
Downcounty Consortium Elementary School **Capacity Study**

Prepared for
Montgomery County Board of Education

October 2013

DOWNCOUNTY CONSORTIUM ELEMENTARY SCHOOL CAPACITY STUDY

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Downcounty Consortium Elementary School Capacity Study

Schools to be Studied for Additions

Brookhaven ES
Forest Knolls ES
Glen Haven ES
Harmony Hills ES
Highland ES
Kemp Mill ES
Sargent Shriver ES

Adjacent Schools

Arcola ES
Georgian Forest ES
Glenallan ES
Weller Road ES
Wheaton Woods ES

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I. Capacity Study Participants

This capacity study was conducted for Montgomery County Public Schools (MCPS) by The Lukmire Partnership Architects, Inc. The capacity study was performed under the direction of the MCPS Department of Facilities Management, Division of Construction. Through a series of public meetings, design alternatives to construct additions to seven elementary schools were developed and evaluated as part of the Superintendent's mandate to relieve overcrowding in the Downcounty Consortium. The proposed plans presented herein were reviewed and subsequently modified in accordance with recommendations and suggestions received during the public meetings.

Capacity Study Participants

Mr. Robert Grundy	Principal	Brookhaven ES
Mr. Donald Masline	Principal	Forest Knolls ES
Ms. Tamisha Sampson	Principal	Sargent Shriver ES
Dr. Joanne Smith	Principal	Glen Haven ES
Mr. Floyd Starnes	Principal	Kemp Mill ES
Mr. Scott Steffan	Principal	Highland ES
Ms. Robin Weaver	Principal	Harmony Hills ES
Ms. Michelle Alanso	Parent	Forest Knolls ES
Ms. Angela Bisogne	GHEs Teacher	Glen Haven ES
Ms. Susan Booker-Roman	Parent	Brookhaven ES
Mr. Larry Buckner	Parent	Highland ES
Ms. Michelle Buckner	Parent	Highland ES
Mr. Joseph Burkle	Parent	Sargent Shriver ES
Mr. Carnell Buyer	Parent	Forest Knolls ES
Mr. Glenn Canner	Parent	Forest Knolls ES
Ms. Donna Rae Castillo	Community	Glen Haven ES
Ms. Tessa Charleny	Parent	Kemp Mill ES
Ms. Toi Davis	Assistant Principal	Glen Haven ES
Mr. Hugh Dennis	Parent	Forest Knolls ES
Ms. Lina Dutky	Parent	Forest Knolls ES
Mr. Stephen Eaton	Parent	Forest Knolls ES
Mr. Joe Eckert	Parent	Glen Haven ES

I. Capacity Study Participants (continued)

Capacity Study Participants (continued)

Ms. Patricia Eckert	Parent	Glen Haven ES
Ms. Shebra Evans	Parent	Harmony Hills ES
Ms. Mirna Everola	Parent	Brookhaven ES
Mr. Joaquim Faris	Parent	Sargent Shriver ES
Ms. Valerie Franck	Parent	Forest Knolls ES
Ms. Melissa Garcia	Parent	Sargent Shriver ES
Mr. Nerin Garcia	Parent	Sargent Shriver ES
Ms. Marie Giradot	Parent	Forest Knolls ES
Ms. Kirstin Goldston	Parent	Highland ES
Ms. Kellie Grady	Parent	Kemp Mill ES
Mr. Tom Helde	Alumni Parent and Community	Brookhaven ES
Mr. Ken Hoffman	Parent	Kemp Mill ES
Ms. Priscilla Holberton	Parent	Forest Knolls ES
Ms. Ronita Hook	Parent	Forest Knolls ES
Mr. Steven Hook	Parent	Forest Knolls ES
Ms. Rebecca Iverson-Hunter	Parent	Highland ES
Mr. Michael Jacknis	Parent	Kemp Mill ES
Mr. Kumar Jayasuriya	Parent	Glen Haven ES
Mr. Frank J Katen	Community	Harmony Hills ES
Mr. Xavier Kimber	Assistant Principal	Brookhaven ES
Ms. Erin Kupferberg	Parent	Forest Knolls ES
Ms. Monica Lesperana	Parent	Forest Knolls ES
Ms. Rachael Lea Leventhal	Parent	Kemp Mill ES
Ms. Sundra Mann	Assistant Principal	Forest Knolls ES
Ms. Carmen Melendez	Parent	Sargent Shriver ES
Ms. Kirsten Murray	Parent	Forest Knolls ES
Ms. Gretchen Naiger	Parent	Forest Knolls ES
Ms. Kateri Orellana	Parent	Sargent Shriver ES
Mr. Sergio Palacios	Community	Harmony Hills ES
Ms. Rachel Palmaira	Parent	Forest Knolls ES
Ms. Helen Pencido	Parent	Sargent Shriver ES

I. Capacity Study Participants (continued)

Capacity Study Participants (continued)

Ms. Rochelle Peters	Parent	Kemp Mill ES
Mr. Dave Potasznit	ESOL Teacher	Sargent Shriver ES
Ms. Carole Rawlson	Assistant Principal	Arcola ES
Ms. Emily Roegner	Parent	Glen Haven ES
Mr. Robin Roegner	Parent	Glen Haven ES
Ms. Carman Romero	PTA President	Glen Haven ES
Ms. Stephanie Schaefer	Parent	Forest Knolls ES
Ms. Niki Scheffer	Parent, PTA President	Sargent Shriver ES
Ms. Mairlee Shelton-Davenport	Parent	Forest Knolls ES
Mr. Steven Staton	Parent	Forest Knolls ES
Ms. Maria Stemphauzer	Parent	Forest Knolls ES
Ms. Michelle Szechenyi	Parent	Forest Knolls ES
Ms. Noelia Torres	School Parent Community Coord.	Glen Haven ES
Ms. Gretchen Vidergar	Parent	Forest Knolls ES
Ms. Monica White	Parent	Forest Knolls ES
Ms. Njeri Williams	Assistant Principal	Sargent Shriver ES
Ms. Magan Wilson	Parent	Forest Knolls ES
Ms. Amie Wohlforth	Parent	Kemp Mill ES
Mr. R. Craig Shumann	Director	Division of Construction, MCPS
Mr. Bruce Crispell	Director	Division of Long-range Planning, MCPS
Mr. Joseph DeRosa	Architect	Division of Construction, MCPS
Mr. Zachary Larnard	Facility Planner	Division of Long-range Planning, MCPS
Mr. Michael Shpur	Architect	Division of Construction, MCPS
Ms. Debbie Szyfer	Facility Planner	Division of Long-range Planning, MCPS
Mr. James Tokar	Project Manager	Division of Construction, MCPS

II. Purpose of the Capacity Study

The Downcounty Consortium of elementary schools includes 12 elementary schools located either east or west of the Georgia Avenue corridor that have significant capacity shortages:

- | East of Georgia Avenue | West of Georgia Avenue |
|---|---|
| <ul style="list-style-type: none">• Arcola• Forest Knolls• Georgian Forest• Glenallan• Glen Haven• Kemp Mill | <ul style="list-style-type: none">• Brookhaven• Harmony Hills• Highland• Sargent Shriver• Weller Road• Wheaton Woods |

This area of the County has experienced a large increase in population that has resulted in a dramatic increase in school age children. As a result, the elementary schools in the Downcounty Consortium are experiencing significant overcrowding. The trend in increased population is likely to continue and this study has been prepared as part of an overall study to explore ways to accommodate the projected student population.

The Board of Education has endorsed a study to investigate a number of options to increase the capacity of these schools and to balance the capacity of the schools with the projected enrollment of each school through 2018- 2019 which is the limit of current population projections. Options to be explored will include:

- Construction of additions on existing elementary schools
- Construction of a new elementary school
- Combination of the above

This study investigates the feasibility of constructing additions to the schools, and the increase in capacity that those additions will add to the Downcounty Consortium. This study provides the increased capacity if additions are constructed on the 7 elementary schools and illustrates site plans and floor plans for each school.

III. Downcounty Consortium Elementary Schools

A. 2012-2013 Enrollments and Capacity

The Downcounty Consortium includes the following elementary schools:

- Arcola
- Bel Pre
- Bookhaven
- East Silver Spring
- Flora Singer
- Forest Knolls
- Georgian Forest
- Glen Haven
- Glenallan
- Harmony Hills
- Highland
- Kemp Mill
- Montgomery Knolls
- New Hampshire Estates
- Oak View
- Oakland Terrace
- Pine Crest
- Piney Branch
- Rock View
- Rolling Terrace
- Sargent Shriver
- Sligo Creek
- Strathmore
- Takoma Park
- Viers Mill
- Weller Road
- Wheaton Woods
- Woodlin

III. Downcounty Consortium Elementary Schools (continued)

A. 2012-2013 Enrollments and Capacity (continued)

Currently there are space shortages throughout the midsection of the Downcounty Consortium. Although there is a 'net' capacity shortage, some of the schools have excess capacity and some have a significant deficit. The elementary schools identified to be studied are:

- Arcola
- Forest Knolls
- Georgian Forest
- Glenallan
- Glen Haven
- Kemp Mill
- Brookhaven
- Harmony Hills
- Highland
- Sargent Shriver
- Weller Road
- Wheaton Woods

Schools with the greatest space shortage are:

- Arcola
 - Opened in August 2007 with a capacity of 434 seats
 - A six (6) classroom addition is being designed which will increase the capacity to 624 seats
 - Projected enrollment by 2018-2019 is expected to be 734 which exceeds the planned capacity by 100 seats
- Harmony Hills
 - Modernized in 1999 with a capacity of 535 seats
 - Class-size reduction initiative lowered the capacity to 353 in 2000
 - 15 classroom addition opened in January 2012 increased capacity to 671 (core capacity)
 - Projected enrollment by 2018-2019 is expected to be 794 which exceeds the planned capacity by 123 seats
- Forest Knolls
 - 12 classroom addition opened in August 2005 increased capacity to 506 seats
 - Projected enrollment by 2018-2019 is expected to be 689 which exceeds the planned capacity by 183 seats
- Sargent Shriver
 - Opened in August 2006 with a capacity of 541 seats
 - Projected enrollment by 2018-2019 is expected to be 793 which exceeds the planned capacity by 252 seats

Smaller space shortages are projected at Glen Haven (-38), Highland (-73), and Kemp Mill (-48) by 2018-2019.

III. Downcounty Consortium Elementary Schools (continued)

A. 2012-2013 Enrollments and Capacity (continued)

DCC Elementary Schools in Study Area—Enrollments and Space
October 30, 2012

Schools East of Georgia Avenue

School	Actual Enrollment 2012-13	Projected Enrollment					
		2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Arcola ES							
Capacity	434	434	434	624	624	624	624
Enrollment	719	757	762	767	759	743	734
space available/deficit	-285	-323	-328	-143	-135	-119	-110
				+ 6-classroom addition in 2015			
Forest Knolls ES							
Capacity	506	506	506	506	506	506	506
Enrollment	687	687	691	702	693	694	689
space available/deficit	-181	-181	-185	-196	-187	-188	-183
Georgian Forest ES							
Capacity	304	583	583	583	583	583	583
Enrollment	554	572	577	584	577	568	560
space available/deficit	-250	11	6	-1	6	15	23
Comment		+14-classroom addition in 2013					
Glenallan ES							
Capacity	274	723	723	723	723	723	723
Enrollment	472	500	534	548	578	591	602
space available/deficit	-198	223	189	175	145	132	121
Comment		Increase in capacity with modernization completed Aug. 2013					
Glen Haven ES							
Capacity	551	551	551	551	551	551	551
Enrollment	555	584	594	604	604	592	589
space available/deficit	-4	-33	-43	-53	-53	-41	-38
Kemp Mill ES							
Capacity	442	442	442	442	442	442	442
Enrollment	474	480	496	506	503	508	490
space available/deficit	-32	-38	-54	-64	-61	-66	-48
Total							
Total Capacity	2511	3239	3239	3429	3429	3429	3429
Total Enrollment	3,461	3,580	3,654	3,711	3,714	3,696	3,664
space available/deficit	-950	-341	-415	-282	-285	-267	-235

Classroom additions at Arcola ES and Georgian Forest ES are indicated, as well as expansion of Glenallan ES with modernization.

DCC Elementary Schools in Study Area—Enrollments and Space (continued)
October 30, 2012

Schools West of Georgia Avenue

School	Actual Enrollment 2012-13	Projected Enrollment					
		2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Brookhaven ES							
Capacity	512	512	512	512	512	512	512
Enrollment	431	457	461	469	477	456	451
space available/deficit	81	55	51	43	35	56	61
Harmony Hills ES							
Capacity	671	671	671	671	671	671	671
Enrollment	741	797	817	834	848	831	794
space available/deficit	-70	-126	-146	-163	-177	-160	-123
Highland ES							
Capacity	462	462	462	462	462	462	462
Enrollment	534	540	548	553	561	549	535
space available/deficit	-72	-78	-86	-91	-99	-87	-73
Sargent Shriver ES							
Capacity	541	541	541	541	541	541	541
Enrollment	758	788	793	825	825	814	793
space available/deficit	-217	-247	-252	-284	-284	-273	-252
Weller Road ES							
Capacity	527	743	743	743	743	743	743
Enrollment	607	644	668	682	690	688	679
space available/deficit	-80	99	75	61	53	55	64
Comment		Increase in capacity with modernization completed Aug. 2013					
Wheaton Woods ES							
Capacity	334	334	334	334	740	740	740
Enrollment	472	503	533	553	571	585	585
space available/deficit	-138	-169	-199	-219	169	155	155
Comment		Increase in capacity with modernization completed Aug. 2016					
Total							
Total Capacity	3047	3263	3263	3263	3669	3669	3669
Total Enrollment	3,543	3,729	3,820	3,916	3,972	3,923	3,837
space available/deficit	-496	-466	-557	-653	-303	-254	-168

Expansion of Weller Road ES and Wheaton Woods with modernizations is indicated.

III. Downcounty Consortium Elementary Schools (continued)

B. Schools Included in the Study

Of the twelve (12) schools in the study, seven (7) have been identified as candidates for additions. The remaining five (5) schools are either undergoing modernization or have additions planned as part of the current Capital Improvement Program (CIP). The seven schools to be studied for additions are:

- Brookhaven
- Forest Knolls
- Glen Haven
- Kemp Mill
- Harmony Hills
- Highland
- Sargent Shriver

Each of the schools have been investigated to determine if they can be enlarged to their maximum core/ program capacity. While not all of the schools in the study are overcrowded, the study will enable the Board of Education to investigate the possibility of balancing enrollments between the twelve schools.

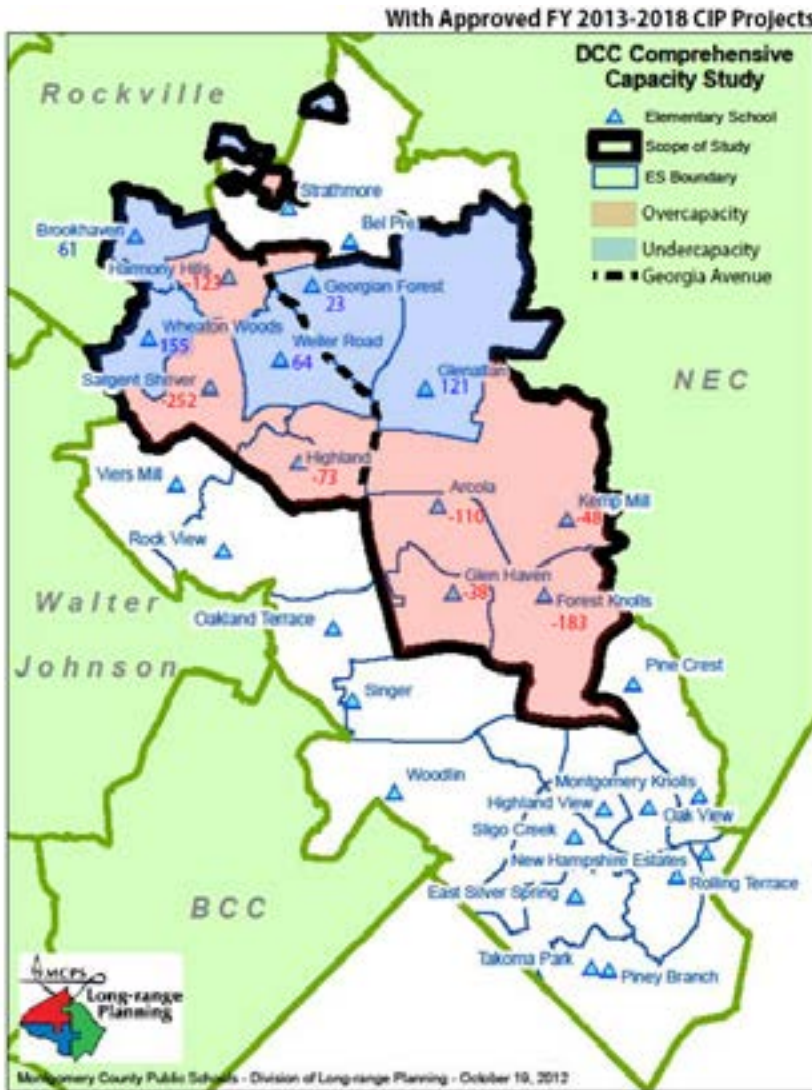
The five schools with current CIP projects are:

- | | | |
|-------------------|-----------------------|---------------------|
| • Arcola | 6 classroom addition | Opening August 2015 |
| • Georgian Forest | 14 classroom addition | Opening August 2013 |
| • Glenallan | Modernization | Opening August 2013 |
| • Weller Road | Modernization | Opening August 2013 |
| • Wheaton Woods | Modernization | Opening August 2016 |

They are included in the study because their increased capacity will add to the total Program Capacity of the Downcounty Consortium.

III. Downcounty Consortium Elementary Schools (continued)

C. Approved FY 2013 - 2019 CIP Projects Capacity and Projected Enrollments



Capacity with Approved FY 2013 - 2018 CIP Projects Based on Projected 2018 - 2019 Enrollment			
Schools East of Georgia Avenue	Projected 2018 - 2019 Enrollment	Capacity with Approved FY 2013 - 2018 CIP Projects	2018 - 2019 Space Available / Deficit*
Arcola	734	624	-110
Forest Knolls	689	506	-183
Georgian Forest	560	583	23
Glenallan	602	723	121
Glen Haven	589	551	-38
Kemp Mill	490	442	-48
Subtotal			-235
Schools West of Georgia Avenue	Projected 2018 - 2019 Enrollment	Capacity with Approved FY 2013 - 2018 CIP Projects	2018 - 2019 Space Available / Deficit*
Brookhaven	451	512	61
Harmony Hills	794	671	-123
Highland	535	462	-73
Sargent Shriver	793	541	-252
Weller Road	679	743	64
Wheaton Woods	585	740	155
Subtotal			-168
TOTAL			-403

* Based on Projected 2018 - 2019 Enrollment

The above chart illustrates the capacities once the projects in the current CIP are completed. It illustrates that the deficit has been reduced from 1446 in the current situation to 403 once the current CIP projects are completed.

IV. Study Process

The capacity study was conducted over a three month period and included the preparation of base drawings of the existing site and floor plans, touring each school with representatives of that school, and conducting neighborhood meetings to gather input.

Initially, the Division of Long-range Planning prepared a Space Needs document that illustrated the number and sizes of rooms required for each elementary school to be brought up to its core capacity and to recognize any special programs. That Space Needs document was presented to the Principal and community as the list of spaces that would be added to the school if an addition is constructed. Needless to say, a different list of spaces was generated for each school.

Two public meetings were held at each school. The first introduced the study, explained that the Board of Education was investigating options to solve overcrowding, presented the space needs program and a conceptual design solution illustrating both a proposed floor plan and site plan of the addition. While site implications were discussed, the focus was on the floor and site plans. Based on the feedback received at the initial meeting, a second meeting was held several weeks later at which any revisions to the proposed plan were presented. In all cases the conceptual design approach to the addition was endorsed as an acceptable concept to both the school and the community. Those plans are included in the Appendix.

V. Findings

A. Summary

It was determined that there is an acceptable design approach to the addition of space to all schools. In several cases the size of the addition was not large enough to accommodate the projected enrollment, and in some cases the addition would create surplus space in the school.

An analysis illustrates that if all additions at all seven schools are constructed, there would be a surplus of 576 seats, or roughly the size of a small elementary school.

Following is a chart illustrating:

- The school
- Projected enrollments
- Capacity if nothing is done
- Proposed addition or previously approved Capital Improvement Project
- Capacity with the proposed addition
- Surplus or deficit

V. Findings (continued)

B. Schools East of Georgia Avenue

Downcounty Elementary Schools - Capacity Study									
Schools East of Georgia Ave.	Actual Enrollment 2012-2013	Projected Enrollment						Capacity w/ Addition or Modernization*	Notes
		2013-14	2014-15	2015-16	2016-17	2017-18	2018-19		
Arcola									Addition 2015
Program Capacity	434	434	434	624	624	624	624	624	6 classroom
Enrollment	719	757	762	767	759	743	734	734	adding 190 capacity
Space available/deficit	-285	-323	-328	-143	-135	-119	-110	-110	DEFICIT
Forest Knolls									Proposed Addition
Program Capacity	506	506	506	506	506	506	506	663	6 classroom
Enrollment	687	687	691	702	693	694	689	689	would add 157 capacity
Space available/deficit	-181	-181	-185	-196	-187	-188	-183	-26	DEFICIT
Georgian Forest									Addition 2013
Program Capacity	304	583	583	583	583	583	583	583	14 classroom
Enrollment	554	572	577	584	577	568	560	560	adding 279 capacity
Space available/deficit	-250	11	6	-1	6	15	23	23	AVAILABLE
Glenallan									Modernization 2013
Program Capacity	274	723	723	723	723	723	723	723	adding 449 capacity
Enrollment	472	500	534	548	578	591	602	602	
Space available/deficit	-198	223	189	175	145	132	121	121	AVAILABLE
Glen Haven									Proposed Addition
Program Capacity	551	551	551	551	551	551	551	652	4 classroom
Enrollment	555	584	594	604	604	592	589	589	would add 101 capacity
Space available/deficit	-4	-33	-43	-53	-53	-41	-38	63	AVAILABLE
Kemp Mill									Proposed Addition
Program Capacity	442	442	442	442	442	442	442	648	10 classroom
Enrollment	474	480	496	506	503	508	490	490	would add 206 capacity
Space available/deficit	-32	-38	-54	-64	-61	-66	-48	158	AVAILABLE
Summary East of Georgia Ave.									With All Additions and Modernizations
Total Program Capacity	2511	3239	3239	3429	3429	3429	3429	3893	
Total Enrollment	3461	3580	3654	3711	3714	3696	3664	3664	
Space available/deficit	-950	-341	-415	-282	-285	-267	-235	229	AVAILABLE

* Based on Projected 2018 - 2019 Enrollment and with all 7 additions in this study constructed by 2018

V. Findings (continued)

C. Schools West of Georgia Avenue

Downcounty Elementary Schools - Capacity Study (continued)									
Schools West of Georgia Ave.	Actual Enrollment 2012-2013	Projected Enrollment						Capacity w/ Addition or Modernization*	Notes
		2013-14	2014-15	2015-16	2016-17	2017-18	2018-19		
Brookhaven									<i>Proposed Addition</i>
Program Capacity	512	512	512	512	512	512	512	653	8 classroom
Enrollment	431	457	461	469	477	456	451	451	would add 141 capacity
Space available/deficit	81	55	51	43	35	56	61	202	AVAILABLE
Harmony Hills									<i>Proposed Addition</i>
Program Capacity	671	671	671	671	671	671	671	763	4 classroom
Enrollment	741	797	817	834	848	831	794	794	would add 92 capacity
Space available/deficit	-70	-126	-146	-163	-177	-160	-123	-31	DEFICIT
Highland									<i>Proposed Addition</i>
Program Capacity	462	462	462	462	462	462	462	645	7 classroom
Enrollment	534	540	548	553	561	549	535	535	would add 183 capacity
Space available/deficit	-72	-78	-86	-91	-99	-87	-73	110	AVAILABLE
Sargent Shriver									<i>Proposed Addition</i>
Program Capacity	541	541	541	541	541	541	541	640	3 classroom
Enrollment	758	788	793	825	825	814	793	793	would add 99 capacity
Space available/deficit	-217	-247	-252	-284	-284	-273	-252	-153	DEFICIT
Weller Road									<i>Modernization 2013</i>
Program Capacity	527	743	743	743	743	743	743	743	adding 216 capacity
Enrollment	607	644	668	682	690	688	679	679	
Space available/deficit	-80	99	75	61	53	55	64	64	AVAILABLE
Wheaton Woods									<i>Modernization 2016</i>
Program Capacity	334	334	334	334	740	740	740	740	adding 406 capacity
Enrollment	472	503	533	553	571	585	585	585	
Space available/deficit	-138	-169	-199	-219	169	155	155	155	AVAILABLE
Summary West of Georgia Ave.									<i>With All Additions and Modernizations</i>
Total Program Capacity	3047	3263	3263	3263	3669	3669	3669	4184	
Total Enrollment	3543	3729	3820	3916	3972	3923	3837	3837	
Space available/deficit	-496	-466	-557	-653	-303	-254	-168	347	AVAILABLE

* Based on Projected 2018 - 2019 Enrollment and with all 7 additions in this study constructed by 2018

V. Findings (continued)

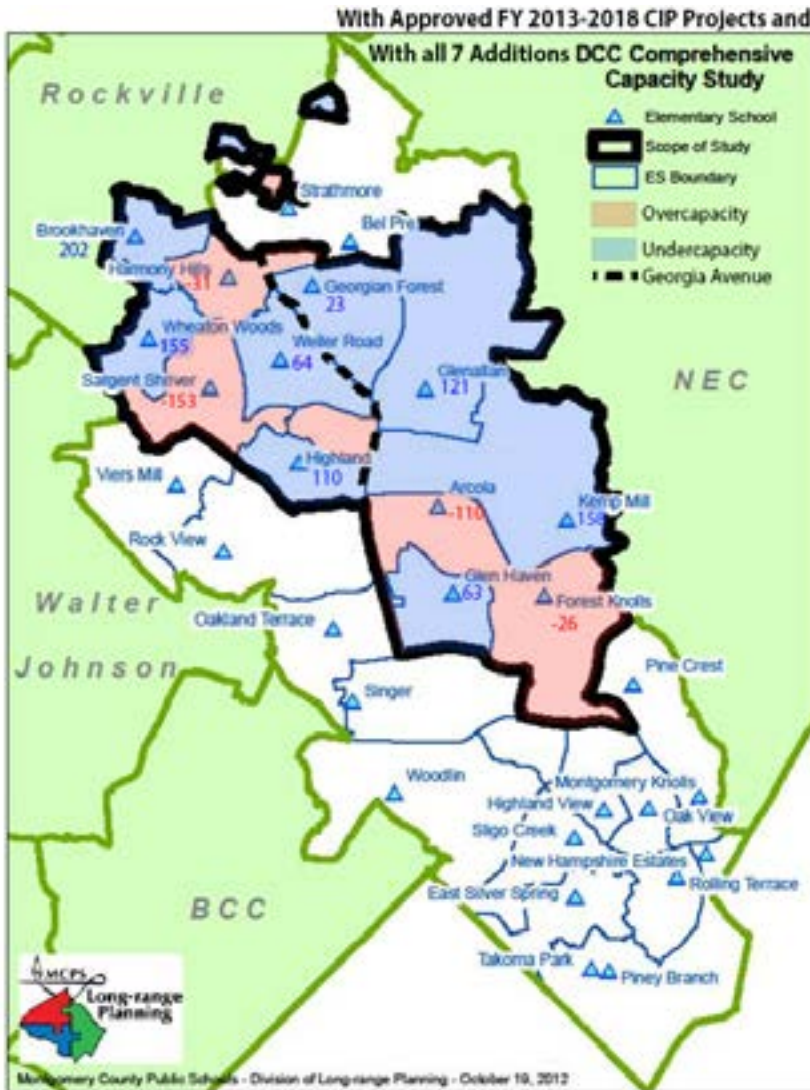
D. Summary Chart

Downcounty Elementary Schools - Capacity Study (continued)									
SUMMARY									
All 12 Schools in the Study	Actual Enrollment 2012-2013	Projected Enrollment						Capacity w/ all Additions and Modernizations*	Notes
		2013-14	2014-15	2015-16	2016-17	2017-18	2018-19		
Total Program Capacity	5558	6502	6502	6692	7098	7098	7098	8077	
Total Enrollment	7004	7309	7474	7627	7686	7619	7501	7501	
Space available/deficit w/ Current CIP	-1446	-807	-972	-935	-588	-521	-403		DEFICIT
Space available/deficit w/ all Additions in this Study								576	AVAILABLE

** Based on Projected 2018 - 2019 Enrollment and with all 7 additions in this study constructed by 2018*

V. Findings (continued)

E. Approved 2018 - 2019 CIP Capacity and Projected Enrollments Including All 7 Study Additions



Schools East of Georgia Avenue	Projected 2018 - 2019 Enrollment	Capacity with Approved FY 2013 - 2018 CIP Projects and All Study Additions	2018 - 2019 Space Available / Deficit*
Arcola	734	624	-110
Forest Knolls	689	663	-26
Georgian Forest	560	583	23
Glenallan	602	723	121
Glen Haven	589	652	63
Kemp Mill	490	648	158
Subtotal			229
Schools West of Georgia Avenue	Projected 2018 - 2019 Enrollment	Capacity with Approved FY 2013 - 2018 CIP Projects and All Study Additions	2018 - 2019 Space Available / Deficit*
Brookhaven	451	653	202
Harmony Hills	794	763	-31
Highland	535	645	110
Sargent Shriver	793	640	-153
Weller Road	679	743	64
Wheaton Woods	585	740	155
Subtotal			347
TOTAL			576

* Based on Projected 2018 - 2019 Enrollment and with all 7 additions in this study constructed by 2018

The above chart illustrates the capacity in the midsection of the Downcounty Consortium if all seven of the additions in this study are constructed. It illustrates that the deficit has been reduced from 1446 in the current situation to a surplus of 576 if all seven of the additions are constructed.

VI. Conclusions and Recommendations

The purpose of this study is to assist the Board of Education in deciding how best to alleviate the overcrowding in the mid section of the Downcounty Consortium elementary schools. As stated earlier, three approaches are being considered:

- Construction of additions at seven existing elementary schools
- Construction of a new elementary school
- Combination of the above

This study has illustrated that the construction of additions at all seven schools in the study will provide sufficient program capacity to accommodate the expected enrollment in 2018-2019. However, if the decision is made not to construct an addition at one or more schools, the projected program capacity will be reduced and may or may not be able to accommodate the projected student enrollments.

The construction cost of the additions including site work is:

Brookhaven ES	\$5,061,000
Forest Knolls ES	Costs not included, project included in future Lower Downcounty Consortium Capacity Study.
Glen Haven ES	\$3,857,000
Harmony Hills ES	Costs not included, project not included in 2015-2020 CIP.
Highland ES	\$7,503,000
Kemp Mill ES	\$8,137,000
Sargent Shriver ES	\$2,898,000

Appendix A - Expansion Concepts and Costs for Each Addition

APPENDIX A: Background Information, Floor Plans, Site Plans and Analysis

1. Brookhaven ES
2. Forest Knolls ES
3. Glen Haven ES
4. Harmony Hills ES
5. Highland ES
6. Kemp Mill ES
7. Sargent Shriver ES

Appendix A - Expansion Concepts and Costs for Each Addition

A. Brookhaven ES

i. Background Information

- Current Core Capacity - 640
- Current Program Capacity - 512
- Current Enrollment - 431
- Proposed Core Capacity - 640
- Projected Program Capacity w/ Addition - 653
- Projected Enrollment 2018-19 - 451
- Projected Excess Capacity after Addition (202)



- Currently has Excess Capacity (81)
- Currently no relocatables
- Small site (8.57 acres)
- Two Story School

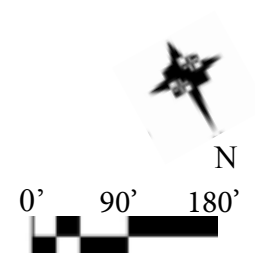
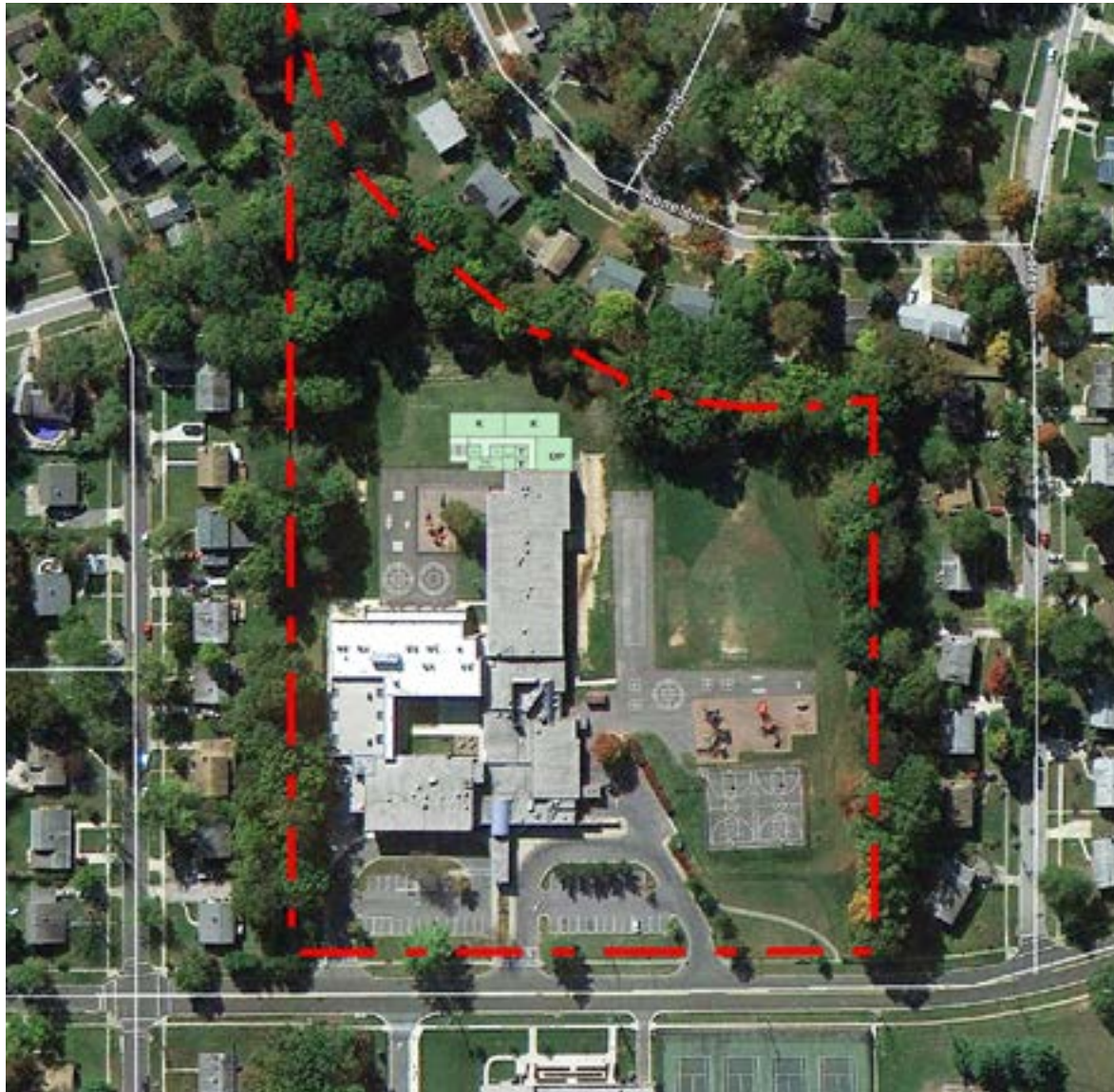
- Original School Built in 1961
- Modernized 1995
- Gym addition 2008
- Classroom addition 2009

- Design Issues / Constraints
 - Not enough parking - @ 56 spaces
 - Not enough parent drop off cue space
 - Tight setbacks on left side and rear of building
 - Must stay 20' away from the SWM pond at rear
 - Concern about construction & fire truck access

Appendix A - Expansion Concepts and Costs for Each Addition (continued)

A. Brookhaven ES (continued)

ii. Proposed Site Plan



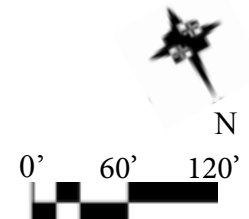
Appendix A - Expansion Concepts and Costs for Each Addition (continued)

A. Brookhaven ES (continued) iii. Proposed Floor Plans

Facility	#	Description	Net Sq. Ft.	Total Net Sq. Ft.
Classrooms				
Kindergarten	2	Includes 250 s.f. storage	1300	2600
Standard	5	Includes 150 s.f. storage	900	4500
Dual purpose Room	1		1000	1000
Support Rooms				
Small Instructional Support Room	1		450	450
Support Staff Offices	1		150	150
Testing/Conference Room	1		150	150
Book Storage	1		200	200
Total	8			9050



First Floor Addition – 6,726 GSF
 Second Floor Addition – 6,727 GSF
 Total Addition – 13,453 GSF



Appendix A - Expansion Concepts and Costs for Each Addition (continued)

A. Brookhaven ES (continued)

iv. Analysis

PROS

- Minimal impact on school during construction
- Minimal impact on neighborhood
- New kindergarten classrooms close to existing kindergarten classrooms
- Efficient two story design
- Ample space for contractor staging
- Provides additional flexibility for grade levels

CONS

- Difficult construction access to the rear of the site
- Does not address the need for additional drop off cue space
- Does not address the need for additional parking

Mechanical System:

The nineteen year old cooling/heating plant does not have the heating or refrigeration capacity to support the addition. The existing two-pipe system does not warrant an expansion or upgrade to support the eight classroom addition. A new independent VRV system is recommended.

Electrical System:

The existing 1600 amps 277/480 Volt, 4-wire main electrical service was installed in 1995. Though in good operating condition, it does not have the reserve electrical capacity to support the proposed addition. An electrical upgrade to 2000 amps @ 277/460 volts will be required.

Other systems:

The sprinkler systems, fire alarm, security, public address system, the domestic cold/hot water and the sanitary and storm water sewer will need to be modified and/ or extended as necessary to support the proposed addition.

Existing Gross Square Footage	81,320 GSF	Existing Program Capacity	512 students
Total New Gross Square Footage	13,453 GSF	Proposed Program Capacity with Addition	653 students
Total New and Existing Gross Square Footage	94,773 GSF		
Estimate Total Construction Cost	\$5,061,000	Proposed Increase in Program Capacity	141 students

Appendix A - Expansion Concepts and Costs for Each Addition

B. Forest Knolls ES

i. Background Information

- Current Core Capacity – 520
- Current Program Capacity – 506
- Current Enrollment - 687
- Proposed Core Capacity – 640
- Projected Program Capacity w/ Addition – 663
- Projected Enrollment 2018-19 – 689
- Projected Capacity Deficit after Addition **(-26)**



- Currently has Capacity Deficit **(-181)**
- Currently 3 relocatables
- Small Site (7.77 acres)
- Single Story School

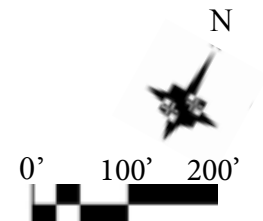
- Original School Built in 1993
- Classroom Addition 2006

- Design Issues / Constraints
 - School should remain one story due to the physically disabled special education program
 - Existing play fields do not meet MCPS Standards

Appendix A - Expansion Concepts and Costs for Each Addition (continued)

B. Forest Knolls ES (continued)

ii. Proposed Site Plan



Appendix A - Expansion Concepts and Costs for Each Addition (continued)

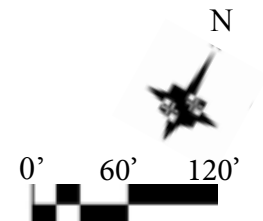
B. Forest Knolls ES (continued) iii. Proposed Floor Plan



Floor Plan

Facility	#	Description	Net Sq. Ft.	Total Net Sq. Ft.
Classrooms				
Prekindergarten	1	Includes 250 s.f. storage	1300	1300
Standard	4	Includes 150 s.f. storage	900	3600
Instrumental Music Room	1		450	450
Dual purpose Room	1		1000	1000
Support Rooms				
Small Instructional Support Room	2		450	900
Itinerant Staff Office	1		150	150
Staff Development Area				
Staff Development Office	1		100	100
Reading Specialist Office	1		100	100
Training/Conference Room	1		450	450
Multipurpose Room				
Multipurpose Room Expansion	1	Expand current MPR	800	800
Total	6			8850

Classroom Addition - 11,700 GSF
Multipurpose Room Renovation - 700 GSF



Appendix A - Expansion Concepts and Costs for Each Addition (continued)

B. Forest Knolls ES (continued)

iv. Analysis

PROS

- Easily accessible Pre-K classroom from parking
- Pre-K classroom adjacent to kindergarten classrooms
- Single story addition is easily accessible by disabled population
- Minimal impact on neighborhood
- Minimal impact on school functions
- Easy access to contractor staging area
- Provides additional flexibility for grade levels

CONS

- Existing site is small, currently does not meet MCPS Standards and any addition will take away from this already small site area
- Multi-Purpose Room renovation involves the removal of a bearing wall
- Multi-Purpose Room renovation must be completed over the summer
- Contractor staging will take most of play space during construction

Mechanical System:

The school was renovated in 1993 and expanded in 2006. The existing two-pipe central heating/cooling plant that was installed with the 1993 renovation did not have the surplus capacity to support the 2006 addition. An independent boiler/cooling tower heat pump system was installed with the 2006 addition to serve the addition. Neither system has the capacity to support the proposed addition. The recommended option is to install a high efficiency (VRV) variable refrigerant flow air cooled heat recovery heat pump system. This option allows retaining and not disrupting the existing HVAC systems.

Electrical System:

The existing 2500 amps 277/480 Volt, 4-wire main electrical service was installed in 1992. The existing electrical service has the capacity to support the proposed addition.

Other systems:

The sprinkler systems, fire alarm, security, public address system, the domestic cold/hot water and the sanitary and storm water sewer will need to be modified and/ or extended as necessary to support the proposed addition.

Existing Gross Square Footage	89,564 GSF	Existing Program Capacity	506 students
Total New Gross Square Footage	11,700 GSF	Proposed Program Capacity with Addition	663 students
Total New and Existing Gross Square Footage	101,264 GSF		
Costs not included, project included in future Lower Downcounty Consortium Capacity Study.		Proposed Increase in Program Capacity	157 students

Appendix A - Expansion Concepts and Costs for Each Addition

C. Glen Haven ES

i. Background Information

- Current Core Capacity – 640
- Current Program Capacity – 551
- Current Enrollment - 555
- Proposed Core Capacity – 640
- Projected Program Capacity w/ Addition – 652
- Projected Enrollment 2018-19 – 589
- Projected Excess Capacity after Addition **(63)**



- Currently has Slight Capacity Deficit **(-4)**
- Currently no relocatables
- Average Size Site (9.755 acres)
- Primarily Single Story School w/ 2 story Classroom Wing

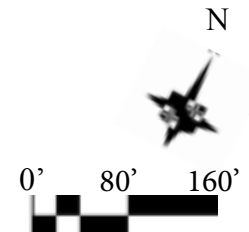
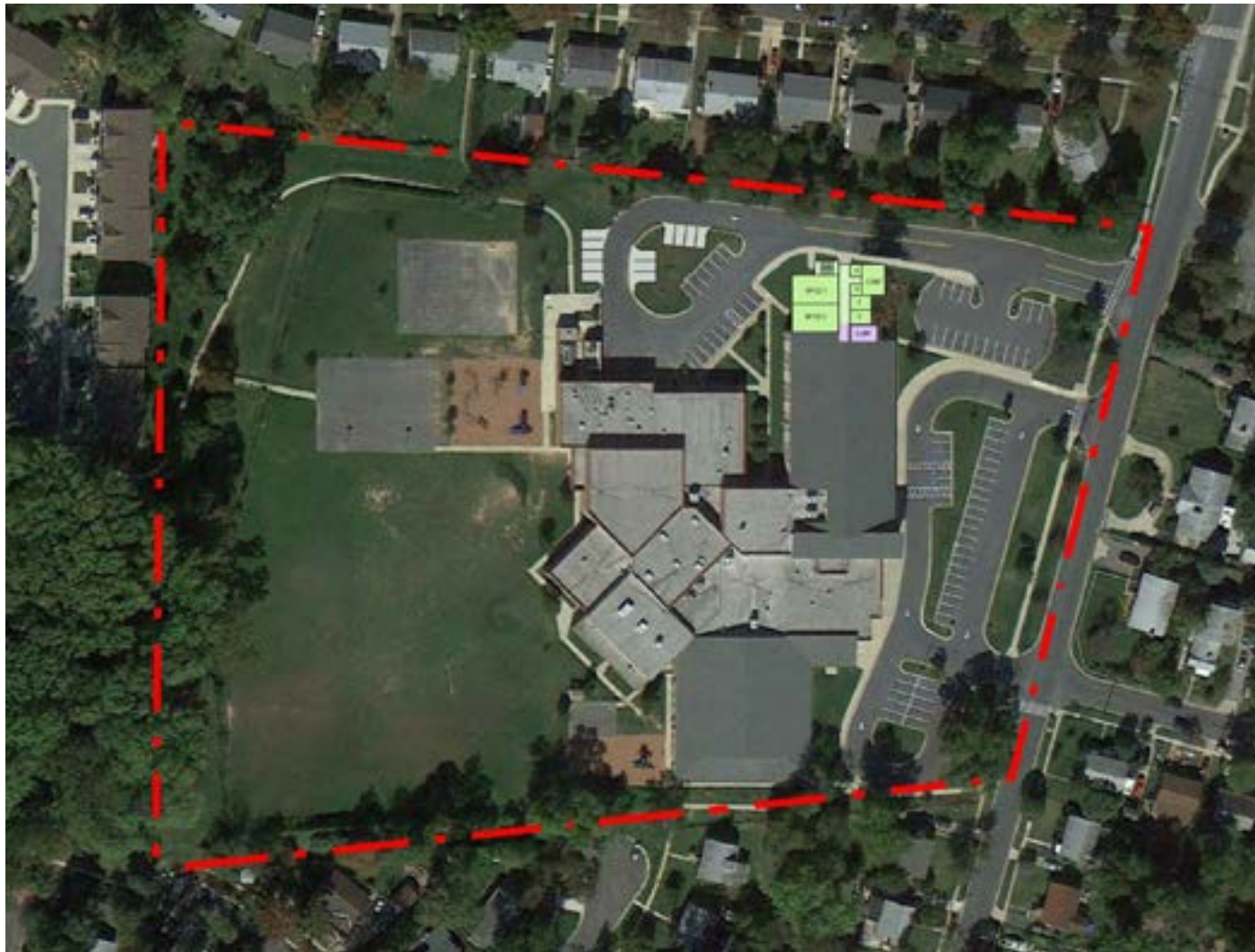
- Original School (Gym) Built in 1973
- Addition 2002

- Design Issues / Constraints
 - Congested area at the bus loop at drop off / pick up
 - 10' side setback at the entry drive
 - Inefficient parking layout

Appendix A - Expansion Concepts and Costs for Each Addition (continued)

C. Glen Haven ES (continued)

ii. Proposed Site Plan



Appendix A - Expansion Concepts and Costs for Each Addition (continued)

C. Glen Haven ES (continued) iii. Proposed Floor Plans

Facility	#	Description	Net Sq. Ft.	Total Net Sq. Ft.
Classrooms				
Standard	2	Includes 150 s.f. storage Includes a shared grooming room; provide an area to store student equipment such as gait trainers	900	1800
Special Education Classroom-SCB	2		900	1800
Support Rooms				
Small Instructional Support Room	2		450	900
Itinerant Staff Office	1		150	150
Parent Resource Room	1		500	500
Staff Development Area				
Staff Development Office	1		100	100
Reading Specialist Office	1		100	100
Training/Conference Room	1		450	450
Total	4			5800



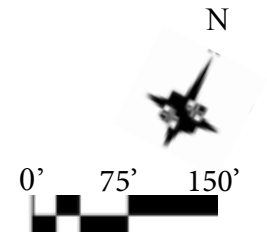
Main Level Floor Plan



Upper Level Floor Plan

Main Level Addition – 3,945 GSF
 Upper Level Addition – 3,945 GSF
 Total Addition – 7,890 GSF

Main Level Renovation – 450 GSF
 Upper Level Renovation – 450 GSF
 Total Renovation – 900 GSF



Appendix A - Expansion Concepts and Costs for Each Addition (continued)

C. Glen Haven ES (continued)

iv. Analysis

PROS

- Minimal impact on school during construction
- Minimal impact on neighborhood
- Relieves congestion at pick-up and drop off by providing additional parking spaces
- Efficient two story design
- Provides additional flexibility for grade levels

CONS

- Site work needs to be completed during the summer since the entry road is impacted
- Contractor staging area will take away parking during construction
- Addition size is small and is less cost effective than a larger addition would be

Mechanical System:

The existing heating plant is eleven years old and has the capacity to support the proposed addition with some minor piping modifications. The existing chilled water plant though currently at design capacity can support the proposed addition by disconnecting the media center air handler from the central chilled water system. This measure will provide a nominal 40 tons of chilled water capacity that can be applied to serve the new proposed addition without the need for the upgrade of the central cooling plant. The code required ventilation for the new classrooms will require a new roof mounted dedicated air cooled 100 percent outdoor ventilation system.

Electrical System:

The existing 2500 amps 277/480 Volt, 4-wire main electrical service was installed in 2002. The existing electrical service has the capacity to support the proposed addition.

Other systems:

The sprinkler systems, fire alarm, security, public address system, the domestic cold/hot water and the sanitary and storm water sewer will need to be modified and/ or extended as necessary to support the proposed addition.

Existing Gross Square Footage	85,845 GSF	Existing Program Capacity	551 students
Total New Gross Square Footage	7,890 GSF	Proposed Program Capacity with Addition	652 students
Total New and Existing Gross Square Footage	93,735 GSF		
Estimate Total Construction Cost	\$3,857,000	Proposed Increase in Program Capacity	101 students

Appendix A - Expansion Concepts and Costs for Each Addition

D. Harmony Hills ES

i. Background Information

- Current Core Capacity - 640
- Current Program Capacity – 671
- Current Enrollment - 741
- Proposed Core Capacity - 740
- Projected Program Capacity w/ Addition - 763
- Projected Enrollment 2018-19 – 794
- Projected Capacity Deficit after Addition **(-31)**



- Currently has Capacity Deficit **(-70)**
- Currently no relocatables
- Small site (6.66 acres)
- Primarily Single Story School w/ a Small 2 Story Classroom Wing

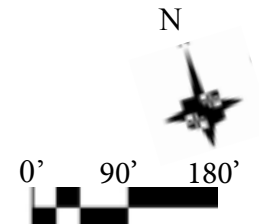
- Original School Built in 1957
- Additions 1969 and 1974
- Modernization and Addition 1999
- Classroom addition 2011

- Design Issues / Constraints
 - Setbacks (25' front, 20' rear, 8'/10' side) limit design options and access

Appendix A - Expansion Concepts and Costs for Each Addition (continued)

D. Harmony Hills ES (continued)

ii. Proposed Site Plan



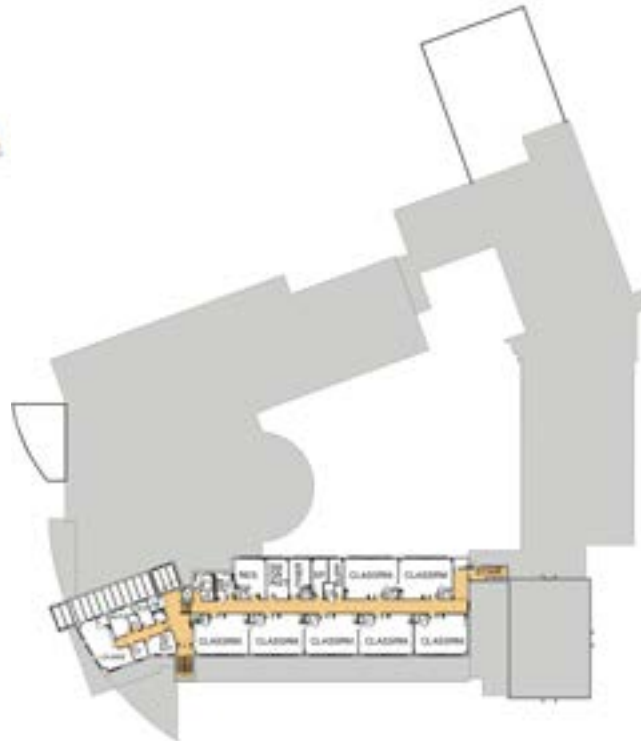
Appendix A - Expansion Concepts and Costs for Each Addition (continued)

D. Harmony Hills ES (continued) iii. Proposed Floor Plans

Facility	#	Description	Net Sq. Ft.	Total Net Sq. Ft.
Classrooms				
Standard	4	Includes 150 s.f. storage	900	3600
Testing Room	1		150	150
Counseling Area				
Counselor's Office	1		250	250
Itinerant Staff Office	1		150	150
Staff Development Area				
Staff Development Office	1		100	100
Reading Specialist Office	1		100	100
Training Conference Room	1		450	450
Multipurpose Room	1	Expand current space	1300	1300
Total	4			6100

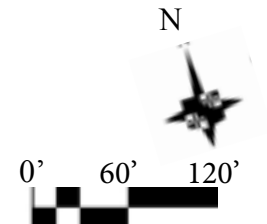


First Floor Plan



Second Floor Plan

Classroom Wing Addition – 6,600 GSF
 MP Room Addition – 1,300 GSF
 Total Addition – 7,900 GSF



Appendix A - Expansion Concepts and Costs for Each Addition (continued)

D. Harmony Hills ES (continued)

iv. Analysis

PROS

- Minimal impact on school during construction
- Ample space for contractor staging
- Provides additional flexibility for grade levels

CONS

- Difficult construction access
- Multi-Purpose Room construction must be completed over the summer
- Classroom construction close to residences
- Addition size is small and is less cost effective than a larger addition would be

Mechanical System:

The existing hot water heating boilers have the capacity to support the addition. The existing two-pipe heating system will need to be slightly modified to serve the addition. The air cooled package chiller does not have the capacity to serve the proposed addition. The recommended system option for the classrooms in the addition is vertical air handlers to be furnished with hot water heating coils served from the modified two pipe heating system and direct expansion (DX) refrigerant coils with remote air cooled condensers. The recommendation for the offices and conference room is to install high efficiency all electric (VRV) variable refrigerant flow air cooled cassette type ceiling units in each office. The multipurpose room expansion will be served by one air cooled/gas fired roof top unit with heat recovery wheel.

Electrical System:

The existing 1200 amps 277/480 Volt, 4-wire main electrical service was installed in 1999. The existing electrical service has the capacity to support the proposed addition.

Other systems:

The sprinkler systems, fire alarm, security, public address system, the domestic cold/hot water and the sanitary and storm water sewer will need to be modified and/ or extended as necessary to support the proposed addition.

Existing Gross Square Footage	85,648 GSF	Existing Program Capacity	671 students
Total New Gross Square Footage	7,900 GSF	Proposed Program Capacity with Addition	763 students
Total New and Existing Gross Square Footage	93,548 GSF		
Costs not included, project not included in 2015-2020 CIP.		Proposed Increase in Program Capacity	92 students

Appendix A - Expansion Concepts and Costs for Each Addition

E. Highland ES

i. Background Information

- Current Core Capacity – 460
- Current Program Capacity – 462
- Current Enrollment - 534
- Proposed Core Capacity - 640
- Projected Program Capacity w/ Addition - 645
- Projected Enrollment 2018-19 – 535
- Projected Excess Capacity after Addition **(110)**



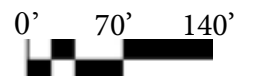
- Currently has Capacity Deficit **(-72)**
- Currently no relocatables
- Large Site (11.05 acres) with On-Site Forest
- Primarily single story school w/ a small 2 story classroom wing

- Original School Built in 1950
- Additions in 1951, 1952, and 1956
- Classroom and Gym Addition 1989
- School Based Health Center Addition 2012

- Design Issues / Constraints
 - Challenging topography
 - Existing school is spread out over multiple levels
 - Challenging construction & fire truck access

Appendix A - Expansion Concepts and Costs for Each Addition (continued)

E. Highland ES (continued) ii. Proposed Site Plan

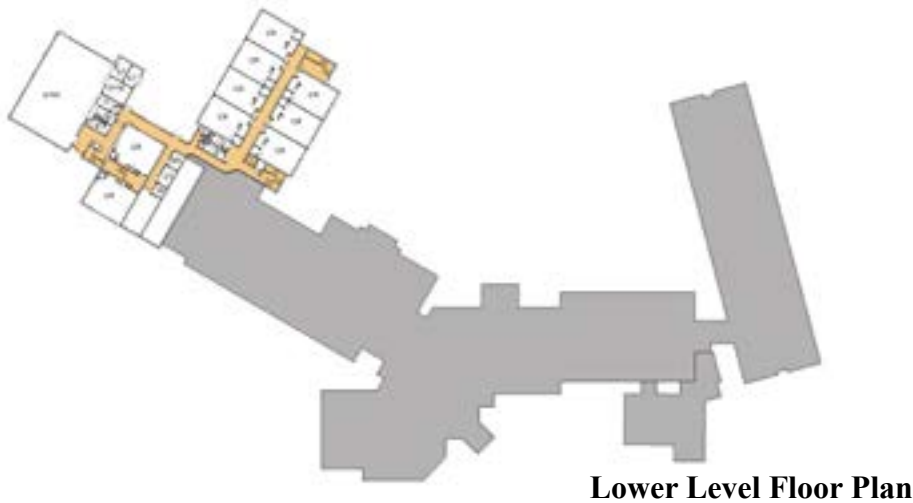


Appendix A - Expansion Concepts and Costs for Each Addition (continued)

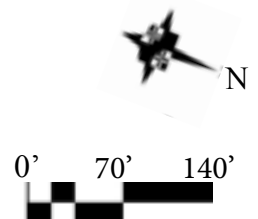
E. Highland ES (continued) iii. Proposed Floor Plans



Facility	#	Description	Net Sq. Ft.	Total Net Sq. Ft.
Classrooms				
Kindergarten	4	Includes 250 s.f. storage	1300	5200
Standard	2	Includes 150 s.f. storage	900	1800
Instrumental Music Room	1		450	450
Dual purpose Room	1		1000	1000
Support Rooms				
Large Instructional Support Room	2		600	1200
Small Instructional Support Room	2		450	900
Therapy/Support Room	1		250	250
Testing Room	1		150	150
Support Staff Offices	2		150	300
Staff Development Area				
Staff Development Office	1		100	100
Reading Specialist Office	1		100	100
Training/Conference Room	1		450	450
Itinerant Staff Office	1		150	150
Book Storage	1		200	200
PTA Storage	1		150	150
Total	7			12400



First Floor Addition – 16,220 GSF
First Floor Renovation – 1,450 GSF



Appendix A - Expansion Concepts and Costs for Each Addition (continued)

E. Highland ES (continued)

iv. Analysis

PROS

- Minimal impact on neighborhood
- New kindergarten classrooms adjacent to existing kindergarten classrooms
- Ample space for contractor staging
- Maintains play area
- Provides additional flexibility for grade levels
- Addition size is relatively large and is more cost effective than a smaller addition would be

CONS

- Inefficient single story design with multiple level changes
- Very difficult construction access
- Code required fire track access to addition will be expensive
- Significant retaining walls will be required

Mechanical System:

The school was modernized with the last addition in 1989. The existing two-pipe central heating/cooling plant that was installed with the 1989 modernization does not have the capacity to support the proposed addition. A new high efficiency (VRV) variable refrigerant flow air cooled heat recovery heat pump system independent of the existing system is recommended for the proposed addition.

Electrical System:

The existing 1600 amps 277/480 Volt, 4-wire main electrical service was installed in 1988. The existing electrical service has the capacity to support the proposed addition.

Other systems:

The sprinkler systems, fire alarm, security, public address system, the domestic cold/hot water and the sanitary and storm water sewer will need to be modified and/ or extended as necessary to support the proposed addition.

Existing Gross Square Footage	87,491 GSF	Existing Program Capacity	462 students
Total New Gross Square Footage	16,220 GSF	Proposed Program Capacity with Addition	645 students
Total New and Existing Gross Square Footage	103,711 GSF		
Estimate Total Construction Cost	\$7,503,000	Proposed Increase in Program Capacity	183 students

Appendix A - Expansion Concepts and Costs for Each Addition

F. Kemp Mill ES

i. Background Information

- Current Core Capacity – 550
- Current Program Capacity – 442
- Current Enrollment - 474
- Proposed Core Capacity - 640
- Projected Program Capacity w/ Addition - 648
- Projected Enrollment 2018-19 – 490
- Projected Excess Capacity after Addition **(158)**



- Currently has Capacity Deficit **(-32)**
- Currently 1 relocatable
- Relatively Large Site (10.01 acres)
- Two story school

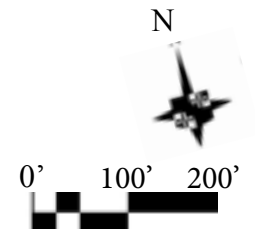
- Original School Built in 1960
- Renovation and Addition 1995

- Design Issues / Constraints
 - Due to site topography, building floor levels rise 18' from front entry to the access to the fields
 - Fields are 6' above rear building exit

Appendix A - Expansion Concepts and Costs for Each Addition (continued)

F. Kemp Mill ES (continued)

ii. Proposed Site Plan



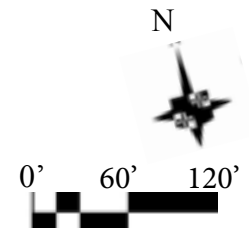
Appendix A - Expansion Concepts and Costs for Each Addition (continued)

F. Kemp Mill ES (continued) iii. Proposed Floor Plans



Facility	#	Description	Net Sq. Ft.	Total Net Sq. Ft.
Classrooms				
Kindergarten	2	Includes 250 s.f. storage	1300	2600
Standard	8	Includes 150 s.f. storage	900	7200
Instrumental Music Room	1		450	450
Dual purpose Room	1		1000	1000
Support Rooms				
Large Instructional Support Room	1		600	600
Small Instructional Support Room	2		450	900
Speech/Language Room	1		250	250
Therapy/Support Room	1		250	250
Testing/Conference Room	1		150	150
Itinerant Staff Office	1		150	150
Staff Development Area				
Staff Development Office	1		100	100
Reading Specialist Office	1		100	100
Training/Conference Room	1		450	450
Total	10			14200

Main Level Addition – 3,700 GSF
 Upper Level Addition – 17,210 GSF
 Total Addition – 20,910 GSF



Appendix A - Expansion Concepts and Costs for Each Addition (continued)

F. Kemp Mill ES (continued)

iv. Analysis

PROS

- New kindergarten classrooms adjacent to existing kindergarten classrooms
- Provides additional flexibility for grade levels
- Provides “loop” corridor circulation
- Addition size is relatively large and is more cost effective than a smaller addition would be

CONS

- Construction close to residences
- Contractor staging will use parking spaces during construction of Kindergarten classrooms

Mechanical System:

The school was modernized in 1995. The existing two pipe hot/chilled water piping system has the capacity to serve the two proposed kindergarten classrooms with some minor piping modifications. The installed refrigeration equipment and the hot water distribution pumps do not have the capacity to serve the new proposed classroom wing addition. The two hot water heating boilers do have surplus heating capacity that can be used to serve the classroom addition; however, the piping distribution system does not. The boilers should be reused and the piping system modified to serve the addition. The existing packaged air cooled chiller does not have surplus capacity to serve the classroom addition. The recommended option for the classroom addition is an air cooled chiller and a new pump room adjacent to the existing boiler room to house two new chilled/hot water pumps. A new 2-pipe distribution system independent of the existing two pipe system will serve the proposed classroom wing.

Electrical System:

The existing 1600 amps 277/480 Volt, 4-wire main electrical service was installed in 1995 when the school was expanded and modernized. The existing electrical service has the capacity to support the proposed addition.

Other systems:

The sprinkler systems, fire alarm, security, public address system, the domestic cold/hot water and the sanitary and storm water sewer will need to be modified and/ or extended as necessary to support the proposed addition.

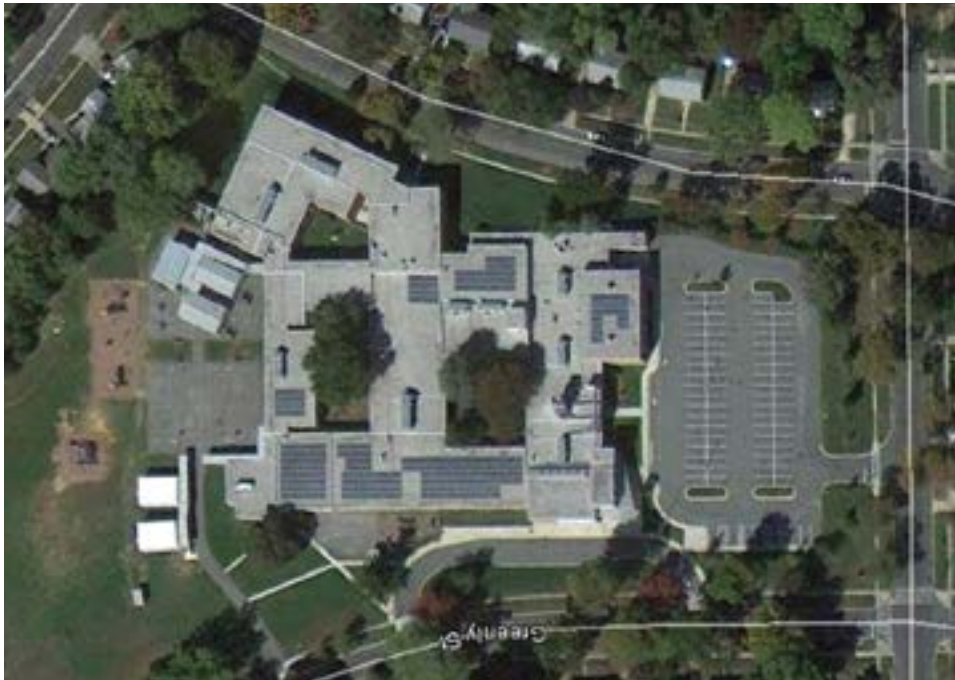
Existing Gross Square Footage	68,222 GSF	Existing Program Capacity	442 students
Total New Gross Square Footage	20,910 GSF	Proposed Program Capacity with Addition	648 students
Total New and Existing Gross Square Footage	89,132 GSF		
Estimate Total Construction Cost	\$8,137,000	Proposed Increase in Program Capacity	206 students

Appendix A - Expansion Concepts and Costs for Each Addition

G. Sargent Shriver ES

i. Background Information

- Current Core Capacity – 640
- Current Program Capacity – 541
- Current Enrollment - 758
- Proposed Core Capacity - 640
- Projected Program Capacity w/ Addition - 640
- Projected Enrollment 2018-19 – 793
- Projected Capacity Deficit after Addition **(-153)**



- Currently has Capacity Deficit **(-217)**
- Currently 6 relocatables
- Average Sized Site (9.17 acres)
- Primarily single story school

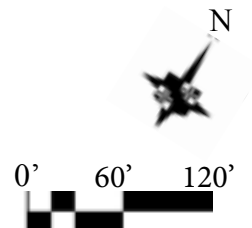
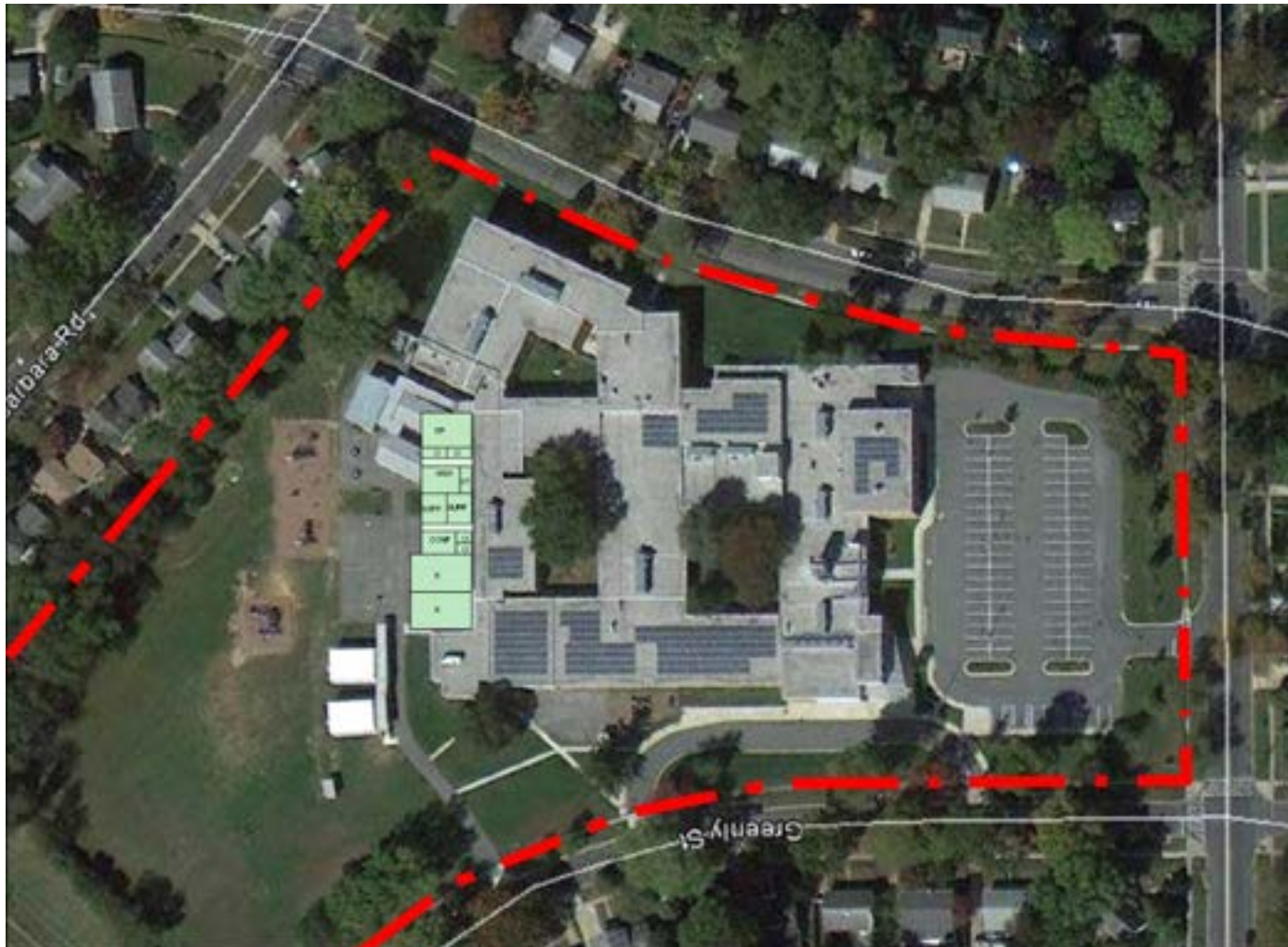
- Original Building Built in 1954
- Addition 1959
- Modernized 2005

- Design Issues / Constraints
 - Multi-purpose Room for a 640 Core
 - Limited sidewalk area at main entry for dismissal
 - Drainage issues in courtyard

Appendix A - Expansion Concepts and Costs for Each Addition (continued)

G. Sargent Shriver ES (continued)

ii. Proposed Site Plan



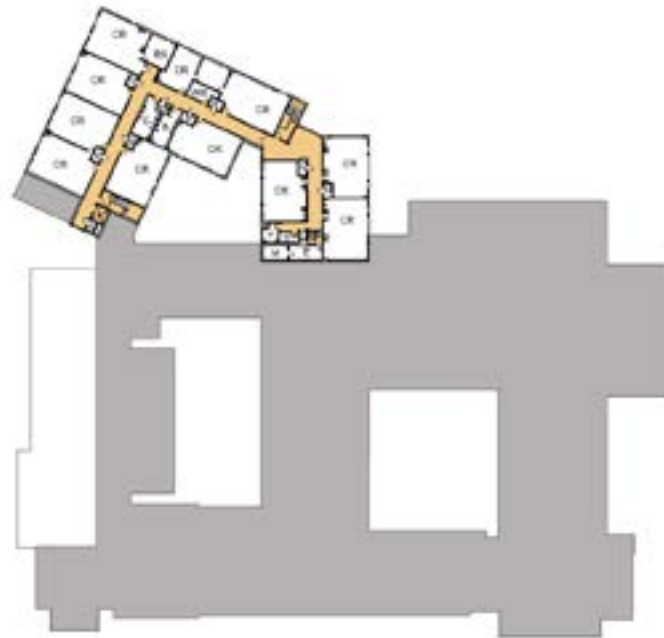
Appendix A - Expansion Concepts and Costs for Each Addition (continued)

G. Sargent Shriver ES (continued) iii. Proposed Floor Plans

Facility	#	Description	Net Sq. Ft.	Total Net Sq. Ft.
Classrooms				
Kindergarten	2	Includes 250 s.f. storage	1300	2600
Dual purpose Room	1		1000	1000
Support Rooms				
Large Instructional Support Room for HSM	1		600	600
Small Instructional Support Room	2		450	900
Support Staff Offices	1		150	150
Staff Development Area				
Staff Development Office	1		100	100
Reading Specialist Office	1		100	100
Training/Conference Room	1		450	450
Itinerant Staff Office	1		150	150
Book Storage	1		200	200
Total	3			6250

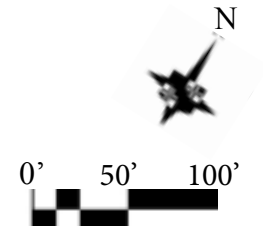


First Floor Plan



Second Floor Plan

First Floor Addition – 6,913 GSF



Appendix A - Expansion Concepts and Costs for Each Addition (continued)

G. Sargent Shriver ES (continued)

iv. Analysis

PROS

- The addition infills the existing single loaded corridor so an additional corridor is not necessary
- Minimal impact on school during construction
- Minimal impact on neighborhood
- New kindergarten classrooms adjacent to existing kindergarten classrooms
- Ample space for contractor staging
- Provides additional flexibility for grade levels

CONS

- Addition size is small and is less cost effective than a larger addition would be

Mechanical System:

The existing system installed in 2005 is in excellent condition. The HVAC system is a two pipe boiler/cooling tower heat pump system delivering condenser water to water cooled vertical type heat pumps for the classrooms and console units for the administrative and support spaces. The system has the capacity to serve the addition.

Electrical System:

The existing 2000 Amps 277/480 Volt, 4-wire main electrical service was installed in 2005. The existing electrical has the capacity to support the proposed addition.

Other systems:

The sprinkler systems, fire alarm, security, public address system, the domestic cold/hot water and the sanitary and storm water sewer will need to be modified and/ or extended as necessary to support the proposed addition.

Existing Gross Square Footage	91,628 GSF	Existing Program Capacity	541 students
Total New Gross Square Footage	6,913 GSF	Proposed Program Capacity with Addition	640 students
Total New and Existing Gross Square Footage	98,541 GSF		
Estimate Total Construction Cost	\$2,898,000	Proposed Increase in Program Capacity	99 students

Appendix B - Capacity and Cost Comparison Chart for the 7 Additions in this Study

Schools	Existing Gross Square Footage	Total New Gross Square Footage	Total New and Existing Gross Square Footage	Estimate Total Building Only Construction Cost	Estimate Total Site Only Construction Cost	Estimate Total Site and Building Construction Cost	Existing Program Capacity	Proposed Program Capacity with Addition	Proposed Increase in Program Capacity
Schools East of Georgia Avenue									
Forest Knolls	89,564	11,700	101,264	See Note 1	See Note 1	See Note 1	506	663	157
Glen Haven	85,845	7,890	93,735	\$3,267,488	\$589,512	\$3,857,000	551	652	101
Kemp Mill	68,222	20,910	89,132	\$5,848,371	\$2,288,629	\$8,137,000	442	648	206
Summary East of Georgia Ave.									464
Schools West of Georgia Avenue									
Brookhaven	81,320	13,453	94,773	\$3,243,207	\$1,817,793	\$5,061,000	512	653	141
Harmony Hills	85,648	7,900	93,548	See Note 2	See Note 2	See Note 2	671	763	92
Highland	87,491	16,220	103,711	\$5,849,825	\$1,653,175	\$7,503,000	462	645	183
Sargent Shriver	91,628	6,913	98,541	\$1,724,831	\$1,173,169	\$2,898,000	541	640	99
Summary West of Georgia Ave.									332
TOTAL Added Capacity if all 7 Additions are Constructed									979*
Note 1 - Costs not included, project included in future Lower Downcounty Consortium Capacity Study.									
Note 2 - Costs not included, project not included in 2015-2020 CIP.									
<i>* This capacity calculation figure does not include the additional capacity generated by the five projects currently included in the Approved 2013-2018 CIP</i>									