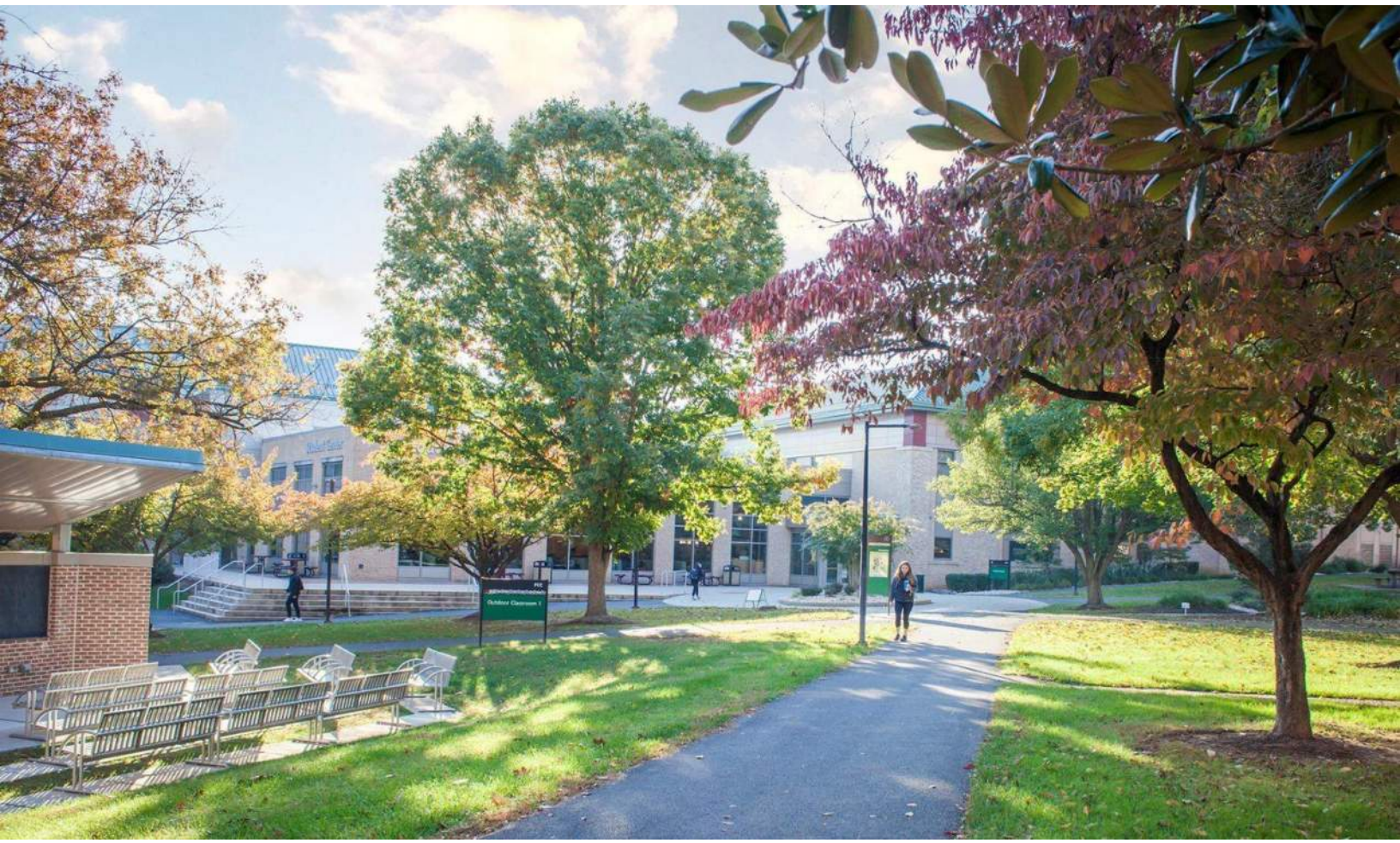
Frederick Community College

2023 – 2033 Facilities Master Plan Report

May, 2023



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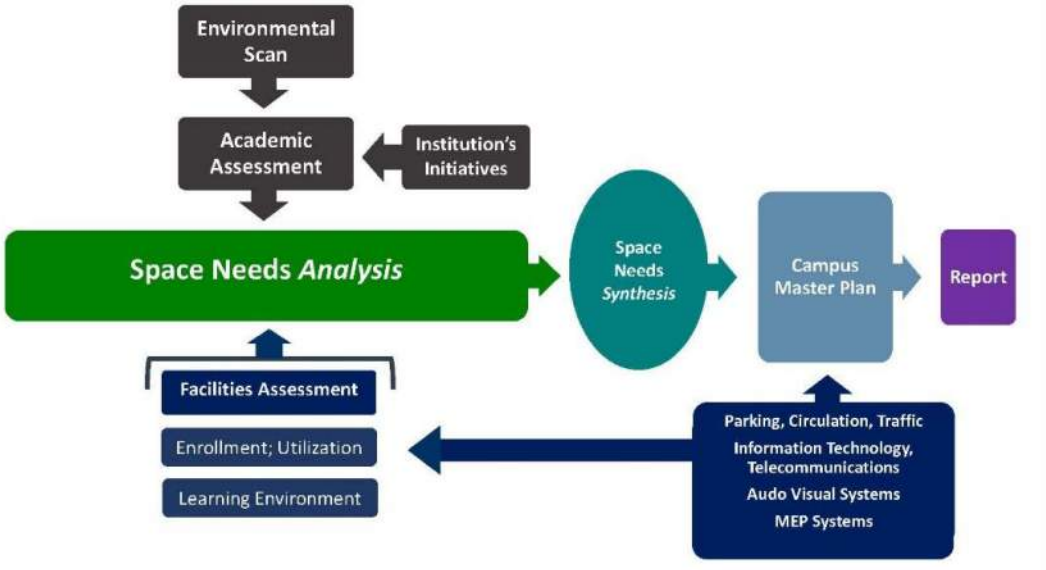
INTRODUCTION

This Facilities Master Plan (FMP) examines nearly all aspects of the College, the forces that shape it, and the College's impact on those and other forces. The planning process is sequential, both linear and iterative, and cumulative, beginning with the environmental scan and ending with a final report. Each step in the process builds on the knowledge gained prior to that step. This report completes the process.



The process is framed by, among other elements, the College's Mission, Strategic Plan, and the Blueprint for Maryland's Future. The process looks back, takes stock of current circumstances, and makes recommendations projecting to the 10-year planning horizon and beyond. Consultant disciplines involved include planning, architecture, environmental scan, facilities planning, academic program review, civil engineering, mechanical & electrical engineering, information technology, and, next, cost estimating. Previously, a separate Facilities Condition Assessment (FCA) was developed in parallel with the early months of this study, evaluating the condition of the College's facilities and laying out anticipated capital renewal needs, complementing the findings developed in the progress reports.

Positioned to thrive, Frederick County and the City of Frederick's population and businesses have been steadily growing, and both are diversifying. From an economy based largely on agriculture in the mid-20th century (note 1957, the year the College was founded) to one led by and invested in 21st-century businesses, industries, and technologies. FCC enrollment has generally followed that growth, often even leading the way as enrollment expanded prior to economic recoveries. Matching a national trend, enrollment has declined since 2017, attributable in part to the pandemic, but it is projected to grow significantly in the next 10 years. Of note, Frederick County grew significantly more in population than any other

Maryland jurisdiction from 2021-2022, and its growth is expected to continue. FCC does well by other metrics, including graduation and retention, and it ranks second among Maryland's 16 community colleges in graduation rates. Located in the center of the County, in central Maryland, and at the confluence of two major interstate highways and numerous U.S. and State highways and roads, the College finds itself in the paths of major business growth from the Washington and Baltimore metropolitan areas. Like the County and City, the College is also positioned to thrive.

As this is a facilities master plan, the ultimate goal is to make recommendations for the disposition of those facilities. By and large, FCC's facilities have been well maintained, as has the campus in its park-like setting. However, there is currently, and more significantly in the next 10 years, a significant space deficit, across the board, in all categories except merchandising. The College has not built a major building or addition on campus since 2015; instead, FCC has invested in improving the existing facilities, which, except for not providing ample space, now are mostly fitted out with up-to-date equipment, systems, and technologies. The result of these upgrades has effectively been continuous relocation of functions from building to building, making way for numerous renovation projects. There is no swing space available on campus to accommodate temporary relocations that are needed when undertaking renovations of existing buildings.

Before addressing the current facilities issues, the consultant team made several recommendations – for academic programs, both credit, and non-credit, for the built environment, and to a lesser degree for the delivery of instruction and operations. Those recommendations led to recommendations for specific projects and other improvements: on the main campus, and possibly at the Monroe Center, all the while as the team looked to the backdrop of the 2020-2022 pandemic environment and its subsequent ramifications, such as remote and hybrid learning, as the development of the plan continued to unfold.

The College's facilities are located on the main Opossumtown Pike campus and the Monroe Center, both of which are situated within the City of Frederick. This report addresses facilities needs at both locations.

For the main campus, three campus plan options were developed and reviewed with the College. A consensus combined the best attributes of each option, and four projects were selected to be developed within the 10-year planning horizon:
1) **Health & Wellness Building**,
2) new **Campus Services Building**,
3) new **Innovation and Technology Center**, and
4) new **Enrollment Services / Welcome Center**.

Several site improvement projects including new alignments of campus roads and pedestrian ways are also incorporated into the **Ten-Year Campus Development Plan**.
In addition, a long range build-out beyond 10 years is presented as the **Long Range Campus Development Plan**. Recommendations for site, architectural, mechanical, electrical, and low voltage systems are also included.

Executive Summary

EXECUTIVE SUMMARY

Introduction

This Executive Summary captures the essential elements of the Facilities Master Plan (FMP) report. The scope of the FMP is uniquely broad, covering subject matter not typically found in many facilities studies. The significant additional elements are the Environmental Scan, Academic Program Review, and synthesis of both relative to Frederick Community College's programs and the facilities in which those programs are carried out. The Environmental Scan provides information on the local and regional demographics, economy, and labor market. This in turn provides a basis for informing and developing recommendations for academic programs, which then help to inform the case for appropriate facilities for those programs. Readers are encouraged to refer to the larger report for details and information not included in this Executive Summary.

Sections within this Summary include the following:

1. Overview of the College
2. Environmental Scan
3. Academic Program Review
4. Needs Assessment
5. Campus Facilities: Current
   - Campus
   - Infrastructure Systems
   - Buildings
   - Sustainability
6. Basis for Recommendations
7. Campus Facilities: Recommendations
   - Campus
   - Infrastructure Systems
   - Buildings and Building Systems
   - Sustainability
8. Proposed Campus Development

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1. Overview of the College

Frederick Community College (FCC) is a comprehensive, public, associate degree-granting institution in Frederick County, Maryland. The approximately 95-acre FCC main campus is located in the City of Frederick. It is less than an hour's drive from Washington D. C. and Baltimore, Maryland. The main campus is comprised of 19 buildings including four storage facilities and a parking deck. The main campus is located at 7932 Opossumtown Pike, and the Monroe Center, an extension campus, is located at 200 Monroe Avenue, also in the city of Frederick.

FCC was founded in 1957 and is governed by a seven-member board of trustees. The trustees are appointed by the Governor of Maryland with Senate consent. The College is fully accredited by the Middle States Commission on Higher Education and was reaccredited in 2016.

During 2020, FCC enrolled a total of 5,756 students, 1,719 (30%) on a full-time basis and 4,037 (70%) on a part-time basis. This enrollment pattern is similar to the national level with community colleges across the nation enrolling 35% of the students on a full-time basis and 65% on a part-time basis. Similar to

most all college enrollment during the pandemic, the 2020 numbers were significantly lower than in 2019. Since 2020, enrollment has rebounded. By race, 59% of FCC students are White; 13% are Black; and 14% are Hispanic. The average age of an FCC student is 25; about 67% are part-time and 71% of FCC students intend to transfer to a four-year college to attain a bachelor's degree.

Mission, Vision, Core Values

The **Mission** of Frederick Community College is focused on teaching and learning. FCC provides affordable, flexible access to lifelong education that responds to the needs of diverse learners and the community. The College's **Vision** is to transform individuals and communities through learning.

In addition to its mission and vision statement, the college had adopted six **Core Values** as follows:

- *Excellence*: providing educational experiences and programming that reflect high academic standards, quality instruction, and exemplary student support
- *Learning*: engaging all learners in critical and creative thinking, problem solving, and the lifelong pursuit of knowledge and skills
- *Diversity*: being culturally conscious and inclusive by embracing the visible and invisible human differences that affect the learning and success of students, faculty, staff, administrators, and members of the community
- *Innovation*: encouraging creative thinking, technological solutions, and alternative approaches to advance learning and student success
- *Community:* responding to the needs of Frederick County with accessible, affordable education while encouraging engagement, communication, and collaboration within and beyond the College
- *Integrity*: applying fair and ethical standards in all policies, procedures, and practices

At the onset of this facility master planning process, FCC's most recent annual operating budget was about $60 million. Funding for operations comes primarily from student tuition (30%), the State of Maryland (27%), and Frederick County Government (36%).

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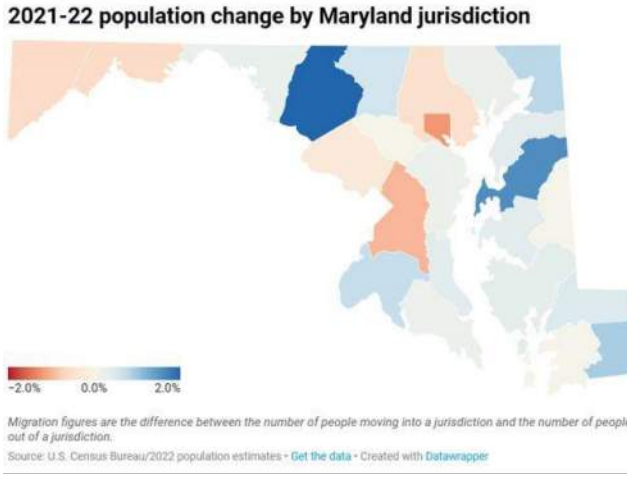
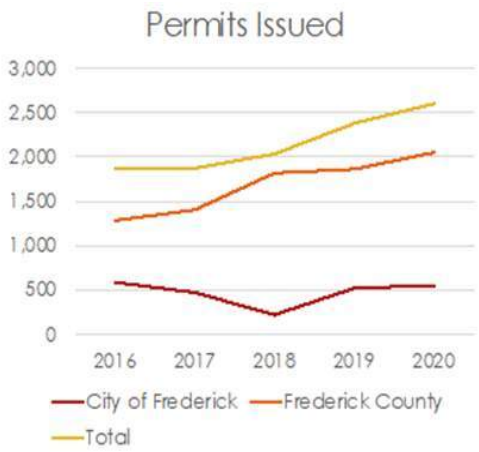
2. Environmental Scan

The largest of Maryland's counties, Frederick County comprises 664 square miles with 259,547 people, more than 6,500 businesses with 106,415 workers and 1,373 farms. The County is dynamic and diverse, with a $12.4B economy that boasts a strategic location, comprehensive transportation network, educated workforce and moderate business costs.

Frederick County's targeted core industry cluster growth creates resilience and diversity with Professional & Business Services and Education & Health Services as two of the many strong industries. The County's population growth has continued to outpace all other Maryland Counties, as shown in the following graphic in **dark blue**, and housing units grow, correspondingly.





Frederick County lies within the central Maryland / south-central Pennsylvania /northern Virginia Combined Statistical Area (CSA). The CSA per capita income is $47,764 or about 10 percent higher than the amount in Maryland $43,325. It is 1.3 times the amount in the United State of $35,672. The per capita income for Frederick County in 2019 dollars was **$43,582**. The median house- hold income in the CSA is $95,309 or 10 percent higher than in the state and 1.5 times the U.S. amount of $65,712. The median household income for Frederick County is **$97,730**. The poverty rate for the CSA is 8.2%, while the Maryland rate is 9%, or about 2/3 the U.S. rate of 12.3%. Frederick County's poverty rate is **6.2%**.

Located close to the geographic center of the State, the County is intersected by five major highways providing easy access to Baltimore, Washington, D.C., south-central Pennsylvania, and northern Virginia.

Frederick County's Main Streets are thriving and the entrepreneurs are creating unique businesses. The City of Frederick is a top vibrant arts community and the County is the leader of the craft beverage cluster growth in Maryland.

Major employers continue to grow, including Fort Detrick with a $7B economic impact to the State of Maryland, Frederick Health, Leidos Biomedical and Frederick National Lab. Life Sciences is the County's largest growing cluster with international leaders such as Thermo Fisher Scientific, AstraZeneca and Lonza. Recent projects include Kite Pharma with a 279,000 SF biologics manufacturing facility, Ellume's first U.S. manufacturing facility at 180,000 SF and VaLogic's 75,400 SF expansion. Frederick County is leading the state with the Quantum Loophole campus, a first-of-its-kind environmentally friendly data center campus. Kroger-Ocado robotics fulfillment center adds to the growing e-commerce cluster alongside Costco E-Commerce and Goodwill E-Commerce.

3. Academic Program Review, Enrollment

A total unduplicated headcount of 5,756 students enrolled in 46,607 credit hours of instruction in Fall 2020 generating 3,107 full-time equivalent (FTE) student enrollments:

Enrollment Summary – Fall 2020

Full-Time Headcount	Part-Time Headcount	Total Headcount	Credit Hours	FTE Enrollments
1,719	4,037	5,756	46,607	3,107

According to the Maryland Higher Education Commission, total enrollments at FCC are expected to increase from 2019 to 2030 by 27%, from 6,129 to 7,780. At the same time, full-time enrollments are expected to increase by 31%, from 1,843 to 2,414 and part-time enrollments are expected to increase by 25%, from 4,286 to 5,361.

FCC has demonstrated success in the percentage of students who have graduated and transferred. The College ranks second of all 16 community colleges in the State in graduation and transfer rates. A total of 21.8% of students graduated and transferred from FCC compared to a statewide average of 15.3%.

During FY 2018-19, the college served 882 associate degree graduates and 230 certificate graduates. Another 6124 students enrolled in courses for credit, but did not complete a degree during that period of time. Significantly, the college offered dual credit courses to county high schools, serving a total of 1,400 students over the course of the year. The college also served 1,151 basic education students and 2,016 personal enrichment students enrolled in non-credit courses. Non-degree seeking students enrolled in workforce or professional development programs accounted for 3,286 students.

The consultant team identified priorities, strengths, and readiness of academic programs in meeting student and community needs through data collected and as expressed by internal and external constituencies. Recommendations are made to strengthen existing academic programs and the development of new initiatives including the expansion of technology support systems and interdisciplinary and partnership opportunities. New programs and expansions will complement the rich array of more than 85 programs currently offered within 12 areas of study, which include Arts and Humanities, Business, Community Education, Education and Childcare, General Studies, Healthcare, Hospitality, Culinary and Tourism, Information Technology, Public Safety, Skilled Trades, Social Sciences and STEM.

4. Needs Assessment

Projected Space Deficits. Frederick Community College has been experiencing space deficits for several years, and, while enrollment has both risen and declined in recent years, it is expected to grow, along with the need for space. Deficits are projected over the next 10 years for every category of space except Classroom and Merchandising. Office, Athletics / Physical Education, Class Labs, Food Facility, Study, and Assembly account for the largest deficits, ranging from about 6,000 NASF to approximately 50,000 NASF, as indicated in the following chart:

Projected (Fall 2030) Space Deficits and Surpluses

Space Classification	Use Code	Projected Fall 2030) NASF Inventory	Allowance	Deficit/Surplus
Office	300	82,268	131,951	(49,683)
Athletics/Physical Education	520	22,501	47,610	(25,109)
Class Laboratory	210	66,164	86,429	(20,265)
Food Facility	630	8,780	18,544	(9,764)
Study	400	18,138	25,515	(7,377)
Assembly	610	8,692	14,722	(6,030)
Shop/Storage	720-740	12,593	16,386	(3,793)
Lounge	650	2,351	5,454	(3,103)
Central Service	750	1,565	4,000	(2,435)
Open Laboratory	220	9,637	12,016	(2,379)
Media Production	530	851	2,689	(1,838)
Exhibition	620	397	2,181	(1,784)
Meeting Room	680	4,678	6,000	(1,322)
Greenhouse	580	0	1,000	(1,000)
Data Processsing	710	1,619	2,500	(881)
Health Care	800	0	772	(772)
Hazmat Storage	760	0	328	(328)
Subtotals Deficits		240,234	378,097	(137,863)
Classroom	100	56,601	45,977	10,624
Merchandising	660	5,922	2,281	3,641
Subtotals Surpluses		62,523	48,258	14,265
FCC Campus Totals		**302,757**	**426,355**	**(123,598)**

While the above projections are quantitative only, they don't take into consideration several other factors, such as room depth-width ratios, geometries, accessibility, ceiling heights, viewing angles, mechanical, electrical and low-voltage systems, sound transmission, and other qualitative issues.

Utilization – Classrooms, Labs. Both classroom and lab use reflected the intensity of use, both by room and by seats. Classrooms averaged 22 room hours per week which is slightly above Maryland's minimum room utilization guideline of 20 hours. Student stations (seats) were occupied 77% of the time when rooms were in use. This is significantly above Maryland's

guideline of 60%. Class laboratories averaged 18 hours per week which exceeds Maryland's utilization guideline of 15 hours. Lab student stations (seats) were occupied 80% of the time which greatly surpasses Maryland's guideline of 60%. As is expected, classroom use is heaviest during the 9:00 AM – 3:00 PM and 6:00 PM-8:00 hours, similar to other community colleges. Lab use is similar, heaviest during the 9:00 AM – 3:00 PM and 5:00 PM – 8:00 PM hours.

Classroom student station size of 31 nsf per station allows selection of appropriate furnishings, while the allocation in lab spaces is very tight at 46 nsf per station, compared to the Maryland standard of 63 nsf.

Current and Projected Enrollments. Whether by headcount, FTE (full time equivalent), FTDE (full time day equivalent), or WSCH (weekly student contact hours), enrollments are projected to grow significantly over the 10-year planning horizon of this study, as the following chart shows.

Current and Projected Enrollments by Headcount, Credit Hours, FTES, FTDES and WSCH

						On-Campus Before 5:00 p.m.			
	Full-Time Headcount	Part-Time Headcount	Total Headcount	Credit Hours	FTES	Credit Hours	FTDES	WSCH Lecture	WSCH Laboratory
Fall 2020	1,719	4,037	5,756	46,607	3,107	34,016	2,268	24,298	9,788
Fall 2030	2,414	5,366	7,780	66,795	4,453	42,915	2,861	30,664	12,352
% Change 2020-2030	40.4%	32.9%	35.2%	43.3%	43.3%	26.2%	26.2%	26.2%	26.2%
Average Annual Growth Rate	3.5%	2.9%	3.1%	3.7%	3.7%	2.4%	2.4%	2.4%	2.4%

Data Sources: FCC Office of Planning, Assessment and Institutional Research (2020 Actual) and Maryland Higher Education Commission (2030 Projected)

Faculty and staff numbers are projected to grow by approximately 26% during the same period. Space needs for library (FCC Learning Commons) functions, measured by Bound Volume Equivalents, is projected to grow even more, by about one-third.

Specific areas of need *by function* include:

- Wellness/Fitness/Recreation
- Assembly
- Physical Plant Operations
- Biotechnology
- Campus-wide Systems and Infrastructure Improvements
- Visual and Performing Arts
- Welcome and Admissions
- Student Services Activities
- Surge Space
- Continuing Education and Workforce Development (non-credit)

Existing Campus Plan

5. Campus Facilities: Current

Campus

Accessing the campus from Opossumtown Pike, a visitor may be struck by the carefully maintained landscape, buildings surrounded mostly by lawns interspersed with mostly deciduous trees, several of which are now mature, as is much of the now 66 year-old campus. The gently rolling grade allows relatively easy access to buildings via the network of asphalt and concrete sidewalks, although some routes are challenging for disabled individuals. (As part of the scope of work for this project, an ADA analysis was completed and produced as a separate document.) The original seven buildings as well as others completed in subsequent decades have created two very different quads, which would benefit from better definition. The exception rather than the rule, forested areas on the west side of the campus need to be protected and maintained as such.

A drainage course cuts through the middle of the campus generally from west to east where it meets a large stormwater management dry pond adjacent to Opossumtown Pike, which appears to be functioning as designed. A combination of drainage by way of the landscape and storm water structures both below and at grade, it presents an opportunity to restore part of the natural environment.

The campus roadway system beginning at Opossumtown Pike loops around most buildings and parking lots before returning to the public road; it is not a true 'loop' within the campus. Generally, parking lots are internal to the campus loop road, and pedestrian ways are mostly internal to both, connecting the parking lots to the buildings. Driveways, parking lots and sidewalks are generally asphalt, with some concrete paving. The approach via the main entrance driveway is not intuitive; a visitor must rely on signage to find their way to a parking lot convenient to their destination. Completed in 2015, campus signage is one of the systemic projects that has been criticized relative to location, readability, and wayfinding, and it could use another look.

Infrastructure Systems

The campus is improved with a network of utility infrastructure that appears to be of adequate capacity based on the documented size of utilities. The site is served by Frederick public water and sewer. The water line is looped through the campus, effectively providing redundancy. Potomac Edison provides electrical service by way of two service connections from Opossumtown Pike. Gas service from Washington Gas enters at the northern end of the campus.

Originally built in 1994, the Central Plant delivers chilled and heating water serving most of the campus buildings. Major upgrades have been made from 2008-2017, and there is adequate capacity to continue to serve the same existing buildings. Electrical service also is routed through the Central Plant and Athletics Building.

Telecommunications service enters the campus adjacent to the main driveway but has no redundancy. Telecommunications rooms in several buildings are not up to current IT standards. The data center is out of date and in need of modernization. The underground conduits system contains an abundance of unused cable which needs to be removed. The College needs to develop an approach and process to address disaster recovery plans as relating to the campus network, distribution,

and data integrity. The Valcom life safety paging system is at the end of its useful life; a replacement system should be planned.

Buildings

The original buildings, consisting of Buildings A (Annapolis Hall), B (Braddock Hall), C (Catoctin Hall), and D (Athletics Center), set the tone for most of the buildings built subsequently. Architecturally, those buildings are recognized by their beige brick facades and sloped standing seam 'mansard' type metal roofs. All buildings are one or two stories except Jefferson Hall which is three stories. Buildings range in size from small, 675 GSF storage buildings to the 50,306 GSF Student Center.

Campus Buildings

Building	Code	Built	Renovated	GSF	N
Main Campus					
Annapolis Hall	A	1970	1995	32,131	18
Braddock Hall	B	1970	2015	34,592	18
Catoctin Hall	C	1970	2014	54,290	29
Athletics Center/Central Plant	D	1970	2000	35,872	22
Conference Center	E	1999	2020	22,939	13
Visual & Performing Arts Center	F	1988	2013	51,676	31
Gambrill Hall	G	2007	n/a	16,020	10
Student Center	H	2009	n/a	76,987	50
Jefferson Hall	J	2012	2018	24,000	13
Mercer-Akre Kiln	K	2011	n/a	960	
Linganore Hall	L	1995	2015*	54,014	37
The Carl and Norma Miller Childrens Center	M	1994	2004	8,572	6
Plant Operations	P	1996	2004	7,380	5
Sweadner Hall	S	1970	2020	4,550	2
Portable Storage #1		1970	n/a	712	
Portable Storage #2		1970	n/a	712	
Athletic Storage Building		2004	2014	800	
Plant Operations Storage Building		1993	n/a	1,008	
Parking Deck		2013	n/a	127,512	
Main Campus Totals				**554,727**	**263**

Building	Code	Built	Renovated	GSF	N
Off-Site Campus					
Monroe Center		1970	2017	55,342	41
Off-Site Campus Totals				**55,342**	**41**
Frederick Community College Totals				**610,069**	**305**

*Under Renovation 2021

Source: Frederick Community College Capital Planning and Project Management

Sustainability

The College's Office of Capital Planning and Project Management (CPPM) began to address sustainability by way of several initiatives in recent years. Significantly, this includes development of its facilities to meet USGBC (United States Green Building Council) LEED (Leadership in Energy and Environmental Design) Silver level requirements, particularly for major capital projects funded in part by the State (Braddock Hall renovation, Monroe Center Renovation, and the Linganore Renovation). Reinforcing positive LEED outcomes, FCC requires commissioning for all building systems in its major construction projects.

As the campus landscaping palette largely focuses on grass, trees and shrubs in its neatly maintained grounds, it also offers several settings where innovative landscaping strategies can be implemented to reflect the growing awareness of the need for a more sustainable environment. In addition to the green spaces, the large expanses of parking lots contribute to an aggregated heat island during all seasons. The College is on the threshold of making large strides towards a more sustainable future, and numerous opportunities await.

6. Basis for Recommendations

Matrices in Chapter 6 Section A evaluate the impacts and relationships of local, state and national labor markets on and with existing and potential credit and non-credit programs. Four other charts following the labor market matrices look at the same programs under the lens of the *Driving Forces*, relative to the 'fit' of each program to the each of the six driving forces. These matrices were then reviewed with the Facilities Master Plan Steering Committee in a series of workshops, out of which consensus was developed, considering the relationship of the programs with the labor market and with the *Driving Forces.*

The six Driving Forces identify factors which are applied to academic programs relative to each, namely:

- Unique identity
- Economic advantage and return on investment
- Building on existing programs
- Potential for partners and alliances
- Social, environmental, community responsibility
- Labor market

A review of the environmental scan, existing programs that are doing well, and the matrices suggests support for certain academic programs, both existing and proposed as new. Existing credit and non-credit areas of study that merit consideration include:

- Arts and Humanities and General Studies
- Business
- Education and Child Care
- Healthcare
- Hospitality, Culinary and Tourism
- Information Technology
- Public Safety
- Skilled Trades
- Social Sciences
- STEM
- Transfer programs

In consideration of several factors, including: the matrix analyses; the space needs, both quantitative and qualitative interviews with College staff, faculty and trustees, and local and State government officials; evaluation of data provided by the College and gathered by the consultant team; the consultant team's observations; feedback from the Workshops; and the suggested emphasis for several areas of study, the following list was developed by the consultant team and reviewed with the FCC Steering Committee and Planning staff to identify the various facilities needed by the College. Those facilities and functions are listed below, in alphabetical order:

- Administration
- Assembly Facilities
- Athletics and Recreation
- Campus-wide Systems and Infrastructure
- Continuing Education and Workforce Development / Monroe Center
- Enrollment Services
- Food Facility Alternatives
- Gathering Spaces
- Instructional Space (Classrooms and Labs)
- Learning Commons Expansion
- Office Space
- Physical Plant Operations
- Visual and Performing Arts
- Wellness and Fitness

In addition, the following considerations are recommended for development and implementation, affecting all future capital projects and campus development:

- Programming
- Surge Space
- Space and Facilities for Dual Enrollment and Early College

7. Campus Facilities: Recommendations

Campus

It is recommended that the College undertake a comprehensive landscape master plan, which would address the landscaping, hardscape, roadways, pedestrian ways, storm water features, way-finding and signage, and accessory elements like site furnishings. More trees will most always be welcome as part of the landscape, providing shade, and contributing to a more collegiate character of the campus. Sustainability considerations include introducing meadows, restoring site drainage to more natural settings, and introducing treed islands into certain parking lots. The existing campus site lighting standards should continue to be deployed. Existing campus seating and tables should be replaced with uniform, aesthetically pleasing, durable and comfortable furniture.

The proposed campus development plan introduces a new connection from the south entrance road to the north entrance road on the FCC property, completing an internal loop. In addition, due to the impact of the proposed new buildings Wellness & Athletics, Innovation and Technology Center, and Enrollment Services / Welcome Center, those building footprints will impact some existing surface parking lots, reconfiguration of the south entrance road, and new pedestrian way axes anchored by the above proposed new buildings. Loss of some parking will result; however, additional parking can be accommodated via the long range plan, and, given the likelihood of the continuance of remote and hybrid learning, the demand for parking similar to pre-covid levels is in question. Additionally, the less-than-intuitive configuration of the segregated parking areas and circulation within the usable space of Parking Lot 1 should be re-examined and improved. The bus stop should be located in front of or near the proposed Enrollment Services and Welcome Center. And, importantly, looking beyond the campus, as long as the Monroe Center remains viable and is appropriately supported, a shuttle system between Monroe and the main campus should be considered, studied, and implemented if deemed feasible.

Infrastructure Systems

In addition to extending underground utilities to the proposed new buildings, some upgrades or re-sizing of some existing utility services may be necessary to accommodate increased loads. Storm water management will be required for all projects and may also warrant a dedicated project to upgrade the existing seasonal water course running through the campus. Hot and chilled water distribution from the central plant will need to be extended to the proposed new buildings from the Central Plant, and the capacity/output of boilers and chillers in the plant itself will need to be expanded, depending on the size and sequence of each project. Electrical service and distribution will need to be extended in a similar fashion.

Virtual learning and hybrid instruction must be an important consideration as it continues to affect instructional delivery and facilities planning. Accordingly, collaborative spaces, hybrid learning, and flexible room arrangements are a high priority, as well as uniformity of systems throughout the campus and the FCC system, including Monroe. Electronic security systems will need to be expanded and made robust, both inside existing and proposed buildings, and in outdoor spaces, pedestrian ways, and parking lots. Structured cabling systems should include two points of entry in every building, and distribution cabling

should be fiber. Disaster recovery planning should be addressed. And the campus blue emergency phones and call boxes should be replaced.

Buildings and Building Systems

Planning for the four building and renovation projects (Health & Wellness Building, Campus Services Building, Innovation and Technology Center, and Enrollment Services / Welcome Center proposed in the ten-year campus development plan needs to continue so as to meet future funding cycles and current and future needs of the College. Correspondingly, capital renewal projects must continue to be implemented and even re-defined as needs change. Campus standards should continue to be developed and to be incorporated into new and renovation projects. Similarly, design guidelines described in Section 6E Design Guidelines of the FMP report should be followed for all projects.

Some important elements from Section 6F College-Wide Recommendations follow:

- The need for more large classrooms and a lecture hall
- Minimize sound transmission into classrooms
- Learning spaces and their furnishings should be as flexible as possible
- A long-term plan for a CEWD Center, possibly located on the main campus
- A long-term plan to better accommodate Early College and Dual Enrollment students
- Additional gathering spaces for students throughout all buildings, especially those used by students
- Pursue strategies to deal with the possibility of an active intruder event on campus

Sustainability

Not just limited to the main campus or the Monroe Center, several opportunities to lower the College's carbon footprint present themselves. Some key recommendations follow:

- Explore enhanced public transit service to the main campus and the Monroe Center
- Generally, pursue strategies to re-introduce native species and habitats to the main campus
- Convert certain areas of grass to wildflower meadows
- Restore the seasonal drainage course to a more natural setting
- More (deciduous) trees, even in parking lots
- Develop solar photovoltaic arrays (on raised framing) on some existing parking lots and on the roofs of proposed buildings
- Minimize impervious surfaces
- Continue to implement LEED certification practices, also including buildings that are not State-funded
- Incorporate biophilic design principles in new buildings
- Use bird-friendly glass in new buildings, at least for large expanses of glass
- Replace existing gas fired boilers with more efficient condensing gas fired boilers
- For buildings connected to the central plant, replace existing heating water coils with low temperature hot water coils
- Consider heat recovery chiller or heat pump chillers at the central plant to provide simultaneous chilled water and heating water capacity
- Develop uniform standards for trash, recycling and compost receptacles and deploy throughout the campus
- Provide healthy food options at existing and new food venues, including vending machines
- Convert College vehicles to electric or at least hybrid
- Develop sustainability education and awareness programs for the entire FCC community

8. Proposed Campus Development

While the needs for new buildings are manifold, and several projects are candidates to be developed soon, four projects were identified to be included within the planning horizon of the Ten-Year Campus Development Plan:

- Health & Wellness Building / Building D Renovation
- Campus Services Building
- Innovation and Technology Center
- Enrollment Services / Welcome Center

These projects are briefly described in the following pages.

1. Health & Wellness Building / Building D Renovation

- Estimated Size: Two stories, 91,500 GSF, 57,100 NSF; Building D ground floor renovation plus a second story, 4,900 new GSF facing the quad, 31,450 sf renovation
- Functions Included: Health, Wellness, Athletics, Recreation, Offices, Student Support Services, Expansion of the Central Plant, and Support Spaces
- Budget Construction Cost: $88,499,216.

This project will serve all members of the FCC community, including athletes, other students, faculty, and staff. It assumes two phases of development: first, the new Health & Wellness Building, which would contain at least one large footprint space – a combined competition arena, convocation center and multi-use space, and several support functions such as storage, locker rooms, fitness rooms, wellness suites, therapy rooms, offices, meeting rooms, and support spaces. The second phase, Renovation of Building D, assumes most if not all functions to be included in the Health & Wellness Building. It includes a two-story link to the new building plus additions in the front and rear providing circulation, a small food service venue, and other functions. It is anticipated that the renovation of Building D will also allow expansion of Health Sciences functions that the existing Linganore Hall is not able to accommodate. Site work associated with this project will include initial development of two new major pedestrian axes, a new vehicle turning circle north of the building, and a new outdoor plaza integrated with the pedestrian axis near Building G.

2. Campus Services Building

- Estimated Size: One-two stories: Office & Shops 19,200 GSF, 12,900 NSF. One-level Storage Building 4,800 GSF
- Functions Included: Plant Services Work, Shops, Offices, Repair Spaces, FCC Receiving, Storage
- Budget Construction Cost: $14,237,182.

This project replaces the current Plant Services building and includes all functions now housed in that building and others distributed throughout the campus. Site work includes a new access driveway, fenced 120’ x 140’ service/storage yard with sliding security gate, a parking lot, and landscaping.

3. Innovation and Technology Center

- Estimated Size: Two Stories, 54,600 GSF, 31,100 NSF
- Functions Included: Science and Biotechnology labs, an Innovation Center serving the FCC community and other entrepreneurial initiatives, instructional spaces for STEM programs, offices, lecture hall, and support spaces. To connect with Building C at the same floor levels.
- Budget Construction Cost: $40,671,361.

This project will provide space for creative development of ideas spawned in other FCC courses and by institutional and business partners in the County. Academic space to be included in the program may also allow for some Continuing Education / Workforce

Development programs that are currently offered at the Monroe Center facility to return to the FCC Main Campus. Site work includes reconfiguration of Parking Lot 5, resulting in a net loss of parking spaces; the pedestrian axis constructed as part of project 1 will be extended to the west campus loop road; and a landscaped plaza is planned for the new courtyard formed by Building C and the new Innovation and Technology Center.

4. Enrollment Services / Welcome Center

- Estimated Size: Three Stories, 48,000 GSF, 27,400 NSF
- Functions Included: All Student Services functions currently housed in Jefferson Hall, also including a new Welcome Center.
- Budget Construction Cost: $31,708,705.

This project represents a four-fold opportunity: 1) to better serve students related to student support services, improving those now housed in Jefferson Hall, 2) provide additional space currently needed for Student Services, 3) introduce a new Welcome Center near the 'front door' of the campus, and 4) allow for a relatively easy relocation of administrative functions to the Jefferson building. Associated site work includes realignment of a portion of the campus entry road west of the intersection with the CTC driveway, to provide a clearer circulation pattern. The building is located within the current Visitor Parking Lot, so a new lot has been proposed immediately north of the new Enrollment Services / Welcome Center building. In addition, completion of the pedestrian axis constructed as part of project 1 is anticipated from the interface location south of Linganore Hall to a new bus stop location on the loop road southeast of the new building.

Refer to the following pages for these drawings:

- Main Campus – Existing Conditions Plan
- Main Campus – Ten-Year Campus Development Plan
- Main Campus – Long Range Campus Development Plan


FREDERICK COMMUNITY COLLEGE | FACILITIES MASTER PLAN 2023 - 2033 | MAIN CAMPUS - EXISTING CONDITIONS PLAN | MAY 2023
LEGEND
A Annapolis Hall
B Braddock Hall
C Catoctin Hall
D Athletics Center
E Conference Center
F Visual and Performing Arts Center
G Gambrill Hall
H Student Center
J Jefferson Hall
K Mercer-Akre Kiln
L Linganore Hall
M The Miller Children's Center
P Plant Operations
S Sweadner Hall
OPPOSSUMTOWN PIKE
SUMMERFIELD DRIVE
RUNNYMEAD COURT
RUNNYMEAD DRIVE
VISTA DRIVE
TENNIS
SOFTBALL
SOCCER
PRACTICE
BASEBALL
PARKING DECK
FCPS CTC


FREDERICK COMMUNITY COLLEGE | FACILITIES MASTER PLAN 2023 - 2033 | MAIN CAMPUS - TEN-YEAR CAMPUS DEVELOPMENT PLAN | MAY 2023
PROPOSED PROJECTS
1 Health & Wellness Building / Renovate D / Landscape Improvements
2 Campus Services Building
3 Innovation and Technology Center
4 Enrollment Services Building / Parking / Realign Entrance Road
LEGEND
Open Space
Recreational / Athletic Field
Wooded
Bioretention Planting
Existing FCC Building
New Construction
Renovation
Primary Pathway/ Plaza
Surface Parking / Road
OPPOSSUMTOWN PIKE
SUMMERFIELD DRIVE
RUNNYMEAD COURT
RUNNYMEAD DRIVE
VISTA DRIVE
TENNIS
SOFTBALL
SOCCER
PRACTICE
BASEBALL
PARKING DECK
FCPS CTC


FREDERICK COMMUNITY COLLEGE | FACILITIES MASTER PLAN 2023 - 2033 | MAIN CAMPUS - LONG RANGE CAMPUS DEVELOPMENT PLAN | MAY 2023
LEGEND
Open Space
Recreational / Athletic Field
Wooded
Bioretention Planting
Existing FCC Building
New Construction
Renovation
Primary Pathway/ Plaza
Surface Parking / Road
PROPOSED PROJECTS
1 Health & Wellness Building
2 Campus Services Building
3 Innovation and Technology Center
4 Enrollment Services Building
5 Relocate Tennis and Softball Facilities
6 Fine & Performing Arts Building/ Realign loop Road
7 Renovate Jefferson Hall/ Demolish Building A/ Expand Quad
8 North Field House
9 South Field House
OPPOSSUMTOWN PIKE
SUMMERFIELD DRIVE
RUNNYMEAD DRIVE
RUNNYMEAD COURT
VISTA DRIVE
FCPS CTC
PARKING DECK
EXPANDED CAMPUS QUAD
TENNIS
PRACTICE
SOCCER
BASEBALL
SOFTBALL
PRACTICE

Chapter 1
Overview of the College

CHAPTER 1 OVERVIEW OF THE COLLEGE (Facilities Master Plan Context)

Introduction

Frederick Community College (FCC) is a comprehensive, public, associate degree-granting institution in Frederick County, Maryland. The approximately 95-acre FCC main campus is located in the City of Frederick. It is less than an hour's drive from Washington D. C. and Baltimore, Maryland. The main campus is comprised of 19 buildings including four storage facilities and a parking deck. The main campus is located at 7932 Opossumtown Pike, Frederick, Maryland 21702. The Monroe Center is an extension campus located at 200 Monroe Avenue in Frederick, Maryland 21701.

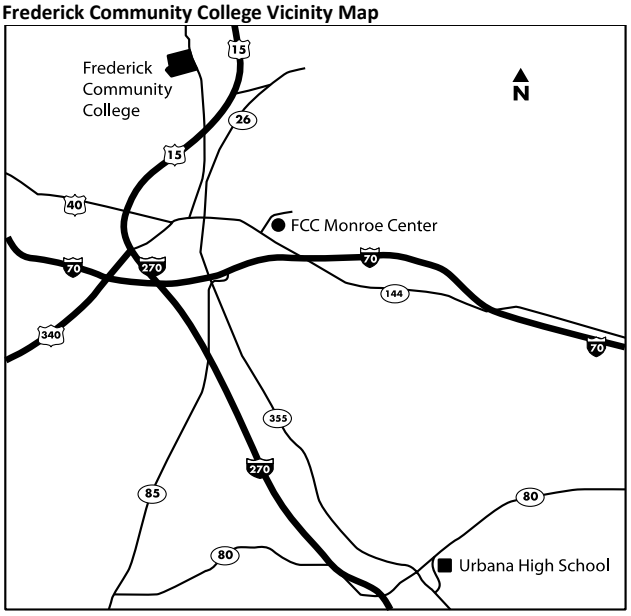
FCC was founded in 1957 and is governed by a seven-member board of trustees. The trustees are appointed by the Governor of Maryland with Senate consent.

FCC is fully accredited by the Middle States Commission on Higher Education and was reaccredited in 2016.

The average age of an FCC student is 25; about 67% are part-time and 71% of FCC students intend to transfer to a four-year college to attain a bachelor's degree.

At the onset of this facility master planning process, FCC's most recent annual operating budget is about $60 million. The funding comes from student tuition (30%), the State of Maryland (27%), and Frederick County Government (36%).[1]

Frederick Community College Vicinity Map



Any proposed capital improvement request must be consistent with the State's Community College Construction Grant Program (CCCGP). Frederick Community College (FCC) must have an approved current facilities master plan and an approved facility program consistent with Section 3-602(d) of the State Finance and Procurement Article of the Annotated Code of Maryland. The programmatic need must be fully described and justified. It must be well grounded in FCC's mission, vision, and philosophy; local front-line interface with the K-12 public school system, articulated transfer agreements with four-year institutions; and the workforce development needs of Frederick County and the State of Maryland; and FCC's Board of Trustees commitments as fiduciaries.

[1] https://www.frederick.edu/about-fcc/presidential-search.aspx; p.9

This Overview foci are: Introduction; Role of a Community College; Student Success: More Than College Completion; Restructuring the System of Higher Education; Developing a Transcendent Built-Environment Responsive to Human Needs; Transforming A Student to Facilitate Holistic Student Success; Eight Dimensions of Wellness; Athletics, Fitness, Recreation; Health and Wellness Impact on Curriculum/Pedagogy/Learning; Mission, Vision, Values; Community Outreach; Strategic Directions; Governance and Organization; Students, Faculty, and Staff; Learning, Instruction, Accreditation; Main Campus; and Extension Centers.

The Overview is intended to orient the reader to Frederick Community College (FCC) at the global, national, regional, state, local and campus levels. United States postsecondary education is ever evolving and is a complex enterprise occurring real-time in a dynamic environment. The FCC facility master planning process was undertaken during the COVID-19 pandemic; a college presidential search; a war oversees; social unrest within the United States; a concomitant drop in college attendance nationally; a loss of jobs in industries paying the lowest wages; and 59 percent loss of low-paying jobs between February 2020 to October 2021 while the Washington-Baltimore-Arlington combined statistical area (CSA) that impacts and is impacted by Frederick County was becoming the third largest CSA in America.[2]

Against this backdrop, Frederick Community College implemented course delivery formats for entirely online courses where students complete work on their time but meet expected deadlines; structured remote courses with specific class times; hybrid remote courses online with periodic in-person class time; and in-person courses in a physical space on campus, at the Monroe Center or in a location off-campus appropriate for the course objectives. Additionally, the FCC Testing Center leveraged the Zoom platform to proctor placement and FCC course exams for students. Additionally, FCC adopted and implemented *Navigate*, which allows students and academic and administrative offices to communicate with students and keep them engaged; and it offers advisors, tutors, and other support staff a comprehensive range of student information to assist in student success and support.

In terms of community outreach and impact the FCC partnered with Frederick County Government and others to ensure consistent and coordinated messaging during COVID-19 via a Joint Information Center (JIC). This led to FCC hosting a county vaccination site in the FCC gymnasium that became a state vaccination site before closing in May 2021.

Role of a Community College

> "The distinctive contribution of community colleges to American higher education is their adaptive, transmutable mission. They represent education's local, front-line interface with society. To fulfill this transmutable mission, comprehensive community colleges provide (1) general and liberal education, (2) vocational and technical education, (3) adult, continuing, and community education, (4) developmental, remedial, and college-preparatory education, and (5) counseling, placement, and student development services."[3]

The American Association of Community Colleges (AACC) serves as a national voice and advocacy for the community college mission. The AACC mission statement is "Building a Nation of Learners by Advancing America's Community Colleges."[4] America's first public

[2] https://www.newgeography.com/content/007051-combined-statistical-areas-lead-continuing-dispersion-2010-2020

[3] Community Colleges - The History of Community Colleges, The junior college and the research university., The Community College Mission

[4] https://files.eric.ed.gov/fulltext/ED451865.pdf

community college, Joliet Junior College, was begun in 1901 as an experimental postgraduate high school program as the "brain child" of J. Stanley Brown, Superintendent of Joliet Township High School, and William Rainey Harper, President of the University of Chicago.[5]

From the outset, community colleges were an extension of the Morrill Act of 1862 and the Morrill Act of 1890, both responses to America's industrialization. Community colleges provided access to education and training to lower division coursework beyond high schools while principally using high school facilities when available. The Local Education Agency (LEA) [nee: local school boards] oversaw the governance and operations of community colleges focusing on adult basic education, transfer programs and vocational training.[6] In 1944, Congress passed the GI Bill of Rights, providing financial assistance for veterans of World War II. The Truman Commission report of 1947 transformed U.S. higher education from an instrument for 'intellectual elites' to the means by which every citizen, youth, and adult is enabled and encouraged to pursue higher learning.[7]

By the 1960's, the comprehensive community college model was created.[8] During the 1970's community colleges continued rapid growth with greater emphasis on economic-development activities in preparation for the pending impact of *high technology*. This led to the 1980's emphasis on specialized training, customized training and vocation-oriented study as a precursor for career and technical education (CTE) programs of study. In 1988, the *Report of the Commission on the Future of Community Colleges* clarified 'community' to mean both a geographical location and a climate for learning. Emphasizing learning, teaching, and college completion the report stated:

"The national college completion agenda has focused funders, communities, and government on community colleges and the goal to double the number of students who complete, with market- place value, a certificate or an associate degree, or who transfer to earn a bachelor's degree in the next two decades. Achievement of this completion agenda requires:

- A systematic transformation of community colleges to create a new seamless and integrated system that begins in high school or at points where adults enter the community college pipeline and extends to college completion.
- A commitment to support staff development and engage adjunct faculty because every community college employee facilitates learning and moving students towards completion.
- A program of study with "instructional program coherence" that includes general education and liberal education, in addition to career training, to provide students the common core knowledge, skills, and attitudes to be successful."[9]

The national discourse created a false dichotomy between the thesis that favors teaching versus the antithesis that favored learning. From this came a new synthesis that suggests: "The purpose of teaching is improved and expanded learning. Improved learning is the outcome of effective teaching."[10]
This left the third pillar of the report for exploration, *college completion with a market-*

[5] https://jjc.edu/about-jjc/history
[6] https://files.eric.ed.gov/fulltext/EJ876835.pdf
[7] https://www.diverseeducation.com/opinion/article/15288858/the-important-history-of-community-colleges
[8] https://www.chronicle.com/article/community-college-faq-whats-a-comprehensive-community-college
[9] http://www.3cmediasolutions.org/sites/default/files/LearningTeachingAndCollegeCompletionAACC.pdf
[10] Ibid.

place value. These pathways were challenged to target and ensure that large numbers of underprepared, lower socio-economic and first-generation college students were not left behind.[11] All of the aforementioned was aimed at student success.

Student Success: More Than College Completion

"I don't have a particularly strong appetite for the phrase "When we get back to normal." I don't want to get back to normal, because "normal" in American higher education is not currently living up to its potential as an engine of equitable social and economic mobility. But I am optimistic that this enterprise can live up to its potential, which is why we continue to invest."

Patrick Methvin
Director, Postsecondary Success
Bill&Melinda Gates Foundation

The Bill & Melinda Gates Foundation (Foundation) in seeking to improve postsecondary success put students at the center of a belief system that guides their philanthropy around postsecondary education:

- Educational opportunity should not depend on race, ethnicity, or income;
- Colleges and universities can be critical agents of change when it comes to boosting student success and eliminating access and success disparities for Black, Latino, and Indigenous students and students from low-income backgrounds;
- Strong networks of institutions/ supporting organizations that provide knowledge and resources are critical for accelerating learning and student-centered change;
- Evidence is essential for guiding improvement in student outcomes.

The Foundation focus is to ensure postsecondary student success by supporting: innovation, holistic student support, transformation, comprehensive data and information; and federal and state policy.[12]

Federal and State Policy

The Higher Education Act of 2008 (Public Law 110-315) (HEOA)[13] was enacted on August 14, 2008, and reauthorized the Higher Education Act of 1965, as amended (HEA).[14] The HEOA had several provisions that made postsecondary education more accessible and affordable for young adults with disabilities, especially those with intellectual disabilities.[15] Several precursors to the HEOA were the Vocational Rehabilitation Act of 1973 and the passage of the Americans with Disabilities Act of 1990 (ADA). Key federal legislation that increased enrollment in postsecondary education for this demographic (National Center for Education Statistics, 2011). Most recently, the U.S. Department of Education proposed a change to its Title IX Regulations on Students' Eligibility for Athletics Teams. These are but two examples of federal policy aimed at improving student access, success, and innovation.

Evidence-Based Research

At the college and university level, *Inside Higher Ed*'s first Student Voice survey of 2023 shed light on how students navigate their academic path, obtain and interact with course materials, and rank the challenges to their success.[16] All of the aforementioned have basis in the seminal work of John Holland's Theory of Career Choice.[17] Holland's person-environment fit

[11] Ibid.
[12] https://www.gatesfoundation.org/our-work/programs/us-program/postsecondary-success
[13] https://www.govinfo.gov/content/pkg/PLAW-110publ315/pdf/PLAW-110publ315.pdf
[14] https://www2.ed.gov/policy/highered/leg/hea08/index.html
[15] https://www.researchgate.net/publication/263589783_The_Higher_Education_Opportunity_Act_Impact_on_Students_with_Disabilities
[16] https://www.insidehighered.com/news/2023/02/14/survey-top-five-barriers-student-success
[17] https://www.careers.govt.nz/resources/career-practice/career-theory-models/hollands-theory/

theorizes that most people fit one of six personality types: realistic; investigative; artistic; social; enterprising; and conventional.[18]

In 2005 and early 2006, at least six major reports were released by highly respected U.S. academic, scientific, and business organizations on the need to improve science and mathematics education: The Education Commission of the States, *Keeping America Competitive: Five Strategies To Improve Mathematics and Science Education*, July 2005; The Association of American Universities, *National Defense Education and Innovation Initiative, Meeting America's Economic and Security Challenges in the 21st Century*, January 2006; The National Academy of Sciences, Committee on Science, Engineering, and Public Policy, *Rising Above the Gathering Storm: Energizing and Employing America for a Brighter Economic Future*, February 2006; The National Summit on Competitiveness, *Statement of the National Summit on Competitiveness: Investing in U.S. Innovation*, December 2005; The Business Roundtable, *Tapping America's Potential: The Education for Innovation Initiative*, July 2005; the Center for Strategic and International Studies, *Waiting for Sputnik*, 2005.

In July 2006, Holland's *Theory and Patterns of College Student Success* resulted in a *Commissioned Report for the National Symposium on Postsecondary Student Success: Spearheading a Dialog on Student Success.* The symposium was under the authority of the National Postsecondary Education Cooperative (NPEC) a voluntary organization established under the auspices of the National Center for Education Statistics (NCES). NPEC encompasses all sectors of the postsecondary education community: federal agencies, postsecondary institutions, associations and other organizations with a major interest in promoting the quality, comparability, and utility of postsecondary data and information that support policy development at the federal, state, and institution levels.

The takeaway, the three basic premises of Holland's theory as applied to higher education settings [i.e. environments]:

- The choice of a career or field of training is an expression of one's personality, and most people can be classified by their resemblance to six personality types (Realistic, Investigative, Artistic, Social, Enterprising, Conventional), their distinctive patterns of attitudes, interests, and abilities.
- There are six corresponding academic environments, each dominated by their analogous personality type, that reflect the prevailing physical and social settings in society.
- Congruence of students and their academic environments is related to higher levels of educational success.

Thus, Holland's original theory focusing on vocational behavior was equally adaptable to educational behaviors. The educational environment is instrumental in developing a student's interests, abilities, and skills. Students learn what they study, what the environment reinforces and rewards, and their personal self-perceptions, competencies, attitudes, interest, and values whether their personalities are congruent or incongruent with the academic environment are not the determining factors.[19] It is therefore incumbent on the institution to create an environment that supports holistic student success.

Restructuring the System of Higher Education

Student success is more than a notion and an institution's educational environment is impacted by the policy, process, and

[18] https://www.careers.govt.nz/assets/pages/docs/career-theory-model-holland-20170501.pdf

[19] https://nces.ed.gov/npec/pdf/Smart_Team_ExecSumm.pdf

procedures of coordinating and governing bodies. Accordingly, in 1988, the State of Maryland via the Maryland Higher Education Commission (Commission) implemented a reorganization of Maryland universities and colleges (Chapter 246, Acts of 1988). The State Board for Community Colleges (SBCC) was abolished in 1991 and its functions were transferred to the Commission.[20] The Commission establishes statewide policies for public and private colleges and universities and private career schools in keeping with the *State Plan for Postsecondary Education* that is reviewed and updated every four years.[21]

Soon after the abolishment of SBCC, the Maryland Association of Community Colleges (MACC) was founded in 1992. MACC is the unified voice for Maryland's community colleges. On behalf of Maryland's 16 community colleges, MACC coordinates with the Commission, the University System of Maryland (USM), the Maryland Independent College and University Association (MICUA), and other organizations (i.e., private, public, state, and federal) regarding community college affairs (e.g., government relations, community college financing, public relations, economic development and job training, member services, research; and professional development).[22]

In 2006, United States Secretary of Education Margaret Spelling's *Commission on the Future of Higher Education* issued its final report.[23] The report called for systemic changes at the nation's colleges and universities. The report took a hard look at the United States global competitiveness and made six recommendations:

a. Expand access and success by improving preparation and persistence, and by addressing non-academic barriers such as finance;
b. Restructure the financial aid system to provide incentives for the measurement of costs and institutional productivity;
c. Create a robust culture of accountability and transparency;
d. Embrace a culture of continuous innovation and quality improvement through the development of new pedagogies, curricula, and technologies;
e. Develop a national strategy for lifelong learning; and
f. Increase federal investment in areas critical to the nation's global competitiveness.

To date, these recommendations have not been fully implemented at the federal level but are recognized at both state and local levels. The recommendations inform Maryland's constitutional mandate to support public higher education.

Informed by these national recommendations and mindful of both Maryland's and the Frederick County region's needs, the Frederick Community College Board of Trustees (BOT) initiated a national presidential search in 2021. The BOT and the Presidential Search Committee sought candidates with the following attributes:

a. Forward-thinking proven leader
b. Exceptional vision
c. Inclusive style
d. Passion for teaching, learning and student success

Dr. Annesa Cheek was named president in February 2022. Dr. Cheek was selected for her

[20] https://msa.maryland.gov/msa/mdmanual/25ind/highered/html/43highf.html
[21] Ibid.
[22] https://mdacc.org/about-macc/
[23] U.S. Department of Education; A Test of Leadership: Charting the Future of U.S. Higher Education, Washington, D.C.; 2006

leadership experience, passion for education and equity, and her all-around positive energy. Dr. Cheek was impressed by the love and commitment to FCC by all who participated in the search. Given her background, Dr. Cheek expressed her enthusiasm "…to hit the ground listening and learning about the College and its connections to support a vibrant workforce and regional economy."[24]

Developing a Transcendent Built-Environment Responsive to Human Needs

> "Campus master plans guide the physical development needed to support the mission and strategic plan of an institution of higher education. They direct how various aspects of the physical environment, such as academic facilities, open spaces, housing, and circulation come together to meet the needs of the college or university. Most importantly, the campus master plan establishes the setting in which higher education transforms students' lives. The endeavor of creating a place that supports learning demands a transcendent environment equal to the transformation that IS the educational journey for the students, whether traditional late adolescents or part-time and mid-career adults. A campus master plan reflects a clear campus identity, reinforces a community and supports the institution's neighbors."[25]

Buildings and the built-environment do not exist in a vacuum. They are a response to the needs of people, programs, activities, and stuff (e.g. furniture and equipment, consumables, things, etc.) essential to human beings. A campus is more than a collection of buildings. Higher education institutions are change agents for communities and societies as a whole.[26]

Transforming A Student to Facilitate Holistic Student Success

Eight Dimensions of Wellness

> "In large part, throughout the history of academic institutional wellness programming, wellness programs have typically been geared for the student population. Most institutions and executive administrators are challenged with sustaining themselves financially, by remaining competitive in the marketplace, and attracting and retaining students… Executive leadership, faculty and staff are becoming more aware of the impediments that undermine student success metrics, like sleeplessness, anxiety, stress, depression, poor eating habits, lack of activity and overall poor coping mechanisms (American College Health Association, 2018). Although many academic institutions have instituted wellness programs for students and/or employees, there are a limited number who have implemented comprehensive, structured and integrated approaches to health and wellness (Hill-Mey et al., 2015)…
>
> Academic institutions have a unique opportunity and responsibility to provide transformative education, engage the student voice, develop new knowledge and understanding, lead by example, and advocate to decision-makers for the benefit of society. In the emergent knowledge society, higher education institutions are positioned to generate, share and implement knowledge and research findings to enhance the health of citizens

[24] https://www.wfmd.com/2022/02/16/frederick-community-college-board-of-trustees-names-new-president/
[25] Dalton, Linda, Ph.D., FAICP; California Polytechnic; https://www.appa.org/bok/campus-master-planning-2/;
[26] https://www.emerald.com/insight/content/doi/10.1108/IJSHE-09-2021-0407/full/html

and communities both now and in the future. The sheer volume of people who live, work and visit academic institutions can allow for a greater collective impact, with work done collaboratively in transdisciplinary and cross-sector ways. Higher education institutions can incorporate health promotion values and principles into their mission, vision and strategic plans, and model and test approaches for the wider community and society.

According to Gallup (Marken & Matson, 2019), faculty and staff who are emotionally and psychologically engaged are more committed to their work and produce better student outcomes than less-engaged peers. Based on their research, only 34% of faculty and staff within higher education are engaged at work, which is lower than those in industry settings. Challenges include over ambitiousness and hastiness in taking on too many initiatives at one time, poor project planning, or taking on projects that do not fit the needs and culture of the institution. Top-down leadership can also lead faculty and staff to feel that their input and expertise are not valued. Higher education needs to continue to make the case for creating a culture of wellness that will benefit all of society, starting locally on our college campuses, to improve population health and decrease fiscal strain on our healthcare system."[27]

Frederick Community College embraces a holistic definition of wellness for its students, faculty, staff, administrators, and community. This embodies the following dimensions: emotional, spiritual, intellectual, physical, social, environmental, financial, and occupational.[28] Living a balanced life encompasses all of these dimensions and each may impact the other. Accordingly, daily encounters formally or informally impact success whether you are a student, faculty, staff, administrator or the external community encountering FCC.

Accordingly, FCC is seeking to incorporate wellness throughout campus operations. These efforts are foundational to the FCC Board of Trustees (BOT) and the Presidential Search Committee's selection of Dr. Cheek as its transformational leader. Dr. Cheek is charged with:

a. Fostering a vibrant and empowered community by evoking trust and welcome collaboration;

b. Engaging the knowledge and experiences of the administration, staff, and faculty in accountable decision-making;

c. Building upon the college's proven track record of academic success; and

d. Modeling an authentic commitment to enhancing diversity, equity, and inclusion and infusing those values throughout academic programs, student life, and college operations.

Athletics, Fitness, Recreation

"The benefits of physical activity have been extolled throughout western history, but it was not until the second half of the [20th century] that scientific evidence supporting these beliefs began to accumulate. By the 1970s, enough information was available about the beneficial effects of vigorous exercise on cardio respiratory fitness that the American College of Sports Medicine

[27] Amaya, M., Donegan, T., Conner, D., Edwards, J., & Gipson, C. (2019). Creating a Culture of Wellness: A Call to Action for Higher Education, Igniting Change in Academic Institutions. Building Healthy Academic Communities Journal, 3 (2) https://doi.org/10.18061/bhac.v3i2.7117

[28] Swarbrick, M. (2006). A Wellness Approach. *Psychiatric Rehabilitation Journal, 29(4),* 311-314.

(ACSM), the American Heart Association (AHA), and other national organizations began issuing physical activity recommendations to the public."[29]

"Survey research conducted by Reynolds and Cain concludes that "institutional characteristics and facilities have a direct correlation with a student's decision to attend a particular school, both initially and after enrollment" (p. 41). Their research suggests that while facilities play an important role in students' decision-making process when they select a particular institution, the quality of facilities is even more important when students reject an institution."[30]

The FCC Athletic Department (Athletics) promotes the academic and athletic growth of student-athletes by offering opportunities to participate at a competitive level as a part of a balanced intercollegiate program. FCC offers three men's teams (i.e., Baseball, Basketball, and Soccer). Four women's teams (i.e., Softball, Women's Basketball, Women's Soccer; and Women's Volleyball). [FCC] serves the community by offering camps, clinics, and partnerships with outside groups.

Athletics operates under the highest standard of integrity, equality, and sportsmanship. Frederick Community College aspires to be the premier institution in the Maryland Junior College Athletic Conference (MD JUCO) and National Junior College Athletic Association (NJCAA), with a reputation for excellence, both academically and athletically. Athletics is committed to: promoting student-athlete welfare, ethical conduct, equal opportunity, and fiscal and social responsibility among all student-athletes, coaching staffs, and administrators; actively developing student-athlete life skills for success in the classroom, on the campus, and in the Frederick County community; and encouraging athletic excellence characterized by discipline, sportsmanship, and continuous personal growth. FCC is a member of the National Junior College Athletic Association (NJCAA), the NJCAA Region 20, and the Maryland Junior College Athletic Conference (MDJUCO).

Harvard Medical School states, "Exercising regularly, every day, if possible, is the single most important thing you can do for your health. In the short term, exercise helps to control appetite, boost mood, and improve sleep. In the long term, it reduces the risk of heart disease, stroke, diabetes, dementia, depression, and many cancers."[31] Internationally, a research article published in the International Journal of Environmental Research and Public Health, *Correlation between Campus-Built Environment and Physical Fitness in College Students in Xi'an - GIS Approach* concluded there is a correlation between campus-built environment and college students' aerobic capacity, muscle strength, and speed agility qualities.[32]

"Reports from the Carnegie Foundation for the Advancement of Teaching and the Wingspread Group on Higher Education serve to challenge [college] administrators in their struggle to create a sense of community. In as much as campus recreation centers have the capacity to engage members of the campus community in exciting, creative, and unique

[29] U.S. Department of Health and Human Services. Physical Activity and Health: A Report of the Surgeon General. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, 1996.

[30] Kadamus, James A.; **Change**, THE MAGAZINE OF HIGHER LEARNING; March-April 2015

[31] https://www.health.harvard.edu/topics/exercise-and-fitness

[32] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9265832/pdf/ijerph-19-07948.pdf

experiences they can provide the means to attract diverse populations. Often open 16–18 hours each day, there is no other single facility on a college campus that can provide as many varied activities with such wide appeal…

The Student Recreation Center provides a state-of-the-art facility and a comprehensive recreation program for students, faculty, staff, alumni, and spouses. It aids in the education and development of the whole person and serves as a place of employment for students. More than just a place to exercise, the recreation center also serves as a venue for education: users develop positive self-esteem, enhance their social relationships, and improve their interpersonal skills. The recreation center provides a unique site for programs and activities aimed at meeting the needs, interests, and expectations of a diverse community. Opportunities for interaction, collaboration, and unification are essential if campuses are to develop a sense of community…

Conventional programs such as intramurals, sport clubs and aerobics programs serve individuals in a variety of sports and recreational activities from basketball to scuba diving. Wellness programs offer health and educational services and outdoors recreation programs provide opportunities to develop skills for life-long enjoyment. Student recreation centers can serve as sites for day camp programs for children. Community members at large receive passes at nominal fees when student enrollment declines during the summer months.

Recreation centers provide opportunities for students to interact with one another, as well as other sectors of the community. Research shows that this aids in both recruitment and retention. [College] administrators must continue their efforts to foster student learning and personal development. Student recreation centers can contribute significantly to that end by providing the facilities, programs, services and personnel to help meet those challenges."[33]

Health and Wellness Impact on Curriculum/Pedagogy/Learning

High-impact practices (HIPs) can improve the rigor, quality, and outcomes of undergraduate education. Several high-impact practices are explicitly woven into the overarching goals, learning objectives, and curricular competencies for undergraduate public health degree programs [health sciences], while others are natural fits. However, capitalizing on the value of HIPs for public health undergraduates requires a conscious effort in the process of curriculum design, course delivery, and administration of these programs…[34]

The American Association of Colleges and Universities (AAC&U), a global membership organization dedicated to advancing the 'vitality and democratic purposes of undergraduate liberal education', envisages educational excellence grounded in equity and inclusion focused on designing, facilitating, and implementing healthcare, fitness, wellness, health sciences, biotechnology, and other public health coursework, that incorporates the following HIPs:

[33] https://journals.sagepub.com/doi/10.1123/nirsa.25.1.66; Dalgarn, Melinda K., Ph.D.; The Role of the Campus Recreation Center in Creating a Community; Recreational Sports Journal; vol. 25, Issue 1

[34] https://pubmed.ncbi.nlm.nih.gov/36203660/; National Library of Medicine. National Center for Biotechnology Information.

- Capstone courses and projects
- Collaborative assignments and projects
- Common intellectual experiences
- Diversity/global learning
- ePortfolios
- First-Year seminars and Experiences
- Internships
- Learning Communities
- Service Learning, Community-Based Learning
- Undergraduate Research
- Writing-Intensive Courses

FCC is currently engaged in a rigorous self-study preparatory to a reaccreditation site visit in 2025 from the Middle States Commission on Higher Education (MSCHE). To be eligible for, to achieve, and to maintain Middle States Commission on Higher Education accreditation, an institution must demonstrate that it fully meets *Requirements of Affiliation*. Compliance is expected to be continuous and will be validated periodically, typically at the time of institutional self-study and during any other evaluation of the institution's compliance. Once eligibility is established, an institution then must demonstrate on an ongoing basis that it meets the Standards for Accreditation. Standard VI Criteria 6 addresses 'comprehensive planning for facilities and infrastructure, and technology that includes consideration of sustainability and deferred maintenance and is linked to the institution's strategic and financial planning processes.[35]

MSCHE Standard III addresses the design and delivery of the student learning experience. The expectation is that the learning experiences are characterized by rigor and coherence at the program, certificate, and degree levels regardless of the instructional modality. FCC's goal is reaccreditation. This facility master planning process is integral in providing FCC with the requisite built-environment.

Mission, Vision & Values[36]

Mission

Focused on teaching and learning, Frederick Community College provides affordable, flexible access to lifelong education that responds to the needs of diverse learners and the community.

Vision

We transform individuals and communities through learning.

Core Values

Learning: Engaging all learners in critical and creative thinking, problem-solving, and the lifelong pursuit of knowledge and skills

Innovation: Encouraging creative thinking, technological solutions, and alternative approaches to advance learning and student success

Diversity: Being culturally conscious and inclusive by embracing the visible and invisible human differences that affect the learning and success of students, faculty, staff, administrators, and members of the community

Excellence: Providing educational experiences and programming that reflect high academic standards, quality instruction, and exemplary student support

[35] https://www.msche.org/standards/#standard_6

[36] https://www.frederick.edu/about-fcc.aspx

Community: Responding to the needs of Frederick County with accessible, affordable education while encouraging engagement, communication, and collaboration within and beyond the College

Integrity: Applying fair and ethical standards in all policies, procedures, and practices

Community Outreach: FCC Foundation and the Office of Institutional Advancement

The Frederick Community College Foundation, Inc. is a philanthropic network of advocates enriching the vitality and quality of life in our community by promoting access to higher education. In partnership with individuals, organizations, and businesses, the mission of the Frederick Community College Foundation is to remove barriers to a community college education and provide financial support so all students can succeed and positively contribute to our community.

The Foundation is governed by an independent Board of Directors. This group of College ambassadors is committed to providing outstanding private support for the priority needs of the College including scholarships, Student Success Funds and program support. All gifts to the Foundation are tax deductible as charitable donations subject to IRS regulations.

Strategic Directions

Strategic Plan 2020-2025

Model educational excellence by designing and delivering student learning experiences, pathways, and programs that increase student access, success, and completion. [MSCHE Standards III and V]

1. Ensure that students develop the skills, awareness, and knowledge needed to achieve their academic, professional, and/or personal goals
2. Strengthen faculty and staff technology skills, cultural competence, instructional effectiveness, leadership, and innovation
3. Cultivate and strengthen programs and partnerships that support the educational, workforce, and economic development needs of Frederick County, and regional and national partners, with a focus on high-demand career, technical, and transfer programs
4. Eliminate the achievement and opportunity gaps for underrepresented students and emerging populations
5. Increase student success in and access to online and hybrid learning by expanding programming, improving success rates, ensuring quality design and delivery, and providing instructional, technical, and student support services
6. Enhance educational affordability, access, and success through innovative and high impact practices
7. Increase student cultural and global competence through innovation and alignment of curricular and co-curricular programming
8. Provide quality academic support programs, resources, and services that meet teaching and learning needs in all learning environments
9. Ensure that the design and use of the learning management system effectively supports student learning and instruction in all learning environments

Support the student learning experience through data-informed enrollment management, responsive programming, and efficient systems. [MSCHE Standard IV]

1. Optimize enrollment in all learning environments with intentional focus on underrepresented and emerging populations by enhancing access, improving success, and accelerating completion
2. Forge new and strengthen existing enrollment in programming that engages students across their lifespan
3. Expand resources that support student well-being
4. Effectively steward students from enrollment through completion by improving student communication and aligning support services, programs, engagement, and operations
5. Eliminate the achievement and opportunity gaps with targeted support programs, tools, and resources
6. Implement advising models, staffing structures, and technical systems that align with college and career pathways

Lead the College with excellence, transparency, and accountability.
[MSCHE Standards II, VII, VI]

1. Enact participatory decision-making that clearly delineates roles, responsibilities, communication processes, and timelines
2. Utilize data and evidence-based practices to align planning, budgeting, and resource allocation, inform decision-making, and support continuous improvement
3. Infuse diversity, equity, and inclusion goals throughout academic, support, administrative, and team plans
4. Ensure transparency in employment practices
5. Increase the recruitment and retention of a diverse workforce
6. Provide training and resources that develop employee job-specific and technology skills, cultural competence, team development, and leadership
7. Provide effective technology solutions, systems, and interfaces that support learning, instruction, communication, and College operations
8. Strengthen the safety and security of both individuals and data in physical and virtual environments
9. Expand environmental sustainability goals and practices

Ensure the fiscal stability and sustainability of the College.
[MSCHE Standards II, VII, VI]

1. Align fiscal resources with emerging, on-going, and annual strategic priorities
2. Strengthen enrollment management to ensure maximum access to courses and efficient use of facilities and resources
3. Pursue grants and alternative sources of revenue to provide funding for program growth and emerging priorities
4. Optimize business practices that enhance College operations

Governance and Organization

Frederick Community College is proactively governed by a seven-member Board of Trustees, appointed by the Governor of Maryland, with the advice and consent of the Maryland State Senate. The Board of Trustees works to ensure the integrity of the College, to approve policies and procedures for the College, and to entrust the administration of those policies to the President.

The President heads the executive senior leadership team (SLT) that is configured as follows:

- President
- Chief of Staff to the President
- Provost and Vice President for Teaching, Learning and Student Success
- Vice President for Finance and Administration
- Vice President for Talent and Culture
- Vice President for Student Affairs
- Chief of Operations
- Chief Information Officer
- Special Assistant to the President for Institutional Effectiveness

In addition to the president's SLT, there is a President's Diversity Advisory Council (PDAC) that provides college-wide coordination and direction on diversity, equity, and inclusion initiatives. There is the President's Cabinet comprised of administrators, faculty, support personnel, affinity group chairs, the President of the Student Government Association, and the convener of the Department Chairs. The Cabinet acts as a leadership and advisory council in implementing the mission, vision, and strategic plan of the College.

The Technology Advisory Committee (TAC) is chaired by the Chief Information Officer (CIO). TAC reviews and makes recommendations regarding Information Technology (IT) resources to ensure alignment with the College mission, College strategic plan, IT strategic plan, the Academic Master Plan, the Facilities Master Plan, and the sustainable allocation of resources. The TAC identifies opportunities for training and education as it relates to IT, security, and technology best practices. The Strategic Enrollment Management Committee (SEMC) is comprised of leadership from Student Affairs, Academic Affairs, Continuing Education and Workforce Development, Marketing, Institutional Effectiveness, and Finance to develop a holistic and integrated approach to enrollment management.

In addition to the presidential teams and committees there are College Leadership Teams: College Senate; Affinity Groups – Faculty Association, Support Staff Association, and Administrative Staff Association; Student Government Association, Career Program Advisory Boards; College Safety and Crisis Management Team (CSCMT); Human Resources Advisory Committee (HRAC); Learning Leadership Council (LLC); and Student Affairs Leadership Team (SALT).

Students, Faculty and Staff

ENROLLMENT

Unduplicated headcount enrollment for this *Facilities Master Plan* baseline of fall 2020 is 5,756 students enrolled in 46,607 credit hours of instruction, generating 3,107 full-time equivalent (FTE) student enrollments.

Enrollment Summary – Fall 2020

Full-Time Headcount	Part-Time Headcount	Total Headcount	Credit Hours	FTE Enrollments
1,719	4,037	5,756	46,607	3,107

College staffing for this *Facilities Master Plan* consists of 101 full-time faculty and 311 full-time staff as well as 365 part-time faculty and 205 part-time staff. The following table illustrates the distribution of personnel who are critical to providing campus environments that foster academic excellence and student success.

Faculty and Staff – 2020

Category	Full-Time	Part-Time	Total
Faculty	101	365	466
Librarians	2	0	2
Other Administrators & Staff	309	205	514
Totals	**412**	**570**	**982**

Learning/Instruction/Accreditation

FCC offers associate of arts, associate of arts in teaching, associate of science, and associate of applied science degrees, as well as certificates and letters of recognition in career programs. The Carnegie Classification for the College is Associate's - High Transfer-High Traditional. FCC offers degrees and certificates of accomplishment in more than fifty fields of study. Additionally, the College offers career-oriented programs that prepare students for immediate entry into the workforce in study areas of business, computers, real estate, and general interest; and contract training for business and industry.[37]

PROGRAMS OF STUDY

A

- Access to Justice Letter of Recognition (Career)
- Accounting A.A.S. (Career)
- Accounting Letter of Recognition (Career)
- Addictions Counseling A.A.S. (Career)
- Addictions Counseling Certificate (Career)
- Agricultural Business Basics Letter of Recognition (Career)
- American Sign Language (ASL) Interpreter Preparatory Program A.A.S. (Career)
- American Sign Language (ASL) Interpreter Preparatory Program Certificate (Career)
- American Sign Language (ASL) Studies Area of Concentration within Arts and Humanities A.A. (Transfer)
- American Sign Language (ASL) Studies Certificate (Career)
- American Sign Language Certificate (Career)
- Architectural Computer Aided Design Certificate (Career)
- Art Area of Concentration within Arts and Humanities A.A. (Transfer)
- Arts & Humanities A.A. (Transfer)
- Arts & Sciences A.A. or A.S. (Transfer)
- Audio Production Certificate (Career)
- Audio Production Technology Area of Concentration within STEM Technology A.A.S. (Career)

B

- Baking and Pastry Arts A.A.S. (Career)
- Baking and Pastry Arts Certificate (Career)
- Biology Area of Concentration within STEM A.S. (Transfer)
- Biotechnology A.A.S. (Career)

[37] https://frederick-public.courseleaf.com/college/

- Biotechnology Certificate (Career)
- Building Trades Technology Certificate (Career)
- Business Accounting Certificate (Career)
- Business Administration A.A. (Transfer)
- Business Basics Letter of Recognition (Career)
- Business Management A.A.S. (Career)
- Business Management Certificate (Career)

C

- Cardiovascular Technology A.A.S. (Career) - Howard Community College
- Cell Therapy and Flow Cytometry Letter of Recognition (Career)
- Certified Nursing Assistant Workforce Training Certificate
- Chemistry Area of Concentration within STEM A.S. (Transfer)
- Child Care Preschool and School Age Teacher Training Certificate (Career)
- Child Care Preschool Teacher Letter of Recognition (Career)
- Civil War Studies Certificate (Transfer)
- Cloud Computing Certificate (Career)
- Coaching Letter Of Recognition (Career)
- Communication Area of Concentration within Arts and Humanities A.A. (Transfer)
- Computer Aided Design (Engineering) Technology Area of Concentration within STEM Technology A.A.S. (Career)
- Computer Aided Design Operator Certificate (Career)
- Computer Aided Design Technology Area of Concentration within STEM Technology A.A.S. (Career)
- Computer Animation Certificate (Career)
- Computer Science A.S. (Transfer)
- Computer Science Studies Certificate (Transfer)
- Computer Studies Certificate (Career)
- Computer Support Specialist Certificate (Career)
- Computerized Accounting Certificate (Career)
- Construction Management and Supervision Certificate (Career)
- Construction Management Technology Area of Concentration within STEM Technology A.A.S. (Career)
- Corrections Certificate (Transfer)
- CPA Exam Qualification Certificate
- Criminal Justice Area of Concentration within Social Sciences A.A. (Transfer)
- Culinary Arts and Supervision A.A.S. (Career)
- Culinary Skills Certificate (Career)
- Culinary Skills Letter of Recognition (Career)
- Cybersecurity Area of Concentration within STEM Technology A.A.S. (Career)

D

- Dental Assisting Workforce Training Certificate

E

- Early Childhood Development A.A.S. (Career)
- Early Childhood Development Certificate (Career)
- Early Childhood Education/Early Childhood Special Education A.A.T. (Transfer)
- Education Area of Concentration within Social Sciences A.A. (Transfer)
- Electrical Advanced Workforce Training Certificate
- Electrical Foundations Workforce Training Certificate
- Electrical Letter of Recognition (Career)
- Elementary Education/Elementary Special Education A.A.T. (Transfer)

- Emergency Management - Professional Development Letter of Recognition (Career)
- Emergency Management Area of Concentration within Public Safety A.A.S. (Career)
- Emergency Management Certificate (Career)
- Emergency Management Track I: FEMA Independent Study A.A.S. (Career)
- Emergency Management Track II: Residency Program A.A.S. (Career)
- Emergency Medical Technician/Paramedic A.A.S. (Career) - Howard Community College
- Engineering Area of Concentration within STEM A.S. (Transfer)
- English Area of Concentration within Arts and Humanities A.A. (Transfer)
- English Education A.A.T. (Transfer)
- Entrepreneurship and Small Business Start-Up Certificate (Career)

F

- Film & Video Production Area of Concentration within Arts and Humanities A.A. (Transfer)
- Film & Video Production Certificate (Career)
- Fire Service Administration A.A.S. (Career)
- Fire Service Administration Area of Concentration within Public Safety A.A.S. (Career)
- Fitness/Personal Trainer Certificate (Career)

G

- Game and Simulation Development A.A.S. (Career)
- Game Programming Certificate (Career)
- General Studies A.A. (Transfer)
- GIS-Public Safety Letter of Recognition (Career)
- Graphic Design A.A.S. (Career)
- Graphic Design Certificate (Career)

H

- Health and Exercise Sciences Area of Concentration within the Arts and Sciences A.A. (Transfer)
- Healthcare Practice Management Certificate (Career)
- History Area of Concentration within Social Sciences A.A. (Transfer)
- Home Inspector Workforce Training Certificate
- Honors College
- Hospitality Management A.A.S. (Career)
- Hospitality Management Certificate (Career)
- Hospitality Skills Letter of Recognition (Career)
- Human Services Area of Concentration within Social Sciences A.A. (Transfer)
- HVAC Advanced Workforce Training Certificate
- HVAC Foundations Workforce Training Certificate
- HVAC Letter of Recognition (Career)

I

- Information Security and Assurance Certificate (Career)
- Information Technology Specialist Area of Concentration within STEM Technology A.A.S. (Career)

M

- Mass Communication Area of Concentration within Arts and Humanities A.A. (Transfer)
- Mathematics Area of Concentration within STEM A.S. (Transfer)
- Mathematics Education A.A.T. (Transfer)
- Medical Assistant A.A.S. (Career)
- Medical Assistant Certificate (Career)
- Medical Billing - AAPC Workforce Training Certificate
- Medical Coding - AAPC Workforce Training Certificate
- Medical Scribe Letter of Recognition (Career)

- Music Area of Concentration within Arts and Humanities A.A. (Transfer)

N

- National Security and Intelligence Area of Concentration within Public Safety A.A.S. (Career)
- Network Engineering Area of Concentration within STEM Technology A.A.S. (Career)
- Nursing A.S. (Career)

O

- Oral Radiography with Clinical Workforce Training Certificate
- Oral Radiography Workforce Training Certificate

P

- Paralegal A.A.S. (Career)
- Paralegal Certificate (Career)
- Patient Care Technician Workforce Training Certificate
- Phlebotomy Technician Workforce Training Certificate
- Physical Therapist Assistant A.A.S. (Career)
- Police Science A.A.S. (Career)
- Practical Nursing Certificate (Career)
- Pre-Health Professions Area of Concentration within Arts and Sciences A.S. (Transfer)
- Principles and Practices of Real Estate in Maryland Workforce Training Certificate
- Project Management Certificate (Career)
- Psychology Area of Concentration within Social Sciences A.A. (Transfer)
- Public Safety A.A.S. (Career)

R

- Respiratory Care A.A.S. (Career)
- Retail Management Certificate (Career)
- RN to BSN

S

- Social Media Management Certificate (Career)
- Social Sciences A.A. (Transfer)
- Sociology Area of Concentration within Social Sciences A.A. (Transfer)
- Software Engineering Area of Concentration within STEM Technology A.A.S. (Career)
- Spanish Education A.A.T. (Transfer)
- STEM Technology A.A.S. (Career)
- STEM: Science, Technology, Engineering, and Mathematics A.S. (Transfer)
- Sterile Processing Technician Workforce Training Certificate
- Surgical Technology A.A.S. (Career)

T

- Tactical Scholars Program Letter of Recognition (Career)
- Theatre Area of Concentration within Arts and Humanities A.A. (Transfer)
- Transition-to-RN

V

- Veterinary Assistant Workforce Training Certificate

W

- Welding - GMAW Workforce Training Certificate
- Welding - SMAW Workforce Training Certificate
- Welding Foundations Workforce Training Certificate
- Welding Letter of Recognition (Career)

CONTINUING EDUCATION & WORKFORCE DEVELOPMENT (CEWD)

Business Solutions & Strategic Initiatives
- Accounting, Bookkeeping & Finance
- Business
- Contract Training
- Professional Development
- Project Management

Career & Technical Training
- Applied Biotechnology
- Automotive Technology
- Automotive Technology
- Child Care Careers
- Cybersecurity
- Digital Fabrication
- IT Certification Preparation
- Logistics & Production
- Manufacturing Technology
- Real Estate & Home Inspection
- Web Development, Coding & Programming

Construction & Applied Technologies Institute (CATI)
- Computer Aided Design
- Construction Management
- Electrical
- HVAC
- Industry Test Prep
- Safety
- Welding

Healthcare Careers
- Certified Nursing Assistant (CNA/GNA)
- CPR & First Aid
- Dental Assisting & Dental Radiography
- Medical Billing & Coding
- Patient Care Technician
- Phlebotomy Technician
- Professional Development
- Sterile Processing
- Veterinary Assistant

Hospitality, Culinary & Tourism Institute (HCTI)
- Baking and Pastry Arts
- Culinary Arts
- Culinary Medicine
- Food Business Entrepreneurship
- Hospitality Management

Adult Education & English for Speakers of Other Languages (ESOL)
- Adult Basic Education
- English as a Second Language, Beginning through Advanced
- Family Literacy
- GED® Test
- Pre-Diploma
- Targeted ESOL

Institute for Learning in Retirement (ILR)
- Arts & Music
- Computers & Technology
- Health & Wellness
- History, Cultures & Current Issues
- Home & Hobby
- Learning on Location
- Life Planning & Finances
- Literature, Theater & Writing
- Philosophy, Religion & Exploration
- Science & Nature

Lifelong Learning
- Arts & Music
- Food & Drink
- Home & Hobby
- Languages & ASL
- Motorcycle Safety
- Photography
- Writer's Institute

Youth & Community Education
- Thrive
- Youth Programs
- Kids on Campus
- Cadence Music Program
- Study Skills & SAT Test Prep

Accreditation[38]

According to the Council of Regional Accrediting Commissions, "accreditation is a process of external review used by the higher education community to assure quality and spur ongoing improvement. Accrediting commissions are private, nonprofit organizations whose members are the colleges and universities themselves. The commissions and visiting teams are made up of volunteers, and one of every seven commissioners is a representative of the public. Regional accreditation has a long history and has served the U.S. higher education system for more than 100 years. It relies on the rigorous process of peer review, not governmental monitoring, to define and evaluate whether institutions meet high standards. Self-regulation preserves the autonomy and diversity of higher education, two unique characteristics of our higher education system that contribute to its quality."

The U.S. Department of Education identifies nine functions of accreditation:

- Verifying that an institution or program meets established standards;
- Assisting prospective students in identifying acceptable institutions;
- Assisting institutions in determining the acceptability of transfer credits;
- Helping to identify institutions and programs for the investment of public and private funds;
- Protecting an institution against harmful internal and external pressure;
- Creating goals for self-improvement of weaker programs and stimulating a general raising of standards among educational institutions;
- Involving the faculty and staff comprehensively in institutional evaluation and planning;
- Establishing criteria for professional certification and licensure and for upgrading courses offering such preparation; and
- Providing one of several considerations used as a basis for determining eligibility for Federal assistance.

Frederick Community College is accredited by the Middle States Commission on Higher Education (MSCHE), 1007 North Orange Street - 4th Floor, MB #166, Wilmington, DE 19801, and authorized by the Maryland Higher Education Commission (MHEC), 6 North Liberty Street, Baltimore, MD 21201, (410) 767-3300; to offer programs that lead to award associate degrees and certificates. The College received its initial accreditation in 1971 and has been reaccredited every ten years thereafter. The College accreditation was reaffirmed on June 23, 2016. In 2017, a new accreditation process and timeline was implemented. The accreditation timeline was moved from every 10 years to now every eight years.

The College has begun its reaccreditation process, culminating in the 2024-25 Self-Study, On-site Peer Review, and MSCHE Notice of Action. Read more here: https://www.frederick.edu/about-fcc/accreditation/self-study.aspx.

Intended Outcomes of the 2024-25 Self-Study[39]

1. Engage the College community in an inclusive and transparent self-appraisal process that actively and deliberately seeks to involve members from all areas of the College
2. Demonstrate how the institution currently meets the Commission's Standards for Accreditation and Requirements of Affiliation through the Self-Study
3. Demonstrate a data informed culture which focuses on institutional effectiveness and innovation in the attainment of the College mission and institutional priorities
4. Demonstrate a culture of diversity, equity, inclusion, and belonging is present at all levels of the College

[38] https://www.frederick.edu/about-fcc/accreditation.aspx
[39] https://www.frederick.edu/about-fcc/accreditation/self-study.aspx

Main Campus Facilities

Frederick Community College's main campus facilities inventory consists of 19 buildings which collectively total 554,727 gross square feet (GSF) and contain approximately 264,000 net assignable square feet (NASF) of space. Although several buildings have undergone renovations over the last 26 years, the various buildings range in age from the eight original campus buildings built in 1970[2] to the nine-year old Jefferson Hall built in 2012.

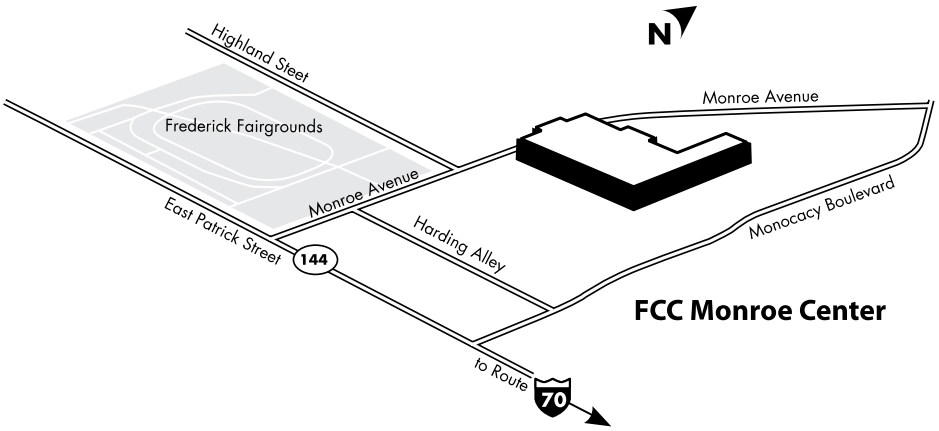
Main Campus Map

A. Annapolis Hall
B. Braddock Hall
C. Catoctin Hall
D. Athletic Center
E. Conference Center
F. Visual & Performing Arts Center
G. Gambrill Hall
H. Student Center
J. Jefferson Hall
K. Mercer-Akre Kiln
L. Linganore Hall
M. The Carl & Norma Miller Children's Center
P. Plant Operations
S. Sweadner Hall

Extension Center Facilities

Located at 200 Monroe Avenue 21701, approximately four miles southeast of the main campus, is the 55,342 GSF Monroe Center. This College-owned facility, one of four units within a warehouse condominium arrangement, was renovated in 2017 to provide approximately 32,000 NASF of contemporary skills training and support spaces. FCC leases approximately 10,000 NASF to Frederick County Workforce Services.

Monroe Center Map



Chapter 2
Environmental Scan

ENVIRONMENTAL SCAN

In the Context of the Facilities Master Plan

BACKGROUND

Frederick Community College (FCC) is a comprehensive, public, associate degree-granting institution in Frederick County, Maryland. FCC is located in the City of Frederick. It is about an hour's drive from Washington D. C. and Baltimore, Maryland. It was founded in 1957 and is governed by a seven-member board of trustees. The trustees are appointed by the Governor of Maryland. FCC is fully accredited by the Middle States Commission on Higher Education and was reaccredited in 2016. Its most recent annual operating budget is about $60 million. The funding comes from student tuition (30%), the State of Maryland (27%), and Frederick County Government (36%).[1]

The FCC Vision, Values, and Strategic Goals seek to transform individuals and communities through learning. Its mission is stated, "Focused on teaching and learning, Frederick Community College provides affordable, flexible access to lifelong education that responds to the needs of diverse learners and the community."[2] FCC promotes values of excellence, learning, diversity, innovation, community, and integrity. The strategic goals are:

1. to model educational excellence by designing and delivering student learning experiences, pathways, and programs that increase student access, success, and completion.
2. to support the student learning experience through data-informed enrollment management, responsive programming, and efficient systems
3. to lead the college with excellence, transparency, and accountability
4. to ensure the fiscal stability and sustainability of the college

The current executive senior leadership structure under the board of trustees is: President; Chief of Staff to the President; Provost and Vice President for Teaching, Learning and Student Success; Vice President for Finance and Administration; Vice President for Student Affairs; Vice President for Talent and Culture; Chief of Operations; Chief Information Officer; Special Assistant to the President for Institutional Effectiveness .[3]

FCC offers affordable access to a broad range of associate degrees and certificates to support student' workforce readiness, especially in high-need areas such as health care, STEM fields, and business. FCC is also one of the region's major employers with its workforce of 1,400.[4]

FCC awards an associate of arts, an associate of arts in teaching, an associate of applied science, and an associate of science degrees and certificates in more than 90 fields of study.[5] In 2020, FCC served 13,898 students with an average age of 25; 70 percent attended part-time, and 71 percent plan to transfer to a four-year school. The college receives about 60 percent of Frederick County's recent high school graduates, about 51 percent of its first-time full-time freshmen, and 74 percent of its

[1] https://www.frederick.edu/about-fcc/presidential-search.aspx; p.9
[2] ibid., p.4
[3] https://apps.frederick.edu/Flipbook/HR/FCCOrganization/4/index.html
[4] op. cit., p.4
[5] ibid., p.4

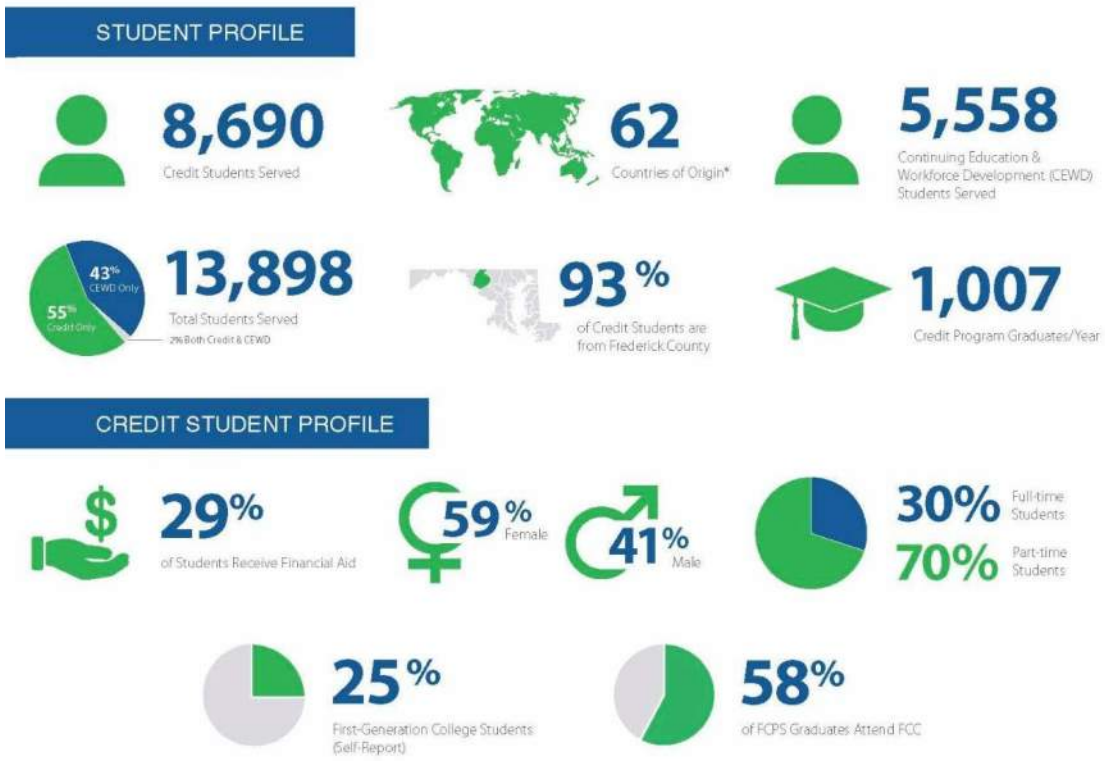
part-time undergraduates.[6] Persistent rates are among the highest of Maryland's community colleges. Fall 2016, first-time freshmen within four years had transferred to other academic opportunities. In 2020, FCC had the third largest percentage of students completing an associate degree within 3-years of all Maryland community colleges.[7]

A high percentage of FCC students are employed within one year of graduation. In FY 2019, 82 percent of degree or certificate graduates were employed. During FY 2020, the following had the highest job placement rates: paralegal (100%), police science (93.74%), nursing (89.55%), and respiratory (89.47%). In Fall 2020, 33.8% of non-credit students listed personal professional development as reason enrolled.

FCC's open campus enrollment and dual enrollment programs for high school students had 276 and 1,233 enrolled during Fall 2021. In keeping with an open access mission and in recognition of the financial need of some students, in Fall 2020, 29 percent of students received financial aid. 137 students enrolled using *the Maryland Promise Scholarship Program*[8] that provides for free tuition, another 15 percent received PELL funding. The FCC Foundation awarded more than $1 million in total scholarship funding to 1,085 students. The College forgave debt accrued by 350 students due to the COVID-19 pandemic.[9]

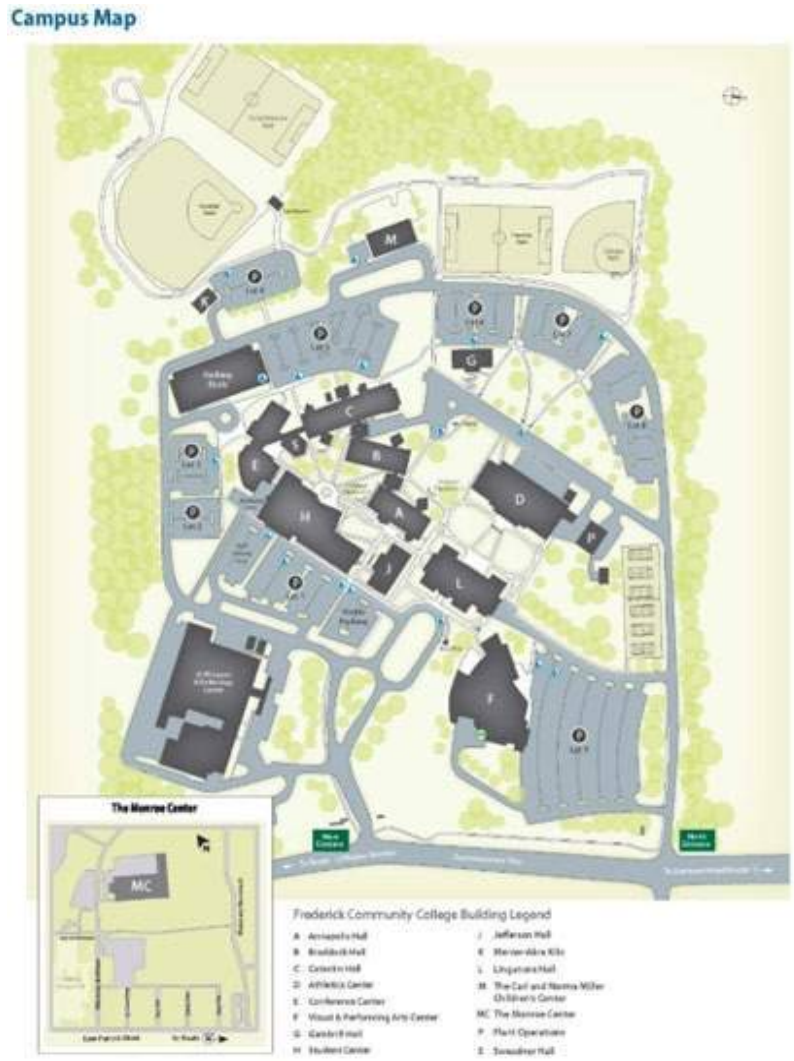
[6] ibid.
[7] ibid., p.5
[8] https://mhec.maryland.gov/preparing/Pages/FinancialAid/ProgramDescriptions/prog_MDCommunityCollegePromiseScholarship.aspx
[9] Op. cit., p.5

The last Community College Survey of Student Engagement results indicated 96 percent of respondents would recommend FCC to family members or friends. Eighty -eight percent evaluated their entire FCC education experience as excellent or good. The quality of campus life is buttressed by more than thirty clubs and organizations available for student participation. Students contributed over 2,900 hours to 25 different causes during the COVID-19 pandemic and the student-athletes were quite active in varsity sports including Men's: baseball, basketball, and soccer; and Women's: basketball, soccer, softball, and volleyball.



The College has approximately 100 full-time faculty members, 330 adjunct faculty, 63 dual enrollment faculty, and 286 full-time staff and administrators. Seventeen percent of faculty identify as *People of Color* and twenty percent of administrative and professional staff.[10] Each May, FCC holds its annual Spring Recognition and Awards Ceremony. Students are recognized for exemplary service, academic excellence, honors college, academic leadership and service, excellence in continuing education and workforce development, student leadership; and campus club and organization involvement.[11] Frederick Community College formally recognizes employees for their years of service, leadership, innovation, and professional excellence.[12]

Frederick Community College is comprised of 19 facilities on its main campus and one facility, the Monroe Center, located at 200 Monroe Avenue:[13] One facility, The Monroe Center, is located on Monroe Avenue. The average age of buildings is plus thirty years and most of the central plant equipment is almost 40 years old.[14] The current deferred maintenance capital renewal is due to past efforts to fund new buildings assuming they would require less maintenance. Also, facilities renewal was directed at partial systems failures. Additionally, available funding, failing systems, regulatory or program requirements; and businesses processes have militated against scheduled improvements and a reduction in maintenance costs. The exterior facades and surrounding grounds are well maintained. Interiors belie their age. Technology infusion is in evidence throughout. The campus is challenged with a lack of surge space.



The above synopsizes Frederick Community College's circumstances. This analysis seeks to briefly and succinctly show how the external environment as reflected in data from four specific areas (i.e., demographics, education, employment and the economy).

[10] ibid., p.7
[11] op. cit., p.6.
[12] https://www.frederick.edu/jobs-hr/policies-and-procedures/policyproceduredocuments/employee-recognition.aspx
[13]https://apps.frederick.edu/Flipbook/FacilitiesMasterPlan/files/assets/common/downloads/FacilitiesMasterPlan.pdf
[14] ibid. p.15

While Frederick Community College's successful and efficient internal operations have resulted in a well-maintained campus, it has militated against the successful orderly capital development of the built environment. The compelling and immediate needs to which Frederick Community College has responded are the compelling justifications for greater investment in systemic capital improvements. Lastly, how current trends in politics and policy, higher education, society, technology, the natural environment and law will further challenge Frederick Community College.

The foundation of the community college capital improvements program is the Facilities Master Plan (FMP). The FMP for each institution establishes the framework for the orderly development of all capital projects. The Five-Year Capital Improvements Program (CIP) and Annual Capital Budget Request for each institution detail the projects included in the Facilities Master Plan.

The Grant supporting general public junior or community college and regional community college construction program is administered by the Maryland Higher Education Commission (MHEC-the lead agency), the Maryland Department of Budget and Management (DBM) and the Maryland Department of General Services (DGS). Funds for this purpose are appropriated in accordance with provisions of the Annotated Code of Maryland, Education Article, Division III, Title 11 and Title 16, and the Code of Maryland Regulations (COMAR) approved by the Board of Public Works (BPW).

The Maryland Higher Education Commission (MHEC) provides the enrollment projections to be used in the capital budgeting process to determine the demand.[15] The supply is regulated by the space planning guidelines for community colleges which are in fact allocation guidelines determining the level of eligible space the State of Maryland will support at a given community college.[16] The regulations are not to be used to design a specific space or facility. They are not fixed standards and may be modified when justified as reflected in MHEC Community College Facilities Manual.[17]

MHEC has prepared projections for Maryland public colleges and universities through Fall 2029.[18] MHEC uses a linear regression analysis to demographic and economic factors. It is critical for college institutional researchers to not only be aware of the assumptions of the projection models, rather to run them independent of MHEC to determine any anomalies germane to the Washington-Baltimore-Arlington Combined Statistical Area, Frederick County, City of Frederick and Frederick Community College. The assumptions of the projection model for community colleges assumes:[19]

- *Credit enrollments* among Maryland residents can be predicted by applying the historical relationship between the state's population and past in-state enrollments to future population projections.
- The ratio of in-state to out-of-state students in Maryland will be relatively constant over time.
- The number of full-time undergraduates at both the community

[15] https://mhec.maryland.gov/About/SiteAssets/Lists/Meeting%20Agendas%20and%20Agenda%20Books/EditForm/2020%20Enrollment%20Projections%20Report%202020%20-%202029.pdf

[16] https://www.law.cornell.edu/regulations/maryland/Md-Code-Regs-13B-07-05-01

[17] ibid.

[18] op.cit., p.2

[19] Ibid., p.2

colleges and public four-year campuses will be affected by trends in high school graduates.

- The number of full-time undergraduates at public four-year campuses will be influenced by the number of full-time students enrolling at the state's community colleges.
- Tuition increases will have impact on full- and part-time community college enrollments.
- The number of part-time undergraduates at both the community colleges and public four-year campuses will be impacted by changes in the per capita disposable income, in constant dollars, of Maryland residents.
- *Noncredit continuing education enrollments* at community colleges can be forecasted by applying the historical relationship between the adult population 20 years of age or older in the county or service area of each two-year institution and past noncredit enrollments at each campus to future population projections.

Students were distributed among the community colleges chiefly on the basis of recent market share, growth rate of each institution, and the anticipated change in the college-age population in each campus' county or counties. The following table reflects the projections for state-eligible full-time equivalent (FTE) noncredit continuing education enrollments at Maryland community colleges[20]

PROJECTED STATE FUNDED NONCREDIT FULL-TIME EQUIVALENT TRENDS
MARYLAND COMMUNITY COLLEGES
FISCAL YEARS 2020 - 2029

College	Actual FY 19	Projected FY 20	Projected FY 21	Projected FY 22	Projected FY 23	Projected FY 24	Projected FY 25	Projected FY 26	Projected FY 27	Projected FY 28	Projected FY 29	Percent Change FY 20-FY 29
Allegany	512	514	516	518	520	522	524	526	528	530	532	4%
Anne Arundel	3,048	3,059	3,070	3,081	3,092	3,103	3,114	3,126	3,138	3,150	3,162	4%
Baltimore City	1,505	1,511	1,517	1,523	1,529	1,535	1,541	1,547	1,553	1,559	1,565	4%
Baltimore County	4,622	4,639	4,656	4,673	4,690	4,707	4,724	4,741	4,759	4,777	4,795	4%
Carroll	432	434	436	438	440	442	444	446	448	450	452	5%
Cecil	300	301	302	303	304	305	306	307	308	309	310	3%
Chesapeake	648	650	652	654	656	658	660	662	664	666	668	3%
Frederick	639	641	643	645	647	649	651	653	655	657	659	3%
Garrett	202	203	204	205	206	207	208	209	210	211	212	5%
Hagerstown	760	763	766	769	772	775	778	781	784	787	790	4%
Harford	853	856	859	862	865	868	871	874	877	880	883	4%
Howard	1,395	1,400	1,405	1,410	1,415	1,420	1,425	1,430	1,435	1,440	1,445	4%
Montgomery	2,993	3,004	3,015	3,026	3,037	3,048	3,059	3,070	3,081	3,092	3,103	4%
Prince George's	4,327	4,343	4,359	4,375	4,391	4,407	4,423	4,439	4,455	4,471	4,488	4%
Southern Maryland	607	609	611	613	615	617	619	621	623	625	627	3%
Wor-Wic	813	816	819	822	825	828	831	834	837	840	843	4%
SYSTEMWIDE	23,656	23,743	23,830	23,917	24,004	24,091	24,178	24,266	24,355	24,444	24,534	4%

Projections of Headcount Enrollment at Maryland Community Colleges

Frederick CC												
	Full-time	1,843	2,262	2,311	2,330	2,357	2,380	2,387	2,397	2,406	2,411	2,414	31%
	Part-time	4,286	4,838	4,964	5,027	5,093	5,122	5,216	5,251	5,289	5,327	5,366	25%
Total Headcount		6,129	7,100	7,275	7,357	7,450	7,502	7,603	7,648	7,695	7,738	7,780	27%

Projections of Full-Time Equivalent and Full-Time Day Equivalent Enrollment at Maryland Community Colleges

		FALL 19 FY 20 Actual	FALL 20 FY 21 Projected	FALL 21 FY 22 Projected	FALL 22 FY 23 Projected	FALL 23 FY 24 Projected	FALL 24 FY 25 Projected	FALL 25 FY 26 Projected	FALL 26 FY 27 Projected	FALL 27 FY 28 Projected	FALL 28 FY 29 Projected	FALL 29 FY 30 Projected	% Change 19-29
Frederick CC													
	FTES	3,467	4,106	4,202	4,245	4,297	4,331	4,372	4,395	4,418	4,436	4,453	28%
	FTDES	2,228	2,638									2,861	8%

[20] Ibid., pp. 14-22

Another critical step in the process is the development of the facility program. Section 3-602 (d) of the State Finance and Procurement Article of the Annotated Code of Maryland requires that before an appropriation may be authorized for a capital project, the unit of State government requesting the appropriation shall submit a facility program justifying the project and describing, in detail, the scope and purpose of the project.[21]

The comprehensiveness of a facility program will depend upon the nature and magnitude of the project under consideration.[22] A facility program is a document that provides the justification for a capital project; defines and explains the scope of work; and provides detailed requirements for the project design. A facility program consists of two parts. Part I includes the justification for the project, and the description and explanation of the scope of work. Part II includes the additional detail needed to procure architectural and engineering services and to provide detailed guidance in creating the project design.[23]

It is critical in the facilities master plan that adequate, sufficient, appropriate and compelling information is introduced for the potential projects included in the plan for the orderly growth of the built environment over the next ten years. Information needs to be data-informed; evidence based; and a compelling justification for the State to determine the facilities master plan and the projects contained therein are "approvable." Being "approvable" does not guarantee support but it speaks to the "reasonableness" of the plan in accordance with the Finance and Procurement regulations covering principles of fairness, competitiveness, and reasonableness in procurement.

Given the aforementioned, we will identify and briefly analyze some key observations and findings in the demographic, education, employment, and economy levels globally, nationally, regionally, statewide, and locally.

Globally, the United Nations Foundation[24] cites the top five issues affecting world in 2022 are COVID-19 response and recovery; poverty reduction; climate control; gender equality; and growing humanitarian crises and conflicts. Nationally, *Governing*[25] identifies the following issues: abortion, broadband, COVID-19, crime, economy, education, elections, energy, federal spending/infrastructure, health, labor, marijuana, redistricting, and taxes. Regionally, The Metropolitan Washington Council of Governments[26] focus is population growth, aging infrastructure, traffic congestion, energy costs, environmental restoration and protection, the need for more affordable housing, and sustainable development, and education, economic and health disparities. Baltimore Metropolitan Council[27] is focused on civic engagement, community development, economic development, environment and sustainability and transportation. Statewide the foci in the 2022 Maryland General Assembly[28] are redistricting, legalizing marijuana, and climate change, education[29], housing and evictions, abortion, crime, and tax cuts. In Frederick County, the foci as expressed in The

[21] https://mhec.maryland.gov/publications/Documents/SECTION4.FACILITYPROGRAM.pdf
[22] ibid., p.4-2
[23] ibid., p.3
[24] https://unfoundation.org/blog/post/5-global-issues-to-watch-in-2022/
[25] https://www.governing.com/next/the-biggest-issues-to-watch-in-2022
[26] https://www.mwcog.org/file.aspx?D=a83SlbEvsnW%2ff3n53L7lV3t9Ryn6de6rKpo5XxR6bzo%3d&A=vuXfr%2bPL2FT4kSgn1P6g5p1D5tCpJVdHiwFSksEvO68%3d
[27] https://www.baltometro.org
[28] https://www.baltimoresun.com/politics/bs-md-pol-legislative-session-20220109-fmovjdc4mrcjhobbusxt7nkbkq-story.html
[29] https://www.baltimoresun.com/politics/bs-md-pol-blueprint-funding-20220222-oz4beqrlxzgkjggkqmy2roixui-story.html

Livable Frederick Master Plan[30] maintaining the trajectory of current planning policies; acknowledge City of Frederick as major regional center for business, institutions, residential living, and culture; suburban place-making; and multi-modal places and corridors addressing community, health, economy and environment.

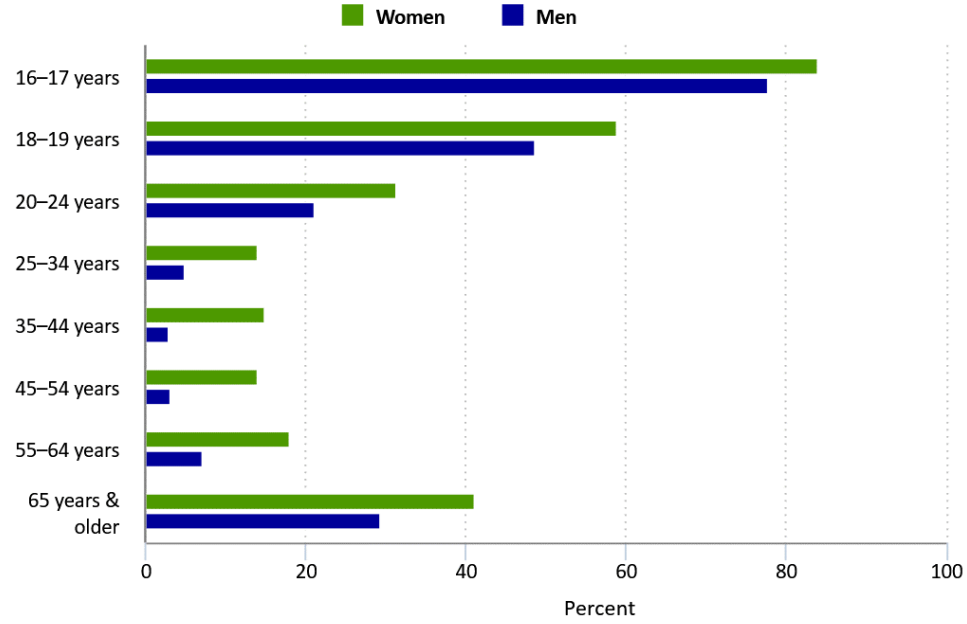
The underlying themes at all levels below the global level acknowledge lowered birthrates, global competition and the need to maintain and grow communities that have clean air and water, safe and healthy neighborhoods, resilient economies, access to housing and transportation choices with education as the underpinning. Over the last fifty years the following gender inequity has ensued:[31]

- The rate of part-time work varies over the life cycle, and is highest at the beginning and at the end of the working life for both women and men. Women part-time workers outnumber men at each stage of the life cycle, but the differences are particularly high during early- and mid-career.
- Almost nine in 10 of those who work part-time because of child care and other family-related reasons are women. Part-time work is significantly more common in low-wage occupations, such as cashiers, customer service representatives, and nursing and personal care workers, where women are the majority of the workforce and it is less common to have stable hours.
- Part-time work is often of lower quality than full-time work, with lower pay and few benefits. Providing part-time workers with lower benefits or pay than comparable full-time workers is illegal in most other high-income economies.
- Women are close to half of all involuntary part-time workers. The share of Black and Hispanic women part-time workers (ages 25 years and older) who report that they worked part-time involuntarily (22 and 21 percent, respectively) is more than twice as high as for White women (10 percent), and nearly twice as high as it is for Asian women (12 percent).

[30] https://www.frederickcountymd.gov/DocumentCenter/View/319126/Livable-Frederick-Master-Plan---Adopted-Plan?bidId=

[31] https://www.bls.gov/opub/mlr/2018/article/pdf/who-chooses-part-time-work-and-why.pdf

Figure 3. Voluntary part-time rate by gender and age, 2016 annual averages



Click legend items to change data display. Hover over chart to view data.
Source: U.S. Bureau of Labor Statistics, Current Population Survey.

The Heritage Foundation posits that health care, immigration, spending, election integrity, religious liberty, education, environment, and welfare remain major issues[32]. Millennials and Gen Z appear to be more progressive.[33]

There are political factors that may influence the life of this facility master plan:

- President Biden's Discretionary Budget[34]
- Supreme Court Justice[35]
- Congressional Mid-Term Elections[36]
- Political Polarization[37]
- War in Europe[38]

The following leading economic factors are critical:[39]

- Yield Curve
- Durable Goods Orders
- Stock market
- Manufacturing Orders
- Building Permits

Five major social issues[40]

- Poverty and Homelessness
- Civil Rights and Racial Discrimination
- Climate Change
- Gender Inequality
- Immigration Stresses

Top Five Technologies Shaping the Future[41]

- Artificial Intelligence
- Blockchain

[32] https://www.heritage.org/americas-biggest-issues
[33] https://rollcall.com/2022/02/03/civility-downhill-biden-poll/
[34]https://www.nationalpriorities.org/analysis/2021/president-bidens-fy-2022-budget-request/
[35] https://www.npr.org/2022/01/27/1075823476/biden-supreme-court-nomination-breyer-replacement
[36] https://www.cnn.com/2022/02/14/politics/2022-midterm-election-calendar/index.html
[37] https://rollcall.com/2022/02/03/civility-downhill-biden-poll/
[38] https://www.cbsnews.com/news/russia-ukraine-news-donetsk-luhansk-putin-act-of-war-us-europe-sanctions/
[39] https://www.thebalance.com/leading-economic-indicators-definition-list-of-top-5-3305862
[40] https://www.bloomberg.com/news/articles/2021-12-23/five-biggest-issues-facing-america-today-here-s-how-to-give-help
[41] https://www.iotforall.com/5-disruptive-technologies-shaping-our-future

- 3D Printing
- Virtual/Augmented Reality
- Internet of Things

Five Biggest Environmental Issues Affecting the U.S.[42]

- Deforestation
- Air Pollution
- Global Warming
- Water Pollution
- Natural Resource Depletion

Legal Matters Affecting Education[43]

- Affirmative Action in Education
- Students Suits Over Banned Books
- Religious Schools and State Aid
- Civil Rights Lawsuits under Title IX
- Parental Rights Over Schooling

Maryland Alliance for Racial Equity in Education released its recommendation for implementing the Blueprint for Maryland's Future to close racial equity gaps. The coalition is comprised of education advocacy, civil rights, and community-based organizations committed to eliminating racial disparities in Maryland's education system.[44]

Deferred Action for Childhood Arrivals (DACA) students in Maryland have access to in-state tuition, state financial aid, and driver licenses and state identification.[45] As an open-admission institution, FCC grants admission to all students regardless of immigration status. Maryland legislation provides the opportunity for some non-U.S. citizens who attend high school in Maryland to receive in-state tuition rates. In order to qualify for the exemption from nonresident tuition rates, students must meet the certain requirements.[46]

The role of the U.S. accepting refugees has diminished according to the United Nations High Commission for Refugees. In 2017, Pew Research reported that there were 10.7 million unauthorized immigrants living in the U.S. in 2016, the lowest number since 2004.

[42] https://eponline.com/articles/2020/02/24/five-biggest-environmental-issues-affecting-the-us.aspx
[43] https://www.edweek.org/policy-politics/law-courts
[44] https://wearecasa.org/maryland-alliance-for-racial-equity-in-education-maree-aib-nominations-committee-prioritize-racial-equity-blueprint/
[45] https://www.higheredimmigrationportal.org/state/maryland/
[46] https://www.frederick.edu/credit-admissions/dream-act.aspx

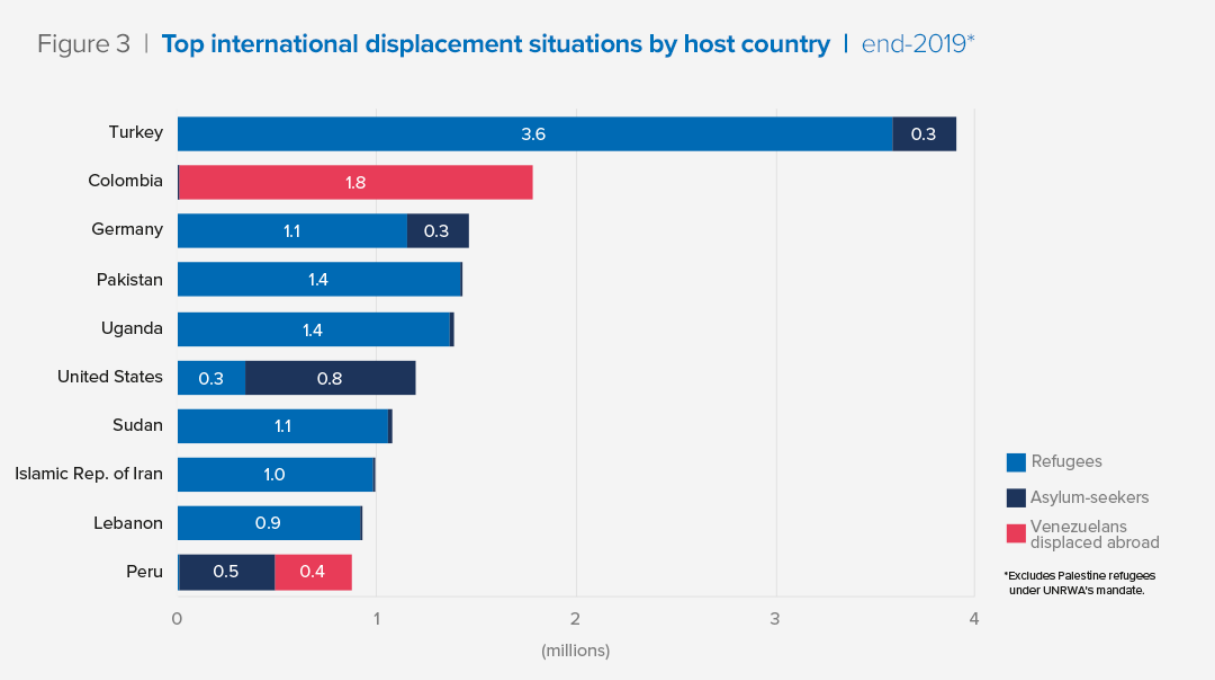


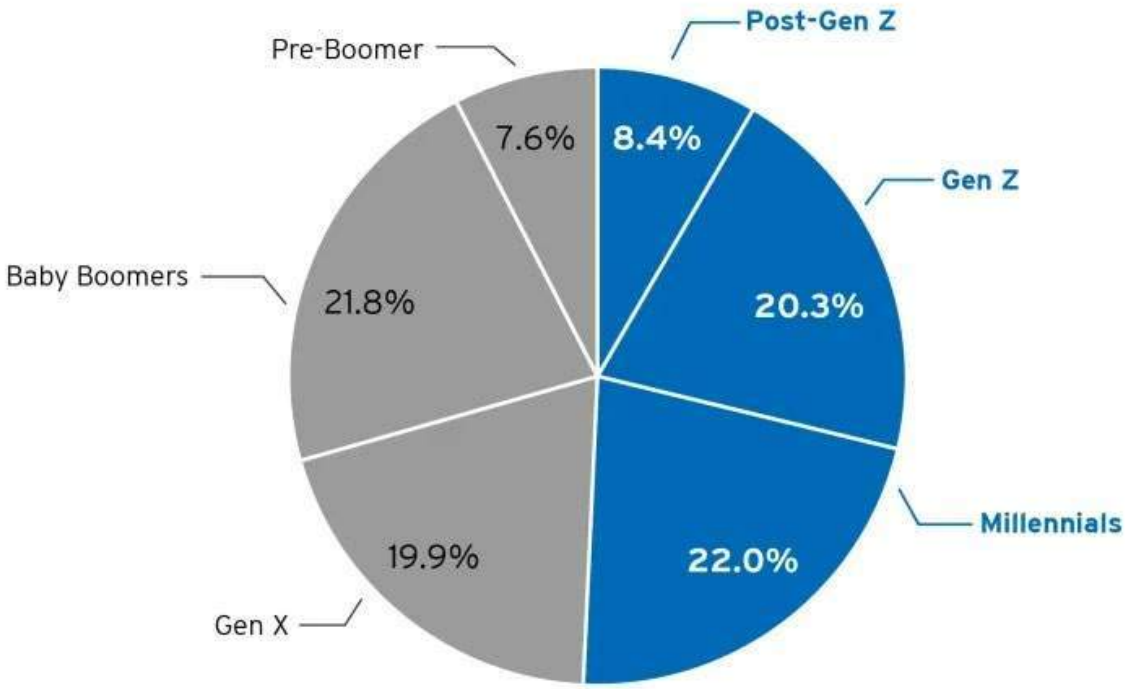
Figure 3 | Top international displacement situations by host country | end-2019*
Turkey
Colombia
Germany
Pakistan
Uganda
United States
Sudan
Islamic Rep. of Iran
Lebanon
Peru
3.6
0.3
1.8
1.1
0.3
1.4
1.4
0.3
0.8
1.1
1.0
0.9
0.5
0.4
0
1
2
3
4
(millions)
Refugees
Asylum-seekers
Venezuelans displaced abroad
*Excludes Palestine refugees under UNRWA's mandate.

SUMMARY -- DEMOGRAPHICS

- Millennials (i.e., ages 23-38) are the largest adult generation in the United States as of 2019.[47]

FIGURE 2

Share of US population by generation



Numbers pertain to July 1, 2019
Note: Birth years are as follows: Post Gen Z (2013+), Gen Z (1997-2012), Millennials (1981-1996), Gen X (1965-1980), Boomers (1946-1964), Pre-Boomer (1945 and earlier).

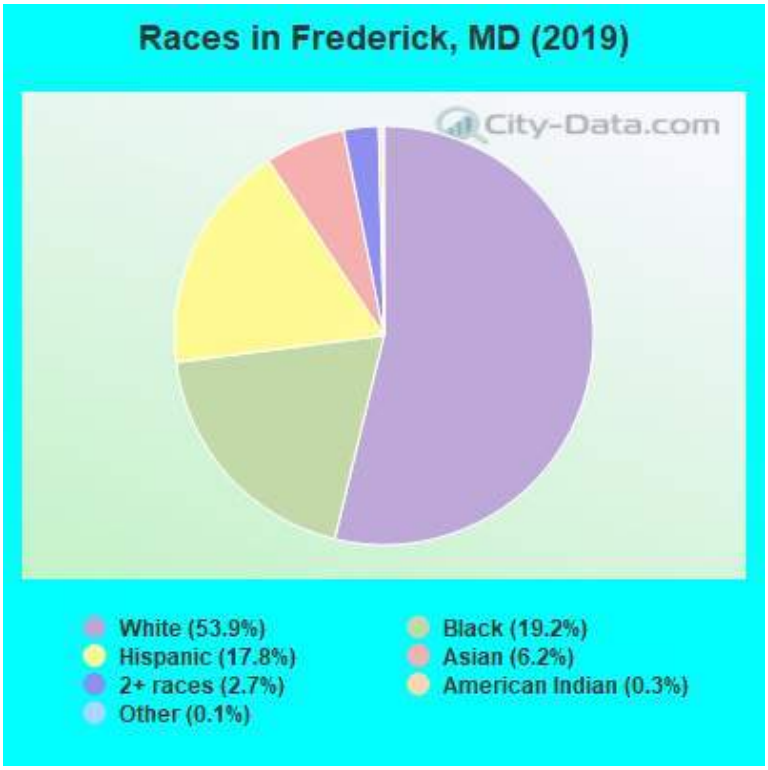
Source: William H. Frey analysis of Census Bureau population estimates released June 25, 2020.

B | Metropolitan Policy Program at BROOKINGS

Millennials and Gen Z are part of a major generational shift. They are more racially diverse than Baby Boomers and Pre-Boomers. They differ in their politically, socially, economically, educationally, and technologically informed positions on issues. Millennials and Gen Z surveys taken recently show differences from the older generations on issues such as immigration reform, criminal justice, environmental protection, the role of government, and the importance of diversity.[48]

[47] https://www.brookings.edu/blog/the-avenue/2020/07/30/now-more-than-half-of-americans-are-millennials-or-younger/
[48] ibid.

- The U. S. Hispanic population reached 62.1 million in 2020. It was an increase of 23% over the past decade while the overall U.S. population grew 7% over the last decade. In Frederick County, Hispanics account for 10.5% of the overall population right after the 10.7% for Black of African-American population. In Frederick City, the Hispanic population is 17.8% of the overall population and the Black or African - American population is 19.2% of the population.[49]



- The American family continues to change. A growing number of parents are unmarried. The shifts in composition over more than five decades have shown a decline. In 1960, 85 percent of all households contained families. By 2017, this share had declined to 65%.[50]

HOUSEHOLD TYPE	1960	1980	2000	2010	2020
Family Households	85	74	68	66	65
Married Couples w/children	44	31	24	20	19
Married Couples w/out children	31	30	28	28	30
Single parents w/children	4	7	9	10	9
Other Family	6	6	7	8	9
Nonfamily Households	15	26	32	34	35
One person	13	23	26	27	28
Other Nonfamily	2	4	6	7	7

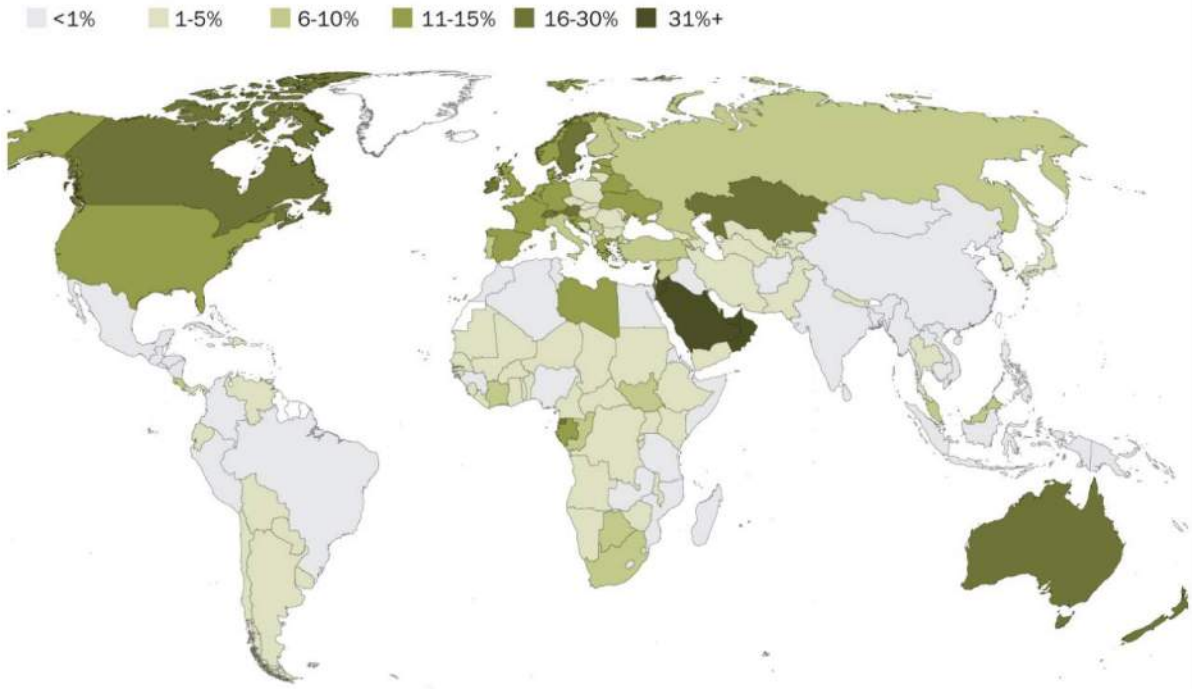
[49] https://www.city-data.com/city/Frederick-Maryland.html

[50] https://www.prb.org/resources/u-s-household-composition-shifts-as-the-population-grows-older-more-young-adults-live-with-parents/ ; James A. Sweet and Larry L. Bumpass; *American Families and Households*; Table 9.2 (New York: Russell Sage Foundation, 1987); U.S. Census Bureau, 2000and 2010 decennial censuses; 2017 ACS.

- The immigrant share of the U.S. population is approaching a record high but is still below that of many other countries. Foreign-born individuals living in America in 2017 accounted for 13.6% of the population according to a Pew Research Center analysis of the American Community Survey. The highest share since 1910.[51]

Immigrant share in U.S. is lower than in many other countries

% foreign born, 2017



Note: Share foreign born in U.S. is for the 50 states and District of Columbia. Countries and territories without shading have populations less than 1 million and are not included.
Source: Pew Research Center analysis of United Nations and U.S. Census Bureau data.

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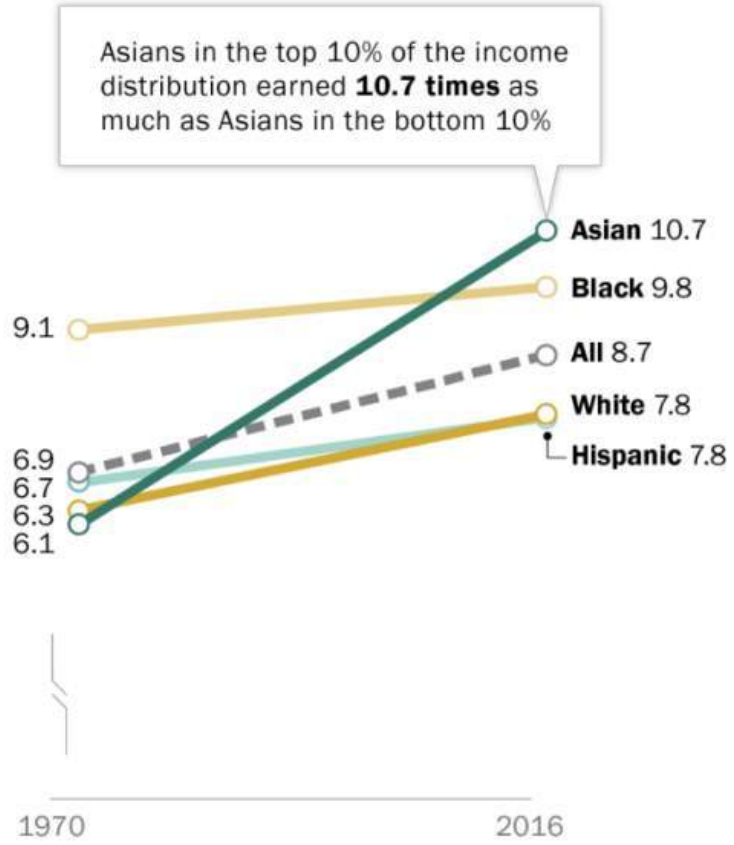
- Incomes are rising in the U.S., but the increase is not equally felt by all Americans.[52] Income is at the highest level in the last fifty years. Income inequality has tilted to upper-income households. The United States middle class, which once was the majority is shrinking. The percentage of Americans living in middle-income households has declined from 61% in 1971 to 51% in 2019.[53] The growth has been most pronounced for the households in the top 5%. The disparity was lessened due to the Great Recession in the late 2000s. The U. S. recession lasted from 2007-2009 and was followed by the global recession in 2009. Males in Maryland have an income 1.26 times higher than the average income for females. The income inequality index is 0.461 which is lower than the national average.[54] Frederick County's median annual income is higher than the average for the U.S.

[51] https://www.pewresearch.org/fact-tank/2019/04/11/6-demographic-trends-shaping-the-u-s-and-the-world-in-2019/
[52] ibid.
[53] https://www.pewresearch.org/social-trends/2020/01/09/trends-in-income-and-wealth-inequality/
[54] https://datausa.io/profile/geo/frederick-md/#economy

From lowest to highest: Income inequality in U.S. increased most among Asians from 1970 to 2016

Ratio of income at the 90th percentile to income at the 10th percentile



Note: Whites, blacks and Asians include only non-Hispanics and are single-race only in 2016. Hispanics are of any race. Asians include Pacific Islanders. Income is adjusted for household size. See Methodology for details.
Source: Pew Research Center analysis of 1970 decennial census and 2016 American Community Survey (IPUMS).
"Income Inequality in the U.S. Is Rising Most Rapidly Among Asians"

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SUMMARY -- EDUCATION

A national college outlook points out the following:
College Outlook in 2022[55]
The following are ten trend ins in Community College Marketing
1) #1 – Expanding Distance Learning
2) #2 – 360° Virtual Tours Online
3) #3 – Offer More Baccalaureate Degrees
4) #4 – Being Mobile-friendly
5) #5 – Increasing Partnership with Business
6) #6 – Focusing on Dual-Enrollment Students
7) #7 – Welcoming Reverse Transfer Students
8) #8 – Increasing enrollment for veterans of the Iraq and Afghanistan wars
9) #9 – Increased Response to Globalization
10) #10 – Partnerships between Community Colleges and Four-Year Institutions

Regionally, six Maryland community colleges formed the Maryland Education Alliance[56] in an effort to allow higher education to be more free flowing for the student, efficient and effective for college resources; and to create success for both. The goal of the Alliance is to create an easy pathway for students to transfer from one community college to another in order to boost enrollment in certain programs. This will create great cost savings for both the students and community colleges. Students would finish their preliminary coursework at the community college in their home county and then could transfer to another institution for more specialized coursework.

The U. S. Department of Education provided funds to Coffey Consulting, LLC. To explore noncredit and related activities. While their findings are not endorsed by the U.S. Department of Education, they are nonetheless provocative.[57] The study suggested that noncredit activity plays an important role in U. S. higher education that is not adequately captured by any national, publicly available data collection and the information would be valuable to community colleges, researchers and policymakers.

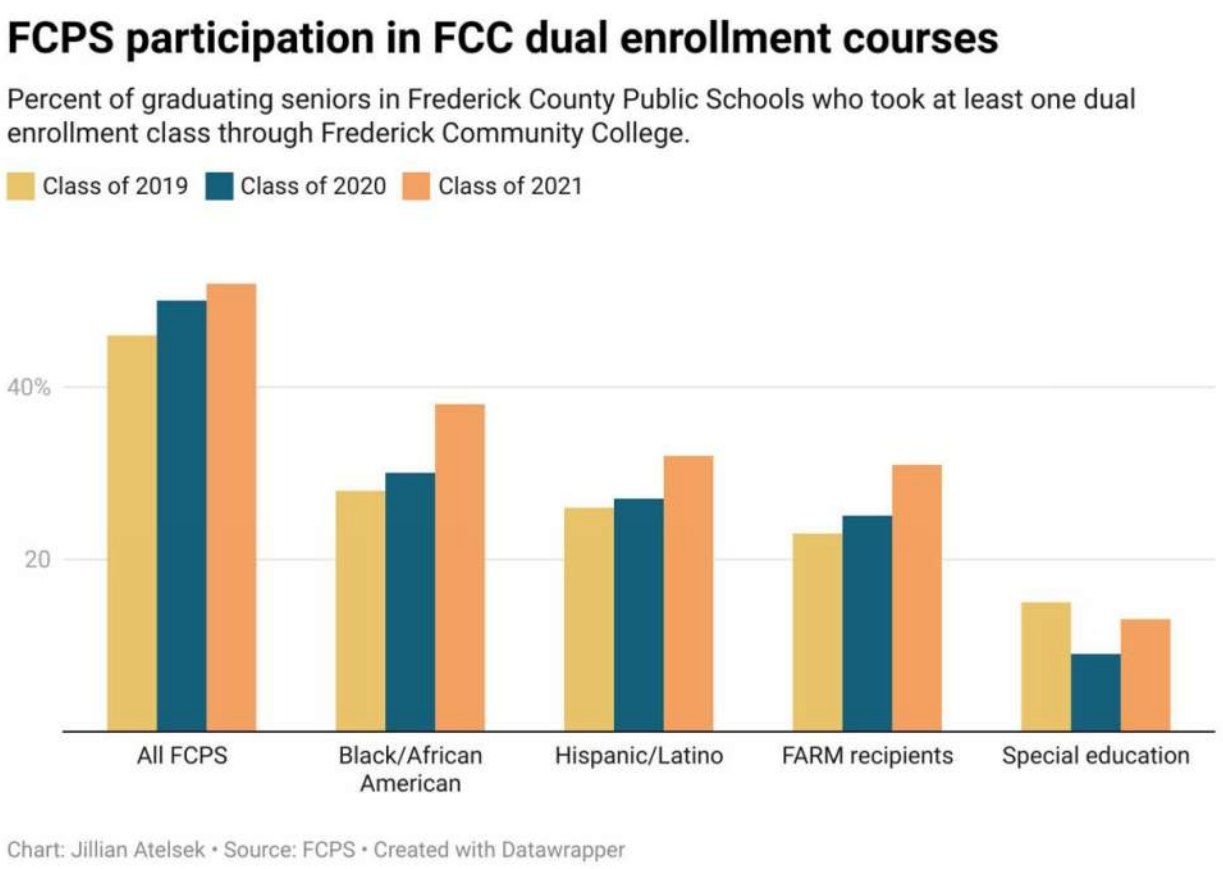
The impact of workforce development in Maryland's post-secondary educational system is captured in Maryland Community Colleges Workforce Training Reports FY 2020 prepared by the Maryland Community College Association for Continuing Education and Training (MCCACET). The impact of the pandemic was palpable. Although 156,793 students were enrolled across Maryland in noncredit continuing education courses, this was an 18% decrease in the number of students from the previous year when 50% of 317,070 enrolled students were noncredit.

- 38,052 students enrolled in 175 licensure and certification courses for professional credential
- 42,510 students enrolled in lifelong learning
- 27,562 students enrolled in basic skills, GED, External Diploma, ESOL
- 59,557 students representing over 600 business, associations, and agencies in contract training to gain technical or essential skills need for continued success in the workplace.

[55] https://linchpinseo.com/trends-in-community-college-marketing-recruitment-strategies/#1-expanding-distance-learning

[56] https://www.baltimoresun.com/maryland/harford/aegis/cng-ag-xcomm-hcc-md-college-alliance-20210503-lkwqblysxza4jombg5cskmnrtm-story.html

[57] Erwin, M. (2020). *Noncredit Enrollment and Related Activities.* (NPEC 2019). U.S. Department of Education. Washington, D.C.: National Postsecondary Education Cooperative. Retrieved January 31, 2022.

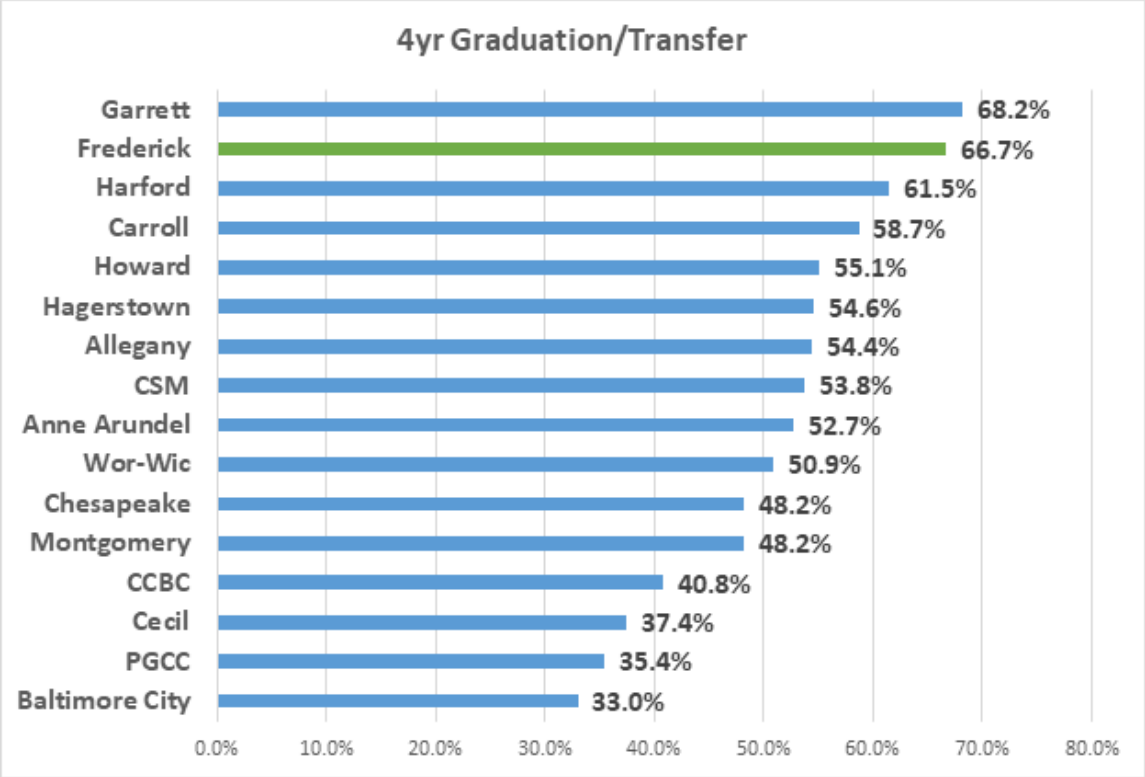


Reflected in Table 1 below are the most recent IPEDS outcome statistics comparing four Maryland peer institutions that are similar in size to FCC. The results show that the College has the highest credit full-time retention rate and six-year full-time graduation rate. The College is on par with other retention, graduation, transfer rates, and student-to-faculty ratio measures.

	Retention Rate		Graduation Rate			Transfer	Student -to
COLLEGE	**Full Time**	**Part Time**	**3-Year**	**6-Year FT**	**6-Year PT**	**Rate**	**Faculty Ratio**
						3-Year	**Fall 2018**
Frederick CC	**75%**	**47%**	**29%**	**37%**	**16%**	**23%**	**16**
Harford CC	69%	47%	29%	32%	16%	25%	19
Howard CC	67%	48%	22%	30%	14%	24%	14
CSM	65%	61%	29%	26%	12%	20%	18
Average	69%	48%	27%	31%	15%	23%	17

Source: 2019 Integrated Postsecondary Education Data System (IPEDS)

Maryland Community College 4-Year Graduation/Transfer Rates (Credit)



Source: MHEC Retention, Graduation, and transfer Rates at Maryland Community Colleges September 2019 (2013 Cohort)[58]

The FCC *Diversity, Equity, and Inclusion Strategic Plan 2019-2024* builds on the strengths of the College and targets the highest impact changes that will strengthen FCC for all students, faculty, and staff. A Diversity, Equity, and Inclusion (DEI) Strategic Plan is required of each public institution of higher education by the Annotated Code of Maryland, Education Article §11-406 (b) (1) (i).

FCC has a diversity, equity, and inclusion (DEI) infrastructure that includes: the Office of Diversity, Equity, and Inclusion with a senior diversity officer, the President's Diversity Advisory Council, Multicultural Student Services, Adult Services, Veteran and Military Services, Disability and Access Services, Adult Education and English as a Second Language Programs, as well as other student-centered and employee-centered programs. FCC's cultural diversity work is grounded in our College-wide 2019-2024 Diversity, Equity, and Inclusion Strategic Plan. [59]

- FCC Diversity, Equity, and Inclusion Strategic Plan 2021-2024 & FCC Institutional Racial Equity Plan 2021-2027
- Implicit Bias Training for Search Chairs & Search Committees & 19% Racial/Ethnic Minority Applicants
- Developmental Reform in Math and English
- Culturally Responsive Teaching Scholars
- Professional Development with a focus on Leadership Development

[58] https://www.frederick.edu/about-fcc/downloads/opair/institutionaleffectivenessreport2019.aspx
[59] https://www.frederick.edu/about-fcc/downloads/opair/culturaldiversityreport.aspx

SUMMARY -- EMPLOYMENT

It is anticipated that both external and internal forces will change dramatically how businesses evolve. Whereas 100 years ago it was founder-led firms and then fifty years later professionally managed corporation with powerful CEOs. Management became a career. Conglomerates were formed and started to build globally. The will of the investors and that of the managers focused on short-term gain. Now, technology is allowing startup businesses to scale up and still retain the customer touch. Technology will allow experts to replace the professional manager. Investment will not be based on companies but also on projects.[60]

Employers exclude two-thirds of U.S. workers from consideration to fill skills gaps and labor shortages because they lack a bachelor's degree.[61] Almost three-quarters of new jobs from 2007 to 2016 were roles "requiring" bachelor's degrees but fewer than 4 in 10 American workers have that credential. The workforce contains over 70 million workers who don't have bachelor's degrees but who have the skills through alternate routes. LinkedIn's CEO Ryan Roslansky committed to piloting skills-based tools to encourage pathways to high-paying jobs. The Biden administration issued an executive order advancing diversity, equity, inclusion, and accessibility (DEIA) in the federal workforce.[62]

Community colleges train students for middle skills position either credit or noncredit. Such jobs require training and education beyond high school but don't require a 4-year degree. Employability is a product consisting of a specific set of skills such as soft, hard, technical, and transferable. It is also a process that "empowers" an individual to acquire and improve marketable skills that can lead to gainful employment.[63] The nexus of employability, labor force, and economy is facilitated by education.

- Employability is a product consisting of a specific set of skills such as soft, hard, technical, and transferable.
- It is also considered as both a product (a set of skills that "enables") and as a process that "empowers" an individual to acquire and improve marketable skills that can lead to gainful employment.
- For labor/human capital to be used efficiently, it warrants the acquisition of knowledge, skills, and capabilities that employers need in our current economic times and knowledge-driven economy.
- From a macroeconomic perspective, a lack of employability contributes to both frictional and structural unemployment and affects the productivity of the labor force.
- If individuals are not employed, they are not spending, which means businesses do not invest in capital and labor or try to meet consumer demand. This translates into economic slowdown and increasing unemployment.[64]

Professions that are insulated from economic fluctuations are healthcare, education, and the defense sectors. The most highly sought after skills include: high IQ workers with higher education/academic skills; increased self-awareness; strong work ethic and positive attitude; analytical/critical thinking and

[60] https://www.bain.com/insights/3000-years-of-business-history-in-two-minutes-video/

[61] https://www.washingtonpost.com/opinions/2021/07/20/majority-americans-lack-college-degree-why-do-so-many-employers-require-one/

[62] https://www.whitehouse.gov/briefing-room/statements-releases/2021/06/25/fact-sheet-president-biden-signs-executive-order-advancing-diversity-equity-inclusion-and-accessibility-in-the-federal-government/

[63] https://www.investopedia.com/articles/economics/12/employability-labor-force-economy.asp

[64] ibid.

problem-solving; communication; cultural competency; social and digital technology skills; team player; and flexible, adaptable who can work under stress.

MAJOR EMPLOYERS 2020-2021[65]		
Employer	**Product/Service**	**Employment**
Fort Detrick	Military Installation	10,200
Frederick County Public Schools	Public Education	6,800
Frederick Health	Medical Services	3,300
Frederick County Government	County Government	2,342
Leidos Biomedical Research/ Frederick National Lab	Medical Research	2,334
Frederick Community College	Higher Education	1,286
Wells Fargo Home Mortgage	Mortgage Loans & Services Center	1,175
Thermo Fisher Scientific	Biological Products	950
City of Frederick Government	Municipal Government	880
Costco Wholesale	Distribution and Retailing	751
AstraZeneca	Biopharmaceuticals	700
Mount St. Mary's University	Higher Education	685
NVR, Inc.	Home Building & Mortgage Banking	630
Legal & General America	Life Insurance Headquarters	586
Stulz Air Technology Systems	Air Conditioning Systems	520
Lonza	Biological Products	464
Way Station	Healthcare Services	409
Goodwill of Central and Northern Arizona	eCommerce, Retail, and Workforce Development	400
National Emergency Training Centers	Federal Government	400
Plamondon Hospitality Companies	Hotels, Restaurants, Restaurant Management	390
Music & Arts	HQ/Music Instruction	396
Pleasants Construction Inc.	Construction and Paving	385
Aldi Distribution Center	Distribution Center and Retail	366
YMCA of Frederick County	Recreation and Sports Center	350
RR Donnelley	Business Documents	350
Maryland School for the Deaf	Educational Institution	320
Fountain Rock Management Corporation	Restaurant Management Services	315
Fitzgerald Auto Mall Frederick	Auto Dealership	300
Homewood Retirement Centers	Retirement Community	298
Hood College	Four-Year College	274
Morgan-Keller Construction	General Contractors	270

Last updated 06/2021

[65] https://www.discoverfrederickmd.com/major-employers

Local Area Unemployment Statistics by Metropolitan Statistical Area (MSA)[66]

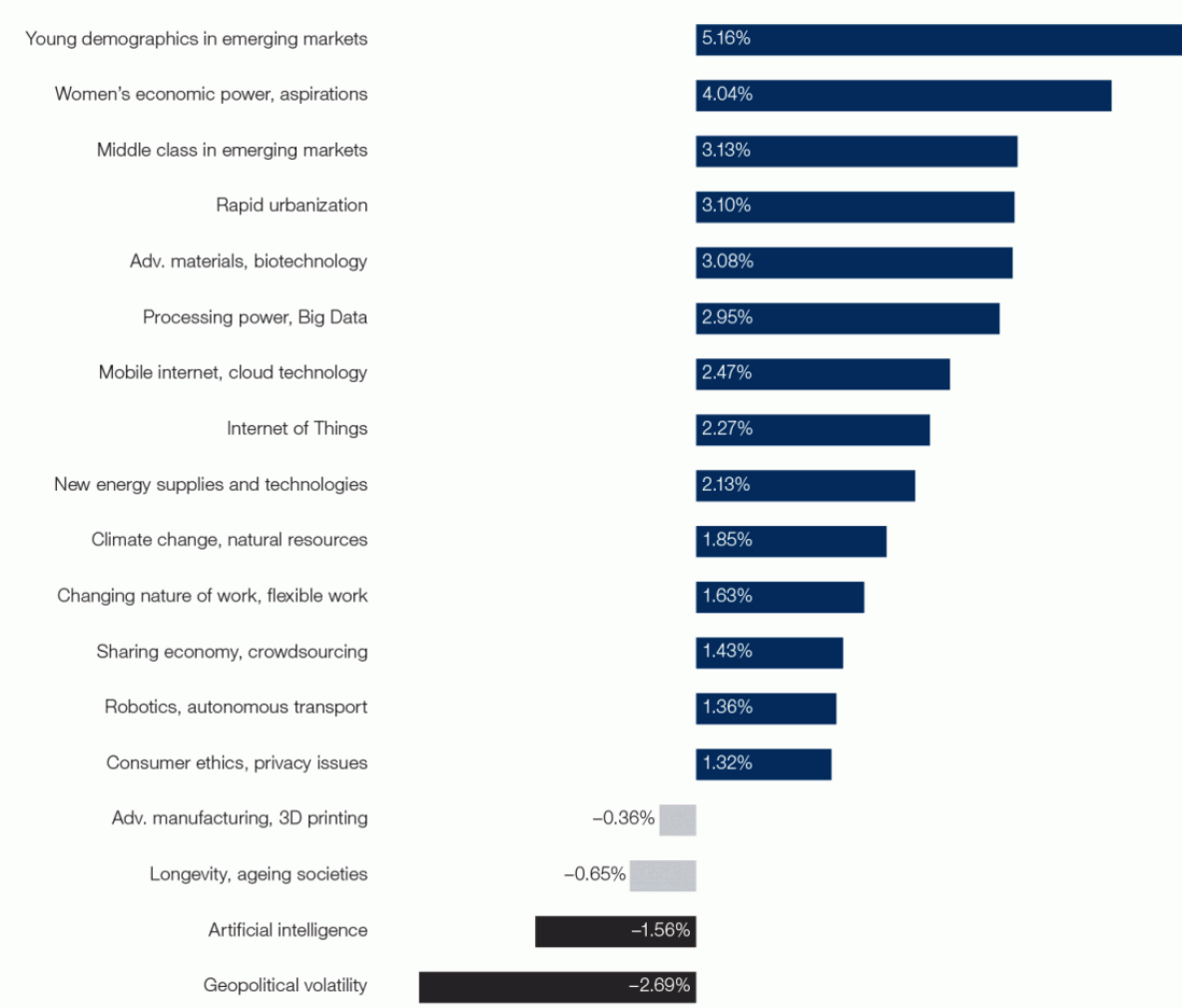
Unemployment Rate by MSA	Dec 2020	Jan 2021	Feb 2021	Mar 2021	Apr 2021	May 2021	Jun 2021	Jul 2021	Aug 2021	Sep 2021	Oct 2021	Nov 2021	Dec 2021
Baltimore-Columbia-Towson	6.3	6.1	5.9	5.8	5.5	5.6	6.4	5.4	5.4	5.1	4.8	4.3	3.8
California-Lexington Park	4.6	4.4	4.4	4.3	4.2	4.4	5.3	4.6	4.8	4.3	4.0	3.6	3.3
Cumberland	7.4	7.2	7.0	6.5	5.8	5.7	6.6	5.6	5.5	4.8	4.5	4.2	4.1
Hagerstown-Martinsburg	5.6	5.6	5.4	5.1	4.7	4.6	5.3	4.6	4.4	3.8	3.5	3.1	2.9
Salisbury, MD Part	8.6	8.9	8.3	7.7	6.9	6.4	7.0	5.8	6.0	5.8	5.7	5.8	5.6
Silver Spring-Frederick-Rockville	6.2	5.8	5.7	5.6	5.5	5.5	6.3	5.5	5.5	4.8	4.5	4.2	3.6
Washington-Arlington-Alexandria, MD Part	8.2	7.4	7.2	7.4	7.5	7.3	7.9	7.4	7.6	6.4	5.9	5.7	4.8
Wilmington, MD Part	5.6	5.5	5.5	5.4	5.0	5.1	6.0	5.2	5.3	4.8	4.5	4.1	3.7
Note: Data Not Seasonally Adjusted													

Employment by MSA	Dec 2020	Jan 2021	Feb 2021	Mar 2021	Apr 2021	May 2021	Jun 2021	Jul 2021	Aug 2021	Sep 2021	Oct 2021	Nov 2021	Dec 2021
Baltimore-Columbia-Towson	1,367,956	1,355,942	1,359,155	1,372,189	1,376,905	1,378,420	1,386,858	1,412,045	1,394,188	1,386,726	1,395,108	1,403,475	1,407,083
California-Lexington Park	53,707	53,898	54,033	54,306	54,524	54,599	54,596	55,296	54,466	54,884	54,998	55,048	55,393
Cumberland	39,314	38,807	39,288	39,635	40,789	40,890	40,838	41,176	40,801	41,783	41,606	41,400	41,528
Hagerstown-Martinsburg	123,477	121,214	120,091	120,504	122,112	123,063	124,330	126,044	124,315	124,911	126,920	127,895	128,673
Salisbury, MD Part	73,245	73,867	74,275	76,095	76,807	79,203	82,030	84,732	82,238	79,925	78,628	76,542	77,126
Silver Spring-Frederick-Rockville	619,710	618,072	622,743	628,913	631,436	636,819	637,054	652,297	643,636	640,753	643,617	643,802	644,656
Washington-Arlington-Alexandria, MD Part	572,910	570,237	573,482	574,772	575,655	575,403	576,573	588,813	578,340	583,669	587,390	587,795	590,120
Wilmington, MD Part	48,221	48,235	48,498	48,646	48,933	49,011	49,078	50,564	49,534	49,627	50,121	50,052	50,368
Note: Data Not Seasonally Adjusted													

Labor Force by MSA	Dec 2020	Jan 2021	Feb 2021	Mar 2021	Apr 2021	May 2021	Jun 2021	Jul 2021	Aug 2021	Sep 2021	Oct 2021	Nov 2021	Dec 2021
Baltimore-Columbia-Towson	1,459,168	1,444,167	1,443,703	1,456,087	1,457,183	1,459,544	1,480,973	1,492,228	1,473,713	1,461,642	1,465,766	1,467,241	1,463,271
California-Lexington Park	56,290	56,408	56,546	56,733	56,906	57,085	57,650	57,984	57,204	57,362	57,279	57,116	57,255
Cumberland	42,465	41,830	42,260	42,410	43,316	43,370	43,738	43,618	43,157	43,881	43,578	43,210	43,317
Hagerstown-Martinsburg	130,791	128,361	126,979	126,944	128,189	129,014	131,268	132,080	129,974	129,864	131,471	131,924	132,480
Salisbury, MD Part	80,118	81,127	80,966	82,468	82,501	84,629	88,237	89,902	87,445	84,825	83,407	81,218	81,665
Silver Spring-Frederick-Rockville	660,695	655,838	660,052	666,117	668,197	673,985	679,878	690,267	681,456	673,361	673,761	671,891	668,434
Washington-Arlington-Alexandria, MD Part	624,160	616,115	617,997	620,486	622,248	620,570	626,081	635,998	626,019	623,434	624,482	623,265	619,641
Wilmington, MD Part	51,101	51,065	51,301	51,404	51,514	51,641	52,234	53,336	52,300	52,128	52,476	52,182	52,310
Note: Data Not Seasonally Adjusted													

[66] https://mwejobs.maryland.gov/admin/gsipub/htmlarea/uploads/MonthlyLaborReview12_Dec21.pdf

Figure 4: Employment effect of drivers of change, all job types
Compound growth rate, 2015-2020, %[7]



Source: Future of Jobs Survey, World Economic Forum.
Note: Names of drivers have been abbreviated to ensure legibility.

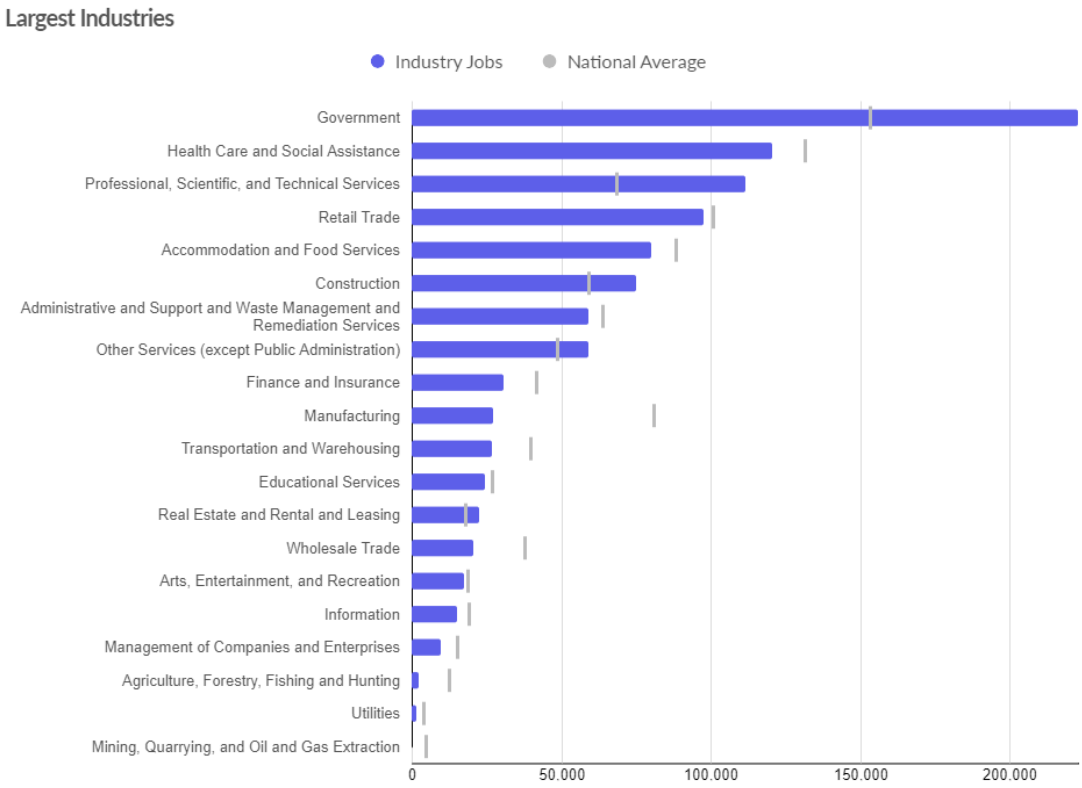
This global aggregate-level view of the driving forces behind employment change masks significant variation and important nuances at the level of individual job families and occupations. Our respondents expect strong employment growth across the Architecture and Engineering and Computer and Mathematical job families, a moderate decline in Manufacturing and Production roles and a significant decline in Office and Administrative roles. Other sizeable job families, such as Business and Financial Operations, Sales and Related and Construction and Extraction have a largely flat global employment outlook over the 2015–2020 period. Further unpacking these expectations according to the factors driving employment change makes clear the true scale of impending industry and occupational transformation. [67]

[67] https://reports.weforum.org/future-of-jobs-2016/employment-trends/

Workforce development partnerships are the foundation of success for matching workforce skills with employer needs while supporting self-sufficiency for job seeking customers. The Workforce Development Board prioritizes partnerships as a way to ensure talent matches industry needs today and in the future. The Workforce Innovation and Opportunity Act gives local boards the ability to be flexible, innovative, and demand driven. Successful workforce development solutions have a profound impact on the Frederick County community by:

- Providing business and industry with the skilled workers needed;
- Increasing family self-sufficiency through skill development and career pathways;
- Preparing youth and adults for lifelong learning and economic success;
- Aligning workforce system, employers, educators, and other partners for efficient and effective use of resources and
- Ensuring the local workforce system is inclusive, diverse and offers equal opportunity and accessibility for all;
- Leveraging local, state, and federal resources for economic and workforce development: local area.

High demand industries are BioHealth, Professional and Technical, Transportation, Warehousing, and Logistics, Construction and Skilled Trades, Administrative and Business Support Services, Healthcare and Social Assistance, Manufacturing.[68]



[68]https://static1.squarespace.com/static/5bd1ecbcf4e5313d98df77b9/t/601037cfa909ee78956054a1/1611675602502/Frederick+County+Local+WIOA+Plan+2021-2024+Public+Comment.pdf

SUMMARY – ECONOMY

Why is Inflation at a 40-Year High?[69]
The recovery has been like a roller coaster and has policymakers, economists and everyday households dealing with higher prices for groceries, cars, rent and other essentials. Inflation is larger than it has been in forty years causing fears about a potential recession. Higher energy costs have joined with higher price at the grocery store and blockages in the supply change globally as the world grapples with the COVID-19 pandemic.

Where are the students?
In times of economic recessions, community colleges see enrollment growth as unemployed workers need to retain or acquire different credentials to survive in a tight labor market.[70] In fall 2021, nationally, many community colleges resumed in-person classes. The loss from 2019 through 2021 was a 5.9% drop in undergraduate enrollment[71]

This has furthered the discussion that since majority of Americans lack a college degree why do employers require it. There is a disconnect between labor shortages reported by business and the skills gap needing to be addressed in order to fill that shortage. Former IBM CEO Virginia Rometty stated, at the *Fortune's Most Powerful Women Summit*,[72]that companies in all parts of the economy needed to shift their hiring criteria to emphasize skills over degrees and this would aid in building a more diverse workforce. She became the first female CEO in 2012. She perceived the digital era as "haves and have-nots" with access to tech training and opportunity leaving people behind. She is a proponent of AI-driven learning systems such as a "Netflix for learning" type of platform. Individuals will seek to learn more than just their skills, as such, they would be provided more coursework based upon their interests and performance.

On September 30, 2020, Heather Long, Andrew Van Dam and Leslie Shapiro wrote in the Washington Post that job losses from the pandemic disproportionately affected low-wage, minority workers. Black women, Black men and mothers of school-age children took the longest to regain their employment.[73] This disparity was closely followed by Hispanic men, Asian Americans, younger Americans ages 25 to 34, and people without college degrees.[74]

The number of international students has been shrinking and that has negatively affected the U.S. economy.[75] In and around college towns and communities, international students generate economic activity. Data from NAFSA: The Association of International Educators revealed that in 2019-20 there was a reduction of $1.8 billion to $38.7 billion. There was a 43% decline in new international students in fall 2020. In Maryland community colleges, the economic contribution was $89.3 million spawning 480 jobs on the basis of 2,324 students.[76]
Frederick County has received national recognition, being named #6 on the Top 10 Remote-Ready locations in the US by Livability and Top 10% of Healthiest Counties in the US by US News & World Report. The County is dynamic and diverse, with a $12.4B economy that boasts a strategic location, comprehensive transportation network, educated workforce

[69]https://www.washingtonpost.com/business/2022/inflation-charts/
[70] https://www.newamerica.org/education-policy/edcentral/community-college-enrollment-survey/
[71] https://nscresearchcenter.org/stay-informed/
[72] https://fortune.com/2020/10/01/ginni-rometty-ibm-mpw-summit-skills-diverse-workforce/
[73]https://www.washingtonpost.com/graphics/2020/business/coronavirus-recession-equality/
[74] https://www.cnbc.com/2020/10/02/former-ibm-ceo-ginni-rometty-hiring-based-on-skills-over-degree.html
[75] https://www.chronicle.com/article/the-number-of-international-students-is-shrinking-heres-how-thats-affecting-the-economy?cid=gen_sign_in
[76] ibid.

and moderate business costs. Frederick County's targeted core industry cluster growth creates resilience and diversity with Professional & Business Services and Education & Health Services as two of the many strong industries.

Frederick County is intersected by five major highways providing easy access to Baltimore, Washington, D.C., Pennsylvania, and Virginia. Frederick County's main streets are thriving and the entrepreneurs are creating unique businesses. The County is a top vibrant arts community and is the leader of the craft beverage cluster growth in Maryland. Major employers continue to grow including Fort Detrick with a $7B economic impact to the State of Maryland, Frederick Health, Leidos Biomedical and Frederick National Lab. Life Sciences is Frederick County's largest growing cluster with international leaders such as Thermo Fisher Scientific, AstraZeneca and Lonza. Recent projects include Kite Pharma with a 279,000 SF biologics manufacturing facility, Ellume's first U.S. manufacturing facility at 180,000 SF and VaLogic's 75,400 SF expansion. Frederick County is leading the state with the Quantum Loophole campus, a first-of-its-kind environmentally friendly data center campus. Kroger-Ocado robotics fulfillment center adds to the growing e-commerce cluster alongside Costco E-Commerce and Goodwill E-Commerce. [77]

Frederick County comprises 664 square miles with 259,547 people, 6,500 and more businesses with 106,415 workers and 1,373 farms.[78] Frederick County has received national recognition[79]

[77] https://commerce.maryland.gov/Documents/ResearchDocument/FrederickBef.pdf

[78] https://www.discoverfrederickmd.com

[79] OED August 2021 Rating Agency Presentation

Here are key economic indicators to understand:[80]

- The unemployment rate.
- Bond yield curves.
- Consumer spending.
- Consumer debt.
- Business expansions.
- The ballpark indicator.

Frederick County had an annual unemployment rate in December 2021 for the year 2020 of 5.9% and the rate for Maryland was 6.8%. Frederick County has zero business personal property tax. Frederick County's non-residential excise tax is $0 for new buildings, new additions and accessory structures. Frederick's real property tax rate is !.060 per $100 of assessed value and all other business taxes are exempt. The Maryland State tax rate for real property was 0.112 and a utility tax rate of 0.280 and no personal property tax rate.[81]

[80] https://money.usnews.com/money/personal-finance/saving-and-budgeting/articles/economic-indicators-to-understand
[81] https://dat.maryland.gov/Documents/statistics/TaxRates_2021.pdf

SUMMARY -- FACILITY MASTER PLAN POTENTIAL IMPACTS

Frederick Community College Facility Master Plan Potential Impacts:

The data and information suggest the following built environment needs as already identified by Frederick Community College in prior facility master plans, strategic plans, institutional research reports and articulated in the presidential search prospectus (note: not in priority order):

- Welcome Center/Gateway
- Physical Education/Athletic NJCAA/Health and Fitness Center
- Assembly Space
- Designated Pre K-12 Space(s)
- Expanded Student Services
- DEI/Multicultural Space
- Systemwide Infrastructure Renewal Program
- Expanded Workforce Development and Training
- Expanded Fine and Theater Arts

The State of Maryland has seven fund sources to support the capital program. The sources are in two categories: Debt and PAYGO. The Capital Debt Affordability Committee (CDAC) annually submits to the Governor and the General Assembly its estimate of the maximum amount of new general obligation debt that may be authorized for the ensuing fiscal year. The Committee's estimate is advisory and not binding upon the Governor.

The Spending Affordability Committee (SAC) includes leadership representation from both houses of the Maryland General Assembly. SAC reviews the status and projections of State revenues and expenditures and the status and projection of the Maryland economy in an effort to limit the rate of growth of State spending to ensure it does not exceed the rate of growth of the State's economy. Annually they recommend to the Governor and the Legislative Policy Committee the fiscal goals of the State government budget to be considered at the next General Assembly session.

The State continues to be supportive of the capital program due to the State's large structural budget surplus due to revisions in the estimated State revenues upward and the enactment of the federal American Rescue Plan Act (ARPA).[82]

Community College funding is supported by two other components, the local government and student tuition and fees. In an effort to keep student tuition and fees low, Frederick Community College has even forgiven debt due to the pandemic. Frederick County continues to absorb a higher rate of increase in support of the community college than the State.

External factors at the global and national level could have a negative impact in addition to the pandemic. Currently the COVI-19 pandemic has disrupted the construction material supply chain and prices for materials and labor have increased on average 13.4% over the last two years.[83] Lastly, the annual inflation factor for cost estimating has been raised from 4.5% to 5.0%.

[82] Department of Legislative Services. Office of Policy Analysis. Annapolis, Maryland. Capital Budget Fiscal Briefing. February 2022. p.14

[83] ibid. p. 13

FINDINGS

- The Board of Trustees has charged the President with the following priorities:
  - Creating unity of purpose throughout the college and the community of Frederick.
  - Establishing a strategic vision
  - Connecting with community partners
  - Championing diversity
- Executive Senior Leadership are capable across their units of operation
- Executive Senior Leadership know the strengths and challenges confronting the College
- Frederick Community College is a top performer in Maryland higher education
- The College's students, faculty, staff and administrators are focused on community
- Frederick County and the City of Frederick value the College
- External forces provide great opportunity for FCC to reach even higher heights as the demographics within the region are changing
- State support is direly needed to address built environment needs that impede Frederick reaching an even larger audience and even more diverse business and industry due to its strategic location.

METHODOLOGY

This strategic environmental scan for Frederick Community College's *Facilities Master Plan* is targeted to the institution's leadership and decisionmakers. It was informed by the following fundamental questions:

- **Who supports Frederick Community College (FCC)?**
- **What is the mission of FCC? What is a Facility Master Plan? What is an environmental scan?**
- **When do you perform an environmental scan?**
- **Where do you apply an environmental scan? (The market affecting FCC and the market FCC seeks to affect)**
- **Why do you perform an environmental scan?**
- **How do you perform a FMP environmental scan?**

The initial answers to the above questions help limit and focus the approach and processing of the environmental scan. There are three generally recognized approaches:[84]

1. Systematic Approach:
Under this approach, information for environmental scanning is collected systematically. Information related to markets and customers, changes in legislation and regulations that have a direct impact on an organization's activities, government policy statements pertaining the organization's business and industry, etc., could be collected continuous updating such information is necessary not only for strategic management but also for operational activities.

[84]https://www.yourarticlelibrary.com/environment/approaches-and-techniques-used-for-environmental-scanning/23556

2. Ad hoc Approach:
Using this approach, an organization may conduct special surveys and studies to deal with specific environmental issues from time to time. Such studies may be conducted, for instance, when organization has to undertake special projects, evaluate existing strategy or devise new strategies. Changes and unforeseen developments may be investigated with regard to their impact on the organization.

3. Processed-form Approach:
For adopting this approach, the organization uses information in a processed form available from different sources both inside and outside the organization. When an organization uses information supplied by government agencies or private institutions, it uses secondary sources of data and the information is available in processed form.

We have included both primary and secondary source data and information. We chose to use an integration of the approaches based upon the data and the information sources.
The next consideration is the sources of information selected. Primary sources are preferable but due to limitations of time, cost and labor it was not strictly used for all data/information.
All data and information have been source identified and attributions noted. All data and information have been double checked for accuracy and timeliness. The references used for this environmental scan are recorded.

The various sources from where data can be identified are as varied as the data and so the following matrix was chosen:

INTERVIEWS	**RESEARCH**	***IN SITU* OBSERVATIONS**
Regional	Literature	Space Inventory
State	Web-based	Instructional Space & Building Photos
Local	Stakeholders	Documents

The consultant team then determined that the technique that would best "fit" this environmental scan for facility master planning purposes was judgmental and intuitive as compared with a statistical or mathematical technique. The following State of Maryland agencies have review authority for facilities master plans and development of resultant projects:

Frederick Community College Facilities Master Plan Strategic Environmental Scan

Maryland Higher Education Commission
Community College Construction Grant Program
Excerpt- "Maryland Community College facilities Manual:
April 2018 Edition

State Agency Functions and Responsibilities

Facilities Master Plan	MHEC	DBM	DGS	MDP
Review for Consistency with Role and Mission Statement	•			
Endorse student and faculty/staff projections	•			
Verify that programs support approved Mission Statement	•			
Verify compliance with space guidelines	•			
Assess adequacy of facilities to support current and proposed academic programs	•			
Distribution of findings to College	•	•		
Review of space guidelines analysis		•		
Physical planning considerations		•	•	
Cost/benefit considrations		•	•	
Telecommunication Plan	•	•	•	
Environmental Studies and Growth & Conservation Initiatives		•	•	•

There are multiple audiences for this environmental scan both external and internal to Frederick Community College. Accordingly, the consultant team decided an approach for the collection of the data to be more than a data dump, rather the data and its corresponding information had to be both relevant to the institution, inform its operations and respond to the considerations for an approvable facilities master plan by the State of Maryland.

Therefore, the strategic environmental scan for the facility master plan is based on the following:

(1) Pareto Principle: 80/20 Rule
(2) Frederick community College Mission: (Three
(3) Domains) Education, Employment and Economy
(4) Community College Impact: (Five Domains) Global, National, Regional, State, and Local

The 80-20 rule, also known as the Pareto Principle, is an aphorism which asserts that 80% of outcomes (or outputs) result from 20% of all causes (or inputs) for any given event. In business, a goal of the 80-20 rule is to identify inputs that are potentially the most productive and make them the priority. For instance, once managers identify factors that are critical to their company's success, they should give those factors the most focus.[85]

Frederick Community College MHEC Mission State Review September 28, 2018:[86]

[85] https://www.investopedia.com/terms/1/80-20-rule.asp

[86] https://www.frederick.edu/about-fcc/downloads/opair/fcc-mission-statement-review.aspx

> *With teaching and learning as our primary focus, FCC prepares an increasingly diverse student body to complete their goals of workforce preparation, transfer, career development, and personal enrichment with quality, innovative lifelong learning. In traditional and alternative learning environments, we anticipate and respond to the needs of our local, regional, and global* communities.[87]

The Frederick Community College's mission is operationalized by its purpose in law and its context within higher education to improve student success, provide job training, and promote economic development[88] Accordingly, the scan focuses on these four domains (i.e., demographics, education, employment, and economy). The five impact domains are equally alluded to in the mission statement (i.e., global, national, regional, state, and local.) This leads to the following strategic data and information gathering three by five collection matrix:

IMPACT	MISSION			
	Demographics	**Education**	**Employment**	**Economy**
Global				
National				
Regional				
State				
Local				

[87] https://www.frederick.edu/about-fcc/downloads/opair/fcc-mission-statement-review.aspx

[88] https://mdacc.org/wp-content/uploads/MACC_StrategicPlan-Final_2021.11.01.pdf

DATA GATHERING

The data gathered is in consideration of the following factors that will be analyzed later:[89]

A **PESTEL** analysis is a framework or tool used by marketers to analyze and monitor the macro-environmental (external marketing environment) factors that have an impact on an organization, company, or industry. It examines the Political, Economic, Social, Technological, Environmental, and Legal factors in the external environment. A PESTEL analysis is used to identify threats and weaknesses which are used in a SWOT analysis.

Political factors include government policies, leadership, and change; foreign trade policies; internal political issues and trends; tax policy; regulation and de-regulation trends.

Economic factors include current and projected economic growth; inflation and interest rates; job growth and unemployment; labor costs; impact of globalization; disposable income of consumers and businesses; likely changes in the economic environment.

Social factors include demographics (age, gender, race, family size); consumer attitudes, opinions, and buying patterns; population growth rate and employment patterns; socio-cultural changes; ethnic and religious trends; living standards.

Technological factors affect marketing in (1) new ways of producing goods and services; (2) new ways of distributing goods and services; (3) new ways of communicating with target markets.

Environmental factors are important due to the increasing scarcity of raw materials; pollution targets; doing business as an ethical and sustainable company; carbon footprint targets.

Legal factors include health and safety; equal opportunities; advertising standards; consumer rights and laws; product labeling and product safety.

The acquisition of the data/information has been by various means. There have been more than forty formal and informal interviews conducted. The individuals interviewed have been at Frederick Community College, the City of Frederick, Frederick County, and State of Maryland agencies. Extensive research has been done in trade journals, newspapers, newsletters, case studies, government publications, and magazines. There has been online research of websites at the global, national, regional, state, and local levels. It has been data and information provided by governments, non-governments, and private-for-profit and private not-for profit organizations.

Lastly, on-site observations were conducted at the main campus and the Monroe Center. Every accessible instructional space in the Frederick Community College inventory was observed and some photographed and noted. Staff provided documents online for review.

[89]https://blog.oxfordcollegeofmarketing.com/2016/06/30/pestel-analysis/

STRATEGIC ENVIRONMENTAL SCAN CONTEXT

EDUCATION

The establishment of education in the United States Constitution is reserved to the states under the Tenth Amendment.

> "The powers not delegated to the United States by the Constitution, nor prohibited by it to the States, are reserved to the States respectively, or to the people."[90]

The Maryland Constitution of 1867 set forth the establishment of a public education system, a transition period to assess the existing system, and a system of dedicated public funding:

> "The General Assembly, at its First Session after the adoption of this Constitution, shall by Law establish throughout the State a thorough and efficient System of Free Public Schools; and shall provide by taxation, or otherwise, for their maintenance. The System of Public Schools, as now constituted, shall remain in force until the end of the said first Session of the General Assembly, and shall then expire; except so far as adopted, or continued by the General Assembly. The School Fund of the State shall be kept inviolate, and appropriated only to the purposes of Education."[91]

The above sets forth some constitutional principles, rules of law, and statutory interpretation for the legal context from which an efficient public system of education evolved. The Morrill Act of 1862 (the Land Grant Act) expanded access into higher education. America's first public community college began in 1901 as an experimental postgraduate high school program. William Rainey Harper, President of the University of Chicago and J. Stanley Brown, the Superintendent of Joliet Township High School are credited as the innovators.[92]

Enrollment started slowly as community colleges were being established, but during the Great Depression, curricula was expanded to job training, enrollment rose, and community colleges helped to relieve unemployment during the 1930s to 1950s.[93] After World War II, the *Serviceman's Readjustment Act of 1944*, commonly referred to as the G.I. Bill made access to higher education a national priority.[94] The increased enrollment remained the trend through the 1960's and 1970's as young people sought to defer being drafted into Vietnam.[95]

The community college sector of postsecondary education was the catalyst for greater opportunity and led to America having more people at a higher level of education than any other nation.

Fast-forward, to April 1983, The National Commission on Excellence in Education released ***A Nation at Risk: The Imperative for***

[90] https://constitution.findlaw.com/bill-of-rights.html
[91] https://codes.findlaw.com/md/maryland-constitution-of1867/#!tid=NAF9F3F209B5B11DB9BCF9DAC28345A2A
[92] https://www.jjc.edu/about-jjc/history
[93] https://www.timetoast.com/timelines/history-of-american-maricopa-community-colleges
[94] https://www.learningoutcomesassessment.org/wp-content/uploads/2019/08/SpellingsReport.pdf ; p.vi
[95] Op. cit.;

Educational Reform.[96] The Commission had six specific charges as follows:

- Assessing the quality of teaching and learning in our Nation's public and private schools, colleges, and universities;
- Comparing American schools and colleges with those of other advanced nations;
- Studying the relationship between college admissions requirements and student achievement in high school;
- Identifying educational programs which result in notable student success in college;
- Assessing the degree to which major social and educational changes in the last quarter century have affected student achievement; and
- Defining problems which must be faced and overcome if we are successfully to pursue the course of excellence in education.

The Commission's methodology relied on five sources of information:

- papers commissioned from experts on a variety of educational issues;
- administrators, teachers, students, representatives of professional and public groups, parents, business leaders, public officials, and scholars who testified at eight meetings of the full Commission, six public hearings, two panel discussions, a symposium, and a series of meetings organized by the Department of Education's Regional Offices;
- existing analyses of problems in education;
- letters from concerned citizens, teachers, and administrators who volunteered extensive comments on problems and possibilities in American education; and
- descriptions of notable programs and promising approaches in education.

In 2015, President Barack H. Obama's American College Promise Proposal for tuition-Free Community College for Responsible Students was an effort to build American skills by strengthening community colleges:

> *"Now is the time to build a firmer, stronger foundation for growth that will not only withstand future economic storms, but one that helps us thrive and compete in a global economy. It's time to reform our community colleges so that they provide Americans of all ages a chance to learn the skills and knowledge necessary to compete for the jobs of the future."*
>
> - President Barack Obama[97]

President Obama's "The American Graduation Initiative" proposed the following:

"THE AMERICAN GRADUATION INITIATIVE"

Fifty years ago, President Harry Truman called for a national network of community colleges to dramatically expand opportunities for veterans returning from World War II. Today, faced with rapid technological change and global competition, community colleges are needed more than ever to raise American skills and education levels and keep American businesses competitive. President Barack Obama called for an additional 5 million community college degrees and certificates by 2020 and new steps to ensure that those credentials will help

[96] The National Commission on Excellence in Education; *A Nation at Risk: The Imperative for Educational Reform*; A Report to the Nation and the Secretary of Education of the United States Department of Education; April 1983; Introduction

[97] https://obamawhitehouse.archives.gov/sites/default/files/100326-community-college-fact-sheet.pdf

graduates get ahead in their careers. Together, these steps will cost $12 billion over the next decade. The administration will pay for them as part of a package that cuts waste out of the student loan program, increases Pell Grant scholarships, and reduces the deficit.

Community colleges are the largest part of our higher education system, enrolling more than 6 million students, and growing rapidly. They feature affordable tuition, open admission policies, flexible course schedules, and convenient locations, and they are particularly important for students who are older, working, need remedial classes, or can only take classes part-time. They are also capable of working with businesses, industry and government to create tailored training programs to meet economic needs such as nursing, health information technology, advanced manufacturing, and green jobs, and of providing customized training at the worksite.

Business and industry play an important role in training the workforce of the future and meeting the on-going demands of the marketplace. Many community colleges are already working with businesses to develop programs and classes ranging from degrees to certified training courses for retraining and on-going training for enhancing skills. For example, Cisco's Networking Academy is working with community colleges to train students throughout the country on technology-based jobs and it is expanding this platform to train for broadband infrastructure and health care information technology.[98]

The American Graduation Initiative will build on the strengths of community colleges and usher in new innovations and reforms for the 21st century economy. It will:

- **Call for 5 Million Additional Community College Graduates**: In February, President Obama called for America to once again lead the world in college degrees by 2020. Affordable, open-enrollment community colleges will play a critical role in meeting that goal. Today, he set a complementary goal: an additional 5 million community college graduates by 2020, including students who earn certificates and associate degrees or who continue on to graduate from four-year colleges and universities.

- **Create the Community College Challenge Fund**: Too often community colleges are underfunded and underappreciated, lacking the resources they need to improve instruction, build ties with businesses, and adopt other reforms. Under President Obama's plan, new competitive grants would enable community colleges and states to innovate and expand proven reforms. These efforts will be evaluated carefully, and the approaches that demonstrate improved educational and employment outcomes will receive continued federal support and become models for widespread adoption. Colleges could:
  - Build partnerships with businesses and the workforce investment system to create career pathways where workers can earn new credentials and promotions step-by-step, worksite education programs to build basic skills, and curriculum coordinated with internship and job placements.
  - Expand course offerings and offer dual enrollment at high schools and universities, promote the transfer of credit among colleges, and align graduation and entrance requirements of high schools, community colleges, and four-year colleges and universities.

[98] Ibid.

- Improve remedial and adult education programs, accelerating students' progress and integrating developmental classes into academic and vocational classes.
- Offer their students more than just a course catalog, through comprehensive, personalized services to help them plan their careers and stay in school.

In addition, the initiative will support a new research center with a mission to develop and implement new measures of community colleges' success so prospective students and businesses could get a clear sense of how effective schools are in helping students -- including the most disadvantaged -- learn, graduate, and secure good jobs.

- **Fund Innovative Strategies to Promote College Completion**: Nearly half of students who enter community college intending to earn a degree or transfer to a four-year college fail to reach their goal within six years. The College Access and Completion Fund will finance the innovation, evaluation, and expansion of efforts to increase college graduation rates and close achievement gaps, including those at community colleges. Promising approaches include performance-based scholarships, learning communities of students, professors and counselors, colleges tailored to promote the success of working adults, and funding formulas based on student progress and success as well as initial enrollment. Resources would also be provided to improve states' efforts to track student progress, completion, and success in the workplace.

- **Modernize Community College Facilities**: Often built decades ago, community colleges are struggling to keep up with rising enrollments. Many colleges face large needs due to deferred maintenance or lack the modern facilities and equipment needed to train students in technical and other growing fields. Insufficient classroom space can force students to delay needed courses and reduce completion rates. President Obama is proposing a new $2.5 billion fund to catalyze $10 billion in community college facility investments that will expand the colleges' ability to meet employer and student needs. The resources could be used to pay the interest on bonds or other debt, seed capital campaigns, or create state revolving loan funds.

- **Create a New Online Skills Laboratory**: Online educational software has the potential to help students learn more in less time than they would with traditional classroom instruction alone. Interactive software can tailor instruction to individual students like human tutors do, while simulations and multimedia software offer experiential learning. Online instruction can also be a powerful tool for extending learning opportunities to rural areas or working adults who need to fit their coursework around families and jobs. New open online courses will create new routes for students to gain knowledge, skills and credentials. They will be developed by teams of experts in content knowledge, pedagogy, and technology and made available for modification, adaptation and sharing. The Departments of Defense, Education, and Labor will work together to make the courses freely available through one or more community colleges and the Defense Department's distributed learning network, explore ways to award academic credit based upon achievement rather than class hours, and rigorously evaluate the results.

THE OBAMA-BIDEN AGENDA FOR COLLEGE AFFORDABILITY

Today's new initiatives complement President Obama's existing agenda for higher education. At this time of economic hardship and uncertainty, the Administration's agenda will build the country's capacity, innovation and confidence to drive the nation to first place in the highly skilled workforce crucial for success in the 21st century. These initiatives include:

- **Expanding Pell Grants and College Tax Credits**: The Recovery Act increased Pell Grants by $500 to $5,350 and created the $2,500 American Opportunity Tax Credit for four years of college tuition. Now, the Administration is working to make these policies permanent and ensure the Pell Grant continues to grow faster than inflation. Together, the Recovery Act and President's Budget call for nearly $200 billion in college scholarships and tax credits over the next decade.

- **Reforming the Student Loan Program to Save Billions**: Guaranteed student loans earn banks and other lenders large profits set by the political process rather than won in a competitive marketplace. The Administration will replace guaranteed loans with direct loans, which are administered by private-sector companies, like Sallie Mae and Accenture, selected through a competitive process and paid based upon performance. Direct loans have essentially the same terms for students, are more reliable and efficient, and will save billions of dollars to finance these investments in community colleges as well as increase Pell Grant scholarships and other investments in college opportunity.

- **Simplifying the Student Aid Application**: The application for federal student aid has as many as 153 questions, creating major obstacle in the path of aspiring college students. More than a million students fail to apply for aid because of the application's complexity. The Obama Administration is simplifying the financial aid process by modernizing the online application, seeking legislation that will eliminate unnecessary questions, and creating an easy process for students to use tax data to apply. The end result will be a modernized application that requests only easily obtainable personal information

- **Helping Unemployed Workers Get New Skills**: In May, President Obama expanded opportunities for unemployed workers to go to a community college and earn new skills. The Department of Education has clarified that these workers should not be denied student aid based upon incomes they no longer earn, and the Department of Labor is working with states to allow workers to keep their unemployment benefits while receiving education and training.

- **Expanding the Perkins Loan Program**: The low-cost Perkins loan program is an important option for students who need to borrow more than allowed under the larger Stafford loan program. The Administration will expand it from $1 billion a year to $6 billion a year, making loans available to 2.7 million more students and at 2,600 additional colleges and universities.

- **Helping Families Save for College**: The President's Middle Class Task Force has directed the Department of the Treasury to investigate improvements to 529 savings plans to help families

save for college more effectively and efficiently."[99]

In 2018, the American Association of Community Colleges (*AACC*) advanced the following recommendations to President-elect Donald J. Trump:[100]

1) Strengthen the Pell Grant Program
2) Invest in the Development of Open Educational Resources
3) Help the Most Economically At-Risk Students Stay in School
4) Rethink the Tax Code's Student Financing Provisions
5) Invest in Community College Workforce Training Capacity
6) Increase Investment in Existing Workforce Education Programs
7) Invest in Community College Infrastructure
8) Lighten the Regulatory Burden on Community Colleges and Produce Better Higher Education Data

The Coronavirus Aid, Relief, and Economic Security Act, or CARES Act, was passed by Congress on March 27th 2020 and signed into law by President Donald J. Trump. Within the $2.2 trillion provided, $14 billion was given to the Office of Postsecondary Education as the Higher Education Emergency Relief Fund, or HEERF.[101] On December 27, 2020, the president signed into law the Coronavirus Response and Relief Supplemental Appropriations Act (CRRSAA), which provides more than $81 billion in emergency support to elementary, secondary and postsecondary education. Over $21 billion of that total is allocated to higher education, including public, private nonprofit, and proprietary institutions and their students. Building on the structure of the Higher Education Emergency Relief Fund (HEERF) under the Coronavirus Aid, Relief, and Economic Security (CARES) Act of March 2020, the U.S. Department of Education (ED) has designated these additional higher education support funds under the CRRSAA as "HEERF II."[102]

Subsequently, President Joseph R. Biden, Jr. followed up with additional funds. The Higher Education Emergency Relief Fund III (HEERF III) authorized by the American Rescue Plan (ARP), Public Law 117-2, signed into law on March 11, 2021, provided $39.6 billion in support to institutions of higher education to serve students and ensure learning continues during the COVID-19 pandemic.

ARP funds are in addition to funds authorized by the Coronavirus Response and Relief Supplemental Appropriations Act, 2021 (CRRSAA), Public Law 116-260 and the Coronavirus Aid, Recovery, and Economic Security (CARES) Act, Public Law 116-136. Emergency funds available to institutions and their students under all emergency funds total $76.2 billion.[103]

As stated in President Obama's *"The American Graduation Initiative,"* business and industry is critical to the emerging global economy as well as the United States economy and security.[104]

EMPLOYMENT

BUSINESS and INDUSTRY

[99] https://obamawhitehouse.archives.gov/the-press-office/excerpts-presidents-remarks-warren-michigan-and-fact-sheet-american-graduation-init

[100] https://www.nccommunitycolleges.edu/sites/default/files/state-board/legislative/leg_01_-aacc_federal_legislative_agenda.pdf

[101] https://www2.ed.gov/about/offices/list/ope/caresact.html

[102] https://www.faegredrinker.com/en/insights/publications/2021/1/21-billion-in-emergency-aid-available-for-higher-education-through-heerf-ii-funding

[103] https://www2.ed.gov/about/offices/list/ope/arp.html

[104] https://obamawhitehouse.archives.gov/sites/default/files/100326-community-college-fact-sheet.pdf

United States business and industry has been on a parallel course as education in America. In the decades following the Civil War, the United States became an industrial giant. Building on existing "old industries", the U.S. expanded in petroleum refining, steel manufacturing, and electrical power. The expansion of railroads turned the U.S. into a national market economy.[105] Economic prosperity was not uniform as all aspects of American society did not share in this wealth. Many workers were unemployed for parts of the year; wages were relatively low when they did work; and farmers were faced with technological advances that increased production, more competition, falling prices; and relocation of its young people to cities seeking better opportunity.

Immigration to the United States from many parts of the world was the result of issues in their native lands such as: crop failure, land and job shortages, rising taxes; famine; and perceived U.S. economic opportunity.[106] The early 20th Century was a period of business expansion and progressive reform in the U.S. Americans focused themselves on regulating "big business", cleaning up corrupt city governments, improving working conditions, improving living conditions; and improving the environment and conserving resources.[107] The stock market crash in October 1929 brought about the great economic depression.

Subsequently, America was drawn into World War II. Millions of men and women entered military service, labor demands caused a displacement of Americans to the Atlantic, Pacific, and Gulf coasts to work in the defense plants. Post-war, American society became more affluent.[108]

"In his 1961 farewell address, U.S. President Dwight D. Eisenhower famously warned the public of the nation's increasingly powerful military-industrial complex and the threat it posed to American democracy. Today the United States routinely outspends every other country for military and defense expenditures."[109]

Post President Dwight D. Eisenhower, many did not share in this *American Dream*. African Americans, Hispanic Americans, and American women began to seek full freedoms and civil rights guaranteed by the Declaration of Independence and the U.S. Constitution they perceived as being denied them. Post-World War II there was general bi-partisan support for most U.S. foreign policy initiatives. The U.S. intervention in Vietnam contributed to a consensus breakdown. In addition to the aforementioned groups perceiving their rights being denied, the 20th Century saw organized activism to secure those same aforementioned rights for lesbian, gay, bisexual, transgender, and queer (LGBTQ) people.[110]

In this ever changing, dynamic political, economic, social, technological, environmental, and legal context, American business and industry attempted to maintain its post-World War II gains. Federal government's response was to build on its prior efforts. The Smith-Hughes Act of 1917 first authorized federal funding for vocational education in American schools. Its expressed purpose was preparing for careers not requiring a bachelor's degree. From its outset, John Dewey criticized vocational education design as having a built-in class distinction.[111]

> "Waste of natural resources and carelessness as to human life, together with almost exclusive attention to raw

[105] https://www.loc.gov/classroom-materials/united-states-history-primary-source-timeline/rise-of-industrial-america-1876-1900/overview/; Overview.
[106] Ibid.; *Immigration to the United States, 1851-1900*
[107] Ibid.; *Progressive Era to New Era, 1900-1929*
[108] Ibid.; The Post War United States, 1945-1968
[109] https://www.history.com/topics/21st-century/military-industrial-complex
[110] Op cit.; *LGBTQ Activism*
[111] https://www.apmreports.org/episode/2014/09/09/the-troubled-history-of-vocational-education

> materials and coarse methods, was the mark of the former [style of education]. Conservation of resources and of life, together with preparation of individuals with trained imagination and resourceful skill for expert action in a complex society, must be the mark of our future America – unless degeneration is to set in."[112]

In the 1960s, civil rights activists and advocates for low-income students complained that vocational education was being used to segregate poor and minority students into occupational training in order that the academic curriculum could be reserved for middle- and upper-class students.[113] The initially perceived shortcomings as expressed by John Dewey were proving to be true. The Vocational Educational Act of 1963 provided grants to states to maintain, improve, and develop vocational-technical education programs for occupations in demand.[114] It was later renamed the Carl D. Perkins Career and Technical Education Act in 1984. The goal was to provide federal funding to support connections between secondary and postsecondary education and employers. The Act was reauthorized and signed into law in 2018 and is referred to as Perkins V. The key improvements to prior legislation were:

> "Perkins V reflects the 100-year federal commitment to Career Technical Education (CTE) by providing federal support for CTE programs and focuses on improving the academic and technical achievement of CTE students, strengthening the connections between secondary and postsecondary education and improving accountability. Perkins V affords states and local communities the opportunity to implement a vision for CTE that uniquely supports the range of educational needs of students — exploration through career preparation — and balances those student needs with the current and emerging needs of the economy."[115]

The focus on improvements in secondary education and postsecondary education along with the needs of business and industry and the economy equally placed accountability and responsibility on business and industry to improve. From the initial laissez-faire role of government with business and the economy to heightened government intervention in the late 19th century, the changes have come about with citizen request for economic reform.[116] In 1890, Congress passed the Sherman Antitrust Act to restore competition and free enterprise by breaking up big business monopolies. In 1906 laws were passed to ensure food and drugs were properly labeled, meat was inspected before it was sold; and a federal banking system.

When the Great Depression hit, new laws were enacted to regulate stock sales, recognize the rights of workers to form unions, setting rules for wages and hours for workers; and stricter controls on the manufacture and sale of food,

[112] http://www.johndeweysociety.org/the-journal-of-school-and-society/wp-content/blogs.dir/2/files/2016/04/vol3_2016_schoolsociety_09.pdf ; p. 59

[113] Ibid.; *Tracking*

[114] https://www.tshaonline.org/handbook/entries/vocational-education; *Published* 1976; *Updated* March 24, 2021.

[115] https://careertech.org/perkins

[116] http://www.let.rug.nl/usa/outlines/economy-1991/the-role-of-government-in-the-economy/growth-of-government-intervention.php

pharmaceutical drugs and cosmetics.[117] These interventions have expanded to meet the economic needs of the poor, the old, the disabled, and to protect the environment. The Employment Act of 1946 stated that maximum employment, production, and purchasing power was to be the policy of the federal government.

In 1981, United States Secretary of Commerce, Malcolm Baldridge helped to reform American Anti-trust laws, increase access to the Soviet market by U.S. companies, negotiated technology transfers with India and China, and led the United States' efforts to pass the Export Trading Company Act of 1982. His impact on the world of business has been both nationally and globally such that his principles are the benchmarks for business quality and prosperity. He advocated that quality was excellence in everything we think, say, and do, continuous improvement and innovation to be the best we can be and the best of the best. His impact on business focused on managerial excellence and efficiency led to the creation of the *Malcolm Baldridge National Quality Improvement Act of 1987* and the *Malcolm Baldridge National Quality Award.*[118]

The Baldridge assessment criteria for performance excellence remains relevant today:[119]

- **Leadership** – examines how senior executives lead the organization and how the organization handles its responsibilities to the public and to the environment in which it is inserted.
- **Strategy** – examines how an organization sets strategic directions and how it determines key plans of action.
- **Customers** – examines how an organization determines requirements and expectations of customers and markets, how it builds relations with customers, and how it acquires, satisfies and retains customers.
- **Measurement, analysis and knowledge management** – examines management, effective use, analysis and enhancement of data and information to provide support for key processes at the organization and for the organization's performance management system.
- **Workforce** – examines how an organization allows its workforce to develop their full potential and how the workforce is aligned with the organization's objectives.
- **Operations** – examines aspects of how key production/delivery and support processes are designed, managed and enhanced.
- **Results** – examines an organization's performance and improvement in its main business areas: customer satisfaction, financial and market performance, human resources, performance of suppliers and partners, operational performance, governance and social responsibility. This category also looks at an organization's performance in relation to its competitors.

COMPETENCY MODELING

The role, relationship, responsibility of education, employee and employer, and the economy is not static. It is interrelated and ever

[117] Ibid.; *Growth of Government Intervention*
[118] https://post.edu/academics/the-malcolm-baldrige-school-of-business/malcom-baldridge-bio-2/
[119] https://blog.softexpert.com/en/malcolm-baldrige-criteria-excellence/

changing. The 1980's alert, *A Nation at Risk: The Imperative for Educational Reform*, spurred business' involvement and attention to state and federal elementary and secondary education policy.[120] It caused business leaders to be aware of mediocrity, economic downturn potential, growing international competition, the need to fundamentally transition to an information age requiring a workforce with higher and more demanding skills and knowledge. In 2005, the *Commission on the Future of Higher Education*, also known as the Spellings Commission was convened by U. S. Secretary of Education Margaret Spellings. Similar to previous presidential commissions, committees and task forces on education it inquired if the American education system was losing its competitive edge. This focus was at the post-secondary level. The final report had six primary recommendations:

- Expand access and success by improving preparation and persistence, and by addressing non-academic barriers such as finance;
- Restructure the financial aid system to provide incentives for the measurement of costs and institutional productivity;
- Create a robust culture of accountability and transparency;
- Embrace a culture of continuous innovation and quality improvement through the development of new pedagogies, curricula, and technologies;
- Develop a national strategy for lifelong learning; and
- Increase federal investment in areas critical to the nation's global competitiveness.

The social scientific study of competency began in the early 1970s. The first competency model was developed in the early 1970s by the eminent psychologist David McClelland and others at a fledgling consulting firm called McBer and Company (McClelland, 1973 and 1976). The U.S. Department of State was concerned about the selection of junior Foreign Service Information Officers (i.e., young diplomats who represent the United States in various countries). The traditional selection criteria, tests of academic aptitude and knowledge, did not predict effectiveness of a Foreign Service Officer, and were screening out too many minority candidates.[121] Over the last fifty years competency modeling has been applied to individuals but the following is cautionary to business and industry.

> "Since the dawn of the Industrial Revolution, businesses entered a new era every 50 years…Technology will allow companies to achieve scale and retain customer intimacy. Power will shift from professional managers to the experts who deliver those customers. Companies will own only those assets critical to their mission and rely on external ecosystems to manage the rest. Investors won't just invest in companies; they'll also invest in projects. And every company will have two engines, the one that powers today's profits, and the one that will generate the profits of tomorrow."[122]

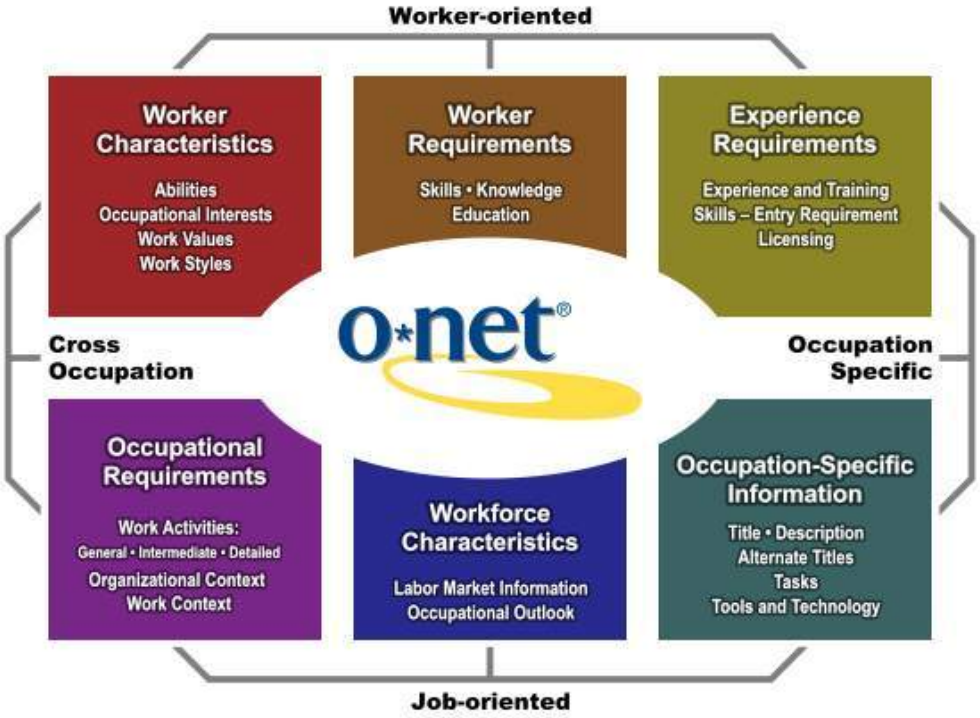
Since 1936 until the 1990's, the U.S. government offered vocational lists and employment matching through the book, The *Dictionary of Occupational Titles.* Information about the characteristics of jobs and the individuals who fill them is valuable for career

[120]https://education.stateuniversity.com/pages/1808/Business-Involvement-in-Education.html

[121] https://knepublishing.com/index.php/KnE-Social/article/view/3106/6554

[122] https://www.bain.com/insights/3000-years-of-business-history-in-two-minutes-video/

guidance, reemployment counseling, workforce development, human resource management, and other purposes. To meet these needs, the U.S. Department of Labor (DOL) in 1998 launched the Occupational Information Network (O*NET), which consists of a content model--a framework for organizing occupational data--and an electronic database. The O*NET content model includes hundreds of descriptors of work and workers organized into domains, such as skills, knowledge, and work activities. Data are collected using a classification system that organizes job titles into 1,102 occupations.[123] It describes occupations in terms of the skills and knowledge required, how the work is performed, and typical work settings. It can be used by businesses, educators, job seekers, human resources professionals, and the publicly funded Workforce Investment System to help meet the talent needs of our competitive global economy. O*NET information helps support the creation of industry competency models.



Every occupation requires a different mix of knowledge, skills, and abilities, and is performed using a variety of activities and tasks. These distinguishing characteristics, or "descriptors", of an occupation are collected, codified, and described by the **O*NET Content Model** . This hierarchical model starts with six domains (or categories), describing the day-to-day aspects of the job and the qualifications and interests of the typical worker. The model includes nearly 277 descriptors collected by the O*NET program, along with other occupational data collected by other federal agencies such as the Bureau of Labor Statistics.[124]

[123] https://www.nap.edu/read/12814/chapter/1

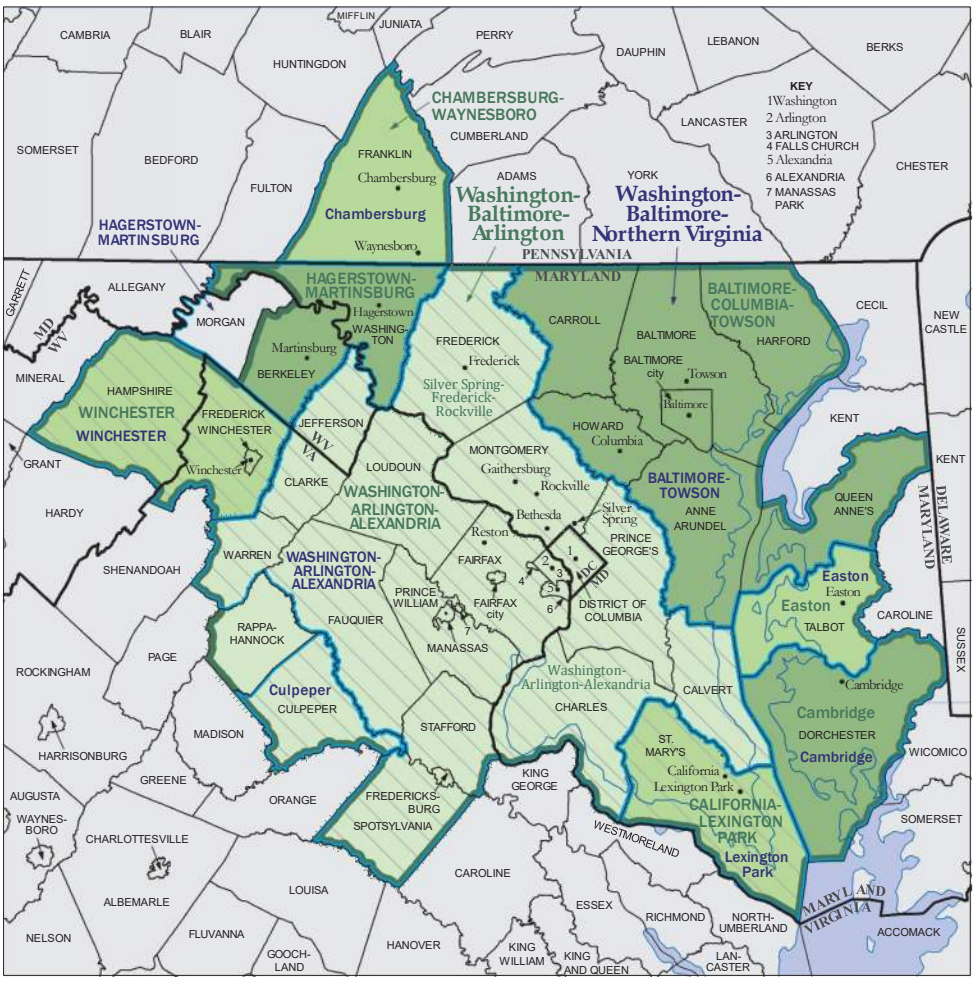
[124] https://www.dol.gov/agencies/eta/onet

ECONOMY

Washington – Baltimore – Arlington Combined Statistical Area

Frederick Community College impacts and is impacted by the third largest combined statistical Area in the entire United States.[125] A combined statistical area (CSA) is a set of overlapping labor markets that have a significant interchange of workers (i.e., commuters) between home and employment.

Washington-Baltimore-Arlington, DC-MD-VA-WV-PA Combined Statistical Area



[125] https://www.newgeography.com/content/007051-combined-statistical-areas-lead-continuing-dispersion-2010-2020

The per capita income is $47,764 or about 10 percent higher than the amount in Maryland $43,325. It is 1.3 times the amount in the United State of $35,672. The per capita income for Frederick County in 2019 dollars is $43,582.

The median house- hold income in the CSA is $95,309 or 10 percent higher than in the state and 1.5 times the U.S. amount of $65,712. The median household income for Frederick County is $97,730.

The poverty rate for the CSA is 8.2%, while the Maryland rate of 9%, or about 2/3 the U.S. rate of 12.3%. Frederick County's poverty rate is 6.2%.

The mean travel time for work in the CSA is 34.2 minutes. The mean travel time for work in Frederick County is 35.5 minutes. In Maryland the mean travel time is 33.7 minutes and in the United States it is 27.6 minutes. The median value of owner-occupied housing units in the CSA is $382,700 or 20 percent higher than the Maryland amount of $332,500 and the U.S. amount of $240,500. Frederick is $331,600.

Accordingly, the FCC Strategic Environmental Scan has been divided into six categories: Background, Methodology: Strategic Environmental Scan Targeted to Leadership Decision-making, Data Gathering, Data/Information, Summary: Integrated; and Findings. This strategic environmental scan is designed to complement FCC's considerable works:

1) Board of Trustees Bylaws
2) Search Prospectus: President
3) Frederick Community College Policies and Procedures
4) Frederick Community College *Strategic Plan 2020-2025*
5) Summary Report of the Strategic Planning Process May 29, 2020
6) Middle State Commission on Higher Education: Accreditation
7) FCC 2016 Self-Study Final Draft
8) Diversity, Equity, and Inclusion Strategic Plan 2019-2024
9) 2019 Cultural Diversity Report
10) Institutional Racial Equality Plan
11) Frederick Community College *FacilitiesMaster Plan 2012-2017*
12) Frederick Community College *Facilities Master Plan UPDATE 2012-2022*
13) Frederick Community College ACADEMIC CATALOGUE 2021-2022
14) Frederick Community College *Health Indicators 2021-2022*
15) Frederick Community College Maryland Higher Education Commission (MHEC) *2021 Performance Accountability Report*

It is within this context that a strategic environmental scan is undertaken to inform the development of the Frederick Community College (FCC) *Facilities Master Plan*.

An environmental scan is the process of examining short and long-term external conditions affecting an organization, institution, and/or community. It is based on historical data; external trends, issues, and situations; and potential pitfalls as well as growth opportunities.[126]

[126]https://www.hfmmagazine.chttps://www.gfoa.org/materials/capital-planning-policiesom/articles/3844-facility-master-planning-101

This Frederick Community College (FCC) strategic environmental scan is targeted to Frederick Community College's leadership and decisionmakers. Environmental scanning is a process that systematically surveys and interprets relevant data to identify external opportunities and threats that could influence future decisions. It is closely related to a S.W.O.T. analysis and should be used as part of the strategic planning process.[127] In this regard, it is FCC's leadership that is responsible for establishing the framework for the orderly development and growth of its campus based upon its mission, purpose and values guided by State of Maryland policies, processes and procedures:

- Annotated Code of Maryland, Education Article, Division III, Higher Education, Title 11 Maryland Higher Education Commission, Subtitle 1 Commission Established and Organized
- Annotated Code of Maryland, Education Article, Division III, Higher Education, Title 11 Maryland Higher Education Commission, Subtitle 1 Commission Established and Organized, Chapter 11-05 General Powers and Duties, Regulation (j) General public junior or community college and regional community college construction program
- Annotated Code of Maryland, Education Article, Division III, Higher Education, Title 16 Community Colleges
- Code of Maryland Regulations (COMAR), Title 13B Maryland Higher Education Commission, Subtitle 07 Community Colleges, Chapter 4 Construction Procedures, Regulation 03 Five-Year Capital Improvements Program/Annual Capital Budget Request Submission
- Code of Maryland Regulations (COMAR), Title 13B Maryland Higher Education Commission, Subtitle 07 Community Colleges, Chapter 4 Construction Procedures, Regulation 05 Obtaining Conditional Allocation for State Funds (Not Applicable to Baltimore City Community College)
- The Annotated Code of Maryland, Education Article, Division III, Higher Education, Title 11-101 established the Maryland Higher Education Commission (MHEC). The law empowers the Commission to develop guidelines to assess the adequacy of capital funding and to make annual recommendations on the appropriate level of funding for higher education. The Commission's responsibility includes the comprehensive assessment of statewide need for higher education capital improvements.
- In addition to the Maryland Higher Education Commission, other State agencies are responsible for certain aspects of these functions. The Department of Budget and Management (DBM) acts as a budgetary control agency; the Department of General Services (DGS) serves as a technical services agency; and the Maryland Department of Planning (MDP), through the Growth and Conservation initiative, coordinates regional planning and environmental compliance.
- The Growth and Conservation initiative is a statewide policy plan that coordinates the smart growth efforts and programs of state government and

[127] https://www.shrm.org/resourcesandtools/tools-and-samples/hr-qa/pages/basics-of-environmental-scanning.aspx

sets a course to grow where it makes sense while protecting valuable resources such as waterways, farmland and forests. It aims to create sustainable growth by guiding state agencies to target their resources to help achieve smart growth at the local level and for Maryland's counties and municipalities to identify their growth and preservation areas to meet land use, planning and development goals.

The foundation of the community college capital improvements program is the Facilities Master Plan (FMP). The FMP for each institution establishes the framework for the orderly development of all capital projects. The Five-Year Capital Improvements Program (CIP) and Annual Capital Budget Request for each institution detail the projects included in the Facilities Master Plan.

The Grant supporting General public junior or community college and regional community college construction program is administered by the Maryland Higher Education Commission (MHEC-the lead agency), the Maryland Department of Budget and Management (DBM) and the Maryland Department of General Services (DGS). Funds for this purpose are appropriated in accordance with provisions of the Annotated Code of Maryland, Education Article, Division III, Title 11 and Title 16, and the Code of Maryland Regulations (COMAR) approved by the Board of Public Works (BPW).

Chapter 3
Academic Program Review

ACADEMIC PROGRAM REVIEW

PURPOSE

The Academic Program Review identifies the priorities and strengths of existing programs and the potential for the development of new programs. The review assesses the extent to which existing and planned programs offered by the college meet the student needs and the workforce needs of the county and beyond for now, and the projected needs 5 to 10 years out.

This review is conducted within the context of the Frederick Community College, Strategic Plan 2020-2025, "Frederick Community College Forward". Additionally, these analyses and recommendations provide a basis for the implementation of Frederick Community College's Facilities Master Plan project.

RESEARCH SOURCES

This analysis is guided by applying six major criteria, termed the six ***Driving Forces*** which include the following factors:

- Unique identity--The extent to which the program reflects the distinctive character and strengths of the college, its faculty and staff, student body, and the particular needs of the county, region, state and nation.
- Economic advantage and return on investment--The need and demand for the program compared to the resources (human, physical, and monetary) required to provide the program.
- Building on existing programs--The efficiency and effectiveness of using existing program offerings and the facilities and resources that support them as foundational for program expansion, new program development, interdisciplinary initiatives, etc.
- Potential for partnerships and alliances--The extent of partnerships and alliances among academic programs and centers on campus and between the campus and the community beyond (e.g., business, community, governmental organizations and agencies, as well as the potential for expanding and developing new partnerships and alliances).
- Social, environmental, community responsibility--Responsiveness to existing and projected needs of students, members of the community, the region, and the State as related to IHE's mission, goals, priorities, and resources.
- Labor market--Analysis of the demands of the labor market (local, state, national) as an important basis for determining projected program development and the resource base required to meet these needs.

All conclusions and recommendations are based on data obtained by Frederick Community College, the Maryland Higher Education Commission, the Maryland Association of Community Colleges, the Maryland Department of Labor, the Maryland Department of Budget and Management, and the U.S. Department of Labor and Statistics, among other sources.

THE COVID CHALLENGE

Frederick Community College students are well engaged in their academic studies. Some students are engaged in fully online instruction while other students have returned to campus after a year of online learning. Faculty, administrators, and staff have returned to their classrooms and offices, online and in person. They have all returned with the goal of learning or teaching in a hybrid or an online environment, but with the additional complication of new regulations and policies dealing with vaccinations, social distancing, and new data and/or science that may change from day to day. Layered on top of that is the political environment on the pandemic and you have a good sense of the challenges and factors that impact FCC's mental health and ability to learn and grow. Under these circumstances, students are not only considered as learners, but as developing adults who are prepared to enter the workforce.

ENVIRONMENTAL SCAN

During this academic review process the academic planning team reviewed and analyzed the major implications for academic programming, namely the challenges, opportunities and constraints, and considered such factors as demographic, economic, workforce, societal, technological, political/governmental, and educational.

The academic planning team identified the status of academic program strengths, priorities and readiness for meeting challenges and opportunities. Recommendations for academic program development are proposed for strengthening and enhancing existing programs, for proposing new ("cutting edge") programs, for developing market niches, for promoting interdisciplinary initiatives, and for seeking opportunities for greater collaboration within and beyond the college.

HIGHLIGHTS

- Frederick county has experienced strong long-term economic growth for several years.
- As a result, the county is successful in attracting and retaining millennial workers. The community college is a vital asset to County employers.
- The college adds highly trained human capital to the county workforce.
- Students at the college are highly competitive in the marketplace and as a result the regional labor market is strengthened through increased employment and job performance.

- The accumulated impact of former FCC students currently employed in the county workforce amounted to $123 million in added income for the county economy, which is equivalent to supporting 1,621 jobs.

- FCC students who earn an associate degree from the college can expect approximate wages of $43,600 per year, approximately $8,400 more than an individual with a high school diploma.

- The college has demonstrated success in the percentage of students who have graduated and transferred. The college ranks second of all 16 MD community colleges in graduation and transfer rates.

- During the period 2019-2030, the college is projected to increase its enrollments by 27% from 6,129 to 7,780.

- The *Blueprint for Maryland's Future* prescribes a substantive revamping of Maryland's educational system including community colleges. To be successful, FCC will need to collaborate with local boards of education to develop students who have met the "college and career readiness" standard, a significant goal of the Plan.

- Current teacher preparation programs at the college will need to be redesigned to reflect the goals of the *Blueprint*.

- Based on past history, FCC has the experience in assisting students who need additional support to achieve "college and career readiness".

- A review of the fields of study offered by the college shows that the vast majority of programs are in high demand by employers in industries in the region.

- The institution continuously examines the viability of current programs and when appropriate discontinues programs not meeting market demand needs or student interest needs.

NATIONAL PERSPECTIVE AND THE IMPACT OF THE PANDEMIC

The National Student Clearinghouse provides the latest enrollment information research that tracks the impact of COVID-19 on higher education. This information is invaluable in understanding the enrollment patterns at Frederick Community College.

According to the clearinghouse research center, 2021 fall enrollments show no sign of recovery from the previous year's declines. While undergraduate enrollments declined by 3.2%, community colleges dropped more significantly by 5.6%. According to the center, community colleges remain the most adversely affected sector of higher education experiencing a 14.1% total enrollment decline since the fall of 2019.

Nationwide, freshman enrollment declined 3.1% this fall. Community colleges showed the sharpest freshmen enrollment declines among the three largest sectors of higher education. This year's freshman class at community colleges is 20.8% below 2019 while the first-year enrollment numbers at all institutions are 12.3% smaller than 2019.

Enrollment of White, Black, and Native American undergraduates declined more than other student groups, falling between 4.4% and 5.1%. Whites and Blacks also shared the largest declines among freshmen -8.6% in -7.5% respectively.

Male and female declines of -3.5% were smaller than last year's -6.0% particularly at community colleges.

With regard to age groups, undergraduate enrollments fell for every age group. Declines were steepest among 25- to 29-year-olds. Dual enrollment of high school students increased 0.7% after a 3.6% drop last fall, but the numbers deteriorated at community colleges which enrolled roughly two-thirds of all dual enrollments. *

**National Student Clearinghouse, "Undergraduate Enrollment Declines Show No Signs of Recovery from 2020", October 26, 2021.*

STATEWIDE PERSPECTIVE AND THE IMPACT OF THE PANDEMIC

During 2020, a total of 273,214 students enrolled as undergraduate students in all segments of higher education in the State of Maryland. Of this number, Maryland community colleges enrolled a total of 108,335 students or 40% of all undergraduates. Of the 108,335 students, 33,136 or 30% enrolled on a full-time basis and 75,199 or 70% enrolled on a part-time basis. During that time, Fredrick Community College (FCC) had similar enrollment patterns and enrolled a total of 5,756 students, 1,719 (30%) on a full-time basis and 4,037 (70%) on a part-time basis.
This enrollment pattern is also similar at the national level with community colleges across the nation enrolling 35% of the students on a full-time basis and 65% on a part-time basis
American Association of Community Colleges

With respect to program offerings, FCC tends to enroll more students in transfer program (77%) in comparison to career programs (18%) and undeclared (4%). Statewide, those numbers are 55% transfer, 32% career and 13% undeclared.

With regard to gender, of all students enrolled in MD community colleges, 43% are male and 57% are female.

By race, within the community college sector: 47% are White; 27% are Black; and 10% are Hispanic.
Similar data at FCC is 59% are White; 13% are Black; and 14% are Hispanic.

Similar to community colleges across the state and the nation, enrollments declined at Frederick Community College (FCC) from 2019 to 2020. Total enrollments declined from 6,129 to 5,756, while full-time enrollments declined from 1,843 to 1,719, and part time enrollments declined from 4,286 to 4,037. These patterns were consistent with statewide enrollments. Total enrollments statewide were 113, 695 in 2019 and 108,242 in 2020. During that same period, full time enrollments were 35,906 in 2019 and 33,017 in 2020 while part time enrollments were 77,789 in 2019 and 75,225 in 2020.
Maryland Association of Community Colleges, DATA Report 2020.

Moreover, during this period:

- Credit enrollment *declined* 3% (8,994 to 8,690) from FY 2017 to FY 2020.
- The unduplicated headcount in continuing education *declined* 20% (6,948 to 5,558).
- The combined unduplicated credit and continuing education headcount *declined* 11% (15,610 to 13,898) from FY 2017 to FY 2020.
- FCC saw an *increase* in the market share of first-time, full-time freshman in fall 2020 (51%) compared to fall 2017 (50%), which is the average of the past four reporting years.
- FCC saw a one percent *decline* in the market share of part-time undergraduates (74%) in fall 2020 compared to fall 2017 (75%).

- The market share of recent, college-bound high school graduates *declined* two percent overall from 60% in fall 2016 to 58% in fall 2019.
- Students concurrently enrolled in both college-level and high school courses *increased* 52% (990 to 1,509) or by 519 students from fall 2017 to fall 2020.
- Online credit enrollment *increased* 36% (5,764 to 7,820) from FY 2017 to FY 2020 and hybrid courses increased 34% (2,551 to 3,430) for the same period.
- Online Continuing Education and Workforce Development enrollment *increased* 9% (485 to 528) from FY 2019 to FY 2020

Source: MHEC Performance Accountability Report

These enrollment patterns are important to understand as Fredrick Community College examines the future viability of its current academic degree programs and assesses the market demand and student interest in new degree programs.

HISTORICAL DATA ON COMMUNITY COLLEGES

It is important to also recognize that nationally, community college enrollments were in a downward spiral even prior to the COVID-19 pandemic, particularly between 2010 and 2017 and enrollment trends at Fredrick Community College (FCC) basically reflected those patterns.

According to the American Association of Community Colleges, (AACC), since hitting a peak enrollment in 2010, total community college enrollments decreased each fall, declining by more than 1 million students nationally (14.4%) between 2010 and 2017.

Over the course of these 17 years, there were important differences in the enrollment trends for different students. For example,

- Full-time student enrollment declined at a faster pace than part-time.
- All age groups showed declines in enrollment with the exception of students under the age of 18. This is largely due to the rapid increase of high school students enrolling in community college classes.
- While always a majority, women have decreased their share of the community enrollment since their highest representation in 2004.
- White students are no longer the majority of students enrolled in community colleges in the fall of 2014.
- While White student enrollment has steadily declined since 2010, non-White student enrollment has remained relatively steady since 2012—largely driven by increases in Hispanic students. *

**American Association of Community Colleges, Crisis in Enrollments*

Again, it is important to recognize these student enrollment patterns, statewide and nationally, as Frederick Community College plans its academic portfolio for the near future.

MISSION, CORE VALUES AND VISION

The **Mission** of Frederick Community College is focused on teaching and learning. FCC provides affordable, flexible access to lifelong education that responds to the needs of diverse learners and the community.

The **Vision** of Frederick Community College is to transform individuals and communities through learning.

In addition to its mission and vision statement, the college had adopted six **Core Values** as follows:

- *Excellence*: providing educational experiences and programming that reflect high academic standards, quality instruction, and exemplary student support

- *Learning*: engaging all learners in critical and creative thinking, problem solving, and the lifelong pursuit of knowledge and skills

- *Diversity*: being culturally conscious and inclusive by embracing the visible and invisible human differences that affect the learning and success of students, faculty, staff, administrators, and members of the community

- *Innovation*: encouraging creative thinking, technological solutions, and alternative approaches to advance learning and student success

- *Community:* responding to the needs of Frederick County with accessible, affordable education while encouraging engagement, communication, and collaboration within and beyond the College

- *Integrity*: applying fair and ethical standards in all policies, procedures, and practices

According to many individuals interviewed for this report, including statements made by the regional accrediting visiting team, Middle States Association, Frederick Community College's statements of mission, vision, and core values are appropriate to the institution, have been approved by the appropriate constituents and are integrated into plans, publications, and organizational strategies.

To that end, Middles States, in particular concluded that the College's mission within the context of higher education is clearly stated in the approved mission statement and related documents.

The vision statement and updated strategic plan indicates whom the College serves and how FCC fulfills its mission. The updated plan was created with opportunities for input from all College constituencies, including the Board of Trustees. Moreover, programs and activities support the mission and goals of the College.

UNITED STATES BUREAU OF LABOR STATISTICS (BLS)

The Bureau of Labor Statistics (BLS) Occupational Projections Data database displays data on employment change, occupational openings, and education and training for each detailed National Employment Matrix occupation. *

A review of the fields of study offered by Frederick Community College (FCC) which are included in the BLS analysis shows that the vast majority of programs offered by Fredrick Community College are in high demand by employers and industries in the region and the state. More specifically, as indicated below, the programs are expected to grow anywhere from 7% to 31% generally from 2019-2030.

Job Occupations Projected Growth

7% Public Safety
8% Business and Financial Occupations
8% STEM
11% Education and Childcare
11% Information Technology
16% Healthcare Occupations
23% Addictions Counseling (new program)
24% American Sign Language (new program)
31% Cybersecurity

Public Safety

Overall employment of emergency management, fire services, police, detectives, and criminal investigators is projected to grow 7% from 2020 to 2030 about as fast as the average for all occupations. About 67,100

openings for criminal investigators, police and detectives, etc. are projected for each year, on average, over the decade.

Business and Financial Occupations

Employment in business and finance occupations is projected to grow 8% from 2020 to 2030, about as fast as the average for all occupations, adding about 750,800 new jobs. Globalization, a growing economy, and a complex tax and regulatory environment are expected to continue to lead to strong demand for accountants and auditors. In addition, increasing usage of data and market research in order to understand customer and product demand, and to evaluate marketing strategies, will lead to growing demand for market research analysts.

STEM

BLS employment projections show that occupations in the STEM field are expected to grow 8% by 2029 compared with 3.7% for all occupations. The number of available STEM jobs is expected to grow significantly in fields that involve computers (growing by 51%), engineers and technicians (28%), life and physical sciences (13%) and architecture (6%).

Education and Childcare

Employment of preschool and childcare center directors is projected to grow 11% from 2020 to 2030, faster than the average for all occupations. About 5,300 openings for preschool and childcare directors are projected each year, on average, over the decade. Many of these openings are expected to result from the need to replace workers who transfer to different occupations or exit the labor force, such as to retire.

Information Technology

Employment in computer and information technology occupations (including the college's new program in cloud computing) is projected to grow 11% from 2019 to 2029, much faster than the average for all occupations. These occupations are projected to add about 531,200 new jobs.

Healthcare Occupations

Employment in healthcare occupations is expected to grow 16% from 2020 to 2030, much faster than the average for all occupations, adding about 2.6 million new jobs. Healthcare occupations are projected to add more jobs than any of the other occupational groups. This projected growth is mainly due to an aging population, leading to greater demand for healthcare services. These occupations included registered nurses, dental hygienists, home health aides, occupational therapy assistants, medical transcriptionists. Note, physical therapy assistant, a new program at the college, is expected to grow by 21%, faster than other health occupations.

Addictions Counseling

Substance abuse, behavioral disorders and mental health counselors work in a variety of settings, such as mental health centers, community health centers, prisons, and private practice. BLS projects 327,500 new jobs in this field and an increase of 23%, much faster than average. Note, this is a new program at the college.

American Sign Language

Employment of interpreters and translators is projected to grow 24% from 2020 to 2030 much faster than the average for all occupations. About 10,400 openings for interpreters and translators are projected each year on average over the decade. Note, this is a new program at the college.

Cyber Security

Demand for cybersecurity professionals (who are tasked with monitoring, preventing, and stopping attacks on a company's network and systems) is on the rise. BLS reports that the industry will experience job growth of 31% between 2019 and 2029. That is a much faster rate than most other industries with experience.

***BLS** Source: Bureau of Labor Statistics, Occupational Outlook Handbook, September, 2021.*

ACADEMIC MASTER PLAN

Frederick Community College's Board of Trustees established the creation of an academic master plan as one of its key priorities. The master plan is significant in that it is arranged around four major relevant themes: educational excellence; academic support and infrastructure; faculty and staff development and leadership; and community engagement and economic development. The FMP study will serve as a basis for updating the Academic Master Plan as the college considers the consultant's opinions with respect to the four major themes within the Academic Master Plan.

What makes the College's master plan so significant and strategic is the fact that it contains specific outcomes, action items, timelines necessary to respond to the goals and objectives, and identifies responsible persons for implementation. Equally significant is the fact that FCC will be able to collect, analyze, and report data about courses, programs, and student performance. As a living document, the academic team meets three times a year to evaluate its progress and effectiveness.

For example, within the first theme, education excellence, the institution commits itself to improving student retention and completion as well as improvement of the curriculum and the delivery of programs and courses. Within this theme, the institution will be developing additional internships and apprenticeships. These are important partnerships, addressing a clear workforce need in Frederick County. These internships provide students with full-time employment, on the job training, as well as full tuition and book costs.

The remaining themes are equally as powerful and relevant to the improvement of the student experience.

For example, within the second theme, support and infrastructure, the institution commits to enhancing academic and student services and infrastructure which would effectively and efficiently support learning. Specifically, the institution will provide curricular systems, library systems and resources, virtual learning and assessment environments, instructional technologies, and innovative technology solutions necessary to support teaching and enhance affordable access to learning.

Within the third theme, faculty and staff development and leadership, the institution commits to implementing the Diversity, Equity and Inclusion strategic plan and to provide ongoing professional development which creates a more informed and technologically empowered College community.

Within the fourth theme, community engagement and economic development, The institution commits to expanding opportunities to provide educational experiences for Frederick County students, identify grant opportunities, develop education for programming to respond to regional community and workforce needs and opportunities, and to expand opportunities in the Middle Atlantic Center for Emergency Management and Public Safety Department.

As a result, the plan will:

- Identify and strengthen effective curriculum development;
- Develop and gather benchmark data;
- Identify and champion academic initiatives;
- Coordinate and align the Academic Plan with other institutional plans at the college.

GRADUATION AND TRANSFER DATA

As an indication of its success in achieving the goals and objectives in the Academic Master Plan, the college has clearly demonstrated success in the percentage of students who have graduated and transferred. As shown below, FCC ranks second of all 16 community colleges in graduation and transfer rates. A total of 21.8% of students graduated and transferred from FCC compared to a statewide average of 15.3%. (MHEC Data Book 2021)

INSTITUTION	GRADUATION AND TRANSFER
Allegany Community College	7.4%
Anne Arundel Community College	16.3%
Baltimore City Community College	7.2%
Carroll Community College	21.3%
Cecil College	7.8%
Chesapeake College	14.5%
College of Southern Maryland	20.5%
Community College of Baltimore County	8.9%
Frederick Community College	**21.8%**
Garrett College	14.2%
Hagerstown Community College	14.0%
Harford Community College	23.3%
Howard Community College	19.4%
Montgomery College	15.0%
Prince Georges Community College	11.6%
Wor-Wic Community College	10.4%

ACADEMIC PROGRAMS

As indicated in the attached Enrollment and Degree Trends (MACC Data) provided in the Appendix, Frederick Community College develops academic programs, associates and certificates, in response to the market demand at the county level as well as the region and the state. Student interest in program development is also assessed to gauge the potential student population interested in enrolling in new program areas.

During the program review and approval process for new programs at FCC the college determines the centrality of the new program to the mission and planning priorities of the campus. It also evaluates the critical and compelling regional and statewide need for the new program. The college also examines the quantifiable and reliable evidence and documentation of market supply and demand

in the region and service area. Lastly the campus examines the adequacy of curriculum design, faculty resources, library resources, finances and physical facilities.

Additionally, the college, on a continuous and regular basis examines the effectiveness and efficiency of existing programs to determine their current and future viability and when determined appropriate, discontinues programs and reallocates those institutional resources for new program initiatives.

During the period 1989-2019, FCC discontinued a total 38 programs (27 certificates and 11 associates degrees). During this same period, the college also launched a significant number of new programs (38 certificates and 24 associate degree programs, totaling 62 new programs) in response to market demand data and student interest at both the local and state level.

ENROLLMENT PROJECTIONS (HEADCOUNT)

According to the Maryland Higher Education Commission, total enrollments at FCC are expected to increase from 2019 to 2030 by 27%, from 6,129 to 7,780. At the same time, full-time enrollments are expected to increase by 31%, from 1,843 to 2,414 and part-time enrollments are expected to increase by 25%, from 4,286 to 5,361.

ECONOMIC IMPACT

Frederick Community College is located in Frederick County, MD with a population of more than 270,000 residents. The population of the county has been growing at a rapid pace. Frederick County has the 7th largest population in Maryland and ranks first in the percentage of population which has increased from 2010-2020.

The median household income in Frederick County in 2019 was $97,730. This was 15.2% greater than the state of Maryland's average $84,805. According to the 2019 Census, the State of Maryland had the highest median household income, out of all 50 states.

Over the years, Frederick County has experienced strong long term economic growth. As a result, the County is successful in attracting and retaining millennial workers. Frederick county also has the highest concentration of private sector life sciences employment in the state and as a result attracts a diverse industry mix. To that end, the county has blended its agricultural heritage with a world class advanced technology sector and is a leader in craft beverage sector growth. Moreover, Computing and IT, manufacturing, and tourism are also thriving.
Frederick County, MD, Office of Economic Development, November, 2021.

As indicated below, the top occupations of residents in Frederick County are Management, Business, Science and Arts (46.9%) followed by Sales and Office Occupations (20.6%), followed by Service Occupations (16%).

Top industries include Educational Services, Health Care and Social Assistance (21.98%) followed by Professional, Scientific, Management and Administrative and Waste Management Services (17.51%), followed by Retail Trade (9.77%), followed by Public Administration (8.99%).

In terms of major employers in Frederick County, Frederick Community College is ranked

6th (out of 31) major companies employing over 250 employees. *

OCCUPATIONS

Management, Business, Science and Arts Occupations	46.90%
Service Occupations	16.00%
Sales and Office Occupations	20.60%
Natural Resources, Construction and Maintenance Occupations	8.60%
Production, Transportation and Material Moving Occupations	7.90%

INDUSTRY

Agriculture, Forestry, Fishing and Hunting, and Mining	1.01%
Construction	7.89%
Manufacturing	5.93%
Wholesale Trade	1.97%
Retail Trade	9.77%
Transportation and Warehousing, and Utilities	3.30%
Information	2.49%
Finance and Insurance, and Real Estate and Rental and Leasing	6.40%
Professional, Scientific, and Management, Administrative and Waste Management Services	17.51%
Educational Services, and Health Care and Social Assistance	21.98%
Arts, Entertainment, and Recreation, and Accommodation and Food Services	7.95%
Other Services	4.81%
Public Administration	8.99%

Source: U.S. Census Bureau, 2014-2018 American Community Survey 5-Year Estimates

MAJOR EMPLOYERS

Company	Employees
Fort Detrick Campus	10,200
Frederick Public Schools	6,800
Frederick Health	3,300
Frederick County Government	2,342
Leidos Biomed	2,334
Frederick Community College	**1,286**

Frederick County, MD, Office of Economic Development, November, 2021.

Within this context, Frederick Community College is a vital asset to county employers. The college adds highly-trained human capital to the Frederick County workforce. Moreover, the institution's career services department connects local employers with students and alumni. Students at the college develop real world skills and knowledge through internships and apprenticeships, making them highly competitive in the marketplace. As a result, the regional labor market is strengthened through increased employment and job performance. *Emsi Burning Glass, "The Economic Value of Fredrick Community College" page 13, November, 2021*.

Over the years, students from the college gained relevant knowledge and skills making

them highly productive and competitive in the workforce. As a result, a significant number of former college students are employed in Frederick County. The accumulated impact of former students currently employed in the Frederick County workforce amounted to $123 million in added income for the Frederick County economy which is equivalent to supporting 1,621 jobs.
Ibid

A few characteristics of the college are worthy of mention. During FY 2018-19, the college served 882 associate degree graduates and 230 certificate graduates. Another 6124 students enrolled in courses for credit, but did not complete a degree during that period of time. Significantly, the college offered dual credit courses to county high schools, serving a total of 1,400 students over the course of the year. The college also served 1,151basic education students and 2,016 personal enrichment students enrolled in non-credit courses. Non-degree seeking students enrolled in workforce or professional development programs accounted for 3,286 students.
Ibid p. 15

As a result of the learning taking place at the college, FCC students have the potential to earn more as they achieve higher levels of education compared to students limited to a high school diploma. As a matter of fact, students who earn an associate degree from the college can expect approximate wages of $43,600 per year within Frederick County, approximately $8,400 more than an individual with a high school diploma.
Ibid p.16

In terms of students residing in neighboring counties, approximately, 7% of the students attending FCC originated from outside Frederick County. Some of these students relocated to Fredrick County to attend the college. In addition, some students are residents of Fredrick County who would have left the county if not for the existence of FCC. The money that these students, referred to as retained students, spent toward living expenses in Frederick County is attributable to FCC.

It is also noteworthy, that the expenditures of relocated and retained students in the county added approximately $12.2 million in income from the Fredrick County economy, which is equivalent to supporting 232 jobs.

In conclusion, the college affects the county in a variety of significant and substantive ways. The college assists students in achieving their individual goals and objectives which allows them to develop the knowledge, skills and abilities they need to have fulfilling and prosperous careers. As a result, the college's program offerings provide employers with workers which make their businesses more productive.
ibid p. 10

THE BLUEPRINT FOR MARYLAND'S FUTURE

The Blueprint for Maryland's Future was developed by the Kirwan Commission on Innovation and Excellence in Education. It prescribes a revamp of Maryland's educational system from pre-K through college. Virtually nothing will be untouched including the work of community colleges, including Frederick Community College (FCC). The goal is designed to ensure that most Maryland high school students are college and career ready by the end of their sophomore year in high school and that almost all students meet that standard before they graduate high school.

The impact of the Blueprint on FCC is as follows:

FCC will need to collaborate with local boards of education to develop students who have not

met the CCR (College and Career Readiness) standard by the end of the 10th grade. Current teacher preparation programs at FCC will need to be redesigned to reflect the goals of the Blueprint which includes a full year of clinical experience managed by teacher education and district partnerships.

It is anticipated that more students will participate in dual enrollment programs and more students will be transfer students. FCC "wraparound" services will also be impacted. Working with the Blueprint Accountability Board, FCC's mission will need to be aligned with the Blueprint's equity goals.

Based on its past history and its aspirations, FCC has the experience of helping students who need additional support to achieve college and career readiness. Moreover, FCC indicates that it is prepared to expand to secondary offerings to college and career eligible students. In conclusion, FCC is ready to implement the Blueprint.

ACADEMIC PROGRAM OPPORTUNITIES

PROGRAM MODIFICATION, EXPANSION, NEW PROGRAMS

The purpose of the academic program review is to make certain that the existing and planned programs offered by the college meet the student needs of the county and beyond for now and the projected needs 5 to 10 years out.

To this end, the consultant team has identified priorities, strengths, and readiness of academic programs in meeting student and community needs through data collected and as expressed by internal and external constituencies. Recommendations are made to strengthen existing academic programs and the development of new initiatives including the expansion of technology support systems and interdisciplinary and partnership opportunities.

These new programs and expansions will complement the rich array of more than 85 programs currently offered within 12 areas of study which include Arts and Humanities, Business, Community Education, Education and Childcare, General Studies, Healthcare, Hospitality, Culinary and Tourism, Information Technology, Public Safety, Skilled Trades, Social Sciences and STEM.

The consultant team analyzed existing programs, proposed modifications and new programs through the prism of six "Driving Forces" described previously in this chapter:

- Unique identity
- Economic advantage, return on investment
- Build on existing programs
- Potential for partnerships and alliances
- Social, environmental, community responsibility
- Labor market and workforce needs

Academic analysis and recommendations based on the findings of the environmental scan, institutional data, prior studies and plans submitted by FCC including accreditation reports, interviews with senior administrators and state and local employment were presented to the Facilities Master Plan Steering Committee for their consideration.

Recommendations were presented which focused on:

- Strengthening and enhancing existing programs
- Proposing new "cutting edge" program initiatives to meet the challenges of the decade ahead

- Developing market niches
- Promoting interdisciplinary initiatives
- Seeking opportunities for greater collaboration and partnerships within and beyond the college.

This review was conducted within the context of an institution which enrolls nearly 16,000 students (56% credit-bearing and 42% CEWD), 57% female and 43% male, 30% full-time and 70% part-time, and a diverse student population which includes 37% people of color, 25% first generation college bound, from 59 different countries.

Chapter 4
Needs Assessment

Needs Context

Quantitative Analysis (Space)

Qualitative Analysis (Programs)

Needs Analysis Conclusion

CHAPTER 4 NEEDS ASSESSMENT

NEEDS CONTEXT

The purpose of this section is to provide context to the meaning of needs as expressed in this facilities master planning document. Needs is more than about space. Needs for development of Frederick Community College's (FCC) campus facilities and infrastructure are influenced by four principal factors. These factors are: 1) FCC Mission, 2) FCC Strategic Plan[1], 3) P.P.A.S., pronounced "pass" (Programs, People, Activities and Stuff)™ who or what must be accommodated, and 4) the need for improvement of operations and services. These four principal factors apply to institutional-wide needs, campus-wide needs, building needs, or individual space needs. Recognizing its community, state, regional, national, international and political contexts, Frederick Community College's orderly development of campus facilities and infrastructure is in response to these factors.

FCC is committed to developing its campus facilities in ways that best accommodates the needs of students, faculty and staff, while pursuing plans that benefit all stakeholders in the success of the campus and the larger community. The College will, on an ongoing basis, consider the merits of removing some obsolete facilities from inventory, renovating and/or renewing other existing facilities, as well as providing new facilities.

Projected needs are the results of future demand on facilities and infrastructure. The need for academic facilities should be viewed in the context of how the process of learning may evolve over time. Due to ever changing technology for both teaching and learning, much of higher education must rethink its learning environments. Although the lecture/lab instructional delivery mode will continue to be used, colleges and universities will increasingly supplement that delivery modality with specialized learning environments that allow for both scheduled and unscheduled instruction and learning in discipline-specific simulated environments.

Growth of some existing programs and the establishment of new ones suggest concomitant growth in enrollment and a need for specific, specialized facilities. The demand for college completion and workforce preparation will drive program offerings in the coming years. Many of these programs require specialized classrooms, labs and other facilities that can be flexibly adjusted for a variety of teaching/learning settings. This demand is considered in subsequent sections to identify space needs and suggests future physical development.

Demand for critical skills in top growth occupations, flexibility in contract and workforce training with their unique learning environments, veterans, and aging of the general population will be primary drivers for future program offerings and environments. Continuing Education & Workforce Development (CEWD) at Frederick Community College offers affordable and convenient workforce training and lifelong learning opportunities for students of all ages. These "market-driven" courses must be extremely flexible as course changes are continuous. This flexibility is essential in order to meet the ever-changing needs of its unique market. As the general population ages, it is expected that a maturing workforce will create greater demand

[1] Frederick Community College, FCC Forward Strategic Plan 2020-2025 https://www.frederick.edu/about-fcc/downloads/opair/strategicplan.aspx

for continuing education and personal enrichment opportunities.
Continuing Education & Workforce Development programs will require highly flexible specialized learning environments for a variety of trade skills. These types of programs often necessitate large unique commercial and industrial type specialty spaces, utilizing interior and exterior open areas. Such spaces, or groupings of spaces, are intended to maximize efficiency and flexibility of use in terms of highly specialized tasks, tools, materials and equipment.

Central to FCC's efforts to enhance and refine its learning environments are the major thrusts of restoring and maintaining existing facilities, as well as the aesthetic environment. These thrusts are to be developed, guided, and modified within the parameters of systematic, coordinated planning efforts. The short and long-term outcomes of each planning methodology will provide direct evidence of the revitalization of levels of integrity that reflect optimal teaching and learning environments.

Contemporary learning environments are required so the College can continue to successfully attract and retain a representative level of its market's available student population. Contemporary teaching/learning environments include the provision of detailed and unique needs for classroom, laboratory and office space, as well as ancillary spaces required for supporting future programmatic impetus.

Improved literacy and refinement of technology in educational institutions dictate the provision of instructional spaces that are designed for both unique and/or shared functions. These spaces will further require adequate consistency with global reconfiguration that increases the utilization efficiency ratio.

Future environments should be such that distinction between computer lab and a lecture classroom will disappear because technology and furnishings will be unobtrusive but available on demand. Furniture will be easily movable allowing for rapid reconfiguration based upon immediate need. Except for science labs, athletic and recreation spaces, and some arts studios, the idea of rooms belonging exclusive to an instructional area will also become obsolete. Credit classrooms will be available to continuing education learns and vice versa.

Electronic presentation that allows integration and manipulation of complex data into the learning environment is becoming more and more the norm. Teleconferencing and online learning capabilities will make partnerships with other schools and businesses, even ones in other countries, commonplace. Modernization of instructional delivery requires that instructional spaces be configured relative to future disciplinary/programmatic goals whose objectives and functions dictate more efficient organization and effective utilization of space.

In addition to academic needs, there are needs for projects focusing on various academic support, institutional support and campus-wide pursuits that collectively create an exceptional atmosphere for students, faculty, staff, alumni and visitors to the College campus. These needs should be viewed in the context of how strategic responses would effectively align with the College's mission, *Strategic Plan*, and its planned academic direction.

In order to make campuses more attractive and responsive to prospective students, institutions are creating single points of entry that create a sense of arrival, appeals to all senses, and provides clear wayfinding. Welcome centers are direct responses to the current state of higher education. Many universities and colleges are in the process of creating welcome centers or "front doors" due to a highly

competitive market. In addition to making a grand statement as a dynamic first point of entry to the campus, welcome centers have been shown to have a memorable impact on students, prospective students, alumni and visitors. Such centers are effective vehicles for recruiting and retaining students, brand promoting, being responsive to local and regional needs, alumni, and business partners.

Section Summary

This overview of Frederick Community College's supply of existing space and its utilization serves as a context for transitioning into the actual planning for future facilities.

Glossary of Terms

This glossary contains brief definitions of generic terms related to educational facilities planning and explanations of acronyms and abbreviations referred to in this needs assessment.

Bound Volume Equivalent (BVE)	The physical space required to accommodate a variety of library materials in amounts equal to one single typical book.
Class Laboratory	Space that is used primarily for formally or regularly scheduled classes that require special purpose equipment for a specific room configuration for student participation, experimentation, observation, or practice in an academic discipline.
Classroom	Space that is not limited to a specific subject or discipline by equipment or room configuration.
Core Space	Space necessary because of existence of the institution or program without regard to other factors.
Credit Hour	A numerical value awarded a student for successfully completing a course.
Facilities Inventory	Room-by-room and building-by-building listing of assignable spaces, their primary use, their size and their capacity.
Full-Time Equivalent Faculty (FTEF)	A base factor statistic equal to all full-time faculty plus 25% of all part-time faculty. **Note: This statistic is used in this document for facilities planning purposes only, and the calculation may differ from FTEF computed for budgetary or other reporting purposes.**
Full-Time Equivalent Student (FTE or FTES)	The total number of on-campus credit hours taught during a given semester/term, divided by 15. **Note: This statistic is used in this document for facilities planning purposes only, and the calculation may differ from FTE or FTES computed for budgetary or other reporting purposes.**
Full-Time Day Equivalent Student (FTDE or FTDES)	The total number of on-campus credit hours taught before 5:00 p.m. during a given semester/term, divided by 15. **Note: This statistic is used in this document for facilities planning purposes only, and the calculation may differ from FTDE or FTDES computed for budgetary or other reporting purposes.**
Gross Square Feet (GSF)	The sum of square feet of space in a building included within the outside faces of exterior walls for all stories or areas that have floor surface. Included are all structural, mechanical, service and circulation areas.
Net Assignable Square Feet (NASF)	The sum of all areas on all floors of a building assigned to, or available for assignment to an occupant for specific use. Excluded are spaces defined as structural, mechanical, services and circulation areas.
On-Campus	FCC's Main Campus and Monroe Center only.
Student Contact Hour	A measure of time of scheduled interface between students and teacher that is usually expressed in terms of Weekly Student Contact Hour (WSCH), which is the number of hours per week of required interface. **Note: This statistic is used in this document for facilities planning purposes only, and the calculation may differ from WSCH computed for budgetary or other reporting purposes.**
Use Codes	Space use codes represent the recommended central or core concepts for classifying the assignable space, **by use**, within campus facilities. Sometimes referred to as HEGIS or FICM codes.

QUANTITATIVE ASSESSMENT (Space)

The purpose of quantitative assessment of space is to evaluate, at a macro-level, the extent to which the total amount of space for instruction and other campus activities is likely to be sufficient to support future enrollments and programs. Specifically, quantitative assessment of space incorporates the concept of supply and demand. It is the process of estimating the needed supply of learning, support and resource space given a projected demand of academic programs and co-curricular activities, faculty and staffing levels, and student enrollments. The ultimate outcome is to provide estimates of overall sufficiency of campus-wide supply of space likely needed that is eligible for capital funding by the State.

Summary of Key Findings

Space deficits in all but two room use categories (Classroom and Merchandising) were suggested when Maryland's *Space Allocation Guidelines for Community Colleges* formulae are applied to Frederick Community College's projected (2030) space inventory.

The 2020 campus building space inventory was 305,354 net assignable square feet (NASF). The College anticipates a 2030 space inventory of 323,719 NASF as the base or supply against which the need, generated by the demand of future enrollments, would be quantified.

When space deficits and surpluses were computed by comparing enrollment and staffing projections against projected space inventory, the outcome was a projected 2030 overall deficit of 123,598 NASF as shown by the following tables. Quantitative indicators suggest immediate and long-term need for facilities to support space classifications showing significant deficits.

Projected (Fall 2030) Space Deficits and Surpluses

Space Classification	Use Code	Projected Fall 2030) NASF Inventory	Allowance	Deficit/Surplus
Office	300	82,268	131,951	(49,683)
Athletics/Physical Education	520	22,501	47,610	(25,109)
Class Laboratory	210	66,164	86,429	(20,265)
Food Facility	630	8,780	18,544	(9,764)
Study	400	18,138	25,515	(7,377)
Assembly	610	8,692	14,722	(6,030)
Shop/Storage	720-740	12,593	16,386	(3,793)
Lounge	650	2,351	5,454	(3,103)
Central Service	750	1,565	4,000	(2,435)
Open Laboratory	220	9,637	12,016	(2,379)
Media Production	530	851	2,689	(1,838)
Exhibition	620	397	2,181	(1,784)
Meeting Room	680	4,678	6,000	(1,322)
Greenhouse	580	0	1,000	(1,000)
Data Processsing	710	1,619	2,500	(881)
Health Care	800	0	772	(772)
Hazmat Storage	760	0	328	(328)
Subtotals Deficits		240,234	378,097	(137,863)
Classroom	100	56,601	45,977	10,624
Merchandising	660	5,922	2,281	3,641
Subtotals Surpluses		62,523	48,258	14,265
FCC Campus Totals		**302,757**	**426,355**	**(123,598)**

Summary of Computed Space Allowances

Space Use Category	Use Code	Base Year (Fall 2020) Inventory NASF	Allowance NASF	(Deficit)/ Surplus	2021-2030 Net Change[a]	Projected Year (Fall 2030) Inventory NASF	Allowance NASF	(Deficit)/ Surplus
Academic Space								
Classroom	110	57,181	36,447	20,734	(580)	56,601	45,977	10,624
Class Laboratory	210	60,270	68,516	(8,246)	5,894	66,164	86,429	(20,265)
Open Laboratory	220	8,571	9,526	(955)	1,066	9,637	12,016	(2,379)
Subtotals		126,022	114,489	11,533	6,380	132,402	144,422	(12,020)
Academic Support Space								
Office	300	80,010	105,094	(25,084)	2,258	82,268	131,951	(49,683)
Study	400	12,344	19,925	(7,581)	5,794	18,138	25,515	(7,377)
Athletics/Physical Education	520	19,698	41,680	(21,982)	2,803	22,501	47,610	(25,109)
Media Production	530	851	2,214	(1,363)	0	851	2,689	(1,838)
Greenhouse	580	0	1,000	(1,000)	0	0	1,000	(1,000)
Assembly	610	8,692	13,536	(4,844)	0	8,692	14,722	(6,030)
Exhibition	620	397	1,884	(1,487)	0	397	2,181	(1,784)
Food Facility	630	8,780	14,708	(5,928)	0	8,780	18,544	(9,764)
Lounge	650	2,351	4,326	(1,975)	0	2,351	5,454	(3,103)
Merchandising	660	5,966	1,984	3,982	(44)	5,922	2,281	3,641
Meeting Room	680	4,438	6,000	(1,562)	240	4,678	6,000	(1,322)
Data Processing	710	1,619	2,500	(881)	0	1,619	2,500	(881)
Shops/Storage	720-740	11,449	13,360	(1,911)	1,144	12,593	16,386	(3,793)
Central Service	750	1,565	4,000	(2,435)	0	1,565	4,000	(2,435)
Hazmat Storage	760	0	267	(267)	0	0	328	(328)
Health Care Facilities	800	0	654	(654)	0	0	772	(772)
Subtotals		158,160	233,132	(74,972)	12,195	170,355	281,933	(111,578)
Other Classified Space (Ad Hoc)								
Research Laboratory	250	1,254	1,254	0	0	1,254	1,254	0
Demonstration	550	1,437	1,437	0	0	1,437	1,437	0
Day Care	640	6,077	6,077	0	0	6,077	6,077	0
Recreation	670	1,892	1,892	0	0	1,892	1,892	0
Subtotals		10,660	10,660	0	0	10,660	10,660	0
Unclassified Space								
Other Organizations	090	10,512	10,512	0	(210)	10,302	10,302	0
Subtotals		10,512	10,512	0	(210)	10,302	10,302	0
FCC Campus Totals		**305,354**	**368,793**	**(63,439)**	**18,365**	**323,719**	**447,317**	**(123,598)**

[a]Net Change includes programmed NASF for the following: Renovations to Annapolis Hall, Renovation of Linganore Hall, and Renovation/Addition to Athletics Center.

In summary, space needs assessment is the process of estimating the needed supply of learning, support and resource space given a projected demand of academic programs, disciplines and student enrollments. Thus, space need assessment begins the transitioning from the language of academic planning to the language of facilities planning.

Methodology

The College provided an inventory of existing space for each campus building, course enrollment data, and staffing data for fall 2020. Fall 2020 is used as the representative semester because during the timeframe of this planning process, it represents the most current data available across all areas of analysis. These sets of data form the basis for a quantitative assessment to be used as one measure of Frederick Community College's need (eligibility) for State-funded space. The consultant team then applied elements of the data to the Maryland Higher Education Commission's *Space Allocation Guidelines for Community Colleges* to arrive at quantitative indicators of current and future space eligibility. Definitions and room use codes are those provided by the Higher Education General Information Survey (HEGIS) taxonomy found in the *Postsecondary Education Facilities Inventory and Classification Manual* published in 2006 by the U.S. Department of Education in cooperation with the National Center for Education Statistics. Basic methodology for quantitative analysis can be expressed using the following demand vs. supply formula:

Total Space Allowance (Demand)
- Facilities Space Inventory (Supply)
=Space Deficit/Surplus (Net Need)

Need Determinants

The quantitative need for space via new or renovated facilities is typically calculated with respect to hours of instruction and the P.P.A.S. factors described in the very beginning of this chapter. Projections of total space need are based on anticipated student enrollments, faculty, staff, and library volumes for fall semester 2030 as mutually determined by Frederick Community College and the Maryland Higher Education Commission (MHEC). These measures of current and anticipated enrollments, personnel and library volumes establish a calculated demand against existing and projected space.

Need Determinants

Space Categories	Need Determinants
Instructional Spaces	Contact Hours
Open Laboratory Spaces	FTDES
Office Spaces	FTEF, FT Staff, Student Offices
Study (Library) Spaces	FTDES & Bound Volume Equivalents (BVE)
All Other Spaces	FTDES, Core Allowance, Ad Hoc Allowance

These computed space projections should be viewed only as a listing of suggested maximum allowances for the campus for each type of space to be considered by the State of Maryland for capital funding and do not necessarily relate to "needs" for a particular program or facility. The *Space Allocation Guidelines* application suggests only a computed allowance for each category of space and does not suggest what sorts of projects should be undertaken. Space deficits and surpluses are identified based on application of guidelines to inventories of various categories of space and projected student enrollments. However, space guidelines calculations only provide one measure of overall sufficiency of campus space and in no way address adequacy or appropriateness of space. Therefore, *Guidelines* calculations are not to be used as the determining factor when making decisions about facilities' needs. A variety of qualitative indicators of need offer augmentation to use of space guidelines metrics.

Current Conditions

The purpose of this section is to provide a brief overview of existing building space at Frederick Community College (FCC) and its distribution as of the fall semester 2020. This supply of existing space will serve as the baseline against which computed space needs/eligibility are compared. Also provided is a brief of current student enrollments, faculty and staff. Projections of these elements form the computed future demand against the existing and projected supplies of space.

Campus Facilities

Frederick Community College's main campus facilities inventory consists of 19 buildings which collectively total 554,727 gross square feet (GSF) and contain approximately 264,000 net assignable square feet (NASF) of space. Although several buildings have undergone renovations over the last 26 years, the various buildings range in age from the seven original campus buildings built in 1970[2] to the nine-year old Jefferson Hall built in 2012. Located at 200 Monroe Avenue 21701, approximately four miles southeast of the main campus, is the 55,342 GSF Monroe Center. This College-owned facility, one of four units within a warehouse condominium arrangement, was renovated in 2017 to provide approximately 31,000 NASF of contemporary skills training and support spaces. FCC leases approximately 10,000 NASF to Frederick County Workforce Services.

Campus Buildings

Building	Code	Built	Renovated	GSF	NASF	Primary Use
Main Campus						
Annapolis Hall	A	1970	1995	32,131	18,015	Office
Braddock Hall	B	1970	2015	34,592	18,401	Instruction
Catoctin Hall	C	1970	2014	54,290	29,117	Instruction
Athletics Center/Central Plant	D	1970	2000	35,872	22,434	Athletics/Physical Education
Conference Center	E	1999	2020	22,939	13,779	Instruction, Office
Visual & Performing Arts Center	F	1988	2013	51,676	31,648	Instruction, Assembly
Gambrill Hall	G	2007	n/a	16,020	10,541	Office
Student Center	H	2009	n/a	76,987	50,306	Instruction, Office, Food Service
Jefferson Hall	J	2012	2018	24,000	13,728	Office
Mercer-Akre Kiln	K	2011	n/a	960	897	Instruction
Linganore Hall	L	1995	2015*	54,014	37,633	Instruction, Office, Study
The Carl and Norma Miller Childrens Center	M	1994	2004	8,572	6,349	Day Care
Plant Operations	P	1996	2004	7,380	5,525	Shops, Office
Sweadner Hall	S	1970	2020	4,550	2,390	Instruction, Storage
Portable Storage #1		1970	n/a	712	675	Storage
Portable Storage #2		1970	n/a	712	675	Storage
Athletic Storage Building		2004	2014	800	665	Storage
Plant Operations Storage Building		1993	n/a	1,008	800	Storage
Parking Deck		2013	n/a	127,512	n/a	Parking
Main Campus Totals				**554,727**	**263,578**	

Building	Code	Built	Renovated	GSF	NASF	Primary Use
Off-Site Campus						
Monroe Center		1970	2017	55,342	41,776	Instruction, Other Organization
Off-Site Campus Totals				**55,342**	**41,776**	
Frederick Community College Totals				**610,069**	**305,354**	

*Under Renovation 2021

Source: Frederick Community College Capital Planning and Project Management

[2] Annapolis Hall, Braddock Hall, Catoctin Hall, Athletics Center/Central Plant, Sweadner Hall, Portable Storage #1 and Portable Storage #2.

In addition to main campus buildings, there are outdoor facilities. They include: 1) athletic fields for baseball, soccer/lacrosse, softball and a practice field, 2) six tennis courts, 3) a walking trail, 4) two outdoor classrooms, 5) 14 parking lots and, 6) a 345-space parking deck. A tabular distribution of parking facilities along with a main campus map and a map and brief description of the Monroe Center depicting Frederick Community College's major existing facilities immediately follow.

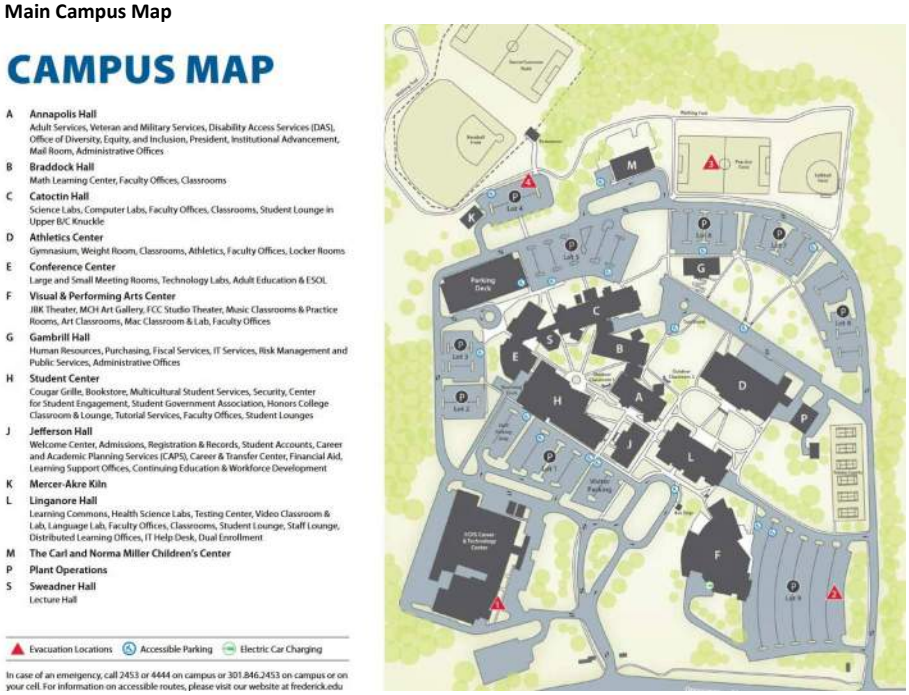
There are 150 parking spaces at the Monroe center. Only 75 spaces are dedicated to FCC while the remaining 75 are on a first come, first served basis.

Distribution of Main Campus Parking Spaces

Parking Area	General	Staff	ADA	Total
Visitor Lot	41	11	3	55
Lot #1	120	7	7	134
Staff Lot	0	82	1	83
Drop Off Area	1	0	2	3
Lot #2	51	0	0	51
Lot #3	63	0	6	69
Lot #5	168	43	9	220
Children's Center	10	0	1	11
Lot #4	93	0	1	94
Lot #6	99	15	2	116
Lot #7	119	0	2	121
Lot #8	138	0	0	138
Staff	0	85	7	92
Lot #9	456	23	9	488
Parking Deck	336	1	8	345
Totals	**1,695**	**267**	**58**	**2,020**

Source: Frederick Community College Capital Planning and Project Management

Main Campus Map

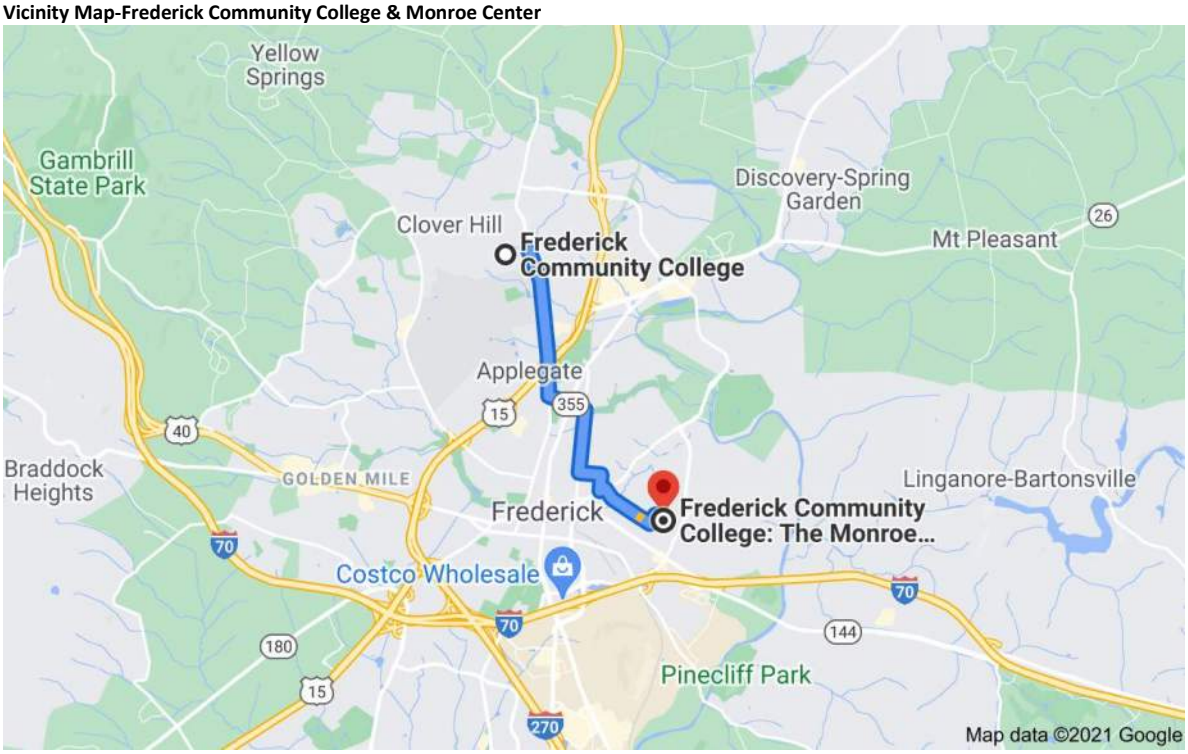


Monroe Center Map and Description

Located at 200 Monroe Avenue, the Monroe Center is home to our Hospitality, Culinary & Tourism Institute (HCTI) and the Construction & Applied Technologies Institute (CATI). Business Solutions, Career & Technical Training, and Healthcare Career programs are located here as well. The Monroe Center also includes the county offices of the American Jobs Center. At the Monroe Center you will find:

- Career and technical training classrooms
- Certified Nursing Assistant (CNA), dental assisting, phlebotomy, and veterinary assistant training labs
- Electrical, HVAC, and welding training labs
- Instructional kitchens and full-service restaurant, 200 Monroe
- Makerspace, including 3-D printers and scanners, laser cutter, hardware supplies, high-end computer stations, and 3-D mechanical design software
- Workforce Development administrative offices

Vicinity Map-Frederick Community College & Monroe Center



Existing Building Space Inventory

A building-by-building inventory of assignable space was provided by the College and given to the consultant team. This inventory of existing spaces serves as the baseline data against which computed space needs are developed.

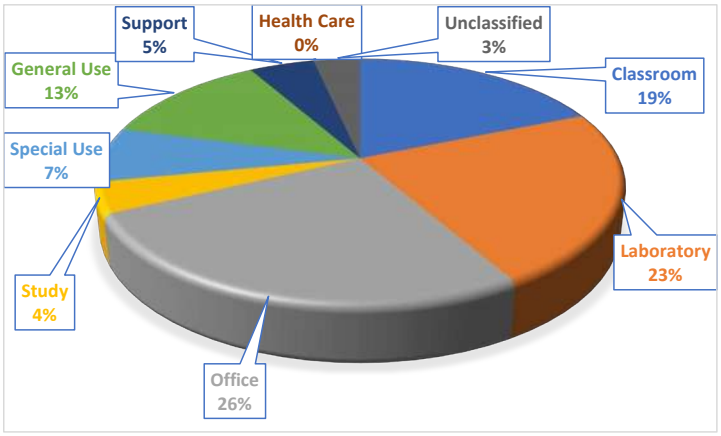
The campus building space inventory utilizes the space taxonomy found in the *2006 Postsecondary Education Facilities Inventory and Classification Manual* (FICM) published by the U.S. Department of Education in cooperation with the National Center for Education Statistics. For the most part, room use codes and classifications referenced in this analysis refer to the primary activity space plus support space that directly services the primary activity. Furthermore, the space inventory data in this section is presented in such a way as to satisfy the requirements of the Maryland Higher Education Commission's *Space Allocation Guidelines for Community Colleges* (*Guidelines*). More detailed attention is devoted to each of the College's building structures later in this plan.

The base inventory to of net assignable square footage (NASF), which is "permanent" and directly related to market-driven conditions, is used to determine space needs. Space contained in temporary structures and space in any facilities at locations other than FCC's main campus and the Monroe Center would be considered "overflow" and is not included in the base calculations. The College currently has no space designated as "overflow."

As depicted in the table below and the accompanying graphic, 42% of FCC's assignable space is used for classroom and laboratory instruction (classroom 19% and laboratory 23%), 26% for offices, 4% for study (library), and 25% is a combination of special use, general use and support space at the time of the inventory. The remaining 3% or 10,512 NASF, primarily located in the Monroe Center, is inventoried as unclassified space.

Distribution of Frederick Community College Space by Room Use Classification

FICM	Room Use	NASF
100	Classroom	57,181
200	Laboratory	70,095
300	Office	80,010
400	Study	12,344
500	Special Use	21,986
600	General Use	38,593
700	Support	14,633
800	Health Care	0
000	Unclassified	10,512
	Total	**305,354**



Existing Student Enrollments

A total unduplicated headcount of 5,756 students enrolled in 46,607 credit hours of instruction in Fall 2020 generating 3,107 full-time equivalent (FTE) student enrollments.

Enrollment Summary – Fall 2020

Full-Time Headcount	Part-Time Headcount	Total Headcount	Credit Hours	FTE Enrollments
1,719	4,037	5,756	46,607	3,107

Data Source: FCC Office of Planning, Assessment and Institutional Research

A distribution of student credit hours is presented in the following table. The on-campus data is organized by Day (before 5:00 pm), Evening (5:00 pm and after) and Online/Distance Learning. Most of FCC's total on-campus student credit hours (73%) are generated before 5:00 pm.

Enrollment Summary – Fall 2020

	Credit Hours	FTE	Percentages
Main Campus: Day (Before 5:00 pm)	27,796	1,853	84%
Main Campus: Evening (5:00 pm or After)	5,489	366	16%
Subtotals Main Campus	33,285	2,219	
Monroe Center: Day (Before 5:00 pm)	6,220	415	91%
Monroe Center: Evening (5:00 pm or Afte	621	41	9%
Subtotals Monroe Center	6,841	456	
FCC: Day (Before 5:00 pm)	34,016	2,268	73%
FCC: Evening (5:00 pm or After)	6,110	407	13%
Online/Distance Learning	6,481	432	14%
Totals Frederick Community College	**46,607**	**3,107**	

Data Source: FCC Office of Planning, Assessment and Institutional Research

Existing Faculty and Staff

Frederick Community College employs 101 full-time faculty and 311 full-time staff as well as 365 part-time faculty and 205 part-time staff. The next table illustrates the distribution of personnel who are critical to providing an environment that fosters academic excellence and student success.

Faculty and Staff – 2020

Category	Full-Time	Part-Time	Total
Faculty	101	365	466
Librarians	2	0	2
Other Administrators & Staff	309	205	514
Totals	**412**	**570**	**982**

Utilization of Instructional Space

Introduction

Utilization analysis provides a measure of adequacy and how efficiently spaces are being used. The focus of this analysis is the regularly scheduled instructional spaces (classrooms and class laboratories). This utilization analysis does not measure other uses of instructional spaces such as for meetings, noncredit continuing education classes, or other uses that may not be regularly scheduled.

Although other spaces, such as open laboratories, libraries and offices are used intensely, their use is not scheduled, therefore, not lending themselves to utilization analysis with any degree of confidence.

Information and findings are presented that represent the results of an analysis of readily available input data pertinent to the utilization of instructional spaces.

Utilization focuses on both classroom and class laboratory/studio space. Nevertheless, a preface is appropriate with reference to classrooms. Although efficient use of all spatial resources is important, classrooms offer the best barometer of whether or not space is being used efficiently and effectively. When determining the enrollment capacity of a campus, the focus should be on classroom space. This is because nearly every student needs and uses classroom space, while only some students use all other kinds of space. Most other kinds of space will not impact an institution's enrollment capacity.

While it is generally understood that it is impossible to use classrooms every hour of the day, there are always opportunities to improve their utilization. The primary reason that utilization goals that approach 100% are not realistic is that the use of classrooms is market driven. That is that both students and faculty, for varying reasons, prefer certain times of the day and week for attending and teaching classes.

There are many factors that can impact the utilization of instructional spaces. Some factors that can adversely affect utilization can be directly influenced by the College, such as:

- Incomplete or inaccurate facilities databases such as facilities inventory and course data
- Non-standardized course starting and ending times
- Non-standardized course meeting times
- Tablet armchair seating
- Outdated technology
- Oversized classrooms
- Antiquated layout and physical condition

Frederick Community College would have more difficulty influencing other factors that can impact utilization of classrooms:

- Student preference for class times
- Faculty preference for class times
- Competition with laboratory sections
- Competition with continuing education courses
- Time constraints of the working student
- Time constraints of the adjunct faculty
- Student course loads

The consultants used the inventory of assignable spaces and floor plans as well as course enrollment data provided by FCC for the 2019 fall semester to use as the basis for preliminary analysis of how classroom and class laboratory spaces are used. For the most part, these two sources were used without field or major data clean-up.

In order to insure adequate data linkage and consistency, only data with complete

information fields, i.e., class start and end times, class location, room size, student stations, was included in the analysis.

This analysis focuses on three areas of utilization:

1. Time Utilization: Room use by day, by time of day
2. Room Utilization: Average number of hours per week that rooms were used
3. Station Occupancy: The percentage of student stations that were filled when rooms are in use

Generally, two measures of utilization are employed to determine how efficiently instructional spaces are being used. Room Utilization, expressed as weekly room hours, is the number of hours each room is used for regularly scheduled classes during the week. Station Occupancy, expressed as a percentage or fraction, is the ratio between the average number of stations per room actually occupied during the week and the number of stations available for occupancy.

The two utilization measures, along with Student Station Size, form the three basic components of instructional space planning guidelines, thus providing suitable means of comparison and measure against guidelines, standards or targets.

Valid comparisons with institutions from other two-year college systems are often problematic for several reasons:

- Data is not always uniform among systems in different states
- Lack of uniform interpretation of definitions
- Methodology of data collection is not standard
- Facilities data is not as readily available as are other educational data such as enrollment, library and fiscal data

Nevertheless, where comparable facilities utilization data is available, it is included as appropriate. This utilization analysis addresses Frederick Community College's main campus and the Monroe Center.

Response to COVID 19 Pandemic

The COVID-19 pandemic caused many classes that normally would have been conducted in traditional in-person formats to instead be temporarily provided online or in hybrid formats. Recognizing that this situation would result in under-representing space needs of community colleges when capital improvement needs are being calculated using current space guidelines, the Maryland Higher Education Commission (MHEC) issued policy directives in 2020 and again in 2021 which provided guidance with respect to reporting of enrollment data.[3] In line with this policy guidance, the focus of this utilization analysis is the fall semester of 2019.

Glossary of Terms

This glossary contains brief definitions of generic terms related to utilization and explanations of acronyms and abbreviations referred to in this utilization analysis.

Classroom	Space that is not limited to a specific subject or discipline by equipment or room configuration.
Class Laboratory	Space that is used primarily for formally or regularly scheduled classes that require special purpose equipment for a specific room configuration for student participation, experimentation, observation, or practice in an academic discipline.
Facilities Inventory	Room-by-room and building-by-building listing of assignable spaces, their primary use, their size and their capacity.
Net Assignable Square Feet (NASF)	NASF is the sum of all areas on all floors of a building assigned to, or available for assignment to an occupant for specific use. Excluded are spaces defined as structural, mechanical, services and circulation areas.
Room Utilization	A measurement of the number of hours a room is used relative to the number of hours available for use expressed as a percentage
Station Occupancy	The percentage of student stations or seats that were filled when rooms are in use
Station Size	A factor determined by dividing net assignable square feet of a space by the number of stations in that space
Student Contact Hour	A measure of time of scheduled interface between students and teacher that is usually expressed in terms of Weekly Student Contact Hour (WSCH), which is the number of hours per week of required interface. **Note: This statistic is used in this document for facilities planning purposes only, and the calculation may differ from WSCH computed for budgetary or other reporting purposes.**
Time Utilization	Room use by day, by time of day
Use Codes	Space use codes represent the recommended central or core concepts for classifying the assignable space, by use, within campus facilities. Sometimes referred to as HEGIS or FICM codes.
Weekly Room Hours (WRH)	Number of hours each week that a classroom or class laboratory is used for regularly scheduled classes

[3] Maryland Higher Education Commission, MHEC Directive on Fall 2020 S-6 Data Reporting, November 6, 2020 and MHEC Directive on Fall 2021 S-6 Data Reporting, September 14, 2021.

Summary of Key Findings

CLASSROOMS

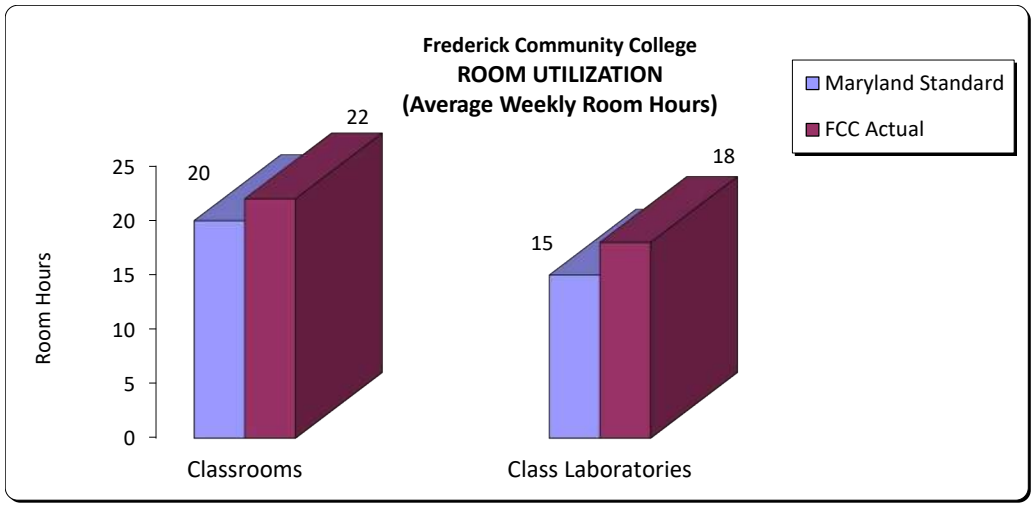
- Of 69 classrooms on campus available for use, 56 were scheduled between 8:00 am and 5:00 pm while 59 were scheduled between 8:00 am and 9:00 pm.
- On a weekly basis (Monday thru Friday) between 10:00 am and 1:00 pm approximately 66% of scheduled classrooms were in use.
- The most scheduled time for classrooms was the three-hour period between 10:00 am and 1:00 pm on Mondays when 88% of scheduled classrooms were in use. During the 11:00 am hour, 90% (53 of 59) of scheduled classrooms were in use.
- Classrooms averaged 22 room hours per week which is slightly above Maryland's minimum room utilization guideline of 20 hours.
- Student stations (seats) were occupied 77% of the time when rooms were in use. This is significantly above Maryland's guideline of 60%.
- At an average of 31 NASF per student station, FCC's classrooms were well above the Maryland guideline of 18 NASF.
- Documentation of established capacities of instructional spaces is limited. This analysis suggests the College establish practical physical capacities for each instructional space that are determined by a combination of room size (NASF) and configuration, technology and equipment needs, need for pedagogical flexibility, and FCC's course scheduling policies and practices.

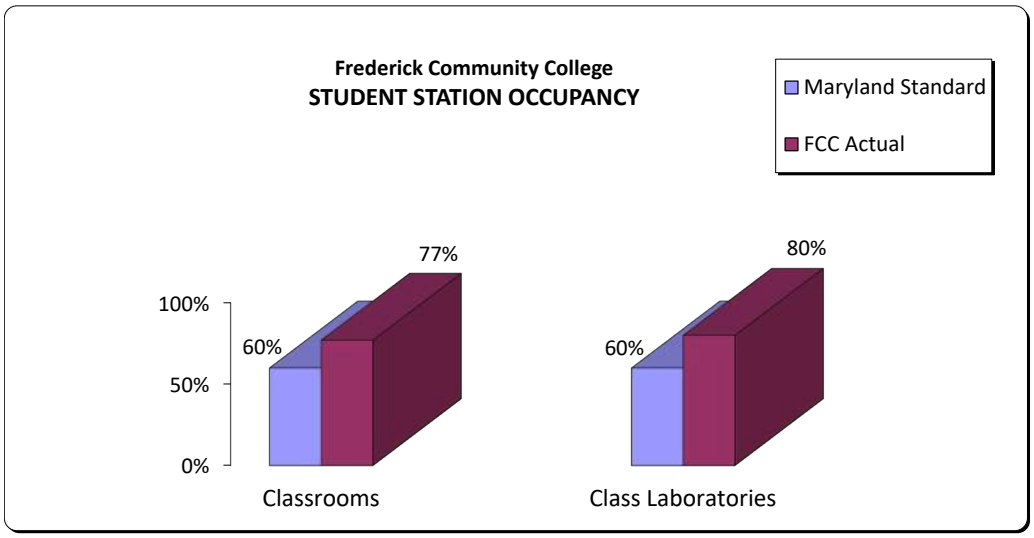
Frederick Community College Utilization Summary

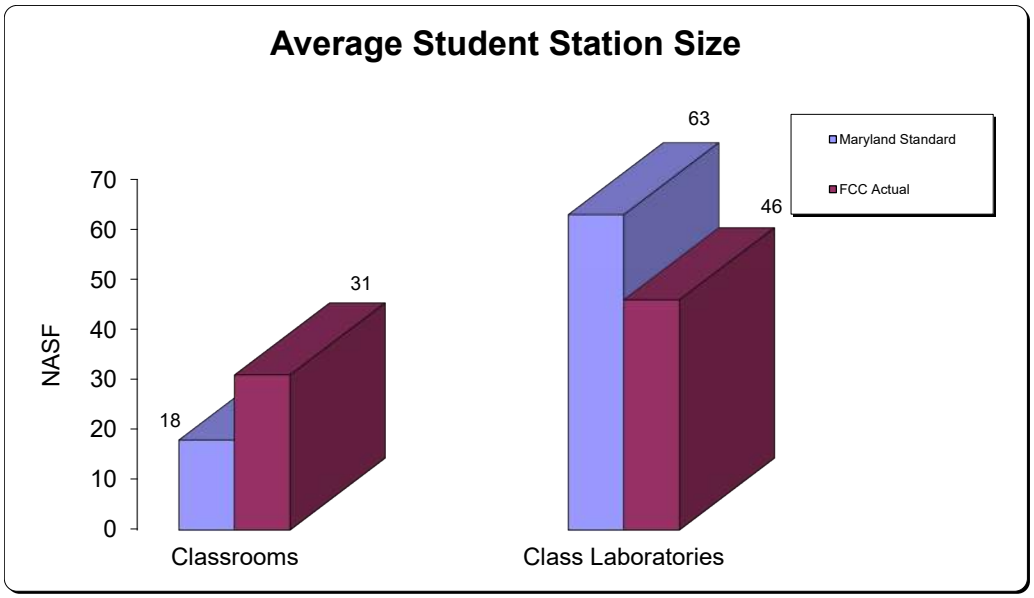
Room Type	Room Utilization		Station Occupancy		Student Station Size	
	Average Weekly Room Hours	Maryland Guideline	% of Student Stations Occupied	Maryland Guideline	Average NASF/Station	Maryland Guideline
Classrooms	22	20	77%	60%	31	18
Class Laboratories	18	15	80%	60%	46	63

CLASS LABORATORIES

- Of 53 class laboratories on campus available for use, 28 were scheduled between 8:00 am and 5:00 pm while 34 were scheduled between 8:00 am and 9:00 pm.
- For the week (Monday thru Friday) 45% of all scheduled class laboratories were being used from 11:00 am to 2:00 pm.
- The most scheduled time for class laboratories was the three-hour period between 11:00 am and 2:00 pm on Tuesdays when 63% of scheduled class laboratories were in use.
- Class laboratories averaged 18 hours per week which exceeds Maryland's utilization guideline of 15 hours.
- Student stations (seats) were occupied 80% of the time which greatly surpasses Maryland's guideline of 60%.
- The average student station size for class laboratories was 46 NASF which is below Maryland's 63 NASF guideline. It must be noted here that utilization goals for class laboratory spaces can vary greatly depending on the array of disciplines. For example, Maryland's guidelines for class laboratory average student station size ranges from 50 NASF for the natural and social sciences to 115 NASF for technical and career labs.


Frederick Community College
ROOM UTILIZATION
(Average Weekly Room Hours)
Maryland Standard
FCC Actual
Room Hours
25
20
15
10
5
0
20
22
15
18
Classrooms
Class Laboratories


Frederick Community College
STUDENT STATION OCCUPANCY
Maryland Standard
FCC Actual
100%
50%
0%
60%
77%
60%
80%
Classrooms
Class Laboratories


Average Student Station Size
Maryland Standard
FCC Actual
NASF
70
60
50
40
30
20
10
0
18
31
46
63
Classrooms
Class Laboratories

Methodology

The College provided base data in the form of course enrollments and facilities room-by-room space inventory.

The consultant team analyzed course enrollment data to define which classrooms and class laboratories were scheduled for use. This data was also used to determine instructional space use by day and time of day, average weekly room hour use, student station occupancy, and weekly student contact hours. The facilities space inventory provided sizes for each instructional space.

Weekly room hours define the number of hours each classroom or class lab is used per week for regularly scheduled classes. Weekly student contact hours are the product of student course enrollment times the weekly room hours. Student station occupancy is the percentage of seats occupied when a room is used for a regularly scheduled course. It is determined by dividing the weekly student contact hours by the weekly student contact hour capacity. Student station size is an average resulting from the room size in net assignable square feet (NASF) divided by the number of student stations.

Courses not scheduled for on-campus classrooms and class laboratories were not included in this analysis. Courses held off-site, independent study courses, online courses and courses not centrally scheduled by were excluded. Also eliminated were courses with incomplete data such as begin/end times and location. When warranted, classrooms and class laboratories that had no course enrollment may be included in tables and charts for accounting and information purposes only, but were not included in calculations or analyses.

Expectations and inferences for instructional space utilization provided by the Maryland Higher Education Commission's (MHEC) *Space Allocation Guidelines for Community Colleges* were used as benchmarks to compare FCC's utilization of instructional spaces.

Instructional Space Inventory Summary

Fredrick Community College's total inventory of net assignable square feet is summarized by building and room use classification in tables presented earlier. The following table provides an extraction of instructional space data for ready reference.

Current Instructional Space Inventory (NASF) by Building

Code	Room Use Classification	A Annapolis Hall	B Braddock Hall	C Catoctin Hall	D Athletics Center	E Conference Center	F Vis. & Perf. Arts Center	H Student Center	K Mercer-Akre Kiln	L Linganore Hall	S Sweadner Hall	MC Monroe Center	FCC Instruction Totals
110	Classroom	880	10,125	5,098	502	4,260	7,885	15,815	0	5,265	1,826	5,525	57,181
210	Class Laboratory	0	805	19,112	0	4,114	10,011	0	897	6,685	0	16,046	57,670
	Totals	**880**	**10,930**	**24,210**	**502**	**8,374**	**17,896**	**15,815**	**897**	**11,950**	**1,826**	**21,571**	**114,851**

Source: Frederick Community College Capital Planning and Project Management

Utilization of Classrooms

For purposes of this utilization analysis, classrooms are defined as spaces that are not tied to a specific subject or discipline by equipment or room configuration. These rooms are generally used for scheduled instruction and have a room use code of 110. Although the inventory includes spaces that directly support classrooms (classroom service: code 115) in its total accounting of net assignable square feet, utilization addresses only the spaces used for actual instruction. On the other hand, application of generally recognized space planning guidelines address space allocated to both classroom and classroom service activity.

The College, from time-to-time, designates rooms that may have been designed for other purposes to be used for classroom instruction. In the fall semester of 2019, there were occasions in which instructional spaces were used to teach both lecture and laboratory sections. In such instances, the consultants used the primary generator of contact hours (lecture vs. laboratory) to determine the room use classification.

The College's facilities inventory identifies a total of 69 rooms classified as classrooms. Of these, 59 were used for regularly scheduled credit courses between 8:00 am and 9:00 pm during the 2019 fall semester. Between the hours of 8:00 am and 5:00 pm 56 were used for regularly scheduled credit courses. These 56 classrooms are the subject of this analysis of classroom utilization.

Using a 45-hour week (Monday through Friday from 8:00 am to 5:00 pm) Maryland's classroom utilization target for Frederick Community College is 20 hours per week room use. Maryland's guidelines infer 60% student station occupancy and 18 NASF per station. This is the Maryland Higher Education Commission's basis for measuring classroom utilization.

The following table presents a comprehensive view of classroom utilization both campus-wide and by building. Overall classrooms at FCC were in use an average of 22 hours per week with 77% of seats occupied when rooms were in use. Average weekly room hours for the campus were slightly above Maryland's minimum utilization guideline while station occupancy was significantly above the minimum of 60%. At 31 NASF per student station, FCC's classrooms were well above the Maryland guideline.

Classroom Utilization by Building (Before 5:00 pm)

Classrooms	Building	Scheduled Rooms	NASF[a]	Student Stations	Average NASF/Station	% of Stations Occupied	Average Weekly Room Hours
B	Braddock Hall	14	9,315	324	29	76%	23
C	Catoctin Hall	5	3,627	122	30	73%	21
D	Athletics Center	1	502	24	21	84%	15
E	Conference Center	4	2,113	80	26	68%	12
F	Visual & Performing Arts Center	4	2,882	89	32	75%	26
H	Student Center	18	14,972	408	37	82%	26
L	Linganore Hall	8	5,735	189	30	78%	20
S	Sweadner Hall	1	1,618	60	27	43%	21
MC	Monroe Center	1	536	20	27	80%	4
	Totals	**56**	**41,300**	**1,316**	**31**	**77%**	**22**

Source: Compiled by Facilities Planning Associates and A.C. Robinson Enterprises

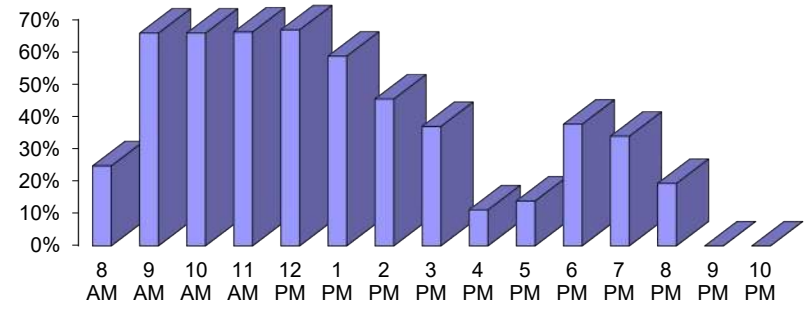
[a]Total of "scheduled" rooms

Review of scheduled classrooms shows that Monday through Friday between 10:00 am and 1:00 pm approximately 66% of scheduled classrooms are in use. From 6:00 pm to 8:00 pm approximately 45% of scheduled classrooms are in use. The highest three-hour use of classrooms occurs Mondays between 10:00 am and 1:00 pm when 88% are in use. The most heavily scheduled day is Monday when 64% of all scheduled classrooms are in use between the hours of 8:00 am and 5:00 pm.

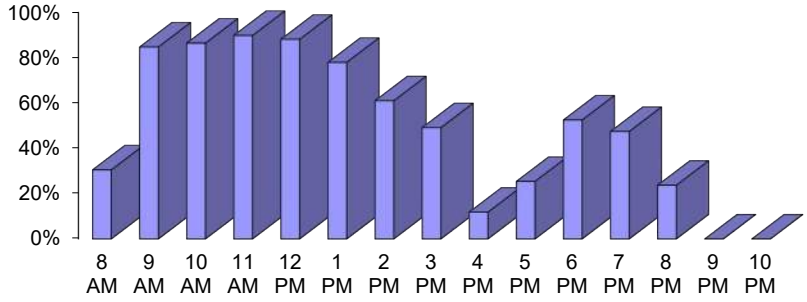
Scheduled Classroom Use by Day and Hour (Fall 2019) **59 Classrooms**

Class Time	Monday Rooms Utilized	Monday % Utilized	Tuesday Rooms Utilized	Tuesday % Utilized	Wednesday Rooms Utilized	Wednesday % Utilized	Thursday Rooms Utilized	Thursday % Utilized	Friday Rooms Utilized	Friday % Utilized	Average (M-F) Rooms Utilized	Average (M-F) % Utilized
8:00 AM	18	31%	20	34%	16	27%	15	25%	4	7%	15	25%
9:00 AM	50	85%	45	76%	47	80%	44	75%	8	14%	39	66%
10:00 AM	51	86%	43	73%	47	80%	45	76%	8	14%	39	66%
11:00 AM	53	90%	43	73%	46	78%	47	80%	6	10%	39	66%
12:00 PM	52	88%	46	78%	48	81%	48	81%	3	5%	39	67%
1:00 PM	46	78%	40	68%	44	75%	39	66%	4	7%	35	59%
2:00 PM	36	61%	32	54%	35	59%	30	51%	1	2%	27	45%
3:00 PM	29	49%	27	46%	28	47%	24	41%	1	2%	22	37%
4:00 PM	7	12%	10	17%	7	12%	9	15%	0	0%	7	11%
5:00 PM	15	25%	9	15%	7	12%	10	17%	0	0%	8	14%
6:00 PM	31	53%	32	54%	27	46%	21	36%	0	0%	22	38%
7:00 PM	28	47%	29	49%	25	42%	18	31%	0	0%	20	34%
8:00 PM	14	24%	17	29%	17	29%	9	15%	0	0%	11	19%
9:00 PM	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%

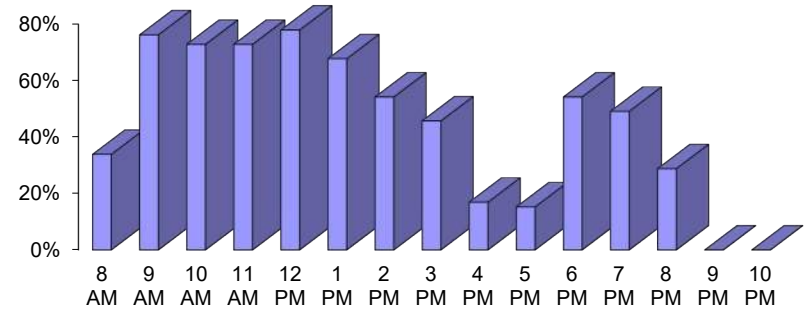
Frederick Community College
AVERAGE CLASSROOM USE BY HOUR
Monday - Friday



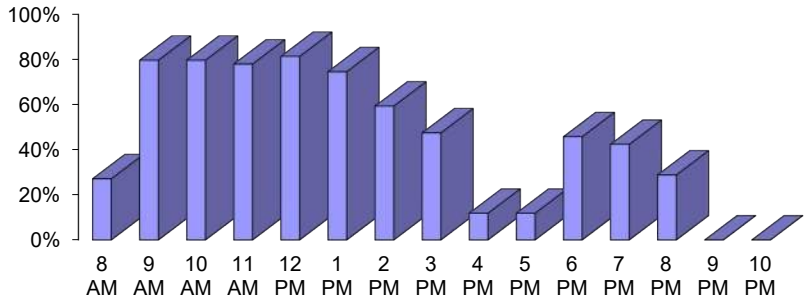
Frederick Community College
AVERAGE CLASSROOM USE BY HOUR
Monday



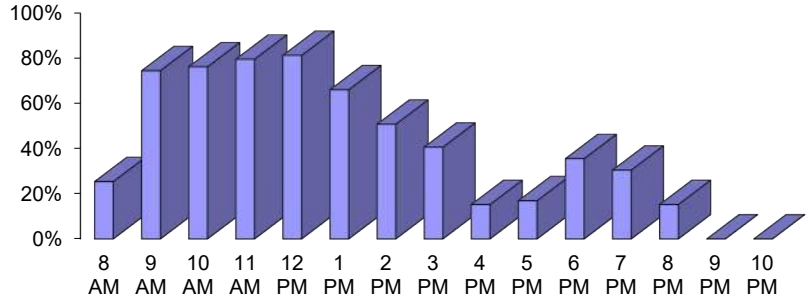
Frederick Community College
AVERAGE CLASSROOM USE BY HOUR
Tuesday



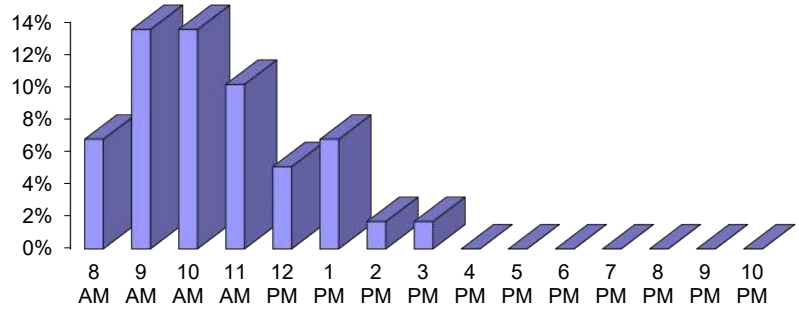
Frederick Community College
AVERAGE CLASSROOM USE BY HOUR
Wednesday



Frederick Community College
AVERAGE CLASSROOM USE BY HOUR
Thursday



Frederick Community College
AVERAGE CLASSROOM USE BY HOUR
Friday



CLASSROOM CAPACITY

When determining the enrollment capacity of a campus, the focus should be on classroom space. This is because nearly every student needs and uses classroom space, while only some students use all other kinds of space. Most other kinds of space will not impact an institution's enrollment capacity.

The following tables offer a view of the size of classes and the capacities of the classrooms in which they were scheduled between 8:00 am and 5:00 pm during the fall semester of 2019. The first table is based on the size of classes while the second table provides the number of classes in rooms with corresponding capacities. The third table presents the distribution of Frederick Community College's 56 scheduled classrooms by room capacity.

Class Distribution by Class Size

Class Size	<21	21-30	31-40	41-60	>60	Total
No. of Classes	325	58	0	0	0	383
Percent of Total	84.9%	15.1%	0.0%	0.0%	0.0%	100.0%

Class Size Distribution by Room Capacity

Room Capacity	<21	21-30	31-40	41-60	>60	Total
No. of Classes	124	246	6	7	0	383
Percent of Total	32.4%	64.2%	1.6%	1.8%	0.0%	100.0%

Classroom Distribution by Room Capacity

Room Capacity	<21	21-30	31-40	41-60	>60	Total
No. of Classrooms	20	34	1	1	0	56
Percent of Total	35.7%	60.7%	1.8%	1.8%	0.0%	100.0%

Review of these tables offers the following:

- Of the 383 classes scheduled, there were 325 classes (85%) with fewer than 21 students. However, there were only 20 classrooms with seating for 20 or fewer students.
- There were no classes with more than 30 students, yet there were 13 classes scheduled in the one larger classroom and in the lecture hall.
- 100% of classes enroll 30 or fewer students
- Given the course data provided, there appears to be little "quantitative" need for classrooms exceeding 40.
- This analysis suggests the College consider reconfiguring some of the existing classroom spaces to provide additional classrooms appropriate for 20 or fewer students.

There is limited documentation of established capacities of instructional spaces, particularly those with movable furnishings. The number of student stations referenced in this analysis is based on enrollment or course capacities reflected in the course enrollment data provided. This analysis suggests the College establish practical physical capacities for each classroom that are determined by a combination of room size (NASF) and configuration, technology and equipment needs, need for pedagogical flexibility, and FCC's course scheduling policies and practices.

Utilization of Class Laboratories

Class laboratories are defined as instructional spaces that are used primarily for formally or regularly scheduled classes that require special purpose equipment or a specific room configuration for student participation, experimentation, observation, or practice in an academic discipline. These rooms have a room use code of 210. Included in this classification are science labs, computer labs, art and music studios, architectural drafting rooms and distance learning classrooms. Although the inventory may include spaces such as preparation rooms, balance rooms, cold rooms, stock rooms, dark rooms, equipment issue rooms that directly support class laboratories (class laboratory service: code 215) in its total accounting of net assignable square feet, utilization addresses only the space used for actual instruction. As is the case with classrooms, application of generally recognized space planning guidelines addresses space associated with both class laboratory and class laboratory service activity.

The class laboratory room use classifications do not include informally scheduled or unscheduled laboratories such as open laboratories (code 220) or research laboratories (code 250). They do not include gymnasia and pools (code 520), animal quarters (code 570), greenhouses (code 580) or theater/assembly facilities (code 610).

The College's facilities inventory identifies a total of 53 rooms classified as class laboratories. Of these, 34 were used for regularly scheduled credit courses between 8:00 am and 9:00 pm during the 2019 fall semester. Between the hours of 8:00 am and 5:00 pm 28 were used for regularly scheduled credit courses. These 28 lab spaces are the subject of this analysis of class laboratory utilization.

Maryland's targets for utilization of class laboratory space at Frederick Community College are 15 hours per week room use and 60% student station occupancy. Maryland's guidelines assume 50 NASF average student station size for natural and social science labs and 115 NASF average student station size for technical and career labs. Guideline assumption is that 80% of lab contact hours are generated in natural and social sciences labs, and 20% in technical and career labs. This is the Maryland Higher Education Commission's basis for measuring class laboratory utilization.

Class Laboratory Utilization by Building (Day Only)

Class Laboratories		Scheduled		Student	Average	% of Stations	Average Weekly
	Building	Rooms	NASF[a]	Stations	NASF/Station	Occupied	Room Hours
B	Braddock Hall	1	805	26	31	66%	24
C	Catoctin Hall	17	14,454	354	41	82%	17
E	Conference Center	1	941	20	47	55%	12
F	Visual & Performing Arts Center	6	5,760	97	59	81%	22
L	Linganore Hall	2	1,883	35	54	70%	19
MC	Monroe Center	1	1,552	18	86	54%	6
	Totals	**28**	**25,395**	**550**	**46**	**80%**	**18**

Source: Compiled by Facilities Planning Associates and A.C. Robinson Enterprises

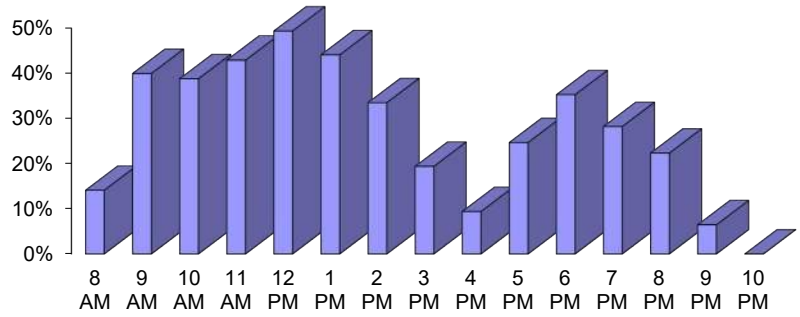
[a]Total of "scheduled" rooms

Review of scheduled class laboratories shows that Monday through Friday between 11:00 am and 2:00 pm approximately 45% of scheduled class labs are in use. From 6:00 pm to 8:00 pm approximately 40% of scheduled class laboratories are in use. The highest three-hour use of class laboratories occurs Tuesdays between 11:00 am and 2:00 pm when 63% are in use. The most heavily scheduled day is Tuesday when 42% of all scheduled class laboratories are in use from 8:00 am to 5:00 pm.

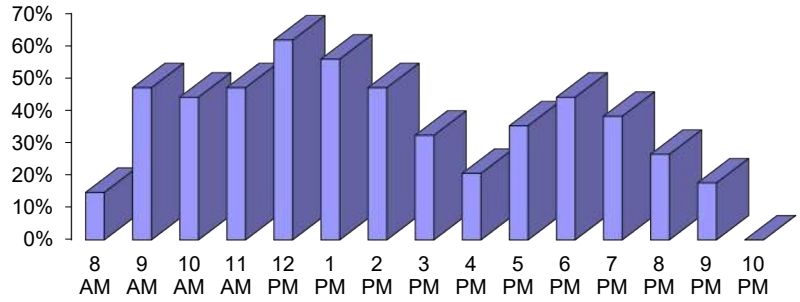
Scheduled Class Laboratory Use by Day and Hour (Fall 2019) **34 Class Laboratories**

Class Time	Monday Rooms Utilized	Monday % Utilized	Tuesday Rooms Utilized	Tuesday % Utilized	Wednesday Rooms Utilized	Wednesday % Utilized	Thursday Rooms Utilized	Thursday % Utilized	Friday Rooms Utilized	Friday % Utilized	Average (M-F) Rooms Utilized	Average (M-F) % Utilized
8:00 AM	5	15%	6	18%	6	18%	6	18%	1	3%	4.8	14%
9:00 AM	16	47%	14	41%	20	59%	14	41%	4	12%	13.6	40%
10:00 AM	15	44%	15	44%	18	53%	13	38%	5	15%	13.2	39%
11:00 AM	16	47%	20	59%	17	50%	14	41%	6	18%	14.6	43%
12:00 PM	21	62%	22	65%	20	59%	15	44%	6	18%	16.8	49%
1:00 PM	19	56%	22	65%	19	56%	13	38%	2	6%	15	44%
2:00 PM	16	47%	17	50%	14	41%	10	29%	0	0%	11.4	34%
3:00 PM	11	32%	8	24%	8	24%	6	18%	0	0%	6.6	19%
4:00 PM	7	21%	5	15%	4	12%	0	0%	0	0%	3.2	9%
5:00 PM	12	35%	8	24%	16	47%	6	18%	0	0%	8.4	25%
6:00 PM	15	44%	14	41%	19	56%	12	35%	0	0%	12	35%
7:00 PM	13	38%	11	32%	14	41%	10	29%	0	0%	9.6	28%
8:00 PM	9	26%	10	29%	10	29%	9	26%	0	0%	7.6	22%
9:00 PM	6	18%	2	6%	1	3%	2	6%	0	0%	2.2	6%

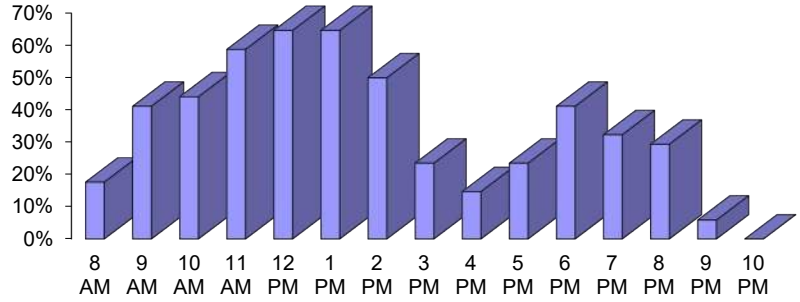
Frederick Community College
AVERAGE CLASS LABORATORY USE BY HOUR
Monday - Friday



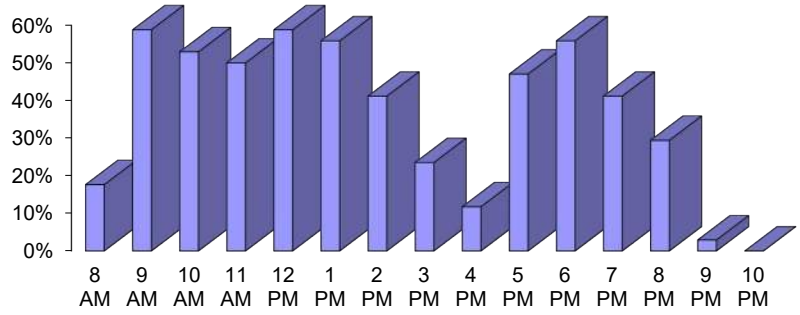
Frederick Community College
AVERAGE CLASS LABORATORY USE BY HOUR
Monday



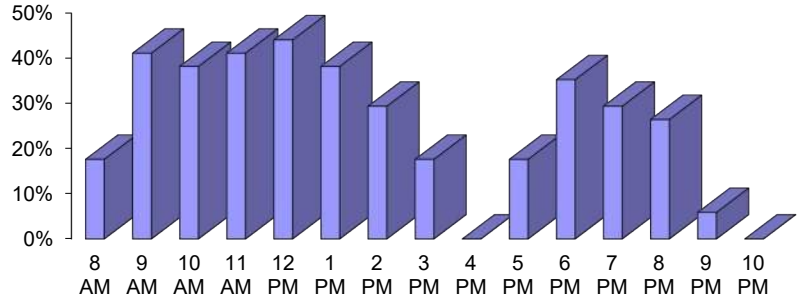
Frederick Community College
AVERAGE CLASS LABORATORY USE BY HOUR
Tuesday



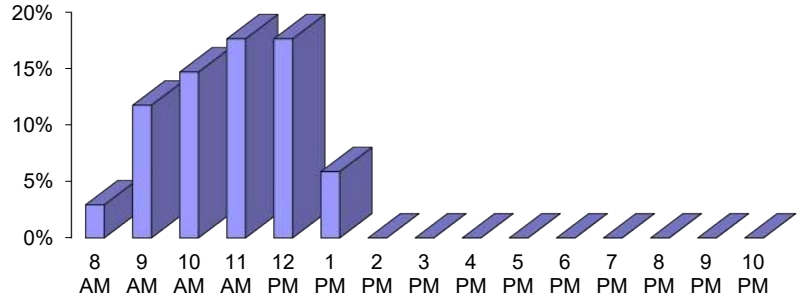
Frederick Community College
AVERAGE CLASS LABORATORY USE BY HOUR
Wednesday



Frederick Community College
AVERAGE CLASS LABORATORY USE BY HOUR
Thursday



Frederick Community College
AVERAGE CLASS LABORATORY USE BY HOUR
Friday



Utilization Analysis by Building

BRADDOCK HALL (B)

Number of Classrooms:	14
Number of Classrooms Scheduled:	14
Average Weekly Room Utilization:	23 hours
Student Station Occupancy:	76%
Average Student Station Size:	29 NASF
Number of Class Labs:	1
Number of Class Labs Scheduled:	1
Average Weekly Room Utilization:	24 hours
Student Station Occupancy:	66%
Average Student Station Size:	31 NASF

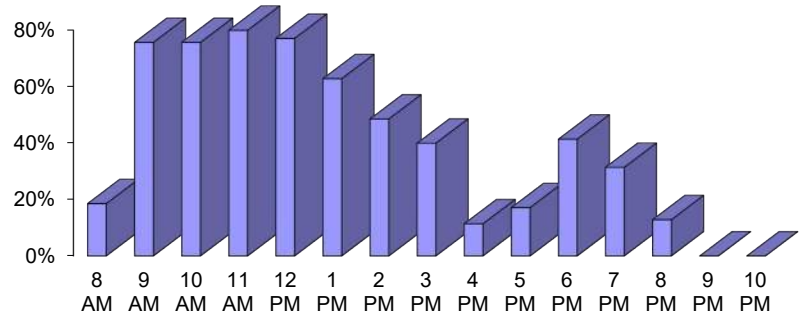
Braddock Hall (B): 8:00 am – 4:59 pm **14 Classrooms Scheduled**

Room	Use Code	Room Use	NASF	No. of Stations	NASF/ Station	Total Students	No. of Classes	Ave. Enroll/ Class	Station Occupancy	Ave. Weekly Room Hours	Room Utilization	WSCH
B101	110	Classroom	687	24	29	158	8	20	82%	24	53.3%	481
B102	110	Classroom	693	24	29	178	10	18	74%	32	71.1%	530
B103	110	Classroom	693	24	29	169	8	21	88%	27	60.0%	654
B104	110	Classroom	674	24	28	187	10	19	78%	28	62.2%	572
B105	110	Classroom	657	24	27	107	5	21	89%	21	46.7%	456
B106	110	Classroom	629	24	26	174	9	19	81%	30	66.7%	543
B109	110	Classroom	685	24	29	148	8	19	77%	37	82.2%	492
B110	110	Classroom	731	24	30	114	6	19	79%	21	46.7%	390
B111	110	Classroom	659	24	27	78	5	16	65%	23	51.1%	355
B112	110	Classroom	719	24	30	83	7	12	49%	22	48.9%	266
B113	110	Classroom	639	16	40	59	5	12	74%	20	44.4%	246
B215	110	Classroom	541	22	25	75	5	15	68%	17	37.8%	258
B222	110	Classroom	669	24	28	76	4	19	79%	17	37.8%	321
B223	110	Classroom	639	22	29	21	2	11	48%	9	20.0%	96
	Totals		**9,315**	**324**	**29**	**1,627**	**92**	**18**	**76%**	**23**	**52.1%**	**5,660**
Maryland Guidelines for Community Colleges:					18				60%	20		

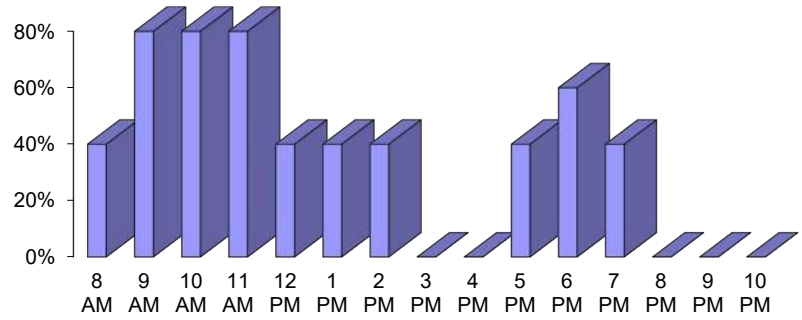
Braddock Hall (B): 8:00 am – 4:59 pm **1 Class Laboratory Scheduled**

Room	Use Code	Room Use	NASF	No. of Stations	NASF/ Station	Total Students	No. of Classes	Ave. Enroll/ Class	Station Occupancy	Ave. Weekly Room Hours	Room Utilization	WSCH
B114	210	Computer Classroom	805	26	31	121	7	17	66%	24	53.3%	481
	Totals		**805**	**26**	**31**	**121**	**7**	**17**	**66%**	**24**	**53.3%**	**481**
Maryland Guidelines for Community Colleges:					63				60%	15		

Braddock Hall (B)
AVERAGE CLASSROOM USE BY HOUR



Braddock Hall (B)
AVERAGE CLASS LABORATORY USE BY HOUR



CATOCTIN HALL (C)

Number of Classrooms: 5
Number of Classrooms Scheduled: 5

Average Weekly Room Utilization: 21 hours
Student Station Occupancy: 73%
Average Student Station Size: 30 NASF

Number of Class Labs: 21
Number of Class Labs Scheduled: 17

Average Weekly Room Utilization: 17 hours
Student Station Occupancy: 82%
Average Student Station Size: 41 NASF

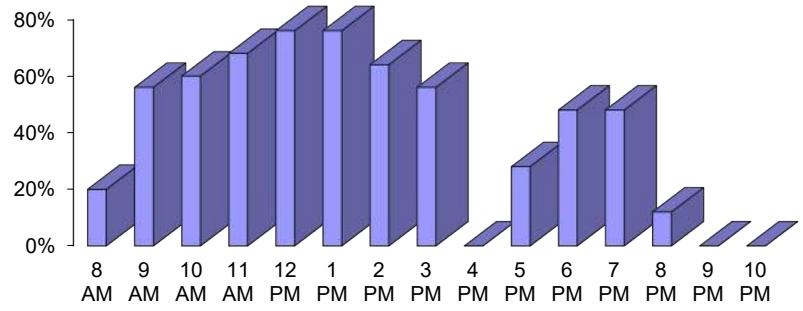
Catoctin Hall (C): 8:00 am – 4:59 pm **5 Classrooms Scheduled**

Room	Use Code	Room Use	NASF	No. of Stations	NASF/ Station	Total Students	No. of Classes	Ave. Enroll/ Class	Station Occupancy	Ave. Weekly Room Hours	Room Utilization	WSCH
C112	110	Classroom	775	30	26	163	8	20	68%	27	60.0%	555
C119	110	Classroom	649	24	27	102	6	17	71%	18	40.0%	308
C133	110	Classroom	917	20	46	160	10	16	80%	30	66.7%	482
C135	110	Classroom	619	24	26	131	7	19	78%	20	44.4%	389
KC100	110	Classroom	667	24	28	64	4	16	67%	12	26.7%	189
	Totals		**3,627**	**122**	**30**	**620**	**35**	**18**	**73%**	**21**	**47.6%**	**1,923**
Maryland Guidelines for Community Colleges:					18				60%	20		

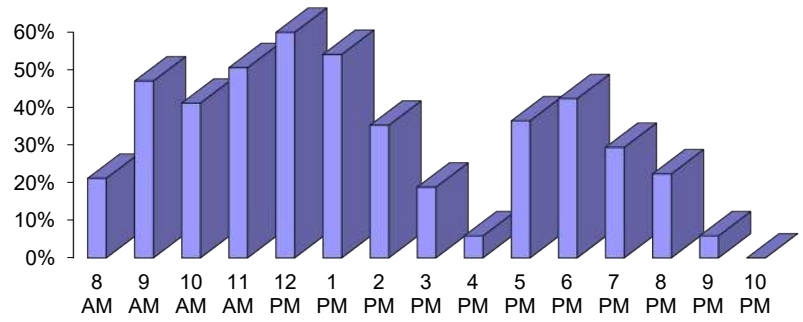
Catoctin Hall (C): 8:00 am – 4:59 pm **17 Class Laboratories Scheduled**

Room	Use Code	Room Use	NASF	No. of Stations	NASF/ Station	Total Students	No. of Classes	Ave. Enroll/ Class	Station Occupancy	Ave. Weekly Room Hours	Room Utilization	WSCH
C101	210	Chemistry Lab	1,261	24	53	72	6	12	50%	21	46.7%	231
C106	210	Chemistry Lab	1,043	30	35	185	10	19	62%	30	66.7%	555
C120	210	General Science Lab	899	24	37	151	8	19	79%	24	53.3%	457
C128	210	Anatomy & Physiology Lab	1,300	24	54	106	6	18	74%	18	40.0%	318
C130	210	Anatomy & Physiology Lab	1,297	24	54	90	4	23	94%	12	26.7%	270
C202	210	Computer Classroom	564	18	31	185	11	17	93%	27	60.0%	404
C203	210	CIS Class Lab	628	18	35	115	7	16	91%	16	35.6%	238
C206	210	Computer Classroom	536	18	30	139	8	17	97%	20	44.4%	311
C207	210	Cyber Class Lab	697	18	39	43	3	14	80%	6	13.3%	82
C208	210	Law Classroom	457	12	38	7	1	7	58%	4	8.9%	28
C209	210	CIS Class Lab	442	12	37	21	2	11	88%	6	13.3%	63
C211A	210	Computer Classroom	546	18	30	128	8	16	89%	20	44.4%	314
C211B	210	Computer Classroom	492	18	27	139	8	17	97%	23	51.1%	390
C227	210	Microbiology Lab	1,321	24	55	71	5	14	59%	15	33.3%	213
C229	210	Physical Science Lab	1,315	24	55	130	8	16	68%	24	53.3%	396
C234	210	General Biology Lab	979	24	41	156	7	22	93%	21	46.7%	468
C237	210	General Science Lab	677	24	28	39	2	20	81%	6	13.3%	117
	Totals		**14,454**	**354**	**41**	**1,777**	**104**	**17**	**82%**	**17**	**38.3%**	**4,855**
Maryland Guidelines for Community Colleges:					63				60%	15		

Catoctin Hall (C)
AVERAGE CLASSROOM USE BY HOUR



Catoctin Hall (C)
AVERAGE CLASS LABORATORY USE BY HOUR

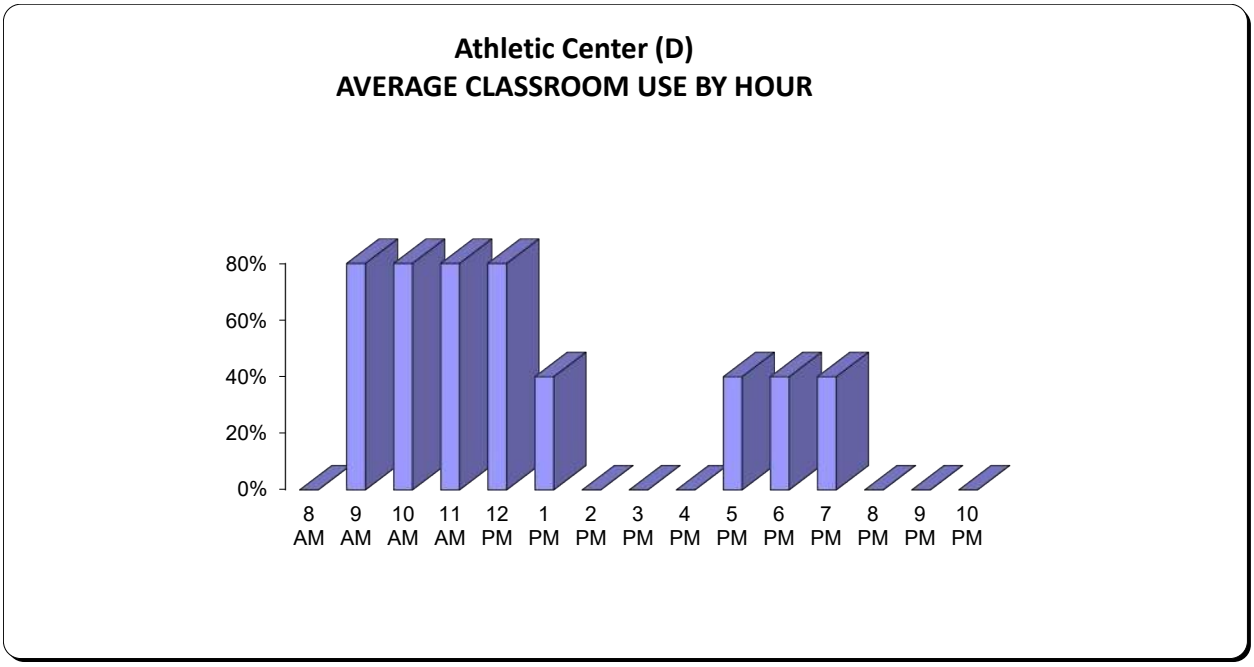


ATHLETIC CENTER (D)

Number of Classrooms:	1
Number of Classrooms Scheduled:	1
Average Weekly Room Utilization:	15 hours
Student Station Occupancy:	84%
Average Student Station Size:	21 NASF
Number of Class Labs:	0
Number of Class Labs Scheduled:	0
Average Weekly Room Utilization:	n/a
Student Station Occupancy:	n/a
Average Student Station Size:	n/a

Athletic Center (D): 8:00 am – 4:59 pm **1 Classroom Scheduled**

Room	Use Code	Room Use	NASF	No. of Stations	NASF/ Station	Total Students	No. of Classes	Ave. Enroll/ Class	Station Occupancy	Ave. Weekly Room Hours	Room Utilization	WSCH
D126	110	Classroom	502	24	21	101	5	20	84%	15	33.3%	303
	Totals		**502**	**24**	**21**	**101**	**5**	**20**	**84%**	**15**	**33.3%**	**303**
Maryland Guidelines for Community Colleges:					18				60%	20		



CONFERENCE CENTER (E)

Number of Classrooms: 6
Number of Classrooms Scheduled: 4

Average Weekly Room Utilization: 12 hours
Student Station Occupancy: 68%
Average Student Station Size: 26 NASF

Number of Class Labs: 4
Number of Class Labs Scheduled: 1

Average Weekly Room Utilization: 15 hours
Student Station Occupancy: 55%
Average Student Station Size: 47

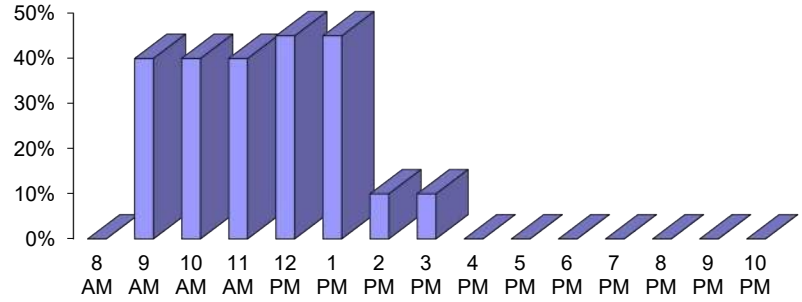
Conference Center (E): 8:00 am – 4:59 pm **4 Classrooms Scheduled**

Room	Use Code	Room Use	NASF	No. of Stations	NASF/ Station	Total Students	No. of Classes	Ave. Enroll/ Class	Station Occupancy	Ave. Weekly Room Hours	Room Utilization	WSCH
E104	110	Classroom	568	20	28	35	2	18	88%	9	20.0%	159
E124A	110	Classroom	528	20	26	107	7	15	76%	21	46.7%	321
E124B	110	Classroom	510	20	26	2	1	2	10%	9	20.0%	14
E125	110	Classroom	507	20	25	33	3	11	55%	10	22.2%	106
	Totals		**2,113**	**80**	**26**	**177**	**13**	**14**	**68%**	**12**	**27.2%**	**600**
Maryland Guidelines for Community Colleges:					18				60%	20		

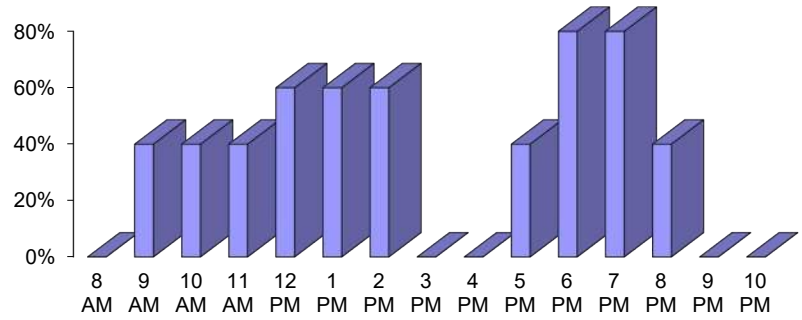
Conference Center (E): 8:00 am – 4:59 pm **1 Class Laboratory Scheduled**

Room	Use Code	Room Use	NASF	No. of Stations	NASF/ Station	Total Students	No. of Classes	Ave. Enroll/ Class	Station Occupancy	Ave. Weekly Room Hours	Room Utilization	WSCH
E105	210	Computer Classroom	941	20	47	55	5	11	55%	15	33.3%	168
	Totals		**941**	**20**	**47**	**55**	**5**	**11**	**55%**	**15**	**33.3%**	**168**
Maryland Guidelines for Community Colleges:					63				60%	15		

Conference Center (E)
AVERAGE CLASSROOM USE BY HOUR



Conference Center (E)
AVERAGE CLASS LABORATORY USE BY HOUR



VISUAL & PERFORMING ARTS CENTER (F)

Number of Classrooms:	4
Number of Classrooms Scheduled:	4
Average Weekly Room Utilization:	26 hours
Student Station Occupancy:	75%
Average Student Station Size:	32
Number of Class Labs:	9
Number of Class Labs Scheduled:	6
Average Weekly Room Utilization:	22 hours
Student Station Occupancy:	81%
Average Student Station Size:	59 NASF

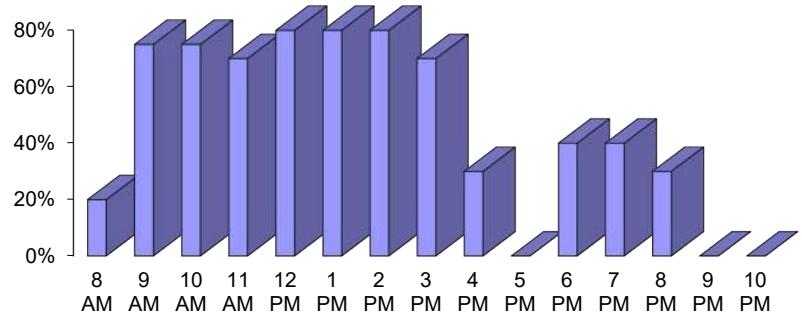
Visual & Performing Arts Center (F): 8:00 am – 4:59 pm **4 Classrooms Scheduled**

Room	Use Code	Room Use	NASF	No. of Stations	NASF/ Station	Total Students	No. of Classes	Ave. Enroll/ Class	Station Occupancy	Ave. Weekly Room Hours	Room Utilization	WSCH
F105	110	Classroom	760	22	35	186	11	17	77%	33	73.3%	558
F112	110	Classroom	636	22	29	119	8	15	68%	26	57.8%	345
F132	110	Classroom	607	25	24	146	7	21	83%	21	46.7%	438
F141	110	Classroom	879	20	44	120	8	15	75%	24	53.3%	360
	Totals		**2,882**	**89**	**32**	**571**	**34**	**17**	**75%**	**26**	**57.8%**	**1,701**
Maryland Guidelines for Community Colleges:					18				60%	20		

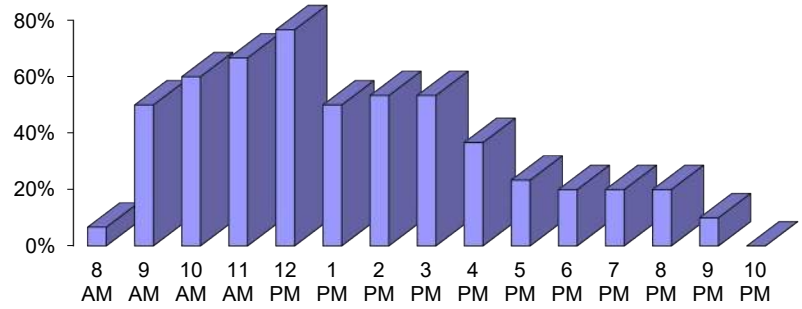
Visual & Performing Arts Center (F): 8:00 am – 4:59 pm **6 Class Laboratories Scheduled**

Room	Use Code	Room Use	NASF	No. of Stations	NASF/ Station	Total Students	No. of Classes	Ave. Enroll/ Class	Station Occupancy	Ave. Weekly Room Hours	Room Utilization	WSCH
F102	210	Music Classroom	876	15	58	79	7	11	75%	15	33.3%	185
F108	210	Computer Classroom	919	15	61	95	8	12	79%	24	53.3%	285
F118	210	Art Studio	819	15	55	57	4	14	95%	20	44.4%	274
F120	210	Sculpture Studio	824	16	52	87	6	15	91%	30	66.7%	417
F130	210	Art Studio	1,125	20	56	68	5	14	68%	25	55.6%	327
F131	210	Art Studio	1,197	16	75	57	4	14	89%	20	44.4%	273
	Totals		**5,760**	**97**	**59**	**443**	**34**	**13**	**81%**	**22**	**49.6%**	**1,761**
Maryland Guidelines for Community Colleges:					63				60%	15		

Visual & Performing Arts Center (F)
AVERAGE CLASSROOM USE BY HOUR



Visual & Performing Arts Center (F)
AVERAGE CLASS LABORATORY USE BY HOUR



STUDENT CENTER (H)

Number of Classrooms: 18
Number of Classrooms Scheduled: 18

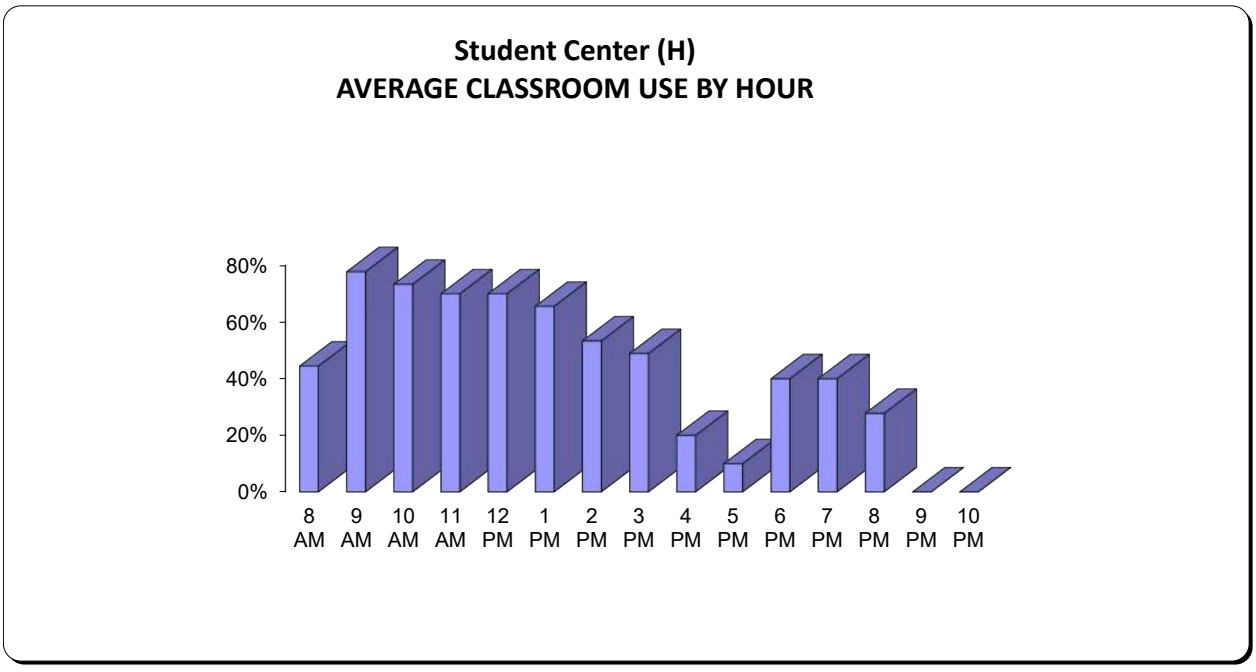
Average Weekly Room Utilization: 26 hours
Student Station Occupancy: 82%
Average Student Station Size: 37 NASF

Number of Class Labs: 0
Number of Class Labs Scheduled: 0

Average Weekly Room Utilization: n/a
Student Station Occupancy: n/a
Average Student Station Size: n/a

Student Center (H): 8:00 am – 4:59 pm **18 Classrooms Scheduled**

Room	Use Code	Room Use	NASF	No. of Stations	NASF/ Station	Total Students	No. of Classes	Ave. Enroll/ Class	Station Occupancy	Ave. Weekly Room Hours	Room Utilization	WSCH
H202	110	Classroom	750	25	30	69	5	14	55%	14	31.1%	199
H203	111	Classroom	743	25	30	105	6	18	70%	18	40.0%	315
H204	112	Classroom	831	27	31	191	10	19	71%	30	66.7%	574
H205	113	Classroom	859	27	32	257	13	20	73%	41	91.1%	797
H206	114	Classroom	833	27	31	227	9	25	93%	27	60.0%	681
H207	115	Classroom	886	20	44	106	7	15	76%	27	60.0%	395
H208	116	Classroom	839	25	34	207	9	23	92%	27	60.0%	621
H209	117	Classroom	858	20	43	137	8	17	86%	30	66.7%	501
H210	118	Classroom	840	22	38	112	7	16	73%	20	44.4%	326
H215	119	Classroom	881	20	44	172	10	17	86%	33	73.3%	562
H248	120	Classroom	780	15	52	100	8	13	83%	24	53.3%	300
H249	121	Classroom	833	25	33	186	10	19	74%	30	66.7%	558
H250	122	Classroom	855	20	43	207	11	19	94%	31	68.9%	584
H251	123	Classroom	855	20	43	128	7	18	91%	20	44.4%	358
H260	124	Classroom	855	20	43	176	9	20	98%	25	55.6%	423
H261	125	Classroom	855	20	43	148	8	19	93%	24	53.3%	444
H262	126	Classroom	812	25	32	156	8	20	78%	24	53.3%	468
H263	127	Classroom	807	25	32	122	6	20	81%	18	40.0%	366
	Totals		**14,972**	**408**	**37**	**2,806**	**151**	**19**	**82%**	**26**	**57.2%**	**8,472**
Maryland Guidelines for Community Colleges:					18				60%	20		



LINGANORE HALL (L)

Number of Classrooms: 9
Number of Classrooms Scheduled: 8

Average Weekly Room Utilization: 20 hours
Student Station Occupancy: 78%
Average Student Station Size: 30 NASF

Number of Class Labs: 8
Number of Class Labs Scheduled: 2

Average Weekly Room Utilization: 19 hours
Student Station Occupancy: 70%
Average Student Station Size: 54

Linganore Hall (L): 8:00 am – 4:59 pm **8 Classrooms Scheduled**

Room	Use Code	Room Use	NASF	No. of Stations	NASF/ Station	Total Students	No. of Classes	Ave. Enroll/ Class	Station Occupancy	Ave. Weekly Room Hours	Room Utilization	WSCH
L106	110	Classroom	599	20	30	22	3	8	37%	21	46.7%	159
L109	110	NM Lab[a]	705	25	28	102	6	17	68%	25	55.6%	411
L110	110	MDA Lab[a]	728	20	36	85	5	17	85%	16	35.6%	253
L111	210	Classroom[b]	918	34	27	147	6	25	72%	26	57.8%	609
L115	110	Hybrid Classroom	699	20	35	112	6	19	93%	18	40.0%	336
L116	110	Hybrid Classroom	707	20	35	98	5	20	98%	14	31.1%	275
L202	110	Classroom	674	25	27	119	7	17	68%	21	46.7%	357
L210	110	Classroom	705	25	28	149	7	21	85%	19	42.2%	397
	Totals		**5,735**	**189**	**30**	**834**	**45**	**19**	**78%**	**20**	**44.4%**	**2,797**
Maryland Guidelines for Community Colleges:					18				60%	20		

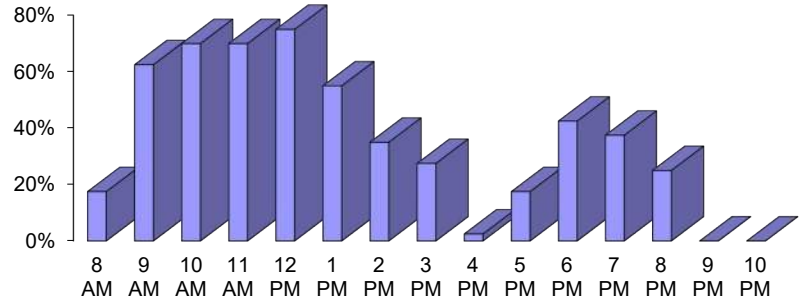
[a]Labeled as Class Lab (210), coded as Classroom (110), used primarily for lecture. Consider a Classroom (110) for this analysis.

[b]Labeled as Classroom (110), Coded as Class Lab (210), Data Component stated as Lecture, Used primarily for Health Science laboratory sections (210). Consider a Classroom (110) for this analysis.

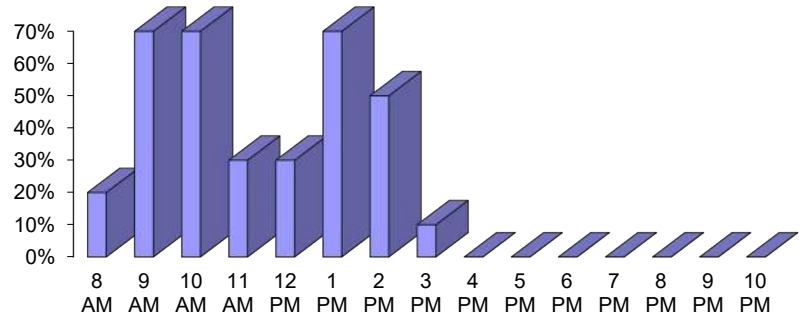
Linganore Hall (L): 8:00 am – 4:59 pm **2 Class Laboratories Scheduled**

Room	Use Code	Room Use	NASF	No. of Stations	NASF/ Station	Total Students	No. of Classes	Ave. Enroll/ Class	Station Occupancy	Ave. Weekly Room Hours	Room Utilization	WSCH
L102D	210	Video Lab	495	15	33	59	4	15	98%	16	35.6%	236
L208	210	Health Lab	1,388	20	69	100	9	11	56%	21	46.7%	219
	Totals		**1,883**	**35**	**54**	**159**	**13**	**12**	**70%**	**19**	**41.1%**	**455**
Maryland Guidelines for Community Colleges:					63				60%	15		

Linganore Hall (L)
AVERAGE CLASSROOM USE BY HOUR



Linganore Hall (L)
AVERAGE CLASS LABORATORY USE BY HOUR



SWEADNER HALL (S)

Number of Classrooms: 1
Number of Classrooms Scheduled: 1

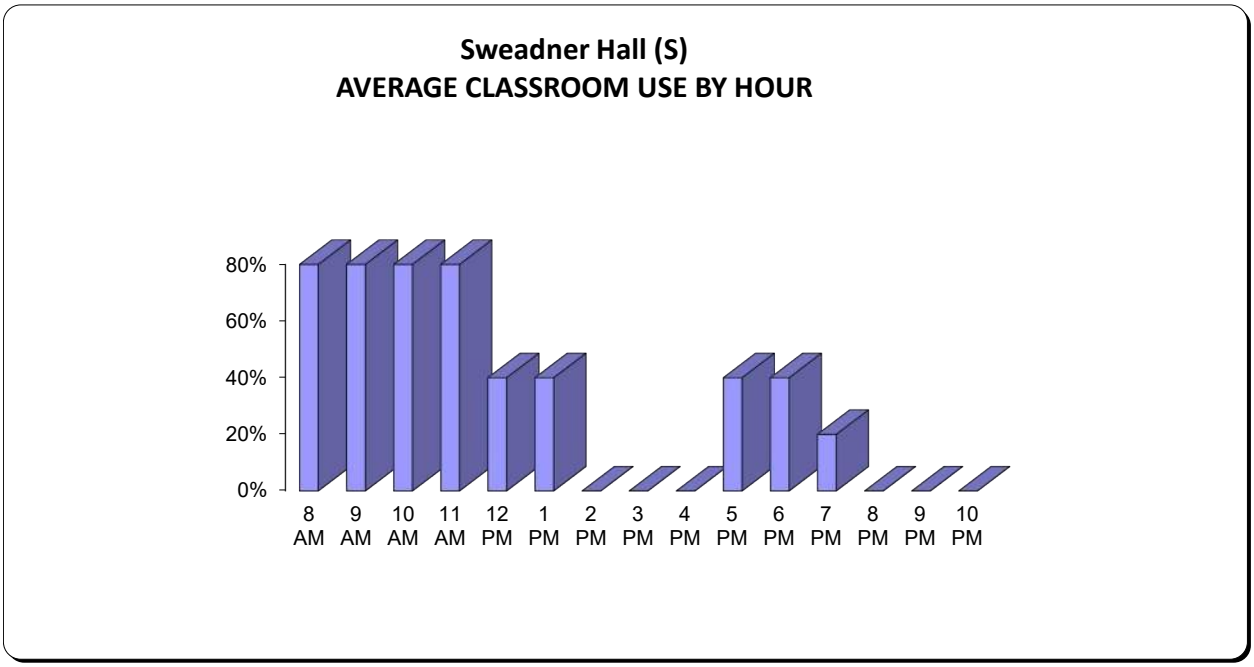
Average Weekly Room Utilization: 21 hours
Student Station Occupancy: 43%
Average Student Station Size: 27 NASF

Number of Class Labs: 0
Number of Class Labs Scheduled: 0

Average Weekly Room Utilization: n/a
Student Station Occupancy: n/a
Average Student Station Size: n/a

Sweadner Hall (S): 8:00 am – 4:59 pm **1 Classroom Scheduled**

Room	Use Code	Room Use	NASF	No. of Stations	NASF/ Station	Total Students	No. of Classes	Ave. Enroll/ Class	Station Occupancy	Ave. Weekly Room Hours	Room Utilization	WSCH
S100	110	Lecture Hall	1,618	60	27	181	7	26	43%	21	46.7%	543
	Totals		**1,618**	**60**	**27**	**181**	**7**	**26**	**43%**	**21**	**46.7%**	**543**
Maryland Guidelines for Community Colleges:					18				60%	20		



MONROE CENTER (MC)

Number of Classrooms:	9
Number of Classrooms Scheduled:	1
Average Weekly Room Utilization:	4 hours
Student Station Occupancy:	80%
Average Student Station Size:	27 NASF
Number of Class Labs:	10
Number of Class Labs Scheduled:	1
Average Weekly Room Utilization:	6 hours
Student Station Occupancy:	64%
Average Student Station Size:	86 NASF

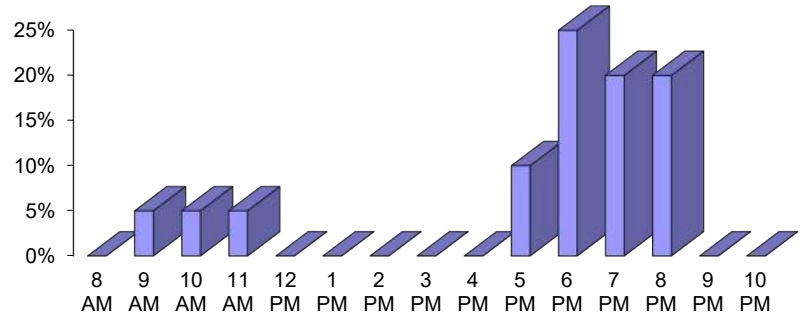
Monroe Center (MC): 8:00 am – 4:59 pm **1 Classroom Scheduled**

Room	Use Code	Room Use	NASF	No. of Stations	NASF/ Station	Total Students	No. of Classes	Ave. Enroll/ Class	Station Occupancy	Ave. Weekly Room Hours	Room Utilization	WSCH
MC117	110	Classroom	536	20	27	16	1	16	80%	4	8.9%	58
	Totals		**536**	**20**	**27**	**16**	**1**	**16**	**80%**	**4**	**8.9%**	**58**
Maryland Guidelines for Community Colleges:					18				60%	20		

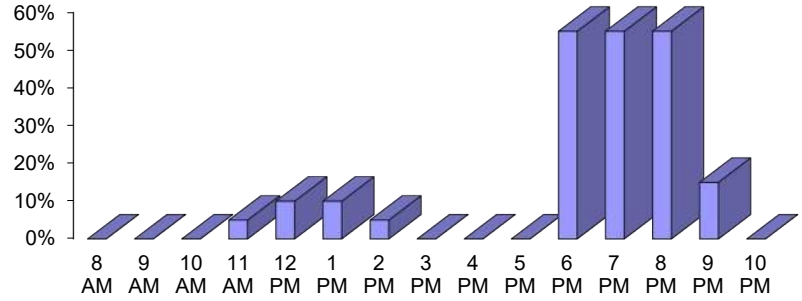
Monroe Center (MC): 8:00 am – 4:59 pm **1 Class Laboratory Scheduled**

Room	Use Code	Room Use	NASF	No. of Stations	NASF/ Station	Total Students	No. of Classes	Ave. Enroll/ Class	Station Occupancy	Ave. Weekly Room Hours	Room Utilization	WSCH
MC135	210	Maker Space	1,552	18	86	23	2	12	64%	6	13.3%	71
	Totals		**1,552**	**18**	**86**	**23**	**2**	**12**	**64%**	**6**	**13.3%**	**71**
Maryland Guidelines for Community Colleges:					63				60%	15		

Monroe Center (MC)
AVERAGE CLASSROOM USE BY HOUR



Monroe Center (MC)
AVERAGE CLASS LABORATORY USE BY HOUR



Demand Against Existing and Projected Space

The base year for this analysis is 2020. Current demands against existing space reflect the actual situation during the fall term of 2020 while data projected to 2030 are statistically based and are, for the most part, assumptions made by the Maryland Higher Education Commission. Summary explanations of the data assumptions for the input items are as follows:

- **Student Data** (FTDE) are calculated from course credit hours. Credit hour and contact hour data are derived from current enrollment course data provided by the College; then the Maryland Higher Education Commission projects an annual average growth in enrollment of 2.4% through 2030.

- **Faculty and Staff Data** for 2020 are provided by the College. Information about the projected numbers of faculty is obtained by maintaining the current student/faculty ratio. Information about the projected numbers of staff is based on an anticipated average annual growth rate of 2.4% over the next ten years as determined by the Maryland Higher Education Commission.

- **Library Volume Data**, in terms of Bound Volume Equivalent (BVE), is based on projections as determined by the Maryland Higher Education Commission.

- **Parking Space Data** is provided by the College. Information about the projected number of parking spaces derived by applying planned adjustments over the next ten years to the existing parking space inventory. Demand against that inventory is generated by the numbers of projected students, faculty and staff as determined by the Maryland Higher Education Commission. Input for this data element reflects parking at the main campus location only.

As of this *Plan's* publication, the 2021 to 2030 projected net change in space inventory is the result of the following programmed building projects: Annapolis Hall, Linganore Hall, and Athletic Center. The current space inventory plus the net change serves as the 2030 base or supply against which the need (eligibility), generated by the demand of future enrollments, staffing and library volumes would be quantified.

Student Enrollments

Headcount enrollments and full-time equivalent student (FTE or FTES) enrollments are the primary measures of student population. Although the headcount is most commonly used when referring to enrollments, this measure is generally not used as a primary metric for determining space needs.

The most generally accepted method of counting students for purposes of assessing facilities needs is the FTE. However, it is useful to analyze trends in headcount enrollments with particular attention given to the mix of full-time versus part-time students. Because full-time students have more needs for space than do part-time students, a sizeable shift in the ration of full-time to part-time could have a significant impact on FTE generation, and consequently, on overall space needs.

Analyses during quantitative assessments of space needs primarily focuses upon academic activities that occur during the prime hours before 5:00 p.m. (Day), and will be engaged by full-time and part-time students, faculty and staff. Students enrolled during these hours are referred to as full-time day equivalent students (FTDES). While presenting various measures of

FTES is important, of prime significance is establishing a stable foundation of planning tools upon which the effectiveness and quality of instructional environments necessary for learning can be predicted. For those purposes, projections of weekly student contact hours (WSCH) are also presented.

Estimates are that the total on-campus WSCH will reach 43,016 by fall 2030. Of this total, approximately 30,664 WSCH will be generated by lecture segments and approximately 12,352 are expected to occur in laboratory segments for courses offered before 5:00 p.m.

Determination of program and course content ten years out is difficult at best. However, given an anticipated number of students to be enrolled, projections of weekly student contact hours generated, as well as the number of classroom and laboratory sections, general estimations of space need can be calculated. These projections of weekly student contact hours form the basis for planning for future instructional spaces. Projections of enrollments for fall 2021 through fall 2030 represent the recommendations developed by the Maryland Higher Education Commission in keeping with the pursuit of Frederick Community College's mission through the year 2030. The table below presents an overall distribution of projected credit/contact hours for fall term 2030 in comparison with fall 2020 enrollments. The table isolates those on-campus credit hours, FTDES and weekly student contact hours expected to be generated on-campus during the day before 5:00 p.m.

Current and Projected Enrollments by Headcount, Credit Hours, FTES, FTDES and WSCH

						On-Campus Before 5:00 p.m.			
	Full-Time Headcount	Part-Time Headcount	Total Headcount	Credit Hours	FTES	Credit Hours	FTDES	WSCH Lecture	WSCH Laboratory
Fall 2020	1,719	4,037	5,756	46,607	3,107	34,016	2,268	24,298	9,788
Fall 2030	2,414	5,366	7,780	66,795	4,453	42,915	2,861	30,664	12,352
% Change 2020-2030	40.4%	32.9%	35.2%	43.3%	43.3%	26.2%	26.2%	26.2%	26.2%
Average Annual Growth Rate	3.5%	2.9%	3.1%	3.7%	3.7%	2.4%	2.4%	2.4%	2.4%

Data Sources: FCC Office of Planning, Assessment and Institutional Research (2020 Actual) and Maryland Higher Education Commission (2030 Projected)

While the use of static demographics may not be realistic for micro-level planning, such as individual project programming where population movement needs to be considered and planned for, macro-level analysis and estimates of future student populations often using static demographic data have shown to be a relatively reliable tool for most facilities master planning purposes.

When student population movement is projected by means of comprehensive academic planning and/or expressions of institutional policy, such considerations are incorporated into space planning guidelines applications to set priorities for campus development and to compute campus-wide allowances for each category of space. In instances where such is not the case, static data for student enrollments, faculty and staff levels, and library collections are appropriately used as the basis for computing future campus-wide estimates of needed space.

Faculty and Staff

The College expects to maintain its current student/faculty ratios for the year 2030.

Current and Projected Faculty and Staff Summary

	Faculty (Credit & Non-Credit				Staff		
	Full-Time[a]	Part-Time	Total	FTEF	Full-Time	Part-Time	Total
Fall 2020	101	365	466	192	311	205	516
Fall 2030	127	461	588	243	392	259	651
% Change 2020-2030	26.2%	26.2%	26.2%	26.2%	26.2%	26.2%	26.2%
Average Annual Growth Rate	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%

Data Sources: FCC Capital Planning and Project Management (2020 Actual) and Maryland Higher Education Commission (2030 Projected)

[a]Includes full-time librarians (five in 2020 and six in 2030)

Library Volumes

Use of Bound Volume Equivalents (BVE) is a generally accepted determinant of need for stack space that houses library collections. The BVE concept provides for conversion of a variety of collections materials such as e-books, audiovisual materials, and electronic reference sources into amounts equal to a typical book. Although the term bound volume equivalent is used to reference the measure of overall library collections, it should not be construed that growth in BVE's necessarily means a corresponding growth in actual "book" resources. Although gradual acquisition of electronic formats is a goal for libraries and will begin to reduce some storage needs long term, particularly for journals, reference books, and government documents, these new formats will not obviate the need for stack space.

The learning landscape is constantly and dramatically changing in terms of the ways by which people learn and the technologies that can facilitate the learning process. Increasing use of technology that facilitates teaching, learning, and accessing and processing information creates demands for library spaces that bring together information resources. Technology also affects other kinds of space needs. Accommodating the added space needed for computer workstations, support systems and other technology often comes at the expense of space for collections or services.

Just as the use of static demographics is generally accepted as reliable in macro-level planning for people-driven space requirements, the use of book equivalents is generally accepted methodology for estimating long-range space needs for library collections. At the time of actual programming for future learning commons facilities, as is true for other facilities, more timely consideration can be given to actual planning for design that is contemporary.

Current and Projected Bound Volume Equivalents (BVE)

	BVE
Fall 2020	41,070
Fall 2030	54,530

Data Source: Maryland Higher Education Commission

Parking

The focus of this *Facilities Master Plan* does not include a parking utilization study. Therefore, calculated existing and projected demand for parking and its impact appear later in this chapter as suggested allowances under Maryland's *Space Allocation Guidelines for Community Colleges*.

Space Guidelines Application and Analysis

Computation of quantitative need for space is based primarily on the projected program of instruction and the number of weekly student contact hours (WSCH) that it generates. Determinations of current and projected space deficits and/or surpluses are driven by current space inventory and anticipated changes, current enrollment and projected enrollments, and current and anticipated staffing levels.

The consultant team used the space guidelines model developed by the State of Maryland and published under *Title 13B of the Code of Maryland Regulations (COMAR)*. These guidelines, Space Allocation Guidelines for Community Colleges, provide an initial quantitative assessment of campus-wide facility needs (eligibility) for State-funded building and parking space.

By applying information about the type of space required to teach the various courses to the current and projected enrollments previously presented, it is possible to determine the approximate amount of space that is allowed using guidelines. Application of the same enrollment-driven data to the *Guidelines* parking algorithm results in an approximate number of parking spaces allowed. Then by applying space inventory data, it is possible to determine the current and projected space deficits and/or surpluses.

Assumptions made for the application of formulae-driven space computations for fall 2030, are shown in the following table and are applied to existing and projected campus space inventories.

Guidelines Planning Assumptions

	FTES	FTDES	WSCH Lecture	WSCH Laboratory	Full-Time Faculty	Part-Time Faculty	Full-Tme Staff	Full-Time Librarians	Library Volumes
Fall 2020	3,107	2,268	24,298	9,788	101	365	309	2	41,070
Fall 2030	4,453	2,861	30,664	12,352	127	461	390	3	54,530
Percent Change 2020-2030	43%	26%	26%	26%	26%	26%	26%	50%	33%
Average Annual Growth Rate	3.7%	2.3%	2.4%	2.4%	2.3%	2.4%	2.4%	4.1%	2.9%

Data Sources: FCC Office of Planning, Assessment and Institutional Research (Fall 2020 Enrollment)
: FCC Capital Planning and Project Management (Fall 2020 Staffing)
: Maryland Higher Education Commission (Fall 2030 Enrollment and Staffing Projections) (Library BVE)

Building Space

With respect to current and projected space deficits and surpluses as the result of the *Guidelines* application, review of the individual data elements reveals the following:

Academic Space: This group includes the types of spaces most typically used for scheduled and nonscheduled instructional activities.

Academic Space

Space Use Category	Use Code	Base Year (Fall 2020) Inventory NASF	Allowance NASF	(Deficit)/ Surplus	2021-2030 Net Change[a]	Projected Year (Fall 2030) Inventory NASF	Allowance NASF	(Deficit)/ Surplus
Academic Space								
Classroom	110	57,181	36,447	20,734	(580)	56,601	45,977	10,624
Class Laboratory	210	60,270	68,516	(8,246)	5,894	66,164	86,429	(20,265)
Open Laboratory	220	8,571	9,526	(955)	1,066	9,637	12,016	(2,379)
Totals		**126,022**	**114,489**	**11,533**	**6,380**	**132,402**	**144,422**	**(12,020)**

[a]Net Change includes programmed NASF for the following: Renovations to Annapolis Hall, Renovation of Linganore Hall, and Renovation/Addition to Athletics Center.

Classroom (110): A room or space used primarily for instruction classes and that is not tied to a specific subject or discipline by equipment in the room or the configuration of the space. This category includes general purpose classrooms, lecture halls, seminar rooms, and support rooms that directly service classroom activity.

Guideline allowance assumes 20 hours per week target room utilization; 60% seat occupancy rate; and 18 NASF per student station.

Given the current inventory of classroom space, guideline application suggests a current surplus of 20,734 NASF and a surplus of 10,624 NASF by 2030. This anticipated reduced space surplus is attributed primarily to a projected 26% increase in enrollment with virtually no change in available classroom space.

The College currently owns 157% of the space allowance in this category. The data suggests that by 2030, the College will own 123% of its computed space allowance.

Class Laboratory/Open Laboratory (210/220): A class laboratory or teaching laboratory (210) is space used primarily for formally or regularly scheduled instruction (including associated mandatory, but noncredit-earning laboratories) that requires special purpose equipment or a specific space configuration for student participation, experimentation, observation, or practice in an academic discipline. Included in this category are spaces generally called teaching laboratories, instructional shops, art studios, computer laboratories, drafting rooms, band rooms and similar specially designed or equipped rooms, and support rooms that directly service class laboratory activity.

An open laboratory (220) is used primarily for individual or group instruction that is informally scheduled, unscheduled, or open. An open laboratory is designed for or furnished with equipment that serves the needs of a particular discipline or discipline group for individual or group instruction. Included in this category are spaces generally called music practice rooms, language laboratories used for individualized instruction, studios for individualized instruction, special laboratories or learning laboratories if discipline restricted, individual laboratories, and computer laboratories involving specialized restrictive software or where access is limited to specific categories of students.

Class Laboratory guideline allowance assumes 15 hours per week target room utilization; 60% seat occupancy rate; 50 NASF per student for natural and social science labs; and 115 NASF per student station for technical and career labs. The allowance assumes 80% of lab contact hours are generated in natural and social science labs, and 20% in technical and career labs. Open Laboratory guideline allowance assumes a space factor of 4.2 NASF/FTDE.

Given the current inventory of laboratory space, guideline application suggests a current deficit in class laboratory space of 8,246 NASF and a deficit of 20,265 NASF by 2030. Application to open laboratory space suggests a current deficit of 955 NASF and a deficit of 2,379 NASF by 2030. This anticipated reduced space deficit is attributed primarily to a projected 26% increase in enrollment with only 10% increase in available laboratory space.

The College currently owns 88% of the space allowance in this combined category. The data suggests that by 2030, the College will own 77% of its computed space allowance.

Academic Support Space: These spaces provide environments that directly support the institution's instructional and research activities.

Academic Support Space

Space Use Category	Use Code	Base Year (Fall 2020) Inventory NASF	Allowance NASF	(Deficit)/ Surplus	2021-2030 Net Change[a]	Projected Year (Fall 2030) Inventory NASF	Allowance NASF	(Deficit)/ Surplus
Academic Support Space								
Office	300	80,010	105,094	(25,084)	2,258	82,268	131,951	(49,683)
Study	400	12,344	19,925	(7,581)	5,794	18,138	25,515	(7,377)
Athletics/Physical Education	520	19,698	41,680	(21,982)	2,803	22,501	47,610	(25,109)
Media Production	530	851	2,214	(1,363)	0	851	2,689	(1,838)
Greenhouse	580	0	1,000	(1,000)	0	0	1,000	(1,000)
Assembly	610	8,692	13,536	(4,844)	0	8,692	14,722	(6,030)
Exhibition	620	397	1,884	(1,487)	0	397	2,181	(1,784)
Food Facility	630	8,780	14,708	(5,928)	0	8,780	18,544	(9,764)
Lounge	650	2,351	4,326	(1,975)	0	2,351	5,454	(3,103)
Merchandising	660	5,966	1,984	3,982	(44)	5,922	2,281	3,641
Meeting Room	680	4,438	6,000	(1,562)	240	4,678	6,000	(1,322)
Data Processing	710	1,619	2,500	(881)	0	1,619	2,500	(881)
Shops/Storage	720-740	11,449	13,360	(1,911)	1,144	12,593	16,386	(3,793)
Central Service	750	1,565	4,000	(2,435)	0	1,565	4,000	(2,435)
Hazmat Storage	760	0	267	(267)	0	0	328	(328)
Health Care Facilities	800	0	654	(654)	0	0	772	(772)
Totals		**158,160**	**233,132**	**(74,972)**	**12,195**	**170,355**	**281,933**	**(111,578)**

[a]Net Change includes programmed NASF for the following: Renovations to Annapolis Hall, Renovation of Linganore Hall, and Renovation/Addition to Athletics Center.

Office (300): Office facilities are individual, multi-person, or workstation spaces specifically assigned to faculty, staff, or students in academic, administrative, and service functions of a college or university. This category also includes conference rooms, file rooms, break rooms, kitchenettes, copy rooms, and testing/tutoring space. The guideline allows:

- 166 NASF per individual requiring office space, plus 1,120 NASF core space for student offices
- 1,500 NASF core space, plus 0.5 NASF/FTDE in excess of 1,500 FTDE for testing and tutoring

Given the current inventory of office space, guideline application suggests a current deficit of 25,084 NASF and a deficit of 49,683 NASF by 2030.

The College currently owns 76% of the space allowance in this category. The data suggests that by 2030, the College will own 62% of its computed space allowance.

Study (400): In this context, study space refers to individually or collectively, three space categories:

- Study (410): A room or area used by individuals to study at their convenience and not restricted to a particular subject or discipline by contained equipment. It includes rooms or areas located in the library or other buildings. Study spaces are primarily used by students or staff for learning at their convenience.

- Stack/Study (420/30): Stack is a space used to house arranged collections of educational materials for use as a study resource. Stack/Study is a combination study space and stack, generally without physical boundaries between the stack and study areas.

- Processing/Service (440): A room or area devoted to processes and operations in support of library functions. Included are card and microfiche areas, reference desk and circulation desk areas, bookbinding rooms, multimedia materials processing areas, interlibrary loan processing areas, and other areas with a specific process or operation in support of library functions.

Guideline allowance assumes a combination of three separate space factors:

- Seating: 25 NASF per seating station for 25% of FTDE
- Stack: .1 NASF per Bound Volume Equivalent
- Processing/Service: 40% of Stack space plus a core of 1,200 NASF

Given the current inventory of collective study space, guideline application suggests a current deficit of 7,581 NASF and a deficit of 7,377 NASF by 2030.

The College currently owns 62% of the space allowance in this category. The data suggests that by 2030, the College will own 71% of its computed space allowance.

Athletics/Physical Education (520): A room or area used by students, staff, or the public for athletic or physical education activities. Athletics/Physical Education space includes gymnasia, basketball courts, handball courts, squash courts, wrestling rooms, weight or exercise rooms, racquetball courts, indoor swimming pools, indoor putting areas, indoor ice rinks, indoor tracks, indoor stadium fields, and field houses. This category includes space used for dancing and bowling.

Guideline allowance assumes 10 NASF/FTDE beyond 1,500 plus a core of 34,000 NASF:

Given the current inventory of athletics/physical education space, guideline application suggests a current deficit of 21,982 NASF and a deficit of 25,109 NASF by 2030.

The College currently owns 47% of the space allowance in this category. The data suggests that by 2030, the College will continue to own 47% of its computed space allowance.

Media Production (530): A space used for production or distribution of multimedia materials or signals. This category includes spaces generally called TV studios, radio studios, sound studios, photo studios, video or audio cassette and software production or distribution rooms, and media centers.

Guideline allowance assumes 0.8 NASF/FTDE beyond 1,500 plus a core of 1,600 NASF.

Given the current inventory of media production space, guideline application suggests a current deficit of 1,363 NASF and a deficit of 1,838 NASF by 2030.

The College currently owns 38% of the space allowance in this category. The data suggests that by 2030, the College will own 32% of its computed space allowance.

Greenhouse (580): A building or room usually composed chiefly of glass, plastic, or other light-transmitting material, which Is used for the cultivation or protection of plants or seedlings for research, instruction or campus physical maintenance or improvement purposes.

Guideline allowance assumes a minimum core of 1,000 NASF.

Given the current inventory contains no space classified as Greenhouse, guideline application suggests a current deficit of 1,000 NASF and a continued deficit of 1,000 NASF by 2030.

Assembly (610): A space designed and equipped for the assembly of many persons for such events as dramatic, musical, devotional, livestock judging, or commencement activities. Includes theaters, auditoria, concert halls, arenas, and chapels that are used primarily for general presentations (speakers), performances (dramatic, musical, dance), and devotional services.

Guideline allowance assumes 2 NASF/FTDE beyond 1,500 plus a core of 12,000 NASF.

Given the current inventory of assembly space, guideline application suggests a current deficit of 4,844 NASF and a deficit of 6,030 NASF by 2030.

The College currently owns 64% of the space allowance in this category. The data suggests that by 2030, the College will own 59% of its computed space allowance.

Exhibition (620): A room or area used for exhibition of materials, works of art, artifacts, etc., and intended for general use by faculty, students, staff, and the public. This includes both departmental and institution-wide museums, galleries, and similar exhibition areas that are used to display materials and items for viewing by institutional population and the public.

Guideline allowance assumes 0.5 NASF/FTDE beyond 1,500 plus a core of 1,500 NASF.

Given the current inventory of exhibition space, guideline application suggests a current deficit of 1,487 NASF and a deficit of 1,784 NASF by 2030.

The College currently owns 21% of the space allowance in this category. The data suggests that by 2030, the College will own 18% of its computed space allowance.

Food Facility (630): Rooms intended for the consumption of food, and rooms that provide direct service. This category includes dining halls, cafeterias, snack bars, restaurants, kitchens, food serving areas, food storage, dishwashing, and cleaning areas. Also included are such facilities located in residence halls.

Guideline allowance assumes 10.2 NASF times Planning Headcount (50% FTDE, FTEF, and FT Staff).

Given the current inventory of food facility space, guideline application suggests a current deficit of 5,928 NASF and a deficit of 9,764 NASF by 2030.

The College currently owns 60% of the space allowance in this category. The data suggests that by 2030, the College will own 47% of its computed space allowance.

Lounge (650): Lounge space used for rest and relaxation that is not restricted to a specific group of people, unit, or area. A lounge facility

is typically equipped with upholstered furniture, draperies, and carpeting, and may include vending machines.

Guideline allowance assumes 3.0 NASF times Planning Headcount (50% FTDE, FTEF, and FT Staff).

Given the current inventory of food facility space, guideline application suggests a current deficit of 1,975 NASF and a deficit of 3,103 NASF by 2030.

The College currently owns 54% of the space allowance in this category. The data suggests that by 2030, the College will own 43% of its computed space allowance.

Merchandising (660): This classification is for areas used to sell products or services. Examples include bookstores, student supply stores, campus food stores, barber and beauty shops, walk-away vending areas, and central ticket outlets.

Guideline allowance assumes 0.5 NASF/FTDE beyond 1,500 plus a core of 1,600 NASF.

Given the current inventory of exhibition space, guideline application suggests a current surplus of 3,982 NASF and a surplus of 3,641 NASF by 2030.

The College currently owns 301% of the space allowance in this category. The data suggests that by 2030, the College will own 260% of its computed space allowance.

Meeting Room (680): A room that is used by the institution and is also available to the public for a variety of non-class meetings.

Guideline allowance assumes a core of 6,000 NASF.

Given the current inventory of meeting room space, guideline application suggests a current deficit of 1,562 NASF and a deficit of 1,322 NASF by 2030.

The College currently owns 74% of the space allowance in this category. The data suggests that by 2030, the College will own 78% of its computed space allowance.

Data Processing (710): A space used as a data or telecommunications center with applications that are broad enough to serve the overall administrative or academic primary equipment needs of a central group of users, department, college, school, or entire institution.

Guideline allowance assumes 0.75 NASF/FTDE beyond 4,000 plus a core of 2,500 NASF.

Given the current inventory of exhibition space, guideline application suggests a current deficit of 881 NASF and a deficit of 881 NASF by 2030 also.

The College currently owns 65% of the space allowance in this category. The data suggests that by 2030, the College will continue to own 65% of its computed space allowance.

Shops/Storage (720-740): In this context, Shops/Storage refers to individually or collectively, three space categories:

- Shops (720): for the manufacture, repair, or maintenance of products or equipment. Includes carpenter, plumbing, HVAC, electrical, and painting shops, and similar physical plant maintenance facilities.

- Storage (730): A space or building that is used to store equipment or materials and that serves multiple space use categories, organizational units, or buildings.

- Vehicle Storage (740): A space or structure that is used to house or store vehicles.

Guideline allowance assumes 4% of all other campus inventory except Shops/Storage and Hazmat Storage.

Given the current inventory of shops/storage space, guideline application suggests a current deficit of 1,911 NASF and a deficit of 3,793 NASF by 2030.

The College currently owns 86% of the space allowance in this category. The data suggests that by 2030, the College will own 77% of its computed space allowance.

Central Service (750): A room or area that is used for the processing, preparation, testing, or delivery of a complex-central or campus-wide support service. Includes centralized food stores and laundries that typically serve the occupants or activities of more than one building. Also includes central facilities for printing and duplicating services, central mail facilities, central shipping and receiving areas, and central environmental testing or monitoring facilities, if they serve the occupants and activities of more than one building.

Guideline allowance assumes 1.0 NASF/FTDE beyond 4,000 plus a core of 4,000 NASF.

Given the current inventory of central service space, guideline application suggests a current deficit of 2,435 NASF and a deficit of 2,435 NASF by 2030 also.

The College currently owns 39% of the space allowance in this category. The data suggests that by 2030, the College will still own 39% of its computed space allowance.

Other Classified Space (Ad Hoc)

Hazmat Storage (760): A **centralized** facility used for the storage of materials planned for future use or distribution that are considered hazardous by the physical, chemical, biological, or radioactive nature of the materials.

Guideline allowance assumes 2% of existing shops/storage/vehicle storage/repair NASF.

Given the current inventory contains no space classified as Hazmat Storage, guideline application suggests a current deficit of 267 NASF and a continued deficit of 368 NASF by 2030.

Health Care Facilities (800): Space used for patient care areas that are located in separately organized and budgeted health care facilities: student infirmaries and centers, teaching hospitals, stand-alone clinics run by these hospitals, and veterinary and medical schools.

Guideline allowance assumes 0.2% NASF/FTDE beyond 1,500 plus a core of 500 NASF.

Given the current inventory contains no space classified as Health Care Facilities, guideline application suggests a current deficit of 654 NASF and a continued deficit of 772 NASF by 2030.

Other Classified Space (Ad Hoc): This grouping represents spaces that are not addressed by Maryland's *Space Allocation Guidelines for Community Colleges*. These are specialized spaces for which need is based entirely on programmatic requirements which vary by institution. For these ad-hoc categories of spaces, existing and projected space is the guideline.

Space Use Category	Use Code	Base Year (Fall 2020) Inventory NASF	Allowance NASF	(Deficit)/ Surplus	2021-2030 Net Change[a]	Projected Year (Fall 2030) Inventory NASF	Allowance NASF	(Deficit)/ Surplus
Other Classified Space (Ad Hoc)								
Research Laboratory	250	1,254	1,254	0	0	1,254	1,254	0
Demonstration	550	1,437	1,437	0	0	1,437	1,437	0
Day Care	640	6,077	6,077	0	0	6,077	6,077	0
Recreation	670	1,892	1,892	0	0	1,892	1,892	0
Totals		**10,660**	**10,660**	**0**	**0**	**10,660**	**10,660**	**0**

[a]Net Change includes programmed NASF for the following: Renovations to Annapolis Hall, Renovation of Linganore Hall, and Renovation/Addition to Athletics Center.

Unclassified Space: These spaces are assignable area that are inactive or unassigned; in the process of being altered, renovated, or converted; or in an unfinished state at the time of the inventory. They include inactive areas, alteration or conversion areas and unfinished areas. Inactive areas are spaces that are available for assignment to an organizational unit or activity. Another area of unclassified space is "other organizations." These are spaces that are being occupied by entities other than the College and are not available for College use and are listed as ad-hoc. At the time of the inventory, the only unclassified spaces were 210 NASF in Annapolis Hall and the 10,303 NASF occupied by Frederick County Workforce Services in the Monroe Center.

Unclassified Space

Space Use Category	Use Code	Base Year (Fall 2020) Inventory NASF	Allowance NASF	(Deficit)/ Surplus	2021-2030 Net Change[a]	Projected Year (Fall 2030) Inventory NASF	Allowance NASF	(Deficit)/ Surplus
Unclassified Space								
Other Organizations	090	10,512	10,512	0	(210)	10,302	10,302	0
Totals		**10,512**	**10,512**	**0**	**(210)**	**10,302**	**10,302**	**0**

[a]Net Change includes programmed NASF for the following: Renovations to Annapolis Hall, Renovation of Linganore Hall, and Renovation/Addition to Athletics Center.

Parking Space

Maryland's *Space Allocation Guidelines for Community Colleges* are also used to compute parking allowances. The *Guidelines* allow 300 square feet per car and a number of spaces to accommodate 75% of full-time faculty, staff, and eligible full-time day equivalent students with regular parking. In addition to regular parking spaces, the *Americans with Disabilities Act* (ADA) requires reserved spaces for disabled individuals.

Frederick Community College has 2,020 parking spaces distributed among 14 lots and a parking deck. 1,695 spaces are available for students and the general public, 267 spaces are for employees, and 58 spaces are reserved for disabled individuals.

When *Guidelines* input data assumptions are applied to current parking inventory data, it is possible to calculate the number of parking spaces allowed for state funding participation. The current parking inventory was presented earlier and calculations of allowance are provided in the following table.

Current and Projected Parking Deficits/Surpluses

Parking Category	Factor	Allowance Current	Inventory 2020	Surplus/ (Deficit)	Allowance 10 Years	Inventory 2030	(Deficit)/ Surplus
FTDE-T	0.75	1,701			2,146		
FT-Faculty plus Staff	0.75	309			389		
Visitors	0.02	40			51		
Reserved Accessible (ADA)	Required	41			52		
Total Spaces		**2,091**	**2,020**	**(71)**	**2,637**	**2,020**	**(617)**

Data Sources: FCC Capital Planning and Project Management (Inventories), COMAR 13B.07.05.04 (allowances)

The College currently owns 97% of *Guidelines* allowed parking spaces. The data suggests that by 2030, FCC will own 77% of its computed parking space allowance.

In advance of any detailed planning for future campus-wide infrastructure improvements, the College's effective parking supply and its capacity to accommodate anticipated demand requires further study.

Section Summary

As previously stated, space guidelines calculations are not to be used as the determining factor when making decisions about facilities needs. The following excerpts offer some understanding as to why:

> ". . .no generalized planning or evaluative process can reflect all the nuances of the institutional situation and that complete dependence on and imperfect system is unwise and unwarranted."
>
> ". . .it must be acknowledged that general planning criteria used in the evaluative process cannot be applied to the design of specific facilities. There must be some allowance for flexibility since no gross indicator is sufficiently sensitive to reflect varying requirements created by differing programs, philosophies, modes of operation, functions to be served, and architectural considerations . . ."
>
> --*Maryland Four-Year Public College and University Space Planning Guidelines*
> Maryland Department of State Planning
> August 1981

QUALITATIVE ASSESSMENT (Programs)

A variety of qualitative or nonstatistical environmental characteristics impact the physical needs of a college campus. These global needs, where Frederick Community College is concerned, focus more on quality and functionality of spaces than on quantity.

Unlike quantitative assessment, where focus is primarily on space, qualitative assessments focus more on programmatic issues. Qualitative indicators of current conditions and program characteristics and future needs/desires are the result of observations by the master plan consultants, conclusions reached in plans and studies by other consultants, and views expressed by FCC personnel during interviews and/or via written statements and other documentation.

Growth or change of some existing programs and the establishment of new ones suggest concomitant growth or change in enrollments, demographics, and the need for specific specialized facilities. We believe that exploiting opportunities to effectively market the values of a Frederick Community College education will drive program offerings in the coming years. Many of these programs require specialized classrooms, labs and other facilities that can be flexibly adjusted for a variety of teaching/learning or other settings.

As previously discussed, in addition to primary academic needs, there are needs for programs and projects focusing on various academic support, institutional support and campus-wide pursuits that collectively create an exceptional atmosphere for students, faculty, staff, alumni and visitors to the campus. These needs should be viewed in the context of how strategic responses would effectively align with the College's mission *Strategic Plan*, and its planned academic direction.

Summary of Key Findings

Facilities master planning regimens should strategically focus on programs and projects that will collectively transform the character of Frederick Community college's academic, co-curricular, and administrative activities to create a holistic approach to student success. Strategic focus should allow for flexible, nimble and seamless response to future market dynamics.

Athletics and Outdoor Recreation

There is a compelling need for contemporary campus development to provide for athletic and large venue facilities that are commensurate with the standing and quality of the FCC's athletic programs now and in the future. Future College facilities should be consistent with Title IX and should also serve as prime recreation resources responsive to the needs of its community. Existing outdated athletic facilities are insufficient, inadequate and inappropriate for the needs of even current athletic programs. The need for an appropriate quantity of facilities is underscored by the fact that the generally recognized necessary minimum core space to support basic Athletics/Physical Education activities on a modern community college campus is nonexistent at Frederick Community College.

One of the original campus buildings constructed, the outdated Athletics Center presents several safety and ADA accessibility challenges. Functionally, this building has antiquated fitness, wellness and other activity spaces and is woefully inadequate in terms of size, configuration for use as a contemporary combination academic, athletic and recreation facility. The athletic weight room is too small for the College's athletic teams. There is insufficient space for shared student activities, recreation, intramurals or club sports, as well as

for indoor practice for the outdoor sports of baseball and softball.

The Athletics Center will reach its estimated useful life during the life of this *Facilities Master Plan* and should be considered for repurposing or replacement. Alternatively, the main interior spaces are original to the building and should be upgraded to address life safety issues and meet code. A comprehensive renovation would also provide additional general education classrooms, formal and informal student and team support spaces, improved locker room facilities, and faculty, staff and coaching office areas. Basically, the need exists to provide new facilities, as well as to rehabilitate existing facilities, including renovation and expansion.

There are insufficient numbers of outdoor recreation facilities such as basketball and tennis courts. There is no athletic track on campus and there are no fields dedicated for recreational and intramural use. Restroom, concession and storage facilities are not available at many of the athletic fields. Due to anticipated increased activity in athletic programs, there is a need for appropriate practice fields suitable for the varied men's and women's programs. Outdoor facilities for both athletics and campus intramural and recreational uses would not only support athletic programs, but would also directly influence academic excellence, student success and institutional viability by fostering better mental and physical health, enhanced workplace performance, and lower levels of stress and anxiety for students, faculty, staff, visitors and the greater campus community users. Contemporary facilities would also allow for large assemblies and community events, such as graduation and convocation ceremonies, to be held on campus.

Wellness/Fitness/Recreation

There is a demonstrated need for properly located and sized wellness, fitness and recreation facilities at the College. The need is for sustainable facilities that inspire the campus and extended communities to engage in recreation and wellness opportunities. There are very few designated outdoor spaces for active recreation. Available fitness spaces within the Athletics Center that are inadequate in size relative to demand for use. They also present ongoing spatial conflicts with academic instruction and athletic activities.

Lastly, providing recreational pathways around the campus would offer access to exercise to improve the health and wellness of the FCC community.

Assembly

There are no spaces on campus for large gatherings/assemblies/events/conferences other than the Athletics Center gymnasium floor which is inappropriate for such use. The 410-seat Jack B. Kussmaul Theater is insufficient space for large assemblies. By the year 2030 total available space for assembly is projected to be less 60% of the Maryland guideline allowance. There is a need, on a year-round basis, for a special events center for training sessions, community and regional tournaments and events, commencements, concerts, special events, fundraising activities, meetings, conferences, trade shows, and more that are just too large for other available assembly spaces.

Physical Plant Operations

There is insufficient, inadequate, inappropriate, and in some instances, nonexistent space for physical plant operations such as maintenance shops, storage, and central services. The existing building (Building P) that contains these operations was built in 1996 and its design provides neither the capacity to appropriately house and support the needs of its current occupants, nor the flexibility to easily adapt interior or exterior spaces to changing needs in the future. Furthermore, it is entering into a deferred maintenance stage with interior

finishes and some building infrastructure that are beyond useful life and require replacement.

Frederick Community College needs to have the adaptability, flexibility and responsiveness to ensure that investments in academic facilities are maintained and sustained by support facilities and operations that are adequate, sufficient and appropriate to accommodate emerging technology and functional requirements of a 21st century institution of higher education. The constraints of physical plant operations facilities impede the College's ability to provide necessary and desired operations and services.

Biotechnology

Global industry is on the cusp of an industrial revolution powered by biotechnology. Biotechnology is a rapidly growing industry with consistent growth that requires an increasingly large workforce. The Environmental Scan and Academic Program Review (Chapters 2 and 3) each referenced the relevancy of biotechnology to Frederick Community College. Healthcare occupations are projected to add more jobs than any of the other occupational groups. Furthermore, Maryland's Washington suburbs, including Frederick County, are a major center for biotechnology.

In September 2022, President Biden signed an Executive Order to launch a National Biotechnology and Biomanufacturing Initiative aimed at supporting the industry with an explicit emphasis on expanding community college-level workforce pathways into biotechnology jobs.

FCC needs to position itself to provide opportunities for the workforce needed to support the ever-expanding demand for skilled biotechnology workers.

Campus-wide Systems and Infrastructure Improvements

There is ongoing need to address condition and capacities of facilities, infrastructure, utilities, technology, campus circulation for pedestrian and various transportation modes, parking and open space. There is also ongoing need for planned renovation, adaptation, replacement, or upgrade of the systems of a capital asset. Categories of campus-wide systems and infrastructure improvements include:

- **Facilities Renewal:** There is ongoing necessity to address facility renewal needs including improvements, repairs, and deferred maintenance. Details are appropriately identified in a subsequent chapter.
- **Technology Upgrades:** There is an identified need to provide upgrades to PeopleSoft Student, HR and Finance software systems.
- **Classroom Technology Upgrades:** There is an identified need to provide upgrades to classroom technology in buildings not being totally renovated.
- **Systemics:** There is an identified need to provide funding support for systemic repairs/maintenance including life safety, ADA accessibility, roofs, elevators, sidewalks, mechanical, etc.

Visual and Performing Arts

The Visual and Performing Arts Building contains the JBK Theater with support spaces, art gallery, music classrooms and labs, ceramics classrooms with kiln and support spaces, art classrooms, general classroom, and offices. The building is in fair condition with interior finishes and many program spaces are beyond useful life and require replacement.

Welcome and Admissions

There is a need for a strategically located Welcome/Admissions Center. Frederick Community College does not have a facility that truly welcomes people to its campus. There is no warm and accessible official front door for visitors and potential students and their families.

In addition to making a grand statement as a dynamic first point of entry to a campus, welcome centers have shown to have a memorable impact on students, prospective students, alumni and visitors. College welcome centers mix aspiration and nostalgia. By offering a lasting first impression, a welcome and admissions center can be an effective vehicle for recruiting and retraining students, brand promoting, being responsive to community and regional needs, alumni, and business partners.

Student Services Activities

Contemporary spatial layouts are needed to overcome qualitative issues resulting from the absence of adequate environments for modern-day student activities functions. Commuter students use student centers or student commons as a home away from home, especially when they have classes spaced out during the day. There is generally insufficient and inadequate student lounge space, meeting space, recreational areas, and student organization space. Students complain that there are insufficient and inadequate places for them to really hang out. There is a need for student areas that are more inviting for enjoyment, relaxation, individual study and group learning. Food facilities are insufficiently sized to effectively serve the needs of FCC's students, faculty and staff. Total campus food facilities are currently, and will be in 2030, less than allowed under Maryland's *Guidelines* for community college food facilities.

As a primary student activities component of Frederick Community College, the Student Center has extremely limited access to formally designated space allocations that meet the need to serve as the primary focal point for student-related activities. Existing design functions of the building are inconsistent with contemporary student activities environments. The layout is challenging due to quantity and quality of space being inadequate and insufficient for the needs of students.

Current and future enrollments dictate an impelling requirement for the availability of student campus life activities, which can be translated into needs for lounge and leisure spaces. Coupled with a campus-wide need is the need to offer such features to future students at their initial interface with FCC. The absence of such facilities mitigates the building's quality of life by not providing space for informal social interchange and/or respite.

Surge Space

The availability of surge or swing space is so critical when the College plans to renovate existing facilities. There is an ongoing compelling need at Frederick Community College for space to temporarily house academic or administrative units that are displaced because of renovations to their home buildings.

Continuing Education and Workforce Development (noncredit)

Continuing Education and Workforce Development (CEWD) offers a robust assortment of workforce development, personal enrichment, continuing education, adult education, and community education classes designed to meet the needs of students and the community.

Continuing Education is included with Qualitative Assessment of need only because viable metrics have yet to be generally accepted and consistently applied in response to unique needs for space and facilities as generated by noncredit programs such as found in continuing education and workforce development situations. It is universally accepted that, unlike with credit programs, noncredit program environments have the distinct need for flexibility and quick response to change.

Today's work environment requires each person to have a broader range of skills and communication abilities than ever before. A wide range of noncredit courses are offered in day, evening, weekend, and online formats that appeal to people of all ages with busy lifestyles.

Continuing Education courses represent cutting-edge curricula and quality instruction. Instructors are generally field practitioners who bring firsthand knowledge to FCC's learning environment. The courses that provide students with hands-on training utilize state-of-the-art equipment.

Frederick Community College prepares organizations and their employees to meet the challenges of a diverse, global society through quality, accessible, innovative training and development. FCC's CEWD team provides programs that reflect the needs, interests and trends in business and industry, and programs that promote the personal and professional growth of the community. Courses tailored to the applications of individual businesses are offered through customized training contracts within parameters convenient to each business. Workforce development courses are designed in conjunction with professional organizations, as well as area businesses and industries. Programs are intended to enhance and update skills or provide entry-level career training. Courses include those which prepare individuals for national certification and licensing examinations or for recertification/relicensing.

The following table presents data showing that 15% of Frederick Community College's Fiscal Year 2020 students were enrolled in Continuing Education (noncredit) courses. Although Maryland space planning models do not fully provide for consideration of continuing education and workforce development student enrollment data when computing space needs, it is rather obvious that the implications of this statistic could have a significant impact on FCC's future development needs.

Student Headcount Comparisons

	Fiscal Year					
	2015	2016	2017	2018	2019	2020
Credit FTE	3,659	3,594	3,424	3,534	3,406	3,318
Continuing Education FTE	560	616	647	652	639	572
Total FTE	4,219	4,210	4,071	4,186	4,045	3,890
Continuing Education %	**13%**	**15%**	**16%**	**16%**	**16%**	**15%**

Data Source: Maryland Association of Community Colleges

Most of FCC's Continuing Education (noncredit) programs and courses are housed in either the Conference Center (Building E) on the main campus or in the Monroe Center.

There is existing and future detailed and unique need to augment the Monroe Center's career and technical training/learning environments with expanded facilities. Such facilities should be highly flexible and adaptable *building systems shop*™ type learning modules which are self-contained combined learning and learning support components composed of a learning studio, shop floor, material storage and tool storage areas. These learning modules are designed to provide environments uniquely conducive to acquiring procedural knowledge distinctive of career and technical education (CTE). Consideration should be given to clean technology as a complement dirty technology currently at Monroe.

Needs Assessment Conclusion

Needs assessment is the process of estimating the needed supply of academic, academic support and other support space given projected demands of: 1) FCC Mission, 2) FCC *Strategic Plan*, 3) P.P.A.S., pronounced "pass" (Programs, People, Activities and Stuff)™ who or what must be accommodated, and 4) the need for improvement of operations and services. Thus, needs assessment begins the transitioning from the language of academic assessment and academic planning to the language of facilities planning and master planning.

Data leading up to and including the quantitative and qualitative needs establishes the necessity for renovated and/or additional facilities at Frederick Community College to meet its present and future requirements for space and programs. Potential strategies for meeting these identified requirements are addressed, in physical terms, in the impending chapters.

Frederick Community College's response to needs for space and programs manifests itself in a series of projects that will culminate in an orderly long-term physical development of FCC's campus community. Priorities and sequencing of specific projects that allow for integration of this *Facilities Master Plan* into the College's Capital Improvement Program (CIP) and related financial planning required to implement this *Plan* will be presented in a later chapter.

The next chapter contains evaluations of buildings and other campus site infrastructure to determine their suitability to support existing and future programs. These evaluations address needs relative to condition of buildings and other infrastructure.

Chapter 5
The Campus Today

Facilities and Their Development

Site Infrastructure and Improvements

Central Plant Assessment

Technology Systems

Sustainability

THE CAMPUS TODAY

This chapter inventories and evaluates the existing facilities, including the main campus and its buildings, and the Monroe Center, including assessments of the following elements and systems:

- Site: utilities, roadways, pedestrian ways, parking, storm water, open spaces, forest cover, signage, and ADA accommodations.
- Buildings, including envelope, interiors, and layout
- Central Plant including primary cooling and heating generation and electrical systems
- Technology including telecommunications, security, and A-V systems

Sections of this chapter include the following:

- Buildings and their Development
- Site infrastructure and Improvements
- Central Plant Assessment
- Technology Systems
- Sustainability (to be included in subsequent Progress Reports)

Separately, a detailed Facilities Condition Assessment has been conducted and is documented in a related report.

FACILITIES AND THEIR DEVELOPMENT

Main Campus

1. Building A Annapolis Hall
2. Building B Braddock Hall
3. Building C Catoctin Hall
4. Building D Athletics Center
5. Building E Conference Center
6. Building S Sweadner Hall
7. Building F Visual and Performing Arts Center
8. Building G Gambrill Hall
9. Building H Student Center
10. Building J Jefferson Hall
11. Building K Mercer-Akre Kiln
12. Building L Linganore Hall
13. Building M Children's Center
14. Building P Plant Operations
15. Parking Deck

Monroe Center

16. Building MC Monroe Center

Annapolis Hall – Building A

Building Description

Building Designation	1. Annapolis Hall – Building A
Number of Floors	2
Net Assignable Square Feet	18,011
Gross Building Area - GSF	32,131
Net-to-Gross Efficiency	56.1%
Year Constructed	1970
Renovations	1995, 2015
Additions	Main Entrance 1994, Mechanical 1995, Interiors 2015, 2022
Contains	Administrative offices
General Condition	good
Adequacy of Space	Generally adequate for functions housed in the building
Sprinkler System	Fully sprinklered

Providing space for administrative offices, Annapolis Hall is one of the original campus buildings built in 1970. Previous renovations included the mechanical tower, knuckle extension to building B, and replacement of the roof system with a metal standing seam roof. An interior renovation was planned for 2021 with renovation drawing Bid Set issued in May 2021.

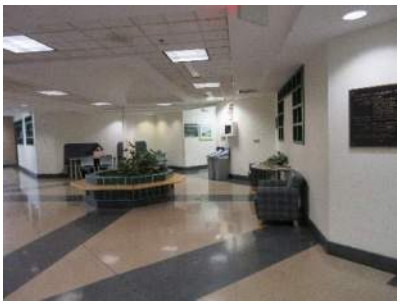
Focus areas for capital renewal needs over a 10-year period from 2023-2032 includes the following:

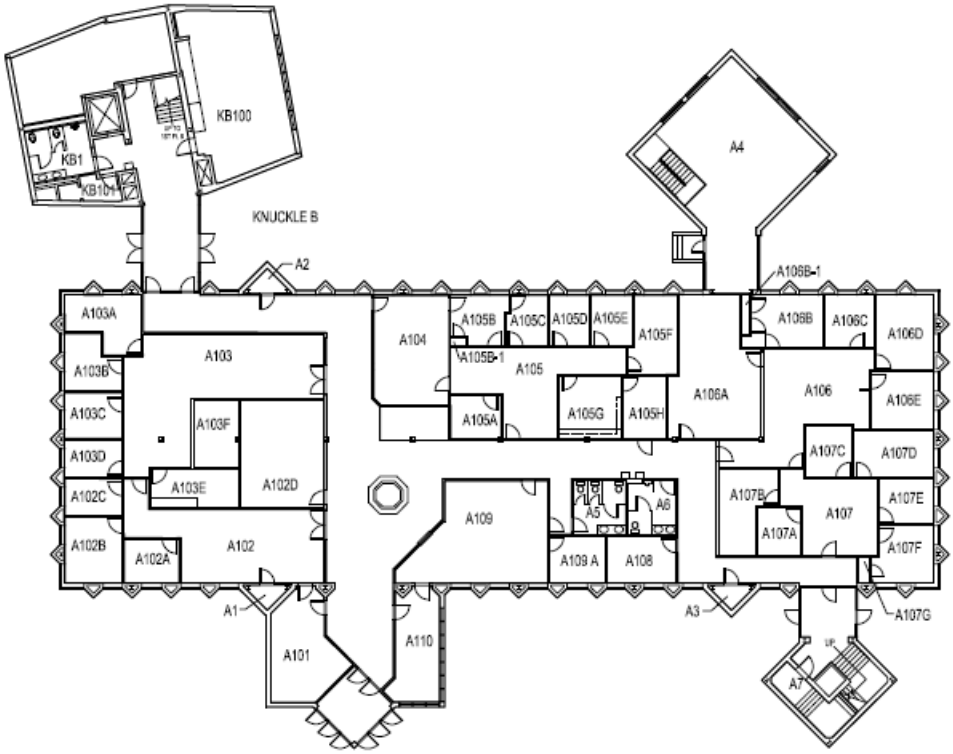
• Exterior masonry sealant and cement board repair and recoating in the 3-4 year timeframe.

• Exterior window/door replacement in the 3-4 year timeframe.

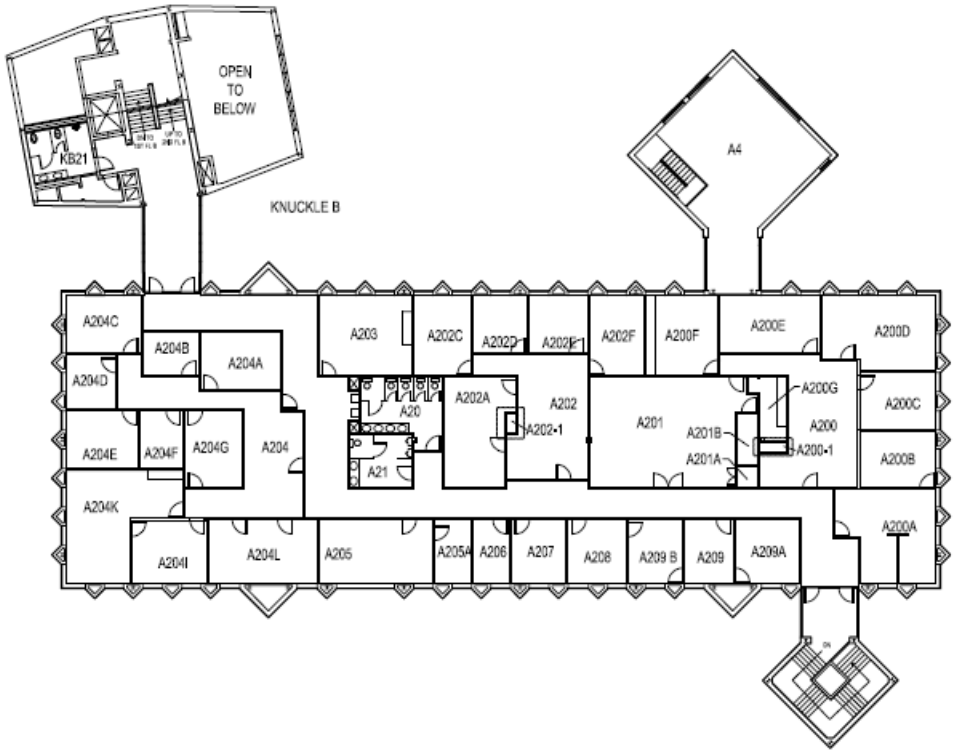
• Interior finish renewal/upgrades (completion of 2021 planned renovations).

Although the primary roof system (standing seam metal) was replaced in 1995, roof replacement for both the metal and flat single-ply roof sections would fall outside the 10-year planning period. One of the three buildings A, B, and C that are informally linked to each other, the interior spaces and connection to building B are disorienting due to the angled relationship at the connecting knuckle. The front-and-rear opening elevator does not meet current code requirements.





Building A First Floor Plan



Building A Second Floor Plan

Braddock Hall – Building B

Building Description

Building Designation	2. Braddock Hall – Building B
Number of Floors	2
Net Assignable Square Feet	18,401
Gross Building Area - GSF	34, 592
Net-to-Gross Efficiency	53.2%
Year Constructed	1970
Renovations	1989, 2015
Additions	1994 (mechanical room addition)
Contains	Academic spaces – classrooms, computer labs, faculty offices
General Condition	Good
Adequacy of Space	Generally adequate for functions housed in the building
Sprinkler System	Fully sprinklered

Providing space for administrative offices, Braddock Hall is one of the original campus buildings built in 1970. Previous renovations included the mechanical tower, knuckle extension to building C, replacement of the roof system with a metal standing seam roof, and recent interior finish renovations.

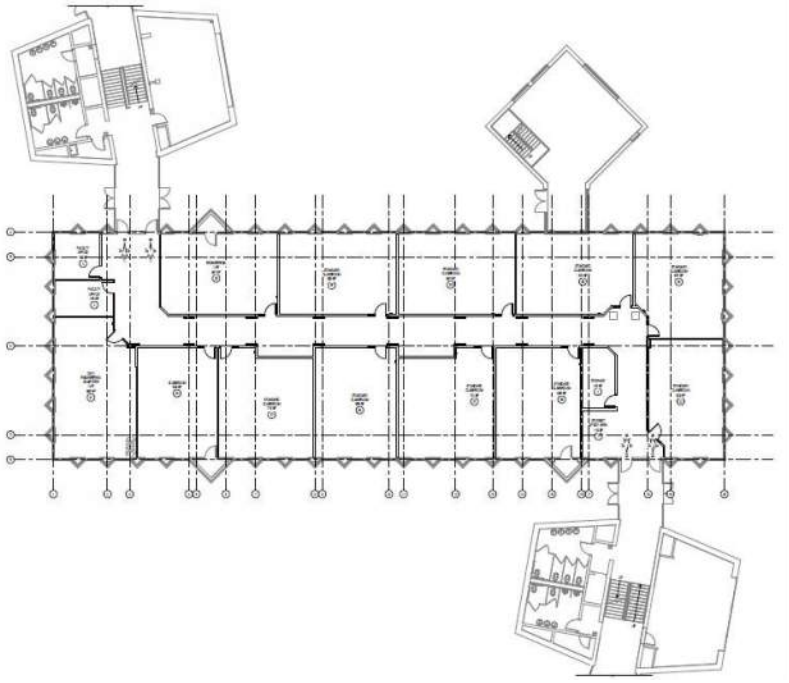
Focus areas for capital renewal needs over a 10-year period from 2023-2032 includes the following:

• Exterior masonry sealant and cement board repair and recoating in the 4-5 year timeframe.

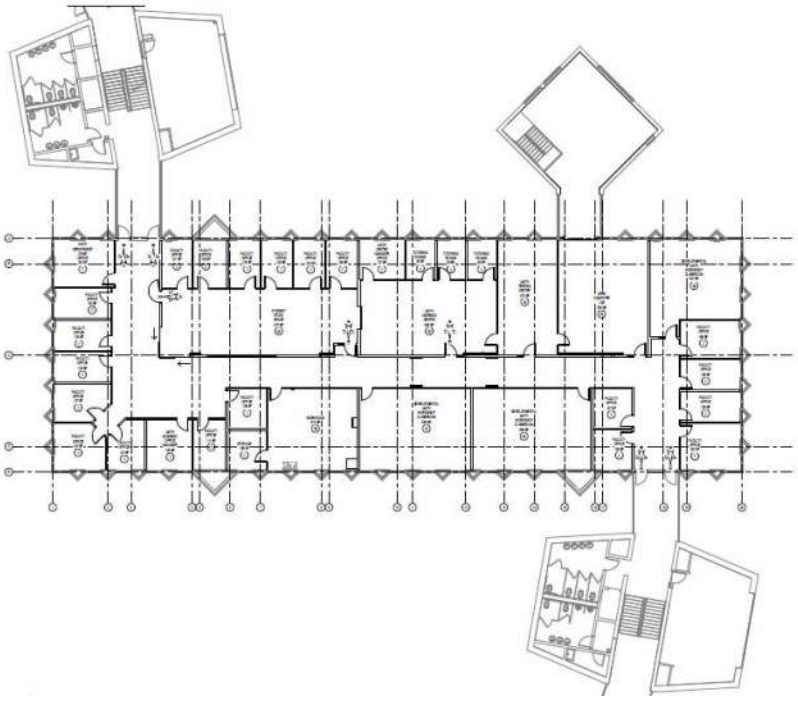
• Repairs to north steps, railings, and brick sidewalls in the 1-2 year timeframe.

• Exterior window/door replacement in the 3-5 year timeframe.

Although the primary roof system (standing seam metal) was replaced in 1995, roof replacement for both the metal and flat single-ply roof sections would fall outside the 10-year planning period. One of the three buildings A, B, and C that are informally linked to each other, the interior spaces and connections to buildings A and C are disorienting due to the angled relationship at the connecting knuckles. Classroom depths from corridor to exterior wall are either 29’-6” or a very narrow 21’-6”. The front-and-rear opening elevators do not meet current code requirements.



Building B First Floor Plan



Building B Second Floor Plan

Catoctin Hall – Building C

Building Description

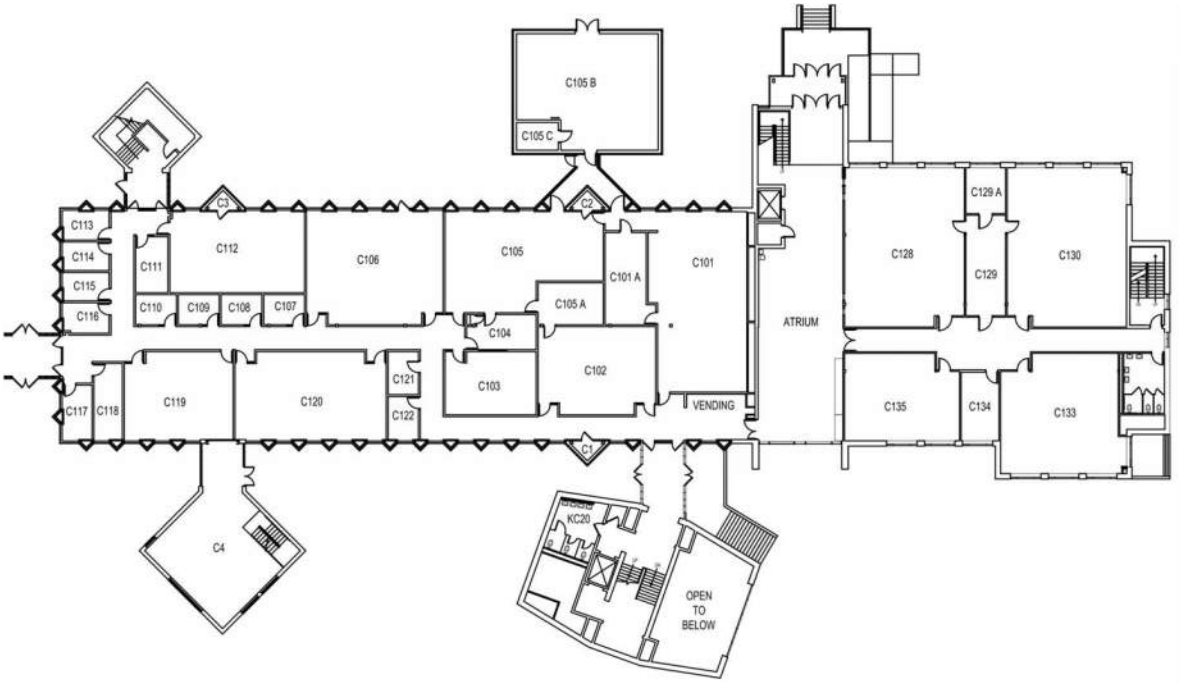
Building Designation	3. Catoctin Hall – Building C
Number of Floors	2
Net Assignable Square Feet	28,383
Gross Building Area - GSF	54,920
Net-to-Gross Efficiency	51.7%
Year Constructed	1970
Renovations	1989, 1991 (renovation/addition (chemical storage and greenhouse), 2000 (interior finishes)
Additions	1995 (mechanical room), 2015
Contains	Academic spaces – classrooms, science labs, faculty offices
General Condition	Good
Adequacy of Space	Generally adequate for functions housed in the building
Sprinkler System	Fully sprinklered

Providing space for classrooms, science labs and faculty offices, the original Catoctin Hall is one of the original campus buildings built in 1970. A major 2-story addition was added in 2015 and serves as biomedical classrooms and laboratories. Finishes in the 2015 addition are in excellent condition.

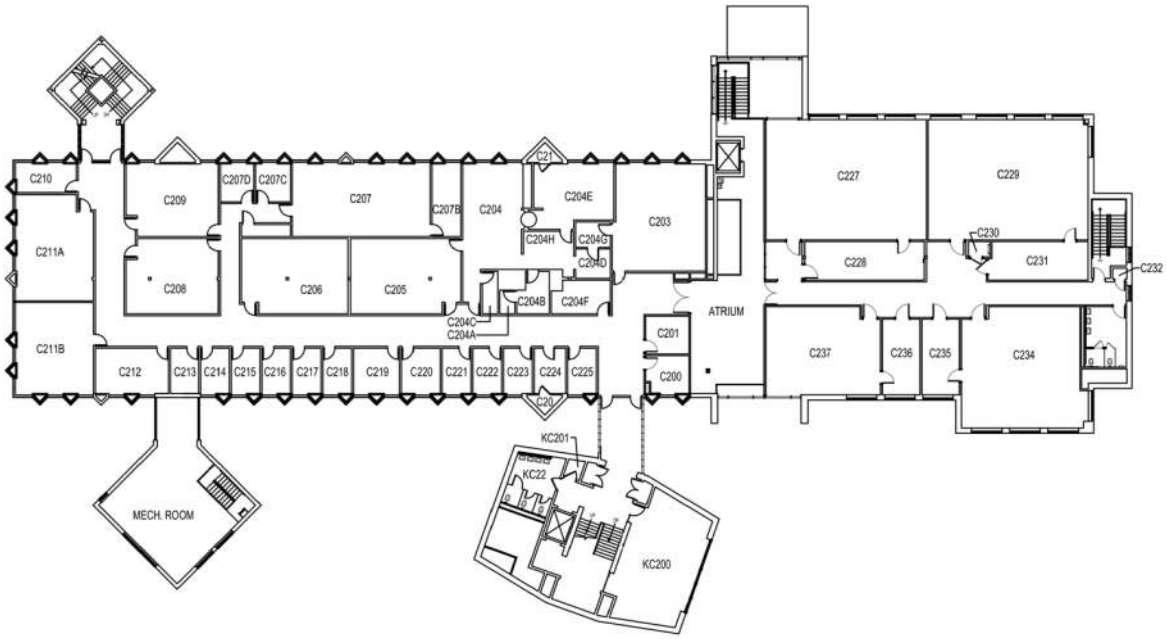
Focus areas for capital renewal needs over a 10-year period from 2023-2032 include the following:

- Exterior masonry sealant and cement board repair and recoating to the original C building in the 3-5 year time frame.
- Interior finish repair/replacement in portions of the original C building in the 2-3 year timeframe.
- Exterior window/door replacement in the original C building in the 3-5 year timeframe.
- Floor replacement in the chemical storage room in years 1-2.

Although the standing seam metal roof on the original C building was replaced in 1995, roof replacement for both the metal and flat single-ply roof sections would fall outside the 10-year planning period. One of the three buildings A, B, and C that are informally linked to each other, the original interior spaces and connection to building B is disorienting due to the angled relationship at the connecting knuckle. Classroom depths from corridor to exterior wall are either 29’-6” or a very narrow 21’-6”. The original front-and-rear opening elevator does not meet current code requirements.



Building C First Floor Plan



Building C Second Floor Plan

Athletics Center – Building D

Building Description

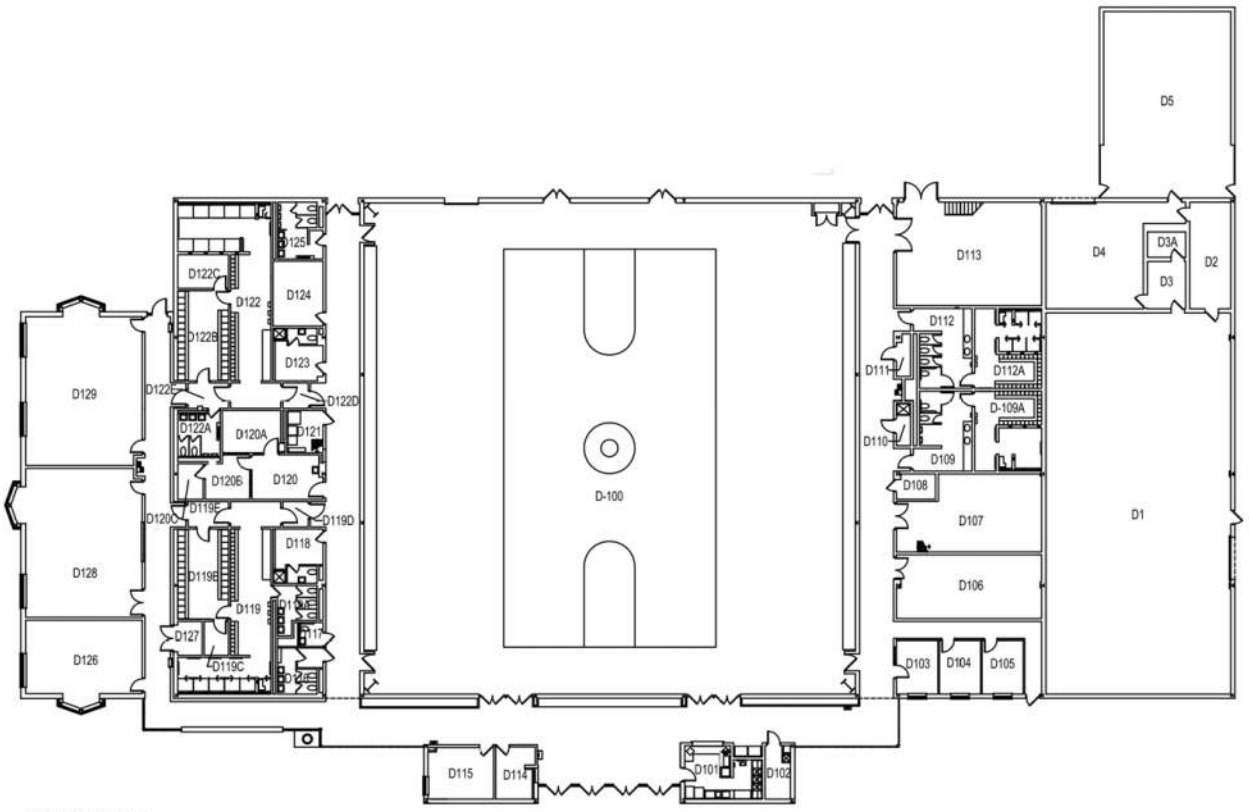
Building Designation	4. Athletics Center – Building D
Number of Floors	1
Net Assignable Square Feet	23,124
Gross Building Area - GSF	38,872 + 4,936 for attached Central Plant
Net-to-Gross Efficiency	59.5%
Year Constructed	1970
Renovations	2017 gymnasium upgrades, 2001, 2022 gymnasium upgrades
Additions	2001 for fitness, training, classroom; 1969 Central Plant
Contains	Gym, locker rooms, weight and fitness rooms, classroom, offices
General Condition	Good
Adequacy of Space	Inadequate for functions housed in the building
Sprinkler System	Fully sprinklered

The Athletic Center is one of the original campus buildings built in 1970 and includes the campus central plant on the north side of the building. Previous renovations included expansions of the building, team and locker facilities and connection to the central plant on the north side, interior renovations for classrooms, fitness rooms and Health& Exercise and Physical Therapy departments, and replacement of the roof system with a metal standing seam roof. See separate section for Central Plant narrative.

Focus areas for capital renewal needs over a 10-year period from 2023-2032 include the following:

- Exterior masonry sealant and cement board repair and recoating in the 5-7 year timeframe.
- Interior finish repair/replacement in portions of the office/classroom/fitness areas in the 4-6 year timeframe.
- Replacement of the built-up roof sections in years 1-2.
- South server room shares space in storage room; North server room is not conditioned.

Although the standing seam metal roof on building D was replaced in 1995, roof replacement for the metal standing seam roof would fall outside the 10-year planning period. In addition to the 2001 addition, the central mechanical plant for the campus is located adjacent and connected to the original north exterior wall. This facility provides limited space for athletics and recreation programs; athletics activities are given regular priority over other uses. A major expansion and renovation are planned.



Building D Floor Plan

Conference Center – Building E

Building Description

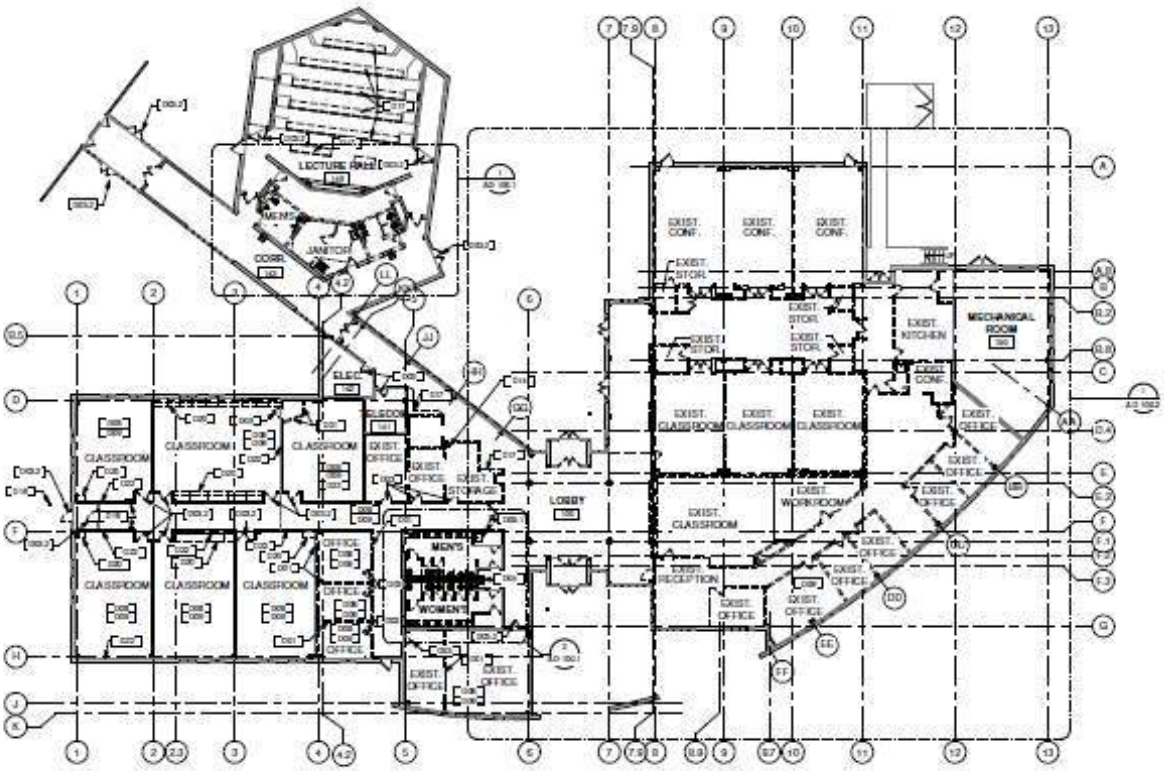
Building Designation	5. Conference Center – Building E
Number of Floors	1
Net Assignable Square Feet	13,586
Gross Building Area - GSF	22,939
Net-to-Gross Efficiency	59.5%
Year Constructed	1999
Renovations	2020
Additions	No additions
Contains	Conference rooms, classrooms, CEWD offices
General Condition	Good
Adequacy of Space	Adequate for functions housed in the building
Sprinkler System	Fully sprinklered

The Conference Center was built in 1999 and the interior was renovated in 2020. The roof consists of both standing seam metal roof sections and flat, built up roof sections, both original.

Focus areas for capital renewal needs over a 10-year period from 2023-2032 includes the following:

• Exterior masonry cleaning, sealing and sealant repair in the near-term, years 1-2.

• Replacement of the flat, built-up roof sections in years 1-2. Renovations in 2020 provide much-needed, flexible, and larger instructional spaces. The standing seam metal roof sections were installed in 1999 and replacement would be expected to fall outside the 10-year planning period.



Building E (and S) Floor Plan

Sweadner Hall – Building S

Building Description

Building Designation	6. Sweadner Hall – Building S
Number of Floors	1
Net Assignable Square Feet	2,125
Gross Building Area - GSF	4,550
Net-to-Gross Efficiency	46.7%
Year Constructed	1970
Renovations	1998, 2015 full renovations, 2020
Additions	No additions
Contains	Tiered lecture hall and associated storage and circulation
General Condition	Good
Adequacy of Space	Adequate for functions housed in the building

Sweadner Hall was built in 1972 with an addition in 1998, renovation in 2015, and interior renovation in 2020. The facility includes a theater-style lecture hall with raised floor. The exterior has cementitious panels, and the roof covered by a built-up roof system.

Focus areas for capital renewal needs over a 10-year period from 2023-2032 includes the following:

- Exterior panel and window cleaning, sealing and sealant repair in years 4-6.
- Built-up roof replacement in the near term, years 1-2.
- Maintenance/repair of interior finishes with wall finish replacements in the 9-10 year timeframe.

Visual and Performing Arts Center – Building F

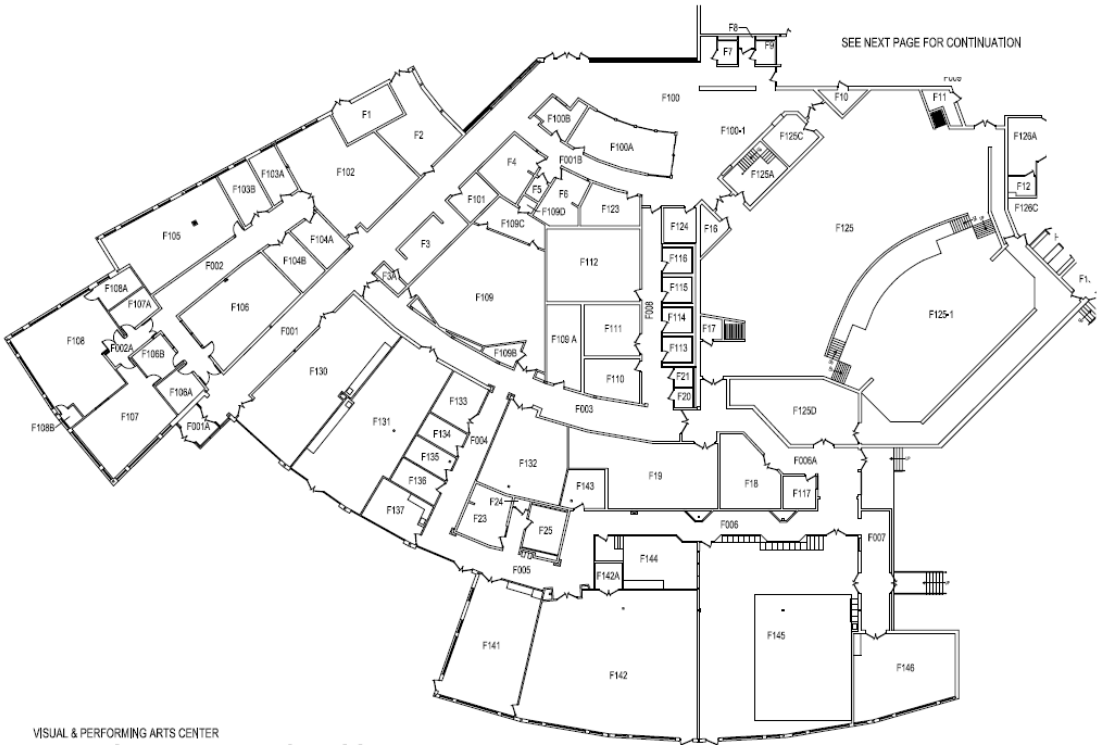
Building Description

Building Designation	7. Visual and Performing Arts Center – Building F
Number of Floors	1
Net Assignable Square Feet	23,124
Gross Building Area - GSF	35,872
Net-to-Gross Efficiency	64.5%
Year Constructed	1988
Renovations	2011-2014 music rooms, black box, other interior upgrades, 2022 film, video, graphics spaces
Additions	2002 art room support areas, 2011 kiln building,
Contains	Theater, black box, and support spaces, music classrooms and practice rooms, visual arts studios, general purpose classrooms, art gallery, and offices
General Condition	Good
Adequacy of Space	Inadequate for functions housed in the building
Sprinkler System	Fully sprinklered

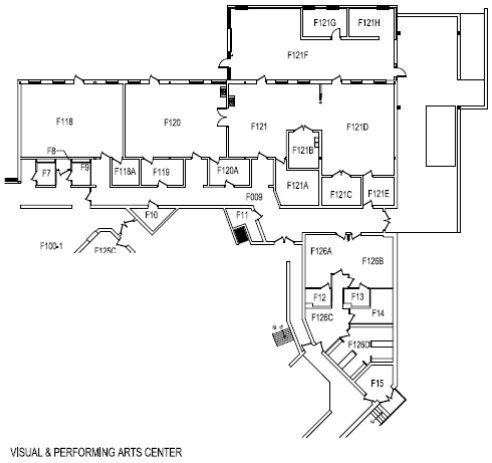
The Visual and Performing Arts Center was built in 1988 and renovated in separate projects in 2011-2014. The roof as replaced (2014) with a single-ply roof membrane. Interior finishes have been renewed or replaced over the life of the Center. The rambling layout of the building is disorienting and not very efficient. Corresponding way-finding is inherently difficult. Space is insufficient for existing visual and performing arts programs, and students will find few gathering spaces to assemble and/or study. The theater is the largest assembly space with seating on campus.

Focus areas for capital renewal needs over a 10-year period from 2023-2032 includes the following:

- Exterior masonry cleaning, sealing and sealant repair in the 4-6 year timeframe.
- Replacement of the single-ply roof system in the 6-8 year timeframe.
- Maintenance/repair of interior finishes with finish replacements in the 6-8 year timeframe.
- Replacement of the heating/cooling distribution systems near the end of the 10-year study period.
- Difficult access to server room, co-location of servers in electrical room, which is unconditioned.



Building F Partial Floor Plan (West)



Building F Partial Floor Plan (East)

Gambrill Hall – Building G

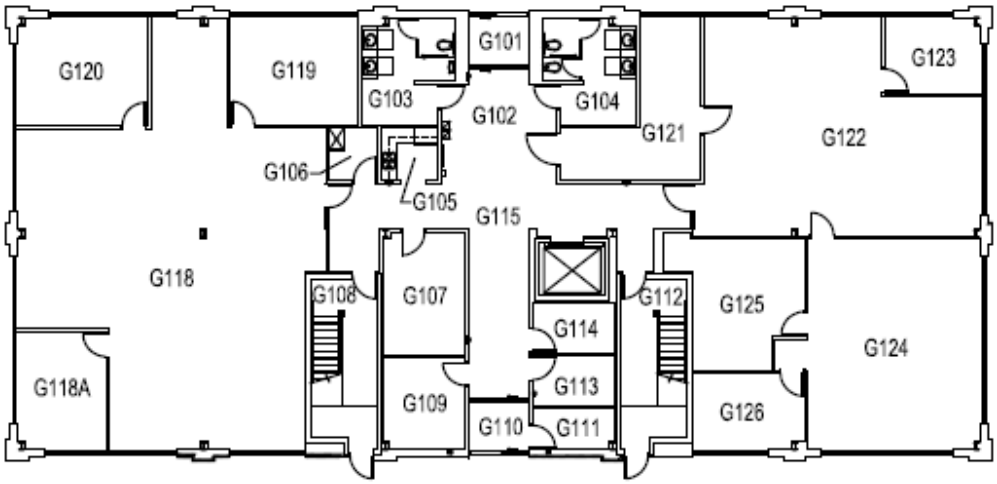
Building Description

Building Designation	8. Gambrill Hall – Building G
Number of Floors	2
Net Assignable Square Feet	10,541
Gross Building Area - GSF	16,020
Net-to-Gross Efficiency	65.8%
Year Constructed	2007
Renovations	2018 IT help desk
Additions	No additions
Contains	Office space for Human Resources, Finance, and Information Technology
General Condition	Good
Adequacy of Space	Adequate for functions housed in the building
Sprinkler System	Fully sprinklered

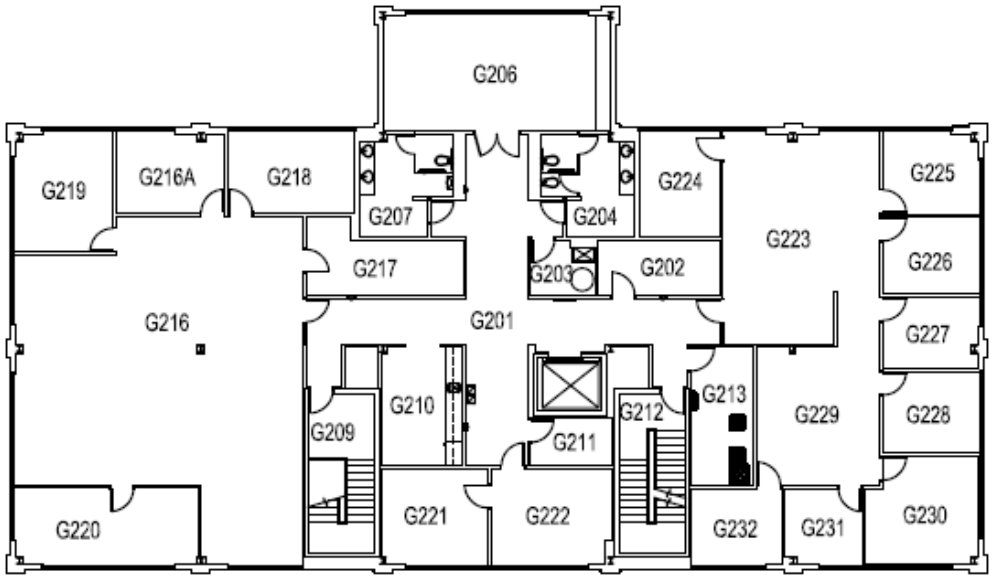
Gambrill Hall was built in 2007 with one renovation to accommodate the IT help desk. The roof is composed of a single-ply membrane on the low slope are and standing seam metal roof system. The exterior is masonry with cementitious panel accents. The location of the IT offices and help desk at this location is inconvenient for students and is a particular challenge for disabled individuals.

Focus areas for capital renewal needs over a 10-year period from 2023-2032 include the following:

- Domestic water heater replacement in the 2-3 year timeframe.
- Exterior masonry cleaning, sealing and sealant repair in the 9-10 ear timeframe.
- Interior wall/ceiling finish updating in the mid- to later term 6-8 year timeframe.
- Controls updates in the 6-8 year timeframe.
- The standing seam metal roof is original, and replacement would be expected to fall outside the 10-year planning period.



Building G First Floor Plan



Building G Second Floor Plan

Student Center – Building H

Building Description

Building Designation	9. Student Center – Building H
Number of Floors	2
Net Assignable Square Feet	50,312
Gross Building Area - GSF	76,987
Net-to-Gross Efficiency	65.4%
Year Constructed	2009
Renovations	2015, 2018
Additions	No additions
Contains	Food services, bookstore, security office, administrative offices, student offices, general classrooms, faculty offices
General Condition	Good
Adequacy of Space	Adequate for functions housed in the building
Sprinkler System	Fully sprinklered

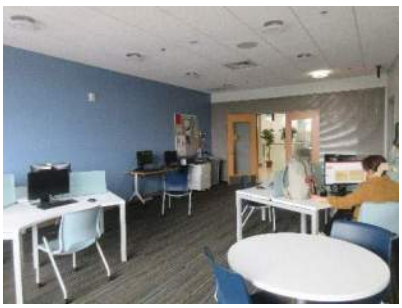
Centrally located, the Student Center houses the bookstore, large dining hall, offices, classrooms, and kitchen facilities. The building serves several functions and fills numerous space needs.

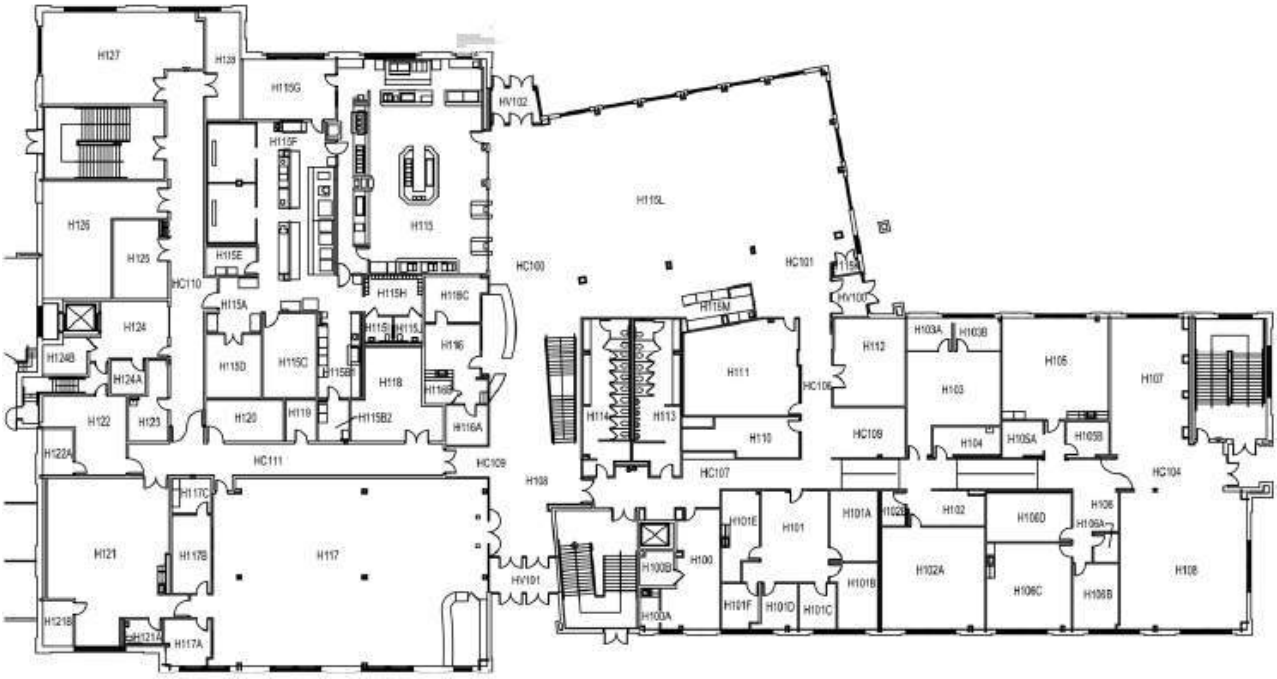
Focus areas for capital renewal needs over a 10-year period from 2023-2032 include the following:

- Exterior masonry cleaning, sealing and sealant repair in the 8-10 year timeframe.
- Roof replacement of the modified bitumen roof system in the 8-10 year timeframe.
- Interior finish upgrade/renewal in the 8-10 year timeframe.

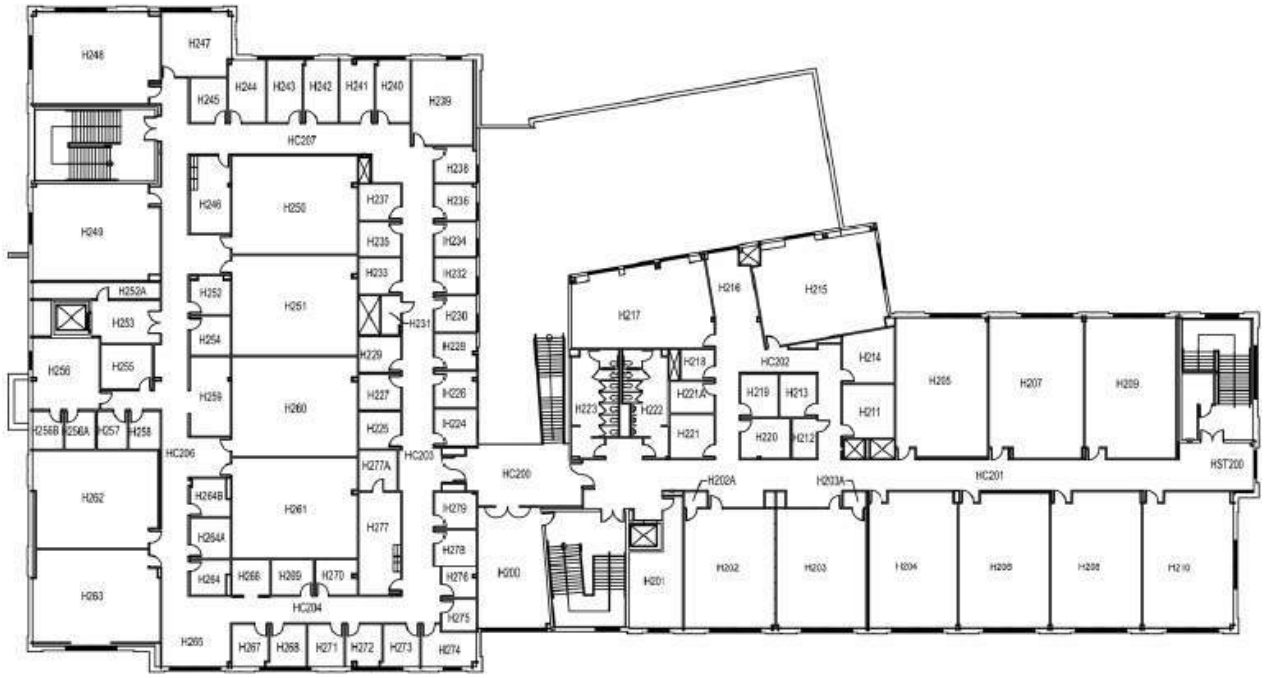






Building H First Floor Plan



Building H Second Floor Plan

Jefferson Hall – Building J

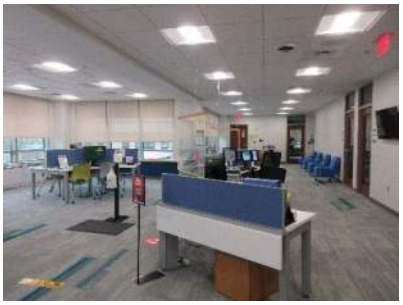
Building Description

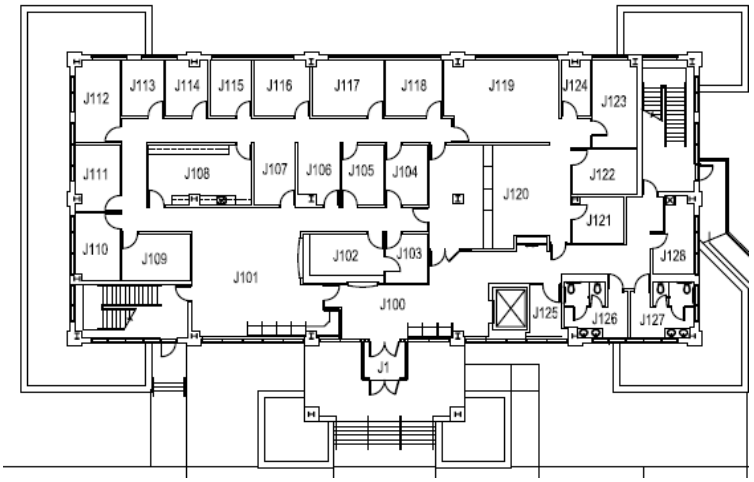
Building Designation	10. Jefferson Hall – Building J
Number of Floors	3
Net Assignable Square Feet	12,752
Gross Building Area - GSF	24,000
Net-to-Gross Efficiency	53.1%
Year Constructed	2012
Renovations	2018
Additions	No additions
Contains	Admissions, Registration and Records, Student Accounts, Counseling and Advising, Financial Aid, and Learning Support offices, meeting rooms and support spaces
General Condition	Good
Adequacy of Space	Somewhat insufficient for functions housed in the building
Sprinkler System	Fully sprinklered

Jefferson Hall was built in 2012 and renovated in 2019 and 2021. The building houses administrative and departmental offices. In addition to insufficient space, staff noted remote routes required for students to access College & Career Readiness Center and Financial Services Center spaces on the upper floors. The most recent renovations included interior partitioning and finishes.

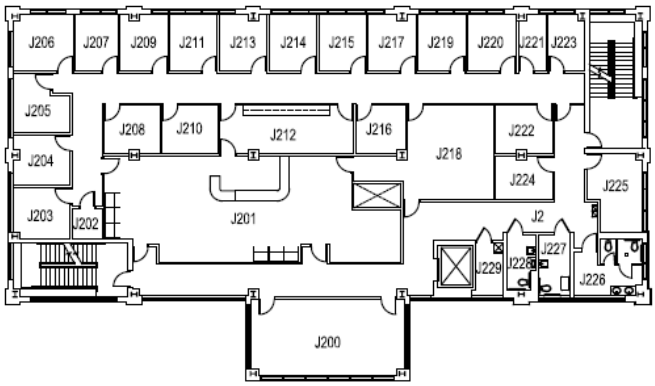
Focus areas for capital renewal needs over a 10-year period from 2023-2032 includes the following:

- Interior wall finish upgrade/renewal in the 5-7 year timeframe.
- Domestic water heater replacement in the 5-7 year timeframe.
- Roof replacement in the 9-10 year timeframe.

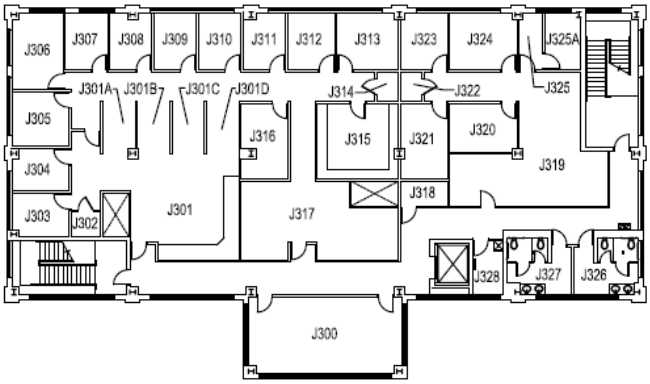




Building J First Floor Plan



Building J Second Floor Plan



Building J Third Floor Plan

Mercer-Akre Kiln – Building K

Building Description

Building Designation	11. Mercer-Akre Kiln – Building K
Number of Floors	1
Net Assignable Square Feet	897
Gross Building Area - GSF	960
Net-to-Gross Efficiency	93.4%
Year Constructed	2011
Renovations	No renovations
Additions	No additions
Contains	Ceramics kiln and storage space
General Condition	Fair
Adequacy of Space	Adequate for functions housed in the building
Sprinkler System	Not sprinklered

The Mercer-Akre Kiln building was built in 2011 and houses the kiln and storage space. The building is of metal exterior construction with an unfinished interior and minimal utility service (electrical only), and a solar array providing supplemental power. The unconditioned building is remote from the ceramics studios in Building F.

Focus areas for capital renewal needs over a 10-year period from 2023-2032 include the following:

- Routine maintenance of exterior finishes.
- Repair/renewal of the solar energy controls.

Linganore Hall – Building L

Building Description

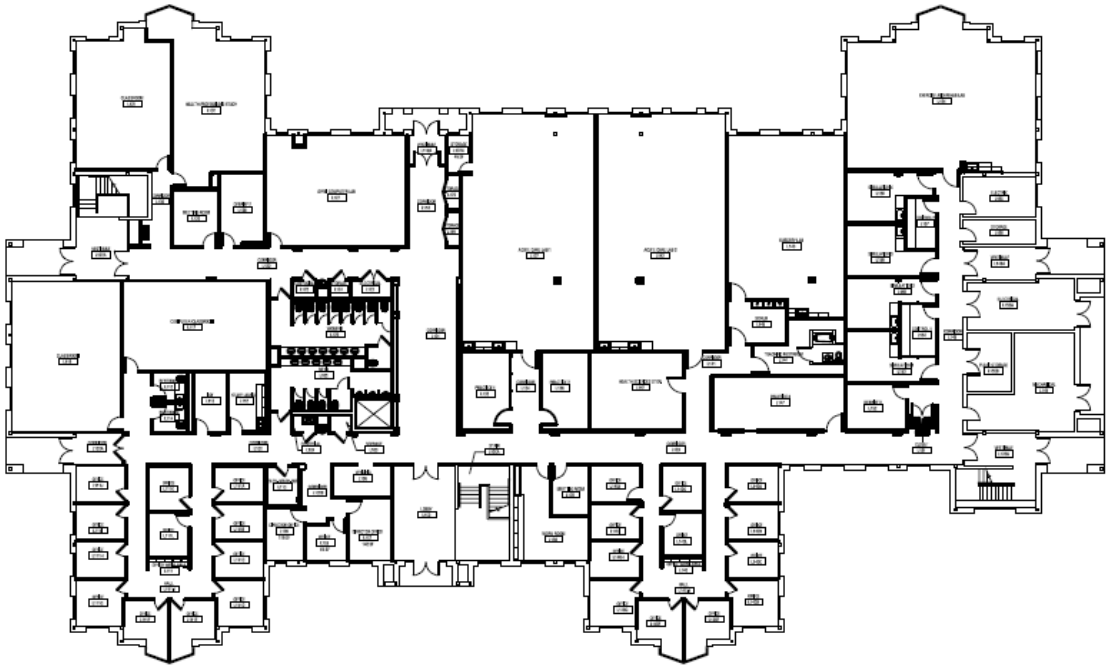
Building Designation	12. Linganore Hall – Building L
Number of Floors	2
Net Assignable Square Feet	38,156
Gross Building Area - GSF	54,014
Net-to-Gross Efficiency	70.6%
Year Constructed	1995
Renovations	2010, 2016 (Learning Commons), 2016, 2021-22 (all spaces except Learning Commons)
Additions	No additions
Contains	Learning Commons, classrooms and labs, offices
General Condition	Good (renovation underway at the time of this report)
Adequacy of Space	Anticipated to be adequate for functions housed in the building
Sprinkler Systems	Fully sprinklered

Linganore Hall was built in 1995, was renovated in 2011 and 2016, and is currently undergoing renovation of the first floor and major portions of the second floor. The 2016 renovation included the 2nd floor library / Learning Commons. Upon completion of the current renovation, the building interiors and systems will be in good to excellent condition and only routine upgrades/renewals will be required over the 10-year study period.

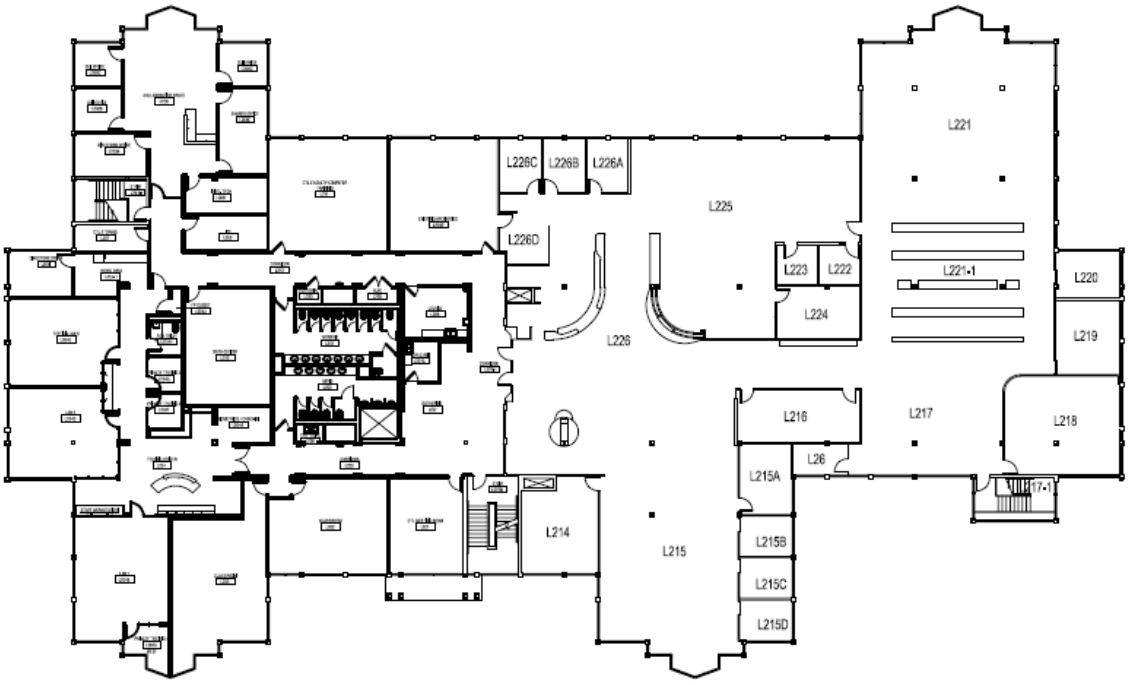
Exterior and interior repair/renewal requirements should include the following:

- Roof replacement of the remaining flat, built-up roof sections in mechanical equipment wells in years 1-2.
- Exterior masonry cleaning, sealing and sealant repair in years 1-2.
- Interior wall finish upgrade/renewal in the 6-8 year timeframe (after completion of current renovations.
- Domestic water heater replacement in the 5-7 year timeframe.

The standing seam metal roof sections on Linganore Hall were installed in 1995 and replacement would be expected to fall outside the 10-year planning period.



Building L First Floor Plan



Building L Second Floor Plan

The Carl and Norma Miller Children's Center – Building M

Building Description

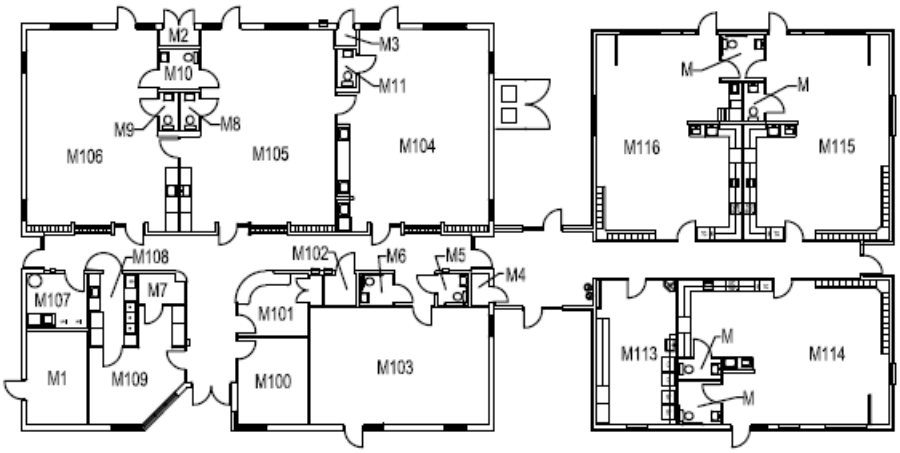
Building Designation	13. Children's Center – Building M
Number of Floors	1
Net Assignable Square Feet	6,349
Gross Building Area - GSF	8,572
Net-to-Gross Efficiency	74.1%
Year Constructed	1994
Renovations	2002, 2016 – full renovations, 2022 – finishes due to sprinkler leak
Additions	2002, 2009 detached shed
Contains	Classrooms, work and break room spaces, offices
General Condition	Good
Adequacy of Space	Adequate for functions housed in the building
Sprinkler System	Fully sprinklered

The Children's Center was built in 1994 with an addition in 2003 and renovation in 2016. The building serves as a child-care center and consists of classrooms with individual toilet rooms, offices for staff, breakroom, small kitchen, and reception area. The most recent renovations included interior finishes.

Focus areas for capital renewal needs over a 10-year period from 2023-2032 includes the following:

- Exterior masonry cleaning, sealing and sealant repair in the 8-10 year timeframe.
- Interior wall, ceiling, and carpeted floor finish upgrades/replacements in the 4-6 year timeframe.
- Domestic water heater replacement in approximately 10 years.

The standing seam metal roof sections were installed in 1993 and 2003 and replacement would be expected to fall outside the 10-year planning period.



Building M Floor Plan

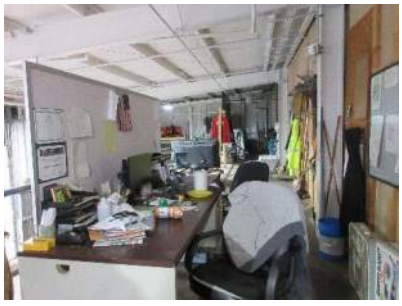
Plant Operations – Building P

Building Description

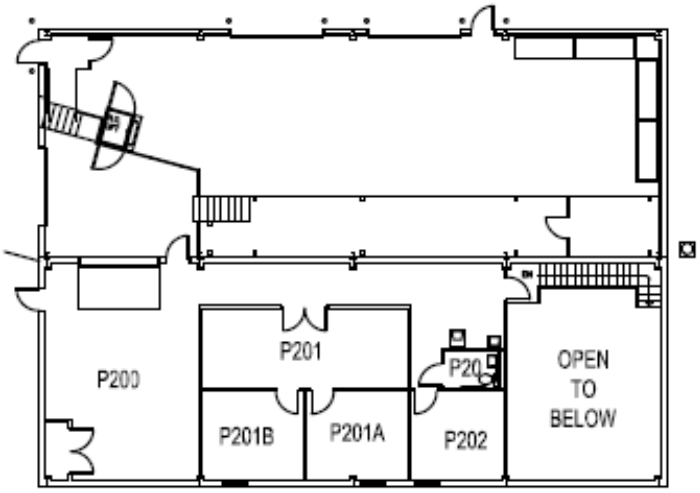
Building Designation	14. Plant Operations – Building P
Number of Floors	2
Net Assignable Square Feet	3,494
Gross Building Area - GSF	4,920
Net-to-Gross Efficiency	71.0%
Year Constructed	1996
Renovations	2016
Additions	2003; 1980 – Community Center Storage shed
Contains	Vehicle storage and maintenance bays, maintenance shops, storage, offices, meeting / lunch room
General Condition	Fair
Adequacy of Space	Inadequate for functions housed in the building.
Sprinkler System	Fully sprinklered

The Plant Operations building was built in 1996 with an addition in 2003 and renovation in 2016. The building is a steel framed, metal panel exterior Butler-style building with vehicle service bays on the lower level and Physical Plant offices on the second floor.

The building does not provide sufficient or the most appropriate space for offices and maintenance shops; as more buildings are added to the campus, the need for more maintenance, storage and office space will continue to grow, correspondingly.
Due to the extensive needs throughout the building for upgrade and expansion, a new replacement building is recommended.



Building P Ground Level Plan



Building P Upper Level Plan

Parking Deck

Building Description

Building Designation	15. Parking Deck
Number of Parking Levels	4
Parking Spaces	365
Gross Building Area - GSF	115,200
Year Constructed	2012
Renovations	No renovations
Additions	No additions
Contains	Parking for cars and other small vehicles
General Condition	Good
Adequacy of Space	Adequate for current parking demand
Sprinkler System	Dry sprinkler system

The Parking Deck was built in 2013 and consists of a 4-story precast concrete structure with masonry block and precast exterior. The structure has a single passenger elevator.
Focus areas for capital renewal needs over a 10-year period from 2023-2032 include the following:
• Exterior panel cleaning and sealant repair in the 5-7 year timeframe.
• Precast concrete deck repairs consisting of sealant replacement, welded plate repair and coating/sealer application in the 6-8 year timeframe.
• Interior wall, floor, ceiling finish renewal/upgrade in stair enclosure towers in long-term, years 9-10.

Monroe Center – Building MC

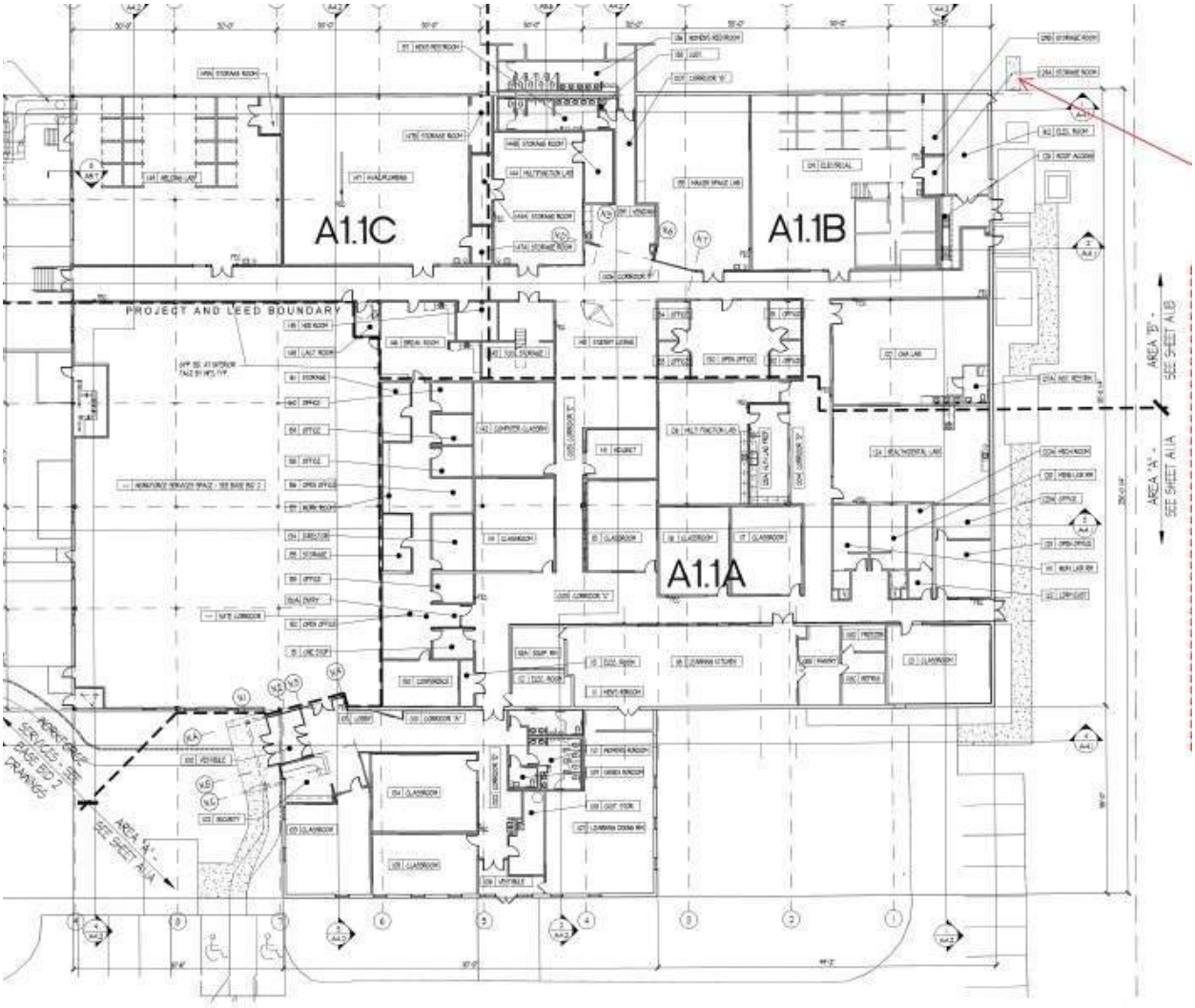
Building Description

Building Designation	16. Monroe Center – Building MC
Number of Floors	1
Net Assignable Square Feet	39,376
Gross Building Area - GSF	55,342
Net-to-Gross Efficiency	71.2%
Year Constructed	1969 (original building)
Renovations	2008 CETEC and SCIF grant upgrades, 2010 Culinary Arts, 2012 Interior Fit-out and renovation, 2017 renovation
Additions	No additions
Contains	CEWD studios, labs, and workshops for automotive and building trades and health care professions, kitchen and dining for culinary arts, classrooms, computer classrooms, lounges, and security desk
General Condition	Good
Adequacy of Space	Adequate for functions housed in the building.
Sprinkler System	Fully sprinklered

The Monroe Center was built in 1969 and serves several businesses in addition to FCC in a condominium-style lease. The FCC facility was renovated in 2017 and includes classroom and laboratory spaces for food preparation, automotive, construction and other trades and professions. The building exterior is original painted block and metal panel with a built-up roof system. Expanding need for growing and new continuing education and workforce development programs suggests exploration of acquiring additional space in the building.

Focus areas for capital renewal needs over a 10-year period from 2023-2032 includes the following:

- Replacement of the built-up roof system in the near term, years 1-2.
- Exterior panel and window cleaning and sealant repair in years 9-10.
- Interior wall finish renewal/upgrade, carpet replacement in the mid-term, years 5-7.
- Evaluation of in-slab waste distribution system, evaluation in year 1.
- Address building stormwater drainage concurrent with roof system replacement.



Building MC - Monroe Center Floor Plan

SITE INFASTRUCTURE AND ASSESSSMENT

Landscaping and Hardscaping

Site softscape is generally in good condition. The center of the campus is improved with many native species shrubs and trees, with Sycamore Trees being the dominate species. Most of the trees are 10-12" caliper. The entry driveway has larger caliper trees whose roots are compromising the accessibility of sidewalks into the campus. Improvements to the campus should include relocating the sidewalk out of rootzones or implementing improvements to the sidewalks that won't compromise their integrity by tree roots.

An existing forest conservation easement is recorded for the west side of the campus. This area meets all of the forest conservation requirements for the campus. Any future improvements to the campus should avoid impacts into this zone.

Site Hardscaping is variable in condition. Many attempts have been made to provide outdoor seating areas, but in most cases lack compliance with ADA. Similarly, sidewalks to access these areas are non-compliant from a slope perspective or in disrepair due to tree root growth. See ADA analysis for more specific areas of noncompliance. Of particular note is the center courtyard of the campus. The memorial garden is improved with a brick walkway that is noncompliant and sinking due to improper subgrade; also, the benches lack companion spaces for wheelchairs.

Soft and hardscape at the Monroe Center is limited to the area directly in front of the doors to the building. These areas are functional, but don't offer much privacy from the parking lot and street. It is unclear how much of this area is utilized by the students and faculty.

ADA/Accessibility

A complete ADA analysis of the site is contained in this report under separate cover. There are many routes that are not compliant. There was a reoccurring challenge at pathway intersections of finding compliance problems.

Further, many of the parking spaces lacked properly sloped access. Any improvements to the campus should take compliance updates into consideration. The Monroe Center presents similar challenges as with the main campus as it relates to ADA.

Roadways, Driveways, and Parking

This site has a loop road around the camps which stems from two driveway connections from Opossumtown Pike. The main entry is from the southern driveway, but both access points are fully signalized intersections. It should be noted that recent traffic improvements north of the campus (Christophers Crossing and US-15) may create more traffic entering the site at the northern driveway. Of particular concern is that there is no emergency entry/exit into the campus. There were plans produced to have a controlled driveway connection to Summerfield Drive, but those improvements were never advanced beyond the conceptual phase.

Potential Driveway Location at Summerfield Drive


Potential Driveway at Summerfield Drive

The one public bus stop is situated at the main driveway directly into the campus. This stop provides direct pedestrian access to two buildings and is a short 3-minute walk to the center of campus. It is unknown how many students or faculty utilize this mode of transportation.

Parking for the site splays out from the center of the campus. This arrangement allows for students and faculty to park within the lot that is closest to their building. However, we understand that during normal operations (i.e. non -Covid) parking is various lots are a premium. While there is a parking structure on the south side of the campus it may not provide sufficient parking for the buildings it directly serves. For the Monroe Center, the site is directly accessible from Monroe Street with two driveways, but these driveways are shared with the other tenants of the complex. Parking seems adequate and is intermingled with the rest of the parking for the entire complex. There were no observed bus stops within the vicinity of the campus.

Utilities and Campus Storm Drainage

The site is improved with a network of utility infrastructure that seems to be of adequate capacity based on the documented size of utilities and based on no comments from the user regarding known deficiencies. The site is serviced from a 12” waterline that is connected to the main within Opossumtown Pike. This line is routed directly under the primary driveway and branches off in front of Linganore Hall to

ultimately create a loop of the water system that provides redundancy in the system.

Sanitary sewer combined within the campus, and the Frederick County Public Schools building and then discharged from the campus via an 8” pipe to the main within Opossumtown Pike.

Electrical service is connected to a two utility poles along Opossumtown Pike. One pole is on the southside of the main driveway and the other is just north of the stormwater pond. These systems appear to provide some redundancy for power to the campus.

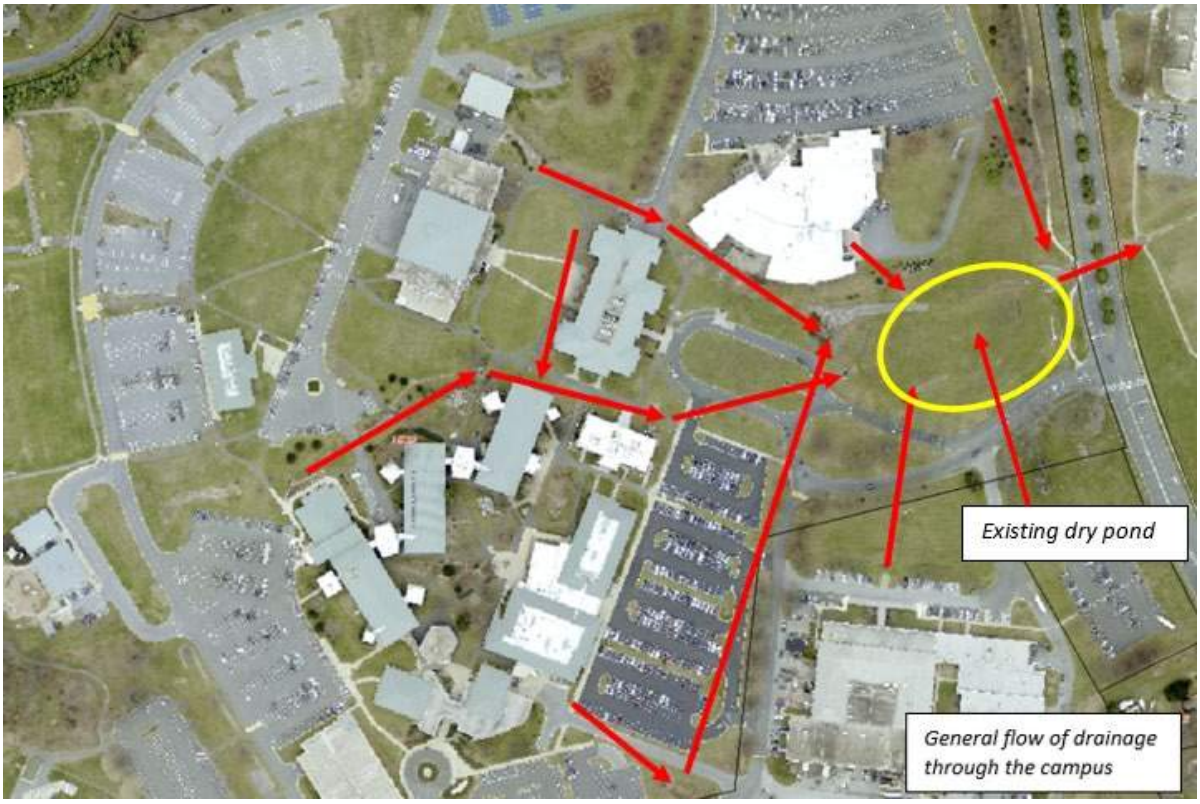
Communication service is routed from one pole on the northside of the main driveway from Opossumtown Pike. There is no redundancy in this system that can be of utmost importance to the campus from a telecommunications / security perspective.

Gas service is provided from a 6” line that is on the extreme northern end of the campus connected to the Washington Gas line with Opossumtown Pike.

The existing dry pond appears to be functioning as designed and looks well maintained. This pond captures all of the stormwater for the campus and routes it under Opossumtown Pike and ultimately it connects to the Little Tuscarora Creek which is part of the Monocacy River Drainage Basin. Newer improvements (less than 10 years old) are also improved with small stormwater quality facilities to provide at point source pollution control for their drainage area. Any improvements to the campus will also need to provide associated water quality treatment controls.

A chilled water system also feeds from Building D to the main buildings within the campus core.

The storm drainage network for the entire campus and the Frederick County Public Schools campus is routed to the existing dry pond located just north of the main driveway into the campus. Most of the system on the south and west side of the campus are comprised of closed drain systems, there is no visible evidence of ponding or degradation of this system. The western and northern portion of the campus is comprised of open/closed system, with culverts routing water under driveways and walkways to incoming/outgoing channels. The channels appear to be functioning as designed. There is a channel that drains from the maintenance shop that is showing signs of excessive erosion and may need to be expanded or converted to a properly sized closed drain system. Alternatively, consideration should be given to converting open section channels into more natural stream channels to provide enhanced water quality treatment as well as providing for further disposition of storm event velocities.



Campus Drainage Patterns

Signage

The campus signage program was intended to provide information to drivers and pedestrians to help them get to their destinations. The installation brought graphic uniformity to the signs and properly identified the buildings. Most buildings are identified by cast aluminum letters pinned to one or more facades, plus free-standing panel signs near building entrances.

Other free-standing panel signs are located throughout the campus and appear to be intended to provide direction primarily to pedestrians. Other informational panel signs provide a campus map image noting one's location on the map. Letter sizes for the signs are relatively small, and not easily read until the view is relatively close to the sign. In some cases, this may be remedied by locating signs closer to pedestrian ways. Way-finding signs for vehicles are more difficult to read from longer

distances, especially when driving. For the vehicles, larger signs with larger characters may improve readability.

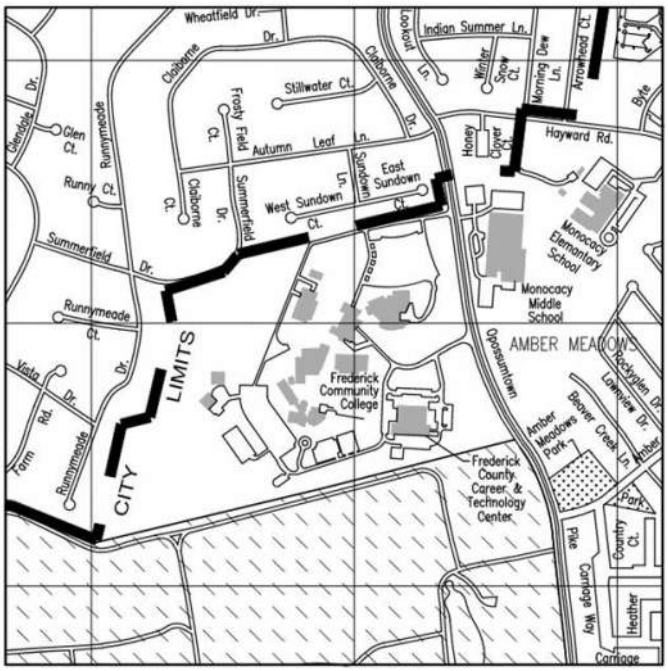
As most campus buildings have more than one major entrance, consideration should be given to additional building identification signage, notably cast aluminum letters, on one of the other façades for some buildings. This would especially be an aid to emergency vehicles and crews entering the campus as they look for a building destination; case in point is Jefferson Hall, which has no signage immediately visible to vehicles entering the campus via the main Opossumtown Pike vehicular entrance.

Site Furnishings




Site furnishings include seating, tables, waste receptacles, bike racks, and other elements which may enhance the outdoor / campus experience, such as sculpture. Seating, tables, and waste receptacles exist on campus in various forms and styles. Seating already exists in both heavy, non-movable form, and lightweight, portable; both have their place on any campus. Perhaps a bit more uniformity would be in order for all elements.

Vicinity Map



CENTRAL PLANT

The Frederick Community College (FCC) central chilled water and heating water plant is located within the campus Athletic Center (Building D). The chilled water and heating water plant was originally built in 1994 and has undergone multiple renovations. Namely, major renovations to the central plant occurred in 2008, 2011, 2016, and 2017. Underground chilled water and heating water piping delivers chilled water and heating water to the existing campus buildings.

Table 1 below summarizes the estimated connected cooling load and heating load seen by the central plant. It should be noted that some buildings are not currently supported by the central plant and have dedicated HVAC systems.

Table 1: Estimated Existing Campus Cooling and Heating Loads

	Building	Occupancy	Cooling Demand (Tons)	Heating Demand (MBH)	Comments
A	Annapolis Hall	Office	55	725	
B	Braddock Hall	Academic	65	740	
C	Catoctin Hall	Academic / Lab	120	1,165	
D	Athletics Center	Athletics	75	900	
E	Conference Center	Academic / Office	40	555	
F	Visual & PA Center	Academic / Lab	130	1,270	
H	Student Center	Academic / Office	145	2,015	
L	Linganore Hall	Academic / Office	110	1,510	
S	Sweadner Hall	Support	10	100	Standalone HVAC
G	Gambrill Hall	Office	40	550	Standalone HVAC
J	Jefferson Hall	Office	40	550	Standalone HVAC
K	Mercer-Akre Kiln	Lab	5	40	Standalone HVAC
M	Children's Center	General Use	25	255	Standalone HVAC
P	Plant Operations	Support	20	225	Standalone HVAC
	Estimated Central Plant Demand		**740 Tons**	**8,880 MBH**	
	Estimated Campus Demand		**880 Tons**	**9,875 MBH**	

Notes:
1. Estimated cooling and heating demand is based off of approximate SF/Ton and SF/MBH.

Central Chilled Water System

Existing Conditions

The existing central chilled water plant is comprised of three (3) water cooled centrifugal chillers, two (2) induced draft counter flow cooling towers, six (6) chilled water pumps and six (6) condenser water pumps. The plant operates as a primary / secondary constant volume chilled water plant. The primary chilled water pumps distribute water to each building where secondary distribution pumps circulate water through the various campus buildings. Due to the current chilled water and condenser water piping configuration only two (2) chillers can operate at a time which limits the central

plant cooling capacity to 760 Tons. The third chiller installation allows for some plant redundancy whenever one of the chillers is down for service. Currently, two (2) chillers are able to satisfy the peak connected load, with one (1) chiller often able to satisfy the connected load outside of peak conditions. A summary of the existing chillers is provided in Table 2. The existing chillers were replaced in 2009 and 2017 and are in fair condition.

Table 2: Existing Chiller Capacity

Chiller #	Manufacturer/Model	Year Installed	Capacity (Tons)
1	Trane CVHF	2017	450
2	Trane CVHF	2017	450
3	McQuay HSC	2009	310
		Total (Tons)	1,210

A summary of the existing cooling towers is provided in Table 3. CT-1 and CT-2 are original to central plant and are rated for 450 Tons and 800 Tons, respectively. Each tower fan is provided with a variable frequency drive (VFD). Campus facilities has noted the towers have operational issues including tower basin vortex. In addition, the existing condenser water piping configuration does not allow all three chillers to operate simultaneously and limits chiller plant capacity. Lastly, the existing towers are enclosed by a solid brick wall which may derate the overall tower capacity.

Table 3: Existing Cooling Tower Capacity

Cooling Tower#	Manufacturer/Model	Year Installed	Capacity (Tons)
CT-1	BAC PT2-0609A-3LA2	1994	450
CT-2	BAC PT2-0609A-3LA2	1994	800
		Total (Tons)	1,250

A summary of the existing chilled water and condenser water pumps is provided in Table 4. Chilled water and condenser water pumps are assigned to a dedicated chiller and are designed for Primary / Standby operation. Due to the existing piping configuration it is not possible to operate chillers, pumps and cooling towers in different configurations and sequences. Chilled water pumps and condenser water pumps were replaced when chillers CH-1 and CH-2 were replaced and were provided with VFDs. Chilled water and condenser water pumps associated with CH-3 do not currently have VFDs and are original to the plant.

Table 4: Existing Pump Capacities					
	Service	Capacity (GPM)	Ft HD	HP	VFD (Y/N)
BP-1	Chilled Water – CH-1	1,080	45	20	Y
BP-2	Chilled Water – CH-1	1,080	45	20	Y
BP-7	Chilled Water – CH-2	1,080	45	20	Y
BP-8	Chilled Water – CH-2	1,080	45	20	Y
P4A	Chilled Water – CH-3	1,080	130	40	N
P4B	Chilled Water – CH-3	1,080	130	40	N
P-2C	Condenser Water – CH-3	1,350	80	40	Y
P-2D	Condenser Water – CH-3	1,350	80	40	Y
BP-5	Condenser Water – CH-1	1273	71	40	Y
BP-6	Condenser Water – CH-1	1273	71	40	Y
BP-9	Condenser Water – CH-2	1,350	71	40	Y
BP-10	Condenser Water – CH-2	1,350	71	40	Y

Central Heating Water System

Existing Conditions

The existing central heating plant consists of three (3) condensing gas fired boilers and one (1) gas fire- tube boiler. A summary of the boilers is provided in Table 5. The existing fire tube boiler was replaced in 2008 while the newer condensing boilers were installed in 2016 after the previous firetube boilers experienced a failure in 2016. The heating plant operates as a constant volume primary / secondary system. The primary heating water pumps distribute water to each building where secondary distribution pumps circulate water through the various campus buildings. During the winter season three (3) boilers are required to operate to meet the campus connected heating load. During the summer months one (1) boiler is required to maintain dehumidification loads throughout campus.

Table 5: Existing Boiler Capacities			
Boiler #	Manufacturer/Model	Year Installed	Capacity (MBH)
1	Weil-McLain 1488	2008	4474
2	Fulton VTG-4000	2016	3876
3	Fulton VTG-4000	2016	3876
4	Fulton VTG-4000	2016	3876
		Total (MBH)	16,102

A summary of the existing primary heating water pumps is provided in Table 6. The existing heating water pumps are original to the central plant and appear to be in poor condition. The heating water pumps are not currently equipped with VFDs and do not allow for variable flow control.

Table 6: Existing Pump Capacities

	Service	Capacity (GPM)	Ft HD	HP	VFD (Y/N)
P-3B	Heating Water	617	190	50	N
P-3C	Heating Water	617	190	50	N
P-3D	Heating Water	617	190	50	N

Campus Chilled Water and Heating Water Distribution

Existing Conditions

There are three (3) sets of underground piping mains leaving the Central Plant in Building D to provide cooling and heating for several of the connected buildings on campus. If the projected load of any building downstream of these mains is increased such that it surpasses these max values, it is expected that the main underground lines will need to increase in size. Campus facilities also noted that there may be a leak in one of the underground pipes, but underground leak detection is not currently installed. It is anticipated that some sections of underground piping are in poor condition.

Central Plant Electrical Infrastructure

Existing Conditions

The central plant and gymnasium building receives secondary service from a pad mounted transformer located adjacent to the building. The pad mounted transformer is owned by Potomac Edison and converts the power company's primary service to a secondary voltage of 480/277 volts, three phase, four wire. The secondary service is extended underground within a ductbank to the main switchboard which is designated as Switchboard MDP and located with the central plant's main electric room.

The switchboard was manufactured by Westinghouse Pow-R-Line, installed in 1994 and is rated 3000 amp, 480/277 volts, three phase, four wire. The switchboard is comprised of three sections which include incoming, metering (current transformers) and distribution. The switchboard utilizes fusible switches for distribution feeders and does not incorporate a single main disconnect. Instead, the switchboard incorporates multiple main disconnects as allowed by the six disconnect exception in the National Electrical Code. The switchboard contains the following distribution fusible switches:

- MDP-1: 1200 amp serving Chiller 3
- MDP-2: 400 amp serving Panel PP-PE
- MDP-3: 400 amp – not labeled (believe it serves MCC-PP-PC)
- MDP-4: 800 amp serving Switchboard MDP-A Sections 1 and 2
- MDP-5: 800 amp serving Chiller 1

A 600 amp, three pole fusible switch is mounted adjacent to the switchboard on C-channel supports. The line side feeder serving this switch is tapped off Switchboard MDP's main bus. This switch is designated as MDP-6 which is the 6th service disconnect and is serving Chiller 2. The highest peak demand load for the past two years was 754 kW which occurred in the month of September in 2018. Based on a 90% power factor, this equates to 838 kVA or 1,008 amps at 480/277 volts, three phase, four wire. This is well within the capacity of the main switchboard which is rated 3000 amps at 480/277 volts, three phase, four wire.

Switchboard MDP-A Sections 1 and 2 are located within the main electric room and appears to be the original switchboard serving the building. This switchboard was manufactured by Cutler Hammer Type QUB and is rated 1200 amps, 480/277 volts, three phase, four wire. This switchboard also utilizes fusible switches for the distribution feeders and contains the following:

- 200 amp serving Panel HB
- 200 amp serving Panel HA
- 600 amp serving Motor Control Center MCC-PA
- 30 amp spare
- 30 amp serving hazardous storage heaters
- 60 amp serving Panel LP-PA transformer
- 60 amp serving site lighting
- 100 amp serving Panel SE
- 100 amp serving Panel PP-PB transformer
- 400 amp serving Panel HHA

The main electric room houses three branch circuit panels designated PP-PD, PP-PE and SE. The feeder for Panel PP-PD is tapped off the main bus in Switchboard MDP-A and utilizes a fusible switch mounted adjacent to the switchboard as the main disconnecting means. Panel PP-PD is rated 225 amp, 480/277 volts, three phase, four wire and was manufactured by Westinghouse Type PRL2. This panel contains the feeder breakers serving cooling tower 1 fans, sump heaters and heat trace. The pneumatic controls air compressor is also indicated as being served from this panel.

Panel PP-PE was manufactured by General Electric A series and is rated 400 amps, 480/277 volts, three phase, four wire. This panel serves cooling tower 2 fans and heat trace. In addition, several of the condenser and chiller water pumps, and heat reclamation pumps are also indicated as being served from this panel.

Panel SE serves site lighting and is rated 100 amps, 480/277 volts, three phase, four wire. This panel was manufactured by Square D Type NF and provides service to five lighting contactors mounted adjacent to the panel. The contactors are designated CL-19 thru CL-21 and CL-24 and manufactured by Square D. These contactors control all parking lot and roadway lighting in the vicinity of the building.
Motor Control Centers MCC-PA and MCC-PP-PC are both located in the main mechanical room of the central plant. Motor Control Center MCC-PA is rated 600 amp main lug only, 480/277 volts, three phase, four wire and was manufactured by Square D Model 6. Motor Control Center MCC-PP-PC is also rated 600 amps main lug only and was manufactured by Westinghouse Series 2100. This control center was installed in 1994 which was concurrent with the installation of Switchboard MDP. Both motor control centers contain combination starters and feeder units which serve chiller, condenser, and heating water pumps. There are also two air compressors being served from MCC-PA.

Two branch circuit panels designated LP-PA and PP-PB are located within the main mechanical room of the plant. Panel LP-PA is served from a 30 kVA transformer located in the main electric room which converts the 480 volt feeder from Switchboard MDP-A to 208/120 volts. The panel is rated 225 amps, 208/120 volts, three phase, four wire manufactured by Cutler Hammer and appears to be one of the original panels.

This panel serves lighting and receptacle branch circuits throughout the building. Panel PP-PB is served from a 75 kVA transformer housed in the main electric room. This panel is rated 225 amp, 208/120 volts, three phase, four wire and was manufactured by Eaton Type PRL1a. Panel PP-PB was installed in 2017 and serves the boilers and associated fuel oil pumps

TECHNOLOGY SYSTEMS

Audiovisual Systems

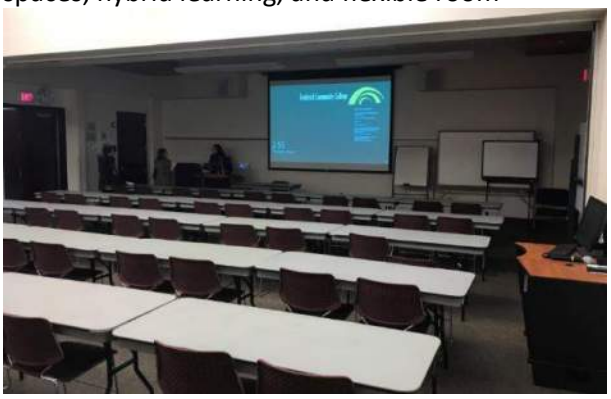
Educational Technology/Audio Visual Systems

Observations on the campus were made and virtual staff interviews were conducted with the Educational Technology stakeholders, IT support staff, and facilities personnel. It was noted that while classroom instruction has historically been in-person on the campus, the need for virtual learning and hybrid instruction is an important consideration that continues to affect instructional delivery and facilities planning.

Educational Technology standards are continually evolving throughout academia and on the campus. The need for collaborative spaces, hybrid learning, and flexible room arrangements continues to be a high priority. It was noted during staff meetings collaborating improvements could be made between campus AV Staff and Instructional Faculty/Users.

Digital Signage: The general consensus of all campus stakeholders is that the inadequate coverage / presence of signage and digital signage throughout the campus needs to be addressed.

Class Scheduling / Maintenance: AV support staff noted that the availability of classrooms, and the quick turnaround time between scheduled classes often creates service and maintenance issues.


Existing Campus Seminar Room


Existing Campus Classroom


Existing Podium

Electronic Security

An Annual Security Report published in October 2021 identified recent improvements to campus security, as well as threat assessments and technical deficiencies. The Electronic Access Control System (card readers) has been recently upgraded throughout the campus. Through meetings with campus facilities and security personnel, several items were noted as requiring further study and consideration:

1. More cameras should be added at the campus entrance

2. Buildings lack exterior markings for identification which presents navigation challenges as well as safety response time inefficiencies

3. Campus Security noted a lack of ability to see into classrooms

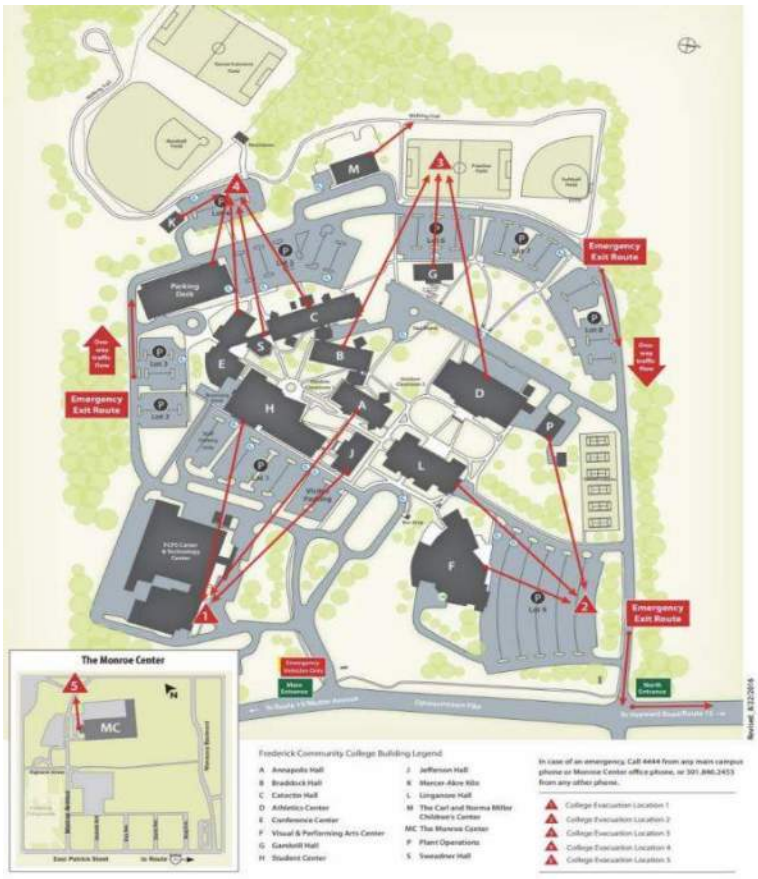
4. Office suites, board rooms, conference rooms are not electronically locked. This should be further investigated/discussed, possibly with a cost vs. benefit analysis.

5. Instructional spaces (classrooms, labs, specialty labs, etc.) all have card readers to enable lockdown and scheduled locking. This standard should continue to be implemented into the future.

6. Telecom rooms have card readers to track who has access.

7. Exterior access to the campus is easy to control, but this limits emergency vehicle access.

8. Lack of digital signage around the campus for emergency messaging is a significant problem.



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Telecommunications Structured Cabling System

As an initial step in the planning process, CTDG met with the information technology division staff to characterize FCC's vision for Telecommunications Structured Cabling Systems. An examination of the existing Telecommunications Rooms and Data Centers along with meetings between campus IT facilities' representatives have established expected practices for any new Distribution Rooms. There is currently a data center relocation project taking place as the part of the Building F renovations which will inform the long-term campus distribution planning. Connectivity standards were discussed with campus IT and a minimum number of connections between Data Centers and Distribution Frames was determined.

A number of specific areas of importance have been identified to date, for discussion and consideration:

a. Telecom distribution systems design standards are regularly updated by campus IT staff, and should continue to be a key component/requirement of all campus renovation and new construction projects.

b. There are approximately Eight (8) to Ten (10) existing campus Telecommunication Rooms that are not up to current IT standards. These should be planned for upcoming renovations and/or replacement.

c. The Data center is out of date and in need of modernization. A new data center is currently in construction.

d. With the completion of the upgrade to a network-based phone system, the underground conduits system contains an abundance of unused cable. A full survey and plan to remove unused cabling should be planned.

e. Each building has one point of entry for networking connectivity. Industry best practices and peer institutions typically recommend two (2) points of entry for redundancy. The long term value vs. cost of including redundancy should continue to be discussed and considered by the College.

f. Disaster Recovery: The College needs to develop an approach and process to address disaster recovery plans as relating to the campus network, distribution, and data integrity.

g. Staff have noted that shipping and receiving space, as well as security for incoming equipment is inadequate. There is a general lack of dedicated storage space for networking equipment, PC's, etc.

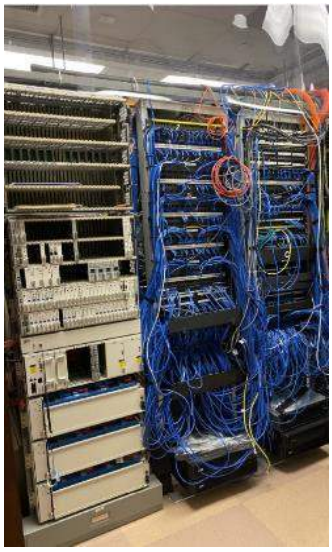
h. Life Safety systems: Valcom paging system is end of life. A replacement system should be discussed and planned for.

    i. Location Specific: Athletic fields cannot hear pages (loudspeakers needed).

    ii. Red phones are not consistent through campus.

    iii. Blue Pole phones around campus are analog based old technology. Also have no accommodation for hearing or visually impaired students.

    iv. Call boxes in parking deck are analog-based old technology.



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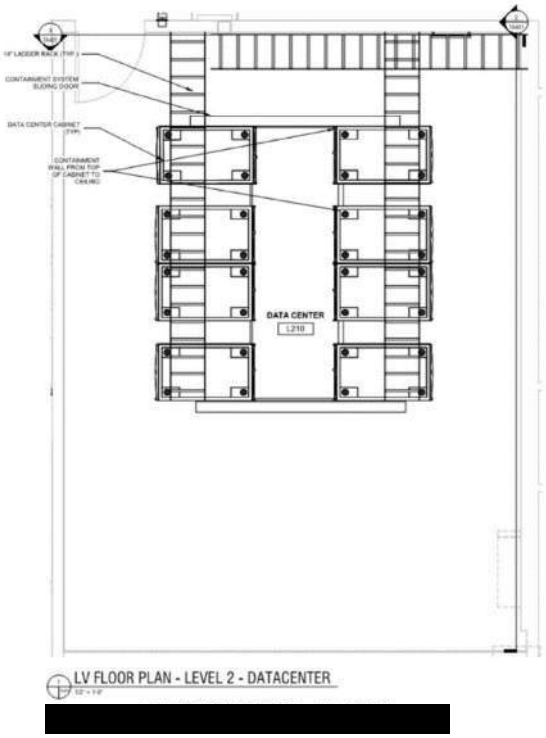

LV FLOOR PLAN - LEVEL 2 - DATACENTER

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SUSTAINABILITY

The Breadth and Currency of FCC Sustainability

Sustainability for Frederick Community College, writ large, encompasses nearly every aspect of the College –its academic programs, physical plant, operations, position in and impact on the community, outreach, image, and ultimately relative to its place as an institution of higher learning. Indeed, the fiscal well-being of FCC must always be sustainable as well. The College's past and present is in part defined by its practices relative to the environment and by setting a standard for the FCC community and for Frederick County. There is hardly an aspect of FCC's operations that isn't affected by sustainability considerations or which have an impact on sustainability: the campus, landscaping, storm water management, parking, transportation, fleet vehicles, water usage, plant operations, energy consumption and production, housekeeping, food service, instruction delivery, class schedules, information technology and more.

The College's Office of Capital Planning and Project Management (CPPM) began to address sustainability by way of several initiatives in recent years. Significantly, this includes development of its facilities to meet USGBC (United States Green Building Council) LEED (Leadership in Energy and Environmental Design) Silver level requirements, particularly for major capital projects funded in part by the State (Braddock Hall renovation, Monroe Center Renovation, and the Linganore Renovation). Reinforcing positive LEED outcomes, FCC requires commissioning for all building systems in its major construction projects. Interestingly, while undertaking significant renovations to existing buildings, avoiding major new building projects, the College effectively limited the embodied carbon expenditure that would have been a factor in any new construction.

Situated within the City of Frederick, the College's location inherently contributes to the sustainability of the region. It is inside the largest population base of the County and is served by several *TransIT* bus lines: routes 60, 61 and 80 serve the main campus, while route EF includes the Monroe Center and also connects with the 60, 61 and 80 lines.

The College has employed storm water management strategies to manage and control storm water events to which the campus and surrounding area contribute. The campus is also noted for its neatly maintained landscape, including several large, mature trees among several species that are thriving.

Energy saving air locks at building entrances have been incorporated into several recent renovation projects. CPPM has developed a very thorough Building Design and Construction Standards document, coordinating and unifying products as campus standards, which should limit if not eliminate stocking of products that won't be used. Those standards also specify water-saving plumbing fixtures and energy-saving (LED) lighting fixtures and building control systems. The Chief of Operations, Director of Capital Planning, and Director of Plant Operations all have been employing strategies to use resources responsibly, monitor energy usage, and plan wisely. Academic courses include segments on environmental sustainability, and faculty, administrators and students have spoken and acted in support of furthering the cause of sustainability. All exterior parking lot, walkway, and parking lot lighting has been upgraded to LED. Additionally interior lighting in common areas of some older buildings has been upgraded to LED.

As the campus landscaping palette largely focuses on grass, trees and shrubs in its neatly maintained grounds, it also offers several settings where innovative landscaping strategies can be implemented to reflect the growing awareness of the need for a more sustainable environment. In addition to the green spaces, the large expanses of parking lots contribute to an aggregated heat sink during all seasons. The College is on the threshold of making large strides towards a more sustainable future, and numerous opportunities await. These are addressed in Chapter 6.

Chapter 6
Proposed Campus Development

The Basis for Strategic Recommendations

Site Infrastructure and Improvements

Central Plant

Technology Systems

Sustainability

Design Guidelines

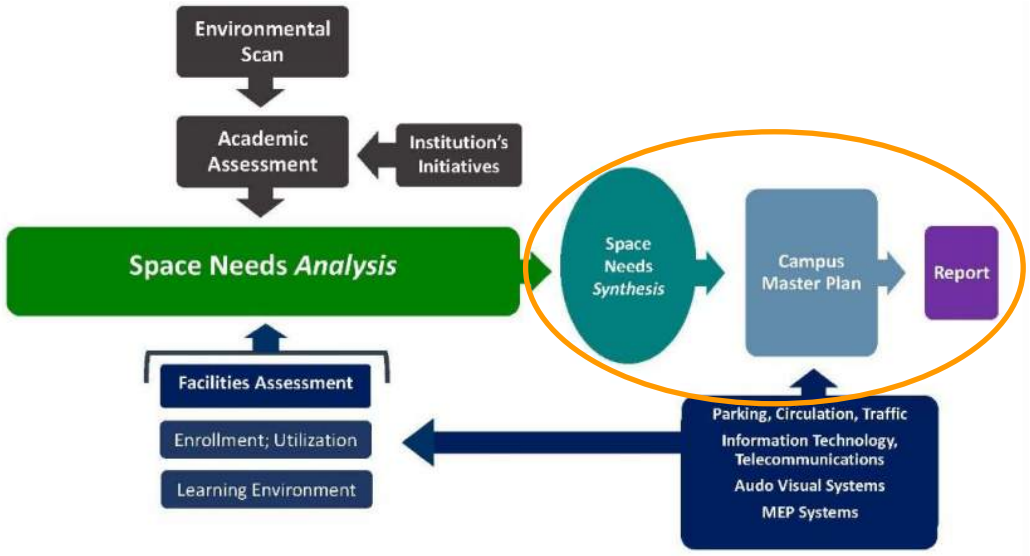
College-Wide Recommendations

Capital Projects, Campus Development

THE BASIS FOR STRATEGIC RECOMMENDATIONS

Process Re-Cap

Continuing from previous chapters, this section includes the synthesis of the findings of the Environmental Scan, Academic Program Review, and Needs Assessment and goes on to make recommendations for capital projects and campus development, and certain college operations. The focus of this section is highlighted in the process graphic below.



The findings from the Environmental Scan and Academic Program Review were evaluated in a series of matrices which:

- synthesize the impact of Environmental Scan findings on enrollment, operations, and academic programs
- address the influence of six Driving Forces first described in Chapter 3, *Academic Program Review*, both external and internal, on existing and potential academic programs, and
- develop a weighted scale of recommendations for credit and non-credit programs, existing and to-be-considered.

Refer to the matrices in the following pages. The first four charts evaluate the impacts and relationships of the local, state and national labor market on and with existing and potential credit and non-credit programs. The four charts following the labor market matrices look at the same programs under the lens of the Driving Forces, relative to the 'fit' of each program to the each of the six driving forces. These matrices were then reviewed with the Facilities Master Plan Steering Committee in a series of workshops, out of which consensus was developed, considering the relationship of the programs with the labor market and with the Driving Forces.

Credit Programs re the Labor Market 1

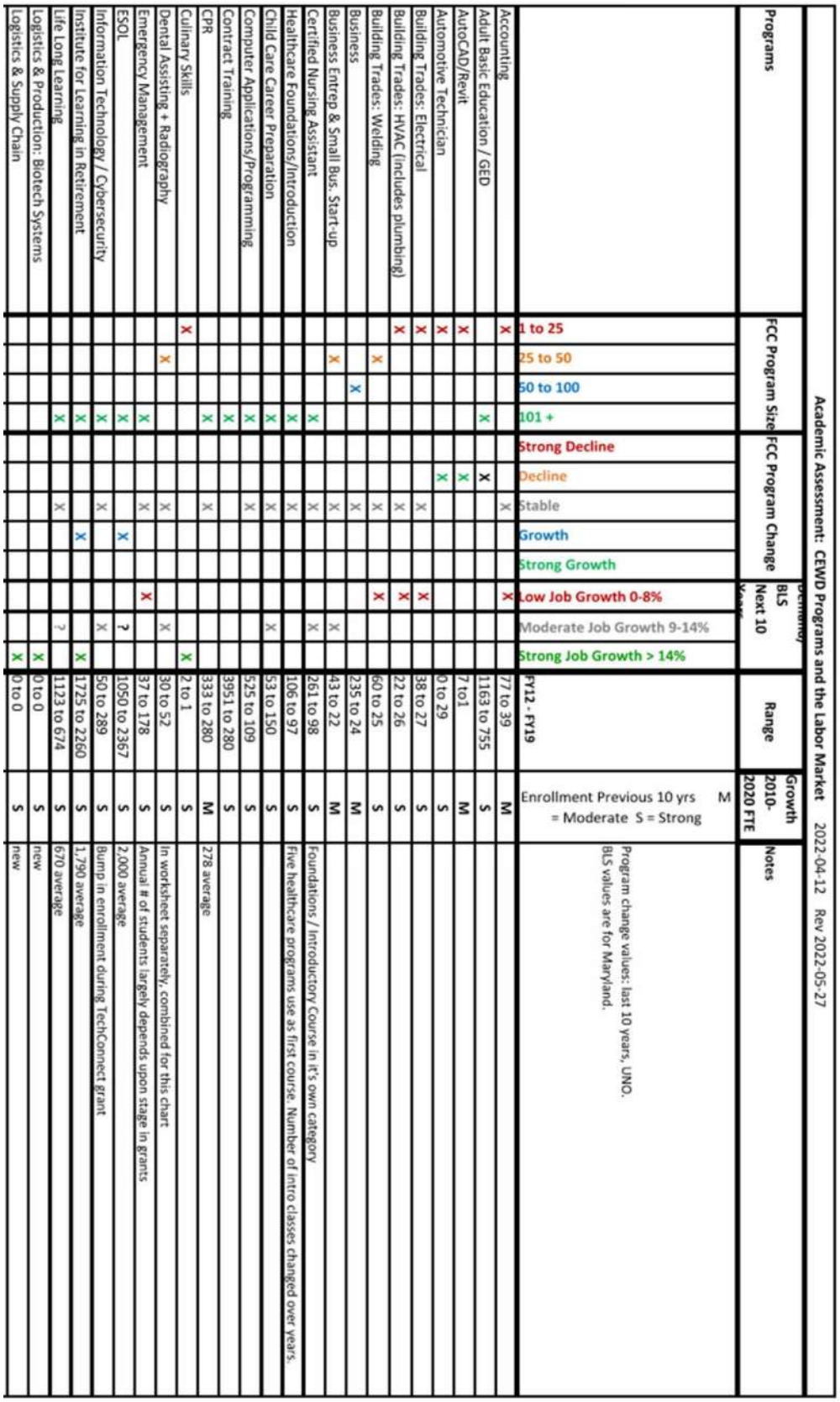
Academic Assessment: Credit Programs and the Labor Market 2022-04-07, Rev 05-27															
	FCC Program Size					FCC Program Change					Demand/ BLS - Next 10 Years			Growth 2010-2020 FTE	Notes*
	1 to 50	51 to 100	101 to 300	301 to 500	501 +	Strong Decline	Decline	Stable	Growth	Strong Growth	Low Job Growth 0-8%	Moderate Job Growth 9-14%	Strong Job Growth 15+%	M = Moderate S = Strong	Program change values: last 10 years, UNO. BLS values are for Maryland.
Associate Degrees															
General Studies Transfer (incl. STEM, Arts & Humanities, Social Sciences, STEM Technology)					X							X			1900-902
Arts & Sciences Transfer (Health & Exercise Science)					X							X		M	1163-663
Social Sciences (incl. Addictions Counseling, History, Sociology, Psychology, Criminal Justice, some Teaching)				X				X				X		M	378-381
Business Administration (incl Accounting, Paralegal, Business Management)				X				X				X		M	374-370
STEM (Biology, Chemistry, Engineering, Math)			X							X		X		S	213-281
Technology, Gaming, Gaming Simulation, IT, Building Trades Technology)			X							X		X		S	294-251
Arts & Humanities (incl Art, Music, English, Theater, Communications, ASL, Sign Language Interpreting, Film & Video, Graphic Design, Mass Communication, World Languages, and misc Arts & Humanities)			X							X	X			M	202-255
Nursing RN and LPN			X					X			X			M	656-182
Computer Sciences Transfer			X						X			X		S	106-136
Elementary Ed, Special Ed (English, Math, Spanish)		X						X				X		S	133-98
Business Management		X						X				X		M	98-62

Credit Programs re the Labor Market 2

Academic Assessment: Credit Programs and the Labor Market 2022-04-07, Rev 05-27																
	FCC Program Size					FCC Program Change					Demand/ BLS - Next 10 Years			Growth 2010-2020 FTE	Notes*
	1 to 50	51 to 100	101 to 300	301 to 500	501 +	Strong Decline	Decline	Stable	Growth	Strong Growth	Low Job Growth 0-8%	Moderate Job Growth 9-14%	Strong Job Growth 15+%	M = Moderate S = Strong	Program change values: last 10 years, UNO. BLS values are for Maryland.
Associate Degrees															
Early Childhood / Elementary & Special Ed	X							X					X	S	110-49
Early Childhood Development	X							X					X	S	52-45
Accounting	X							X				X		M	80-43
Medical Assisting	X							X					X	M	40-43
Respiratory Care	X							X					X	S	76-41
Surgical Technician														M	
Hospitality Management														M	
Supervision														S	
Physical Therapy Assistant														M	
First Responder - Part of MACEM														M	
Lower Division Certificates															
Addictions Counseling	X									X			X	S	2-10
Business Accounting	X								X			X		M	11-14
Healthcare Practice Management	X							X					X	M	24-10
Medical Assistant	X							X					X	M	50-17
American Sign Language	X							X					X	M	22-19
Building Trades Technology	X									X	X			S	17-31
Culinary Skills	X							X					X	S	19-12

*Enrollment data from earlier years was reported to State of MD differently from recent years.

Non-Credit Programs re the Labor Market 1



Academic Assessment: CEWD Programs and the Labor Market 2022-04-12 Rev 2022-05-27

Programs	FCC Program Size	FCC Program Change	BLS Next 10 Years (Estimate)	Range	Growth 2010-2020 FTE	Notes
	1 to 25	Strong Decline	Low Job Growth 0-8%	FY12 - FY19	Enrollment Previous 10 yrs M = Moderate S = Strong	
	25 to 50	Decline	Moderate Job Growth 9-14%			
	50 to 100	Stable	Strong Job Growth > 14%			
	101 +	Growth				
		Strong Growth				
Accounting	X	X	X	77 to 39	M	
Adult Basic Education / GED				1163 to 755	S	Program change values: last 10 years, UNO. BLS values are for Maryland.
AutoCAD/Revit	X	X		7 to1	M	
Automotive Technician	X	X		0 to 29	S	
Building Trades: Electrical	X	X	X	38 to 27	S	
Building Trades: HVAC (includes plumbing)	X	X	X	22 to 26	S	
Building Trades: Welding	X	X	X	60 to 25	S	
Business		X		235 to 24	M	
Business Entrep & Small Bus. Start-up	X	X	X	43 to 22	M	
Certified Nursing Assistant		X	X	261 to 98	S	Foundations / Introductory Course in it's own category
Healthcare Foundations/Introduction		X		106 to 97	S	Five healthcare programs use as first course. Number of intro classes changed over years.
Child Care Career Preparation		X	X	53 to 150	S	
Computer Applications/Programming		X		525 to 109	S	
Contract Training		X		3951 to 280	S	
CPR		X		333 to 280	M	278 average
Culinary Skills	X			2 to 1	S	
Dental Assisting + Radiography	X	X	X	30 to 52	S	In worksheet separately, combined for this chart
Emergency Management		X		37 to 178	S	Annual # of students largely depends upon stage in grants
ESOL		X	?	1050 to 2367	S	2,000 average
Information Technology / Cybersecurity		X		50 to 289	S	Bump in enrollment during TechConnect grant
Institute for Learning in Retirement		X	X	1725 to 2260	S	1,790 average
Life Long Learning		X	?	1123 to 674	S	670 average
Logistics & Production: Biotech Systems			X	0 to 0	S	new
Logistics & Supply Chain			X	0 to 0	S	new

Non-Credit Programs re the Labor Market 2

Academic Assessment: CEWD Programs and the Labor Market 2022-04-12 Rev 2022-05-27															
Programs	**FCC Program Size**				**FCC Program Change**					**Demand/ BLS Next 10 Years**			**Range**	**Growth 2010-2020 FTE**	**Notes**
	1 to 25	25 to 50	50 to 100	101 +	Strong Decline	Decline	Stable	Growth	Strong Growth	Low Job Growth 0-8%	Moderate Job Growth 9-14%	Strong Job Growth > 14%	FY12 - FY19	Enrollment Previous 10 yrs M = Moderate S = Strong	Program change values: last 10 years, UNO. BLS values are for Maryland.
Makerspace	X						X						0 to 57	M	Experienced growth prior to COVID
Management/Supervision	X												51 to 15	M	Could be combined with Business
Manufacturing Technology												X	0 to 0	S	Also includes Robotics and Rehabilitation Aide
Medical Billing & Coding				X				X			X		103 to 138	S	Medical Billing & Coding combined
Motorcycle/ Driver's Education Training				X			X				?		706 to 227	M	Need site and storage
Music Lessons				X			X						660 to 512	S	
Patient Care Technician	X						X				X		0 to 18	S	Program restarted FY18
Phlebotomy Technician		X				X					X		59 to 48	S	
Project Management		X								X			5 to 52	M	Enrollment dropped after classroom based program ended. Current classes online.
Real Estate and Home Inspection			X				X				X		0 to 78	S	
Sterile Processing Technician	X										X		0 to 23	S	
Thrive - re students w/ intellectual disabilities				X				X			?		0 to 116	S	
Veterinary Assistant		X									X		0 to 22	M	
Wastewater Treatment				X									218 to 104	M	
Youth Programs				X			X				?		2304 to 2689	S	Enrollment number affected by discontinuance of home school program
Possible New Programs?															
CDL Training															
Dental Hygienist											X				Proposed as Credit
Electric Vehicle Technology												X			
Forklift and Heavy Equipment Training															Needs appropriate space
Occupational Therapy Assistant											X				Potential as Credit Program
Remote Work and Instruction Training															
Renewable Energy Technology (Wind, Solar, etc)												X			

Driving Forces

In addition to the review of academic programs relative to the labor market, this analysis is guided by applying six major **Driving Forces** which include the following factors also incorporating the labor market as one of the factors:

- **Unique identity**--The extent to which the program reflects the distinctive character and strengths of the college, its faculty and staff, student body, and the particular needs of the county, region, state and nation.

- **Economic advantage and return on investment**--The need and demand for the program compared to the resources (human, physical, and monetary) required to provide the program.

- **Building on existing programs**--The efficiency and effectiveness of using existing program offerings and the facilities and resources that support them as foundational for program expansion, new program development, interdisciplinary initiatives, etc.

- **Potential for partnerships and alliances**--The extent of partnerships and alliances among academic programs and centers on campus and between the campus and the community beyond (e.g., business, community, governmental organizations and agencies, as well as the potential for expanding and developing new partnerships and alliances).

- **Social, environmental, community responsibility**--Responsiveness to existing and projected needs of students, members of the community, the region, and the State as related to IHE's mission, goals, priorities, and resources.

- **Labor market**--Analysis of the demands of the labor market (local, state, national) as an important basis for determining projected program development and the resource base required to meet these needs.

Refer to the following four pages for this evaluation.

Credit and Proposed Programs re Driving Forces 1

Academic Assessment: Credit and Proposed Programs and Driving Forces 2022-05-27																		
	Unique Identity			Economic Advantage, Ret on Investment			Build on Existing Programs			Potential for Partnerships and Alliances			Social / Community, Environmental			Labor Market and Workforce Needs		
	Minor Relevance	Moderate Relevance	Significant Relevance	Minor Relevance	Moderate Relevance	Significant Relevance	Minor Relevance	Moderate Relevance	Significant Relevance	Minor Relevance	Moderate Relevance	Significant Relevance	Minor Relevance	Moderate Relevance	Significant Relevance	Minor Relevance	Moderate Relevance	Significant Relevance
FCC Credit Programs																		
General Studies Transfer	X				X			X			X			X		X		
Arts & Sciences Transfer	X				X			X			X			X		X		
Social Studies	X				X			X			X			X		X		
Business Administration		X			X			X			X		X					X
STEM			X			X			X			X			X			X
Technology, Gaming, Gaming Simulation, IT, Bldg Trades Tech		X				X			X			X	X					X
Arts & Humanities			X		X				X		X				X	X		
Nursing RN and LPN			X		X				X			X		X				X
Computer Sciences Transfer			X			X			X		X		X					X
Elementary Ed, Special Ed		X			X			X			X			X				X
Business Management		X			X			X			X		X					X
Early Childhood / Elem & Spec Ed		X			X			X				X		X				X
Early Childhood Development		X			X			X				X		X				X
Accounting		X			X			X			X		X					X

Credit and Proposed Programs re Driving Forces 2

Academic Assessment: Credit and Proposed Programs and Driving Forces 2022-05-27																		
	Unique Identity			Economic Advantage, Ret on Investment			Build on Existing Programs			Potential for Partnerships and Alliances			Social / Community, Environmental			Labor Market and Workforce Needs		
	Minor Relevance	Moderate Relevance	Significant Relevance	Minor Relevance	Moderate Relevance	Significant Relevance	Minor Relevance	Moderate Relevance	Significant Relevance	Minor Relevance	Moderate Relevance	Significant Relevance	Minor Relevance	Moderate Relevance	Significant Relevance	Minor Relevance	Moderate Relevance	Significant Relevance
FCC Credit Programs																		
Medical Assisting			X		X				X			X		X				X
Respiratory Care			X		X				X			X		X				X
Surgical Technology			X		X				X			X		X				X
Hospitality Management			X		X				X			X	X					X
Supervision	X				X			X			X		X					X
Physical Therapy Assistant			X			X			X			X		X				X
First Responder - Part of MACEM			X			X			X			X		X				X
Lower Division Certificates																		
Addictions Counseling			X			X	X				X				X			X
Business Accounting		X				X		X			X		X					X
Healthcare Practice Management			X			X			X			X	X					X
Medical Assistant			X			X			X			X		X				X
American Sign Language			X		X				X			X			X		X	
Building Trades Technology			X			X			X			X	X					X
Culinary Skills			X		X				X			X	X				X	

CEWD and Proposed Programs re Driving Forces 1

Academic Assessment: CEWD and Proposed Programs and Driving Forces 2022-05-27																		
	Unique Identity			Economic Advantage, Ret on Investment			Build on Existing Programs			Potential for Partnerships and Alliances			Social / Community, Environmental			Labor Market and Workforce Needs		
	Minor Relevance	Moderate Relevance	Significant Relevance	Minor Relevance	Moderate Relevance	Significant Relevance	Minor Relevance	Moderate Relevance	Significant Relevance	Minor Relevance	Moderate Relevance	Significant Relevance	Minor Relevance	Moderate Relevance	Significant Relevance	Minor Relevance	Moderate Relevance	Significant Relevance
FCC CEWD Programs+4:244:24																		
Accounting		X				X		X			X		X					X
Adult Basic Education / GED	X				X			X				X			X			X
AutoCad / Revit	X				X				X		X		X					X
Automotive Technician		X			X			X			X		X					X
Building Trades: Elec, HVAC, Welding			X		X				X			X	X					X
Business		X				X		X			X		X					X
Business Entrep & Small Bus. Start-up		X				X		X			X		X					X
Certified Nursing Assistant		X				X			X			X		X				X
Healthcare Foundations/Introduction			X			X			X			X		X				X
Child Care Preparation			X		X			X			X			X				X
Computer Applications/Programming		X				X			X		X		X					X
Contract Training		X			X			X		X			X				X	
CPR			X		X			X		X				X		X		
Culinary Skills			X			X			X		X		X					X
Dental Assisting + Radiography			X			X			X			X		X				X
Emergency Management			X			X			X			X			X			X
ESOL		X			X			X		X					X		X	
Information Technology/Cybersecurity		X				X			X			X	X					X
Institute for Learning in Retirement			X		X			X				X		X				X
Life Long Learning			X		X			X		X				X		X		
Logistics & Production: Biotech Systems			X			X		X			X			X				X
Logistics & Supply Chain			X			X		X			X		X					X

CEWD and Proposed Programs re Driving Forces 2

Academic Assessment: CEWD and Proposed Programs and Driving Forces 2022-05-27																		
	Unique Identity			Economic Advantage, Ret on Investment			Build on Existing Programs			Potential for Partnerships and Alliances			Social / Community, Environmental			Labor Market and Workforce Needs		
	Minor Relevance	Moderate Relevance	Significant Relevance	Minor Relevance	Moderate Relevance	Significant Relevance	Minor Relevance	Moderate Relevance	Significant Relevance	Minor Relevance	Moderate Relevance	Significant Relevance	Minor Relevance	Moderate Relevance	Significant Relevance	Minor Relevance	Moderate Relevance	Significant Relevance
FCC CEWD Programs+4:244:24																		
Makerspace	X			X				X		X			X			X		
Management / Supervision	X				X			X		X			X					X
Manufacturing Technology		X			X			X				X	X					X
Medical Billing and Coding			X			X			X			X	X					X
Motorcycle/Driver's Education Training						X	X			X			X			X		
Music Lessons		X		X				X		X				X		X		
Patient Care Technician			X			X			X			X		X				X
Pharmacy Technician			X			X			X			X		X				X
Phlebotomy Technician			X			X			X			X		X				X
Project Management		X			X			X		X			X					X
Real Estate and Home Inspection		X			X			X			X		X					X
Sterile Processing Technician			X			X			X			X		X				X
Thrive - re Students with Disabilities		X				X		X			X				X			X
Veterinary Assistant			X			X			X			X			X			X
Wastewater Treatment	X				X			X		X			X			X		
Youth Programs		X			X			X				X			X		X	
Possible New Programs																		
CDL Training	X			X				X			X		X					X
Dental Hygienist (proposed as credit)			X		X				X			X		X				X
Electric Vehicle Technology			X			X			X			X			X			X
Forklift and Heavy Equipment Training	X				X		X					X	X					X
Occupational Therapy Assistant			X	X					X		X			X				X
Remote Work and Instruction Training	X				X		X				X		X				X	
Renewable Energy Technology (wind etc)			X			X			X			X			X			X

Summary: Academic Program Review

Before addressing recommendations for academic programs, it is instructive to be mindful of certain factors influencing existing and possibly new programs, per the below considerations:

- **Strengthening and enhancing existing programs**
- **Proposing new "cutting edge" program initiatives to meet the challenges of the decade ahead**
- **Developing market niches**
- **Promoting interdisciplinary initiatives**
- **Seeking opportunities for greater collaboration and partnerships within and beyond the college**

A review of the environmental scan, existing programs that are doing well, and the matrices suggests support for certain academic programs, both existing and proposed as new. Existing credit and non-credit areas of study that merit consideration include:

- **Arts and Humanities and General Studies**, in consideration of: critical thinking skills for transfer degrees; Fine and Performing Arts venues in the City of Frederick and in Baltimore and Washington; and already strong arts programs at the College *
  - In consideration of the strong Frederick economy, note is taken of the many small and large companies, institutions and foundations whose presence in the County is noteworthy. Examples include:
    - Fort Detrick
    - Banner Life
    - NVR, Inc.
    - Wells Fargo
  - City of Frederick arts venues include:
    - Delaplaine Arts Center
    - Frederick Arts Council
    - Frederick Festival of the Arts
    - Maryland Ensemble Theater
    - Other Voices Theater
    - Sky Stage
    - Weinberg Center
    - Several art galleries
- **Business**, in consideration of the strong and stable Frederick and Maryland economy *
- **Education and Child Care**, in consideration of the labor market in education *
  - In addition to Frederick Community College, Frederick County educational institutions include:
    - Frederick County Public Schools
    - Hood College
    - Maryland School for the Deaf
    - Mount Saint Mary's University
- **Healthcare**, in consideration of the strong healthcare labor market in Frederick County and regionally, particularly in biosciences and biotechnology *
  - Local healthcare institutions include:
    - Frederick Health
    - Frederick Memorial Hospital
    - Lifebridge Health
    - Way Station
  - Local biotechnology and research facilities include:
    - Astra Zeneca
    - Frederick National Lab
    - Kite Pharma
    - Leidos Biomedical Research
    - Lonza
    - Thermo Fisher Scientific
    - Valogic

- **Hospitality, Culinary and Tourism**, in consideration of the strong hospitality labor market locally and regionally
  - In addition to several accommodations and dining facilities, local businesses include:
    - Fountain Rock Management Corporation
    - Plamondon Hospitality Companies

- **Information Technology**, in consideration of the growing technology sector in Frederick County and beyond *

- **Public Safety**, in consideration of FCC's strong MACEM program, nationally

- **Skilled Trades**, in consideration of the labor market and growth of technology, construction, and manufacturing businesses in Frederick County *

- **Social Sciences**, in consideration of steady demand for addictions counseling, psychology and sociology professionals *

- **STEM**, in consideration of essential science, technology, engineering and math skills required for the technology economy *

- **Transfer programs***

*and in consideration of strong undergraduate and graduate level degree programs at Baltimore, Washington and regional four-year colleges and universities

Facilities Needs: Functions, Projects

In consideration of several factors, including: the matrix analyses; the space needs, both quantitative and qualitative, described in Chapter 4, *Needs Assessment*; 40+ interviews with College staff, faculty and trustees, and local and State government officials; evaluation of data provided by the College and gathered by the consultant team; the consultant team's observations; feedback from the Workshops; and the suggested emphasis for several areas of study, the following list was developed by the consultant team and reviewed with the FCC Steering Committee and Planning staff to identify the various facilities needed by the College. Those facilities and functions are described below, in alphabetical order.

Administration Primarily located in Building A / Annapolis Hall, there are both a space and quality of workspace needs for either renovation or new space.

Assembly Facilities These include large venue spaces like an arena or convocation center as well as smaller theater type facilities.

Athletics and Recreation space has been previously approved as an expansion of Building D / Athletics, but the analysis of this report suggests that a major expansion is more appropriate, also addressing Wellness needs. Even just focusing on Athletics, there are manifold needs for sports programs, like better and larger training and fitness facilities, locker/shower/toilet rooms for visiting teams and officials, team rooms, and staff and faculty offices.

Campus-wide Systems and Infrastructure As the College has expanded and will continue to do so, there is a corresponding need for growth and improvements to its utility, central plant and distribution, and technology infrastructure systems.

Continuing Education and Workforce Development / Monroe Center Currently accommodated mostly in the Monroe Center and noting on-going demand for CEWD programs by local institutions, businesses and government agencies, the Monroe facilities will need to continue to meet that demand. Some CEWD functions are located in Building E, Conference Center, on the main campus. The short-term strategy is for that accommodation to take place in the Monroe Center, including instructional, workshop, lab, and support spaces. The College acknowledges limitations of the current Monroe Center students and faculty as a separate, remote facility, disconnected in several ways from the Opossumtown Pike campus, specifically related to support functions and amenities available there but not at Monroe. Support functions are most needed, along with improvements and some expansion of current program space. The long term goal is to bring the Monroe functions to the main campus.

Enrollment Services. Following the consultant team's observations and several comments across the board from constituent groups on the main campus, a new facility is recommended at a more strategic location close to the main campus entrance yet still convenient to the academic core. This facility should include all of the current enrollment services functions plus a combined Admissions / Welcome Center

Food Facility Alternatives e.g. grab-and-go are suggested to complement those offered in the main dining facility in Building H / Student Center.

Gathering Spaces for students should be expanded in number and distribution throughout the College's buildings, by carving them out of existing buildings and by incorporating them into all new projects.

Instructional Space including Classrooms and Labs The need here is primarily to provide additional laboratory facilities, likely in new academic building projects.

Learning Commons Expansion and Study Spaces. Once students learn the location of the Learning Commons, they frequent it as a key learning support space. LC staff report regular demand for several additional study rooms, as well as additional space for tutoring. Study spaces may also be distributed throughout other academic buildings.

Office Space for both faculty and staff are one of the significant categories showing a deficit.

Physical Plant Operations. The Central Plant is able to accommodate heating and cooling water current demand but will likely need to expand to provide both for new buildings and additions.

Visual and Performing Arts are currently housed in Building F, a 35 year-old building originally constructed as a student center. The building has undergone several renovations with small, scattered additions. Those projects were mostly making the best of what was already there with available funds. The building plan lacks a unified organizational structure; way-finding is a challenge; its circulation paths are circuitous and two are dead-ends; the odd geometries of the floor plan force challenges to furnish rooms efficiently, and space relationships are not well considered; sound transmission through partitions is a significant problem, particularly in music rooms; several rooms are smaller than an ideal size for their function; and, despite a having a regionally recognized ceramics program, the major kiln facility is located on the opposite side of the campus. If it weren't for other priorities, the disposition of this building would be settled within the 10-year planning horizon.

Wellness and Fitness Spaces. Fitness spaces primarily accommodate the Athletics programs, but are not readily available for use by students, faculty and staff. There are effectively no wellness spaces in any buildings on campus. There is an opportunity to combine programs in a new facility to be shared with Athletics.

Future Development Considerations

Programming will need to be developed for each capital project, justifying the project and describing the detailed specifications for each program, as well as budgeting for the costs and time necessary to produce the Parts I and II required for projects receiving State funding.

Surge Space. There is none. Scheduling spaces for courses is a major challenge for the College because of the very limited availability of classrooms and labs. So, the resultant effect for construction projects is that while new projects are undertaken, little-to-no existing space will be available while the construction is underway.

Space and Facilities for Dual Enrollment and Early College. These programs have brought hundreds of high school students to the campus and have effectively expanded FCC's enrollment. The needs of these students are unique to their age cohort, and they are often left on campus without a place to call home base. This is an immediate need which the College should address as learning spaces are allocated during course scheduling. Another, albeit not immediate, possibility is as the first capital project is developed, this need could be addressed during the program phase, perhaps finding a space for the students in an existing space which will be effectively relocated to the new building.

SITE INFRASTRUCTURE AND IMPROVEMENTS

Campus Plan, Landscaping and Accessory elements

The existing campus is a lovely setting, somewhat pastoral and suburban, and reflecting an academic mission. Its relatively small scale with modest change in grade makes the campus easily walkable. It is very neatly planted and maintained, perhaps a bit too neat! One of the comments in the interviews was that it looks like a golf course, which is both a compliment and a criticism. As is pointed out in the Sustainability section, the campus can use some strategic re-thinking, restoring more natural settings. It is recommended that the College undertake a comprehensive landscape master plan, which would address the landscaping, hardscape, roadways, pedestrian ways, storm water features, way-finding and signage, and accessory elements like site furnishings. More trees will most always be welcome as part of the landscape, providing shade, and contributing to a more collegiate character of the campus. Sustainability considerations are addressed in Section 6E. The existing campus site lighting standards should continue to be deployed. Existing campus seating and tables should be replaced with uniform, aesthetically pleasing, durable and comfortable furniture.

New Buildings

Four new buildings or additions to buildings are introduced to be completed in 2033:

1. Health & Wellness Building / Building D Renovation
2. Campus Services Building
3. Innovation and Technology Center
4. Enrollment Services / Welcome Center

All of these buildings will be served by the loop road, campus driveways, fire lanes / service drives, pedestrian ways, and below-grade infrastructure. Existing and in one case new parking areas will serve these facilities. In addition to the above four buildings, a build-out is shown with additional structures beyond the year 2033.

Roadways and Parking

Not just for vehicular circulation, but as a major organizing element for the campus, the loop road is accessed primarily from the south entrance at Opossumtown Pike, and traffic tends to proceed in a counter-clockwise direction, entering or passing parking lots 1-9. However the 'loop road' is really not a loop road; it is a 'U' shape connected to Opossumtown Pike, a public road. The proposed campus development plan introduces a new connection from the south entrance road to the north entrance road on the FCC property. This should be a long term goal, not easily achievable until replacement of Building F, Visual and Performing Arts Center.

In addition, due to the impact of the proposed new buildings Wellness & Athletics, Biotechnology, and Enrollment Services, those building footprints will impact some existing surface parking in lots 1 and 5, reconfiguration of the south entrance road, and replacing the

existing driveway from the north entrance road to Catoctin and Gambrill Halls with a pedestrian way / new fire lane and service drive from the north entrance road to the proposed new Biotechnology building. The bus stop should be located in front of or near the proposed Enrollment Services and Welcome Center Building. Simultaneously, the less-than-intuitive configuration of the segregated parking areas and circulation within the usable space of Parking Lot 1 should be re-examined and improved.

Pedestrian Ways

Pedestrian ways are proposed in two different scales: 1) Major axes are shown in the expanded heart of the campus as organizing and connecting elements, defining open spaces, linking existing buildings to each other and to proposed buildings, and, if they are designed properly, vastly improving the pedestrian experience. These pedestrian ways are envisioned to accommodate groups of individuals passing by each other without compromise, able to pause along the way, and feel good about the experience. At 16 feet wide and lined with deciduous tress on both sides, they will allow service vehicles to use these routes under low speeds, safely with regard to pedestrians. Paved bump-out pads for benches, lighting, waste containers, and signage keep the traffic going smoothly. They would most likely be paved in concrete but perhaps with certain areas like edge trim or intersections in unit pavers. 2), Narrower sidewalks are suggested at 6-to-8 feet wide, probably concrete again, and also highlighted with unit pavers similar to those described above for the major axes. New sidewalks will be needed in addition to maintaining the existing walkways. Pedestrian-scale lighting, benches, signage as well as site furnishings should be part of the vision.

Signage

The campus signage program should be re-considered**,** pursuant to the consultant team's observations and those of FCC faculty and staff described in Section 5B. This would apply to all site signage except the pinned building names mounted to the exterior walls which should remain as a campus standard.

ADA/Accessibility

A complete ADA analysis of the site is included in a separate document submitted with this report. Recommendations from that document should be adopted and implemented as part of the suggested landscape master plan. Any improvements to the campus should take compliance updates into consideration.

Ten-Year Planning Horizon: Buildings 1-4 Site Improvements

Building 1 Health & Wellness Building / Building D Renovation

Pedestrian Improvements While the new building cuts off vehicular access to the parking to the east of building G, it creates the opportunity for an enhanced pedestrian gathering area in the location of the old parking lot. This improvement in concert with pedestrian connections to the southwest and towards the southeast helps to enhance the pedestrian experience through the campus. These paths will need to be designed to comply with current accessibility requirements. Unique opportunities for gathering can be created along these promenades at each of the existing buildings that the pathway passes.

Parking and Driveways While this new building cuts off vehicular access to the parking to the east of building G, the new fire lane / pedestrian walk will permit access for service and emergency vehicles. To allow for continuity, a cul-de-sac is recommended at the interface between the new building, building D and the central plant. This cul-de-sac will need to be large enough to accommodate a fire truck.

Utilities Beyond connecting new utilities to the new building, the building will require the relocation of several existing utilities. An 8" waterline that connects a loop system of domestic/fire through the campus will need to be moved to the west side of the new building to allow continuous service. In addition, there are several communication and electrical lines that will need to be moved from the footprint of the new building. Lastly, there is a natural gas line that will need to be moved to accommodate the building. All of these utilities are pressure or dry and can be relocated with relative ease.

Stormwater Management The new building and associated new impervious areas will be subject to water quality treatment in accordance with the requirements of MDE and the City of Frederick. Stormwater management should be accomplished through microscale practices that are located near the area they are treating to limit their size. These facilities should be woven into the overall landscape plan for the site. Volumetric stormwater management is accomplished at the existing dry pond at the front of the site.

Building 2 Campus Services Building

Pedestrian Improvements This building will primarily be accessed by vehicles, but has an opportunity to connect to the existing sidewalk network to the south of Building K. Due to the multi-floor at grade access of the new building a switchback handicap ramp will be required to comply with accessibility requirements.

Parking and Driveways The location of the new driveway to the lower level of the new building creates an opportunity to improve the site distance that is partially blocked at the parking deck. This relocated driveway could potentially create a true intersection with the driveway to the new building thus further improving safety.

Parking for the building is proposed to be located in a new parking lot north of the building. Any equipment parking will be located in the service yard to the south.
The yard is large enough to allow a tractor trailer to enter and backup into the space between the buildings and exit through the same driveway with relative ease. Furthermore, the yard has sufficient laydown area for storage of equipment, plows, or debris.
Utilities Beyond connecting new utilities to the new building, the building will require the relocation of a 12" watermain. This line provides to loop the camps with the City water system to the west of the campus and provides emergency backup for the campus.

Stormwater Management The new building and associated new impervious areas will be subject to water quality treatment in accordance with the requirements of MDE and the City of Frederick. Stormwater management should be accomplished through microscale practices that are located near the area they are treating to limit their size. Due to the nature of the facility the City may deem this building to be a "hotspot", and thus subject to additional oil and grit separation upstream of any microscale practice in accordance with MDE requirements. Volumetric stormwater management is accomplished at the existing dry pond at the front of the site.

Building 3 Innovation and Technology Center

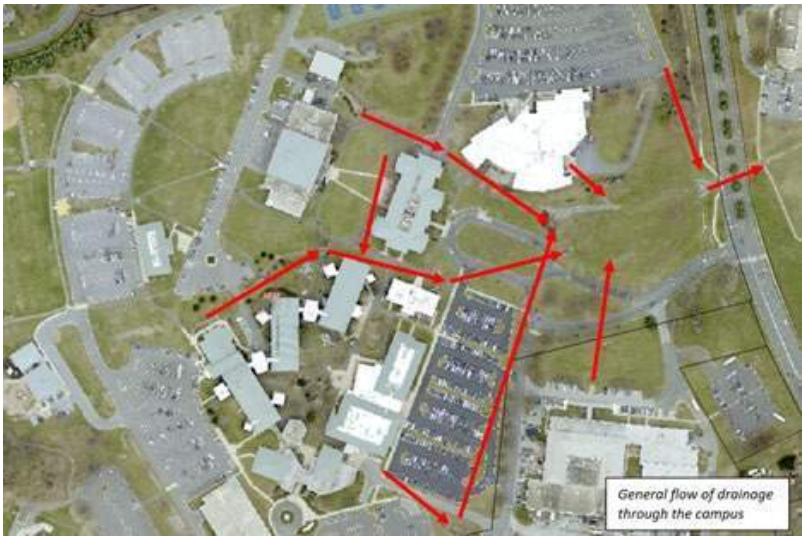
Pedestrian Improvements This building will be constructed adjacent to the new pedestrian walkway created with the construction of Building 1. The building will need to be connected to the pedestrian areas to the south to help create a safe pedestrian connection to the new walkway on the west side of the new building.
Parking and Driveways The new building is located within an existing parking lot, and will result in a net loss of parking. This parking reduction will need to be coordinated with the City of Frederick as part of the Site Plan process to ensure that overall campus parking is not compromised by this parking reduction.
Utilities Beyond connecting new utilities to the new building, the building will require the relocation of several existing utilities. There are several communication and electrical lines that will need to be moved from the footprint of the new building. Of particular concern will be the relocation of an existing gravity flow sanitary sewer that serves the parking deck, building E and Building C. The sewer will need to be relocated to the west side of the building and should be studied early in the project to determine if an ejector pump will be required should the slopes of the sewer not be able to accommodate the relocation.
Stormwater Management The new building and associated new impervious areas will be subject to water quality treatment in accordance with the requirements of MDE and the City of Frederick. Stormwater management should be accomplished through microscale practices that are located near the area they are treating to limit their size. These facilities should be woven into the overall landscape plan for the site. Volumetric stormwater management is accomplished at the existing dry pond at the front of the site.

Building 4 Enrollment Services / Welcome Center

Pedestrian Improvements This building will be constructed adjacent to the new pedestrian walkway created with the construction of Building 1.

Parking and Driveways The new building is located within an existing parking lot, and will result in a net loss of parking. This parking reduction will need to be coordinated with the City of Frederick as part of the Site Plan process to ensure that overall campus parking is not compromised by this parking reduction.
A main component of this building will be the realignment of the entrance driveway into the campus. This will create a clearer approach into the campus, a dedicated area for visitors, and direct route to the loop road around the campus. This new entry route will allow for a dedicated area for users that arrive via the County Ride-On Bus system that will be connected to the pedestrian path constructed with Building 1.

Utilities Beyond connecting new utilities to the new building, the building will require the relocation of a storm drain system that serves the parking lots on the east side of Building H.
Stormwater Management The new building and associated new impervious areas will be subject to water quality treatment in accordance with the requirements of MDE and the City of Frederick. Stormwater management should be accomplished through microscale practices that are located near the area they are treating to limit their size. These facilities should be woven into the overall landscape plan for the site. Volumetric stormwater management is accomplished at the existing dry pond at the front of the site.




Potential Driveway at Summerfield

Mechanical Services Except for Building 2, Campus Services Building, the HVAC systems of all buildings described above are expected to be served by below-grade piping generated at the Central Plant.

CENTRAL PLANT

Several upgrades to the FCC central plant are anticipated to support the initial projects listed in the Facility Master Plan. The proposed updated to the central plant are discussed below and include deferred maintain upgrades, capacity upgrades to the chilled water system, capacity upgrades to the heating water system, as well as recommendations for upgrades in system efficiency and sustainability.

It is recommended that upgrades to the central plant be considered during initial project #1, which also includes renovation to the athletic center (Building D). It is anticipated the central plant floor area will need to grow in order to accommodate the additional cooling and heating capacity of the campus.

Table 1 below summarizes the estimated connected cooling load and heating loads that will be realized by the central plant after completion of the initial projects listed in the 2023-2033 Facilities Master Plan. It is anticipated that some existing facilities as well as new facilities will remain stand alone over the next 10 years and will not be connected to the central plant. Table 1 defines which facilities are assumed to be connected to the central plant and which facilities are anticipated to be stand alone.

Table 1: Estimated Existing Campus Cooling and Heating Loads

	Building	Occupancy	Cooling Demand (Tons)	Heating Demand (MBH)	Comments
A	Annapolis Hall	Office	55	725	
B	Braddock Hall	Academic	65	740	
C	Catoctin Hall	Academic / Lab	120	1,165	
D	Athletics Center	Athletics	75	900	
E	Conference Center	Academic / Office	40	555	
F	Visual & PA Center	Academic / Lab	130	1,270	
H	Student Center	Academic / Office	145	2,015	
L	Linganore Hall	Academic / Office	110	1,510	
1	**Wellness, Athletics and Recreations**	**Athletics**	**230**	**2,285**	**New Building**
3	**Biotechnology Center**	**Science and Technology**	**180**	**1,8770**	**New Building**
S	Sweadner Hall	Support	10	100	Standalone HVAC
G	Gambrill Hall	Office	40	550	Standalone HVAC
J	Jefferson Hall	Office	40	550	Standalone HVAC
K	Mercer-Akre Kiln	Lab	5	40	Standalone HVAC
M	Children's Center	General Use	25	255	Standalone HVAC
P	Plant Operations	Support	20	225	Standalone HVAC
2	**Plant Operation**	**Support**	**40**	**515**	**New Building Standalone HVAC**
4	**Enrollment and Welcome Center**	**Office**	**95**	**1,095**	**New Building Standalone HVAC**

	Estimated Central Plant Demand	**1,150 Tons**	**13,035 MBH**	
	Estimated Campus Demand	**1,425 Tons**	**15,640 MBH**	
Notes: 1. Estimated cooling and heating demand is based off of approximate SF/Ton and SF/MBH.				

Facilities Renewal Upgrades

An analysis of the existing central plant and its components has been provided in Chapter 5 of the Facilities Master Plan. It is recommended that the following deferred maintenance items be addressed at the central plant. It is recommended that these items be addressed before, or during the construction of the Wellness, Athletics and Recreation Building which would include renovations to Building D and expansion of the central plant. These items should be addressed in order to ensure capacity and reliability at the central plant.

- The existing heating water pumps are in poor condition and past their useful life. New heating water pumps should be provided and should be equipped with variable frequency drives.
- While the current central plant has three (3) available chillers only two (2) chillers can run at the same time. The existing central plant chilled water piping and associated controls should be modified to allow for simultaneous three (3) chiller operation. This would increase the overall plant capacity and provide some redundancies at the plant for its near term operation.
- The existing cooling towers and associated condenser water system is susceptible to tower vortex which forces the system to be run in manual operation to reduce risk of failure on the condenser water system. The existing towers were installed in 1994 and should be considered for replacement. Replacement and modifications to the condenser water system should be provided to allow for future capacity growth, system redundancy and allow for automated operation.
- Sections of the existing underground chilled water and heating water distribution piping are suspected of leaking and can greatly increase the overall water consumption of the plant. It is recommended that older sections of the underground distribution piping be replaced. The replacement of the underground distribution piping should be coordinated with the 10 year facilities master plan to minimize impact to campus operations.
- The existing electrical system should be considered for upgrade should additional chillers be added. The switchboard configuration as currently installed will not allow the addition of fusible switches or circuit breakers which would be required to support additional chillers. Also, the switchboard and some of the electrical distribution system was installed in 1994 and is nearing the end of its useful life. Several of the original distribution panels and branch circuit panels within the central plant are still in service and should be replaced. Parts for this equipment are no longer manufactured and the equipment has exceeded its useful life.

Chilled Water System

Table 2 below summarize the net increase in cooling demand anticipated at the central plant, as well as the campus during the next 10 year facility master plan (2023-2033). The following

upgrades should be considered to the central plant during the construction of the Wellness, Athletics and Recreation Building which would include renovations to Building D, in order to accommodate the increased cooling load on Campus.

- The existing central chilled water plant has a connected chiller capacity of 1,210 Tons, but it is anticipated that the capacity is limited to 760 Tons, since only two chillers are able to run at a time. It is recommended that existing central plant grow in size and a new 450 Ton chiller by provided to increase the total connected capacity of the plant to 1,660 Tons. Existing chiller, CH-3 was installed in 2009 and will be approaching its useful life in the next ten years. The additional chiller will provide the plant with adequate capacity and redundancy in the near term while the campus expands.
- In order to accommodate the increased chilled water capacity at the plant it is recommended that the cooling tower yard be expanded, and the existing cooling towers be replaced. Two (2) new 850 Ton cooling tower should be considered for a total condenser water capacity of 1,700 Tons.
- New chilled water and condenser water pumps should be provided to support the new chiller and cooling tower equipment. All new pumps should be provided with variable frequency drives.
- It is anticipated that chiller #3 should be replaced in the next 10 years. When chiller #3 is replaced, FCC should consider the newer technologies that are available. A new heat recovery or heat pump chiller may be considered to reduce the annual consumption of natural gas at the plant by reducing the demand on the existing gas fired boilers. The final size and performance of CH #3 should be verified at the time of replacement.

Table 2: Existing and Future Cooling Demand Summary		
	Central Plant Cooling Demand (Tons)	**Campus Cooling Demand (Tons)**
Existing	740	880
Future (2023-2033)	1,150	1,425
Net Increase	**410**	**544**

Heating Water System

Table 3 below summarize the net increase in heating demand anticipated at the central plant, as well as the campus during the next 10 year facility master plan (2023-2033). The following upgrades should be considered to the central plant during the construction of the Wellness, Athletics and Recreation Building which would include renovations to Building D, in order to accommodate the increased heating load on Campus.

- It is anticipated that two (2) new 4,000 MBH condensing boilers should be provided to accommodate the increase heating load and to provide redundancy at the central heating plant. It is recommended that the existing Weil-McLain firetube boiler be removed in order to accommodate the new, more efficient condensing hot water boilers.

Table 3: Existing and Future Heating Demand Summary		
	Central Plant Cooling Demand (Tons)	**Campus Cooling Demand (Tons)**
Existing	8,880	9,875
Future (2023-2033)	13,035	15,640
Net Increase	**4,155**	**5,765**

Electrical Infrastructure

While existing Switchboard MDP has adequate spare capacity to serve additional load, the current incoming service arrangement with the six disconnects limits the ability to install additional fusible switches or circuit breakers. The National Electrical Code (NEC) dictates a maximum of six service disconnecting devices may be connected to the incoming service. Since Switchboard MDP does not have a main disconnecting device, the six devices which currently exist will not allow the installation of additional disconnecting devices to be connected to the incoming service. Coupled with the 29-year age of the switchboard, it is recommended the main switchboard be replaced.

The new switchboard will be rated for a minimum of 3,000 amp at 480/277 volts and will be provided with a single main circuit breaker. This will allow an unlimited quantity of feeder circuit breakers to be incorporated into the switchboard when it is initially installed and should they be needed in the future. It is recommended the new switchboard be installed in an alternate location which will allow the existing switchboard to remain in service. The new switchboard will be provided with a 100% rated, 1200 amp, 3 pole feeder breaker to back feed the existing switchboard. Once the new switchboard is energized, the existing incoming service will be de-energized, and the new switchboard will be used to back feed the existing switchboard through this 1200-amp circuit breaker. This will minimize downtime for the central plant which provides heating and chilled water to most of the campus.

As new chillers are installed, they will be connected to the new switchboard which will allow the old feeder serving the associated chiller to be removed. The goal is to remove all mechanical equipment connections from the existing switchboard and have them served by the new switchboard. Once all connections have been removed from the switchboard, it can be removed in its entirety.

Concurrent with the installation of the new switchboard, two distribution panels will be provided and will be served by the new switchboard. Each distribution panel will provide service to half of the boilers and heating water pumps. Half of the chilled water, cooling towers and condenser water pumps will also be served by each panel. This distribution scenario will allow 50 percent of the heating and cooling systems to operate should a panel need to be turned off to add additional circuit breakers.

As new mechanical equipment is being provided, it will be connected to the new distribution panels. Existing feeders will be removed back to the existing motor control centers and panels serving the equipment. Once all equipment is removed from the existing control centers and panels, then they can be removed inclusive of their associated feeders.

Additional circuit breakers will be provided in the main switchboard to serve branch circuit panels within the central plant. These panels will be used to serve existing and new lighting and larger mechanical equipment associated with the central plant such as HVAC equipment. The branch panels will also be used to serve dry type transformers which will step the voltage down to 208/120 volts to serve branch circuit panels for receptacles and smaller mechanical equipment loads.

The central plant does not currently have an emergency generator to support equipment during a power outage. Should there be a desire to operate any of the existing systems during a power outage, then an emergency power generator should be considered. The size of the generator would be dependent on the amount and size of the equipment which will be operated under emergency power. The generator would also be used to serve life safety loads such as egress and exit sign lighting. Should an emergency generator not be provided, emergency lighting would need to be provided by lighting fixtures utilizing batter backup to maintain a minimum level of illumination during a power outage.

Solar photovoltaic (PV) systems should be considered and analyzed on any new building or major renovation of an existing building. While solar PV has had a historic economic payback of 6-10 years in this region, recent advances in manufacturing have significantly dropped the material cost of solar panels. Installation costs of approximately $1000 per panel or $2 per kWh per year are being seen industry-wide, making most solar PV projects approach a more attractive 3–5-year payback period. An in-depth financial payback analysis should be done as this can become a critical component of the design. In addition, solar PV installations will provide risk mitigation against future Maryland state Building Energy Performance Standards (BEPS) requirements for reducing total building energy use intensity, as outlined in the recently adopted Maryland Climate Solutions Now Act legislation.

Solar PV installations should consider the age and configuration of the building roof and structures when sited as a rooftop installation. Buildings with either older or more complicated roofing systems should be analyzed to determine the associated ancillary costs of those structural systems when comparing a potential solar PV project. Another key factor which should be considered is the periodic maintenance associated with a PV system. Will the system be maintained internally or by an outside firm that specializes in PV maintenance? Should an outside firm be considered, a power purchase agreement (PPL) may be the best solution to incorporate PV without needing to have the internal capability to maintain the system.

TECHNOLOGY SYSTEMS

Audiovisual Systems

General campus wide recommendations. For Educational Audiovisual Systems

- Virtual learning and hybrid instruction needs to be an important consideration as it continues to affect instructional delivery and facilities planning.
- Collaborative spaces, hybrid learning, and flexible room arrangements are a high priority.
- Collaborating improvements should be made between campus AV Staff and Instructional Faculty/Users.
- Digital Signage: The general consensus of all campus stakeholders is that the inadequate coverage / presence of signage and digital signage throughout the campus needs to be addressed.
- Digital signage should be implemented around the campus for improved messaging to visitors, students, faculty, and staff.

Electronic Security

General campus-wide recommendations for Electronic Security Systems.

- Additional surveillance cameras should be added at the campus entrance.
- Exterior markings on buildings for identification should be added to prevent navigation challenges as well as improve safety response time.
- Additional surveillance cameras should be added to assist Campus Security personnels view into classrooms.
- Office suites, boardrooms, conference rooms are not electronically locked. Consider adding card access to these spaces.
- Instructional spaces (classrooms, labs, specialty labs, etc.) all have card readers to enable lockdown and scheduled locking. This standard should continue to be implemented into the future.
- Digital signage should be implemented around the campus for emergency messaging.

Recommendations for the four campus buildings in the 10-year planning horizon are as follows.

Health & Wellness Building

- Additional electronic access control doors will be required at entrances, classrooms, conference rooms and telecommunications rooms.
- Security cameras will be required at entrances and exits, stairwells and hallways.

Campus Services Building

- Additional electronic access control doors will be required at entrances, classrooms, conference rooms and telecommunications rooms.
- Security cameras will be required at entrances and exits, stairwells and hallways.

Innovation and Technology Center

- Additional electronic access control doors will be required at entrances, classrooms, conference rooms and telecommunications rooms.
- Security cameras will be required at entrances and exits, stairwells and hallways.

Enrollment Services / Welcome Center

- Additional electronic access control doors will be required at entrances, classrooms, conference rooms and telecommunications rooms.
- Security cameras will be required at entrances and exits, stairwells and hallways.

Telecommunications Structured Cabling System

General campus wide recommendations for Telecommunications Structured Cabling Systems.

- Each building has one point of entry for networking connectivity. Industry best practices and peer institutions recommend two (2) points of entry for redundancy. The long-term value vs. cost of including redundancy should continue to be considered by the College.
- Telecommunications optical fiber cabling shall be included in all future projects connecting back to building L data center.
- The College should develop an approach and process to address disaster recovery plans as relating to the campus network, distribution, and data integrity.
- Shipping and receiving space and a dedicated storage space for networking equipment, PC's should be created to secure valuable equipment.
- The campus paging system, Blue emergency phones and call boxes in the garage should be replaced.
- Red phones should be updated for consistency throughout the campus.
- An additional carrier connection to the campus should be considered for redundancy.

Recommendations for the four campus buildings in the 10-year planning horizon are as follows.

Health & Wellness Building

- This building connects to building D. The project will also include a complete renovation of building D.
- Redundant OSP cabling should be added as part of this project.
- Any telecommunications conduits that currently run under the renovation areas will need to be moved at time of renovation.
- Additional "blue" lights phones may be required.

Campus Services Building

- Would require a fiber connection to building L.
- Redundant OSP cabling should also be added as part of this project.
- Any telecommunications conduits that currently run under the renovation areas will need to be moved at time of renovation.
- Additional "blue" lights phones may be required.

Innovation and Technology Center

- Redundant OSP cabling should also be added as part of this project.
- Any telecommunications conduits that currently run under the renovation areas will need to be moved at time of renovation.
- Existing Telecommunications rooms should be reviewed and updated if current standards are not being met.
- Additional "blue" lights phones may be required.

Enrollment Services / Welcome Center

- Redundant OSP cabling should also be added as part of this project.
- Any telecommunications conduits that currently run under the renovation areas will need to be moved at time of renovation.
- Existing Telecommunications rooms should be reviewed and updated if current standards are not being met.
- Additional "blue" lights phones may be required.

SUSTAINABILITY

Underwriting a Sustainable Future for FCC

Sustainability for Frederick Community College begins with a commitment to make current sustainability practices more robust, explore new ways of limiting the College's carbon footprint, broaden the reach of sustainability in the College's policies, and implement new and expanded sustainable practices. An array of opportunities await, to save resources, become less dependent on fossil fuels, and to lower operating costs.

Location and Accessing the Campus

Located within the City of Frederick, the campus, while in a suburban setting, is accessible by way of private vehicles and three Frederick County TransIT bus routes. Considering the reality that most staff, faculty and students commute to the campus by car, even there, opportunities exist to encourage the use of fuel-efficient, hybrid, or electric vehicles by providing additional and conveniently located charging stations and designating favorable locations for those types of vehicles. While the TransIT bus intervals are relatively widely spaced apart, higher use could be encouraged by providing a more comfortable 4-season bus shelter, the location of which this plan suggests in, adjacent to, or at least near the proposed new Enrollment Services Building.

In addition, perhaps under the purview of Student Affairs, the College could facilitate ride-share connections by any number of strategies.

The Monroe Center is served by one TransIT line, but the link with the main campus is hampered by long wait times at the point of origin and at the Transit Center to transfer to the second bus. And, vice-versa. It is recommended that the College explore providing a shuttle between the main campus and Monroe. This could be in association with TransIT, independently operated by FCC, or in association with other institutions. One example is the Collegetown operation in Baltimore serving several colleges and universities in the city and county.

The Campus and its Landscape

The Opossumtown Pike campus, well maintained and with favorable location, size, and topography, offers several opportunities. Originally covered by forest, the campus is located in an area likely settled long ago by native peoples (known to have occupied the lands near the Monocacy River), later cleared for farming and additional settlement prior to the County purchasing the property to establish a permanent home for the College. As a testimony to the evidently balanced soils substrate, grasses, shrubs, ground cover and trees appear to do well.

Much of the campus is planted with grass, which requires significant, energy-consuming maintenance. As many other institutions have done, areas of meadow are proposed in the campus development

plan and are so designated. Once established, which can be by introducing native grasses, shrubs, perennials, etc, those areas will attract wildlife and pollinators, restore habitat, and can be managed by annual or semi-annual cutting. In addition, meadow areas create a spongy surface layer which is more drought-resistant and reduces storm water run-off more effectively than cut grass. Alternatively, some or part of the designated areas can be allowed to grow fallow, ultimately re-establishing many of the native piedmont forest species.

At the same time, there is value to strategically located lawns, which lend themselves easily to settings for open spaces, recreation, and for trees. Indeed, the proposed campus development plan provides open spaces, including newly defined quads. Trees, especially deciduous varieties, provide shade, welcome relief in the summer, and additional habitat for birds, and, with lawns, they also help contribute to the collegiate setting that this report embraces. More trees are encouraged, in a variety of settings, also including lining pedestrian ways and driveways, and in parking lots.

One of the cherished areas of campus is the open space surrounded by Buildings A, B, C, S, E, H, and J. It is populated by lawns areas, trees, ground cover, shrubs, paved areas for sidewalks and patios, an outdoor classroom, and site furnishings. The proposed campus development plan keeps this space, opening it up more towards the existing quad between Buildings D and L. A phased redevelopment of this space is recommended, to accommodate the eventual demolition of Building A.

As per State of Maryland requirements, storm water management is required for all state-funded facilities projects in addition to those imposed by the City of Frederick; those requirements are among the most effective in the county relative to managing water retention and minimizing damage from excessive run-off. Beyond those requirements, a natural drainage course runs more or less west-to-east through the middle of the campus, presenting another opportunity to better manage the storm water that courses through that drainage feature. Sections along its length have been constructed similar to highway standards and details, and some sections are underground. Especially for those lengths at grade, it is recommended that a project be undertaken to provide a more natural setting for the water flow, re-introducing native grasses and other plantings, designed by qualified landscape experts.

Hardscape

Hardscape, defined here as paved surfaces, including roadways, driveways, delivery/receiving pads, fire lanes, sidewalks and other pedestrian ways, and parking lots, manages the ways people and vehicles navigate and use the campus. Complementing the landscape, the hardscape is essential to campus operations and conducting the business of the College.

A variety of materials make up the hardscape now, including concrete, asphalt, and unit pavers. It also contributes significantly to run-off during storms and to the build-up of heat in warm and hot months, i.e. the heat island effect. All of the above materials are impervious, so that water drains from those paved surfaces in sheet flow, entering the landscaped areas and into the FCC storm water system.

Strategies to mitigate the effects of storm water include filtration at the points and edges of runoff, channeling the water to natural retention and filtration areas, and pervious pavement. All should be considered in any project involving the hardscape.

Parking lots are major contributors to heat island issues, and the larger they are, the greater the build-up and radiation of the heat. One effective way to reduce the negative effects is by incorporating green spaces with trees within the area of the parking lot. These areas can be islands or larger areas separating parking bays and allowing water to flow into them from the parking surfaces.

Relative to vehicle emissions, the proposed new loop road configuration connecting both entrance roads will provide a shorter and more efficient path from one to the other, and to parking areas and campus destinations in a *real* loop, reducing the time vehicles are using the campus road system and their corresponding emissions. Another indirect strategy includes providing friendly environments inside the campus buildings where, if designed correctly, students may prefer to be there rather than sitting in their cars with the engine running. This would also bring other benefits, like providing opportunities for socializing or studying together. It all counts.

Fleet

The College-owned vehicles should at least be fuel-efficient, but preferably electric vehicles like UTV's (utility task vehicles) that the College already operates for on-campus use, and larger, commercial vehicles including cars, trucks and buses. When existing vehicles using fossil fuels are retired, the replacements should be preferable electric, or at the least hybrid.

Buildings

All buildings are either required be LEED-Silver-Certified if State-funded, or, if not, then they should be designed and constructed to meet LEED Silver standards. In addition, in design for buildings to be occupied by persons (i.e. excluding garages, storage, utility buildings or the like), biophilic design principles, including natural shapes and forms, natural patterns and processes, light and space, place-based relationships, and evolved human-environment connections should be considered. And for glazing systems and windows, bird-friendly glass should be evaluated.

CSNA In addition, per the Maryland Climate Solutions Now Act (CSNA) FCC will be required to reduce its carbon emissions by 60% compared to 2006 levels by 2031 and reach net-zero emissions by 2045. In order to achieve these goals, CSNA will require buildings over 35,000 square feet to meet the Maryland Building Energy Performance Standards (BEPS). More information regarding the requirements of BEPS will be available in June, 2023. Since FCC will be required to reduce carbon emissions by 60% by the end of this facility master plan, it is recommended that FCC consider technologies and renewable energies that reduce the use of fossil fuels on campus.

The following strategies can be considered when looking to reduce overall carbon emissions in the next 10 years:

- Replace existing gas fired boilers with more efficient condensing gas fired boilers.
- Where buildings are connected to the central heating water plant, renovate existing heating water coils with low temperature hot water coils. Producing lower temperature heating water can improve condensing boiler efficiency and reduce gas consumption.
- Consider heat recovery chiller or heat pump chillers at the central plant to provide simultaneous chilled water and heating water capacity. Utilizing a heat recovery chiller to address the campus base heating and cooling load can reduce the consumption of natural gas at the plant.
- New standalone buildings or renovated standalone building that are not connected to the central plant should consider all-electric or decarbonized HVAC systems, which utilize electric for heating in lieu of fossil fuels. All-electric HVAC systems include water source heat pumps, ground source heat pumps and variable refrigerant flow systems, among others.

Energy Production

Opportunities for on-campus energy production will likely be limited to solar photovoltaic installations. Wind turbines may not be feasible in consideration of the Butterfield community and possible Fort Detrick limitations on structures of adjacent properties.

That effectively leaves photovoltaic (solar) panels, or PVs, which are typically installed on rooftops or at grade. The 'mansard' architecture on most of the existing buildings leaves only the internal wells, which have been claimed for mechanical equipment.

On a limited number of existing buildings, some roof surfaces are 'level' and suitable for PV installation. In addition, new buildings with 'level' roof areas will offer additional opportunities. More importantly, there are acres of surface parking (plus the garage upper deck) where several arrays of panels can be mounted on framed structures above the parking spaces. The panels create power and simultaneously provide shade. Refer to Section 6C Central Plant for further discussion of solar panel systems, technology and acquisition.

Operations: Miscellaneous Initiatives

FCC should continue and increase its sustainable practices in many ways, for example:

- Efforts at recycling should be increased, as long as a suitable entity can be found to actually do the recycling. A recycling policy and provision of the means to carry it out with distinctive containers that won't be confused with trash containers should be implemented.
- Housekeeping services should continue to monitor its purchases of cleaning supplies, to avoid purchasing red list products.
- Food service operations should increase its efforts to provide healthy, tasty food as alternatives to high-fat, high salt and high sugar content offerings, including in vending machines.
- Limited use of paper should continue to be encouraged.
- The College should continue to install low-flow plumbing fixtures.
- Resilience. The College should continue to review its policies to be able to rebound from unforeseen events that could cripple any number of infrastructure and operational systems, such as loss of power, flooding, a fire, or loss of its network, or other systems; in other words, develop a disaster recovery plan.

Education, Teaching by Example

Finally, education of the state of the local and global environment and of sustainable practices is key to the success of implementing sustainable policies. This includes all members of the FCC community: staff, faculty students, and the local governing entities and residents.

In addition, the College is looking at a unique opportunity: to become the sustainability exemplar for the City of Frederick, Frederick County and beyond. And who could be better positioned to achieve this than Frederick Community College.

DESIGN GUIDELINES

The Place for Guidelines

In its *Building Design and Construction Standards*, the College has put in place a comprehensive set of design standards which can be used for capital and facilities renewal projects. In addition to physical building and site systems, those standards also include project protocols and processes such as procurement and building systems standards, all of which are regularly updated. The Guidelines in this section 6F are intended to complement those standards at a level appropriate to the Facilities Master Plan. It is understood that while each project is unique, it is entirely appropriate and important to have such guidelines in place while accommodating and encouraging distinct designs for buildings, landscaping, and special campus elements such as site lighting, furnishings, and signage.

The Campus and Campus Development Plan

The Campus Development Plan identifies several building development opportunity sites, anticipating new development, additions, or newly created sites where an existing building will be scheduled for demolition. Considerations for creating these sites and the proposed placement of buildings on them have been carefully evaluated and defined. Specific sites for proposed buildings are based on how each would work most effectively relative to the campus as a whole, including Opossumtown Pike and the loop road, and to proximate existing buildings, pedestrian ways, parking, and existing or newly create quads. In short, the campus development plan should be followed. While proposed buildings are shown by suggested footprints, it is acknowledged that the building design process will define the footprint.

Buildings

The original campus buildings (A-D, S) date from 1970 and are relatively modest in size except for the larger Athletics Center. Defined primarily by beige brick facades and green sloped standing seam metal roofs with some level roof elements, these buildings were placed in a 'village'-like setting reflecting their angular connectedness and scale. This was unlike a more traditional orthogonal relationship defining quadrangles typically found on other college campuses. The masonry facades are penetrated by vertical window and entrance door systems, occasionally differentiated by an expanse of glass curtainwall and, in some cases, metal panel systems. Subsequent additions and other buildings employed similar features, and so for the most part there is a unity of architecture somewhat akin to the 'Prairie' style of Frank Lloyd Wright. The sloped roofs of the original buildings covered the upper floor completely, while in newer buildings, the sloped roofs are in an extended mansard style, leaving a level recess behind the sloped roof structures, where mechanical equipment is placed, out of sight. Notably, some buildings or components thereof feature level roofs as alternative precedent. Other than the three-story Jefferson Building, all campus buildings are one- or two-stories. Building sizes range from the 960 GSF Kiln Building to the 76,987 GSF Student Center.

New designs should, first of all, be buildings of their time, not expected to mimic the architecture of the earlier 1970's and 1980's buildings. It is not anticipated that any new building would reflect the architecture of an historic nature – for example, Georgian architecture that often exists on other, older campuses; indeed, the architecture of the past should remain in the past. The nature of the design of proposed buildings may also reflect its

internal functions and purpose. A performing arts building can project the idea of performing arts; an athletics building may offer hints to the contained spaces like a competition gym; and a biotechnology building façade can reflect the advanced studies taking place within.

Due to the limited available land of the campus, multi-story buildings with smaller footprints may be more welcome than if the same volume were to be contained within a shorter, sprawling building. Generally, the campus development plan anticipates buildings of up to three floors, and the consultant team views three floors as a comfortable limit for the future campus buildings. Often, the ground floor size is larger than upper levels due to programmatic and functional relationship considerations. In another scenario, a future building may incorporate a parking level below grade, possibly connected to an adjacent parking structure.

Generally, if brick is used in the exterior façade, it should match the brick masonry of the existing buildings. If sloped roofs are part of the design, the standing seam roofing featured in existing buildings should be considered. Glazing systems may include expanses of curtainwall or storefront and should facilitate views into the building and to the exterior from within, unless, for example, strategies for sun shading such as fritted glass are employed for certain areas.

Building entrances should be logically located relative to interior circulation, other proximate buildings, pedestrian ways, and parking. Loading docks and mechanical equipment should always be screened or preferably hidden from view. Building signage should follow the design and size range of the signage of existing buildings.

Landscaping, Hardscape, Site Furnishings, Site Lighting



Acknowledging the care that the College's grounds crews have given the campus during the time FCC has occupied its Opossumtown Pike location, this report suggests building on that attention to quality, while at the same time providing opportunities for further campus beautification, cost-savings through selective landscaping, and investing in environmentally friendly strategies such as improving storm water filtration and quality, reducing the 'heat island' effect of hard surfaces, and restoring habitat for wildlife. Several strategies are addressed in Section 6G *Sustainability* of this report. Complementing this approach is prioritization of the pedestrian experience, providing safe and pleasant routes to move to destinations from most any point of origination such as parking or other buildings, and enhancing opportunities for chance encounters among the FCC community.

Accomplishment of the above presumes a commitment to improving 'the spaces outside the buildings' by way of planning, design, and

implementation. This will require a multi-year effort which should be coordinated with other recommendations in this Facilities Master Plan and with continued development of the College's facilities. A master landscape planning study is recommended to establish the scope, nature of suggested improvements, cost, and schedule for implementing the work.

The proposed Campus Development Plan introduces new vehicular and pedestrian circulation elements along axes that already exist in part but are functionally different, and new paths for people and vehicles, planned to better serve existing and proposed building and site projects. Currently, the campus roads, surface parking lots, and most pedestrian ways employ asphalt paving surfaces, while ramps, curbs and some sidewalks are concrete. While other alternatives exist, such as concrete roadways and pedestrian ways or unit pavers for some sidewalks or terraces, it is anticipated that the current palette of paving materials will be continued.

Site furnishings including seating, tables, and waste receptacles are currently a variety of styles, materials, and sizes. For example, no less than eight types of outdoor seating can be found throughout the campus. While there is justification for both fixed and movable seating, the opportunity for some unity of design (which may reflect preferences of the College relative to the rest of its built environment) will improve the user experience, such as intuitively knowing what a FCC trash receptacle looks like. Like many of us tend to do, students will re-arrange seating to suit their needs in gathering spaces, inside and out. So let's accommodate them and provide chairs and possibly tables that they can move, encouraging group interaction and collaboration in the process. This can be addressed in the master landscape planning study suggested earlier in this section, selecting the furnishings, settings and arrangements. Exterior ramps and stairs already are equipped with railing systems. The College may wish to establish a campus standard for railings and bike racks, too, in addition to furnishings.

FCC has already adopted some site lighting standards including exterior wall sconce, walkway and roadway lights. The suggested planning study should coordinate with those standards, possibly also making lighting recommendations for parking lots and gathering spaces.

Signage

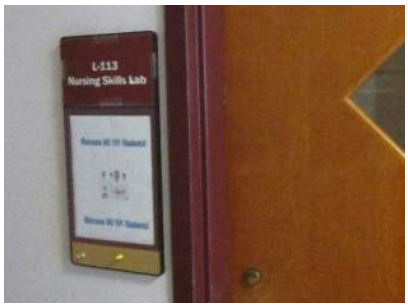
The College completed a comprehensive signage program in 2015, including building exterior and interior signage as well as campus signage. Since then, the College community has had time and opportunity to form opinions on how well the signage works, or not. During the interview period in the earlier months of this study, individuals in administrative and faculty positions did comment on the signage, and their comments have been shared with the consultant team. Statements included issues regarding signage sizes, readability, content, graphics, placement, and wayfinding, and there were calls for digital signage.

Site Signage

While the overall design quality of the signage is consistent and attractive, the placement, sizes, legibility, and content can be improved. The scale of the text is often too small and isn't readable until the viewer is close to the sign. This is most true of the free-standing information and directional signs located near (but in some cases not near enough) pedestrian ways. For roadway signs, much of the text is universally too small to read while driving, even slowly. Except for the large Frederick Community College sign at the main Opossumtown Pike entrance, none of the exterior signs are illuminated, either internally or by flood or spotlights. Digital signs may be considered and if implemented, should be limited to locations near major, strategic building entrances, for example, where approaching the front door of the Student Center from Parking Lot 1.

Interior Signage

Interior signage generally works adequately, relative to legibility, size, clarity, and location. Two different interior signage programs can be found, and the newer, clear anodized room signs provide utility and an appropriate level of information, even allowing for messages to the room occupant or visitor to be clipped to the lower bar of the sign panel. With certain exceptions, the information on each sign is limited to the room number, which conveys the building designation, floor level, and room number. This is largely successful due also to the utility and flexible features of the sign, e.g. a room name which is easily changed and the lower bar clip function. Budgets permitting, this type of sign should continue to be installed in every building with older signs. Interior digital signs are appropriate at strategic locations, as long as the messaging is easily changeable, delivers important messages only, and is not a distracting eyesore.



Preferred Interior Signage

For both interior and campus signage, a new signage program is recommended for study and eventual implementation.

COLLEGE-WIDE RECOMMENDATIONS

In addition to the specific recommendations for capital projects in Section 6H, several other issues of a more universal nature, applicable to both the main Opossumtown Pike campus and to the Monroe Center, are addressed in this section. These ideas can be applied to existing aspects of the College's facilities as well as its operations. In addition, several may be incorporated into programming narratives. And, when undertaking new initiatives, the College should be mindful of its role as Frederick's *Community* College.

The Blueprint for Maryland's Future

The Blueprint for Maryland's Future prescribes a revamp of Maryland's educational system from pre-K through college. Virtually nothing will be untouched including the work of community colleges, including Frederick Community College (FCC). The goal is designed to ensure that most Maryland high school students are college and career ready by the end of their high school sophomore year and that almost all students meet that standard before they graduate. The impact of the Blueprint on FCC is as follows:

- FCC will need to collaborate with local boards of education to develop students who have not met the CCR (College and Career Readiness) standard by the end of the 10th grade.
- Current teacher preparation programs at FCC will need to be redesigned to reflect the goals of the Blueprint which includes a full year of clinical experience managed by teacher education and district partnerships.
- It is anticipated that more students will participate in dual enrollment programs and more students will be transfer students. FCC "wraparound" services will also be impacted.
- Working with the Blueprint Accountability Board, FCC's mission will need to be aligned with the Blueprint's equity goals.
- Based on its past history and its aspirations, FCC has the experience of helping students who need additional support to achieve college and career readiness. Moreover, FCC indicates that it is prepared to expand to secondary offerings to college and career eligible students. Summing up, FCC is ready to implement the Blueprint.

Learning, Learning Support, Learning Spaces

- Need for some – at least two – large classrooms to accommodate 50 persons. These rooms could also be used for large group meetings, e.g. by Admissions for meetings with high school students.
- Provide one additional tiered lecture hall to seat up to 60 persons.
- Consider efforts to expand the heavily scheduled class hours beyond Monday-Thursday 9:00AM-2:00PM.
- Minimize the sound transmission between classrooms and corridors and between classrooms and the outdoors. Note that interview comments tended to mention Buildings C and F.
- Address classroom teaching wall conflicts involving projection screens and whiteboards. This should also be avoided in proposed new capital projects and renovations.

- Learning spaces and their furnishings should be as flexible as possible.
- Consider modifying or expanding existing labs to also accommodate flexible space for lecture/instruction mode.
- Review lab storage configuration in Building C to improve safety conditions when chemicals are moved to the lab.
- A long term plan for an FCC Career, Technical, and CEWD Center coordinated with Frederick County Public Schools, is needed, addressing the needs of CEWD, the Monroe Center, the main FCC Campus, and the adjacent FCPS Career and Technology Center (CTC).
- A long term plan to better accommodate Early College and Dual Enrollment students on campus. Provide a 'home' for Early College students, proximate to their classroom destinations and to support functions.

Student Affairs, Student Services, Student Support

- Targeted services such as DEI, Multicultural, and Disability Services suites should be grouped together to extent feasible.
- Locate office/meeting space for student advisors in a prominent location, closer to faculty offices, e.g. in the Student Center. In addition, facilitate utilization of remote advising.
- A 'Quick Question Advisor' or 'Ask Me Anything' desk located in the Student Center should be considered, alongside a relocated Help Desk.
- Provide additional, accessible gathering spaces for student use between classes, in addition to those already in place in the Student Center like the Game Room. Two types of spaces should be provided: quiet study and social/'hang-out'.
- Acknowledging that some students prefer to bring their own food to campus, provide lockers where coolers (and other gear) can be stored.
- Consider providing microwaves in some of the more active spaces.
- Food. Consider healthier and additional options in vending machines; also, an additional, smaller venue like a 'Grab-n-Go' located in a building other than the Student Center (e.g. the proposed Wellness/Athletics project) that would offer extended hours beyond the Student Center grille.
- The setting for a student food pantry should be studied so that it is accessible and at the same time laid out and in a location where students who may be hesitant to use it would feel less awkward.
- Provide shelves and/or hooks in restrooms for students' gear, coats, books, etc.
- When planning the proposed new Student Services and Welcome Center, consider the essential spaces that need to be located on the first floor.

Safety, Security

- Provide additional cameras, including at the main entrances to the campus.
- Doors to classrooms, offices, other spaces: investigate upgrading insecure doors to be more secure, while still allowing visibility into the rooms from the corridor while at the same time providing a way to obscure the glass panels in an active intruder or lockdown event. At the same time the doors would be upgraded, sound seals can be installed at the door perimeter.

- Move the Safety and Security offices from the ground floor center location in the Student Center. Consider a swap with the Help Desk in Gambrill Hall.
- Provide a second data center as a back-up.
- Update and expand the blue-light emergency call system.

Monroe Center

The Monroe Center was discussed extensively during the course of this study. Since its inception in 2017, the Center has developed into a well utilized facility, but with some specific needs. Recommendations include:

- For Monroe students, provide on-site services which are currently available to students on the main campus but not at Monroe, including advising, counseling, tutoring, financial aid and other student services.
- Provide support spaces for the above, as well as a limited food service facility.
- Improve and expand the number of instructional spaces including labs, studios, workshops, general instruction, and storage space.
- Expand the Hospitality and Culinary spaces.
- Improve connections such as a shuttle between campuses and VR connection between Monroe and Jefferson Hall on the main campus.

General, Miscellaneous

- Windows in existing and new buildings should include operable sashes.
- Improve ways to find and get to lactation rooms.
- Provide single-use restrooms on the ground floor of all buildings.
- Planning for offices should consider hoteling, shared office space, and hot desks for use by full time and adjunct faculty.
- Consider a faculty help center and lounge.
- Consider uniform digital signage or monitors to convey information and updates to students and others using the buildings.
- Incorporate a secure receiving and storage space in the proposed new Plant Services Building.
- Affordable housing for students. The cost of housing in the Frederick area is unaffordable for most students. Consider multiple strategies to develop housing for FCC students, including partnerships and associations with a developer and/or the City of Frederick, and/or individual homeowners to take advantage of the City of Frederick's Accessory Dwelling Unit (ADU) ordinance, and/or establish a foundation to help make this possible.

CAPITAL PROJECTS, CAMPUS DEVELOPMENT

Proposed Projects

As documented, the College's needs for improving its facilities are significant. Approximately a dozen projects merited consideration for inclusion in this study. All address current and future needs of the College, and all will improve FCC's operations, delivery of programs, and ability to respond to the needs of the community served by the College. The estimated size of these buildings, as well as a more informed narrative of the functions to be included in each, will be developed in the programming phase for each project.

In concert with the MCA consultant team, the FCC Office of Capital Planning and Project Management prioritized the proposed projects into two groups:

- Within the 2023-2033 planning horizon, shown on the **Ten-Year Campus Development Plan** exhibit and
- Future development beyond 2023, titled **Long Range Campus Development Plan** exhibit**.**

Enlarged plans for each project are also shown. In addition, the **Monroe Center** existing and possible expansion plans are included.

The main campus projects are described below. Three of the four projects will result in a net loss of existing parking. Currently, the parking lots and deck provide significantly more spaces than are used. Further study may be necessary to determine if replacement or additional parking is needed.

PROPOSED PROJECTS: 2023-2033

The list of these projects assumes feasibility of programming, funding, designing, and constructing the projects within the ten-year planning horizon.

1. **Health & Wellness Building / Building D Renovation**

- Estimated Size: Two stories, 91,500 GSF, 57,100 NSF; Building D ground floor renovation plus a second story, 4,900 new GSF facing the quad, 31,450 sf renovation
- Functions Included: Health, Wellness, Athletics, Recreation, Offices, Student Support Services, Expansion of the Central Plant, and Support Spaces
- This project will serve all members of the FCC community, including athletes, other students, faculty, and staff. It assumes two phases of development: first, the new Health & Wellness Building, which would contain at least one large footprint space – a combined competition arena, convocation center and multi-use space, and several support functions such as storage, locker rooms, fitness rooms, wellness suites, therapy rooms, offices, meeting rooms, and support spaces. The second phase, Renovation of Building D, assumes most if not all functions to be included in the Health & Wellness Building. It includes a two-story link to the new building plus additions in the front and rear providing circulation, a small food service venue, and other functions. It is anticipated that the

renovation of Building D will also allow expansion of Health Sciences functions that the existing Linganore Hall is not able to accommodate. Programming for this building has begun and may include a second floor within the existing gym footprint.

- Site work associated with this project will include initial development of two new pedestrian axes and related landscape improvements, ultimately connecting with the proposed Innovation and Technology Center and the proposed Enrollment Services / Welcome Center. An allee of paired, medium-sized flowering trees is planned to line the path. These pedestrian paths are also intended to provide small vehicle service access by FCC staff and as Fire Department access. A new vehicle turning circle is planned for the north side of the building to terminate the campus access road, and a new outdoor plaza is proposed to replace the existing vehicle turning circle/parking lot located north of Building C. Hard surface landscape entrance plazas are proposed for the north, south, and west sides of the proposed new construction.

2. Campus Services Building

- Estimated Size: One-two stories: Office & Shops 19,200 GSF, 12,900 NSF. One-level Storage Building 4,800 GSF
- Functions Included: Plant Services Work, Shops, Offices, Repair Spaces, FCC Receiving, Storage
- This project replaces the current Plant Services building and includes all functions now housed in that building and others distributed throughout the campus.
- Site work associated with this project will include a staff and visitor parking lot, limited realignment of the campus loop road at the southwest corner of the Parking Deck, a new access driveway, fenced 120' x 140' service/storage yard with sliding security gate, and landscaping.

3. Innovation and Technology Center

- Estimated Size: Two Stories, 54,600 GSF, 31,100 NSF
- Functions Included: Science and Biotechnology labs, an Innovation Center serving the FCC community and other entrepreneurial initiatives, instructional spaces for STEM programs, offices, lecture hall, and support spaces. To connect with Building C at the same floor levels.
- This project will provide space for creative development of ideas spawned in other FCC courses and by institutional and business partners in the County. Academic space to be included in the program may also allow for Continuing Education / Workforce Development programs that are currently offered at the Monroe Center facility to return to the FCC Main Campus.
- This project will require reconfiguration of Parking Lot 5 and will result in a net loss of parking spaces. The pedestrian axis constructed as part of project 1 will be extended to the west campus loop road, and a landscaped plaza is planned for the new courtyard formed by Building C and the new Innovation and Technology Center.

4. Enrollment Services / Welcome Center

- Estimated Size: Three Stories, 48,000 GSF, 27,400 NSF
- Functions Included: All Student Services functions currently housed in Jefferson Hall, also including a new Welcome Center.
- This project represents a four-fold opportunity: 1) to better serve students related to student support services, improving those now housed in Jefferson Hall, 2) provide additional space currently

needed for Student Services, 3) introduce a new Welcome Center near the 'front door' of the campus, and 4) allow for a relatively easy relocation of administrative functions to the Jefferson building.
- Site work associated with this project will include realignment of a portion of the campus entry road west of the intersection with the CTC driveway, to provide a clearer circulation pattern. The building is located within the current Visitor Parking Lot, so a new lot has been proposed immediately north of the new Enrollment Services / Welcome Center building. In addition, completion of the pedestrian axis constructed as part of project 1 is anticipated from the interface location south of Linganore Hall to a new bus stop location on the loop road southeast of the new building.

PROPOSED PROJECTS: LONG RANGE DEVELOPMENT

- **Jefferson Hall Renovation.** This project would follow the construction of the new Enrollment Services / Welcome Center Building, allowing administrative functions to relocate from Annapolis Hall.

- **Demolition of Annapolis Hall and Expanded Quad.** This project assumes relocation of most if not all functions from Annapolis Hall to the Jefferson Building. It also will open up the much-needed opportunity to develop an expanded and integrated quad and open space concept connecting most of the existing and proposed campus buildings.

- **Fine and Performing Arts.** Acknowledging the existing issues and compromises in the existing Building F, this project is envisioned to finally properly house the successful arts programs of the College, to be located at the end of and defining the existing quad between Buildings D and L.

- **Monroe Center Expansion and Renovation.** This project will provide major improvements to the existing functions now housed in Monroe while also expanding the program and support functions that aren't there now.

- **Playing Fields, Athletic Facilities, and related Site Improvements.** This project will include improvements to existing athletics and recreation fields, including baseball, softball, soccer, and tennis, also including two 'Field Houses' to house storage, restrooms, and concessions functions.

- **Campus loop road connection.** After a new Fine and Performing Arts building is constructed, FCC should consider linking the loop road from the entrance to Parking Lot 9 as shown on the proposed Long-Range plan.

- **Emergency Access to Summerfield Drive.** In the event that both Opossumtown Pike entrances to the campus are closed or not available, it is prudent to provide for a third access and egress point, also providing direct and safe access to the campus from the adjacent residential community.

- **Future Academic Building.** As the College continues to grow, it is expected that another academic building will be needed. At that point in time, at least one decade into the future, it will be appropriate to address that need in a future Facilities Master Plan. With replacement of the Fine and Performing Arts building, the current Building F site provides a large footprint of space for future facilities.

CAMPUS DEVELOPMENT

Refer to the following exhibits illustrating proposed main campus and the Monroe Center development:

- Main Campus Site Plan – Existing Conditions
- Main Campus Site Plan – Proposed Ten-Year Campus Development Plan
- Main Campus Site Plan – Proposed Long-Range Campus Development Plan
- Main Campus Proposed Project 1 Enlarged Plan
- Main Campus Proposed Project 2 Enlarged Plan
- Main Campus Proposed Project 3 Enlarged Plan
- Main Campus Proposed Project 4 Enlarged Plan
- Monroe Center Plan – Existing Conditions
- Monroe Center Plan – Proposed Ten-Year Development Plan

BUDGET COST ESTIMATE

Refer to the Budget Cost Estimate at the end of this Section 6H for the four proposed 2023-2033 projects.

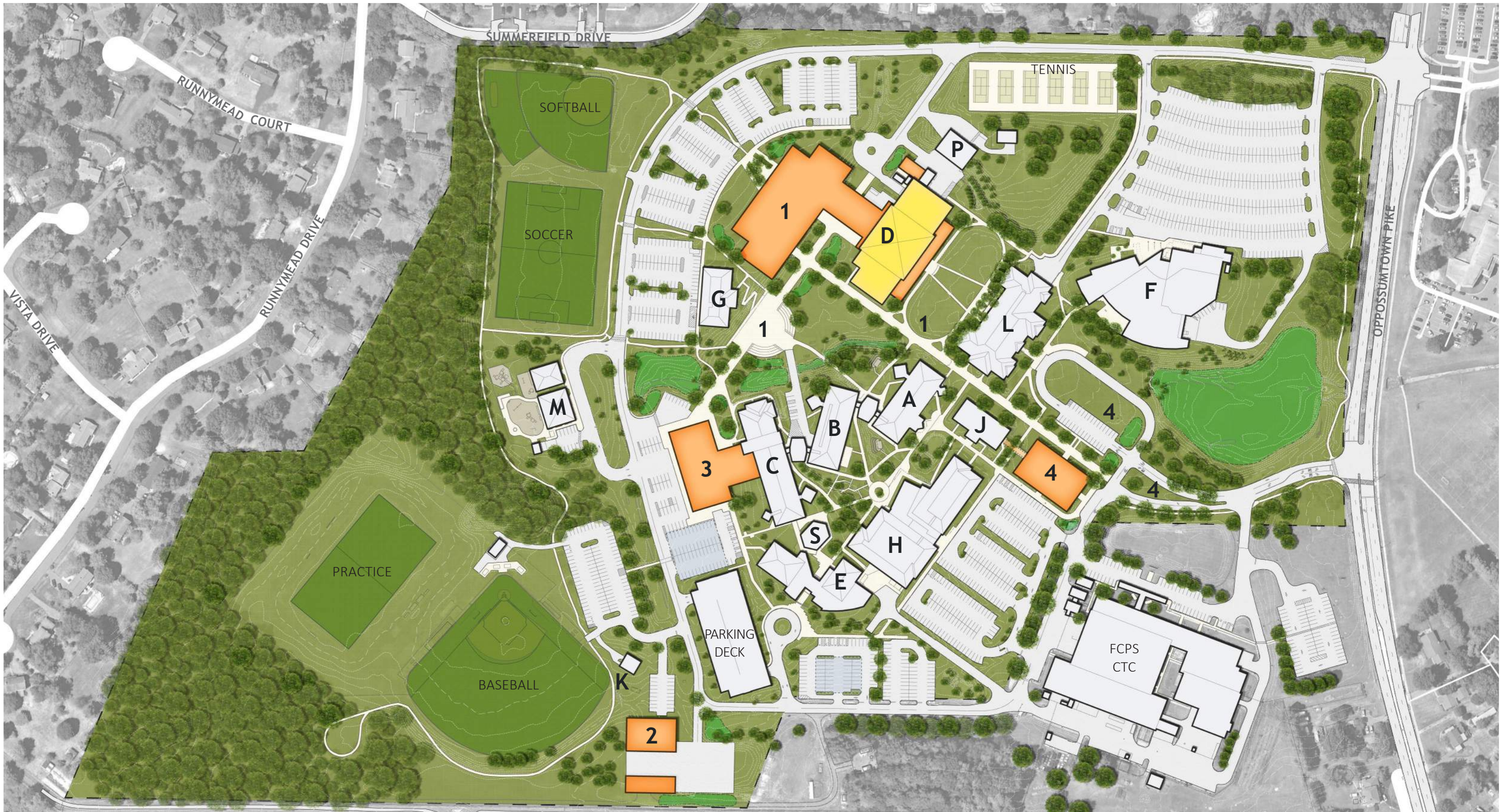
FREDERICK COMMUNITY COLLEGE | FACILITIES MASTER PLAN 2023 - 2033 | **MAIN CAMPUS - EXISTING CONDITIONS PLAN** | MAY 2023

0 30 100
10 50

N

LEGEND

- A Annapolis Hall
- B Braddock Hall
- C Catoctin Hall
- D Athletics Center
- E Conference Center
- F Visual and Performing Arts Center
- G Gambrill Hall
- H Student Center
- J Jefferson Hall
- K Mercer-Akre Kiln
- L Linganore Hall
- M The Miller Children's Center
- P Plant Operations
- S Sweadner Hall



FREDERICK COMMUNITY COLLEGE | FACILITIES MASTER PLAN 2023 - 2033 | **MAIN CAMPUS - TEN-YEAR CAMPUS DEVELOPMENT PLAN** | MAY 2023

0 30 100
10 50

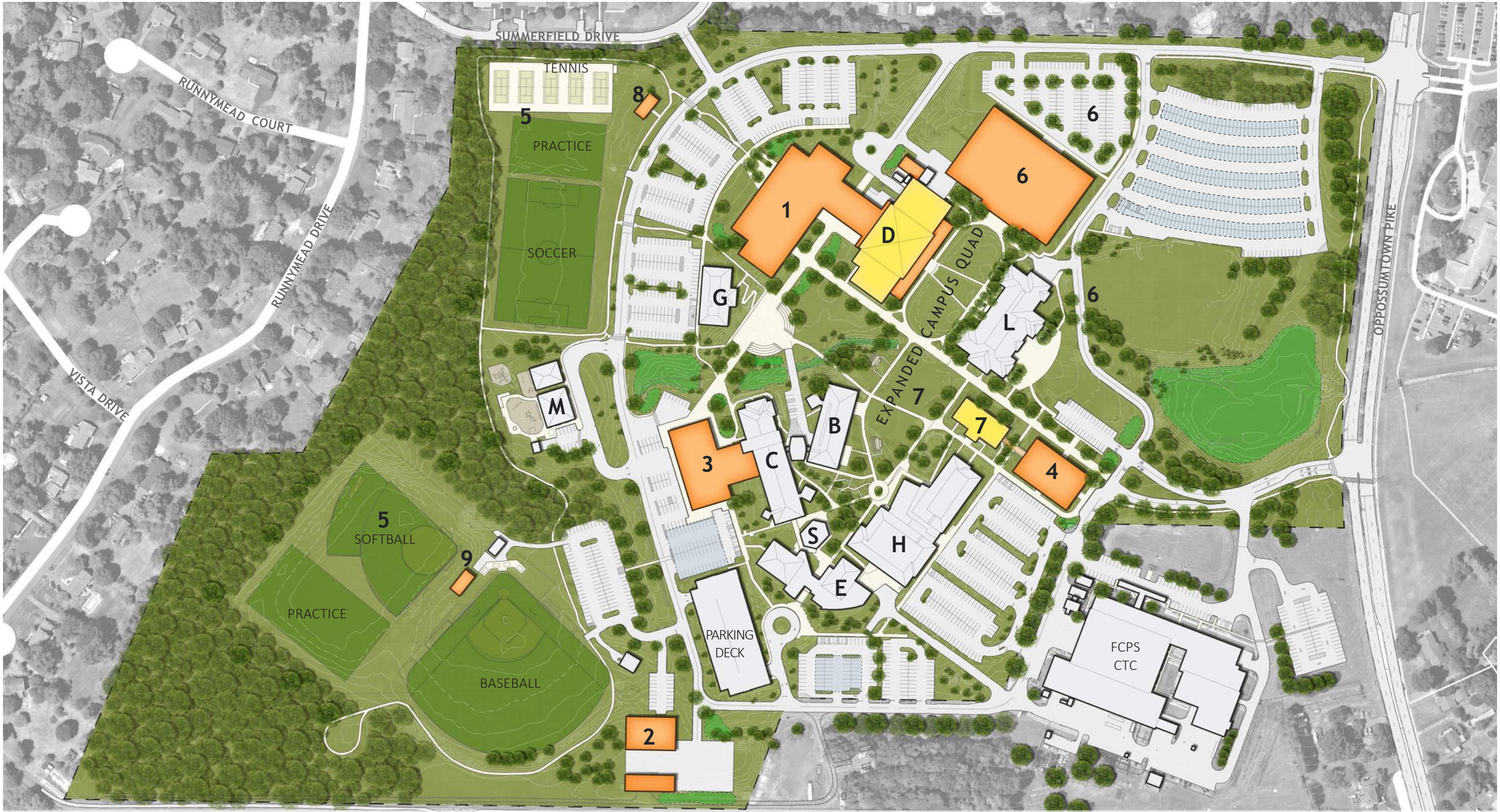
N

LEGEND

- Open Space
- Recreational / Athletic Field
- Wooded
- Bioretention Planting
- Existing FCC Building
- New Construction
- Renovation
- Primary Pathway/ Plaza
- Surface Parking / Road

PROPOSED PROJECTS

1 Health & Wellness Building / Renovate D / Landscape Improvements
2 Campus Services Building
3 Innovation and Technology Center
4 Enrollment Services Building / Parking / Realign Entrance Road



FREDERICK COMMUNITY COLLEGE | FACILITIES MASTER PLAN 2023 - 2033 | **MAIN CAMPUS - LONG RANGE CAMPUS DEVELOPMENT PLAN** | MAY 2023

0 30 100
10 50

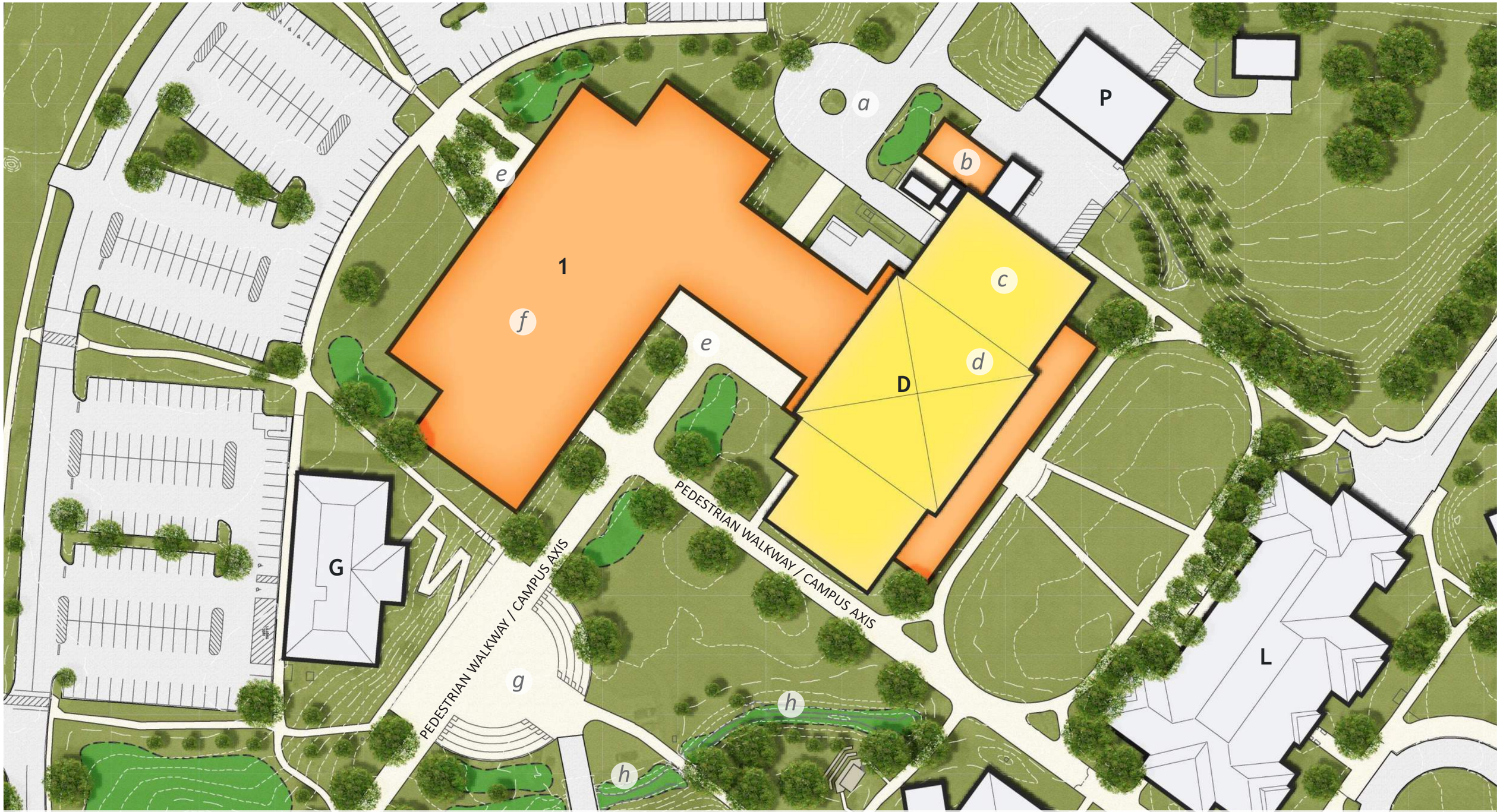
N

LEGEND

- Open Space
- Recreational / Athletic Field
- Wooded
- Bioretention Planting
- Existing FCC Building
- New Construction
- Renovation
- Primary Pathway/ Plaza
- Surface Parking / Road

PROPOSED PROJECTS

1 Health & Wellness Building
2 Campus Services Building
3 Innovation and Technology Center
4 Enrollment Services Building
5 Relocate Tennis and Softball Facilities
6 Fine & Performing Arts Building/ Realign loop Road
7 Renovate Jefferson Hall/ Demolish Building A / Expand Quad
8 North Field House
9 South Field House



FREDERICK COMMUNITY COLLEGE | FACILITIES MASTER PLAN 2023 - 2033 | **MAIN CAMPUS - PROJECT 1 DEVELOPMENT PLAN** | MAY 2023

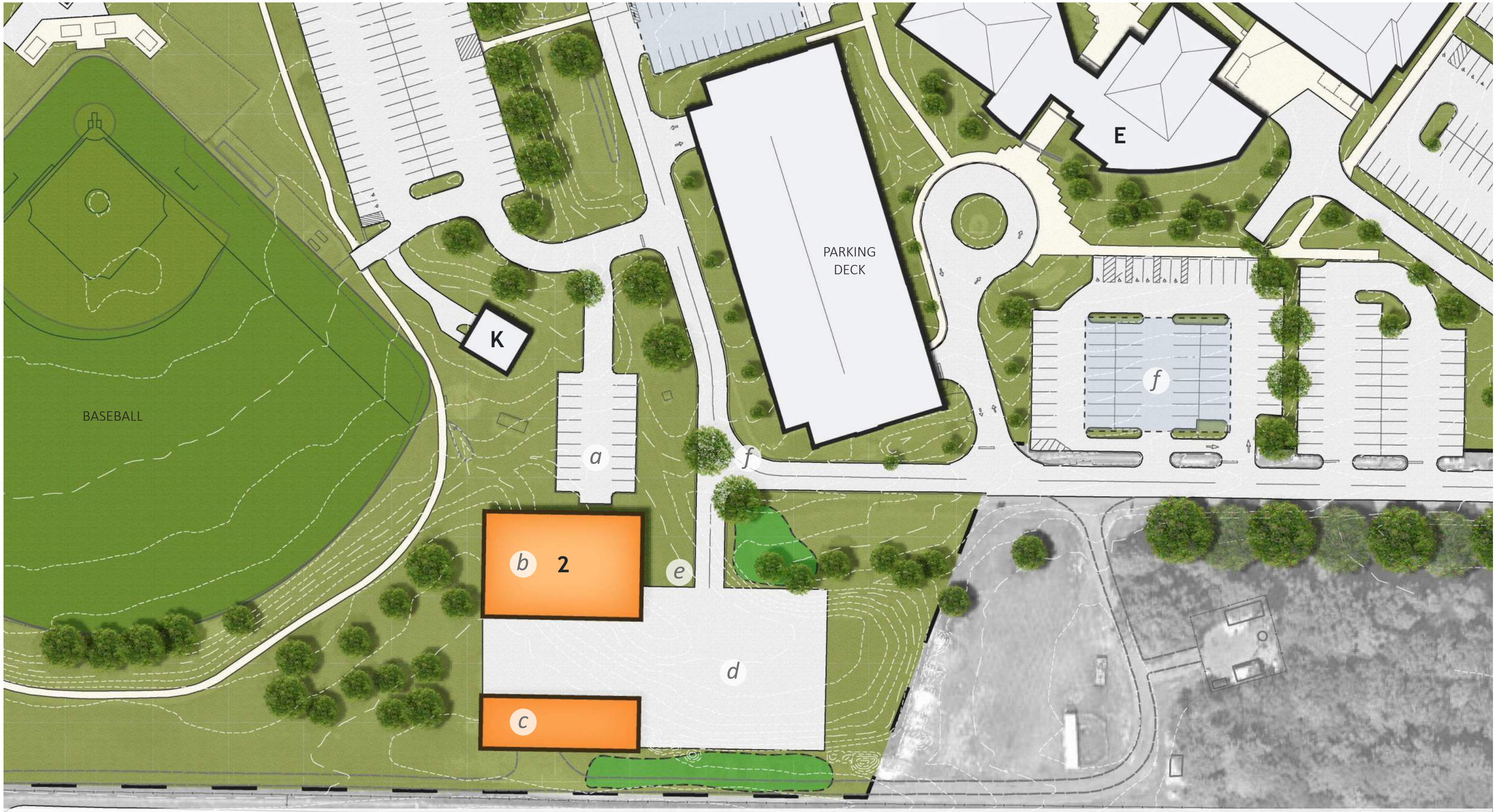
0 30 50 N
10

LEGEND

- Open Space
- Recreational / Athletic Field
- Wooded
- Bioretention Planting
- Existing FCC Building
- New Construction
- Renovation
- Primary Pathway/ Plaza
- Surface Parking / Road

PROJECT FEATURES

a Vehicle turnaround circle
b Central Plant Expansion
c Central Plant Renovation
d Consider addition of second story mezzanine at existing gym
e Entrance Plaza
f Consider PV Panels on Roof
g Pedestrian Plaza/ Amphitheater
h Restore drainage swale with native landscaping



FREDERICK COMMUNITY COLLEGE | FACILITIES MASTER PLAN 2023 - 2033 | **MAIN CAMPUS - PROJECT 2 DEVELOPMENT PLAN** | MAY 2023

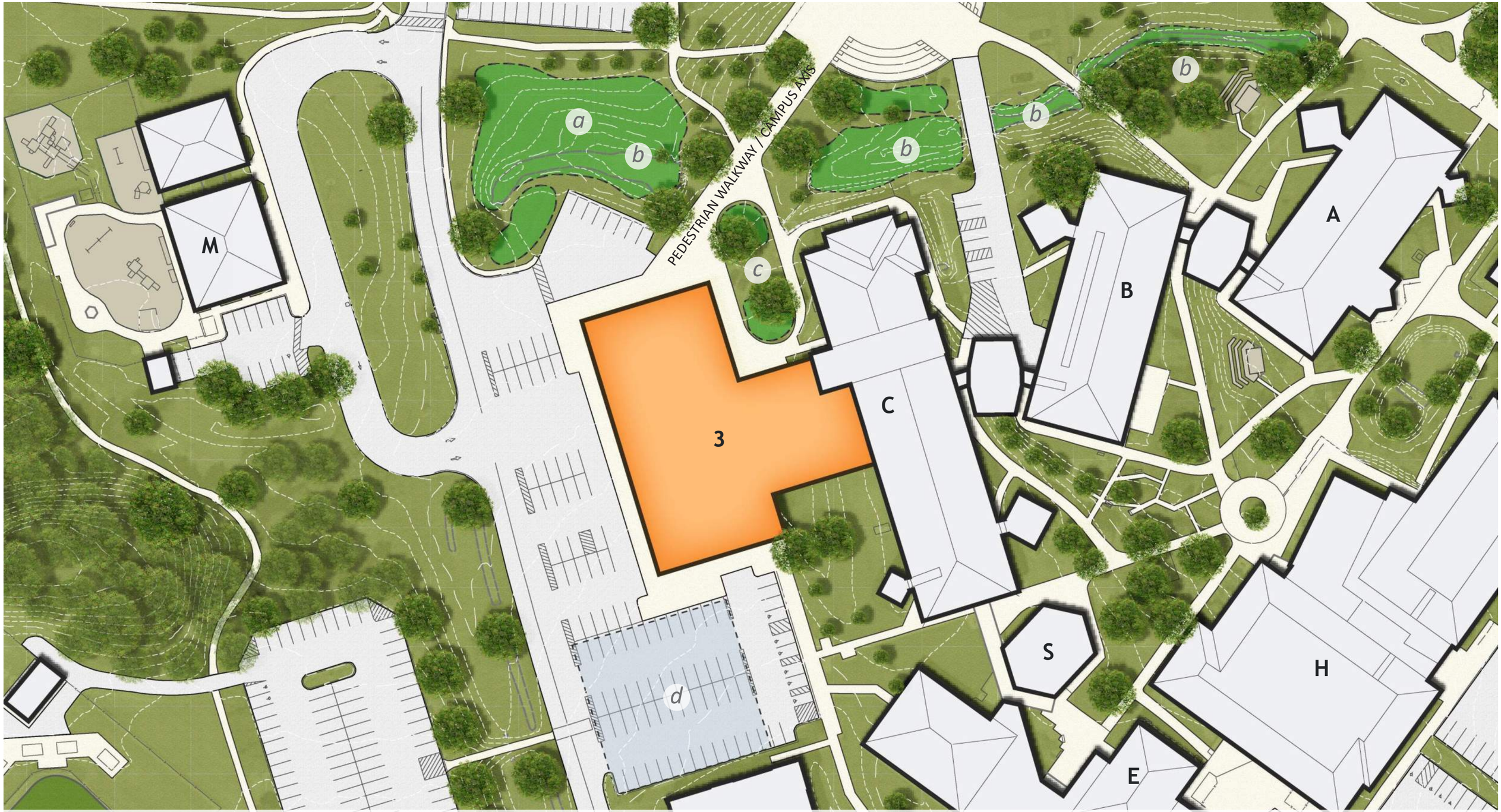
0 10 30 50 N

LEGEND

- Open Space
- Recreational / Athletic Field
- Wooded
- Bioretention Planting
- Existing FCC Building
- New Construction
- Renovation
- Primary Pathway/ Plaza
- Surface Parking / Road

PROJECT FEATURES

a New Plant staff/ visitor parking lot
b Office and Shop building
c Storage building
d Secure parking/ storage yard
e Sliding gate
f Modify intersection
g PV shade canopy



FREDERICK COMMUNITY COLLEGE | FACILITIES MASTER PLAN 2023 - 2023 | **MAIN CAMPUS - PROJECT 3 DEVELOPMENT PLAN** | MAY 2023

LEGEND

- Open Space
- Recreational / Athletic Field
- Wooded
- Bioretention Planting
- Existing FCC Building
- New Construction
- Renovation
- Primary Pathway/ Plaza
- Surface Parking / Road

PROJECT FEATURES

a Wildflower meadow
b Restore drainage swale with native landscaping
c Plaza
d PV shade canopy

L

F

PROJECT 1 / 4 INTERSECTION

PEDESTRIAN WALKWAY / CAMPUS AXIS

OPPOSSUMTOWN PIKE

J

H

4

a

b

c

d

e

FREDERICK COMMUNITY COLLEGE | FACILITIES MASTER PLAN 2023 - 2033 | **MAIN CAMPUS - PROJECT 4 DEVELOPMENT PLAN** | MAY 2023

0 10 30 50

LEGEND

- Open Space
- Recreational / Athletic Field
- Wooded
- Bioretention Planting
- Existing FCC Building
- New Construction
- Renovation
- Primary Pathway/ Plaza
- Surface Parking / Road

PROJECT FEATURES

a Visitor parking lot
b Bridge to Building J
c New bus stop
d Realign entrance road- Coordinate with specimen trees
e Wildflower meadow

FREDERICK COMMUNITY COLLEGE | FACILITIES MASTER PLAN 2023 - 2033 | **MONROE CENTER - EXISTING CONDITIONS PLAN** | MAY 2023

LEGEND

A Monroe Center

Leased Space

Existing FCC Building

FREDERICK COMMUNITY COLLEGE | FACILITIES MASTER PLAN 2023 - 2033 | **MONROE CENTER - TEN-YEAR CAMPUS DEVELOPMENT PLAN** | MAY 2023

0 30 100
10 50

N

LEGEND

A Monroe Center

Proposed Reprogrammed Space

4/28/2023

DRAFT

FREDERICK COMMUNITY COLLEGE
FACILITIES MASTER PLAN
2023-2033 PROJECTS

Frederick Community College

Feasible Cost of Construction / Magnitude of Cost Estimate for the 2023-2033 Master Plan Projects

Cat	Description	PROJECT #1 ADDITION Health & Wellness Building	PROJECT #1 RENOVATION Building D Renovation	PROJECT #1 TOTAL Health & Wellness Building / Building D Renovation-Total	PROJECT #2 Campus Services Building	PROJECT #3 Innovation and Technology Center	PROJECT #4 Enrollment Services and Welcome Center	Total
100	General Conditions	$3,551,336.23	$785,041.86	$4,336,378.10	$697,608.52	$1,992,858.35	$1,553,696.62	**$8,580,541.58**
200	Sitework and Demolition	$6,653,456.45	$314,450.00	$6,967,906.45	$1,309,435.93	$1,340,138.00	$1,635,666.00	**$11,253,146.38**
300	Concrete	$1,446,300.00	$31,445.00	$1,477,745.00	$211,200.00	$819,000.00	$720,000.00	**$3,227,945.00**
400	Masonry	$1,928,400.00	$31,445.00	$1,959,845.00	$480,000.00	$1,092,000.00	$1,200,000.00	**$4,731,845.00**
500	Metals	$6,267,300.00	$62,890.00	$6,330,190.00	$1,152,000.00	$3,003,000.00	$3,120,000.00	**$13,605,190.00**
600	Carpentry	$1,253,460.00	$408,785.00	$1,662,245.00	$322,800.00	$1,965,600.00	$624,000.00	**$4,574,645.00**
700	Moisture Protection	$3,626,238.30	$196,531.25	$3,822,769.55	$770,400.00	$1,583,127.00	$1,080,000.00	**$7,256,296.55**
800	Doors Windows & Glass	$2,410,500.00	$1,100,575.00	$3,511,075.00	$504,000.00	$1,365,000.00	$1,200,000.00	**$6,580,075.00**
900	Finishes	$5,785,200.00	$1,839,532.50	$7,624,732.50	$1,180,800.00	$3,106,740.00	$2,736,000.00	**$14,648,272.50**
1000	Specialties	$337,470.00	$110,057.50	$447,527.50	$52,800.00	$191,100.00	$144,000.00	**$835,427.50**
1100	Equipment	$1,500,000.00	$500,000.00	$2,000,000.00	$50,000.00	$1,200,000.00	$400,000.00	**$3,650,000.00**
1200	Furnishings	$144,630.00	$47,167.50	$191,797.50	$36,000.00	$81,900.00	$72,000.00	**$381,697.50**
1300	Special Construction	$2,024,820.00	$660,345.00	$2,685,165.00	$120,000.00	$1,146,600.00	$768,000.00	**$4,719,765.00**
1400	Conveying	$674,940.00	$0.00	$674,940.00	$172,800.00	$436,800.00	$432,000.00	**$1,716,540.00**
1500	Mechanical	$9,834,840.00	$3,679,065.00	$13,513,905.00	$2,049,600.00	$6,715,800.00	$4,896,000.00	**$27,175,305.00**
1600	Electrical	$6,749,400.00	$2,201,150.00	$8,950,550.00	$1,536,000.00	$4,368,000.00	$3,120,000.00	**$17,974,550.00**
1700	Miscellaneous	$96,420.00	$31,445.00	$127,865.00	$18,000.00	$54,600.00	$48,000.00	**$248,465.00**
	SUBTOTAL	**$54,284,710.98**	**$11,999,925.61**	**$66,284,636.60**	**$10,663,444.45**	**$30,462,263.35**	**$23,749,362.62**	**$131,159,707.01**
	PHASING AND LOGISTICS FACTOR 0.00%	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	LIABILITY INSURANCE 1.00%	$542,847.11	$119,999.26	$662,846.37	$106,634.44	$304,622.63	$237,493.63	$1,311,597.07
	GENERAL CONTRACTORS BOND 2.00%	$1,096,551.16	$242,398.50	$1,338,949.66	$215,401.58	$615,337.72	$479,737.12	$2,649,426.08
	OVERHEAD AND PROFIT 8.00%	$4,473,928.74	$988,985.87	$5,462,914.61	$878,838.44	$2,510,577.90	$1,957,327.47	$10,809,658.41
	DESIGN CONTINGENCY 20.00%	$12,079,607.60	$2,670,261.85	$14,749,869.45	$2,372,863.78	$6,778,560.32	$5,284,784.17	$29,186,077.71
	ESCALATION OF CONSTRUCTION COST TBD	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	TOTAL	**$72,477,645.59**	**$16,021,571.08**	**$88,499,216.68**	**$14,237,182.69**	**$40,671,361.92**	**$31,708,705.01**	**$175,116,466.29**

4/28/2023

PROJECT #1 ADDITION

FREDERICK COMMUNITY COLLEGE FACILITIES MASTER PLAN 2023-2033 PROJECTS

Health & Wellness Building	
BLDG	AREA
NEW #1	91500.00
ADDITION #1	4920.00
TOTAL	96420.00

Feasible Cost of Construction / Magnitude of Cost Estimate for the 2023-2033 Master Plan Projects

Estimate Figured in 1st Quarter 2023 US Dollars

CSI Code	Task Description	Unit	Count	$/S.F.	Sub Total	Total
100	**GENERAL CONDITIONS**					$3,551,336.23
	General Conditions					
	general conditions as a percentage of subcontracts	percent	7.00%	$50,733,374.75	$3,551,336.23	
200	**SITEWORK AND DEMOLITION**					$6,653,456.45
	Demolition- Hazmat					
	abatement and remove and dispose of hazmat by owner	by owner	0.00	$0.00	$0.00	
	Clearing					
	clearing and demo in the area of disturbance	sf	160000.00	$2.00	$320,000.00	
	Demolition-Site					
	site demolition	included above	0.00	$0.00	$0.00	
	Erosion and Sediment Control					
	erosion and sediment control-install, maintain and remove	ls	1.00	$50,000.00	$50,000.00	
	Excavation					
	excavation, grading and backfill-miscellaneous	ls	1.00	$300,000.00	$300,000.00	
	Utility Relocations					
	relocate water	allowance	1.00	$200,000.00	$200,000.00	
	relocate electric	allowance	1.00	$500,000.00	$500,000.00	
	relocate sanitary	allowance	1.00	$25,000.00	$25,000.00	
	Stormwater Management					
	stormwater management	ls	1.00	$400,000.00	$400,000.00	
	Sanitary					
	sanitary	ls	1.00	$40,000.00	$40,000.00	
	Water					
	water	ls	1.00	$765,000.00	$765,000.00	
	Electric					
	electric	ls	1.00	$150,000.00	$150,000.00	
	Site Lighting					
	base, pole, fixture and power	ls	1.00	$150,000.00	$150,000.00	
	Telecom					
	telecom	ls	1.00	$10,000.00	$10,000.00	
	Curb and Gutter					
	concrete curb and gutter	ls	1.00	$30,000.00	$30,000.00	
	Sidewalks					
	sidewalks	ls	1.00	$15,000.00	$15,000.00	
	patching and repairs to existing	ls	1.00	$5,000.00	$5,000.00	
	Asphalt and Concrete Paving					
	asphalt paving	allowance	1.00	$100,000.00	$100,000.00	
	concrete paving	not required	0.00	$0.00	$0.00	
	patching and repairs to existing	ls	1.00	$15,000.00	$15,000.00	
	Bollards					
	concrete filled pipe bollards	ls	1.00	$20,000.00	$20,000.00	
	Retaining Walls					
	retaining wall	not required	0.00	$0.00	$0.00	
	Pedestrian Walkway, Landscape and Hardscape Improvements					
	building 1- pedestrian walkway area	sf	32191.69	$45.00	$1,448,626.05	
	plaza-landscape-hardscape improvements	sf	27228.16	$65.00	$1,769,830.40	
	Landscaping					
	landscaping allowance-other	allowance	1.00	$150,000.00	$150,000.00	
	Site Furnishings					
	site furnishings	by owner	0.00	$0.00	$0.00	
	Fences and Railings					
	fences and railings	not required	0.00	$0.00	$0.00	

	Signs and Markings					
	signage and markings	ls	1.00	$40,000.00	**$40,000.00**	
	Dumpster Enclosure					
	dumpster enclosure gates - 6' tall gates; (2) 10' wide double gates	ls	1.00	$30,000.00	**$30,000.00**	
	Miscellaneous					
	surveying	ls	1.00	$100,000.00	**$100,000.00**	
	temp construction fence and gate-rental- install, maintain and remove	ls	1.00	$20,000.00	**$20,000.00**	
300	**CONCRETE**					**$1,446,300.00**
	Concrete					
	concrete	sf allowance	96420.00	$15.00	**$1,446,300.00**	
400	**MASONRY**					**$1,928,400.00**
	Masonry					
	masonry	sf allowance	96420.00	$20.00	**$1,928,400.00**	
500	**METAL**					**$6,267,300.00**
	Structural Steel and Miscellaneous Metals					
	structural steel and miscellaneous metals-includes framing for sloped roof	sf allowance	96420.00	$65.00	**$6,267,300.00**	
600	**CARPENTRY**					**$1,253,460.00**
	Carpentry					
	carpentry	sf allowance	96420.00	$3.00	**$289,260.00**	
	Cabinetry and Millwork					
	cabinetry and millwork	sf allowance	96420.00	$7.00	**$674,940.00**	
	Installations					
	install doors, frames and hardware	sf allowance	96420.00	$2.00	**$192,840.00**	
	carpentry labor to install accessories and miscellaneous	sf allowance	96420.00	$1.00	**$96,420.00**	
700	**MOISTURE PROTECTION**					**$3,626,238.30**
	Roofing					
	standing seam metal roofing-insulation, board-membrane-flashings and sheetmetal and accessories	sf	46700.34	$40.00	**$1,868,013.60**	
	flat roofing-insulation, board-membrane-flashings and sheetmetal/roof hatch/mechanical screening and accessories	sf	23001.66	$45.00	**$1,035,074.70**	
	Sealants					
	caulking of windows and expansion joints-interior and exterior included	sf allowance	96420.00	$1.50	**$144,630.00**	
	Waterproofing					
	waterproofing	sf allowance	96420.00	$1.00	**$96,420.00**	
	Fireproofing and Firestopping					
	fireproofing	sf allowance	96420.00	$3.00	**$289,260.00**	
	firestopping	sf allowance	96420.00	$2.00	**$192,840.00**	
	Insulation					
	exterior wall insulation	see cat 900	0.00	$0.00	**$0.00**	
800	**DOOR, WINDOW, GLASS**					**$2,410,500.00**
	Doors, Windows, Glass and Glazing					
	doors, windows, glass and glazing	sf allowance	96420.00	$25.00	**$2,410,500.00**	
900	**FINISH**					**$5,785,200.00**
	Partitions					
	gwb partitions	sf allowance	96420.00	$12.00	**$1,157,040.00**	
	Light Gage Exterior Wall -Assembly-backup to veneers					
	6" steel studs-structural-sheathing-insulation-vapor barrier-gwb-finished	sf allowance	96420.00	$10.00	**$964,200.00**	
	Painting					
	painting	sf allowance	96420.00	$3.00	**$289,260.00**	
	Flooring					
	floor prep	sf allowance	96420.00	$1.50	**$144,630.00**	
	flooring allowance	sf allowance	96420.00	$20.00	**$1,928,400.00**	
	Ceramic Tile					
	ceramic tile walls	sf allowance	96420.00	$3.00	**$289,260.00**	
	Ceilings					
	ceiling allowance	sf allowance	96420.00	$9.00	**$867,780.00**	
	bulkhead allowance	sf allowance	96420.00	$1.00	**$96,420.00**	
	Finish Protection					
	protection of finishes	sf allowance	96420.00	$0.50	**$48,210.00**	
1000	**SPECIALTIES**					**$337,470.00**
	Specialties					
	specialties-allowance	sf allowance	96420.00	$2.00	**$192,840.00**	
	Smart Boards					
	installed by contractor	by owner	0.00	$0.00	**$0.00**	

	Tack Boards and Marker Boards tack boards and marker boards	sf allowance	96420.00	$1.50	**$144,630.00**	
1100	**EQUIPMENT**					**$1,500,000.00**
	Equipment equipment	ls	1.00	$1,500,000.00	**$1,500,000.00**	
1200	**FURNISHINGS**					**$144,630.00**
	Furnishings window shades in classrooms and offices	sf allowance	96420.00	$1.50	**$144,630.00**	
1300	**SPECIAL CONSTRUCTION**					**$2,024,820.00**
	Special Construction it/date and telecom	equipment by owner	0.00	$0.00	**$0.00**	
	security-equipment budget	sf allowance	96420.00	$6.00	**$578,520.00**	
	intercom/pa	equipment by owner	0.00	$0.00	**$0.00**	
	av wiring	equipment by owner	0.00	$0.00	**$0.00**	
	Teaching Technology teaching technology	sf allowance	96420.00	$15.00	**$1,446,300.00**	
1400	**CONVEYING**					**$674,940.00**
	Conveying elevators	sf allowance	96420.00	$7.00	**$674,940.00**	
1500	**MECHANICAL**					**$9,834,840.00**
	HVAC hvac budget	sf allowance	96420.00	$80.00	**$7,713,600.00**	
	Plumbing plumbing	sf allowance	96420.00	$14.00	**$1,349,880.00**	
	Fire Suppression fire suppression	sf allowance	96420.00	$8.00	**$771,360.00**	
1600	**ELECTRICAL**					**$6,749,400.00**
	Electrical electrical budget	sf allowance	96420.00	$70.00	**$6,749,400.00**	
1700	**MISCELLANEOUS**					**$96,420.00**
	Miscellaneous building permit	by owner	0.00	$0.00	**$0.00**	
	final clean	sf allowance	96420.00	$1.00	**$96,420.00**	
					$54,284,710.98	**$54,284,710.98**

04/28/23

Health & Wellness Building

FREDERICK COMMUNITY COLLEGE FACILITIES MASTER PLAN 2023-2033 PROJECTS

Frederick Community College

Feasible Cost of Construction / Magnitude of Cost Estimate for the 2023-2033 Master Plan Projects

Estimate Figured in 1st Quarter 2023 US Dollars

CAT	DESCRIPTION	% OF TOT	TOTALS
100	General Conditions	4.90%	$3,551,336.23
200	Sitework and Demolition	9.18%	$6,653,456.45
300	Concrete	2.00%	$1,446,300.00
400	Masonry	2.66%	$1,928,400.00
500	Metals	8.65%	$6,267,300.00
600	Carpentry	1.73%	$1,253,460.00
700	Moisture Protection	5.00%	$3,626,238.30
800	Doors Windows & Glass	3.33%	$2,410,500.00
900	Finishes	7.98%	$5,785,200.00
1000	Specialties	0.47%	$337,470.00
1100	Equipment	2.07%	$1,500,000.00
1200	Furnishings	0.20%	$144,630.00
1300	Special Construction	2.79%	$2,024,820.00
1400	Conveying	0.93%	$674,940.00
1500	Mechanical	13.57%	$9,834,840.00
1600	Electrical	9.31%	$6,749,400.00
1700	Miscellaneous	0.13%	$96,420.00
	SUBTOTALS	74.90%	**$54,284,710.98**

PHASING AND LOGISTICS FACTOR	**0.00%**	0.00%	$0
LIABILITY INSURANCE	**1.00%**	0.75%	$542,847
GENERAL CONTRACTORS BOND	**2.00%**	1.51%	$1,096,551
OVERHEAD AND PROFIT	**8.00%**	6.17%	$4,473,929
DESIGN CONTINGENCY	**20.00%**	16.67%	$12,079,608
ESCALATION OF CONSTRUCTION COST	**0.00%**	0.00%	$0
TOTAL		100.00%	**$72,477,646**
			$752

PROJECT #1 RENOVATION

FREDERICK COMMUNITY COLLEGE FACILITIES MASTER PLAN 2023-2033 PROJECTS

Frederick Community College

Building D Renovation	
BLDG	AREA
RENOVATION	31445.00
TOTAL	31445.00

Feasible Cost of Construction / Magnitude of Cost Estimate for the 2023-2033 Master Plan Projects

Estimate Figured in 1st Quarter 2023 US Dollars

CSI Code	Task Description	Unit	Count	$/S.F.	Sub Total	Total
100	**GENERAL CONDITIONS**					$785,041.86
	General Conditions general conditions as a percentage of subcontracts	percent	7.00%	$11,214,883.75	$785,041.86	
200	**SITEWORK AND DEMOLITION**					$314,450.00
	Demolition- Hazmat abatement and remove and dispose of hazmat by owner	by owner	0.00	$0.00	$0.00	
	Demolition-Interior interior demolition	sf allowance	31445.00	$10.00	$314,450.00	
	Miscellaneous miscellaneous	not required	0.00	$0.00	$0.00	
300	**CONCRETE**					$31,445.00
	Concrete concrete patching and repairs	sf allowance	31445.00	$1.00	$31,445.00	
400	**MASONRY**					$31,445.00
	Masonry masonry-patching and repairs	sf allowance	31445.00	$1.00	$31,445.00	
500	**METAL**					$62,890.00
	Structural Steel and Miscellaneous Metals structural steel and miscellaneous metals	sf allowance	31445.00	$2.00	$62,890.00	
600	**CARPENTRY**					$408,785.00
	Carpentry carpentry	sf allowance	31445.00	$3.00	$94,335.00	
	Cabinetry and Millwork cabinetry and millwork	sf allowance	31445.00	$7.00	$220,115.00	
	Installations install doors, frames and hardware carpentry labor to install accessories and miscellaneous	sf allowance sf allowance	31445.00 31445.00	$2.00 $1.00	$62,890.00 $31,445.00	
700	**MOISTURE PROTECTION**					$196,531.25
	Roofing roofing-patching and repairs to existing roof	sf	31445.00	$2.00	$62,890.00	
	Sealants caulking of windows and expansion joints-interior and exterior included	sf allowance	31445.00	$1.25	$39,306.25	
	Waterproofing waterproofing	sf allowance	31445.00	$1.00	$31,445.00	
	Fireproofing and Firestopping fireproofing patching and repairs to existing firestopping	sf allowance sf allowance	31445.00 31445.00	$1.00 $1.00	$31,445.00 $31,445.00	
	Insulation exterior wall insulation	see cat 900	0.00	$0.00	$0.00	
800	**DOOR, WINDOW, GLASS**					$1,100,575.00
	Doors, Windows, Glass and Glazing doors, windows, glass and glazing-office	sf allowance	31445.00	$35.00	$1,100,575.00	
900	**FINISH**					$1,839,532.50
	Partitions gwb partitions-average price	sf allowance	31445.00	$12.00	$377,340.00	
	Light Gage Exterior Wall -Assembly-backup to veneers 6" steel studs-structural-sheathing-insulation-vapor barrier-gwb-finished	sf allowance	31445.00	$9.00	$283,005.00	

	Painting					
	painting	sf allowance	31445.00	$3.00	**$94,335.00**	
	Flooring					
	floor prep	sf allowance	31445.00	$1.00	**$31,445.00**	
	flooring allowance	sf allowance	31445.00	$20.00	**$628,900.00**	
	Ceramic Tile					
	ceramic tile walls	sf allowance	31445.00	$3.00	**$94,335.00**	
	Ceilings					
	ceiling allowance	sf allowance	31445.00	$9.00	**$283,005.00**	
	bulkhead allowance	sf allowance	31445.00	$1.00	**$31,445.00**	
	Finish Protection					
	protection of finishes	sf allowance	31445.00	$0.50	**$15,722.50**	
1000	**SPECIALTIES**					**$110,057.50**
	Specialties					
	specialties-allowance	sf allowance	31445.00	$2.00	**$62,890.00**	
	Smart Boards					
	installed by contractor	by owner	0.00	$0.00	**$0.00**	
	Tack Boards and Marker Boards					
	tack boards and marker boards	sf allowance	31445.00	$1.50	**$47,167.50**	
1100	**EQUIPMENT**					**$500,000.00**
	Equipment					
	equipment	ls	1.00	$500,000.00	**$500,000.00**	
1200	**FURNISHINGS**					**$47,167.50**
	Furnishings					
	window shades in classrooms and offices	sf allowance	31445.00	$1.50	**$47,167.50**	
1300	**SPECIAL CONSTRUCTION**					**$660,345.00**
	Special Construction					
	it/date and telecom	equipment by owner	0.00	$0.00	**$0.00**	
	security-equipment budget	sf allowance	31445.00	$6.00	**$188,670.00**	
	intercom/pa	equipment by owner	0.00	$0.00	**$0.00**	
	av wiring	equipment by owner	0.00	$0.00	**$0.00**	
	Teaching Technology					
	teaching technology	sf allowance	31445.00	$15.00	**$471,675.00**	
1400	**CONVEYING**					**$0.00**
	Conveying					
	elevators	not required	0.00	$0.00	**$0.00**	
1500	**MECHANICAL**					**$3,679,065.00**
	HVAC					
	hvac budget	sf allowance	31445.00	$95.00	**$2,987,275.00**	
	Plumbing					
	plumbing	sf allowance	31445.00	$14.00	**$440,230.00**	
	Fire Suppression					
	fire suppression	sf allowance	31445.00	$8.00	**$251,560.00**	
1600	**ELECTRICAL**					**$2,201,150.00**
	Electrical					
	electrical budget	sf allowance	31445.00	$70.00	**$2,201,150.00**	
1700	**MISCELLANEOUS**					**$31,445.00**
	Miscellaneous					
	building permit	by owner	0.00	$0.00	**$0.00**	
	final clean	sf allowance	31445.00	$1.00	**$31,445.00**	
					$11,999,925.61	**$11,999,925.61**

04/28/23

Building D Renovation

FREDERICK COMMUNITY COLLEGE
FACILITIES MASTER PLAN
2023-2033 PROJECTS

Frederick Community College

Feasible Cost of Construction / Magnitude of Cost
Estimate for the 2023-2033 Master Plan Projects

Estimate Figured in 1st Quarter 2023 US Dollars

CAT	DESCRIPTION	% OF TOT	TOTALS
100	General Conditions	4.90%	$785,042
200	Sitework and Demolition	1.96%	$314,450
300	Concrete	0.20%	$31,445
400	Masonry	0.20%	$31,445
500	Metals	0.39%	$62,890
600	Carpentry	2.55%	$408,785
700	Moisture Protection	1.23%	$196,531
800	Doors Windows & Glass	6.87%	$1,100,575
900	Finishes	11.48%	$1,839,533
1000	Specialties	0.69%	$110,058
1100	Equipment	3.12%	$500,000
1200	Furnishings	0.29%	$47,168
1300	Special Construction	4.12%	$660,345
1400	Conveying	0.00%	$0
1500	Mechanical	22.96%	$3,679,065
1600	Electrical	13.74%	$2,201,150
1700	Miscellaneous	0.20%	$31,445
	SUBTOTALS	74.90%	**$11,999,926**

PHASING AND LOGISTICS FACTOR	**0.00%**	0.00%	$0
LIABILITY INSURANCE	**1.00%**	0.75%	$119,999
GENERAL CONTRACTORS BOND	**2.00%**	1.51%	$242,398
OVERHEAD AND PROFIT	**8.00%**	6.17%	$988,986
DESIGN CONTINGENCY	**20.00%**	16.67%	$2,670,262
ESCALATION OF CONSTRUCTION COST	**0.00%**	0.00%	$0
TOTAL		100.00%	**$16,021,571**
			$510

PROJECT #2

FREDERICK COMMUNITY COLLEGE FACILITIES MASTER PLAN 2023-2033 PROJECTS

Campus Services Building	
OFFICE (2 floors)	19200.00
STORAGE (1 floor)	4800.00
TOTAL	24000.00

Feasible Cost of Construction / Magnitude of Cost Estimate for the 2023-2033 Master Plan Projects

Estimate Figured in 1st Quarter 2023 US Dollars

CSI Code	Task Description	Unit	Count	$/S.F.	Sub Total	Total
100	**GENERAL CONDITIONS**					$697,608.52
	General Conditions general conditions as a percentage of subcontracts	percent	7.00%	$9,965,835.93	$697,608.52	
200	**SITEWORK AND DEMOLITION**					$1,309,435.93
	Demolition- Hazmat abatement and remove and dispose of hazmat by owner	by owner	0.00	$0.00	$0.00	
	Demolition-Site demolition-site	not required	0.00	$0.00	$0.00	
	Erosion and Sediment Control erosion and sediment control-install, maintain and remove	ls	1.00	$25,000.00	$25,000.00	
	Excavation excavation, grading and backfill-miscellaneous	ls	1.00	$75,000.00	$75,000.00	
	Utility Relocations relocate electric relocate water	allowance allowance	1.00 1.00	$75,000.00 $100,000.00	$75,000.00 $100,000.00	
	Stormwater Management stormwater management	allowance	1.00	$250,000.00	$250,000.00	
	Sanitary sanitary	allowance	1.00	$50,000.00	$50,000.00	
	Water water	allowance	1.00	$50,000.00	$50,000.00	
	Electric electric	allowance	1.00	$250,000.00	$250,000.00	
	Site Lighting parking-- light pole, fixture, base and power yard- light pole, fixture, base and power	ea ea	4.00 5.00	$8,500.00 $8,500.00	$34,000.00 $42,500.00	
	Telecom telecom	ls	1.00	$10,000.00	$10,000.00	
	Curb and Gutter parking- curb and gutter yard-curb and gutter	ft ft	434.32 585.22	$24.00 $24.00	$10,423.68 $14,045.28	
	Sidewalks sidewalks	ls	1.00	$10,000.00	$10,000.00	
	Asphalt and Concrete Paving parking- pavement yard-paving patching and repairs to existing	sf sf ls	7806.63 26452.49 1.00	$4.00 $5.00 $10,000.00	$31,226.52 $132,262.45 $10,000.00	
	Bollards concrete filled pipe bollards	ea	12.00	$1,000.00	$12,000.00	
	Retaining Walls retaining wall	not required	0.00	$0.00	$0.00	
	Landscaping landscaping allowance	ls	1.00	$30,000.00	$30,000.00	
	Site Furnishings site furnishings	by owner	0.00	$0.00	$0.00	
	Fences and Railings yard- fencing yard- double entry gate- 20'0"	ft ea	453.04 1.00	$75.00 $4,000.00	$33,978.00 $4,000.00	
	Signs and Markings signage and markings	ls	1.00	$10,000.00	$10,000.00	
	Dumpster Enclosure					

	dumpster enclosure gates - 6' tall gates; (2) 10' wide double gates	ls	1.00	$25,000.00	$25,000.00	
	Miscellaneous					
	surveying	ls	1.00	$15,000.00	$15,000.00	
	temp construction fence and gate-rental- install, maintain and remove	ls	1.00	$10,000.00	$10,000.00	
300	**CONCRETE**					$211,200.00
	Concrete					
	concrete-office	sf allowance	9600.00	$15.00	$144,000.00	
	concrete-storage	sf allowance	4800.00	$14.00	$67,200.00	
400	**MASONRY**					$480,000.00
	Masonry					
	masonry-office	sf allowance	19200.00	$20.00	$384,000.00	
	masonry-storage	sf allowance	4800.00	$20.00	$96,000.00	
500	**METAL**					$1,152,000.00
	Structural Steel and Miscellaneous Metals					
	structural steel and miscellaneous metals-office	sf allowance	19200.00	$50.00	$960,000.00	
	structural steel and miscellaneous metals-storage	sf allowance	4800.00	$40.00	$192,000.00	
600	**CARPENTRY**					$322,800.00
	Carpentry-Rough					
	carpentry-office	sf allowance	19200.00	$3.00	$57,600.00	
	carpentry-storage	sf allowance	4800.00	$2.00	$9,600.00	
	Cabinetry and Millwork					
	cabinetry and millwork-office	sf allowance	19200.00	$10.00	$192,000.00	
	cabinetry and millwork-storage	sf allowance	4800.00	$2.00	$9,600.00	
	Installations					
	install doors, frames and hardware	sf allowance	24000.00	$1.50	$36,000.00	
	carpentry labor to install accessories and miscellaneous	sf allowance	24000.00	$0.75	$18,000.00	
700	**MOISTURE PROTECTION**					$770,400.00
	Roofing					
	roofing-insulation, board-membrane-flashings and sheetmetal/roof hatch/mechanical screening and accessories-Office	sf allowance	9600.00	$45.00	$432,000.00	
	roofing-insulation, board-membrane-flashings and sheetmetal/roof hatch/mechanical screening and accessories-Storage	sf allowance	4800.00	$45.00	$216,000.00	
	Sealants					
	caulking of windows and expansion joints-interior and exterior included	sf allowance	24000.00	$1.25	$30,000.00	
	Waterproofing					
	waterproofing	sf allowance	24000.00	$1.00	$24,000.00	
	Fireproofing and Firestopping					
	fireproofing-office	sf allowance	19200.00	$2.00	$38,400.00	
	fireproofing-storage	sf allowance	4800.00	$2.00	$9,600.00	
	firestopping-office	sf allowance	19200.00	$1.00	$19,200.00	
	firestopping-storage	sf allowance	4800.00	$0.25	$1,200.00	
	Insulation					
	exterior wall insulation	see cat 900	0.00	$0.00	$0.00	
800	**DOOR, WINDOW, GLASS**					$504,000.00
	Doors, Windows, Glass and Glazing					
	doors, windows, glass and glazing-office	sf allowance	19200.00	$25.00	$480,000.00	
	doors, windows, glass and glazing-storage	sf allowance	4800.00	$5.00	$24,000.00	
900	**FINISH**					$1,180,800.00
	Partitions					
	gwb partitions-average price-office	sf allowance	19200.00	$12.00	$230,400.00	
	gwb partitions-average price-storage	sf allowance	4800.00	$6.00	$28,800.00	
	Light Gage Exterior Wall -Assembly-backup to veneers					
	6" steel studs-structural-sheathing-insulation-vapor barrier-gwb-finished	sf allowance	24000.00	$10.00	$240,000.00	
	Painting					
	painting-office	sf allowance	19200.00	$3.00	$57,600.00	
	painting-storage	sf allowance	4800.00	$2.00	$9,600.00	
	Flooring					
	floor prep	sf allowance	24000.00	$1.50	$36,000.00	
	flooring allowance-office	sf allowance	19200.00	$15.00	$288,000.00	
	flooring allowance-storage	sf allowance	4800.00	$5.00	$24,000.00	
	Ceramic Tile					
	ceramic tile walls- office	sf allowance	19200.00	$3.00	$57,600.00	
	Ceilings					
	ceiling allowance-office	sf allowance	19200.00	$8.00	$153,600.00	
	bulkhead allowance-office	sf allowance	19200.00	$1.00	$19,200.00	
	ceiling allowance-storage	sf allowance	24000.00	$1.00	$24,000.00	
	bulkhead allowance-storage	not required	0.00	$0.00	$0.00	

	Finish Protection					
	protection of finishes	sf allowance	24000.00	$0.50	**$12,000.00**	
1000	**SPECIALTIES**					**$52,800.00**
	Specialties					
	specialties-allowance	sf allowance	19200.00	$2.00	**$38,400.00**	
	specialties-allowance	sf allowance	4800.00	$1.00	**$4,800.00**	
	Smart Boards					
	installed by contractor	by owner	0.00	$0.00	**$0.00**	
	Tack Boards and Marker Boards					
	tack boards and marker boards-office	sf allowance	19200.00	$0.50	**$9,600.00**	
1100	**EQUIPMENT**					**$50,000.00**
	Equipment					
	equipment	ls	1.00	$50,000.00	**$50,000.00**	
1200	**FURNISHINGS**					**$36,000.00**
	Furnishings					
	window shades offices	sf allowance	24000.00	$1.50	**$36,000.00**	
1300	**SPECIAL CONSTRUCTION**					**$120,000.00**
	Special Construction					
	it/date and telecom	equipment by owner	0.00	$0.00	**$0.00**	
	security-equipment budget	sf allowance	24000.00	$5.00	**$120,000.00**	
	intercom/pa	equipment by owner	0.00	$0.00	**$0.00**	
	av wiring	equipment by owner	0.00	$0.00	**$0.00**	
	Teaching Technology					
	teaching technology -office	not required	0.00	$0.00	**$0.00**	
1400	**CONVEYING**					**$172,800.00**
	Conveying					
	elevators-office	sf allowance	19200.00	$9.00	**$172,800.00**	
1500	**MECHANICAL**					**$2,049,600.00**
	HVAC					
	hvac budget-office	sf allowance	19200.00	$70.00	**$1,344,000.00**	
	hvac budget-storage	sf allowance	4800.00	$25.00	**$120,000.00**	
	Plumbing					
	plumbing-office	sf allowance	19200.00	$18.00	**$345,600.00**	
	plumbing-storage	sf allowance	4800.00	$10.00	**$48,000.00**	
	Fire Suppression					
	fire suppression -office	sf allowance	19200.00	$8.00	**$153,600.00**	
	fire suppression-storage	sf allowance	4800.00	$8.00	**$38,400.00**	
1600	**ELECTRICAL**					**$1,536,000.00**
	Electrical					
	electrical budget	sf allowance	19200.00	$70.00	**$1,344,000.00**	
	electrical budget	sf allowance	4800.00	$40.00	**$192,000.00**	
1700	**MISCELLANEOUS**					**$18,000.00**
	Miscellaneous					
	building permit	by owner	0.00	$0.00	**$0.00**	
	final clean	sf allowance	24000.00	$0.75	**$18,000.00**	
					$10,663,444.45	**$10,663,444.45**

04/28/23

Campus Services Building

FREDERICK COMMUNITY COLLEGE
FACILITIES MASTER PLAN
2023-2033 PROJECTS

Frederick Community College

Feasible Cost of Construction / Magnitude of Cost
Estimate for the 2023-2033 Master Plan Projects

Estimate Figured in 1st Quarter 2023 US Dollars

CAT	DESCRIPTION	% OF TOT	TOTALS
100	General Conditions	4.90%	$697,609
200	Sitework and Demolition	9.20%	$1,309,436
300	Concrete	1.48%	$211,200
400	Masonry	3.37%	$480,000
500	Metals	8.09%	$1,152,000
600	Carpentry	2.27%	$322,800
700	Moisture Protection	5.41%	$770,400
800	Doors Windows & Glass	3.54%	$504,000
900	Finishes	8.29%	$1,180,800
1000	Specialties	0.37%	$52,800
1100	Equipment	0.35%	$50,000
1200	Furnishings	0.25%	$36,000
1300	Special Construction	0.84%	$120,000
1400	Conveying	1.21%	$172,800
1500	Mechanical	14.40%	$2,049,600
1600	Electrical	10.79%	$1,536,000
1700	Miscellaneous	0.13%	$18,000
	SUBTOTALS	74.90%	**$10,663,444**

PHASING AND LOGISTICS FACTOR	**0.00%**	0.00%	$0
LIABILITY INSURANCE	**1.00%**	0.75%	$106,634
GENERAL CONTRACTORS BOND	**2.00%**	1.51%	$215,402
OVERHEAD AND PROFIT	**8.00%**	6.17%	$878,838
DESIGN CONTINGENCY	**20.00%**	16.67%	$2,372,864
ESCALATION OF CONSTRUCTION COST	**0.00%**	0.00%	$0
	TOTAL	100.00%	**$14,237,183**
			$593

PROJECT #3

FREDERICK COMMUNITY COLLEGE FACILITIES MASTER PLAN 2023-2033 PROJECTS

Innovation and Technology Center	
BLDG	AREA
NEW	54600.00
TOTAL	54600.00

Feasible Cost of Construction / Magnitude of Cost Estimate for the 2023-2033 Master Plan Projects

Estimate Figured in 1st Quarter 2023 US Dollars

CSI Code	Task Description	Unit	Count	$/S.F.	Sub Total	Total
100	**GENERAL CONDITIONS**					$1,992,858.35
	General Conditions general conditions as a percentage of subcontracts	percent	7.00%	$28,469,405.00	$1,992,858.35	
200	**SITEWORK AND DEMOLITION**					$1,340,138.00
	Demolition- Hazmat abatement and remove and dispose of hazmat by owner	by owner	0.00	$0.00	$0.00	
	Clearing clearing and demo in the area of disturbance	sf	77359.00	$2.00	$154,718.00	
	Demolition-Site demo entry structure	sf	1842.00	$10.00	$18,420.00	
	Erosion and Sediment Control erosion and sediment control-install, maintain and remove	ls	1.00	$30,000.00	$30,000.00	
	Excavation excavation, grading and backfill-miscellaneous	ls	1.00	$10,000.00	$10,000.00	
	Utility Relocations relocate comm relocate sanitary relocate u/g electric	allowance allowance allowance	1.00 1.00 1.00	$50,000.00 $50,000.00 $200,000.00	$50,000.00 $50,000.00 $200,000.00	
	Stormwater Management stormwater management	ls	1.00	$300,000.00	$300,000.00	
	Sanitary sanitary	ls	1.00	$25,000.00	$25,000.00	
	Water water	ls	1.00	$50,000.00	$50,000.00	
	Electric electric	ls	1.00	$150,000.00	$150,000.00	
	Site Lighting base, pole, fixture and power	ls	1.00	$40,000.00	$40,000.00	
	Telecom telecom	ls	1.00	$10,000.00	$10,000.00	
	Curb and Gutter concrete curb and gutter	ls	1.00	$15,000.00	$15,000.00	
	Sidewalks sidewalks patching and repairs to existing	ls ls	1.00 1.00	$15,000.00 $5,000.00	$15,000.00 $5,000.00	
	Asphalt and Concrete Paving asphalt paving concrete paving patching and repairs to existing	ls not required 1	1.00 0.00 1.00	$75,000.00 $0.00 $10,000.00	$75,000.00 $0.00 $10,000.00	
	Bollards concrete filled pipe bollards	not required	0.00	$0.00	$0.00	
	Retaining Walls retaining wall	not required	0.00	$0.00	$0.00	
	Pedestrian Walkway and Landscape Improvements pedestrian walkway-hardscape improvements	not required	0.00	$0.00	$0.00	
	Landscaping landscaping allowance	ls	1.00	$75,000.00	$75,000.00	
	Exterior Areas landscape/hardscape improvements-plaza	not required	0.00	$0.00	$0.00	
	Site Furnishings site furnishings	by owner	0.00	$0.00	$0.00 $0.00	

					$0.00	
	Fences and Railings					
	fences and railings	not required	0.00	$0.00	$0.00	
	Signs and Markings					
	signage and markings	ls	1.00	$15,000.00	$15,000.00	
	Dumpster Enclosure					
	dumpster enclosure gates - 6' tall gates; (2) 10' wide double gates	not required	0.00	$0.00	$0.00	
	Miscellaneous					
	surveying	ls	1.00	$30,000.00	$30,000.00	
	temp construction fence and gate-rental- install, maintain and remove	ls	1.00	$12,000.00	$12,000.00	
300	**CONCRETE**					$819,000.00
	Concrete					
	concrete	sf allowance	54600.00	$15.00	$819,000.00	
400	**MASONRY**					$1,092,000.00
	Masonry					
	masonry	sf allowance	54600.00	$20.00	$1,092,000.00	
500	**METAL**					$3,003,000.00
	Structural Steel and Miscellaneous Metals					
	structural steel and miscellaneous metals-includes framing for sloped roof	sf allowance	54600.00	$55.00	$3,003,000.00	
600	**CARPENTRY**					$1,965,600.00
	Carpentry					
	carpentry	sf allowance	54600.00	$3.00	$163,800.00	
	Cabinetry and Millwork					
	cabinetry and millwork	sf allowance	54600.00	$30.00	$1,638,000.00	
	Installations					
	install doors, frames and hardware	sf allowance	54600.00	$2.00	$109,200.00	
	carpentry labor to install accessories and miscellaneous	sf allowance	54600.00	$1.00	$54,600.00	
700	**MOISTURE PROTECTION**					$1,583,127.00
	Roofing					
	standing seam metal roofing-insulation, board-membrane-flashings and sheetmetal and accessories	sf	19205.55	$40.00	$768,222.00	
	flat roofing-insulation, board-membrane-flashings and sheetmetal/roof hatch/mechanical screening and accessories	sf	9009.00	$45.00	$405,405.00	
	Sealants					
	caulking of windows and expansion joints-interior and exterior included	sf allowance	54600.00	$1.50	$81,900.00	
	Waterproofing					
	waterproofing	sf allowance	54600.00	$1.00	$54,600.00	
	Fireproofing and Firestopping					
	fireproofing	sf allowance	54600.00	$3.00	$163,800.00	
	firestopping	sf allowance	54600.00	$2.00	$109,200.00	
	Insulation					
	exterior wall insulation	see cat 900	0.00	$0.00	$0.00	
800	**DOOR, WINDOW, GLASS**					$1,365,000.00
	Doors, Windows, Glass and Glazing					
	doors, windows, glass and glazing	sf allowance	54600.00	$25.00	$1,365,000.00	
900	**FINISH**					$3,106,740.00
	Partitions					
	gwb partitions-average price	sf allowance	54600.00	$12.00	$655,200.00	
	Light Gage Exterior Wall -Assembly-backup to veneers					
	6" steel studs-structural-sheathing-insulation-vapor barrier-gwb-finished	sf allowance	54600.00	$8.00	$436,800.00	
	Painting					
	painting	sf allowance	54600.00	$3.00	$163,800.00	
	Flooring					
	floor prep	sf allowance	54600.00	$1.50	$81,900.00	
	flooring allowance	sf allowance	54600.00	$20.00	$1,092,000.00	
	Ceramic Tile					
	ceramic tile	sf allowance	54600.00	$3.00	$163,800.00	
	Ceilings					
	ceiling allowance	sf allowance	54600.00	$8.00	$436,800.00	
	bulkhead allowance	sf allowance	54600.00	$1.00	$54,600.00	
	Finish Protection					
	protection of finishes	sf allowance	54600.00	$0.40	$21,840.00	
1000	**SPECIALTIES**					$191,100.00

	Specialties					
	specialties-allowance	sf allowance	54600.00	$2.00	**$109,200.00**	
	Smart Boards					
	installed by contractor	by owner	0.00	$0.00	**$0.00**	
	Tack Boards and Marker Boards					
	tack boards and marker boards	sf allowance	54600.00	$1.50	**$81,900.00**	
1100	**EQUIPMENT**					**$1,200,000.00**
	Equipment					
	equipment	ls	1.00	$1,200,000.00	**$1,200,000.00**	
1200	**FURNISHINGS**					**$81,900.00**
	Furnishings					
	window shades in classrooms and offices	sf allowance	54600.00	$1.50	**$81,900.00**	
1300	**SPECIAL CONSTRUCTION**					**$1,146,600.00**
	Special Construction					
	it/date and telecom	equipment by owner	0.00	$0.00	**$0.00**	
	security-equipment budget	sf allowance	54600.00	$6.00	**$327,600.00**	
	intercom/pa	equipment by owner	0.00	$0.00	**$0.00**	
	av wiring	equipment by owner	0.00	$0.00	**$0.00**	
	Teaching Technology					
	teaching technology	sf allowance	54600.00	$15.00	**$819,000.00**	
1400	**CONVEYING**					**$436,800.00**
	Conveying					
	elevators	sf allowance	54600.00	$8.00	**$436,800.00**	
1500	**MECHANICAL**					**$6,715,800.00**
	HVAC					
	hvac budget	sf allowance	54600.00	$95.00	**$5,187,000.00**	
	Plumbing					
	plumbing	sf allowance	54600.00	$20.00	**$1,092,000.00**	
	Fire Suppression					
	fire suppression	sf allowance	54600.00	$8.00	**$436,800.00**	
1600	**ELECTRICAL**					**$4,368,000.00**
	Electrical					
	electrical budget	sf allowance	54600.00	$80.00	**$4,368,000.00**	
1700	**MISCELLANEOUS**					**$54,600.00**
	Miscellaneous					
	building permit	by owner	0.00	$0.00	**$0.00**	
	final clean	sf allowance	54600.00	$1.00	**$54,600.00**	
					$30,462,263.35	**$30,462,263.35**

COSTCON CONSTRUCTION SERVICES

04/28/23

Innovation and Technology Center

FREDERICK COMMUNITY COLLEGE
FACILITIES MASTER PLAN
2023-2033 PROJECTS

Frederick Community College

Feasible Cost of Construction / Magnitude of Cost
Estimate for the 2023-2033 Master Plan Projects

Estimate Figured in 1st Quarter 2023 US Dollars

CAT	DESCRIPTION	% OF TOT	TOTALS
100	General Conditions	4.90%	$1,992,858
200	Sitework and Demolition	3.30%	$1,340,138
300	Concrete	2.01%	$819,000
400	Masonry	2.68%	$1,092,000
500	Metals	7.38%	$3,003,000
600	Carpentry	4.83%	$1,965,600
700	Moisture Protection	3.89%	$1,583,127
800	Doors Windows & Glass	3.36%	$1,365,000
900	Finishes	7.64%	$3,106,740
1000	Specialties	0.47%	$191,100
1100	Equipment	2.95%	$1,200,000
1200	Furnishings	0.20%	$81,900
1300	Special Construction	2.82%	$1,146,600
1400	Conveying	1.07%	$436,800
1500	Mechanical	16.51%	$6,715,800
1600	Electrical	10.74%	$4,368,000
1700	Miscellaneous	0.13%	$54,600
	SUBTOTALS	74.90%	**$30,462,263**

PHASING AND LOGISTICS FACTOR	**0.00%**	0.00%	$0
LIABILITY INSURANCE	**1.00%**	0.75%	$304,623
GENERAL CONTRACTORS BOND	**2.00%**	1.51%	$615,338
OVERHEAD AND PROFIT	**8.00%**	6.17%	$2,510,578
DESIGN CONTINGENCY	**20.00%**	16.67%	$6,778,560
ESCALATION OF CONSTRUCTION COST	**0.00%**	0.00%	$0
	TOTAL	100.00%	**$40,671,362**
			$744.90

PROJECT #4

FREDERICK COMMUNITY COLLEGE
FACILITIES MASTER PLAN
2023-2033 PROJECTS

Enrollment Services and Welcome Center	
BLDG	AREA
NEW (3 floors)	48000.00
TOTAL	48000.00

Feasible Cost of Construction / Magnitude of Cost Estimate for the 2023-2033 Master Plan Projects

Estimate Figured in 1st Quarter 2023

CSI Code	Task Description	Unit	Count	$/S.F.	Sub Total	Total
100	**GENERAL CONDITIONS**					$1,553,696.62
	General Conditions					
	general conditions as a percentage of subcontracts	percent	7.00%	$22,195,666.00	$1,553,696.62	
200	**SITEWORK AND DEMOLITION**					$1,635,666.00
	Demolition- Hazmat					
	abatement and remove and dispose of hazmat by owner	by owner	0.00	$0.00	$0.00	
	Clearing					
	clearing and demo in the area of disturbance	sf	93217.00	$2.00	$186,434.00	
	Demolition-Site					
	miscellaneous demo	ls	1.00	$30,000.00	$30,000.00	
	Erosion and Sediment Control					
	erosion and sediment control-install, maintain and remove	ls	1.00	$3,000.00	$3,000.00	
	Excavation					
	excavation, grading and backfill-miscellaneous	ls	1.00	$75,000.00	$75,000.00	
	Utility Relocations					
	miscellaneous utility relocations	allowance	1.00	$100,000.00	$100,000.00	
	Stormwater Management					
	stormwater management	ls	1.00	$250,000.00	$250,000.00	
	Sanitary					
	sanitary				$0.00	
		ls	1.00	$65,000.00		
	Water					
	water	ls	1.00	$40,000.00	$40,000.00	
	Electric					
	electric	ls	1.00	$100,000.00	$100,000.00	
	Site Lighting					
	base, pole, fixture and power	ls	1.00	$50,000.00	$50,000.00	
	Telecom					
	telecom	ls	1.00	$10,000.00	$10,000.00	
	Curb and Gutter					
	concrete curb and gutter	see below	0.00	$0.00	$0.00	
	Sidewalks					
	sidewalks	ls	1.00	$10,000.00	$10,000.00	
	patching and repairs to existing	ls	1.00	$50,000.00	$50,000.00	
	Asphalt and Concrete Paving					
	asphalt paving -visitor parking	see below	0.00	$0.00	$0.00	
	concrete paving	not required	0.00	$0.00	$0.00	
	patching and repairs to existing	ls	1.00	$10,000.00	$10,000.00	
	Bollards					
	concrete filled pipe bollards	not required	0.00	$0.00	$0.00	
	Retaining Walls					
	retaining wall	not required	0.00	$0.00	$0.00	
	Pedestrian Walkway and Landscape Improvements					
	building 4- pedestrian walkway-area	sf	6727.20	$45.00	$302,724.00	
	Roadway Re-alignment-east-west section only					
	demo roadway-existing	sf	25647.00	$2.00	$51,294.00	
	grading	ls	1.00	$25,000.00	$25,000.00	
	paving	sf	18984.00	$4.50	$85,428.00	
	curb and gutter	ft	1048.00	$24.00	$25,152.00	
	lighting	ls	1.00	$40,000.00	$40,000.00	
	grading and landscaping	ls	1.00	$20,000.00	$20,000.00	

	Visitor Parking					
	demo roadway-existing	sf	2937.00	$2.00	**$5,874.00**	
	grading	ls	1.00	$10,000.00	**$10,000.00**	
	paving	sf	7800.00	$4.50	**$35,100.00**	
	curb and gutter	ft	340.00	$24.00	**$8,160.00**	
	lighting	ls	1.00	$20,000.00	**$20,000.00**	
	grading and landscaping	ls	1.00	$10,000.00	**$10,000.00**	
	Site Furnishings					
	site furnishings	by owner	0.00	$0.00	**$0.00**	
	Fences and Railings					
	fences and railings	not required	0.00	$0.00	**$0.00**	
	Signs and Markings					
	signage and markings	ls	1.00	$10,000.00	**$10,000.00**	
	Dumpster Enclosure					
	dumpster enclosure gates - 6' tall gates; (2) 10' wide double gates	not required	0.00	$0.00	**$0.00**	
	Miscellaneous					
	surveying	ls	1.00	$65,000.00	**$65,000.00**	
	temp construction fence and gate-rental- install, maintain and remove	ls	1.00	$7,500.00	**$7,500.00**	
300	**CONCRETE**					**$720,000.00**
	Concrete					
	concrete	sf allowance	48000.00	$15.00	**$720,000.00**	
400	**MASONRY**					**$1,200,000.00**
	Masonry					
	masonry	sf allowance	48000.00	$25.00	**$1,200,000.00**	
500	**METAL**					**$3,120,000.00**
	Structural Steel and Miscellaneous Metals					
	structural steel and miscellaneous metals-included framing for sloped roof	sf allowance	48000.00	$65.00	**$3,120,000.00**	
	bridge connection at third floor to building	see above	0.00	$0.00	**$0.00**	
600	**CARPENTRY**					**$624,000.00**
	Carpentry					
	carpentry	sf allowance	48000.00	$3.00	**$144,000.00**	
	Cabinetry and Millwork					
	cabinetry and millwork	sf allowance	48000.00	$7.00	**$336,000.00**	
	Installations					
	install doors, frames and hardware	sf allowance	48000.00	$2.00	**$96,000.00**	
	carpentry labor to install accessories and miscellaneous	sf allowance	48000.00	$1.00	**$48,000.00**	
700	**MOISTURE PROTECTION**					**$1,080,000.00**
	Roofing					
	standing seam metal roofing-insulation, board-membrane-flashings and sheetmetal and accessories	sf	16000.00	$45.00	**$720,000.00**	
	Sealants					
	caulking of windows and expansion joints-interior and exterior included	sf allowance	48000.00	$1.50	**$72,000.00**	
	Waterproofing					
	waterproofing	sf allowance	48000.00	$1.00	**$48,000.00**	
	Fireproofing and Firestopping					
	fireproofing	sf allowance	48000.00	$3.00	**$144,000.00**	
	firestopping	sf allowance	48000.00	$2.00	**$96,000.00**	
	Insulation					
	exterior wall insulation	see cat 900	0.00	$0.00	**$0.00**	
800	**DOOR, WINDOW, GLASS**					**$1,200,000.00**
	Doors, Windows, Glass and Glazing					
	doors, windows, glass and glazing	sf allowance	48000.00	$25.00	**$1,200,000.00**	
900	**FINISH**					**$2,736,000.00**
	Partitions					
	gwb partitions-average price	sf allowance	48000.00	$12.00	**$576,000.00**	
	Light Gage Exterior Wall -Assembly-backup to veneers					
	6" steel studs-structural-sheathing-insulation-vapor barrier-gwb-finished	sf allowance	48000.00	$8.00	**$384,000.00**	
	Painting					
	painting	sf allowance	48000.00	$3.00	**$144,000.00**	
	Flooring					
	floor prep	sf allowance	48000.00	$1.50	**$72,000.00**	

	flooring allowance	sf allowance	48000.00	$20.00	$960,000.00	
	Ceramic Tile					
	ceramic tile walls	sf allowance	48000.00	$3.00	$144,000.00	
	Ceilings					
	ceiling allowance	sf allowance	48000.00	$8.00	$384,000.00	
	bulkhead allowance	sf allowance	48000.00	$1.00	$48,000.00	
	Finish Protection					
	protection of finishes	sf allowance	48000.00	$0.50	$24,000.00	
1000	**SPECIALTIES**					**$144,000.00**
	Specialties					
	specialties-allowance	sf allowance	48000.00	$2.00	$96,000.00	
	Smart Boards					
	installed by contractor	by owner	0.00	$0.00	$0.00	
	Tack Boards and Marker Boards					
	tack boards and marker boards	sf allowance	48000.00	$1.00	$48,000.00	
1100	**EQUIPMENT**					**$400,000.00**
	Equipment					
	equipment	ls	1.00	$400,000.00	$400,000.00	
1200	**FURNISHINGS**					**$72,000.00**
	Furnishings					
	window shades in classrooms and offices	sf allowance	48000.00	$1.50	$72,000.00	
1300	**SPECIAL CONSTRUCTION**					**$768,000.00**
	Special Construction					
	it/date and telecom	equipment by owner	0.00	$0.00	$0.00	
	security-equipment budget	sf allowance	48000.00	$6.00	$288,000.00	
	intercom/pa	equipment by owner	0.00	$0.00	$0.00	
	av wiring	equipment by owner	0.00	$0.00	$0.00	
	Teaching Technology					
	teaching technology	sf allowance	48000.00	$10.00	$480,000.00	
1400	**CONVEYING**					**$432,000.00**
	Conveying					
	elevators	sf allowance	48000.00	$9.00	$432,000.00	
1500	**MECHANICAL**					**$4,896,000.00**
	HVAC					
	hvac budget	sf allowance	48000.00	$80.00	$3,840,000.00	
	Plumbing					
	plumbing	sf allowance	48000.00	$14.00	$672,000.00	
	Fire Suppression					
	fire suppression	sf allowance	48000.00	$8.00	$384,000.00	
1600	**ELECTRICAL**					**$3,120,000.00**
	Electrical					
	electrical budget	sf allowance	48000.00	$65.00	$3,120,000.00	
1700	**MISCELLANEOUS**					**$48,000.00**
	Miscellaneous					
	building permit	by owner	0.00	$0.00	$0.00	
	final clean	sf allowance	48000.00	$1.00	$48,000.00	
					$23,749,362.62	$23,749,362.62

04/28/23

Enrollment Services
and Welcome Center

FREDERICK COMMUNITY COLLEGE
FACILITIES MASTER PLAN
2023-2033 PROJECTS

Frederick Community College

Feasible Cost of Construction / Magnitude of Cost
Estimate for the 2023-2033 Master Plan Projects

Estimate Figured in 1st Quarter 2023 US Dollars

CAT	DESCRIPTION	% OF TOT	TOTALS
100	General Conditions	4.90%	$1,553,697
200	Sitework and Demolition	5.16%	$1,635,666
300	Concrete	2.27%	$720,000
400	Masonry	3.78%	$1,200,000
500	Metals	9.84%	$3,120,000
600	Carpentry	1.97%	$624,000
700	Moisture Protection	3.41%	$1,080,000
800	Doors Windows & Glass	3.78%	$1,200,000
900	Finishes	8.63%	$2,736,000
1000	Specialties	0.45%	$144,000
1100	Equipment	1.26%	$400,000
1200	Furnishings	0.23%	$72,000
1300	Special Construction	2.42%	$768,000
1400	Conveying	1.36%	$432,000
1500	Mechanical	15.44%	$4,896,000
1600	Electrical	9.84%	$3,120,000
1700	Miscellaneous	0.15%	$48,000
	SUBTOTALS	74.90%	**$23,749,363**

PHASING AND LOGISTICS FACTOR	**0.00%**	0.00%	$0
LIABILITY INSURANCE	**1.00%**	0.75%	$237,494
GENERAL CONTRACTORS BOND	**2.00%**	1.51%	$479,737
OVERHEAD AND PROFIT	**8.00%**	6.17%	$1,957,327
DESIGN CONTINGENCY	**20.00%**	16.67%	$5,284,784
ESCALATION OF CONSTRUCTION COST	**0.00%**	0.00%	$0
	TOTAL	100.00%	**$31,708,705**
			$660.60

Appendix

Detailed Facilities Condition Assessment – Issued Separately

ADA Campus Survey – Issued Separately