

CAPACITY CALCULATIONS

Cropper performed a capacity study for the Richmond Public Schools (district). The field research/school tours occurred in February-March 2019. The first step in the process was to collect floor plans for each school within the district. These floor plans were printed off and used as a guide during discussions with school principals/administrators.

Student to teacher ratios that have been used historically for the district were utilized for the capacity calculations, which are shown in the table to the left. Since these are class sizes that are below the state maximum, or sizes that the districts typically aim for, they have been named 'Functional' class sizes.

*Functional calculated using:
 18:1 for KG,
 22:1 for 1-12,
 15:1 for VPI, and
 9:1 for Exc. Ed

Cropper met with each building principal to better understand building/room uses and limitations, and to also take a tour of the facility. This part of the process is critical because it helps to confirm or validate the use of classroom spaces. It is not uncommon to see space that could be used as classroom but may currently not be utilized as a classroom because there isn't a demand for the room. These spaces could be included in the total capacity for the building, as long as there are still adequate spaces available for special uses.

Cropper made sure to set aside spaces that are not included in the capacity. Spaces or rooms that were not included in capacity at the elementary level include pull-out/resource rooms, music, art, library, and other core spaces (gym, auditorium, cafeteria).

Lab spaces, music, and art were calculated in the Middle and High School capacity because of the nature of how education is delivered at the upper grades. In elementary school, students mostly stay in their homeroom and the majority of classes are taught in homeroom. At the Middle and High School levels, students migrate from room to room based on their class schedule. Although this is the case, only spaces that can be utilized for general classroom use were used. Rooms such as band or choir rooms (rooms without desks or tables) were not counted.

The floor plan was evaluated for each building and capacities calculated based on the number of rooms counted. There were several schools that had rooms being used for special instruction, but were included in the capacity. These rooms were included in capacity only if there was an adequate number of pull-out spaces set aside already and/or if the principal indicated that the space could be utilized as a classroom.

During interviews with the principals, one of the questions asked is "How many students do you think can fit in this building?" After calculating the capacities and reviewing the results, it appears that the capacity totals only vary slightly from what the principals estimated the capacity of their buildings to be.

RPS Elementary School Capacities 2018-19	
School Name	RPS Functional*
BARACK OBAMA ELEM.	402
BELLEVUE ELEM.	361
BLACKWELL ELEM.	601
BROAD ROCK ELEM. (Ideal)	721
BROAD ROCK ELEM. (Existing)	1086
CHIMBORAZO ELEM.	560
E.S.H. GREENE ELEM.	1000
ELIZABETH D. REDD ELEM.	424
FAIRFIELD COURT ELEM.	499
G.H. REID ELEM. (Ideal)	632
G.H. REID ELEM. (Existing)	782
GEORGE MASON ELEM.	750
GEORGE W. CARVER ELEM.	700
GINTER PARK ELEM.	389
J.B. FISHER ELEM.	386
J.L. FRANCIS ELEM.	566
JOHN B. CARY ELEM.	336
LINWOOD HOLTON ELEM.	591
MARY MUNFORD ELEM.	508
MILES JONES ELEM. (Ideal)	575
MILES JONES ELEM. (Existing)	685
OAK GROVE/BELLEMEADE ELEM.	739
OVERBY-SHEPPARD ELEM.	408
SOUTHAMPTON ELEM.	531
SWANSBORO ELEM.	296
WESTOVER HILLS ELEM.	451
WILLIAM FOX ELEM.	477
WOODVILLE ELEM.	552

RPS Middle School Capacities 2018-19	
School Name	RPS Functional*
ALBERT HILL MIDDLE	819
BINFORD MIDDLE	661
ELKHARDT MIDDLE	1500
HENDERSON MIDDLE	977
LUCILLE M. BROWN MIDDLE	779
MARTIN LUTHER KING JR. MIDDLE	876
THOMAS C. BOUSHALL MIDDLE	885

RPS High School Capacities 2018-19	
School Name	RPS Functional*
ARMSTRONG HIGH	1255
FRANKLIN MILITARY ACADEMY	550
GEORGE WYTHE HIGH	1401
HUGUENOT HIGH	1426
JOHN MARSHALL HIGH	1391
OPEN HIGH	198
RICHMOND COMMUNITY HIGH	726
THOMAS JEFFERSON HIGH	1127



**Richmond Public Schools
Capacity Study: Calculations**

When calculating capacities for schools, there were certain assumptions made regarding uses of specific rooms. For instance, the rooms that were considered pull-out spaces or self-contained special ed are listed in the notes. Other building assumptions are noted. Below are the school level notes and assumptions as a result of school tours and calculation of individual school capacity figures:

RPS Pre-K and Specialty School Capacities 2018-19	
School Name	RPS Functional*
Amelia Street Special Education	108
Blackwell Pre-K	264
Franklin Military Academy	704
Maymont Pre-K Center	237
Mary Scott Annex	219
Richmond Community High School	726
Summerhill Pre-K	210

School	Type	Notes
BELLEVUE ELEM.	ES	Pull-out rooms include 205, 307, 102, 103, 305. 1 PK/PDD room (106). 2 VPI rooms (101, 105). Art in room 104. Music in auditorium.
BLACKWELL ELEM.	ES	Room 116 assumed for KG use, Room 110 assumed for 1st grade use. Self-Contained Sp. Ed rooms include 106, 119, 206. Pull-out rooms (not factored into capacity) include 205, 211, 111, and 120. Music/Art assumed to be in room 101.
BROAD ROCK ELEM. (Existing)	ES	16 of the 24 rooms in the portables are currently used for grades 2-3, which leaves 8 available. Includes use of 6 of available classrooms in portable stock for grades 1-3, and the remaining 2 to use for pull-out instruction.
CHIMBORAZO ELEM.	ES	VPI uses rooms 107, 113. Self-Contained Special Ed rooms include 102, 119. Pull out rooms (not factored into capacity) include 101, 108, 201, 204a. Assumed use of rooms 204 and 205 as regular classrooms (204 for 4th grade, 205 for 5th grade). Music/Art use rooms 118, 121.
ELIZABETH D. REDD ELEM.	ES	Room used behind the stage for KG and 1st grade not counted in capacity, and assumed use for music and art. Room 3 assumed for Sc. Sped. Another Sc. Sped class being taught in 'Activity' room behind stage. This was not counted in capacity, but the number of grade 4-5 rooms reduced by 1 to account for the needed additional Sc. Sped space. Various small rooms around library and auditorium assumed for pull-out uses. Room 23 in Round currently used for a combined/larger 2nd grade class. Only counted as 1 classroom.
FAIRFIELD COURT ELEM.	ES	Room 112 is Self-Contained Sp. Ed. Rooms 119a and 117 not counted in capacity, used as pull-out. Space in G ill Center not factored into capacity, but are assumed to be used for music/art.
G.H. REID ELEM.	ES	Assumes 8 modular additions in capacity (6 rooms counted in 2nd grade, 1 room for Sc. Sped, 1 for pull-out). Pull out spaces include: 112, 114, 116, Modular room, 204, 1 room in round bldg. Counselors office (rm. 208) not counted in capacity. Music rm 117, Art rm 115
GEORGE MASON ELEM.	ES	
GEORGE W. CARVER ELEM.	ES	13 Acres uses Rooms 115-120, and 217-222. 14 rooms total counted as Self-Contained (including 10 in 13 acres section). Music/Art uses auditorium and basement, as well as P.E. Not ideal environment in basement. No Gym.
GINTER PARK ELEM.	ES	Self-Contained room B6. Pull out spaces not factored into capacity includes rooms B4, B5, 06, 17, 123, 124. There are other small office spaces above stage and above auditorium lobby that weren't counted as pull-out or classrooms. Could be used for pull-out. Art room is B3. Room 17 considered pull-out because it is smaller due to elevator install. Room 01 is currently used for tutoring, but counted as 2nd grade classroom.
J.B. FISHER ELEM.	ES	Grades 1-3 inventory includes available use of rooms 108 and 119, and counted in capacity as regular classroom. Rooms 104, 113, 114 counted as pull-out spaces (113-114 used for hearing impaired). Music and Art in rooms 001 and 002. Conference room next to room 120 not counted in capacity.
BARACK OBAMA ELEM.	ES	Rooms 208, 309 Self Contained Sp. Ed. Art in room 104. Music in auditorium. Pull out spaces (not included in capacity) are rooms 205, 202, 306.
J.L. FRANCIS ELEM.	ES	Self-Contained Special Ed / PDD rooms include 001, 003, 28, 29. Pull-out rooms (not factored into capacity) includes: Room 025, 014a, 014b, Computer Lab, and rooms around open court in center of bldg. Building has no gym. Art being taught in group assembly room in center of bldg.
JOHN B. CARY ELEM.	ES	Rooms 104 (1st gr), 107 (KG), and 209 (3rd gr) assumed to be available for regular classroom use. Rooms 105, 200, 203 assumed for pull-out uses. Self-Contained Special Ed rooms include 112, 211. Art uses room 116. There is designated space for music near gymnasium.
LINWOOD HOLTON ELEM.	ES	Self-Contained special ed rooms are 205, 206, 235. VPI rooms are 104, 105. Pull-out rooms include 111, 102, 116. Music/Art rooms are 101, 211
MARY MUNFORD ELEM.	ES	Self-Contained rooms are 112, 115. Room 105 used for pull-out, as well as small room constructed across from room 213. Other pull-out spaces not categorized exist around auditorium.

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MILES JONES ELEM.	ES	Assumes use of semi-permanent trailers in capacity (6 total classrooms with 1 assumed for pull-out, so 5 rooms counted). Other pull-out rooms not in capacity include 116, 211, and 205. Title 1 room upstairs not counted as classroom or pull-out room. Music assigned to room 206, Art to room 101.
OAK GROVE/BELLEMEADE ELEM.	ES	Pull-out spaces include 1501, 1104, 2507, 2505, 3405, 3507 (not counted in capacity). Self-Contained Sp. Ed rooms include: 1401, 1102, 2401, 2405, 3402, 3505. VPI rooms include 1105, 1106, 1107. Music/Art in rooms 2201, 2205.
OVERBY-SHEPPARD ELEM.	ES	Pull-Out rooms (not counted in capacity) include 107, 116, 124, 121. Self-Contained room is 113. VPI room is 103.
SOUTHAMPTON ELEM.	ES	Room 2 assumed for KG use. Rooms 7, 13, and 16 assumed for grades 1-3 use. Pull-out rooms assumed for rooms 10, 9, 15. Multi-Purpose room assumed for Music/Art use.
SWANSBORO ELEM.	ES	Pull-out spaces include B4, B5, and 101 (not counted in capacity). No rooms assumed for music/art.
WESTOVER HILLS ELEM.	ES	Music is on stage. Art is in multi-purpose room, neither of which are counted in capacity. Rooms 14 and 15 are small and counted as pull-out spaces.
WILLIAM FOX ELEM.	ES	Portable classrooms (2) used for 4th grade. Not factored into capacity. Pull-out spaces not factored into capacity include 104, 108, 203. Other small spaces exist in the bldg for pull-out uses. Self-Contained Special Ed Room B3. Music/Art use rooms B7 and room coded as 'Art' on floor plan.
WOODVILLE ELEM.	ES	Self-Contained Special Ed rooms are A1, A2. Pull out rooms are A8, 118, 120, A7, 110, 108. Music/Art in rooms 102, 113. Room 101 not counted as a room (used as office).
ARMSTRONG HIGH	HS	Kitchen, Band, Choir, and Dance rooms not factored into capacity. Room 121 and 122 not factored into capacity.
FRANKLIN MILITARY ACADEMY	HS	Rooms 308a, 203a, 203b factored as pull-out and not included in capacity. Band and Choir not factored into capacity.
GEORGE WYTHE HIGH	HS	Rooms not included in capacity include Band, Choir, Dance, Art Room, and ISS Room (111).
HUGUENOT HIGH	HS	Does not include band, choir, drama, dance rooms. Computer labs (3) and 5 classrooms in Arts hall included (including Tech CR).
JOHN MARSHALL HIGH	HS	Does not include band and dance rooms. Nor does capacity include portion of building that is used by charter school.
OPEN HIGH	HS	
RICHMOND COMMUNITY HIGH	HS	Undersized rooms factored as pull-out spaces (Rooms 106, 306, 307).
THOMAS JEFFERSON HIGH	HS	Small rooms not factored into capacity include rooms 104, 107, 122, 322, 323, 311. Self-Contained Special Education Rooms are 103, 119, 120.
ALBERT HILL MIDDLE	MS	Rooms 104, 214, 306 factored as self-contained special ed.
BINFORD MIDDLE	MS	5 total self-contained special ed rooms (113, 114, 313, 314, 214). Room 108 is used for meetings, and not counted as classroom.
HENDERSON MIDDLE	MS	Rooms 134-137 considered to be used as pull-out space. Due to open design and concern that filling all pods will overload core of building, the Home Ec, Fine Arts, Industrial Arts, Music, Chorus spaces not factored into capacity.
LUCILLE M. BROWN MIDDLE	MS	Rooms 501, 502, TR-08, 320, 310, Space Lab counted as pull-out space and not included in capacity. Drama room (505) and Band (506) not counted in capacity. Room 101 and 102 counted as 1 large classroom. Room 212 counted for Self-Contained Sp. Ed. Multipurpose/Comp lab not counted in capacity.
MARTIN LUTHER KING JR. MIDDLE	MS	Rooms D02, and E02 counted for Self-Contained Special Ed rooms. Band, Choir, Dance rooms not counted in school capacity. Rooms D19-21, E22-25, C26-28, C50, and F21-23 factored as pull-out spaces.
THOMAS C. BOUSHALL MIDDLE	MS	