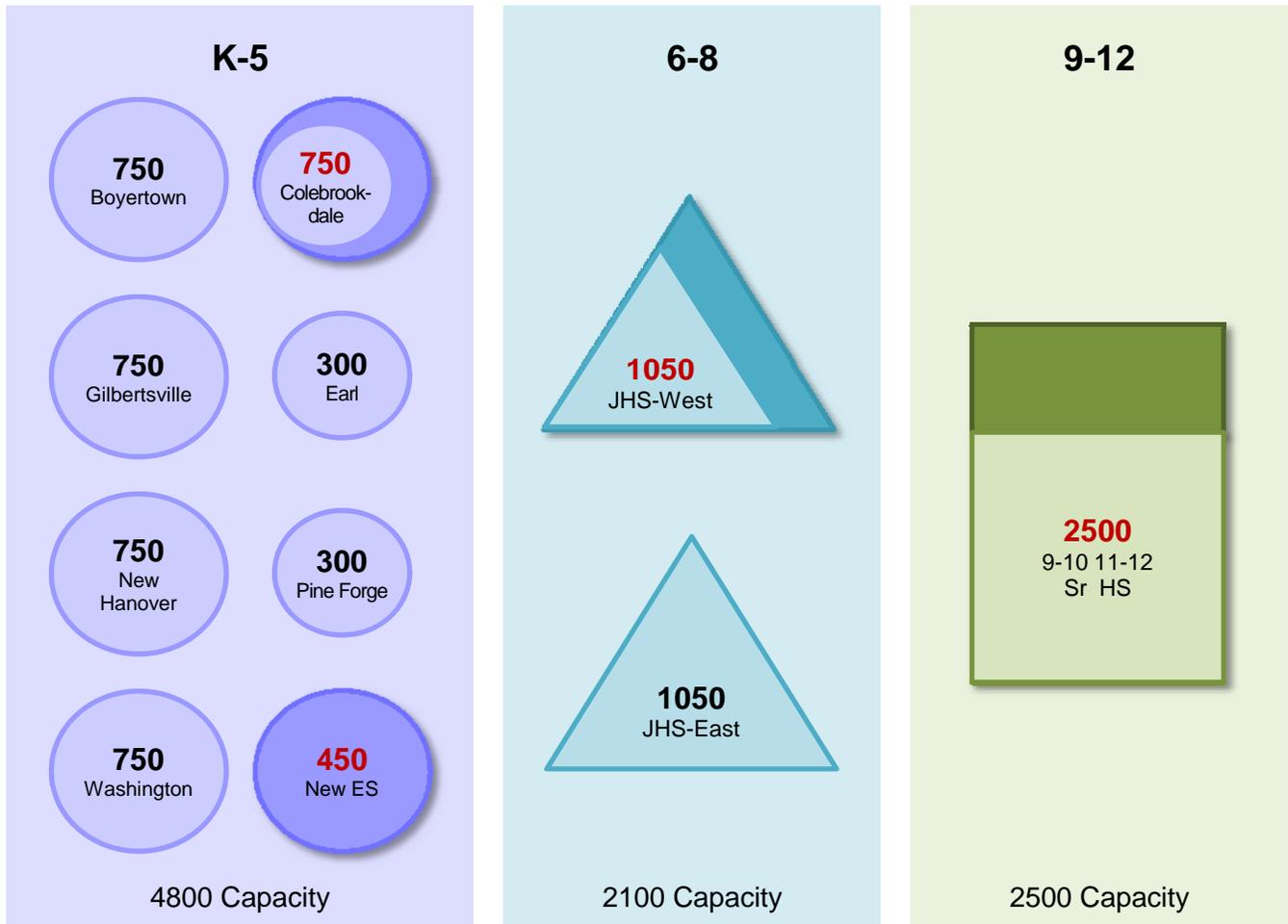
K-5
6-8
9-10
11-12

New Elementary School; Alterations & Additions to Colebrookdale;

Maintain Existing Elementary Schools

Alterations to JHS West; Maintain JHS East

Alterations and Additions to Sr. High School as 9-10th Grade Center and 11-12th Grade Center



Pros

- Maintains neighborhood Schools
- Targeted School Upgrades & Energy savings to offset Air Conditioning
- Additional capacity adequate for the projected student growth

Cons

- Does not provide better parity at all Elementary Schools
- Increased number of Elementary Schools to maintain

PROGRAM SUMMARY

OPTION 5

OPTION 5 New Elementary School & High School Additions

K-5
6-8
9-10
11-12

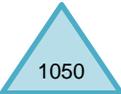
New Elementary School; Alterations & Additions to Colebrookdale;

Maintain Existing Elementary Schools

Alterations to JHS West; Maintain JHS East

Alterations and Additions to Sr. High School as 9-10th Grade Center and 11-12th Grade Center

OPTION EDUCATIONAL PROGRAM

	Building	Proposed Work	Proposed Grade Alignment	Functional Capacity	Total Capacity	Highest Projected Enrollment Methods	Current +10%
	Boyertown ES	Maintain Change to K-5	K-5	750	750		
	Colebrookdale ES	Alts & Additions Change to K-5	K-5	750	750		
	Earl ES	Maintain Change to K-5	K-5	300	325		
	Gilbertsville ES	Maintain Change to K-5	K-5	750	750		
	New Hanover ES	Maintain Change to K-5	K-5	750	775		
	Pine Forge ES	Maintain Change to K-5	K-5	300	300		
	Washington ES	Maintain Change to K-5	K-5	750	750		
	New K-6 ES	New Elementary	K-5	450	500		
K-5 Total				4,800	4,900	3,674 Method III	3,506 2011-12
	JHS - East	Maintain Change to 6-8	6-8	1,050	1,180		
	JHS - West	Alts & Additions Change to 6-8	6-8	1,050	1,180		
6-8 Total				2,100	2,360	1,865 Method I	1,858 2011-12
	Sr High School	Alts & Additions Change to 9-10 11-12	9-12	2,500	2,810		
9-12 Total				2,500	2,810	2,531 Method I	2,511 2011-12
K-12 Total				9,400	10,070	7,833 Method III	7,858 2011-12

OPTION COST SUMMARY

OPTION 5

OPTION 5 New Elementary School & High School Additions

K-5	New Elementary School; Alterations & Additions to Colebrookdale; Maintain Existing Elementary Schools
6-8	Alterations to JHS West; Maintain JHS East
9-10	Alterations and Additions to Sr. High School as 9-10th Grade Center and 11-12th Grade Center
11-12	

OPTION COST SUMMARY

	Max Elig. Reimb.	Constr. Cost for Additions	Total Renov. Cost	Total Constr. Cost	Total Project Cost	Aid Ratio	+ Annual State Share	+ Annual Local Share
 Colebrookdale ES	\$4,675,600	\$8,000,000	\$2,909,200	\$10,909,200	\$13,636,500	0.4655	\$157,600	\$829,800
 New ES	\$3,276,800	\$12,000,000	\$0	\$12,000,000	\$15,000,000	0.4655	\$110,400	\$975,600
K-5	\$7,952,400	\$20,000,000	\$2,909,200	\$22,909,200	\$28,636,500	0.4655	\$268,000	\$1,805,400
 JHS - West	\$9,947,300	\$2,000,000	\$22,222,200	\$24,222,200	\$30,277,800	0.4655	\$335,300	\$1,857,000
6-8	\$9,947,300	\$2,000,000	\$22,222,200	\$24,222,200	\$30,277,800	0.4655	\$335,300	\$1,857,000
 9-12 High School	\$23,479,700	\$12,000,000	\$31,987,600	\$43,987,600	\$54,984,500	0.4655	\$791,300	\$3,189,700
9-12	\$23,479,700	\$12,000,000	\$31,987,600	\$43,987,600	\$54,984,500	0.4655	\$791,300	\$3,189,700
K-12	\$41,379,400	\$34,000,000	\$57,119,000	\$91,119,000	\$113,898,800	0.4655	\$1,394,600	\$6,852,100

PROPOSED K-5 ROOM SCHEDULE

Existing Adjusted & Proposed Capacity

		Exist	Opt 5	Exist	New	Opt 5	Exist	Opt 5	Exist	Opt 5									
		Boyertown		Colebrookdale			Earl		Gilbertsville										
		No. Capacity	No. Capacity	No. Capacity	No. Capacity	No. Capacity	No. Capacity	No. Capacity	No. Capacity	No. Capacity									
CLASSROOMS	Kindergarten 1/2-day	2	100	2	100	1	50	1	50	2	100	1	50	1	50	2	100	2	100
	Kindergarten 1/2-day adj		1	25			1	25	1	25								1	25
	First Grade	4	100	5	125	2	50	3	75	5	125	2	50	2	50	4	100	5	125
	Second Grade	4	100	5	125	2	50	3	75	5	125	2	50	2	50	4	100	5	125
	Third Grade	4	100	5	125	2	50	3	75	5	125	2	50	2	50	4	100	5	125
	Fourth Grade	4	100	5	125	2	50	3	75	5	125	2	50	2	50	4	100	5	125
	Fifth Grade	4	100	5	125	2	50	3	75	5	125	2	50	2	50	4	100	5	125
	Sixth Grade	4	100			2	50	-2	-50			2	50			4	100		
SUPPORT	Support / Divided	1	25											1	25	1	25		
	Spec Educ / Interven	5		4		3	1	4			2		3		3			3	
	S.E. / Gift / Inter S.G.I.	3		3							1		1		4			4	
	Modular/Clstrm<660 s.f.					1	S.E.	-1											
	Seminar / S.G.I.	1		1		4		4			4		4		2			2	
	Large Group / L.G.I.														1			1	
	Computer Lab	1		1		1		-1			1		1		1			1	
	Music Classroom	1		1		1					1		1		1			1	
	Music Seminar / Pract	1		1		1					1				1			1	
	Art Classroom	1		1		1					1		1		1			1	
ANCILLARY / CORE AREAS	Media Center	1		1		1		1		1		1		1		1		1	
	Gymnasium	1	*	1			1	1							1	*	1		
	Locker Room	2		2															
	Multi-Purpose Room					1		-1			1		1						
	Stage / Platform	1		1		1				1		1		1		1		1	
	Student Dining	1	*	1			1	1							1	*	1		
	Kitchen Areas	1		1		1		1		1		1		1		1		1	
	Administration / Guid	1		1		1		1		1		1		1		1		1	
	Health Suite	1		1		1		1		1		1		1		1		1	
	Faculty / I.P.C. / Office	2		2		1		1		1		1		1		1		1	
	P.E. Office						1	1							2			2	
Capacity		700	750	350	400	750	350	300	700	750									
Total Capacity		725	750	350	350	750	350	325	725	750									
2011-12 Enrollment		668		366			320		783										
Architectural Area		97,800	97,800	41,340		81,340	38,530	38,530	96,930	96,930									
New Arch. Area			0			40,000		0		0									

OPTION 5

Exist	Opt 5	Exist	Opt 5																
New Hanover		Pine Forge		Washington		New K-5 ES		K-5 Total											
No Capacity	No. Capacity	No. Capacity																	
2	100	2	100	1	50	1	50	2	100	2	100	CLASSROOMS							
	1	25						1	50	11	550		12	600	Kindergarten 1/2-day				
	4	100	5	125	2	50	2	50	4	100	5		125	0	0	5	125	Kindergarten 1/2-day adj	
	4	100	5	125	2	50	2	50	4	100	5		125	22	550	29	725	First Grade	
	4	100	5	125	2	50	2	50	4	100	5		125	22	550	29	725	Second Grade	
	4	100	5	125	2	50	2	50	4	100	5		125	22	550	29	725	Third Grade	
	4	100	5	125	2	50	2	50	4	100	5		125	22	550	29	725	Fourth Grade	
	4	100	5	125	2	50	2	50	4	100	5	125	22	550	29	725	Fifth Grade		
	4	100			2	50			4	100			22	550	0	0	0	0	Sixth Grade
4	100	1	25						2	50	6	150	2	50			Support / Divided	SUPPORT	
4		5			1			4		2	21		22				Spec Educ / Interven		
1		1		4	4	3	4				16		17				S.E. / Gift / Inter S.G.I.		
											1		0				Modular/Clstrm<660 s.f.		
2		2		1	1	5	4		2		19		18				Seminar / S.G.I.		
1		1		1	1	1	1				1		1				Large Group / L.G.I.		
1		1		1	1	1	1		1		7		6				Computer Lab		
1		1		1	**	1	1		1		7		7				Music Classroom		
1		1		1		1	1		1		5		5				Music Seminar / Pract		
1		1		** share	1	1	1		1		6		7				Art Classroom		
1		1		1	1	1	1		1		7		7				Media Center	ANCILLARY / CORE AREAS	
1		1				1	*	1	1		4		5				Gymnasium		
											2		2				Locker Room		
				1	1						3		2				Multi-Purpose Room		
1		1		1	1	1	1		1		7		7				Stage / Platform		
1		1				1	*	1	1		4		5				Student Dining		
1		1		1	1	1	1		1		7		7				Kitchen Areas		
1		1		1	1	1	1		1		7		7				Administration / Guid		
1		1		1	1	1	1		1		7		7				Health Suite		
1		1		1	1	1	1		1		8		8				Faculty / I.P.C. / Office		
				1	1	1	1		1		4	0	5				P.E. Office		
700	750	350	300	700	750	0	450	3850	4800	Capacity									
800	775	350	300	700	750	0	500	4000	4900	Total Capacity									
741		277		606		277		3761		2011-12 Enrollment									
90,700	90,700	37,570	37,570	82,030	82,030	0	60,000	484,900	584,900	Architectural Area									
	0		0		0		60,000		100,000	New Arch. Area									

PROPOSED 6-8 ROOM SCHEDULE

OPTION 5

Existing Adjusted & Proposed Capacity

		Exist	Opt 5	Exist	New	Opt 5	Exist	Opt 5							
		Jr High East		Jr High West			6-8 Total								
CLASSRMS		No.	Capacity	No.	Capacity	No.	Capacity	No.	Capacity	CLASSRMS					
	Classroom	31	775	31	775	23	575	8	200	31	775	54	1350	62	1550
	Science Classroom / Lecture	2	50	2	50	3	75	-1	-25	2	50	5	125	4	100
	Science Lab	5	100	5	100	3	60	2	40	5	100	8	160	10	200
SUPPORT	S.E. / Gifted / Interv	6		6		4		2		6		10		12	
	S.E. Seminar / S.G.I.	4		4		1		3		4		5		8	
	Seminar / S.G.I. < 660 s.f.	3		3		6		-3		3		9		6	
	Large Group / L.G.I.											0		0	
	Business / Computer Lab	3	60	3	60	3	60			3	60	6	120	6	120
	Music Classroom											0	0	0	0
	Band / Orchestra / Choral	2	50	2	50	2	50			2	50	4	100	4	100
	Art Classroom	2	40	2	40	2	40			2	40	4	80	4	80
	Family & Consumer Science	2	40	2	40	2	40			2	40	4	80	4	80
	T.E. Lab	3	60	3	60	3	60			3	60	6	120	6	120
T.E. Wood / Metal Lab	1	20	1	20			1	20	1	20	1	20	2	40	
T.V. Studio	1	20	1	20	1	20			1	20	2	40	2	40	
ANCILLARY / CORE AREAS	Media Center	1		1		1				1		2		2	
	Gymnasium	1	99	1	99	1	66			1	66	2	165	2	165
	Auxiliary Gym					1	33			1	33	1	33	1	33
	Weight Room / Adapt. Gym	1		1		1				1		2		2	
	Locker Room	4		4		2				2		6		6	
	Officials / P.E. Office	2		2		2				2		4		4	
	Auditorium	1		1		1				1		2		2	
	Stage / Platform	1		1		1				1		2		2	
	Student Dining	1		1		1				1		2		2	
	Kitchen Areas	1		1		1				1		2		2	
	Administration / Guidance	1		1		1				1		2		2	
	Health Suite	1		1		1				1		2		2	
	Faculty / I.P.C. / Office	2		2		2				2		4		4	
		Capacity (80%)		1050		1050		860		190		1050		1910	
	P.D.E. Capacity (90%)		1180		1180		970		210		1180		2150		2360
	2011-12 Enrollment		843				807						1650		
	Architectural Area		159,430		159,430		145,720				155,720		305,150		315,150
	New Architectural Area				0						10,000				10,000

P.D.E.: 20-25 students per classroom; 90% P.D.E. Utilization Factor and 80% District Utilization Factor.

Secondary Functional Capacity includes all spaces that receive capacity except a Natatorium or District Administration. Special Education Capacity is not included in the Functional Capacity or Total Capacity.

The existing building capacity may have been adjusted to represent the intended or adjusted use of space, therefore, showing respective support classrooms including Art, Music and Computer Education spaces.

PROPOSED 9-12 ROOM SCHEDULE

OPTION 5

Existing Adjusted & Proposed Capacity

		Exist		New		Opt 5		Exist		Opt 5		
		High School						9-12 Total				
CLASSROOMS	Classroom	No. 48	Capacity 1200	No. 20	Capacity 500	No. 68	Capacity 1700	No. 48	Capacity 1200	No. 68	Capacity 1700	CLASSROOMS
	Science Classroom / Lecture	8	200			8	200	8	200	8	200	
	Science Lab	7	140	5	100	12	240	7	140	12	240	
	Classrooms (Other Use)	3	75	3	75	6	150	3	75	6	150	
SUPPORT	S.E. / Gifted / Interv	8		4		12		8		12		SUPPORT
	S.E. Seminar / S.G.I.	5				5		5		5		
	Modular / Clsrn <660 s.f.	7		-7		0		7		0		
	Seminar / S.G.I. < 660 s.f.	2				2		2		2		
	Large Group / L.G.I.	2				2		2		2		
	Business / Computer Lab	4	80			4	80	4	80	4	80	
	Music Classroom	2	50	2	50	4	100	2	50	4	100	
	Band / Orchestra / Choral	2	50	1	25	3	75	2	50	3	75	
	Art Classroom	4	80	2	40	6	120	4	80	6	120	
	Family & Consumer Science	3	60	1	20	4	80	3	60	4	80	
	T.E. Lab	7	140	1	20	8	160	7	140	8	160	
T.V. Studio	1	20			1	20	1	20	1	20		
ANCILLARY / CORE AREAS	Media Center	1				1		1		1		ANCILLARY / CORE AREAS
	Gymnasium	2	165			2	165	2	165	2	165	
	Auxiliary Gym	1	33			1	33	1	33	1	33	
	Weight Room / Adaptive Gym	3				3		3		3		
	Locker Room	6				6		6		6		
	Officials / P.E. Office	8				8		8		8		
	Auditorium	2				2		2		2		
	Stage / Platform	2				2		2		2		
	Student Dining	1				1		1		1		
	Kitchen Areas	1				1		1		1		
	Administration / Guidance	1		1		2		1		2		
	Health Suite	1		1		2		1		2		
	Faculty / I.P.C. / Office	15		5		20		15		20		
Capacity (80%)		1835		665		2500		1835		2500		
P.D.E. Capacity (90%)		2065		745		2810		2065		2810		
2011-12 9-12 Enrollment		1733						1733				
Architectural Area		370,000				430,000		370,000		430,000		
New Architectural Area						60,000				60,000		

P.D.E.: 20-25 students per classroom; 90% P.D.E. Utilization Factor and 80% District Utilization Factor.

Secondary Functional Capacity includes all spaces that receive capacity except a Natatorium or District Administration. Special Education Capacity is not included in the Functional Capacity or Total Capacity.

The existing building capacity may have been adjusted to represent the intended or adjusted use of space, therefore, showing respective support classrooms including Art, Music and Computer Education spaces.

PROJECTED REIMBURSEMENT

	PDE Adj. New FTE	RPC	** Reimb. Factor	Max Elig. Reimb.	Constr. New S.F.	Constr. Cost for Additions	Renov. Exist. S.F.	Renov. Study Cost	Total Constr. Cost
Colebrookdale Elementary	601	829	4,700	3,896,300	40,000	8,000,000	41,340	2,909,200	10,909,200
	*Existing	829	470	389,630					
	*LEED	829	470	389,630					
				4,675,600					
New K-5 Elementary	415	581	4,700	2,730,700	60,000	12,000,000	0	0	12,000,000
	*Existing	581	470	273,070					
	*LEED	581	470	273,070					
				3,276,800					
K-5 Total				\$7,952,400	100,000	\$20,000,000	41,340	\$2,909,200	\$22,909,200
JHS West	369	517	6,200	3,205,400	10,000	2,000,000	145,720	22,222,200	24,222,200
	*Existing	517	620	320,540					
	*LEED	517	620	320,540					
	739	820	6,200	5,084,000					
	*Existing	820	620	508,400					
	*LEED	820	620	508,400					
6-8 Total				\$9,947,300	10,000	\$2,000,000	145,720	\$22,222,200	\$24,222,200
Sr. High School	2,856	3,156	6,200	19,566,456	60,000	12,000,000	370,000	31,987,600	43,987,600
	*Existing	3,156	620	1,956,646					
	*LEED	3,156	620	1,956,646					
9-12 Total				\$23,479,700	60,000	\$12,000,000	370,000	\$31,987,600	\$43,987,600
K-12 Total				\$41,379,400	170,000	\$34,000,000	557,060	\$57,119,000	\$91,119,000

* Additional 10% Reimbursement for *Qualifying Existing Building* also Additional 10% Reimbursement for *Qualifying Leed Certification*.

+ 4.0% 20-year bond issue rate

OPTION 5

Total Project Cost	** % M.E.R. to T.P.C.	Aid Ratio	% State Share	% Local Share	+ Annual Total Share	+ Annual State Share	+ Annual Local Share	
13,636,500	0.3429	0.4655	15.96%	84.04%	987,400	157,600	829,800	Colebrookdale Elementary
15,000,000	0.2185	0.4655	10.17%	89.83%	1,086,000	110,400	975,600	New K-5 Elementary
\$28,636,500		0.4655			\$2,073,400	\$268,000	\$1,805,400	K-5 Total
30,277,800	0.3285	0.4655	15.29%	84.71%	2,192,300	335,300	1,857,000	JHS West
\$30,277,800		0.4655			\$2,192,300	\$335,300	\$1,857,000	6-8 Total
54,984,500	0.4270	0.4655	19.88%	80.12%	3,981,000	791,300	3,189,700	Sr. High School
\$54,984,500		0.4655			\$3,981,000	\$791,300	\$3,189,700	9-12 Total
\$113,898,800		0.4655			\$8,246,700	\$1,394,600	\$6,852,100	K-12 Total

INTRODUCTION TO OPTIONS COST SUMMARY

Option Cost Summary

This section of the Feasibility Study is a Cost Summary of all options including: Maximum Eligible Reimbursement; Cost for Addition; Renovation Study Cost; Total Project Cost; Annual Total Share; Annual State Share (State Reimbursement); and Annual Local Share.

PlanCon "20% Rule"

Existing Renovation Costs must exceed the "20% Rule" to qualify for Reimbursement of the existing portion of the facility.

Based on the provisions of Basic Education Circular (BEC) 24 P.S. § 7-733, "School Construction Reimbursement Criteria", if the Adjusted Estimated Alteration costs for a project fall below 20% of the replacement value at the time a project is bid, the alteration work will be non-reimbursable. If the project is not voided and the District still receives reimbursement for any additions, the project building will not be eligible for reimbursement for alterations for the next 20 years unless a request for a variance is approved by the Pennsylvania Department of Education.

SUMMARY OF OPTIONS

OPTION 1 Alterations & Additions

K-6	Alterations & Additions to Colebrookdale E.S., Alterations to Pine Forge E.S.; Maintain Existing Elementary Schools
7-9	Alterations & Additions to JHS West; Maintain JHS East
10-12	Alterations to Sr. High School

OPTION 2 New Elementary School

K-6	New Elementary School; Alterations to Colebrookdale E.S. & Pine Forge E.S.; Maintain Existing Elementary Schools
7-9	Alterations & Additions to JHS West; Maintain JHS East
10-12	Alterations to Sr. High School

OPTION 3 New 9th Grade Center Addition to HS

K-5	Alterations to Colebrookdale E.S. & Pine Forge E.S.; Maintain Existing Elementary Schools
6-8	Alterations & Additions to JHS West; Maintain JHS East
9	New 9th Grade Center Addition to High School
10-12	Alterations to Sr. High School

OPTION 3A New 9th Grade Center

K-5	Alterations to Colebrookdale E.S. & Pine Forge E.S.; Maintain Existing Elementary Schools
6-8	Alterations & Additions to JHS West; Maintain JHS East
9	New 9th Grade Center
10-12	Alterations to Sr. High School

OPTION 4 New 11-12th Grade Center Addition to High School

K-5	Alterations to Colebrookdale E.S. & Pine Forge E.S.; Maintain Existing Elementary Schools
6-8	Alterations to JHS West; Maintain JHS East
9-10	Alterations and Additions to Sr. High School as 9-10th Grade Center and 11-12th Grade Center
11-12	Center

OPTION 4A New 11-12th Grade Center

K-5	Alterations to Colebrookdale E.S. & Pine Forge E.S.; Maintain Existing Elementary Schools
6-8	Alterations to JHS West; Maintain JHS East
9-10	Alterations to Sr. High School as 9-10th Grade Center
11-12	New 11-12th Grade Center

OPTION 5 New Elementary School & High School Additions

K-5	New Elementary School; Alterations & Additions to Colebrookdale; Maintain Existing Elementary Schools
6-8	Alterations to JHS West; Maintain JHS East
9-10	Alterations and Additions to Sr. High School as 9-10th Grade Center and 11-12th Grade Center
11-12	Center

OPTIONS COST SUMMARY

	Max Elig. Reimb.	Total Constr. Cost	Total Project Cost	+ Annual State Share	+ Annual Local Share
OPTION 1 Alterations & Additions					
K-6 Total	\$8,984,500	\$14,713,100	\$18,391,400	\$302,800	\$1,029,000
7-9 Total	\$9,173,500	\$24,222,200	\$30,277,800	\$309,200	\$1,883,100
10-12 Total	\$17,519,700	\$31,987,600	\$39,984,500	\$590,500	\$2,304,500
K-12 Total	\$35,677,700	\$70,922,900	\$88,653,700	\$1,202,500	\$5,216,600
OPTION 2 New Elementary School					
K-6 Total	\$10,800,500	\$22,713,100	\$28,391,400	\$364,200	\$1,691,700
7-9 Total	\$9,173,500	\$24,222,200	\$30,277,800	\$309,200	\$1,883,100
10-12 Total	\$17,519,700	\$31,987,600	\$39,984,500	\$590,500	\$2,304,500
K-12 Total	\$37,493,700	\$78,922,900	\$98,653,700	\$1,263,900	\$5,879,300
OPTION 3 New 9th Grade Center Addition to HS					
K-5 Total	\$5,346,700	\$6,713,100	\$8,391,400	\$180,300	\$427,500
6-8 Total	\$9,947,300	\$24,222,200	\$30,277,800	\$335,300	\$1,857,000
9-12 Total	\$23,479,700	\$43,987,600	\$54,984,500	\$791,300	\$3,189,700
K-12 Total	\$38,773,700	\$74,922,900	\$93,653,700	\$1,306,900	\$5,474,200
OPTION 3A New 9th Grade Center					
K-5 Total	\$5,346,700	\$6,713,100	\$8,391,400	\$180,300	\$427,500
6-8 Total	\$9,947,300	\$24,222,200	\$30,277,800	\$335,300	\$1,857,000
9 Total	\$6,398,400	\$18,000,000	\$22,500,000	\$215,700	\$1,413,400
10-12 Total	\$17,519,700	\$31,987,600	\$39,984,500	\$590,500	\$2,304,500
K-12 Total	\$39,212,100	\$80,922,900	\$101,153,700	\$1,321,800	\$6,002,400
OPTION 4 New 11-12th Grade Center Addition to High School					
K-5 Total	\$5,346,700	\$6,713,100	\$8,391,400	\$180,300	\$427,500
6-8 Total	\$9,947,300	\$24,222,200	\$30,277,800	\$335,300	\$1,857,000
9-12 Total	\$23,479,700	\$43,987,600	\$54,984,500	\$791,300	\$3,189,700
K-12 Total	\$38,773,700	\$74,922,900	\$93,653,700	\$1,306,900	\$5,474,200
OPTION 4A New 11-12th Grade Center					
K-5 Total	\$5,346,700	\$6,713,100	\$8,391,400	\$180,300	\$427,500
6-8 Total	\$9,947,300	\$24,222,200	\$30,277,800	\$335,300	\$1,857,000
9-10 Total	\$12,008,200	\$24,000,000	\$30,000,000	\$404,700	\$1,767,400
11-12 Total	\$11,591,800	\$32,400,000	\$40,500,000	\$390,700	\$2,541,500
K-12 Total	\$38,894,000	\$87,335,300	\$109,169,200	\$1,311,000	\$6,593,400
OPTION 5 New Elementary School & High School Additions					
K-6 Total	\$7,952,400	\$22,909,200	\$28,636,500	\$268,000	\$1,805,400
6-8 Total	\$9,947,300	\$24,222,200	\$30,277,800	\$335,300	\$1,857,000
9-12 Total	\$23,479,700	\$43,987,600	\$54,984,500	\$791,300	\$3,189,700
K-12 Total	\$41,379,400	\$91,119,000	\$113,898,800	\$1,394,600	\$6,852,100

ENERGY PORTFOLIO SURVEY

SELECTED OPTIONS

Within the District-Wide Facility Study, Energy Portfolio Surveys must be included for each existing building and for each Construction Option that is being considered.

The selection of Options for consideration are Option 4 and Option 5

1. Surveys for each Existing Building are located in Part II Facilities
2. Surveys for the Construction Options: This Survey entails providing a predictive utility budget, using the EPA/DOE Target Finder tool, identifying the annual site and source energy and annual water consumption.

ENERGY PORTFOLIO SURVEY

Options 4 & 5

Senior High School



OMB No. 2060-0347

STATEMENT OF ENERGY DESIGN INTENT

September 10, 2012

FACILITY INFORMATION & CHARACTERISTICS

Facility Name: Boyertown High School	Location: Fourth and Monroe Streets, Boyertown, PA 19512 United States	Design Energy (kBtu) ¹ Electricity - Grid Purchase 15,000,000 Natural Gas 1,200,000
Space Type: K-12 School	Total Floor Area: 430,000 sq. ft. Total Gross Floor Area: 430,000 Sq. Ft.	

RESULTS FOR ESTIMATED ENERGY USE

	DESIGN	MEDIAN BUILDING	ESTIMATED SAVINGS
EPA Energy Performance Rating (1-100) ¹	79	50	29
Percent Energy Reduction (%) ²	26	0	N/A
Site Energy Use Intensity (kBtu/sf/yr)	38	51	13
Source Energy Use Intensity (kBtu/sf/yr)	119	161	42
Total Annual Site Energy Use (kBtu/yr)	16,200,000	21,866,157	5,666,157
Total Annual Source Energy Use (kBtu/yr)	51,356,400	69,318,858	17,962,558
Total Annual Energy Costs (\$)	\$ 420,600	\$ 567,710	\$ 147,110
Pollution Emissions (metric tons/yr)³			
CO ₂ -eq	2,188	2,953	765

CONTACT INFORMATION

Building Owner/Company Name _____
 Address _____
 City, State, Zip Code _____
 Contact Name _____
 Phone _____ Email _____

Professional Verification (Licensed Architect/Engineer)

Prepared By _____
 Firm Name _____
 Address _____
 City, State, Zip Code _____
 Phone _____
 Email _____

Architect of Record Firm (if different from verifier)

Name _____
 Firm Name _____
 Phone _____
 Email _____

Professional Stamp Signature & Date

This project was specified and executed to achieve Designed to Earn the ENERGY STAR certification.

¹ Target Finder determines an EPA energy performance rating by comparing estimated total annual source energy use to source energy use of an existing building from CBECS database (DOE-EIA). Note: An incomplete energy design profile could result in a high but inaccurate performance score for your project.
² "Percent Energy Reduction" is the percent reduction from the median energy consumption of a similar building and the equivalent of a Rating of 50.
³ The amount of carbon dioxide equivalent gases emitted from the facility's estimated energy consumption.

ENERGY PORTFOLIO SURVEY

Options 4 & 5

Senior High School

OMB No.2060-0347



STATEMENT OF ENERGY DESIGN INTENT

September 10, 2012

FACILITY INFORMATION & CHARACTERISTICS

Facility Name: Boyertown High School		Location: Fourth and Monroe Streets, Boyertown, PA 19512 United States		Design Energy (kBtu) [†] Electricity - Grid Purchase 15,000,000 Natural Gas 1,200,000				
Space Type: K-12 School		Total Floor Area: 430,000 sq. ft. Total Gross Floor Area: 430,000 Sq. Ft.						
K-12 School	Gross Floor Area 430000 Sq. Ft.	Open Weekends? No	Number of PCs 550	Number of walk-in refrigeration/freezer units 2	Presence of cooking facilities Yes	Percent Cooled 100 %	Percent Heated 100 %	High School? Yes

ADDITIONAL INFORMATION (if necessary please attach additional pages).

1. Does the building design match "Space Type" description in Target Finder?
2. Is the building occupied and generating energy bills?
3. Does energy calculation account for the whole building and all energy sources?
4. Is the Architect of Record an ENERGY STAR partner? If no, Join now. The AOR is required to be an ENERGY STAR partner to submit design project.
5. The AOR/Building Owner agree that EPA may use information from the Statement of Energy Design Intent in ENERGY STAR program materials?

This document was generated from Target Finder, an EPA tool located on the ENERGY STAR Web site, www.energystar.gov.

The government estimates the average time needed to fill out this form is 10 minutes and welcomes suggestions for reducing this level of effort. Send comments (referencing OMB control number) to the Director, Collection Strategies Division, U.S., EPA (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460

ENERGY PORTFOLIO SURVEY

Options 4 & 5

Junior High School - West

OMB No. 2060-0347



STATEMENT OF ENERGY DESIGN INTENT

September 10, 2012

FACILITY INFORMATION & CHARACTERISTICS

Facility Name: Boyertown Junior High West	Location: 200 S Madison Street, Boyertown, PA 19512 United States	Design Energy (kBtu) ¹ Electricity - Grid Purchase 5,000,000 Natural Gas 200,000
Space Type: K-12 School	Total Floor Area: 155,720 sq. ft. Total Gross Floor Area: 155,720 Sq. Ft.	

RESULTS FOR ESTIMATED ENERGY USE

	DESIGN	MEDIAN BUILDING	ESTIMATED SAVINGS
EPA Energy Performance Rating (1-100) ¹	79	50	29
Percent Energy Reduction (%) ²	26	0	N/A
Site Energy Use Intensity (kBtu/sf/yr)	33	45	12
Source Energy Use Intensity (kBtu/sf/yr)	109	147	38
Total Annual Site Energy Use (kBtu/yr)	5,200,000	7,034,745	1,834,745
Total Annual Source Energy Use (kBtu/yr)	16,909,400	22,875,637	5,966,237
Total Annual Energy Costs (\$)	\$ 137,600	\$ 186,150	\$ 48,550
Pollution Emissions (metric tons/yr)³			
CO ₂ -eq	719	972	253

CONTACT INFORMATION

Building Owner/Company Name _____
 Address _____
 City, State, Zip Code _____
 Contact Name _____
 Phone _____ Email _____

Professional Verification (Licensed Architect/Engineer)

Prepared By _____
 Firm Name _____
 Address _____
 City, State, Zip Code _____
 Phone _____
 Email _____

Architect of Record Firm (if different from verifier)

Name _____
 Firm Name _____
 Phone _____
 Email _____

Professional Stamp

Signature & Date

This project was specified and executed to achieve Designed to Earn the ENERGY STAR certification.

¹ Target Finder determines an EPA energy performance rating by comparing estimated total annual source energy use to source energy use of an existing building from CBECS database (DOE-EIA). Note: An incomplete energy design profile could result in a high but inaccurate performance score for your project.
² "Percent Energy Reduction" is the percent reduction from the median energy consumption of a similar building and the equivalent of a Rating of 50.
³ The amount of carbon dioxide equivalent gases emitted from the facility's estimated energy consumption.

ENERGY PORTFOLIO SURVEY

Options 4 & 5

Junior High School - West



OMB No.2060-0347

STATEMENT OF ENERGY DESIGN INTENT

September 10, 2012

FACILITY INFORMATION & CHARACTERISTICS

Facility Name: Boyertown Junior High West		Location: 200 S Madison Street, Boyertown, PA 19512 United States		Design Energy (kBtu) ¹ Electricity - Grid Purchase 5,000,000 Natural Gas 200,000				
Space Type: K-12 School		Total Floor Area: 155,720 sq. ft.						
K-12 School	Gross Floor Area 155720 Sq. Ft.	Open Weekends? No	Number of PCs 400	Number of walk-in refrigeration/freezer units 2	Presence of cooking facilities Yes	Percent Cooled 100 %	Percent Heated 100 %	High School? No

ADDITIONAL INFORMATION (if necessary please attach additional pages).

1. Does the building design match "Space Type" description in Target Finder?
2. Is the building occupied and generating energy bills?
3. Does energy calculation account for the whole building and all energy sources?
4. Is the Architect of Record an ENERGY STAR partner? If no, Join now. The AOR is required to be an ENERGY STAR partner to submit design project.
5. The AOR/Building Owner agree that EPA may use information from the Statement of Energy Design Intent in ENERGY STAR program materials?

This document was generated from Target Finder, an EPA tool located on the ENERGY STAR Web site, www.energystar.gov.

The government estimates the average time needed to fill out this form is 10 minutes and welcomes suggestions for reducing this level of effort. Send comments (referencing OMB control number) to the Director, Collection Strategies Division, U.S., EPA (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460

DEFINITIONS

The following section is included to present the reader with the terminology used in this Study.

Adjusted Capacity - The adjusted capacity reflects usage of a building in compliance with Pennsylvania Department of Education (PDE) guidelines. These guidelines include individual classroom spaces for all PDE recommended educational subjects, including art, music, and special education programs; and, occupancy use of all support services and programs per recommended minimum square footage.

Architectural Area - The sum of the areas of all floors, including basements, mezzanines, and penthouses, with a 6 ft. 6 in. minimum head room height. The area is measured from the exterior faces of the exterior walls. The area of open roofed-over paved areas and covered walkways is also included, but multiplied by a factor of 0.50. The area does not include roof overhangs, pipe trenches, exterior steps, or terraces.

Building Replacement Value - This value pertains to alteration work for an existing building. A project is only eligible for State reimbursement when the total alteration costs are greater than 20% of the replacement value for the building (20% Rule). The value is determined by following calculations of the PDE formula. (A capacity value or full-time equivalent (FTE) value is calculated for an existing building. The FTE is then multiplied by the PDE recommended square feet per student. This value (the recommended architectural area) is then multiplied by a construction cost per square foot factor to equal the building replacement value.

CARF - Capital Account Reimbursement Fraction as determined by the Pennsylvania Department of Education.

Classroom Equivalent - An 800 sq. ft. space which can be subdivided into small group instructional areas for special support programs or be considered as a classroom.

Cohort Survival - A population projection method based upon historic data averages and multiplied by a retention ratio to determine future projections.

Construction Cost - The Total Cost of a project without soft costs. The Total Construction Cost includes: cost for new additions, renovation costs, demolition costs, and additional educational upgrades costs.

Current Capacity - The capacity reflects the current usage of spaces in a building. Room capacities are given to specific instructional spaces as determined, but may not be the original capacity when the school was constructed, or meet PDE guidelines for square footage. The capacity represents the PDE designated number of students that will occupy a space (regardless of the actual number of students that will occupy a space). The sum of all individual room capacities will equal the total building capacity.

Daylighting - Daylighting is the controlled admission of natural light into a space through glazing with the intent of reducing or eliminating electric lighting. By utilizing solar light, daylighting creates a productive environment for building occupants. Daylighting features include the use of light shelves, solar tubes, and exterior sun-shades, or other controlling devices.

DEFINITIONS

Enrollment - The number of students that make up the student population in a school for the current year. Enrollment data is supplied for each grade level. The building enrollment includes only the student population in the grade levels which are to be housed by the building.

Enrollment Projections - Enrollment projections are calculated and supplied by the school district. The projections span from a current given year, to either five or ten years into the future for each grade level. The district enrollment projection model uses resident live birth data and grade progression rates determined by enrollment patterns from the most recent five years for grades 2 to 12. Retention rates for kindergarten and first grade are determined from births five and six years earlier, respectively. These ten-year projections are used to determine an increase or decline in the student population for each grade level. This data can be used to determine a need for more classroom space in the future.

Heat Island Effect - Occurs when warmer temperatures are experienced in urban landscapes compared to adjacent rural areas as a result of solar energy retention on constructed surfaces. Principal surfaces that contribute to the heat island effect include streets, sidewalks, parking lots, and buildings. The intent is to reduce heat islands (thermal gradient differences between developed and undeveloped areas) to minimize impact on microclimate and human and wildlife habitat.

LEED® - The Leadership in Energy and Environmental Design (LEED) Green Building Rating System™ encourages and accelerates global adoption of sustainable green building and development practices through the creation and implementation of universally understood and accepted tools and performance criteria. LEED certification provides independent, third-party verification that a building project meets the highest green building and performance measures.

LEED® Equivalent - Utilizing LEED design principals in a project. A project may choose to not pursue LEED certification, however, it may benefit from the LEED design principals such as Water and Energy use Reduction, low VOC emitting materials, use of regional and recycled materials, sustainability features, and improved indoor air quality.

PlanCon - When a school district undertakes a major construction project and seeks reimbursement from the Commonwealth, a process known as PlanCon is initiated. PlanCon, an acronym for Planning and Construction Workbook, is a set of forms and procedures used to apply for Commonwealth reimbursement. The PlanCon forms are designed to: (1) document a local school district's planning process; (2) provide justification for a project to the public; (3) ascertain compliance with state laws and regulations; and (4) establish the level of State participation in the cost of the project.

PlanCon 20% Rule - Existing Renovation Costs must exceed the "20% Rule" to qualify for Reimbursement of the existing portion of the facility. Based on the provisions of Basic Education Circular (BEC) 24 P.S. 7-733, "School Construction Reimbursement Criteria", if the Adjusted Estimated Alteration costs for a project fall below 20% of the replacement value at the time a project is bid, the alteration work will be non-reimbursable. If the project is not voided and the District still receives reimbursement for any additions, the project building will not be eligible for reimbursement for alterations for the next 20 years unless a request for a variance is approved by the Pennsylvania Department of Education.

DEFINITIONS

PlanCon 20-Year Rule - The PlanCon reimbursement process allows reimbursement for alterations every 20-years, unless a request for a variance is approved by the Pennsylvania Department of Education.

Project Cost - The Total Cost of a project including Construction costs and soft costs. Total Project Costs include 18%-25% of Construction Cost for the following construction-related costs: Movable Fixtures and Equipment; Project Contingency; Construction-Related Costs; Architect/Engineering Fees; Financing Cost; and Project Supervision.

Rated Pupil Capacity (RPC) - The figure used to determine amount of reimbursement. RPC is determined by multiplying the Full Time Equivalent (FTE) by the RPC factor.

Reimbursement - For School construction projects, it is based on the capacity of a building that can be justified by current or projected student enrollment and is based on the Rated Pupil Capacity (RPC) of a building. RPC is the figure used to determine amount of reimbursement, and is determined by multiplying the Full Time Equivalent (FTE) by the RPC factor.

Retention Ratio - A ratio of the difference between a past year population and a present year population for a given progressing grade.

Scheduled Area - The sum of areas of instructional spaces which accommodate direct student instruction, such as classrooms, laboratories, student project or activity rooms, seminar rooms, shops, band and choral rooms, and physical education stations. General use areas are also included, such as libraries, locker rooms, team rooms, instructors' offices, multipurpose rooms, auditorium, stage, cafeteria and kitchen areas, health suites, faculty rooms, and administration suites. However, service and general storage areas, toilet rooms, custodial rooms, maintenance and utility areas, and circulation are not included.

Transpired Solar Wall - Outside air passes through South-facing, perforated solar collector wall panels and is pre-heated 30 to 55 degrees Fahrenheit on sunny days before entering the building's ventilation system. As the warm air rises, it is collected for use in the ventilation system on cold days, or vented out the top on warmer days. The feature also helps to keep the space behind it cooler in the summer months.

Vegetative Roof - Green roofs are vegetated roof surfaces that may provide many benefits. They reduce the heat island effect by replacing heat-absorbing surfaces with plants, shrubs and small trees that cool the air through evapotranspiration (or evaporation of water from leaves). Green roofs provide insulating benefits, stormwater management benefits, and the potential for rainwater harvesting and re-use as non-potable (non-drinking) water.

VOCs (Low Emitting Materials) - Volatile Organic Compounds (VOC) are carbon compounds that participate in atmospheric photochemical reactions (excluding carbon monoxide, carbon dioxide, carbonic acid metallic carbides and carbonates, and ammonium carbonate). The compounds vaporize (become a gas) at normal room temperatures. The intent is to reduce the quantity of indoor air contaminants that are odorous, irritating and/or harmful to the occupants' well-being.

INFORMATION UTILIZED IN THE STUDY

District Aid Ratio - 0.4655

DESIGN GUIDELINES FOR NEW CONSTRUCTION

	S.F. Per Student	Cost per S.F. New Construction
		ADDITIONS AND ALTERATIONS
Elementary School	125 s.f.	\$180 - \$200 / s.f. construction cost for additions
Middle School	150 s.f.	\$180 - \$200 / s.f. construction cost for additions
High School	175 s.f.	\$180 - \$200 / s.f. construction cost for additions

DESIGN GUIDELINES FOR RENOVATION

Educational Upgrade See Part II Facilities
Renovation See Part II Facilities

**Site Acquisition or State Reimbursement on Site Acquisition
– Not included in Total Construction Cost**

**Total Project Costs Include:
25% of construction cost for the following construction-related costs.**

Movable Fixtures and Equipment	Architect/Engineering Fees
Project Contingency	Financing Cost
Construction-Related Costs	Project Supervision

AUTHORS OF THE STUDY

EI ASSOCIATES - ARCHITECT

Architect - Design/Educational	Mark S. Barnhardt, AIA	PA License RA011059X
Architect - Technical	Daniel J. Bierzonski, AIA	PA License RA011076X
Architectural Designer - Design	Ann D. Long, LEED AP	
Intern Architect	Scott W. Bower, Assoc. AIA	
Director of Business Development	Leah E. Shiley, MBA	

MOORE ENGINEERING - MEP ENGINEERS

Engineer - Mechanical / Electrical	Kenneth L. Kauffman, PE, LEED AP
Engineer - Mechanical / Electrical	William M. Fleischer, PE

BOYERTOWN AREA SCHOOL DISTRICT

District Superintendent	Dion E. Betts, Ed.D.,
Assistant Superintendent for Curriculum Instruction	Karen M. Beerer, Ed.D.
Assistant Superintendent for for Admin & Student Services	Robert Scoboria
Director of Business Operations	David Szablowski
Facilities Manager	Paul Grenewald
Principal, Boyerstown Elementary School	Greg M. Miller
Principal, Colebrookdale Elementary School	Michael Stoudt
Principal, Earl Elementary School	Craig K. Zerr
Principal, Gilbertsville Elementary School	Melissa Woodard
Principal, New Hanover Elementary School	Kelly Mason
Principal, Pine Forge Elementary School	Laura Heineck
Principal, Washington Elementary School	Christopher Iacobelli
Principal, Boyertown Area JHS East	Andrew Ruppert
Principal, Boyertown Area JHS West	Gregory Galtere
Principal, Boyertown Area Senior High School	Brett A. Cooper

BOYERTOWN AREA BOARD OF EDUCATION

School Board Members:

Gwen W. Semmens, President
Barbara W. Hartford, Vice President
Ronald W. Christman
John R. Crossley
Ruth A. Dierolf
Stephen Elsier
Robert J. Haas
Kenneth Parsons, Jr.
Donna Usavage

School Board Officials:

David Szablowski, School Board Secretary

AUTHORS OF THE STUDY

EI ASSOCIATES

Mark S. Barnhardt, AIA, Senior Vice President, Principal-in-Charge

EDUCATION

Pennsylvania State University

Master of Architecture

Miami University

Bachelor of Environmental Design

Thaddeus Stevens State School of Technology

Associate Degree

EXPERIENCE

Mark is the managing principal of the Harrisburg, Pennsylvania Office. He has developed a specialized interest in the design of educational facilities as well as energy efficient facilities. He has managed and designed over a half billion dollars of school construction projects over the last twenty years. Mark is involved in the building programming and development of demographic studies and specifications to solve the needs of clients. Mark has worked for EI Associates since 1987.

REGISTRATIONS

Commonwealth of PA	License Number RA011059X
State of Maryland	License Number 0013190
State of New Jersey	License Number 21A101591200
State of Delaware	License Number S5-0007799

American Institute of Architects
Pennsylvania Society of Architects
Pennsylvania Association of School Business Officials
Delaware Valley School Business Officials
Maryland Association of School Business Officials
AIA Committee of Educational Architecture
Central Pennsylvania Society of Architects
Council of Educational Planners, International
U.S. Green Building Council Central Pennsylvania Chapter
Delaware Valley Green Building Council
U.S. Green Building Council
Pennsylvania School Boards Association
Pennsylvania Association of School Administrators

AUTHORS OF THE STUDY

EI ASSOCIATES

Daniel J. Bierzonski, AIA, Director of Production

Education

Pennsylvania State University
B. S. Structural Design and Construction

Pennsylvania State University
Associate Degree Mechanical Engineering

Registration

Commonwealth of PA License Number RA011076X

Ann D. Long, LEED AP, Architectural Designer

Education

Pennsylvania State University
Majored in Architecture and Architectural Engineering

Harrisburg Area Community College
AutoCad and 3-D Computer Design

Scott W. Bower, Intern Architect, Assoc. AIA

Education

Drexel University
Bachelor of Architecture

Leah E. Shiley, MBA, Director of Business Development

Education

Chatham College
Master of Business Administration

University of Pittsburgh
Bachelor of Arts, Communications

NOTES
