SOUTHERN
WV COMMUNITY & TECHNICAL COLLEGE

Campus Development Plan

2023 – 2032

02.22.2023

ZMM
ARCHITECTS
ENGINEERS

ACKNOWLEDGEMENTS

Southern West Virginia Community and Technical College embarked on a campus master planning process to establish a framework for the orderly development of all capital improvements that support the mission, vision, values, and strategic initiatives of the College.

The successful master planning process included a comprehensive look at the physical environment of the multiple campuses and how that environment helps the College succeed in its educational mission. ZMM acknowledges this important input, and provides our thanks to the following:

EXECUTIVE STEERING COMMITTEE

Dr. Pamela L. Alderman, President
S. Derek Adkins, CPA, Chief Financial Officer
William Alderman, Accreditation liaison Officer / Professor of Business
Jennifer Dove, Executive Assistant to the President
Shelia Elkins, Professor / Director of Nursing
Dr. Mike Jiles, Dean of Arts & Sciences
Joe Linville, Chief Facilities Management Officer
Velva Pennington, Director of Budgets and Purchasing
Chad Scott, Director of Institutional Research

CONSULTANT TEAM

ZMM Architects and Engineers

EXECUTIVE SUMMARY

BACKGROUND

Southern West Virginia Community and Technical College (Southern) started the process to update their campus development plan in the Summer of 2022. The process consisted of:

- The College formed a steering committee.
- ZMM facilitated meetings with the steering committee to develop direction for Southern's facilities in the coming years.
- ZMM visited all campus / site locations and assessed the existing facilities.
- The College issued surveys to students, staff, and faculty that focused on the physical characteristics of the facilities and sought feedback from end-users.
- ZMM performed square foot allocation study for each building at all campuses.
- ZMM evaluated the Fall 2022 class schedule and generated results for classroom utilization and course enrollment.

The steering committee meetings focused to create a campus development plan which outlines the future for the campuses and facilities. The discussions during these meetings produced several themes that guided the development of the Campus Development Plan:

- Evaluate utilization and building usage at all campus locations to determine viability. With declining enrollments in the previous years, maintenance cost and lease costs should be a determining factor in the prolonged existence / closure of the College's campus locations.
- Focus on campus modernization at the two campuses (Logan and Williamson) where the largest percentage of students are located. There was a consistent concern that the main buildings were 'dated' and did not adequately display their importance to Southern.
- More student focused areas are needed and could second as a community support center.
- HVAC remains an issue at both the main buildings at Logan and Williamson.
- Science laboratory spaces have not been updated and students from local high schools have more modern facilities which is a concern with competing for students.
- Williamson campus has fewer academic programs and more workforce programs. How can the building be useful to accommodate these programs?
- The virtual footprint vs. the physical footprint with the presence of online classes has changed the landscape of facility needs since the COVID-19 pandemic.

Southern consists of four campus locations and one site location situated in the southwestern portion of West Virginia. Campuses are located in Logan, Williamson, Foster (Boone), Saulsville (Wyoming/McDowell), and Hamlin (Lincoln Site). The buildings at the Boone campus and the Lincoln site are leased.

Enrollment at Southern has increased in AY2021-2022 by 4.47% since AY2018-2019. The current enrollment of 1,822 equates to approximately 1,042 FTE's. The largest percentage of students are from Logan County and Mingo County where both counties account for approximately 59% of students while 30% of students are from Boone, Lincoln and Wyoming counties.

The facility evaluation survey results indicate the students, faculty, and staff believe the College's facilities meet their needs and are overall positive about the physical condition of the buildings. The minimal negative comments that were provided in the survey responses suggest some deferred building maintenance, upgrades to building infrastructure (HVAC and lighting) along with some renovations for larger classrooms and signage would help provide value to the educational / work experience at Southern.

SQUARE FOOTAGE ALLOCATION / BUILDING UTILIZATION

ZMM conducted a square footage analysis of all buildings at each campus by separating each space / room into the following categories:

- Academic Space (Classrooms, Laboratories, Specialized Academic Space)
- Academic Support Space (Offices, Conference Rooms, and Service)
- Other Student / Public Space (Student Services, and Student Use)
- Building Support (Toilets, Storage, Mechanical, Electrical, etc.)

Southern's buildings at all campuses consist of more square footage allocated to academic space than office / support or student service spaces. The distribution of building areas is appropriate for the offered courses and do not suggest renovations would be required to provide more square footage for academic space. The available square footage is more than adequate for the programs offered and the student enrollment.

Classroom / laboratory utilization was determined by evaluating the Fall 2022 class schedule. The analysis considered the max number of students per class, number of students enrolled, days of the week for each class, and time of day use. The evaluation included all 5 campus / site locations and all buildings on each campus. The average course enrollment for the entire College is at 70% with instructional space utilization is just above 24%. The results of the analysis indicate that the course scheduling in utilizing the available spaces is efficient. While the utilization of laboratories and specialized instructional spaces are typically low, the enrollment of these courses are a higher percentage than most other courses offered.

CAMPUS / FACILITY STRATEGIES

The results of the building assessments, square footage allocation analysis and classroom/lab utilization yielded the need for renovated laboratory spaces, better equipped laboratories and classrooms, and a few larger classrooms.

The campus and facility strategies are:

- Exterior signage and building entrances should be enhanced to identify buildings and wayfinding. Main campus entrance for visitors and new students are not clearly identifiable.
- Exterior building lighting and site lighting need to be upgraded to more efficient LED light fixtures to provide better illumination for safety and security. Install new and replace existing parking lot and walkway lighting with new LED fixtures. Install photocells and new digital lighting controls for interior and exterior lighting. Site cameras and emergency call stations should be added as part of this project.
- Install security systems including card access, door contacts, motion detectors, front end system and remote monitoring by monitoring service. New CCTV system integrated into the security system with motion activated event capture and digital cameras.
- Renovation and reconfiguration of instructional academic spaces at both Building 'A' on the Logan campus and the main building at the Williamson campus will yield more useable spaces and a higher utilization rate.
- The Wyoming campus is struggling to remain relevant with minimal enrollment and minimal course offerings. It is recommended that this facility be closed immediately as operation and maintenance costs would exceed the value of keeping the facility opened.
- The Boone campus and Lincoln site offer limited course offerings as enrollment makes up less than 30% of the College's students at these two locations. As both of these facilities are leased from the county school systems in which they reside, they have a cost to the College. Renovations have to be considered to keep these facilities relevant, however with the limited number of students, the return on the financial investment must be considered. It is recommended that if the program offerings are not expanded, or student enrollment is not increased within the next five years, these campus locations be vacated.

CONCLUSION

Southern' s campus development plan does not include new facilities. Based upon the College's current building inventory, educational program demands, and enrollment, strategically planned renovations of the existing main buildings at both the Logan and Williamson campuses will meet the current and forecasted needs. Both existing buildings are great candidates for significant renovations in lieu of new construction. The building configurations will allow for the necessary space revisions and are considerably more cost effective. These facilities serve as the central education facilities on their campuses and require improvement so that they may continue to function adequately. Due to the size of the facilities, it is understood that this will require a significant capital investment.

The implementation of the Campus Development Plan will allow for the College to focus efforts where the majority of the students are located and create an identity within the community that they reside in. Proposed closure for the Wyoming / McDowell campus will allow for resources to be reallocated to better meet the College's current needs. In order to continue to serve students in the Wyoming / McDowell campus area, it is recommended that online courses continue be offered and partnerships with local high schools be considered for an in-person instructional location. The proposed renovations to the Logan and Williamson campuses will allow for the reconfiguration of instructional spaces to provide value added to the academic offerings and provide simulated workforce training opportunities. Continued efforts to enhance community partnerships and collaborative efforts with business and industry should be a priority. These partnership efforts can yield off-site training opportunities which can provide some financial relief on renovating / constructing specialized facilities for smaller-sized programs. Capital projects campaigns will be vital to generate interest at each campus and involve the local businesses to demonstrate the available workforce training.

The Campus Development Plan document indicates the strategy to implement the vision noted above. Existing facilities were evaluated to quantify and prioritize needs. Square footage allocation, classroom utilization, enrollment, demographics, and program offerings were examined to determine realistic requirements for new and replacement facilities. All the needs were then prioritized, and a timing, phasing, and cost analysis for the plan were developed. The outcome of this process is a realistic strategy to guide the development in a manner that supports the priorities and vision of the College.

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INSTRUCTIONAL PROGRAMS

ASSOCIATE PROGRAMS

Division of Allied Health and Nursing

- Health Care Professional
- Medical Assisting
- Medical Lab Technology
- Nursing
- Paramedic Science
- Radiologic Technology
- Respiratory Care Technology
- Salon Management/Cosmetology
- Surgical Technology

Division of Arts and Sciences

- Board of Governors
- Early Childhood Development
- University Transfer – Associate in Arts
- University Transfer – Associate in Science

Division of Professional and Technical Studies

- Business Accounting
- Business Administration
- Criminal Justice – Corrections
- Criminal Justice – Law Enforcement
- Electrical Engineering Technology
- Information Technology
- Occupational Development
- Technical Studies
- Welding Technology

CERTIFICATE PROGRAMS

Division of Allied Health and Nursing

- Central Sterile Supply Technician
- Health Care Technology - Medical Lab Assistant
- Medical Assisting
- Medical Coding Specialist

Division of Arts and Sciences

- Early Childhood Development
- General Studies
- Paraprofessional Education

Division of Professional and Technical Studies

- Criminal Justice
- Electrical Engineering Technology
- Electromechanical Instrumentation Technology
- Industrial Technology – Welding Certificate
- Information Technology
- Technical Studies

INSTRUCTIONAL PROGRAMS

SKILL SETS

Division of Arts and Sciences

- Early Childhood Provisional Assistant Teacher
- Early Childhood Provisional Teacher

Division of Professional and Technical Studies

- Bookkeeping
- Central Sterile Technician
- Computer Repair Technician
- Emergency Medical Technician
- Entrepreneurism
- Graphic Design Technician
- Industrial Welding
- Medical Coding
- Payroll
- Phlebotomy
- Pipe Welding
- Tax Preparation

Programs that have been sent to the Council to be terminated at Southern and removed from degree inventory below:

- Agriculture – Associate and Certificate
- Mechatronics – Associate
- Allied Health Business and Leadership – Certificate
- Behavioral Health – Certificate

To date, these have not gone through the process for termination nor removal from degree inventory at the Council. These programs are not currently being offered at Southern.

ENROLLMENT and DEMOGRAPHIC ASSESSMENT

BACKGROUND

The area that Southern serves continues to struggle due to a decline in the coal industry. The population is declining, as reflected by a declining number of graduates from the high schools that Southern serves. In AY09-10 there were 1,781 seniors in the 13 high schools, and that number decreased to 1,698 in AY11-12, which is decrease of 4.66%. In FY18 there were 21,701 students in K-12 in the six service counties of Boone, Lincoln, Logan, McDowell, Mingo, and Wyoming. That numbered decreased by 13.77% in FY22 to a total of 18,712 students.

Enrollment at Southern has increased in AY2021-2022 by 4.47% since AY2018-2019. The current enrollment of 1,822 equates to approximately 1,042 FTE's.

The largest percentage of students are from Logan County and Mingo County where both counties account for approximately 59% of students while 30% of students are from Boone, Lincoln and Wyoming counties.

OPPORTUNITIES

There is a tremendous opportunity to increase enrollment at Southern by working to increase the college going rate from the 13 high schools. In 2010 the college going rate for high school seniors in the State of West Virginia was 57.5% and dropped to 51.6% in 2019. Mingo County had the largest percentage of college going rate for high school seniors in the service area with 55.3% while McDowell County was 38.4%. Southern should continue working closely with the local schools to increase overall college attendance rates and increase enrollment. Due to the continued changing economic opportunities for area residents, Southern envisions a greater need for workforce retraining. The College anticipates that this need will make up for the challenge of the declining population.

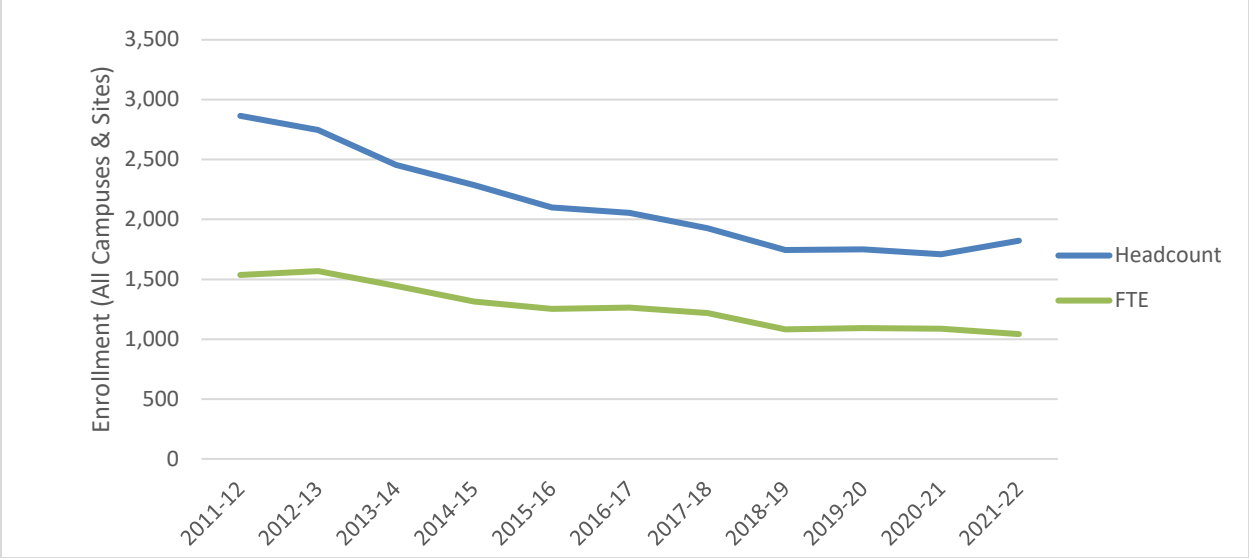
SERVICE REGION

Southern' s primary service region consists of students from southern West Virginia. The primary service region includes the West Virginia counties of Boone, Lincoln, Logan, McDowell, Mingo, and Wyoming. Southern draws students from numerous high schools, including home school students, however the greatest number of attendees come from:

Scott High School
Sherman High School
Van Junior / Senior High School
Lincoln County High School
Chapmanville Regional High School
Logan Senior High School
Man Senior High School
River View High School
Mount View High School
Tug Valley High School
Mingo Central Comprehensive High School
Wyoming County East High School
Westside High School

ENROLLMENT HISTORY

Academic Year	Logan Campus		Boone / Lincoln Campus		Williamson Campus		Wyoming Campus		All Campuses & Sites	
	HC	FTE	HC	FTE	HC	FTE	HC	FTE	HC	FTE
2011-12	1261	754	466	225	765	385	373	172	2865	1536
2012-13	1301	781	482	250	689	391	276	147	2748	1568
2013-14	1160	723	434	233	570	330	292	158	2456	1444
2014-15	1098	669	444	207	472	275	272	165	2286	1315
2015-16	1077	659	319	172	470	289	233	132	2099	1252
2016-17	1032	675	311	157	485	308	226	123	2054	1264
2017-18	987	655	301	169	449	291	190	103	1927	1218
2018-19	941	604	224	113	435	281	144	85	1744	1083
2019-20	950	645	246	125	418	247	137	76	1751	1093
2020-21	989	622	227	135	351	230	142	101	1709	1088
2021-22	995	577	284	138	393	232	150	95	1822	1042



ENROLLMENT GOALS

The Southern WV Community and Technical College Strategic Plan anticipates a 2.5% annual increase and headcount, and in FTE over the next 5 years.

Year	HC	FTE
2023	1868	1068
2024	1914	1095
2025	1962	1122
2026	2011	1150
2027	2061	1179

FACILITY EVALUATION SURVEYS

Facility Evaluation Surveys were created by the steering committee and issued to a select number of students, faculty, and staff to obtain feedback from end-users of the facilities. These surveys were to broaden the depth of this campus development plan and include input from stakeholders that were not part of the steering committee.

END USERS

Online surveys were administered to students, faculty, and staff that yielded 202 responses. The breakdown resulted with responses from 135 students, 67 faculty and staff that represented several Academic programs, Student Services, Physical Plant, and Academic Staff. Most of the responses were from individuals that spent most of their time at the main campus, but all 5 campuses were represented in the survey.

EVALUATION QUESTIONS

The surveys asked each participant the following questions:

Note: Questions marked 'A' were directed at students and questions marked 'B' were directed at Faculty

1) What facility are you located in?
2) Do you agree your facility promotes and engaging learning environment?
3) How do you rate the condition and appearance of your building's exterior?
4) How do you rate the condition and appearance of your building's interior?
5) A. Do you agree your facility puts learners needs first?
   B. Do you agree that your facility creates a positive work environment?
6) A. Do you agree that your facility provides an active space to learn?
   B. Do you agree that your facility is an inviting workplace?
7) Do you agree your facility embodies Southern as a College?
8) Do you agree that your facility is an inviting learning environment?
9) Do you agree your facility is fit for the curriculum?
10) How do you rate the condition and adequacy of lighting within your building?
11) Do you agree that the facility has met your expectations?
12) Are the offices adequate for supplying student support?
13) Does the facility support educational delivery, teaching methods?
14) Do you agree that the classrooms adequately sized for the program?
15) A. Do you enjoy coming to your learning space?
   B. Do you enjoy coming to your workspace?
16) If there is one thing you could change about the facility, what would it be?
17) What is the greatest issue that needs to be addressed with this facility?
18) General comments/concerns?

SURVEY RESPONSES

The responses yielded mostly anticipated results as many of the participants were favorable to the appearance of the facility, maintenance and cleanliness, and overall experience. Most questions were 90% - 95% favorable while only 5% provided negative feedback. The exceptions were:

Do you agree your facility promotes and engaging learning environment?	13% disagreed with this statement.
Are the offices adequate for supplying student support?	9% provided a negative response to this question.
Do you agree that the classrooms adequately sized for the program?	18% disagreed with this statement.

It is important to note that the one question that received the most positive overall response was the following:

How do you rate the condition and appearance of your building's exterior?	50% of the responses were excellent.

The last three questions in the survey were open-ended questions about "what would one change about the facility" or "what needs to be addressed" and the participants could provide any comments. For the participants that were mostly located at the Logan campus, many responses were focused on providing better HVAC comfort, better signage and wayfinding, food options, more parking or designated staff / student parking, and larger classrooms. Many participants that were located at the Williamson facility also responded on providing better HVAC comfort, and better lighting (interior and exterior.) The common thread for the responses from the Boone campus were related to more security cameras, better safety and accessibility, larger classroom size, better HVAC comfort, better lighting, more parking or designated staff / student parking, and larger nursing classrooms. The one comment that was telling about the participant's feelings on the College was, "I enjoy Southern, it just looks dull."

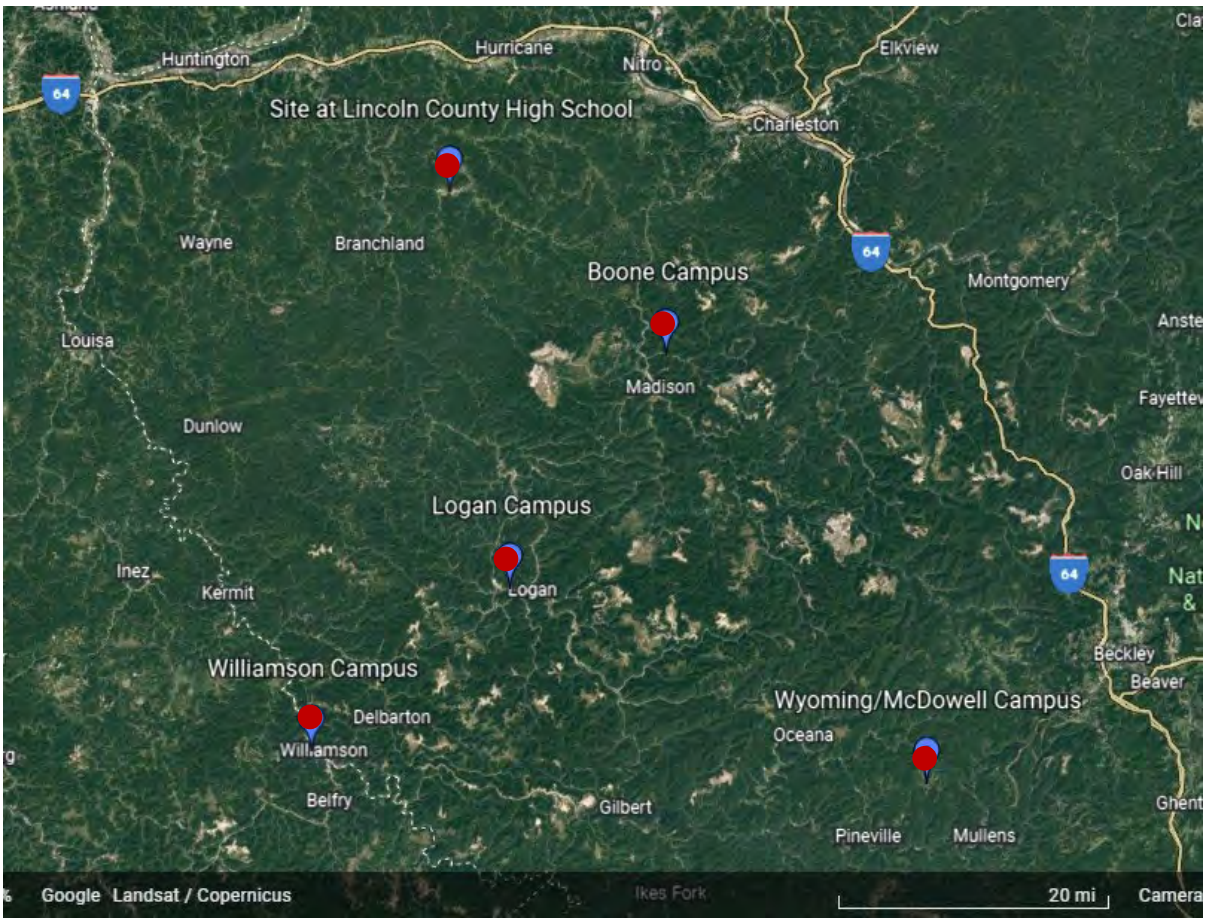
The survey results indicate the students, faculty, and staff think the College's facilities meet their needs and are overall positive about the physical condition of the buildings. The minimal negative comments that were provided in the survey responses suggest some deferred building maintenance, upgrades to building infrastructure (HVAC and lighting) along with some renovations for larger classrooms and signage would help provide value to the educational / work experience at Southern. The majority of renovations for the infrastructure enhancements, building updating, and classroom size renovations would result in capital improvement projects.

CAMPUS LOCATIONS

CAMPUSES AND SITES

Southern consists of four campus locations and one site location situated in the southwestern portion of West Virginia. Campuses are located in Logan, Williamson, Foster (Boone), Saulsville (Wyoming/McDowell), and Hamlin (Lincoln Site).

Travel distance between the campus locations is reasonable however any separation between campuses where students and / or faculty must travel back and forth can present challenges. The distance between the Main Campus at Logan to the Williamson Campus is approximately 30 miles, which is almost identical distance from the Logan Campus to the Boone Campus. Both distances take around 30 minutes by automobile. The Wyoming / McDowell campus located in Saulsville is approximately 54 miles from the Logan Campus and takes 1 hour and 10 minutes by automobile. The site at Lincoln County High School is approximately 51 miles from the Logan Campus and takes 1 hour and 15 minutes by automobile.



LOGAN CAMPUS – MAIN CAMPUS

The Logan Campus is the main campus and consists of three buildings centered along an entry drive with parking mainly on the southern portion of the site with some parking to the west and the north. The elevation of the site varies and access across the site includes stairs from the lower parking areas. The north and east are bound by steep vertical change in elevation. The south is bound by Mud Fork Road and the west boundary is Mohawk Drive / Lower Dempsey Branch Road, along with numerous residences.

The site is impacted by the FEMA 100-Year flood plain in the southern portion of the parking lot. Building 'C' located in the southwest corner of the property does have floor barriers installed on the lowest level.

WILLIAMSON CAMPUS

The Williamson Campus consists of three buildings accessed from Armory Drive which is located to the east of the property. Parking is distributed around the buildings. The elevation of the site is relatively level and site stairs and ramps are minimal. The north and west are bound by the flood wall that borders the Tug Fork River. The south is bound by the City of Williamson sewer plant. The Armory Building is separated from the other campus buildings and there is not a pedestrian access without walking on Armory Drive. All of the campus is out of the FEMA 100-year flood plain.

BOONE CAMPUS

The Boone Campus consists of a leased portion of one building that is owned by Boone County Schools. The site is accessed from County Route 3 – Daniel Boone Parkway, which located to the south of the property. Parking is distributed around the building on all sides. The elevation of the site is relatively level and site stairs and ramps are not required. The north, east, and west are bound by Rock Creek. Portions of the parking lots that are adjacent to Rock Creek are located within the FEMA 100-year flood plain.

WYOMING / McDOWELL CAMPUS

The Wyoming / McDowell Campus consists of a single building except for an exterior storage building and the sanitary sewer plant building. The site is accessed from County Route 97, which located to the west of the property. Parking is distributed around the building to the north and east. The elevation of the site is significantly sloped making ADA accessibility a challenge. The north, east, and west are bound by steep slopes. The steep slope to the south leads towards county route 4/5 Bowers Bridge Road which is the access drive to the sanitary sewer plant. There is a helicopter pad to the southeast corner of the site. The entire site is located above the FEMA 100-year flood plain.

LINCOLN SITE

The Lincoln Site consists of a leased portion of Lincoln County High School that is owned by Lincoln County Schools. The site is accessed off County Route 3 – Straight Fork Road, which located to the north of the property. Parking is distributed around the building to the north and east. The elevation of the site is relatively level and site stairs and ramps are not required. The north, east, and west are bound by the Mud River. Portions of the site (not accessible) that adjacent to the Mud River are located within the FEMA 100-year flood plain.

SQUARE FOOTAGE ALLOCATION

Logan Campus

Building 'A'

First Floor Plan

Legend

Academic Space

- Classrooms
- Laboratories
- Specialized Academic Space

Academic Support Space

- Office / Conference / Service

Other Student / Public Space

- Student Services / Bookstore / Etc.

Building Support

- Toilets / Mechanical / Electrical / Storage

SQUARE FOOTAGE ALLOCATION

Logan Campus

Building 'A'

Second Floor Plan

Legend

Academic Space

- Classrooms
- Laboratories
- Specialized Academic Space

Academic Support Space

- Office / Conference / Service

Other Student / Public Space

- Student Services / Bookstore / Etc.

Building Support

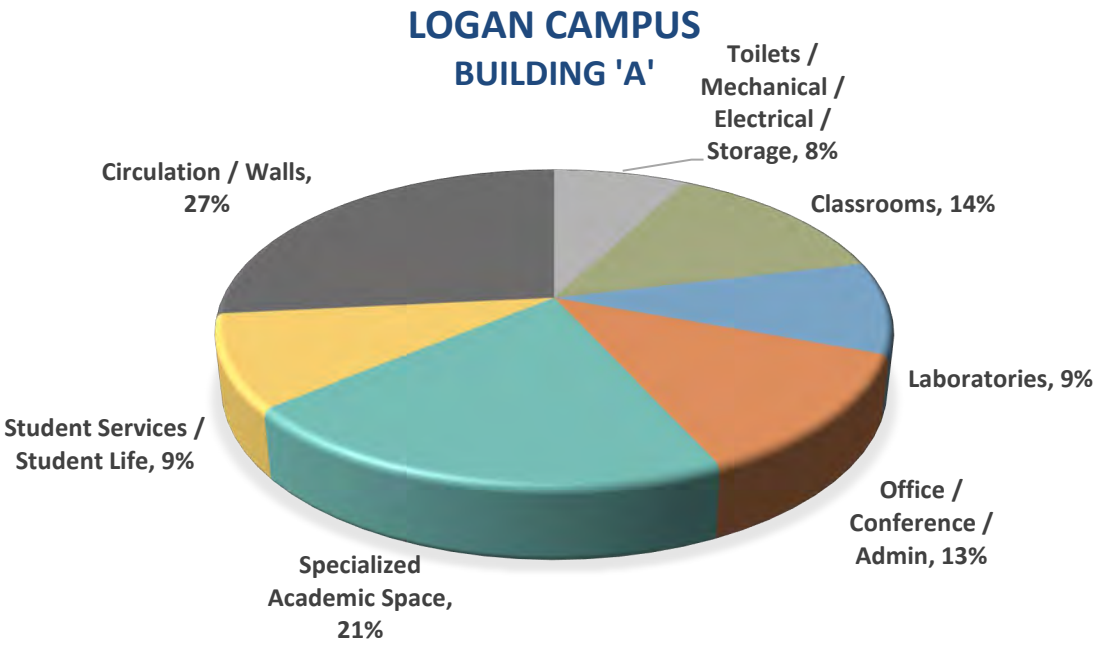
- Toilets / Mechanical / Electrical / Storage

SQUARE FOOTAGE ALLOCATION

Logan Campus

Building 'A'

Space Description	Current Inventory	% Of Total SF
Academic Space		
Classrooms	11,268	
Laboratories	7,830	
Specialized Academic Space	17,204	
Subtotal	36,302	44%
Academic Support Space		
Office / Conference / Service	10,410	
Subtotal	10,410	13%
Other Student Space		
Student Services / Bookstore / Etc.	7,878	
Subtotal	7,878	9%
Building Support		
Toilets / Mechanical / Electrical / Storage	6,401	
Subtotal	6,401	8%
Net SQ FT Total	60,991	73%
Circulation & Walls	22,125	27%
Building Gross SQ FT	83,116	



SQUARE FOOTAGE ALLOCATION

Logan Campus

Building 'B'

First Floor Plan

Legend

Academic Space

- Classrooms
- Laboratories
- Specialized Academic Space

Academic Support Space

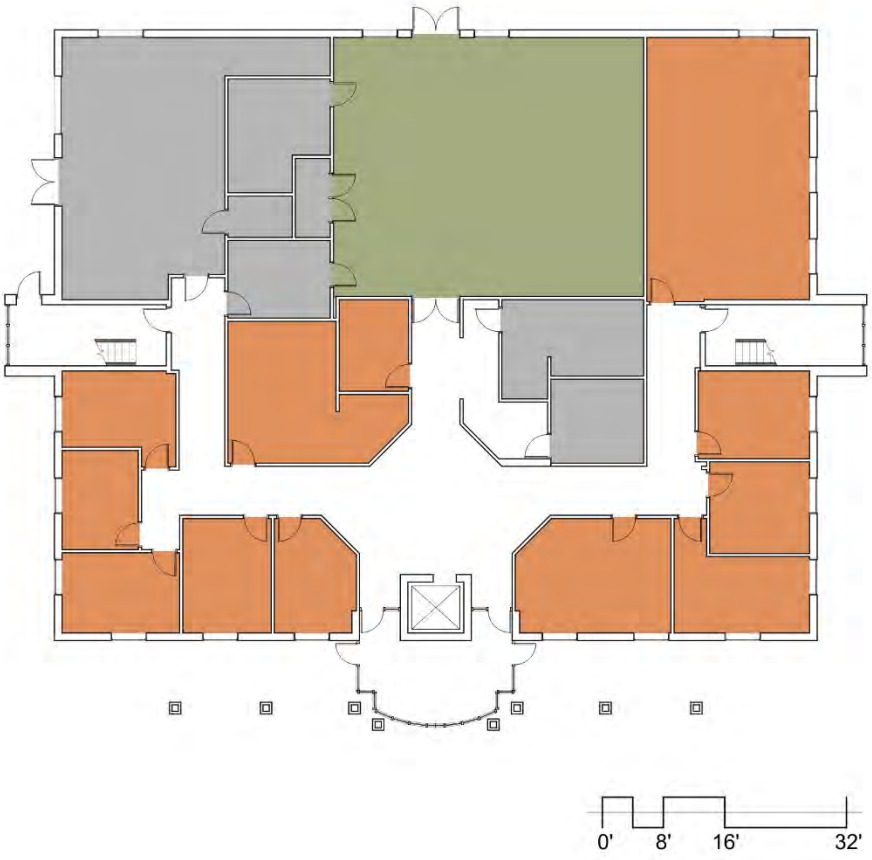
- Office / Conference / Service

Other Student / Public Space

- Student Services / Bookstore / Etc.

Building Support

- Toilets / Mechanical / Electrical / Storage



SQUARE FOOTAGE ALLOCATION

Logan Campus

Building 'B'

Second Floor Plan

Legend

Academic Space

- Classrooms
- Laboratories
- Specialized Academic Space

Academic Support Space

- Office / Conference / Service

Other Student / Public Space

- Student Services / Bookstore / Etc.

Building Support

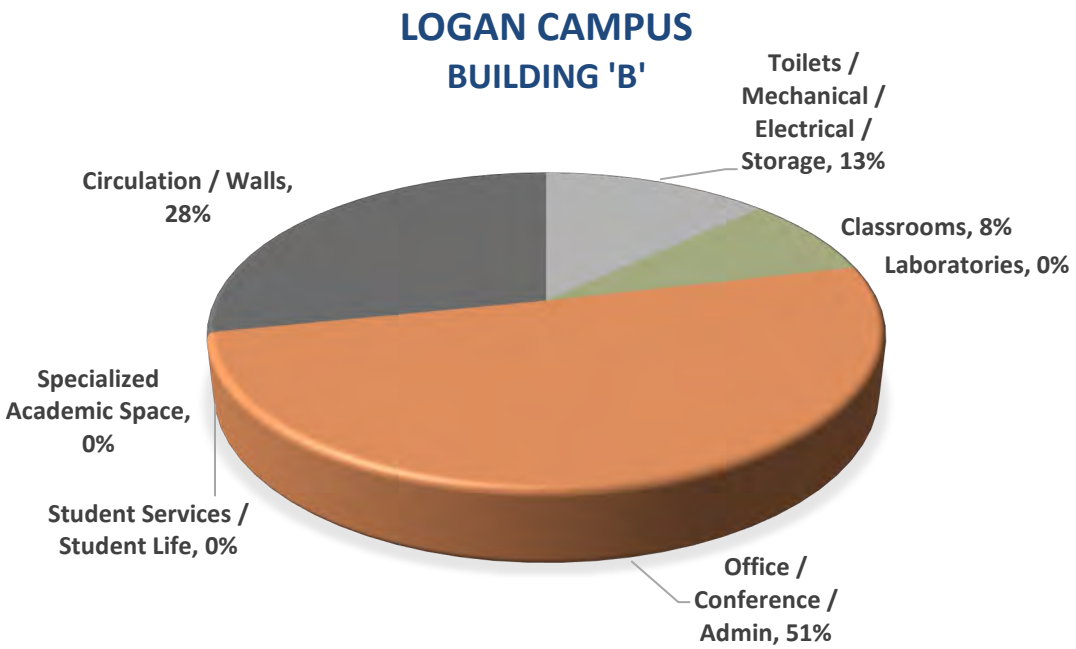
- Toilets / Mechanical / Electrical / Storage

SQUARE FOOTAGE ALLOCATION

Logan Campus

Building 'B'

Space Description	Current Inventory	% Of Total SF
Academic Space		
Classrooms	1,379	
Laboratories	0	
Specialized Academic Space	0	
Subtotal	1,379	8%
Academic Support Space		
Office / Conference / Service	8,317	
Subtotal	8,317	51%
Other Student Space		
Student Services / Bookstore / Etc.	0	
Subtotal	0	0%
Building Support		
Toilets / Mechanical / Electrical / Storage	2,136	
Subtotal	2,136	13%
Net SQ FT Total	11,832	72%
Circulation & Walls	4,652	28%
Building Gross SQ FT	16,484	



SQUARE FOOTAGE ALLOCATION

Logan Campus

Building 'C'

First Floor Plan

Legend

Academic Space

- Classrooms
- Laboratories
- Specialized Academic Space

Academic Support Space

- Office / Conference / Service

Other Student / Public Space

- Student Services / Bookstore / Etc.

Building Support

- Toilets / Mechanical / Electrical / Storage

SQUARE FOOTAGE ALLOCATION

Logan Campus

Building 'C'

Second Floor Plan

Legend

Academic Space

- Classrooms
- Laboratories
- Specialized Academic Space

Academic Support Space

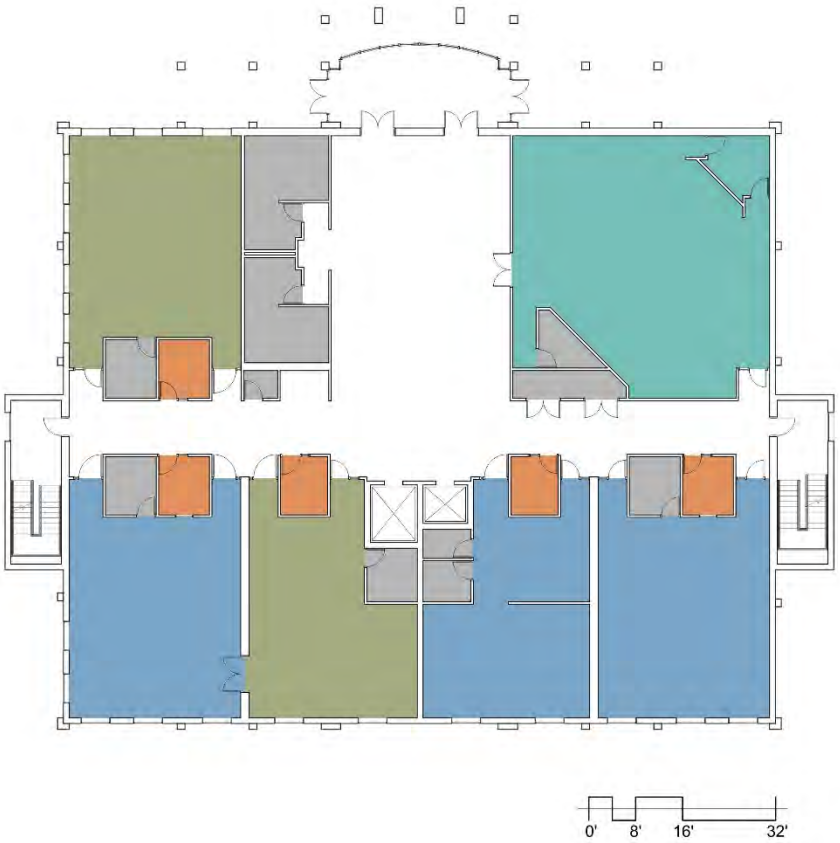
- Office / Conference / Service

Other Student / Public Space

- Student Services / Bookstore / Etc.

Building Support

- Toilets / Mechanical / Electrical / Storage



SQUARE FOOTAGE ALLOCATION

Logan Campus

Building 'C'

Third Floor Plan

Legend

Academic Space

- Classrooms
- Laboratories
- Specialized Academic Space

Academic Support Space

- Office / Conference / Service

Other Student / Public Space

- Student Services / Bookstore / Etc.

Building Support

- Toilets / Mechanical / Electrical / Storage

SQUARE FOOTAGE ALLOCATION

Logan Campus

Building 'C'

Fourth Floor Plan

Legend

Academic Space

- Classrooms
- Laboratories
- Specialized Academic Space

Academic Support Space

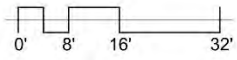
- Office / Conference / Service

Other Student / Public Space

- Student Services / Bookstore / Etc.

Building Support

- Toilets / Mechanical / Electrical / Storage

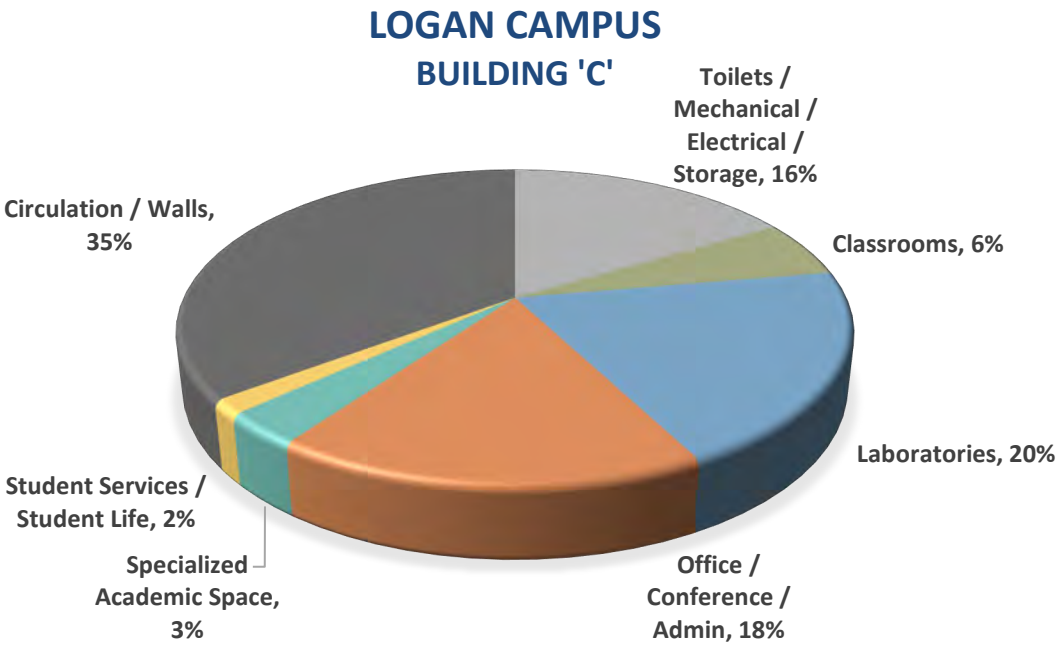


SQUARE FOOTAGE ALLOCATION

Logan Campus

Building 'C'

Space Description	Current Inventory	% Of Total SF
Academic Space		
Classrooms	3.076	
Laboratories	10,649	
Specialized Academic Space	1,773	
Subtotal	15,498	29%
Academic Support Space		
Office / Conference / Service	9,311	
Subtotal	9,311	18%
Other Student Space		
Student Services / Bookstore / Etc.	797	
Subtotal	797	2%
Building Support		
Toilets / Mechanical / Electrical / Storage	8,737	
Subtotal	8,737	16%
Net SQ FT Total	34,343	65%
Circulation & Walls	18,691	35%
Building Gross SQ FT	53,034	



SQUARE FOOTAGE ALLOCATION

Williamson Campus

Main Building

First Floor Plan

Legend

Academic Space

- Classrooms
- Laboratories
- Specialized Academic Space

Academic Support Space

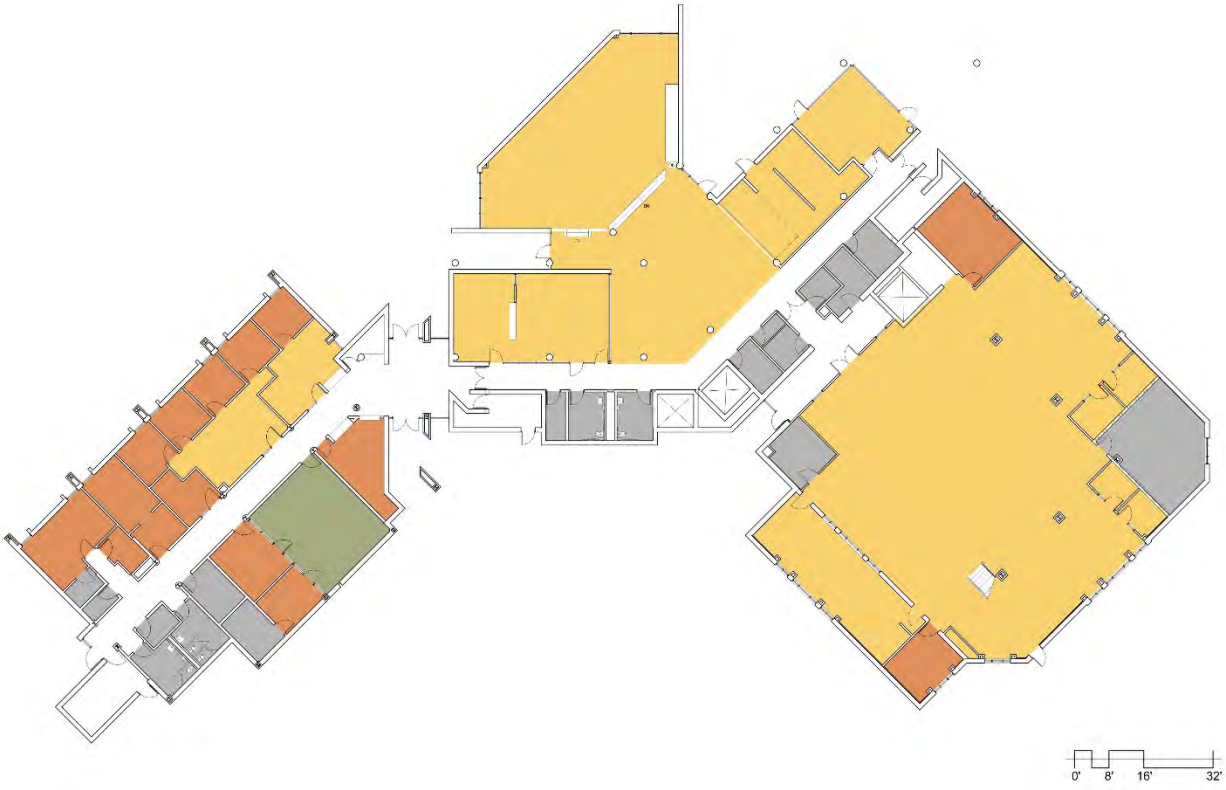
- Office / Conference / Service

Other Student / Public Space

- Student Services / Bookstore / Etc.

Building Support

- Toilets / Mechanical / Electrical / Storage



SQUARE FOOTAGE ALLOCATION

Williamson Campus

Main Building

Second Floor Plan

Legend

Academic Space

- Classrooms
- Laboratories
- Specialized Academic Space

Academic Support Space

- Office / Conference / Service

Other Student / Public Space

- Student Services / Bookstore / Etc.

Building Support

- Toilets / Mechanical / Electrical / Storage

SQUARE FOOTAGE ALLOCATION

Williamson Campus

Main Building

Third Floor Plan

Legend

Academic Space

- Classrooms
- Laboratories
- Specialized Academic Space

Academic Support Space

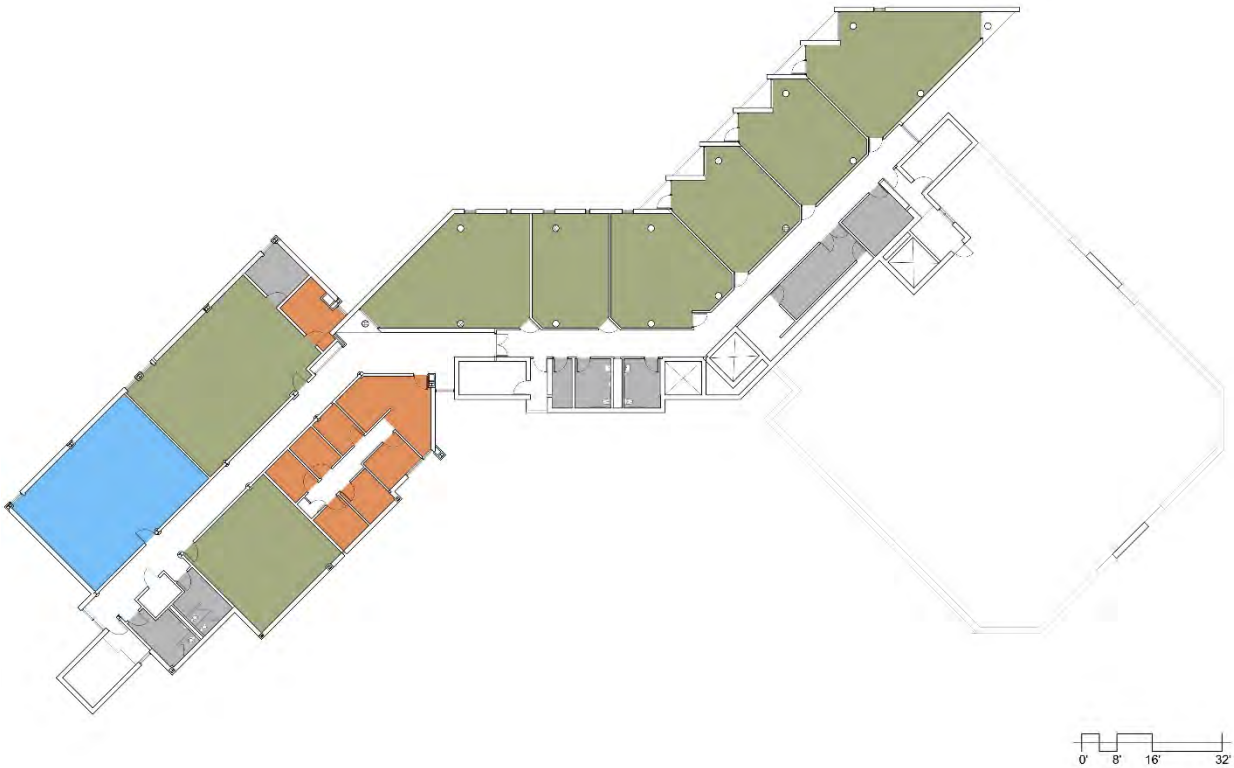
- Office / Conference / Service

Other Student / Public Space

- Student Services / Bookstore / Etc.

Building Support

- Toilets / Mechanical / Electrical / Storage



SQUARE FOOTAGE ALLOCATION

Williamson Campus

Main Building

Fourth Floor Plan

Legend

Academic Space

- Classrooms
- Laboratories
- Specialized Academic Space

Academic Support Space

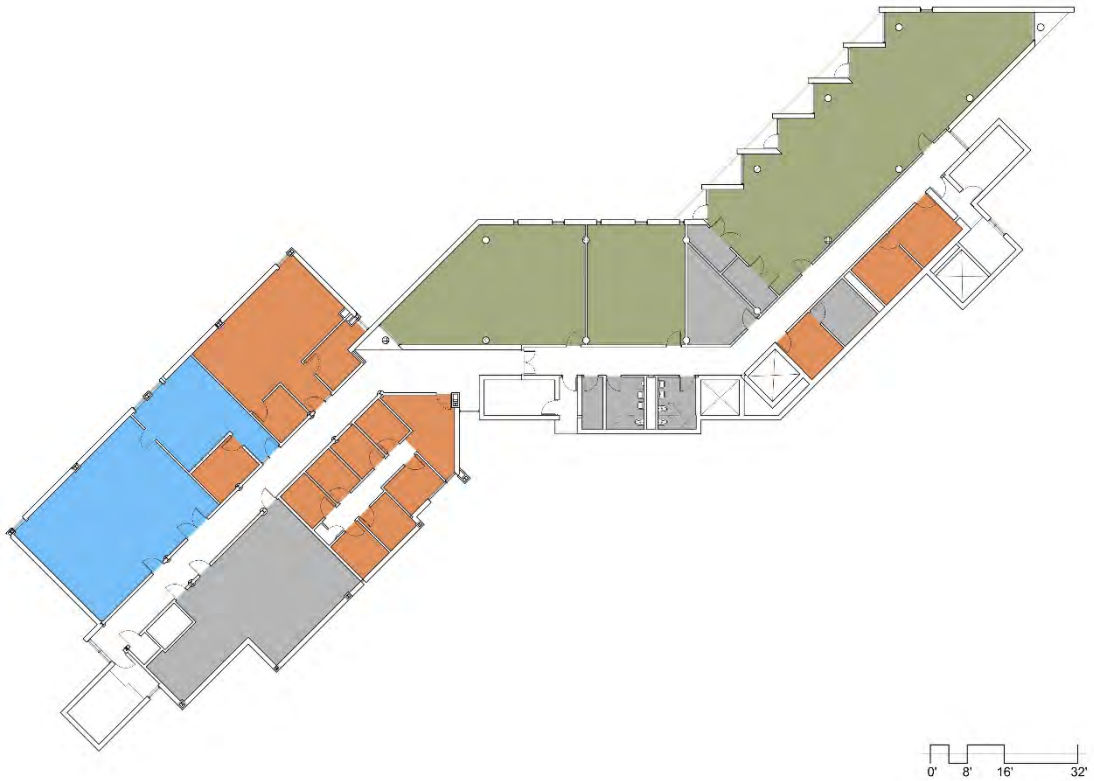
- Office / Conference / Service

Other Student / Public Space

- Student Services / Bookstore / Etc.

Building Support

- Toilets / Mechanical / Electrical / Storage



SQUARE FOOTAGE ALLOCATION

Williamson Campus

Main Building

Fifth Floor Plan

Legend

Academic Space

- Classrooms
- Laboratories
- Specialized Academic Space

Academic Support Space

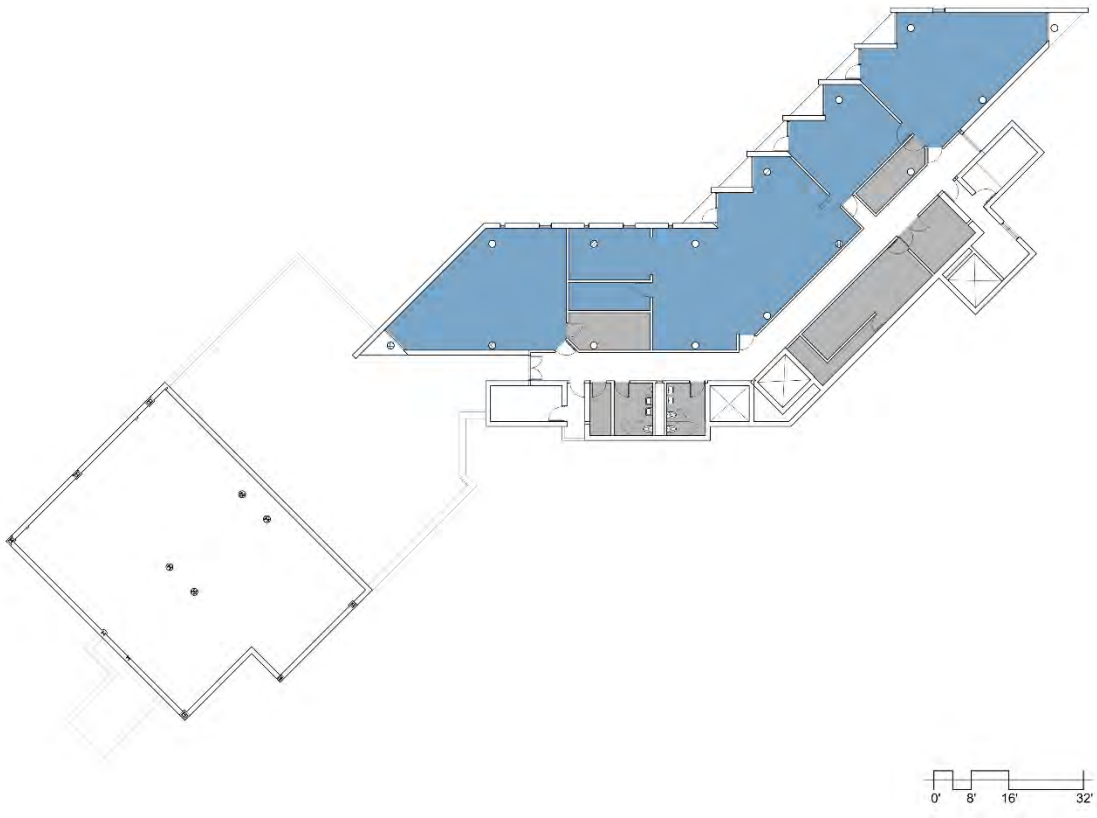
- Office / Conference / Service

Other Student / Public Space

- Student Services / Bookstore / Etc.

Building Support

- Toilets / Mechanical / Electrical / Storage

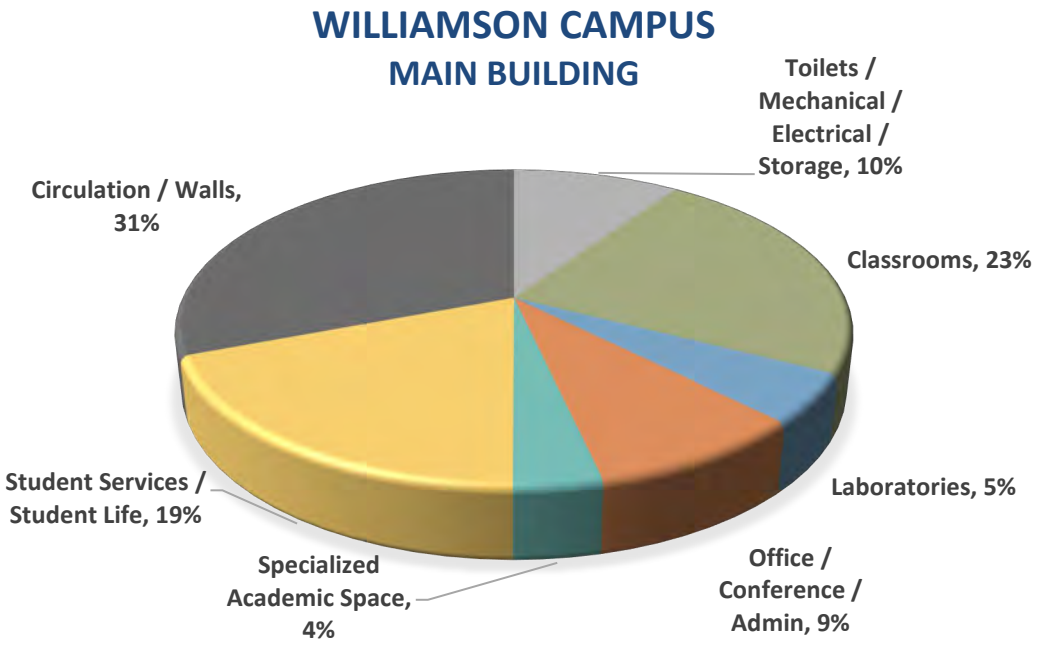


SQUARE FOOTAGE ALLOCATION

Williamson Campus

Main Building

Space Description	Current Inventory	% Of Total SF
Academic Space		
Classrooms	15,153	
Laboratories	3,277	
Specialized Academic Space	2,354	
Subtotal	20,784	32%
Academic Support Space		
Office / Conference / Service	5,869	
Subtotal	5,869	9%
Other Student Space		
Student Services / Bookstore / Etc.	12,605	
Subtotal	12,605	19%
Building Support		
Toilets / Mechanical / Electrical / Storage	6,296	
Subtotal	6,296	10%
Net SQ FT Total	45,554	70%
Circulation & Walls	20,286	35%
Building Gross SQ FT	65,840	



SQUARE FOOTAGE ALLOCATION

Williamson Campus

Advanced Technology Center

First Floor Plan

Legend

Academic Space

- Classrooms
- Laboratories
- Specialized Academic Space

Academic Support Space

- Office / Conference / Service

Other Student / Public Space

- Student Services / Bookstore / Etc.

Building Support

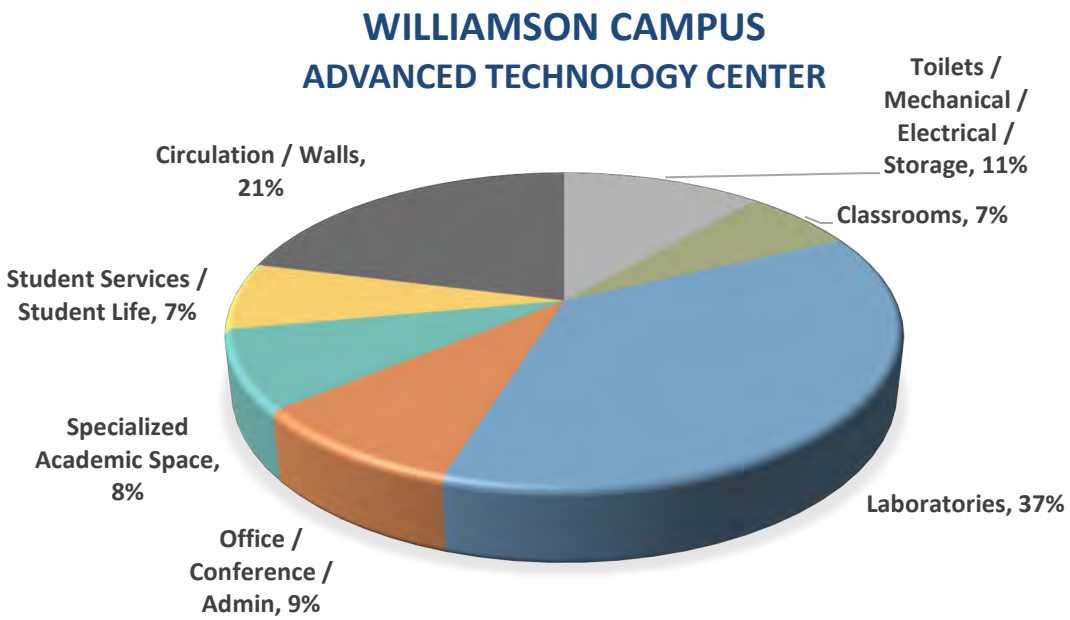
- Toilets / Mechanical / Electrical / Storage

SQUARE FOOTAGE ALLOCATION

Williamson Campus

Advanced Technology Center

Space Description	Current Inventory	% Of Total SF
Academic Space		
Classrooms	1,500	
Laboratories	8,554	
Specialized Academic Space	1,870	
Subtotal	11,924	52%
Academic Support Space		
Office / Conference / Service	2,110	
Subtotal	2,110	9%
Other Student Space		
Student Services / Bookstore / Etc.	1,589	
Subtotal	1,589	7%
Building Support		
Toilets / Mechanical / Electrical / Storage	2,649	
Subtotal	2,649	11%
Net SQ FT Total	18,272	79%
Circulation & Walls	4,872	21%
Building Gross SQ FT	23,144	



SQUARE FOOTAGE ALLOCATION

Williamson Campus

Armory Building

First Floor Plan

Legend

Academic Space

- Classrooms
- Laboratories
- Specialized Academic Space

Academic Support Space

- Office / Conference / Service

Other Student / Public Space

- Student Services / Bookstore / Etc.

Building Support

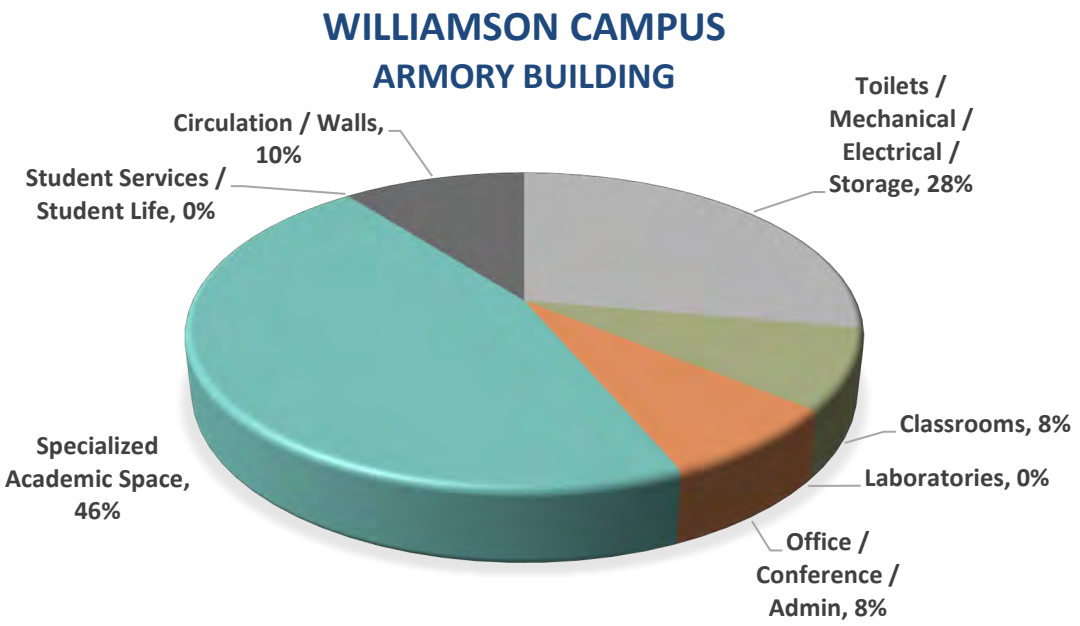
- Toilets / Mechanical / Electrical / Storage

SQUARE FOOTAGE ALLOCATION

Williamson Campus

Armory Building

Space Description	Current Inventory	% Of Total SF
Academic Space		
Classrooms	1,302	
Laboratories	0	
Specialized Academic Space	7,266	
Subtotal	8,568	54%
Academic Support Space		
Office / Conference / Service	1,211	
Subtotal	1,211	8%
Other Student Space		
Student Services / Bookstore / Etc.	0	
Subtotal	0	0%
Building Support		
Toilets / Mechanical / Electrical / Storage	4,391	
Subtotal	4,391	28%
Net SQ FT Total	14,170	90%
Circulation & Walls	1,658	10%
Building Gross SQ FT	15,828	



SQUARE FOOTAGE ALLOCATION

Wyoming / McDowell Campus

Main Building

First Floor Plan

Legend

Academic Space

- Classrooms
- Laboratories
- Specialized Academic Space

Academic Support Space

- Office / Conference / Service

Other Student / Public Space

- Student Services / Bookstore / Etc.

Building Support

- Toilets / Mechanical / Electrical / Storage

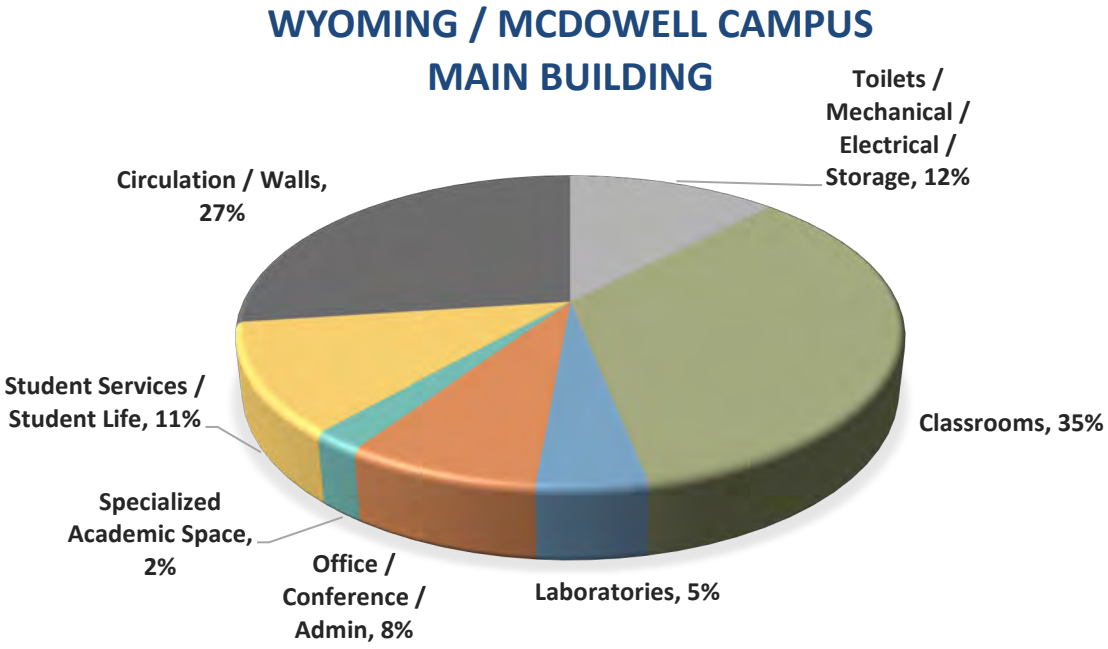
0' 8' 16' 32'

SQUARE FOOTAGE ALLOCATION

Wyoming / McDowell Campus

Main Building

Space Description	Current Inventory	% Of Total SF
Academic Space		
Classrooms	7,971	
Laboratories	1,042	
Specialized Academic Space	483	
Subtotal	9,496	42%
Academic Support Space		
Office / Conference / Service	1,841	
Subtotal	1,841	8%
Other Student Space		
Student Services / Bookstore / Etc.	2,617	
Subtotal	2,617	11%
Building Support		
Toilets / Mechanical / Electrical / Storage	2,809	
Subtotal	2,809	12%
Net SQ FT Total	16,763	73%
Circulation & Walls	6,237	27%
Building Gross SQ FT	23,000	



SQUARE FOOTAGE ALLOCATION

Boone Campus

Main Building

First Floor Plan

Legend

Academic Space

- Classrooms
- Laboratories
- Specialized Academic Space

Academic Support Space

- Office / Conference / Service

Other Student / Public Space

- Student Services / Bookstore / Etc.

Building Support

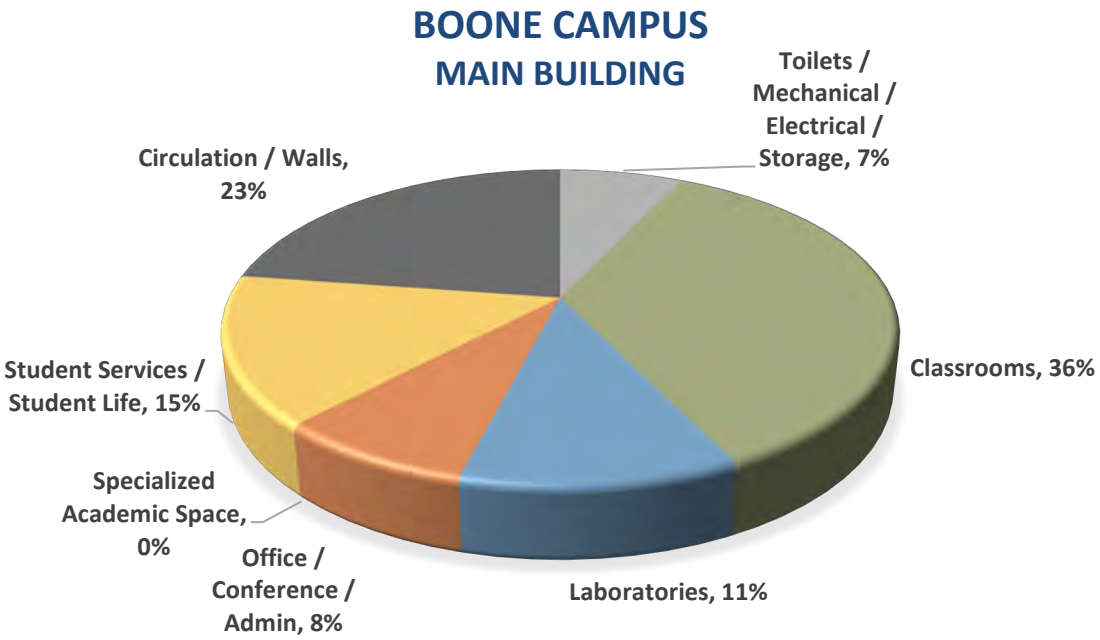
- Toilets / Mechanical / Electrical / Storage

SQUARE FOOTAGE ALLOCATION

Boone Campus

Main Building

Space Description	Current Inventory	% Of Total SF
Academic Space		
Classrooms	5,339	
Laboratories	1,689	
Specialized Academic Space	0	
Subtotal	7,028	47%
Academic Support Space		
Office / Conference / Service	1,220	
Subtotal	1,220	8%
Other Student Space		
Student Services / Bookstore / Etc.	2,270	
Subtotal	2,270	15%
Building Support		
Toilets / Mechanical / Electrical / Storage	1,062	
Subtotal	1,062	7%
Net SQ FT Total	11,580	77%
Circulation & Walls	3,394	23%
Building Gross SQ FT	14,974	



SQUARE FOOTAGE ALLOCATION

Lincoln Site

Main Building

First Floor Plan

Legend

Academic Space

- Classrooms
- Laboratories
- Specialized Academic Space

Academic Support Space

- Office / Conference / Service

Other Student / Public Space

- Student Services / Bookstore / Etc.

Building Support

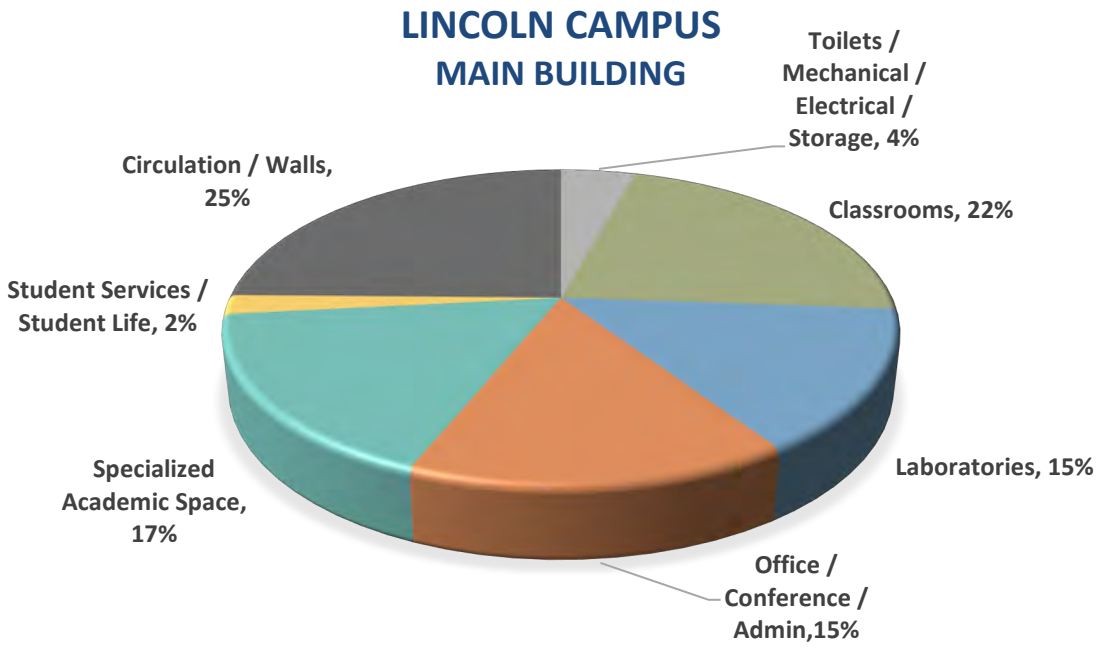
- Toilets / Mechanical / Electrical / Storage

SQUARE FOOTAGE ALLOCATION

Lincoln Site

Main Building

Space Description	Current Inventory	% Of Total SF
Academic Space		
Classrooms	2,629	
Laboratories	1,748	
Specialized Academic Space	2,064	
Subtotal	6,441	54%
Academic Support Space		
Office / Conference / Service	1,867	
Subtotal	1,867	15%
Other Student Space		
Student Services / Bookstore / Etc.	236	
Subtotal	236	2%
Building Support		
Toilets / Mechanical / Electrical / Storage	514	
Subtotal	514	4%
Net SQ FT Total	9,058	75%
Circulation & Walls	2,947	25%
Building Gross SQ FT	12,032	



INSTRUCTIONAL SPACE UTILIZATION

BACKGROUND

Classroom / laboratory utilization was determined by evaluating the Fall 2022 class schedule. The Spring 2023 class schedule was used to confirm / compare the results of the in-depth analysis of the Fall 2022 class schedule. The class schedule was separated and sorted by campus location, building, and instructional room. The analysis considered the max number of students per class, number of students enrolled, days of the week for each class, and time of day use. The baseline evaluation considered an instructional day was 13 hours in length and occurred 4 days a week for a total of 52 hours on instruction per week in each instructional space. The evaluation included all 5 campus / site locations and all buildings on each campus.

Course enrollment is also evaluated along with instructional space utilization to support that a scheduled room for a course has a reasonable percentage of students occupying the space. For instance, if a course with a maximum capacity of 25 only has 8 students enrolled and this course occupies a specific room 3 days a week, the utilization rate of the room should be adjusted. It is important to note that only the scheduled instructional spaces were evaluated in this study. Instructional spaces that were not listed in the course schedule did not factor into the utilization percentage. The reason for this is to first evaluate the course offerings with the available instructional spaces and determine if the overall course scheduling of rooms is efficient. This also takes into consideration the number of spaces versus the number of courses offered. Consideration is also given to the allocation of square footage and the type of instructional spaces and if they can be utilized for multiple types of courses. For example, a nursing laboratory may be used for every medical course requiring a laboratory, even if this is only a certain percentage of educational hours each week. The nursing laboratory cannot typically meet a certain utilization rate because of the number of course offerings and cannot likely support other educational programs. This is the reasons laboratories and specialized educational spaces are identified in the square footage allocation study.

RESULTS

The result of the analysis is based only on the class schedule and did not include room usage for committee meetings, staff meetings and tutoring. Below is listing of the numbered of enrolled students in the course offerings and the utilization of the buildings' scheduled instructional spaces. The list below is separated by campus and building.

Campus	Building	Course Enrollment (%)	Instructional Space Utilization (%)
Logan	Building A	67.0	17.5
Logan	Building C	80.6	40.9
Williamson	Main Building	76.1	24.2
Williamson	ATC	69.9	37.2
Wyoming	Main Building	55.0	18.3
Boone	Main Building	58.8	25.0
Lincoln	Main Building	78.8	6.9
Online	ZOOM	79.7	-
Online	Online	81.4	-

SUMMARY

As indicated in the chart on the previous page, the average course enrollment for the entire College is at 70% with instructional space utilization is just above 24%. The results of our analysis indicate that the course scheduling in utilizing the available spaces is efficient. While the utilization of laboratories and specialized instructional spaces are typically low, the enrollment of these courses are a higher percentage than most other courses offered.

Below is an 'adjusted' utilization study that includes all scheduled and non-scheduled instructional spaces. The non-scheduled instructional spaces consist of classrooms, laboratories, and/or specialized instructional spaces that are not currently used due to space configuration, size, physical condition, or just not needed to meet the current student demands.

Campus	Building	Course Enrollment (%)	***Adjusted*** Instructional Space Utilization (%)
Logan	Building A	67.0	***13.4***
Logan	Building C	80.6	***33.3***
Williamson	Main Building	76.1	***5.4***
Williamson	ATC	69.9	***22.3***
Wyoming	Main Building	55.0	***1.3***
Boone	Main Building	58.8	***10.7***
Lincoln	Main Building	78.8	***6.9***
Online	ZOOM	79.7	-
Online	Online	81.4	-

LOGAN CAMPUS – BUILDING 'A'

The square footage allocation for the building is evenly distributed with the first floor not including many instructional spaces, while the second floor consists primarily of classrooms and laboratories. The room size and configuration of the non-scheduled classrooms are the reason many of these spaces are not utilized. Reconfiguration and renovation of the instructional spaces in this building will yield a higher utilization usage.

LOGAN CAMPUS – BUILDING 'C'

The square footage allocation for the building is heavily concentrated with laboratory or specialized education spaces. The majority of these spaces occur on the first and second floors. The configuration / specialized layout of the non-scheduled classrooms is the reason these spaces are not currently utilized. Reconfiguration of these spaces will yield a higher utilization usage, however the utilization rate for this building is very high, considering the courses offered in this building.

WILLIAMSON CAMPUS – MAIN BUILDING

The square footage allocation for the building is fairly evenly distributed with all the upper four floors consisting of instructional spaces, while the first floor consists primarily of student life, student support spaces. The physical condition and room configuration of the non-scheduled classrooms on the upper floors are the reason many of these spaces are not utilized. Reconfiguration and renovations of the instructional spaces in this building will yield a higher utilization usage.

WILLIAMSON CAMPUS – ATC

The square footage allocation for the building is heavily concentrated with laboratory or specialized education spaces. The change in course offering, and configuration / specialized layout of the non-scheduled classrooms is the reason these spaces are not currently utilized. Reconfiguration and minimal renovation of the instructional spaces in this building will yield a higher utilization usage.

WYOMING CAMPUS – MAIN BUILDING

The square footage allocation for the building is highly concentrated with classrooms and laboratories comprising 40% of the square footage. The limited class offerings and enrollment in this facility is the reason the utilization is so low. Reconfiguration and renovations of the instructional spaces in this building will NOT yield a higher utilization usage.

BOONE CAMPUS – MAIN BUILDING

The square footage allocation for the building is evenly distributed with educational spaces, student life / student support, and administrative / staff spaces. The limited class offerings and enrollment in this facility is the reason the utilization is so low. Reconfiguration and renovations of the instructional spaces in this building will NOT yield a higher utilization usage.

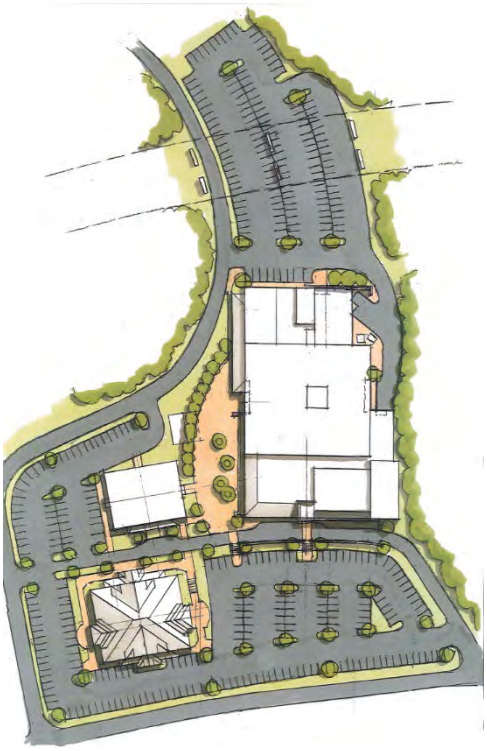
LINCOLN SITE – MAIN BUILDING

The square footage allocation for the building is evenly distributed with educational spaces, and administrative / staff spaces. The limited class offerings and enrollment in this facility is the reason the utilization is so low. Reconfiguration and renovations of the instructional spaces in this building will NOT yield a higher utilization usage.

FACILITY ASSESSMENT

LOGAN CAMPUS - GENERAL

Main Parking Lot



Proposed Site Revisions

BACKGROUND

The Logan Campus includes three buildings with multiple independent parking areas. The buildings are identified as 'A', 'B', and 'C'. Building 'A' is the Main Academic Building, Building 'B' is the Workforce Building, and Building 'C' is Allied Health, and includes Southern WVCTC's main administrative functions.

The three campus buildings do not share an architectural language other than the use of hip metal roof entrances. Exterior materials include multiple brick colors, and various other exterior finishes. The buildings also sit at various elevations, creating a disjointed campus. One of the challenges of the campus is that there is no hierarchy on the campus. The main entry to Building 'A' should be improved to provide clarity.

As noted above, there are several parking areas. The most prominent parking area is the large parking lot that connects the three facilities. This parking lot has been recently paved in 2022. This main parking area need to be redesigned to include landscaping, pedestrian circulation, and separated visitor, staff, and student parking. Site lighting, security cameras, and security call stations (blue-phones) should be included in the revised layout. The improvement of this area would be a cost-effective way to improve the overall image of the campus.

Other, smaller parking areas are located around the perimeter of Buildings 'B' and 'C'. The other significant parking area is located in the rear of Building "A," the main academic building – and extends under the connector to US Route 119. This area also contains no landscaping, and little striping. This location is the only portion of campus where property acquisition may be entertained to expand the parking capacity. This expansion would occur to the west of Building 'C.' As identified in the previous master plan, the rear of Building 'A' should be improved to create a student entry from this area.

Logan Campus

FACILITY ASSESSMENT

LOGAN CAMPUS – BUILDING 'A'

Building 'A'

Loading Dock at Stage Workshop

Roof 'Well" at Auditorium HVAC units

BACKGROUND

Building 'A' is the original building located at Southern' s Logan Campus. The building contains 83,116 SF of space and was originally constructed in 1979. The original building was 37,461 SF. The building underwent a significant improvement in 1987 when additions (45,655 SF) were made to both the front and the rear of the structure. The rear addition expanded the library and classroom space, while the front addition included a large theater space. Building 'A' is the main academic building on the campus, and improved signage/prominence would assist in identifying the structure's importance.

EXTERIOR

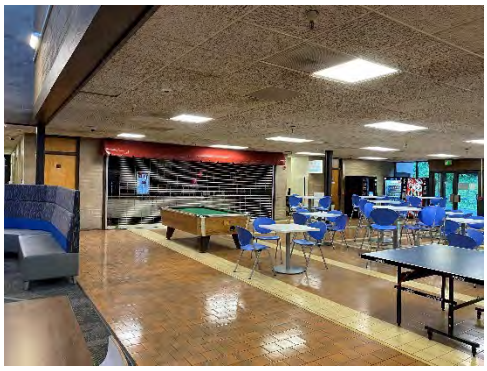
The exterior envelope is in good condition. The exterior walls are comprised of brick veneer, metal wall panels, and punched windows around the building. The brick at the rear of the building around the loading dock is stained and could benefit from a cleaning.

The existing roofing is EPDM and is in good shape. There is minimal evidence of ponding water in a few locations however there are some areas that require emergency overflow drains. This should be considered when the building is reroofed. The 'well' area where the auditorium units are located may require to be reroofed prior to the remainder of the roofing. If these HVAC units are replaced, it is recommended this roof be replaced at the same time. The hip roof at the front of the building is metal roofing and appears to be in good condition.

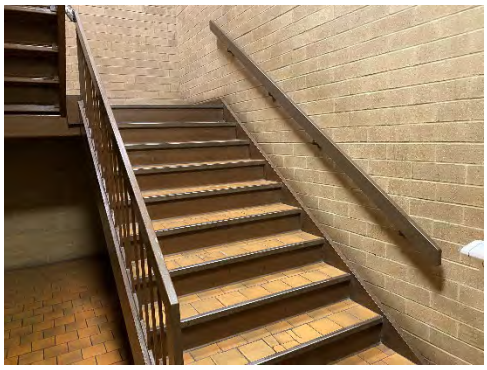
INTERIOR

The first-floor spaces are separated by walls and demountable partitions. Most of the second-floor spaces consist of demountable partitions. Ceilings are typically suspended acoustical ceiling tile. Flooring is mostly VCT and quarry tile in entryways and restrooms. Most restrooms have ceramic wall tile that has been patched multiple times and should be replaced upon any renovation to the restrooms. Only a few spaces have carpet flooring. Partitions that are not demountable partitions are either CMU, gypsum board, or brick veneer.

Circulation between the levels is through elevators or perimeter stairwells. These stairs have quarry tile on the treads and painted steel pans. The existing handrails meet current existing codes, however if the building undergoes significant renovations, these handrails will need to be modified to meet current codes. The stairs doors have panic exit hardware however these should be upgraded and have been repaired. The elevator cab does not have controls meeting current codes and should be upgraded to accommodate fire fighter controls.



Student Services Area



Stairs

Rooftop HVAC Units

STRUCTURAL

The overall structural system consists of load bearing masonry walls with structural steel and open web steel joist framing. The foundations were not visible and there were no structural drawings available to verify the foundation construction. In the previous master plan, there are some signs of soil erosion around the building perimeter, however landscaping has been installed and seems to have corrected this issue.

The exterior walls consist of masonry block with brick veneer and the interior walls mainly consist of masonry block. The ground floor is a concrete slab on grade and the elevated floor is a concrete slab on metal decking. Above the stage area there are elevated steel platforms with a metal grating floor system. The loads applied to the floors appear to be consistent with typical educational and administrative loadings.

The roof structure consists of open web steel bar joists with metal decking. There are various leaks in the roof that have contributed to some minor deterioration of the metal roof deck in some areas. The rear storage structure roof consists of wood framing with metal corrugated roof decking. There are some signs of water damage to the wooden roof members in the storage area. The building structure falls under a seismic design category B according to the current 2018 International Building Code which West Virginia has adopted. While the structure can withstand some seismic loads, it is not clear if the design accommodates loads according to the current building codes.

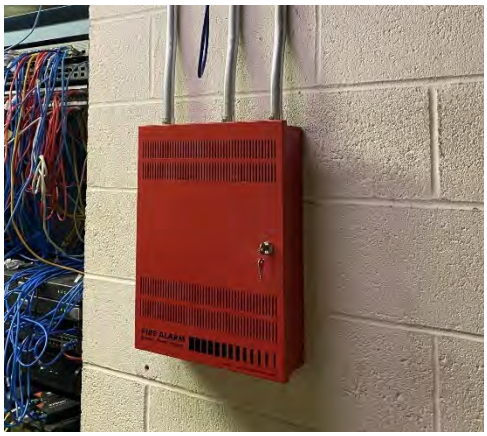
HVAC

This building is heated and cooled with a combination of rooftop air handling units, split dx systems, exterior wall unit ventilators and water-source heat pump units throughout the building. The rooftop units have dx-cooling coils and gas-fired heating coils. A Baltimore Air Coil cooling tower conditions the water for the water-source heat pump loop, and the pumps for the heat pump loop are in the adjacent Mechanical Room. The heat pump loop system is leaking and requires makeup water on a regular basis. Most of the equipment has reached and exceeded the end of its service life. As heat pump units have failed, the maintenance staff has replaced them with similar units. Outside contractor performs water testing and chemical management of cooling tower and condenser loop water. Maintenance is performed by Logan Campus personnel.

Most of the building does not have ventilation air. Only the exterior wall unit ventilators and the rooftop units provide ventilation air. The building automation system (BAS) is from Trane, and only controls the rooftop unit serving the Theater and three rooftop units serving the upstairs. There is no standardization to the controls – there are thermostats from at least six different manufacturers throughout the building. All of the roof mounted equipment shows signs of corrosion, and most of the ductwork exposed on the roof has insulation that is either damaged or covered in mold

Rooftop HVAC Units

Fire Suppression System Entrance



Fire Alarm Control Panel

growth. Plenum return air ceilings are being utilized and not everything within the plenum was plenum rated. Exhaust was not working or not provided in most of the toilet rooms. Large classrooms were capable of dividing into smaller classrooms with moveable walls but only controlled by one thermostat.

PLUMBING

The building has several domestic hot water heaters, none of which have an expansion tank installed. There are no thermostatic mixing valves installed at the water heaters, or at any of the plumbing fixtures requiring hot water. The restrooms in the building are not ADA-compliant, nor are the water coolers. The majority of the restroom fixtures throughout the building are functional but are in need of replacement. The records room is protected by a Sinorex 227 waterless fire suppression system that is in good condition. There are no overflow roof drains or scuppers installed on the roofs.

FIRE PROTECTION/LIFE SAFETY

The building is fully sprinklered. The fire protection system has a valve with tamper switch.

ELECTRICAL

Life Safety

All the campuses fire alarm systems are tied into one main fire alarm control panel located on the first-floor corridor wall of Building A. The fire alarm control panel is a modern Edwards iO Series with on-board battery backup. The fire alarm system was replaced in 2021. The Computer Center room, located on the first floor, uses a dry fire suppression system. All emergency lighting and the data center are on a Kohler 80kW, 3 phase, 480/277V natural gas generator. The elevator does not have backup power. The exit signs throughout the building are older incandescent lamp style with green or red laminated lenses.

Electrical Power Systems

The electrical service for the building is fed underground via a pad mounted transformer to the service meter located in the main electrical room. With the moving of the TV station to the Williamson campus the overall electrical load has been lightened. The electric service is 1200 amps which appears adequate for the buildings need. Some panels that have had loads removed do not have updated panel schedules and taped covers were breakers are removed. The MDP (Main distribution panel) was rebuilt after an internal electrical fire caused by the old service transformer two years ago. The MDP is in fair condition with no notable damage. In

Electrical Power System MDP

Data Racks

the modular classroom the power poles that are utilized in some of these locations are falling apart making them unsafe.

Electrical Lighting Systems

The exterior lighting for the building consists of large wall mounted Metal Halide fixtures that are used for area and walkway lighting. Recessed metal halide fixtures are used at the entrance. The exterior lighting for the parking lot areas and all walkways throughout the campus are not adequately lite according to the IES standards. The exterior lighting is controlled by mechanical time switches. Interior lighting throughout the building consists of 2x2 U-shaped T8 fixtures in the corridors, T12 and T8 fixtures in the classrooms and offices and Metal Halide recessed and spotlight fixtures in the commons areas.

Data/Communications Systems

The buildings A, B and C central data is tied into the first floor Computer Center room. The phone system is a VoIP Cisco system.

Security –Electrical

The campus has a mass notification system in place. The building does not have a security system. The CCTV system consists of ceiling mounted analog dome cameras connected to a central DVR and monitor.

Environmental Concerns - Electrical

The fluorescent ballasts may contain PCB's. The T12 fluorescent lamps are not environmentally friendly low mercury lamps. Lamps for the T12 fixtures will not be available in the near future.

FACILITY ASSESSMENT

LOGAN CAMPUS – BUILDING 'A'

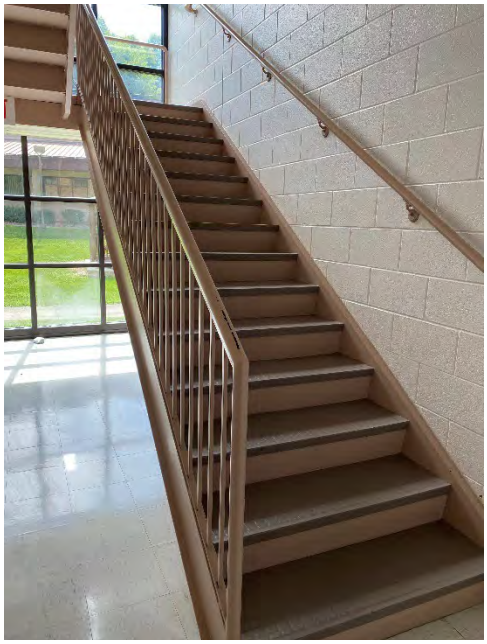
RECOMMENDATIONS

1. The building is overdue for significant renovations. Renovations should include updating interior finishes, classroom reconfiguration for varying sizes of classrooms, replacing demountable partitions with more permanent gypsum board partitions, stair and elevator renovations, science laboratory renovations, lobby renovations, restrooms / ADA renovations, and exterior entrance enhancements.
2. Exterior site improvements to include parking lot improvements, site lighting improvements, site security systems enhancements, and exterior signage improvements.
3. The HVAC and plumbing systems throughout the building are in need of replacement.
4. Restrooms and water coolers need to be updated to meet ADA requirements. As the restrooms are renovated for ADA compliance, ensure the resultant number of fixtures will meet code requirements based on building occupancy.
5. A new HVAC system is needed that will replace the current equipment and provide ventilation air to all spaces: cooling would include the addition of a second air cooled chiller on the pad next to Building B in order to have a central chilled water system for the entire campus; heating would include the addition of high efficiency hot water boilers; airside systems would consist of variable volume air handling units with VAV boxes for individual spaces.
6. A central building automation system (BAS) is needed to provide more efficient operation of the entire HVAC system, allow scheduling of the system based on building occupancy and provide the maintenance staff a more reliable means of troubleshooting and maintaining the system. Some consideration should also be given to integrating the controls systems for all three buildings. Currently each building has a different controls manufacturer.
7. Proper exhaust air is also needed in the science labs, art rooms and restrooms.
8. The elevator equipment room should have a dedicated cooling unit.
9. Install ASSE 1070 rated point-of-use thermostatic mixing valves at each plumbing fixture requiring hot water.
10. Install one overflow roof drain for every 2 roof drains that serve the same area. Overflow roof drain piping shall discharge to grade and shall be insulated.
11. New emergency lighting for path of egress integral to new lighting for both interior and exterior fixtures with emergency ballast.
12. New exit signs throughout with directional arrows as needed.
13. Create new accurate panel schedule labeling all loads, spare breakers and available space.
14. Install blank space covers on panels where breakers have been removed.
15. Install weather covers on all exterior receptacles.
16. Replace all power poles with new a dual channeled portable power poles for both data and electric connections.
17. Complete fixture replacement of all existing interior and exterior lighting with LED fixtures. Lighting selections for each area are to be based on IES recommended foot candle levels and the fixture aesthetics for given locations.
18. Occupancy sensors for all classrooms, restrooms, and offices.
19. Digital lighting controls for exterior lighting, corridors, foyer, and commons area.
20. Photocell integral to the lighting controls for exterior lighting.
21. Install new and replace existing parking lot and walkway lighting with new LED fixtures.
22. Follow EPA regulations and procedures for disposing of lighting fixtures, lamps, drivers, and ballasts.
23. A PONs fiber system is recommended for data and communications distributions to all the buildings on campus. This system would eliminate the need for large quantity data cabling and switching.
24. Install security systems including card access, door contacts, motion detectors, front end system and remote monitoring by monitoring service.
25. New CCTV system integrated into the security system with motion activated event capture and digital cameras.

FACILITY ASSESSMENT
LOGAN CAMPUS – BUILDING 'B'

Building 'B'

Typical Corridor



Typical Stair

BACKGROUND

Building 'B', the Workforce Building was the second building located at Southern 's Logan Campus. The building contains 16,484 SF of space and was constructed in 1999. The building is in generally good condition. There are two skylights on the second level which have been problematic and require replacement. Control of the HVAC system has also been a challenge.

EXTERIOR

The exterior envelope is in good condition. The exterior walls are comprised of brick veneer and punched windows around the building. There are some areas where the brick soldier course band has mortar joints starting to deteriorate. This needs to be monitored and masonry restoration may be required, however this is likely several years from needing to occur. This soldier course detail has caused some staining on the brick veneer and a thorough cleaning would resolve this issue.

The existing roofing is EPDM and is in good shape. The hip roof at the front of the building is metal roofing and appears to be in good condition.

INTERIOR

The spaces are separated by gypsum board partitions. Ceilings are typically suspended acoustical ceiling tile. Flooring is mostly carpet with porcelain tile at the entry, VCT in minimal spaces, and ceramic mosaic tile in restrooms.

Circulation between the levels is through elevator or perimeter stairwells. These stairs have rubber treads and painted steel pans. The existing handrails meet current existing codes, however if the building undergoes significant renovations, these handrails will need to be modified to meet current codes. The elevator cab does have controls meeting current codes that accommodate fire fighter controls.

STRUCTURAL

The overall structural system consists of structural steel framing with open web steel bar joists and reinforced masonry stair and elevator shaft walls. According to the structural drawings, the foundation system consists of shallow spread footings designed for an allowable soil bearing pressure of 2500psf. The reinforced masonry shaft walls serve the purpose of resisting the lateral loads for the building. The perimeter walls consist of metal stud framing with brick veneer and the interior partition walls consist of metal stud framing.

ADA Toilet Stall

Chiller

Water Heater / Sprinkler System Entrance

The ground floor is a concrete slab on grade and the elevated floor is a concrete slab on metal decking. The loads applied to the floors appear to be consistent with typical educational and administrative loadings. The roof structure consists of open web steel bar joists with metal decking.

The building structure falls under a seismic performance category B according to the 1996 edition of the Boca International Building Code. The seismic information was found on structural drawing S2 dated April 1st, 1998. The structure does appear to have been designed to accommodate the seismic loads according to the governing building code at the time of design and construction.

MECHANICAL

The HVAC system consists of a central Carrier 50-ton Chiller and Carrier Variable Air Volume (VAV) Air Handling Unit (AHU) with a chilled water coil and a hot water heating coil. The chiller is located directly outside the mechanical room. The AHU and Chiller are of the 2018 vintage. There is a return air fan drawing from return air from the ceiling plenums on each of the two (2) floors. Everything within the return air plenum appeared to be plenum rated and code compliant. There are zone level VAV boxes with hot water reheat coils. There is one Lochinvar Copper Fin boilers and two (2) base-mounted TACO pumps located in the mechanical room for the AHU heat coil and VAV reheat coils. The heating hot water contains glycol and has an appropriate glycol feeder.

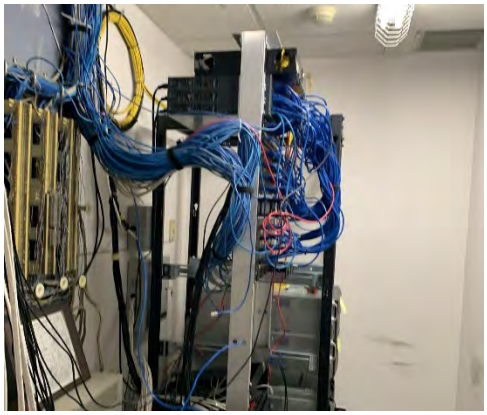
Sufficient fresh, outdoor ventilation air is provided to the AHU through a louver in the mechanical room. Proper exhaust air was provided to all toilet rooms. All ductwork and hot water piping is provided with external insulation and appeared to be in good condition. There were only a few areas of the building that appeared to be fire-rated as the wall penetrations were fire-caulked, no fire dampers in the ductwork were observed or appeared to be needed. There is a Carrier central Building Automation System (BAS) of the same vintage as the AHU and chiller. Maintenance for the mechanical system is performed by the Logan Campus personnel.

PLUMBING

The main water service to the building was not provided with a backflow preventer. There was a central, gas-fired, power vent A.O. Smith water heater that was not provided with an expansion tank or a thermostatic mixing valve. Recirculation piping and pump were provided, all domestic water piping and equipment appeared operational and in good condition. ADA compliant toilet rooms were provided on each floor, all toilet rooms contained flush valve type fixtures. All fixtures appeared operational and in good condition. A mop basin was provided in the mechanical room.

Fire Alarm Control Panel

Elevator Controller / Hydraulic Pump



Floor-Mounted Data Rack

FIRE PROTECTION/LIFE SAFETY

The building has a complete, code compliant fire protections system with all appropriate valves, sensors, and flow meters. Information was not attained on any recent testing. There were no issues observed or reported with the fire protection system.

ELECTRICAL

Life Safety

The buildings fire alarm control panel is located on the first floor and is tied into the main fire alarm control panel located in Building A. The fire alarm control panel is a Simplex 4010 with a Honeywell Silent Knight backup battery. The elevator does not have backup power.

Electrical Power Systems

The electrical service for the building is fed underground to the building. The service coming into the building is 120/200 Amp 3 Phase service. The MDP (Main distribution panel) is in good condition with no notable damage. Panel schedules in the first-floor Mechanical room are missing. The Mechanical room is very cluttered with storage items placed in front of the electrical panels (picture 1).

The hydraulic elevator system located in the second floor Elevator room 202 is abnormally loud and has a very strong odor of hydraulic fluid. No leaks were noted.

Electrical Lighting Systems

The exterior lighting for the building consists of large wall mounted metal halide fixtures that are used for area and walkway lighting and recesses Metal Halide fixtures at the entrance. The exterior lighting is controlled by mechanical time switches. Throughout the building the lighting fixtures are T8s and metal halide type.

Data/Communications Systems

The phone system is a VoIP Cisco system. Data and phone cabling is very cluttered in Communication closet.

Security –Electrical

The campus has a mass notification system in place. The building does not have a security system. The CCTV system consists of ceiling mounted analog dome cameras connected to a central DVR and monitor.

FACILITY ASSESSMENT

LOGAN CAMPUS – BUILDING 'B'

RECOMMENDATIONS

1. The level glycol feeder is nearing empty. We recommend filling the system and inspecting the AHU coils and building to confirm that the systems in not leaking.
2. The chilled water systems, heating hot water systems, controls and AHU are approximately 5 years old. With periotic maintenance these systems have an approximate remaining life of 15-20 years.
3. Provide emergency controls backups systems for elevator.
4. Confirm existing loads on panels and put new schedules together, place inside panels.
5. Remove all storage in front of electrical panels per NEC.
6. Replacement or repair of the elevator's hydraulic system is recommended.
7. Complete fixture replacement of all existing interior and exterior lighting with LED fixtures. Lighting selections for each area are to be based on IES recommended foot candle levels and the fixture aesthetic for given locations.
8. Provide occupancy sensors for all restrooms and offices.
9. Provide digital lighting control to control exterior lighting, corridors, and foyer area.
10. Photocell integral to the lighting controls for exterior lighting.
11. Follow EPA regulations and procedures for disposing of lighting fixtures, lamps, drivers, and ballasts.
12. Install PONs fiber systems throughout campus. This system would eliminate the need for large quantity data cabling and switching.
13. Install security systems including card access, door contacts, motion detectors, front end system and remote monitoring by monitoring service.
14. New CCTV system integrated into the security system with motion activated event capture and digital cameras.

FACILITY ASSESSMENT

LOGAN CAMPUS – BUILDING 'C'

Building 'C'

Exterior Stairs

Typical Corridor

BACKGROUND

Building 'C' is the newest building on the Logan campus and has been designated as the Allied Health and Technology Center. The 53,034 SF facility is constructed with a light brick veneer and exterior finish system that does not match the other buildings on campus. The building has two main entries on different levels. One entry faces Building 'B', while the other faces the main road.

The lower level of the facility has previously sustained flood damage, and the entry has been retrofitted to protect against future flood damage. It was noted in the previous master plan that the current flood barrier protection installed after the flood that took in 2012 is an improvement, it is not sufficient for the timed response needed for a flash flood. With proper planning, the manual system will be effective if installed prior to a flash flood, however an automated system would reduce the overall risk.

EXTERIOR

The exterior envelope is in good condition. The exterior walls are comprised of brick veneer and punched windows around the building.

The existing roofing is metal panels and is in good condition.

There appears to be some soil erosion on the east side of the building along the slope of the adjacent exterior stairs. The existing foundation walls are exposed in these areas.

INTERIOR

The spaces are separated by gypsum board partitions. Ceilings are typically suspended acoustical ceiling tile. Flooring is mostly VCT, carpet in minimal spaces, and ceramic mosaic tile in restrooms.

Circulation between the levels is through elevator or perimeter stairwells. These stairs have exposed concrete treads and painted steel pans. The existing handrails meet current existing codes, however if the building undergoes significant renovations, these handrails will need to be modified to meet current codes. The elevator cab does have controls meeting current codes that accommodate fire fighter controls.

STRUCTURAL

The overall structural system consists of structural steel framing with composite steel floor beams and reinforced masonry stair and elevator shaft walls. According to the structural drawings, the foundation system consists of 36-inch diameter drilled caissons that are embedded six feet

Flood Barriers at Door Jambs

Chiller

Fan Coil Unit

into the underlying bedrock and are designed for an allowable end bearing value of 50,000psi. There is a reinforced concrete retaining wall that resists the soil loads around the rear and side sections of the structure. The retaining wall extends from the ground floor up to the first elevated level of the building. The reinforced masonry shaft walls serve the purpose of resisting the lateral loads for the building in the north-south direction and steel moment frames have been provided to resist lateral loads in the east-west direction. The above grade perimeter walls consist of metal stud framing with brick veneer and the interior partition walls consist of metal stud framing. The ground floor is a concrete slab on grade and the elevated floors are concrete slabs on metal decking. The loads applied to the floors appear to be consistent with typical educational and administrative loadings. The roof structure consists of metal deck on structural steel framing members arranged to create a hip type roof structure with various angles and slopes. The building structure falls under a seismic design category C. The seismic information was found on structural drawing S1 dated January 24th, 2006. The structure does appear to have been designed to accommodate seismic loading.

MECHANICAL

The HVAC system consists of approximately 40 Carrier Fan Coil Units (FCU) located throughout the building in mechanical closets. Each FCU is provided with an Electric Duct Heater (EDH), chilled water piping, a fully ducted return air and fresh, outdoor ventilation air. The ventilation air was varied by a duct-mounted CO2 sensor and control damper that enters the building through wall-mounted intake louvers.

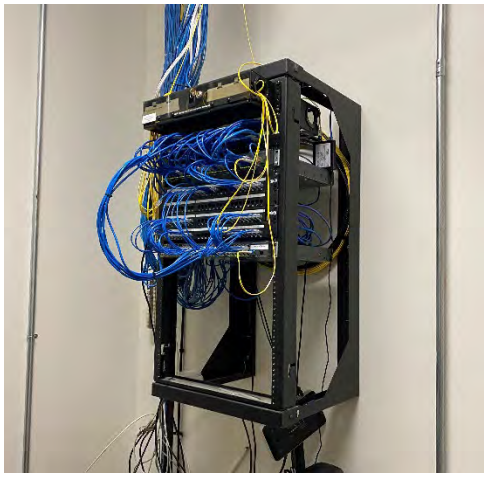
Two (2) base-mounted chilled water pumps are located in the basement mechanical room and a Carrier, Aquasnap approximately 125-ton chiller is located outside near Building 'B' with underground piping to Building 'C' and Building 'B'. The chilled water contains glycol, and an appropriate glycol feeder is located near the pumps. The chiller was being service while on site and is approaching the end of life. It has also been identified and a noise concern for the adjacent building A classrooms.

Several electrical/data closets as well as the elevator equipment room were too warm from a lack of exhaust and make-up air. Proper exhaust airflow appeared to be provided to all toilet rooms. All ductwork and chilled water piping is provided with external insulation and appeared to be in good condition.

There is an Andover central Building Automation System (BAS). The building was constructed in 2005 and the maintenance is performed by the Logan Campus personnel.

Typical Restroom Lavatories

Electrical Power Systems - MDP



Data Rack

PLUMBING

The incoming water service was provided with a backflow preventer. Electric water heaters and mop sinks were provided in the Janitor closets on each floor without expansion tanks or thermostatic mixing valves. ADA compliant toilet rooms were provided on each floor, all toilet rooms contained flush valve type fixtures. Public water fountains were located outside the large Men's/Women's toilet rooms on each floor. All fixtures appeared operational and in good condition.

FIRE PROTECTION/LIFE SAFETY

The building has a complete, code compliant fire protection system with all appropriate valves, sensors, and flow meters. Information was not available regarding any recent testing. There were no issues observed or reported with the fire protection system.

ELECTRICAL

Life Safety

The buildings fire alarm control panel is a Faraday system that ties back into the main fire alarm control panel located in Building 'A'. The emergency lighting fixtures are recessed tungsten-halogen type. LED type exit sign are located at all exits and in corridors.

Electrical Power Systems

The electrical service for the building is fed underground via a pad mounted transformer. The electric service is 2000 amps, which may not be adequate for the building's need. Newly installed CT imaging and x-ray machines loads have been added that impact the capacity of the electrical service. There are no reported issues, but this should be investigated.

Electrical Lighting Systems

The exterior and entry way lighting consists of Wall mounted MR16 type fixtures. The exterior lighting is controlled by mechanical time switches. Interior lighting throughout the building is comprised of 2x4 54-Watt T5HO fixtures and 6" round metal Halide. The construction of baskets on the T5HO fixtures has allowed bugs and debris to be trapped inside. As a result, the light levels have depreciated, and the fixtures have become discolored. This is typical throughout the building.

Data/Communications Systems

The phone system is a VoIP Cisco system. Data and phone cabling is very cluttered in Communication closet.

Security –Electrical

The campus currently has a mass notification system. The building has security components in place but there is not an operating system. The CCTV system consists of ceiling mounted analog dome cameras connected to a central DVR and monitor.

FACILITY ASSESSMENT

LOGAN CAMPUS – BUILDING 'C'

RECOMMENDATIONS

1. We recommend replacement of the existing 125-ton chiller within the next 5 years. Additionally, we recommend that any new chiller be provided with an acoustic package to quieten the chillers noise impact.
2. We recommend replacing the existing BAS systems. The existing manufacture no longer exists and is becoming cost prohibitive for parts.
3. Investigate electrical/data closets and elevator equipment rooms to determine if additional cooling can be provided.
4. Provide solids interceptors on hair washing sinks.
5. A remote annunciator with zone indications and a school zone map mounted beside the annunciator.
6. New emergency lighting for path of egress integral to new lighting for both interior and exterior fixtures with emergency ballast.
7. Conduct a full load analysis to ensure panels are not overloaded.
8. Create new accurate panel schedule labeling all loads.
9. Label newly installed breakers for equipment.
10. Install new receptacles and switches with junction boxes mounted at correct distance from the drywall to ensure cover plates can be installed correctly.
11. As required replace existing interior and exterior lighting with LED fixtures. Lighting selections for each area are to be based on IES recommended foot candle levels and the fixture aesthetics for given locations.
12. Provide occupancy sensors for all classrooms, restrooms, and offices.
13. Provide digital lighting control to control exterior lighting, corridors, foyer and commons area.
14. Install photocell integral to the lighting controls for exterior lighting.
15. A PONs fiber system is recommended for data and communications distributions to all the buildings on campus. This system would eliminate the need for large quantity data cabling and switching.
16. Install a security operating system include additional card access, door contacts, motion detectors, and remote monitoring by monitoring service. Connect systems to all buildings on campus.
17. Integrate existing CCTV into the security system.

FACILITY ASSESSMENT

WILLIAMSON CAMPUS - GENERAL

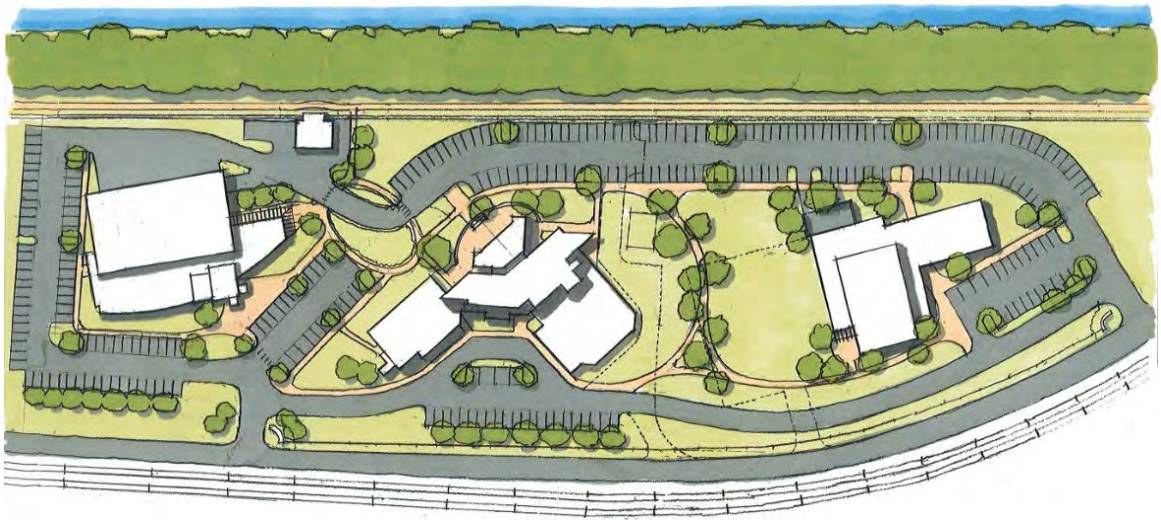
Williamson Campus Approach

BACKGROUND

The Williamson Campus has undergone some recent upgrades, and additional improvements are anticipated in the near future. All of the buildings are constructed on deep foundations, and the Campus is bordered on one side by a flood wall. Until recently the original Main Building was the only facility on Campus. The building was constructed in 1971 and contains approximately 65,840 SF. The original structure contained 32,000 SF and was constructed for Marshall University. A 4-story Southern Addition (23,840 SF) was added in 1978, which nearly doubled the size of the facility. A 1 story (with a mezzanine) library addition containing 10,000 SF was constructed in 2001. With the exception of the Library Addition that conveys a postmodern style, the building conveys a relatively modern aesthetic with sharp masonry edges. One challenge presented by the Main Building is that the primary entrance faces the floodwall, not the entry road.

In 2013 the Applied Technology Center was added to the Campus. The Applied Technology Center includes administrative, classroom, and high-bay training areas. The ATC was positioned to address the main entry of the Main Building and reflects a very contemporary style. The addition of the ATC also began to implement a long-term strategy for the development of the Campus.

Southern acquired the adjacent West Virginia Army National Guard Armory in 2020. The additional building although adjacent to the other campus buildings, it is not connected by road or pedestrian access. The previous master plan developed a strategy for implementing this facility into the Campus in a manner that keeps vehicular circulation and parking at the perimeter of the Campus, allowing for safe pedestrian circulation between the facilities.



FACILITY ASSESSMENT

WILLIAMSON CAMPUS – MAIN BUILDING

Main Building

Roof needs replacement.

Stairs

BACKGROUND

As noted above, the Main Building at Williamson was built in three phases. The original building containing 32,000 SF was constructed in 1971. The southern addition containing 24,840 SF was constructed in 1978, and the most recent addition (the library) included 10,000 SF of new construction and was completed in 2001.

While partial improvements have been made to the building over time, the facility is need of an overall renovation. Several areas of the building including the library addition have leaking roofs, many windows are single pane, and due to their age have a non-existing thermal shading coefficient, which may contribute to some of the HVAC control issues being experienced. Additionally, ceilings, lighting, and general improvements to the interior and classroom environments are required for the building to remain relevant and functional.

EXTERIOR

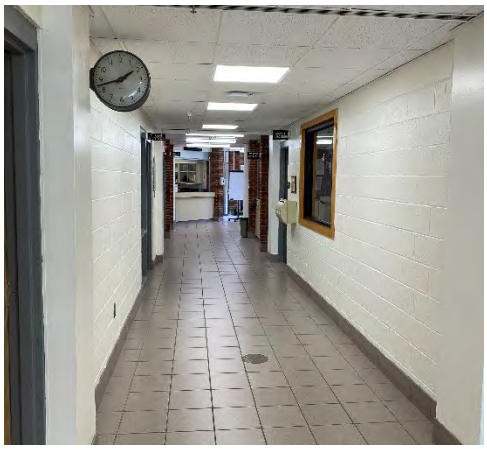
The exterior envelope is in good condition. There was a previous renovation that addressed some of the exposed concrete that was spalling and falling off the building. The exterior walls are comprised of brick veneer, exposed concrete frame, and punched windows around the building. Masonry restoration needs to occur along areas of low roofs where mortar joints are cracked, missing, or flashings are replaced.

The existing roofing is EPDM and is in poor condition. It has been covered with a coating that is currently peeling. Many flashings and joints are cracked and are allowing water infiltration. There is evidence of ponding water in a few locations and there are some areas that require emergency overflow drains. It is expected that some of this water infiltration will result in some metal roof decking at the southern addition and library addition will be required to be replaced. This should be considered when the building is reroofed.

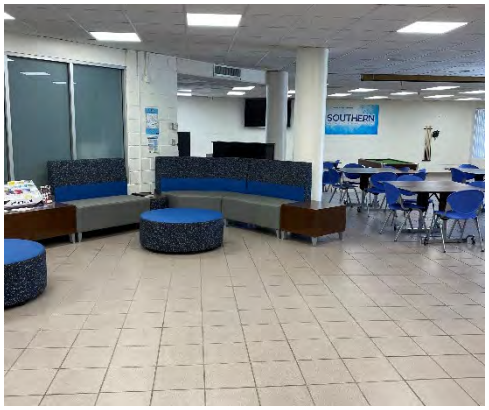
INTERIOR

Most spaces are separated by CMU walls and minimal gypsum board partitions. Ceilings are typically suspended acoustical ceiling tile. Most ceiling tiles are stained from roof leaks. Flooring is mostly VCT and porcelain tile in entryways and first floor corridors, and ceramic mosaic tile in restrooms. The restrooms adjacent to the elevator on the first three floors were renovated in 2021. The college has been actively painting and installing new flooring in most of the corridors over the last couple of years.

Library



Typical Corridor



Student Lounge Areas

Circulation between the levels is through elevators or perimeter stairwells. These stairs have vinyl treads and painted steel pans. The existing handrails meet current existing codes, however if the building undergoes significant renovations, these handrails will need to be modified to meet current codes. Not all of the stairs doors have panic exit hardware so these should be upgraded and replaced. One of the two elevator cabs do not have controls meeting current codes and should be upgraded to accommodate fire fighter controls.

STRUCTURAL

The building structure consists of an original main building with two additions. The first addition is located on the southern end of the main building. The second addition is a library area that is located on the northeast end of the main building.

Original Main Building

The overall structural system for the original main building consists of cast in place concrete framing. The foundations were not visible and there are no structural drawings available for the original main building. The architectural drawing sections suggest that the foundations consist of concrete piles, pile caps, and concrete grade beams.

The exterior walls consist of concrete masonry block infill between the concrete floor framing members with brick veneer. The concrete floor framing is exposed at the perimeter creating a concrete strip around the building at each level that interrupts the brick veneer. There are also exposed concrete balconies located next to the main entrance on the east side of the building. The exposed perimeter concrete strip and balcony concrete has been patched in several places.

The interior walls consist of masonry block infill between the concrete structural framing. The cast in place concrete structure likely serves the purpose of resisting the lateral loads for the building. There are various cracks in the masonry walls throughout the structure.

The ground floor is a concrete slab on grade. Various cracks in the concrete slab on grade were observed in the areas where it was visible and, in the bathrooms, where the tile is cracked and broken. The elevated slabs consist of cast in place concrete that is monolithic with the concrete framing and columns. The elevated concrete slabs are exposed from below in many locations and serve as the ceiling. Several minor cracks were observed in the concrete slab ceiling when observed from the floors below. The loads applied to the floors appear to be consistent with typical educational and administrative loadings.

The roof structure also appears to be a cast in place concrete slab that is monolithic with the concrete framing and columns. There were several locations in the roof where cracks and signs of water leaks were observed.

Recently Renovated Toilets

Stained Ceiling Tiles

Stair Doors

The building structure falls under a seismic design category B according to the 2018 International Building Code which West Virginia has adopted. While the structure can withstand some seismic loads, it is not clear whether it can resist seismic loads according to the current building code.

Southern Addition

The overall structural system for the addition on the southern end of the building is structural steel framing with open web steel joists. According to the structural drawings, the foundations for the southern addition consist of drilled concrete piles, pile caps, and concrete grade beams. The exterior walls consist of masonry block with brick veneer. The interior partition walls consist of masonry block. There are various cracks in the masonry walls throughout the structure.

According to the structural drawings, the ground floor slab consists of precast concrete planks that bear on the foundation grade beams. The elevated floor systems consist of concrete slab on metal deck. The roof structure consists of metal deck on open web steel bar joists. The building structure falls under a seismic performance category B according to the 2012 International Building Code which West Virginia has adopted. While the structure can withstand some seismic loads, it is not clear whether it can resist seismic loads according to the current building code.

Library Addition

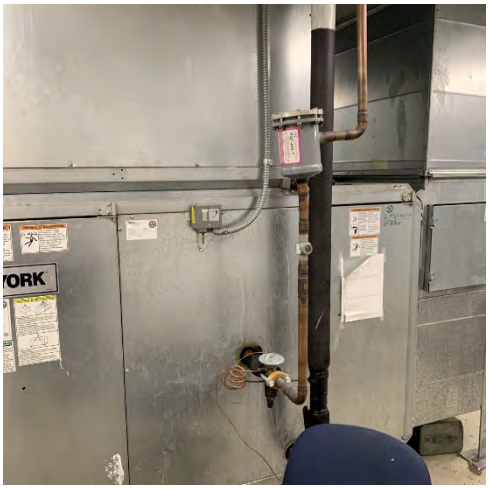
The overall structural system for the library addition on the northeast end of the building is a combination of load bearing concrete masonry block walls and structural steel framing. According to the structural drawings, the foundation consists of shallow concrete spread footings. The exterior walls consist of masonry block with brick veneer. There are various cracks in the masonry walls throughout the structure. The interior walls consist of concrete masonry block and metal stud framing.

The ground floor consists of a concrete slab on grade. The elevated mezzanine floor system consists of a concrete slab on metal deck that is supported by composite steel beams. There were several signs of cracking in the drywall around the perimeter of the mezzanine. The roof structure consists of metal deck on open web steel bar joists with a large skylight area. There are several signs of water leaks in the roof area. The building structure falls under a seismic performance category B according to the 2018 International Building Code which West Virginia has adopted. While the structure can withstand some seismic loads, it is not clear whether it can resist seismic loads according to the current building code.

MECHANICAL

This building has been constructed in three primary phases: the original 5-story building in 1971, a 4-story addition in 1978 and the library addition in 2001. Each portion of the building has a different HVAC system.

Chiller



Air Handler

Boilers

The 1971 building has multiple air handling units (AHU-2, AHU-4, AHU-5, AHU-6 and AHU-7). ACU-2 is a roof mounted dx-cooled unit, and the other four units serving the 1971 building are located in mechanical rooms and have chilled water-cooling coils and hot water heating coils. The heating hot water is produced by two Bryan boilers located in Mechanical Room 507. The chilled water is produced by a York chiller located on the roof. The hot water pumps are in Mechanical Room 507 and the chilled water pump is in Mechanical Room 409.

The 1978 addition is primarily served by AHU-1, a cooling-only Trane air handling unit in Mechanical Room 409. This air handling unit has a chilled water-cooling coil. There is also a roof mounted unit, AHU-3, that served only the TV Studio. Throughout the 1978 Addition electric radiant heating panels have been installed in the ceiling.

The library addition has a cooling only York air handling unit in Mechanical Room L111, with its condensing unit located on the roof. Heating for the library is through electric reheat coils throughout the library.

The chiller, boilers, hot water pumps and air handling units AHU-4, -5, -6 and -7 were replaced in 2003. At that time a new Building Automation System (BAS) from RDS Controls was installed as well. Most of the ceiling tiles throughout the building show signs of cupping, which typically indicates humidity control concerns. The Library AHU is very loud and transmit noise to the adjacent spaces. Sound attenuation measures should be added to this unit and/or room to limit the noise transmitted through the Mechanical Room walls.

PLUMBING

The building has several domestic hot water heaters, none of which have an expansion tank installed. The two restrooms in the library addition are ADA-compliant. The restroom on floors 1st, 2nd & 3rd have been renovated 2021 and are ADA-compliant. The restrooms on the 4th and 5th floor are not ADA-compliant. There are ADA-compliant water coolers in the library addition and the 2021 renovation on the 1st, 2nd & 3rd floors; all other water coolers in the building are not ADA-compliant. Most of the restroom fixtures in the 1971 and 1978 buildings are functional but are in need of replacement.

FIRE PROTECTION/LIFE SAFETY

The building is fully sprinklered. There are two services to the building, one located in the 1971 building and one in the 1978 addition. The library addition is served by the 1971 system. Each fire protection system has a valve with tamper switch, and there is an additional valve with tamper switch for the library.

Electrical Power Systems - MDP

Fire Alarm Control Panel

Skylights Infilled

ELECTRICAL

Life Safety – Electrical

The fire alarm control panel is a modern Edwards iO Series with on-board battery backup. The fire alarm system was replaced in 2021. The FACP is located just outside of the library, mounted on the wall in the corridor on the first floor.

The emergency lighting in the majority of the building is dual-head remote halogen. The emergency lighting fixtures in the literary area are recessed tungsten-halogen type. There are exit signs located at each exit and in some of the corridors.

Electrical Power Systems

The electrical service for the building is fed underground via a pad mounted transformer. The overall condition of the MDP (Main distribution panel) is in fair condition with no notable damage. The janitor's closet, room 211 has a recessed style electrical panel that is installed as a surface mount. The panel has open punch outs on the top and the buss bars is exposed. The data closet on the first floor has a panel with large gage exposed wire having bare ends. This room also has storage placed in front of the electrical panels.

Throughout the building the panels are not fully labeled for the loads are on them. Additional electrical items of note include:

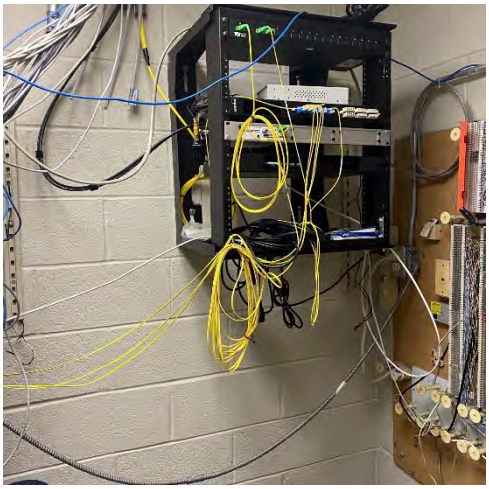
- Broken ADA exterior side door controls.
- Ceiling panel heaters used throughout.
- Overloaded circuits in the TV studio.
- Specialty receptacles not used on first floor.
- Taped off electrical underground run-in conduit in yard.
- Damaged floor receptacles in computer lab.

Electrical Lighting Systems

Exterior metal halide lighting fixtures for the parking lot area and walkways are below required foot candle level prescribed by IES. The exterior lighting is controlled by mechanical time switches. The interior lighting is a comprised of T12, T8, metal halide and MR16 with no noted controls including the library addition. Some locations have exposed wiring and connections.

Data/Communications Systems

The building has VoIP phone system. The majority of the cables connected to the phones have been run exposed. On most of the floors, in the corridors are the old phone punch down panels that are not in use. None of the cable in the plenum spaces are plenum rated cable. Fire stop material has not been used on the through wall penetrations. Most cable runs coming out of wall, ceilings and floors are not in conduit. It was also



Data Rack

noted that the maintenance personnel had a difficult time communicating across campus.

Security –Electrical

The facility does not have a mass notification system. There is also not a security system for this building. The CCTV system is comprised of ceiling mount analog dome cameras connected to a central DVR and monitor.

FACILITY ASSESSMENT

WILLIAMSON CAMPUS – MAIN BUILDING

RECOMMENDATIONS

1. The building is overdue for significant renovations. Renovations should include updating interior finishes, classroom reconfiguration for varying sizes of classrooms, replacing demountable partitions with more permanent gypsum board partitions, stair and elevator renovations, science laboratory renovations, lobby renovations, restrooms / ADA renovations, and exterior entrance enhancements.
2. Exterior site improvements to include parking lot improvements, site lighting improvements, site security systems enhancements, and exterior signage improvements.
3. Clean and repair any deteriorated roof structure elements that have been damaged by roof leaks.
4. Repair and seal any cracks in the masonry walls and concrete slabs.
5. Remove and repair cracked floor tiles and verify the degree of underlying slab cracks.
6. Repair all exterior concrete that is cracked or deteriorated.
7. The HVAC and plumbing systems throughout the building, excluding the 2021 renovation, are in need of replacement.
8. Restrooms and water coolers need to be updated to meet ADA requirements. As the restrooms are renovated for ADA compliance, ensure the resultant number of fixtures will meet code requirements based on building occupancy.
9. The HVAC systems needs to be replaced to address the numerous heating issues throughout the building, ensure the building is properly ventilated, and ensure building relative humidity is properly controlled.
10. Proper exhaust air is also needed in the science labs, art rooms and restrooms.
11. The elevator equipment rooms should each have dedicated cooling units.
12. The HVAC and plumbing systems throughout the building are in need of replacement.
13. Restrooms and water coolers need to be updated to meet ADA requirements. As the restrooms are renovated for ADA compliance, ensure the resultant number of fixtures will meet code requirements based on building occupancy.
14. The HVAC systems need to be replaced to address the numerous heating issues throughout the building, ensure the building is properly ventilated, and ensure building relative humidity is properly controlled.
15. Proper exhaust air is also needed in the science labs, art rooms and restrooms.
16. The elevator equipment rooms should each have dedicated cooling units.
17. New emergency lighting for path of egress integral to new lighting for both interior and exterior lighting.
18. Install additional emergency exit signs in corridors with directional arrows excluding library signs.
19. Conduct a complete building electrical load analysis to determine adequacy of the electric service.
20. Create new accurate panel schedule labeling all loads, with spare breakers and available space.
21. Replace damaged panels and wiring.
22. Remove all unused and damaged electrical power runs and receptacles.
23. Create necessary spacing around all electrical panels per NEC.
24. Install fire protection for all wall penetration.
25. Complete fixture replacement of all existing exterior and interior lighting with LED fixtures. Lighting selections for each area are to be based on IES recommended foot candle levels and the fixture aesthetics for given locations.
26. Provide occupancy sensors for all classrooms, restrooms, and offices.
27. Provide digital lighting control to control exterior lighting, corridors, foyer, and commons area.
28. Include photocell integral to the lighting controls for exterior lighting.
29. Follow EPA regulations and procedures for disposing of lighting fixtures, lamps, drivers, and ballasts.
30. Complete redesign of data/communications distribution to provide wire management and optimal space for all equipment.
31. Remove old phone punch down panels.
32. AC unit or supply duct work for heat management in data/communications distribution room.
33. Install data ports within the wall or wire mold type cable runs for all phones and needed areas where cabling is exposed.
34. New plenum rated cables and fire stop wall penetrations were needed.

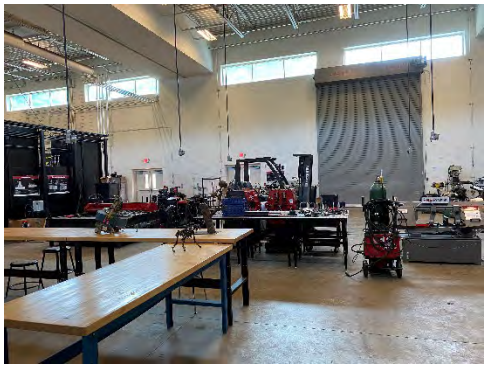
35. Provide wireless communication for maintenance personnel.
36. Develop a mass notification system including phone, email, and social media site contacts.
37. Install security systems including card access, door contacts, motion detectors, front end system and remote monitoring by monitoring service. Integrate system with the Applied Technologies building.
38. New CCTV system integrated into the security system with motion activated event capture and digital cameras.

FACILITY ASSESSMENT

WILLIAMSON CAMPUS – APPLIED TECHNOLOGY CENTER (ATC)

Applied Technology Center

Corridor



High-Bay Lab

Exterior Trellis

BACKGROUND

The Applied Technology Center (23,145 SF) was completed in 2013. It is the second building added to the Williamson campus. The Applied Technology Center includes administrative, classroom, and high-bay training areas. The ATC was positioned to address the main entry of the Main Building and reflects a very contemporary style.

EXTERIOR

The exterior envelope is in great condition. The exterior walls are comprised of brick veneer, metal panel, aluminum curtainwall, and windows around the building. The roof consists of EPDM and is in good condition. The wood trellis shade on the north side of the building is showing some signs of weathering. The College has cleaned the wood and it is recommended a sealer be added for continued protection.

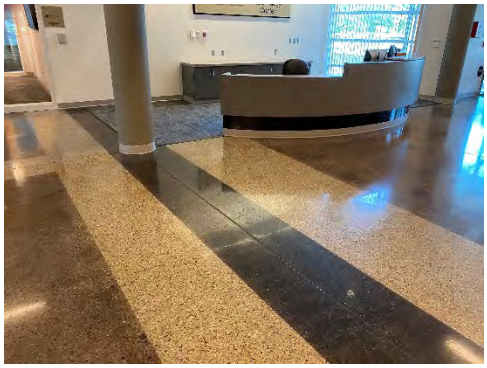
INTERIOR

Most spaces are separated by CMU walls and minimal gypsum board partitions. Ceilings are typically suspended acoustical ceiling tile. Flooring is mostly polished concrete, carpet, VCT, and ceramic mosaic tile in restrooms.

STRUCTURAL

The overall structural system consists of a combination of load bearing masonry walls with structural steel and open web steel joist framing. Concrete columns are also provided as part of the framing system. The foundations consist of concrete auger cast piles and concrete grade beams. The exterior walls mainly consist of masonry blocks with brick veneer and metal panel veneer. The interior walls consist of masonry blocks and metal stud partitions. A combination of concrete masonry shear walls with steel and concrete moment frames serves the purpose of resisting the lateral loads for the building.

The ground floor is a concrete slab on grade. Some minor cracks were observed in the concrete slab. There were some signs of water infiltration at the garage doors in the large assembly area. The loads applied to the floors appear to be consistent with typical educational and administrative loadings. The roof structure consists of open web steel bar joists with metal decking. The building structure falls under a seismic design category B. The building has been designed to withstand seismic loads according to the applicable building code during design and construction.



Stained Concrete Floors

Plasma Cutter Needs an Exhaust Hood

Electrical Panels and Transformers

MECHANICAL

This building was constructed within the past 9 years and does not require significant HVAC modifications at this time. One item of note is that the plasma cutter in the lab does not have proper fume exhaust.

PLUMBING

The plumbing systems are adequate for the anticipated occupancy of the building. The restrooms have an adequate number of ADA compliant fixtures.

FIRE PROTECTION/LIFE SAFETY

The building is fully sprinklered. The existing system is new and adequately sized for the facility.

ELECTRICAL

Life Safety – Electrical

The facility has an EST Edwards main fire alarm control panel system a fire alarm. The emergency lighting is integral to the fixtures with emergency ballast for the path of egress. The exit signs throughout are edge lit LED style.

Electrical Power Systems

Electrical/Mechanical room is in excellent condition. Panels have been laid out and installed neatly and efficiently optimizing space. The transformers mounted above the appropriate distanced panels allowing for clean conduit paths connecting the MDP.

Electrical Lighting Systems

Overall, the lighting is in good condition. The exterior and interior spaces are illuminated to correct levels according to IES standards. Lighting controls are utilized through the entire building.

Data/Communications Systems

The data and communications distribution systems have excellent cable management. Plenum rated cables are utilized and penetrations have fire stop protection throughout. The phone system is VoIP.

Security - Electrical

There is not a mass notification system. There is a security system in place. CCTV systems consist of digital IP cameras connected to a central DVR and monitor.

FACILITY ASSESSMENT

WILLIAMSON CAMPUS – APPLIED TECHNOLOGY CENTER (ATC)

RECOMMENDATIONS

1. The plasma cutter in the lab does not have proper fume exhaust. Provide an exhaust hood for this piece of equipment.
2. Ensure all lighting controls are set correctly to maximize efficiency.
3. Create a re-lamping schedule.
4. Only re-lamp fixtures with energy efficient lamp types.
5. Follow EPA regulations and procedures for disposing of lighting fixtures, lamps, drivers, and ballasts.
6. Develop a mass notification system including phone, email, and social media site contacts.
7. Integrate security system to Main building systems once systems are installed.

FACILITY ASSESSMENT

WILLIAMSON CAMPUS – ARMORY

Armory Building

Front Entrance

High-Bay Space

Roof Needs to be Replaced

BACKGROUND

The College acquired the Armory Building in 2020. The Armory was originally owned by the West Virginia Army National Guard (15,828 SF) was constructed in 1958. It is the third building added to the Williamson campus. The Armory includes administrative, classroom, and high-bay training areas, and exterior flat grassed area for the electrical linemen course.

EXTERIOR

The exterior envelope is in good condition. The exterior walls are comprised of brick veneer and ribbon style windows around the building. The roof consists of a ballasted EPDM and needs replacement within the next few years. There is exterior roof mounted ductwork so reroofing project should take this into consideration. The exterior coiling overhead doors with some maintenance will last for a few years but should ultimately be replaced for an insulated overhead coiling door. The main entrance doors are new aluminum doors.

INTERIOR

Most spaces are separated by CMU walls and minimal gypsum board partitions. Ceilings are typically suspended acoustical ceiling tile. Flooring is mostly VCT and ceramic mosaic tile in restrooms. The floor in the high-bay area is concrete. The restrooms / locker rooms have structural glazed tile wainscot.

STRUCTURAL

The overall structural system consists of load bearing masonry walls with structural steel and open web steel joist framing. The foundations are unknown but assumed to be spread type footings. The exterior walls mainly consist of masonry blocks with brick veneer. The interior walls consist of masonry blocks.

The ground floor is a concrete slab on grade. The roof structure consists of open web steel bar joists with tectum decking.

Boiler

Rooftop HVAC Units and Ductwork

Fire Alarm Control Panel

MECHANICAL

The Facility was constructed in 1958 and has had several renovations.

The facility has a 2,340 MBH boiler with atmospheric combustion. The boiler provides heating hot water to the heating ventilating units in the gym, heater in the locker rooms and support areas. It also provides heating hot water heating to the perimeter convectors in the classroom/office areas. The existing boiler roof does not meet the current code requirements for combustion air.

They gym, storage and Locker room areas are provided with heating only via a mixture of perimeter convectors, heating ventilation units and unit heaters.

The Classroom/Office areas are provided with heating and cooling by DX Roof Top Units (RTU's) with gas heating. The units are single zone constant volume. One unit serve the classroom and the other units serve offices. These unit are 3-4 years old and in good condition.

PLUMBING

The building has one central atmospheric hot water heater with expiation tank and recirculating pumps. There are not mixing valves on the system. The existing boiler roof does not meet the current code requirements for combustion air.

FIRE PROTECTION/LIFE SAFETY

The building is fully sprinklered.

ELECTRICAL

Life Safety – Electrical

The fire alarm control panel is a Siemens Cerberus series with on-board battery backup. Fire alarm devices throughout the building are of modern vintage and appear to provide adequate coverage and comply with applicable code requirements. The exit signs throughout the building are of a newer style with red laminated lenses.

Electrical Power Systems

The electrical service for the building is an underground, three-phase, 208/120V, 400A service supplied by a pole-mount transformer located to the west of the building and appears to be adequate for the building at this time. The MDP (Main distribution panel) is a modern Square-D NQ panel in good condition. Load panels throughout the building are modern Square-D equipment in good condition.

Electrical Power Systems - MDP

Electrical Lighting Systems

Site lighting appears to be adequate in pedestrian walkways.

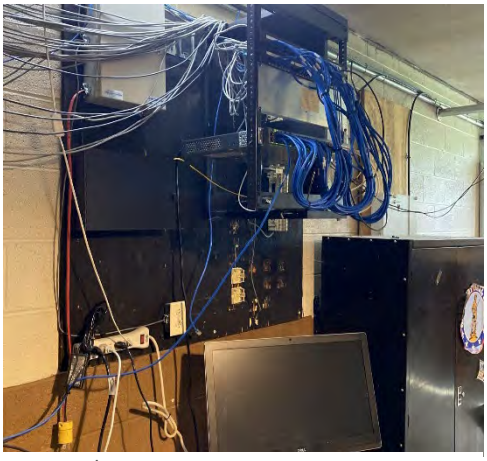
Interior lighting in the corridors and office spaces appears to be recently installed, LED fixtures. High-bay fixtures appear to be an older technology.

Data/Communications Systems

Networking equipment was observed to be improperly installed. Cabling is hanging, unsupported or inadequately supported between spans placing mechanical strain on the connection points and jacks which are not designed for support. Cabling is crossing in front of other networking equipment access doors which would hinder maintenance or inspection.

Security - Electrical

The building has a video intercom and card access control at the entrance as well as video surveillance throughout.



Data Rack

FACILITY ASSESSMENT
WILLIAMSON CAMPUS – ARMORY

RECOMMENDATIONS

1. The existing roof should be replaced. Based upon the number of leaks observed, portion of the tectum decking should be replaced when the roof is replaced. There is existing roof-mounted ductwork that will be required to be moved to accommodate the roof replacement.
2. Replace the existing overhead coiling doors with insulated coiling doors.
3. Locker rooms should be renovated and converted to useable program space.
4. Address the combustion air in the existing boiler room. If heating is upgraded in the gym, storage, and support areas. The existing boiler systems and be removed as the boiler is nearing end of life.
5. Replacing the heating systems in the gym and support areas. Evaluate the need for cooling in these spaces.
6. Restrooms and water coolers need to be updated to meet ADA requirements. As the restrooms are renovated for ADA compliance, ensure the resultant number of fixtures will meet code requirements based on building occupancy.
7. Fire Alarm was noted to be in "Trouble" alarm at the time of inspection. Trouble conditions should be addressed immediately upon observation.
8. A fire alarm annunciator panel should be installed in a supervised location so that alarm conditions are observed in a timely manner
9. Panel schedules should be re-typed on an ongoing basis as new loads are added. Hand-written additions to panel schedules should be temporary.
10. Insufficient receptacle quantity in some locations. Permeant use of extensions cords and power strips was observed. This creates tripping hazards and unsafe electrical conditions.
11. Review site and interior lighting equipment and perform technology upgrades throughout the building for increased efficiency and performance.
12. Occupancy sensors for all classrooms, restrooms, and offices.
13. Digital lighting controls for exterior lighting, corridors, foyer, and commons area.
14. Photocell integral to the lighting controls for exterior lighting.
15. Follow EPA regulations and procedures for disposing of lighting fixtures, lamps, drivers, and ballasts.
16. A PONs fiber system is recommended for data and communications distributions to all the buildings on campus. This would create a single networking system which could be administered from a central location.
17. Re-route existing networking cables to reduce interference with other equipment.
18. Support networking cables from structural building components with appropriate support systems: J-Hooks, cable tray, etc.
19. Ensure video surveillance coverage is adequate based on expected risks and operational security concerns.

FACILITY ASSESSMENT

WYOMING / McDOWELL CAMPUS – MAIN BUILDING

Wyoming County Facility

Sloped Parking Lot

Roof

BACKGROUND

The Wyoming/McDowell Campus consists of the Main Academic Building. The building is sited on top of a hill, and a narrow entry drive that was excavated through rock leads you so a sloping parking area. Although accessible spaces are provided at the building entry, they do not meet the cross-slope requirements of ADA, and the accessible entry condition requires improvement. Building and directional signage also require improvement. Aside from the steeply sloped parking area, the campus is in generally good condition. The access road is narrow in the curve, and the site lighting could be improved. There is a former helipad on the eastern side of the site.

The Main Academic Building contains 20,760 SF of space and was constructed in 1988. A 2,240 SF classroom addition was later added to the facility. The building is generally well maintained and well utilized. Although the previous master plan envisioned a second level addition, due to the current level of enrollment, the current leadership of the College recommends closing the building and utilizing online courses or a separate smaller footprint at a local high school. Another possibility would be a reduced footprint located closer to a more densely populated area.

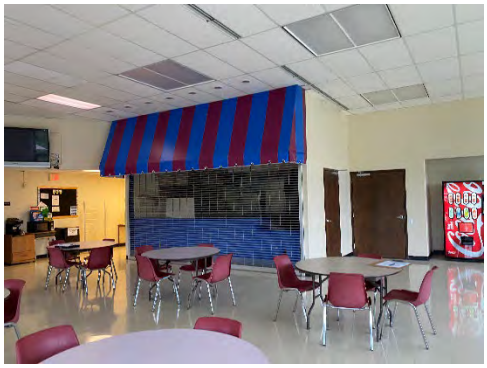
EXTERIOR

The exterior envelope is in good condition. The exterior walls are comprised of block veneer and punched windows around the building. There is some staining on the exterior walls as a result of the course block textures, fluted block, and the projections of some courses. Cleaning of the masonry appears it will remove most of the staining.

The existing roofing is a ballasted EPDM roof and is in decent condition however it will be nearing the end of its life by the end of this 10-year period. There is evidence of ponding water in a few locations.

INTERIOR

The spaces are separated by CMU walls and some gypsum board partitions. Ceilings are typically suspended acoustical ceiling tile. Flooring is mostly VCT, with minimal carpet, and ceramic mosaic tile in the restrooms. There is a large student commons area, however this space is rarely utilized. Most of the wood doors have a matching wood transom installed over the door.



Commons

STRUCTURAL

The overall structural system consists of load bearing masonry walls with structural steel and open web steel joist framing. According to the structural drawings, the foundations consist of shallow concrete spread footings that bear on sandstone bedrock with an allowable bearing strength of 6000psf. The exterior walls consist of masonry blocks with fluted block veneer and the interior walls mainly consist of concrete masonry blocks. The masonry walls also serve the purpose of resisting the lateral loads for the building. There are various cracks in the masonry walls throughout the structure. The ground floor is a concrete slab on grade. Various cracks in the concrete slab on grade were observed in the areas where it was visible. The floor tiles in several locations were cracked indicating the underlying concrete slab may also be cracked. The loads applied to the floors appear to be consistent with typical educational and administrative loadings. The roof structure consists of open web steel bar joists with metal decking. There were several locations in the roof where signs of water leaks were observed.

Rooftop HVAC Equipment

MECHANICAL

The HVAC system consists of a single rooftop mounted central Variable Air Volume (VAV) Air Handling Unit (AHU) with DX refrigerant coil and gas heat. The return air is drawn from each room thru plenum return light fixtures. There are zone level fan powered VAV boxes with hot water reheat coils. There are two (2) boilers located in the mechanical room for the VAV reheat. The Building Automation System is a Trane Tracer System. The facility has an HVAC Maintenance Agreement Contract with Casto Technical Services currently in place to service the air handling unit, boilers, hot water heating pumps, VAV boxes, building automation system (BAS), hot water controllers, exhaust fans, and filters.

Boiler

All ductwork is provided with external wrap insulation. Fresh, outdoor ventilation air is provided by the rooftop mounted air handling unit (AHU). The chemical containment exhaust hood located in the Science Lab was exhausted by a roof mounted exhaust fan. The Lab Chemical Prep rooms did not appear to have proper exhaust. Automatic gas shut-off valves were installed in the correct location. The AHU was replaced in 2009 and appears to be in very good condition. All exhaust fans are past their expected service life (15-20 years). Proper exhaust airflow is provided to toilet rooms and the custodian closet. Conditioned air is brought into the gang toilets by way of transfer grilles located in the corridor.

Water Entrance

Sanitary Sewer Plant

Fire Alarm Control Panel

PLUMBING

The main water service to the building provided with a backflow preventer. This backflow preventer has tamper switches on the valves that are tied into the fire alarm control panel. There is a domestic booster pump installed to increase the city water pressure, this system will need to be replaced. Bathrooms were ADA compliant. The toilets were manual flush-valve type and in good condition. The quantity of fixtures was sufficient for the occupants. The domestic hot water system is served by a gas fired instantaneous water heater with a recirculation system. The hot water recirculation loop temperature is maintained by 6-gallon, 2 KW electric water heater. The gas-fired water heater, electric water heater and recirculation pump appeared to be in good condition. This system does not have any thermostatic mixing valves installed.

There is a sanitary sewer packaged plant just to the south of the facility down the hillside. It is accessible from the road to the south of the main building access drive. The plant is in good condition and is currently maintained by a specialty contractor.

FIRE PROTECTION/LIFE SAFETY

The facility is not fully sprinklered. The only rooms that are sprinklered throughout the facility are the storage closets. They are fed from a branch domestic water line with a flow switch. The existing backflow preventer serving the domestic water service has tamper switches installed on the os&y valves. Both the tamper switches and the flow switch are tied into the fire alarm control panel.

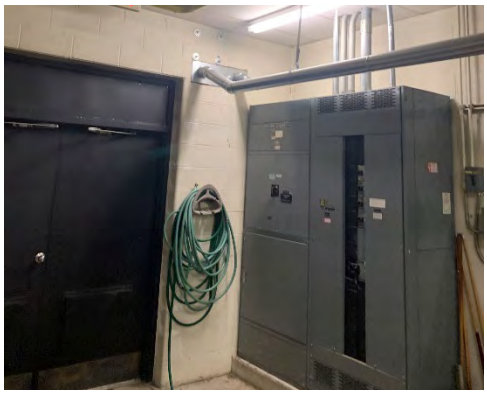
ELECTRICAL

Life Safety – Electrical

The main fire alarm control panel is a GE Fireworx with an internal backup battery system. The panel is located in the front foyer and has a building zone map. There are no smoke detectors through the building. Three temporary CO detectors are used to detect gas emissions, one in the common's kitchen sales area, a second in the science classroom and a third in the mechanical/electrical room. There are different styles of horn/strobe and fire alarm pull stations throughout the building. The interior emergency lighting fixtures are recessed tungsten-halogen type. The exterior lighting did not have emergency battery test button thus there were no exterior emergency fixtures noted. There are exit signs located at each exit.

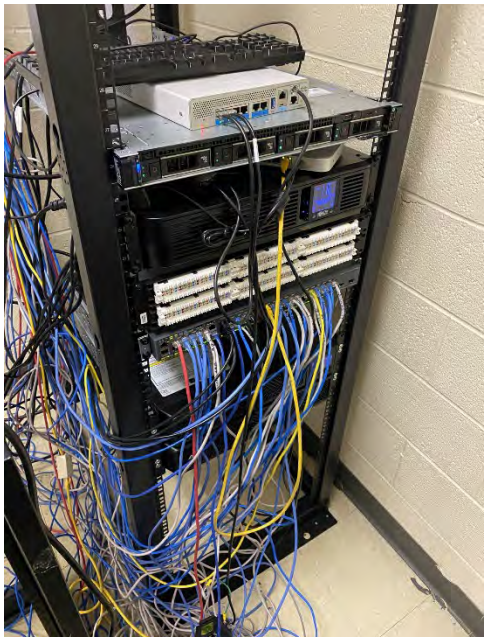
Electrical Power Systems

The electrical service to the building is fed underground via pole mounted transformers. The electrical service for the building is 480/277V, 3 phase, 4 wire, 600 Amp. The former child development center next to the college also gets their power from this service. The overall condition of the MDP



Electrical Power Systems -MDP

Fire Alarm Pull – Not ADA Height



Data Rack

(Main distribution panel) is in good condition with no notable damage. The panels are not fully labeled for the loads. Damaged floor GFI and code violating receptacles were noted.

Electrical Lighting Systems

Metal halide exterior flood type fixtures are mounted on the roof parapet, and there are similar pole mounted fixtures in the parking lot area. The exterior lighting is on mechanical timers. Connections to pole lights at the bottom of the roadway have been damaged and are inoperable.

The basketball court does not have lighting. There is not a fixture on the flagpole or on the building signage. This sign, mounted on the rear of the building, also needs new lettering (or removal) as the damaged or missing letters have been replaced with painted plywood. Throughout the interior the lighting consists of T12, incandescent and metal halide type fixtures. There were no interior lighting controls noted.

Data/Communications Systems

The data backbone for the building is a one gig fiber connection. The main data rack is located in the mechanical/electrical room. This room contains boilers and other heat generating systems. The data rack has multiple switch connections, and the runs are very difficult to distinguish. The phone system is a VoIP Cisco system. For all the phone locations, the cables are direct CAT5e drops from the ceiling. Some drops are in PVC conduit, but the conduit does not connect to the ceiling. Cabling in the ceilings is not plenum rated and there are not fire stop wall penetrations for through wall routing.

Security - Electrical

The campus does not have a mass notification system. The building does not have a security system. The CCTV system has been up graded to all digital IP cameras that all tie into a new central DVR and monitor. The College has a central video broadcast location.

FACILITY ASSESSMENT

WYOMING / McDOWELL CAMPUS – MAIN BUILDING

RECOMMENDATIONS

1. Clean and repair any deteriorated roof structure members that have been subjected to water damage.
2. Repair and seal any cracks in the masonry walls.
3. Remove and repair cracked floor tiles and verify the degree of underlying slab cracks.
4. Replace all exhaust fans.
5. Install point of use thermostatic mixing valves on all plumbing fixtures requiring hot water.
6. Replace domestic water booster pump.
7. Install sprinkler system to fully sprinkler facility.
8. Install exhaust fan and associated ductwork to exhaust Lab Chemical Prep Room.
9. Provide smoke detectors.
10. Provide permanent CO detector in needed locations. Hard wired CO detectors with battery backup are recommended in all locations on SWVCTC campuses where gas equipment with open flames are located. The CO detectors should be connected to the fire alarm control panel.
11. Replace older horn/strobe devices.
12. Replace older manual fire alarm pull stations.
13. Emergency lighting for path of egress integral to new lighting for both interior and exterior lighting.
14. Install additional emergency exit signs in corridors with directional arrows.
15. Conduct a complete building electrical load analysis to determine the adequately of the electric service.
16. Create new accurate panel schedules labeling all loads, spare breakers and available space.
17. Replace damaged non code compliant devices and wiring.
18. Install fire sealant for all wall penetrations.
19. Complete fixture replacement of all existing interior and exterior lighting with LED fixtures, with additional fixtures placed as needed. Lighting selections for each area are to be based on IES recommended foot candle levels and the fixture aesthetics for given locations.
20. Provide occupancy sensors for all classrooms, restrooms, and offices.
21. Provide digital lighting control to control exterior lighting, corridors, foyer, and commons area.
22. Provide photocell integral to the lighting controls for exterior lighting.
23. Illuminate or remove the building signage.
24. Follow EPA regulations and procedures for disposing of lighting fixtures, lamps, drivers, and ballasts.

    Note: Parking lot needs to be restructured for proper ADA access. New walkway fixture and parking lot fixtures will be needed.
25. Provide a separate data/communications distribution room with an AC unit for heat management.
26. Provide wire management and plenum rated cables were needed.
27. Install data ports within the wall or wire mold type cable runs for all phones and needed areas were cabling is exposed.
28. Develop a mass notification system including phone, email and social media site contacts.
29. Install a security system including card access, door contacts, motion detectors, front end system, and remote monitoring by monitoring service.

FACILITY ASSESSMENT

BOONE CAMPUS - MAIN BUILDING

Boone Campus

Large Classroom

Science Laboratory

BACKGROUND

The Boone Campus is located in a shared facility with Boone County Schools. Boone County Schools operates a Career and Technical Center and an Honors Academy at the site. There is minimal daily interaction between Boone County Schools and Southern West Virginia Community and Technical College at the facility. The shared use of the facility creates some problems. The Southern portion of the building is unable to be secured as students enter the Honors Academy through the College, and because the large classroom/gathering area is shared. The 15,000 SF addition to the Boone County Career and Technical Center was constructed in 1997. The building was designed as an expansion of the existing facility.

EXTERIOR

The exterior envelope is in good condition. The exterior walls are comprised of block veneer and punched windows around the building. There is some staining on the exterior walls as a result of the course block textures, fluted block, and the projections of some courses. Cleaning of the masonry appears it will remove most of the staining.

The existing roofing is EPDM and is in good shape however will be nearing the end of its life by the end of this 10-year period. There is minimal evidence of ponding water in a few locations.

INTERIOR

The spaces are separated by CMU walls and some gypsum board partitions. Ceilings are typically suspended acoustical ceiling tile. Flooring is mostly VCT, carpet, and ceramic mosaic tile in the restrooms.

STRUCTURAL

The overall structural system consists of load bearing masonry walls with structural steel and open web steel joist framing. The foundations were not visible and there were no structural drawings available to verify the foundation construction, however the architectural section drawings seem to indicate the presence of shallow spread footings under the load bearing walls.

The exterior walls consist of masonry block with brick veneer and the interior walls mainly consist of masonry block. The masonry walls also serve the purpose of resisting the lateral loads for the building. There were small cracks observed in the masonry walls at various locations within the structure.

EPDM Roofing

Rooftop Unit

Fume Hood

The ground floor is a concrete slab on grade. There are some signs of cracking in the floor tile throughout the building that could indicate some settlement of the concrete floor slab. The loads applied to the floors appear to be consistent with typical educational and administrative loadings.

The roof structure consists of open web steel bar joists with metal decking. There are various leaks in the roof that have contributed to some minor deterioration of the metal roof deck in some areas.

The building structure falls under a seismic design category B according to the current 2018 International Building Code which West Virginia has adopted. While the structure can withstand some seismic loads, it is not clear if the design accommodates loads according to the current building codes.

MECHANICAL

The HVAC system consists of TRANE roof top units (RTUs), zone control dampers in the supply ductwork, and fully ducted return air. The central Building Automation System (BAS) was not provided for major mechanical equipment. All ductwork is provided with external wrap insulation and in several locations was seen to be ripped or not sealed. Fresh, outdoor ventilation air is provided by the RTUs, but outdoor air dampers appeared to have been adjusted or closed because outdoor air intake was minimal. The quantity of supply air zone dampers provides fair controllability for the classrooms, but office spaces often have complaints.

The two (2) chemical containment exhaust hoods located in the front Science Lab had up-to-date inspection/approval stickers. The Science Lab chemical storage rooms did not appear to have proper exhaust and ventilation. Automatic gas shut-off valves were installed in the correct location. The RTUs were installed in 1997 and appear to be reaching the end of their expected service life (15-20 years). The Science Lab exhaust fans for the containment hoods also appear to be reaching the end of their service life.

The small computer lab off the main corridor, which is served by a mechanical system not controlled by SWVCTC, often experiences cooling issues. The large computer classrooms at the back of the facility also suffer from a lack of cooling. Proper exhaust airflow is provided to toilet rooms and the custodian closet. There was a BARD HVAC unit relocated during a recent remodel of Classroom 119 that appeared to be loud but operating correctly. Maintenance of the mechanical equipment is provided by the Logan campus personnel.

Thermostatic Mixing Valve

Sprinkler Riser

Sanitary Sewer Treatment Plant

PLUMBING

The incoming water service was located in a part of the Boone campus not controlled by SWCTC, confirming the existence of a back flow preventer was not accomplished and determined to be the responsibility of the neighboring occupant.

There is an on-site sanitary treatment facility for the entire campus. The treatment facility is operating without any issues or deficiency reports. The existing underground sewage and storm water piping appeared to be clay; above ground piping was PVC and appeared to have sufficient clean-outs. The single gas-fired water heater has an expansion tank. The water heater appeared to be operating correctly and in good condition.

The hot water recirculation pump was not running. The entire hot water recirculation system has not been operating correctly for some time. A thermostatic mixing valve was located in the custodian closet. Toilet rooms appeared to be ADA compliant and provided with flush valve fixtures. The quantity of toilet fixtures is sufficient for the building classification and the fixtures appeared to be in decent condition. A mop sink was located in the custodian room. There were several water fountains provided, operational and appeared to be in good condition. There appeared to be a leak from one of the roof drains and/or storm piping in Classroom 119. There is an overflow roof drain installed above an exterior light.

FIRE PROTECTION/LIFE SAFETY

The building has a complete sprinkler system with the correct sensors and valves. Ductwork and piping appeared to be fire caulked and sealed at all fire-rated walls and partitions.

ELECTRICAL

Life Safety - Electrical

The facility has a fire alarm that is interconnected to the whole building. The main fire alarm control panel is a Honeywell IntelliKnight with a backup battery system and is located at the Boone Career Technical Center's Mechanical Room 11. The fire alarm system for the Southern CTC area consists of a remote annunciator, alarm strobes, smoke detectors and fire alarm pull stations.

The emergency lighting fixtures are recessed tungsten-halogen type but there is an insufficient amount for the path of egress. There are no exterior emergency lighting fixtures for the Southern portion of the building for the path of egress. There are exit signs located at each exit and one located in the corridors but corridors sign do not have directional arrows.

Electrical Power Systems - MDP

Electrical Power Systems

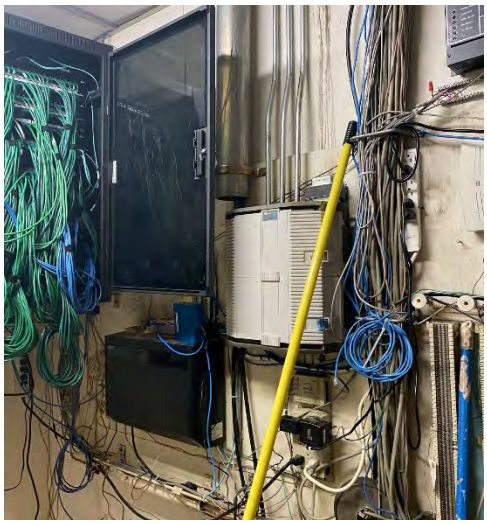
The electrical service for the whole building is fed underground via a pad mounted transformer, to the service meter located in the Boone Career Technical Center's Mechanical Room 11. The overall condition of the MDP (Main distribution panel) is in fair condition with no notable damage. The electrical distribution for the Southern CTC side of the building is in good condition than the older MDP. These panels contain spares and blank space available for future loads. The panels are not fully labeled for the loads that are on them. A complete load assessment per panel and per circuit is required to determine the adequately of the electric service shared throughout the buildings three schools.

Some locations were noted to have exposed wiring and improper wire connections. Damaged floor receptacles and audio equipment ports corroded electrical raceways and wall penetration without fire protection were also noted.

Egg Crate Lighting Fixtures

Electrical Lighting Systems

The exterior lighting for the building consists of large wall mounted metal halide fixtures that are used for area and walkway lighting. Recessed metal halide fixtures are used at the entrance. The exterior lighting is controlled by mechanical time switches. The offices and main classroom have 2x4 T8 recessed egg crate fixtures. The corridors, main entrance and some classrooms have 2x4 T12 recessed troffers. Most of these troffers have yellow stained parabolic lens. The commons area lighting has both suspended indirect fixtures and recessed fixtures both lamped with metal halide bulbs.



Data / Communications Cabling

Data/Communications Systems

The data and communications systems are on a shared service for the whole building. The data and communications come into and are distributed from a room just off from the Boone Career Technical Center's Mechanical Room 11. The room is only cooled by one small window style air conditioning unit. Transformers and electrical panels are also located in these rooms. The wire management for the data and communications in this room is in poor condition. The overall space for the data and communications distribution systems is cluttered. The portable wheel-based cabinets are placed in front of each other. The power supplies for these cabinets are lying on the floor.

The phone system is a VoIP Cisco system. For all the phone locations, the cables are direct CAT5e drops from the ceiling running exposed to the Cisco phones. Some data drops in the front office in the Science Lab are also drops from the ceiling running exposed in the space. The majority of this cabling is not plenum rated and penetrations are not fire stopped.

Data / Communications Rack

Security - Electrical

The Cisco phone system serves as inner communications but there is not a mass notification system in place. The only security for the building is controlled access to the data/communications distribution room. The CCTV system is comprised of ceiling mount analog dome cameras connected to a central DVR with a monitor for the Southern CTC side.

FACILITY ASSESSMENT

BOONE CAMPUS - MAIN BUILDING

RECOMMENDATIONS

1. Clean and repair any deteriorated roof structure members that have been subjected to water damage.
2. Repair and monitor any cracks in the masonry walls.
3. Remove cracked floor tiles and evaluate the underlying concrete slab.
4. Budget for the replacement of the existing major equipment - Roof Top Units and Exhaust Fans.
5. Provide a central Building Automation System as the RTUs are replaced.
6. Investigate the hot water recirculation pump and piping, determine operational issues, and recommission or replace.
7. Provide additional zone control dampers for the office areas to mitigate heating and cooling complaints.
8. Provide a new complete addressable fire alarm system. This system is to include:
    A. Provide an independent main fire control panel for the Southern CTC side with connections to Boone Career Technical Center's Fire Control Panel.
    B. Provide a new remote annunciator with zone indications and a school zone map mounted beside the annunciator.
    C. Provide new horn/strobe devices.
    D. Provide new manual fire alarm pull stations.
    E. Provide new emergency lighting for path of egress integral to new lighting for both interior and exterior.
    F. Provide and install additional emergency exit signs in corridors with directional arrows.
9. Conduct a complete building electrical load analysis to determine adequately of the electric service.
10. Create new accurate panel schedule labeling all loads, with spare breakers and available space.
11. Replace damaged wiring, exposed and M/C wiring with correct sized wire in conduit.
12. Replace damaged and corroded raceways.
13. Install fire protection for all wall penetration.
14. Damaged floor receptacles need to be replaced or removed and patched.
15. Undertake a complete fixture replacement of all existing interior and exterior lighting with LED fixtures excluding stage LED lighting in the large lecture room 110. Lighting selections for each area are to be based on IES recommended foot candle levels and the fixture ascetics for given locations.
16. Provide occupancy sensors for all classrooms, restrooms, and offices.
17. Provide digital lighting control to control exterior lighting, corridors, foyer, and commons area.
18. Provide photocell integral to the lighting controls for exterior lighting.
19. Follow EPA regulations and procedures for disposing of lighting fixtures, lamps, drivers, and ballasts.
20. Complete redesign of data/communications distribution room to provide wire management and optimal space for all equipment.
21. Provide a new AC unit for heat management in data/communications distribution room.
22. Install data ports within the wall or wire mold type cable runs for all phones and needed areas were cabling is exposed.
23. New plenum rated cables and fire stop wall penetrations were needed.
24. Develop a mass notification system including phone, email, and social media site contacts.
25. Security systems including card access, door contacts, motion detectors, front end system and remote monitoring by monitoring service.
26. Provide a new CCTV system integrated into the security system with motion activated event capture and digital cameras.

FACILITY ASSESSMENT

LINCOLN SITE – MAIN BUILDING

Lincoln Site

Computer Lab

Lecture / Classroom

BACKGROUND

The Lincoln site is a wing of Lincoln County High School (12,032 SF), which was constructed in 2004. Many of the challenges observed at the Lincoln Site are operational and can be solved with minimal improvements. The shared PA system that disrupts College classes, as well as the control of the HVAC system are some of the issues. This site is leased from Lincoln County Schools.

EXTERIOR

The exterior envelope is in good condition. The exterior walls are comprised of brick veneer, metal wall panels, and punched windows around the building.

The existing roofing is EPDM and is in good shape however will be nearing the end of its life by the end of this 10-year period. There is minimal evidence of ponding water in a few locations.

INTERIOR

The spaces are separated by CMU walls and some gypsum board partitions. Ceilings are typically suspended acoustical ceiling tile. Flooring is mostly VCT, sheet vinyl, carpet, and ceramic mosaic tile in the restrooms. The computer lab consists of a tiered floor with computer stations around the perimeter of the room. The science laboratory has access panels that connect the island tables, so the utilities are accessible.

STRUCTURAL

The overall structural system consists of load bearing masonry walls with structural steel and open web steel joist framing. The foundations consist of shallow concrete spread footings. The exterior walls consist of masonry block with brick veneer and the interior walls mainly consist of masonry block. The masonry walls also serve the purpose of resisting the lateral loads for the building. The ground floor is a concrete slab on grade. The loads applied to the floors appear to be consistent with typical educational and administrative loadings. The roof structure consists of open web steel bar joists with metal decking. The building structure falls under a seismic design category B. The structure was designed to withstand seismic loads according to the applicable building code during design and construction.

Laboratory Manifold

Fume Hood

Chemical Treatment System

MECHANICAL

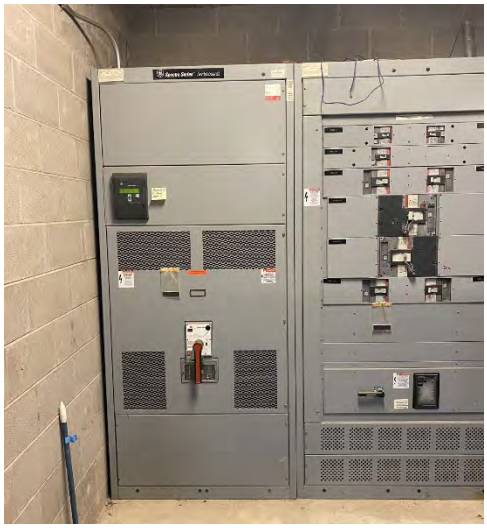
The HVAC system serving the SWVCTC section of the Lincoln County High School consists of three (3) single zone Constant Air Volume (CAV) Air Handling Units (AHUs) which serve individual classrooms, one (1) CAV AHU and four (4) Constant Volume Boxes (CVB) with hot water reheat coils serving four individual classrooms and one (1) Variable Air Volume (VAV) AHU and VAV boxes and hot water reheat coils serving the Administration area. The heating hot water and chilled water is provided by a central plant with two (2) 270-ton chillers and two (2) 4300 MBH combustion boilers. Proper fresh, outdoor ventilation air is provided to the facility through the AHU intakes on the roof. All ductwork, chilled water and hot water piping is provided with wrap insulation which was in good condition.

There was a chemical containment exhaust hood located in the Physics/ Chemistry Lab that did not have an up-to-date inspection/approval sticker on it. There is a return air plenum utilized throughout the facility, everything located within the plenum appeared to be plenum rated and compliant. Proper exhaust airflow was provided to all toilet rooms, Janitor closets and Labs. Adequate fire dampers, and fire caulking was observed for penetrations through fire-rated walls. The occupancy schedules for the entire facility and central plant equipment operation are controlled by the main Building Automation System (BAS) located in the High School. Therefore, HVAC issues arise when the SWVCTC is using their facilities and the High School is not. The building was constructed in 2004 and all of the mechanical equipment is operational and in good condition. Maintenance is performed by the Lincoln County High School maintenance personnel.

PLUMBING

The incoming water service is located in the High School portion of the facility and was provided with a code compliant backflow preventer. Domestic hot water is provided to the fixtures within the SWVCTC facility by a 7 KW Domestic Electric Water Heater (DEWH) with an expansion tank located in the Janitor Closet. Hot water recirculation piping and pump were also present. All hot water equipment was operational and appeared to be in good condition. Although there were only two (2) toilet rooms located within the SWVCTC portion of the building, shared facilities with the High School provide adequate services. The toilet rooms were ADA compliant and contained flush valve type fixtures with vandal resistant lavatories; everything was operational and in good condition. There was a mop basin and a thermostatic mixing valve located in the Janitors Closet. There were not any water fountains within the SWVCTC portion of the building, but multiple units were located within the High School. Storm piping was insulated and provided with clean-outs.

The Physics/Chemistry Lab stations were provided with natural gas, vacuum, compressed air, domestic hot and cold water. The air compressor and vacuum pump were located within the Janitors Closet. The equipment appeared to be in good condition. All appropriate valves, regulators and emergency shut offs were provided and appeared to be in good condition.



Electrical Power Systems - MDP

Electrical Panels

Data Rack

FIRE PROTECTION/LIFE SAFETY

The building has a complete, code compliant fire protections system with all appropriate valves, sensors, and flow meters. Information was not attained on any recent testing. There were no issues observed or reported with the fire protection system.

The one issue addressed to ZMM was providing a BAS system override capability to the SWVCTC Administration personnel for the HVAC system when they are occupying the facility, but the High School is not. Further investigation into the main chiller and boiler plants is required to determine the efficacy of running a single chiller or boiler just for the five (5) AHUs serving SWVCTC. The equipment and its efficiency might be affected by such a small heating and cooling load.

ELECTRICAL

Life Safety - Electrical

The facility has a fire alarm that is interconnected with the High School. The main fire alarm control panel is an EST Edwards system is located in the High School Data room. The emergency lighting fixtures are recessed tungsten-halogen type.

Electrical Power Systems

The electrical distribution panel (MDP 1) serving the Southern CTC section of the building is located in a large shop classroom in a locked fenced in area. Due to amount of dust generated in the classroom the MPD is very dirty. This dust may disrupt internal electrical connections in the MDP over time.

Electrical Lighting Systems

Overall, the lighting is in good condition. The exterior and interior spaces are illuminated to correct levels according to IES standards. Lighting controls are utilized through the entire building. Some of the lighting technologies currently used in the building are becoming obsolete. The installed lamping of the High-pressure sodium, Halogen Quartz Tungsten, MR16 and the florescent T8 appear to be the top energy efficient lamps of their types.

Data/Communications Systems

The data and communications distribution systems have excellent cable management. Plenum rated cables are utilized and penetrations have fire stop protection throughout. The phone system is VoIP. Only the office phones are on the Southern CTC system, the Southern classrooms are on the High School's system.

AIPHone at Entrance

Security - Electrical

Currently the Southern CTC does not have a mass notification system in place. There is a security system in place, but it is controlled by the High School. There is an AIPhone at the Southern CTC entrance, that is controlled by the SWVCTC office. The CCTV system consists of ceiling mount analog dome cameras connected to a central DVR and monitor for the Southern CTC side.

FACILITY ASSESSMENT
LINCOLN SITE – MAIN BUILDING

RECOMMENDATIONS

1. Clean the MDP both internally and externally.
2. Erect a walled enclosure around the MDP to keep shop dust off the equipment.
3. Ensure all lighting controls are set correctly to maximize efficiency.
4. Create a re-lamping schedule for the entire Southern CTC area.
5. Only re-lamp fixtures with energy efficient lamp types. When energy efficient lamps become unavailable change lamping with LED retro fit kits or replace fixture with LED type.
6. Follow EPA regulations and procedures for disposing of lighting fixtures, lamps, drivers, and ballasts.
7. Connect all Southern CTC classroom phones to the Southern CTC phone system.
8. Develop a mass notification system including phone, email, and social media site contacts.
9. Install a separate security system using existing card access, door contacts and motion detectors.
10. Install new AiPhone type video call system for afterhours entrance request.
11. New CCTV system integrated into the security system with motion activated event capture and digital cameras.

EXISTING BUILDING NEEDS

Below is a list of existing buildings and facilities at Southern in need of renovations, additions, demolition, or any combination thereof.

Logan Campus – General

Deferred Maintenance Projects

1. No items.

Capital Improvement Projects

1. Main entrance upgrades should be considered for vehicular access / visitors and ADA parking. Driveway reconfiguration would provide drop off areas for all 3 buildings along with ADA and visitor parking while helping to separate pedestrian areas. The flood plain elevation would have to be taken into consideration as grade modifications could adversely impact adjacent properties.
2. Exterior signage and building entrances should be enhanced to identify buildings and wayfinding. Main campus entrance for visitors and new students are not clearly identifiable.
3. Exterior building lighting and site lighting need to be upgraded to more efficient LED light fixtures to provide better illumination for safety and security. Install new and replace existing parking lot and walkway lighting with new LED fixtures. Install photocells and new digital lighting controls for interior and exterior lighting. Site cameras and emergency call stations should be added as part of this project.
4. Install security systems including card access, door contacts, motion detectors, front end system and remote monitoring by monitoring service. New CCTV system integrated into the security system with motion activated event capture and digital cameras.

Site Infrastructure Improvements

1. A PONs fiber system is recommended for data and communications distributions to all the buildings on campus. This system would eliminate the need for large quantity data cabling and switching.

Currently Planned and / or Active Projects

1. No items.

Logan Campus – Building 'A'

Deferred Maintenance Projects

1. The elevator equipment room needs to have a dedicated cooling unit.
2. Install ASSE 1017 thermostatic mixing valve where the water heaters are located and temper the hot water serving the facility to 120 Fahrenheit. Install ASSE 1070 thermostatic mixing valves for all laboratories in private and gang toilets through the facility.
3. Install one overflow roof drain for every 2 roof drains that serve the same area. Overflow roof drain piping shall discharge to grade and shall be insulated.
4. Create new accurate panel schedule labeling all loads, spare breakers, and available space.
5. Install blank space covers on panels where breakers have been removed.
6. Replace all interior power poles with new a dual channeled portable power poles for both data and electric connections.
7. Upgrade panic door hardware on all stair doors.
8. Upgraded / replace door hardware in Auditorium, Stage, and Stage Workshop area. Door hardware in stage workshop is not code compliant.

9. Flooring replacement (hybrid between maintenance and capital improvements.) Tile flooring on second floor elevator lobby / stair area is not code compliant (trip hazard.)

Capital Improvement Projects

1. The HVAC system throughout the building is in need of replacement. Proper exhaust air is needed in the science labs, art rooms and restrooms. A central building automation system (BAS) is needed to provide more efficient operation of the entire HVAC system, allow scheduling of the system based on building occupancy and provide the maintenance staff a more reliable means of troubleshooting and maintaining the system. Some consideration should also be given to integrating the controls systems for all three buildings. Currently each building has a different controls manufacturer. New corridor ceilings and lighting should be included in this project, along with sprinkler systems modifications that would be required as part of the HVAC renovations.
2. The Science labs and support spaces need to be renovated. This renovation would upgrade / replace existing domestic piping, chemical-resistant sanitary piping, mechanical exhaust systems, reconfigure the lab layout, replace science casework, new ceilings, new lighting, and new power distribution.
3. Lobby is need of renovations to include reception / information desk, wayfinding / signage, and lighting and flooring upgrades.
4. Restrooms and water coolers need to be updated to meet ADA requirements. As the restrooms are renovated for ADA compliance, ensure the resultant number of fixtures will meet code requirements based on building occupancy.
5. Elevator modernization is needed to connect elevator controller to the fire alarm system. Elevator controls are dated and will require significant upgrades if there is an equipment failure as replacement parts will be difficult to obtain.
6. Classroom and student areas need to be updated to meet current higher education demands. Improvements have been made however upgrades to lighting, finishes, and spatial reconfiguration would enhance the learning environment and provide added value for students.
7. Interior upgrades. Upgrades would include LED fixtures with digital lighting control system for both interior and exterior lighting. Occupancy sensors for all classrooms, restrooms, and offices.

Currently Planned and / or Active Projects

1. No items.

Logan Campus – Building 'B'

Deferred Maintenance Projects

1. The level glycol feeder is nearing empty. We recommend filling the system and inspecting the AHU coils and building to confirm that the systems in not leaking.
2. Implement a maintenance plan for the chilled water systems, heating hot water systems, controls, and AHU. These systems are approximately 5 years old and with regular scheduled maintenance these systems will have an approximate remaining life of 15-20 years.

Capital Improvement Projects

1. No items.

Currently Planned and / or Active Projects

1. No items.

Logan Campus – Building 'C'

Deferred Maintenance Projects

1. The existing 125-ton chiller needs to be replaced within the next 5 years. The new chiller should be provided with an acoustic package to quieten the chillers noise impact.
2. Replace the existing BAS systems. The existing manufacture no longer exists and is becoming cost prohibitive for parts.
3. Investigate electrical/data closets and elevator equipment rooms to determine if additional cooling can be provided

Capital Improvement Projects

1. No items.

Currently Planned and / or Active Projects

1. No items.

Williamson Campus – General

Deferred Maintenance Projects

1. No items.

Capital Improvement Projects

1. Exterior building lighting and site lighting need to be upgraded to more efficient LED light fixtures to provide better illumination for safety and security. Install new and replace existing parking lot and walkway lighting with new LED fixtures. Install photocells and new digital lighting controls for interior and exterior lighting. Site cameras and emergency call stations should be added as part of this project.
2. Install security systems including card access, door contacts, motion detectors, front end system and remote monitoring by monitoring service. New CCTV system integrated into the security system with motion activated event capture and digital cameras.
3. Exterior signage and building entrances should be enhanced to identify buildings and wayfinding. Main campus entrance for visitors and new students are not clearly identifiable.

Site Infrastructure Improvements

1. A PONs fiber system is recommended for data and communications distributions to all the buildings on campus. This system would eliminate the need for large quantity data cabling and switching.

Currently Planned and / or Active Projects

1. No items.

Williamson Campus – Main Building

Deferred Maintenance Projects

1. The elevator equipment room needs to have a dedicated cooling unit.
2. Create new accurate panel schedule labeling all loads, spare breakers, and available space.
3. Install blank space covers on panels where breakers have been removed.

Capital Improvement Projects

1. Replace the existing roofing membrane and roof insulation.
2. The HVAC system throughout the building is in need of replacement. Proper exhaust air is needed in the science labs, art rooms and restrooms. A central building automation system (BAS) is needed to provide more efficient operation of the entire HVAC system, allow scheduling of the system based on building occupancy and provide the maintenance staff a more reliable means of troubleshooting and maintaining the system. Some consideration should also be given to integrating the controls systems for both buildings. Currently each building has a different controls manufacturer. New corridor ceilings and lighting should be included in this project, along with sprinkler systems modifications that would be required as part of the HVAC renovations.
3. The Science labs and support spaces need to be renovated. This renovation would upgrade / replace existing domestic piping, chemical-resistant sanitary piping, mechanical exhaust systems, reconfigure the lab layout, replace science casework, new ceilings, new lighting, and new power distribution. *These renovations could be reallocated to renovating a space in the ATC in lieu of the main building.*
4. Renovate the existing library from a traditional "library" to a digital learning commons / digital library and student support space with meeting / study rooms.
5. Classroom and student areas need to be updated to meet current higher education demands. Improvements have been made however upgrades to lighting, finishes, and spatial reconfiguration would enhance the learning environment and provide added value for students.
6. Interior lighting upgrades. Upgrades would include LED fixtures with digital lighting control system for both interior and exterior lighting. Occupancy sensors for all classrooms, restrooms, and offices.

Currently Planned and / or Active Projects

1. No items.

Williamson Campus – Advanced Technology Center (ATC)

Deferred Maintenance Projects

1. Provide proper exhaust for the plasma cutter.

Capital Improvement Projects

1. In lieu of renovating the existing science labs in the main building, a new combined science laboratory could be constructed in the existing exercise physiology space, which is not currently in use.

Currently Planned and / or Active Projects

1. No items.

Williamson Campus – Armory

Deferred Maintenance Projects

1. Address the combustion air in the existing boiler room. If heating is upgraded in the gym, storage, and support areas. The existing boiler systems and be removed as the boiler is nearing end of life.
2. Replacing the heating systems in the gym and support areas. Evaluate the need for cooling in these spaces.
3. Restrooms and water coolers need to be updated to meet ADA requirements. As the restrooms are renovated for ADA compliance, ensure the resultant number of fixtures will meet code requirements based on building occupancy.

Capital Improvement Projects

1. Replace the existing roofing membrane and roof insulation.

Currently Planned and / or Active Projects

1. No items.

Lincoln Campus

Deferred Maintenance Projects

1. No items.

Capital Improvement Projects

1. Roof replacement will be required around in the next 10 years. This should be discussed with the building owner, Lincoln County Schools, and negotiated in any lease renewals.
2. No items.

Currently Planned and / or Active Projects

1. No items.

Boone Campus

Deferred Maintenance Projects

1. Roof top HVAC unit serving Auditorium area was not cooling and needs maintenance.
2. Carbon monoxide detectors need to be added.
3. Existing flammable storage cabinet is not vented.
4. Install electrical junction box covers where covers are missing. There is some exposed wiring.
5. The corridor adjacent to Room 111 needs an exit sign.
6. The security cabling for exterior cameras should be evaluated. The exterior camera cabling should be routed within a protective conduit and supported along the routing.

Capital Improvement Projects

1. The HVAC equipment is in need of replacement. The existing equipment serving the classroom, Auditorium and Administration area are beyond service life and utilize R22. Proper exhaust air is needed in the science labs, art rooms and restrooms. Some renovations of the system should occur as the outside air louver for the Bard units are located below the minimum height for anticipated snow depth. The Bard units are not integrated into the existing controls systems, and this should be included in the renovations.
2. Exterior signage and building entrances should be enhanced to identify buildings and wayfinding. Main campus entrance for visitors and new students are not clearly identifiable.
3. Classroom and student areas need to be updated to meet current higher education demands. Improvements have been made however upgrades to lighting, finishes, and spatial reconfiguration would enhance the learning environment and provide added value for students.
4. Interior and exterior lighting upgrades. Upgrades would include LED fixtures with digital lighting control system for both interior and exterior lighting. Occupancy sensors for all classrooms, restrooms, and offices.

** Projects listed above would be required to be considered within the next 10 years, however based upon current enrollment it is recommended that this building be removed from Southern WV CTC's inventory.*

Currently Planned and / or Active Projects

1. No items.

Wyoming Campus

Deferred Maintenance Projects

1. Existing caped flue appears to be leaking with water intrusion in the mechanical room
2. Existing flammable storage cabinet is not vented.

Capital Improvement Projects *

1. The existing central roof top HVAC unit is approaching the end of its life and will likely need to be replaced within the next 5 years.
2. Roof replacement will be required around in the next 10 years.
3. Exterior signage and building entrances should be enhanced to identify buildings and wayfinding. Main campus entrance for visitors and new students are not clearly identifiable.
4. Classroom and student areas need to be updated to meet current higher education demands. Improvements have been made however upgrades to lighting, finishes, and spatial reconfiguration would enhance the learning environment and provide added value for students.
5. Sprinkler and fire alarm upgrades should be considered. The building is not currently fully sprinklered and the availability of adequate water should be investigated.
6. Interior and exterior lighting upgrades. Upgrades would include LED fixtures with digital lighting control system for both interior and exterior lighting. Occupancy sensors for all classrooms, restrooms, and offices.

** Projects listed above would be required to be considered within the next 10 years, however based upon current enrollment it is recommended that this building be removed from Southern WV CTC's inventory.*

Currently Planned and / or Active Projects

1. No items.

DEFERRED MAINTENANCE PROJECTS

Below is a comprehensive list of deferred maintenance projects at Southern for each campus by building or facility. The cost estimate supplied for each building includes overhead and profit for the general contractor plus a project contingency. Architectural / Engineering design fees, WV Fire Marshall review / inspection fees, and legal advertisement costs not included in the cost estimates. The strategy to deal with deferred maintenance projects should be scheduled and phased to address immediate needs and long-term needs. This approach allows for renovations to occur annually and be spaced to fit within annual maintenance budgets and not require capital improvement funds.

Logan Campus – Building 'A'		**$147,000**
1.	Install HVAC unit in elevator equipment room	$10,000
2.	Install Thermostatic Mixing Valves at Water Heaters	$5,000
3.	Install Thermostatic Mixing Valves for lavatories at all Laboratories	$10,000
4.	Install Thermostatic Mixing Valves for lavatories at all Toilet Rooms	$10,000
5.	Install one overflow roof drain for every 2 roof drains that serve the same area	$25,000
6.	Create new accurate panel schedule labeling all loads, spare breakers, and available space	$3,500
7.	Install blank space covers on panels where breakers have been removed.	$1,000
8.	Replace all interior power poles with new a dual channeled portable power poles	$7,500
9.	Upgrade panic door hardware on all stair doors.	$10,000
10.	Upgraded / replace door hardware in Auditorium, Stage, and Stage Workshop area.	$5,000
11.	Landscaping	$60,000
Logan Campus – Building 'B'		**$10,000**
1.	Fill the glycol feeder and inspect the AHU coils.	$7,500
2.	Maintenance plan for chilled water systems, heating hot water systems, controls, and AHU.	$2,500
Logan Campus – Building 'C'		**$50,000**
1.	Install HVAC in electrical/data closets and elevator equipment rooms	$50,000
Williamson Campus – Main Building		**$54,500**
1.	Install HVAC unit in elevator equipment room	$10,000
2.	Create new accurate panel schedule labeling all loads, spare breakers, and available space	$3,500
3.	Install blank space covers on panels where breakers have been removed.	$1,000
4.	Landscaping	$40,000
Williamson Campus – Advanced Technology Center (ATC)		**$35,000**
1.	Install exhaust for the plasma cutter.	$35,000
Williamson Campus – Armory		**$180,000**
1.	Address the combustion air in the existing boiler room.	$25,000
2.	Replacing the heating systems in the gym and support areas.	$30,000
3.	Restrooms and water coolers need to be updated to meet ADA requirements.	$125,000

Boone Campus* — $19,000

1. Service roof top HVAC unit serving Auditorium area. $5,000
2. Install carbon monoxide detectors. $3,500
3. Vent existing flammable storage cabinet. $2,500
4. Install electrical junction box covers where covers are missing. $1,000
5. Install exit sign at the corridor adjacent to Room 111. $2,000
6. Reinstall / secure the security cabling for exterior cameras. $5,000

Wyoming Campus* — $4,500

1. Seal existing caped flue at the mechanical room $2,000
2. Vent existing flammable storage cabinet. $2,500

** The Boone facility is leased and will need to be negotiated with the building owner. Based upon current enrollment at Wyoming campus, it is recommended that this building be removed from Southern 's inventory.*

MAJOR SITE IMPROVEMENTS

General for All Campus Locations

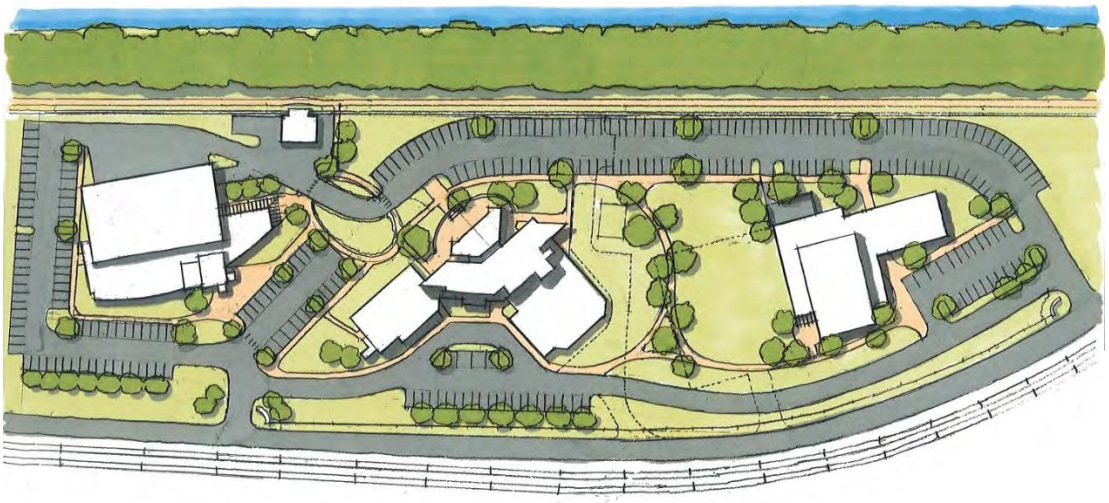
1. Exterior signage and building entrances should be enhanced to identify buildings and wayfinding. Main campus entrance for visitors and new students are not clearly identifiable.
2. Exterior building lighting and site lighting need to be upgraded to more efficient LED light fixtures to provide better illumination for safety and security. Install new and replace existing parking lot and walkway lighting with new LED fixtures. Install photocells and new digital lighting controls for interior and exterior lighting. Site cameras and emergency call stations should be added as part of this project.
3. Install security systems including card access, door contacts, motion detectors, front end system and remote monitoring by monitoring service. New CCTV system integrated into the security system with motion activated event capture and digital cameras.

Logan Campus

1. Main entrance upgrades should be considered for vehicular access / visitors and ADA parking. Driveway reconfiguration would provide drop off areas for all 3 buildings along with ADA and visitor parking while helping to separate pedestrian areas. The flood plain elevation would have to be taken into consideration as grade modifications could adversely impact adjacent properties.
2. A PONs fiber system is recommended for data and communications distributions to all the buildings on campus. This system would eliminate the need for large quantity data cabling and switching.

Williamson Campus

1. As part of the previous master plan, there was a strategy developed to bring the existing Armory into the Williamson Campus. The existing Armory parking lot and lack of pedestrian walkways between the Armory building and the main building, creates a very disjointed campus. The previous plan recommends pushing all of the vehicular circulation to the perimeter, and opening the interior of the campus to pedestrians. The plan also includes the addition of fencing to eliminate the current situation where students park on the grass area near the entry road as opposed to in the developed parking areas. The first phase of this implementation occurred when the Applied Technology Center was constructed. The next phase will include pushing the access points to the new edges of the campus, removing the parking area and road between the Armory and the Main Academic Building, and then adding parking as a buffer between the buildings and the flood wall. This approach greatly improves the pedestrian connection between the buildings and maximizes the available green space and outdoor recreation areas.

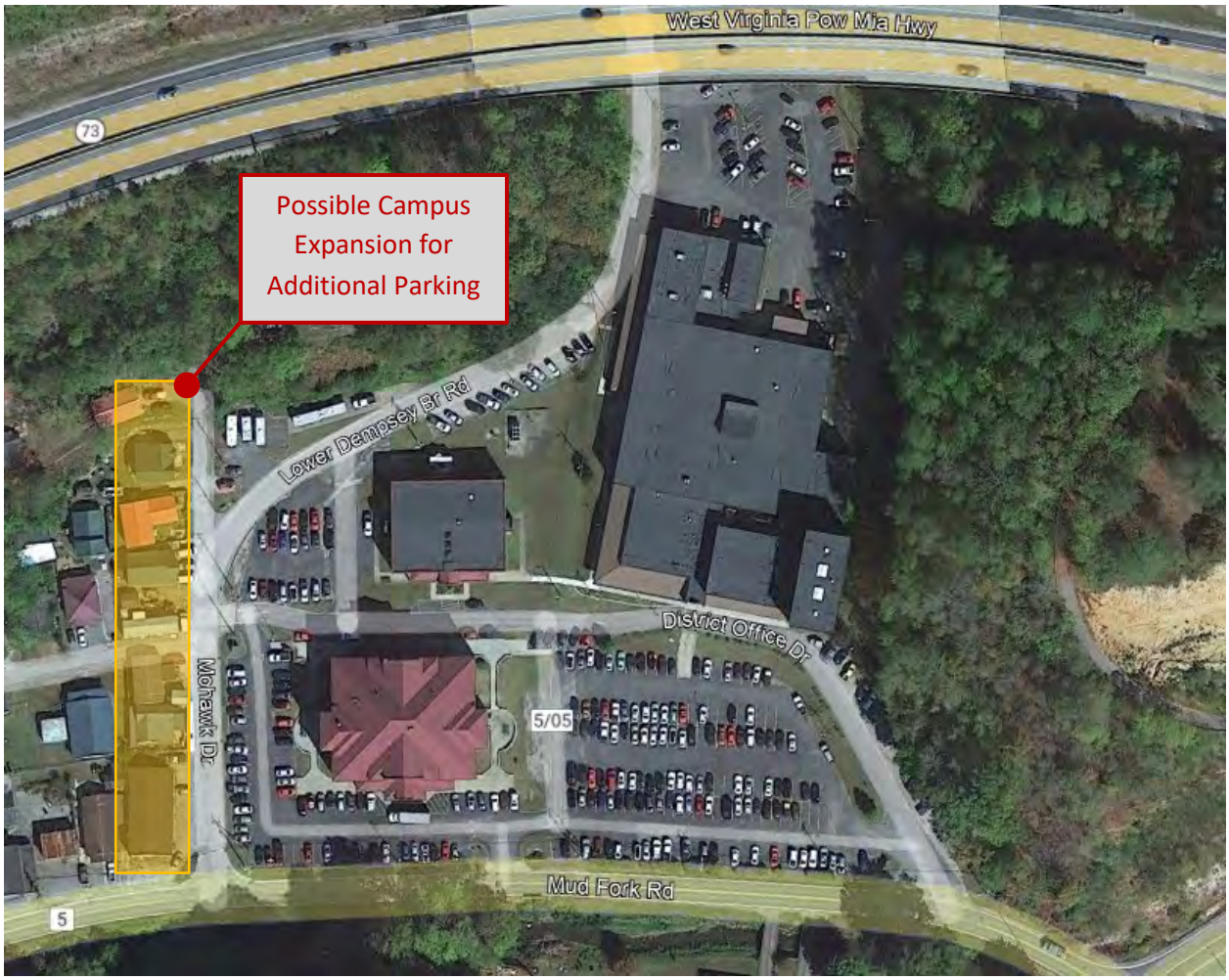


INFRASTRUCTURE IMPROVEMENTS

There are no significant infrastructure improvements planned for the next 10-year period. The incoming site utilities are adequately sized for the facilities and will accommodate anticipated growth at both campus locations. The main infrastructure improvement would be to connect the campuses with communication systems that would link security, network, phones, building automation, lighting controls, HVAC controls, etc.

PROPERTY ACQUISITION

As the existing campuses are not scheduled for expansion, no property acquisition is anticipated. To ease parking on the Logan campus, property acquisition to the west of campus along Mohawk Drive could be considered as property becomes available.



NEW FACILITIES and BUILDING SITES

Southern' s campus development plan does not include new facilities. Based upon the College's current building inventory, educational program demands, and enrollment, strategically planned renovations of the existing main buildings at both the Logan and Williamson campuses will meet the current and forecasted needs. Both existing buildings are great candidates for significant renovations in lieu of new construction. The building configurations will allow for the necessary space revisions and are considerably more cost effective.

LIST of CAPITAL PROJECTS

Southern has identified the following list of capital improvements and new projects necessary to enable continued growth and success of the College. These projects represent the immediate, near term (5 years) and long term (10 years) needs and are listed in order of priority. Please refer to Section 10 for timing estimates and projected costs associated with individual projects.

Logan Campus

1. Campus Exterior Lighting / Security Upgrades
2. Campus Communications Cabling Upgrades
3. Campus Exterior Signage Improvements
4. Building 'A' HVAC Renovations including Building Automation System (BAS) Controls
5. Building 'A' Science Lab / Science Support Space Renovations
6. Building 'A' Lobby improvements that would include lighting, finishes and furniture
7. Building 'A' Library Renovation
8. Building 'A' Exterior Entrance Renovations
9. Building 'A' Toilet Upgrades
10. Building 'A' Elevator Modernization
11. Building 'A' Classroom / Student Area Renovations
12. Building 'A' Interior Lighting Upgrades

Williamson Campus

1. Campus Exterior Lighting / Security Upgrades
2. Campus Communications Cabling Upgrades
3. Campus Exterior Signage Improvements
4. Main Building Roof Replacement
5. Main Building HVAC Renovations including Building Automation System (BAS) Controls
6. Main Building Library Renovation
7. Main Building Classroom / Student Area Renovations
8. Main Building Interior Lighting Upgrades
9. ATC – Science Lab Renovations
10. Armory Building Roof Replacement

Boone Campus*

1. HVAC Equipment Replacement and Renovations.
2. Exterior Signage Improvements
3. Classroom / Student Area Renovations
4. Interior and Exterior Lighting Upgrades

Wyoming Campus**

1. HVAC Equipment Replacement
2. Roof Replacement
3. Exterior Signage Improvements
4. Classroom / Student Area Renovations
5. Sprinkler & fire Alarm Upgrades
6. Interior and Exterior Lighting Upgrades

** Projects listed above would be required to be considered within the next 10 years, the building is leased and will need to be resolved with the building owner.*

** Projects listed above would be required to be considered within the next 10 years, however based upon current enrollment it is recommended that this building be removed from Southern 's building inventory.*

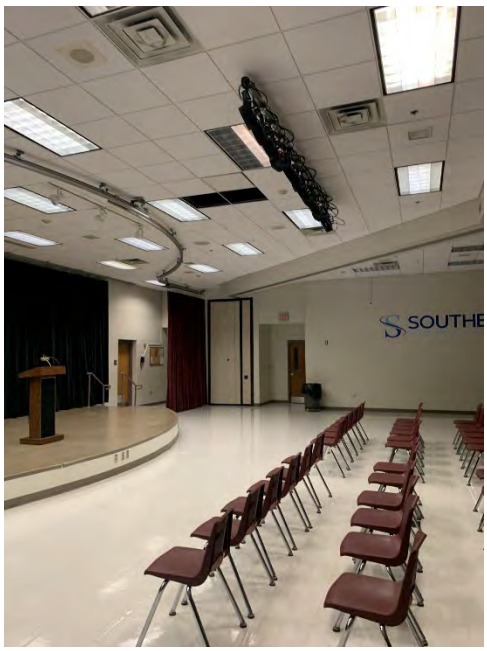
TIMING, PHASING and PROJECTED COSTS

For the Campus Development Plan to be appropriately implemented and funded over time, timing estimates with associated costs were identified. These estimates provide a sequence of construction, allowing capital projects to be built to accommodate the ongoing needs of Southern. The planned projects have been identified starting with immediate needs and include proposed construction through 2033. The estimated scheduling for capital projects assumes that funding strategies will begin in 2023. The estimated scheduling also assumes that the Campus Development Plan will be implemented in multiple steps to allow for ongoing operations and reduced interruption activities on the multiple campuses. The project sequencing reflects the findings of the enrollment and space projections, and notes that the steps may be adjusted as needs and enrollment changes. The cost estimate supplied for each building includes overhead and profit for the general contractor plus a project contingency. Architectural / Engineering design fees, WV Fire Marshall review / inspection fees, and legal advertisement costs not included in the cost estimates. Identified below are the list of capital projects in order of priority and their associated order of magnitude costs.

Estimated Schedule	Campus	Building	Estimated Cost
Phase 1: 2023-2026			
1. Major Building Renovation	Logan	Building 'A'	$17,500,00
A. HVAC Renovations, Including HVAC Controls			*$8,800,000*
B. Classroom / Student Area Renovations			*$2,300,000*
C. Science Lab Renovations			*$1,600,000*
D. Library Renovations / Learning Commons			*$1,675,000*
E. Lobby Renovations			*$300,000*
F. Interior Lighting Upgrades			*$600,000*
G. Exterior Entrance Renovations			*$550,000*
H. Toilet / ADA Renovations			*$1,050,000*
I. Elevator Modernization			*$150,000*
J. Chiller Replacement	*Logan*	*Building 'C'*	*$225,000*
K. Building Automation System (BAS) Replacement	*Logan*	*Building 'C'*	*$250,000*
2. Roof Replacement	Williamson	Armory	$720,000
3. Renovations for New Science Laboratory	Williamson	ATC	$1,650,000
Subtotal of Phase 1			**$19,870,000**
Phase 2: 2027-2030			
1. Major Building Renovation	Williamson	Main Building	$15,000,00
A. HVAC Renovations, Including HVAC Controls			*$7,900,000*
B. Classroom / Student Area Renovations			*$3,000,000*
C. Library Renovations / Learning Commons			*$1,750,000*
D. Interior Lighting Upgrades			*$500,000*
E. Toilet / ADA Renovations			*$1,100,000*
F. Roof Replacement			*$750,000*
Subtotal of Phase 2			**$15,000,000**
Phase 3: 2031-2033			
1. Campus Exterior Lighting / Security Upgrades	Logan & Williamson	All	$575,000
2. Campus Exterior Signage Improvements	Logan & Williamson	All	$150,000
Subtotal of Phase 3			**$725,000**

** Projects not listed for the Boone and Wyoming Facility. The Boone facility is leased and will need to be negotiated with the building owner. Based upon current enrollment at Wyoming campus, it is recommended that this building be removed from Southern 's building inventory.*

CAMPUS INTERACTION and SUPPORT



The physical location of the Southern' s facilities provide access to the College's programs for the majority of residents in the area served. One of the challenges is the required number of facilities and locations due to the low population density. To meet this challenge, Southern has increased online course offerings to reach the large geographic area in their region.

The Early College Academy (ECA) has helped with introducing programs and offerings to high school students which in turn has provided some students returning to Southern to continue their education. While this program has yielded positive results in Logan, the other campuses have not experienced a similar boost in enrollment.

The Logan and Williamson campuses remain the largest based upon enrollment, courses offered, and available facilities. The Wyoming campus, Boone campus, and Lincoln Site provide access to more remote areas, however the enrollment is a much smaller percentage. The current IT infrastructure project is in response to the recent COVID-19 pandemic and having to deliver education remotely. This has created an opportunity to offer more online resources and opportunities for students allowing the College to expand the coverage area.

Facilities at all locations, when built or renovated, should reflect the Southern' s brand in some aspect of the design. Signage should be improved to provide consistency at all campus locations and leased facilities, as there is not a uniform appearance for the existing buildings. The proposed renovations should be focused to reinforce the brand and reflect the quality of Southern to the general public.

IMPACT on LOCAL COMMUNITY

The implementation of the Campus Development Plan will provide a framework for Southern to continue to support local communities. The proposed renovations and updating of facilities will continue to allow the College to 1) support intellectual enrichment for students; 2) provide business and industry training opportunities; and 3) maintain the College's leadership role in workforce development in the southern part of the state. The facility enhancements will allow for each campus to become a gateway in their communities and allow Southern to continue to develop business partnerships.

Although no new facilities are planned, the improvements to the Logan and Williamson Campuses will help ensure that the tremendous investment made in both communities allows the College to remain relevant. Without the investment in both the Main Academic facility (Building 'A') at Logan and the main building at Williamson, the facilities will soon become obsolete. Reinvestment in the facility and the campus will allow Southern to continue to deliver services in this area.

The leased facilities at Lincoln and Boone continue to struggle with maintaining enrollment that utilizes the facilities at both locations. These locations are located in key areas of the communities they serve, however unless enrollment increases, justification to maintain these facilities may become more difficult with each passing year. The strong partnership with Boone Hospitals could help revitalize the Boone facility.

The Wyoming / McDowell campus is located in an area where the lack of community support and significantly reduced enrollment warrant the facility to be vacated as it is no longer viable. Specialized education and workforce programs there are non-existent suggesting the general education courses could be taught online or at another campus location.