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Chesapeake College at 50

MASTER PLAN REPORT

March 1st 2016

CHESAPEAKE COLLEGE
WYE MILLS, MARYLAND

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INTRODUCTION

This Master Plan was undertaken to establish a framework for the physical growth and change that can be anticipated for Chesapeake College. It provides projected enrollment growth and establishes space needs by discipline.

Capital projects are identified as short or long term projects; some may be undertaken as funds become available and as influenced by other projects by partner institutions. For each major project that proceeds, the master plan will need to be followed by programming, design, and construction, unless programming or design have been undertaken already. The master plan does not attempt to design projects, but it does provide a site plan for the Wye Mills campus, identifying locations and establishing relationships of major components.

The Master Plan should be regarded as a working document, which will need to be periodically reviewed and updated; it is recommended that the update should occur by or before 2022. An early event, such as availability of funding for a major project, may suggest an earlier update.

This report is both a master plan and facilities assessment. The facilities assessment component provides an inventory and evaluation for the site infrastructure, buildings, and building systems for the Wye Mills campus, as well as assessments of the Cambridge Center. This provides the foundation for the evaluation, both quantitatively and qualitatively, of the facilities and for recommendations for improvements to the site and buildings.

Because of inevitable unforeseen changes in programs, priorities, policies, and funding, this Facilities Master Plan should be viewed as a fluid document that is a conceptual tool and comprehensive guide for making decisions regarding Chesapeake College's physical resources. This document integrates academic and physical planning on a campus-wide basis; as facility and site development needs change or are newly identified, they must be incorporated into subsequent plan updates.

The planning process for development of this Facilities Master Plan results in a long-range planning document that addresses a broad range of subjects:

- Review of the College's vision, mission, functional and instructional program emphases, and organizational structure.
- Description of the student clientele in terms of credit participation and choice of academic programs.
- Analyses of the academic programs and projections of institutional growth.
- Inventory of existing facilities and patterns of physical development.
- Identification of projects that are needed to support the programs, personnel, and student clientele of the College for the next ten years.

The information contained in this Facilities Master Plan serves various purposes. It affords the College a written reference that can be used to facilitate communication within the Chesapeake College community and with representatives of local and state review agencies. This document provides the rationale for physical improvements and serves as the basis for long-range capital development.

Inventory data concerning the existing facilities are collected and presented. Alternative actions to deliver improved educational facilities are presented. Recommendations are provided for renovation, replacement, and/or new construction as necessary, and priorities are suggested for the recommended facilities/infrastructure actions. In brief, this document aggregates the inventory of existing facilities and physical resources, identifies current and future facility/infrastructure needs of Chesapeake College, and then provides a framework for achieving the required additional facilities.

ORGANIZATION OF THE REPORT

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Chapter 2	Overview of the College
Chapter 3	Academic Programs and Space Needs
Chapter 4	Wye Mills Campus Facilities
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Chapter 5	Wye Mills Campus: Mechanical, Electrical, Technology Systems Assessment
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ACKNOWLEDGEMENTS

Any project such as this requires assistance from a large number of people. Thanks to the following member who have made the job of creating the master plan possible through their efforts. These include:

The President, Barbara Viniar

- Tim Jones
- Paul Renshaw Jr.
- Douglass Gray
- Rich Midcap
- Lucie Hughes
- Vinnie Maruggi
- Michael Dugan
- Greg Farley
- Dick Plutschak
- Kathy Petrichenko
- Miriam Collins

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CHAPTER 1:
EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

HISTORY

Founded in 1965 to serve the counties of the Upper Eastern Shore of Maryland, Chesapeake College opened the doors of its Wye Mills campus in the fall of 1968. By 1972, the Community College was fully accredited by the Middle States Association of Colleges and Secondary Schools. Initially serving Kent, Queen Anne's, Caroline and Talbot counties, the College expanded its service area to include Dorchester County in 1979. Responding to the need for program offerings outside the main campus at Wye, the College began conducting classes in a renovated facility in Cambridge in 1994; and entered into a relationship with Easton Memorial Hospital to offer allied health classes in the hospital facility in 1997. This relationship/accommodation lasted 18 years. In August 2015 the Allied Health and Nursing Programs moved to the main campus at the completion of the renovation and addition of the new Health Professions and Athletics Center – HPAC building. In addition to the main campus and one center, the College administers programs at various locations throughout the 5-county service area.

The original campus was comprised of 5 buildings: Dorchester Library/Administration, Talbot Science, Kent Humanities, Gymnasium, and Caroline College Center. Queen Anne's Technical Center and a pool addition to the Gymnasium were added in 1976, followed by the Maintenance Building and Manufacturing Training Center in 1978, Early Childhood Development Center in 1989, and Center for Business & Arts (now known as the Todd Performing Arts Center / Economic Development Center) in 1996.

In 1998, the College commissioned a master plan that laid out the need for several renovation and new construction projects at the Wye Mills campus; since that time, the College has made significant progress towards completing those projects, including a new Learning Resource Center in 2002 and renovations and additions to Dorchester and Caroline in 2004 and 2006, Talbot Science Building, in 2007, Kent Humanities Building in 2010 and the Health Professions and Athletics Center in 2015. In addition, a new Eastern Shore Higher Education Center and a new water tower and water distribution system were completed in 2003. Finally, the college installed a Wind Turbine in 2011 and is currently installing a 1.76 MW photovoltaic system at its Wye Mills campus.

MISSION

The College serves a population from its Upper Eastern Shore region and beyond, in face-to-face settings and on-line. It is the only public institution of higher education in the Upper Eastern Shore service area. Students find a nurturing and supportive environment, embodied in the faculty and staff committed to their success. Students include traditional high school graduates and non-traditional life-long learners, all of whom are embraced by the College's learner-centered Mission Statement:

“Chesapeake College’s core commitment is to prepare students from diverse communities to excel in further education and employment in a global society.

We put students first, offering transformative educational experiences. Our programs and services are comprehensive, responsive and affordable.

The college is a catalyst for regional economic development and sustainability and a center for personal enrichment and the arts. “

PROGRAMS

As a public comprehensive, open admissions two-year regional community college, Chesapeake College offers a wide range of transfer, career, continuing education and personal development education programs. These programs lead to the Associate of Arts (A.A.), Associate of Science (A.S.), Associate of Applied Science (A.A.S.), and Associate of Arts in Teaching (A.A.T.) degrees and certificates and letters of recognition in specialized areas. During the 2015-2016 academic year, the College offered 79 programs in transfer and career areas, plus an array of non-credit courses and community service programs. Additional programs are offered at various off-campus sites on the Upper Eastern Shore. In addition to its core arts and sciences and health sciences programs, the College is also known for the strength of its business administration, computer science, and teacher education transfer programs. The College has also expanded into new academic areas, including landscape design, landscape management, exercise science and sport management. Partnerships and articulation agreements with other institutions help assure the ability of students to complement and continue their learning experience at and beyond the College.

LOCATION SETTINGS

The 5-county service area is the largest of any community college in Maryland. The Wye Mills location is relatively central but is still a long commute – up to one hour – from the most remote areas. While the location is readily accessible from two major roads – US Route 50 and MD Route 213 – the campus is relatively isolated from any population center; other than the highways, it is surrounded by farmland. Proposed commercial and residential developments along Routes 50 and 213 will bring correspondingly more activity to the immediate vicinity of the College and can improve the setting as long as the developments are carefully planned and are stable and active.

As a 170 acre campus, there has been ample land for the College to expand since 1968, allowing growth to occur without limitations by which many other campuses are constrained. The property is relatively flat, with some gently rolling terrain towards the southeast corner. The College leases some of its unused land for cultivation. All of the parking on site is in surface lots. Nearly all of the College's buildings have been built inside the original ring road, and this area is able to accommodate some additional buildings and additions. When the Higher Education Center was built in 2002, it was located outside the ring road to distinguish it from other Chesapeake College facilities. There is sufficient land area for the College to continue to expand for several decades.

ENROLLMENT

In FY 2014, Chesapeake College served 3,103 credit and 7,796 non-credit students. In fall 2014, seventy-four percent of credit students were Caucasian; 65% female, and the mean age was 24. Seventy-six percent of on- campus courses take place during the day (before 5:00PM). Credit enrollment has grown steadily since the College opened in 1968. Headcount and FTEs leveled briefly in 2000 and 2005 but resumed in following years until peaking in fall 2011, largely a result of the Great Recession causing job cuts and making education a more attractive alternative. In the last five years, headcount and FTEs fell by 25% as a declining high school population and a recovering economy has limited the number of prospective students. Nonetheless, the Maryland Higher Education Commission projects headcount to increase by 21% and FTES by 26% over the next 10 years. Continuing education enrollments have generally mirrored those on the credit side over the last ten years. Additionally, MHEC has projected a ten-year 17% increase.

SPACE NEEDS

Space needs have been reduced upon completion of the HPAC project. Space needs in this report are based on Fall 2014

PARKING

A deficit of about 100 spaces is projected to grow by 2020

FACILITIES, CONDITION

The combined gross area of all of the Wye Mills buildings is approximately 325,155 square feet. Individual building summaries are as follows:

Building	Year Built	Major Renovation	Net Square Feet	Gross Square Feet
Dorchester	1968	2004	14,020	23,554
Caroline	1968	2005	21,833	35,419
Kent	1968	2010	13,144	29,546
Talbot	1968	2007	11,975	24,863
Queen Anne's	1976		11,870	18,058
MTC	1979		9,870	10,930
Maintenance	1979		3,383	4,000
ECDC	1989		2,981	3,994
HPAC* (PE / Pool)	1968, 1979	2015	60,312	100,907
TPAC/EDC	1994		20,294	29,400
LRC	2002		31,474	44,484
Total			**201,156**	**325,155**
HEC**	2003		15,142	28,054

* HPAC – previously the Physical Education and Pool building.
** not included in inventory for reporting purposes

The oldest buildings on campus are nearly 40 years old. of the College's 12 buildings, only three (Child Development Center, Todd Performing Arts Center / Center for Economic Development – TPAC/EDC, and Learning Resource Center) have been built in the past 30 years. (The Higher Education Center, not a Chesapeake College building, was built in 2002.) Of the other 8, only five – Dorchester, Caroline, Talbot, Kent, and Physical Education / Pool buildings (HPAC) – have had major renovations. The College has maintained their un-renovated buildings in serviceable condition, but it has been largely a strategy of getting by while awaiting the resources for proper, comprehensive renovations.

The major needs are in the Queen Anne's Technical Building. This building is almost 40 years old. Major building systems – mechanical, electrical, telecommunications, special systems – and architectural elements – doors, windows, casework, built-in equipment – have been deteriorating, do not meet current codes, do not support (and in several cases inhibit) the functions that take place in the spaces, are energy-inefficient, and, increasingly, parts for mechanical equipment are difficult or impossible to obtain.

Two other buildings, the Maintenance Building and Manufacturing Training Center (MTC), are also in need of major renovations. The Maintenance Building continues to serve just part of the needs of the maintenance activities and needs to be expanded. The MTC has been serving as temporary space for several departments over several years, developing into de-facto "surge" space. It has been made over so many times and its MEP systems have been modified so often, most of the building is not original. This building provides the only true trades space on campus and should be reconfigured to meet future training needs for skilled workers.

CAPITAL PROJECTS

The following building infrastructure, IT infrastructure, and building projects are proposed:

PRIORITY GROUP	PRIORITY WITHIN GROUP	PROJECT	REMARKS	AREA (GROSS SQUARE FEET)	COST ESTIMATE
1	A	TPAC Chiller/Roof	Facility Infrastructure		850,000
1	B	IT/AV Infrastructure	Campus IT/AV Infrastructure e.g. Upgrade Fiber Optic Loop System, Expand Wireless Coverage throughout Campus, etc.		5,000,000
2	A	Queen Anne's Tech.	Renovation: As Careers Building*	18,058 Sq. Ft.	16,362,000
2	B	Manufacturing Training Center	Renovation: As Trades Building*	10,930 Sq. Ft.	4,000,000

Priority Group Notes:

Priority 1: needs are immediate; should be accomplished as soon as possible. 0-5 years
Priority 2: 0-10 years. needs may also be immediate
* Priority to be determined as needs arise, as affected by other projects, and as funds become available

In addition to building renovations, additions, and new buildings, other capital projects that support the buildings or are independent, including site, mechanical, electrical, special systems, and technology projects are identified in Chapter 5, 6 and 9. Major projects in these categories include building infrastructure, parking lots, a new waste water treatment plant, site and building lighting replacement and several important information technology Infrastructure and telecommunications upgrades. Expanding the campus wireless network coverage is an especially high priority. The capacity of the waste water treatment plant is necessary as it has reached its limits with the addition of the HPAC project.

DESIGN STANDARDS

Design Standards are described in Chapter 4 and include standards for building design, both exterior and interior; site accessories such as benches and waste receptacles; signage, both exterior and interior; and lighting, both site and interior. The standards are suggested to: 1) achieve a cohesiveness in the physical development of the campus and 2) simplify the ability of the College to maintain its facilities. At the same time, development of design unique to each project is encouraged. It is recommended that the College continue with and expand the standards to include certain mechanical and electrical equipment and automatic HVAC control systems. In addition to these design standards, the College has committed to developing projects sustainably, including achieving LEED silver certification for all new major building and renovation project.

In addition, as part of the design standards, the College is including sustainable ("green") design policies for its property, buildings and other capital projects. The College has already invested in green design aspects of recent projects, such as renovating buildings, well-insulated building envelope systems, energy-efficient lighting and HVAC systems, and geo-thermal heating and cooling systems. Through a grant from a private non-profit organization, the college is redesigning the outflow of its storm water pond to greatly reduce runoff into an especially compromised tributary of the Chesapeake Bay.

WYE MILLS DEVELOPMENT

Acknowledging that the Wye Mills campus will continue to be the main campus for the College for the foreseeable future, the site development plan allows for continued growth and enhances several aspects of the existing and future, expanded campus. In addition to planning for building projects to be constructed over the next 10 years, the plan accommodates future long term building expansion. Renovation projects will proceed along with new buildings and additions.

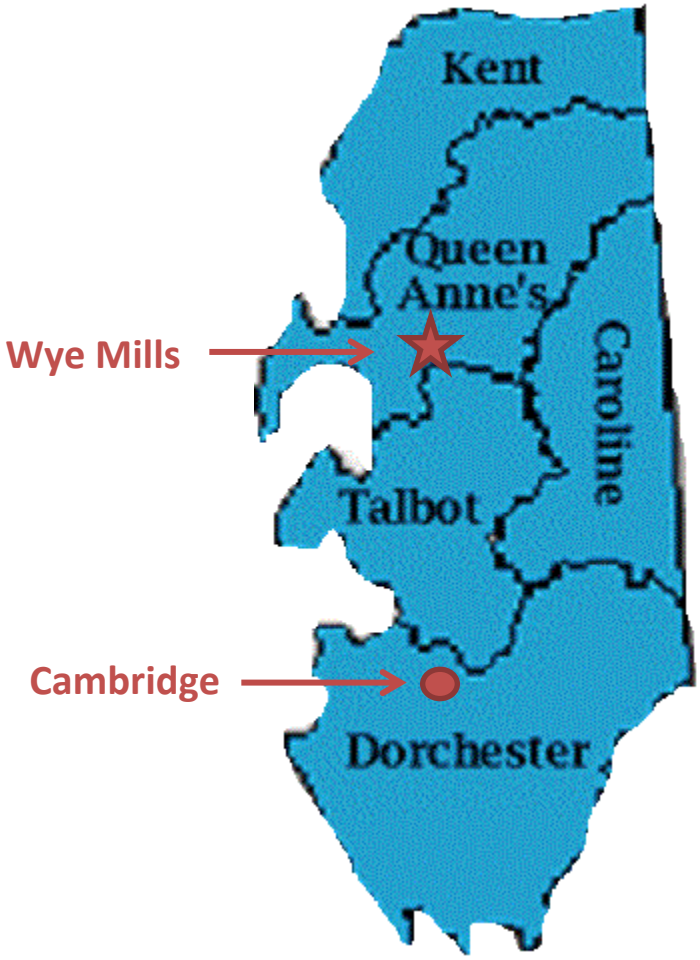
Finally, the transition from a completely rural setting to one more tied to other off-campus development is reinforced in this plan. The plan provides an informed framework for the College to continue its growth in a deliberate manner that supports and enhances the academic mission of the College.

CHAPTER 2:
OVERVIEW OF THE COLLEGE

OVERVIEW OF CAMPUS

In 1965, the Maryland General Assembly adopted legislation providing for the creation of regional community colleges. On December 22 of that year, Chesapeake College was founded as Maryland's first regional community college with a mandate to provide transfer and career programs, continuing education courses, and educational services responsive to the citizens of Caroline, Kent, Queen Anne's, and Talbot counties[1]. The following year, the College purchased a 170-acre site near Wye Mills, developed its first master plan, and began constructing five buildings: Kent Humanities, Talbot Science, Dorchester *Library/* Administration, Caroline College Center, and Gymnasium.

CHESAPEAKE COLLEGE VICINITY MAP



[1] Dorchester was not one of the original counties. Dorchester joined Chesapeake in June 1979.

While its new campus was under construction and with an initial enrollment of 260 students, Chesapeake College opened classes in September 1967 in the Queen Anne's County High School in Centreville. The faculty, staff, and library were housed in the Kennard Elementary School in Centreville. The following September, the College took gradual occupancy of the five new buildings at Wye Mills and graduated its first class in May 1969.

Shortly after the opening of its new campus, Chesapeake College fulfilled its community mission by making its facilities available to State, county, and local groups for their events. The College was granted full accreditation by the Middle States Association of Colleges and Secondary Schools at the end of its third academic year.

Subsequent to construction of the initial five buildings, development at Wye Mills resulted in the Queen Anne's Technical Center being constructed in 1976, the Manufacturing Training Center and the Maintenance Building in 1978, expansion of the Manufacturing Training Center in 1984, construction of the Early Childhood Development Center in 1989, the Center for Business and the Arts in 1996, and the Learning Resource Center in 2002. The Dorchester Administration Building was completely renovated in 2003. The College's focal point for student-related activities, the Caroline College Center re-opened in 2006 after a major renovation/expansion. Similarly, the renovation to the Talbot Science building, the Kent Humanities, and the Health Professions and Athletics Center were completed in 2007, 2010, and 2015, respectively. Chesapeake College is also the host campus for the Eastern Shore Higher Education Center, one of six regional higher education centers in Maryland. This is not however, part of the University of Maryland System. This center was opened in 2003 and is the only higher education center in Maryland located on the campus of a community college.

Responding to the need for program offerings outside the main campus at Wye Mills, the College began conducting classes in a renovated facility in Cambridge in 1994; and entered into a relationship with Easton Memorial Hospital to offer allied health classes in the hospital facility in 1997. In 2015 however, at the completion of the renovation and addition of the Health Professions and Athletics Center – HPAC - the allied health and nursing programs were relocated to the HPAC facility located in Wye Mills campus.

Chesapeake College serves a five-county rural area covering over 1,800 square miles of Maryland's Mid-Eastern Shore, comprising 19 percent of the State's total land area. The Mid Eastern Shore is largely rural with many traditional occupations and industries such as farming, fishing, manufacturing, and service. Chesapeake's service area is in transition, facing the difficult challenges of balancing growth and development while maintaining its unique character and culture.

MISSION

Chesapeake College's mission statement reflects its uniqueness in that the statement recognizes Chesapeake as a regional community college that serves the educational, economic development, and cultural needs of the residents of Maryland's Mid-Eastern Shore.

CHESAPEAKE COLLEGE
MISSION STATEMEN

Chesapeake College's core commitment is to prepare students from diverse communities to excel in further education and employment in a global society.
We put students first, offering transformative educational experiences. Our programs and services are comprehensive, responsive and affordable.
The college is a catalyst for regional economic development and sustainability and a center for personal enrichment and the arts.

The college offers a large selection of credit and continuing education offerings designed to help students prepare for transfer to upper level institutions, for immediate entry into a career, or for enhancing work-related skills. Beyond the curricula, the college offers many opportunities for further academic, social, personal, cultural, and athletic development through a rich variety of extracurricular and co-curricular activities.

To enhance student learning and to promote teaching excellence, the college commits to providing a supportive learning environment characterized by a dedicated, caring and highly qualified faculty and staff. The college offers all employees professional development opportunities that are aligned with goals outlined in its Strategic Plan. Through these commitments, the college nurtures a community of lifelong learners among faculty, staff and students.

In addition, the college embraces its commitment to regional economic and community development that will improve the quality of life by acting on the following:

- Support workforce development by providing the courses and training needed to build a skilled labor force.
- Enhance enjoyment and appreciation of the arts by incorporating cultural activities into the curriculum and bringing fine and performing arts events to the region.
- Sponsor a broad range of community and civic activities that reflect the college's role as a community-learning center.
- Extend access to baccalaureate and graduate degree programs for Upper Shore residents through inter-institutional partnerships

VISION

In order to fulfill its mission, Chesapeake College is committed to "Fostering a Community of Learners," a philosophy embodied in its vision statement as approved by the Board of Trustees.

CHESAPEAKE COLLEGE
VISION STATEMENT

Chesapeake College will have the resources, programs and services necessary to offer every citizen in its service region opportunities for learning. Students will build on their strengths and excel in the College's dynamic learning environment.

In order to implement our mission and pursue our vision, the College faculty and staff dedicate themselves to being guided by the following core values:

Quality: Creating a learning environment that establishes high standards for individual excellence.

Student-Centeredness: Encouraging and supporting each student to achieve his or her greatest potential.

Community: Engaging our community and serving as a catalyst for positive change.

Diversity and Respect: Fostering inclusiveness and an appreciation for individual differences.

Adaptability: Responding rapidly to local and global change.

Teamwork and Collaboration: Working together to share ideas, knowledge, and creative solutions.

Responsibility: Taking responsibility for our actions, acting as stewards of our resources, and adhering to the highest standards of ethical and civic behavior.

STRATEGIC INITIATIVES

Chesapeake's FY 2014–2018 Strategic Plan identifies the following six goals or "strategic initiatives":

INITIATIVE I — Transform the Student Learning Experience.

New ideas and new technologies are creating possibilities for instruction that were unimaginable a few years ago. We know more than ever about how we learn, shattering previously held assumptions about best classroom practices. We are at the cusp of a new era in teaching and learning, and Chesapeake College's students can reap the benefits of small, responsive, active classes guided by innovative faculty. We will create a climate in which creativity is encouraged and rewarded and where high-impact practices that improve student learning outcomes are the norm.

INITIATIVE II — Strengthen the Regional Economy.

The Mid-Shore region has seen major changes to its economy over the past several decades. Most manufacturing jobs have been lost, and the five counties supported by Chesapeake College continue to experience high unemployment. As an institution of higher learning, an employer and a training provider for new and incumbent workers, Chesapeake College is one of the region's most significant economic engines. As one of the few five-county entities on the Mid-Shore, the college is effectively positioned to promote regional economic development. The college will break new ground in educating and training a skilled workforce, helping Mid-Shore counties recruit and retain businesses.

INITIATIVE III — Improve Student Goal Attainment.

The college will improve the percent of students who complete a degree, certificate or workplace credential or who transfer in an accelerated time frame. In the most recent Maryland Higher Education Commission report on retention, graduation and transfer rates – focusing on first-time, full-time students – the college is generally in the upper half for most categories. The college's goal is to consistently be among the top five community colleges for all these categories.

INITIATIVE IV — Grow Enrollment.

Enrollment is a measure of how well the college is meeting the community's need for access to higher education, including continuing education and workforce training. It is also critical to the financial health of the college. Substantial growth between FY06 and FY11 allowed the college to weather the recession and add resources. Since then, enrollment declines have forced budget cuts to all areas. The high school population in the region is declining and the college must compensate for that drop or face severe financial

consequences. The college is committed to taking advantage of economies of scale, setting a goal of 3,000 students per semester by FY18.

INITIATIVE V Advance Environmental Sustainability.

Chesapeake College, located in an agricultural region adjacent to the Chesapeake Bay, has an obligation to make a positive impact on the environment through partnerships, leadership, education and modeling. Since the initiation of the last strategic plan, the college has signed the American College and University Presidents' Climate Commitment – a pledge to reduce its carbon footprint in the interest of good global citizenship. Chesapeake College will be recognized as a regional environmental leader. Through our institutional actions, we will model environmental responsibility on the Eastern Shore, inspire environmentally engaged citizens, and reduce our carbon footprint.

INITIATIVE VI Build the Resources to Advance the College Mission.

If the college is to realize its goals and continue to provide opportunities for education and economic development, it will require additional resources. An enhanced institutional advancement infrastructure will support advocacy, communicate the college's alumni and community leaders will be involved in these efforts.

GOVERNANCE AND ORGANIZATION

Chesapeake College is governed by a Board of Trustees, appointed by the Governor of Maryland and confirmed by the Maryland House of Delegates. The Board is comprised of ten members, two from each of the five counties, Caroline, Dorchester, Kent, Queen Anne's, and Talbot, which make up the institution's service area. The Board is responsible for setting policy for the institution and the selection of the President of the College. The President has overall operational authority and responsibility for Chesapeake College and as such, exercises general supervision of all departments. The President shares administrative responsibility with vice-presidents each with a broad range of responsibilities for Academic Affairs and Economic Development, Administrative Services, Technology and Academic Support, Institutional Advancement and Student Success and Enrollment Services. Also reporting to the President are director of Institutional Planning, Research & Assessment and the Dean of Continuing Education and Workforce Training. The faculty also participates in the governance of the college through standing and ad hoc committees, the Faculty Assembly, and representation on the College Council.

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STUDENT GOVERNMENT

The College encourages students to assume the responsibilities of self-government recognizing this is an important facet of higher education. The Chesapeake College Student Government Association (SGA) is a cooperative organization based on mutual confidence between the student body and the administration, faculty, and staff of the college. Authority is granted the student body a voice in the regulation and conduct of student affairs. Governing powers of the SGA are vested in the legislative officers including a president, vice-president, secretary, events coordinator, public relations officer, and two representatives.

STUDENT BODY CHARACTERISTICS

The student body of Chesapeake College is comprised of individuals with a wide variety of experiences, goals and educational backgrounds. The table below shows the diversity of the student body in the fall semester of 2014. The College is a community of more than 9,000 individuals.

STUDENT HEADCOUNT CHARACTERISTICS AND COURSE INFORMATION

	Credit Students: Fall 2014		Continuing Education & Workforce Training Students: FY2015	
Characteristic	Number	Percent of Total	Number	Percent of Total
Full-Time/Part-Time				
Full-Time	780	32%	N/A	N/A
Part-Time	1,648	68%	N/A	N/A
Total	2,428		6,269	
Gender				
Female	1,590	65%	2,191	35%
Male	838	35%	4,075	65%
Unreported	0	0%	3	0%
Race/Ethnicity				
African-American	376	15%	1,174	19%
Asian	31	1%	76	1%
American Indian	21	1%	20	0%
Pacific/Hawaiian Islander	2	0%	3	0%
White	1,790	74%	4,180	67%
Two or More Races	45	2%	55	1%
Hispanic	86	4%	610	10%
Foreign	26	1%	11	0%
Unreported	51	2%	140	2%
Program of Study				
Transfer	1,026	42%	N/A	N/A
Career	1,043	43%	N/A	N/A
Non-Degree	359	15%	N/A	N/A
Age				
<16 - 22	1,743	72%	1,279	20%
23-29	508	21%	790	13%
30-39	333	14%	890	14%
40-59	348	14%	1,823	29%
60+	24	1%	1,487	24%
Mean	25		42	
Residence				
Caroline	530	22%	1,086	17%
Dorchester	421	17%	730	12%
Kent	177	7%	470	7%
Queen Anne's	657	27%	1,543	25%
Talbot	575	24%	1,512	24%
Other	68	3%	928	15%
Course Offerings				
Sections	459		1,295	
Registrations	7,299		11,042	

Data Source: Chesapeake College Institutional Research, Planning & Assessment

During fall 2014, Chesapeake College employed 225 full-time faculty, administrative, and support staff. In addition, the College employed 258 part-time faculty and staff. The following table illustrates the distribution of personnel who are critical to the mission, strategic initiatives and learning experience at Chesapeake College.

FACULTY AND STAFF, FALL 2014

Row Labels	FT	PT	Total Employees	FTE Employees
Administrators	32	4	36	33
Credit Faculty	55	77	132	81
Continuing Education/Workforce Training Faculty	0	80	80	27
Librarians	3	0	3	3
Staff	135	97	232	167
Grand Total	225	258	483	311

Data Source: Chesapeake College Institutional Research, Planning & Assessment

ACADEMIC PROGRAMS

As a public comprehensive, open admissions two-year regional community college, Chesapeake offers a wide range of transfer, career, continuing education and personal development education programs. These programs lead to the Associate of Arts (A.A.), Associate of Science (A.S.), Associate of Applied Science (A.A.S.), and Associate of Arts in Teaching (A.A.T.) degrees and Certificates and Letters of Recognition in specialized areas. During the 2015-2016 academic year, the College offered 79 programs in transfer and career areas plus an array of non-credit courses and community service programs. Additional programs are offered at various off-campus sites on the Mid Eastern Shore.

Chesapeake College is fully accredited by the Middle States Commission on Higher Education. The Radiologic Sciences Program is accredited by the Joint Review Committee on Education in Radiologic Technology; the Physical Therapist Assistant Program is accredited by the Commission on Accreditation in Physical Therapy Education of the American Physical Therapy Association; the Surgical Technology Program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP); and the Nursing Program is approved by the Maryland Board of Nursing, and is accredited by the National League of Nursing Accrediting Commission.

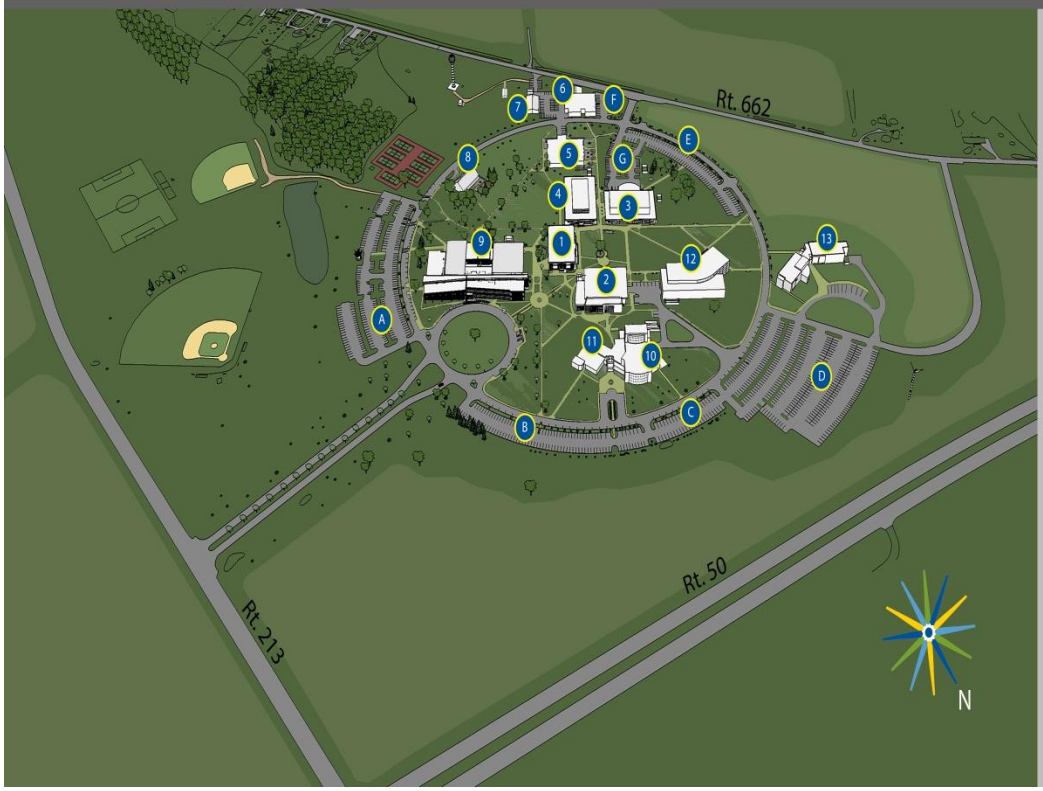
WYE MILLS CAMPUS

The Chesapeake College campus is located on a 170 acre site at the intersection of routes 50 and 213 in Wye Mills, Maryland and is approximately 26 miles east of the Bay Bridge.

Chesapeake College enjoys a campus that has both a rural character and physical environment. Currently consisting of twelve buildings that contain approximately 325,155 gross square feet (GSF) of space, the campus includes five classroom buildings, a student center, a maintenance building, an early childhood development center, a center for business and the performing arts, the 45,000 square foot Learning Resource Center completed in 2002. The Dorchester Administration building, Caroline College Center the Talbot Science Building, Kent Humanities Building, and the Professional Allied Health and Athletics Center - HPAC have been fully renovated within the last *ten years*. The campus also has outdoor tennis courts, six playing fields used primarily for intercollegiate athletics and community activities, and numerous parking facilities.

Also located on the campus, although not part of the Chesapeake College, is the Eastern Shore Higher Education Center. This facility is one of six regional higher education centers in Maryland.

Chesapeake College Campus Directory



1. Dorchester Administration Building
2. Caroline College Center
3. Kent/Humanities Building
4. Talbot/Science Building
5. Queen Anne's/Technical Center
6. Manufacturing Training Center
7. Maintenance Building
8. Early Childhood Development Center
9. Health Professions and Athletics Center
10. Todd Performing Arts Center
11. Economic Development Center
12. Learning Resource Center/Library
13. Eastern Shore Higher Education Center

A. Parking Lot A
B. Parking Lot B
C. Parking Lot C
D. Parking Lot D
E. Parking Lot E
F. Parking Lot F
G. Parking Lot G

The following table contains a programmatic description of each Wye Mills campus building. Further detailed information relative to each building is provided in Chapter 4.

CHESAPEAKE COLLEGE WYE MILLS CAMPUS: BUILDING INVENTORY							
Bldg. Name	**Yr. Built**	**Yr. Renov**	**Sustainability**	**NASF**	**GSF**	**Penthouse**	**Primary Use**
Dorchester Admin	1968	2003	Geothermal	14,020	23,554		Office
Caroline Coll Ctr	1968	2006	Geothermal	21,833	35,419		Dining, Office, Instruction, Bookstore
Kent Humanities	1968	2010	Geothermal	13,144	25,398	4,148 gsf	Instruction
Talbot Science	1968	2007	Geothermal	11,975	23,043	1,820 gsf	Instruction
Health Professions & Athletics Ctr	1968, 1976	2015	Geothermal	60,312	100,907	5619 gsf	Allied Health, Athletics, Physical Education, Classroom, Office
Queen Anne's Tech	1976	1983		11,870	18,058		Instruction
Manufacturing Training Ctr	1979	1984		9,870	10,930		Instruction, Shop, Central Serves, Office
Maintenance	1979			3,383	4,000		Shops, Storage, Office
Early Childhood Devt Ctr	1989			2,981	3,994		Day Care
Economic Devt Ctr / Todd Performing Arts Ctr	1996			20,294	29,400		Assembly, Instruction, Office
Learning Resource Ctr	2002			31,474	44,484		Library, Instruction
Sub-Total				**140,844**	**319,187**		
Higher Education Ctr	2002		Geothermal	15,142	28,054		Not in inventory for reporting purposes

CAMBRIDGE CENTER

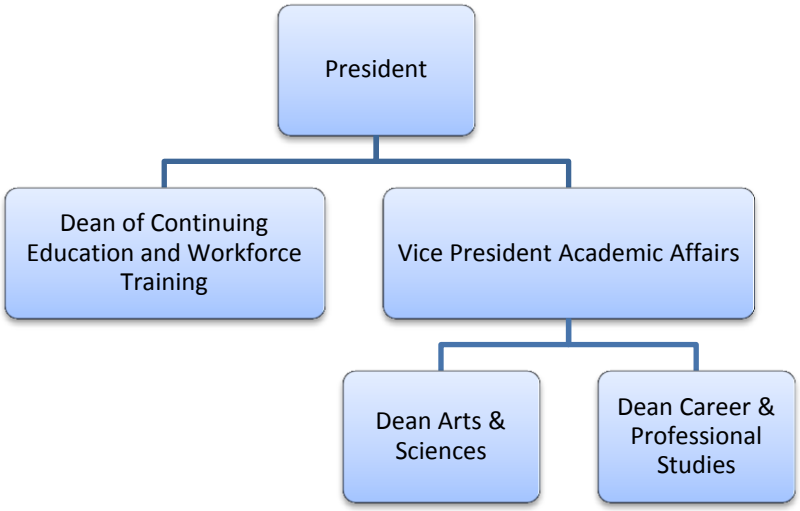
In addition to the facilities at Wye Mills, the College also occupies a 20,600 gross square foot two-story brick building located at 416-418 Race Street in downtown Cambridge. The Cambridge Center is a full-service educational center for Mid-Shore citizens offering Dorchester County residents top-quality education close to home. Modified in 1993 to accommodate the College's educational mission, this multi-service center currently has six general classrooms, one science laboratory, two computer laboratories and one distance learning classroom in support of both credit and non-credit offerings.

CHAPTER 3:
ACADEMIC PROGRAMS AND SPACE NEEDS

INSTRUCTIONAL ORGANIZATION

Two academic divisions, each headed by a dean, offer the credit instructional programs for Chesapeake College in Arts and Sciences as well as Career and Professional Studies. These divisions are each comprised of several departments or programs with the instructional organization administered by the Vice President for Academic Affairs.

CHESAPEAKE COLLEGE INSTRUCTIONAL ORGANIZATION



ACADEMIC PROGRAMS OVERVIEW

Chesapeake College directly contributes to the quality of life, not only on the Mid Eastern Shore, but also throughout the State of Maryland. It does so by preparing its graduates for careers in a global economy, as well as preparing its students to become productive members of society. Chesapeake serves the needs of students with a varied curriculum and other learning opportunities that will help each student to begin focusing on a lifetime of independent learning. Programs are designed to provide the first two years of baccalaureate education (Transfer Programs) in preparation of transfer in addition to programs of study designed to prepare the student for direct entry into the workforce (Career Programs).

The College offers 33 transfer and career programs leading to associate degrees; 30 programs leading to certificates of proficiency; and 16 programs which award letters of recognition.

DEGREE PROGRAMS

Accounting
Business Administration
Business Management Technology
Computer Information Security
Computer Information Systems
- Interactive Media/Web Design
- Microcomputer Applications Specialist
- PC and Network Management

Criminal Justice
- Crime Scene Technician
- Law Enforcement

Early Childhood Development Emergency Medical Services
Engineering Technology
- Drafting and Design

Environmental Science
General College Studies: Allied Health
Health, Fitness & Exercise Science
- Allied Health
- Exercise Science
- Sport Management

Hotel/Restaurant Management
Human Services
- Mental Health

Landscape Design
Landscape Management
Liberal Arts & Sciences
Nursing: Registered Nurse
Paralegal Studies
Physical Therapist Assistant
Radiologic Sciences
Teacher Education AAT
- Elementary/Elementary Special Education
- Early Childhood/Early Childhood Special Education
- Secondary Ed. - Chemistry
- Secondary Ed. - English
- Secondary Ed. - Math
- Secondary Ed. - Physics

Technical/Professional Studies

CERTIFICATE PROGRAMS

Accounting
- Advanced
- Basic

Business Management Technology
Cardiac Rescue Technician
Computer Information Systems
- Interactive Media/Web Design
- Microcomputer Applications Specialist
- PC and Network Management Advanced
- PC and Network Management Basic

Criminal Justice
- Crime Scene Technician
- Law Enforcement

Early Childhood Development
- Advanced
- Basic

Emergency Medical Services
Engineering Technology
- Drafting and Design

Environmental Monitoring
Health, Fitness & Exercise Science
- Exercise Science
  - Advanced
  - Basic
- Sport Management
  - Advanced
  - Basic

Hotel/Restaurant Management
- Food Service Management
- Hotel/Resort Management

Nationally Registered Paramedic
Paralegal Studies
Surgical Technology
Teacher Aide
Theatre & Performance Studies
Transfer Studies
- Advanced
- Basic

Welding
- Advanced
- Basic

LETTERS OF RECOGNITION

African-American Studies
Accounting: Tax
Basic Chemistry
Biology
Business Management
Communications
Early Childhood Development
Engineering Technology
- Drafting and Design

General Science
Geography
Mathematics
Music
Hotel/Restaurant Management
- Food Service Management
- Hospitality Management

Land Use Management
Welding

ASSOCIATE DEGREE DESIGNATIONS

Associate degree programs require completion of a minimum of 60 credit hours including an established set of requirements for graduation. The Associate degree often parallels the first two years of study at a four-year college or university. Students need only two additional years of study to complete a Bachelor's degree. The Associate degree is also suitable for career exploration, advancement, and skills upgrading.

The Associate of Applied Science (AAS) degree focuses on specific occupational areas, and is intended to provide students with entry-level employment skills, instruction for employed students seeking to upgrade skills, and training for students preparing for a career change. The Associate of Arts (AA) degree focuses in the liberal arts, humanities, and fine arts and is intended primarily for transfer into Bachelor of Arts programs at four-year institutions. Scientific and technical studies are the focus of students pursuing the Associate of Science (AS) degree, which is intended primarily for direct transfer into Bachelor of Science programs at four-year institutions while also providing technical knowledge and skills applicable to career entry and advancement. The Associate of Arts in Teaching (AAT) degree is intended to facilitate transfer into a teacher education program at any Maryland four-year college or university, but is also suitable for persons needing to meet requirements to become teacher aides.

NON-TRADITIONAL STUDIES

Chesapeake College offers a variety of opportunities for students to earn college credits through non-traditional course formats and individualized program advising. These formats are oriented toward self-directed students who either have encountered obstacles in meeting their educational goals through conventional academic scheduling, or who prefer the flexibility afforded through these options. Through non-traditional course formats – including online courses, Honors courses, independent study courses, and accelerated courses – students can access a broadened learning environment, develop a new kind of relationship with academic faculty, and pursue a personalized approach to study which is tailored to fit their individual situations and learning styles.

In addition to the program formats offered by Chesapeake College, various statewide programs are available to Mid-Shore residents at other Maryland community colleges. Area students enrolled in these programs are eligible for in-county tuition rates at the host institution. Eligible high school juniors and seniors may earn college credits while still in high school under Chesapeake's Dual Enrollment program. College credits earned by Dual Enrollment students can often be applied toward high school graduation requirements and, in all cases, will be a part of the student's permanent college record.

CONTINUING EDUCATION AND WORKFORCE TRAINING

The Division of Continuing Education and Workforce Training at Chesapeake College is not organized within the Academic Affairs Division, reporting directly to the President of the College. Its programs and non-credit course offerings are designed to afford lifelong learning opportunities for adult individuals, to meet licensure/certification requirements of various professions, and to meet the specific training needs of employers throughout the region. A wide range of courses to upgrade skills, develop new skills, or just for special interest are offered throughout the year at locations in Caroline, Dorchester, Kent, Queen Anne's and Talbot counties. Courses are offered in areas such as: child care, computer training, nursing and other health professions, industrial technology, insurance, law enforcement, family, food/restaurant, GED prep, personal interest, real estate, travel, and truck driving, welding, and more. Some course offerings are designed specifically for special populations, such as senior citizens, or talented and gifted youth.

The Division regularly provides customized training for employers in the College's five-county service area. Customized training is provided for clients in both the public and private sectors including for-profit business and industry, government, non-profit organizations, service agencies and professional associations. The Division has also been very successful in

providing training opportunities for displaced workers as part of federal, state, and local grants supporting workforce development objectives. The Division works in partnership with the local Workforce Investment Board which is located on the Wye Mills campus and the Upper Shore Manufacturing and Business Council.

In fiscal Year 2015, Continuing Education produced 32% of the total full- time equivalent (FTE) enrollment for Chesapeake College. The following table illustrates this relationship over the past six years.

FTE TRENDS

Total FTEs	Fiscal Year						
	2010	2011	2012	2013	2014	2015	Change 2010-15
Credit	1,779	1,794	1,747	1,549	1,498	1,365	-23.3%
Noncredit	856	866	1,036	851	955	698	-18.4%
Total	2,635	2,660	2,783	2,401	2,453	2,062	-21.7%
Noncredit % of Total	32%	33%	37%	35%	39%	34%	
State Funded	Fiscal Year						
	2010	2011	2012	2013	2014	2015	Change 2010-15
Credit	1,730	1,751	1,715	1,524	1,473	1,340	-22.6%
Noncredit	849	859	1,027	841	937	638	-24.8%
Total	2,579	2,610	2,741	2,365	2,410	1,978	-23.3%
Noncredit % of Total	33%	33%	37%	36%	39%	32%	

Data Source: Chesapeake College Institutional Research, Planning & Assessment

Off-CAMPUS PROGRAMS

Chesapeake College provides credit and non-credit instruction at many locations throughout its five-county service area. In fall 2006, credit courses were offered at eight different off-campus sites. Many of the sites are used for evening instruction, particularly area high schools. The Cambridge Center, in downtown Cambridge (Dorchester County), is a College facility that offers credit and non-credit programs throughout the week and on weekends. The strategic location of the Cambridge Center ensures that academic programs are available to citizens in the southernmost region of the College's service area. Continuing Education courses are offered at over thirty off-campus sites throughout Caroline, Dorchester, Kent, Queen Anne's, and Talbot counties.

ENROLLMENTS

HISTORICAL TRENDS

By analyzing an institution's student body composition during the past few years, it is possible to deduce trends in the numbers and types of students enrolled, number of credit hours generated, and choices among continuing programs.

HISTORICAL FALL CREDIT ENROLLMENT HEADCOUNT TRENDS (2005 – 2015)

Year	Full Time	Part-Time	Total
2005	859	1,682	2,541
2006	877	1,702	2,579
2007	947	1,673	2,620
2008	998	1,624	2,622
2009	1,106	1,750	2,856
2010	1,116	1,840	2,956
2011	995	1,987	2,982
2012	920	1,740	2,660
2013	849	1,723	2,572
2014	780	1,648	2,428
2015	708	1,559	2,267
Change 2005-2015	-17.6%	-7.3%	-10.8%
Average Annual Change 2005-2015	-1.9%	-0.8%	-1.1%

Data Source: Chesapeake College Institutional Research, Planning & Assessment

The table below shows that annual fiscal year Continuing Education and Workforce Training unduplicated headcount peaked in FY2009, again as a consequence of the economic downturn. Chesapeake's service region has substantial economic growth challenges, limiting workforce development training opportunities.

HISTORICAL FISCAL YEAR CONTINUING EDUCATION/WORKFORCE TRAINING ENROLLMENT HEADCOUNT TRENDS (2005 – 2015)

Year	Headcount
2005	8,208
2006	8,491
2007	8,052
2008	8,484
2009	10,357
2010	9,127
2011	9,672
2012	9,287
2013	7,292
2014	7,796
2015	6,269
Change 2005-2015	-23.6%
Average Annual Change 2005-2015	-2.7%

Data Source: Chesapeake College Institutional Research, Planning & Assessment

CURRENT CONDITIONS

During the fall semester of 2014, 1,383 FTE Chesapeake College students generated 20,746 credit hours and 100 Continuing Education/ Workforce Training FTEs had 3,006 equated credit hours. The following table shows the enrollment distribution in terms of campus sites, off-campus and distance learning.

CURRENT CREDIT ENROLLMENT DISTRIBUTION

	Credit (Fall 2014)		Continuing Education/ Workforce Training (August - October, 2014)	
Location	Total Credit Hours	Total FTE	Total Equated Credit Hours	Total FTE
Wye Mills	14,726	982	510	17
Cambridge Center	2,260	151	503	17
Easton Memorial Hospital	987	66	3	0
Online	2,461	164	281	9
Off Campus	312	21	1,709	57
Total Chesapeake College	20,746	1,383	3,006	100

Data Source: Chesapeake College Institutional Research, Planning & Assessment

A comprehensive summary of actual on-campus credit hours generated by each campus site is provided in the table below. The data are further organized by site by Day before 5:00 p.m., Evening after 5:00 p.m., and Weekend (Saturday and Sunday) for both credit and continuing education. The overall enrollment is concentrated primarily during the day. Overall, 83% of Chesapeake College's campus site enrollments occur before 5:00 p.m. Having a somewhat different pattern, almost a third of the Cambridge Center enrollments are at night.

COMPARATIVE SUMMARY: DAY, EVENING, WEEKEND CAMPUS SITE CREDIT HOUR GENERATION (FALL 2014)

Credit				Fall 2014
Time	Wye Mills	Cambridge Center	Easton Memorial Hospital	Total
Credit Hours: Day	12,545	1,401	849	14,795
Credit Hours: Evening	2,145	859	0	3,004
Credit Hours: Weekend	36	0	138	174
Credit Hours: Total	14,726	2,260	987	17,973
% Day	85%	62%	86%	82%
% Evening	15%	38%	0%	17%
% Weekend	0%	0%	14%	1%

Continuing Education/Workforce Training				August - October, 2014
Time	Wye Mills	Cambridge Center	Easton Memorial Hospital	Total
Equated Credit Hours: Day	445	488	0	933
Equated Credit Hours: Evening	0	0	3	3
Equated Credit Hours: Weekend	65	16	0	81
Equated Credit Hours: Total	510	503	3	1,016
% Day	87%	97%	0%	92%
% Evening	0%	0%	100%	0%
% Weekend	13%	3%	0%	8%

Chesapeake College Total				Fall/August - October, 2014
Time	Wye Mills	Cambridge Center	Easton Memorial Hospital	Total
Credit/Equated Credit Hours: Day	12,990	1,889	849	15,728
Credit/Equated Credit Hours: Evening	2,145	859	3	3,007
Credit/Equated Credit Hours: Weekend	101	16	138	255
Credit/Equated Credit Hours: Total	15,236	2,763	990	18,989
% Day	85%	68%	86%	83%
% Evening	14%	31%	0%	16%
% Weekend	1%	1%	14%	1%

Data Source: Chesapeake College Institutional Research, Planning & Assessment

One factor in identifying the academic thrust of an institution is the student subject selection distribution among disciplines. for purposes of establishing the integrity and substance of parameters required for providing appropriate rationale for educational space planning and thorough consideration and application of the Maryland Higher Education Commission (MHEC) Space Allocation Guidelines for Community Colleges, systematic relationships between credit hours and weekly student contact hours (WSCH) are established. Analysis of student subject selection distribution among disciplines and the crucial ratios between credit hour and contact hour generation is fundamental to the application of guidelines for determining quantitative indicators of space need.

The table below summarizes the detail presented on the next two pages.

CAMPUS SITE CREDIT VS. CONTACT HOUR GENERATION: CHESAPEAKE COLLEGE
FALL 2014 (DAY ONLY)

Credit — Fall 2014

Site Location	Course Enrollments	WSCH Lecture	WSCH Lab	WSCH Total	Credit Hours
Wye Mills Campus	4,834	11,748	966	12,714	12,581
Cambridge Center	637	1,313	140	1,453	1,401
Easton Memorial Hospital	566	789	220	1,009	987
Totals: Chesapeake College	6,037	13,850	1,326	15,176	14,969

Continuing Education/Workforce Training — August - October, 2014

Site Location	Course Enrollments	WSCH Lecture	WSCH Lab	WSCH Total	Equated Credit Hours
Wye Mills Campus	655	3,525	1,274	4,841	510
Cambridge Center	16	1,176	0	1,176	503
Easton Memorial Hospital	1	6	0	6	3
Totals: Chesapeake College	672	4,707	1,274	6,023	1,016

Data Source: Chesapeake College Institutional Research, Planning & Assessment

While data relative to credit hour and contact hour distribution at all three Chesapeake College campus sites only two are presented for comparison purposes, the primary focus of quantitative analyses will be the Wye Mills Campus. The Cambridge Center is a single, leased building so its unique purpose neither lend it to nor benefit from typical "campus-wide" guidelines analyses; its space needs will, for the most part, be addressed qualitatively. Additionally, the allied health facilities at Easton Memorial Hospital were relocated to the Health Professions & Athletics Center (HPAC) on the Wye Mills Campus in 2015 and is longer under the auspices of the college.

CREDIT ENROLLMENTS BY DISCIPLINE: WYE MILLS CAMPUS, FALL 2014 (DAY ONLY)

Course/Discipline	Dept. Code	Course Enrollments	WSHC Lecture	WSHC Lab	WSHC Total	Credit Hours	FTDE
Accounting	ACC	43	129	0	129	129	9
Art	ART	29	87	0	87	87	6
Biology	BIO	638	957	494	1,451	1,276	85
Business	BUS	88	264	0	264	264	18
Chemistry	CHM	91	194	102	296	228	15
Computer Information Systems	CIS	102	209	52	261	254	17
Criminal Justice	CMJ	42	126	0	126	126	8
Communication	COM	315	945	0	945	945	63
Career Planning & Preparation	CPL	45	26	0	26	40	3
Early Childhood Development	ECD	11	33	0	33	33	2
Economics	ECN	30	90	0	90	90	6
Education	EDU	26	54	0	54	62	4
English	ENG	707	2,041	0	2,041	2,041	136
Film	FLM	50	150	0	150	150	10
Freshman Seminar	FSC	162	162	0	162	162	11
Food Service Management	FSM	31	43	40	83	63	4
History	HIS	206	618	0	618	618	41
Humanities	HUM	64	192	0	192	192	13
Interdisciplinary Courses	IDC	25	75	0	75	75	5
Interactive Media and Web Design	IMD	20	44	8	52	48	3
Math	MAT	783	2,408	0	2,408	2,408	161
Music	MUS	57	169	0	169	169	11
Nursing	NUR	61	305	0	305	549	37
Physical Education	PED	141	353	28	381	367	24
Physics	PHY	21	24	24	48	32	2
Political Science	POL	15	45	0	45	45	3
Psychology	PSC	339	1,017	0	1,017	1,017	68
Physical Therapist Assistant	PTA	28	42	28	70	56	4
Science	SCI	187	312	166	478	395	26
Developmental Orientation	SDD	238	0	0	0	0	0
Sociology	SOC	142	391	0	391	405	27
Social Studies	SOS	16	48	0	48	48	3
Spanish	SPA	10	30	0	30	30	2
Theatre	THE	47	141	0	141	141	9
Welding	WEL	24	24	24	48	36	2
Wye Mills Total		4,834	11,748	966	12,714	12,581	839

Data Source: Chesapeake College Institutional Research, Planning & Assessment

CREDIT ENROLLMENTS BY DISCIPLINE: CAMBRIDGE CENTER, FALL 2014 (DAY ONLY)

Course/Discipline	Dept. Code	Course Enrollments	WSHC Lecture	WSHC Lab	WSHC Total	Credit Hours	FTDE
Accounting	ACC	2	6	0	6	6	0
Biology	BIO	146	219	110	329	292	19
Business	BUS	5	15	0	15	15	1
Communication	COM	48	144	0	144	144	10
Early Childhood Development	ECD	2	6	0	6	6	0
English	ENG	95	269	0	269	269	18
Freshman Seminar	FSC	36	36	0	36	36	2
Humanities	HUM	9	27	0	27	27	2
Math	MAT	118	354	0	354	354	24
Music	MUS	8	24	0	24	24	2
Psychology	PSC	43	129	0	129	129	9
Science	SCI	30	45	30	75	60	4
Sociology	SOC	13	39	0	39	39	3
Developmental Orientation	SDD	82	0	0	0	0	0
Cambridge Total		637	1,313	140	1,453	1,401	93

Data Source: Chesapeake College Institutional Research, Planning & Assessment

CREDIT ENROLLMENTS BY DISCIPLINE: EASTON MEMORIAL HOSPITAL, FALL 2014 (DAY ONLY)

Course/Discipline	Dept. Code	Course Enrollments	WSHC Lecture	WSHC Lab	WSHC Total	Credit Hours	FTDE
Cardiac Rescue Technician	CRT	138	236	0	236	184	12
Nationally Registered Paramedic	NRP	44	130	0	130	121	8
Nursing	NUR	266	292	138	430	477	32
Radiologic Sciences	RSR	90	90	68	158	135	9
Surgical Technology	SGT	28	42	14	56	70	5
Easton Memorial Hospital Total		566	789	220	1,009	987	66

Data Source: Chesapeake College Institutional Research, Planning & Assessment

CONTINUED EDUCATION/WORKFORCE TRAINING ENROLLMENTS BY DISCIPLINE: WYE MILLS CAMPUS, AUGUST-OCTOBER 2014 (DAY ONLY)

Course/Discipline	Dept. Code	Course Enrollments	WSHC Lecture	WSHC Lab	WSHC Total	Credit Hours	FTDE
Adult Basic Education	FABE	16	77	0	77	70	5
Allied Health	AHC	204	878	173	1,094	103	7
Child Care Resource Center	CCR	49	426	0	426	26	2
Computer Training	CPT	84	0	685	685	48	3
Hospitality	HST	5	0	45	45	21	1
Institute for Adult Learning	CEL	89	196	0	196	60	4
Motorcycle	BRC	25	0	197	197	21	1
Truck Driving	CDL	26	473	0	473	57	4
Workforce Development	WFD	154	1,475	120	1,594	100	7
Youth	YKC	3	0	54	54	4	0
Wye Mills Total		655	3,525	1,274	4,841	510	34

Data Source: Chesapeake College Institutional Research, Planning & Assessment

CONTINUED EDUCATION/WORKFORCE TRAINING ENROLLMENTS BY DISCIPLINE: CAMBRIDGE CENTER, AUGUST-OCTOBER 2014 (DAY ONLY)

Course/Discipline	Dept. Code	Course Enrollments	WSHC Lecture	WSHC Lab	WSHC Total	Credit Hours	FTDE
Adult Basic Education	FABE	30	259	0	259	219	15
Allied Health	AHC	63	791	0	791	208	14
ESL	FESL	8	58	0	58	62	4
Workforce Development	WFD	27	227	0	227	14	1
Cambridge Total		128	1,334	0	1,334	503	34

Data Source: Chesapeake College Institutional Research, Planning & Assessment

CONTINUED EDUCATION/WORKFORCE TRAINING ENROLLMENTS BY DISCIPLINE: EASTON MEMORIAL HOSPITAL, AUGUST-OCTOBER 2014 (DAY ONLY)

Course/Discipline	Dept. Code	Course Enrollments	WSHC Lecture	WSHC Lab	WSHC Total	Credit Hours	FTDE
Allied Health	AHC	7	42	0	72	3	0
Easton Memorial Hospital Total		7	42	0	72	3	0

Data Source: Chesapeake College Institutional Research, Planning & Assessment

PLANNED ACADEMIC DIRECTION

ENHANCEMENT of PROGRAMS

Curriculum development at Chesapeake College is a cooperative of the Office of Institutional Research, Planning & Assessment, faculty, and administration; colleagues in area high schools and four-year institutions; and the Maryland Higher Education Commission. In response to a 2015 community needs assessment, the College is currently seeking state approval for a new agriculture program developed as an Associate of Arts degree with crop production and sustainability areas of concentration. The program is fitting for the rural nature of the College's region, which includes a heavy emphasis on farming. Chesapeake is also seeking state approval for a completely redesigned Computer Information Systems program and begun redesign of its culinary offerings, both also in response to the community needs assessment. Employment opportunities in the healthcare field, the aging demographics of the College service region, and the recent opening of the college's Health Professions and Athletics Center have spurred planning for expanded healthcare programs in terms of either higher enrollment caps, new offerings, or both.

UPPER SHORE JOB OPENINGS 2002 – 2012 BY EDUCATIONAL REQUIREMENTS

Associates Degree - Postsecondary Vocational Training	**Number**
Registered Nurses (Associate degree)	355
Automotive Service Technicians & Mechanics (Postsecondary vocational training)	120
Licensed Practical & Licensed Vocational Nurses (Postsecondary vocational training)	85
Preschool Teachers, Exc. Special Education (Postsecondary vocational training)	55
Dental Hygienists (Associate degree)	55
Real Estate Sales Agents (Postsecondary vocational training)	50
Security & Fire Alarm Systems Installers (Postsecondary vocational training)	50
Fitness Trainers & Aerobics Instructors (Postsecondary vocational training)	45

Bachelor's Degree - Bachelor's Degree or Higher, plus Work Experience	**Number**
General & Operations Managers (Bachelor's/higher, plus work experience)	395
Construction Managers (Bachelor's degree)	110
Child, Family & School Social Workers (Bachelor's degree)	105
Middle School Teachers, Exc. Special & Vocational Educ. (Bachelor's degree)	90
Medical and Health Service Managers (Bachelor's/higher, plus work experience)	80
Elementary School Teachers, Exc. Special Education (Bachelor's degree)	80
Secondary School Teachers, Exc. Special & Voc. Educ. (Bachelor's degree)	75
Financial Managers (Bachelor's/higher, plus work experience)	65

Data Source: Maryland Department of Labor, Licensing and Regulation

The Maryland Higher Education Commission projects Chesapeake's noncredit FTE eligible for state funding to increase from by 17% from 937 FTEs in FY2014 to 1,095 FTEs in FY2024. However, the FY2014 base on which the projections are based includes some 200 FTEs attributed to adult education offerings in Wicomico County that have now been taken over by Wor-Wic Community College. Chesapeake College recommended to MHEC that the future projections be reduced by 200 FTEs each year into the future, but that action was not factored into the most recent set of projections (note: the 2016-2025 projections that will be prepared in 2016 will be based on FY2015 actuals that do not include the Wor-Wic FTEs and thus will likely better reflect more realistic expectations. For purposes of this analysis, the MHEC FY2024 projections were reduced by 200 (to 895) and the series was extended to FY2025 (to 906 FTE) by Chesapeake's office of Institutional Research, Planning and Effectiveness to align with the fall 2024 credit enrollment projections and FTEs that are ineligible for state funding were added to capture the full essence of continuing education course offerings.

MODERNIZATION OF INSTRUCTIONAL DELIVERY

Chesapeake has continued its philosophy of creating learning environments that use the latest technology and design innovations to deliver instruction to its students. The Health Professions and Athletics Center is the latest example of this philosophy, with students building their skills and gaining experience in cutting-edge facilities. The college expects future facilities improvements to continue this philosophy of providing instruction and experience in facilities appropriate to the task.

The efforts envisioned over the next decade would be centered around maintaining and enhancing the college's facilities with design efforts that build upon the aesthetic environment. That environment was created in the 21st-century makeovers provided to most of the Wye Mills Campus' original buildings along with the construction of the Learning Resource Center and the renovation of the Physical Education Building into the Health Professions and Athletics Center. While those enhancements are easily seen by the eye, less visible technology initiatives such as wireless access project and bandwidth initiatives are also critical to the changing face of instructional delivery.

These initiatives provide instructional opportunities that not only enhance learning but improve the college's ability to recruit and retain students. They also ensure an environment in which the college's academic programming can continue to be engaging and dynamic for Chesapeake students as well as the community the college serves.

IMPLICATIONS OF ACADEMIC PROGRAMS ON FACILITIES

The anticipated growth of existing programs, particularly in healthcare fields, and the establishment of new programs such as the agriculture program suggest need for specific, specialized facilities. We believe that the demand identified in the previously discussed community needs assessment will drive program offerings in the coming years. Many of these programs have specific space needs, with the agriculture program being a prime example. This demand is used in subsequent sections to develop space needs and suggested physical development.

SPACE NEEDS ANALYSIS

INTRODUCTION

The purpose of space needs analysis is to assess the extent to which the current total amount of academic and other space is adequate for use in support of future enrollments. The ultimate outcome of this assessment is to provide estimates of the types and amounts of space likely to be needed to support Chesapeake College's projected academic programs and their ensuing enrollments and staffing levels.

The College provided a room-by-room facility space inventory, course enrollment data from fall 2014, and current staffing data which formed the basis for analyzing Chesapeake's space needs. The college applied the data to the Maryland Higher Education Commission's Space Allocation Guidelines for Community Colleges (COMAR Title 13B) to provide quantitative indicators of current space needs. 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 2014 by the U.S. Department of Education in cooperation with the National Center for Education Statistics.

Future space needs are the result of demand, in terms of anticipated programs, enrollments and staffing, on buildings and spaces at a future date. The College developed ten-year enrollment projections to 2025. Using these projections, discipline-level distribution of credit hours and weekly student contact hours (WSCH) for the fall semester of 2014 were extrapolated through fall of 2025.

The projected credit hour and contact hour data maintains existing ratios between credit hours and contact hours college-wide. A statistical model projected baseline weekly student credit hours by discipline and by lecture/lab for Wye Mills and Cambridge. These projections were reviewed by the Interim Vice President for Academic Affairs and the Dean of Continuing Education and Workforce Training who recommended specific adjustments based on knowledge and expectations for current and future program trends. Maryland space planning guideline applications were used to provide quantitative indicators of future space needs.

Space needs and data relating to facilities refers to on-campus permanent buildings at Wye Mills Campus and the Cambridge Center. However, because the single- building nature of the Cambridge Center its unique purpose neither lends it to nor benefits from typical "campus-wide" guidelines analyses, its space needs will, for the most part, be addressed qualitatively. Additionally, the allied health facilities at Easton Memorial Hospital were relocated to the Health Professions & Athletics Center (HPAC) on the Wye Mills Campus in 2015 and is longer under the auspices of the college. In order to most accurately reflect facilities inventory needs, the primary focus of quantitative analyses is the Wye Mills Campus.

MHEC projections call for the college's fall 2024 credit student headcounts to be 21% higher than in 2014. With full-time student enrollments growing at a much more accelerated rate than part-time students coupled with emphasis on enhancing priority programs, Chesapeake expects a 26% increase in FTES and FTDEs over the same ten-year period.

The most recent data provided by the Maryland Department of Planning projects population growth for Chesapeake College's five-county service area at 11% between 2015 and 2025.This growth exceeds the 7% projected for Maryland during the same period. Projections of employment (jobs) in the five county service area also show faster growth (10.5%) from 2015 to 2025 than in the Maryland in total (9.3%).

MARYLAND DEPARTMENT of PLANNING POPULATION PROJECTIONS

Historical and Projected Total Population for Maryland's Jurisdictions

	Historical					Projected			
	1970 Census	1980 Census	1990 Census	2000 Census	2010 Census	2015	2020	2025	Change 2015-2025
Maryland	3,923,897	4,216,933	4,780,753	5,296,486	5,773,552	6,010,150	6,224,550	6,429,750	7.0%
Chesapeake College Service Region Total	107,436	121,573	139,615	154,018	171,461	177,000	186,700	196,300	10.9%
Caroline County	19,781	23,143	27,035	29,772	33,066	33,900	36,050	38,250	12.8%
Dorchester County	29,405	30,623	30,236	30,674	32,618	33,250	34,800	36,550	9.9%
Kent County	16,146	16,695	17,842	19,197	20,197	20,600	21,400	22,100	7.3%
Queen Anne's County	18,422	25,508	33,953	40,563	47,798	50,150	53,600	57,350	14.4%
Talbot County	23,682	25,604	30,549	33,812	37,782	39,100	40,850	42,050	7.5%

Data Source: Maryland Department of Planning, Planning Data Services, July 2014

MARYLAND DEPARTMENT of PLANNING Jobs by Place of Work PROJECTIONS

Historical and Projected Total Population for Maryland's Jurisdictions

	Historical			Projected					
	1970	1980	1990	2000	2010	2015	2020	2025	Change 2015-2025
Maryland	1,702,298	2,070,441	2,737,249	3,065,202	3,344,652	3,552,000	3,751,600	3,880,900	9.3%
Chesapeake College Service Region Total	48,662	55,214	72,468	82,845	91,232	95,500	101,000	105,500	10.5%
Caroline County	8,125	8,466	11,158	12,811	13,307	14,800	16,100	17,100	15.5%
Dorchester County	13,941	14,335	16,605	16,185	16,033	16,100	17,100	17,700	9.9%
Kent County	7,303	8,066	10,269	11,603	12,705	12,900	13,100	13,300	3.1%
Queen Anne's County	6,710	8,398	12,829	17,113	21,964	23,100	25,000	27,000	16.9%
Talbot County	12,583	15,949	21,607	25,133	27,223	28,600	29,700	30,400	6.3%

Data Source: Maryland Department of Planning, Planning Data Services, January 2015

The projections support a larger number of high school graduates seeking postsecondary educational opportunities throughout the state. With acceptance rates at four-year institutions facing limited expansion, more and more high school seniors are opting to begin their college career at Chesapeake. These, as well as demand for skills in high-growth occupations previously discussed will continue to drive increases to the number of students attending Chesapeake College, especially full-time traditional students.

SUMMARY COMPUTATION of SPACE NEEDS (WYE MILLS ONLY)

WYE Mills Only

HEGIS CODE	HEGIS CATEGORY	Need 2014	Inventory 2014	Surplus/ (Deficit)	Need 2024	Inventory 2024	Surplus/ (Deficit)
100 (110-115)	**CLASSROOM**	**21,260**	**34,630**	**13,370**	**26,538**	**43,318**	**16,780**
200	**LABORATORY**	**13,562**	**20,433**	**6,871**	**16,927**	**30,599**	**13,672**
210-15	Class Laboratory	9,282	20,317	11,035	11,585	30,483	18,898
220-25	Open Laboratory	4,280	116	(4,164)	5,342	116	(5,226)
300	**OFFICE**	**46,278**	**43,391**	**(2,887)**	**57,234**	**47,931**	**(9,303)**
310-15	Office/ Conf. Room	44,778	41,954	(2,824)	55,734	46,494	(9,240)
320-25	Testing/Tutoring	1,500	1,437	(63)	1,500	1,437	(63)
400	**STUDY**	**9,952**	**19,479**	**9,527**	**11,921**	**25,821**	**13,900**
410-15	Study	6,369	8,513	2,144	7,950	8,846	896
420-30	Stack/Study	2,383	10,281	7,898	2,771	16,290	13,519
440-55	Processing/Service	1,200	685	(515)	1,200	685	(515)
500	**SPECIAL USE**	**36,600**	**1,264**	**(35,336)**	**36,600**	**1,264**	**(35,336)**
520-23	Athletic	34,000	0	(34,000)	34,000	0	(34,000)
530-35	Media Production	1,600	1,264	(336)	1,600	1,264	(336)
580-85	Greenhouse	1,000	0	(1,000)	1,000	0	(1,000)
600	**GENERAL USE**	**29,561**	**32,969**	**3,408**	**31,673**	**35,728**	**4,055**
610-15	Assembly	12,000	17,466	5,466	12,000	18,465	6,465
620-25	Exhibition	1,500	0	(1,500)	1,500	0	(1,500)
630-35	Food Facility	6,538	7,799	1,261	8,170	7,799	(371)
650-55	Lounge	1,923	1,934	11	2,403	3,694	1,291
660-65	Merchandising	1,600	2,410	810	1,600	2,410	810
680-85	Meeting Room	6,000	3,360	(2,640)	6,000	3,360	(2,640)
700	**SUPPORT**	**13,200**	**8,677**	**(4,523)**	**14,166**	**10,593**	**(3,573)**
710-15	Data Processing	2,500	1,593	(907)	2,500	1,873	(627)
720-25	Shop/ Storage	6,569	6,453	(116)	7,516	8,089	573
750-55	Central Service	4,000	631	(3,369)	4,000	631	(3,369)
760-65	Hazmat Storage	131	0	(131)	150	0	(150)
800	**HEALTH CARE**	**500**	**0**	**(500)**	**500**	**0**	**(500)**

Data Source: Chesapeake College Facilities

In summary, space needs analysis 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 needs analysis begins the transition from the language of academic planning to the language of facilities planning and master planning.

GLOSSARY of TERMS

This glossary contains brief definitions of generic terms related to educational facilities planning and explanations of the acronyms and abbreviations referred to in this Space Needs Analysis.

Bound Volume Equivalent (BVE)	The physical space required to accommodate a variety of library materials in amounts equal to one single typical book.
Campus Site(s)	Wye Mills Campus, Cambridge Center
Class Laboratory	Spaces that are 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	Spaces that are not tied to as 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 a 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 the 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, divided by 15. *Note: This statistic is used in this document for facilities planning purposes only, and the calculation may differ from the FTE 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, divided by 15. *Note: This statistic is used in this document for facilities planning purposes only, and the calculation may differ from the FTDE 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 those spaces defined as structural, mechanical, service and circulation areas.
On-Campus	Refers to Wye Mills Campus only.
Student Contact Hour	A measure of time of scheduled interface between students and teacher. Usually expressed in terms of Weekly Student Contact Hour (WSCH), which is the number of hours per week of required interface.

NEED DETERMINANTS

The need for space via new or renovated facilities is typically calculated in terms of hours of instruction and the number of students, employees and library volumes to be accommodated.

Gross projections of space need are based on an anticipated number of student enrollments, faculty and staff, and volumes for fall semester 2024. For this master planning process, the enrollment assumption is that the projected mix off academic disciplines maintains the program distributions for fall semester 2014.

Space deficits and surpluses are identified based on the application of Maryland Higher Education Commission's Space Allocation Guidelines for Community Colleges (COMAR Title 13B) to inventories of various categories of space and projected student enrollments. However, guidelines are not to be used as the only determining factor when making decisions about facilities needs; a variety of qualitative or non-statistical indicators of space need, along with utilization analyses, offer augmentation to any statistical calculations.

ENROLLMENT PROJECTIONS

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 for facility planning purposes. FTEs are a better measure of counting students for the facilities planning purposes as a changing mix of full-time versus part-time students could have a significant impact on FTE generation, and consequently, on overall space needs MHEC's space planning formulas that Chesapeake College has employed to assess future needs are based on Full-Time Day Equivalent or FTDE (i.e., enrolled before 5:00 p.m.) students and Weekly Student Contact Hours (WSCH) in day classes in the fall term with the rationale that enrollments are at their peak during the day and in the fall term. Thus, fall, daytime enrollments reflect the maximum to which capacity must be oriented.

The projections of enrollments for fall 2014 through fall 2024 are the outcomes of complex and careful extrapolations of data previously developed and presented. These projections represent the recommendations developed by Chesapeake College in keeping with the pursuit of its mission through the year 2024. Projections are presented in such a manner as to satisfy the requirements of the Maryland Higher Education Commission and the State of Maryland. The following tables present an overall distribution of various projected enrollment series for the fall semester of 2024 in comparison with fall 2024 enrollments by location, lecture vs. lab, for both credit and continuing education/workforce training classes.

The College anticipates a steady, but controlled increase in student enrollments during the next ten years. Total headcount is expected to increase from 2,426 in fall 2014 to 2,928 (+21%). Projections for FTEs and FTDEs call for 26% gains each. A greater increase in FTEs is expected due to the emphasis on priority programs coupled with a significant increase in full-time versus part-time students during the ten- year period.

In consideration of an essential requirement for validating the rationale or underlying assumptions for systematic strategic planning efforts in postsecondary education, additional data are presented. These additional data represent extrapolations of the core parameters for projected enrollment patterns. While presenting various measures of credit hours and FTEs is important, of prime significance is establishing a stable foundation of planning tools upon which the effectiveness and quality of physical environments necessary for learning can be predicted. For those purposes, projections of weekly student contact hours (WSCH) are also presented.

The initial step for both credit and continuing education/workforce training enrollment projection disaggregations was the determination of the online components not requiring physical facilities. Historical and expected shares of online enrollments were applied to fall 2024 totals to yield the day/evening requirements from which further breakdowns were made.

The College estimates that the total day (starting before 5:00 p.m.) on-campus (including Wye Mills and the Cambridge Center) WSCH will reach 19,490 in fall 2024. Of this total, approximately 17,555 (90%) will be generated by lecture segments and 1,934 (10%) are expected to occur in laboratory segments. Some 90% of all WSCH will be generated at the Wye Mills campus, although the rate of growth at Cambridge will be higher, but starting from a vastly smaller base, the absolute change will still be higher at Wye Mills. Lecture components will increase by 3,705 WSCH (+27%) and lab components will grow by 608 WSCH (+46%).

Determination of program and course content ten years out is difficult to identify with pinpoint accuracy. However, given an anticipated number of students to be enrolled, projections of weekly student contact hours generated, disaggregated by location and lecture/lab components were calculated. Baseline projections were reviewed by the Interim Vice President for Academic Affairs and the Dean of Continuing Education and Workforce Training who recommended specific college-wide adjustments. A statistical model projected baseline weekly student credit hours by discipline and by lecture/lab for Wye Mills and Cambridge. These projections were again reviewed by the Interim Vice President for Academic Affairs and the Dean of Continuing Education and Workforce Training who recommended specific adjustments based on knowledge and expectations for current and future program trends. Maryland space planning guideline applications were used to provide quantitative indicators of future space needs.

The table that begins on the following page establishes detailed parameters, by discipline, where the College might exercise flexibility in determining the composition of course offerings. These tables utilize the program distributions for fall 2014 and extrapolate the distribution through 2024

PROJECTED ENROLLMENTS (fALL 2024)

Credit				
	Fall 2014	Fall 2024	Change	Average Annual Growth Rate
Headcount	2,426	2,928	21%	1.9%
FTEs	1,411	1,771	26%	2.3%
Credit Hours	42,330	53,130	26%	2.3%
Full-Time Day Equivalents (FTDE)				
Wye Mills*	905	1,109	23%	2.1%
Cambridge	93	121	30%	2.6%
Wye Mills* & Cambridge Subtotal	998	1,230	23%	2.1%
Off Campus	21	42	102%	7.3%
Total	1,019	1,272	25%	2.2%
Weekly Student Contact Hours (WSCH)				
Wye Mills*				
Lecture	12,537	15,698	25%	2.3%
Lab	1,186	1,769	49%	4.1%
Total	13,723	17,467	27%	2.4%
Cambridge				
Lecture	1,313	1,857	41%	3.5%
Lab	140	165	18%	1.7%
Total	1,453	2,022	39%	3.4%
Total				
Lecture	13,850	17,555	27%	2.4%
Lab	1,326	1,934	46%	3.8%
Total	15,176	19,490	28%	2.5%
* includes Easton Memorial Hospital in 2014				

Continuing Education & Workforce Training				
	August-October 2014	August-October 2024	Change	Average Annual Growth Rate
Headcount	N/A	N/A	N/A	N/A
FTEs	100	138	38%	3.3%
Equated Credit Hours	3,006	4,132	37%	3.2%
Full-Time Day Equivalents (FTDE)				
Wye Mills*	34	46	34%	3.0%
Cambridge	34	46	37%	3.2%
Wye Mills* & Cambridge Subtotal	68	92	36%	3.1%
Off Campus	114	N/A	N/A	N/A
Total	182	N/A	N/A	N/A
Weekly Student Contact Hours (WSCH)				
Wye Mills*				
Lecture	3,567	5,202	46%	3.8%
Lab	1,274	1,407	10%	1.0%
Total	4,841	6,609	37%	3.2%
Cambridge				
Lecture	1,334	1,821	36%	3.2%
Lab	0	0	0%	0.0%
Total	1,334	1,821	36%	3.2%
Total				
Lecture	4,902	7,023	43%	3.7%
Lab	1,274	1,407	10%	1.0%
Total	6,176	8,430	37%	3.2%
* includes Easton Memorial Hospital in 2014				

Chesapeake College Total				
	Fall 2014	Fall 2024	Change	Average Annual Growth Rate
Headcount	N/A	N/A	N/A	N/A
FTEs	1,511	1,909	26%	2.4%
Equated Credit Hours	45,336	57,262	26%	2.4%
Full-Time Day Equivalents (FTDE)				
Wye Mills*	939	1,155	23%	2.1%
Cambridge	127	167	32%	2.8%
Wye Mills* & Cambridge Subtotal	1,066	1,322	24%	2.2%
Off Campus	135	N/A	N/A	N/A
Total	1,200	N/A	N/A	N/A
Weekly Student Contact Hours (WSCH)				
Wye Mills*				
Lecture	16,105	20,900	30%	2.6%
Lab	2,460	3,176	29%	2.6%
Total	18,565	24,076	30%	2.6%
Cambridge				
Lecture	2,647	3,678	39%	3.3%
Lab	140	165	18%	1.7%
Total	2,787	3,843	38%	3.3%
Total				
Lecture	18,752	24,578	31%	2.7%
Lab	2,600	3,341	29%	2.5%
Total	21,352	27,920	31%	2.7%
* includes Easton Memorial Hospital in 2014				

Data Sources: MHEC Enrollment Projections 2015-2024 Maryland Colleges and Universities and Chesapeake College Institutional Research, Planning & Assessment

PROJECTED WEEKLY STUDENT CREDIT HOURS (WSCH) BY DISCIPLINE, FALL 2024 WYE MILLS (DAY ONLY)

Credit

Course/Discipline	Dept. Code	WSHC Lecture	WSHC Lab	WSHC Total
Accounting	ACC	202	0	202
Architectural Technology	ACH	0	9	9
Agriculture	AGR	180	60	240
Anthropology	ANT	43	0	43
Art	ART	228	17	245
Biology	BIO	1,067	633	1,700
Business	BUS	353	0	353
Computer-Aided Design	CAD	0	9	9
Chemistry	CHM	221	95	315
Computer Information Systems	CIS	474	176	650
Criminal Justice	CMJ	200	0	200
Communication	COM	1,166	0	1,166
Career Planning and Preparation	CPL	40	0	40
Early Childhood Development	ECD	22	0	22
Economics	ECN	129	0	129
Education	EDU	39	0	39
English	ENG	2,659	0	2,659
Film	FLM	108	0	108
Freshman Seminar	FSC	150	0	150
History	HIS	637	0	637
Honors	HON	100	0	100
Humanities	HUM	280	0	280
Interactive Media and Web Design	IMD	45	11	56
Landscape Architecture/Management	LARC	22	0	22
Math	MAT	2,600	0	2,600
Music	MUS	163	10	172
Nationally Registered Paramedic	NRP	221	0	221
Nursing	NUR	1,150	360	1,510
Physical Education	PED	520	23	542
Paralegal Studies	PLG	47	0	47
Political Science	POL	43	0	43
Psychology	PSC	1,179	0	1,179
Physical Therapist Assistant	PTA	36	24	60
Radiologic Sciences	RSR	90	61	151
Science	SCI	401	212	613
Surgical Technology	SGT	43	37	80
Sociology	SOC	482	0	482
Social Studies	SOS	36	0	36
Technology	TEC	3	0	3
Theatre	THE	320	33	353
Welding	WEL	2	2	4
Wye Mills Total		15,698	1,769	17,467

Data Sources: Chesapeake College Institutional Research, Planning & Assessment and Academic Affairs

Continuing Education/Workforce Training

Course/Discipline	Dept. Code	WSCH Lecture	WSCH Lab	WSCH Total
Adult Basic Education	FABE	105	0	105
Allied Health	ACH	1,346	254	1,600
Child Care Resource Center	CCR	500	0	500
Computer Training	CPT	0	835	835
Hospitality	HST	0	56	56
Institute for Adult Learning	CEL	268	0	268
Truck Driving	CDL	645	0	645
Workforce Development	WFD	2,313	187	2,500
Youth	YKC	25	75	100
Wye Mills Total		5,202	1,407	6,609

Data Sources: Chesapeake College Institutional Research, Planning & Assessment and Continuing Education and Workforce Training

PROJECTED WEEKLY STUDENT CREDIT HOURS (WSCH) BY DISCIPLINE, FALL 2024 CAMBRIDGE CENTER (DAY ONLY)

Credit

Course/Discipline	Dept. Code	WSHC Lecture	WSHC Lab	WSHC Total
Accounting	ACC	22	0	22
Biology	BIO	196	114	310
Business	BUS	60	0	60
Computer Information Systems	CIS	53	36	89
Communication	COM	204	0	204
Early Childhood Development	ECD	13	0	13
English	ENG	466	0	466
Freshman Seminar	FSC	39	0	39
Humanities	HUM	49	0	49
Math	MAT	450	0	450
Music	MUS	36	0	36
Psychology	PSC	160	0	160
Science	SCI	34	15	49
Sociology	SOC	75	0	75
Cambridge Center Total		1,857	165	2,022

Data Sources: Chesapeake College Institutional Research, Planning & Assessment and Academic Affairs

Continuing Education/Workforce Training

Course/Discipline	Dept. Code	WSCH Lecture	WSCH Lab	WSCH Total
Adult Basic Education	FABE	354	0	354
Allied Health	ACH	1,079	0	1,079
English as a Second Language	FESL	79	0	79
Workforce Development	WFD	310	0	310
Cambridge Center Total		1,821	0	1,821

Data Sources: Chesapeake College Institutional Research, Planning & Assessment and Continuing Education and Workforce Training

FACULTY AND STAFF PROJECTIONS

The College expects to maintain its current student/faculty ratios for the year 2016. For master planning purposes, a conservative annual increase of 1.0% is projected for staff.

FACULTY AND STAFF PROJECTIONS ACTUAL (2014) AND PROJECTED (2024)

	Fall 2014 Actual	Fall 2024 Projection	Change	Average Annual Growth Rate
Full-Time Credit Faculty	55	63	15%	1.4%
Full-Time Librarians	3	3	0%	0.0%
Part-Time Credit Faculty	77	88	14%	1.3%
FTE Credit Faculty/Librarians	84	95	14%	1.3%
Part-Time Continuing Education/Workforce Training Faculty	80	95	19%	1.7%
Total FTE Faculty/Librarians	110	127	15%	1.4%
Full-Time Administrators	32	32	0%	0.0%
Full-Time Staff	135	140	4%	0.4%
Part-Time Staff	101	105	4%	0.4%
Total FTE Administrators/Staff	201	207	3%	0.3%
Total Staff and FTE Faculty	311	334	7%	0.7%

Data Source: Chesapeake College Institutional Research, Planning & Assessment

FACILITIES INVENTORY

A building-by-building inventory of assignable space was prepared by the College. Temporary spaces and space in facilities at locations other than Wye Mills, and Cambridge Center, are not included in the base calculations.

EXISTING SPACE INVENTORY SUMMARY BY ROOM USE CLASSIFICATION

HEGIS CODE	Room Use	NASF Wye Mills	NASF Cambridge	NASF Mem. Hosp	NASF CC Total
100	Classroom	23648.00	6547.00	4435.00	34630.00
200	Laboratory	16649.00	2285.00	1499.00	20433.00
300	Office	38492.00	2516.00	2383.00	43391.00
400	Study	18240.00	1239.00	0.00	19479.00
500	Special Use	1152.00	0.00	112.00	1264.00
600	General Use	34050.00	2011.00	283.00	36344.00
700	Support	8613.00	0.00	64.00	8677.00
800	Health Care	0.00	0.00	0.00	0.00
	Sub-Total Assignable	**140,844**	**14,598**	**8,776**	**164,218**
060	Inactive	25,984			25,984
	Sub-Total Non-Assignable	25,984	0	0	25,984
	Total Space Inventory	**166,828**	**14,598**	**8,776**	**190,202**

Data Source: Chesapeake College Facilities, December 2014

Note. Inactive (HEGIS 060) represents Physical Ed/Pool which was temporarily out of use due to renovation.

SPACE INVENTORY BY BUILDING BY CAMPUS SITE (NASf), FALL 2014

	Year Constructed	1965	1965	1965	1965	1965	1976	1979	1979	1989	1996	2002	1959		Fall 2014
		1	2	3	4	5	6	7	8	9	10	11	12		Subtotal
HEGIS CODE	HEGIS CATEGORY	Dorchester Administration	Caroline Coll Cent	Kent Humanities	Talbot Science	Physical Education	Queen Anne's Tech	Manufacturing Trng Cent	Maintenance Bldg	Early Childhood	Cent Bus & Arts	LRC	Cambridge Center	Easton Mem Hospital	On Campus Permanent
100 (110-115)	**CLASSROOM**	**0**	**1,123**	**7,743**	**2,050**		**8,364**	**2,322**			**1,681**	**365**	**6,547**	**4,435**	**34,630**
200	**LABORATORY**	**0**	**2,509**	**0**	**7,725**	**0**	**739**	**3,586**	**0**	**0**	**907**	**1,183**	**2,285**	**1,499**	**20,433**
210-15	Class Laboratory		2,393		7,725		739	3,586			907	1,183	2,285	1,499	20,317
220-25	Open Laboratory		116												116
250-55	Research Lab.														0
300	**OFFICE**	**12,451**	**5,339**	**1,740**	**1,975**	**0**	**1,693**	**961**	**1,020**	**0**	**4,098**	**9,215**	**2,516**	**2,383**	**43,391**
310-15	Office/ Conf. Room	12,451	5,339	1,740	1,975		1,693	961	1,020		4,098	7,778	2,516	2,383	41,954
320-25	Testing/Tutoring											1,437			1,437
350-55	*Included w/ 310*														0
400	**STUDY**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**#####**	**1,239**	**0**	**19,479**
410-15	Study											7,274	1,239		8,513
420-30	Stack/Study											10,281			10,281
440-55	Processing/Service											685			685
500	**SPECIAL USE**	**0**	**0**	**0**	**0**	**0**	**306**	**0**	**0**	**0**	**0**	**846**	**0**	**112**	**1,264**
520-23	Athletic														0
530-35	Media Production						306					846		112	1,264
580-85	Greenhouse														0
600	**GENERAL USE**	**1,569**	**12,105**	**3,523**	**0**	**0**	**0**	**0**	**0**	**2,981**	**13,608**	**264**	**2,011**	**283**	**36,344**
610-15	Assembly			3,523							12,699		1,244		17,466
620-25	Exhibition														0
630-35	Food Facility		7,799												7,799
640-45	Day Care									2,981					2,981
650-55	Lounge		994									169	488	283	1,934
660-65	Merchandising		2,036									95	279		2,410
670-75	Recreation		394												394
680-85	Meeting Room	1,569	882								909				3,360
700	**SUPPORT**	**0**	**757**	**138**	**225**	**0**	**768**	**3,001**	**2,363**	**0**	**0**	**1,361**	**0**	**64**	**8,677**
710-15	Data Processing		270	138	80		76					965		64	1,593
720-25	Shop							711	1,547						2,258
730-35	Central Storage		487		145		692	383	816			396			2,919
740-45	Vehicle Storage							1,276							1,276
750-55	Central Service							631							631
760-65	Hazmat Storage														0
800	**HEALTH CARE**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**		**0**
060	**ALTER. OR CONV.**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**		**0**
	Total NASF:	**14,020**	**21,833**	**13,144**	**11,975**	**25,984**	**11,870**	**9,870**	**3,383**	**2,981**	**20,294**	**#####**	**14,598**	**8,776**	**190,202**

Data Source: Chesapeake College Facilities, Fall 2014

QUANTITATIVE INDICATORS OF SPACE NEED

GUIDELINES APPLICATIONS (BUILDINGS)

Total 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 surpluses and/or deficits are driven by current space inventory and anticipated changes, current enrollment and projected enrollments, and current and anticipated staffing levels.

Title 13B of the code of Maryland Regulations (COMAR) prescribes guidelines for computing maximum allowances for space on community college campuses. These guidelines, Space Allocation Guidelines for Community Colleges, provide an initial

assessment of facilities needs for Chesapeake College.

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 needed using the guidelines. Then by applying current space inventory data, it is possible to determine the current and projected space surplus and/or deficit. The assumptions made for the application of the formulae-driven space computations for Chesapeake College are shown in the following table and applied to the current Wye Mills space inventory.

HEGIS CODE	HEGIS CATEGORY	Need 2014	Inventory 2014	Surplus/ (Deficit)	Need 2024	Inventory 2024	Surplus/ (Deficit)
100 (110-115)	**CLASSROOM**	**21,260**	**34,630**	**13,370**	**26,538**	**43,318**	**16,780**
200	**LABORATORY**	**13,562**	**20,433**	**6,871**	**16,927**	**30,599**	**13,672**
210-15	Class Laboratory	9,282	20,317	11,035	11,585	30,483	18,898
220-25	Open Laboratory	4,280	116	(4,164)	5,342	116	(5,226)
300	**OFFICE**	**46,278**	**43,391**	**(2,887)**	**57,234**	**47,931**	**(9,303)**
310-15	Office/ Conf. Room	44,778	41,954	(2,824)	55,734	46,494	(9,240)
320-25	Testing/Tutoring	1,500	1,437	(63)	1,500	1,437	(63)
400	**STUDY**	**9,952**	**19,479**	**9,527**	**11,921**	**25,821**	**13,900**
410-15	Study	6,369	8,513	2,144	7,950	8,846	896
420-30	Stack/Study	2,383	10,281	7,898	2,771	16,290	13,519
440-55	Processing/Service	1,200	685	(515)	1,200	685	(515)
500	**SPECIAL USE**	**36,600**	**1,264**	**(35,336)**	**36,600**	**1,264**	**(35,336)**
520-23	Athletic	34,000	0	(34,000)	34,000	0	(34,000)
530-35	Media Production	1,600	1,264	(336)	1,600	1,264	(336)
580-85	Greenhouse	1,000	0	(1,000)	1,000	0	(1,000)
600	**GENERAL USE**	**29,561**	**32,969**	**3,408**	**31,673**	**35,728**	**4,055**
610-15	Assembly	12,000	17,466	5,466	12,000	18,465	6,465
620-25	Exhibition	1,500	0	(1,500)	1,500	0	(1,500)
630-35	Food Facility	6,538	7,799	1,261	8,170	7,799	(371)
650-55	Lounge	1,923	1,934	11	2,403	3,694	1,291
660-65	Merchandising	1,600	2,410	810	1,600	2,410	810
680-85	Meeting Room	6,000	3,360	(2,640)	6,000	3,360	(2,640)
700	**SUPPORT**	**13,200**	**8,677**	**(4,523)**	**14,166**	**10,593**	**(3,573)**
710-15	Data Processing	2,500	1,593	(907)	2,500	1,873	(627)
720-25	Shop/ Storage	6,569	6,453	(116)	7,516	8,089	573
750-55	Central Service	4,000	631	(3,369)	4,000	631	(3,369)
760-65	Hazmat Storage	131	0	(131)	150	0	(150)
800	**HEALTH CARE**	**500**	**0**	**(500)**	**500**	**0**	**(500)**

			ACTUAL	PROJECTED	
			Fall 2014 (S-6)	Fall 2024 (MHEC)	
ENROLLMENT/		FTDE-C	1,019	1,272	
EMPLOYMENT		FTDE-N	136		FALL WSCH
STATISTICS		FTDE-T	1,019	1,272	15499
		WSCH-Lec-C	14,173	17,692	
		WSCH-Lec-N	6,921		
		WSCH-Lec-T	14,173	17,692	91%
		WSCH-Lab-C	1,326	1,655	
		WSCH-Lab-N	0		
		WSCH-Lab-T	1,326	1,655	9%
Employment		FTE	1,383	1,771	
		BVE	23,830	27,710	
S-6 Worksheet		FT-Fac	51	64	
		FT-Libr	3	4	
N/A =		PT-Fac	152	190	
		FTEF	92	116	
MHEC Data =		FT-Staff	171	213	
		PHC-T	641	801	
Formulas =	#DIV/0!				
			ACTUAL	PROJECTED	
			Fall 2014 (MHEC)	all 2024 (MHEC)	
		Headcount	2,426	2,928	

Given this data, it is possible to calculate the amount of space eligible for state funding for Chesapeake College. This space eligibility is derived by analyses within the parameters of the guideline algorithm contained in Title 13B of COMAR. The amounts of eligible net assignable square feet are calculated for each type of space in the U.S. Department of Education's Higher Education General Information Survey (HEGIS) space classification system for both 2014 and 2024. Surpluses and deficits for each room use category are determined by subtracting the guideline allowance from the on-campus space inventory.

COMPUTATION OF PARKING ALLOWANCE

Maryland's Space Allocation Guidelines for Community Colleges are also used to compute parking allowances. When the guidelines input data assumptions are applied to current parking inventory data, it is possible to determine the number of eligible parking spaces. The current parking inventory and calculations of allowance are provided in the table to follow.

EXISTING PARKING LOTS (WYE MILLS), COMPUTATION OF PARKING ALLOWANCE (WYE MILLS) **INCLUDE TABLE 4**

PARKING CATEGORY	FACTOR	Need Current	Inventory 2014	Surplus/ (Deficit)	Need 10 Years	Inventory 2024	Surplus/ (Deficit)
FTDE-T	0.75	764	886	122	954	886	(68)
FT-Fac and FT-Staff	0.75	167	57	(110)	208	57	(151)
SUBTOTAL		**931**	**943**	**12**	**1,162**	**943**	**(219)**
Visitors	0.02	19		(19)	23		(23)
REGULAR SPACES		**950**	**943**	**(7)**	**1,185**	**943**	**(242)**
Reserved Accessible*		18	42	24		42	42
ALL SPACES		**968**	**985**	**17**	**1,185**	**985**	**(200)**

Data Source: Chesapeake College Facilities

* In addition to the regular parking spaces, the Americans with Disabilities Act requires reserved spaces for disabled individuals. Reserved accessible spaces shall conform to the requirements in the space allocation guidelines:

TOTAL SPACES	REQUIRED ADA	TOTAL SPACES	REQUIRED ADA
<= 25	1	201 - 300	7
26 - 50	2	310 - 400	8
51 - 75	3	410 - 500	9
76 - 100	4	501 - 1,000	2% of total
101 - 150	5	> 1,000	20 plus 1 for each
151 - 200	6		100 beyond 1,000

*This does not included HPAC parking space – project was under construction during Fall 2014

CAMBRIDGE CENTER

The Cambridge Center is a converted department store that is ill-suited for contemporary academic purposes. The design of the existing building provides neither the capacity to appropriately house current programs, nor the flexibility for easy adaptation of interior spaces to changing needs in the future. New spaces are needed to overcome qualitative issues resulting from the absence of adequate facilities for formal learning, informal learning support, housing of faculty and staff, meetings/conferences, for general building and hazardous materials storage, for storage of housekeeping supplies, and for maintenance operations. The needs of its future users will not be met quantitatively or qualitatively given the interior configuration of the current facilities.

Many qualitative problems with the Cambridge Center stem from the impact of steady enrollment growth coupled with the fact that the current building was never designed or built to accommodate unique postsecondary learning environments. As a result, there are little to no spaces for student life, bookstore administration and merchandising, administrative services, and student services, and insufficient or inappropriate spaces for instruction, multi-service instructional support, office/conference/meeting/food service, building support and outdoor spaces.

INSTRUCTION

- With a full complement of credit classes each semester, scheduling continuing education and other non-credit offerings in Cambridge's limited instructional spaces becomes increasingly challenging.
- Cambridge has six general classrooms. Current distribution of lecture section sizes is 58% of the weekly student contact hours generated by sections of 1-15 students; 40% generated by sections of 16-30 students; and 2% generated by sections of 31-50 students. Maintaining this same distribution in 2016, it is estimated that the total number of required lecture rooms will be 10, whose overall distribution is six (6) at 375 NASf; three (3) at 750 NASf; and one (1) at 1,250 NASf.
- Columns in instructional spaces interfere with room layouts, obstruct views, and force awkward proportions.
- Cambridge Center has only one 24-station biological sciences class laboratory which is insufficiently sized. The nationally recognized Council of Educational facility Planners International (CEfPI) recommends allocations of 50-75 net assignable square feet for biology laboratories. The laboratory at Cambridge provides only 42 NASf per student station.
- There is no room for waste holding. Hazardous materials are stored in the undersized prep room.
- The current lab has inadequate ventilation and that is one reason that chemistry cannot be taught here in Cambridge. Proper ventilation is needed in the lab to remove fumes from the room and the adjacent hallways. Ideally the Center should have at least two science labs, one for the biological sciences and one for the physical sciences. This would then enable the College to teach chemistry and other physical sciences.
- Currently the Center has two computer labs, discounting the small one in the Multi- Service Center. With more and more instructors requiring lab time for their students, the Center needs to have at least three 30-station labs.
- There is insufficient space at each station to allow students to take notes, spread out work materials, or to work collaboratively.
- The assembly (auditorium) room has no hand washing station.

MULTI-SERVICE CENTER

- There is no space for future growth of library collections without encroaching on other Multi-Service Center activity space.
- The absence of flexible spaces to support group study compromises the curriculum.
- Lack of space to support collaborative assignments means noisy students disturb others who desire quiet study, but must share the one common space.
- Limited port availability and space results in students waiting in line to use computers.
- Because there are no appropriate spaces for one-on-one tutoring, this activity takes place in the open common area.

- The Testing Center's limited size can only accommodate up to 8 persons at one time. When available, classrooms are often used for testing.

STUDENT LIFE

- The space used for student lounge is too small. It is not designed to accommodate formal or informal student gatherings. The layout discourages use as a TV lounge, game/activity space, or just a place for students to relax between classes or while on breaks. The building does not provide quiet lounge spaces for student study.
- The College provides comprehensive services in support of student academic and social wellbeing; however, there is extremely limited space to access these activities for the students attending Cambridge Center. Activities such as personal counseling and academic counseling must be conducted in staff offices. There is only one room large enough for small workshops, meetings, seminars exhibits etc.
- The bookstore is located in a room just inside the main office suite. At less than 300 square feet, the squared configuration of this space prohibits efficient bookstore functions of administration and merchandising. Additionally, this space is currently accessed by walking into the main office; and during times of heavy advising/ registration this causes severe congestion and noise in the office area.
- The limits of the building envelope restrict making additional space available to enhance services or add student life activities.

OFFICE/CONFERENCE/MEETING/FOOD SERVICE

- As the Center programs grow, so does the need for additional office space. There is now one full-time instructor and plans are to have at least two more within the next five years. There is the need for space for adjunct faculty as well as a faculty planning/ prep area.
- Within individual offices there is insufficient space for temporary storage of reference materials and supplies, or for accomplishing multifarious activities efficiently.
- There are no conference rooms or spaces available for staff meetings and other small group activities. Any such gatherings must be scheduled around use of instructional space. There are requests from the public and from within the College that Cambridge is not in position to honor due to the lack of adequate meeting facilities.
- With only a handful of vending machines in the building, there are no facilities for preparation or consumption of food and drink by students, faculty, staff or the public.

BUILDING SUPPORT

- In addition to insufficient space for temporary storage in office areas, there is no building storage at the Cambridge Center. Consequently, materials, equipment and supplies are stored in hallways, stairwells, mechanical areas or other inappropriate locations.
- With the increased number of people in the Center on a daily basis and at any given time, there need to be more restrooms.

OUTDOOR AREAS

- There are no green spaces adjacent to or even near the building. Not only is outdoor space to gather, relax or recreate limited to non-existent, but also areas conducive to outdoor learning are not available to the students of the Cambridge Center.
- Parking at Cambridge has been and continues to be a major problem at various times during the day and into the evening. There are insufficient spaces for the number of building occupants, including students, faculty, staff and visitors. The proximity to the local courthouse only exacerbates this situation. The Cambridge parking lot is a city municipal lot that is not owned by the College.

This inadequate facility limits the ability of the College, in keeping with its mission and vision, to successfully offer quality programs for residents of Dorchester County and the southern regions of Talbot and Caroline counties. In addition to the insufficiency of space, the quality of the spaces at Cambridge Center is woefully inferior. The Cambridge Center has outlived its original purpose and can be considered as functionally obsolete.

SUMMARY – WYE MILLS, CAMBRIDGE

The data leading up to and including the computed and qualitative needs establishes the necessity for renovated and/or additional facilities for Chesapeake College to meet its present and future space requirements. Potential strategies for meeting these identified space requirements are addressed, in physical terms, by the capital projects outlined later in this document.

The next chapter begins the evaluation of the buildings and site to determine their suitability to support existing and future programs.

CHAPTER 4:
WYE MILLS CAMPUS FACILITIES

WYE MILL CAMPUS BUILDING SUMMARY

Building name	Building number	Net Assignable Square FEET	Gross Building AREA	YEAR Constructed	Major Renovations
Dorchester Administration	1	14,020	19,500	1968	2003
Caroline College Center	2	21,833	35,419	1968	2006
Kent Humanities	3	11,925	25,398	1968	2010
Talbot Science	4	11,975	23,043	1968	2007
Queen Anne's Technical Center	5	11,870	18,058	1976	
Manufacturing Training Center	6	9,870	10,930	1979	
Maintenance Building	7	3,383	4,000	1979	
EARLY Childhood Development Center	8	2,981	3,944	1989	
Health Professions and Athletics Center - HPAC*	9	60,312	100,907	gym: 1968 Pool: 1976	2015
Economic Development Center / Todd Performing ARTS Center	11	22,486	32,400	1994	
Learning Resource Center	12	29,182	44,484	2002	

*HPAC – previously Physical Education and Pool building.

DORCHESTER ADMINISTRATION BUILDING

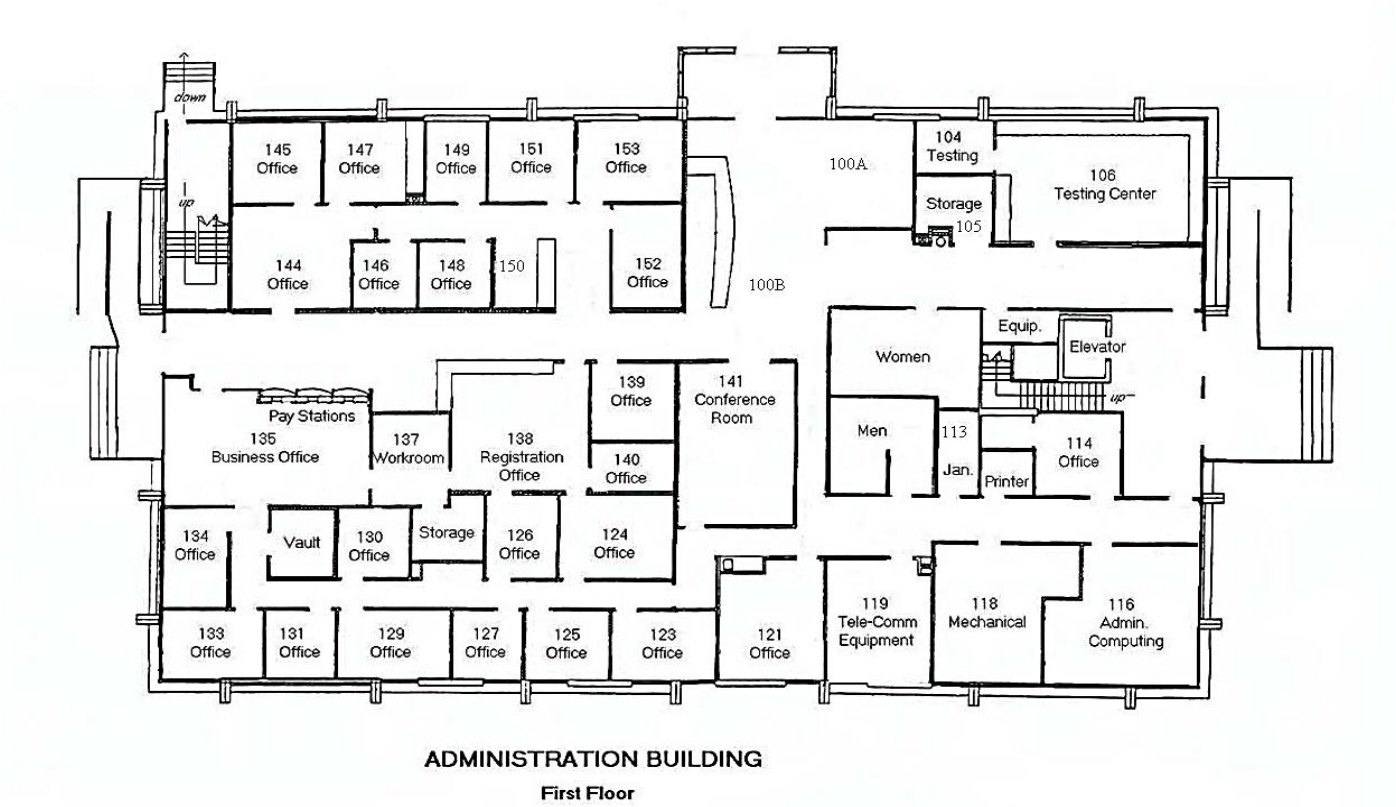
Building number:	1
number of Floors:	2
Net Assignable Square Feet:	14,020
gross Building Area:	23,554
net-to-gross Efficiency:	60%
Year Constructed:	1968
Renovations:	1983, 1989 Interior Renovations
	1997 ADA Modifications
	2003 Total Renovation and Addition
Additions:	2003 new Front Entrance
Contains:	College Administration and Student Services
	offices and Related Support Spaces
General Condition:	very good
Adequacy of Space:	Adequate
Sprinkler Systems:	Fully Sprinklered

ARCHITECTURAL, GENERAL

The Dorchester Administration Building is one of the original 5 core buildings built in the late 1960's and has been returned to one of its two original functions. When the Learning Resource Center was built in 2001, the library was moved from the building. Subsequently, the remaining administrative functions were temporarily relocated so the renovation work could occur. Student services functions took over that space after the renovation work was complete. It is in very good condition, having been renovated with a small addition, completed in 2003. The renovation provided much-needed space for expansions to administrative and "one-stop shopping" student services functions.

ADMINISTRATION BUILDING

Second Floor



ADMINISTRATION BUILDING

First Floor

MECHANICAL

Mechanical systems are functioning satisfactorily; there are no recommendations for specific changes or upgrades.

ELECTRICAL

Electrical systems are functioning satisfactorily; there are no recommendations for specific changes or upgrades.

TECHNOLOGY SYSTEMS

Technology systems are functioning satisfactorily; there are no recommendations for specific changes or upgrades.

CAROLINE COLLEGE CENTER

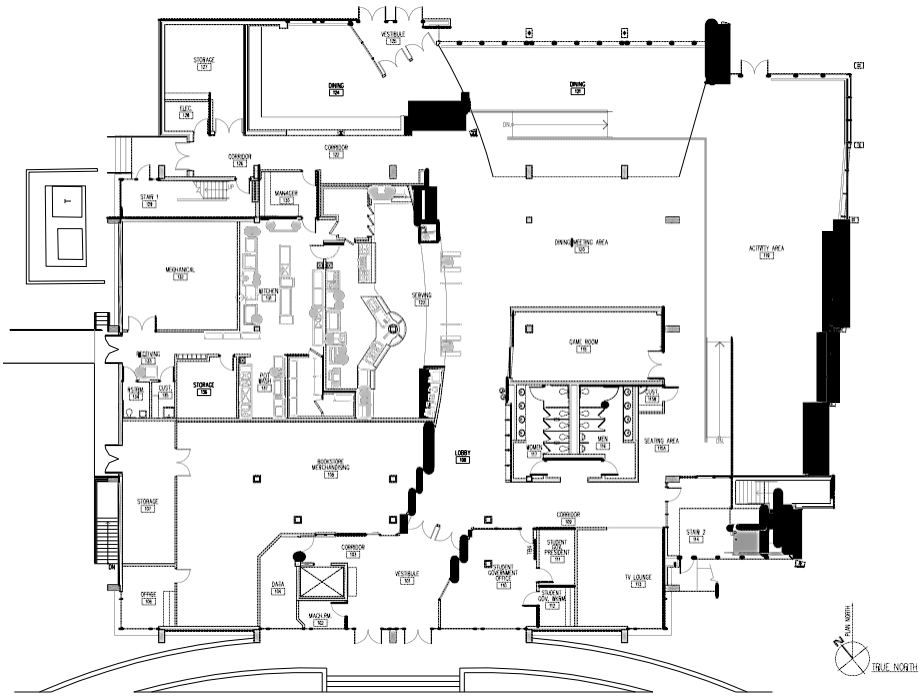
Building number:	2
number of Floors:	2
Net Assignable Square Feet:	21,833
gross Building Area:	35,419
net-to-gross Efficiency:	62%
Year Constructed:	1968
Renovations:	1988 Interior Renovations 1997 ADA Modifications 2006 Complete Renovation + Addition
Additions:	2006
Contains:	dining, Food Service, Bookstore, Classrooms, Music and Art Studios, Staff, Faculty and Student Life offices, Active and quiet Lounges
General Condition:	very good
Adequacy of Space:	Adequate
Sprinkler Systems:	Fully Sprinklered

ARCHITECTURAL, GENERAL

Until its recent renovation and expansion, the Caroline College Center was undersized and obsolete. The renovation and expansion provided much needed additional dining space which also affords convocation and conference-related space. Also expanding significantly were the bookstore, faculty office areas, student life spaces, and art and music studio spaces. The Caroline Center is now actively used by the entire campus community.

SECOND FLOOR

FIRST FLOOR



MECHANICAL

Mechanical systems are functioning satisfactorily; there are no recommendations for specific changes or upgrades.

ELECTRICAL

Electrical systems are functioning satisfactorily; there are no recommendations for specific changes or upgrades.

TECHNOLOGY SYSTEMS

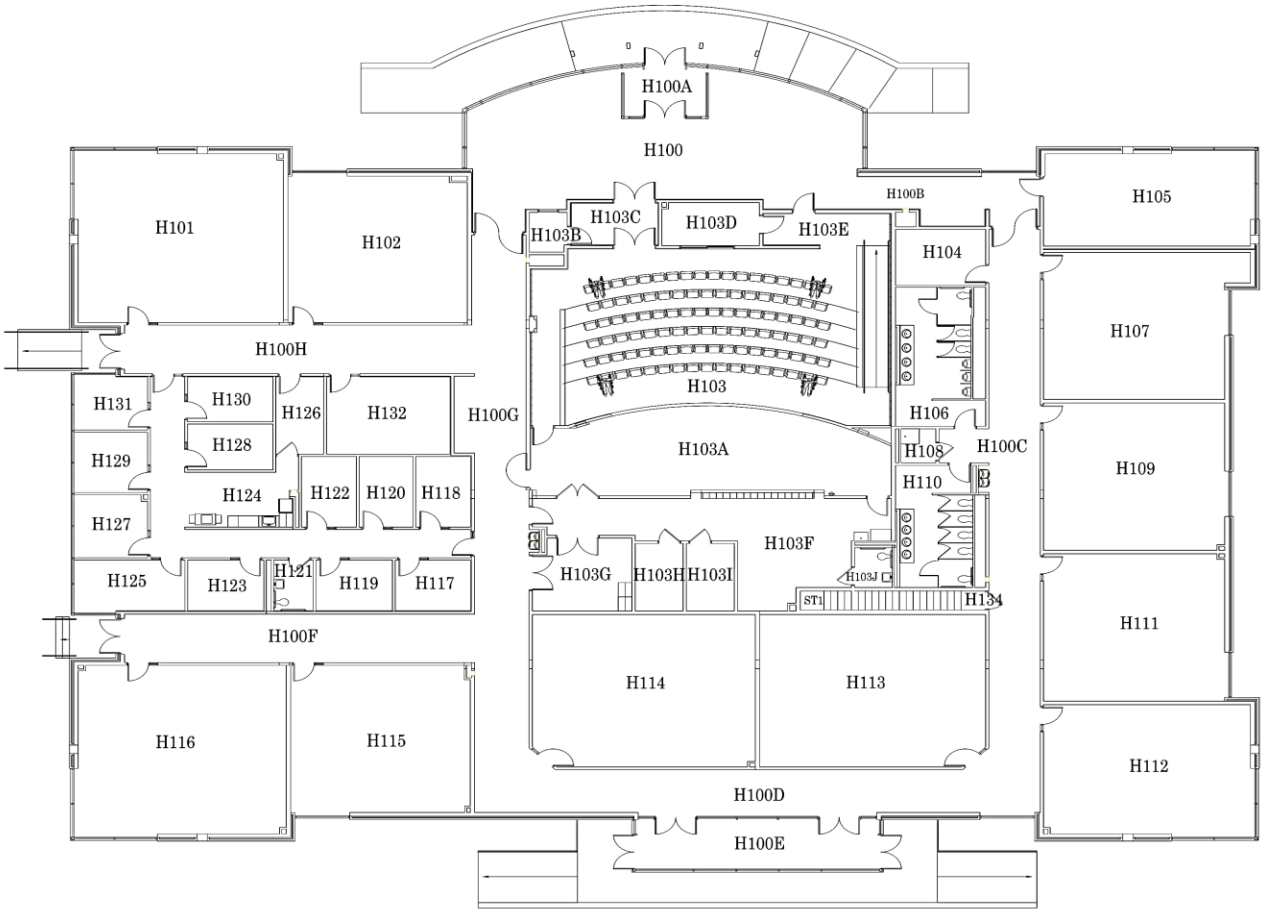
Technology systems are functioning satisfactorily; there are no recommendations for specific changes or upgrades.

KENT HUMANITIES BUILDING

Building number:	3
number of Floors:	2
Net Assignable Square Feet:	13,144
gross Building Area:	25,398
(includes 4,148 at penthouse taken @50%)	
Net-to-gross Efficiency:	52%
Year constructed:	1968
Renovations:	1988 Interior Renovations
	1997 ADA Modifications
	2005 Roof Replacement
	2010 Total Renovation
Additions:	2010 as part of renovation project
Contains:	Classrooms, Lecture Halls, Theatre, Faculty offices
General Condition:	Excellent
Adequacy of Space:	Adequate
Sprinkler Systems:	Fully Sprinklered

ARCHITECTURAL, GENERAL

The Kent Humanities Building is one of the original 5 core buildings built in the late 1960's and is still used for its original functions. The roof was replaced in 2005. This building provides more classrooms and lecture halls than any other building on campus. The 2010 renovation modernized classrooms, lecture halls, and faculty offices, while improving the seating, layout, sight lines, and support spaces for the Cadby Theater.



KENT HUMANITIES BUILDING FLOOR PLAN

MECHANICAL

Mechanical systems are functioning satisfactorily; there are no recommendations for specific changes or upgrades.

ELECTRICAL

Electrical systems are functioning satisfactorily; there are no recommendations for specific changes or upgrades.

TECHNOLOGY SYSTEMS

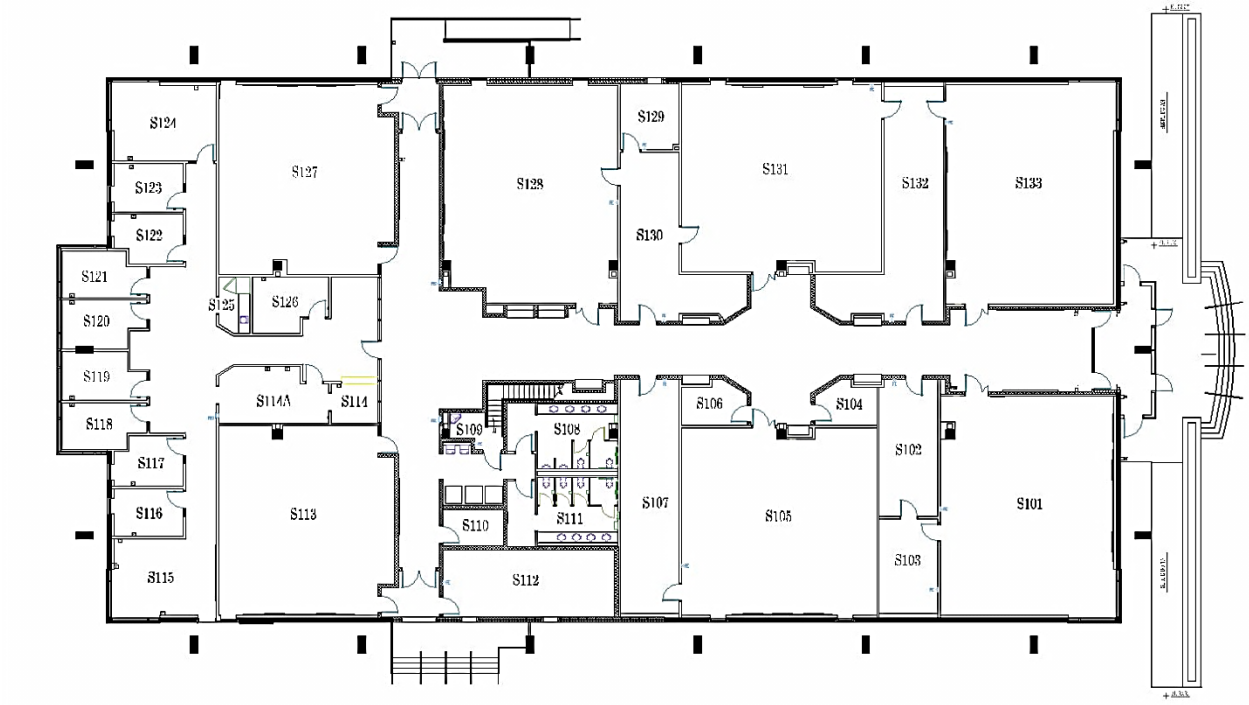
Technology systems are functioning satisfactorily; there are no recommendations for specific changes or upgrades.

TALBOT SCIENCE BUILDING

Building number:	4
number of Floors:	2
Net Assignable Square Feet:	11,975 gross Building Area:
	23,043 net-to-gross
Efficiency:	70%
Year Constructed:	1968
Renovations	1987, 1988 Interior Renovations
1997 ADA Modifications	
1997 Roof Replacement	
2007 Complete Renovation	
Additions:	2007 – Mechanical penthouse as part of renovation project
Contains:	Science labs, classrooms, offices
general Condition:	Excellent
Adequacy of Space:	Adequate for intended uses
Sprinkler Systems	Fully Sprinklered

ARCHITECTURAL, GENERAL

The Talbot Science Building is one of the original 5 core buildings built in the late 1960's and has been continuously used for its original functions. The entire building was renovated in 2007, bringing the science labs, classrooms, and related spaces up to date.



TALBOT SCIENCE BLDG. - FIRST FLOOR PLAN

MECHANICAL

Mechanical systems are functioning satisfactorily; there are no recommendations for specific changes or upgrades.

ELECTRICAL

Electrical systems are functioning satisfactorily; there are no recommendations for specific changes or upgrades.

TECHNOLOGY SYSTEMS

Technology systems are functioning satisfactorily; there are no recommendations for specific changes or upgrades.

QUEEN ANNE'S TECHNIC AL CENTER

Building number:	5
number of Floors:	1
Net Assignable Square Feet:	11,870
gross Building Area:	18,058
net-to-gross Efficiency:	64.8%
Year Constructed:	1976
Renovations:	1983 Interior Renovations
	1997 AdA Modifications
	2005 Roof Replacement
	2011 HVAC Upgrade
Additions:	Storage Addition used for general storage
Contains:	Computer labs, classrooms, distance learning
lab, faculty offices	
General Condition:	Fair: Marginal for its current purpose
Adequacy of Space:	Adequate
Sprinkler Systems:	Fully Sprinklered

ARCHITECTURAL, GENERAL

The Queen Anne's Technical Center is one of two buildings built in 1976 as "Phase 2" of the first two groups of buildings. It is in generally good condition, except for the mechanical and electrical systems, which are in need of replacement and modernization. Originally built to house technical trades shops and related instructional areas, the "Tech Center" has evolved to house more computer labs, as the trades shops moved into the Manufacturing Training Center.

This building has a very "enclosed" feeling, with dark brick corridor walls, little interface between the interior spaces and corridors, and no vertical relief. Former industrial shops have been remodeled for instructional and office spaces, without proper air distribution systems. Several spaces are not sized or proportioned appropriately for the learning and instruction that takes place in those spaces. Due to low floor-to-roof structure height, inflexibility of the interior spaces (narrow corridors flanked by bearing walls), and inefficiency of building systems, it is recommended that this building be razed, to be replaced by a new classroom building.

QUEEN ANNE'S TECH BLDG

MECHANICAL

This building recently went through an HVAC renovation only. Many of the recommended items in previous reports were taken care of by the latest renovation. Specific needs and recommended improvements include the following:

1. Replace all existing plumbing fixtures with new Code-compliant water-saving fixtures, properly piped and vented.
2. Replace all domestic water piping and equipment and install with energy code compliant pipe/equipment insulation

This building recently went through an HVAC renovation only.

PLUMBING

Fixtures are old and worn.

FIRE PROTECTION

This building is fully sprinklered.

ELECTRICAL

The 750 kvA building transformer steps down from the 25 kv loop distribution system to 480/277 volts, 3 phases, 4 wires. Generally, power for 3 phase motors and the majority of lighting utilizes the 480/277-volt system (480 volts for motors and 277 volts for lighting).

Dry type transformers are used to further step down from 480 volts to 120/208 volts for 120-volt receptacles and equipment.

EMERGENCY POWER

Emergency battery ballasts and emergency battery wall packs provide emergency lighting with battery back-up exit signs. No emergency generator power is available.

LIGHTING

The lighting system is a combination of fluorescent, mercury vapor, metal halide and incandescent lighting fixtures.

Specific needs and recommended improvements include the following:

1. The building electrical system lacks transient voltage surge suppression (TVSS).
2. The building systems lack generator power for sump pumps and other critical systems.
3. The electrical branch circuits need dedicated neutrals in lieu of the existing shared neutrals.
4. The continuity of the electrical grounding system is in question where the equipment grounds use the conduits in lieu of dedicated equipment ground conductors.
5. Voice & data cabling is installed in different areas of the building.
6. Computers and other electronic harmonic distortion electrical loads are not equipped with K-rated transformers and over-sized neutral conductors and panelboard neutral busses. This is providing stress on all existing electrical distribution equipment.
7. The existing lighting system serving the building utilizes traditional fluorescent lighting ballasts, and not today's state of the art energy-saving electronic fluorescent ballasts.
8. An addressable fire alarm system should be installed in accordance with all latest NFPA (National Fire Protection Association) and State and Local Codes and connected to a central campus-wide monitoring location. Provisions should be made available for 24-hour off-site monitoring of the entire fire alarm system.
9. The building should be equipped with a security system to match campus standards established during the addition of the Learning Center, Higher Education Center and recent renovations to the Dorchester Administration Building, as well as Caroline Student Center.

TECHNOLOGY SYSTEMS

This building recently went through an HVAC renovation only. Specific needs and recommended improvements include the following:

1. The building electrical system lacks transient voltage surge suppression (TVSS).
2. The building systems lack generator power for sump pumps and other critical systems.
3. The electrical branch circuits need dedicated neutrals in lieu of the existing shared neutrals.
4. The continuity of the electrical grounding system is in question where the equipment grounds use the conduits in lieu of dedicated equipment ground conductors.
5. Voice & data cabling is installed in different areas of the building.
6. Computers and other electronic harmonic distortion electrical loads are not equipped with K-rated transformers and over-sized neutral conductors and panelboard neutral busses. This is providing stress on all existing electrical

distribution equipment.

7. The existing lighting system serving the building utilizes traditional fluorescent lighting ballasts, and not today's state of the art energy-saving electronic fluorescent ballasts.
8. An addressable fire alarm system should be installed in accordance with all latest NFPA (National Fire Protection Association) and State and Local Codes and connected to a central campus-wide monitoring location. Provisions should be made available for 24-hour off-site monitoring of the entire fire alarm system.
9. The building should be equipped with a security system to match campus standards established during the addition of the Learning Center, Higher Education Center and recent renovations to the Dorchester Administration Building, as well as Caroline Student Center.

SPECIAL SYSTEMS,

FIRE ALARM

The fire alarm systems consist essentially of local evacuation alarms in the building with an annunciator panel at the main entrance. Alarm systems were recently replaced but they are minimal systems and are local building alarms only. The underground wiring which originally linked each building to the central annunciator panel in the library has been broken and removed in some places so that a central alarm annunciation is not operable.

SECURITY

The building is not equipped with a security system.

MANUFACTURING TRAINING CENTER

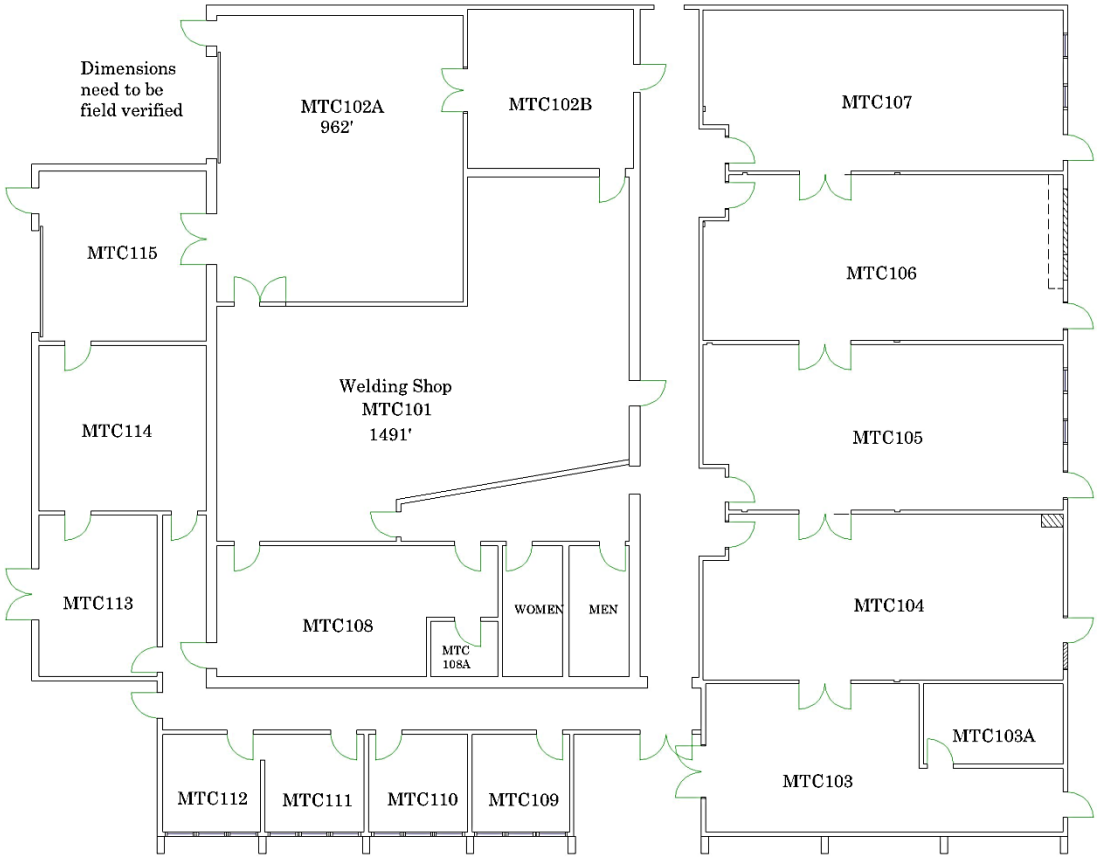
Building number:	6 number of Floors: 1
Net Assignable Square Feet:	9,870 excluding outdoor equipment storage
gross Building Area:	10,930 excluding outdoor equipment storage
net-to-gross Efficiency:	90.3
Year Constructed:	1979
Renovations:	1990, 1996, 2002, 2006 Interior Renovations
Additions:	1984, 1996
Contains:	Technical trade shops, facilities management offices, mail room, print shop, temporary science labs
General Condition:	Poor
Adequacy of Space:	Inadequate, even for its use as temporary “surge” space
Sprinkler Systems:	none

ARCHITECTURAL, GENERAL

The Manufacturing Training Center (MTC) has been built, expanded and renovated several times over several years, adapting to new programs and functions, and providing “surge” space while other buildings have been renovated. The original building and the first major addition are premanufactured metal building structures; subsequent additions are metal framed.

On-going maintenance and modifications to building systems has been required to keep up with the repairs and alterations that the building requires, all the while affected by renovation work in other buildings. A loose thermal envelope burdens an inefficient HVAC system. Mechanical and electrical systems are in need of replacement and modernization, and the roof has needed periodic repair and replacement.

Until the renovations to other campus buildings are complete, the MTC remains the only building on campus which can provide the surge space needed to temporarily house displaced functions.



MTC - FIRST FLOOR PLAN

MECHANICAL

HEATING, VENTILATION AND AIR CONDITIONING (HVAC)

There is a combination of HvAC systems of diverse ages and types spread throughout the building. Most areas are served by split system heat pumps. However, there are also electric infrared heaters, propane unit heaters, and electric unit heaters. There is no central control system for this building. All HvAC equipment is locally controlled.

PLUMBING

Fixtures are poor in condition and quality. For the occupant capacity of the building, there are an inadequate number of appropriate fixtures.

FIRE PROTECTION

This facility is not sprinklered.

This building has outlived its usefulness as a permanent building. This report recommends maintaining the building as temporary surge space followed by eventual demolition. Specific issues include the following:

1. Primarily, firm decisions need to be made as to how this building will be used, and what types of courses will be taught. Only after this is established can HVAC system types, components, and requirements be recommended. If current usages are expected to remain, decisions need to be made as to whether or not "shop" areas will be air-conditioned. Typically they are not. If not, there will probably not be enough of a cooling load to dictate chillers or centralized equipment. Therefore, for classroom type areas requiring cooling, small dedicated units such as split system heat pumps, geothermal units, or similar equipment could be utilized.
2. Because of adjacent unlike usages and the nature of some of the operations, consideration should be given to sprinklering this building. Most likely several specifically located fire-rated walls to separate unlike usage areas, in addition to storage areas, etc., may be required.
3. Replace or modify restrooms to meet the current Code requirements for fixture quantity and type.

ELECTRICAL

Service is derived from a 400 Amp, 480-volt, 3 phase, 4 wire circuit breaker in the main switchboard location in the Tech Center. Generally, power for 3 phase motors and the majority of lighting utilizes the 480/277-volt system (480 volts for motors and 277 volts for lighting).

Dry type transformers are used to further step down from 480 volts to 120/208 volts for 120-volt receptacles and equipment.

EMERGENCY POWER

Emergency battery ballasts and emergency battery wall packs with battery provide emergency lighting with battery back-up exit signs. no emergency generator power is available.

LIGHTING

The lighting system is a combination of fluorescent, mercury vapor, metal halide and incandescent lighting fixtures.

This building has outlived its usefulness as a permanent building. This report recommends eventual demolition. Specific issues include the following:

1. The building electrical system lacks transient voltage surge suppression (TVSS).
2. The building systems lack generator power for sump pumps and other critical systems.
3. The electrical branch circuits need dedicated neutrals in lieu of the existing shared neutrals.
4. The continuity of the electrical grounding system is in question where the equipment grounds use the conduits in lieu of dedicated equipment ground conductors.
5. Computers and other electronic harmonic distortion electrical loads are not equipped with K-rated transformers and over-sized neutral conductors and panelboard neutral busses. This is providing stress on all existing electrical distribution equipment.
6. The existing lighting system serving the building utilizes traditional fluorescent lighting ballasts, and not today's state of the art energy-saving electronic fluorescent ballasts.
7. An addressable fire alarm system should be installed in accordance with all latest NFPA (National Fire Protection Association) and State and Local Codes and connected to a central campus-wide monitoring location. Provisions should be made available for 24-hour off-site monitoring of the entire fire alarm system.
8. The building should be equipped with a security system to match campus standards established during the addition of the Learning Center, Higher Education Center and recent renovations to the Dorchester Administration Building, as well as Caroline Student Center.

Recommendation: The electrical systems in the Manufacturing Training Center need to be modified to suit the intended use of this facility when this is determined. Costs are included in the overall building renovations project.

SPECIAL SYSTEMS

FIRE ALARM

The fire alarm systems consist essentially of local evacuation alarms in each building with an annunciator panel at the main entrance. Alarm systems were recently replaced but they are minimal systems and are local building alarms only. The underground wiring which originally linked each building to the central annunciator panel in the library has been broken and removed in some places so that a central alarm annunciation is not operable.

SECURITY

The building is not equipped with a security system.

TECHNOLOGY, TELECOMMUNICATIONS

This building has outlived its usefulness as a permanent building. This report recommends eventual demolition. Specific issues include the following:

1. Provide Category 6 cabling to provide Gigabit Ethernet (1000 Mbps) data server to computer outlets.
2. Remove old and abandoned cabling to free up space in ceilings and conduits.
3. Test, trace and label all copper cabling.
4. Provide wireless network access

A separate report was made on the Chesapeake College telecommunications system by BTg Inc., in July 1997. This report covered the current network Environment; network design and Specifications; network Architecture Standards; network Administration; Standards and Procedures; and related topics. It also set forth recommendations on Technical Acquisitions, Policies and Procedures and Training and Administration. In addition, drawings showing a layout of outside copper and fiber optic backbone and interior copper and fiber optic cabling paths was prepared by ARK Systems, Inc. in late 1997.

COMPUTERS

Computers for instructional use are networked PC systems. Administration laptops are also utilized.

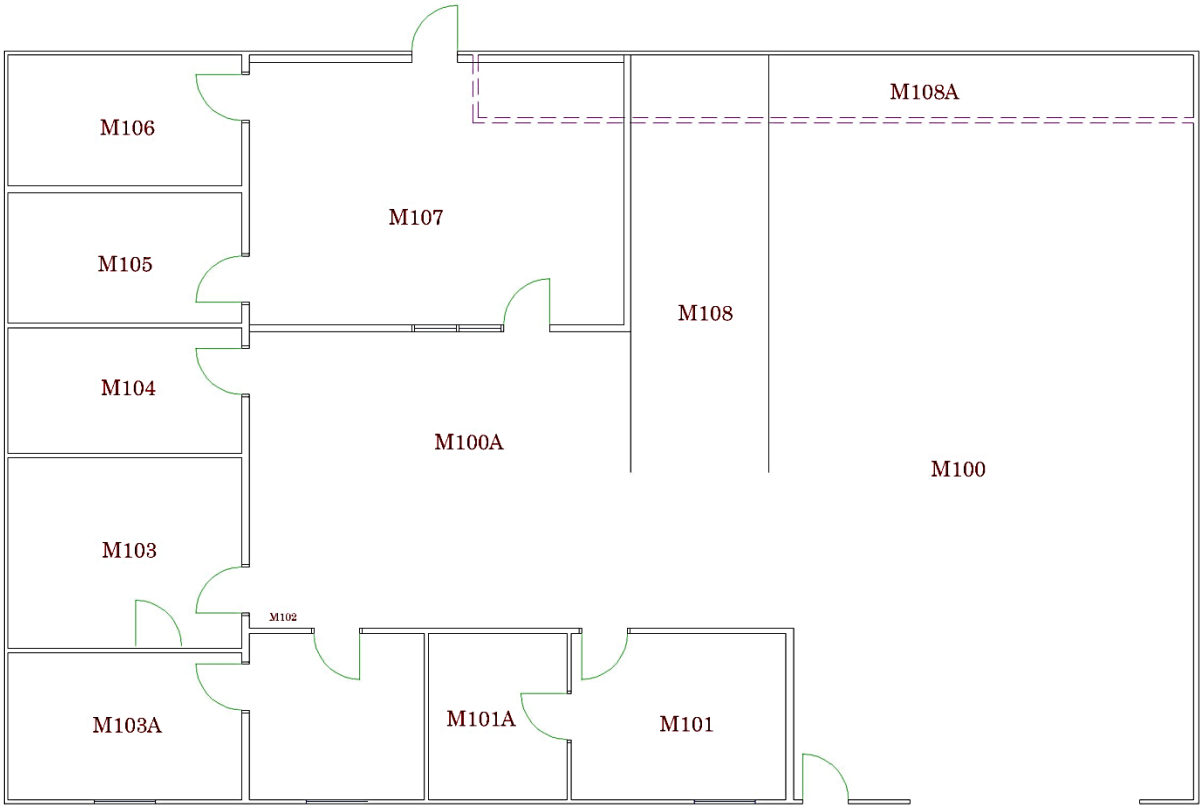
MAINTENANCE BUILDING

Building number:	7
number of Floors:	1
Net Assignable Square Feet:	3,383
gross Building Area:	4,000
net-to-gross Efficiency:	84.6%
Year Constructed:	1979
Renovations:	none, except for minor AdA modifications in 1997
Additions:	none
Contains:	Maintenance Shop, Facilities offices
general Condition:	Fair
Adequacy of Space:	Inadequate
Sprinkler Systems:	none

ARCHITECTURAL, GENERAL

The Maintenance Building continues to be used for its original purpose, for the storage and repair of maintenance equipment for the entire campus. Its location at the back of the campus, near the ring road and rear campus entrance serves the maintenance needs conveniently. Built as a premanufactured metal building, it is appropriate as a maintenance building.

The building is too small for the maintenance, repair, and storage functions that occur within the Maintenance department. Document storage, general storage, repair functions, and meetings all take place in the same room. In addition, there is insufficient storage space; several items are stacked above rooms and other stored items and are not easily accessible. In addition, the layout, building envelope, and HVAC systems are labor- and energy-inefficient. The building should be replaced with a new, larger facility.



MAINTENANCE BUILDING - FIRST FLOOR PLAN

MECHANICAL

HEATING, VENTILATION AND AIR CONDITIONING (HVAC)

Currently only a small portion of the building is cooled (office areas), utilizing split system heat pumps. The shop area is heated by electric infrared heaters; manually controlled by a circuit breaker. Manually opening and closing the overhead doors meet ventilation needs.

PLUMBING

The present restrooms appear adequate for the facility.

FIRE PROTECTION

The building is not sprinklered.

MECHANICAL ANALYSIS

1. Except for the capacity of the radiant heaters (see below), the maintenance building appears to be functioning mechanically as intended and is not in great need of mechanical upgrade.

2. The present radiant spot heaters are electric infrared and expensive to operate and during some portions of the year, inadequate.

ELECTRICAL

Fed from 200 Amps, 480/277 volts circuit breaker in main switchboard in Tech Center. Generally, power for 3 phase motors and the majority of lighting utilizes the 480/277- volt system (480 volts for motors and 277 volts for lighting). dry type transformers are used to further step down from 480 volts to 120/208 volts for 120-volt receptacles and equipment.

EMERGENCY POWER

Emergency battery ballasts and emergency battery wall packs provide emergency lighting, with battery back-up exit signs. no emergency generator power is available.

LIGHTING

The lighting system is a combination of fluorescent, mercury vapor, metal halide and incandescent lighting fixtures.

SPECIAL SYSTEMS AND TECHNOLOGY

FIRE ALARM

The fire alarm systems consist essentially of local evacuation alarms in each building with an annunciator panel at the main entrance. Alarm systems were recently replaced but they are minimal systems and are local building alarms only. The underground wiring which originally linked each building to the central annunciator panel in the library has been broken and removed in some places so that a central alarm annunciation is not operable.

SECURITY

The building is not equipped with a security system.

TECHNOLOGY, TELECOMMUNICATIONS

Fifty pair copper telephone and 12 strand (62.5 micron) fiber is routed in an underground duct system to the building from Dorchester Administration Building (circa 1995). Communication wire closets are generally not separated but are multi-used spaces.

A separate report was made on the Chesapeake College telecommunications system by BTg Inc., in July 1997. This report covered the current network Environment; network design and Specifications; network Architecture Standards; network Administration; Standards and Procedures; and related topics. It also set forth recommendations on Technical Acquisitions, Policies and Procedures and Training and Administration. In addition, drawings showing a layout of outside copper and fiber optic backbone and interior copper and fiber optic cabling paths was prepared by ARK Systems, Inc. in late 1997.

COMPUTERS

Computers for instructional use are networked PC systems. Administration Laptops will also be utilized.

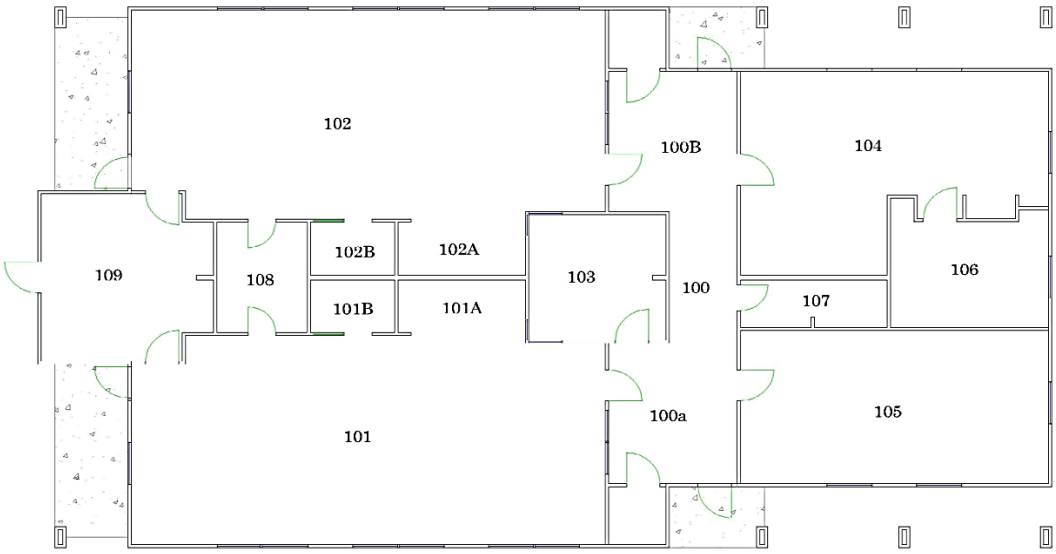
EARLY CHILDHOOD DEVELOPMENT CENTER

Building number:	8
number of Floors:	1
Net Assignable Square Feet:	2,987
gross Building Area:	3,944 net-to-gross
Efficiency:	75.5%
Year Constructed:	1989
Renovations:	
(new cladding in 1997)	
Additions:	
none	
Contains:	Pre-school classrooms, offices
general Condition:	good
Adequacy of Space:	Adequate
Sprinkler Systems:	none

ARCHITECTURAL, GENERAL

Constructed to house early childhood demonstration-laboratory classrooms, this building continues to be used as originally intended. It is in relatively good condition and hasn't been altered since its construction. The building is bright and cheery inside, befitting a pre-school environment. Two office areas are utilized by the College to provide space for related grant programs.


Chesapeake
College



ECDC - FIRST FLOOR PLAN

MECHANICAL

HEATING, VENTILATION AND AIR CONDITIONING (HVAC)

This facility is served by two residential type split system heat pumps. The air handlers are in the attic providing ducted air distribution through ceiling outlets. The matching condenser/evaporator portions of the systems are pad mounted at exterior grade. HVAC control is performed locally using a wall-mounted thermostat with sub-base.

PLUMBING

The fixtures appear to adequately serve the facility.

FIRE PROTECTION

The building is not sprinklered.

MECHANICAL ANALYSIS

Even though the facility was constructed in 1990, the HVAC systems are residential in nature and provide only limited space temperature control. For example, the same unit that serves the classrooms with exterior walls serves an interior office. There are no provisions to meet outside air requirements, except for operable windows.

1. Replace all flex duct with, at a minimum, high quality flex duct.
2. Provide outside air of sufficient quantities to the return side of the unit. This will require calculations to insure that the existing units can handle the additional load.

3. In the future, when the equipment's service life is nearing its end, consider replacement units that are capable of serving spaces for individual temperature control.
4. A Geothermal system is a strong candidate for this small facility. This can be incorporated with a VRF system as described earlier in the report.
5. At a minimum, install limited area sprinkler systems in the janitor's closet and all storage areas.

ELECTRICAL

Fed from 100 Amps, 480 volt circuit breaker in the pool main switchboard. generally, power for 3 phase motors and the majority of lighting utilizes the 480/277-volt system (480 volts for motors and 277 volts for lighting). dry type transformers are used to further step down from 480 volts to 120/208 volts for 120-volt receptacles and equipment.

EMERGENCY POWER

Emergency battery ballasts and battery wall packs provide emergency lighting, with emergency battery back-up exits. no emergency generator power is available.

LIGHTING

The lighting system is a combination of fluorescent, mercury vapor, metal halide and incandescent lighting fixtures.

1. The building electrical system lacks transient voltage surge suppression (TVSS).
2. The building systems lack generator power for sump pumps and other critical systems.
3. The electrical branch circuits need dedicated neutrals in lieu of the existing shared neutrals.
4. The continuity of the electrical grounding system is in question where the equipment grounds use the conduits in lieu of dedicated equipment ground conductors.
5. Computers and other electronic harmonic distortion electrical loads are not equipped with K-rated transformers and over-sized neutral conductors and panelboard neutral busses. This is providing stress on all existing electrical distribution equipment.
6. The existing lighting system serving the building utilizes traditional fluorescent lighting ballasts, and not today's state of the art energy-saving electronic fluorescent ballasts.
7. An addressable fire alarm system should be installed in accordance with all latest NFPA (National Fire Protection Association) and State and Local Codes and connected to a central campus-wide monitoring location. Provisions should be made available for 24-hour off-site monitoring of the entire fire alarm system.
8. The building should be equipped with a security system to match campus standards established during the addition of the Learning Center, Higher Education Center and recent renovations to the Dorchester Administration Building, as well as Caroline Student Center.

Recommendation: Certain modifications need to be made to this facility if it will not be renovated in the next few years.

SPECIAL SYSTEMS AND TECHNOLOGY

FIRE ALARM

The fire alarm systems consist essentially of local evacuation alarms in each building with an annunciator panel at the main entrance. Alarm systems were recently replaced but they are minimal systems and are local building alarms only. The underground wiring which originally linked each building to the central annunciator panel in the library has been broken and removed in some places so that a central alarm annunciation is not operable.

SECURITY

The building is not equipped with a security system.

TECHNOLOGY SYSTEMS

1. Provide Category 6 cabling to provide Gigabit Ethernet (1000 Mbps) data server to computer outlets.
2. Remove old and abandoned cabling to free up space in ceilings and conduits.
3. Test, trace and label all copper cabling.
4. Provide wireless network access

COMPUTERS

Computers for instructional use are networked PC systems. Administration Laptops are also be utilized.

HEALTH PROFESSIONS & ATHLETICS CENTER - HPAC

Building number:	9 number of Floors: 3
Net Assignable Square Feet:	
Gross Building Area:	100,907 net-to-gross Efficiency: *68%*
Year Constructed:	gym: 1968
	Pool: 1976
Renovations:	1991 general Interior Renovations
	2005 Roof Replacement
Additions:	(1976 Pool Addition)
	2015 HPAC Addition
Contains:	Allied Health Labs, Classroom, gymnasium, Fitness Room, Locker Rooms, offices
general Condition:	Excellent
Adequacy of Space:	Adequate
Sprinkler Systems:	Sprinklered

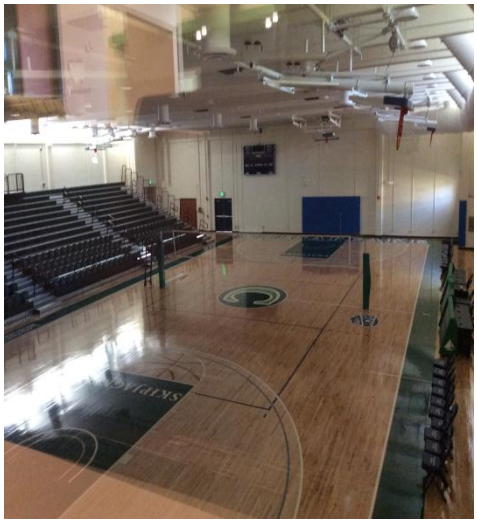
ARCHITECTURAL, GENERAL

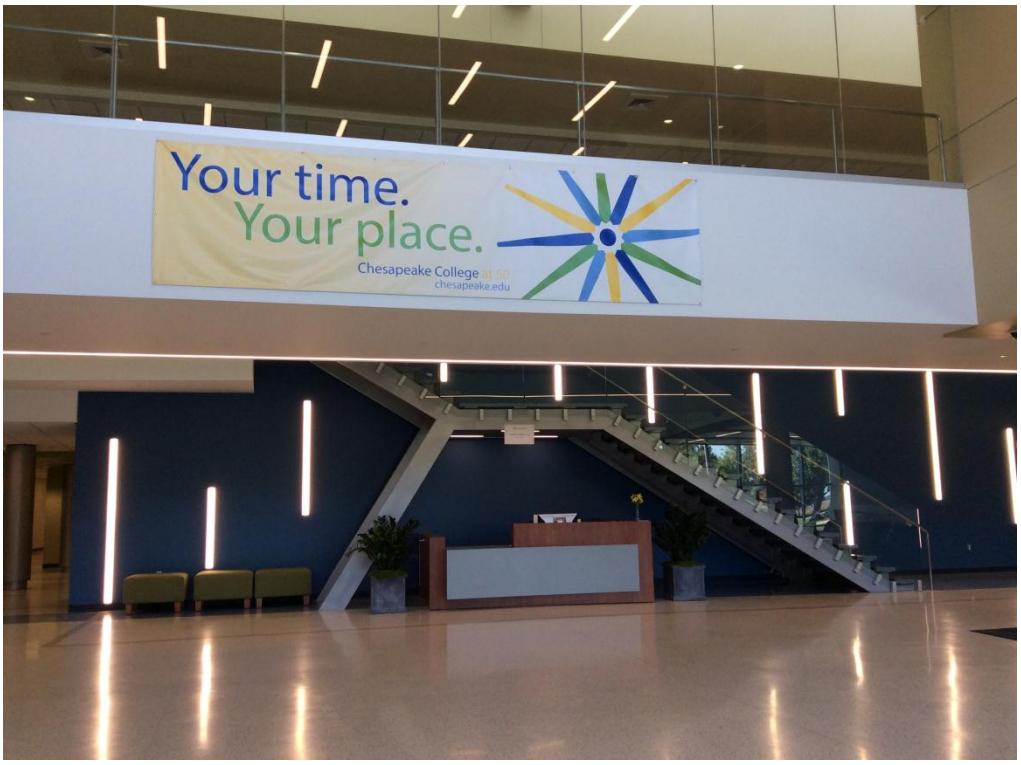
Renovation and Addition of this project was completed in August 2015.

HPAC SECOND FLOOR PLAN

HPAC FIRST FLOOR PLAN


HEALTH PROFESSIONS

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Chesapeake College at 50
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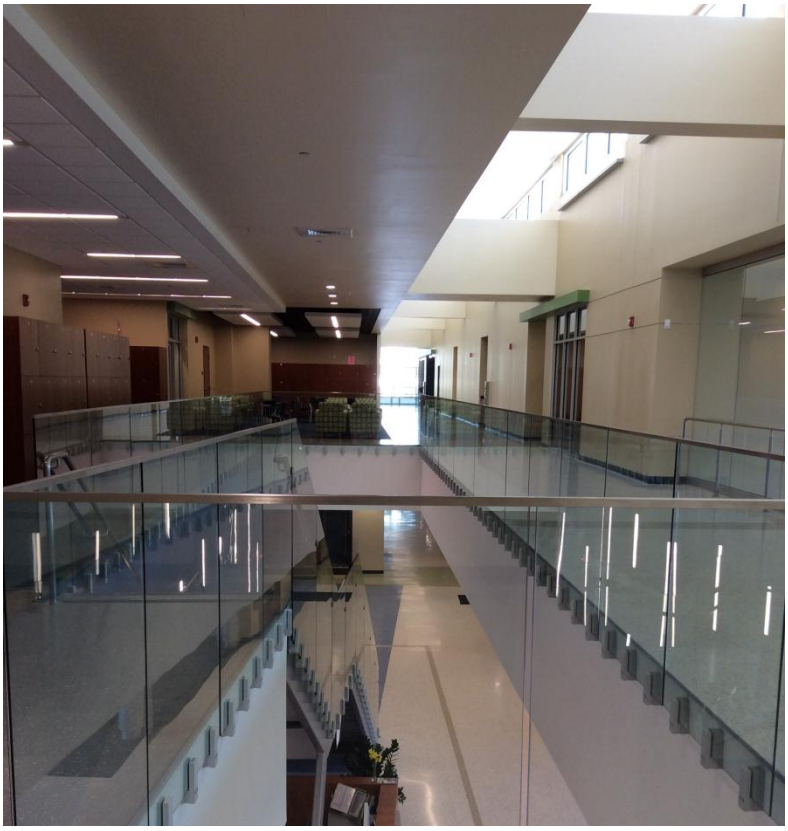


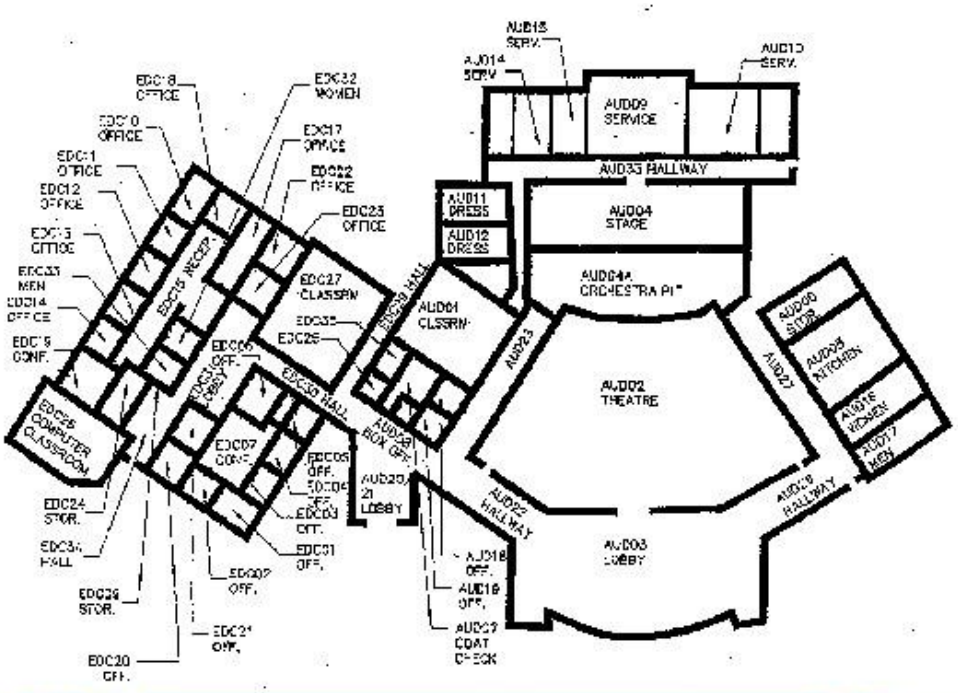
ECONOMIC DEVELOPMENT CENTER/ TODD PERFORMING ARTS CENTER

Building number:	11, 12
Number of Floors:	1 + theater balcony/mezzanine
net Assignable Square Feet:	22,486
Gross Building Area:	32,400
net-to-gross Efficiency:	62.6%
Year Constructed:	1994
Renovations:	2004 Balcony/Mezzanine added to Theater
Additions:	none
Contains:	Performing Arts Center / Auditorium: 900 seat theater with stage, lobby, backstage support spaces, classroom, catering kitchen Economic development Center: offices, classrooms general
	Condition: good
Adequacy of Space:	Adequate
Sprinkler Systems:	Fully Sprinklered

ARCHITECTURAL, GENERAL

The Economic development Center / Todd Performing Arts Center is functioning much the way it was intended. The Todd Performing Arts Center provides a theater facility for the College and the surrounding community, as well as a lobby that serves as meeting, reception, and special events space. Related performing arts functions and spaces such as a black box theater, improved and expanded set shop, and additional toilet rooms are needed. The Economic development Center provides facilities for instruction and training for/by the business community and for workforce development.

The building is oriented to the perimeter and ring road, an unfortunate consequence is that it faces away from the rest of the campus buildings; the only campus side entrance door at the back of the building leads through a narrow corridor to the center of the building. This and the functional connection to the Caroline College Center should be reconsidered during any future renovation. The roof is the critical part of the building that is in need of renovation/work.


AUD15 SERV.
AUD14 SERV.
AUD13 SERV.
AUD09 SERVICE
AUD33 HALLWAY
AUD11 DRESS
AUD12 DRESS
AUD04 STAGE
AUD44 ORCHESTRA PIT
AUD01 CLASSRM
AUD23
AUD02 THEATRE
AUD27
AUD00 STOR.
AUD05 KITCHEN
AUD16 WOMEN
AUD17 MEN
AUD22 HALLWAY
AUD18 HALLWAY
AUD03 LOBBY
AUD19 OFF.
AUD18 OFF.
AUD07 COAT CHECK
EDC18 OFFICE
EDC32 WOMEN
EDC17 OFFICE
EDC22 OFFICE
EDC23 OFFICE
EDC10 OFFICE
EDC11 OFFICE
EDC12 OFFICE
EDC13 OFFICE
EDC33 MEN
EDC14 OFFICE
EDC15 CONF.
EDC16 RECEP.
EDC27 CLASSRM
EDC35
EDC26
EDC06 OFF.
EDC06 LOBBY
EDC30 HALL
EDC25 COMPUTER CLASSROOM
EDC07 CONF.
EDC05 OFF.
EDC04 OFF.
EDC03 OFF.
EDC01 OFF.
AUD20 21 LOBBY
EDC24 STOR.
EDC31 HALL
EDC29 STOR.
EDC08 OFF.
EDC21 OFF.
EDC20 OFF.

MECHANICAL

1. The HVAC control system is reported to have several operational problems. Since the addition of the balcony in the Theater, stratification of air and inadequate air movement have been a problem.

2. The chiller unit is in need of replacement. This is extremely critical to maintain the building functional.

3. The rooftop unit serving the EdC office area produces a rumbling noise with considerable vibration. This could be the result of an oversized unit in a "turn down" mode or simply poor equipment vibration isolation.

4. The computer classroom is very "breezy", loud, and generally uncomfortable. The schedule on the drawings shows that the air handler serving this area is twice the capacity expected for a room of this size and usage.

5. The original fire protection system would not meet pressure and duration (storage volume) to meet the physical nFPA fire protection demands of an "Assembly" classified building, but this was corrected by construction of the water tower and loop in 2002.

6. The AUd-05 kitchen appeared to have insufficient cooling for the size of the space and the amount of heat producing equipment within.

7. The fire alarm system is currently not remotely monitored.

PLUMBING

Fixtures in the TPAC part of the building are inadequate in number, and location. A no. 2 fuel oil fired domestic water heater serves the facility with domestic hot water.

FIRE PROTECTION

The building is fully sprinklered.

ELECTRICAL

1. The building electrical system lacks transient voltage surge suppression (TVSS).
2. The building systems lack generator power for sump pumps and other critical systems.
3. The electrical branch circuits need dedicated neutrals in lieu of the existing shared neutrals.
4. The continuity of the electrical grounding system is in question where the equipment grounds use the conduits in lieu of dedicated equipment ground conductors.
5. Computers and other electronic harmonic distortion electrical loads are not equipped with K-rated transformers and over-sized neutral conductors and panelboard neutral busses. This is providing stress on all existing electrical distribution equipment.
6. The existing lighting system serving the building utilizes traditional fluorescent lighting ballasts, and not today's state of the art energy-saving electronic fluorescent ballasts.
7. An addressable fire alarm system should be installed in accordance with all latest NFPA (National Fire Protection Association) and State and Local Codes and connected to a central campus-wide monitoring location. Provisions should be made available for 24-hour off-site monitoring of the entire fire alarm system.
8. The building should be equipped with a security system to match campus standards established during the

addition of the Learning Center, Higher Education Center and recent renovations to the DorchesterAdministration Building, as well as Caroline Student Center.

Recommendation: Minimal modifications need to be made to this facility.

SPECIAL SYSTEMS AND TECHNOLOGY

FIRE ALARM

The fire alarm systems consist essentially of local evacuation alarms in each building with an annunciator panel at the main entrance. Alarm systems were recently replaced but they are minimal systems and are local building alarms only. The underground wiring which originally linked each building to the central annunciator panel in the library has been broken and removed in some places so that a central alarm annunciation is not operable.

SECURITY

The building is not equipped with a security system.

TECHNOLOGY, TELECOMMUNICATIONS

1. Provide Category 6 cabling to provide Gigabit Ethernet (1000 Mbps) data server to computer outlets.
2. Remove old and abandoned cabling to free up space in ceilings and conduits.
3. Test, trace and label all copper cabling.
4. Replace the existing 50 pair copper cable from Dorchester Hall to CBA with a suitable outside plant rated copper cable.
5. Provide wireless network access

COMPUTERS

Computers for instructional use are networked PC systems. Administration Laptops are also utilized.

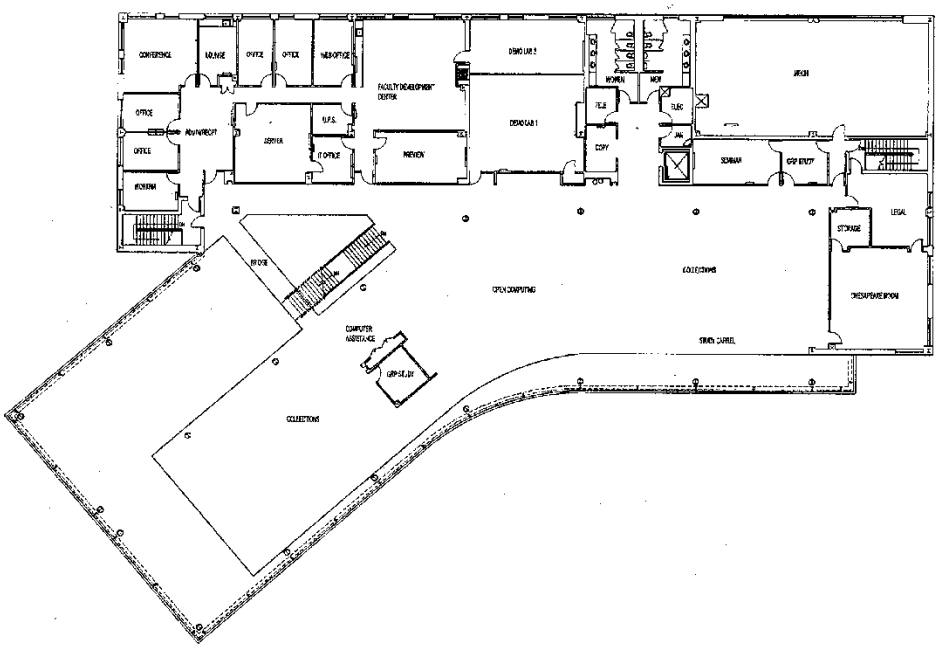
LEARNING RESOURCE CENTER

Building number:	13
number of Floors:	2
Net Assignable Square Feet:	29,182
gross Building Area:	44,484
net-to-gross Efficiency:	70.4%
Year Constructed:	2002
Renovations:	none
Additions:	none
Contains:	Complete learning resource areas for the College - Includes open and reserved collections, computer classrooms, computer study areas, cyber café, large and small group study rooms, video media room faculty development center, and learning assistance center
General Condition:	very good
Adequacy of Space:	Adequate
Sprinkler Systems:	Fully Sprinklered

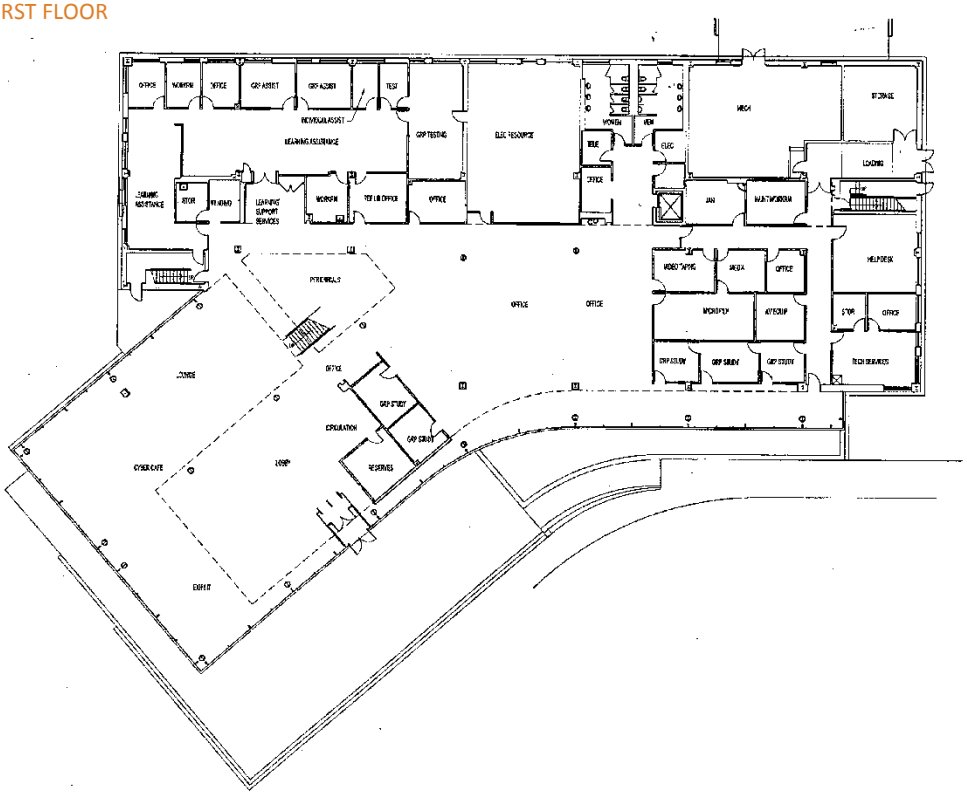
ARCHITECTURAL, GENERAL

The LRC serves Chesapeake College and the 5 counties of the upper eastern shore. More than a library, the LRC is an intensively used resource for the students, faculty, staff, and visitors using the facility, providing faculty and student support spaces, and offering hard and wireless data connections throughout the building. The building also houses a writing center, tutoring labs, testing center, and other student and faculty support services as well as two computer classrooms and IT help desk functions. It is a steel framed structure with brick and curtain wall skin. HVAC: internal boilers and external chiller use the existing oil tank in the EdC/TPAC.

SECOND FLOOR



FIRST FLOOR



MECHANICAL

Mechanical systems are functioning satisfactorily; there are no recommendations for specific changes or upgrades.

ELECTRICAL

Electrical systems are functioning satisfactorily; there are no recommendations for specific changes or upgrades.

TECHNOLOGY, TELECOMMUNICATIONS

1. Provide a supplemental optical fiber backbone within the LRC.
2. Provide additional computer outlets for computer areas for use by students and tutors in the LRC.
3. Provide additional network computer and printer outlets, and associated electrical outlets.
4. Provide dedicated spaces for network printers is desired to keep the printers and peripheral equipment in one location.
5. Provide for the growth needs of the server room in LRC L220 which is rapidly outgrowing its current space. There is a need for a larger dedicated server room.
6. Provide a separate testing room for Technology Support Services in currently in the LRC room L119. The current room does not provide sufficient space for both equipment storage and Technology technicians.

DESIGN STANDARDS

BACKGROUND, ARCHITECTURE

Originally developed in the 1960's, the architecture of the academic campus core is modern and generally uniform in its language. Elements that are constant among the original buildings include flat roofs, exposed concrete columns and beams, and brown brick with vertical windows at building corners and between brick panels. Original interior spaces tend to be similar to public schools, with painted concrete block walls, and hard floor surfaces.

Newer buildings, additions, and renovations have kept some of the original palette of materials and colors while introducing newer, often more energy-efficient, elements. There has been a conscious effort to bring the architecture into the 21st century, removing the "13th grade" character of the original buildings (particularly interior spaces), while maintaining a unity of design throughout the campus. new projects should reflect the unique characteristics of each building, while incorporating certain elements from the original buildings and from recent projects, including: brown brick in running bond; horizontal glazing patterns (some including fritted glass); green-tinted glass (also insulating, low-e units); clear anodized aluminum curtain wall, windows, and exterior doors; stainless steel tubular handrails. All materials should be from renewable, sustainable sources to the extent practicable. The scale of new buildings should be similar to existing buildings, while allowing up to three floors in height.


SITE ACCESSORIES

Site accessories incorporated into recent projects include benches, tables, waste receptacles, (all manufactured by Landscape Forms) and ash urns (Forms & Surfaces), all steel finished in enameled black paint.




BUILDING INTERIORS AND ACCESSORIES

Building interiors will vary depending on the function and nature of each building. Generally, hard surface flooring, such as terrazzo or porcelain tile should be used in corridors and other similar public spaces. Classrooms, conference and seminar rooms, and office spaces should be carpeted. In public ways, painted walls should be flecked paint such as Zolatone or Polymix; other spaces may incorporate painted drywall or special paint systems depending on the use. All toilet rooms should include ceramic tile floors and walls. Where wood is considered for interior finishes, doors, and elements, domestic hardwoods such as cherry should be used. Generally, interior doors are 3'-0"x7'-0"; office door frames should include side-lights. All interior materials should be from renewable, sustainable sources. Examples of interior accessories that should be continued include water coolers, door hardware (Russwin-Corbin), chair rails, and fire extinguisher cabinets (both recessed and semi-recessed). Generally, interior lighting is fluorescent, except for special accent or uplighting. Where practicable and in all classrooms where computers are used or anticipated, indirect lighting should be used.





SITE LIGHTING

Site lighting standards have been established for three general categories; large parking areas, major pedestrian ways and driveways, and small scale gathering spaces and accent lighting.



SIGNAGE

EXTERIOR SIGNAGE

Exterior building signage includes two types of elements; cast letters applied to opaque surfaces of the buildings, and text applied to the exterior surface of glazing areas. Cast letters are clear anodized aluminum, 1' high. All letters are "Arial", all capitals.

INTERIOR SIGNAGE

Generally, the interior signage is cast plastic, background in a light neutral color, with dark neutral-colored text. All permanent interior signage must comply with ADA requirements.

SUSTAINABLE DESIGN

Chesapeake College, located in an agricultural region adjacent to the Chesapeake Bay, has an obligation to make a positive impact on the environment through partnerships, leadership, education and modeling. Since the initiation of the last strategic plan, the college has signed the American College and University Presidents' Climate Commitment – a pledge to reduce its carbon footprint in the interest of good global citizenship. Chesapeake College will be recognized as a regional environmental leader. Through our institutional actions, we will model environmental responsibility on the Eastern Shore, inspire environmentally engaged citizens, and reduce our carbon footprint.

Sustainable design practice involves several aspects of the project development. Considerations include, among many:

- Selecting a site / building the project in a developed area or community
- Limiting site disturbance, storm water impact, heat island effect, light pollution
- Water use reduction
- Innovative waste water technologies
- Reduction of energy use
- Use of green power and renewable energy resources
- Re-use of buildings
- Use of recycled, regional, and rapidly renewable materials
- Construction waste management
- Improving indoor air quality; improving ventilation; limiting indoor chemical pollutants

- Controlling and monitoring MEP systems
- Increasing lighting by natural light, limiting use of artificial light
- Innovative design strategies

Many colleges have adopted sustainable design policies in their procurement and implementation of design and construction services. These range from weighing the value of sustainable design to requiring compliance with established standards. Several higher education institutions are reflecting on their missions as leaders in enlightened campus development as related to sustainable design practices.

The current standards in the United States are LEED (Leadership in Energy and Environmental Design) guidelines published by the United States Green Building Council, establishing levels of sustainable design. These standards are required by the State of Maryland jurisdictions. Agencies of some jurisdictions throughout the country have adopted various levels of compliance requirements. There are four levels of LEED certification for building projects, including both renovation and new construction: Certified, Silver, Gold, and Platinum. A rigorous review of all aspects of the project is required to determine the level of certification. The College has committed to developing all of its new and renovation projects to meet LEED Silver designation requirements. The Health Professions and Athletics Center – HPAC is being evaluated by USGBC for and Platinum certification.

Capital projects incorporating LEED standards add some additional cost; estimates range from 2%-3% additional capital cost. From a life-cycle perspective, this typically is balanced by lower operating costs and increased worker productivity, not to mention the more global impact of a cleaner environment.

The College has already invested in green design aspects in recent projects, such as renovating buildings; well- insulated building envelope systems, energy-efficient lighting and HVAC systems, and geo-thermal heating and cooling. In 2010-2011, the College undertook investigation and conceptual design for a new, net-zero energy building to be known as the Center for Leadership in Environmental Education, and has implemented a 45 mega-watt wind turbine, now producing electricity for a portion of the power needs of the Higher Education Center. The experience with these strategies may help inform discussions concerning sustainable design policies.

MECHANICAL SYSTEMS

EXISTING CONDITIONS

The 2016 Master Facilities Plan includes evaluations of the existing buildings on the main Wye Mills Campus except for buildings renovated or constructed since the *2003 5-Year Facilities Master Plan Update.* These buildings, which are not included in this analysis, are: Kent Humanities, Learning Resource Center, Dorchester Administration Building, Caroline College Center, Talbot Science Building, Todd Performing Arts Center, Eastern Shore Higher Education Center, and the Health Professions and Athletics Center – HPAC building.

GENERAL ANALYSIS

ENERGY COSTS

Previous analysis in the 2003 Facilities Master Plan Update determined that electricity costs were about 2.25 times the cost of No. 2 fuel oil as an energy source for heating. Based on the magnitude of energy costs for heating, it was determined that the capital costs for boilers, stacks, pumps, fuel storage, etc., probably could not be justified over the continued use of electricity as the primary heating energy source. Natural Gas is not available at the Wye Mills campus at this time due to lack of pipeline infrastructure to the region. It is not projected to be available in the region within the next ten years.

Analysis on subsequent projects, involving either new construction or renovation, determined that a geothermal heat pump system was the most cost-effective system for heating and cooling the buildings on Campus. The geothermal system has become the preferred system on Campus for space conditioning. And, indeed, as long as the real-estate is available for the well fields and the well fields can be placed in a manner that will not hinder future development on site, the continued use of geothermal systems is encouraged, thus providing a substantial contribution to sustainable design on Campus. There are currently six buildings on the main campus that are on geothermal systems: HPAC, Dorchester, Science, Humanities, Higher Education Center, and Caroline. The most recent conversion was the P.E. building, renamed the Health Professions and Athletics Center (HPAC). No further conversions are planned in the next 10 years.

Factors which have contributed to the success and popularity of the geothermal systems on Campus are:

- Requires less ceiling space than conventional ducted VAV systems, which integrates better with the low floor-to-floor heights in the existing buildings.
- Utilizes energy recovery units as part of the system design, thus reducing loads related to ventilation air. The result is a very efficient building.
- The simplicity of the system and its operation.
- Ease of control and controllability.
- The overall efficiency of the system and its use of a renewable energy source - thus a “green” design with sustainability.

POTENTIAL ENERGY SAVINGS

Energy savings on Campus can primarily be realized by reduction of electricity use, since fossil fueled heating systems have been shown to be not cost effective. Potential electrical savings should be evaluated on renovation and new construction projects. Potential electrical savings to be considered are:

- The College contracted with Energy Education, Inc. (currently Cenergistic) to participate in an energy use reduction program from 2011 through 2014. Cenergistic identified areas of potential energy savings and recommended improvements. Those improvements included revised building scheduling, personal use of equipment and periodic energy audits of the campus classroom and office areas to identify potential savings

and encourage personal conservation of energy. Cenergistic personnel also made recommendations which resulted in improved conditioned air in the TPAC building. The program resulted in energy savings of approximately 18%. While the contract has expired, the College continues to utilize the lessons learned in the program.

- The College has entered into an agreement with Solar City to permit the installation of a 1.76 MW (AC) Photovoltaic (PV) energy supply system on campus. This includes 6 acres of ground array units and parking lot canopies in parking lot A. The builder will install and maintain the system. The College has also entered into a Power Purchase Agreement (PPA) with builder to purchase the output of the installation for the next 20 years. The system will supply up to 40% of the campus load at a cost that is below the current cost of electricity purchased by the College

- The PV system also includes a small "tracking" array next to the CLEEn building to be used for educational purposes. The parking lot canopy system includes 10 electric vehicle charging stations which will be available for both College and public use. The system may also include storage battery technology to enable more efficient use of the system.

- Solar energy also will contribute to the College's Sustainability program.

- The College will evaluate the system and investigate possible additional solar energy installations in the future.

POTENTIAL ENERGY SAVINGS

- Individual building electric meters.
- Use of hydronic heat pump and geothermal heat pump systems (geothermal is preferred).
- Better HVAC system control (energy management).
- Manipulation of off peak energy and demand charges (energy management); investigate ice thermal storage for existing buildings utilizing chilled water as a cooling media.
- Improved insulation on buildings.
- High efficiency windows and doors.
- Use of Energy Recovery (thermal wheels, heat pipes, etc.).
- Proper balancing or rebalancing of systems to improve operating efficiency.
- Variable speed pumping techniques.
- Hot water reset control strategies.
- Economizer (free cooling) control strategies.
- Geothermal domestic water heating.

HVAC SYSTEMS SELECTION

• A life cycle cost analysis should be performed in the early stage of design of any new building or renovation of a building or buildings. This analysis should include a geothermal system as one of the alternative systems.

Buildings of excessive square footage, or buildings that have need of considerable outside air quantities or stringent humidity control do not usually economically lend themselves to conventional geothermal heat pump systems. These systems can require large amounts of acreage for the well or the trench fields which might limit future campus development.

The most likely configuration for a geothermal system would be to utilize vertical wells with a central pump to serve various geothermal units throughout the building.

• If a geothermal system is not appropriate for a particular building, then a small packaged boiler and evaporative cooler could be utilized to maintain a building “loop“ piping circuit (+/-70 degrees F) served by a central pump feeding various conventional water source heat pumps throughout the building.

• It is believed that life cycle costing will demonstrate that either geothermal systems or water source heat pumps served from a primary hydronic loop circulated throughout the building will perform very efficiently and effectively in the majority of the above listed buildings.

A new system that has recently (within the last 5 years) been introduced to the American market is the Variable Refrigerant Flow (VRF) system. This consists of either an air-cooled or water cooled condenser that serves “split” or “ductless” heat pumps throughout the facility. The benefits of this type of system are many. Some of the major advantages are: 1) Energy efficiency. These systems utilize digital scroll compressor technologies, Electrically Commutated Motors (ECM) for the fans within the Heat pumps themselves. Both of these technologies help in the reduction of energy usage by allowing the equipment to utilize only the amount of energy needed to meet temperature and humidity setpoints, no more and no less. 2) Simultaneous Heating and Cooling. 3) Lower installed costs. No ductwork to fabricate, seal, test or balance. This is a huge labor savings.

This type of system has already been installed within the Queen Anne’s Technical Building and is a good solution when renovating a building with little head room above the ceilings for utilities.

FIRE PROTECTION

- To meet both the domestic and fire protection needs of the campus, a water tower was constructed in the year 2001. This elevated tank system was the most efficient way for providing the needed available pressure of the potable and fire protection water to the campus.

- As buildings are constructed or renovated, they should be evaluated for sprinklering. Generally, a fully sprinklered building is desired for life-safety and loss prevention.

- Even though there exists a check valve in the fire protection riser at the Center for Business and Arts, this does not satisfy Code requirements for cross connection prevention. Its main purpose is to prevent backflow when the Siamese connection is charged. Also, there are two independent control systems (two fire protection sources), which could be a potential problem and require periodic maintenance, testing and performance review.

DOMESTIC WATER

- At all future buildings (new/renovated), where connections are made to potable water piping systems, a double check valve assembly should be installed.

- Master meters are already installed in the well house and are recorded daily.

These meters could be electronically read and stored via the new building control and monitoring system or manually read at each site.

BUILDING HVAC CONTROL AND MONITORING SYSTEM

The Campus has established a policy that will insure that each building receives a fully integrated HVAC control system tied to a campus wide building Automated System (BAS). The Campus standard for new controls is Johnson MetaSys., or similar BAS.

GENERAL HVAC ISSUES

- In general, eliminate all “flush with the floor” HVAC components such as:

Below-slab ductwork with floor diffusers which are subject to ground water seepage and refuse collection.

In-floor convective heating cabinets that are subject to accumulation of refuse (dirt, water, floor wax, dust, etc.). The electric heating elements tend to fail prematurely.

- In general, utilize fire dampers or approved transfer devices at ductwork wall penetrations in areas such as mechanical, janitor and storage rooms, floor penetrations and other rated walls by the Architect in accordance with present day Codes to comply with life safety requirements.

- Ventilation requirements (fresh outside air) should be as recommended by ASHRAE STANDARD 62 for each building. Each building should undergo a complete airside analysis/balance to insure that the occupants are receiving an adequate amount of fresh air.

- during any future renovation project, the buildings that use the corridor area as a return air plenum must have their

HVAC systems modified (or replaced) to avoid this condition, currently not allowed by Codes.

- There is a need for additional development of mechanical and electrical building standards. These standards should be in a written document that can be given to the various designers of the buildings, thus allowing for consistency on Campus as well as quality control.

NEEDS AND RECOMMENDED IMPROVEMENTS

1. Continue the recommendations and procedures initiated by Cenergistic in its program (see POTENTIAL ENERGY SAVINGS section above). Energy audits should be performed on all buildings on a regular basis. All new buildings or revisions to existing building should take into consideration new efficient energy technologies.

2. The mechanical (HVAC) and plumbing systems in the following buildings are in very poor condition, are very inefficient, do not meet certain Code requirements, have exceeded their useful life, and are in need of total replacement. It is recommended that these buildings be renovated as soon as possible in the following priority:

Continue the installation of individual electrical meters on each building on campus. These meters will help to identify cost of operation of each building and will enable more efficient scheduling of classes and other uses.

SUMMARY OF RECOMMENDATIONS BUILDING INFRASTRUCTURE, AV/IT INFRASTRUCTURE AND BUILDINGS

1. Building Infrastructure - Chiller and Roof for TPAC bldg.

This project is a critical to maintain this building operational. Closing this building would be devastating to the college.

2. IT/AV Infrastructure

The college is in need to update, upgrade and maintain the IT/AV needs of today learning environment.

3. QUEEN ANNE'S TECHNICAL BUILDING

After replacement of HVAC systems in the PE Building and Kent Humanities, the HVAC systems in Queen Anne's should be replaced. Due to the required disruption to the building which will affect architectural, electrical and perhaps structural components of the building, replacement of the HVAC system should be accomplished as a major renovation to the building.

If renovations to these buildings do not occur within a 1 to 2 year period, there will be further substantial deterioration and excessive operating and maintenance costs incurred.

Costs of renovations/replacement are included in the overall building renovation project.

4. Manufacturing Training Center.

The mechanical (HVAC) and plumbing systems in the Manufacturing Training Center need to be modified to suit the intended use of this facility when this is determined. Costs are included in the overall building renovations project.

ELECTRICAL SYSTEMS

The 2016 Master Facilities Plan includes evaluations of the existing buildings on the main Wye Mills Campus except for buildings renovated or constructed since the 2012 5-Year Facilities Master Plan Update. These buildings which are not included in this analysis are: Kent Humanities Building, Learning Resource Center, Dorchester Administration Building, Caroline College Center, Talbot Science Building, Todd Performing Arts Center, Eastern Shore Higher Education Center, and HPAC.

SUMMARY OF RECOMMENDATIONS

POWER FACTOR CORRECTION

Recent power factor corrections on the Delmarva Power billings have been minimal. Recommend continued installation of capacitors on 3-phase motors of 3 HP or larger. Recommend that power factors be closely monitored after the installation of the solar PV system. Installer has indicated that it will assist the College if issues arise from the installation.

LIGHTING FIXTURE REPLACEMENT

Continue with a scheduled replacement of lighting fixtures with high efficiency lamps and electronic ballasts in existing building interiors. Utilize more efficient equipment when existing buildings are renovated. If an existing building is not expected to be renovated within five years, then replacing should be done now. Payback is generally in a two to three year period so that if $75,000 were spent, savings would be at approximately $30,000 per year in electric costs could be realized. Lighting Fixture Replacement is an on-going program. The College has taken advantage of Utility programs and replaced building fixtures at minimal cost. It continues to do so as funds are available. Revised lighting schedules have also resulted in energy savings.

EMERGENCY LIGHTING

Replace all emergency lighting fixtures and exit signs with new fixtures utilizing LEDs in lieu of krypton and/or incandescent lamps.

SITE LIGHTING

Convert all 40 remaining existing fixtures with mercury vapor lamps to metal halide lamps. Install additional metal halide fixtures to improve illumination and security on campus. Any additional fixtures would offset any savings in energy costs. This includes new proposed parking areas and new access road from north end of campus.

The College continues to explore replacement of existing site lighting with more efficient fixtures as funds are available. College is also exploring additional funding through various equipment vendors.

FIRE ALARM SYSTEM

Revise and revamp all existing fire alarm systems with a state of the art addressable system to provide a central annunciator and remote monitoring system. This can be accomplished when replacing fire alarm systems as existing buildings are renovated and also by tying existing fire alarm systems into the central annunciator/monitoring system. This has been added to the HPAC bldg.

SECURITY SYSTEM

College has installed some closed circuit TV surveillance system with central monitoring station. Security surveillance system has been installed as buildings are renovated. The college will continue to install system to new building or renovated structures.

ELECTRIC SYSTEM TESTING

Schedule annual testing of medium voltage (25kv) system and components such as switchgear, transformers, and cables.
TRANSFORMER ENCLOSURES

The brick enclosures surrounding medium voltage switchgear and transformers should be removed and/or replaced. The college will explore the replacement of the existing campus electrical switchgear with new, outdoor switchgear due to the age and location of the current switchgear.

TECHNOLOGY SYSTEMS

See Technology Infrastructure Plan FY15 – FY19 – summary

SANITARY SEWER

EXISTING CONDITIONS

Chesapeake College has a permit from Maryland department of the Environment (MdE) to discharge treated wastewater into a tributary of the Wye River. The nPdES discharge permit number is Md0024384. The permit limits the amount of pollutants that can be discharged, based on a flow of 15,000 gallons per day (gpd). The college is required to notify MdE at least 180 days in advance if the average daily flow is anticipated to exceed
15,000 gpd.

The highest flows reported occurred during the winter months, and the lowest flows have traditionally occurred during the summer. These flow rates are slightly lower than those recorded in 2006, which we believe is due to the improvements the College has made to reduce the amount of stormwater and groundwater infiltration into the system. There were no non-compliances during the reporting period.

The treatment system is a package plant designed to treat 15,000 gpd. The treatment plant employs an extended aeration variation of the activated sludge process and includes two (2) aeration chambers, a surge tank, digester, chlorination/dechlorination, post aeration chamber, and clarifier. Drawings from 1989 show the package treatment plant manufactured by dAVCo. The data presented herein was provided by Jay Janney from Maryland Environmental Services (MES). The contact is Don Reed, who can be reached at 443-223-0084.

The existing gravity sewer system is generally in satisfactory condition with a few exceptions. Roughly 500 feet of 8" main needs to be replaced between the tennis courts and the Talbot Science building. In addition, two doghouse manholes located near the LRC and HEC buildings experience frequent flow blockages due to the lack of a smooth, shaped invert for the new-buildings' tie-ins.

ANALYSIS

With the current 4-inch diameter force main coming from the maintenance building and the 8-inch diameter gravity collection system, future plans for Chesapeake College will not be limited by the capacity of the collection system, but rather by the treatment plant's capacity. An 8-inch diameter collection line at a slope of 0.5% (6 inches of fall in every 100 feet) can handle over 550,000 gpd.

Maryland department of the Environment (MdE) in their design guidelines recommends that wastewater treatment plants be designed based on a design flow per student of
20 gpd for schools with a cafeteria and no gyms or showers. There are other design guidelines for schools without both a cafeteria and gyms and showers and for schools with both a cafeteria and gyms and showers. Since not every student uses both the cafeteria and the gym and shower each day, the 20 gpd per student is the most appropriate design guideline. Historical data can always be used to supersede recommended design guidelines.

Since the current treatment system is designed to treat 15,000 gpd, roughly 500 combined day students and staff can be added before the treatment system's capacity is exhausted.

(15,000 gpd – 3950 gpd) = 11,000 +/- unused capacity
11,000 gpd / 20 gpd/student = 550 new students/staff

This number is based on design data, whereas actual campus enrollment information may show that the actual sewage flow per person is less than the assumed rate of 20 gpd per student. Similarly, MdE's guidelines list a design flow of 100 gpd for boarding students. This same 10,000 of excess capacity translates to 110 boarding students.

If the college were to add dormitories for students to live on campus, the design flow for each resident student would be 80 gpd. The college could add roughly 125 resident students before the existing wastewater treatment plant would reach capacity.

RECOMMENDATIONS

The existing wastewater collection system and treatment plant can adequately serve the existing student population and allows for significant expansion of both day students, resident students, or some combination.

It may be to the college's advantage to offer more classes/events during non-academic periods in the school calendar. The treatment plant has a biological population (biomass) that reduces the pollution in the treatment process. The biomass responds poorly to changes such as lower flows. It is better to treat 5,000 to 6,000 gpd year-round then to have low flow periods in the summer and over major holidays and other breaks in the academic schedule. By utilizing the campus and its resources more intensely during non- academic periods, the treatment plant's performance many improve.

The existing farm located in the northwest quadrant of the Route 50/Route 213 intersection is under consideration for development into a business park. As plans for this development progress, it is recommended that the college be involved in the discussion of possible synergies related to wastewater treatment. One possibility would be to pump the college's sewage to a new treatment plant that would also serve the proposed development. This new treatment plant would use a more advanced treatment technology to treat a higher volume of flow to more stringent standards, and would discharge the effluent through the college's existing outfall. Thus, the pollutant loading in the combined effluent would remain consistent with the college's existing permit despite the higher volume of flow.

The existing package sewer treatment plan is roughly 20 years old. A building enclosure is proposed that will extend the life of this system to some extent, but the college may wish to consider replacement of the plant in its expansion plans for the next 10 years if the synergy with the development described in the previous paragraph does not materialize.

New buildings and renovation projects may wish to consider such technologies as low-flow faucets, dual flush toilets, waterless urinals, and greywater reuse to reduce sewage flows. However, staff indicated that the gravity sewer from the HEC building is exceedingly flat and that blockages are occurring due to insufficient flow. This situation may actually be improved by adding another building to this section of sewer because the flows pipe scour velocity would be increased. It may not be wise to utilize water-saving features described above in this area if it will contribute to additional frequency of blockages.

The entire gravity system should be "scoped" with a video camera to identify potential problem areas, since this has never been performed before. At a minimum, the 500 feet of sewer mentioned above should be corrected utilizing slip-line or pipe-burst technology. The two dog-house manholes should be re-build with shaped inverts in place of the existing dog-house connections.

WATER SYSTEM

EXISTING CONDITIONS

Water usage for students and staff at the college mirrors the flows discharged by the water treatment plant.

Maryland department of the Environment classifies Chesapeake College's water system as a non-transient/non-community water system. This means that Chesapeake College must meet the same requirements as the Town of Centreville. The need for disinfection in a non-transient/non-community water system is determined by MdE on a case-by case basis. Normally a distribution system serving multiple buildings would require a disinfection system to maintain a chlorine residual in the distribution system.

The potable water used by Chesapeake College's students and staff comes from two wells. Both wells are approximately 425 feet deep and contain 7.5 horsepower, three- phase, submersible pumps. The wells were drilled in 1967. Well #1 is located in the well house with the chlorination equipment and chlorine contact tanks. The pump in Well #1 was replaced in 2002. Well #2 is located 200 feet south of the well house in a concrete vault. Its pump was replaced in 2002. Both wells pump 60 gallons per minute (gpm) at 60 pounds per square inch (psi). Shannahan tested the wells in 1993. No problems were discovered. Chesapeake College was issued groundwater Appropriation Permit (gAP), #QA2000g031(02) by Maryland department of the Environment, effective November 1,
2003. This permit expires on November 1, 2015.

There are two tanks in the well house. One is 10,000 gallons and the other is 15,000 gallons. These tanks are used as chlorine contact tanks. Only one is used at a time. They are completely filled with water. The tanks provide the 30 minutes of chlorine contact time required by MdE before to water is used by the people on campus. The chlorine contact tanks are required because there are people using the water within 100 feet of the well house. The distribution system between the well house and the first user does not contain the volume necessary to produce the required detention time. The wells pump water through the chlorine contact tanks and into the distribution system and the 50,000 gallon elevated water storage tank.

Groundwater from the two wells was found to contain arsenic levels higher than allowed by state drinking water standards. An arsenic treatment system has been designed to correct this condition, and construction was completed in 2009.

The campus water distribution system consists of an 8-inch loop with several spurs. The distribution system includes approximately 12 fire hydrants. All but two hydrants are connected to the 8-inch loop. Maintenance staff have added several additional gate valves to more effectively isolate sections of water main for maintenance and repair such that disruptions to unaffected buildings can be minimized. Staff indicated that some additional gate valves are still required to facilitate isolation of certain buildings.

The elevated water storage tank is connected to the loop with a 12-inch pipe. Since water can take two paths to any point in the loop in the distribution system, less energy is needed to deliver the water and more pressure or flow is available. Fifteen hundred gallons per minute are available at any point in the 8-inch distribution system. If extensions to the water distribution system are constructed in the future, they should be designed consistent with the current loop configuration to strengthen the distribution system.

ANALYSIS

Since both wells pump 60 gpm, the pumps only run a total of 1.4 hours per day. The second pump is a back-up for the first pump. Design criteria dictate that the system's capacity be based on one pump out of service. The well pumps and distribution systems are not the limiting factor that establishes the water system's capacity because they pump far less than 12 hours on an average day. Storage in the college's 50,000 gallon elevated water tank is what establishes the water system

capacity.

Chesapeake College only has 11,000 gallons of domestic storage in the elevated water storage tank. Thirty-nine thousand gallons of the elevated storage is reserved for firefighting and sprinklers. A good rule of thumb is to have approximately one day of domestic use in elevated storage. The difference between the domestic storage in the tank and the current usage during the school year is 6,000 gallons per day. Assuming each day student/ staff uses 20 gpd, the college could add 300 more full time day students/staff. This number is based on design data, whereas actual campus enrollment information may show that the similarly, actual sewage flow per person is less than the assumed rate of 20 gpd per student. 60 new boarding students may be added assuming a rate of 100 gpd per student.

RECOMMENDATIONS

The Chesapeake College's existing water system, wells, elevated storage tank and distribution system are more than adequate to meet today's needs for potable water for sanitary needs. There is also room for expansion in the number of staff and students on campus.

Where feasible, future capital projects should include provision of additional gate valves that will allow for efficient isolation of buildings for maintenance and repair. Any additional gate valves may also installed as a part of regular campus operations and maintenance.

New buildings and renovations of existing buildings could reduce water usage through use of:

- rainwater catchment systems for toilet flushing or landscape irrigation
- dual flush toilets
- efficient fixtures
- Implementation of drought tolerant landscaping materials with no irrigation drip efficient irrigation.

SIDEWALKS

EXISTING CONDITIONS

In general, the sidewalks are in good condition and provide convenient access routes between buildings and parking areas. Some of the older sidewalks are settling and/or turf is building up to prevent adequate drainage, creating wet or icy conditions. Some sidewalks provide access for emergency and maintenance vehicles to access the interior campus spaces and buildings. Not all of these sidewalks are wide enough to accommodate these vehicles.

A sidewalk was never constructed adjacent to the loop road, in the vicinity of the pool building. In addition, there is considerable pedestrian traffic between Parking Lot A and the Kent Humanities building with no sidewalk along this route.

ANALYSIS

The existing annual budget for sidewalk improvements is not sufficient to repair damaged or degrading sidewalks and allow for the widening and new sidewalks listed above. Some instances of wet/icy sidewalks may require minor regrading of the surrounding turf or the addition of small storm drain inlets.

RECOMMENDATIONS

Where possible, building renovations or new buildings should include upgrades for new sidewalks, widening of existing sidewalks, and wider curb cuts from the loop road to provide emergency vehicle access. Drainage and storm drain inlets should also be investigated at this time. Where improvements cannot be folded into larger projects, it may be necessary to request additional monies to fund these upgrades.

STORMDRAINS AND STORMWATER MANAGEMENT:

EXISTING CONDITIONS

The campus is served by a network of inlet catch basins and storm drain pipes which generally drain surface runoff from the north side of the campus to the south side. There are two main drainage networks each outfalling at separate locations on the south side of campus. The first discharges directly into the existing woods and serves the southwest quadrant of the campus (i.e., the Queen Anne's Technical Building, the technical annex building, the maintenance building, the day care building, the tennis courts, and the associated parking lots and travel lanes). The main drainage network serves approximately 85 acres of on-site drainage area and accounts for over 75% of the developed site. An additional off-site drainage area of approximately 50 acres from the north side of U.S. Route 50 drains through the site. The discharge from this network outfalls into the existing stormwater management pond at the south side of the campus.

An existing stormwater management facility was enlarged on the north side of campus as part of the Higher Education Center project. This pond receives approximately 20 acres of on-site drainage plus 50 acres of off-site drainage from the north side of U.S. Route 50.

The site's primary stormwater management pond is located on the south side of campus and has a surficial water area of approximately one acre at elevation 36.5 ±. The bottom of the pond is at elevation 31.0 ± and the top of the embankment is at elevation 40.5 ±. The existing corrugated metal riser structure that provides the outlet from this pond was replaced in 2007 and the accumulated sediment in the pond was removed at that time.

There is evidence in some areas of washouts from storm drain pipes that are not completely water-tight.

ANALYSIS

Computations performed during the Caroline College Center renovation showed that the campus as a whole functions adequately to provide water quantity and quality control. Therefore, both the primary pond and the northern pond are in compliance with current state and local regulations. The replacement of the primary ponds outlet structure should ensure that this facility will continue to operate satisfactorily for the next 20-30 years.

Due to the large offsite drainage area that flows into to the northern pond, there is inadequate storm drain capacity to convey the pond outflow to the primary pond during intense storm events. Based on McCone's analysis of the on-site closed storm drain system, it appears that these pipes were not sized to accommodate this additional offsite flow when the campus was originally designed. As a result, there is a possibility of periodic flooding throughout the downstream storm drain system and adjacent low areas.

The primary pond will require routine removal of sediment in the permanent pool as part of the regular maintenance schedule of any stormwater pond. This may occur as early as 2007 in conjunction the outlet structure reconstruction. Sediment removal, when it occurs, should include provision of a sediment forebay in accordance with current pond design standards.

RECOMMENDATIONS

In 2010, Queen Anne's County adopted a new stormwater management ordinance that requires Environmental Site Design (ESD) practices to be implemented to the maximum extent practicable to treat the Channel Protection Volume, or one-year storm event. This change will affect all new impervious areas proposed from this point forward that are larger than 5,000

square feet. ESD practices include bioretention, landscape infiltration, permeable pavements, green roofs, rainwater harvesting, and water quality swales. Future design should proceed with attention paid to stormwater management from the outset of project planning.

New buildings and renovations of existing buildings will need to provide quantity and quality management of stormwater in accordance with these new regulations. This can be accomplished either by utilizing excess capacity in the stormwater management system, by providing new stormwater management facilities. Based on recent interpretations by the Queen Anne's County Department of Public Works, it may be unlikely that the pond capacity can be utilized; meaning new ESD facilities will be required. Design should also consider that there may not be sufficient capacity to accommodate additional stormwater flows from new construction to the existing ponds.

At the time this section was prepared, the EPA had issued its final Chesapeake Bay TMDL, which presents a pollution "diet" to restore and protect the Bay. Maryland has issued its Final Phase I Watershed Implementation Plan (WIP) to achieve the required reduction in pollutants, which includes those found in stormwater runoff. It is unclear at this time what affect this new layer of regulation will have on development at the College, but this should be kept in mind when planning and budgeting for new projects.

New buildings and renovations have implementing low impact development strategies to minimize the need for stormwater infrastructure improvements such as:

- Porous pavement or porous pavers
- Bioretention and raingardens

LIGHTING

EXISTING CONDITIONS

The college recently completed an effort to upgrade all light poles and fixtures. In some locations, the new pole locations allow for future addition or widening of sidewalks.

ANALYSIS

Lighting should be adequate for the existing campus for the foreseeable future.

RECOMMENDATIONS

New capital projects should design the exterior lighting to meet the current campus and Queen Anne's county standards, as applicable.

FOREST CONSERVATION

EXISTING CONDITIONS

During the approval process for the Caroline College Center addition and renovation, the Queen Anne's County Planning and Zoning department required that the college address forest conservation for the proposed project, but not the entire existing campus. Of the 9.77 acres of existing forest on campus, 6.81 acres was placed in a forest conservation easement. The majority of this forest is located in the ravine on the south end of campus, into which the primary stormwater pond discharges. The unencumbered area of forest is the relatively flat area south of the tennis courts and water tower.

ANALYSIS

It is difficult to extrapolate the previous forest conservation analysis to determine what effect it might have on future development, because it only analyzed the proposed project, not the entire site. If this same methodology is applied in the future, it would allow for a project area of 7.41 acres, at which point, the entire 9.77 acres of forest would need to be placed in a forest conservation easement. Any area in excess of 7.41 would presumably require a portion of the site to be afforested.

RECOMMENDATIONS

Due to the uniqueness of this site, all we can recommend at this time is to be aware that an analysis of forest conservation will need to be performed with any project that creates new floor area, and possibly with any project that creates any additional impervious area. This should be addressed at the time if site plan submittal to the County for review.

FACILITIES MANAGEMENT INFORMATION

Following is a list of the Programs the College has started in order to maintain the facilities information documents:

1. CAD Records for all the college buildings
2. BAS systems for our renovated buildings and to implement those systems to the rest of the bldg.
3. GIS to maintain the building utilities records
4. GIS to maintain the AV/IT utility records

The college has been active in including the above mentioned type of system/ records for the structure, bldg infrastructure, and AV/IT infrastructure records as well.

Technology Infrastructure Plan FY 15- FY 19

The technological landscape is subject to changes more frequently than other institutional long term plans such as the Facilities Master Plan. The College should however, formulate a longer term view of how current and emerging technology tools can be used to further its educational mission than is represented in the 1-3 year tactical Technology Plan. As technology and technology-supported initiatives are often costly, the realization of the goals and objectives described in the plan that follows must depend on the availability of the requisite funding. The costs for many of the initiatives in this plan are significant. It will often be the case that we will need to allocate additional one-time funds to support a project such as a new telephone switch or a major renovation of the fiber optic infrastructure.

A successful information technology planning process must address the concerns, needs, and goals of all College constituencies, with particular emphasis on the needs of students and faculty, whose activities are at the core of the College's mission. Plans for training and support for all members of the College community must also be incorporated into technology objectives. These goals are generally represented in the Technology Plan and are not addressed in the Technology Infrastructure Plan (TIP). The TIP looks at institutional needs from the perspective of technology as a utility and represents the best look at the future needs of the college from point of view of the base level tools on which the school builds its services.

This document describes information technology goals and activities in which the College will engage over the next three to five years. These cover a broad range of issues that affect all members of the College community. The primary responsibility for carrying out this plan and for moving the College forward technologically will be borne by the College's IT organizations. However, a consistent, efficient IT strategy requires that the entire community work toward achieving institutional goals.

A robust infrastructure, coupled with suitable technology tools and broad access, is key to the effective use of technology. With this in mind, the College will provide students, faculty, and staff with the technology resources they need to carry out their work. An equipment and infrastructure replacement plan, ensuring that computer equipment and software is replaced or upgraded on a rolling basis, following an affordable and practical multi-year plan, will assist the college in achieving this goal. The College will ensure that its technology tools and architectures that are reliable and that they facilitate Web access. A state-of-the-art network communications system will provide high-speed, ubiquitous, and secure access to shared resources from all campus locations, as well as appropriate off-campus sites.

The College will enhance and increase access to technology for all members of the campus community. Recognizing the importance of state-of-the-art instructional spaces, the College will build facilities that allow the enrichment of instruction through information technology. We will also ensure that persons with disabilities have full access to all technology initiatives.

The Technology Infrastructure Plan will be used to develop shorter term objectives to be included in the annually updated Technology Plan.

Priorities

1 Time frame of 1-2 years
2 Time frame of 2-3 years
3 Time frame of 3-4 years
4 When convenient

Goals

I. Support the base-level technology infrastructure.

a. Maintain fiber optic cable infrastructure to provide a minimum of 2 GB capacity across the network. This will improve total capacity and allow for greater support for video and other tools requiring high quality of service.

Strategy	Purpose	Cost	Status	Priority
Evaluate and install single mode fiber to the Maintenance, Manufacturing Training Center and the Queen Anne's Technical Building	These buildings are at the distance limits for multi-mode fiber. The single mode fiber will improve connectivity and capacity.	$50,000	Fiber has been installed to Tech Building July 2014	1
Evaluate and plan for major network infrastructure improvement to expand capacity to 10 GB	Improved capacity and QOS.	$150,000	No funds	1
Upgrade fiber link between LRC and Dorchester Building	Improving network performance	$20,000		1
Evaluate network speeds as new buildings come on line to maintain defined capacity.	Maintain current campus standards.	No cost for evaluation	Ongoing	2

b. Support 24/7/365 services to the college within the college's internal network and redundancy to the Internet.

Strategy	Purpose	Cost	Status	Priority
Develop alternative paths for network connectivity within the college's network.	This will permit routing of services around a failure in the event of severed connections.	$75,000	Possible project FY 15	1
Develop an alternative connection to the Internet.	The current connection is vulnerable to electrical storms and other issues. The Internet is mission critical. We expect this connection to be through Maryland Broadband Cooperative.	$20,000 - $50,000	Contracted with MD Broadband July 2015	3

c. Optimize the network for the distribution of video. Video requires high bandwidth and quality of service.

Strategy	Purpose	Cost	Status	Priority
Replace the coaxial infrastructure with fiber connections for the distribution of network video.	The coaxial infrastructure is expensive to support and prone to poor performance.	$75,000 plus single mode Evaluate Alternative connection	Not in current plans	4

d. Maintain core switches, edge switches, and routers for 99.99% uptime. Currently we are subject to unscheduled downtime due to equipment failure, power fluctuations, and other issues.

Strategy	Purpose	Cost	Status	Priority
Replace core switches on no more than a five year cycle. These are mission critical devices. Installed Spring 08.	Five years is the expected end of life for these devices and the new devices need to be 10 GB compatible to work with the HPAC equipment.	$85,000	Plan to replace in July 2015	1
Purchase and maintain a supply of backup switches and routers.	Redundancy	$30,000		1
Replace edge switches on no more than a seven year cycle. Refreshed Fall 2011.	Eliminate unexpected downtime due to single points of failure.			3
Evaluate routers and firewalls on an annual basis.	Eliminate unexpected downtime due to single points of failure.	No cost for evaluation replacement scenario $50,000	Evaluating FY 15	3

e. Support off-campus connectivity

Strategy	Purpose	Cost	Status	Priority
Continue to develop the use of VPNs	Provide secure access to our mission critical systems from off-site locations for telecommuting and other needs.	$15,000		2
Maximize use of the MD Broadband connection to Cambridge	Eliminate T1 expenses and improve connectivity.	DONE	**Complete**	1
Evaluate connectivity with Easton for the provisioning of Internet services.	Currently Easton has most limited Internet services.	No associated costs for evaluation. Final decisions pending Easton plans.	Wireless issues a concern for iPad plan	1

II. Support Mission critical systems: Colleague, Campus EAI Portal, Canvas LMS, Exchange Email, telecommunications.

a. Maintain the computers and backup equipment for the Colleague system.

Strategy	Purpose	Cost	Status	Priority
Purchase Windows servers for Colleague.	Migration to SQL	$275,000	FY 15-16	1
Review backup procedures and test on a regular basis.		No cost associated	Review FY 15	
Replace the Colleague Server as needed and recommended by Datatel. Replaced in Fall 2011.			FY 15-16	1
Install new Colleague modules as needed	Recruiter, Image Management, etc.	$230,000 for Recruiter	FY 15-16	1

b. Provide a secure network infrastructure

Strategy	Purpose	Cost	Status	Priority
Develop identity management services and secure sign-on to industry standards. Projected as part of the Portal Project 2012.	Security		Continuing implementation	1
Expand and enhance intrusion detection and other appropriate security monitoring systems.	Security	$35,000	FY 15 – purchased additional software in FY 14	1
Evaluate spam and antivirus identification and control systems.	Security	$10,000		3
Plan for quality of service data transmission to support video over IP and other services	Enhanced usability of network systems	No cost for planning	No funds	2
Continue to improve physical security for telecom closets and server farms by such appropriate means as access control systems,	Security – Security cameras have been moved up in priority due to issues with the server room.	$50,000	No funds	1

security cameras, and motion detectors.				
Expand the use of computer security systems such as key-based locks and cables as appropriate.	Security	$5,000	FY 15	2

c. Provide secure power systems for maintenance of mission critical systems.

Strategy	Purpose	Cost	Status	Priority
Purchase additional UPS systems as needed for mission critical servers and replace as needed		$100,000	First installed July 2014	1
Purchase and install extended UPS capacity for telecomm closets			FY 15	1
Analyze the need for extended UPS service or generators across the campus	Maintenance and other buildings that may need to have 7/24 service in case of emergencies	50,000 +-		2

d. Replace the telephone switch before it reaches end of life.

Strategy	Purpose	Cost	Status	Priority
Evaluate the integration of voice mail with email services. Unified communications will be integrated with the new phone system.			FY 15 with O 365	1-2

e. Continue to develop and support disaster recovery planning and crisis management.

Strategy	Purpose	Cost	Status	Priority
Evaluate disaster recovery plans and procedures and implement improvements as appropriate.	Disaster Recovery	No cost for evaluation	Ongoing	1
Develop a hotsite for system operations at Cambridge	Redundancy	$250,000	No funds	3

f. Replace all mission critical servers within the five year support coverage time period.

Strategy	Purpose	Cost	Status	Priority
Evaluate servers and network needs to develop a replacement plan.	Budget planning/continuity of services	No cost for evaluation	FY 15	1

g. Expand use of blade servers and virtualization to support redundancy and rapid support for failover.

Strategy	Purpose	Cost	Status	Priority
Implement a backup SAN (Storage Area Network) for data center consolidation and other system services. Implemented Summer 2011. Continuing virtualization.	Failover for servers	$250,000		3

III. Provide the Technology infrastructure necessary for 21st century teaching and learning

a. Objective: Instructors will have state of the art technology tools in the classroom.

Strategy	Purpose	Cost	Status	Priority
Upgrade computer systems.	Improved pedagogy	$860,000	Beginning refresh Summer 2014	1
Begin planning for expanded use of handhelds and other mobile internet devices in the classroom	Improved pedagogy	No cost for planning	Implementing iPad project in August 2014	1

b. Objective: Upgrade software and network design to accommodate changes to new versions of software.

Strategy	Purpose	Cost	Status	Priority
Upgrade domain infrastructure as it reaches EOL.	Necessary for continued support and compatibility with new systems	$25,000 for consulting and license upgrades		2

Move to new certificate authentication and away from internal certificates.		???		1

IV. Provide the technology necessary to enhance business operations at the college

Strategy	Purpose	Cost	Status	Priority
Plan and implement a document management system	Improve business operations, enhance storage and retrieval.	$250,000	No funds	1-2
Evaluate and upgrade campus trunk lines to expand capacity	We are occasionally using all trunks		FY 15	1

V. P**rovide the technology necessary for major renovations and construction projects**

Strategy	Purpose	Cost	Priority
Continue to study the available technology needed to support the HPAC building		??	?
Begin planning for the technology for the renovation of the Queen Anne's Technical Building.		??	?

CAMPUS PLANNING

SITE ANALYSIS

The Chesapeake College Campus is located in Queen Anne's County, Maryland near the historic Village of Wye Mills and Wye Mills state Park and is bounded by U.S. Route 50 to the north, MD Route 213 to the east and MD Route 662 to the southeast. The campus occupies approximately 170 acres of land. There are a number of existing and planned conditions which will influence the development of this master plan.

CIRCULATION AND PARKING

The circulation system for Chesapeake College is comprised of the regional road network, internal campus road network, parking areas and internal pedestrian system.

REGIONAL ROADWAY NETWORK

Chesapeake College is well-served by the regional road network as described above. The primary access is off of MD Rt. 213 with three secondary access points off of MD Rt. 662. Currently, the intersection of Rt. 50 and Rt. 213 is signalized allowing access from both the east and the west along Rt. 50 and from Centreville to the north. In addition, there is a median break along Rt. 50 to the west which connects Rt. 662 to Rt. 50 in both directions. While there is a median break, this intersection is not signalized; therefore, it is not ideal for accessing the campus from westbound Rt. 50 nor is it ideal for going westbound Rt. 50 from Rt. 662.

There are a number of regional roadway improvements/modifications planned which will affect access to and from the campus. A "diamond interchange" is planned for Rt. 50 and Rt. 213, with Rt. 213 modified to bridge over Rt. 50. The interchange ramps will intersect Rt. 213 at traffic circles which should facilitate the movement of traffic. The ramp at the southwest corner of the interchange will encroach into the campus and will meet Rt. 213 approximately halfway between the existing intersection of Rt. 50 and the main entrance to Chesapeake College. In addition, there are tentative plans to eliminate the median break at Rt. 50 and Rt. 662, resulting in a right-in/right-out (accommodating eastbound Rt. 50 traffic only) intersection. These projects are currently identified as non-funded projects, without a set schedule for construction (MDSHA, 10/18/2011).

INTERNAL ROADWAY NETWORK

Internally, Chesapeake College is served by a clearly defined roadway system. The primary organizing element of this system is a one-way, circular "loop road" which surrounds the core of the campus. There are then three connecting roads linking the loop road with the surrounding roadway network. The main entrance is a divided boulevard, which connects Rt. 213 to the loop road at the eastern side and terminates in a smaller circular drop-off/visitor parking area. A secondary access road connects Rt. 662 to the loop road at the northwestern side and a third access "spur" connects Rt. 662 to the loop road at the southwestern side. In addition, there is an existing access lane that provides a direct connection between Route 662 and Maintenance. There are several drop-off extensions from the loop road: the primary campus drop-off at the main entrance road as described above; one at the front of the Economic development Center; a service/drop-off area to the rear of the Learning Resource Center, Caroline College Center and Economic development Center; and a drop-off at the daycare facility. In addition, the Queen Anne's Technical, Technical Annex and Maintenance Building have direct service access.

PEDESTRIAN NETWORK

The campus core is well-served by an extensive system of pedestrian pathways linking buildings, open spaces and parking areas. Stakeholders have indicated, however, that some areas of campus, particularly the pond, athletic fields and woods are underserved by walkways. In addition, covered walkways among some of the buildings where pedestrian traffic is heaviest (between Economic development Center and Caroline and between Talbot and Kent) could be considered. While an extensive pedestrian system exists, additional improvements should focus on maintenance and grading to eliminate pooling of water and providing better connections across parking bays.

PARKING RESOURCES

Chesapeake College has approximately 784 parking spaces (not including the 136 parking spaces for Higher Education) as outlined in the Computation of Parking Allowance in Chapter 3 of this report. Most are located in lots that follow the alignment of the loop road. They are, for the most part, on the outside of the loop road with the exception of the lot to the southwest of Kent Humanities. In addition, some of the parking is located along the loop road (parallel parking) and on the campus drop-off loop.

As described in Chapter 3 under Computation of Parking Allowance, the College has a parking deficit of approximately 131 parking spaces. More importantly, the parking that does exist is not well-distributed. Most of the academic activity occurs in Kent, Talbot and Queen Anne's Technical buildings; however, this portion of the campus is under-served by parking. In addition, there are no parking spaces convenient to the athletic fields. Only a few buildings have handicap parking (or the ability to add handicap parking easily) adjacent to the building and this has been identified by many stakeholders as a problem.

PEDESTRIAN AND VEHICULAR CONFLICTS

Because most of the parking is located outside the loop road, pedestrian safety and conflict with vehicles has been identified as a concern to the College. People generally take the shortest and most direct route from the parking to their destination which results in crossing the loop road in many different locations as opposed to designated intersections. In addition, designated crosswalk areas are not always very visible. Speed bumps have been added with some success in some areas to calm traffic along the loop road. The campus master plan will need to address these conflicts. Options should consider speed humps, more visible pedestrian crosswalk areas and additional walkways/landscaping that help to channel pedestrians to the appropriate crossing areas. Longer-term solutions might also include relocating the loop road (or portions of it) outside of the parking areas to eliminate the need to cross it. Refer to Exhibit A-3, Pedestrian/Vehicular Conflicts

ADJACENT LAND USE

One of the most appealing attributes to Chesapeake College is its rural Eastern Shore location and agrarian setting. At the time of the previous master plan, Queen Anne's County identified the campus and surrounding lands adjacent to Rt. 50 and Rt. 213 area as a potential site for mixed used development. The Chesapeake College Area Community Plan (CCACP) was prepared by the Queen Anne's County Department of Planning and Zoning to guide development, while respecting the rural and agricultural qualities of the area. In the draft CCACP, two adjacent areas were identified for development. The area north of Rt. 50 was identified for mixed-use development and area east of Rt. 213 was identified for residential development. The master plan was not approved by the Planning Commission.

Subsequently, the Queen Anne's County 2010 Comprehensive Plan identifies Chesapeake College's surrounding lands as

Priority Preservation Areas (PPA), with the exception of the land northeast of the intersection of Rt. 50 and Rt. 213, the Whalou Property. This property is classified as non-priority preservation area (Map ESA-10). The Comprehensive Plan's classification of land for preservation is a reversal of the economic development goals of the draft CCACP.

At the time of this report the Whalou property and the property east of Rt. 213 submitted petitions for rezoning. The rezoning will allow development similar to the land uses considered in the draft CCACP. The area to the southwest of the campus, across Rt. 662, is likely to remain as agricultural uses, as supported by Queen Anne's County 2010 Comprehensive Plan.

RESIDENTIAL DEVELOPMENT

New residential development is under consideration for the area to the east of Chesapeake College, across Rt. 213.

AGRICULTURAL USES

The area to the southwest of the campus, across Rt. 662, is likely to remain as agricultural uses.

OPEN SPACES AND RECREATION

Chesapeake College is fortunate to have a significant amount of open space for both active and passive recreational uses, as described below.

ACTIVE RECREATION

Most of the active recreation facilities are located on the eastern portion of the campus, along Rt. 213 and include soccer, baseball and softball fields as well as a disc golf course. Tennis courts are also located to the southeast of the loop road. There is a need to provide better access to the athletic facilities (trail connections as well as convenient access).

QUADRANGLES

There remains a significant amount of open space within the core of Chesapeake College, however, only a few of these areas are developing as traditional campus quadrangles. The Learning Resource Center ("LRC") quad is the central organizing space of the academic core. This quad is defined by Dorchester, Caroline, Talbot and Kent and the Learning Resource Center. The western portion of this space is open to accommodate a variety of passive uses. The eastern portion contains the Core Garden with significant gathering and paved areas, landscaping and shade trees, seat walls and picnic tables.

The other area of campus that acts as a quadrangle is "Talbot Quad" the area defined by Talbot, Dorchester, Queen Anne's Technical, Daycare and the Physical Education building. In comparison to the "LRC Quad", this space has less of a geometric organization, with less open lawn and more tree canopy cover. This quad is mostly a passive open space.

GATHERING AREAS

Gathering areas are those areas where students and faculty congregate because they are pleasant spaces, they are associated with a particular interior use or they are located at particular junctions. As with sacred spaces, the master plan should strive to preserve and reinforce these spaces. The most significant gathering spaces include the east side of the "LRC Quad" (the Core Garden near Dorchester and Caroline), the Caroline Patio on the north side of Caroline, the entrance area in front of Talbot and the terrace outside of the LRC. Because the terrace on the north side of Caroline has become so popular, there is a need to create a stronger connection between it and the Economic Development Center. This most likely will be an architectural solution.

IMAGE OPEN SPACE

Some open space areas are not used for activities, but are nonetheless important in terms of overall campus image. In particular, the open space associated with the main entrance drive and the drop-off circle is particularly important. As identified in the previous master plan, this entrance drive is reminiscent of the traditional approach drive to many Eastern Shore estates and conveys a distinct sense of arrival and welcome. The frontage along Rt. 50 also conveys an important Eastern Shore rural image for the College.

PRIMARY DEVELOPMENT OPPORTUNITIES

The Chesapeake College Campus contains a significant amount of acreage providing for expansion for its facilities. Following is an outline of the primary opportunities for development of new (or expansion of existing) facilities:

BUILDING EXPANSION

Many of the existing buildings have open space adjacent to them which would allow for expansion opportunities.

The Daycare facility could expand to the east or west. There is an existing playground and grove of trees to the north and expansion to the north would cut off window access to some of the existing classrooms.

The Physical Education facility could expand to the south or the east. Expansion to the south should take advantage of the opportunity to provide an attractive architectural face along the north side of Talbot Quad. Expansion to the northeast provides an opportunity to enhance the arrival experience to the College and shape the future development around the existing drop-off loop.

The Economic Development Center has expansion opportunities to the east or west. Expansion to the west should take into account the service and loading access to the LRC and Caroline College Center. Expansion to the east should take advantage of the opportunity to reinforce the central drop off area as the campus "front door".

The Maintenance Building could expand to the southeast or west. Telecommunication infrastructure is constraint for eastward expansion. Expansion to the west and south will displace surface parking and services.

The land north and west of Kent Humanities is an opportunity to site a new building on the LRC Quad, reinforcing the

definition of this space. Site planning and design of this building should take into account the existing evergreen grove and future opportunities to expand parking resources in this area.

The land east of the Economic Development Center provides generous space for a new building site, if the EDC does not expand east. This building site offers an opportunity to reinforce the central drop off area and enhance the sense of arrival to the campus.

The Queen Anne's Technical building site offers a good opportunity for redevelopment, assuming this building's program is relocated to a new facility elsewhere on campus.

OTHER SITE DEVELOPMENT PROJECTS

In addition to accommodating building, parking and open space projects, there may be the need to accommodate other programs that may not require a building. For example, there is an interest in considering a CdL/Transportation Program that includes a training track and lab area for students to learn appropriate techniques and operations of truck, bus, motorcycle and/or emergency vehicles. Exhibits E identifies several areas on campus where this might be considered, if appropriate to include on the campus. If this facility is to be developed on campus, consideration for locating it in any of the sites identified should be given to the ability to utilize existing natural resources, such as the woods, to provide visual buffering. In addition, consideration should be given to the ability to provide additional landscape screening and, potentially, noise buffers without adversely affecting the character of the campus and surroundings.

VISUAL AND PHYSICAL CORRIDORS TO MAINTAIN

The expansion of buildings within the academic core has enhanced a clear sense of organization in terms of campus spaces and a hierarchy of walkways. The LRC Quad is defined on three of the four sides by buildings and associated walkways reinforce this organization of this quadrangle. The expansion to Caroline and its associated site work has created a direct and clear pedestrian connection between the campus drop-off and the LRC Quad. As the campus continues to grow and expand, it will be important to maintain and reinforce these connections, both visually and physically. Consideration should also be given to reinforcing a significant pedestrian connection along a north-south alignment linking Economic Development, Dorchester, Physical Education, Talbot and Queen Anne's. Refer to

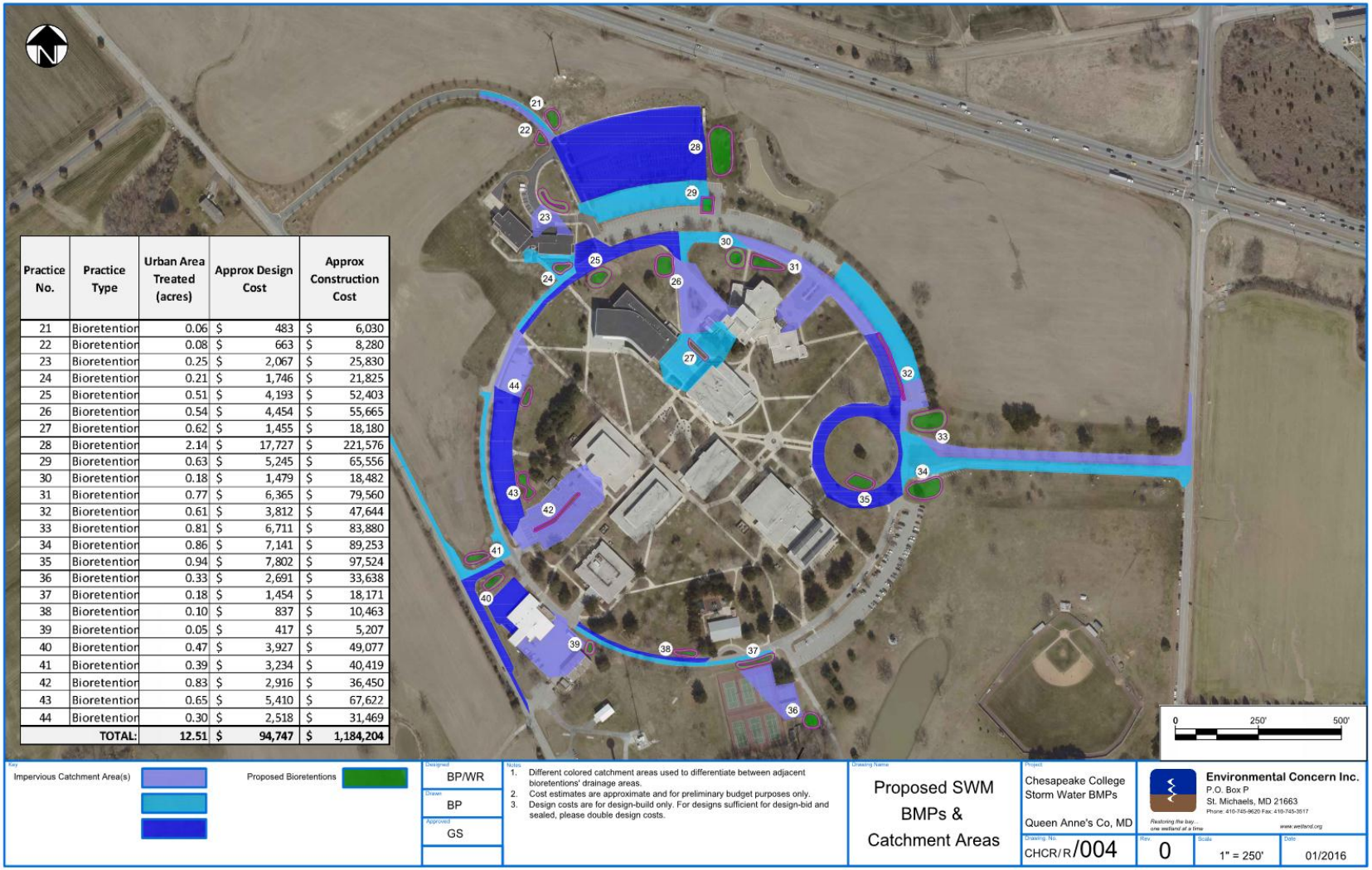
The previous master plan identified as a challenge that the campus lacked a clear sense of organization in terms of campus spaces and a hierarchy of walkways. This has been successfully addressed with recent development projects. The LRC and associated walkways reinforced a new quadrangle as well as the significant east-west pedestrian connection along the north side of Kent and Talbot. The expansion to Caroline and its associated site work has created a direct and clear pedestrian connection between the campus drop-off and the LRC Quad. As the campus continues to grow and expand, it will important to maintain and reinforce these connections, both visually and physically. Consideration should also be given to reinforcing a significant pedestrian connection along a north-south alignment linking Economic development, Dorchester, Physical Education, Talbot and Queen Anne's. Refer to Exhibit E,Visual/Physical Corridors to Maintain

CAMPUS IMAGE

Since the campus is set within the expansive context of agricultural fields, the campus image has both an internal and external character. The external character, or approach, to Chesapeake College campus reflects that of a traditional Eastern Shore estate or farmstead with the buildings and trees clustered in the center, accessed via a long entrance drive, and surrounded by open space and fields. Internally the campus core has developed in a more traditional academic character defined by quads, walks and gardens defined by buildings and landscape features. This image has been maintained with recent development projects and continues to define a unique identity for the campus. Future building projects should continue to respect and reinforce the academic campus core and farmstead character where possible.

The College has a consistent language of site furnishings and lighting standards that unifies campus and its diverse spaces and buildings. The application of these standards has done a remarkable job in elevating the character and aesthetics of the campus. The application of these standards should be continued with all future projects and enhancements.

The previous master plan compared the character of the Chesapeake College campus with that of a traditional Eastern Shore estate or farmstead with the buildings and trees clustered in the center, accessed via a long entrance drive, and surrounded by open space and fields. This character has been maintained with recent development projects and continues to define a unique identity for the campus. Additional enhancements and development projects should continue to respect and reinforce this character where possible. Since the previous master plan effort, the College has also adopted campus- wide site furnishings and lighting standards, using the standard established during the development of the LRC. The application of these standards has done a remarkable job in elevating the character and aesthetics of the campus. The application of these standards should be continued with all future projects and enhancements.



Practice No.	Practice Type	Urban Area Treated (acres)	Approx Design Cost	Approx Construction Cost
21	Bioretention	0.06	$ 483	$ 6,030
22	Bioretention	0.08	$ 663	$ 8,280
23	Bioretention	0.25	$ 2,067	$ 25,830
24	Bioretention	0.21	$ 1,746	$ 21,825
25	Bioretention	0.51	$ 4,193	$ 52,403
26	Bioretention	0.54	$ 4,454	$ 55,665
27	Bioretention	0.62	$ 1,455	$ 18,180
28	Bioretention	2.14	$ 17,727	$ 221,576
29	Bioretention	0.63	$ 5,245	$ 65,556
30	Bioretention	0.18	$ 1,479	$ 18,482
31	Bioretention	0.77	$ 6,365	$ 79,560
32	Bioretention	0.61	$ 3,812	$ 47,644
33	Bioretention	0.81	$ 6,711	$ 83,880
34	Bioretention	0.86	$ 7,141	$ 89,253
35	Bioretention	0.94	$ 7,802	$ 97,524
36	Bioretention	0.33	$ 2,691	$ 33,638
37	Bioretention	0.18	$ 1,454	$ 18,171
38	Bioretention	0.10	$ 837	$ 10,463
39	Bioretention	0.05	$ 417	$ 5,207
40	Bioretention	0.47	$ 3,927	$ 49,077
41	Bioretention	0.39	$ 3,234	$ 40,419
42	Bioretention	0.83	$ 2,916	$ 36,450
43	Bioretention	0.65	$ 5,410	$ 67,622
44	Bioretention	0.30	$ 2,518	$ 31,469
	TOTAL:	12.51	$ 94,747	$ 1,184,204

0 250' 500'

Key
Impervious Catchment Area(s)
Proposed Bioretentions

Designed: BP/WR
Drawn: BP
Approved: GS

Notes:
1. Different colored catchment areas used to differentiate between adjacent bioretentions' drainage areas.
2. Cost estimates are approximate and for preliminary budget purposes only.
3. Design costs are for design-build only. For designs sufficient for design-bid and sealed, please double design costs.

Drawing Name: Proposed SWM BMPs & Catchment Areas

Project: Chesapeake College Storm Water BMPs
Queen Anne's Co, MD

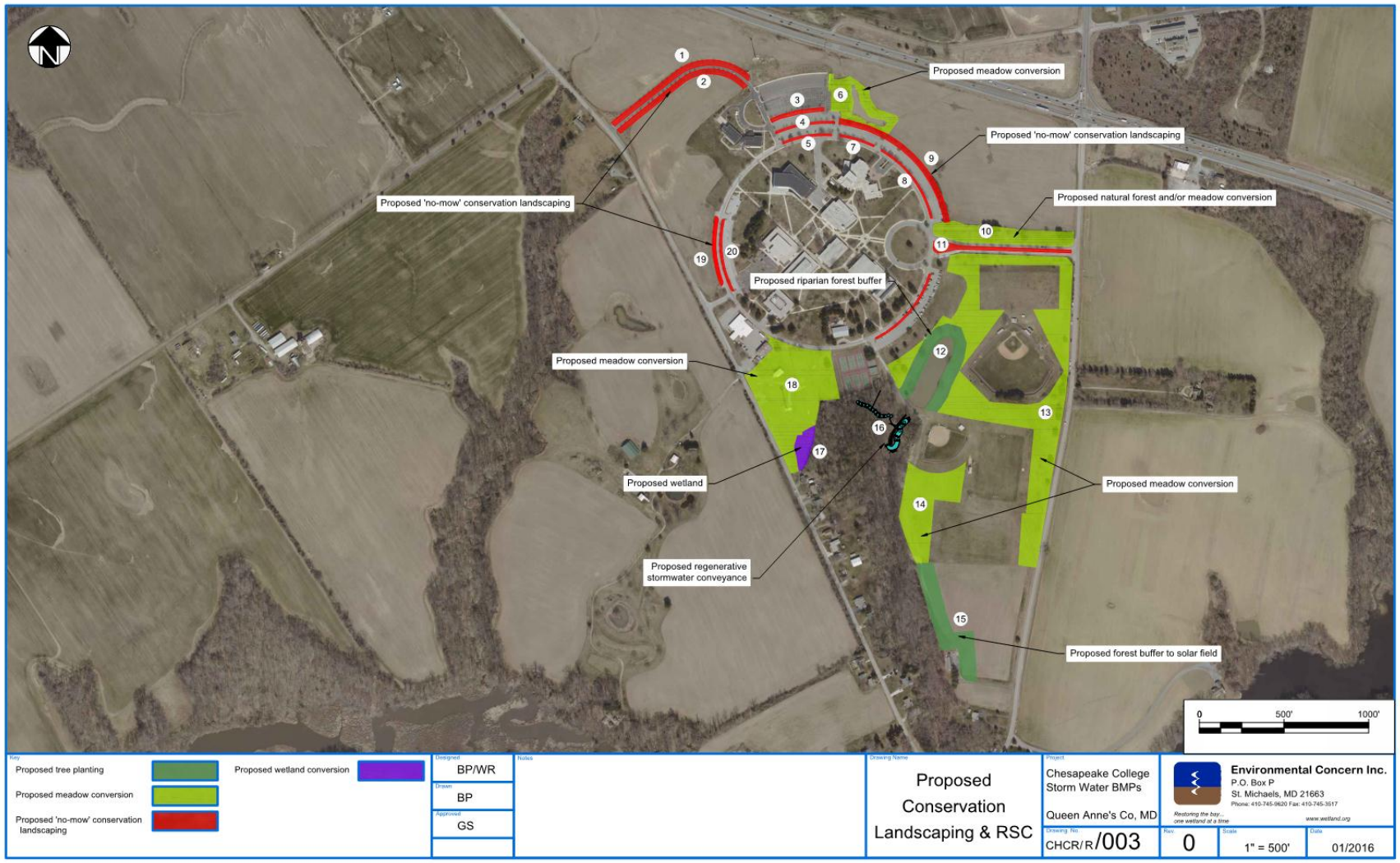
Drawing No.: CHCR/R/004

Rev.: 0

Scale: 1" = 250'

Date: 01/2016

Environmental Concern Inc.
P.O. Box P
St. Michaels, MD 21663
Phone: 410-745-9620 Fax: 410-745-3517
Restoring the bay... one wetland at a time.
www.wetland.org


Proposed meadow conversion
Proposed 'no-mow' conservation landscaping
Proposed natural forest and/or meadow conversion
Proposed 'no-mow' conservation landscaping
Proposed riparian forest buffer
Proposed meadow conversion
Proposed wetland
Proposed meadow conversion
Proposed regenerative stormwater conveyance
Proposed forest buffer to solar field
0
500'
1000'
Proposed tree planting
Proposed meadow conversion
Proposed 'no-mow' conservation landscaping
Proposed wetland conversion
Designed BP/WR
Drawn BP
Approved GS
Notes
Drawing Name
Proposed Conservation Landscaping & RSC
Project
Chesapeake College Storm Water BMPs
Queen Anne's Co, MD
Drawing No. CHCR/R/003
Rev. 0
Scale 1" = 500'
Date 01/2016
Environmental Concern Inc.
P.O. Box P
St. Michaels, MD 21663
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SUSTAINABILITY

A number of campus projects, both building and site, have been described above to fulfill immediate and future College needs. There on college campuses nationwide toward more sustainable design and LEED certification. There is an opportunity on the Chesapeake College campus to employ sustainable practices wherever possible on any development project. These practices may include the use of recycled building materials, building materials obtained locally (within 500 miles), site planning that takes advantage of solar orientation, accommodation of bicycles as a transportation mode, green roofs and use of native and adapted plant materials that don't require irrigation to name a few.

POND TRAIL AND PLANTING

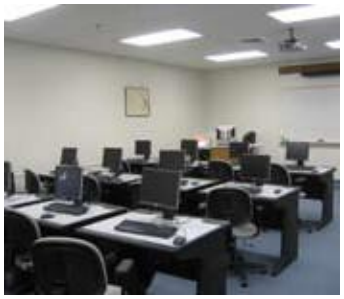
Pedestrian access to the pond and athletic fields is desired and needed to better integrate these amenities with the campus core. The Master Site Plan illustrates a trail that extends from the East-West Pedestrian Lane and creates a loop around the pond, ultimately connecting to the new concession building. This would be the minimum trail recommended. Over time, the trail system could be extended further south along the athletic fields and tie into any future bike path or lane provided along Route 213.

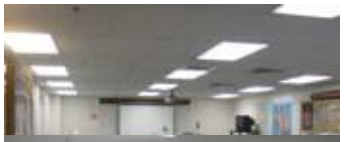
MAIN VEHICULAR DROP-OFF

The existing main drop-off loop is spacious, but is an underutilization of land. The Master Site Plan identifies a strategy to reconfigure the geometry of the drop-off loop to increase useable land for future buildings and related site improvements, and provide an opportunity to increase convenient visitor and accessible parking spaces within proximity to Dorchester. The design needs to accommodate transit service. Since this site improvement is at the terminus of the main entrance from Rt. 213, the landscape design has an important role to enhance a visitor's first impression. The reconfiguration of this space could be implemented at the time of CAHA expansion, Queen Anne's Tech Replacement (2a) or at a later time when funds are available.

CHAPTER 7
OFF-CAMPUS CENTER

CAMBRIDGE CENTER





Building Number:	14
Number of Floors:	2
Net Assignable Square Feet:	14,598
Gross Building Area:	20,598
Net-to-Gross Efficiency:	70.5%
Year Constructed:	Mid-20th Century
Renovations:	(by Chesapeake College): 1994
Additions:	None
Contains:	Classrooms, computer labs, student lounge, science lab, offices, “multi-service center” space
General Condition:	Poor Adequacy
of Space:	Inadequate
Sprinkler Systems	Not Sprinklered

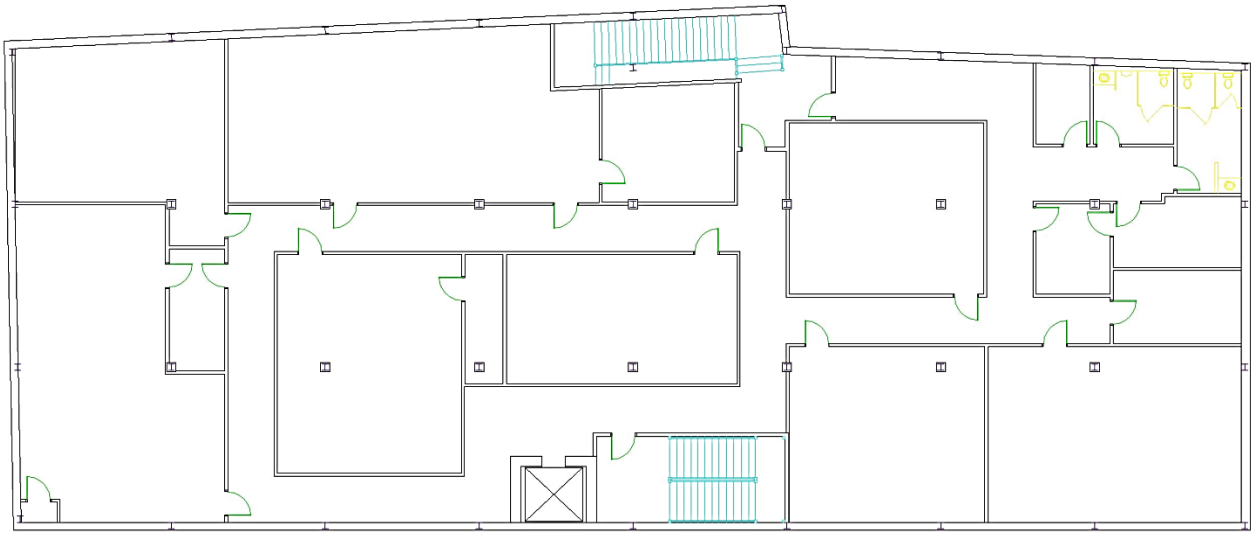
ARCHITECTURAL, GENERAL

The Cambridge Center is located in downtown Cambridge, primarily serving Dorchester and Talbot County residents and proximate geographic areas. The Center occupies a former department store and is accessed from the rear parking lots and the main street. As a department store, the building was not built with education spaces in mind, and the spaces are compromised, accordingly. Little natural light enters the building, corridors are not intuitive, and columns interfere with room layouts, obstructing views and forcing awkward proportions. Unwanted sounds are transmitted from room to room due to lack of sufficient attenuation and barriers. The interior of the building does not inspire occupants or visitors to want to stay for long periods of time; it is dreary. There are little-to-no spaces for student life, bookstore, administrative services and student services. There is no green space adjacent to or even near the building. Parking is very limited, indeed insufficient for the number of occupants, including staff, faculty, students and visitors.

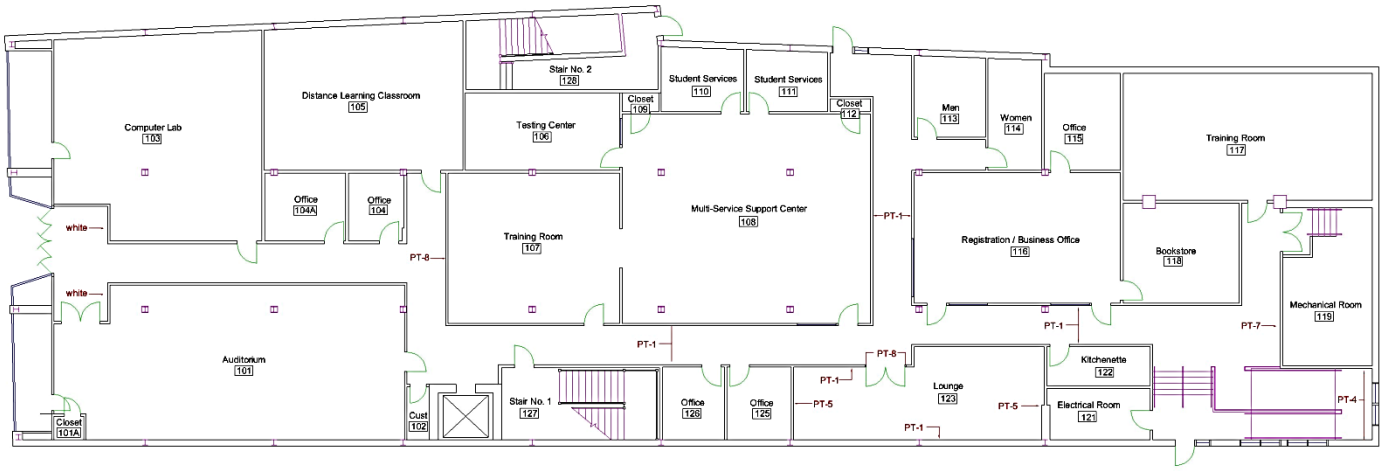
The most successful area of the building is the multi-service center, used intensively by students and staff for study, testing, tutoring, and related activities, but it has become too small for the use demand.

This facility limits the ability of the College to successfully carry out its programs in a Cambridge facility. In addition to the inadequacy of the space, the quality of the spaces is inferior, and building systems regularly break down and require maintenance.

The inadequacies of the building, building systems, space, lack of parking and the “non-campus” experience of the students all combine to suggest that the building can no longer adequately serve the needs of the College. The College should find suitable, larger, alternative space as soon as possible, certainly within the next five years.



SECOND FLOOR PLAN



FIRST FLOOR PLAN

MECHANICAL

HEATING, VENTILATION AND AIR CONDITIONING (HVAC)

The mechanical systems are approximately 13 years old. The HVAC systems consists of two packaged rooftop units utilizing natural gas for heat and packaged condensing units for cooling. Carrier Model VVT terminal units are utilized for individual space temperature control. The facility's manager indicated that recent upgrades to the HVAC units and terminal equipment have occurred in 2006 but are not fully operational at this point and there are extreme variations in zone temperatures throughout the facility. Unitary electric heaters are utilized throughout the building for areas such as the elevator machine room. A ductless split system provides space cooling for the central IT and Electrical room located on the first floor. Building HVAC system control is accomplished by a Siemens Control System serving the Rooftop Units and Terminal Units.

PLUMBING

The plumbing fixtures are in good condition. The urinals and water closets have flush valves. The facility is connected to the Town of Cambridge water and sewer system.

FIRE PROTECTION

The building is fully sprinklered. The fire protection water supply is provided by the Town of Cambridge.

ELECTRICAL

Incoming electrical service – 1,200 Amp – is provided by Choptank Electric. The electrical service is a 208 Volt/3 Phase/60 Hz system. The equipment was originally manufactured by Square D.

EMERGENCY POWER

Emergency Power is not provided for this facility. Emergency battery packs are provided for egress lighting.

LIGHTING

The lighting system is a combination of fluorescent, metal halide and incandescent fixtures.

SPECIAL SYSTEMS AND TECHNOLOGY

FIRE ALARM

Facility is equipped with a Silent Knight model 5104 4-Zone Control Communicator. The fire alarm consists of manual pull stations, smoke detectors, horns and strobes. The central fire alarm annunciator panel is located in the Main lobby.

SECURITY

The building is equipped with a central security system monitored by Delmarva Time and Control. The system consists of door contacts, room and building entry keypads and motion detectors.

TECHNOLOGY, TELECOMMUNICATIONS

Computers for instructional and administrative use are utilized throughout the facility. A central server system is provided in the Main Electrical Room. There is a need for wireless network access throughout the facility.
There is a need for a computer lab (similar to the Chesapeake Campus lRC computer lab).

MECHANICAL, ELECTRICAL, SPECIAL SYSTEMS, TECHNOLOGY RECOMMENDATIONS

Refer to the Architectural, General section for recommendations for the entire facility. Mechanical, electrical, technology and special systems should be maintained to provide functional and continuous operating ability for the Cambridge Center for the duration of the College's tenancy; however, long term investment of resources into the facility should be avoided in consideration of the recommendation to seek and/or develop alternative facilities.

1. Provide wireless network access throughout the facility.
2. Provide a computer lab (similar to the Wye Mills Campus LRC computer lab).

CHAPTER 8:
PROPOSED CAPITAL PROJECTS

The following tables summarize major capital projects for site and infrastructure improvements. Many of the projects can be coordinated and implemented with capital building projects.

BUILDING AND INFRASTRUCTURE CAPITAL PROJECTS

PRIORITY GROUP	PRIORITY WITHIN GROUP	PROJECT	REMARKS	AREA (GROSS SQUARE FEET)	COST ESTIMATE
1	A	TPAC Chiller/Roof	Facility Infrastructure		850,000
1	B	IT/AV Infrastructure	Campus IT/AV Infrastructure e.g. Upgrade Fiber Optic Loop System, Expand Wireless Coverage throughout Campus, etc.		5,000,000
2	A	Queen Anne's Tech.	Renovation: As Careers Building*	18,058 Sq. Ft.	16,362,000
2	B	Manufacturing Training Center	Renovation: As Trades Building*	10,930 Sq. Ft.	4,000,000

CHAPTER 9: SUSTAINABILITY

Chesapeake College Plan for Sustainability

Our Vision: Chesapeake will
Be an educational leader in a thriving, ecologically stable

Sustainability is one of five core themes in Chesapeake College's new strategic plan. It drives our efforts to support the interconnected environmental, economic, and social needs of our local area and of the broader world. Through sustainability we can meet "the needs of the present without compromising the ability of future generations to meet their own needs." (Brundtland Commission, 1989)

The College has identified seven sustainability goals:

1. Promote and model environmental and social responsibility.
2. Improve campus energy efficiency.
3. Support "green" business development.

4. Offer learning opportunities in and across disciplines and through co-curricular activities
5. Build on the cultural heritage of the Shore as we develop new academic and career programs.
6. Use transparent, inclusive budget processes to ensure appropriate allocation of resources.
7. Expand the base of private financial support for the college.

To insure that we achieve each of those goals, our Sustainability Operations Group (SOG) derived strategies, specific action plans, and measures of success for FY 2010-
2012. The SOG is a cross-divisional team which has representatives from all segments of the college including student representation. The SOG will work with the appropriate division to support efforts to attain our sustainability goals.

Goal 1: Promote and model environmental and social responsibility

Strategies	Plan of Action	Measures of Success	Assigned to:
a. Provide a continuing series of sustainability workshops.	SOG reps will schedule workshops	At least 3 workshops will be presented by December 31, 2010 Participants will fill out evaluations for each workshop.	October 28 – Fiscal Sustainability – Mike Kilgus November 11—Cultural-Social Justice Sustainability – Greg Farley December 2 – Environmental Sustainability – Doug Gray
b. Develop a sustainability website for the college and the community.	SOG will work with the Green Team and the Webmaster to develop a sustainability page.	New website will be developed by December 31, 2010.	Doug Gray

c. Sustainability advocates will meet with constituencies to encourage their support and collaboration including: College Council, Divisional meetings of Academics, Administration, Student Success, and Technology, Staff Assembly (STARS), Student groups, Board of Trustees.	SOG will present our current plans and seek input from our various constituencies.	Brainstorming results from each constituency group will be incorporated into ongoing sustainability planning.	All – Invite STARS reps to our meetings
d. Provide objective measurement of sustainability efforts and current status. First report will be developed and delivered to the president by June 30, 2010.	SOG will develop an annual report on sustainability efforts at the College	First report will be developed and delivered to the president by November 30, 2010.	Committee
e. The College will provide leadership for sustainability efforts on the Eastern Shore.	SOG reps will meet with other organizations to seek partnerships. The College President will sign the American College and University President's Climate Change Commitment.		Committee will develop a recommendation on the Climate Change Commitment by June 30 2011.

Goal 2: Improve campus energy efficiency.

Strategies	Plan of Action	Measures of Success	Assigned to:
a. The college designs and builds its facilities in such a way that we efficiently use our natural resources.	The College will seek LEED certification for all new construction and renovation projects.	The College's new construction will be certified as LEED Silver. Participants will fill out evaluations for each workshop	Director of Facilities: The College has incorporated LEED principles in its planning for the next two construction projects. This requirement has been incorporated into the program statement for the

b. The College operates its facilities in such a way that we efficiently use our natural resources.	The College will contract with an energy firm to support its efforts to reduce energy use.	The College will reduce energy use by 15 % over the next three years.	Director of Facilities: There have been no significant savings from this agreement yet. It will continue to be monitored over the next 3 years.
c. The College will purchase new equipment that helps to reduce our energy use.	The College will establish a green purchasing policy.	The SOG will meet with Purchasing and IT Departments to establish the new policy and implement by Fall 2011.	Vice President for Administration
d. Use renewable energy resources	The College will seek to purchase power produced by wind and solar sources.	The College will obtain at least20% of our electricity from renewable resources by 2015.	Director of Facilities: The SOG is planning to investigate the status of our energy buying consortium to determine the status of this initiative.
e. Complete a comprehensive analysis of the College's Carbon Footprint	The analysis will be included in the agreement with the Energy savings firm.	The Carbon Footprint Analysis will be produced by the Energy Education Consultant by July 2011.	Director of Facilities (Energy Management)

Goal 3: Support "green" business development.

Strategies	Plan of Action	Measures of Success	Assigned to:
Establish a solar/windpower information center on the Wye Mills campus	Install anemometer; move forward with design/cost estimate for wind/solar education/business development facility.	Design completion by August 2010. Construction during 2011. Completion and installation by Spring 2012.	Director of Facilities

Goal 4: Offer learning opportunities in and across disciplines and through co-curricular activities.

Strategies	Plan of Action	Measures of Success	Assigned to:
a. Design credit courses and programs that teach sustainability practices and principles	SOG reps will work with the academic administration to suggest measures that will incorporate and expand sustainability across the curriculum.	Recommendations to Academic Administration by August 2011.	Greg Farley to work with Academics.
b. Incorporate sustainability education across the curriculum.	Academic administration to approve new courses and programs.	At least two new "green curricula" will be in place by Spring 2012.	Greg Farley to work with Academics

Goal 5: Build on the cultural heritage of the Shore as we develop new academic and career programs.

Strategies	Plan of Action	Measures of Success	Progress
The SOG in cooperation with academic administration will inculcate our rich cultural history into the academic curriculum.	SOG reps will work with Academic administration to introduce Eastern Shore literature and history into our curriculum.	The College will introduce a new course on Eastern Shore history and culture by Spring 2012.	Greg Farley to work with Academics

Goal 6: Use transparent, inclusive budget processes to ensure appropriate resource allocation.

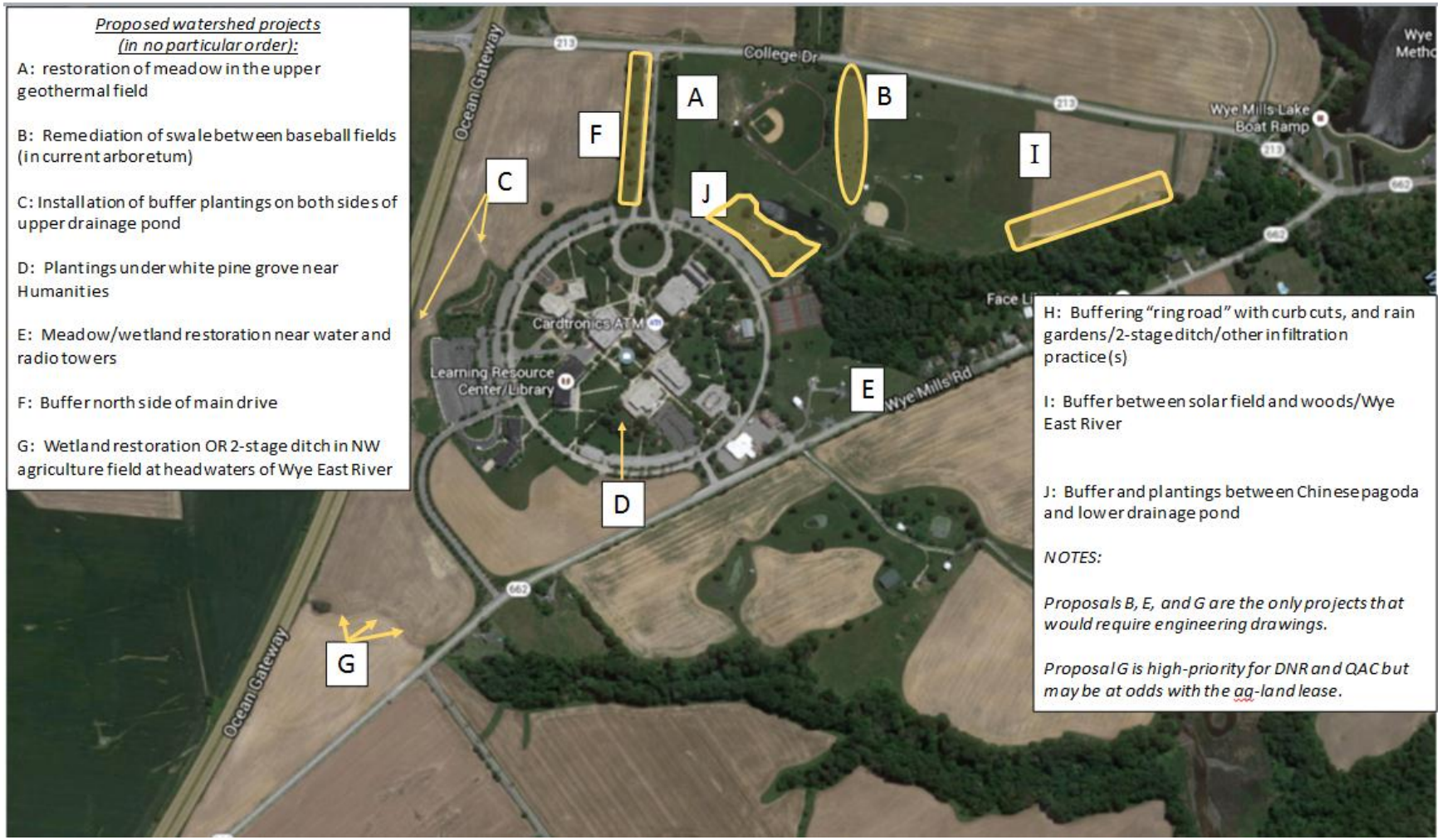
Strategies	Plan of Action	Measures of Success	Progress
The college will develop an auxiliary fund for the support of sustainable projects and will support the fund through savings generated by incorporation of sustainable practices and will also support the fund through a variety of methods including use of auxiliary fund balance earnings, annual internal giving, private donations, and grants.	The SOG will work with the Vice President for Administration to establish an auxiliary fund for approval by the Board by December 2010.	The College will create funding proposal for sustainability projects by July 2012.	Vice President for Administration

Goal 7: Expand the base of private financial support for the college.

Strategies	Plan of Action	Measures of Success	Progress
Seek grants and other funding support for sustainability projects.	The SOG will work with the College's grant writer to pursue funding for Sustainability projects.	At least one grant will be obtained by July 2011.	Grants Director hired: waiting for the money to roll in.


50’
Scale in Feet
25’
100’


VIEW
Classroom
Classroom
Lobby
Vestibule
Mechanical
Stor.
Elect
Office
Jan
Men
Women
Future Classroom
Outdoor Classroom
Future Classroom
apply to entire building
Scale in Feet
0'
25'
12.5'
50'
N


Proposed watershed projects
(in no particular order):
A: restoration of meadow in the upper geothermal field
B: Remediation of swale between baseball fields (in current arboretum)
C: Installation of buffer plantings on both sides of upper drainage pond
D: Plantings under white pine grove near Humanities
E: Meadow/wetland restoration near water and radio towers
F: Buffer north side of main drive
G: Wetland restoration OR 2-stage ditch in NW agriculture field at headwaters of Wye East River
H: Buffering "ring road" with curb cuts, and rain gardens/2-stage ditch/other infiltration practice(s)
I: Buffer between solar field and woods/Wye East River
J: Buffer and plantings between Chinese pagoda and lower drainage pond
NOTES:
Proposals B, E, and G are the only projects that would require engineering drawings.
Proposal G is high-priority for DNR and QAC but may be at odds with the ag-land lease.
College Dr
Ocean Gateway
Wye Mills Lake Boat Ramp
Cardtronics ATM
Learning Resource Center/Library
Wye Mills Rd
A
B
C
D
E
F
G
I
J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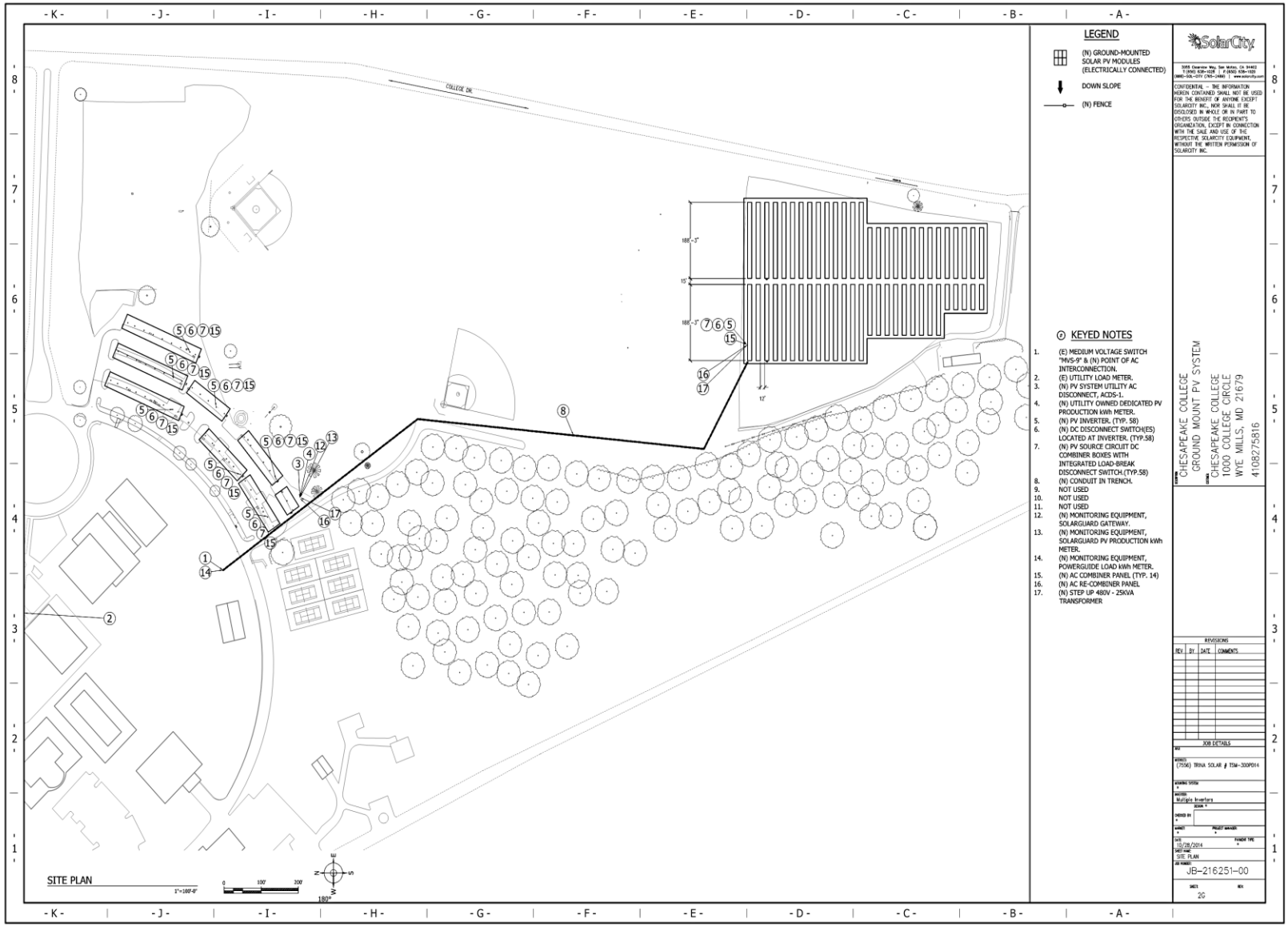
LEGEND
(N) GROUND-MOUNTED SOLAR PV MODULES (ELECTRICALLY CONNECTED)
DOWN SLOPE
(N) FENCE
KEYED NOTES
1. (E) MEDIUM VOLTAGE SWITCH "MVS-9" & (N) POINT OF AC INTERCONNECTION.
2. (E) UTILITY LOAD METER.
3. (N) PV SYSTEM UTILITY AC DISCONNECT, ACDS-1.
4. (N) UTILITY OWNED DEDICATED PV PRODUCTION kWh METER.
5. (N) PV INVERTER. (TYP. 58)
6. (N) DC DISCONNECT SWITCH(ES) LOCATED AT INVERTER. (TYP.58)
7. (N) PV SOURCE CIRCUIT DC COMBINER BOXES WITH INTEGRATED LOAD-BREAK DISCONNECT SWITCH.(TYP.58)
8. (N) CONDUIT IN TRENCH.
9. NOT USED
10. NOT USED
11. NOT USED
12. (N) MONITORING EQUIPMENT, SOLARGUARD GATEWAY.
13. (N) MONITORING EQUIPMENT, SOLARGUARD PV PRODUCTION kWh METER.
14. (N) MONITORING EQUIPMENT, POWERGUIDE LOAD kWh METER.
15. (N) AC COMBINER PANEL (TYP. 14)
16. (N) AC RE-COMBINER PANEL
17. (N) STEP UP 480V - 25KVA TRANSFORMER
SolarCity
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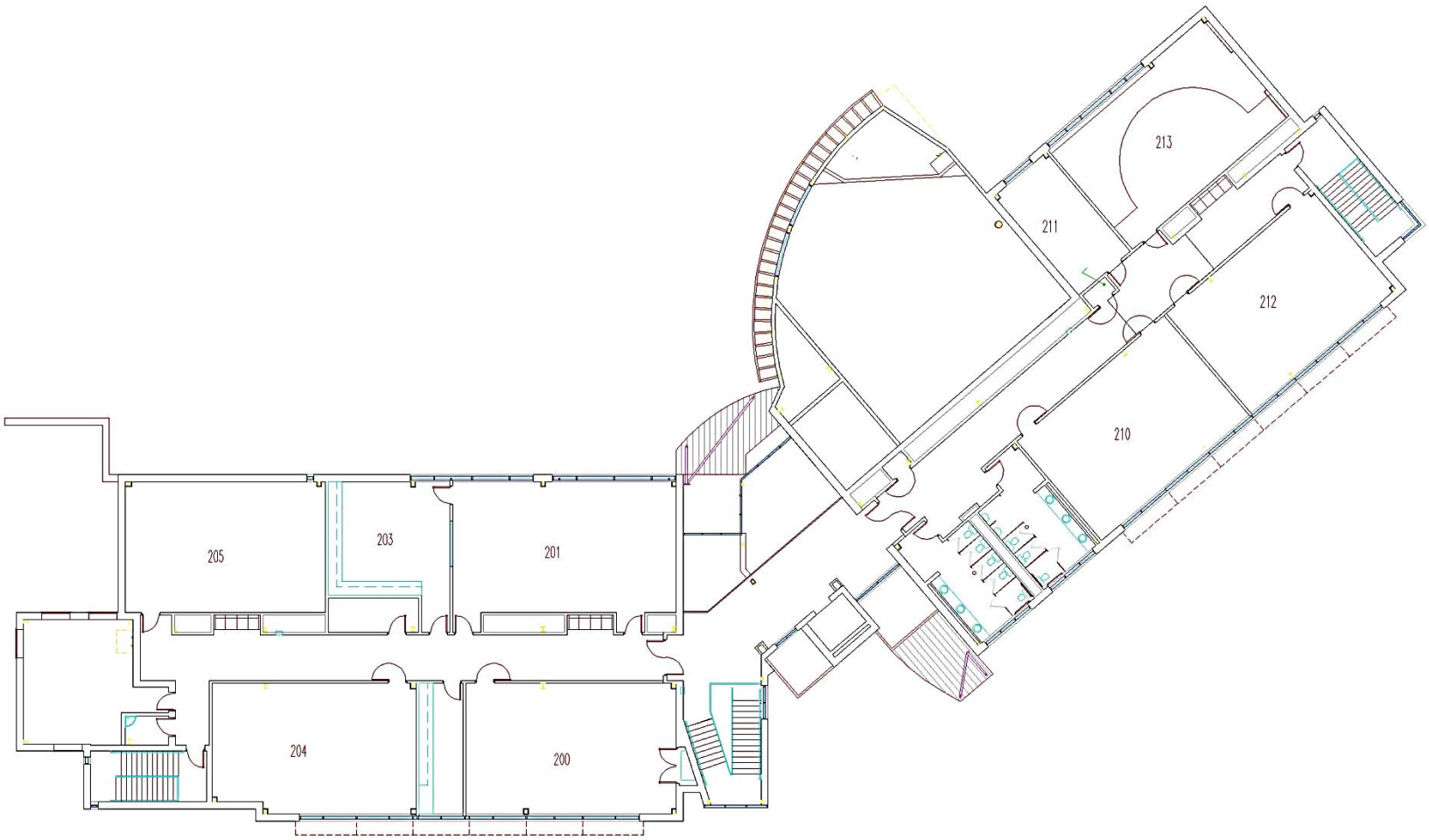
CHESAPEAKE COLLEGE
GROUND MOUNT PV SYSTEM
CHESAPEAKE COLLEGE
1000 COLLEGE CIRCLE
WYE MILLS, MD 21679
4108275816
REVISIONS
REV BY DATE COMMENTS
JOB DETAILS
(7556) TRINA SOLAR # TSM-300PD14
Multiple Inverters
10/28/2014
SITE PLAN
JB-216251-00
2G
SITE PLAN
1"=100'-0"
180°

APPENDIX

Higher Education Center

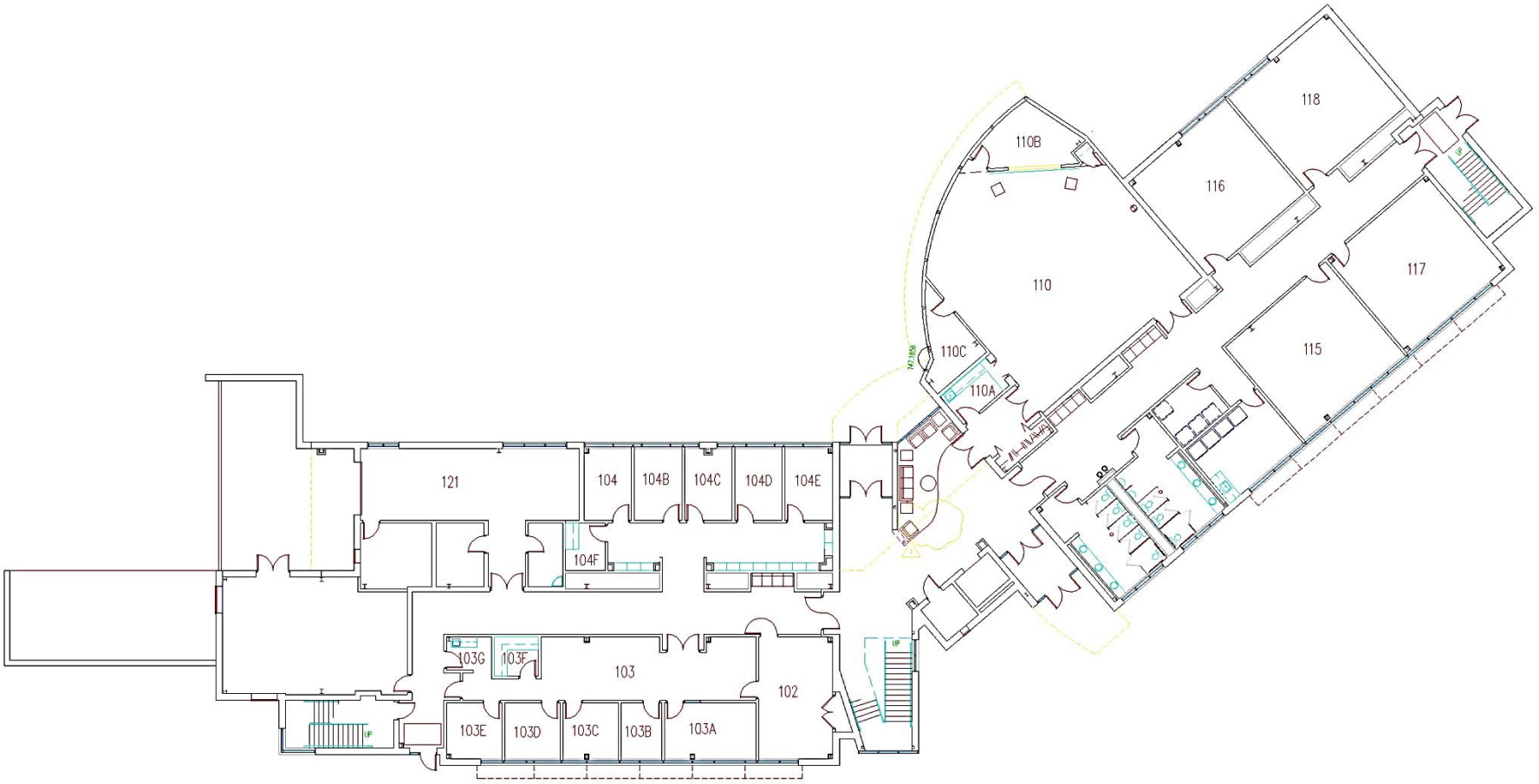
Building Number:	14
Number of Floors:	2
Net Assignable Square Feet:	16,172
Gross Building Area - GSF:	28,054
Net-to-Gross Efficiency: Year	57.6%
Constructed: Renovations:	2002
Additions:	None
Contains-:	None Class-rooms, computer Jabs and classrooms, seminar rooms, multipurpose room ("amphitheater"), conference rooms, offices, support spaces
General Condition:	Good
Adequacy of Space:	Good
Sprinkler Systems:	Fully sprinklered

The Higher Education Center, similar to others in the state, is programmed to provide more accessible face to face classroom space for students pursuing baccalaureate or graduate degrees in underserved communities. In this case it serves the member colleges and universities of the Eastern Shore Association of Colleges (ESAC), offering instructional, conferencing, and seminar spaces. The building is located outside the Chesapeake College ring road as the first building of other future buildings which may house other higher education and related functions. Construction is steel frame, enclosed by masonry walls and built-up roofing. First floor is slab-on grade; no basement. Finishes include painted concrete block, drywall partitions, acoustical ceilings, tiled and carpeted floors. INAC energy source is from geo-thermal loops outside the building; VAV, ducted distribution inside. Second floor served by elevator.



HIGHER EDUCATION CENTER – SECOND FLOOR PLAN

n.t.s.



HIGHER EDUCATION CENTER – FIRST FLOOR PLAN

n.t.s.