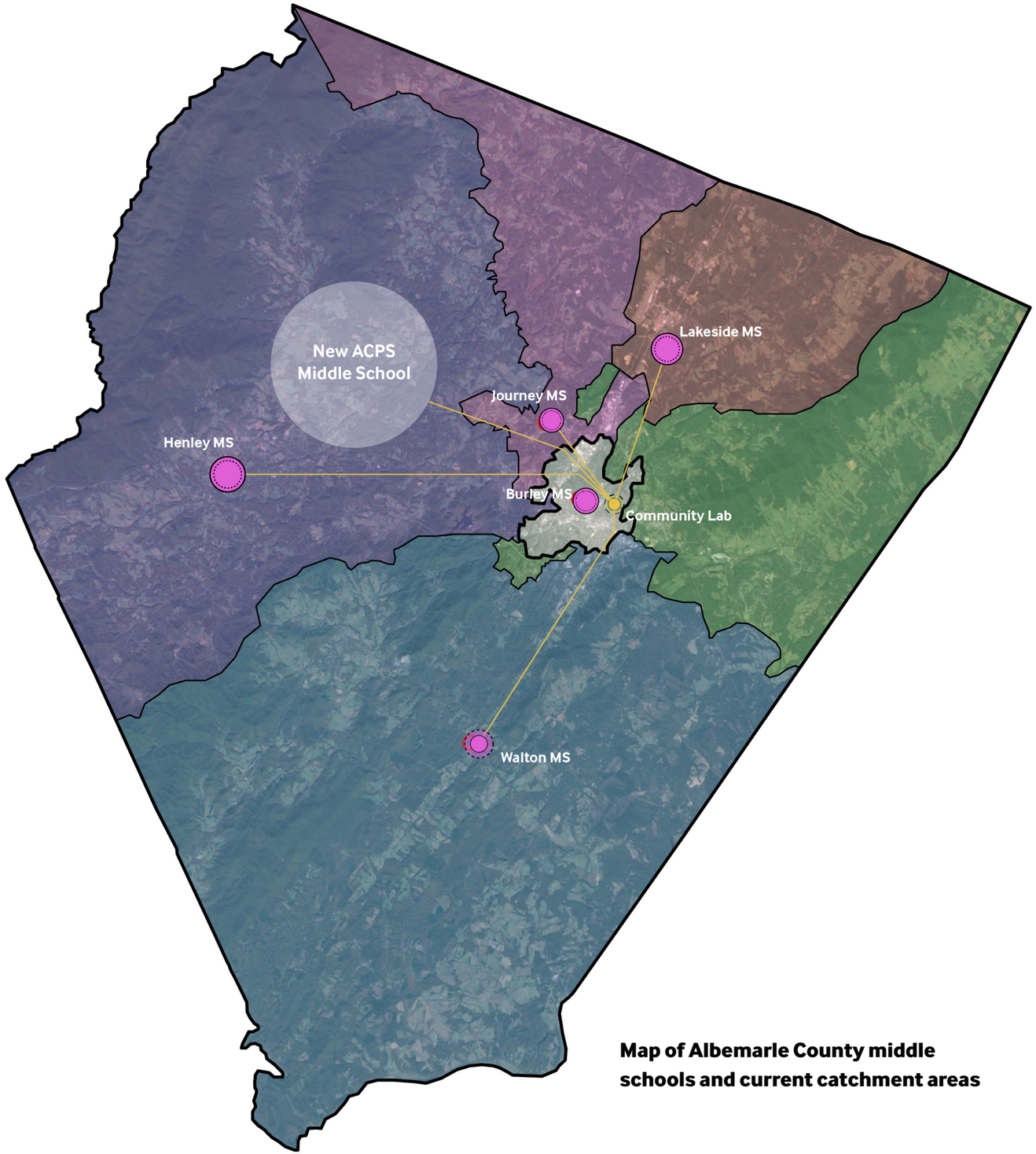
Middle School Master Plan

Albemarle County Public Schools


KEEP
What are (3) things you'd keep in your school?
LIBRARY



Map of Albemarle County middle schools and current catchment areas


Inspiration Mapping
Inspiration Mapping
Inspiration Mapping

EXECUTIVE SUMMARY

1

EXECUTIVE SUMMARY

INTRODUCTION

Albemarle County Public Schools currently owns and operates five comprehensive middle schools and one community lab school in the district (general data in table below). Collectively, these middle schools have adequate current capacity, but there are looming overcrowding issues at Henley Middle School in Crozet and Journey Middle School on Lambs Lane.

Middle School	Year Built	Square Ft.	Acres	2022-2023 Enrollment
Burley	1951	123,626	15	585
Henley	1966	120,419	30	805
Journey	1966	120,419	20	631
Lakeside	1994	94,440	21	513
Walton	1974	98,340	50	335
Community Lab	1959	30,915	7	92

Due to projected growth, age/condition of the schools and associated facilities, and other factors, ACPS contracted with VMDO Architects in March of 2023 to develop a comprehensive study and recommended 20-year master plan for all middle schools to adequately address, improve and resolve capacity challenges.

Of varying ages and sizes, the current middle school facilities have differing needs. Therefore, in addition to capacity, renovation needs must also be evaluated for educational adequacy and parity. All recommendations are based on and consistent with the vision, mission, values and goals of the Albemarle County Public Schools Strategic Plan.

This Middle School Master Plan investigates and documents how middle school facilities can support and enhance the strategic plan goals of Thriving Students, Affirming and Empowering Communities, and Equitable, Transformative Resources.

TASKS

The specific tasks contributing to and captured by the middle school master plan include:

Facilities Assessments

Each facility was evaluated by a team of architects and engineers to assess current conditions and make recommendations for improvements. Recommendations included site/civil, structural, mechanical, electrical, plumbing, architectural, and educational adequacy.

Community Engagement

A broad group of stakeholders were engaged throughout the process to better understand the unique characteristics and culture of each existing facility and the community aspirations and concerns around capacity needs, feeder patterns, boundaries, instructional space needs, and parity amongst middle schools.

Recommendations

Options were developed to consider new facilities, additions and renovations, boundary changes, grade level configurations, unique educational programming, and other creative solutions to meet the various needs of the middle schools.

Cost Estimating and Capital Improvement Planning

The cost of each recommended strategy was estimated in today's dollars. The strategies were then considered as part of a phased district-wide plan for middle school education over the next 20 years. Projects were placed in order of priority for execution. Costs were escalated by an estimated inflation rate of 5.25% per year and totaled on an annual basis for inclusion in funding requests for the Albemarle County Capital Improvement Plan.

PROCESS

The master plan process lasted from March to December of 2023 and required a wide variety of meetings and engagements with a broad group of stakeholders, including 8 meetings with the Steering Committee of district leadership and 3 meetings with a county-wide Stakeholder Group. Beyond this, the process included numerous meetings with student advisory groups, building operators, instructional leaders, and families and culminated with a public gallery walk presentation. In an effort to increase participation, engagements were both synchronous (in-person) and asynchronous (virtual) and leveraged community and user surveys to capture stakeholder input.

See the following chapters and appendices for detailed information on each phase of the Master Plan, along with recommendations and a proposed Capital Improvement Plan for ACPS Middle Schools.

ENGAGEMENT GROUPS AND ROLES

ACPS

Steering Committee

Role: Execute the Process

Closed discussions between Owner and Consultant

- What are the questions we should ask? How? When?
- Does feedback suggest changes to the approach?
- Planning and Direction

Members

Meet once a month for an hour

PUBLIC

Stakeholders + Community

Role: Advise the Process

Discussions with selected stakeholders where potential solutions are first presented

- Present the issues, Ask the questions, Hear people's voices.
- Public meetings that include community members are recorded and published.

Members

Meet periodically at key points in process

STAFF

ACPS Schools + Facilities Personnel

Role: Inform the Process

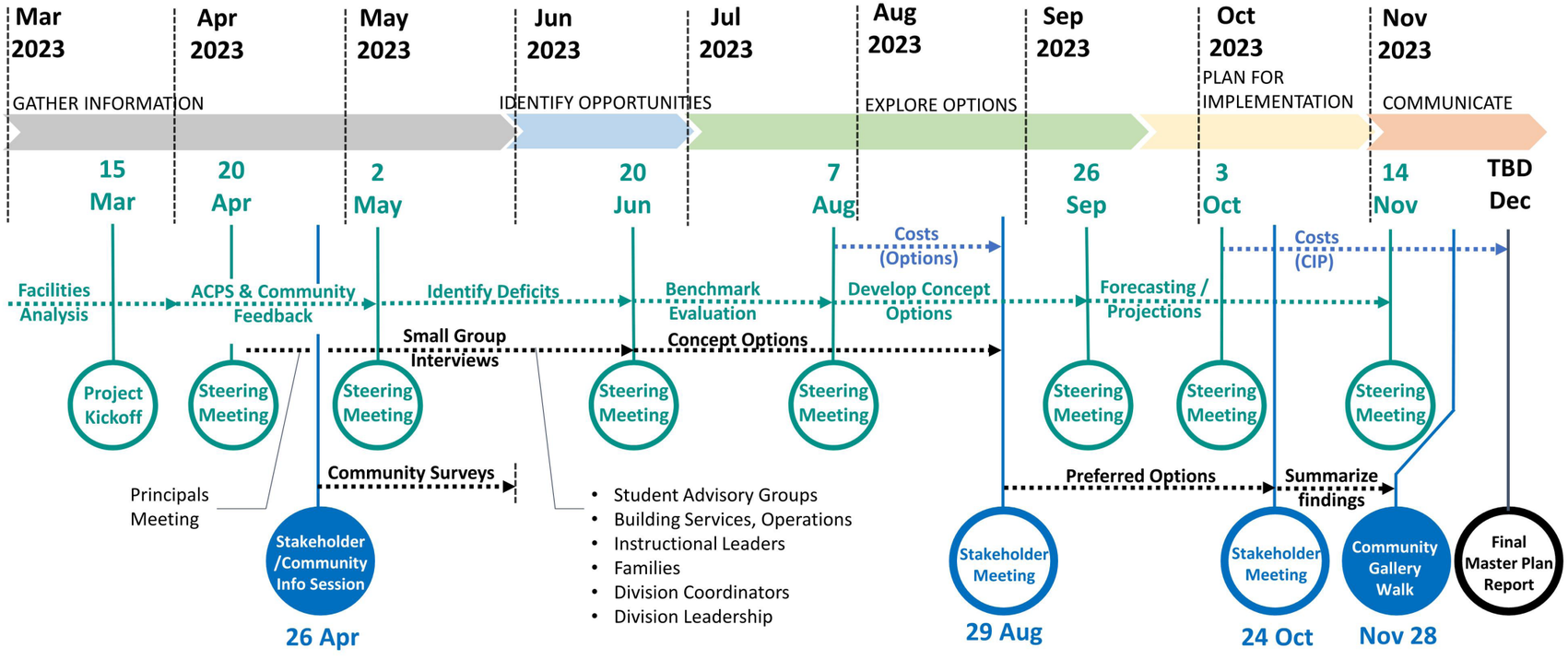
Non-public discussions, but all information presented & collected is made public

- Subject matter expertise
- Provide experience-based feedback to design team
- Share in-depth, professional knowledge of each school

Members

Meet as needed throughout the study

MASTER PLAN SCHEDULE



KEY MEETINGS AND ENGAGEMENTS

Steering meetings

Eight (8) closed meetings with ACPS leadership occurred once per month to discuss overall planning and steer key decision-making for the master plan.

Stakeholder meetings

Four (4) public meetings at key points in the process to present the issues, answer questions, and hear feedback about the possible futures of ACPS middle schools

Gallery Walk

The Master Plan recommendations were presented to the public and stakeholders in person, held at the Community Lab School gym, where participants had an opportunity to ask questions and offer feedback on the recommendations.


to clean and organize our room!
Block 1 starts at 8:30, until then
勇士

PROJECT TEAM

2

PROJECT TEAM

ARCHITECTURE

For over 47 years, **VMDO Architects** has connected people and places through well-designed, community-centered environments. We strive to enrich the human experience and the long-term stewardship of our planet by emphasizing the spirit of a place through enduring architecture, sustainable design, sensitivity to sites and landscapes, and design transformations that embody a community's highest ambitions.

CIVIL ENGINEERING

Founded in 1953 in downtown Richmond, VA, **Timmons Group** has grown to provide multi-discipline services from four operating units — infrastructure, public and private land development, geospatial technology, and field operations. Consistently recognized as one of the Engineering News Record's Top 500 Design Firms, Timmons Group provides civil engineering, environmental, geotechnical, GIS/geospatial technology, landscape architecture and surveying services to a diverse client base.

STRUCTURAL ENGINEERING

Springpoint Structural provides a unique approach to structural engineering that has been developed throughout our staff's careers in and around the construction industry. With significant experience in structural engineering and design as well as stints in construction planning and management, we deliver creative structural solutions that meet the needs of the wide variety of perspectives involved in a project.

MECHANICAL, ELECTRICAL, PLUMBING, AND FIRE PROTECTION

CMTA is a multi-specialty firm that specializes in cost effective, energy efficient, high performance buildings. Unlike other firms, we are true partners who are vested in the long-term success of our buildings, which is measured by exceeding the expectations of building owners and managers, and maintaining the health and comfort of the occupants. CMTA is the national leader in Zero Energy Design with nine million square feet of zero energy projects.

COST ESTIMATING

Downey & Scott is a Construction Management Services firm headquartered in Warrenton, Virginia with over 29 years experience in the industry. Our principal offerings include a comprehensive range of Pre-Construction, Construction Phase, and Post-Construction Management Services. With senior level construction management experience, our company adds a valuable hands-on perspective. Over fifty percent of our project base comes from both the private and public education sector. We have been retained on a broad spectrum of K12 projects ranging from multi-phased Urban High School replacements to site adapted rural Middle School fast track projects, from long range studies for Capital Improvement Plans, to the disassembly and reconstruction of deficiently constructed projects.

ALBEMARLE COUNTY PUBLIC SCHOOLS

Steering Committee

Daphne Keiser, Assistant Superintendent for School Community Engagement
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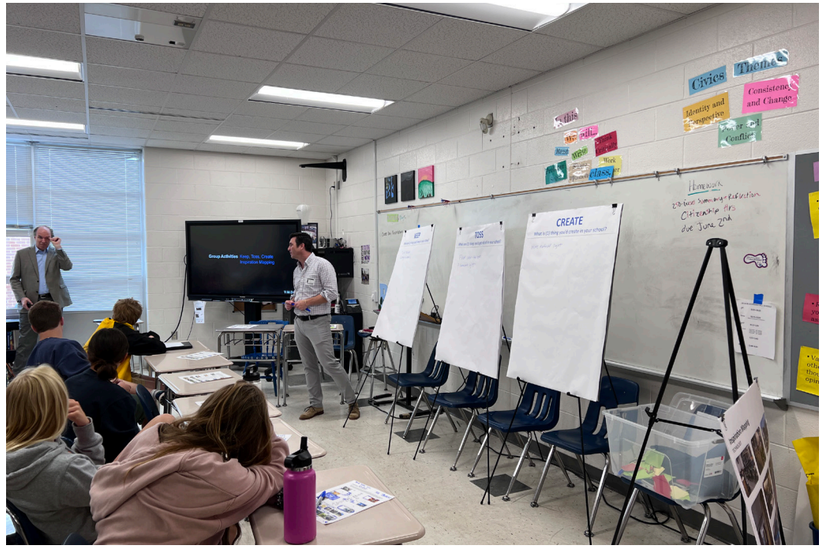
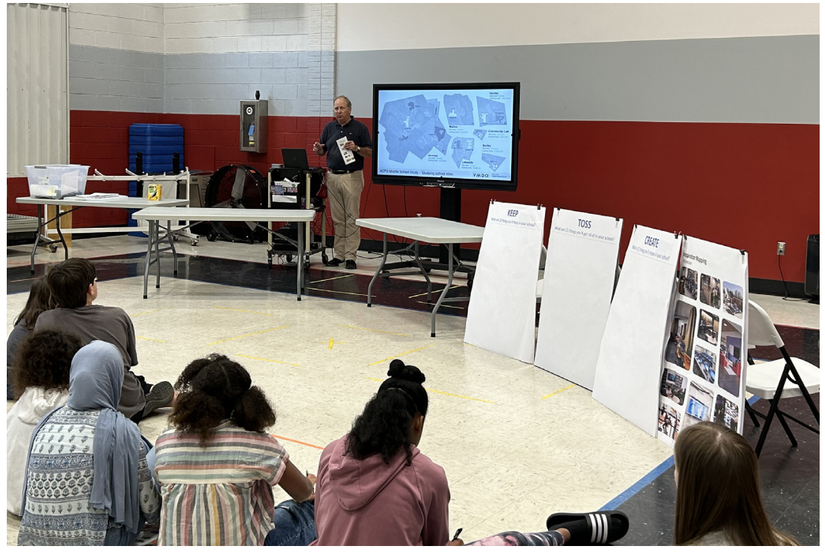




The design team analyzed existing ACPS middle school facilities to develop needs assessment reports, and facilitated student advisory group activities to imagine the future of ACPS middle schools.

COMMUNITY ENGAGEMENT

3

VMDO conducted a variety of in-person and virtual meetings to engage a broad group of ACPS leadership, stakeholders, and school representatives. The following is an overview of meeting activities and feedback, including surveys conducted by both VMDO and ACPS. See Appendix for more specific data collected from these engagements and surveys.

Stakeholder Meetings + Small Group Interviews

VMDO conducted five (5) interviews with the following groups, using the same activities as the Student Advisory Groups in a virtual setting. Each group was encouraged to think about possible future outcomes of the master plan study for ACPS middle schools, imagining multiple types of learning environments designed to support the unique wants and needs of the adolescent learner during a critical time in their brain development.

Group 1: Division Directors

This group included representatives of ACPS leadership and Division Directors to discuss operational goals relating to the future of ACPS middle schools.

Group 2: Division Coordinators (virtual)

Participants with common experience in division-wide programs related to school facilities and operations were invited to discuss key deficiencies that might impact future improvements for each facility.

Group 3: Staff / Instruction (virtual)

Participants with common experience in division-wide programs for school operations and curriculum, including principals and staff members from each school, were invited to discuss issues surrounding educational adequacy and program goals.

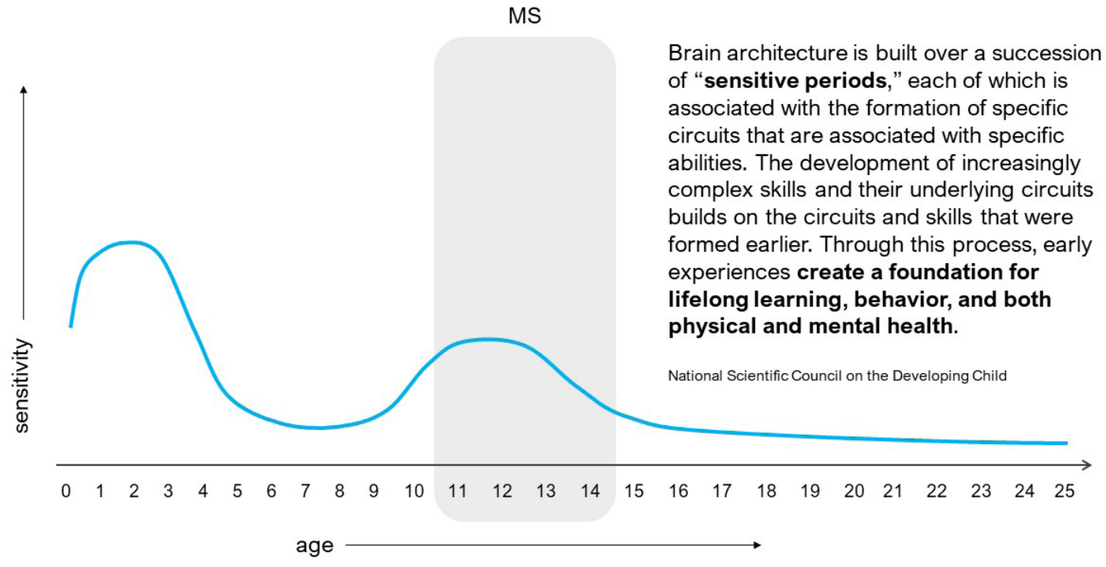
Group 4: Division Leadership (virtual)

Participants with common experience in division-wide administration of middle school operations, facilities, and curriculum to discuss overall vision, mission, values, and goals relating to the future of ACPS middle schools.

Group 5: Families (virtual)

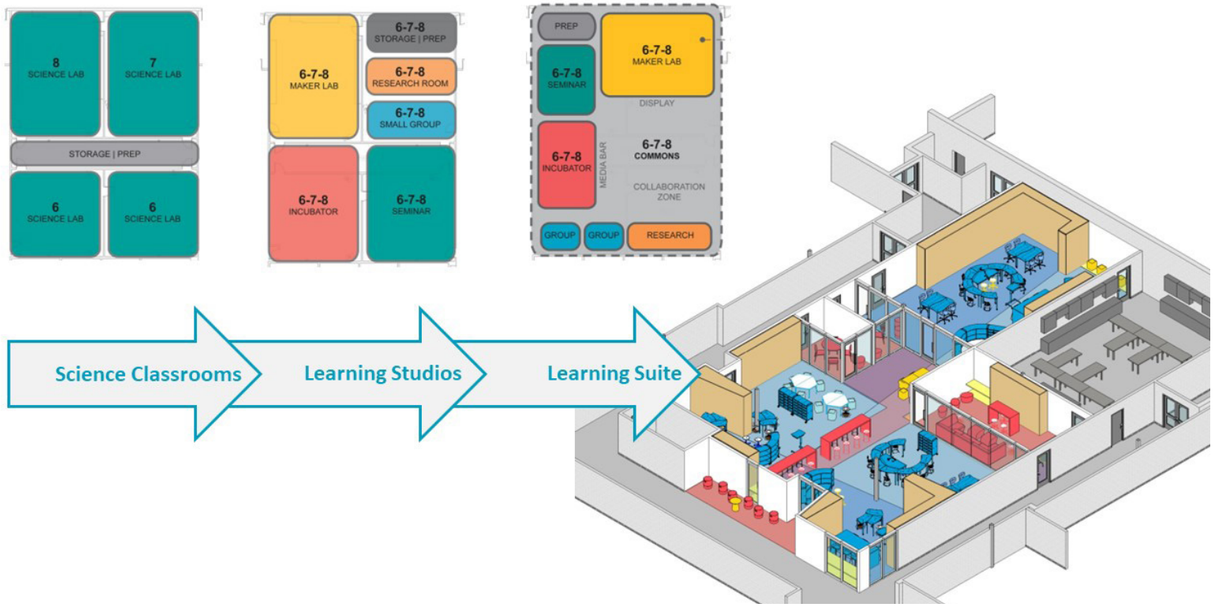
Participants with a common experience as ACPS parents with interests in specific middle schools or programs were invited to discuss what they thought was the most important criteria for a future ACPS middle school site and building (safety/security, welcoming/inviting, etc.), rating the quality of the facilities and environment, and informing us of unique features/cultures of each school.

The Adolescent Learner - second largest spike in brain development since infancy



Brain architecture is built over a succession of "**sensitive periods**," each of which is associated with the formation of specific circuits that are associated with specific abilities. The development of increasingly complex skills and their underlying circuits builds on the circuits and skills that were formed earlier. Through this process, early experiences **create a foundation for lifelong learning, behavior, and both physical and mental health.**

National Scientific Council on the Developing Child

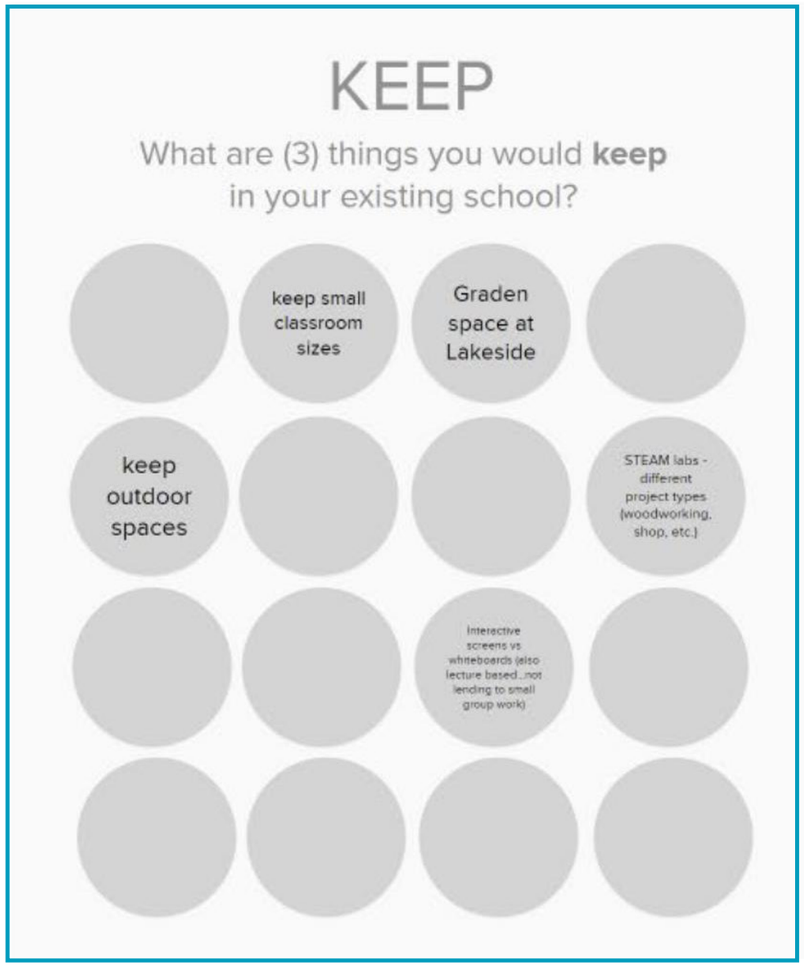


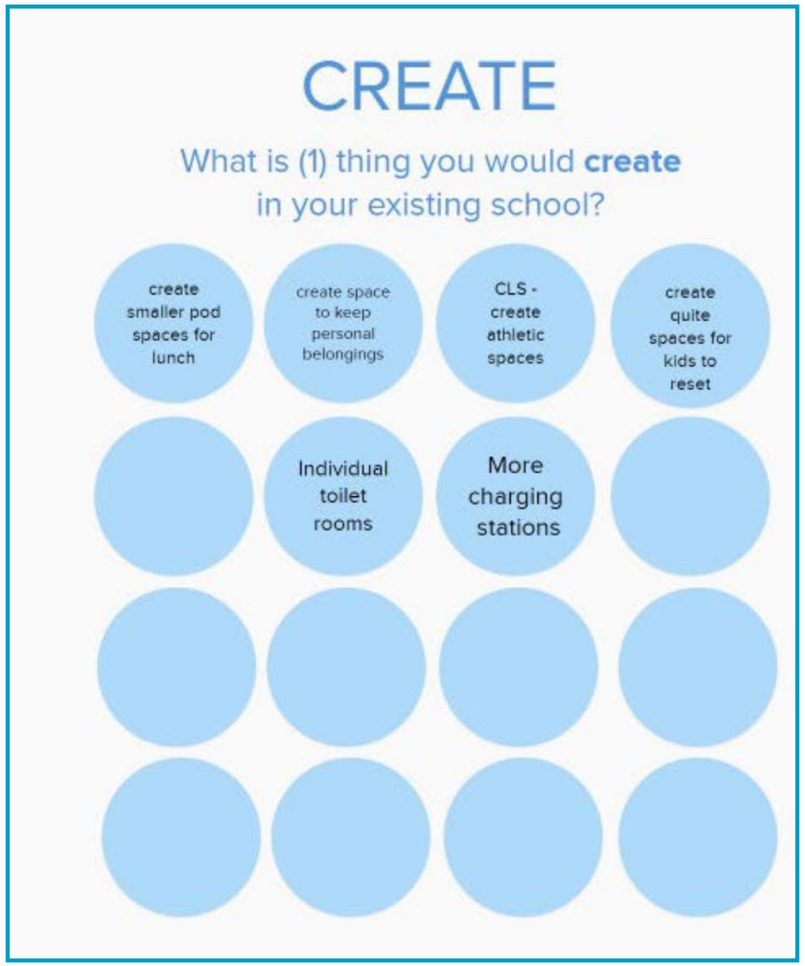
Traditional, Transitional, and Transformational Learning Envrionments

Small Group Virtual Meetings - Inspiration Mapping

Participants were encouraged to place sticky notes on images of inspirational middle school spaces that they "prefer" (green), "somewhat prefer" (yellow), or "don't prefer" (red), and then discuss reasons for their choices.

Small Group Virtual Meetings - Keep, Toss, Create





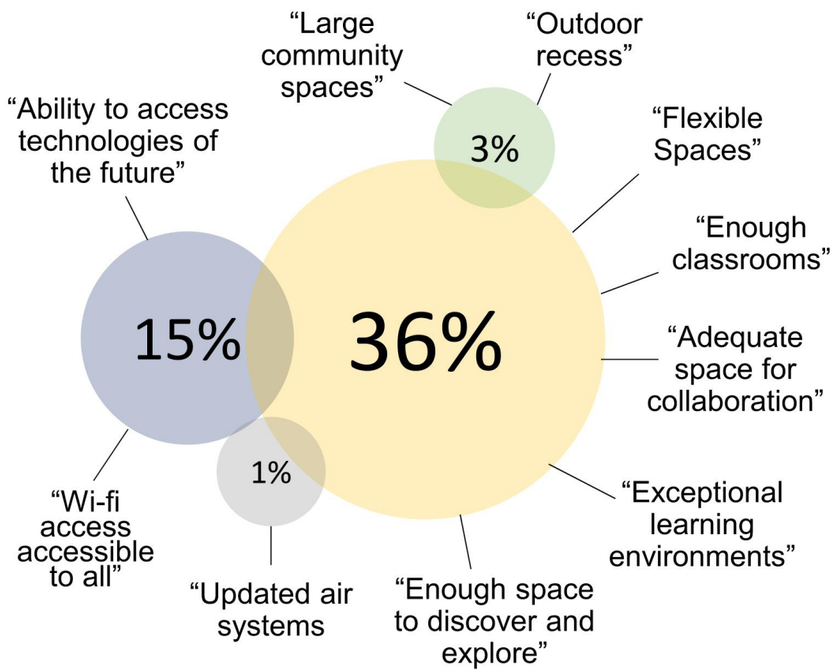
Participants were asked to think of three (3) things they would "keep", (2) things they would "toss", and (1) thing they would "create" for their existing school.

Stakeholder Group Polling

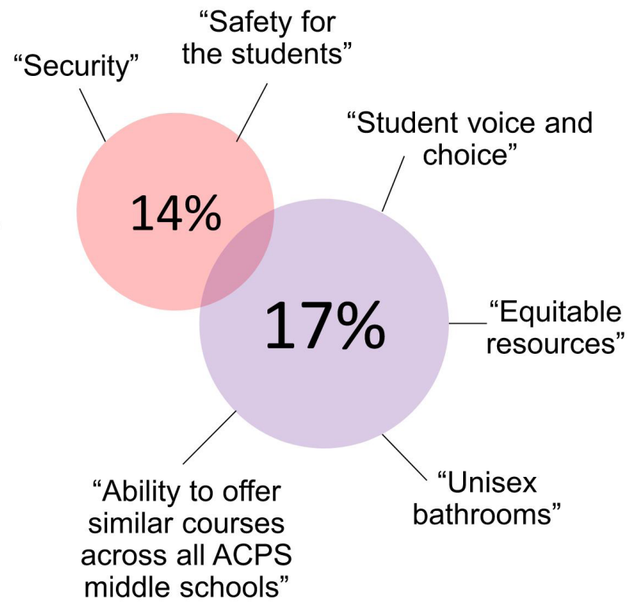
To meet the needs of students, educators, and the community, a middle school facility in Albemarle County must have...

Learning Space
Learning Program
Staff / Resources
Outdoor Learning
Safety / Security
Equity, Inclusion
Technology
Building Systems

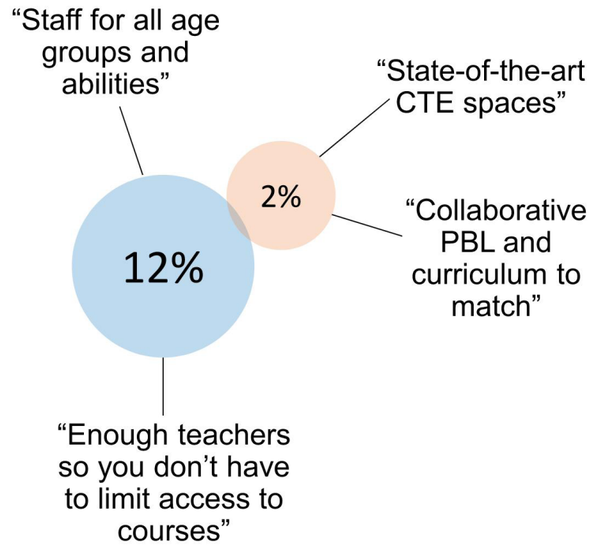
55%
Learning Spaces, Systems



31%
Environment, Well-being



14%
Staff Resources, Programs



Evaluation Criteria

Based on community feedback and survey results, the following criteria were established for the evaluation of existing facilities and the development of recommendations for the future:

Instruction	**Community priorities**	**Disruption**
Equity	**Cost**	**Transportation**
Flexibility / Adaptability	**Staffing**	

Student Advisory Groups

VMDO conducted six (6) in-person meetings with student advisory groups at each of the middle schools. The following activities were introduced:

Learning Preferences

Students were given a handout that asked them to circle which environments they preferred to learn in. Responses from over 80 students across all 6 schools showed a wide range of preferences, revealing that no two learners are the same and emphasizing the need for learning environments that include a wide variety of space types and sizes.

Keep, Toss, Create

Students were asked, "What are three things you would keep, two things you would toss, and one thing you would create for your existing school?"

Inspiration Mapping

Students were given the opportunity to place sticky notes (green = like, yellow = indifferent, red = dislike) on boards with inspirational images of middle schools. Images were grouped on boards and organized as follows:

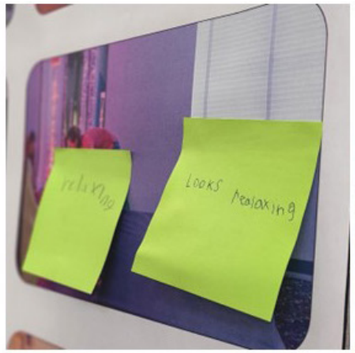
Technology
Integrated, accessible, personal use

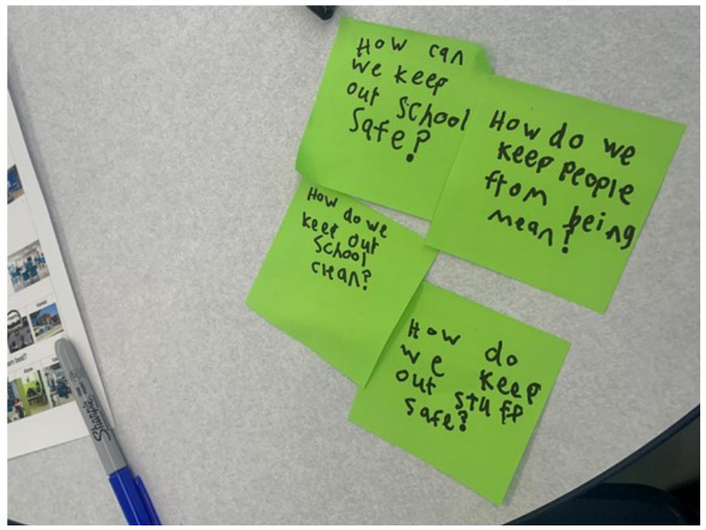
Learning spaces
Flexible, collaborative, large-small, peer-peer, individual

Health & Well-being
Movement spaces, quiet spaces, access to resources

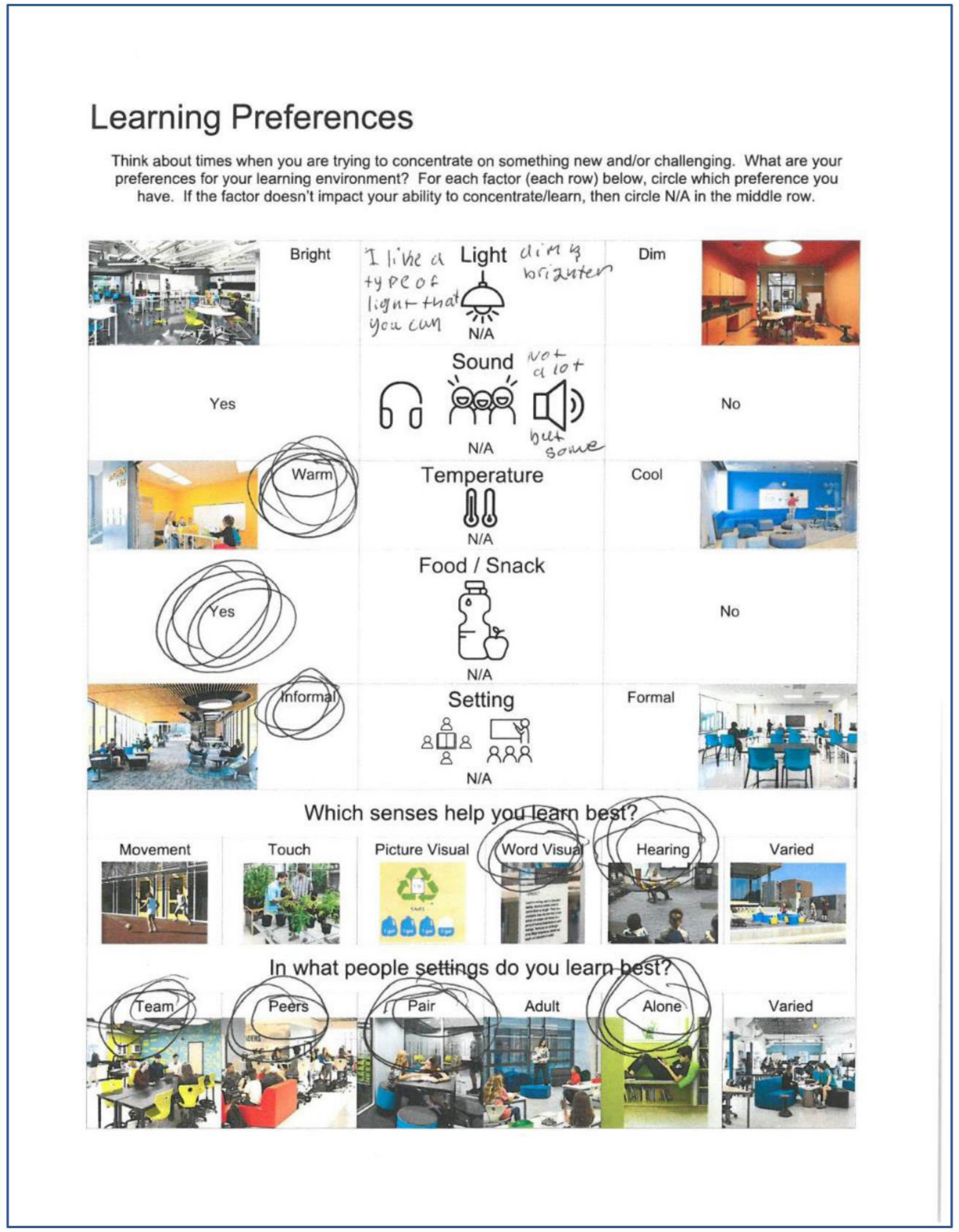
Civic / Social space
Gathering, indoor/outdoor, dining, big entrances

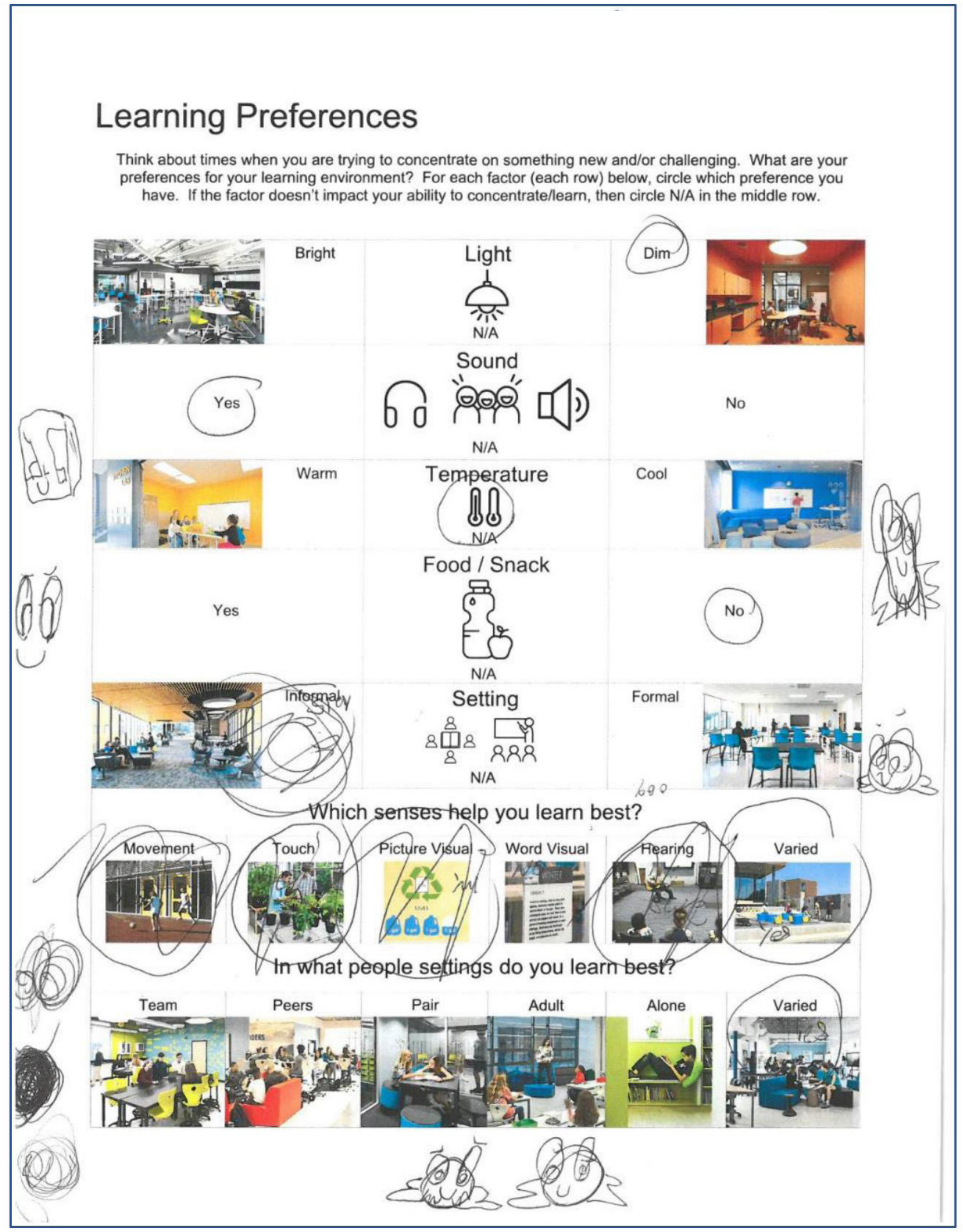
Student Advisory Group Activity - Inspiration Mapping





Student Advisory Group Activity - Learning Preferences





Over 100 advisory group student participants were encouraged to think about times when they were trying to concentrate on something new and/or challenging, and asked, "What are your preferenes for your learning environment?" Students circled the preference they had for each category listed on the handout (e.g.,environments with bright or dim light, warm or cool temperature, informal or formal settings, etc.). Responses revealed a wide variety of different learning preferences among students - the DNA of a middle school learner is unique and varies from student to student based on individual wants and needs. This suggests that middle school environments should include a variety of space typologies and sizes to support the different wants, needs, and interests of the adolescent learner.

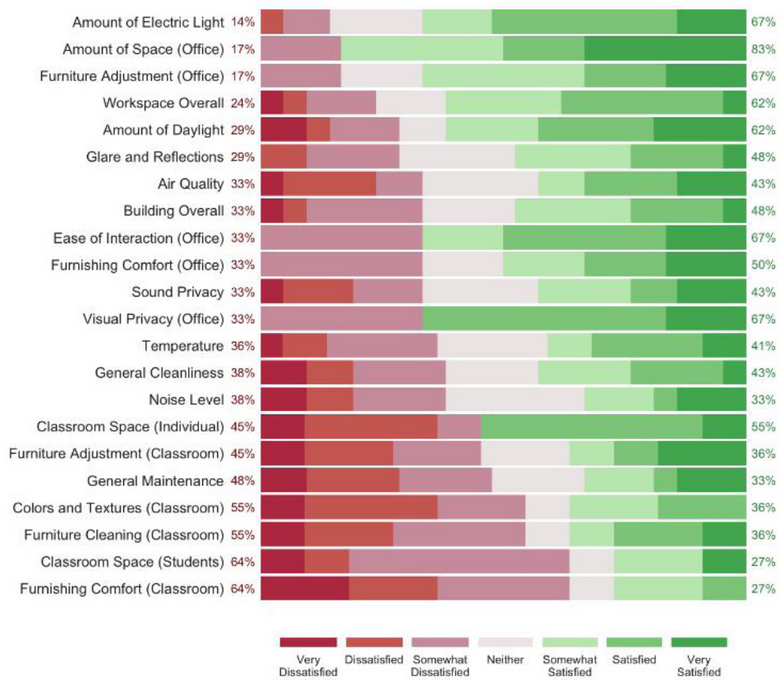
Building Occupant Surveys

Originally developed in 2000 as a research tool at the Center for the Built Environment at the University of California, Berkeley, the CBE Occupant Survey is widely used as a way to receive feedback from occupants. This anonymous, web-based tool assesses indoor environmental quality from the perspective of occupants in the space. Specifically, occupants provide self-reports of satisfaction on a number of categories, including Personal Workspace, Layout, Visual Privacy, Furniture, Air Quality, Lighting and Views, Cleanliness and Maintenance, Thermal Comfort, and Acoustics. These surveys are deployed in various building types including offices, K-12 education spaces, higher education buildings, laboratories, health care spaces, residence halls, and multi-unit housing.

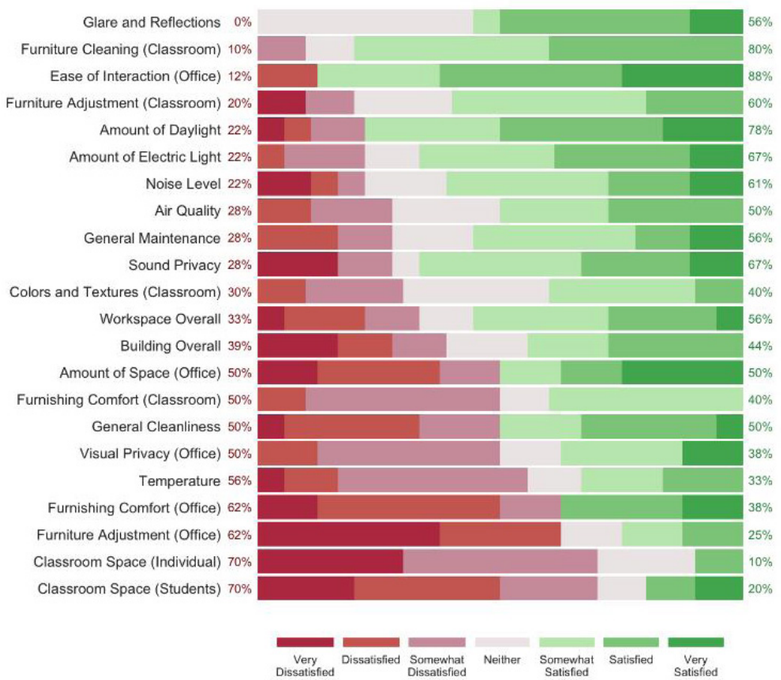
Below, you will see a summary chart for the survey results at each facility. These charts illustrate occupant satisfaction across each area that the survey measures. The numbers in red, to the left of the bars, show the percentage of dissatisfied occupants (somewhat dissatisfied to very dissatisfied), and the numbers in green, to the right of the bars, show the percentage of satisfied occupants (somewhat satisfied to very satisfied). These results are arranged in descending order, with the best performing category at the top and the worst performing at the bottom.

See the appendix for a detailed survey report for each facility.

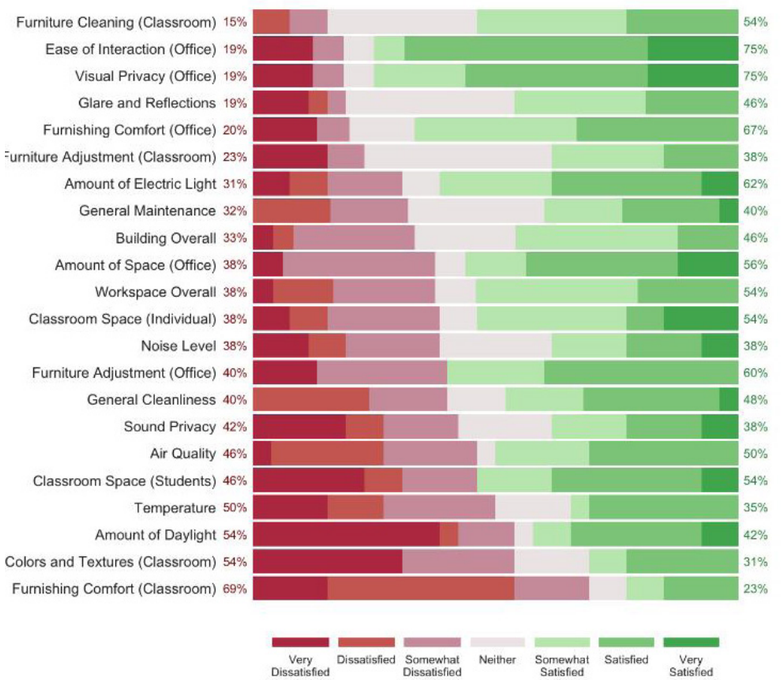
Burley Middle School
22 respondents



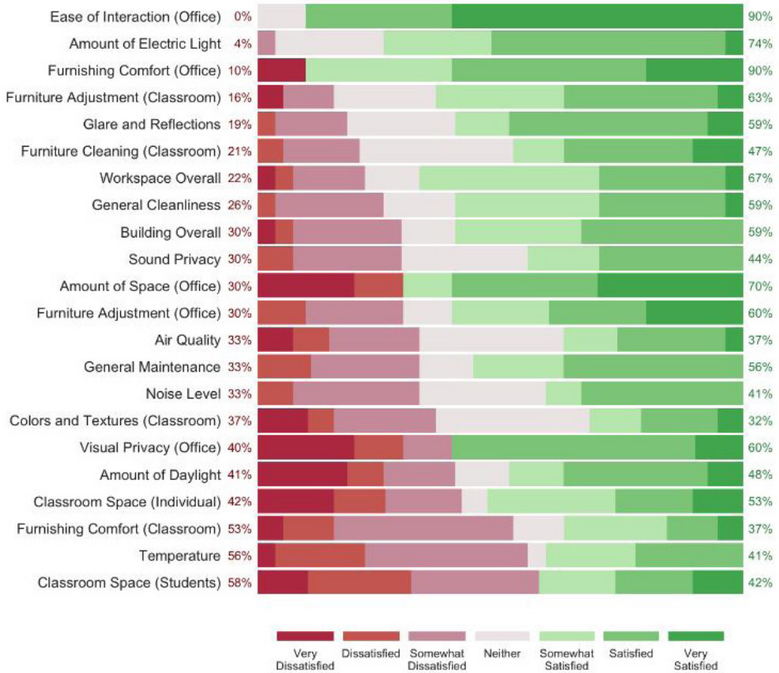
Community Middle School
18 respondents



Henley Middle School
28 respondents

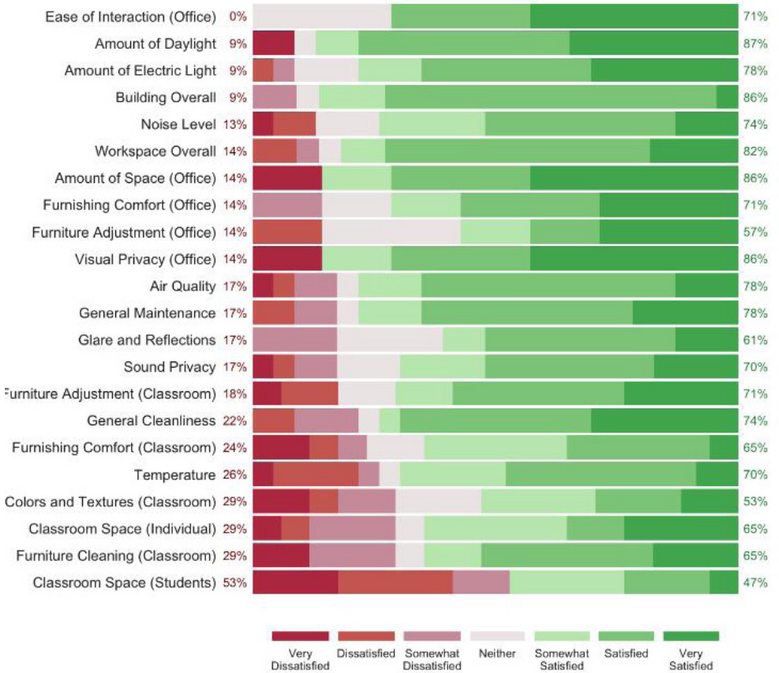


Journey Middle School
27 respondents



Walton Middle School
17 respondents

Lakeside Middle School
23 respondents




Multiplication
63 x 28
413 x 12

RECOMMENDATIONS

4

ACPS MIDDLE SCHOOLS

RECOMMENDATIONS

4.0 Overview

The proposed recommendations for each school address multiple challenges facing ACPS middle school facilities:

- County-wide growth and school enrollment: Districting/feeder patterns, additions/renovations, potential new facilities, etc.
- Facility equity: Infrastructure, building amenities, recreation/athletics, etc.
- Unique school/community needs
- Environmental sustainability
- Buildings and facilities that support current and future educational programming.
- All recommendations will be consistent with the vision, mission, values and goals of the division's strategic plan.

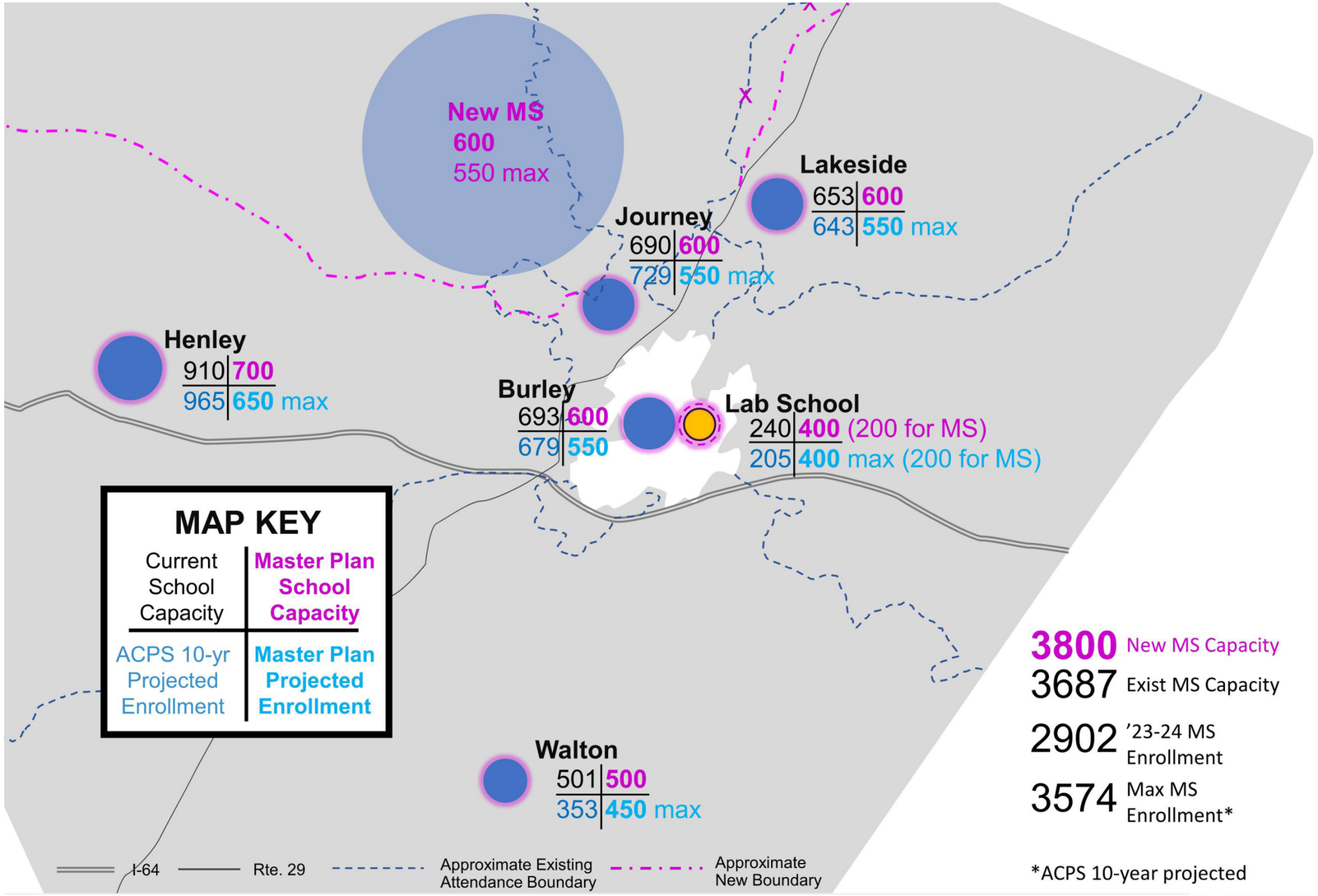
This master plan outlines a proposed phasing plan for short- and long-term improvements at all ACPS middle schools to address capacity and equity needs, as follows:

Phase 1: Addition/Renovation to Community Lab School to increase admissions and offer some relief enrollment pressures at other schools.

Phase 2: Renovate/Improve Walton MS + Redistricting Study. Students may be redistricted to Walton to better fit, but not exceed, its current capacity of 501. Renovations will include equity improvements within the current footprint and structure. This phase will require a redistricting study.

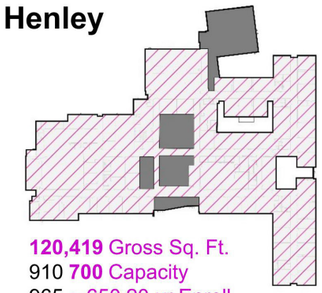
Phase 3: Build a new middle school to provide current capacity management and long-term growth projections. This phase will require a redistricting study.

Phase 4: Renovate/Improve Burley, Journey, Henley, and Lakeside to equitable standards.



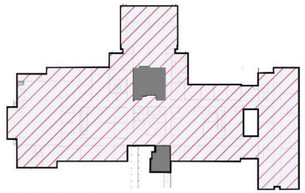
Map showing current ACPS middle school capacities and maximum enrollments over a 10-year projection, with new approximate capacities and enrollments (designated in magenta color) for the proposed Master Plan.

Henley



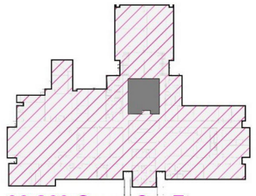
120,419 Gross Sq. Ft.
910 **700** Capacity
965 ~ 650 20-yr Enroll.
132 172 Area/student

Journey

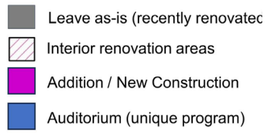


97,236 Gross Sq. Ft.
690 **600** Capacity
729 ~ 550 20-yr Enroll.
141 162 Area/student

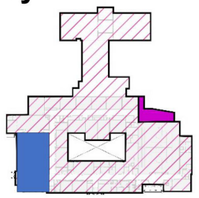
Walton



93,260 Gross Sq. Ft.
501 **500** Capacity
353 ~ 450 20-yr Enroll.
186 Area/student



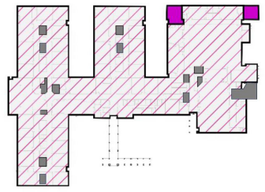
Burley



123,626 **125,876** Sq. Ft.
693 **600** Capacity
679 ~ 550 20-yr enroll.
178 *209 area/student

*Auditorium (unique program) results in a larger than average area / student compared to other schools

Lakeside



94,440 **96,179** GSF
653 **600** capacity
643 ~ 550 20-yr enroll.
145 160 area/student

Lab School

30,915 **53,658** GSF
240 **400 (200 MS)** capacity
205 ~ 400 (200 MS) 20-yr enroll.
129 **134 area/student

**Smaller fitness, cafeteria, and kitchen spaces result in a smaller than average area / student compared to other schools

110,000 GSF
600 capacity
~ 550 20-yr enroll.
183 sf/student

Renovation improvement scopes referenced in the narratives, plan diagrams, and estimated cost/sf allowances for each school are defined as follows:

Renovation – Light

- Finish materials replacement (floors, ceilings, lighting, paint)
- FFE (furniture, technology)
- MEP equipment and fixture replacement ("in kind")
- Minimum ADA or building code requirements

Renovation – Moderate

- Reconfiguration of spaces
- Door / Window replacement
- MEP system extension or additional equipment
- Meet ADA and building code requirements for moderate renovations

Renovation – Heavy

- Gut renovation to structure
- MEP new high efficiency systems replacements (geothermal, etc.)
- Most stringent code applications (fire protection, egress, accessibility, structural forces etc.)

Improvement scopes

Equity upgrades and improvement scopes are categorized as follows:

Tier 1

- Mechanical, electrical and plumbing (MEP) equipment replacement as needed
- Roof replacement as needed
- Interior/exterior finish & surface upgrades
- Minor site improvement/repair as needed

Tier 2

- Sprinkler systems where possible
- Single-user toilets and locker rooms per identified ACPS standards
- Natural daylighting in all classrooms
- Outdoor learning/dining/gathering spaces
- Interior upgrades per identified ACPS standards in additions and renovations (administrative offices, fitness/wellness rooms, specialty classrooms, health clinics, furniture and technology, environmental graphic design)
- Kitchen modernizations as needed

Tier 3

- MEP retrofit to accommodate higher efficiency systems.
- Equipment upgrades to plan for Net Zero Energy implementation
- Geothermal systems (equipment/plumbing/wells)
- Photovoltaic arrays

4.1 Community Lab

Existing	
Gross Sqft	30,915 SF
Capacity	240
Gross Sqft per Student	129
Teaching Stations	13 | 12 Classroom, 1 Art

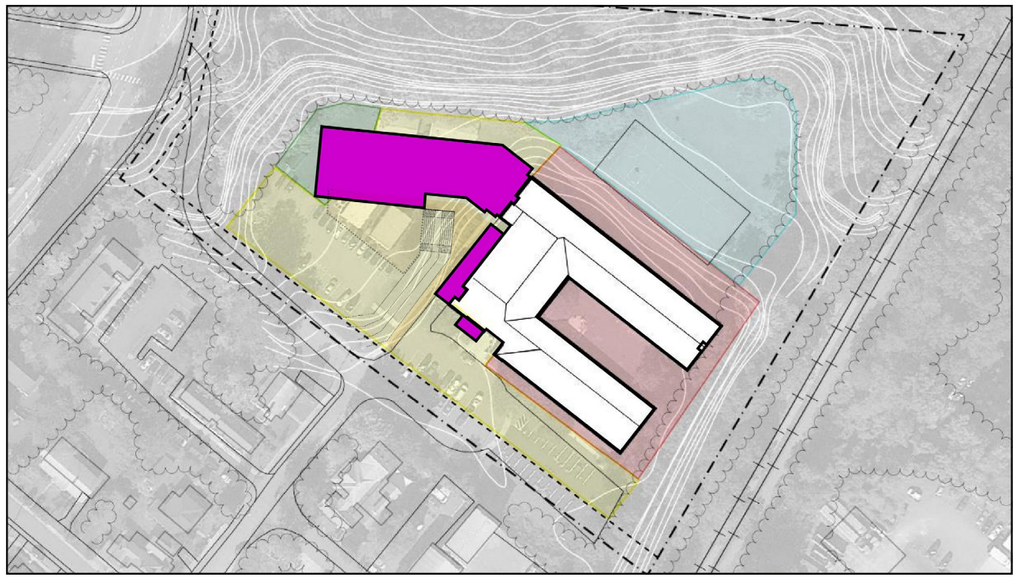
Improvements	
New Gross Sqft	55,516 SF
New Capacity	400
Gross Sqft per Student	139
Teaching Stations	21 | 17 Classroom, 2 Science, 1 Fitness, 1 Art

Cost Summary

Construction Cost	$25,777,986
Site Improvements	$ 388,630
Soft Costs	$ 7,849,985
Total Project Costs*	**$34,016,600**

*Costs are a rough order of magnitude and include Tier 2 and Tier 3 scopes, estimated into today's dollars (2023). Assume a 15% swing either way.

Building Exterior / Neighborhood / Aerial



Site Plan

Architectural

Proposed recommendations for Tier 2 improvements at Community Lab School include additions and renovations to the existing facility to increase the school's overall capacity from 240 students to 400 students, provide program spaces to accommodate project-based teaching and learning curriculums, and transform the facility's overall learning experience. A 2-story addition includes new classrooms and dedicated media center on the main level and a "specials" community (art, music, science, and fitness rooms) below with direct access to outdoor programs. Heavy renovations to the existing facility will widen the entry sequence and create an open Commons with views and direct access to the outdoor courtyard. The gym will be converted into a multi-purpose room that can be opened to the Commons for large assemby seating. Moderate renovations will provide additional administrative, teacher, and academic support spaces and modernized existing classrooms.

Mechanical

The renovated school in Tier 2 will be served by a new water source heat pump loop and distributed heat pumps throughout the building. A cooling tower and condensing natural gas boilers will maintain temperature on the heat pump loop. Ventilation will be provided by Dedicated Outdoor Air System (DOAS) units located on the roof equipped with enthalpy wheels and demand control ventilation. Chilled/hot water will be provided to the DOAS units via central water to water heat pump chillers. In Tier 3, replace the cooling tower and boilers with a vertical bore geothermal wellfield, 40 wells estimated.

Plumbing

Provide new low-flow and watersense label fixtures for reduced water use. Provide an air-source heat pump water heater for central hot water creation.

Fire Protection

A new fire protection system will be provided for full building coverage. A new fire pump is not expected to be required at this location.

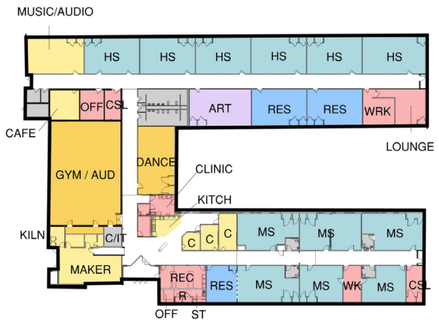
Electrical

Tier 2 proposes all LED lighting fixtures and replacing electrical equipment that is nearing the end of its useful life. Tier 3 scope proposes a roof mounted 205kW photovoltaic system.

Site Improvements

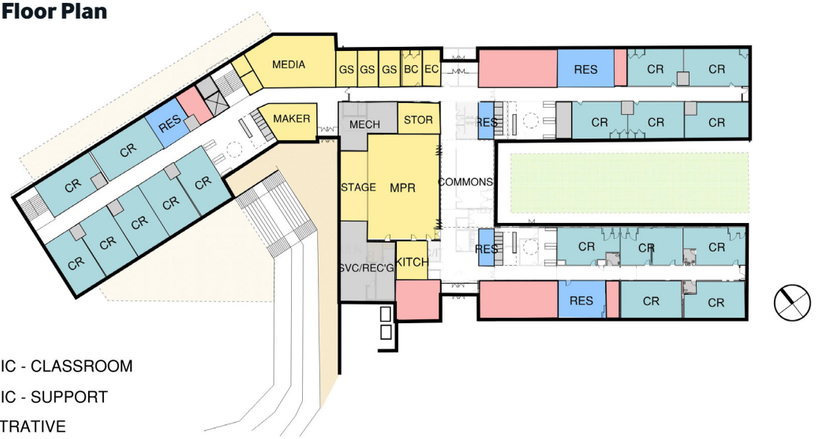
Of the 6.33 acres only about 2.75 are developable for school infrastructure. The building addition has been carefully planned and located to take advantage of the available space on site and the topography. The increased capacity with the addition will create a higher demand for parking. It is recommended costs to reconstruct the lower parking lot is carried with the project to correct deferred maintenance and increase parking on site with the project. Retaining walls may be required to achieve the expanded parking counts. See appendix for additional Tier 2 scopes and consideration for future geothermal field locations and well counts.

Community Lab - Level 1
Existing Floor Plan

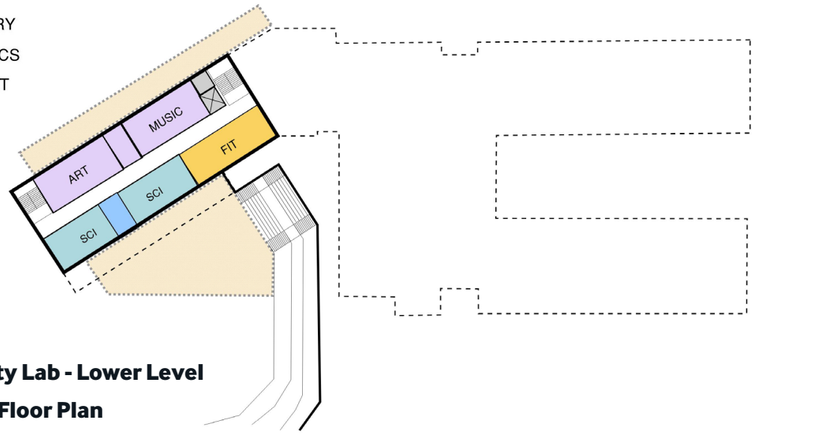


- ACADEMIC - CLASSROOM
- ACADEMIC - SUPPORT
- ADMINISTRATIVE
- ARTS
- AUXILIARY
- ATHLETICS
- SUPPORT

Community Lab - Main Level
Proposed Floor Plan

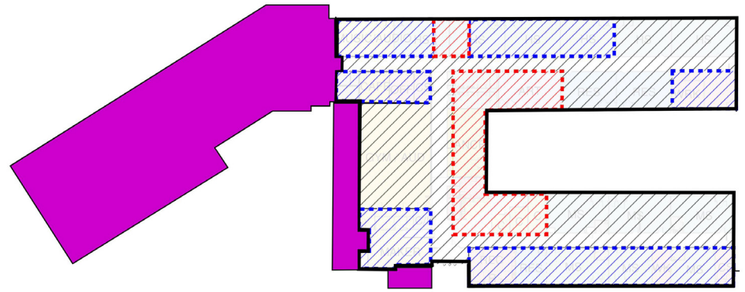


- ACADEMIC - CLASSROOM
- ACADEMIC - SUPPORT
- ADMINISTRATIVE
- ARTS
- AUXILIARY
- ATHLETICS
- SUPPORT



Community Lab - Lower Level
Proposed Floor Plan

Community Lab - Level 1
Additions/Renovations Floor Plan



- ADDITION
- RENOVATION - LIGHT
- RENOVATION - MEDIUM
- RENOVATION - HEAVY
- KEEP AS IS

4.2 Walton Middle School

Existing	
Gross Sqft	93,260 SF
Capacity	501
Gross Sqft per Student	186
Teaching Stations	26 | 18 Classroom, 1 Science, 4 Lab, 2 Gym, 1 Art, 3 SPED

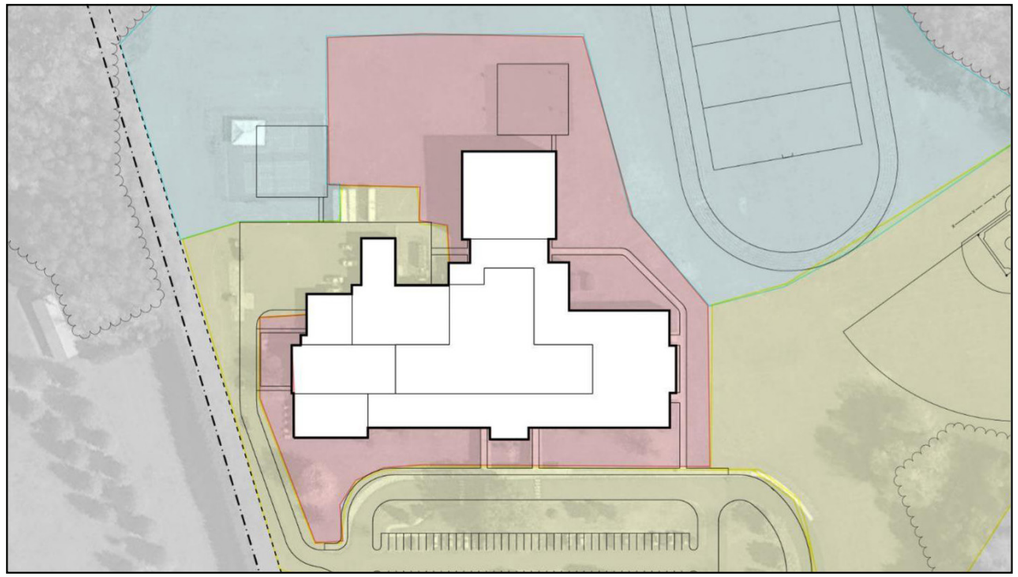
Improvements	
New Gross Sqft	93,260 SF
New Capacity	500
Gross Sqft per Student	189
Teaching Stations	25 | 12 Classroom, 6 Science, 4 Lab, 2 Gym, 1 Art, 3 SPED

Cost Summary

Construction Cost	$35,542,731
Site Improvements	$ 50,000
Soft Costs	$ 10,677,819
Total Project Costs*	**$ 46,270,550**

*Costs are a rough order of magnitude and include Tier 2 and Tier 3 scopes, estimated into today's dollars (2023). Assume a 15% swing either way.

Building Exterior / Neighborhood / Aerial



Site Plan

Architectural

Proposed recommendations for Tier 2 improvements at Walton Middle School include renovations to the existing facility and maintaining its 500-student capacity. Recently renovated CTE labs will remain as-is. Heavy renovations will add new administrative offices, modernize existing locker rooms, replace existing group toilets with new single-user toilet configurations, and add new secure vestibules at the main entrances. Moderate renovation scopes include reconfiguring or converting spaces to accommodate additional administrative offices and teacher support rooms, academic resource classrooms, health rooms, and grade-level groupings of core classrooms and science rooms with access to natural daylight and natural ventilation through the use of operable windows. Tier 2 cost estimates include light interior upgrades in all remaining spaces.

Mechanical

The renovated school in Tier 2 will be served by a new 4-pipe fan coil system with central heating and cooling of the independent loops. Due to the lack of natural gas to the site a new 4-pipe air source heat pump with simultaneous heating and cooling capabilities will be the main source of heating and cooling for the building. Ventilation will be provided by Dedicated Outdoor Air System (DOAS) units located on the roof equipped with enthalpy wheels and demand control ventilation. In Tier 3, replace the air-cooled heat pump chiller with a vertical bore geothermal wellfield, 75 wells estimated. Central 6-pipe water-source heat pump chillers will maintain the chilled/heating water loops with all rejected heat being passed to the geothermal wellfield.

Plumbing

Provide new low-flow and watersense label fixtures for reduced water use. Provide an air-source heat pump water heater for central hot water creation.

Fire Protection

A new fire protection system will be provided for full building coverage. After verifying the capacity of the existing water storage tank on site, the existing water storage tank will be utilized to provide fire protection water in the event of a fire. Additional storage is expected to provide adequate volume. A new fire pump will provide adequate flow and pressure to operate the system.

Electrical

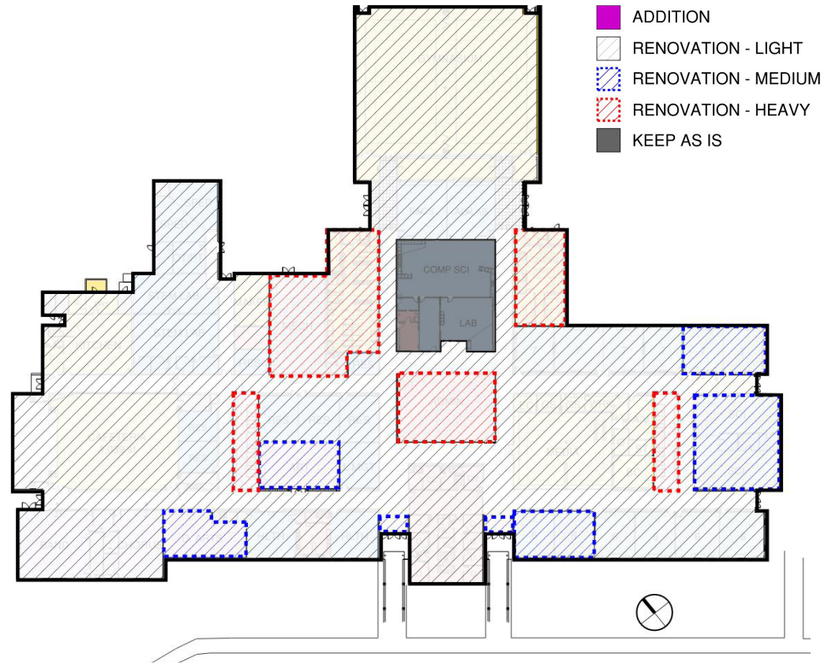
Tier 2 proposes all LED lighting fixtures and replacing electrical equipment that is nearing the end of its useful life. Tier 3 scope proposes a roof mounted 650kW photovoltaic system.

Site Improvements

Planning should be considered in Tier 2 for replacement of the septic drain field by 2030. Diligent maintenance of the system will prolong the life, and annual inspections are recommended to forecast issues for CIP cost planning to stay ahead when the time comes for replacement. Consideration for future geothermal field locations are noted in the appendix for potential locations and well counts in Tier 3.

Walton - Level 1

Existing Floor Plan



ADDITION
RENOVATION - LIGHT
RENOVATION - MEDIUM
RENOVATION - HEAVY
KEEP AS IS

ACADEMIC - CLASSROOM
ACADEMIC - SUPPORT
ADMINISTRATIVE
ARTS
AUXILIARY
ATHLETICS
SUPPORT

Walton - Level 1

Proposed Floor Plan

4.3 New ACPS Middle School

Proposed	
Gross Sqft	116,000 SF
Capacity	600
Gross Sqft per Student	193
Teaching Stations	31 | 18 Classroom, 6 Science, 3 Lab, 2 Gym, 1 Art, 1 Other

Cost Summary

Construction Cost	$51,972,212
Site Improvements	$15,525,000
Soft Costs	$20,249,164
Total Project Costs*	**$87,746,376**

*Costs are a rough order of magnitude and include Tier 2 and Tier 3 scopes, estimated into today's dollars (2023). Assume a 15% swing either way.

Recommendations to build a new 600 capacity middle school on a future site in northern Albemarle County (location to be determined) will provide current capacity management and address projected long-term ACPS enrollment increases. For the purposes of this master plan, construction of a new middle school will occur when projected enrollment is anticipated to exceed capacity in overcrowded middle schools (Henley, Journey, and Lakeside), sometime around FY2033. Estimated costs and programming for a new ACPS middle school are summarized, herein.

New Middle School Program (600 capacity)

115,000 Gross Sqft

27 Acres (per VDOE guidelines)

Parking Requirements	
Staff	70 spaces
Visitor	15 spaces
Student	180 spaces
Total	265 spaces

Outside Play Areas:	
Hard Surface	2
Fitness Development	1
Field Game AReas	2

Program Parameters

22 students/classroom for "actual" capacity (ACPS planning)

25 students/classroom for "max" capacity (room for growth)

.875 utilization (spaces occupied 7 out of 8 periods per day)

The following spaces are counted as a "teaching station":

CR Core classrooms – 1 teaching station

SCI Science rooms – 1 teaching station

LAB Labs – 1 teaching station (STEM, Computer Sci., Family & Cons. Sci.)

ART Art Rooms – 1 teaching station

GYM Gym – 2 teaching stations

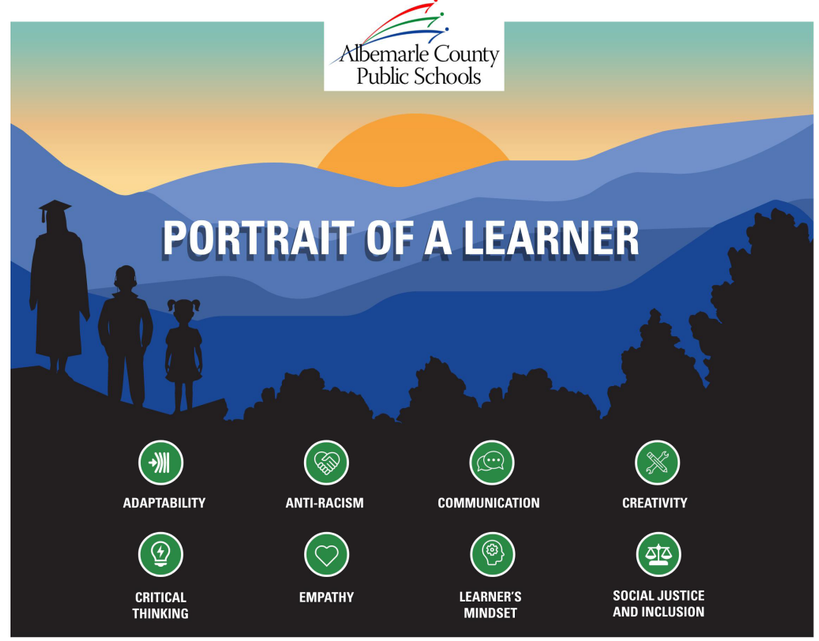
120 Students / learning community

(6 CR/LC * 22 ST/CR * .875 | 150 recommended max)

150 Gross Sqft / student (VDOE 130 Gross Sqft)

"Ideal" ACPS Middle School Program

To establish a program for a 600 capacity middle school, VMDO developed an "Ideal" ACPS Middle School program, starting with VDOE standard guidelines and assessments of the existing schools of similar sizes as a baseline. The "Ideal" program provides a variety of right-sized spaces to accommodate flexible and adaptable teaching and learning that supports the ACPS "Portrait of a Learner" objectives and strategies outlined in the ACPS Strategic Plan. See an excerpt from the Comparative Space Program comparisons on the opposite page.



"Portrait of a Learner" objectives (ACPS Strategic Plan)

600 Student Capacity Middle School

	max	planned
VDOE Student Capacity (max)	600	525
Students per Teaching Station	25	
Efficiency Factor	100%	87.5%
Required Teaching Stations	24	

	max	planned
ACPS Student Capacity (max)	686	600
Students per Teaching Station	22	
Efficiency Factor	87.5%	
Required Teaching Stations	31	

VDOE Middle School Prototype Program (600 Students)				
Description	**#**	**TS**	**SF**	**TOTAL SF**
ACADEMICS				**32900**
Standard Spaces				12600
Science				7200
Career & Technology Education				7600
Special Education				1500
Resource Classrooms				2400
Additional Instructional Spaces				1600
ARTS				**4600**
Art Department				1200
Music Department				2200
Auditorium				1200
AUXILIARY				**8600**
Library Media Center				3700
Food Service				4900
ATHLETICS				**14050**
Physical Education				14050
ADMINISTRATION				**4300**
Staff Offices				200
Administration Suite				1950
Counseling Suite				200
Health Suite				300
Staff Facilities				0
Staff Facilities				1650
BUILDING SUPPORT				**0**
Building Services Facilities				0
NET SF TOTAL				64450
CIRC, TOILETS, HVAC (38%)				24491
GROSS SF TOTAL				**88941**

Ideal ACPS Middle School Program (600 Students)					
Description	**#**	**TS**	**SF**	**TOTAL SF**	**Delta**
ACADEMICS				**35250**	2350
Standard Spaces				13500	900
Science				8250	1050
Career & Technology Education				5250	-2350
Special Education				3000	1500
Resource Classrooms				3750	1350
Additional Instructional Spaces				1500	-100
ARTS				**8035**	3435
Art Department				1625	425
Music Department				3975	1775
Auditorium				2435	1235
AUXILIARY				**11625**	3025
Library Media Center				5625	1925
Food Service				6000	1100
ATHLETICS				**14875**	825
Physical Education				14875	825
ADMINISTRATION				**9275**	4725
Staff Offices				1125	925
Administration Suite				3775	1825
Counseling Suite				1125	675
Health Suite				750	450
Staff Facilities				500	500
Staff Facilities				2000	350
BUILDING SUPPORT				**1375**	**1375**
Building Services Facilities				1375	1375
NET SF TOTAL				80435	15985
CIRC, WALLS, HVAC (45%)				36196	11705
GROSS SF TOTAL				**116631**	27690

Comparative Space Program Analysis summary developed by VMDO.
See appendix for comprehensive program.

4.4 Burley Middle School

Existing	
Gross Sqft	123,626 SF
Capacity	693
Gross Sqft per Student	178
Teaching Stations	36 | 28 Classroom, 4 Science, 2 Lab, 1 Gym, 1 Art, 3 SPED
Improvements	
New Gross Sqft	125,325 SF
New Capacity	600
Gross Sqft per Student	208
Teaching Stations	30 | 18 Classroom, 6 Science, 3 Lab, 2 Gym, 1 Art, 3 SPED

Cost Summary

Construction Cost	$44,701,211
Site Improvements	$ 350,000
Soft Costs	$13,515,363
Total Project Costs*	**$58,566,575**

*Costs are a rough order of magnitude and include Tier 2 and Tier 3 scopes, estimated into today's dollars (2023). Assume a 15% swing either way.

Building Exterior / Neighborhood / Aerial

Site Plan

Architectural

Proposed recommendations for Tier 2 improvements at Burley Middle School include renovations to the existing facility to reduce the school's overall capacity from 693 students to 600 students. Heavy renovations will modernize existing locker rooms and replace existing group toilets with new single-user toilet configurations. Relocating stairs on the north side of the building will improve circulation and wayfinding in the 4-story school. Moderate renovation scopes include reconfiguring or converting spaces to accommodate additional administrative offices and teacher support rooms, academic resource classrooms, health rooms, and grade-level groupings of core classrooms and science rooms with access to natural daylight and natural ventilation. Tier 2 cost estimates include light interior upgrades in all remaining spaces. A moderate addition to the cafeteria will improve the dining capacity and experience.

Mechanical

In the Tier 2 scope, the school is to be served by a new condenser loop and distributed heat pumps throughout the building. A cooling tower and condensing natural gas boilers will maintain temperature on the heat pump loop. Ventilation will be provided by Dedicated Outdoor Air System (DOAS) units located in mechanical rooms throughout and will be equipped with enthalpy wheels and demand control ventilation. Chilled/hot water will be provided to the DOAS units via central water to water heat pump chillers. Tier 3 proposes replacing the cooling tower and boilers with a vertical bore geothermal wellfield, 100 wells estimated.

Plumbing

Provide new low-flow and watersense label fixtures for reduced water use. Provide a water source heat pump water heater for central hot water creation.

Fire Protection

Expand the existing fire protection system to provide full building coverage. A new fire pump is not expected for this location.

Electrical

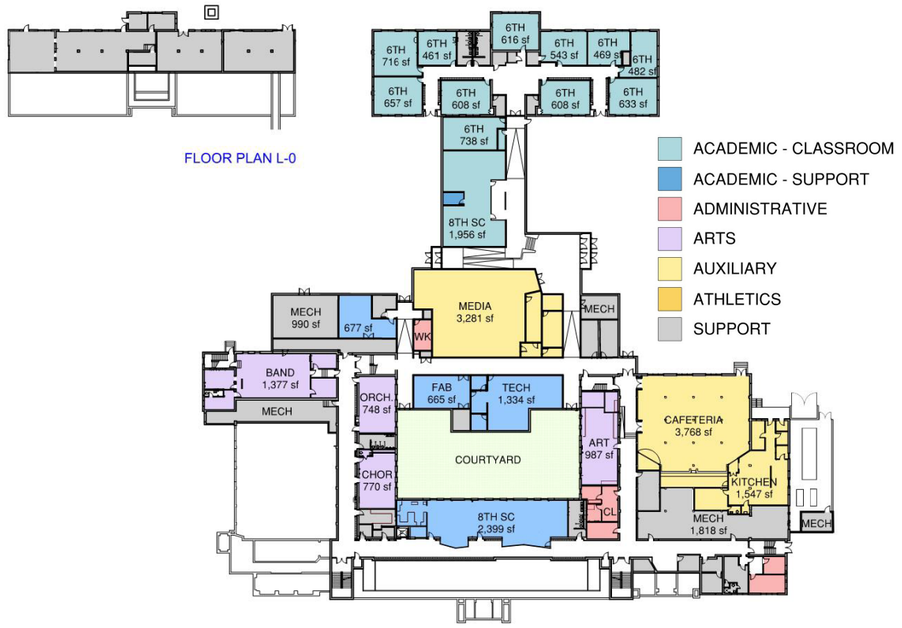
Tier 2 proposes all LED lighting fixtures and replacing electrical equipment that is nearing the end of its useful life. Tier 3 scope proposes a roof mounted 815kW photovoltaic system.

Site Improvements

This school is located in an urban environment and is encumbered by areas of natural features, steep slopes, and a stream bed that limit the use on site for buildings or fields. Significant site improvements should be considered in the planning for this site. Options to increase parking and reconfigure bus and car drop off on site will likely impact athletic facilities. The terraced landscape between the school and lower multipurpose field could be used to integrate structured parking into the landscape to replace asphalt parking lot repurposed for play. Approximately 70 structured parking spaces may be necessary to provide the recommended parking and athletic facilities on this compact urban campus.

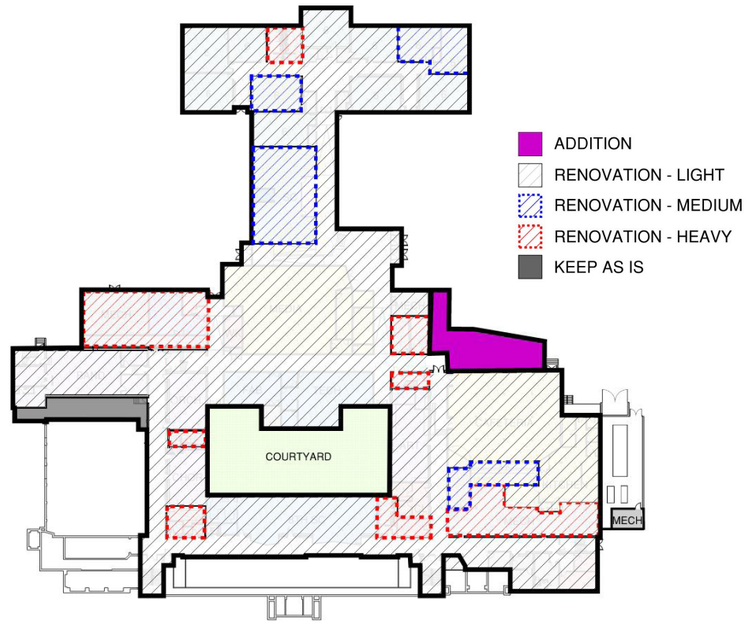
Burley - Level 1

Existing Floor Plan



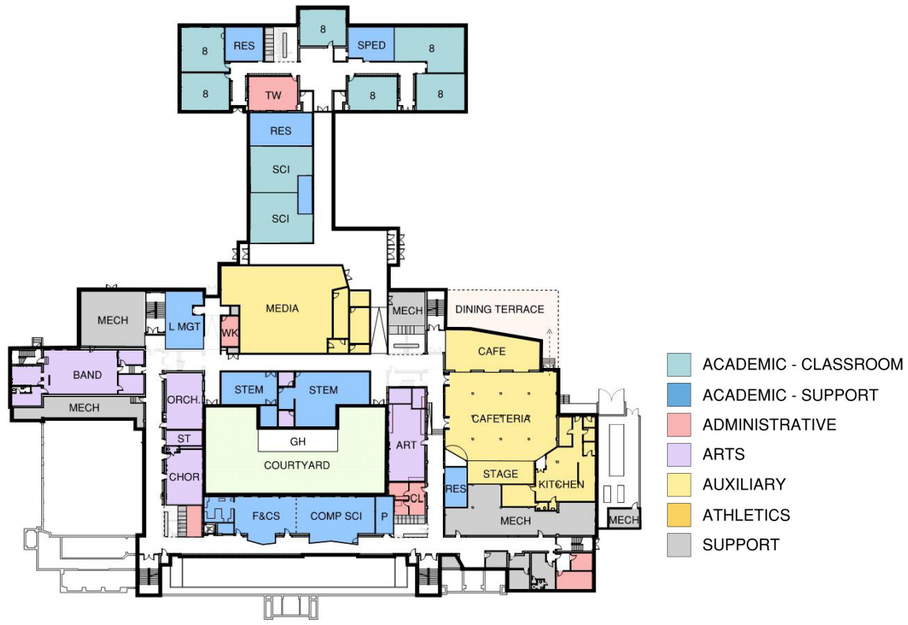
Burley - Level 1

Additions/Renovations Floor Plan



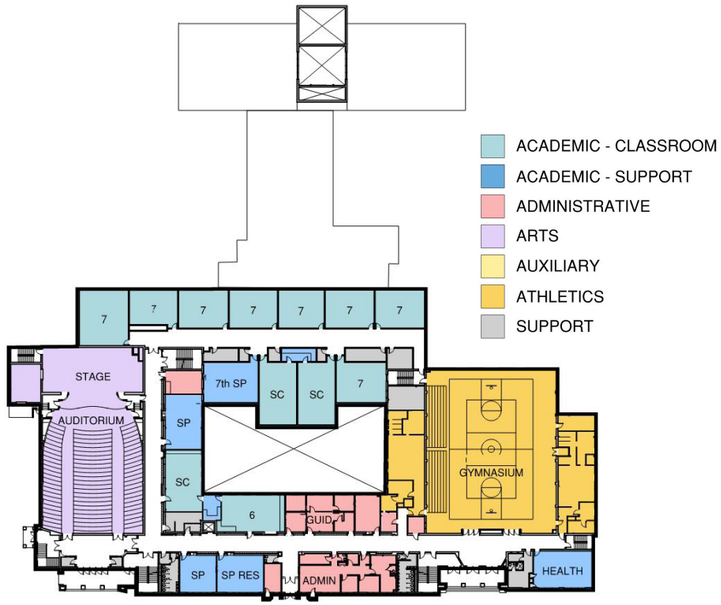
Burley - Level 1

Proposed Floor Plan



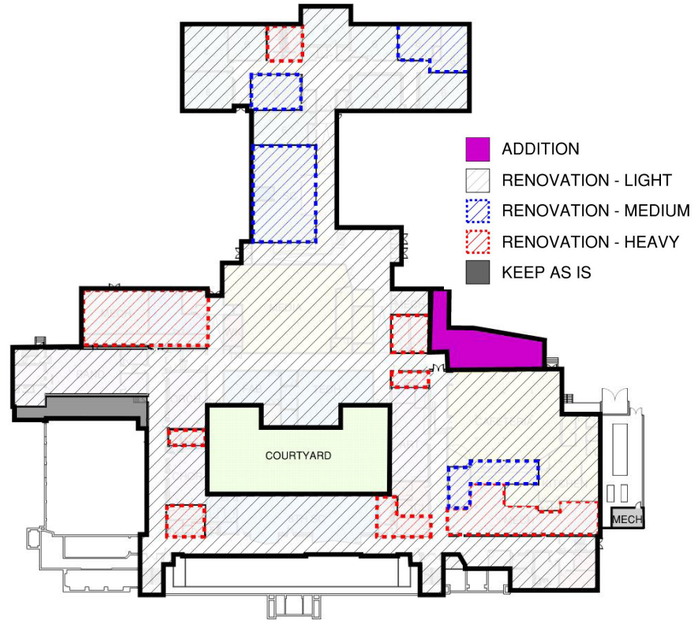
Burley - Level 2

Existing Floor Plan



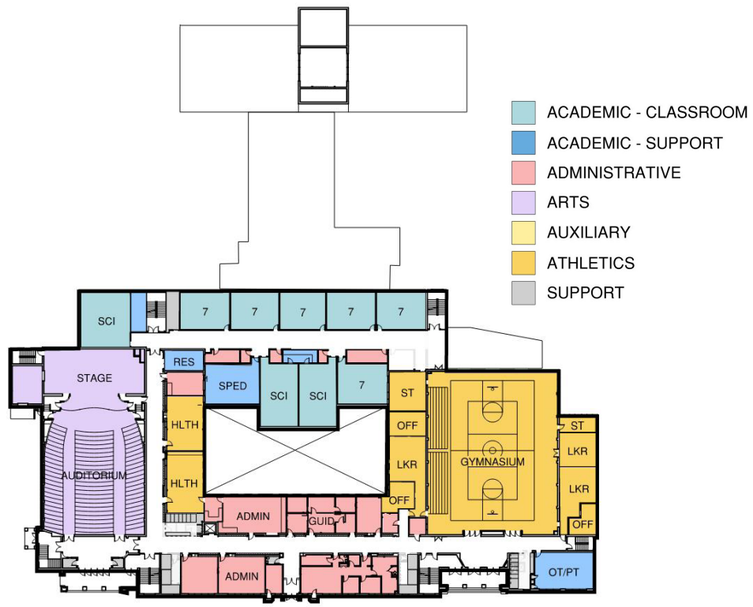
Burley - Level 2

Additions/Renovations Floor Plan



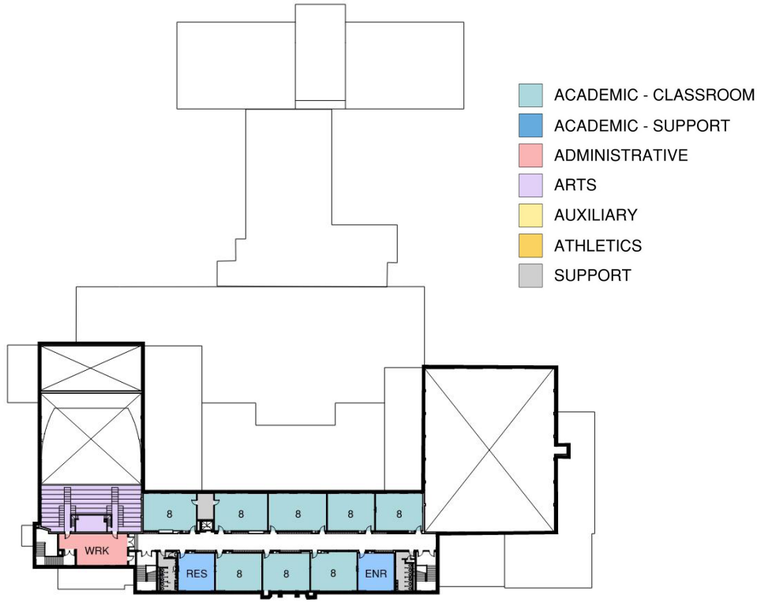
Burley - Level 2

Proposed Floor Plan



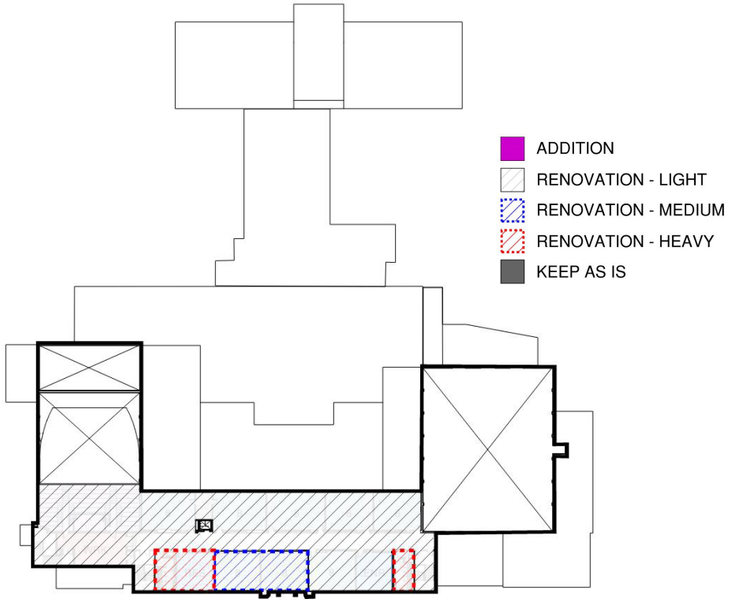
Burley - Level 3

Existing Floor Plan



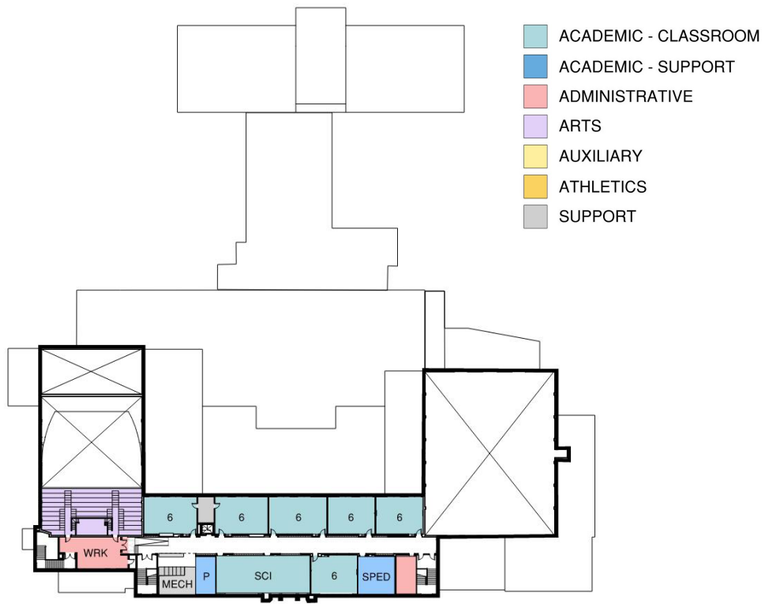
Burley - Level 3

Additions/Renovations Floor Plan



Burley - Level 3

Proposed Floor Plan

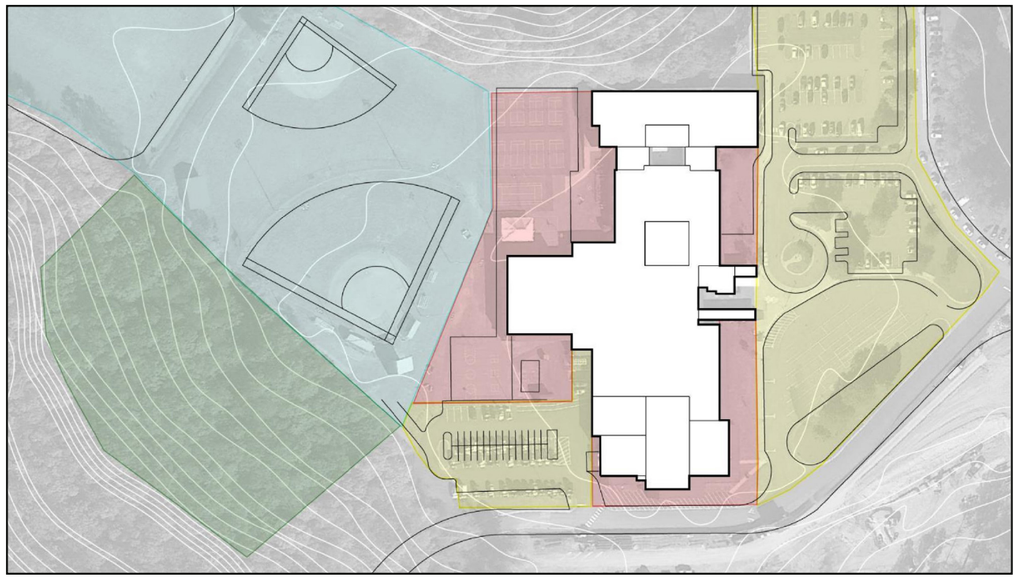


4.5 Journey Middle School

Existing	
Gross Sqft	97,236 SF
Capacity	690
Gross Sqft per Student	141
Teaching Stations	35 | 25 Classroom, 4 Science, 4 Lab, 1 Gym, 1 Art, 3 SPED
Improvements	
New Gross Sqft	97,236 SF
New Capacity	600
Gross Sqft per Student	162
Teaching Stations	30 | 18 Classroom, 6 Science, 3 Lab, 2 Gym, 1 Art, 3 SPED
Cost Summary	
Construction Cost	$36,917,038
Site Improvements	$ 50,000
Soft Costs	$11,090,111
Total Project Costs*	**$48,057,150**

*Costs are a rough order of magnitude and include Tier 2 and Tier 3 scopes, estimated into today's dollars (2023). Assume a 15% swing either way.

Building Exterior / Neighborhood / Aerial



Site Plan

Architectural

Proposed recommendations for Tier 2 improvements at Journey Middle School include renovations to the existing facility to reduce the school's overall capacity from 690 students to 600 students. Spaces associated with recent additions and renovations, including CTE labs and administrative spaces, will remain as-is. Heavy renovations will modernize existing locker rooms and replace existing group toilets with new single-user toilet configurations. Moderate renovation scopes include reconfiguring or converting spaces to accommodate additional administrative offices and teacher support rooms, academic resource classrooms, health rooms, and grade-level groupings of core classrooms and science rooms with access to natural daylight and natural ventilation. Tier 2 cost estimates include light interior upgrades in all remaining spaces.

Mechanical

The school is to be served by a new condenser loop and distributed heat pumps throughout the building. A cooling tower and condensing natural gas boilers will maintain temperature on the heat pump loop. Ventilation will be provided by Dedicated Outdoor Air System (DOAS) units located on the roof equipped with enthalpy wheels and demand control ventilation. Chilled/hot water will be provided to the DOAS units via central water to water heat pump chillers. Tier 3 improvements include replacing the cooling tower and boilers with a vertical bore geothermal wellfield, 80 wells estimated.

Plumbing

Provide new low-flow and watersense label fixtures for reduced water use. Provide a water source heat pump water heater for central hot water creation.

Fire Protection

A new fire protection system will be provided for full building coverage. A new fire pump is expected for this location to provide adequate flow and system pressure.

Electrical

Tier 2 proposes all LED lighting fixtures and replacing electrical equipment that is nearing the end of its useful life. Tier 3 scope proposed a roof mounted 630kW photovoltaic system.

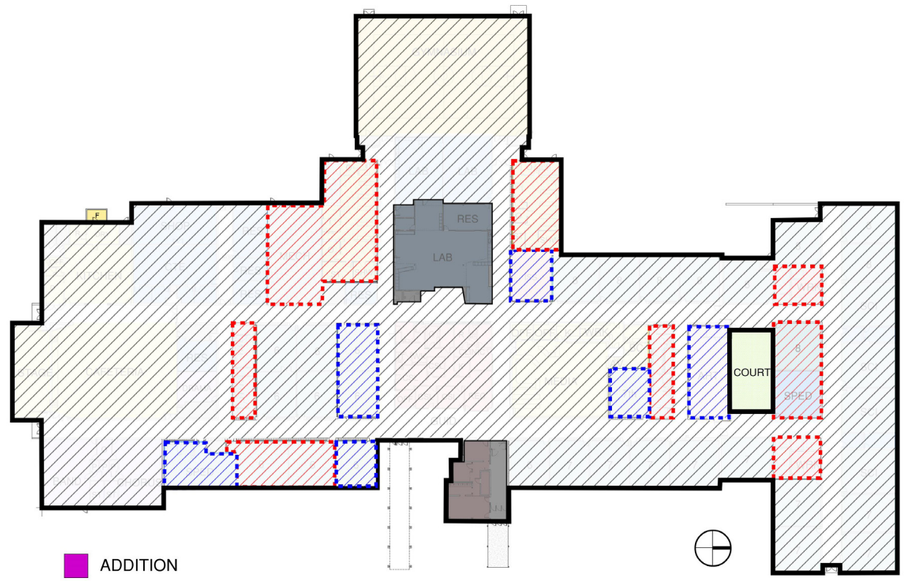
Site Improvements

As mentioned in the Tier 2 section of the appendix, there are no planned additions to Journey and as such there are no site impacts. Additionally, the parking and athletic spaces were found to be in excess of recommendations, however should any future expansion to either be contemplated there are opportunities for this school. Consideration for future geothermal field locations are noted in the appendix for potential locations and well counts. Tier 2 cost estimates include allowances for accommodating outdoor learning programs at Journey. Tier 3 considerations for future geothermal field locations are noted in the appendix for potential locations and well counts.

Journey - Main Level
Existing Floor Plan

- ACADEMIC - CLASSROOM
- ACADEMIC - SUPPORT
- ADMINISTRATIVE
- ARTS
- AUXILIARY
- ATHLETICS
- SUPPORT

Journey - Main Level
Additions/Renovations Floor Plan



- ADDITION
- RENOVATION - LIGHT
- RENOVATION - MEDIUM
- RENOVATION - HEAVY
- KEEP AS IS

Journey - Main Level
Proposed Floor Plan

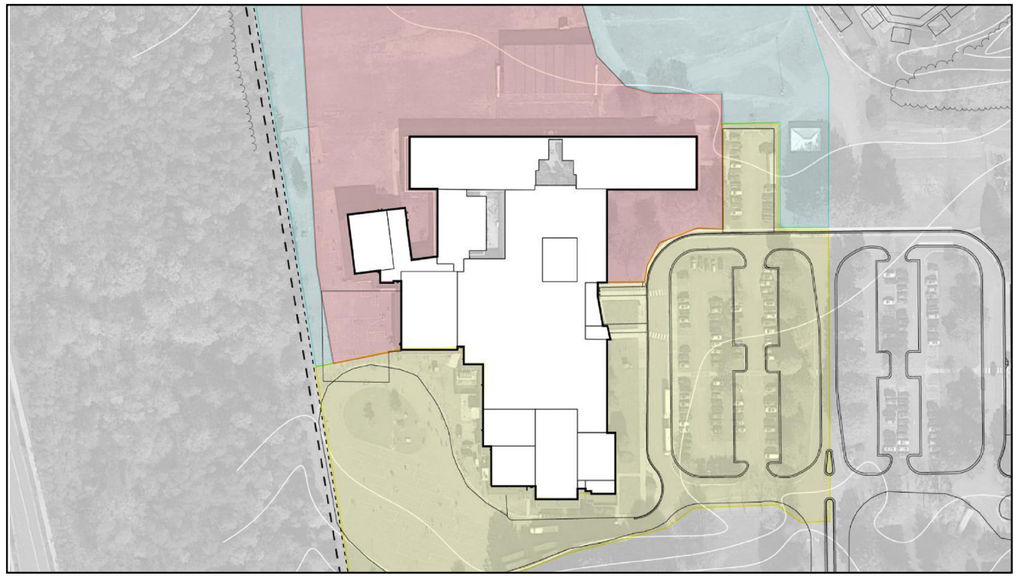
- ACADEMIC - CLASSROOM
- ACADEMIC - SUPPORT
- ADMINISTRATIVE
- ARTS
- AUXILIARY
- ATHLETICS
- SUPPORT

4.6 Henley Middle School

Existing	
Gross Sqft	120,419 SF
Capacity	910
Gross Sqft per Student	132
Teaching Stations	43 | 29 Classroom, 6 Science, 4 Lab, 2 Gym, 1 Art
Improvements	
New Gross Sqft	120,419 SF
New Capacity	700
Gross Sqft per Student	201
Teaching Stations	31 | 18 Classroom, 6 Science, 4 Lab, 2 Gym, 1 Art
Cost Summary	
Construction Cost	$42,504,962
Site Improvements	$ 176,632
Soft Costs	$12,804,478
Total Project Costs*	**$55,486,072**

*Costs are a rough order of magnitude and include Tier 2 and Tier 3 scopes, estimated into today's dollars (2023). Assume a 15% swing either way.

Building Exterior / Neighborhood / Aerial



Site Plan

Architectural

Proposed recommendations for Tier 2 improvements at Henley Middle School include renovations to the existing facility to reduce the school's overall capacity from 910 students to 700 students. Spaces associated with recent additions and renovations, including CTE labs and administrative spaces, will remain as-is. Heavy renovations will modernize locker rooms and replace existing group toilets with new single-user toilet configurations. Moderate renovation scopes propose reconfigured spaces to accommodate additional administrative offices and teacher support rooms, academic resource classrooms, and grade-level groupings of core classrooms and science rooms. All grade-level classrooms will be located along an exterior wall to recieve natural daylight and natural ventilation. All remaining spaces will receive light renovations as previously described.

Mechanical

The school is to be served by a new condenser loop and distributed heat pumps throughout the building. A cooling tower and condensing natural gas boilers will maintain temperature on the heat pump loop. Ventilation will be provided by Dedicated Outdoor Air System (DOAS) units located on the roof equipped with enthalpy wheels and demand control ventilation. Chilled/hot water will be provided to the DOAS units via central water to water heat pump chillers. Tier 3 improvements include replacing the cooling tower and boilers with a vertical bore geothermal wellfield, 100 wells estimated.

Plumbing

Provide new low-flow and watersense label fixtures for reduced water use. Provide a water source heat pump water heater for central hot water creation.

Fire Protection

A new fire protection system will be provided for full building coverage. A new fire pump is not expected for this location.

Electrical

Tier 2 proposes all LED lighting fixtures and replacing electrical equipment that is nearing the end of its useful life. Tier 3 scope provides 795kW photovoltaic system, some ground mount or parking canopies may need to be considered due to the available roof space.

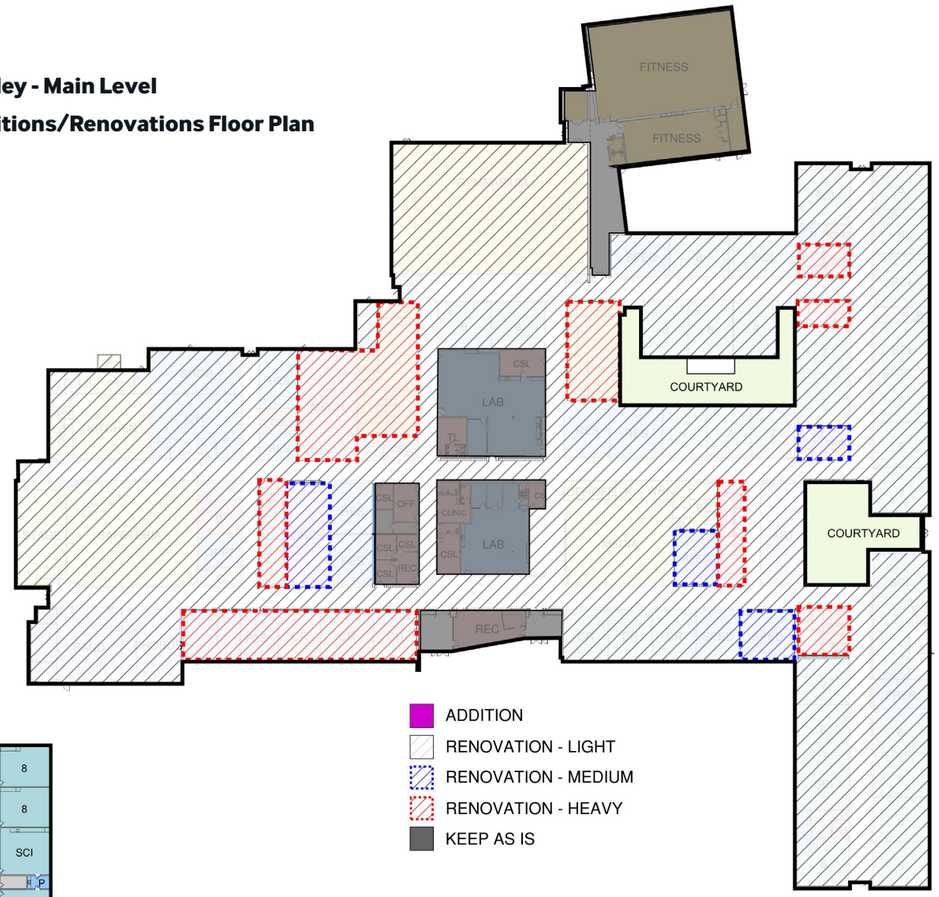
Site Improvements

An expansion to the multipurpose hard surface play area is recommended in the facilities assessment as a Tier 1 improvement. As mentioned in the Tier 2 section of the appendix, there are no planned additions to Henley and as such there are no site impacts. Additionally, the parking and athletic spaces were found to be adequate, however, should any future expansion to either be contemplated there are opportunities for this school. Consideration for future geothermal field locations are noted in the appendix for potential locations and well counts.
Tier 2 cost estimates include allowances for accommodating outdoor learning programs.

Henley - Main Level
Existing Floor Plan

Henley - Main Level
Proposed Floor Plan

Henley - Main Level
Additions/Renovations Floor Plan



4.7 Lakeside Middle School

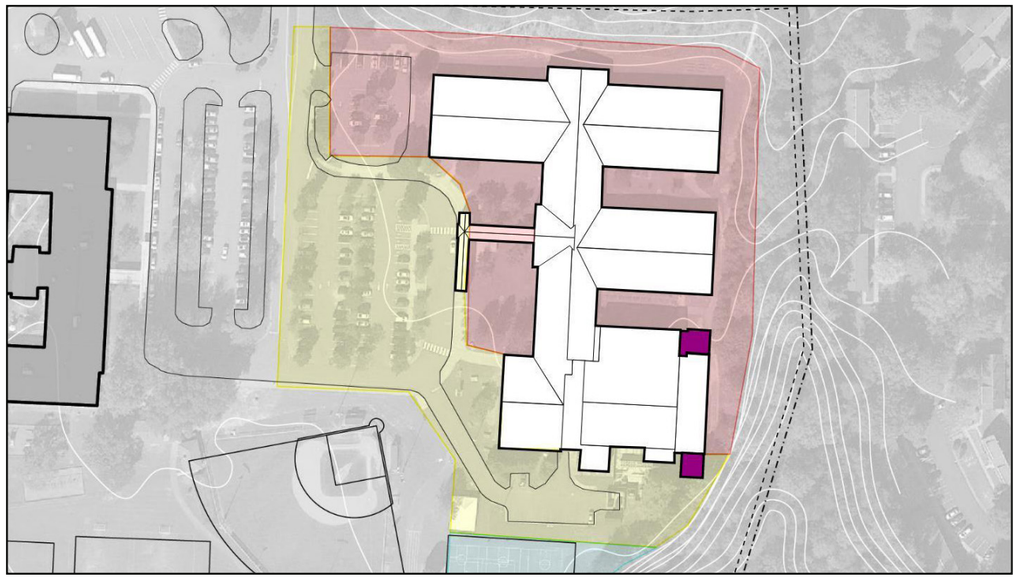
Existing	
Gross Sqft	94,440 SF
Capacity	653
Gross Sqft per Student	145
Teaching Stations	34 | 25 Classroom, 4 Science, 2 Lab, 2 Gym, 1 Art, 1 SPED
Improvements	
Gross Sqft	96,179 SF
New Capacity	600
Gross Sqft per Student	160
Teaching Stations	30 | 18 Classroom, 6 Science, 3 Lab, 2 Gym, 1 Art, 3 SPED

Cost Summary

Construction Cost	$36,314,762
Site Improvements	$ 166,868
Soft Costs	$10,944,489
Total Project Costs*	**$47,426,119**

*Costs are a rough order of magnitude and include Tier 2 and Tier 3 scopes, estimated into today's dollars (2023). Assume a 15% swing either way.

Building Exterior / Neighborhood / Aerial



Site Plan

Architectural

Proposed recommendations for Tier 2 improvements at Lakeside Middle School include renovations to the existing facility to reduce the school's overall capacity from 653 students to 600 students. Heavy renovations will modernize existing locker rooms and replace existing group toilets with new single-user toilet configurations. Moderate renovation scopes include reconfiguring or converting spaces to accommodate additional science rooms in the learning communities. Small additions provide new health rooms. Tier 2 cost estimates include light interior upgrades in all remaining spaces.

Mechanical

The school is to be served by a new condenser loop and distributed heat pumps throughout the building. A cooling tower and condensing natural gas boilers will maintain temperature on the heat pump loop. Ventilation will be provided by Dedicated Outdoor Air System (DOAS) units located on the roof equipped with enthalpy wheels and demand control ventilation. Chilled/hot water will be provided to the DOAS units via central water to water heat pump chillers. Tier 3 improvements include replacing the cooling tower and boilers with a vertical bore geothermal wellfield, 100 wells estimated.

Plumbing

Provide new low-flow and watersense label fixtures for reduced water use. Provide a water source heat pump water heater for central hot water creation.

Fire Protection

A new fire protection system will be provided for full building coverage. A new fire pump is not expected for this location.

Electrical

Tier 2 proposes all LED lighting fixtures and replacing electrical equipment that is nearing the end of its useful life. Tier 3 scope provides 795kW photovoltaic system, some ground mount or parking canopies may need to be considered due to the available roof space.

Site Improvements

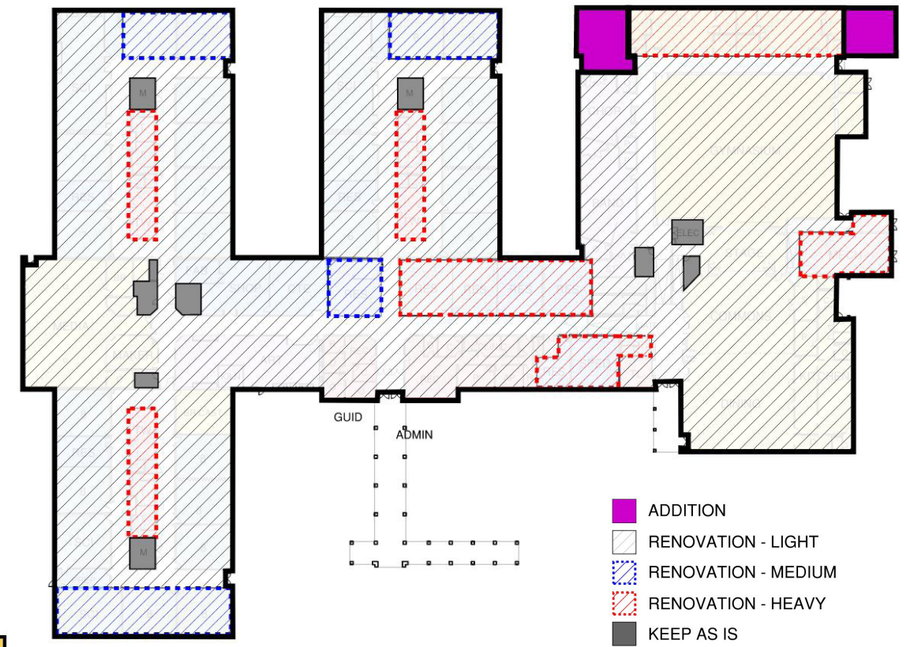
As mentioned in the Tier 2 section of the appendix, the small addition proposed will create only minor site impacts for typical site work associated with the addition. Future consideration should be given for improvements to the bus loop/bus parking on site which only has capacity for approximately 5 buses. A minor parking addition is also recommended to add 5 spaces for a total of 120 spaces on site. The athletic areas on site appear adequate but may be impacted by the bus loop or parking improvements. This site has used most all of the developable area so there may be some give and take to find the right balance between parking and athletics when the addition is added. Consideration for future geothermal field locations are noted in the appendix for potential locations and well counts. Tier 2 cost estimates include allowances for accommodating outdoor learning programs.

Lakeside - Main Level

Existing Floor Plan

Lakeside - Main Level

Additions/Renovations Floor Plan



Lakeside - Main Level

Proposed Floor Plan


TOSS
What are (2) things you'd get rid of in your school?
CREATE
Designing for the Middle School Learner
VMDO

COST ESTIMATING AND CAPITAL IMPROVEMENT PLANNING

5

COST ESTIMATING AND CAPITAL IMPROVEMENT PLANNING

OVERVIEW

Cost estimates provided in the appendix are a rough order of magnitude for the recommended Tier 2 and Tier 3 improvements at each school. These estimates include construction costs (additions and/or renovations), allowances for site improvements (parking, vehicular access and drop-off, new outdoor programs, etc.), and allowances for owner-carried soft costs (A/E fees, FFE, permits, HAZMAT inspections, surveys etc.). These scopes are estimated in today's (2023) dollars.

The chart on the opposite page outlines a proposed sequencing of these projects along a 20-year CIP timeline, including anticipated project durations. The costs provided in the chart assume a 5.25% escalation along the fiscal year timeline, and tallies anticipate total costs of each school (in the right hand column) and total costs within each fiscal year (along the bottom row). The costs included in the CIP planning chart include Tier 2 and Tier 3 scopes. Itemized Tier 1 scopes are required to maintain the facilities in their current operation and either already are or should be included in the annual ACPS maintenance budget.

MARKET CONDITIONS & OPINIONS OF PROBABLE COST

Cost estimates are based on the A/E team's extensive experience with similar projects and are developed using best judgment in analyzing the subject projects. Costs provided are a rough order of magnitude based on single procurement via lump sum general contract and competitively bid to qualified general contractors. Costs are based on open shop wage and burden rates. The limits of construction are those indicated on the documents provided.

ACPS Middle School Master Plan 20-year CIP

	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	20-yr CIP
Phase 1																							
Lab School	$4.4	2 years																					$ 44.0
	Summer '27	$15.4	$15.4	Summer '29																			
				$8.8																			
Phase 2							★ Redistricting Study Fall '32																
Walton				$7.0	2 years																		$ 69.7
				Summer '30	$24.4	$24.4	Summer '32																
					$ 13.9																		
Phase 3				Land acquisition	?					★ Redistrict Fall '35													
New Middle School				(New MS)			$15.4	2 years															$ 154.0
							Summer '33	$ 53.9	$ 53.9	Summer '35													
								$ 30.8															
Phase 4																							
Burley										$12.0	2 years												$ 120.0
										Summer '36	$ 42.0	$ 42.0	Summer '38										
											$ 24.0												
Journey										$9.8	2 years												$ 98.5
										Summer '36	$ 34.5	$ 34.5	Summer '38										
											$ 19.7												
Henley										$11.4	2 years												$ 113.7
										Summer '36	$ 39.8	$ 39.8	Summer '38										
											$ 22.7												
Lakeside										$9.7	2 years												$ 97.1
										Summer '36	$ 34.0	$ 34.0	Summer '38										
											$ 19.4												

$4.4	$15.4	$15.4	$15.8	$24.4	$24.4	$29.3	$53.9	$53.9	$73.7	$150.3	$150.3	$85.8	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	**$ 697.0**
2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	

★ Redistricting Study

Renovations & Additions (Major)

Renovations & Additions (Minor)

Land Acquisition

New Construction

A/E Design

FF&E

Note:

Estimates in the chart are in millions of dollars

Estimates are based on 2023 costs, and escalated at 5.25% per annum