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Appendix A | Capacity & Utilization Analysis
Appendix B | Educational Adequacy Assessment (EFEI)
Appendix C | Facilities Conditions Assessment
Appendix D | Learning Resource Specifications
1 The Study

HBA Architecture & Interior Design and Fielding Nair International (HBA x FNI), have been commissioned as an integrated design team of architects, planners and educators to recommend how to best address capacity needs and future enrollment growth at the high school level for Albemarle County.

The study includes concepts of how High School 2022 can be implemented across the school division and county. The primary focus is to find ways to give every student access to opportunities that support their passion, whether they be in or out of high school buildings.
The Study

Process & Project Framework

The process began by developing a deeper understanding of the vision and mission of ACPS and the High School 2022 strategic plan. This study considers all of the School Division’s resources, including high school facilities, as ultimately in service to the learning experiences envisioned at the core of High School 2022.

We then analyzed all of the existing experiences, resources and systems across the Division that support learning at the high school level. We feel that understanding the existing conditions and operations is essential to the planning process when looking toward the future.

We studied the above at various scales from classroom to building to division and engaged a wide variety of stakeholders including members of ACPS, the school board, parents and students to gain a similar cross-scale understanding of culture and place.

The diagram at the right outlines the major components of the process from the start at top, to the development of the recommendations contained in this report at bottom.
Discovery Visit
The Design Team engaged with ACPS administration, teachers and students to learn about the existing culture and envision the future of high school in Albemarle County.

Discovery Findings Visit
The Design Team shared a framework of how high school in the Division could operate and, together with ACPS, the team created conceptual models and systems to implement High School 2022.

Facilities Assessments
The Design Team conducted Education Adequacy and Facilities Condition assessments to establish benchmarks and highlight areas of opportunity at each high school.

Community Engagement
The Design Team had the opportunity to learn about the culture of each high school and its immediate surrounding community from teachers, administrators, parents and students.

Presentation of Scenarios
The Design Team shared context data and preliminary scenarios to handle capacity and align facilities with High School 2022. The team facilitated an active discussion with members of ACPS and the School Board.

School Board Session
The Design Team participated in a School Board working session to share and discuss progress as refined from previous meetings.

Photo Credit: Josh Mandell, Charlottesville Tomorrow
The Study

4 Essential Questions

The context for this study is broad - from High School 2022 to building capacity and enrollment projections to the evolution of high school around the world.

The Design Team took inventory of this context and distilled it into four (4) essential questions.

The 4 Essential Questions guided the work of this study and serve as a framework for its organization.

The context section outlines many aspects of the context studied in greater detail.

4 Essential Questions

1. How do we respond to enrollment pressure in the North & West?
2. What does each school site need?
3. How do we expand opportunity for all?
4. How do we use space as a catalyst for High School 2022?

Context

- ACPS Mission/Vision/Core Values
- High School 2022
- The Evolution of High School around the World
- Enrollment Projections
- Large Geography of School Division
- Facilities Conditions & Alignment with High School 2022
- Success and competitiveness of ACPS Specialized Programming
- Demographic Diversity
2 Context
High School 2022 is ACPS’ vision for the high school experience in Albemarle County.

The “High School 2022 - A Day in the Life” video shares examples of what this learning could look like,

“...In addition to their standard coursework, students will engage in a variety of accredited learning experiences outside of the classroom to compliment their content knowledge. These experiences are designed to develop and further support content knowledge, workplace skills, community engagement, civic responsibility and career exploration in alignment with the Profile of a Virginia Graduate.”
- Narrative as transcribed from video

The Design Team devoted a large amount of time learning about High School 2022.

The images to the right are clips from the “High School 2022 - A Day in the Life” video and illustrate some of the elements of High School 2022.

**Specialized Programming**
Exposure to a variety of specialized programming gives students the opportunity to explore their interests and potential career pathways.

**Peer Mentorship**
Peer mentoring programs promote every individual as a learner and a teacher.

**Community Engagement**
Students participate in various out of building learning experiences and engage as active community members.
As we look around the world, high school is evolving to prepare students for the demands of the 21st Century. Students must not only master the old basics of reading, writing, and arithmetic, but also the new basics of digital and information literacy, communication, creativity, and collaboration skills to name just a few. In this context high school facilities are also changing from large buildings with classrooms, to more nimble, flexible, environments that support the kind of workflows students will engage beyond high school. Below are a few themes relevant to this study from high school projects we have worked on recently.

### Marketplace of Ideas
**Hawaii**

From our work in Hawaii, we are exploring how the HS facility might be designed to be as flexible as a market, able to adapt to changes in the curricular focus, like a market can receive different vendors and stalls. Like a market, the 21st Century High School can also make visible the wide range of ideas students are pursuing.

### Activity Based Learning Space
**Singapore**

From our work in Singapore, we have explored a learning environment designed around activity rather subjects. From quiet areas for focus to active zones for making, the 21st century learning environment offers the flexibility for students and teachers to choose the right space for the right activity.

### Identity
**Tanzania**

From our work in Tanzania, we have explored how high school facilities can reflect the richness of the community identities that surround the facilities.

### Innovation Workflow
**South Carolina**

From our work in Greenville, South Carolina, we have studied how learning space can be arranged to make movement between tasks like designing and making more seamless and direct. The BMW Innovation Center pictured above, designed by Zaha Hadid, places advanced manufacturing directly next to design.
Question 1

How do we respond to enrollment pressure in the North & West?

We looked at the Albemarle County Public Schools Enrollment Projections FY 2018/2019 to FY 2027/2028 to determine where, when and to what extent growth is anticipated within the County.

Through analyzing the projections from the elementary to the high school level we were able to understand that the most pressing capacity needs are located in the North and West of Albemarle County.
**Context**

Enrollment | Existing* & Future** (7-Year Peak)

**NOTES**

* Existing Enrollment numbers are for 2017/2018 School Year based on Albemarle County Public Schools Enrollment Projections FY 2018/2019 to FY 2027/2028.

** Future Enrollment numbers are for 2024/2025 School Year (peak enrollment) based on Albemarle County Public Schools Enrollment Projections FY 2018/2019 to FY 2027/2028.

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**Existing (E)**

**Future (F)**
Context

Enrollment Projections* | High School (7-Year Peak)

High School enrollment projections suggest significant growth in the West and moderate growth in the North.

LEGEND

PROJECTED ENROLLMENT CHANGE
- The labels on the map indicate change in total enrollment and percent increase.
- Data Sources: Albemarle CPS; Albemarle Co., VA; City of Charlottesville, VA; ESRI Cartographer; ZS, November 2017

< -10.00%
-9.99% - -5.00%
-4.99% - -2.00%
-1.99% - -0.01%
0.00%
0.01% - 2.00%
2.01% - 5.00%
5.01% - 10.00%
>10.00%

* Enrollment numbers based on Albemarle County Public Schools Enrollment Projections FY 2018/2019 to FY 2027/2028.

**Albemarle County High School Facilities Planning Study**

Enrollment Projections* | High School (7-Year Peak)

High School enrollment projections suggest significant growth in the West and moderate growth in the North.

LEGEND

PROJECTED ENROLLMENT CHANGE
- The labels on the map indicate change in total enrollment and percent increase.
- Data Sources: Albemarle CPS; Albemarle Co., VA; City of Charlottesville, VA; ESRI Cartographer; ZS, November 2017

< -10.00%
-9.99% - -5.00%
-4.99% - -2.00%
-1.99% - -0.01%
0.00%
0.01% - 2.00%
2.01% - 5.00%
5.01% - 10.00%
>10.00%

* Enrollment numbers based on Albemarle County Public Schools Enrollment Projections FY 2018/2019 to FY 2027/2028.
Context

Beyond the peak high school enrollment in 2024/2025, there is a slight decrease in growth in both the West and North.

Enrollment Projections* | High School (10-Year)

**ALBEMARLE COUNTY**

**WESTERN ALBEMARLE**

17.1% 194

**ALBEMARLE**

5.0% 98

**MONTICELLO**

-3.9% -44

---

Beyond the peak high school enrollment in 2024/2025, there is a slight decrease in growth in both the West and North.

**LEGEND**

PROJECTED ENROLLMENT CHANGE
- The labels on the map indicate change in total enrollment and percent increase.
- Data Sources: Albemarle CPS; Albemarle Co., VA; City of Charlottesville, VA; ESRI Cartographer; ZS, November 2017

* Enrollment numbers based on Albemarle County Public Schools Enrollment Projections FY 2018/2019 to FY 2027/2028.
**Context**

**Capacity | Existing* v Modernization**

**NOTES**

* Existing Capacity as calculated per current ACPS guidelines. Refer to Appendix A for complete calculations and additional diagrams.

** For a more detailed look at the modernization envisioned at each school, including its impact on capacity, please see the Modernization subsection of Chapter 3 Opportunities.

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**Modified Programming w/Learning Communities (LC)**

现有（E）

14 | Albemarle County 高中设施规划研究
NOTES

Modernization alone cannot support the increasing enrollment demands at Albemarle and Western Albemarle High School.

* Future Enrollment numbers are for 2024/2025 School Year (peak enrollment) based on Albemarle County Public Schools Enrollment Projections FY 2018/2019 to FY 2027/2028.

** For a more detailed look at the modernization envisioned at each school, including its impact on capacity, please see the Modernization subsection of Chapter 3 Opportunities.
Question 2

What does each school site need?

We analyzed each school in terms of its physical conditions and adequacy to support the educational vision of High School 2022.

Understanding the existing parameters, opportunities and challenges of each site helped determine the best course of action for the Division to handle capacity in a way that supports the vision.
EFEI - Education Facilities Effectiveness Instrument

Facilities Conditions Assessment
$60 M (Million) = Estimated capital renewal investment needed over next 20 years at 3 Comprehensive High Schools

Opportunity Photos

Albemarle
Sustainability

Western Albemarle
Transparency

Monticello
Student-Crafted Learning

EFEI = 46.75
High Scores
• Technology
• Shared Learning Resources

Low Scores
• Transparency
• Sustainability

EFEI = 55.50
High Scores
• Shared Learning Resources
• Inside/Outside Connections

Low Scores
• Transparency
• Sustainability

EFEI = 48.00
High Scores
• Choice & Comfort
• Inside/Outside Connections

Low Scores
• Transparency
• Student Dining

EFEI = 74.25
High Scores
• Cave Space
• Teachers Professional Space

Low Scores
• Sustainability
• Student-Crafted Learning

Context
Existing Conditions & Future Projections | Investment Needed
## Context

**EFEI Analysis | Summary**

### EFEI - Education Facilities Effectiveness Instrument

- A tool used as part of the Educational Adequacy Assessment to measure each school building for its potential to support the envisioned high school program.
- Refer to Appendix B | Education Adequacy Assessment (EFEI) for assessment criteria and a detailed analysis for each school.

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<th>Western Albemarle HS</th>
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<td>2.25</td>
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**EFEI ASSESSMENT SCORE (out of 130 possible points)**

- Albemarle HS: 55.50
- Monticello HS: 74.25
- Western Albemarle HS: 46.75
- Murray HS: 48.00

**EFEI RATING (5.00 Scale)**

- Albemarle HS: 2.13
- Monticello HS: 2.86
- Western Albemarle HS: 1.80
- Murray HS: 1.85
Area of the Existing Site
- 65.97 acres (per county estimates)

Area of the Existing Building Footprint
- 180,000 sf (estimated)

Site Opportunities and Challenges
- Minimal site area is available for building expansion due to adjacencies of property lines, grade constraints and previously constructed site elements.
Area of the Existing Site
• 75.00 acres (per county estimates)

Area of the Existing Building Footprint
• 150,600 sf (estimated)

Site Opportunities and Challenges
• Minimal site area is available for building expansion due to adjacencies of property lines, grade constraints and previously constructed site elements.
Area of the Existing Site
• 47.57 acres (estimated)

Area of the Existing Building Footprint
• 194,000 sf (estimated)

Site Opportunities and Challenges
• Site is centrally located to north urban ring and US 29 Corridor
• Minimal site area is available for building expansion due to adjacencies of property lines and previously constructed site elements.
• The size of the school already exceeds the community’s desired school size for a high school student population.
• The shape of the existing building poses challenges for additional classroom expansion because of its triangular shape and 3 corners consisting of Gym, Auditorium, and new Addition.
• The shape of the existing building also poses challenges for contraction of footprint because of its triangular shape - eliminating a leg of the triangle would likely make the remaining building less efficient for circulation and utility infrastructure.
**Context**

Site Plan | Murray High School

**Area of the Existing Site**
- 6.33 acres (per county estimates) - 7.1 acres (per MUR site 2009.pdf)

**Area of the Existing Building Footprint**
- 29,200 sf (estimated)

**Site Opportunities and Challenges**
- Site is centrally located to urban ring
- Site area is available for building expansion

---

**Site Plan | Murray High School**

- EXISTING SCHOOL BUILDING
- Learning Community
- Modernization could add capacity to support expanded programming

- Site Available for Future Construction
- Existing Parking

---

Albemarle County High School Facilities Planning Study
Area of the Existing Site
- 13.5 acres (per county estimates)

Area of the Existing Building Footprint
- 58,200 sf (estimated)

Design Options
- Modernize & Reinvigorate Programming
- Relocate current programming and reuse site/building

Site Opportunities and Challenges
- Site is centrally located to north urban ring and US 29 Corridor
- Site area is available for building expansion

EXISTING SCHOOL BUILDING
Modernization could add capacity to support expanded or new programs

Site Available for Future Construction

Site Available for Future Parking

Grade constraints
Question 3

How do we expand opportunity for all?

We looked at the demographic makeup of each high school individually to understand the diversity of the school division.

We looked at current student participation rates in specialized programming offered by ACPS and where those participating students live.

An analysis of these data points, along with feedback from community and ACPS staff, made clear the need to strategically expand specialized programming opportunities so that all students may participate.
Context
Demographics* | Race & Ethnicity

LEGEND
- Black/African American
- Hispanic
- White
- Not Identified

* Demographic statistics sourced from ACPS High School Fact Sheet Websites. Data as of September 30, 2016.
Context
Demographics* | Free & Reduced Price Meals

Albemarle
- Disadvantaged (Free & Reduced Price Meals): 26.5%
- 73.5%

Western Albemarle
- Disadvantaged (Free & Reduced Price Meals): 8.7%
- 91.3%

Monticello
- Disadvantaged (Free & Reduced Price Meals): 32.4%
- 67.6%

LEGEND
Disadvantaged (Free & Reduced Price Meals)

* Demographic statistics sourced from ACPS High School Fact Sheet Websites. Data as of September 30, 2016.
**Context**

**Median Household Income | High School Students**

---

**LEGEND**

**CONCENTRATION OF HIGH SCHOOL STUDENTS (2017/2018)**
- Concentration represents counts of students w/in a half-mile radius.
- Concentrations of less than 6 students are excluded.
- Data Sources: Albemarle CPS; Albemarle Co., VA; City of Charlottesville, VA; ESRI Cartographer: ZS, October 2017

**MEDIAN HOUSEHOLD INCOME BY BLOCK GROUP (2017/2018)**
- In the past 12 months
- Data Sources: Albemarle CPS; Albemarle Co., VA; City of Charlottesville, VA; U.S. Census Bureau, 2015 American Community Survey; ESRI Cartographer: ZS, October 2017

---

**ALBEMARLE COUNTY**

Highest household incomes are concentrated in the North and West of Charlottesville while high school student households are located throughout the county.

---

- Highest household incomes are concentrated in the North and West of Charlottesville while high school student households are located throughout the county.

---

**ALBEMARLE**

**WESTERN ALBEMARLE**

**MONTICELLO**

**CATEC**

**MURRAY**

---

**Median Household Income**

- $131,964.01 - $175,682.00
- $106,250.01 - $131,964.00
- $88,047.01 - $106,250.01
- $73,457.01 - $88,047.00
- $63,977.01 - $73,457.00
- $58,214.01 - $63,977.00
- $48,750.01 - $58,214.00
- $41,705.01 - $48,750.00
- $20,590.01 - $41,705.00
- $8,043.00 - $20,590.00

---

**High School Facilities Planning Study**

---

27 | Albemarle County
**Context**

**Median Household Income | Gifted Education Program Participation**

**LEGEND**

**GIFTED EDUCATION PARTICIPATION - # STUDENTS (2017/2018)**
- Concentration represents counts of students within a half-mile radius.
- Concentrations of less than 6 students are excluded.
- Data Sources: Albemarle CPS; Albemarle Co., VA; City of Charlottesville, VA; ESRI Cartographer: ZS, October 2017

- 52 - 60
- 46 - 51
- 41 - 45
- 32 - 40
- 28 - 31
- 23 - 27
- 18 - 22
- 13 - 17
- 6 - 12

**MEDIAN HOUSEHOLD INCOME BY BLOCK GROUP (2017/2018)**
- In the past 12 months
- Data Sources: Albemarle CPS; Albemarle Co., VA; City of Charlottesville, VA; U.S. Census Bureau, 2015 American Community Survey; ESRI Cartographer: ZS, October 2017

- $131,964.01 - $175,682.00
- $106,250.01 - $131,964.00
- $88,047.01 - $106,250.01
- $73,457.01 - $88,047.00
- $63,977.01 - $73,457.00
- $58,214.01 - $63,977.00
- $48,750.01 - $58,214.00
- $41,705.01 - $48,750.00
- $20,590.01 - $41,705.00
- $8,043.00 - $20,590.00

**ALBEMARLE COUNTY**

Students identified as gifted live primarily in areas of higher household income.
### Context

**Median Household Income | Academy Student Participation**

**Legend**

**Academy Participation - # Students (2017/2018)**
- Concentration represents counts of students within a half-mile radius.
- Concentrations of less than 6 students are excluded.
- Data Sources: Albemarle CPS; Albemarle Co., VA; City of Charlottesville, VA; ESRI Cartographer: ZS, October 2017

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<th>Notation</th>
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<td>10 - 11</td>
<td>Red</td>
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<tr>
<td>6 - 26</td>
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**Median Household Income by Block Group (2017/2018)**
- In the past 12 months
- Data Sources: Albemarle CPS; Albemarle Co., VA; City of Charlottesville, VA; U.S. Census Bureau, 2015 American Community Survey; ESRI Cartographer: ZS, October 2017

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<thead>
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<th>Income Range</th>
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<tr>
<td>$106,250.01 - $131,964.00</td>
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<td>$63,977.01 - $73,457.00</td>
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</tr>
<tr>
<td>$58,214.01 - $63,977.00</td>
<td>Green</td>
</tr>
<tr>
<td>$48,750.01 - $58,214.00</td>
<td>Green</td>
</tr>
<tr>
<td>$41,705.01 - $48,750.00</td>
<td>Green</td>
</tr>
<tr>
<td>$20,590.01 - $41,705.00</td>
<td>Green</td>
</tr>
<tr>
<td>$8,043.00 - $20,590.00</td>
<td>Green</td>
</tr>
</tbody>
</table>

**Albemarle County**

Academy student participation is concentrated in areas of higher household income.
Context

Existing Programs

Existing High School Academic Programs

- Academies
- Pathway Programs
- Advanced Placement (AP)
- Team
- AVID
- Special Education (A Base/B Base)
- Peer Tutoring
- Fusion/Interdisciplinary Courses
- Dual Enrollment
- ESOL
- TPRS World Language
- Career and Technical Education Courses
- PLC
- STEAM
- Library
- Work-based Learning
- GIS
- Design Lab
- Student-design Course Credit
- Industrial Arts
- Multi-use Library-learning Resource Center
- Music Studio
- Broadcast Studio
- Career Connector
- Auto Mech
- Auto Body
- Cosmetology
- Computer Network Design

Western Albemarle
Program Participation Rates are calculated from student data provided by ACPS and enrollment numbers for 2017/2018 School Year based on Albemarle County Public Schools Enrollment Projections FY 2018/2019 to FY 2027/2028.

LEGEND

Academy Participation

* Academy Program Participation Rates are calculated from student data provided by ACPS and enrollment numbers for 2017/2018 School Year based on Albemarle County Public Schools Enrollment Projections FY 2018/2019 to FY 2027/2028.
Program Participation Rates are calculated from student database information (2017/2018) and enrollment numbers for 2017/2018 School Year based on Albemarle County Public Schools Enrollment Projections FY 2018/2019 to FY 2027/2028.

LEGEND
AP Participation

* Program Participation Rates are calculated from student database information (2017/2018) and enrollment numbers for 2017/2018 School Year based on Albemarle County Public Schools Enrollment Projections FY 2018/2019 to FY 2027/2028.
3 Opportunities

3a Design Principles
3b Modernization
Question 4

How do we use space as a catalyst for High School 2022?

With an understanding of facility condition, quality and projected enrollment, we studied how to better align capacity with enrollment, and the quality of space with the learning goals of High School 2022.

The following section outlines opportunities for modernizing each high school facility to foster the learning experiences envisioned in High School 2022, and how the location and type of space in existing school buildings, and even out of school buildings, might be optimized to better support student pathways.
The Design Team developed the Design Principles for learning as a summary of the beliefs and values about learning at the core of High School 2022 that we came to understand through our engagement with ACPS staff and community. These principles guided all proposals for the planning and organization of high school, and the criteria for assessing any proposal that became a recommendation. As these principles were socialized with ACPS staff and community, “Accessible to All,” or equity, rose to the top as the most important guiding principle for any recommendation.

Each Design Principle completes the following statement:

Great learning is...

- Accessible to All (Equity)
- Student-Designed
- Interdisciplinary
- Community Oriented
- Fostering Life/Career & Citizen Success
- Mentored
- Authentic
- Transparent
Great Learning Is...

ACCESSIBLE TO ALL (EQUITY)

Systems designed for great learning remove barriers to accessing specialty programs, unique resources, and professionals for every learner, within and beyond the immediate school community, and allow each learner to pursue their evolving passions, projects and personal development.

INTERDISCIPLINARY

Great learning occurs when learners are immersed in authentic contexts that allow them to create meaning by making connections across traditional discipline boundaries.

STUDENT-DESIGNED

Great learning is, as much as possible, designed and led by the learner.

COMMUNITY ORIENTED

We believe learning is a social process enriched and expanded through interactions in our communities. Great learning happens in communities within and outside of schools.
We believe that the high school experience must prepare students to be successful in life as learners, in career, and as citizens in their communities. Therefore, programs, curricula, assessments and pedagogy are designed to develop in our students, life-long competencies including the skills to be collaborative, creative, logical, analytical, effectual, and entrepreneurial. Great learning happens when we prepare our students by empowering them to develop the social and emotional strengths necessary to question, inquire, persevere and find success.

We believe the real world is the most relevant context in which to learn. Great learning happens when learners apply passion, knowledge and skills to challenges that impact their immediate and broader communities. Authentic contexts provide the learner with a greater sense of meaning and purpose to their learning.

Great learning happens when students are connected and supported by adults and peers (teachers, community experts, leaders) who serve as mentors in academic pursuits and character development.

We believe great learning happens when learning and work are visible, and serve as an inspiration to others to inquire and join.
The approach to the Learning Resource Specifications prepared as part of this report are generative in nature, recognizing that the interrelationship of environment, pedagogy, infrastructure, and personal experience lies at the core of any successful educational model. Through compiling resources within these categories, focused around a series of learning design principles, the future of the high school experience can be comprehensively visualized through this document.

The specifications illustrated acknowledge that relationships between resources are constantly shifting and influencing one another. By exploring them as a dynamic and living system, it is undeniable that the physical environment is key to allowing for educational success.

Please refer to Appendix D | Learning Resource Specifications for the full Specification document.
### Opportunities | Design Principles

#### Learning Resource Specifications | Resources

**EXAMPLE**

The image to the right is an example page from the Learning Resource Specifications. Each category of resource identified; environmental, pedagogical and infrastructural, is populated with a series of supporting elements. Each element includes a description, imagery and resource links where applicable, and a reference to the supporting Design Principle(s).

Please refer to Appendix D | Learning Resource Specifications for the full Specification document.

<table>
<thead>
<tr>
<th>Advisory Stations</th>
<th>Spatial Qualities</th>
</tr>
</thead>
<tbody>
<tr>
<td>With a greater emphasis on student-led learning, students will form close relationships with their mentors and advisors. Advisory Stations can be distributed throughout the school community to serve not only as educator workstations, but to encourage informal interaction between students and teachers.</td>
<td>Integrated power, Centrally located, Distributed</td>
</tr>
<tr>
<td>Supporting Design Principles: Life/Career Success, Mentored</td>
<td>Typ. size: 300-400 SF</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Brainstorming Walls</th>
<th>Spatial Qualities</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Brainstorming Wall can be any easily accessible whiteboard, glass, or similar vertical surface meant for students and teachers to draw notes and write comments on. Ideally located near Soft Seating in student-directed learning areas, these can promote active and passive collaboration.</td>
<td>Easily accessible, Collaborative furniture, Writing instruments</td>
</tr>
<tr>
<td>Supporting Design Principles: Accessible to All, Interdisciplinary, Transparent</td>
<td>Typ. size: Varies based on location/intended use</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cave Spaces</th>
<th>Spatial Qualities</th>
</tr>
</thead>
<tbody>
<tr>
<td>In addition to spaces that support large and small groups, it is important to offer more intimate spaces where an individual or pair can work without distraction. Cave Spaces are designed specifically for individual study, reflection, quiet reading, and creative flow.</td>
<td>Intimate, Comfortable, Quiet, Enclosed on 2-3 sides</td>
</tr>
<tr>
<td>Supporting Design Principles: Student-Designed, Mentored</td>
<td>Typ. size: 10-15 SF</td>
</tr>
</tbody>
</table>

**EXAMPLE**

The image to the right is an example page from the Learning Resource Specifications. Each category of resource identified; environmental, pedagogical and infrastructural, is populated with a series of supporting elements. Each element includes a description, imagery and resource links where applicable, and a reference to the supporting Design Principle(s).

Please refer to Appendix D | Learning Resource Specifications for the full Specification document.
3b Modernization

The modernization of academic spaces in all of the existing high school facilities in Albemarle County is a key component of every scenario and recommendation offered by the Design Team.

The building block for modernization is the Learning Community, a variety of learning spaces designed to support the vision of High School 2022.

Each of the Design Principles is evident in the Learning Community and can be used to guide the operation of the Community every day.
When students operate in communities of approximately 150 members, they form stronger and more meaningful relationships with their peers, and have a greater sense of belonging. Learning Communities comprise a variety of spaces such as Teacher Collaboration Rooms, Small Group Rooms, Seminar Rooms, Learning Studios, Project Studios, Makerspaces, and other learning spaces.

These spaces are united by a central Learning Commons, together forming a flexible environment in which teachers can work with students independently, in small groups, or in large classes throughout the day. This Commons provides a space for students to come together both academically and socially as a Community.

Fisher STEAM School
Planning Capacity within a Learning Community is calculated based on square footage per student rather than by individual teaching stations.

The Square Footage per Student for each space type is based on the furniture and activities envisioned for that space.

Taking into consideration the flexibility required for the success of this model, the following ranges have been used to calculate capacity for the Learning Community Patterns on the following pages:

- Learning Studio: 30-40 SF per student
- Project Studio: 35-45 SF per student
- Small Group Room: 20-30 SF per student
- Seminar Room: 20-30 SF per student
- Learning Commons: 25-35 SF per student (+15% for circulation)
## Description

With a greater focus on Interdisciplinary Learning, Communities can be more all-inclusive, with a teaching staff comprised of educators from every department. This model allows for stronger peer and mentor relationships to develop as student-teacher groupings interact throughout the day at all levels of learning, rather than solely through specified course material.

## Typical Areas

<table>
<thead>
<tr>
<th>Area</th>
<th>Net Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning Commons</td>
<td>700 SF</td>
</tr>
<tr>
<td>Learning Commons</td>
<td>850 SF</td>
</tr>
<tr>
<td>Learning Studio</td>
<td>750 SF</td>
</tr>
<tr>
<td>Learning Studio</td>
<td>750 SF</td>
</tr>
<tr>
<td>Learning Studio</td>
<td>750 SF</td>
</tr>
<tr>
<td>Project Studio</td>
<td>1000 SF</td>
</tr>
<tr>
<td>Seminar Room</td>
<td>225 SF</td>
</tr>
<tr>
<td>Small Group Room</td>
<td>100 SF</td>
</tr>
<tr>
<td>Small Group Room</td>
<td>100 SF</td>
</tr>
<tr>
<td>Teacher Collaboration</td>
<td>450 SF</td>
</tr>
</tbody>
</table>

**Total Net Area**: 5,675 SF

**Estimated Gross Area (x1.25)**: 7,090 SF

## Capacity

- Planning Capacity Total = 150 Students
Allowing for greater autonomy, the Advisory pattern allows students to develop their own learning pathways with guidance from a core team of teachers. Due to this, the larger common area often becomes more personalized, housing individual workstations where students can self-direct their own studies.

Typical Areas
- Learning Commons: 2250 SF
- Learning Studio: 750 SF
- Project Studio: 1000 SF
- Seminar Room: 225 SF
- Small Group Room: 150 SF
- Small Group Room: 150 SF
- Small Group Room: 100 SF
- Teacher Advisory Station: 500 SF

Total Net Area: 5,125 SF
Estimated Gross Area (x1.25): 6,400 SF

Capacity
- Planning Capacity Total = 150 Students
The Atelier model provides the greatest individualization of study material. As such, teachers still play advisory roles and teach core course content, but students have access to an Atelier space with single workstations where they can focus on their own path.

**Typical Areas**
- Atelier Commons: 1500 SF
- Learning Studio: 750 SF
- Learning Studio: 750 SF
- Project Studio: 1000 SF
- Seminar Room: 225 SF
- Small Group Room: 100 SF
- Small Group Room: 100 SF
- Small Group Room: 100 SF
- Teacher Advisory Station: 500 SF

**Capacity**
- Planning Capacity Total = 150 Students
Opportunities | Modernization

Learning Community Modernization | Monticello High School

Gross Square Footage by Learning Community

1  –  7,688 SF
2  –  9,466 SF
3  –  8,915 SF
4  –  8,992 SF

TOTAL LEVEL 1  35,061 SF

TOTAL LEVEL 1  35,061 SF
TOTAL LEVEL 2  34,491 SF
TOTAL COMBINED  69,552 SF

Learning Community Locations

Additional Learning Spaces Available Due to Transition to Learning Community Model. Refer to the Capacity | Learning Community Modernization chart on p. 56.
Opportunities | Modernization
Learning Community Modernization | Monticello High School

Gross Square Footage by Learning Community

<table>
<thead>
<tr>
<th>Learning Community</th>
<th>Gross Square Footage</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>8,238 SF</td>
</tr>
<tr>
<td>6</td>
<td>8,854 SF</td>
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<td>8,661 SF</td>
</tr>
<tr>
<td>8</td>
<td>8,738 SF</td>
</tr>
<tr>
<td><strong>TOTAL LEVEL 2</strong></td>
<td><strong>34,491 SF</strong></td>
</tr>
</tbody>
</table>

| **TOTAL LEVEL 1**  | **35,061 SF**        |
| **TOTAL LEVEL 2**  | **34,491 SF**        |
| **TOTAL COMBINED** | **69,552 SF**        |

Learning Community Locations

Additional Learning Spaces Available Due to Transition to Learning Community Model. Refer to the Capacity | Learning Community Modernization chart on p. 56.
Opportunities | Modernization
Learnign Community Modernization | Western Albemarle High School

Gross Square Footage by Learning Community

1 – 6,969 SF
TOTAL LEVEL 1 6,969 SF

2 – 6,448 SF
3 – 7,453 SF
4 – 7,268 SF
5 – 7,269 SF
TOTAL LEVEL 2 28,438 SF

TOTAL LEVEL 1 6,969 SF
TOTAL LEVEL 2 28,438 SF
TOTAL COMBINED 35,407 SF

Learning Community Locations
Planned Renovation by VMDO Architects
Planned Addition by VMDO Architects
Opportunities | Modernization

Learning Community Modernization | Albemarle High School

Gross Square Footage by Learning Community

<table>
<thead>
<tr>
<th></th>
<th>SF</th>
</tr>
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<tr>
<td>3</td>
<td>9,148</td>
</tr>
<tr>
<td>4</td>
<td>8,846</td>
</tr>
<tr>
<td><strong>TOTAL LEVEL 1</strong></td>
<td><strong>32,731</strong></td>
</tr>
<tr>
<td><strong>TOTAL LEVEL 1</strong></td>
<td><strong>32,731</strong></td>
</tr>
<tr>
<td><strong>TOTAL LEVEL 2</strong></td>
<td><strong>52,135</strong></td>
</tr>
<tr>
<td><strong>TOTAL COMBINED</strong></td>
<td><strong>84,866</strong></td>
</tr>
</tbody>
</table>

- Learning Community Locations
- Basement Spaces to be Decommissioned for Alternate Uses
- Additional Learning Spaces Available Due to Transition to Learning Community Model. Refer to the Capacity | Learning Community Modernization chart on p. 56.
Opportunities | Modernization

Learning Community Modernization | Albemarle High School

Gross Square Footage by Learning Community

<table>
<thead>
<tr>
<th>Level</th>
<th>Square Feet</th>
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</thead>
<tbody>
<tr>
<td>5</td>
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<td>7,059 SF</td>
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<td>8,987 SF</td>
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<td>9</td>
<td>9,148 SF</td>
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<tr>
<td>10</td>
<td>7,122 SF</td>
</tr>
<tr>
<td>11</td>
<td>6,788 SF</td>
</tr>
</tbody>
</table>

TOTAL LEVEL 2  52,135 SF

TOTAL LEVEL 1  32,731 SF

TOTAL LEVEL 2  52,135 SF

TOTAL COMBINED 84,866 SF

Learning Community Locations
Opportunities | Modernization
Learning Community Modernization | Murray High School

Gross Square Footage by Learning Community

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>7,050 SF</td>
</tr>
<tr>
<td>2</td>
<td>6,412 SF</td>
</tr>
<tr>
<td>TOTAL COMBINED</td>
<td>13,462 SF</td>
</tr>
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</table>

Learning Community Locations

LEVEL 1
This layout test-fits an Interdisciplinary Learning Community Pattern into the existing conditions at Monticello. Each “House” within the school would ideally target an average capacity of 150 students to function properly, even though the square footage available suggests a higher potential capacity.

Notes:
- 8,238 SF of Renovation (Gross)
- Planning Capacity of 150 students
- Best supports interdisciplinary teaching teams collaborating on course content for the entire Learning Community
- Teachers share available spaces, teaching in teams, meeting with small groups, or advising individuals
Opportunities | Modernization

Learning Community Modernization | Western Albemarle High School | Advisory Pattern

This layout test-fits an Advisory Learning Community Pattern into the existing conditions at Western Albemarle. Gross square footage analysis (p. 48) indicates this community would be the smallest proposed for development, and therefore targets a less than average student capacity per community than the school as a whole would be able to achieve.

Notes:
- 6,448 SF of Renovation (Gross)
- Planning Capacity of 125 students
- Best supports individualized and small group learning while providing a common core curriculum
- Teachers collaborate on common curriculum while serving as advisors to individual students and groups

Existing 2nd Floorplan and Area of Transformation
This layout test-fits an Atelier Learning Community Pattern into the existing conditions at Albemarle. Gross square footage analysis (p. 50) indicates this community would be one of the smallest proposed for development, and therefore targets a less than average student capacity per community than the school as a whole would be able to achieve.

Notes:
- 6,585 SF of Renovation (Gross)
- Planning Capacity of 125 students
- Best supports individualized learning where students design their own educational paths
- Teachers serve primarily as individual and group advisors while sharing studio teaching spaces

Learning Community Modernization | Albemarle High School | Advisory (Atelier) Pattern
Opportunities | Modernization
Learning Community Modernization | Murray High School | Interdisciplinary Pattern

This layout test-fits an Interdisciplinary Learning Community Pattern into the existing conditions at Murray. Each wing of the school would ideally target an average capacity of 100 students to function properly, even though the square footage available suggests a higher potential capacity.

Notes:
• 7,050 SF of Renovation (Gross)
• Planning Capacity of 100 students
• Best supports an interdisciplinary teaching team collaborating on course content for the entire Learning Community
• Teachers share available spaces, teaching in teams, meeting with small groups, or advising individuals

Existing Floorplan and Area of Transformation
**Notes**

* Learning Community Modernization Capacity as calculated for renovations to academic areas to support High School 2022. See adjacent table and diagrams in the Modernization subsection of Chapter 3 Opportunities.

---

**Division:** Albemarle County Public Schools  
**Date:** December 2017

### Albemarle High School

<table>
<thead>
<tr>
<th>No. of Teaching Stations</th>
<th>Multiplier Capacity</th>
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</thead>
<tbody>
<tr>
<td>8</td>
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</tr>
<tr>
<td>11</td>
<td>150</td>
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<tr>
<td>3</td>
<td>8</td>
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### Monticello High School

<table>
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<tr>
<th>No. of Teaching Stations</th>
<th>Multiplier Capacity</th>
</tr>
</thead>
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<tr>
<td>5</td>
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<td>6</td>
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### Western Albemarle High School

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<tr>
<th>No. of Teaching Stations</th>
<th>Multiplier Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>100</td>
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</table>

### Murray High School

<table>
<thead>
<tr>
<th>No. of Teaching Stations</th>
<th>Multiplier Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
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<td>6</td>
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<tr>
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<td>0</td>
</tr>
</tbody>
</table>

### Western Executive High School

- **Spaces that contribute towards Capacity**
  - LEARNING COMMUNITIES (Note 1)
    - 6 Modernized Science Labs (2019) @ WAHS
    - 4 New Science Labs (2019) + ESA Lab @ WAHS
    - Additional Learning space Available after LC Configurations
    - Arts Education Classrooms / Labs
    - Music Labs
    - Drama Classroom
    - Career & Tech. Education Classrooms / Labs
    - 6 Modernized Science Labs (2019) @ WAHS
    - 4 New Science Labs (2019) + ESA Lab @ WAHS
    - Additional Learning space Available after LC Configurations
    - Arts Education Classrooms / Labs
    - Music Labs
    - Drama Classroom
    - Career & Tech. Education Classrooms / Labs

- **Spaces that do not contribute towards Capacity**
  - Resource Rooms (Pull-Out Programs)
  - Health Classroom
  - Fitness Center
  - Weight Room
  - Wheeling Room
  - Video/Sound Production Lab
  - Maker Space (Unscheduled)
  - Community Rooms

---

**Notes**

* Please see Section 4b Modernization of the Final Report for explanation on proposed methodology for calculating Learning Community Capacities. Each Learning Community is assumed to include an average of seven (7) "Teaching Stations".
4 Scenarios Studied
Scenarios Studied
Scope | Spectrum

All scenarios studied propose the renovation of all 3 existing comprehensive schools and Murray to support interdisciplinary learning communities. The difference between them lies in the way they expand capacity to manage enrollment demand, distribute resources, and transform the student experience.

A spectrum framework was created to illustrate and organize the range of scenarios imagined.

The following page shows a workflow to illustrate the breadth of scenarios studied along with input we received from ACPS, the School Board and the community. The feedback noted captures the key points that lead us to explore the various options.

- Multiple individual, self sustaining and comprehensive high schools handle the capacity needs for the Division.

- New Division resources in the form of High School Centers are added to ACPS to support specialized programming and increase capacity. The number, location and operation of these facilities might vary but are always accessible to all students.
A financial analysis was developed for Scenarios 1, 2 and 3. Please refer to Chapter 6 | Financial Analysis for additional information and a comparative analysis between these Scenarios and the final Recommendation.
5 Recommendation

5a Scope
5b High School Center [Prototype]
5c Phasing
5a Scope

The recommendation to the ACPS Division is to build multiple High School Centers, phased over time, to comprehensively address enrollment capacity and equity of access to specialized programs across the school division. Each Center would be a resource for the whole Division, strategically placed to provide access to specialized programming, and act as an interface between the school, community, and professional organizations that provide out-of-building learning experiences. Transportation to the High School Centers would be provided by the Division to ensure equity of opportunity to every student. In addition, it is recommended that the four ACPS high schools be modernized to support the learning envisioned through High School 2022.

Beginning with one Center and modernization, Phase I addresses pressing capacity needs and provides the Division a framework for nimble growth in the future. In Phase 2 additional centers are built either from the ground up, or renovated in leased space to respond to enrollment and programming demand.
Recommendation | Scope

Concept

NOTES

• No Redistricting Required
• New High School Center with a capacity of 600 reduces enrollment pressure on Albemarle, but will be open to all students.
• High School Center might be strategically located near 250 and 29 for ease of access for as many students as possible, and connections to business and institutional partners.
• All High Schools are modernized. In some cases modernization increases capacity through a more efficient layout for learning.
• A Transportation network provides access to the new High School Centers and all High Schools.
Recommendation | Scope

Impact & Needs

**IMPACT**
- Guaranteed authentic P-based learning in a community setting for all students
- High percentage of teachers engaged in innovative program and learning design, leading practices, leadership and community building
- Integration of community experts and advisors to students and teachers
- Stronger connection to leading-edge business practices, technologies
- Strong programmatic linkages to UVA, Piedmont Valley Community College, and other institutions of higher education.
- Students are exposed to and can cross collaborate with multiple Pathway programs in one High School Center

**NEEDS**
- Creating a new Division-wide ecosystem to support Pathway learning and High School Center professional experiences for 11/12th grade students
- Supporting teachers transitioning from isolated practitioners to members of multidisciplinary teams at High School Centers and home base high school learning communities.
- Revising graduation requirements and transcript to fully account for Pathways, community-based learning experiences, and Life-long skills development
- Transportation systems to move students to and from home high school and Super Hubs
- Teachers developing new methodologies for Student-designed and P-based learning.
- Preparing teachers to support High School Center model and maintaining culture and practices across home base high schools, and high school centers.

**LEGEND**
- SPECIALIZED PROGRAMMING/CENTER
- HIGH SCHOOL CENTER
- LOCAL BUSINESS/COMMUNITY PARTNER
- TRANSPORTATION CONNECTION
Recommendation | Scope

Enrollment* (7-Year Peak) | Capacity** (Learning Community Modernization)

NOTES

- No Redistricting Required

* Enrollment numbers for 2024/2025 School Year (peak enrollment) based on Albemarle County Public Schools Enrollment Projections FY 2018/2019 to FY 2027/2028.

** Learning Community Modernization Capacity as calculated for renovations to academic areas to support High School 2022. See diagrams in Modernization section.
5b High School Center
[Prototype]
**Recommendation | High School Center [Prototype]**

**Concept | Site Plan**

**KEY CONCEPTS**
- The Prototype is designed to a capacity of 600 students at approximately 150 sf/student.
- The minimum acreage needed, including parking and drop-off, is 9.3 acres.
- The Prototype can be flexibly arranged for a variety of site conditions

**ASSUMPTIONS**
- 90,000 sf, 2-Story Building
- Parking Recommendation for School Use*
  - 100 spaces for students
  - 25 spaces for teachers
  - 25 spaces for visitors
  - 150 spaces recommended
  - Parking Growth Calculation: 120 parking spaces/acre (350 SF/space)
* No defined requirement in zoning ordinance
- Parking Requirements for Possible Future Conversion to Office Use **
  - 90,000 sf x 80/200 = 360 parking spaces
** to retain marketability value of property
KEY CONCEPTS

- The Prototype concept has three flexible components: (2) Academic Wings, and (1) Innovation Core.
- The Academic Wings can connect to the Core in a variety of configurations to maximize flexibility and work with different site conditions.
- The Prototype is designed to a capacity of 600 students.
- Each Academic Wing is two levels, with a capacity of 150 students per level.
- Academic Wings are conducive for student-designed work, where students can work within a variety of space types for a 21st century workflow.
- The “Innovation Core” provides space for Authentic and Interdisciplinary work, and could stay open during non-school hours while the wings stay locked, to operate as a community oriented space.
- Presentation areas, Project Studios, and collaborative zones all provide opportunity for students to connect with community experts and leaders in both the Core and Wings.

Configurations Options

- Condition - Long Narrow Site
- Condition - Corner Site
- Condition - Compact or Infill Site
NOTES

Each Wing of the Prototype is arranged to provide flexibility in program and student-designed projects. The variety of space types allow for student agency within authentic contexts.

- The variety of space includes Ateliers, Project Commons, Digital Display Areas, a Small Group Room, Seminar Rooms, and Learning Studios.
- The two Learning Studios can open into one larger Active Learning Suite.
- Teacher Collaboration zones open into the Learning Community for direct access to students.
- Teacher Collaboration Rooms connect directly to a Seminar or Team Room, allowing teachers to guide students in an Advisory Model.
Recommendation | High School Center [Prototype]

Concept | Wing

PRECEDENT IMAGERY

Hip Hop High, Minnesota, FNI
Specialized Space / Variety of Space

Youth Republic Office, Istanbul, Turkey, KONTRA
Co-Working Space

Ateliers (Total 75-80 Workspaces)

Connection between Learning Studios and Ateliers

Connection between Learning Studios to form Active Learning Suite

Connection between Learning Studio and Project Commons

Connection between Learning Studio and Core

Project Commons connects to Project Studio in Core

Teacher Collaboration with Views to Learning Community

Soft seating, lounge (Students meet with community leaders, teacher advisors and peers)

Group Table with monitor for digital collaboration and small presentations

Two Learning Studios form an Active Learning Suite

Commons for small group collaboration and brainstorming
NOTES

Level 1 and Level 2 of the Prototype form the Innovation Core and the heart of the High School Center. The variety of space and resources provide students to work on Authentic projects within an Interdisciplinary environment.

- Level 1 of the Innovation Core includes two Project Studios which connect to a large central flexible space.
- The flexible space is primarily used as a cafe, but can also serve multiple functions including an assembly area, break out space for the labs, and indoor fitness.
- The Project Studios and the Cafe have direct connections to an outdoor terrace for project work and outdoor dining.
- Project Studios on Level 1 and Level 2 can be designed for different academy types and focuses (e.g. Science Labs, Making, Robotics, Media Production, Business and Entrepreneurship).
- The Project Studios on Level 1 are double height spaces catering to the activities that need more vertical space.
Recommendation | High School Center [Prototype]

Concept | Core 1st Floor

PRECEDENT IMAGERY

1. MIT Media Lab, Cambridge, MA, Maki and Associates
   Transparency and Making

2. Facebook Headquarters, Silicon Valley, CA, Frank Gehry
   Non-Precious Space

PRECEDENT IMAGERY

1. Dining / Assembly / Flex Space
2. Servery
3. Coffee Bar / Lounge
4. Secure Vestibule
5. Outdoor Project Terrace
NOTES

Level 1 and Level 2 of the Innovation Core provides an environment where students can develop the skills to work collaboratively, creatively, logically, analytically and effectually, fostering life/career, & citizen success.

- Level 2 of the Innovation Core includes the Idea Lab which overlooks the Cafe/Assembly space, and which has connections to two Project Studios and a Digital Output Lab.
- The Idea Lab inspires innovation, and allows students access to digital and print resources, while providing a variety of spaces to work individually and collaboratively.
- The 2nd level overlooks two double height Project Studios, providing vertical transparency to learning.
Recommendation | High School Center [Prototype]
Concept | Core 2nd Floor

PRECEDENT IMAGERY

1. We Work - Cotham St, London, UK
   Co-Working Space

2. Facebook Headquarters, Silicon Valley, CA, Frank Gehry
   Non-Precious Space

Recommendation | High School Center [Prototype]
Concept | Core 2nd Floor

1. Research and Inquiry zone
2. Collaborative Work Area / Break Out Space from Project Studio and Digital Output Lab
3. Media Bar
4. Double Height Cafe/Assembly Space
5. Double Height Project Studios
5c Phasing
Recommendation | Phasing
Implementation Concept

NOTES

- Building and occupying a High School Center frees space at the three comprehensive high schools to allow for modernization.
- A smaller High School Center could be leased space and put into practice in advance of PHASE I.
- For details on how phases could be implemented refer to the Implementation Timeline on p. 78.

LEGEND

- **PHASE IA**
- **PHASE IB**
- **PHASE II**
- **NEW CONSTRUCTION**
- **MODERNIZATION**
- **POTENTIAL LEASED SPACE (INTERIOR BUILD OUT)**
Recommendation | Phasing
Implementation Timeline

LEGEND
C: TOTAL CAPACITY in Division (includes capacity for Albemarle, Western Albemarle, Monticello and Murray High Schools in addition to High School Centers and the addition/subtraction of capacity due to modernization.)
E: PROJECTED ENROLLMENT per Albemarle County Public Schools Enrollment Projections FY 2018/2019 to FY 2027/2028
∆: DELTA between TOTAL CAPACITY and PROJECTED ENROLLMENT to highlight surplus/negative capacity in Division

Milestone or Meeting
High School Center
Pedagogy & Systems
Modernization (assumes 25% max student displacement at one time)

SITE STUDIES (6 MONTHS) DESIGN (18 MONTHS) CONSTRUCTION (21 MONTHS)
SITE STUDIES (6 MONTHS) DESIGN (10 MONTHS) CONSTRUCTION (15 MONTHS)


C: 4379 E: 4332 ∆: +47
C: 4499 = 4379 + 120 E: 4409 = E: 4499 + 193 ∆: +133
C: 5099 = 4499 + 600 E: 5099 + 2 + 5 ∆: 165
C: 5106 = 5099 + 7 E: 4774 ∆: +324
C: 5452 = 5087 + 65 + 200 E: 4784 ∆: +168
6 Financial Analysis
### Financial Analysis

**Summary | Capital Project Budgets**

#### FINANCIAL ANALYSIS for HIGH SCHOOL FACILITIES SCENARIOS

**ESTIMATED CAPITAL PROJECT BUDGETS**

<table>
<thead>
<tr>
<th>Scenario 1 School - Based</th>
<th>Scenario 2 Center - Based</th>
<th>Scenario 3 Village - Based</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albemarle HS - Learning Community Modernization</td>
<td>14,015,475</td>
<td>19,203,525</td>
</tr>
<tr>
<td>25 Temporary Portable Classrooms needed to facilitate LC Moc</td>
<td>[Note 1]</td>
<td>3,117,500</td>
</tr>
<tr>
<td>Albemarle HS - Reprogram/Repurpose Partial 2nd Floor Space</td>
<td>5,188,050</td>
<td>0</td>
</tr>
<tr>
<td>Monticello HS - Learning Community Modernization</td>
<td>7,824,600</td>
<td>7,824,600</td>
</tr>
<tr>
<td>15 Temporary Portable Classrooms needed to facilitate LC Modernization</td>
<td>[Note 1]</td>
<td>1,618,500</td>
</tr>
<tr>
<td>W Albemarle HS - Learning Community Modernization</td>
<td>10,027,388</td>
<td>10,027,388</td>
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<tr>
<td>17 Temporary Portable Classrooms needed to facilitate LC Modernization</td>
<td>[Note 1]</td>
<td>1,834,300</td>
</tr>
<tr>
<td>New Comprehensive HS - 1200 Students</td>
<td>90,000,000</td>
<td>0</td>
</tr>
<tr>
<td>High School Center - 800 Students (New Construction)</td>
<td>0</td>
<td>51,800,000</td>
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<tr>
<td>Brookhill Site Mass Grading / Rock Removal Allowance</td>
<td>4,000,000</td>
<td>4,000,000</td>
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<tr>
<td>High School Center - 600 Students (New Construction)</td>
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<td>31,500,000</td>
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<tr>
<td>High School Center - 400 Students x 2 (New Construction)</td>
<td>38,080,000</td>
<td>38,080,000</td>
</tr>
<tr>
<td>High School Center - 200 Students (New Construction or Lease Space)</td>
<td>9,520,000</td>
<td>9,520,000</td>
</tr>
</tbody>
</table>

**Total Estimated Capital Project Budgets [2020 Dollars]**

- **Scenario 1 School - Based**: 134,336,875
- **Scenario 2 Center - Based**: 102,707,175
- **Scenario 3 Village - Based**: 84,987,175
- **Total**: 87,927,175

**Cost Model Assumptions [2020 Dollars]:**

- **Construction Cost**
  - Comprehensive HS - New Construction: $300.00
  - High School Center - New Construction: $280.00
  - Major Modernization - AHS [60% of New CC]: $180.00
  - Major Modernization - WAHS & MuHS [65% of New CC]: $195.00
  - Moderate Modernization - MHS [30% of New CC]: $90.00

- **Soft Cost @ .25**
  - $75.00
  - $70.00
  - $48.75
  - $22.50

- **Total Project Cost**
  - $375.00
  - $350.00
  - $243.75
  - $112.50

[Note 1: Swing Space for relocating students during LS Modernizations will be freed up by rezoning students to the new Comprehensive High School if new HS constructed first.]
# Financial Analysis
High School Facilities Planning Study

## Financial Analysis for High School Facilities Scenarios

### Operational Budgeting

<table>
<thead>
<tr>
<th>Total Estimated 20-YR Energy Usage Costs Delta [2020 Dollars]</th>
<th>Current</th>
<th>21c Learning Modernizations Only</th>
<th>Scenario 1 School - Based</th>
<th>Scenario 2 Center - Based</th>
<th>Scenario 3 Village - Based</th>
</tr>
</thead>
<tbody>
<tr>
<td>[Note: This Financial Model assumes that the number of Teachers remains constant over all Scenarios and is a factor of the number of the students and not the number of facilities]</td>
<td>$-</td>
<td>$5,280,000</td>
<td>$3,256,000</td>
<td>$2,393,600</td>
<td>$2,578,400</td>
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</tbody>
</table>

### Total Estimated 20-YR Staffing Cost Deltas [2020 Dollars]

<table>
<thead>
<tr>
<th>Current</th>
<th>21c Learning Modernizations Only</th>
<th>Scenario 1 School - Based</th>
<th>Scenario 2 Center - Based</th>
<th>Scenario 3 Village - Based</th>
</tr>
</thead>
<tbody>
<tr>
<td>$-</td>
<td>$53,540,000</td>
<td>$22,200,000</td>
<td>$24,100,000</td>
<td>$24,100,000</td>
</tr>
</tbody>
</table>

### Total Estimated 20-YR Transportation Cost Deltas [2020 Dollars]

<table>
<thead>
<tr>
<th>Current</th>
<th>21c Learning Modernizations Only</th>
<th>Scenario 1 School - Based</th>
<th>Scenario 2 Center - Based</th>
<th>Scenario 3 Village - Based</th>
</tr>
</thead>
<tbody>
<tr>
<td>$-</td>
<td>$6,327,780</td>
<td>$8,135,700</td>
<td>$7,231,740</td>
<td>$3,310,140</td>
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</table>

### Total Estimated 20-YR Operational Cost Deltas

<table>
<thead>
<tr>
<th>Current</th>
<th>21c Learning Modernizations Only</th>
<th>Scenario 1 School - Based</th>
<th>Scenario 2 Center - Based</th>
<th>Scenario 3 Village - Based</th>
</tr>
</thead>
<tbody>
<tr>
<td>$-</td>
<td>$58,820,000</td>
<td>$31,783,780</td>
<td>$34,629,300</td>
<td>$33,910,140</td>
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</table>

### Total Estimated 20-YR Capital Cost Deltas

<table>
<thead>
<tr>
<th>Current</th>
<th>21c Learning Modernizations Only</th>
<th>Scenario 1 School - Based</th>
<th>Scenario 2 Center - Based</th>
<th>Scenario 3 Village - Based</th>
</tr>
</thead>
<tbody>
<tr>
<td>$-</td>
<td>$169,464,740</td>
<td>$112,767,880</td>
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<td>$101,074,240</td>
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</table>

## Capital Project Budgeting

<table>
<thead>
<tr>
<th>Total Estimated Capital Project Budgets</th>
<th>Current</th>
<th>21c Learning Modernizations Only</th>
<th>Scenario 1 School - Based</th>
<th>Scenario 2 Center - Based</th>
<th>Scenario 3 Village - Based</th>
</tr>
</thead>
<tbody>
<tr>
<td>[Note: All Estimates are shown in 2020 Dollars]</td>
<td>$-</td>
<td>$46,907,175</td>
<td>$134,336,875</td>
<td>$102,707,175</td>
<td>$87,927,175</td>
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### Total Estimated Capital Renewal Budgets

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<th>21c Learning Modernizations Only</th>
<th>Scenario 1 School - Based</th>
<th>Scenario 2 Center - Based</th>
<th>Scenario 3 Village - Based</th>
</tr>
</thead>
<tbody>
<tr>
<td>$63,276,954</td>
<td>$41,553,879</td>
<td>$39,584,819</td>
<td>$41,553,879</td>
<td>$41,553,879</td>
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</tbody>
</table>

### Total Estimated Land Acquisition Costs

<table>
<thead>
<tr>
<th>Current</th>
<th>21c Learning Modernizations Only</th>
<th>Scenario 1 School - Based</th>
<th>Scenario 2 Center - Based</th>
<th>Scenario 3 Village - Based</th>
</tr>
</thead>
<tbody>
<tr>
<td>$-</td>
<td>$960,000</td>
<td>$960,000</td>
<td>$130,441,054</td>
<td>$130,441,054</td>
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</table>

### Total Estimated Capital Budgets

<table>
<thead>
<tr>
<th>Current</th>
<th>21c Learning Modernizations Only</th>
<th>Scenario 1 School - Based</th>
<th>Scenario 2 Center - Based</th>
<th>Scenario 3 Village - Based</th>
</tr>
</thead>
<tbody>
<tr>
<td>$63,276,954</td>
<td>$88,461,054</td>
<td>$173,921,694</td>
<td>$144,261,054</td>
<td>$127,501,054</td>
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### Total Estimated Capital Budget Deltas

<table>
<thead>
<tr>
<th>Current</th>
<th>21c Learning Modernizations Only</th>
<th>Scenario 1 School - Based</th>
<th>Scenario 2 Center - Based</th>
<th>Scenario 3 Village - Based</th>
</tr>
</thead>
<tbody>
<tr>
<td>$-</td>
<td>$25,184,100</td>
<td>$110,644,740</td>
<td>$80,984,100</td>
<td>$64,224,100</td>
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</tbody>
</table>

### Total Estimated Capital Budget Deltas (Above Capital Renewal Only Budgets)

<table>
<thead>
<tr>
<th>Current</th>
<th>21c Learning Modernizations Only</th>
<th>Scenario 1 School - Based</th>
<th>Scenario 2 Center - Based</th>
<th>Scenario 3 Village - Based</th>
</tr>
</thead>
<tbody>
<tr>
<td>$-</td>
<td>$25,184,100</td>
<td>$110,644,740</td>
<td>$80,984,100</td>
<td>$64,224,100</td>
</tr>
</tbody>
</table>

### Recommendation

- **Recommendation**
  - 3 Home Base HS
  - 1 High School Center @ 600
  - 1 High School Center @ 200

### Notes

- Estimated Capital Renewal Expenditures are over 20 to 25 years and are based on the Facilities Conditions Assessments conducted as part of this study.
- Land Acquisition Assumptions: Value - $60,000/Acre; Scenario 3 - two ~8 Acre Sites; Recommendation Scenario - one ~12 Acre Site and one ~4 Acre Site.
- Capital Project Budgets
- Total Estimated Capital Project Budgets
- Total Estimated Capital Renewal Budgets
- Total Estimated Land Acquisition Costs
- Total Estimated Capital Budgets
- Total Estimated Capital Budget Deltas
- Operational Budgeting
- Total Estimated 20-YR Energy Usage Costs Delta [2020 Dollars]
- Total Estimated 20-YR Staffing Cost Deltas [2020 Dollars]
- Total Estimated 20-YR Transportation Cost Deltas [2020 Dollars]
- Total Estimated 20-YR Operational Cost Deltas
- Total Budget Deltas (Above Capital Renewals Only)
## Financial Analysis
### High School Facilities Planning Study

### STUDENT CAPACITIES

<table>
<thead>
<tr>
<th></th>
<th>Current</th>
<th>21c Learning Modernizations</th>
<th>Scenario 1 School - Based</th>
<th>Scenario 2 Center - Based</th>
<th>Scenario 3 Village - Based</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Capital Renewal Only</td>
<td>Only Current w/ LC Model</td>
<td>Optimal Building Capacity @ 87.5% Utilization</td>
<td>Optimal Building Capacity @ 87.5% Utilization</td>
<td>Optimal Building Capacity @ 87.5% Utilization</td>
<td>Optimal Building Capacity @ 87.5% Utilization</td>
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<tr>
<td>Albemarle HS</td>
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<td>1756</td>
<td>1250</td>
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<td>Monticello HS</td>
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<td>1408</td>
<td>1408</td>
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<tr>
<td>W Albemarle HS (Note 1)</td>
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<td>Murray HS</td>
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<td>219</td>
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<tr>
<td>New Comprehensive HS - 1200 Students</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High School Center - 800 Students (New Construction)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>High School Center - 600 Students (New Construction)</td>
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<td></td>
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<tr>
<td>High School Center - 400 Students x 2 (New Construction)</td>
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<td></td>
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<tr>
<td>High School Center - 200 Students (New Construction or Lease Space)</td>
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<tr>
<td>Student Capacity</td>
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<td>2014/15 HS Enrollment Projection (Peak year for 10 year projections)</td>
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<tr>
<td>Over (Under)</td>
<td>2951</td>
<td>(222)</td>
<td>462</td>
<td>568</td>
<td>568</td>
<td>568</td>
</tr>
</tbody>
</table>

(Note 1: Includes 10,000 SF Science Lab Addition scheduled for Occupancy in August of 2019)

### TOTAL GROSS BUILDING AREAS

<table>
<thead>
<tr>
<th></th>
<th>Current</th>
<th>21c Modernization</th>
<th>Scenario 1</th>
<th>Scenario 2</th>
<th>Scenario 3</th>
<th>Recommendation</th>
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<tbody>
<tr>
<td>Monticello HS</td>
<td>252,460</td>
<td>252,460</td>
<td>252,460</td>
<td>252,460</td>
<td>252,460</td>
<td>252,460</td>
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<tr>
<td>W Albemarle HS (Note 1)</td>
<td>208,806</td>
<td>208,806</td>
<td>208,806</td>
<td>208,806</td>
<td>208,806</td>
<td>208,806</td>
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<tr>
<td>Murray HS</td>
<td>29,102</td>
<td>29,102</td>
<td>29,102</td>
<td>29,102</td>
<td>29,102</td>
<td>29,102</td>
</tr>
<tr>
<td>New Comprehensive HS - 1200 Students</td>
<td></td>
<td></td>
<td>240,000</td>
<td>148,000</td>
<td>148,000</td>
<td>148,000</td>
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<tr>
<td>High School Center - 800 Students (New Construction)</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High School Center - 600 Students (New Construction)</td>
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<td></td>
</tr>
<tr>
<td>High School Center - 400 Students x 2 (New Construction)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High School Center - 200 Students (New Construction or Lease Space)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Gross Building Area</td>
<td>782,268</td>
<td>782,268</td>
<td>1,022,268</td>
<td>930,268</td>
<td>891,068</td>
<td>899,468</td>
</tr>
</tbody>
</table>

Building Area per # Student Assumptions:

- New Comprehensive HS - 1200 Students: 200
- High School Center - 800 Students: 185
- High School Center - 600 Students: 150
- High School Center - 200 to 400 Students: 136

(Note 1: Includes 10,000 SF Science Lab Addition scheduled for Occupancy in August of 2019)
## Financial Analysis

### High School Facilities Planning Study

### Learning Environment Modernization Areas for Learning Community Model

<table>
<thead>
<tr>
<th></th>
<th>Current</th>
<th>21c Modernization</th>
<th>Scenario 1</th>
<th>Scenario 2</th>
<th>Scenario 3</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Albemarle HS - Gross Area</strong></td>
<td>291,900</td>
<td>291,900</td>
<td>291,900</td>
<td>291,900</td>
<td>291,900</td>
<td>291,900</td>
</tr>
<tr>
<td>Major Modernization Area (Learning Communities)</td>
<td>63,652</td>
<td>40,594</td>
<td>63,652</td>
<td>63,652</td>
<td>63,652</td>
<td>63,652</td>
</tr>
<tr>
<td>Moderate Modernization Area (Reprogram/Repurpose Area)</td>
<td>21,697</td>
<td>21,697</td>
<td>21,697</td>
<td>21,697</td>
<td>21,697</td>
<td>21,697</td>
</tr>
<tr>
<td>Capital Renewal Area (Gross SF - Modernization SF)</td>
<td>185,337</td>
<td>162,279</td>
<td>185,337</td>
<td>185,337</td>
<td>185,337</td>
<td>185,337</td>
</tr>
<tr>
<td><strong>Monticello HS - Gross Area</strong></td>
<td>252,460</td>
<td>252,460</td>
<td>252,460</td>
<td>252,460</td>
<td>252,460</td>
<td>252,460</td>
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<tr>
<td>Major Modernization Area (Learning Communities)</td>
<td>69,552</td>
<td>69,552</td>
<td>69,552</td>
<td>69,552</td>
<td>69,552</td>
<td>69,552</td>
</tr>
<tr>
<td>Capital Renewal Area (Gross SF - Modernization SF)</td>
<td>182,908</td>
<td>182,908</td>
<td>182,908</td>
<td>182,908</td>
<td>182,908</td>
<td>182,908</td>
</tr>
<tr>
<td><strong>W Albemarle HS - Gross Area</strong></td>
<td>208,806</td>
<td>208,806</td>
<td>208,806</td>
<td>208,806</td>
<td>208,806</td>
<td>208,806</td>
</tr>
<tr>
<td>Capital Renewal Area (Gross SF - Modernization SF)</td>
<td>138,884</td>
<td>138,884</td>
<td>138,884</td>
<td>138,884</td>
<td>138,884</td>
<td>138,884</td>
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<tr>
<td><strong>Murray HS - Gross Area</strong></td>
<td>29,102</td>
<td>29,102</td>
<td>29,102</td>
<td>29,102</td>
<td>29,102</td>
<td>29,102</td>
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<tr>
<td>Major Modernization Area (Learning Communities)</td>
<td>13,462</td>
<td>13,462</td>
<td>13,462</td>
<td>13,462</td>
<td>13,462</td>
<td>13,462</td>
</tr>
<tr>
<td>Capital Renewal Area (Gross SF - Modernization SF)</td>
<td>13,640</td>
<td>13,640</td>
<td>13,640</td>
<td>13,640</td>
<td>13,640</td>
<td>13,640</td>
</tr>
</tbody>
</table>

**Notes:**
1. AHS LC Modernization Area does not include building areas scheduled for Major Modernizations during Summer of 2018 - BCWH Project.
2. WAHS LC Modernization Area does not include building areas scheduled for Major Modernizations during Summer of 2019 - VMDO Project.
3. Capital Renewal Areas do not include building areas recently constructed or renovated, those areas scheduled for Major Modernizations during Summers of 2018/19, nor those areas indicated to receive Major Modernization as part of this study.

### Estimated Capital Project Budgets

<table>
<thead>
<tr>
<th></th>
<th>Current</th>
<th>21c Modernization</th>
<th>Scenario 1</th>
<th>Scenario 2</th>
<th>Scenario 3</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Albemarle HS - Learning Community Modernization</strong></td>
<td>0</td>
<td>19,203,525</td>
<td>19,203,525</td>
<td>19,203,525</td>
<td>19,203,525</td>
<td>19,203,525</td>
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<tr>
<td>25 Temporary Portable Classrooms needed to facilitate LC Modernization</td>
<td>3,117,500</td>
<td>5,188,050</td>
<td>5,188,050</td>
<td>5,188,050</td>
<td>5,188,050</td>
<td>5,188,050</td>
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<tr>
<td><strong>Monticello HS - Learning Community Modernization</strong></td>
<td>0</td>
<td>7,842,600</td>
<td>7,842,600</td>
<td>7,842,600</td>
<td>7,842,600</td>
<td>7,842,600</td>
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<tr>
<td>15 Temporary Portable Classrooms needed to facilitate LC Modernization</td>
<td>10,027,388</td>
<td>10,027,388</td>
<td>10,027,388</td>
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<td>10,027,388</td>
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<tr>
<td><strong>W Albemarle HS - Learning Community Modernization</strong></td>
<td>0</td>
<td>1,834,300</td>
<td>1,834,300</td>
<td>1,834,300</td>
<td>1,834,300</td>
<td>1,834,300</td>
</tr>
<tr>
<td><strong>Murray HS - Learning Community Modernization</strong></td>
<td>0</td>
<td>90,000,000</td>
<td>90,000,000</td>
<td>90,000,000</td>
<td>90,000,000</td>
<td>90,000,000</td>
</tr>
<tr>
<td>New Comprehensive HS - 1200 Students</td>
<td>40,000,000</td>
<td>40,000,000</td>
<td>40,000,000</td>
<td>40,000,000</td>
<td>40,000,000</td>
<td>40,000,000</td>
</tr>
<tr>
<td>High School Center - 800 Students (New Construction)</td>
<td>51,800,000</td>
<td>51,800,000</td>
<td>51,800,000</td>
<td>51,800,000</td>
<td>51,800,000</td>
<td>51,800,000</td>
</tr>
<tr>
<td>Brookhill Site Mass Grading / Rock Removal Allowance</td>
<td>18,080,000</td>
<td>18,080,000</td>
<td>18,080,000</td>
<td>18,080,000</td>
<td>18,080,000</td>
<td>18,080,000</td>
</tr>
<tr>
<td>High School Center - 600 Students (New Construction)</td>
<td>9,520,000</td>
<td>9,520,000</td>
<td>9,520,000</td>
<td>9,520,000</td>
<td>9,520,000</td>
<td>9,520,000</td>
</tr>
<tr>
<td>Total Estimated Capital Project Budgets (2020 Dollars)</td>
<td>0</td>
<td>46,907,175</td>
<td>134,396,875</td>
<td>102,707,175</td>
<td>84,987,175</td>
<td>87,927,175</td>
</tr>
</tbody>
</table>

**Cost Model Assumptions (2020 Dollars):**

<table>
<thead>
<tr>
<th></th>
<th>Construction Cost</th>
<th>Soft Cost @ .25</th>
<th>Total Project Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comprehensive HS - New Construction</td>
<td>$300.00</td>
<td>$75.00</td>
<td>$375.00</td>
</tr>
<tr>
<td>High School Center - New Construction</td>
<td>$280.00</td>
<td>$70.00</td>
<td>$350.00</td>
</tr>
<tr>
<td>Major Modernization - AHS [60% of New CC]</td>
<td>$180.00</td>
<td>$45.00</td>
<td>$225.00</td>
</tr>
<tr>
<td>Major Modernization - WAHS &amp; MuHS [65% of New CC]</td>
<td>$195.00</td>
<td>$48.75</td>
<td>$243.75</td>
</tr>
<tr>
<td>Moderate Modernization - AHS [30% of New CC]</td>
<td>$90.00</td>
<td>$22.50</td>
<td>$112.50</td>
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</tbody>
</table>

**Note:** Swing Space for relocating students during LC Modernizations will be freed up by rezoning students to the new Comprehensive High School if new HS constructed first.
## Financial Analysis
### High School Facilities Planning Study

### ESTIMATED CAPITAL RENEWAL BUDGETS for 20 YEAR TERM

<table>
<thead>
<tr>
<th>Current</th>
<th>21c Modernization</th>
<th>Scenario 1</th>
<th>Scenario 2</th>
<th>Scenario 3</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albemarle HS (for areas not Modernized)</td>
<td>24,927,080</td>
<td>15,827,031</td>
<td>13,857,971</td>
<td>15,827,031</td>
<td>15,827,031</td>
</tr>
<tr>
<td>Monticello HS (for areas not Modernized)</td>
<td>13,986,925</td>
<td>10,133,568</td>
<td>10,133,568</td>
<td>10,133,568</td>
<td>10,133,568</td>
</tr>
<tr>
<td>W Albemarle HS (for areas not Modernized)</td>
<td>21,250,778</td>
<td>14,134,618</td>
<td>14,134,618</td>
<td>14,134,618</td>
<td>14,134,618</td>
</tr>
<tr>
<td>Murray HS (Capital Renewal included in Mod. Cost)</td>
<td>3,112,171</td>
<td>1,458,663</td>
<td>1,458,663</td>
<td>1,458,663</td>
<td>1,458,663</td>
</tr>
<tr>
<td>New Comprehensive HS - 1200 Students</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>High School Center - 800 Students (New Construction)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>High School Center - 600 Students (New Construction)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>High School Center - 400 Students x 2 (New Construction)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>High School Center - 200 Students (New Construction or Lease Space)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

**Total Estimated Capital Renewal Budgets (2020 Dollars):**

- Current: $63,276,954
- 21c Modernization: $41,553,879
- Scenario 1: $39,584,819
- Scenario 2: $41,553,879
- Scenario 3: $41,553,879

### Capital Renewal Projections for 20 Years (2020 Dollars):

- Total Projects Cost:
  - Albemarle HS: $24,927,080
  - Monticello HS: $13,986,925
  - W Albemarle HS: $21,250,778
  - Murray HS: $3,112,171

- Cost/SF:
  - Albemarle HS: $85.40
  - Monticello HS: $55.40
  - W Albemarle HS: $101.77
  - Murray HS: $106.94

[Note: Estimated Capital Renewal Expenditures are based on our Facilities Conditions Assessments and represent a 25% to 50% increase in the current level of funding for the ACPS Maintenance/Replacement Program]

### ESTIMATED CAPITAL REPLACEMENT BUDGETS + CAPITAL RENEWAL BUDGETS for 20 YEAR TERM

<table>
<thead>
<tr>
<th>Current</th>
<th>21c Modernization</th>
<th>Scenario 1</th>
<th>Scenario 2</th>
<th>Scenario 3</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Estimated Capital Budgets (2020 Dollars):</td>
<td>$63,276,954</td>
<td>$41,553,879</td>
<td>$39,584,819</td>
<td>$41,553,879</td>
<td>$41,553,879</td>
</tr>
</tbody>
</table>

[Not Including Estimated Cost of Land Acquisition]

### ESTIMATED ENERGY USAGE COSTS for 20 YEAR TERM

<table>
<thead>
<tr>
<th>Current</th>
<th>21c Modernization</th>
<th>Scenario 1</th>
<th>Scenario 2</th>
<th>Scenario 3</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albemarle HS</td>
<td>$5,458,530</td>
<td>$5,458,530</td>
<td>$5,458,530</td>
<td>$5,458,530</td>
<td>$5,458,530</td>
</tr>
<tr>
<td>Monticello HS</td>
<td>$6,442,779</td>
<td>$6,442,779</td>
<td>$6,442,779</td>
<td>$6,442,779</td>
<td>$6,442,779</td>
</tr>
<tr>
<td>W Albemarle HS</td>
<td>$5,925,914</td>
<td>$5,925,914</td>
<td>$5,925,914</td>
<td>$5,925,914</td>
<td>$5,925,914</td>
</tr>
<tr>
<td>Murray HS</td>
<td>$614,634</td>
<td>$614,634</td>
<td>$614,634</td>
<td>$614,634</td>
<td>$614,634</td>
</tr>
<tr>
<td>New Comprehensive HS - 1200 Students</td>
<td>0</td>
<td>5,280,000</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>High School Center - 800 Students (New Construction)</td>
<td>0</td>
<td>0</td>
<td>3,256,000</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>High School Center - 600 Students (New Construction)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>3,199,600</td>
<td>0</td>
</tr>
<tr>
<td>High School Center - 400 Students X 2 (New Construction)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1,980,000</td>
</tr>
<tr>
<td>High School Center - 200 Students (New Construction or Lease Space)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>596,400</td>
</tr>
</tbody>
</table>

**Total Estimated 20-YR Energy Usage Costs (2020 Dollars):**

- Current: $18,441,858
- 21c Modernization: $18,441,858
- Scenario 1: $23,721,858
- Scenario 2: $21,697,858
- Scenario 3: $20,835,458
- Recommendation: $21,020,258

**Total Estimated 20-YR Energy Usage Costs Delta:**

- Above Expected 20-YR Energy Costs: $5,280,000
- Expected 20-YR Energy Costs: $18,441,858
- Total Estimated 20-YR Energy Usage Costs: $23,721,858

**Energy Usage Cost Model (2020 Dollars):**

- Albemarle HS: $0.85
- Monticello HS: $1.14
- Western Albemarle HS: $1.29
- Murray HS: $0.96
- New Comprehensive HS: $1.00
- High School Center: $1.00

Albemarle County | High School Facilities Planning Study

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### Financial Analysis

#### High School Facilities Planning Study

**ESTIMATED OPERATIONAL STAFFING COSTS DELTAS for 20 YEAR TERM**

[Note 1: These Transportation Cost Delta Estimates are based on similar scenarios produced by ACPS Staff]

**ESTIMATED TRANSPORTATION COSTS DELTAS for 20 YEAR TERM**

[Note 2: ACPS has not yet run a Transportation Cost Delta Estimate for the Recommendation - However, we believe that it is approximately between the cost of Scenarios 2 and 3, so we have input the average here.]

#### Subsequent 19 Years Operating Costs per Year

<table>
<thead>
<tr>
<th>Role</th>
<th>Scenario 1</th>
<th>Scenario 2</th>
<th>Scenario 3</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Custodian</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Athletic Director High School</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Assistant Principal High School</td>
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<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Custodian</td>
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<tr>
<td>Administrative Assistant High School</td>
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<td>Custodian</td>
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<td>0</td>
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</tr>
</tbody>
</table>

**Assumes that Assistant Principals and Guidance Counselors are redistributed with students:**

### ESTIMATED TRANSPORTATION COSTS DELTAS for 20 YEAR TERM

<table>
<thead>
<tr>
<th>Role</th>
<th>Scenario 1</th>
<th>Scenario 2</th>
<th>Scenario 3</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Custodian</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Athletic Director High School</td>
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<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Assistant Principal High School</td>
<td>0</td>
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<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Custodian</td>
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<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Administrative Assistant High School</td>
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</tr>
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</tr>
</tbody>
</table>

[Note 1: These Transportation Cost Delta Estimates are based on similar scenarios produced by ACPS Staff]

<table>
<thead>
<tr>
<th>Role</th>
<th>Scenario 1</th>
<th>Scenario 2</th>
<th>Scenario 3</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Custodian</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Athletic Director High School</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Assistant Principal High School</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Custodian</td>
<td>0</td>
<td>0</td>
<td>0</td>
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### Notes:

- [Note 1]: These Transportation Cost Delta Estimates are based on similar scenarios produced by ACPS Staff.
- [Note 2]: ACPS has not yet run a Transportation Cost Delta Estimate for the Recommendation - However, we believe that it is approximately between the cost of Scenarios 2 and 3, so we have input the average here.