# **ROANOKE COUNTY PUBLIC SCHOOLS**

# FACILITY USE STUDY

JANUARY 2016

PERKINS+WILL

PERKINS+WILL

## **EXECUTIVE SUMMARY /**



Cave Spring Elementary School



Clearbrook Elementary School



Glen Cove Elementary School



Glenvar Elementary School



Cave Springs High School

In the fall of 2015, Roanoke County Public Schools hired the Perkins+Will with Rife+Wood and Cropper GIS with McGibben Demographics to do a Facility Use and Demographics Study for the school system.

Roanoke County Public Schools is the 17th largest of more than 130 school systems in the Commonwealth of Virginia. The County of Roanoke is located in the southwestern part of the State and is the suburban hub of the Roanoke Valley, with a provisional population of 926,871 and a Metropolitan Statistical Area (MSA) population of approximately 300,000. Located in the largest urban area west of Richmond, the School System is the largest employer in Roanoke County. RCPS provides educational services to approximately 14,100 students in preschool through grade 12 who are served in 16 elementary schools, 5 middle schools, 5 high schools and one specialty school. The District needed a comprehensive population and facilities use assessment to ascertain the present use of each facility.

This Facility Use Study found that based on current program usage, the student capacity at each school in the Roanoke County Public Schools system is greater than its current enrollment.

Based on the current program usage, in 2025- 2026 the forecasted enrollments will be greater than the current capacity at four (4) elementary schools and one (1) high school: Cave Spring Elementary School, Clearbrook Elementary School, Glen Cove Elementary School, Glenvar Elementary School, and at Cave Spring High School. (Cave Spring High School is currently slated for renovation in 2017-2018.)

Based on the Virginia Department of Education recommended square footages for classroom sizes, Cave Spring Elementary School, Northside Elementary School, William Byrd Elementary School, Northside Middle School, Cave Spring High School, Northside High School, and William Byrd High School have a considerable number of classrooms that are smaller than recommended.

A number of elementary schools have substantial amounts of special programs, i.e., PEAP, FACES, PBSC, Title 1, OT/PT, Remediation, occupying classroomsizes spaces. These schools include Bonsack Elementary School Burlington Elementary School, Glencove Elementary School, Herman Horn Elementary School, Mountain View Elementary School, Oak Grove Elementary School, Penn Forest Elementary School, and W. E. Cundiff Elementary School.

### FACILITY USE STUDY /

#### FACILITY USE STUDY METHODOLOGY

To determine the capacity of each school in the Roanoke County Public Schools system, Perkins+Will with Rife+Wood did the following.

We analyzed the existing building plans for each school.

We identified every space that could function as a classroom based on typical Department of Education square foot recommendations.

We counted the number of classroom sized spaces at every school that could potentially house students.

We calculated the square footage of every potential classroom space from the existing building plans.

With information provided by the school principals and the special education department, we identified which classroom-sized spaces were occupied by special programs.

We walked through the elementary schools and substantiated the current use of all the classrooms, whether they were being used for core classrooms housing Pre-K -5th grade students, for full time special education programs, for computer labs, for STEM labs, for reading specialists, and/or for other support programs.

We generated capacity numbers based on current average students / classroom counts:

Pre-K:	18 students / classroom
K-5th Grade:	21 students / classroom
6th - 8th Grade:	24 students / classroom
9th - 12th Grade:	24 students / classroom
Special Education	8 students / classroom

We compared these capacity numbers to the current student enrollment numbers and to the 2025-2026 forecasted student enrollment numbers.

To calculate capacity we dealt only with spaces that did house or could house students full time. We considered only classroomsized spaces, and did not factor in any small resource rooms that are used for pull-out support services such as speech, guidance, remediation, etc.

#### **ELEMENTARY SCHOOLS**

The elementary schools vary significantly in size with current capacities ranging from to 252 to 585. Along with calculating the current and forecasted capacities, there were three significant findings in analyzing the current and future capacities at the elementary schools.

**First, nine (9) schools house significant special programs as listed below.** These programs currently occupy classroom sized spaces and therefore limit the capacities in those specific schools.

#### **Bonsack Elementary School**

2 Special Ed 1 PEAP 1 OT/PT 1 Special Ed/Psychologist 1 Guidance 1 Remediation

#### **Burlington Elementary School**

2 Special Ed 1 (FACES) 1 OT/PT

#### **Glen Cove Elementary School**

4 Special Ed 2 Remediation (PALS) 1 ELL (in modular)

#### **Glenvar Elementary School**

3 Special ED 1 OT/PT

#### Herman L. Horn Elementary School

2 Special ED 1 Title 1 1 FACES

#### **Mountain View Elementary School**

3 Special Ed 1 FACES 1 PBSC 1 Sensory 1 OT/PT 2 Remediation

#### **Oak Grove Elementary School**

1 Special Ed (FACES) 1 OT/PT 2 Remediation (Open Classrooms)

#### Penn Forest Elementary School

1 Special Ed 1 REAP 1 Speech/OT

#### W. E. Cundiff Elementary School

3 Special Ed 1 Title 1 1 OT/PT

Second when we assume a typical complement of support programs for each elementary school, seven (7) schools could not accommodate this. We assumed that a typical elementary school would have the following programs with each of these occupying a full-sized classroom space:

2 Special Education Classrooms 2 Computer Labs 1 Maker Space/STEM Lab ! Reading Specialist

The schools listed below do not have a total of six (6) classroom-sized spaces that are not used as Pre-K - 5th grade core classrooms available for the above assumed support programs.

Back Creek Elementary School Cave Spring Elementary School\* Clearbrook Elementary School Fort Lewis Elementary School\* Green Valley Elementary School\* Masons Cove Elementary School\* Mount Pleasant Elementary School

Cave Spring, Fort Lewis, Green Valley, and Masons Cove Elementary Schools do however have multiple smaller rooms used for Special Education.

Thirdly we found six (6) elementary schools have classrooms with square footages significantly smaller than those recommended by the Virginia Department of Education. While this did not affect our capacity numbers since we were using the previously noted assumed average class sizes, we do think this fact should be taken into consideration in future planning.

Preferred VA DOE Classroom size:

Pre-K - 1st Grade:	975 SF
2nd - 5th Grade:	800 SF

Those with the smaller classrooms are:

Fort Lewis Elementary School (10 classrooms: 694 SF average) Glen Cove Elementary School (700 SF average) Green Valley Elementary School (7 classrooms: 705 SF average) Herman L. Horn Elementary School (10 classrooms: 764 SF average) Mount Pleasant Elementary School (8 classrooms: 697 average) W. E. Cundiff Elementary School (730 average)

The following chart shows the current enrollments, forecasted 2025-2026 enrollments, and the current capacity of each elementary school. It also shows how many classrooms are core classrooms, being used for Pre-K through 5th grade classes, how many house Special Education students all day, and then how many other classroom-sized spaces exist at each school. The breakdown of what these other classrooms are used for is included on the following pages.

Currently the capacities at every school are greater than the enrollments. In 2025-2026, four (4) schools will have enrollments greater than the current capacities. They are:

Cave Spring Elementary School Clearbrook Elementary School Glen Cove Elementary School Glenvar Elementary School

Both Glen Cove and Glenvar appear to have a sufficient number of classrooms to support their core Pre-K -5th grade classes, our assumed 6 (six) support programs, and accommodate some growth if current programs there could be consolidated, relocated, etc.

		Forecasted	Current	Spaces as Curr	ently Used:	Other Classroom	Total Spaces	
	Current	2025-2026	Program	Core	Special Ed.	Sized Spaces	Classroom	
	Enrollment	Enrollment	Capacity	Classrooms	Classrooms	in Use	Sized Spaces	
mentary Schools								
	216							
Back Creek Elementary	316	284	349	16	2	2	20	
Bonsack Elementary	386	342	428	19	4	8	31	
Burlington Elementary	464	456	525	24	3	4	31	
Cave Spring Elementary	489	515	501	24	0	4	28	
Clearbrook Elementary	348	356	354	17	0	2	19	
Fort Lewis Elementary	233	215	252	12	0	2	14	
Glen Cove Elementary	436	499	470	21	4	5	30	
Glenvar Elementary	403	440	420	19	3	5	27	
Green Valley Elementary	507	514	517	24	2	3	29	
Herman L. Horn Elementary	422	399	501	23	3	4	30	
Masons Cove Elementary	239	213	270	13	0	3	16	
Mount Pleasant Elementary	349	320	412	19	2	2	23	
Mountain View Elementary	379	321	483	21	5	7	33	
Oak Grove Elementary School	456	410	467	22	1	7	30	
Penn Forest Elementary	468	427	504	23	3	6	32	
W. E. Cundiff Elementary	545	522	585	27	3	4	34	

						Total	
		Current	Total #	Average #	Total #	Teaching	Total Studen
		Enrollment	Spaces	of Students	Students	Spaces	Capacity
K CREEK ELEMENTARY	r school	316	_				
Classrooms						16	333
	dents/975 sf)		1	18	18		
K (24 student			2	21	42		
1st (24 studer			2	21	42		
2nd (24 stude			3	21	63		
3rd (24 stude			3	21	63		
4th (25 stude			2	21	42		
5th (25 stude	nts/800 sf)		3	21	63		
			16		333		
Special Educati	ion		2	8	16	2	16
Computer			1				
Maker Space			1				
			20		349	18	349
Music (current	ly in modular)					1	
Art			1			1	
Gymnasium			1			1	
Classrooms						19	396
	dents/975 sf)		1	18	18		
K (24 student			3	21	63		
1st (24 studer			3	21	63		
2nd (24 stude			3	21	63		
3rd (24 stude	, ,						
	nts/ 800 sf)		3	21	63		
4th (25 stude			3	21 21	63 63		
4th (25 stude 5th (25 stude	nts/800 sf)		3	21 21 21 21	63 63 63		
4th (25 stude 5th (25 stude	nts/800 sf)		3	21	63 63		
	nts/800 sf)		3	21	63		
5th (25 stude	nts/800 sf) nts/800 sf)		3	21 21	63 63	3	24
5th (25 stude	nts/800 sf) nts/800 sf)		3 3 19 3	21 21 8 8	63 63 396 24	3	
5th (25 stude	nts/800 sf) nts/800 sf)		3 3 19	21 21	63 63 396	3	
Special Educati	nts/800 sf) nts/800 sf) ion		3 3 19 3	21 21 8 8	63 63 396 24		
Sth (25 stude	nts/800 sf) nts/800 sf) ion		3 3 19 3 1 1	21 21 8 8	63 63 396 24		
Sth (25 stude	nts/800 sf) nts/800 sf) ion d Laptop Lab)		3 3 19 3 1 3 1 2	21 21 8 8	63 63 396 24		
Sth (25 stude	nts/800 sf) nts/800 sf) ion Laptop Lab) chologist		3 3 19 3 1 3 1 2 2 1	21 21 8 8	63 63 396 24		
Sth (25 stude Special Educati PEAP Computer (and OT/PT Special Ed/Psy	nts/800 sf) nts/800 sf) ion Laptop Lab) chologist		3 3 19 3 1 3 1 1 2 1 1 1	21 21 8 8	63 63 396 24		
Special Educati PEAP Computer (and OT/PT Special Ed/Psy Guidance Class Remediation	nts/800 sf) nts/800 sf) ion Laptop Lab) chologist sroom		3       3       19       3       1       2       1       1       1       1       1       1       1       1       1       1       1       1       1	21 21 8 8	63 63 396 24		
Special Educati PEAP Computer (and OT/PT Special Ed/Psy Guidance Class Remediation Reading Coord	nts/800 sf) nts/800 sf) ion Laptop Lab) chologist sroom		3       3       19       3       1       2       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1	21 21 8 8	63 63 396 24		
Special Educati PEAP Computer (and OT/PT Special Ed/Psy Guidance Class Remediation	nts/800 sf) nts/800 sf) ion Laptop Lab) chologist sroom		3       3       19       3       1       2       1       1       1       1       1       1       1       1       1       1       1       1       1	21 21 8 8	63 63 396 24		ξ 
Special Educati PEAP Computer (and OT/PT Special Ed/Psy Guidance Class Remediation Reading Coord	nts/800 sf) nts/800 sf) ion Laptop Lab) chologist sroom		3       3       19       3       1       2       1	21 21 8 8	63         63         396         24         8         1		3 
Special Educati PEAP Computer (and OT/PT Special Ed/Psy Guidance Class Remediation Reading Coord	nts/800 sf) nts/800 sf) ion Laptop Lab) chologist sroom		3       3       19       3       1       2       1	21 21 8 8	63         63         396         24         8         1		
Sth (25 stude	nts/800 sf) nts/800 sf) ion Laptop Lab) chologist sroom		3         3         19         3         1         2         1         1         1         1         1         1         3         1         1         3         3	21 21 8 8	63         63         396         24         8         1	1 	8

							Total	
			Current	Total #	Average #	Total #	Teaching	Total Student
			Enrollment	Spaces	of Students	Students	Spaces	Capacity
				-				
JRLIN	GTON ELEMENTA	RY SCHOOL	464					
	Classrooms						24	501
	Pre -K (18 stu			1	18	18		
	K (24 student			4	21	84		
	1st (24 studer			4	21	84		
	2nd (24 stude			4	21	84		
	3rd (24 stude			4	21	84		
	4th (25 stude	nts/800 sf)		4	21	84		
	5th (25 stude	nts/800 sf)		3	21	63		
				24		501		
	Special Educati			2	8	16	2	16
	Special Ed (FAG	CES)		1	8	8	1	8
	Computer			3				
	OT/PT			1				
				31		525	27	525
	Gymnasium			1			1	
	Music							
				1			1	
	Art			1			1	
<b>VE SF</b>	PRING ELEMENTA	RY	489					
	Classrooms						24	501
	Data K (10 atu	dents/975 sf)		1	18	18		
	Pre - K (18 stu							
	K (24 student			4	21	84		
		s/975 sf)		4	21 21	63		
	K (24 student	s/975 sf) nts/975 sf)						
	K (24 student 1st (24 studen 2nd (24 stude	s/975 sf) nts/975 sf) ents/ 800 sf)		3	21	63		
	K (24 student1st (24 student2nd (24 student3rd (24 student)	s/975 sf) hts/975 sf) hts/ 800 sf) hts/ 800 sf)		3	21 21	63 84		
	K (24 student 1st (24 studen 2nd (24 stude 3rd (24 stude 4th (25 stude	s/975 sf) nts/975 sf) nts/ 800 sf) nts/ 800 sf) nts/800 sf)		3 4 4	21 21 21 21 21 21	63 84 84		
	K (24 student1st (24 student2nd (24 student3rd (24 student)	s/975 sf) nts/975 sf) nts/ 800 sf) nts/ 800 sf) nts/800 sf)		3 4 4 4 4	21 21 21 21	63 84 84 84 84		
	K (24 student 1st (24 studen 2nd (24 stude 3rd (24 stude 4th (25 stude 5th (25 stude	s/975 sf) hts/975 sf) ints/ 800 sf) nts/ 800 sf) nts/800 sf) nts/800 sf)		3 4 4 4 4 4	21 21 21 21 21 21	63 84 84 84 84 84		
	K (24 student 1st (24 studen 2nd (24 stude 3rd (24 stude 4th (25 stude	s/975 sf) hts/975 sf) ints/ 800 sf) nts/ 800 sf) nts/800 sf) nts/800 sf)		3 4 4 4 4 4	21 21 21 21 21 21	63 84 84 84 84 84		
	K (24 student 1st (24 studen 2nd (24 stude 3rd (24 stude 4th (25 stude 5th (25 stude Special Educati	s/975 sf) hts/975 sf) ints/ 800 sf) nts/ 800 sf) nts/800 sf) nts/800 sf)		3 4 4 4 4 24	21 21 21 21 21 21	63 84 84 84 84 84		
	K (24 student 1st (24 studen 2nd (24 stude 3rd (24 stude 4th (25 stude 5th (25 stude 5th (25 stude 5th (25 stude PT/OT	s/975 sf) hts/975 sf) ints/ 800 sf) nts/ 800 sf) nts/800 sf) nts/800 sf)		3 4 4 4 4 24 24 1	21 21 21 21 21 21	63 84 84 84 84 84		
	K (24 student 1st (24 studen 2nd (24 stude 3rd (24 stude 4th (25 stude 5th (25 stude 5th (25 stude PT/OT Computer	s/975 sf) hts/975 sf) ints/ 800 sf) nts/ 800 sf) nts/800 sf) nts/800 sf)	Image: Constraint of the sector of the se	3 4 4 4 24 24 1 2 2	21 21 21 21 21 21	63 84 84 84 84 84		
	K (24 student 1st (24 studen 2nd (24 stude 3rd (24 stude 4th (25 stude 5th (25 stude 5th (25 stude 5th (25 stude PT/OT	s/975 sf) hts/975 sf) ints/ 800 sf) nts/ 800 sf) nts/800 sf) nts/800 sf)		3 4 4 4 4 24 24 1	21 21 21 21 21 21	63 84 84 84 84 84		
	K (24 student 1st (24 studen 2nd (24 stude 3rd (24 stude 4th (25 stude 5th (25 stude 5th (25 stude PT/OT Computer	s/975 sf) hts/975 sf) ints/ 800 sf) nts/ 800 sf) nts/800 sf) nts/800 sf)		3 4 4 4 24 24 1 2 1	21 21 21 21 21 21	63         84         84         84         501         1		
	K (24 student 1st (24 studen 2nd (24 stude 3rd (24 stude 4th (25 stude 5th (25 stude 5th (25 stude PT/OT Computer	s/975 sf) hts/975 sf) ints/ 800 sf) nts/ 800 sf) nts/800 sf) nts/800 sf)	Image: Constraint of the sector of	3 4 4 4 24 24 1 2 1	21 21 21 21 21 21	63         84         84         84         501         1	24	
	K (24 student 1st (24 studen 2nd (24 stude 3rd (24 stude 4th (25 stude 5th (25 stude 5th (25 stude PT/OT Computer STEM	s/975 sf) hts/975 sf) ints/ 800 sf) nts/ 800 sf) nts/800 sf) nts/800 sf)	Image: Constraint of the sector of the se	3         4         4         4         24         1         2         1         28	21 21 21 21 21 21	63         84         84         84         501         1		501

						Total	
		Current	Total #	Average #	Total #	Teaching	Total Student
		Enrollment	Spaces	of Students	Students	Spaces	Capacity
LEARBROOK ELEMENT	ARY	348					
Classrooms						17	354
	tudents/975 sf)		1	18	18		
K (24 stude			3	21	63		
	lents/975 sf)		3	21	63		
	dents/ 800 sf)		3	21	63		
	dents/ 800 sf)		3	21	63		
4th (25 stue	dents/800 sf)		2	21	42		
5th (25 stud	dents/800 sf)		2	21	42		
			17		354		
4-5 Math (c	urrently in modul	lar)					
Crossial F-b	ation	_					
Special Educ	ation						
Computer			2				
			19		354	17	354
Gymnasium						1	
Music (curre	ntly in modular)		1				
	y on stage in gym	nasium)				1	
ORT LEWIS ELEMENTA	RY	233					
Classrooms						12	252
Pre -K (18 s	tudents/975 sf)			18	0		
K (24 stude	nts/975 sf)		2	21	42		
1st (24 stud	lents/975 sf)		2	21	42		
2nd (24 stu	dents/ 800 sf)		2	21	42		
3rd (24 stud	dents/ 800 sf)		2	21	42		
4th (25 stue	dents/800 sf)		2	21	42		
	dents/800 sf)		2	21	42		
			12		252		
Special Educ	ation						
Computer			2				
i i			14		252	12	252
					1 1 1	1	
Gymnasium			1				-
Gymnasium Music/Art (s Art			1			1	

							Total	
			Current	Total #	Average #	Total #	Teaching	Total Student
			Enrollment	Spaces	of Students	Students	Spaces	Capacity
			436					
GLEN COVE EL	ISSTOOMS		430				21	438
		dents/975 sf)		1	18	18	21	430
	(24 student			2	21	42		
	st (24 student			3	21	63		
	nd (24 studer			4	21	84		
	rd (24 stude rd (24 stude			4	21	84		
				4	21	84		
	th (25 stude)							
50	th (25 stude	nts/800 st)		3 21	21	63 438		
				21		450		
Spe	ecial Educati	on		4	8	32	4	32
Ren	mediation (I	PALS)		2				
	ading Specia			1				-
	mputer			2				
	. (in modular	r)		2				
	iker Space (i							
IVIU	ikei Spuce (il	in modulur)		30		470	25	470
				50		470		470
Gvr	mnasium			1			1	
Mu				1			_	
Art				1			1	
			402					
SLENVAR ELEI	INENTARY		403				19	396
		dents/975 sf)		1	18	18	15	390
				3	21	63		
	(24 student st (24 studer			3	21	63		
	nd (24 studer							
	rd (24 stude rd (24 stude			3	21 21	63 63		
	th (25 stude)			3				_
	•			-	21	63		
50	th (25 stude	nts/800 ST)		3 19	21	63		
				19		396		
Spe	ecial Educati	on		3	8	24	3	24
OT/				1				
Rea	ading			1				
	mputer			2				
	ker Space			1				
Cor				27		420	22	420
Cor								
Cor Mal	mnasium			1			1	
Cor Mal	mnasium			1			1	
Cor Mal	isic			1 1 1			1 1 1	

							Total	
			Current	Total #	Average #	Total #	Teaching	Total Student
			Enrollment	Spaces	of Students	Students	Spaces	Capacity
REEN V	ALLEY ELEMENTA	RY SCHOOL	507					
	Classrooms						24	501
	Pre -K (18 stud	lents/975 sf)		1	18	18		
	K (24 students	;/975 sf)		4	21	84		
	1st (24 studen	ts/975 sf)		4	21	84		
	2nd (24 studer	nts/ 800 sf)		3	21	63		
	3rd (24 studen	nts/ 800 sf)		4	21	84		
	4th (25 studen	nts/800 sf)		4	21	84		
	5th (25 studen	nts/800 sf)		4	21	84		
				24		501		
	Special Education	on		2	8	16	2	16
	Computer			2				
	Reading Special	lict		1				
	Reading Special	list		29		517	26	517
				29		517	20	517
	Gymnasium			1			1	
	Music			1			1	
	Art			1			1	
			205					
ERMAN	N HORN ELEMENT	ARY SCHOOL	395				23	477
ERMAN	Classrooms		395	2	18	36	23	477
ERMAN	Classrooms Pre -K (18 stud	lents/975 sf)	395	2	18 21	36 84	23	477
ERMAN	Classrooms	dents/975 sf) 5/975 sf)	395				23	477
ERMAN	Classrooms Pre -K (18 stud K (24 students	lents/975 sf) /975 sf) ts/975 sf)	395	4	21	84	23	477
ERMAN	Classrooms Pre -K (18 stud K (24 students 1st (24 studen	dents/975 sf) 5/975 sf) ts/975 sf) nts/ 800 sf)	395	4	21 21	84 63	23	477
ERMAI	Classrooms Pre -K (18 stud K (24 students 1st (24 studen 2nd (24 studen	dents/975 sf) 5/975 sf) ts/975 sf) nts/ 800 sf) nts/ 800 sf)	395	4 3 3	21 21 21 21	84 63 63	23	477
ERMAN	Classrooms Pre -K (18 stud K (24 students 1st (24 studen 2nd (24 studen 3rd (24 studen	dents/975 sf) /975 sf) ts/975 sf) nts/ 800 sf) nts/ 800 sf) nts/ 800 sf)	395 	4 3 3 3 3	21 21 21 21 21 21	84 63 63 63 63	23 23	477
	Classrooms Pre -K (18 stud K (24 students 1st (24 studen 2nd (24 studen 3rd (24 studen 4th (25 studen	dents/975 sf) /975 sf) ts/975 sf) nts/ 800 sf) nts/ 800 sf) nts/ 800 sf)	395 	4 3 3 3 4	21 21 21 21 21 21 21	84       63       63       63       63       84	23	477
	Classrooms Pre -K (18 stud K (24 students 1st (24 studen 2nd (24 studen 3rd (24 studen 4th (25 studen 5th (25 studen	dents/975 sf) /975 sf) ts/975 sf) nts/ 800 sf) nts/ 800 sf) nts/ 800 sf) nts/ 800 sf)	395 	4 3 3 3 4 4	21 21 21 21 21 21 21	84       63       63       63       84       84	23	477
	Classrooms Pre -K (18 stud K (24 students 1st (24 studen 2nd (24 studen 3rd (24 studen 4th (25 studen	dents/975 sf) /975 sf) ts/975 sf) nts/ 800 sf) nts/ 800 sf) nts/ 800 sf) nts/ 800 sf)		4 3 3 4 4 23	21 21 21 21 21 21 21 21	84       63       63       63       84       84       477		
	Classrooms Pre -K (18 stud K (24 students 1st (24 studen 2nd (24 studen 3rd (24 studen 3rd (24 studen 5th (25 studen 5th (25 studen Special Educatio	dents/975 sf) /975 sf) ts/975 sf) nts/ 800 sf) nts/ 800 sf) nts/ 800 sf) nts/ 800 sf)		4 3 3 4 4 23 2 2	21 21 21 21 21 21 21 21 21 21 21 8	84       63       63       63       84       84       477       16	2	
	Classrooms Pre -K (18 stud K (24 students 1st (24 studen 2nd (24 studen 3rd (24 studen 4th (25 studen 5th (25 studen Special Education FACES	dents/975 sf) /975 sf) ts/975 sf) nts/ 800 sf) nts/ 800 sf) nts/ 800 sf) nts/ 800 sf)		4 3 3 4 4 23 2 1	21 21 21 21 21 21 21 21 21 21 21 8	84       63       63       63       84       84       477       16	2	16
	Classrooms Pre -K (18 stud K (24 students 1st (24 student 2nd (24 student 3rd (24 student 3rd (24 student 4th (25 student 5th (25 student 5th (25 student Special Education FACES Title 1	dents/975 sf) /975 sf) ts/975 sf) nts/ 800 sf) nts/ 800 sf) nts/800 sf) nts/800 sf) nts/800 sf) nts/800 sf)		4 3 3 4 4 23 2 1 2 1 1 2 1 2 1 1 2 1	21 21 21 21 21 21 21 21 21 21 21 8	84       63       63       63       63       84       84       477       16       8       16       16       16       16       16       16       16       16       1        1		
	Classrooms Pre -K (18 stud K (24 students 1st (24 student 2nd (24 studen 3rd (24 studen 3rd (24 studen 4th (25 studen 5th (25	dents/975 sf) /975 sf) ts/975 sf) nts/ 800 sf) nts/ 800 sf) nts/800 sf) nts/800 sf) nts/800 sf) nts/800 sf)		4 3 3 4 4 23 2 1 2 1 1 2 1 2 2 1 2 2 2 1 2 2 2 1 2 2 2 2 1 2	21 21 21 21 21 21 21 21 21 21 21 8	84       63       63       63       84       84       477       16	2	
	Classrooms Pre -K (18 stud K (24 students 1st (24 student 2nd (24 studen 3rd (24 studen 3rd (24 studen 4th (25 studen 5th (25	dents/975 sf) /975 sf) ts/975 sf) nts/ 800 sf) nts/ 800 sf) nts/800 sf) nts/800 sf) nts/800 sf) nts/800 sf)		4 3 3 4 4 23 2 1 2 1 1 2 1 2 1 1 2 1	21 21 21 21 21 21 21 21 21 21 21 8	84       63       63       63       63       84       84       477       16       8       16       16       16       16       16       16       16       16       1        1		
	Classrooms Pre -K (18 stud K (24 students 1st (24 studen 2nd (24 studen 3rd (24 studen 3rd (24 studen 4th (25 studen 5th (25 s	dents/975 sf) /975 sf) ts/975 sf) nts/ 800 sf) nts/ 800 sf) nts/800 sf) nts/800 sf) nts/800 sf) nts/800 sf)		4 3 3 4 4 23 2 1 2 1 1 2 1 2 1 30	21 21 21 21 21 21 21 21 21 21 21 8	84       63       63       63       63       84       84       477       16       8       16       16       16       16       16       16       16       16       1        1	2 1 2 2 1 26	

							Total	
			Current	Total #	Average #	Total #	Teaching	Total Studen
			Enrollment	Spaces	of Students		Spaces	Capacity
								. ,
ASONS	COVE ELEMENT	ARY SCHOOL	239					
	Classrooms						13	270
	Pre -K (18 stu	dents/975 sf)		1	18	18		
	K (24 student	s/975 sf)		2	21	42		
	1st (24 studer			2	21	42		
	2nd (24 stude			2	21	42		
	3rd (24 stude	nts/ 800 sf)		2	21	42		
	4th (25 stude	nts/800 sf)		2	21	42		
	5th (25 stude	nts/800 sf)		2	21	42		
				13		270		
	Special Educati	on						
	Computer			2				
	STEM Lab			1				
				16		270	13	270
	Gymnasium			1			1	
	Music			1			1	
	Art			1			1	
10UNT P	LEASANT ELEM	ENTARY SCHOOL	. 349					
	Classrooms						19	396
	Pre -K (18 stu	dents/975 sf)		1	18	18		
	K (24 student	s/975 sf)		3	21	63		
	1st (24 studer	nts/975 sf)		3	21	63		
	2nd (24 stude	nts/ 800 sf)		3	21	63		
	3rd (24 stude	nts/ 800 sf)		3	21	63		
	4th (25 stude	nts/800 sf)		3	21	63		
	5th (25 stude	nts/800 sf)		3	21	63		
				19		396		
	Constant Education				0			
	Special Educati	on		1	8	8	1	8
	(ICANN)			1	8	8	1	8
	Computer			2				
				23		412	21	412
	Cumposium			4				
	Gymnasium			1			1	
	Music Art			1			1	

							Total	
			Current	Total #	Average #	Total #	Teaching	Total Student
			Enrollment	Spaces	of Students	Students	Spaces	Capacity
			270					
		NTARY SCHOOL	379				21	435
		dents/975 sf)		2	18	36	21	455
	4 students			2	21	84		
		nts/975 sf)		3	21	63		
		nts/ 800 sf)		3	21	63		
		nts/ 800 sf)		3	21	63		
	•	nts/800 sf)		4	21	84		
		nts/800 sf)		2	21	42		
Juir	25 31000	11(3) 800 31)		21	21	435		
				21		455		
Specie	al Educati	on		3	8	24	3	24
FACES			-	1	8	8	1	8
PACES	,			1	16	16	1	16
F DJC				1	10	10	1	10
Senso				1				
OT/P1				1				
Comp				2				
	r Space			1				
	diation			2				
Kenne	ulation			33		483	26	483
				55		405	20	
Gymn	asium			1			1	
Music				1			1	
Art				1			1	
GROVE ELE	MENTAR	SCHOOL	456					
Classr	ooms							
Pre -	-K (18 stu	dents/975 sf)		1	18	18	22	459
K (24	4 student	s/975 sf)		4	21	84		
1st (	24 studer	nts/975 sf)		4	21	84		
2nd	(24 stude	nts/ 800 sf)		4	21	84		
3rd (	24 stude	nts/ 800 sf)		3	21	63		
		nts/800 sf)		3	21	63		
		nts/800 sf)		3	21	63		
				22		459		
	- I E - L							
C	ai Educati	on (FACES)		1	8	8	1	8
Specia				1				
Specia OT/P1	Г							
				3				
OT/P1 Comp		pace		3				
OT/P1 Comp STEM,	outer /Maker Sp	pace ms (Remediatio	n)					
OT/P1 Comp STEM,	outer /Maker Sp		n)	1		467	23	467
OT/P1 Comp STEM, Open	outer /Maker Sp Classrooi		n)	1 2 30		467	23	467
OT/P1 Comp STEM, Open Gymn	outer /Maker Sp Classrooi asium		n)	1 2 30 1		467	23	467
OT/P1 Comp STEM, Open	outer /Maker Sp Classrooi asium		n)	1 2 30		467	23	467

							Total	
			Current	Total #	Average #	Total #	Teaching	Total Studen
			Enrollment	Spaces	of Students	Students	Spaces	Capacity
<u>/EN</u>	NTAD		468					
ms			408				23	480
		lents/975 sf)		1	18	18	25	400
		/975 sf)		4	21	84		
		ts/975 sf)		3	21	63		
		nts/ 800 sf)		4	21	84		
		its/ 800 sf)		4	21	84		
		its/800 sf)		3	21	63		
		its/800 sf)		4	21	84		
511	luuen	113/800 31/		23		480		
				23		400		
du	ucatio	on (Self-Conta	inod)	1	8	8	1	
_uu	ucatic		incuj	2	8	16	2	16
				۷	0	01	۷	Lt
nce	sory			1				
OT				1				
	pecial	ict		1				
	e/Tuto			1				
er		Jillig		2				
er						504	26	50/
				32		504	26	504
ium	m			1			1	
				1			1	
				1			1	
ME	ENTA	RY SCHOOL	545					
ms							27	561
	_	lents/975 sf)		2	18	36		
		/975 sf)		4	21	84		
		ts/975 sf)		4	21	84		
		nts/ 800 sf)		5	21	105		
		its/ 800 sf)		4	21	84		
		its/800 sf)		4	21	84		
		its/800 sf)		4	21	84		
				27		561		
Edu	ucatic	on		3	8	24	3	24
				1				
				1				
er				2				
CI				34		585	30	58
i	m			1			1	
ium	rf1			1			1	
				1			1	

#### **MIDDLE SCHOOLS**

In calculating the capacity of the middle schools, we included every space that housed a full complement of students during any period of the day because these students unlike elementary students move throughout the day from classroom to classroom. We assumed an average of twenty-four (24) students in the generic 6th, 7th, and 8th grade classrooms, science rooms, career tech/shared labs, music, art, and the gymnasium, and we assumed eight (8) students in the special education and special resource classrooms.

In programming a middle school or a high school, an 85% utilization factor is typically used to calculate student capacity. The number of students in every classroom-sized space is added and multiplied by 85%. This 85% utilization rate accounts for the fact that not every classroom is filled every period of the day. With teacher planning periods built in, 85% is a typical utilization factor used in middle and high school programming.

Four of the five middle schools have similar classroom counts. The difference in the capacity numbers is the number of classrooms dedicated to Special Education and Resource classrooms, hence carrying a smaller student load. These four middle schools, Cave Spring, Hidden Valley. Northside, and William Byrd Middle School all have 50 instructional spaces but their capacities range from 938 to 993.

All of the middle schools have more capacity than the forecasted 2025-2026 enrollments.

Below is the summary chart of current enrollment, forecasted enrollment, and current program capacity for Roanoke County Public Schools middle schools.

		Forecasted	Current	Total	
	Current	2025-2026	Program	Classroom	
	Enrollment	Enrollment	Capacity	Spaces	
Middle Schools					
Cave Spring Middle School	769	841	952	50	
Glenvar Middle School	434	493	619	33	
Hidden Valley Middle School	595	614	952	50	
Northside Middle School	678	690	993	50	
William Byrd Middle School	804	785	938	50	

As with the elementary schools, we did calculate the square footages of all the classroom spaces in the middle schools. Northside was the only one where the generic classrooms are considerably smaller than recommended by Virginia DOE. The average classroom size at Northside Middle School is 640 square feet versus the 700 square feet recommended by the VA DOE.

The charts on the following pages show the breakdown of the instructional spaces at the middle schools.

		Current	Total # of	Average #	<b>Total Student</b>
		Enrollment	Spaces	of Students	Capacity
AVES	SPRING MIDDLE SCHOOL	769			
	Generic Classrooms (6t	n, 7th, and 8th)	30	24	720
	Science		6	24	144
			36		864
	Health Classrooms		2	24	48
	Career Tech/Shared Lab		4	24	96
			4	24	50
	Special Education		5	8	40
	Gymnasium		1	24	24
	Music		1	24	24
	Art		1	24	24
			50		1,120
	85% Utilization				952
LEN	AR MIDDLE SCHOOL	434			
	Generic Classrooms (6t	n, 7th, and 8th)	16	24	384
	Science		4	24	96
			20		480
	Health Classrooms		2	24	48
	Career Tech/Shared Lab	os l	3	24	72
	Specialty Classrooms (R				
	Special Education		4	8	32
	Gymnasium		1	24	24
	Music		1	24	24
	Art		2	24	48
				-	
			33		728

		Current	Total # of	Average #	Total Student
		Enrollment	Spaces	of Students	Capacity
IDDE	N VALLEY MIDDLE SCHOOL	595			
	Conorio Classrooms (G	the 7th and 9th)	29	24	696
	Generic Classrooms (6 Science	lii, 7tii, aliu otii)	6	24	144
			35	24	840
	Health Classrooms		2	24	48
	Career Tech/Shared La	bs	4	24	96
	Specialty Classrooms (	Resource)	2	8	16
	Special Education		3	8	24
	Gymnasium		1	24	24
	Music		2	24	48
	Art		1	24	24
			50		1,120
	85% Utilization				952
NORTH	SIDE MIDDLE SCHOOL	678			
	Generic Classrooms (6	th. 7th. and 8th)	35	24	840
	Science		5	24	120
			40		960
	Health Classrooms			24	00
	Career Tech/Shared La		4	24	96
	Specialty Classrooms ( Special Education	Resource)	2	0	10
	Special Education		2	8	16
	Gymnasium		1	24	24
	Music		2	24	48
	Art		1	24	24
			50		1,168
	85% Utilization				993

					Current	Total # of	Average #	Total Student
				1	Enrollment	Spaces	of Students	Capacity
WILLIAM	BYRD	MIDDLE S	CHOOL		804			
	Gene	eric Classro	oms (6th, 7	7th, a	nd 8th)	28	24	672
	Scier	nce				7	24	168
						35		840
	Heal	th Classroo	oms					
	Care	er Tech/Sh	ared Labs			5	24	120
	Spec	ialty Class	rooms (Res	ourc	e)	1	8	8
	Spec	ial Educati	on			5	8	40
	Gym	nasium				1	24	24
	Musi	с				2	24	48
	Art					1	24	24
						50		1,104
	85%	Utilizatio	n					938

#### **HIGH SCHOOLS**

Much like with the middle schools, in calculating the high school capacities, we included all the instructional spaces that house students any period of the day. Again we used an average of 24 students for all spaces excluding special education where we used 8 students per classroom. We used the same 85% utilization factor to compute the actual capacities of the schools.

Three of the five high schools are similar in size and classroom counts, Cave Spring, Hidden Valley, and Northside High Schools. Their capacities range from 1190 to 1251. William Byrd High School is smaller with a capacity of 1107 and Glenvar High School is much smaller with a capacity of only 755 students.

All of the high schools have capacity for the current enrollment. For the forecasted 2025-2026 enrollments, Cave Springs will be over capacity as its current capacity is 1190 and the forecasted enrollment is 1219 students. Cave Springs High School is currently slated for renovation in 2017-2018, so this issue will be addressed.

In looking at the actual classroom square footages, we found Cave Spring, Northside, and William Byrd High Schools have classrooms with less square footage than the 700 square feet recommended by the Virginia Department of Education:

Cave Spring High School (22 classrooms @ 653 SF) Northside High School (26 classrooms @ 620-670 SF) William Byrd High School (29 Classrooms @ 635-660 SF)

Below is the summary chart of current enrollment, forecasted enrollment, and current program capacity for Roanoke County Public Schools high schools.

		Forecasted	Current	Total	
	Current	2025-2026	Program	Classroom	
	Enrollment	Enrollment	Capacity	Spaces	
High Schools					
Cave Spring High School	1024	1219	1190	61	
Glenvar High School	564	610	755	43	
Hidden Valley High School	951	853	1251	62	
Northside High School	1044	929	1217	61	
William Byrd Hig School	1143	1030	1107	56	
Burton Center for Arts &			510	25	
Technology					

The charts on the following pages show the breakdown of the instructional spaces at the high schools.

			Current	Total # of	Average #	Total Student
			Enrollment	Spaces	of Students	Capacity
		IGH SCHOOL	1,024			
AVE SP			1,024			
	Gene	ric Classrooms		36	24	864
	Scien	ice		6	24	144
	Healt	th Classrooms		2	24	48
	Busir	ness, Computer, etc.		5	24	120
	Othe	r Career Techs		3	24	72
	Snec	al Education		3	8	24
	Spee	Self Contained		1	8	8
					24	
		nasium		1	24	24
	Musi			1	24	24
	Dram	ia		1	24	24
	Art			2	24	48
	050/			61		1,400
	85%	Utilization				1,190
ilenva	R HIGH	SCHOOL	564			
ilenva			564	23	24	552
ilenva	Gene	ric Classrooms	564	23	24	
ilenva	Gene Scien	ric Classrooms	564	6	24	144
ilenva	Gene Scien Healt	ric Classrooms ice :h Classrooms	564	6 2	24 24	144 -48
ilenva	Gene Scien Healt Busir	ric Classrooms	564 564	6	24	552 144 -48 48 48
ilenva	Gene Scien Healt Busir Othe	ric Classrooms ice ch Classrooms ness, Computer, etc. r Career Techs	564  564	6 2 2 2 2	24 24 24 24 24	144 -48 48 48
ILENVA	Gene Scien Healt Busir Othe	ric Classrooms ice ch Classrooms ness, Computer, etc.	564	6 2 2	24 24 24 24	144 -48 48 48 16
ilenva	Gene Scien Healt Busir Othe Spect	ric Classrooms the Classrooms the Classrooms the Structure of the Classrooms the Structure of the Classrooms the Structure of the Classroom the Classroom of the Classroom the Classroom of the C	564	6 2 2 2 2 2 2 2 2 1	24 24 24 24 24 8 8 8	144 -48 48 48 16 8
ilenva	Gene Scien Healt Busir Othe Speci	ric Classrooms and a serie classrooms and a serie classrooms and a serie classrooms and a serie class computer, etc. a serie class computer, etc. a serie class cl	564	6 2 2 2 2 2 2 2 2 1 2 1 1 1	24 24 24 24 24 8 8 8 8 24	144 -48 48 48 16 8 24
ilenva	Gene Scien Healt Busir Othe Speci Gymn Musi	ric Classrooms ace th Classrooms th Classrooms	564	6 2 2 2 2 2 2 2 2 1 2 1 1 2 1 2 1 2	24 24 24 24 24 8 8 8 8 24 24 24	144 -48 48 48 16 8 24 24
SLENVA	Gene Scien Healt Busir Othe Speci Gymi Musi Dram	ric Classrooms ace th Classrooms th Classrooms	564           -	6 2 2 2 2 2 1 2 1 1 2 1 2 1 2 1 1	24 24 24 24 24 8 8 8 8 24 24 24 24	144 -48 48 48 16 8 24 24 48 24
SLENVA	Gene Scien Healt Busir Othe Speci Gymn Musi	ric Classrooms ace th Classrooms th Classrooms	564         -         <	6 2 2 2 2 2 2 2 2 1 2 1 1 2 1 2 1 2	24 24 24 24 24 8 8 8 8 24 24 24	144 -48 48 48 16 8

		Current	Total # of	Average #	Total Student
		Enrollment	Spaces	of Students	Capacity
IDDEN	VALLEY HIGH SCHOOL	951			
	Generic Classrooms		40	24	960
	Science		7	24	168
	Health Classrooms		2	24	48
	Business, Computer, etc.			24	
	Other Career Techs		7	24	168
	Special Education				
	Self Contained		1	8	8
	Gymnasium		1	24	24
	Music		2	24	48
	Drama				
	Art		2	24	48
			62		1,472
	85% Utilization				1,251
NORTH	SIDE HIGH SCHOOL	1,044			
	Generic Classrooms		36	24	864
	Generic Classrooms Science		36 10	24 24	
					240
	Science		10	24	240 48
	Science Health Classrooms		10 2	24 24	864 240 48 120 24
	Science Health Classrooms Business, Computer, etc.		10 2 5	24 24 24	240 48 120
	Science Health Classrooms Business, Computer, etc. Other Career Techs		10 2 5 1	24 24 24 24 24	240 48 120 24
	Science         Health Classrooms         Business, Computer, etc.         Other Career Techs         Special Education         Self Contained         I	Image: Constraint of the sector of	10 2 5 1 1	24 24 24 24 24 8	240 48 120 24 8 8
	Science         Health Classrooms         Business, Computer, etc.         Other Career Techs         Special Education         Self Contained         Gymnasium	Image: Constraint of the sector of	10 2 5 1 1 1 1 1 1	24 24 24 24 24 8 8	240 48 120 24
	Science         Health Classrooms         Business, Computer, etc.         Other Career Techs         Special Education         Self Contained         I	Image: Constraint of the sector of	10 2 5 1 1 1 1 1 1 1 1	24 24 24 24 24 8 8 8 8 24	240 48 120 24 8 8 8 8 24
	Science         Health Classrooms         Business, Computer, etc.         Other Career Techs         Special Education         Self Contained         Gymnasium         Music	Image: section of the sectio	10 2 5 1 1 1 1 1 1 1 1	24 24 24 24 24 8 8 8 8 24	240 48 120 24 8 8 8 8 24 48
	Science Health Classrooms Business, Computer, etc. Other Career Techs Special Education Self Contained Gymnasium Music Drama	Image: constraint of the sector of	10 2 5 1 1 1 1 1 1 2	24 24 24 24 24 8 8 8 24 24 24	240 48 120 24 8 8 8 8 24

			Current	Total # of	Average #	Total Student
			Enrollment	Spaces	of Students	Capacity
			4.442			
VILLIAN	M BYRD HIGH S	CHOOL	1,143			
	Generic Clas	ssrooms		33	24	792
	Science			8	24	192
	Health Class	rooms			24	
	Business, Co	omputer, etc.		2	24	48
	Other Caree			6	24	144
	Special Educ			2	8	16
	Self Co	ontained		1	8	8
	Gymnasium			1	24	30
	Music			1	24	24
	Drama					
	Art			2	24	48
				56		1,302
	85% Utilizat	tion				1,107
URTON		THE ARTS AND T	ECHNOLOGY			
	Generic Clas	srooms				
	Generic clas	531001113				
	Science					
	Science Health Class	srooms				
	Science Health Class Business, Co	prooms		9	24	
	Science Health Class	prooms		9 16	24 24 24	
	Science Health Class Business, Co	prooms pmputer, etc. r Techs				
	Science Health Class Business, Cc Other Caree Special Educ	prooms pmputer, etc. r Techs				
	Science Health Class Business, Cc Other Caree Special Educ Self Cc	prooms omputer, etc. er Techs cation ontained				
	Science Health Class Business, Cc Other Caree Special Educ Self Cc Gymnasium	prooms omputer, etc. er Techs cation ontained				
	Science Health Class Business, Cc Other Caree Special Educ Self Cc Gymnasium Music	prooms omputer, etc. er Techs cation ontained	Image: select			
	Science Health Class Business, Co Other Caree Special Educ Self Co Gymnasium Music Drama	prooms omputer, etc. er Techs cation ontained				
	Science Health Class Business, Cc Other Caree Special Educ Self Cc Gymnasium Music	prooms omputer, etc. er Techs cation ontained	Image: select			216 384
	Science Health Class Business, Co Other Caree Special Educ Self Co Gymnasium Music Drama	srooms omputer, etc. or Techs cation ontained	Image: section of the section of t			

PERKINS+WILL