GARRETT COLLEGE

FACILITIES MASTER PLAN 2012-2022

January 30, 2012

Garrett College
687 Mosser Road, McHenry, Maryland 21541

Facilities Assessment by Grimm and Parker Architects

GARRETT COLLEGE

EXPERIENCE. EXPLORE. EXCEL.

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I. Executive Summary

The Garrett College mission states that the College will provide accessible, quality education in a supportive environment to a diverse student population. We offer associate degrees and certificate programs as well as continuing education to meet the transfer, career, workforce development, and lifelong learning needs of our students and the community. We are committed to the ongoing development of engaging, innovative, and sustainable curricula, programs, and initiatives that are responsive to a changing world.

In order to meet the strategic direction outlined in the Strategic and Academic Plans a comprehensive building renovation is required that will improve the quality of the instructional and learning spaces in order to better serve our students. The College serves both traditional and non-traditional students and our instructional spaces currently contrast markedly with the requirements of the population we serve and the quality of the programs we offer. In addition to building renovations and improvements, an overall equipment and furniture upgrade is required.

The following strategies are listed in the 2012 Academic Plan:

1. Enhance the quality of the teaching and learning environment.
2. Develop instructional programs that define Garrett College as one of the region's premier institutions for post-secondary education.
3. Better serve the student body.
4. Improve access and support a more diverse campus community and help build Garrett County's future.

During the next five years, the College will expand programs that involve science, technology, engineering, and mathematics (STEM), as well as training leading to the acquisition of advanced technical skills and training directed toward the application of new and emerging technologies which in turn may lead to the formation of new businesses. Potential examples include:

- A.S. degree program in Mechanical Engineering Technology
- A.A.S. degree program in Cyber-security
- A.A.S. degree program in Robotics
- A.A.S. degree program in generic Technical Skills
- Non-credit STEM entrepreneurship training program
- Eco-tourism concentration offered jointly by the Adventure Sports (ASI) and Natural Resource and Wildlife programs (NRWT).
- Event management and tourism/hospitality concentrations linked to the A.A.S. degree program in Business Management
- Leadership development component as developed by ASI integrated into other degree programs (e.g., Business Management, General Studies).
- Corporate training, summer camps, experiential learning opportunities
- Health Informatics (Electronic Health Records)
- The College is developing new training opportunities which support local economic development through the creation of new businesses providing jobs to County residents, the development of existing businesses which are poised for expansion and growth, and the

preparation of a competitive workforce. Examples include: A Leadership Academy; Lean Efficiency Programs and Workshops; Entrepreneurship Training and Workforce Certifications. The College will also improve its short-term training, predominantly leading to licensure and certification, to address ongoing local and regional employment needs (e.g. health care, construction, tourism and manufacturing), while responding to emerging and cyclical employment trends.

Modern facilities and instructional spaces with new equipment and furniture will be required to attract both students and industry support of these programs.

During 2011 the College requested a facilities assessment from Grimm & Parker Architects for Buildings 200 - 800 & 1000. The report (Attachment I.) includes descriptions, assessments, and recommendations relating to construction, ADA compliance, capacity for renovation/expansion, HVAC, plumbing, fire protection, electrical, emergency, electrical & lighting, fire alarm, voice/data/video and security. Overall the common theme of Grimm & Parker's assessment throughout the document was that many of our campus buildings, particularly several of the older buildings on campus are in need of renovation. ***In particular, Grimm & Parker found that Buildings 200, 400, 600, 700, and 800 are in serious need of renovation.***

The Garrett College 2012 - 2022 Facilities Master Plan proposes the relocation of the science labs from the 600 building to the 200 building, as well as the addition of engineering and robotics to the 200 building which will then become a STEM building. Buildings 600 and 400 will be renovated and continue to be used as instructional and student service buildings. The 700 building currently has fine arts and administration and this will be converted in an administration and student services building that will include such student services as financial aid, registrar, business office and admissions. The 800 building, which will have been used as surge space throughout, will be converted into a multi-purpose meeting area, continuing education offices and a small theatre and fine arts area.

The order of the proposed projects is as follows:

1. STEM Building (200)
2. Learning Center (600)
3. Student Center (400)
4. Administration and Student Services Building (700)
5. Performing Arts and Conference Center (*includes Fine Arts and Workforce Development* - 800 - old gym)

Two projects will be required by the College during this Campus Facilities Master Plan period, these will not be presented for funding through MHEC Community College channels; other local sources of funding will be sought:

- Increased parking
- Move baseball field and add a soccer and girls softball field.

Other projects beyond the ten year plan are re-location to the main campus center of the Adventure Sports Center and the Natural Resource and Wildlife Technology Program, as well as the relocation of the Facilities Department after a full analysis of the impact on underground utilities.

Proposed Projects	Fiscal Year	Estimated Project Cost ($000's)	State Share ($000's)	Local Share ($000's)
Building 200 STEM	**15**	**6,092**	**3,046**	**3,046**
Building 600 Shaw Learning Center	**16**	**6,789**	**3,395**	**3,395**
Building 400 Student Center	**18**	**4,055**	**2,027**	**2,027**
Building 700 Administration and Student Services	**17**	**4,445**	**2,222**	**2,222**
Building 800 Performing Arts and Conference Center	**19**	**8,450**	**4,225**	**4,225**
Baseball Field Relocation [1]	**13**	**629**	**-**	**314**
Parking Lot Expansions[2]	**14**	**540**	**-**	**270**

The College is seeking a local match through an affidavit of support from the Garrett County Commissioners during the pre-planning stage. The first project commitment from the County (STEM Building) will be required by July FY2013 to be presented with a programming plan in FY2013. Major renovations will not begin until FY2015 in order to allow time to facilitate the programming and design and obtain the necessary local funding from local and State sources. The College will be required to obtain approximately $15.5 million in local funding over the 10 year period. The funding timeframe also takes into account growing local support for programs such as STEM. Additionally, the timeframe provides the College time to construct temporary surge space in the gymnasium for renovations.

In order to meet the College's mission, strategic plan and academic plan goals the College must substantially improve the quality of its instructional space to provide accessible, quality education in a supportive environment to its student population. The analysis conducted during the development of this plan collected information from and involved students, staff, faculty, community members, local elected officials, businesses and local industry and agreement was reached that a comprehensive building renovation is required that will improve the quality of the instructional and learning spaces in order to better serve our students.

[1] Local source of funds only.
[2] Local source of funds only

II. Overview of the Institution

A. *Mission Statement, Purpose, Values, & Goals*

B. *Institutional Units & Programs*

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D. *Enrollment Trends*

E. *Factors Influencing Future Programs*

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A. Mission Statement, Purpose, Values, & Goals

Mission

Garrett College provides accessible, quality education in a supportive environment to a diverse student population. We offer associate degrees and certificate programs as well as continuing education to meet the transfer, career, workforce development, and lifelong learning needs of our students and the community. We are committed to the ongoing development of engaging, innovative, and sustainable curricula, programs, and initiatives that are responsive to a changing world.

Purpose

GARRETT COLLEGE is a place where education thrives through engaged learning, businesses incubate and emerge, and vibrant leaders are forged.

Values

Garrett College believes that every human being is entitled to dignity, worth, respect, and the opportunity to learn. Therefore, Garrett College commits to…
The inherent value of learning by:

- Encouraging a culture of appreciation for the power of knowledge;
- Designing and advancing a curriculum of excellence for student mastery and success;
- Creating opportunities to reveal brilliance;
- Promoting ageless, life-long learning; and
- Providing open access to programs and services.

The inherent value of the Garrett College community by:

- Sustaining a college focused on student learning and success;
- Fostering innovation and creativity;
- Embracing the concept of the power of people working together in the free exchange of ideas, including respectful disagreement; and
- Vesting individuals with the authority and responsibility to participate in shared governance.

The inherent value of the Garrett County community and the surrounding region by:

- Recognizing diversity of people, along with their differing points of view;
- Fostering a sense of belonging;
- Understanding the intrinsic value of our unique surroundings and of our cultural and artistic heritage;
- Seeking an approach that balances preservation and progress; and
- Contributing to the quality of life, economic and cultural vitality, awareness of local issues, and promotion of social justice.

The inherent value of a global community by:

- Facilitating understanding of other cultures and beliefs;
- Providing opportunities for community awareness; and
- Expecting a high level of cultural competence.

The inherent value of organizational responsibility by:

- Making the most effective use of resources;
- Regularly evaluating our fiscal health;
- Managing our human resources wisely;

- Monitoring and assessing the utility of existing policies and procedures;
- Facilitating necessary change in a timely manner;
- Being responsive to future trends and needs; and
- Promoting environmental awareness and serving as stewards of our environment.

Vision

Garrett College will be a gateway where…
Academic excellence will be our hallmark.
The campus reflects the diversity of the world.
An engaged faculty and staff are committed to students' success.
The needs of local and regional economic development shape programs and services.
Scholarly achievement, physical and emotional preparedness, and integrity will be our product.

Future

- Garrett College will be recognized as a small college that offers excellent academic programs that prepare our students for further study or entry into careers. We will be known for signature programs offering curricula ranging from those focusing on the acquisition of advanced technical skills to the wise use and management of the area's natural resources.
- Garrett College will serve as a model for transfer preparation, advising, and seamless transition.
- Garrett College will be a leader in partnership initiatives focusing on community and regional economic and workforce development.
- Garrett College will be the College of choice for students seeking a personal educational experience set in a dynamic natural environment.

B. Institutional Units & Programs

Garrett College has an Academic Affairs Department, a Continuing Education Department and support services are provided by Department of Administration and Finance, Student Services, IT and Human Resources. An organizational chart can be found in Attachment B.

The Academic Affairs Department is headed by a Chief Academic Officer and has a Director of Business and Technology, a Director of Liberal Arts and Sciences, an Associate Dean of Academic Affairs, Director of Education, a Director of Adventure Sports, a Director of Natural Resources and Wildlife Technology and a Director of the Library. The Continuing Education and Workforce Development area is headed by a dean and has two program directors, a coordinator of operations and programs and a coordinator of each of the Southern Outreach Center, Northern Outreach Center and the Career Technology Training Center (CTTC).)

Garrett College operates on a semester basis and offers a variety of transfer and career advancement programs leading to Associate in Arts (AA), Associate of Arts in Teaching (AAT), Associate of Science in Engineering (ASE), and Associate in Applied Science (AAS) degrees as well as one-year certificate programs. Garrett College offers a comprehensive and diversified array of transfer and career programs despite its small size. Currently, the College offers 20 Associate of Arts, one (1) Associate of Science in Engineering, seven(7) Associate of Applied Science, and two (2) Associate in Teaching degree programs, and eight (8) certificate programs.

C. Performance of the Institution

Garrett College is a public, two-year institution accredited by the Middle States Commission on Higher Education and is approved by the Maryland Higher Education Commission. Over the last four and a half years enrollment has grown significantly, with fall 2011 enrollment reaching a record 902 students. Much of this growth is attributable to the establishment of the Garrett County Scholarship Program (GCSP) in fall 2006, which provides tuition support for all eligible graduating Garrett County high school students. However, the number of out-of-county and out-of-state students have also grown, due to several factors: more aggressive marketing and recruiting, the availability of new student housing, and increasing costs at 4-year institutions. Despite these gains, enrollment growth continues to be a major concern, particularly as the College looks to increased tuition revenue as a way to offset reductions in state and local funding. While graduating high school seniors have typically accounted for the majority of the College's incoming students, the local high school population continues to decline. Therefore, to achieve its enrollment goals the College will need to concentrate on attracting more non-traditional students (a population that has not been well-served in recent years) as well as more students from outside Garrett County. Over the past year the College's non-credit enrollment has also rebounded significantly, due in part to an improving local economy. The recent extension of the GCSP to include graduating high school students who prefer to pursue postsecondary job training instead of a college degree (about 30% of the local high school population) may also be a factor.

The majority of Garrett College's credit students attend full-time, while the number of students attending part-time has continued to decrease. For fall 2011, 78% of Garrett's credit students were full-time. About 60% of Garrett's students are first-generation. While its student body is predominantly white, the College enrolls a minority population that is proportionally much larger than that of its service area. Over the last four years the number of newly entering students with developmental education needs has steadily increased. For fall 2011, among new students, 86% have needed developmental coursework in English, reading, and/or mathematics.

D. Enrollment Trends

Student Characteristics & Demographics

Student demographics are shown in the following table. For the fall 2010 Semester, the majority of the student population was between the ages of 18-24 (644 students), 55% were women, 81% of the student population was white, 16% of the student population was African-American, and the remaining 3% of the student population was Hispanic, Asian, or Other. Whereas the total number of students dropped from 897 (fall 2009) to 850 (fall 2010), the overall trend of enrollment at the College has been significant enrollment growth since the fall 2001 Semester, i.e., from 637 (fall 2001) to 850 (fall 2010) representing a 33% increase in enrollment during the ten-year period.

Demographic Profile of Fall Credit Students, Fall Semesters, 2001-2010										
	2001	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**
Female	*357*	*346*	*339*	*335*	*345*	*369*	*378*	*396*	*469*	*467*
Male	*280*	*289*	*275*	*278*	*302*	*365*	*399*	*434*	*428*	*383*
Under 18	*45*	*51*	*58*	*51*	*43*	*85*	*85*	*72*	*56*	*43*
18 – 19	*210*	*216*	*214*	*202*	*231*	*285*	*358*	*394*	*408*	*398*
20 – 24	*206*	*190*	*178*	*187*	*193*	*182*	*183*	*223*	*240*	*246*
25 – 29	*47*	*39*	*46*	*55*	*54*	*61*	*50*	*48*	*51*	*53*
30 – 39	*59*	*74*	*57*	*53*	*62*	*58*	*45*	*47*	*75*	*65*
40— 49	*48*	*46*	*46*	*41*	*46*	*42*	*36*	*30*	*47*	*25*
50 – 59	*21*	*14*	*11*	*17*	*11*	*18*	*13*	*15*	*17*	*16*
60 and older	*1*	*5*	*4*	*7*	*7*	*3*	*7*	*1*	*3*	*4*
Unknown age	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
White	*592*	*589*	*556*	*542*	*566*	*656*	*688*	*689*	*730*	*690*
African-Amer.	*26*	*29*	*35*	*46*	*45*	*34*	*51*	*94*	*127*	*132*
Hispanic	*1*	*2*	*4*	*8*	*7*	*8*	*11*	*18*	*12*	*7*
Asian-Pac. Isl.	*3*	*1*	*2*	*0*	*0*	*3*	*3*	*4*	*5*	*6*
Native Amer.	*4*	*7*	*4*	*4*	*2*	*5*	*2*	*3*	*3*	*1*
Mixed/other	*11*	*7*	*8*	*13*	*25*	*28*	*21*	*22*	*20*	*14*
Unknown race	*0*	*0*	*5*	*0*	*2*	*0*	*1*	*0*	*0*	*0*
Total students (Headcount)	*637*	*635*	*614*	*613*	*647*	*734*	*777*	*830*	*897*	*850*

As seen in the next table, 37% of the Garrett County High School Graduates (GCHSG) enrolled in Garrett College. As seen in the table, the number of GCHSG began increasing in the fall 2006 semester. The increase is attributed to the implementation of the Garrett County Scholarship Program by the Garrett County Commissioners. The program is County funded and the Garrett County Scholarship Program provides all eligible Garrett County high school graduates equal access to post-secondary education and an equal opportunity for advancement. The goal of this program is to encourage Garrett County high school graduates to participate in post secondary education and training as a means of improving their earning power and quality of life. The immediate objective is to encourage high school graduates to pursue post-secondary educational opportunities by making an education affordable. Subsequent phases of the program now allow high school graduates to participate in certificate training aimed at developing trade and vocational skills.

Enrollment Rate of Garrett County High School Graduates, Fall 2001-2010 (Unduplicated Headcount)										
	2001	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**
GCHS grads	276	291	268	274	293	288	332	328	364	330
Enrolled GC	74	72	44	51	72	104	112	133	147	121
Enroll Rate	27%	25%	16%	19%	25%	36%	34%	41%	40%	37%

As seen below, the number of full-time students at the College has significantly increased since 2001 from 348 to 647 in 2010, while part-time students at the College have decreased from 289 (2001) to 203 (2010).

Course load of Fall Credit Students, Fall Semesters, 2001-2010										
	2001	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**
Full-time	348	345	377	360	419	450	543	584	653	647
Part-time	289	290	237	253	228	284	234	246	244	203
Total students	637	635	614	613	647	734	777	830	897	850

Enrollment Trends

Annual Unduplicated Headcounts for Credit class enrollment show a growth trend, while enrollment trends for Annual Unduplicated Headcounts for Non-Credit classes have remained relatively flat.

Annual Unduplicated Headcount						
	FY 2006	**FY 2007**	**FY 2008**	**FY 2009**	**FY 2010**	**FY 2011**
Credit	829	984	1004	1039	1095	999
Non-Credit	3821	3897	3638	3199	3705	3883

(Numbers are from "Unduplicated Headcount from RGENRL" report in Campus Café)

As seen below, Garrett College experienced a record number of enrollments for the fall 2011-2012 Academic Year (AY), i.e., 902 headcount. The table shows that the enrollment numbers have grown significantly since the 2001-2002 AY. The table also shows an enrollment decrease from the fall to the spring semesters, e.g., the fall AY2010-2011 enrollment of 850 students dropped in the spring AY2010-2011 to 776 students.

The overall growth can be attributed to the implementation of the Garrett County Scholarship Program, increased recruitment due to the opening of Garrett and Laker Halls (student housing), and increasing tuition rates at 4-year schools.

Official Fall and Spring Unduplicated Headcounts											
	AY 01-02	**AY 02-03**	**AY 03-04**	**AY 04-05**	**AY 05-06**	**AY 06-07**	**AY 07-08**	**AY 08-09**	**AY 09-10**	**AY 10-11**	**AY 11-12**
Fall	642	635	614	618	650	732	777	835	897	850	902
Spring	618	586	595	562	580	714	739	732	818	776	

(Numbers are from EIS files)

As seen below, Garrett College's Continuing Education Registrations totaled 6,546. The overall trend has been an increase in registrations from 2001-2007. Registrations dropped in 2008 & 2009 due largely to the economic situation. In 2010, registrations again began an upward trend.

Continuing Education Registrations, by Course Type, Fiscal Years 2001-2010										
	2001	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**
Basic Skills and Literacy	NA	NA	302	279	225	240	243	249	243	215
Workforce Development	2265	2666	3336	3508	5218	5696	5726	5283	5114	5346
Community Service and Lifelong Learning	NA	NA	1125	1270	1424	1186	1213	873	662	985
Total	**NA**	**NA**	**4763**	**5057**	**6867**	**7122**	**7182**	**6405**	**6019**	**6546**

Enrollment Projections

Enrollment projections for Garrett College published by MHEC predict that full-time enrollments will increase 18% over the next 10 years and part-time enrollments will increase by 34% during the next ten years. Accordingly the College should plan for the increased growth. Total enrollment has increased by 16% during the last 5 years so it is likely that these totals might be revised upwards for the next 10 years.

Garrett College

Projections of Headcount Enrollment at Maryland Community Colleges													
		FALL 10	FALL 11	FALL 12	FALL 13	FALL 14	FALL 15	FALL 16	FALL 17	FALL 18	FALL 19	FALL 20	% Change 10-20
		FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	
		Actual	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	
	Full-time	647	663	670	684	687	709	717	723	735	750	761	18%
	Part-time	203	210	217	222	228	234	242	251	256	264	272	34%
Total Headcount		850	873	887	906	915	943	959	974	991	1,014	1,033	22%

As seen below MHEC projects that Full-Time Equivalent Students (FTES) and Full-Time Daily Equivalent Student enrollments at Garrett College will increase by 16% each during the next ten years.

Garrett College

Projections of Full-Time Equivalent and Full-Time Day Equivalent Enrollment at Maryland Community Colleges											
	FALL 11	FALL 12	FALL 13	FALL 14	FALL 15	FALL 16	FALL 17	FALL 18	FALL 19	FALL 20	% Change 11-20
	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	
	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	
FTES	714	723	738	743	767	777	786	799	816	830	16%
FTDES	490	[redacted]								570	16%

As seen below MHEC projects that the College will not experience any enrollment growth in non-credit Full-Time Equivalent enrollments.

Projectioned State Funded Noncredit Full-Time Equivalent Trends Maryland Community Colleges FY2011-FY2020												
	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	% Change FY10- FY20
College	Actual	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	
Garrett	149	152	152	152	152	152	151	151	150	150	149	0%

ii. Employee Data

The College employed a total of 330 individuals, 122 full-time and 208 part-time during the fall 2011 semester. The majority of the part-time employees were adjunct faculty and continuing education instructors as well as lifeguards and front desk personnel in the new Community and Aquatic Recreation Complex (CARC).

The College used 2011 as a base year and has projected a 10% -15% increase in full-time and part-time faculty and a 5% increase in professional and technical staff to ensure that student's needs relating to instruction and service is being met. The three years prior to 2011 were anomalous due to no significant increases in staff, except part-time adjunct faculty, due to flat budgets and relatively modest tuition increases.

Garrett College Employee Projections:

	2011	2012	2013	2014	2015	2016	2017	2018	2020	2022
Credit Faculty										
FT	15	17	17	18	18	20	20	21	21	22
PT	2	3	3	4	4	5	5	5	5	5
Adjunct Faculty										
FT										
PT	72	72	74	74	74	74	75	75	75	75
Librarians										
FT	4	4	4	4	4	4	4	4	4	4
PT	1	1	2	2	2	2	2	2	2	2
Professional Staff										
FT	42	42	42	43	43	44	44	44	44	44
PT	3	4	4	4	4	4	4	4	4	4
Technical Staff										
FT	12	12	12	12	12	12	12	12	12	12
PT	2	2	2	2	2	2	2	2	2	2
Clerical/mentors/tutors										
FT	20	20	20	20	20	20	20	20	20	20
PT	99	99	99	99	99	99	99	99	99	99
Maintenance Staff										
FT	27	29	29	29	29	29	29	31	31	31
PT	1	2	2	2	2	2	2	2	2	2
CARC Staff										
FT	2	3	3	3	3	3	3	3	3	3
PT	26	30	30	30	30	30	30	30	30	30
Total Employees										
FT	122	122	122	122	122	122	122	122	122	122
PT	208	208	208	208	208	208	208	208	208	208

E. Factors influencing future programs

Over the past five years Garrett College has experienced rapid growth in terms of student enrollment, as was noted above. The College expects enrollment growth to continue, although it is likely to occur at a much more moderate rate. Nevertheless, it has become increasingly important for the College to ascertain the capacity of its physical plant with respect to the number of students it can adequately support. Accordingly, a capacity study was undertaken in order to answer two key questions:

1. Given the available physical resources, what is the maximum number of students the College can adequately serve without compromising the quality of education it provides?
2. What physical resources would be required to increase maximum capacity by 25%?

Calculation of capacity was done by making various assumptions. The first assumption was based on using the current Monday-Thursday (8:30 a.m. - 9:30 p.m.) schedule and then using a Monday – Friday (8:30 a.m. – 9:30 p.m.) schedule. Moreover, four different "levels of capacity" were calculated, i.e., maximum capacity, high capacity, mid-range capacity, and optimal capacity (as defined by the Maryland Higher Education Commission). Each "level of capacity" assumed a different occupancy rate and utilization rate. The results from the capacity analysis for the McHenry campus are shown in the following tables.

Table 1
GARRETT COLLEGE CAPACITY
Full-Time Day Equivalent Students (Four-Day Week)

Calculated Capacity Based on Monday - Thursday 8:30 a.m. – 9:30 p.m. Schedule					
Assumption	Occupancy Rate (%)	Utilization Rate (%)	Total FTDE Students	NASF/Student	Student : Faculty Ratio
Max. Capacity	100	100	1700	8	41
High Capacity	80	80	1090	13	27
Mid. Capacity	70	60	710	21	17
MHEC Rec. Capacity	60	44	440	34	11

Note: FTDE = Full-Time Day Equivalent; NASF/Student = Net Assignable Square Footage per Student

Table 2
GARRETT COLLEGE CAPACITY
Full-Time Day Equivalent Students (Five-Day Week)

Calculated Capacity Based on Monday - Friday 8:30 a.m. - 9:30 p.m. Schedule					
Assumption	Occupancy Rate (%)	Utilization Rate (%)	Total FTDE Students	NASF/Student	Student : Faculty Ratio
Max. Capacity	100	100	2130	7	52
High Capacity	80	80	1360	11	33
Mid. Capacity	70	60	890	16	22
MHEC Rec. Capacity	60	44	560	26	14

In both cases, the calculated mid-range capacities appear as the most reasonable based on the following considerations:

- Average to high NASF/student (16 NASF/Student M-F and 21 NASF/Student M-R)
- NASF/Student (16 M-F & 21 M-R) is slightly less than current levels (23 NASF/Student)
- A reasonable Student to Faculty Ratio is achieved (22:1 M-F and 17:1 M-R)
- Similar Usage and Occupancy Rates when compared with national levels

Thus, given available resources and assuming the current four-day schedule, the maximum number of students the College can adequately serve at its McHenry campus without compromising the quality of education is 710 FTDE, which correlates to 920 FTE and an unduplicated headcount of 1200 students. Assuming a mid-range capacity and four-day schedule, an additional analysis was completed in order to determine the additional capacity that would be provided by inclusion of the Career Technology Training Center (CTTC), Northern Outreach Center (NOC), and Southern Outreach Center (SOC). Inclusion of these three off-campus sites increases capacity by an additional 103 students.

Looking at the available instructional space on the basis of square footage alone, and using the information provided by the Capacity Study, it is clear that for the foreseeable future (i.e., the next 5-10 years), the potential for further enrollment growth should not be limited by the availability of instructional (classroom) space. **However, there are several important factors that are not accounted for in this study, such as the function and arrangement of the space, its appearance, or its ability to provide an environment that supports learning. Most of the College's instructional space is not attractive and poorly-suited to its intended function, nor does it create a supportive environment in which learning can take place.**

Modest population growth (a little more than 3%) is forecast over the next decade (2010 to 2020). The County's declining/stagnant population is one of the biggest challenges to building and growing the local economy. This decline also poses a significant challenge for Garrett College considering that most of the College's enrollment consists of traditional age students, most of who are from Garrett County and the surrounding area. The College does have residence halls and is able to house students from the out of County and out of State, both residence halls house together approximately 180 students. Residence halls have been full for the last two years, last year there was a waiting list due in part to the lack of local housing for students.

Table 3
GARRETT COUNTY POPULATION

1970 Census	1980 Census	1990 Census	2000 Census	2010 Census	2020 Projected
21,476	26,498	28,138	29,846	30,097	31,100

Sources: U.S. Census Bureau, Decision Data Resources, Demographic Comparison Reports, October 2010; Projected Population, Maryland Department of Planning, November 2010

While the College has experienced significant enrollment growth over the last five years, there has been no increase in the number of full-time faculty and only a modest increase in the number of professional staff (mainly in Student Life). In fact, the College has only slightly more full-time faculty today than it did 20 years ago. This situation has forced the College to rely more heavily on adjunct instructors to meet enrollment demand. While many of these part-time instructors are competent and dedicated, because of the College's rural location, the supply of qualified instructors is limited. In order to improve instructional quality, the College must hire more full-time faculty. The need is particularly acute in developmental math and English due to the large increase in the number of entering students who are

under-prepared to do college-level work. The College plans to hire two additional full-time faculty in FY2013.

F. Anticipated Changes

The 2011 Academic Plan calls for the following program changes:

- Improvement and expansion of the College's programs that involve science, technology, engineering, and mathematics (STEM), as well as training leading to the acquisition of advanced technical skills and training directed toward the application of new and emerging technologies which in turn may lead to the formation of new businesses. Potential examples include:
    - A.S. degree program in Mechanical Engineering Technology
    - A.A.S. degree program in Cyber-security
    - A.A.S. degree program in Robotics
    - A.A.S. degree program in generic Technical Skills
    - Non-credit STEM entrepreneurship training program

- Creating new programs and other educational opportunities such as corporate training, summer camps, and experiential learning that are set in the context of the region's (County's) natural environment and complement its tourism/adventure sports industry, that take advantage of the synergies between existing programs such as Adventure Sports Management and Natural Resources and Wildlife Technology, and that have the potential to promote economic development and attract more students, especially those coming from outside the local area. Potential examples include:
    - Eco-tourism concentration offered jointly by the ASI and NRWT programs
    - Event management and tourism/hospitality concentrations linked to the A.A.S. degree program in Business Management
    - Leadership development component as developed by ASI integrated into other degree programs (e.g., Business Management, General Studies)
    - Corporate training, summer camps, experiential learning opportunities

These program changes will require modern facilities to provide an environment that supports learning. The instructional space required to support these programs should be attractive, suited to each of the specific programs and should create a supportive environment in which learning can take place. This will enable Garrett College to provide more programs and services to traditional and nontraditional students and be responsive to business, industry and the needs of the local economy.

III. INSTITUTIONAL BACKGROUND

A. Programs and Services Provided by the Institution

B. Overview of the Campus Facilities

C. General Description & Assessment of Land and Facilities

A. Programs and Services Provided by the Institution

i. Current & Future Programs

Garrett College offers a variety of transfer and career advancement programs leading to:

Associate in Arts (AA): Students enrolled in the Arts and Sciences programs select a major program to graduate with an A.A. Degree or option in preparation for transfer to a four-year college or university. The focus of this academic major may be as diversified as fine and performing arts, social and behavioral sciences, liberal arts or mathematics/sciences.

Options include: Fine and Performing Arts, Liberal Arts, Mathematics/Sciences, Social and Behavioral Sciences and Wildlife/Fisheries.

The business administration area can accommodate a wide variety of interests-accounting, management, marketing, sales, advertising, economics, public relations, banking and investing, to name a few. There are many employment opportunities for business majors, including small businesses, corporations, banks, or entrepreneurial enterprises.

General Studies is a popular transfer program since many students do not have a clear choice of major at the time of their admission to college. This program allows students to complete general education requirements and explore various disciplines which may assist the student in determining a program major in preparation for transfer to a four-year college/university.

Associate of Arts in Teaching (AAT): The Associate of Arts in Teaching Teacher Education program prepares students who aspire to teach at the preschool, elementary, or secondary level for transfer into a four-year teacher education curriculum. Students have the opportunity to participate in classroom activities in the public schools as part of their pre-professional course work. Students may be required to take additional special education or inclusion courses as part of the requirements for a baccalaureate degree and teacher education certification at four year institutions.

Options include: Early Childhood Education/Early Childhood Special Education and Elementary Education/Elementary Special Education.

Associate of Science in Engineering (ASE): The Associate of Science in Engineering (ASE) program is a two-year transfer program that prepares students who wish to pursue a bachelor's degree in electrical engineering or other engineering majors. The curriculum is built around a strong basic core of mathematics, the sciences including chemistry and physics, and computer technology. Students will gain knowledge of engineering theory through engineering courses and application of theory to real world problems. The program will provide students hands-on experience in the design, development, implementation, and management of projects and in the communication and presentation of their ideas and project plans.

Associate in Applied Science (AAS) degrees: The Adventure Sports program offers students the opportunity to combine studies in business management, environmental science, and leadership development with participation in adventure sport skills classes in preparation for entry into the job market trained for middle management positions in organizations specializing in adventure sport

activities. Students may elect to transfer to another institution for further schooling, leading to a Bachelor's Degree.

Garrett's program is fully articulated with nearby Frostburg State University's Department of Health, Physical Education, and Recreation where students may earn a Bachelor's Degree in Recreation with an emphasis in Adventure Sports.

Business and Information Technologies offer programs designed to prepare students for the business careers of today and the future. The curriculum is designed to develop the skills needed to work in a business world that is becoming increasingly dependent on technology.

Options include: Business Management and Computer Applications for Business

Computer and Information Technology programs prepare students for technology-based careers. Students can earn national certifications as a Microsoft Certified Systems Engineer, an A+ Computer Repair Technician, or a Net+ Technician.

Options include: Graphic Web Design and Network Administration.

The Juvenile Justice curriculum offers a degree program that prepares students with a thorough understanding of the dynamics and theories of juvenile delinquency and of the scope and range of interventions for delinquent and at-risk behaviors. Students study the unique features of the juvenile justice system, diversion and community justice, and interaction between delinquent youth and the myriad service providers and professionals associated with the juvenile and justice systems.

The program equips students with a solid practical skills set including conflict management, leadership, and experience in juvenile justice settings working with adjudicated youth. The Juvenile Justice A.A.S. degree prepares students for employment in juvenile services or to transfer to related justice studies beyond the Associate's degree.

The Natural Resources and Wildlife Technology program strives to graduate technicians who are well prepared for employment in the field of natural resources management and environmental protection, who understand and appreciate the interrelationships among all the components of the ecosystem, and who recognize the socioeconomic and political forces affecting resource management and environmental protection decisions. While taking a holistic approach to resource management, the program emphasizes wildlife, fisheries, and forest management and soil and water conservation. Career opportunities for graduates include jobs in wildlife management, fisheries management, forest management, environmental consulting, ecological restoration, soil and water conservation, water quality monitoring, environmental inspection, nature interpretation and education, and parks and recreation.

Certificate Programs offered:

- ADVENTURE SPORTS
- ARTS & SCIENCES: SOCIAL SERVICES CERTIFICATE
- BUSINESS AND INFORMATION TECHNOLOGIES
- COMPUTER AND INFORMATION TECHNOLOGIES

Non Degree Transfer Programs: A variety of transfer programs have been established with other regional institutions. These programs require transfer for completion; no degree is issued from Garrett.

ii. Academic Programming:

a. Existing programming & participation rates

The following table shows that in the fall of 2010 General Studies is the most popular program at Garrett College (276 students). During the 2010 Semester, the Arts & Sciences program included 109 students, the Business & Commerce career program included 106 students and Teacher Education had 90 students enrolled in the transfer program. Overall the data shows that the College's enrollment in the General Studies transfer program and the Arts & Sciences transfer program has increased significantly since 2001.

Declared Majors of Credit Students, Fall Semesters, 2001-2010

Program	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
General Studies	116	128	111	117	130	198	238	165	162	276
Arts and Sciences	59	58	57	48	56	69	86	74	91	109
Teacher Education	78	82	78	60	59	60	56	64	75	90
Business Administration	26	28	25	29	27	41	53	54	64	49
Computer Science	0	0	0	0	0	0	0	0	0	0
Engineering	0	0	0	0	0	0	0	0	0	0
Total transfer program	***279***	***296***	***271***	***254***	***272***	***368***	***433***	***357***	***389***	***524***
Business & Commerce	94	91	64	69	90	96	102	48	132	106
Information Technology	0	0	23	15	8	11	16	48	39	39
Health Services	0	0	0	0	0	0	0	0	0	0
Natural Sciences	104	89	39	36	38	46	44	48	47	46
Public Service	35	42	100	108	101	96	113	155	77	62
Mechanical/ Engineering	0	0	0	0	0	0	0	0	0	0
Total career program	***233***	***222***	***226***	***228***	***237***	***249***	***278***	***299***	***295***	***253***
Undecided major	125	117	117	131	138	117	66	174	213	73
Total headcount	**637**	**635**	**614**	**613**	**647**	**734**	**777**	**830**	**897**	**850**

b. Considerations for Future Programming

Garrett College's Mission is diverse, but it is first and foremost an institution where teaching and learning is to take place. Thus, the quality of the teaching and learning environment goes to the very heart and essence of the institution. It is therefore crucial that the College strive to continually improve the quality of the instruction it provides and the programs it delivers. It must also work to create a physical environment that supports and is conducive to the learning process. The following examples are designed to improve and enhance the quality of the teaching and learning environment:

- Upgrading instructional facilities, and science laboratories in particular, bringing them up to current standards ;
- Refurbishing classrooms to make them more attractive and functional ;
- Upgrading instructional equipment and replacing existing classroom furnishings with furniture that is attractive, comfortable, and functional;
- Ensuring that the facilities and equipment used by career programs are adequate and up to date with respect to industry standards. Examples include: An indoor climbing wall for the Adventure Sports Management Program, Global Positioning System (GPS), and other field equipment for the Natural Resources and Wildlife Technology Program.

c. New program initiatives planned by the College are:

- A.S. degree program in Mechanical Engineering Technology
- A.A.S. degree program in Cyber-security
- A.A.S. degree program in Robotics
- A.A.S. degree program in generic Technical Skills
- Non-credit STEM entrepreneurship training program
- Eco-tourism concentration offered jointly by the ASI and NRWT programs
- Event management and tourism/hospitality concentrations linked to the A.A.S. degree program in Business Management
- Leadership development component as developed by ASI integrated into other degree programs (e.g., Business Management, General Studies
- Corporate training, summer camps, experiential learning opportunities

d. Policies, goals, or philosophies affecting campus facilities

Garrett College has established six Institutional Goals that it considers fundamental and indeed critical to the accomplishment of its Mission and Vision:

***Accessibility*:** Make higher education accessible to a diverse student population through appropriate admissions practices, active recruitment of a diverse student body, affordable tuition and fees, financial aid and scholarship assistance, developmental studies for students who are under-prepared for college-level work, student support services, and delivery of courses at times and via media that are responsive to student needs.

***Student Satisfaction and Success*:** Create and sustain a supportive learning environment that encourages student growth and achievement through appropriate advising and career counseling,

transfer and career preparation programs, experiential learning opportunities, and curricular as well as extra-curricular activities that encourage student engagement and responsibility.

***Educational Effectiveness*:** Ensure, through an emphasis on teaching excellence, that graduating students are able to demonstrate mastery with respect to oral and written communications skills, information literacy, critical reasoning and analysis, quantitative reasoning, scientific literacy, and information management; that they have achieved the requisite levels of academic and technical proficiency in their major; and that, through activities focusing on diversity and cultural awareness, they are adequately prepared to live and work in a global society comprised of diverse cultures and beliefs.

***Workforce Development*:** Support the economic development of Garrett County and the surrounding region by creating a skilled workforce through credit programs, as well as non-credit job readiness and workforce preparation courses; Garrett College will also be the provider of choice for affordable contract and customized training in response to the emerging needs of new and growing businesses.

***Community Service*:** Serve, within the scope of available resources, the specific needs of the community through partnerships with local government, businesses, community and arts organizations, schools, and non-profit agencies; and by providing continuing education courses for personal enrichment, lifelong learning, and community need.

Effective Use of Financial, Human, and Physical Resources: Ensure, through the application of "best practices", that financial, human, and physical resources are managed effectively and efficiently for optimal results.

The strategies and initiatives outlined here link to and directly support one or more of these mission-critical goals. The process that lead to the creation of these strategies and initiatives was informed and guided by analysis of an extensive volume of information and data that have been gathered from a wide array of sources, both internal and external to the College. Most of these sources have already been identified, but also included are the College's Institutional Research office and input from faculty, staff, administrators, and Board members as they have reviewed draft portions of this plan.

B. Overview of the Campus Facilities

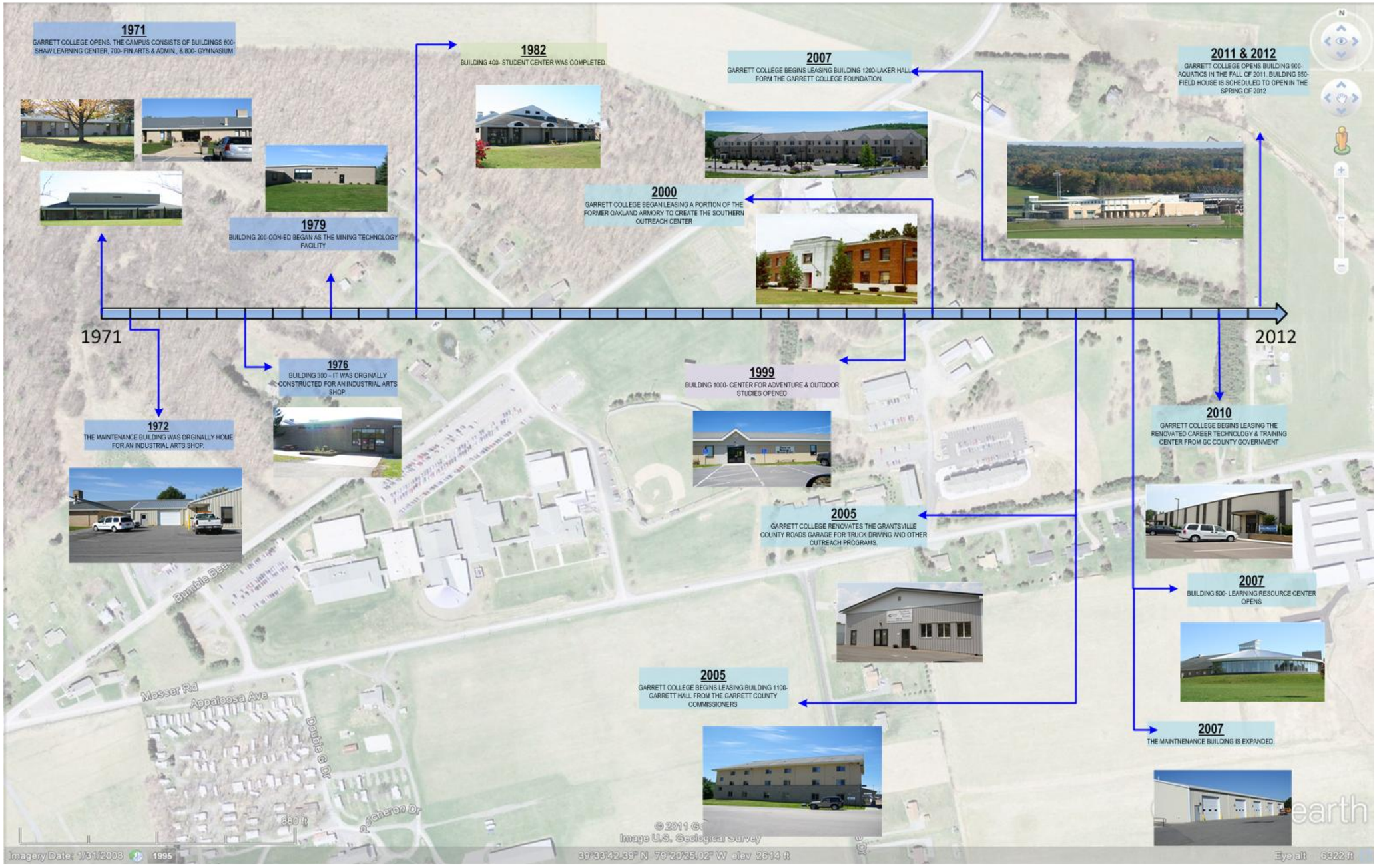
History of the Campus

In 1967, Garrett County, Maryland residents voted by a 2:1 majority to establish a community college. Initially, the Garrett County Board of Education served as the Board of Trustees of Garrett Community College until 1976, when the Governor appointed a separate College Board of Trustees. McHenry, Maryland was selected to be the site of the College because it was the geographical center of the County and could serve residents equally. Garrett Community College, dba Garrett College since 2000, opened its doors in September 1971 with a class of 144 students. By the academic year 2010-11, enrollment had risen to around 900 FTE students in credit programs and 4000 enrollments each year in non-credit enrichment and workforce training classes. The diverse student body includes traditional and nontraditional age students, minority and international students.

As illustrated in the following timeline, Garrett College opened its main campus in 1971, and the campus included Buildings 600 Shaw Learning Center, 700 Fine Arts & Administration, and 800 Gymnasium. The College expanded throughout the 1970's to include the Maintenance Building in 1972, Building 300 -

Information Technology (IT) in 1976, and Building 200 – Continuing Education in 1979. In 1982, Building 400, the Student Center, opened. After 17 years of no significant facility expansions, Building 1000 - Center for Adventure & Outdoor Studies was constructed by Garrett College Facilities personnel and opened in 1999.

During the first decade of the 21st century, increases in enrollment, development of outreach programs, among other changes lead to the expansion of College facilities. In an effort to attract more community involvement, the College began leasing space during 2000 at the former Oakland Armory to serve as an outreach facility. In 2005, the former Garrett County Roads Garage was renovated by Garrett College Facilities personnel to include the Northern Outreach Center & Mountaintop Truck Driving Institute. Moreover, the College began leasing Building 1100 Garrett Hall from the Garrett County Commissioners in 2005. 2007 marked the opening of Building 500 Learning Resource Center and Building 1200 Laker Hall. In 2010, Garrett College began leasing the newly renovated Career Technology Training Center from Garrett County Government. During October of 2011, the College opened Building 900 Aquatics and Building 950 Field House is expected to open in the spring of 2012.



Garrett College Timeline

Information Technology (IT) Infrastructure

Due to our location, in the far western part of the state, as well as our geographic isolation, Internet service has historically provided some challenges for the College. The College currently has a T-3 (45Mb/s) connection through Access2Go for our Internet service. In July 2012, we will be upgrading our Internet connection to 100Mb/s through Comcast.

The campus fiber backbone is 24-strand multimode/12-strand single mode interconnections between the main telecommunication room (MTR) and TRs in other main campus buildings (Continuing Education – 200, Learning Resource Center – 500, Learning Center – 600, Administration – 700, and Maintenance – 800). There is a 36-strand multimode/24-strand single mode interconnection between the CARC (Aquatics building) and the main campus buildings. There are Verizon T-1 connections (1.544 Mb/s) to the CTTC in Accident, to the NOC in Grantsville, and to the SOC in Oakland. In the next few months we will be replacing the T-1 to the CTTC with a 100Mb/s Ethernet connection through Comcast.

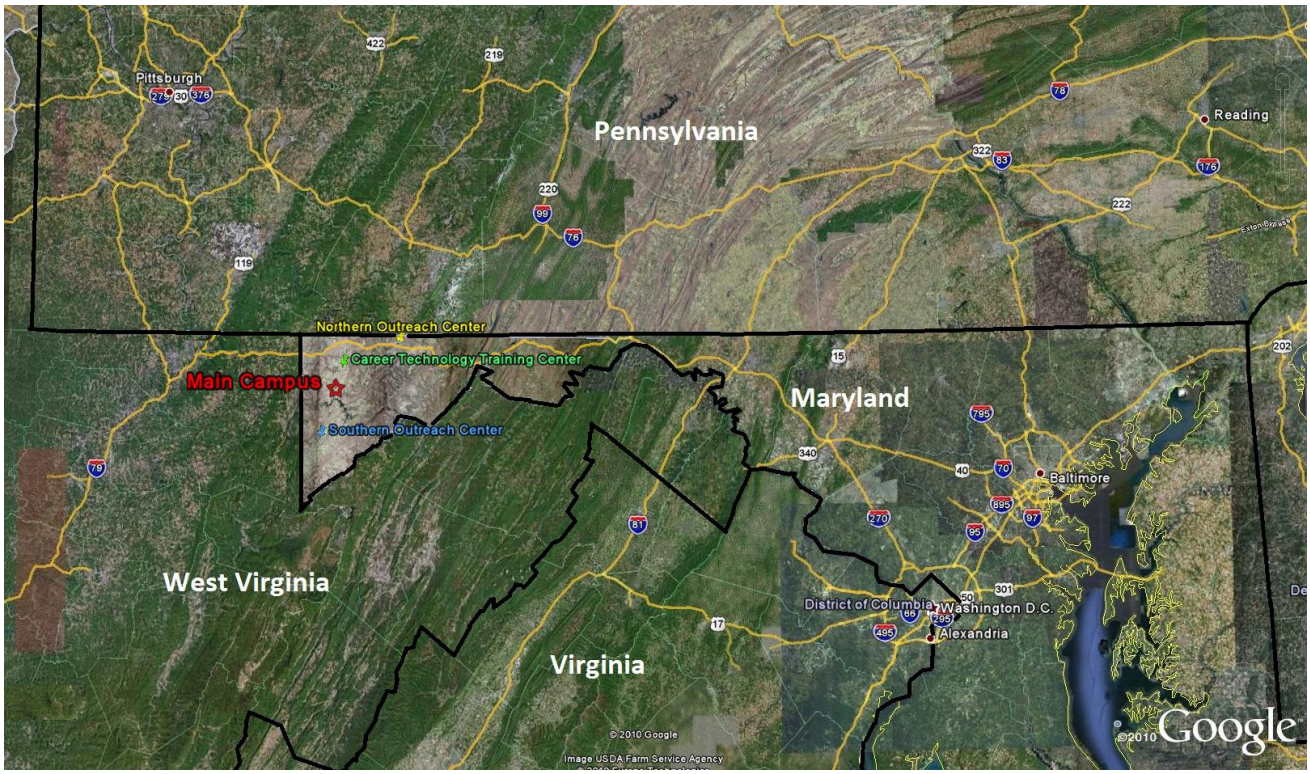
The horizontal campus cabling in all of the College facilities is Category 5e UTP, except for the CARC, which is Category 6 UTP. Since the College has a VoIP system for voice communications, the horizontal cabling is being used for both voice and data. The horizontal cabling is utilizing both PoE and standard 10/100/1000 Layer 3 stackable switches. As the need increases for PoE ports, future switch purchases are for PoE switches versus the standard switches.

All students have e-mail accounts and students can currently access grades and schedules on line, however on line registration is not yet available.

Location Map

Main Campus

As seen in the figure on the next page, Garrett College's main campus is situated in the Appalachian mountains of Garrett County in Western Maryland. During initial planning, the site in McHenry, MD was selected due to its proximity to the center of the county. The main campus in McHenry, MD, is approximately 15 miles south of I-68 on U.S. 219. Overlooking Deep Creek Lake, the Wisp Resort and the Adventure Sports Center International, the College's 64-acre campus is surrounded by forests, lakes, and rivers that serve as outdoor classrooms and recreation sites for its students. Whereas the College is located in a rural setting, major metropolitan areas are only a short drive away, i.e., a 3 ½ hour drive to Baltimore and Washington D.C. and a 2 ½ hour drive to Pittsburgh, PA.



Geographic location of Garrett College & Outreach Centers (revised from Google Earth).

Outreach Centers

In addition to the main McHenry campus, GC operates three outreach facilities, i.e., the Northern Outreach Center & Mountaintop Truck Driving Institute in Grantsville, MD, Southern Outreach Center in Oakland, MD, and the Career Technology Training Center in Accident, MD. The outreach center locations are shown above.

Site Plan

Main Campus

The figure below shows that Garrett College's main campus encompasses a 64.22-acre pie-shaped site and has grown to house 13 principal buildings and 6 smaller buildings (the kiln house is not shown) with a new facility currently under construction (950 Field House). The Garrett Information and Enterprise Center (GIEC) – 100 - is not used for classes and does not house any aspect of college programming, it is a business incubator for local businesses. The main academic corridor of Garrett College is separated from the Adventure Sports facilities (1000 CAOS) and residence halls (1100 Laker Hall and 1200 Garrett Hall) by a baseball field, 900- Aquatics building, and the upcoming 950- Field House. Access from U.S. Route 219 to the GC main campus is provided by Bumble Bee Road and Mosser Road, and eight parking lots have been located throughout campus to provide for easy access by vehicle.

The main campus consists of approximately 43 acres of grass (excluding construction zone), and three acres of trees that are primarily located around the Northeast corner of the property. Shrubbery and flowers are planted near and around buildings throughout campus. There is approximately 1800 lineal ft. (~60,000 SF) of roadway on campus and 2800 linear ft. (~10,000 SF) of sidewalks. Six-breezeways (~500 lineal feet) connect Buildings 100-800 to serve as protection from the elements during harsh

Garrett County winters. Buildings occupy roughly 6.4 acres, and parking lots encompass roughly five acres of the site space.
The same figure also provides salient data on the campus infrastructure in terms of the location and size of fuel tanks (i.e., propane and #2 fuel oil) as well as tap locations and sizes of water mains. Moreover, the figure provides data on the College's water & sewerage infrastructure. GC is billed by Garrett County Department of Public Works (DPU) for a total of five public drinking water taps on campus and at CTTC. NOC has one well in service and one out of service, and Buildings 1000, B, C, and W utilize the same well. Water and sewer are included in the lease at the Southern Outreach Center (SOC). Water tap sizes range from six inches to two inches and are separated by way of a tee inside the buildings that have sprinkler systems (fire & domestic). Dynamic/ static pressures and flow rates of the water mains were measured by DPU at two separate fire hydrants located along Mosser and Bumble Bee Roads.

Buildings 100-600 sewage flows by gravity to the sewerage system, whereas, Buildings 700-1200 require sewage to be pumped by way of grinder pumps to the sewerage system. Buildings 1100 & 1200 also connect to a 1000 gallon grease trap approximately 15 feet before the grinder tank. GC ownership of the system ends at the grinder pumps where DPU assumes ownership. DPU is granted easement from the grinder pumps to the public road right-of way. GC's water & sewer usage is billed for a total of 73 Equivalent Residential Units (each ERU is billed at a flat rate up to 6,000 gal of drinking water/quarter).

The topography of GC's campus slopes gradually upward from the south toward the north. The North end elevations are approximately 2655 feet above sea level, whereas the southern end is approximately 2590 ft. above sea level for a total change in elevation of 65 ft in roughly 1300 ft providing an average grade of 5%. GC's main campus consists of five property deeds, and as summarized below in a table, GC owns four of the five property deeds at the McHenry site. The fifth deed (Garrett Hall & surrounding area) is owned by the Garrett County Commissioners and is for 0.59 acres. The deeds are recorded in the Garrett County Land Records.

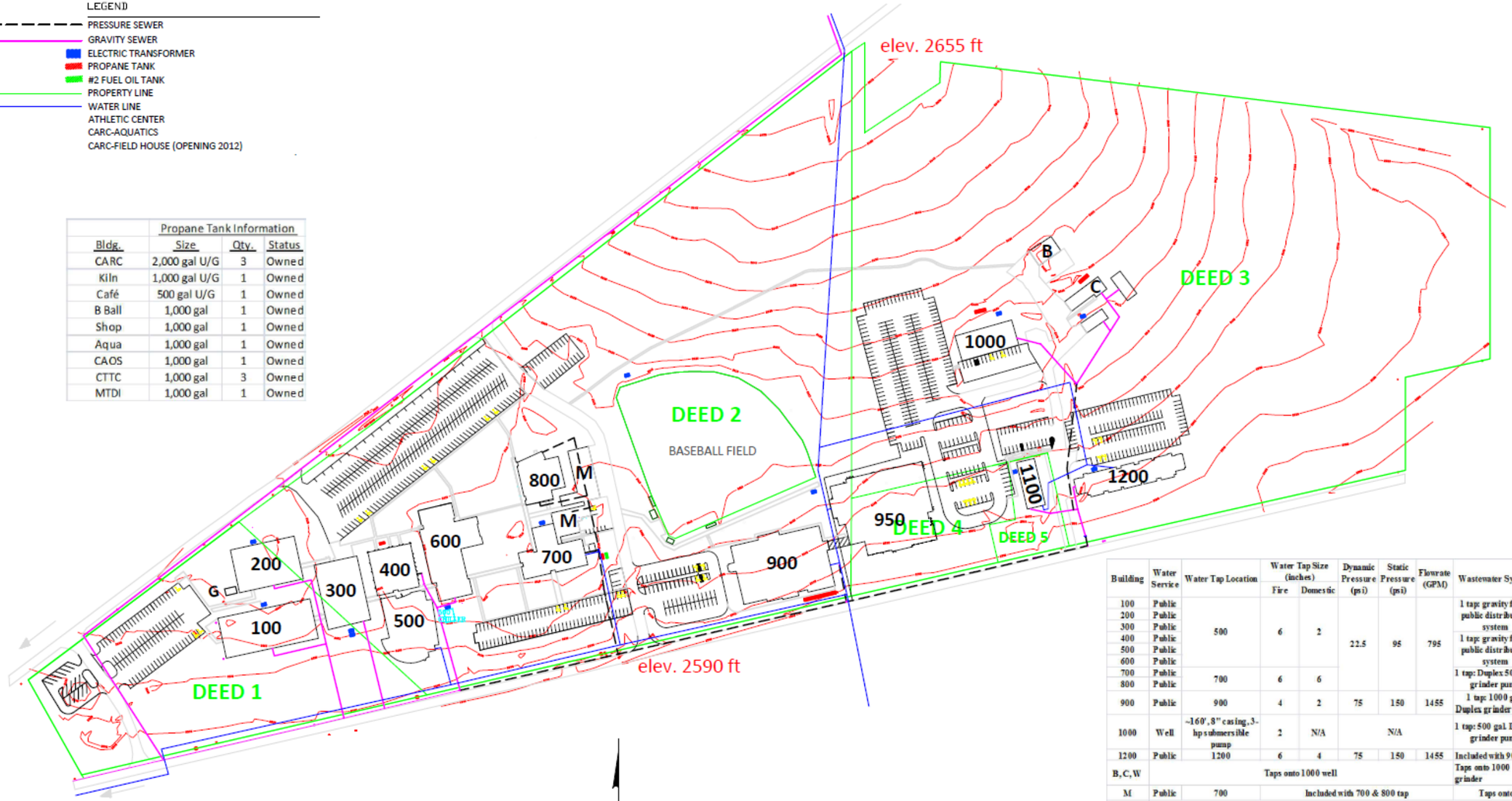
Summary of GC property deeds.

Deed	Owner	Book	Pages	Acres
1	Garrett College	288	567-568	30.06
2	Garrett College	288	569-570	6.56
3	Garrett College	288	571-573	25.7
4	Garrett College	1487	482-485	1.9
5	Garrett County Commissioners	1062	566-569	0.59
Total GC Acreage				64.22

LEGEND

- PRESSURE SEWER
- GRAVITY SEWER
- ELECTRIC TRANSFORMER
- PROPANE TANK
- #2 FUEL OIL TANK
- PROPERTY LINE
- WATER LINE
- ATHLETIC CENTER
- CARC-AQUATICS
- CARC-FIELD HOUSE (OPENING 2012)

	Propane Tank Information		
Bldg.	Size	Qty.	Status
CARC	2,000 gal U/G	3	Owned
Kiln	1,000 gal U/G	1	Owned
Café	500 gal U/G	1	Owned
B Ball	1,000 gal	1	Owned
Shop	1,000 gal	1	Owned
Aqua	1,000 gal	1	Owned
CAOS	1,000 gal	1	Owned
CTTC	1,000 gal	3	Owned
MTDI	1,000 gal	1	Owned

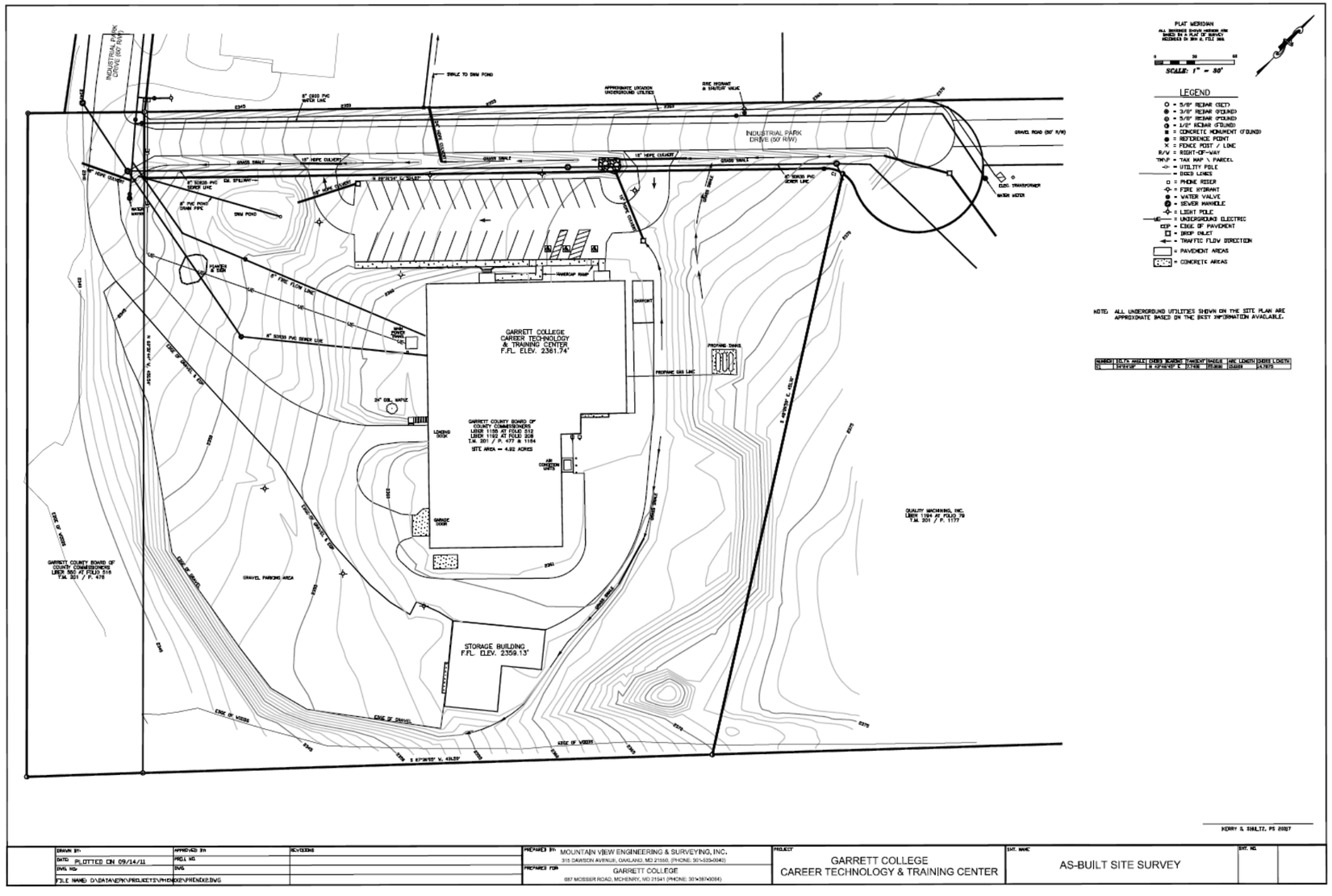


Building	Water Service	Water Tap Location	Water Tap Size (inches)		Dynamic Pressure (psi)	Static Pressure (psi)	Flowrate (GPM)	Wastewater System	Equivalent Residential Units
			Fire	Domestic					
100	Public	500	6	2	22.5	95	795	1 tap: gravity fed to public distribution system	6
200	Public								21
300	Public								
400	Public							1 tap: gravity fed to public distribution system	
500	Public								
600	Public								
700	Public	700	6	6				1 tap: Duplex 500 gal. grinder pump	
800	Public								
900	Public	900	4	2	75	150	1455	1 tap: 1000 gal. Duplex grinder pump	10
1000	Well	~160', 8" casing, 3-hp submersible pump	2	N/A	N/A			1 tap: 500 gal. Duplex grinder pump	4
1200	Public	1200	6	4	75	150	1455	Included with 900 tap	32
B, C, W	Taps onto 1000 well							Taps onto 1000 grinder	
M	Public	700	Included with 700 & 800 tap					Taps onto 700 grinder	
G	None								
NOC	Well	~230', 8" casing, 3/4-hp submersible pump and 1 well out of service	N/A					Public gravity	Yet To be determinied
SOC	Public	SOC	Yet To be determinied						
CTTC	Public	CTTC	4	Yet To be determinied					

Outreach Centers

CTTC

As seen in the following figure, Mountain View Engineering & Surveying was hired during the summer of 2011 to conduct an As-Built site survey for the CTTC. Accordingly, property lines, contours, parking lots, roadways, water & sewer line, deeds, propane tanks, etc. were located/identified and are included in the site drawing.



Northern Outreach Center (NOC)

The NOC site consists mainly of parking lots due to the large area required for truck driving instruction. Grass covers only 0.2 acres of the two-acre site, and there are no trees or shrubbery. Water for the building is provided by a well, and the College owns a thousand gallon propane tank.

C. General Description & Assessment of Land and Facilities

Vicinity Map

Garrett College is located in McHenry, MD (population ~ 1400) and overlooks Deep Creek Lake, Maryland's largest man-made fresh water lake. As seen above access to Garrett College's main campus is provided from US Route 219 by way of Mosser Road and/or Bumble Bee Road. Due to land along both sides of Mosser Road and at the intersection of Bumble Bee Road & Mosser Road being owned by others, the College does not have an area to erect signage to clearly direct traffic to the main campus.

Campus Map

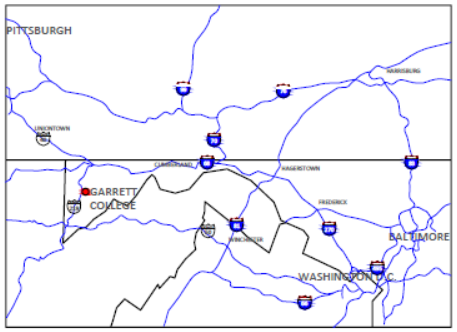
The following figure shows Garrett College's current campus map. The main campus houses 13 principal buildings (i.e., 200-1200 & M) and six smaller buildings (i.e., B,C,G, and three temporary buildings). Building 100 Garrett Information Enterprise Center (GIEC) -100- was constructed in 2002, and the College does not use space in the building for academic or continuing education because it serves as an incubation center for small businesses.

LEGEND

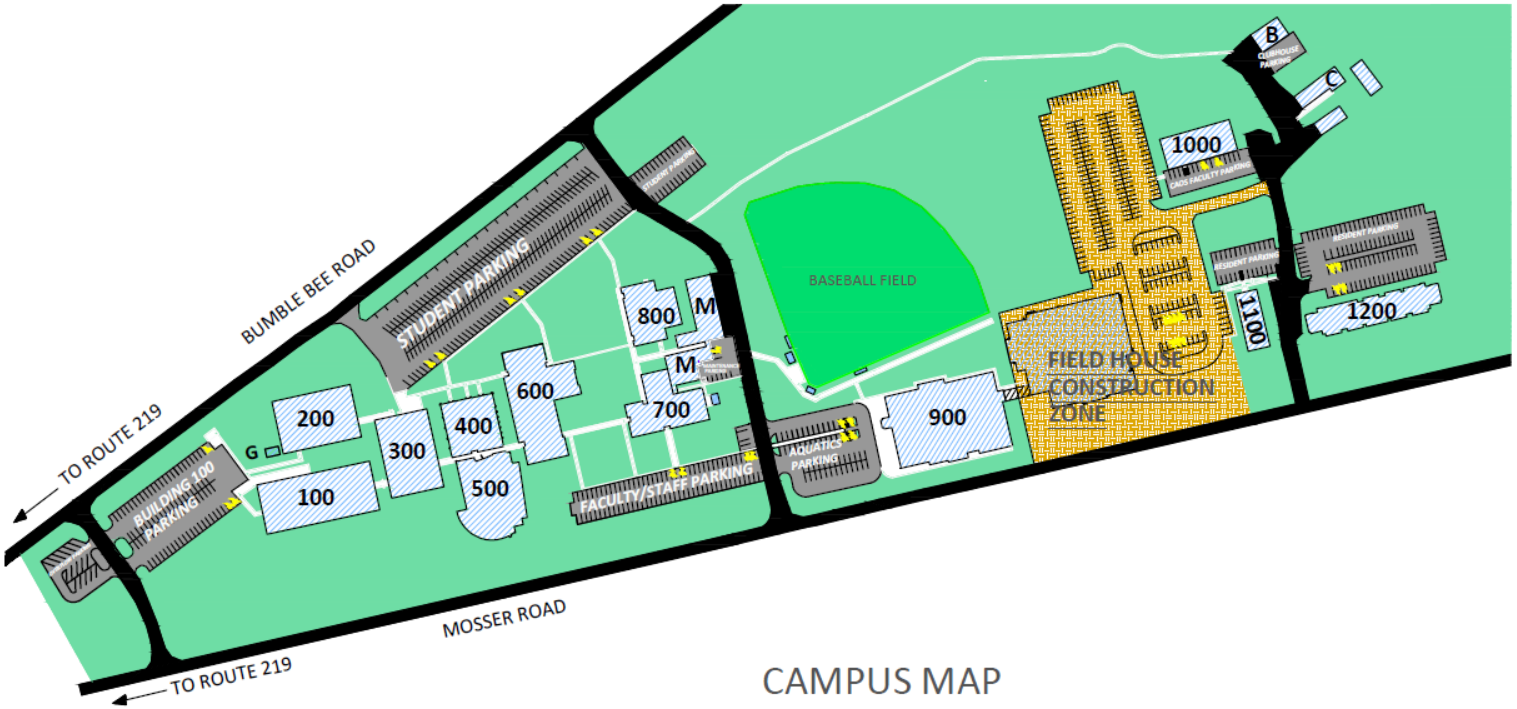
100	GARRETT INFO. ENTERPRISE CENTER (GIEC)
200	CONTINUING EDUCATION
300	INFORMATION TECHNOLOGY
400	STUDENT CENTER
500	LEARNING RESOURCE CENTER
600	SHAW LEARNING CENTER
700	FINE ARTS / BUSINESS ADMIN.
800	ATHLETIC CENTER
900	CARC-AQUATICS
950	CARC-FIELD HOUSE (OPENING 2012)
1000	CENTER FOR ADVENTURE & OUTDOOR STUDIES (CAOS)
1100	GARRETT HALL
1200	LAKER HALL
B	BASEBALL PRACTICE
C	BASEBALL CLUBHOUSE
M	MAINTENANCE
G	GARRETT LAKES ARTS FESTIVAL

GARRETT COLLEGE

687 Mosser Road
McHenry, MD 21541
(301) 387-3000



AREA MAP



CAMPUS MAP

Inventory

The table provides a snapshot of the FY 2012 Facilities Inventory submitted to the Maryland Higher Education Commission in April 2011 and includes: the building number, building name, code function, code owner, code status, gross square footage (GSF), net-assignable square footage (NASF), and efficiency. The main campus inventory includes 13 buildings totaling 131,172 GSF, 87925 NASF, and an overall efficiency of 67%. The off-site & leased space consists of five buildings totaling 81,527 GSF, 58,112 NASF, and an overall efficiency of 71%. Main campus and off-site/leased space totals include 212,699 GSF, 146,037 NASF, and an overall efficiency of 69%. It is important to note that Building 900 Aquatics was not included in the FY 2012 Inventory submission due to the building not being completed until October 2011, and as stated earlier Building 100 GEIC is not included in the inventory. Moreover, Garrett Hall's building number was changed to 1100 when Building 900 Aquatics was opened. The succeeding sections provide more details concerning each building.

FY 2012-April 2011 Facilities Inventory

MAIN CAMPUS

Year 2011	Institution	Campus Bldg #	Building Name	Code Function	Code Owner	Code Status	Total GSF	Bldg NASF	Effic %
Campus Totals									
2011	Garrett			13	= Total # of Buildings		131,172	87,925	67%
	Garrett	200	Continuing Education	1	2	1	15,000	10,022	67%
	Garrett	300	Information Technology	1	2	1	15,000	9,745	65%
	Garrett	400	Student Center	4	2	1	12,105	7,230	60%
	Garrett	500	Learning Resource Center	5	2	1	18,128	11,589	64%
	Garrett	600	Shaw Learning Center	1	2	1	21,553	13,761	64%
	Garrett	700	Fine Arts/Administration	3	2	1	14,110	7,515	53%
	Garrett	800	Gymnasium/Athletic Center	2	2	1	10,960	8,374	76%
	Garrett	1000	Adventure/Outdoor Studies	3	2	1	8,160	5,502	67%
	Garrett	1020	Baseball Practice Facility	7	2	1	2,560	2,560	100%
	Garrett	1040	Baseball Clubhouse	7	2	1	2,882	2,649	92%
	Garrett	850	Maintenance Shop A	7	2	1	3,000	2,469	82%
	Garrett	860	Maintenance Shop B	7	2	1	6,250	5,100	82%
	Garrett	1060	Welding Shop	3	2	1	1,464	1,409	96%

OFF-SITE CAMPUSES/LEASED SPACE.

Year 2011	Institution	Campus Bldg #	Building Name	Code Function	Code Owner	Code Status	Total GSF	Bldg NASF	Effic %
Campus Totals									
2011	Garrett			5	= Total # of Buildings		81,527	58,112	71%
	Garrett	1	Northern Outreach Center	1	4	1	8,470	6,792	80%
	Garrett	2	Southern Outreach Center	1	4	1	1,391	1,154	83%
	Garrett	900	Garrett Hall Dormitory	6	4	1	14,190	10,814	76%
	Garrett	1200	Laker Hall	6	4	1	37,469	23,892	64%
	Garrett	3	Career Technology Training Center	1	4	1	20007	15460	77%

Description & Assessment of Buildings

A facilities assessment for Buildings 200- 800 & 1000 was performed in the spring of 2011 by Grimm & Parker Architects, and the full report is attached in the Attachments. The reports descriptions, assessments, and recommendations for the following items:

- Construction
- ADA Compliance
- Capacity for Renovation/Expansion
- HVAC
- Plumbing
- Fire Protection
- Electrical
- Emergency
- Electrical & Lighting
- Fire Alarm
- Voice/Data/Video
- Security

Overall there were no surprises in Grimm & Parker's assessment, i.e., a common theme throughout the assessment was that several older buildings on campus are in need of renovation. In particular, Grimm & Parker found that Buildings 200, 400, 600, 700, and 800 are in serious need of renovation.

The following section provides a building description, summarization of Grimm & Parker's assessment, building layout, and pictures of the College's facilities.

200 Continuing Education

Programming: Administrative Offices, Classrooms, Labs, & Meeting

Condition Code: 4- Requires Major Renovation

Adequacy of Space: Good

Sprinkler System: No

Renovations: Interior in the late 1980's, ADA upgrades in 2000, roof in 2002

Description:

Building 200 Continuing Education was constructed in 1979 and was originally a mining technology center. The building serves as the primary location for Continuing Education & Workforce development programming. During the late 1980's, Building 200 underwent a renovation which is reflected in the current building layout seen in the following figure. The facility encompasses 15,000 GSF with 10,022 NASF for an efficiency of 67%. Fire alarms are monitored by campus security. Other than a roof replacement during 2002, the building has not been updated for two decades and is in need of modernization (e.g., window replacement, electrical/mechanical, insulation, etc.).

Assessment:

A summary of Grimm & Parker's report is as follows.

Construction:

The building is a one-story structure consisting of concrete footings, concrete slab on grade, steel columns, exterior bearing walls and pitched steel joists. The building envelope is comprised of brick veneer with two inch foam insulation board and 8" CMU backup exterior walls. The roof system is built-up roof system on rigid insulation on metal deck. Windows are a combination of fixed and projected vent aluminum windows with un-insulated glazing.

Building Envelope:

- Walls: Exterior walls appear to be in good condition.
- Entrances: Building Entrances appear to be in good condition.
- Windows: Windows are recommended to be replaced with new thermally broken aluminum windows with one inch low-e insulated glazing to improve energy efficiency.
- Roof: The built-up roof system appears to be in good condition.

Building Interior:

- Building interior was last renovated in the late 1980s. Acoustics could be improved if existing operable partitions in the large dividable classroom were replaced with high STC rated operable panel partition system.

ADA Compliance:

The majority of building components are handicap accessible.

- Should consider widening existing four- foot wide corridor if building is to be renovated in the future to allow accessible turn around clearance.
- Tiered classroom is not handicap accessible.

Capacity for Renovation/Expansion:

- There is limited room for expansion on the north side of the building. Given the steel structure, and non-load bearing partitions, the building interior can be reconfigured relatively easily.

HVAC:

Heating:

The heating system for this building is primarily served by the campus heating water system. Some electric resistance heaters are still utilized. The Student Center pump serves this building. Two inch heating lines were tapped into the student center mains between the Student Center (building 400) and the Learning Resource Center (building 500). The original building, constructed in 1979, was originally heated by oil fired unit heaters. When the building function changed around 1983 these oil fired unit heaters were removed and the heating system was extended from the Student Center to serve this building. This building is located at the furthest point from the central heating plant.

The existing heating system within the building is inadequate, beyond its useful life and lacks controllability. It also is served from the student center which was not designed to serve this building. The use of electric heat is not energy efficient and is beyond its useful life.

Ventilation/Air Conditioning:

The building is served by a combination of three (3) split system air handling units and classroom unit ventilators. The equipment and systems are almost thirty (30) years old. A small one (1) ton split DX unit is the oldest and serves the President's office. A seven and one-half ton multi zone unit and a five-ton single zone unit serve the majority of the building except for perimeter classrooms which are served by vertical unit ventilators. Transfer air louvers in classroom doors allow relief air to migrate through to the corridor. This condition does not meet current code requirements and is a life safety issue. The air handling units have a hot water heating coil, direct expansion cooling coil and supply fan. Refrigerant piping connects the cooling coils to remote air cooled condensing units (R-22 Refrigerant). Compressors have failed and have been replaced several times. The air distribution system is constructed of fiberglass duct board, not conventional galvanized steel. Extensive amounts of flexible duct connect diffuser to duct mains.

There are significant functional and operational problems with this facility based on the age and type of equipment and materials used. Code and life safety issues exist and fiberglass ductwork is a concern.

Electrical & Lighting:

Electrical service to the Continuing Education building is 480/277V, three-phase/four wire from a utility pad-mount transformer. The majority of the lighting in the building dates to the renovation in the late 1980s, with recessed 2'x4' lensed troffers typically throughout in classrooms and corridors, including the connecting link to the Information Technology building. The lighting fixtures vary in condition from fair to poor. The original electrical distribution system as well as the lighting is recommended for replacement.

Voice/ Data/Video:

The original incoming telephone service, located in the main electrical room, is abandoned. Services on the main campus originate from the Tech Building. Telephone service is voice over internet protocol (VOIP) via fiber optic cabling routed overhead through the buildings. The data rack in the Continuing Education Building is located in Custodial adjacent to the President's Office. Data outlets are wired back to this rack, in addition to wireless routers mounted flush in ceilings, strategically placed, with lockable covers for wireless access in the building. Removal of all unused, abandoned low voltage cabling is recommended.

HEGIS CODE	HEGIS CATEGORY	Continuing Education
100 (110-115)	CLASSROOM	4,367
200	LABORATORY	933
300	OFFICE	2,524
600	GENERAL USE	1,807
700	SUPPORT	391
	Total NASF:	10,022
	Total GSF:	15,000
	Efficiency (%):	0.67

Multi-purpose room (Rooms 205, 207, 219, & 225) (photo courtesy of David Beard)

Northeast view from student parking

300 Information Technology

Programming: Classroom, Lab, IT Offices, IT support

Condition Code: 3-Deferred Maintenance

Adequacy of Space: Good

Sprinkler System: No

Renovations: Interior in the late 1980's, roof in 1999, ADA upgrades in 2000, various interior during 2009/10,

Description:

Building 300 Information Technology was constructed in 1976 and was originally used as a construction trades facility. The building currently is the central hub for the main campus IT servers, and includes computer labs and classroom space. The building underwent renovation in the late 1980's and 1990's to reflect the current layout in the following figure and encompasses 15,000 GSF with 9,745 NASF for an efficiency of 65%. Fire alarms are monitored by campus security. Since the late 1980's renovation, GC has updated areas of the building, e.g. new finishes were installed on hall way walls, hall way/ lobby floor tile upgrades, etc.

Assessment:

A summary of Grimm & Parker's report is as follows.

Construction:

The building is a 1-story structure consisting of concrete footings, concrete slab on grade, steel columns and steel joists. The building envelope is comprised of brick veneer with two-inch foam insulation board and eight-inch CMU backup exterior walls. The roof system is built-up roofing on rigid insulation on metal deck. Windows are a combination of fixed aluminum and projected vent aluminum windows with insulated glazing.

Building Envelope:

- Walls: Exterior walls appear to be in good condition.
- Entrances: Building Entrances appear to be in good condition.
- Windows: Windows are failing, and are recommended to be replaced.
- Roof: The built-up roof system appears to be in good condition.

Building Interior:

- Interior finishes have been recently replaced.
- The carpet requires repairs in several spaces.
- Some of the interior partitions only extend to the ceiling height, which does not provide adequate sound attenuation between spaces

ADA Compliance:

The building appears to be handicap accessible.

Capacity for Renovation/Expansion:

There is room for expansion on the south side of the building. Interior partitions could be reconfigured within the structural column bays to accommodate future campus needs.

HVAC:

Heating:

The heating system for this building is served by the Central Campus Heating Water System. The heating water lines serving the Library are tapped between the Building 500 Learning Resource Center and Student Center Building 400 and extended to the Information Technology Building. A separate tap from the Student Center currently serves a section of this building which used to be a Lecture Hall, but was recently converted to Office spaces. Two circulating pumps are located in the building and serve the perimeter heating units and interior air handling unit. The heating system also serves duct-mounted heating coils located above the ceiling for each packaged rooftop unit. The heating system is recommended for upgrade due to the numerous taps on the main heating water lines.

Ventilation/Air Conditioning:

The main Computer Room/Hub Room is cooled by three (3) five (5) ton low ambient type ductless split A/C units as manufactured by Mitsubishi. The Main Building, primarily consisting of Computer Lab Spaces, is cooled and ventilated by four (4) packaged cooling-only rooftop units with duct-mounted hot water heating coils. Two (2) rooftop units are five (5) ton capacity, constant volume single zone units utilizing scroll type compressors. These units each serve two (2) rooms apiece. The units were manufactured by York and are approximately fifteen (15) years old. The remaining two (2) rooftop units are ten (10) ton capacity units, constant volume single zone type serving a VVT Air Distribution System. These units are original to the 1980's renovation when the building was converted from the Trades Shops to Classrooms. All rooftop units [five (5) and ten (10) tons] utilize R-22 refrigerant, which is no longer manufactured.

The existing five (5) ton units are fifteen (15) years old and have an average life expectancy of 15-20 years. The main ten (10) ton units are over 20 years old and beyond their average useful life expectancy. The existing main computer room units freeze up at sub zero/windy outdoor air conditions. The existing HVAC units are functional but are near the end of their anticipated life expectancy and utilize the no longer manufactured R-22 refrigerant.

Electrical & Lighting:

Secondary service is obtained from the utility pad-mount transformer that also serves Building 400. The main distribution panelboard is configured in two sections, each rated for 1200A, 208/120V, three-phase/four wire. A good portion of the lighting is original to the building. Fluorescent lighting fixtures were retrofit with T8 lamps and electronic ballasts approximately 15 years ago. Newer recessed 2'x4' troffers have been installed in the corridors. The original electrical distribution system as well as the lighting is recommended for replacement.

Voice/ Data/Video:

Services on the main campus originate from this Building. The main point-of-presence (MPOP) and main distribution frame (MDF) are one in the same in the Computer Hub Room. A 600 pair copper voice cable serves the campus, with 110 terminal blocks designated for: Continuing Education, Student Center/Learning Resource Center, Admin, Tech Center Hub Room (three), GIEC (four), and CAOS. This provides analog voice services where required.

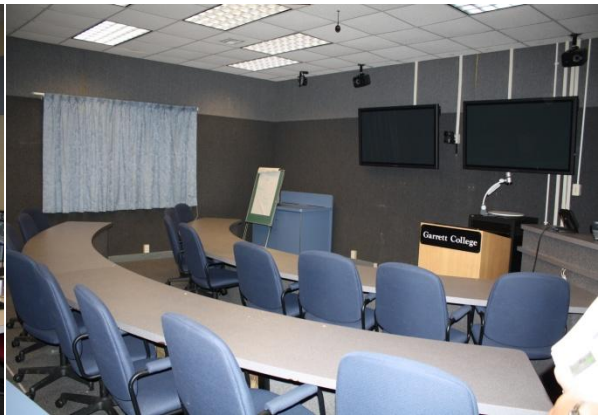
Incoming fiber optic cabling is routed to a handhole adjacent to the connecting corridor to GIEC, then into the building overhead to the Computer Hub Room. A total of six (6) data racks are in a single lineup in the Hub Room. Data outlets are wired back to this rack, in addition to wireless routers mounted flush in ceilings, strategically placed, with lockable covers for wireless access in the building. Telephone service is voice over internet protocol (VOIP) via fiber optic cabling routed overhead through the buildings.

HEGIS CODE	HEGIS CATEGORY	Information Technology
100 (110-115	CLASSROOM	1,811
200	LABORATORY	3,160
300	OFFICE	2,424
500	SPECIAL USE	774
600	GENERAL USE	425
700	SUPPORT	1,151
	Total NASF:	9,745
	Total GSF:	15,000
	Efficiency (%):	0.65

302 Conference Room

301 Computer Lab

309 Computer Lab



311 Classroom

Photos courtesy of David Beard

400 Student Center

Programming: Admissions & Financial Aid Offices, Dining Hall, Support

Condition Code: 4-Requires Major Renovation

Adequacy of Space: Poor

Sprinkler System: Yes

Renovations: Roof in 1994, ADA upgrades in 2000

Description:

Building 400 Student Assistance Center was constructed in 1982 and besides the 1994 roof replacement it has not been renovated. The building serves as space for Admission and Financial Aid offices, a small bookstore, dining hall, kitchen, and second floor storage. As seen in the following figure, the building encompasses 12,105 GSF with 7,230 NASF for an efficiency of 60%. The second floor was designed as storage space, but from time-to-time throughout its history the space has been utilized as non-storage space. However, due to ADA Accessibility issues (i.e., lack of an elevator), these efforts have been abandoned. Fire alarms are monitored by campus security, and the building has a sprinkler system that was installed in 2006 to coincide with the construction of Building 500 Learning Resource Center.

Assessment:

A summary of Grimm & Parker's report is as follows.

Construction:

The building is a one-story structure with storage loft area consisting of concrete footings, concrete slab on grade, steel columns and glue-laminated wood beams and rafters. The building envelope is comprised of brick veneer with two-inch foam insulation board and eight-inch CMU backup exterior walls. The roof system is asphalt shingle on rigid insulation on wood deck. Windows are a combination of fixed and projected vent aluminum windows with un-insulated glazing.

Building Envelope:

- Walls: Exterior walls appear to be in good condition for the age of the building.
- Entrances: Building Entrances appear to be in good condition.
- Windows: Sliding Glass doors do not operate properly. Storefront system is recommended to be replaced with Thermally Broken aluminum system with 1" depth, low-e, insulated glazing.
- Roof: The asphalt shingle roof system is failing and is recommended to be replaced.

Building Interior:

- Interior partitions only extend to the ceiling height, which does not provide adequate sound attenuation between spaces.
- Limited grout failure was observed in the quarry tile floor in the dining room.
- A new grease trap is recommended.
- Guards are not code compliant at the loft level and the stairs that access the loft.

ADA Compliance:

The majority of the building components are handicap accessible. Below is a list of deficiencies:

- An accessible push-button automatic door operator is recommended at the accessible building entrance.
- Heights of paper towel dispensers are not accessible.
- The stair door at the main level is not accessible.
- The loft area is not accessible to the general public. It is only utilized for storage.

Capacity for Renovation/Expansion:

There is no room for expansion of the building. Given the size of the building and the location of the kitchen, there is limited capability of making significant alterations to the layout of the building. With the addition of an elevator, the loft (mezzanine) space could be utilized more efficiently. Expansion of the bookstore should be considered to allow for more merchandise, storage, and work space.

HVAC:

Heating:

The heating system for this building is served by the Central Campus Heating Water System. The heating water piping system and distribution pumps are original to the 1982 construction and are approximately 29 years old. The existing heating water pumps are located in the Main Boiler Room with the heating water pipes extending through the Fine Arts/Administration Building 700 and Shaw Learning Center Building 600. The heating water system serves air handling unit heating coils, which utilize 3-way electric/electronic modulating mixing valves. It is recommended the entire heating water system within the building be replaced with the associated air distribution equipment and converted to variable flow as recommended in the central heating plant recommendations.

Ventilation/Air Conditioning:

The building houses the dining hall, kitchen, bookstore, and offices. It shares a common main street type corridor with the Learning Resource Center Building 500. It was originally constructed like a Cape Cod style house, with both perimeter sides open to a center loft area. At some point, the west side of the loft area was enclosed with a wall to separate the perimeter offices from the open loft area. The kitchen and other offices are located under the loft, while the east side dining hall is still open to the loft area. The building was originally just heated and ventilated. About 12 years ago, air conditioning was added for the office areas only, while the rest of the building (dining hall, kitchen, and ancillary spaces) is still only heated and ventilated.

A five-ton split fan coil unit located within the First Floor Mechanical Equipment Room serves the interior rooms located under the loft. A duct-mounted hot water coil provides heat to the space. This system is approximately 12 years old. Cooling is provided using R-22 refrigerant. The air handling unit is located above the ceiling in a low roof condition, which is accessed through the loft storage room. The unit is not very accessible, but needed to be located where it is, since it was added after the original construction; and the building is physically limited as a result of the style of its architecture. The unit also contains a hot water heating coil. The unit serves the West perimeter office spaces.

Overall, the systems and equipment do not provide the proper indoor environmental conditions (temperature, humidity, and acoustics); they are not systems typically used in an educational setting; they are inaccessible to properly service and maintain; and, for the most part, they are beyond their anticipated life expectancies.

It is recommended the entire HVAC System be replaced in its entirety.

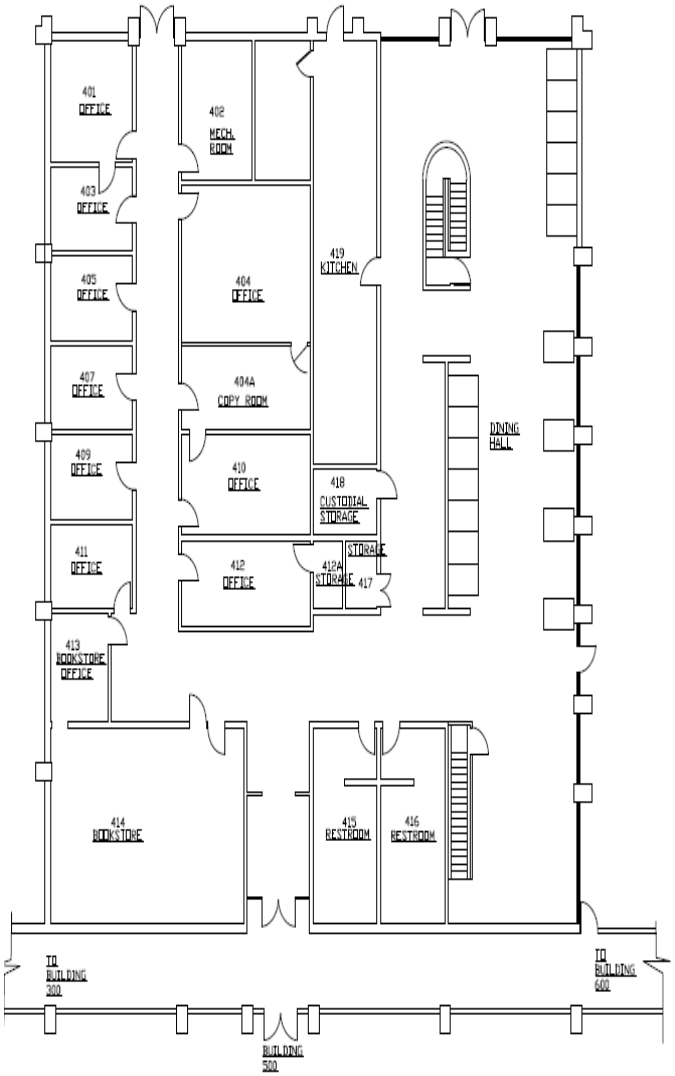
Electrical & Lighting:

The Student Center electric service is derived from a utility pad-mount transformer that also serves Building 300. The main switchboard, located in the main electrical room, is rated for 800A, 208/120V, three-phase/four wire. The dining hall and main corridor are open to the structure above, and utilize pendent mounted linear direct/indirect fluorescent fixtures. The dining hall is one of the few areas on campus where the lamps and ballasts have not been retrofit. These utilize high output T12 lamps and magnetic ballasts. The first few rows of fixtures have been replaced with individual pendants fit with compact fluorescent lamps, due to their proximity to the loft stairs. Replacement of lighting fixtures in

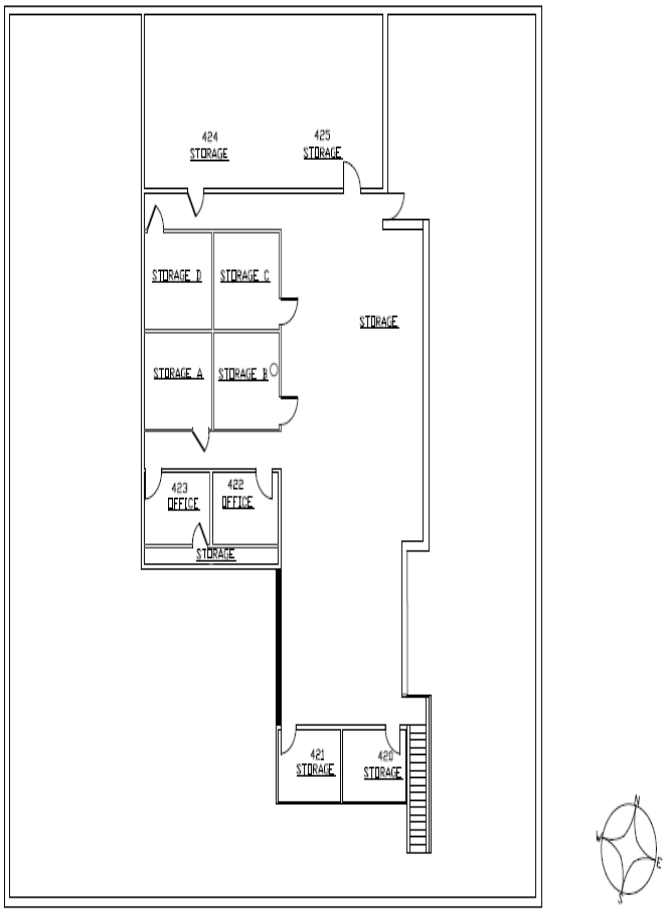
fair to poor condition, such as the kitchen is recommended. Installation of emergency egress lighting at building exits is also recommended.

Voice/ Data/Video:

The original incoming telephone service, located in the main electrical room, is abandoned. Services on the main campus originate from the Tech Building. The Student Center is served directly from the IDF in the Learning Center. Telephone service is voice over internet protocol (VOIP) via fiber optic cabling routed overhead through the buildings. Wireless routers mounted flush in ceilings, strategically placed, with lockable covers are located in the building for wireless access. Coax cabling for CATV serves a television monitor in the Dining Hall. CATV is distributed from the Learning Center IDF. Removal of all unused, abandoned low voltage cabling is recommended.



STUDENT CENTER: FIRST FLOOR



STUDENT CENTER: SECOND FLOOR

HEGIS CODE	HEGIS CATEGORY	Student Center
300	OFFICE	1,956
600	GENERAL USE	5,049
700	SUPPORT	225
	Total NASF:	7,230
	Total GSF:	12,105
	Efficiency (%):	0.60

Dining Hall


Hallway Adjacent to Bookstore

414 Bookstore


Hallway Adjacent to Offices

500 Learning Resource Center

Programming: Library, Developmental Center

Condition Code: 1-Satisfactory

Adequacy of Space: Good

Sprinkler System: Yes

Renovations: None

Description:

Building 500 Learning Resource Center (LRC) was constructed in 2006. The total cost of the building was $5.415 million ($0.325 million for A&E and $5.09 million for construction and equipment). The capital cost of the building was funded by the state (60.6%) and the remaining cost (39.4%) was funded mainly by a private donation as well as contributions from the College fund balance. As seen in the following figure, the building encompasses 18,128 GSF with 11,589 NASF for an efficiency of 64%. Building 500 provides vital space for Garrett College's developmental programs, e.g., math, writing, etc. Moreover, the LRC includes library space which is favorable for learning. The LRC is open to Garrett College students as well as the community. The fire alarms are monitored by campus security.

Assessment:

A summary of Grimm & Parker's report is as follows.

Construction:

The building is a one-story structure consisting of concrete footings, concrete slab on grade, steel columns and pitched steel joists. The building envelope is comprised of brick veneer with two-inch foam insulation board and eight-inch CMU backup exterior walls. The roof system is asphalt shingle on rigid insulation on metal deck. Windows are a combination of fixed storefront and projected vent aluminum windows with insulated glazing.

Building Envelope:

- Walls: Exterior walls appear to be in good condition.
- Entrances: Building Entrances appear to be in good condition.
- Windows: All windows appear to be in good condition
- Roof: The metal roof system appears to be in good condition. There are leaks at the clerestory structure, which require correction.

Building Interior:

- Recommend replacing carpet at main student thoroughfare adjacent to the Student Center with a more durable floor finish. Carpet is suitable at the student computer / study areas adjacent to the circulation path.
- Supervision of the book stack areas is challenging given the location of the circulation desk, arrangement of the book stacks and the height of the stacks.
- Access to pendant mounted light fixtures at high ceiling areas is challenging for lamp replacement.

ADA Compliance:

The building appears to be handicap accessible.

Capacity for Renovation/Expansion:

There is limited room for expansion on the south, east, and west sides of the building. There are limited opportunities to reconfigure the interior spaces of the LRC if required in the future for the expansion of technology or future library needs.

HVAC:

Heating:

The heating system for the building is served by the Central Campus Heating Water System. The building was constructed in 2006 and included a new boiler and pumps in the main heating plant and piping to the Library Building. Heating lines were extended from this loop to feed the Garrett

Information Enterprise Center (GIEC) Building 100. The heating system is five years old and in good operational condition.

The Learning Resource Center is the only building with an air-cooled chiller used to generate chilled water even though it only serves a single air handling unit. The unit is approximately 30 tons in capacity and was manufactured by York. The chiller is located at grade within a masonry courtyard adjacent to the air handling unit Mechanical Room. It is on the east side of the Learning Resource Center between Buildings 500 and 600. The cooling system is five years old and in good operational condition.

Ventilation/Air Conditioning:

A single large single zone variable air volume air handling unit serves the entire building including offices, classrooms, and stack areas. The unit consists of a mixing box, hot water preheat coil, chilled water cooling coil and supply air fan. The air distribution system is five years old and in good operational condition.

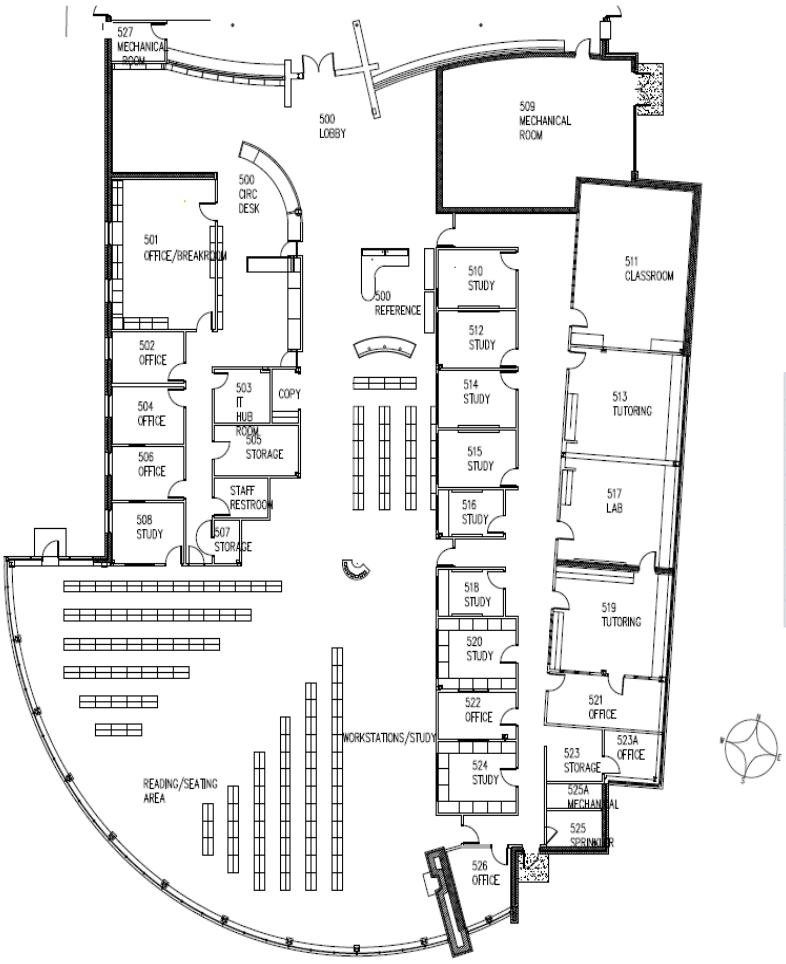
Electrical & Lighting:

Secondary service is obtained via an Allegheny Power pad-mount transformer. The main distribution panel is 500A, 480/277V, three-phase/four wire, manufactured by Square D. Surge protection is provided at the service entrance. The electrical distribution equipment, approximately five years old, is in good condition. Spares and spaces are available in each panel to accommodate future loads.

Energy efficient fluorescent lighting is utilized throughout the Learning Resource Center. Compact fluorescent down lights illuminate the lobby area, and recessed parabolic 2'x2' fixtures are in use in office spaces. Pendant mounted linear fluorescent and circuline fixtures with biax lamps are installed in the high ceiling spaces in the library stack area, supplemented by wall sconces.

Voice/ Data/Video:

The data rack in the Learning Resource Center, located in a closet next to the Library desk, contains three data racks. Data outlets are wired back to this rack, in addition to wireless routers mounted flush in ceilings, strategically placed, with lockable covers for wireless access in the building.



HEGIS CODE	HEGIS CATEGORY	LRC
200	LABORATORY	2,135
300	OFFICE	2,368
400	STUDY	6,561
600	GENERAL USE	244
700	SUPPORT	281
	Total NASF:	11,589
	Total GSF:	18,128
	Efficiency (%):	0.64

Lobby

513 Tutoring

511 Classroom

510 Study

Photos courtesy of David Beard

600 Shaw Learning Center

Programming: Faculty Offices, Classroom, Science Labs

Condition Code: 4-Major Renovation Required

Adequacy of Space: Poor

Sprinkler System: None

Renovations: ADA upgrades in 2000, Electrical entry service & HVAC 2002, Temporary faculty offices in old library space in 2008

Description:

Building 600 Shaw Learning Center was constructed in 1971 and is one of three buildings originally built. The current layout is seen in the following figure and encompasses 21,553 GSF with 14,110 NASF for an efficiency of 65%. The building serves as space for Faculty offices, classrooms, and science labs (i.e., Biology, Physics, & Chemistry). The building formerly housed the library before completion of Building 500 Learning Resource Center. Due to the library relocation the vacated space was temporarily renovated for faculty offices in 2008. The science labs are in serious need of renovation. Fire alarms are monitored by campus security.

Assessment:

A summary of Grimm & Parker's report is as follows.

Construction:

The building is a one-story structure consisting of concrete footings, concrete slab on grade, steel columns and pitched steel joists. The building envelope is comprised of brick veneer with two-inch foam insulation board and eight-inch CMU backup exterior walls. The roof system is asphalt shingle on rigid insulation on metal deck. Windows are a combination of fixed and projected vent aluminum windows with un-insulated glazing. The faculty office area was renovated in 2008.

Building Envelope:

- Walls: Exterior walls appear to be in good condition for the age of the building. There is some evidence of water infiltration at the east wall.
- Entrances: Building Entrances appear to be in good condition.
- Windows: All windows are beyond their useful lifespan, and are recommended to be replaced with Thermally Broken aluminum windows with one-inch depth, low-e, insulated glazing.
- Roof: The asphalt shingle roof system is failing and is recommended to be replaced.

Building Interior:

- Recommend replacement of all original ceiling grid and tile to improve lighting efficiency and acoustics.
- Recommend replacing all original light fixtures with energy efficient, recessed ceiling mounted light fixtures.
- Access to the Main Electric Room through the Chemistry Storage Room is not ideal.
- Panic Devices reduce the egress width of doors below width required by the current Building Code.
- Interior partitions only extend to the ceiling height, which does not provide adequate sound attenuation between spaces.
- Sight lines between lab tables and chalkboards appear to make teaching a challenge in the Chemistry Lab.
- Emergency Eye Wash is not operating properly in the Chemistry Laboratory.
- There does not appear to be a gas shut-off switch in the Chemistry Laboratory.
- Recommend replacement of fume hood in Chemistry Laboratory with newer more efficient, quieter model.
- Recommend capping abandoned plumbing in Physics Storage Room.
- Some cracks observed in CMU wall at north corridor.
- The depth of Classroom 604 is not ideal for teaching / flexibility.

ADA Compliance:

The majority of the building components are handicap accessible. Below is a list of deficiencies:

- Heights of paper towel dispensers are not accessible.
- Accessible sink and workstation are recommended at the Chemistry and Physics Laboratories

Capacity for Renovation/Expansion:

There is limited room for expansion on the south side of the building. Given the steel structure, and non-load bearing partitions, the building can be reconfigured relatively easily.

HVAC:

Heating:

The heating system for the building is served by the Central Campus Heating Water System. The heating water piping systems and distribution pump are original to the 1971 construction and are 40 years old. The existing heating water lines extend from the Main Boiler Room through the Fine Arts/Administration Building (700) to the Shaw Learning Center (600). The heating water distribution system within the building serves air handling unit heating coils equipped with three-way modulating control valves. It is recommended the existing heating water piping system and distribution pump which are now 40 years old be replaced in their entirety.

Ventilation/Air Conditioning:

The building was originally designed based on the open classroom landscape philosophy. In 2002, the HVAC Systems were replaced; and in 2008, when the new Learning Resource Center (library building) was constructed, the existing Library space in this building was converted into offices. The perimeter offices have full height partitions; whereas the interior office areas have high, but not full height partitions (i.e., still open landscape layout).

All four (4) air handling systems are split type using indoor air handling units, located above the ceiling and equipped with a direct expansion cooling coil and hot water heating coil. Remote outdoor air cooled condensing units are strategically located at grade along the perimeter of the building in close proximity to the air handling units they serve. Refrigerant piping connects the indoor air handling unit cooling coil to the remote air-cooled condensing units. The units use Refrigerant R-22, which is no longer manufactured. The units and systems appear to be in good working condition, have an anticipated life expectancy of 20 years, and are currently nine years old.

Electrical & Lighting:

The original building service was 600A, derived from the Fine Arts/Administration Building switchboard. The original main panel (MDPB) is manufactured by General Electric, and is located in the electric closet. The electrical service was upgraded in 2002 to accommodate an HVAC upgrade. A dedicated utility pad-mount transformer was installed for the building to serve a 1200A main fused switch, 208/120V, three-phase/four wire switchboard manufactured by Square D. This is located in the workroom off the Chemistry Lab. The original service was then backfed from the new switchboard. Surge protection has been provided for the service entrance. Recommendations include replacing the original panelboards as they have exceeded their anticipated useful life of 25-30 years. A dedicated panel with emergency off shunt trip capability is also recommended for the Chemistry Lab.

A good portion of the lighting in the building is the original. Surface mounted fluorescent lighting fixtures were retrofit with T8 lamps and electronic ballasts approximately 15 years ago. Lamping is standardized on 28 watt lamps with 4100k color temperature. Existing surface mounted fixtures were

reused to suit revised space arrangements. The original lighting fixtures vary in condition from fair to poor. During the old library renovation for faculty offices, the lighting was not re-circuited to provide individual control of fixtures in each office. Replacement of lighting fixtures in fair to poor condition is also recommended, as well as installation of emergency egress lighting at building exits.

Voice/ Data/Video:

Three data racks are centrally located in a dedicated IDF closet. Data outlets are wired back to this rack, in addition to wireless routers mounted flush in ceilings, strategically placed, with lockable covers for wireless access in the building. A 25 pair CAT 3 cable provides analog voice service, terminated to a patch panel in one of the data racks.

HEGIS CODE	HEGIS CATEGORY	Shaw Learning Ctr
100 (110-115)	CLASSROOM	2,327
200	LABORATORY	4,544
300	OFFICE	4,694
600	GENERAL USE	154
700	SUPPORT	605
060	ALTER. OR CONV.	1,437
	Total NASF:	13,761
	Total GSF:	21,553
	Efficiency (%):	0.64

Faculty Row

663 Chemistry Lab

620 Reception Area (Temporary Faculty offices)

604 Classroom

Photos courtesy of David Beard

700 Fine Arts & Administration

Programming: Administrative Offices, Auditorium, Fine Arts, Central Heating Plant

Condition Code: 4-Major Renovation Required

Adequacy of Space: Poor

Sprinkler System: Central Heating Plant (Boiler Room) only

Renovations: ADA upgrades in 2000, Central Heating Plant addition, roof in 2011

Description:

Building 700 Fine Arts/Administration was constructed in 1971 and is one of three buildings originally built. The current layout is seen in the following figure and encompasses 14,110 GSF with 7,515 NASF for an efficiency of 53%. The building serves as space for the College's Business Office, Fine Arts programming, Auditorium, and Central Heating Plant. Apart from ADA upgrades in 2000 and upgrades to the Central Heating Plant, the building has not experienced any major renovations since initial construction in 1971. Auditorium lighting is extremely inefficient (24-300 W incandescent bulbs) and needs updated. Fire alarms are monitored by campus security.

Assessment:

A summary of Grimm & Parker's report follows:

Construction:

The building is a one-story structure consisting of concrete footings, concrete slab on grade, steel columns and pitched steel joists. The building envelope is comprised of brick veneer with two-inch foam insulation board and eight-inch CMU backup exterior walls. The roof system is asphalt shingle on rigid insulation on metal deck. Windows are a combination of fixed and projected vent aluminum windows with un-insulated glazing.

Building Envelope:

- Walls: Exterior walls appear to be in good condition for the age of the building.
- Entrances: Building Entrances appear to be in good condition.
- Windows: All windows are beyond their useful lifespan, and are recommended to be replaced with Thermally Broken aluminum windows with one-inch depth, low-e, insulated glazing.
- Roof: The asphalt shingle roof system is failing and is recommended to be replaced. Demolition or redesign/replacement of roof is recommended over infill storage area between the Fine Arts Building and the Maintenance Shop.

Building Interior:

- Recommend replacement of all original ceiling grid and tile to improve lighting efficiency and acoustics.
- Access to the Main Electric Room through the Stage is not ideal.
- Panic Devices reduce the egress width of doors below width required by the current Building Code.
- Change in level of the stage causes a tripping hazard, particularly where it is in close proximity to the stage access stair.
- Guard rails are not provided at stage access stairs.
- Code compliant guard rail and handrail are not provided at the Control room.
- Code compliant stairs, guards, and handrails are not provided to the mechanical room level.
- Surface mounted light fixtures are recommended to be replaced with energy efficient, recessed ceiling mounted light fixtures.
- Interior partitions only extend to the ceiling height, which does not provide adequate sound attenuation between spaces.

ADA Compliance:

The majority of the building components are handicap accessible. Below is a list of deficiencies:

- Companion seats are required for the four wheelchair spaces in the auditorium.
- Access to the stage is currently provided by exiting the auditorium and entering the stage off of the exterior corridor. Egress from the stage is not accessible.
- Access to the stage from the handicap seating areas is recommended within the Auditorium.

Capacity for Renovation/Expansion:

There is room for expansion on the south side of the building. Given the steel structure, and non-load bearing partitions, the building can be reconfigured relatively easily. The sloped floor of the auditorium would have to be addressed if this space were to be repurposed.

HVAC:

Heating:

The Central Heating Plant is located in Building 700, the Fine Arts/Administration Building. The plant is original to the 1971 construction and serves all the buildings (100-800) and Maintenance Building on the main part of the Campus. The system has been altered, modified, and extended over the years as the Main Campus grew from three (3) buildings to nine (9) buildings.

Three (3) boilers generate heating hot water for the Campus. Two (2) boilers are original to the 1971 construction and are 40 years old. The third boiler was installed as part of the Learning Resource Center (LRC – new library building 500) project and is approximately five (5) years old. The boilers utilize Number two heating fuel with propane pilot lights. A 100-gallon above-ground propane tank serves the burner pilots while an underground double-wall fiberglass, 20,000 gallon fuel oil tank stores Number 2 fuel oil used by all three boilers. A Gilbarco Leak Detection and Monitoring System was installed about twenty (20) years ago when the fuel oil tank was replaced. This leak detection system is also connected to sensors monitoring an underground storage tank housing gasoline and diesel oil used for transportation vehicles.

Multiple pumps exist to distribute heating water throughout the Campus. These distribution pumps for the most part are located in the main boiler room adjacent to the boilers.

Generally, with the exception of the Cleaver Brooks boilers, the fuel oil tank and leak detection system and main heating plant pumps, all systems and equipment is beyond its anticipated life expectancy and is inefficient compared to current energy standards, code requirements, and typical design practices. The pumping/piping distribution system is not very efficient with multiple parallel lines serving various building and multiple taps to serve other building within the main campus. Although the system is old and not the most energy efficient it does effectively provide heat where needed throughout the campus.

Recommendations include replacing the two (2) existing Kawanee boilers. Similar Cleaver Brooks style boilers are recommended for consistency. Additionally it is recommended the pumping and distribution piping be replaced in its entirety.

Ventilation/Air Conditioning:

Three (3) separate air handling unit zones exist within the building. The air handling unit zones consist of the auditorium, art area, and the music and administration office areas. The auditorium utilizes ceiling fans to aid in the distribution of air in this high volume space. According to ASHRAE, the ductwork, air handling units, controls, air-cooled condensing unit, and air terminals (diffusers/ grilles/ registers) are all beyond the median service life expectancy. Additionally, the equipment is not efficient compared to today's requirements. The cooling system uses Refrigerant R-22, which is no longer manufactured. The systems do not provide the code required outdoor air quantities for ventilation.

Recommendations include replacement of the entire HVAC System, including controls, ductwork, air devices, air-cooled condensing units.

Electrical & Lighting:

Secondary service is obtained via an Allegheny Power pad-mount transformer. The main switchboard is 2000A, 208/120V, three-phase/four wire, configured with four service disconnects: 600A for the Shaw Learning Center (disconnected), 100A emergency service, 225A for the Building 800 Athletic Center/gymnasium, and a 600A main breaker distribution section for Building 700 Fine Arts/Administration Building. The switchboard is manufactured by General Electric, and is original to the building. The handles have broken off some of the larger amp breakers, and replacements have had to be custom made due to lack of availability. One of the breaker handles is still broke.

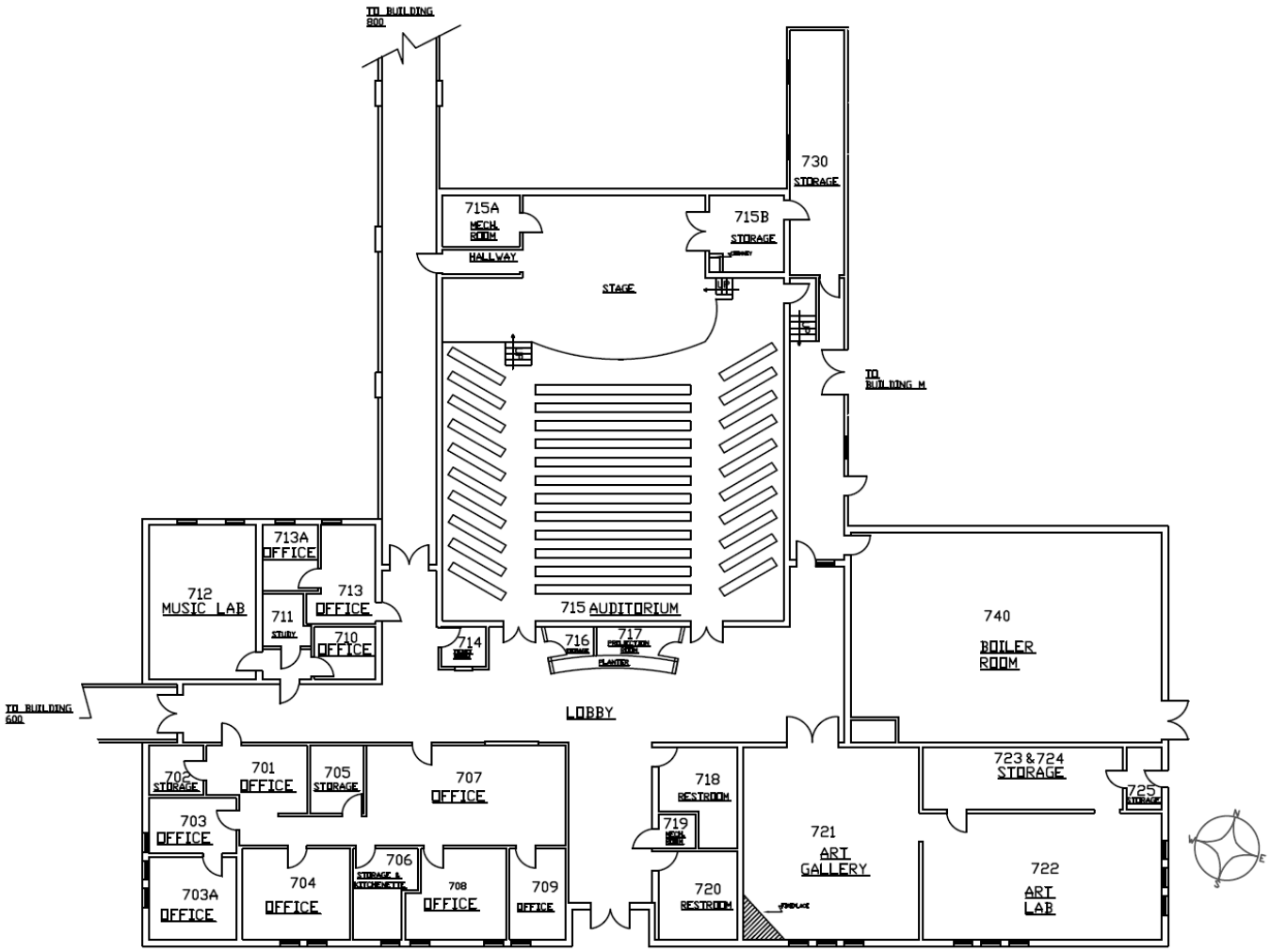
Recommendations include replacing the main distribution panel at a minimum, as well as the remaining original panelboards as they have exceeded their anticipated useful life of 25-30 years.

The majority of the lighting in the building is the original. Surface mounted fluorescent lighting fixtures were retrofit with T8 lamps and electronic ballasts approximately 15 years ago. Newer recessed 2'x4' troffers have been installed in the corridors. Lamping is standardized on 28 watt lamps with 4100k color temperature.

Replacement of lighting fixtures in fair condition is also recommended, where fixture lenses have yellowed over time. This is most evident in the Administration area. The addition of a more energy efficient lighting source in the Auditorium is also recommended, for times when the space is used for instructional purposes rather than performances. Installation of emergency egress lighting at building exits is also recommended.

Voice/ Data/ Video

The data rack in the Fine Arts/Administration Building is located in a storage closet off the Lobby at the Auditorium entry. Data outlets are wired back to this rack, in addition to wireless routers mounted flush in ceilings, strategically placed, with lockable covers for wireless access in the building.



HEGIS CODE	HEGIS CATEGORY	Fine Arts
100 (110-115)	CLASSROOM	0
200	LABORATORY	1,392
300	OFFICE	1,945
600	GENERAL USE	4,079
700	SUPPORT	99
	Total NASF:	7,515
	Total GSF:	14,110
	Efficiency (%):	0.53

722 Art Lab

721 Art Gallery

Lobby

715 Auditorium

Photos courtesy of David Beard

800 Athletic Center/Gymnasium

Programming: Gymnasium, Locker rooms, Offices

Condition Code: 4-Major Renovation Required

Adequacy of Space: Poor

Sprinkler System: No

Renovations: Built-up roof in 1995, ADA upgrades in 2000, Basketball court in 2000, shingle roof in 2011

Description:

Building 800 Athletic Center was constructed in 1971 and is one of three buildings originally built. The current layout is seen in the below figure and encompasses 10,960 GSF with 8,374 NASF for an efficiency of 76%. The basketball court is not collegiate regulation size, storage areas are inadequate, and offices are small. These issues among others are being addressed by the construction of Building 950 Field House. Since the building will be vacated when Building 950 Field House opens in the spring of 2012, a plan for Building 800 is a top priority in terms of the College's capital planning.

Assessment:

A summary of Grimm & Parker's report is as follows.

Construction:

The building is a one-story structure consisting of concrete footings, concrete slab on grade, masonry bearing walls and steel joists. The building envelope is comprised of brick veneer with two-inch foam insulation board and twelve inch CMU backup exterior walls. The roof over the gymnasium is a built-up roof over rigid insulation on metal deck. The lower roof system is asphalt shingle on rigid insulation on metal deck. Windows are a combination of fixed and projected vent aluminum windows with un-insulated glazing.

Building Envelope:

- Walls: Exterior walls appear to be in good condition for the age of the building.
- Entrances: Building Entrances appear to be in good condition.
- Windows: All windows are beyond their useful lifespan, and are recommended to be replaced with Thermally Broken aluminum windows with one-inch depth, low-e, insulated glazing.
- The built-up roof over the Gymnasium is nearing the end of its useful lifespan, and is recommended to be replaced in the next five years.

Building Interior:

- Recommend replacement of all original ceiling grid and tile to improve lighting efficiency and acoustics.
- Surface mounted light fixtures are recommended to be replaced with energy efficient, recessed ceiling mounted light fixtures.
- Combination of electrical panels and plumbing / janitor sink is not ideal.
- Panic Devices reduce the egress width of doors below width required by the current Building Code.

ADA Compliance:

The majority of the building components are handicap accessible. Below is a list of deficiencies:

- Accessible lavatory and urinal are not provided in the Men's restroom.
- Heights of paper towel dispensers are not accessible.

Capacity for Renovation/Expansion:

There is room for expansion on the north side of the building, and potentially to the west of the exterior enclosed walkway. The load bearing partitions limit the flexibility of future renovations. The two-story volume of the gymnasium could lend itself to functions such as a multi-purpose space, black box theater, auxiliary gymnasium, etc.

HVAC:

Heating:

The building is heated and ventilated only. The heating for the building is served by the Central Campus Heating Water System. The Athletic Center/Gymnasium heating water pump is located in the main

boiler room. The pump and piping to and serving the Athletic Center/Gymnasium Building is original to the 1971 construction and is 40 years old. The enclosed breezeway connection from the Athletic Center/Gymnasium 800 to the Fine Arts /Administration Building 700 is not heated or conditioned in any way. The existing heating lines are located above the breezeway ceiling. The existing heating lines have froze before as a result of failure of the single circulating pump (no standby). The pipes are 40 years old and at the end of their expected life. It is recommended the existing heating water piping system which is now 40 years old be replaced in its entirety back to the boiler and be sized based on conditioning the breezeway as well as the future capacity needs for this Facility.

Ventilation/Air Conditioning:

The building does not have air conditioning. The Main Gymnasium is heated and ventilated only. Four heating and ventilating units (two each side at 1/3 points) are located in the space, are exposed and hung tight to the underside of the structure. These units also provide the make-up- air source for the Locker Rooms. Transfer grilles are used to provide make-up air to be transferred from the Main Gym into the Locker Room. The locker rooms have an exhaust fan mounted on the roof, which provides the ventilation source.

The entire HVAC system is 40 years old and beyond its anticipated life expectancy. It is recommended the HVAC system, controls, piping, fans, cabinet unit heaters, etc., be replaced in their entirety.

Electrical & Lighting:

The electric service for the Athletic Center/Gymnasium is derived from the main switchboard in the Fine Arts/Administration Building. A 225A feeder serves a 208/120V, three-phase/four wire panelboard in Mechanical Room 805. This panel (CA) is original to the building, and is manufactured by General Electric. A portion of the bus bar is burned out due to a bad breaker. A sub-panel (CB), also original, is located recessed mounted in the hallway to the Faculty Office. These panels are physically full.

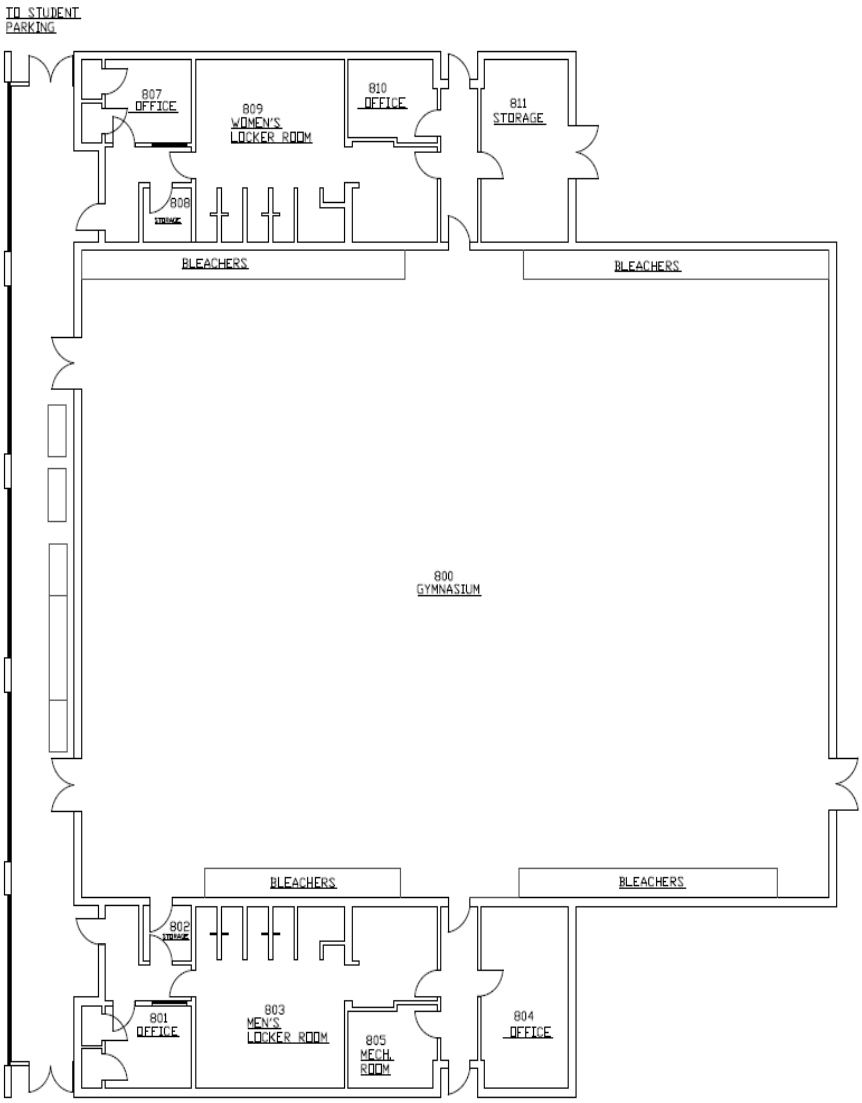
Recommendations include replacing panel CA with the damaged bussing, as well as the remaining original panel boards as they have exceeded their anticipated useful life of 25-30 years.

The original gymnasium lighting fixtures utilized an incandescent source. These were replaced with 400 watt metal halide lamp fixtures, and recently retrofit with 360 watt pulse start metal halide lamps. These fixtures are in good condition, with the impact resistant lenses recently replaced. Wall mounted fluorescent fixtures were added over the doorways to provide an instant on light source. The remaining fixtures in the Athletic Center/Gymnasium appear to be original, in fair condition, retrofit with T8 lamps and electronic ballasts approximately 15 years ago. Lamping is now standardized on 28 watt lamps with 4100k color temperature.

Replacement of lighting fixtures in fair condition is recommended, where fixture lenses have yellowed over time. Installation of emergency egress lighting at building exits is also recommended.

Voice/ Data/Video:

The original incoming telephone service, located in a closet off the women's locker room, is abandoned. Services on the main campus originate from the Tech Building. Telephone service is voice over internet protocol (VOIP) via fiber optic cabling routed overhead through the buildings. The location of the data rack was not found. Wireless routers are mounted flush in ceilings, strategically placed, with lockable covers for wireless access in the building.



HEGIS CODE	HEGIS CATEGORY	Gymnasium
300	OFFICE	228
500	SPECIAL USE	7,851
700	SUPPORT	295
	Total NASF:	8,374
	Total GSF:	10,960
	Efficiency (%):	0.76

803 Men’s Locker Room


800 Gymnasium

Photos courtesy of David Beard

900 Aquatics & Recreation

Programming: Athletic (Aquatic & Fitness), Classroom (Con-Ed), Office

Condition Code: 1-Satisfactory

Adequacy of Space: Good

Sprinkler System: Yes

Renovations: No

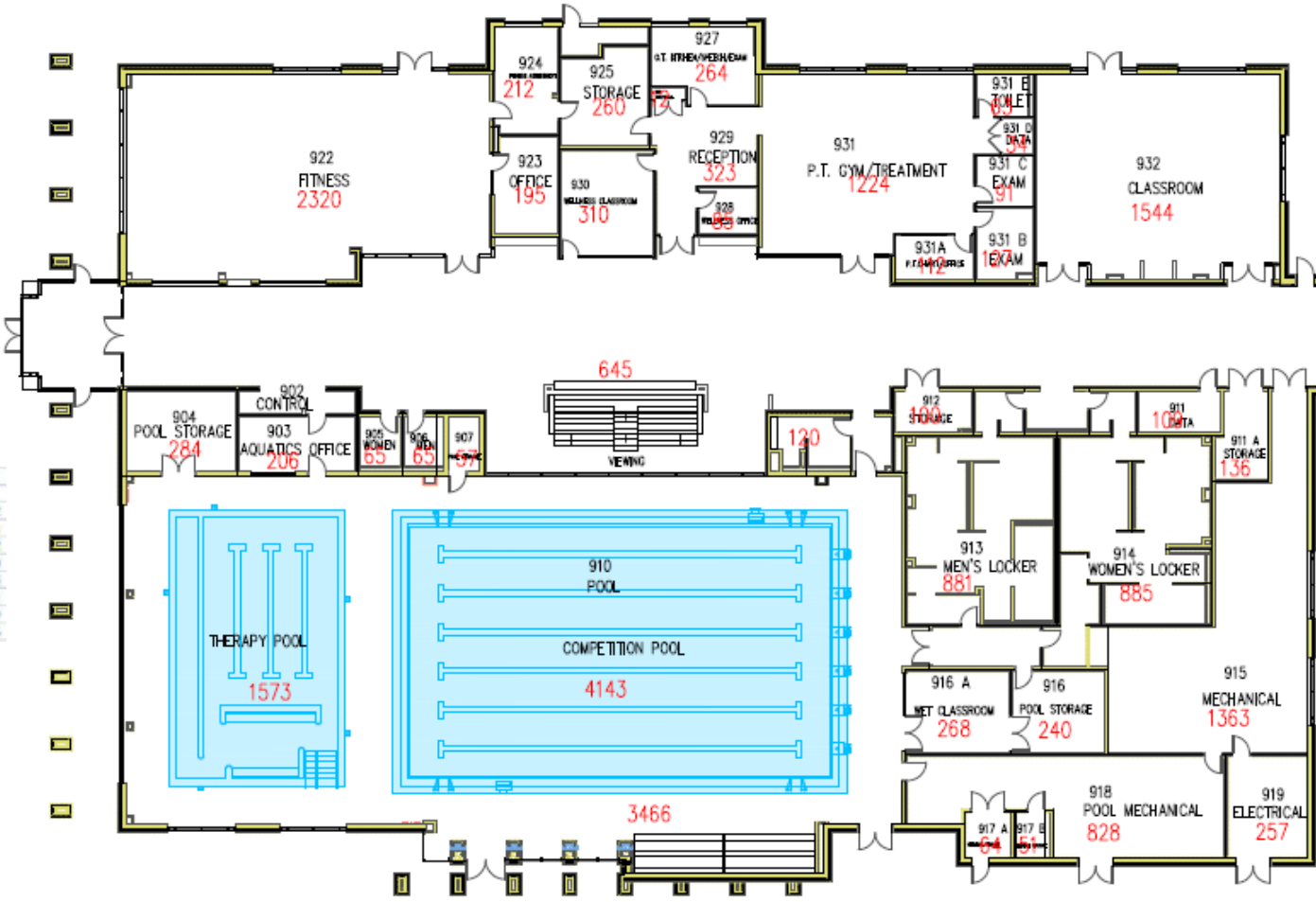
Description:

Building 900 Aquatics & Recreation was constructed during 2010-11 and opened in October 2011. The total cost of the building was $13.918 million ($0.648 million A&E, $13.27 million for site acquisition, construction, & equipment). Funding for the building came from a Maryland Legislative Grant and the Garrett County Government The building consists of 32,500 GSF and 17821 NASF for an efficiency of 56%. The Aquatics building is a state of the art fitness and wellness complex housed on the Garrett College campus. The facility offers a full size competition pool as well as a therapy pool. A full fitness center also features cardio and free weight equipment. Whereas the College offers the community and staff memberships at a cost, students have access to the facility without purchasing a membership. Garrett County Memorial Hospital conducts some programming in the Wellness Center and in the warm water therapy pool. Heating for the competition & therapy pools as well as the building is provided by propane boilers. The building is equipped with air conditioning. The roofs are a combination of steel and built-up roofing.

Assessment:

Due to the timing of the building opening, in late October 2011, an assessment was not completed.

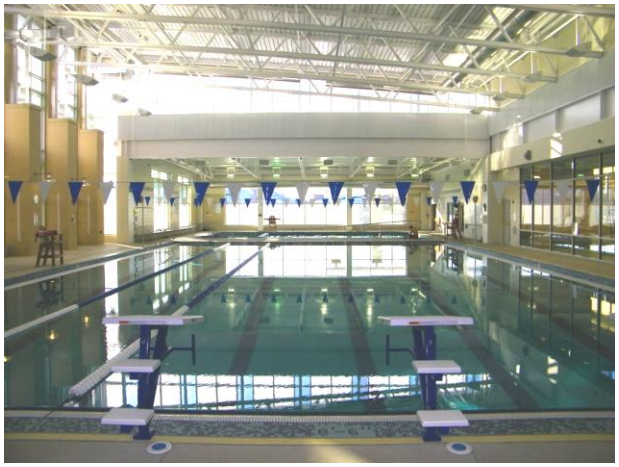
HEGIS	Aquatics
CATEGORY	Gains
CLASSROOM	1,812
OFFICE	971
SPECIAL USE	12,142
SUPPORT	360
OTHER ORG. USAGE	2,536
Total NASF:	17,821
Total GSF:	32,500
Efficiency (%):	0.55



Main Corridor

922 Fitness

932 Classroom



910 Competition & Therapy Pool

Therapy Pool

931 PT Gym/Treatment (GC Memorial Hospital)

1000 Center for Adventure & Outdoor Studies

Programming: Classroom, Faculty Offices, ASI Store, Storage

Condition Code: 1-Satisfactory

Adequacy of Space: Fair

Sprinkler System: No

Renovations: None

Description:

Building 1000 Center for Adventure & Outdoor Studies (CAOS) was constructed to provide temporary surge space in 1999 and serves as the location for two signature programs, i.e., Natural Resource & Wildlife Technology (NRWT) and Adventure Sports. The building also houses the Adventure Sports Institute which is a small retail store that sells outdoor gear, equipment, etc. The current layout is seen in the following figure and encompasses 8,160 GSF with 5,502 NASF for an efficiency of 67%. The building has not experienced any major renovations since initial construction in 1999. Fire alarms are monitored by campus security.

Assessment:

A summary of Grimm & Parker's report is as follows.

Construction:
The building is a one-story structure consisting of concrete footings; concrete slab on grade, wood posts, and pitched wood trusses. The building envelope is comprised of exposed seam metal wall panels with wood stud backup system. The roof system is fiberglass shingles. Windows are a combination of fixed and projected vent aluminum windows with uninsulated glazing.

Building Envelope:

- Walls: Exterior walls generally appear to be in good condition. There is air infiltration through the electrical outlets on the exterior wall. Air barrier on exterior sheathing and insulation behind electrical outlets would provide a better barrier.
- Entrances: Building Entrances appear to be in good condition. Seals at glazing are recommended to be replaced.
- Windows: Seals at windows are recommended to be replaced
- Roof: The fiberglass roof shingle system appears to be in good condition.

Building Interior:
- Carpet is recommended to be replaced.

ADA Compliance:

The building is handicap accessible.

Capacity for Renovation/Expansion:

There is very limited room for expansion of the building. Given the wood roof trusses, which span the entire building, the building interior can be reconfigured relatively easily.

HVAC:

Heating:

Three residential style high efficiency type (<5 tons) propane furnaces with “A” type cooling coil and remote air-cooled condensing units serve this Facility. All three (3) units are re-circulating type only (no outdoor air for ventilation). The units were installed in 1999 when the original building was constructed. The units were manufactured by York and are in good operating condition. The units have an average life expectancy of fifteen (15) years and the units are currently twelve (12) years old. The units serve classrooms and offices as well as different exterior building exposures. An even temperature from room to room is not obtainable and comfort issues exist within the building.

A variable refrigerant volume (VRV) heat pump system (super heat type) is recommended to be used in junction with a dedicated outdoor air system (DOAS) so as to provide individual room temperature control and to provide the code required outdoor air quantities for ventilation. Additionally it is recommended the new system be connected to the proposed/recommended campus energy management system described under the central plant systems.

Ventilation/Air Conditioning:

There is no ventilation in place. Air conditioning is discussed above in the heating section.

Electrical & Lighting:

The electrical service to the building is 600A, 208/120V, three-phase/four wire via a utility pad-mount transformer. The main distribution panel is located on the exterior wall of the Mechanical room with three 100A lighting and appliance sub-panels located immediately adjacent. The electrical distribution equipment is manufactured by General Electric, and is original to the building. No problems have been reported with the panels, which have not yet reached their anticipated useful life of 25-30 years.

Lighting throughout the building consists of recessed 2'x4' lensed troffers in finished spaces. The fixtures are equipped with electronic ballasts. Linear fluorescent lamps are T8. Lamping is now standardized on 28 watt lamps with 4100k color temperature. The campus had also standardized on three lamp fixtures by the time this building was constructed. These are generally in good condition, although the occasional fixture is showing discoloration in the lenses.

Voice/ Data/Video:

The original incoming telephone service, located in the Mechanical room was 25 pair copper cable derived from Garrett Dorm. This is not in use. Services on the main campus originate from the Tech Building. Telephone service is voice over internet protocol (VOIP), transmitted via RF antennas mounted to both buildings. The data rack is located in the Hub Room off the main Lobby. Data outlets are wired back to this rack, in addition to wireless routers mounted flush in ceilings, strategically placed, with lockable covers for wireless access in the building. Removal of all unused, abandoned low voltage cabling is recommended.

1010 Office

1012 Classroom

Hallway Adjacent to 1012 Classroom

1013 Classroom

1100 Garrett Hall

Programming: Student Housing

Condition Code: 1-Satisfactory

Adequacy of Space: Good

Sprinkler System: Yes

Renovations: Public water tap & sprinkler system in 2007, Plumbing & bathrooms in 2009

Description:

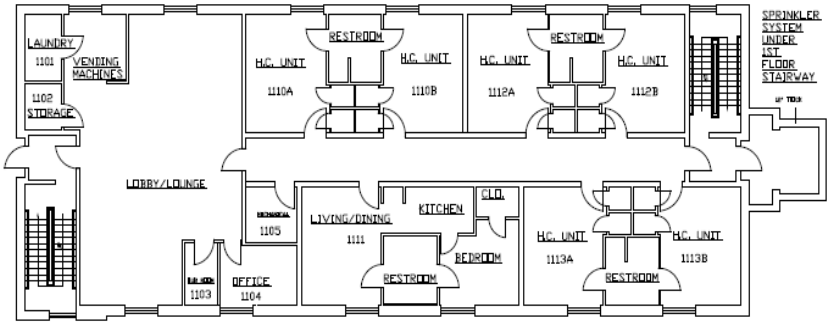
Building 900 Garrett Hall was constructed in 1994 and serves as student housing. The building was initially owned/operated by a private investor; however, in 2005 the Garrett County Commissioners purchased the building for approximately $1.0 million. The building is leased to GC on a 30-yr capital lease at ~$65,000/yr. The current 3-story layout is seen in the below figure and encompasses 14,190 GSF with 10,814 NASF for an efficiency of 76%. The building houses 30 dorm rooms (two students per room) and an apartment for the Residential Life Assistant Coordinator. The building was previously on well water and water tanks, that supplied the sprinkler system, were located in the roof structure. In FY2007, public water was tapped and the sprinkler system was reconfigured. In FY2009, the building required a renovation due to leaking poly-butane (Qwest) pipe. The plumbing was converted to copper. A central hot water heater with hot water recirculation by way of pumps was installed. Bathrooms were tiled, and floor drains were added in the bathrooms. Bathroom fixtures were upgraded to commercial grade, and

the building received new carpet and paint in the renovation. Fire alarms are monitored by campus security, and the fire alarm control panel is located in the utility room on the first floor. The asphalt shingle roof has not been replaced. Heat is provided by electric baseboard heaters. The building has no cooling system. The building is not ADA compliant because there is no elevator to access the upper floors.

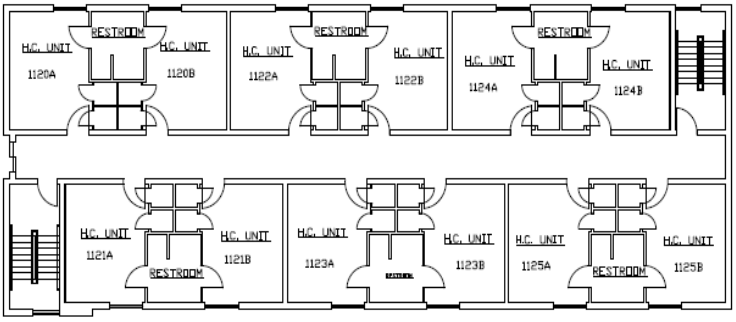
Assessment:

An assessment by Grimm & Parker was not conducted.

1ST FLOOR

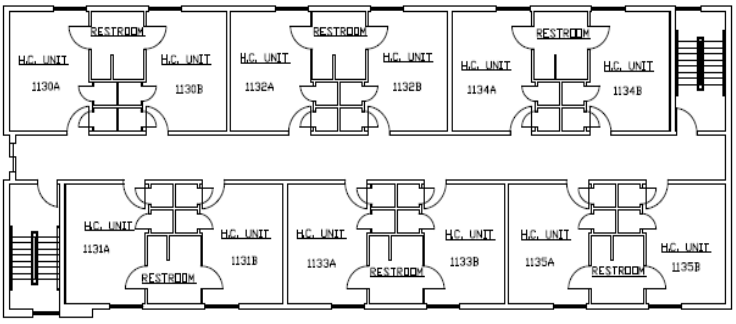


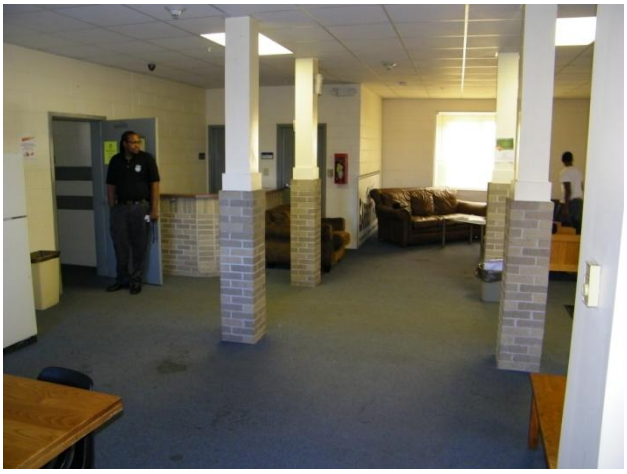
2ND FLOOR



HEGIS CODE	HEGIS CATEGORY	Garrett Hall Dormitory
900	RESIDENTIAL	10,814
	Total NASF:	10,814
	Total GSF:	14,190
	Efficiency (%):	0.76

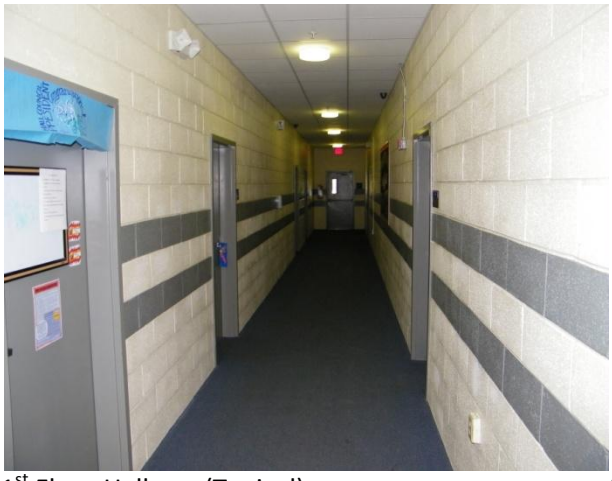
3RD FLOOR





Lobby/Lounge

Common Kitchen in Lounge



1st Floor Hallway (Typical)

Dorm Room (Typical)

1200 Laker Hall

Programming: Student Housing

Condition Code: 1-Satisfactory

Adequacy of Space: Good

Sprinkler System: Yes

Renovations: None

Description:

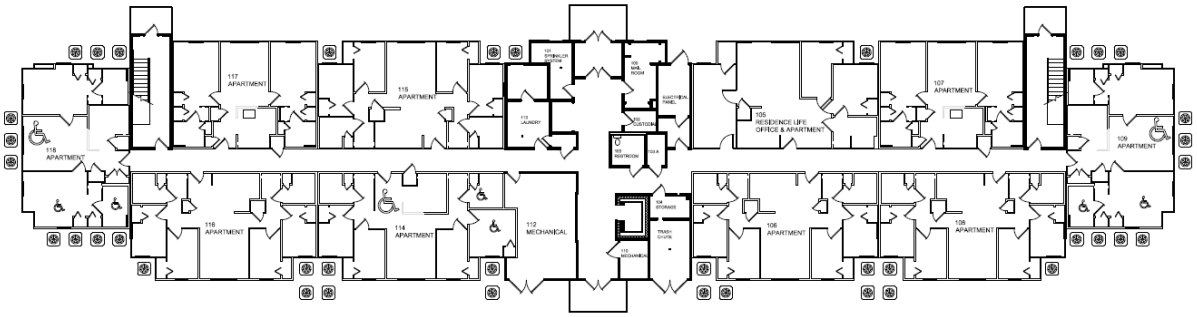
Building 1200 Laker Hall was constructed in 2006 and serves as student housing. The total cost of the building was roughly $8 million. GC has a 30- year lease agreement with the building owner (Garrett College Foundation (GCF)). The land for the building is owned by GC and leased to GCF. The current three-story layout is seen in below figure and encompasses 37,469 GSF with 23,892 NASF for an efficiency of 64%. The building houses 128 beds with two styles of apartments (A&B). Type-A apartments include four-single beds, two-shared bathrooms, one common kitchen, and one common living room. Type-B apartments include two-double beds, two-shared bathrooms, one-common kitchen, and one-common living room. Fire alarms are monitored by campus security. The fire alarm control panel is located in the first floor security office. Heating and cooling is provided by individual apartment heat pumps. After initial construction, severe settlement of the building occurred in and around the area of the elevators. A professional engineer investigated the structure and advised GC facilities that the building was safe. The settlement issues continue to cause maintenance repairs, i.e., fixing cracked drywall, repainting, etc. The building is ADA compliant.

Assessment:

An assessment by Grimm & Parker was not conducted of this building.

HEGIS CODE	HEGIS CATEGORY	Laker Hall Dormitory
900	RESIDENTIAL	23,892
	Total NASF:	23,892
	Total GSF:	37,469
	Efficiency (%):	0.64

LEVEL 1



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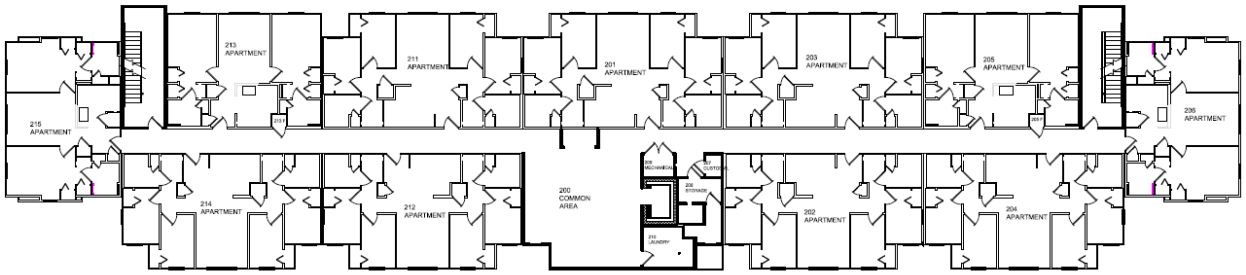

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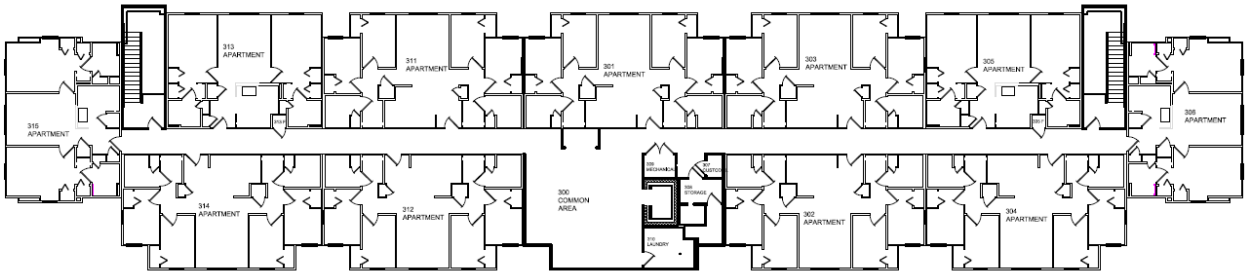


1st Floor Lobby

200 Common Area

Typical Apartment

105 Residence Life Office

M Maintenance (A&B)

Programming: Facilities & Security Offices, Maintenance support

Condition Code: Maintenance A: 3- Deferred; Maintenance B: 1-Satisfactory

Adequacy of Space: A&B: Good

Sprinkler System: Yes

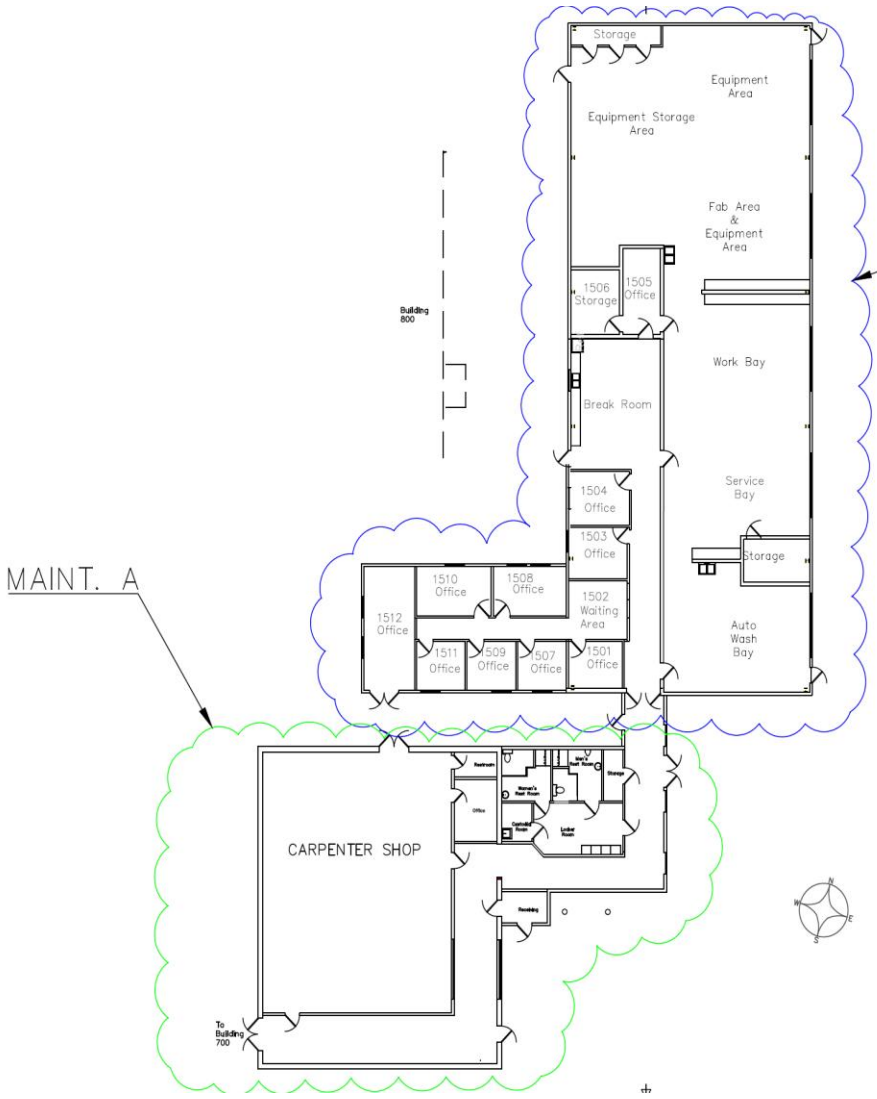
Renovations: 2008-2009 Maintenance B expansion

Description:

Building M Maintenance was originally constructed in 1971 as an Industrial Arts Shop. In 1976, it became the maintenance shop (Maintenance A in the following figure). Additions totaling 7,226 GSF were made in FY's 2008-2009 (Maintenance B in the following figure) at a total cost of $ 0.5 million. The current layout is seen in the following figure and encompasses 11,390 GSF with 8,339 NASF for an efficiency of 73%. The building serves as the central location for Garrett College facilities and security personnel as well as a maintenance/wood shop. Fire alarms are monitored by campus security. The roof is overlapping metal. Heat is provided by boilers located in Building 700. Cooling is provided in offices only by units in and around the building. Fire alarms are monitored by campus security.

Assessment:

An assessment by Grimm & Parker was not conducted.



HEGIS CODE	HEGIS CATEGORY	Maint. Shop A	Maint. Shop B
300	**OFFICE**	**114**	**400**
310-15	Office/ Conf. Room	114	400
320-25	Testing/Tutoring		
350-55	*Included w/ 310*		
600	**GENERAL USE**	**0**	**225**
700	**SUPPORT**	**2,355**	**4,475**
	Total NASF:	**2,469**	**5,100**
	Total GSF:	**3,000**	**6,250**
	Efficiency (%):	**0.82**	**0.82**

1512 Office (serving as CAD room)

Work Bay

Carpenter Shop

Breakroom

B Baseball Practice

Programming: Baseball Practice

Condition Code: 1-Satisfactory

Adequacy of Space: Good

Sprinkler System: No

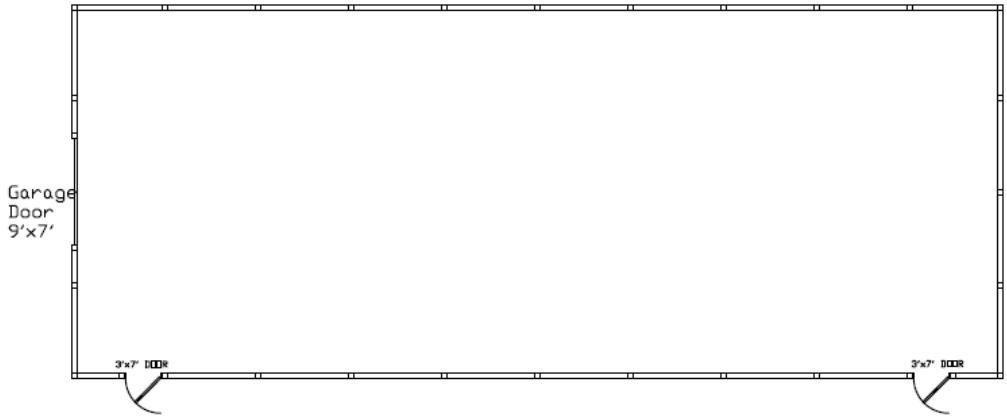
Renovations: Parking lot paved in 2011

Description:

Building B Baseball Practice was constructed in 2006 and serves as a practice facility for the baseball team. The main objective for the building is to help alleviate the disadvantages presented to baseball team by extreme Garrett County weather, i.e., winters are long and frequently extend into April. The current layout of the building is shown below. The building has 2,560 GSF with 2,560 NASF for an efficiency of 100%. The building is a wood framed pole building with wood trusses, metal siding/roofing, and painted OSB on the interior walls & ceilings. There are no fire alarms, and the building does not have a sprinkler system. Heating is provided by propane forced air furnaces and there is no cooling system. The parking lot for the building was paved during the summer of 2011 to bring the building into compliance with ADA regulations.

Assessment:

An assessment by Grimm & Parker was not conducted.



HEGIS CODE	HEGIS CATEGORY	Baseball Practice
500	SPECIAL USE	2,560
	Total NASF:	2,560
	Total GSF:	2,560
	Efficiency (%):	1.00

Baseball Practice Facility Interior

C Baseball Clubhouse

Programming: Baseball Clubhouse, Support

Condition Code: 1-Satisfactory

Adequacy of Space: Good

Sprinkler System: No

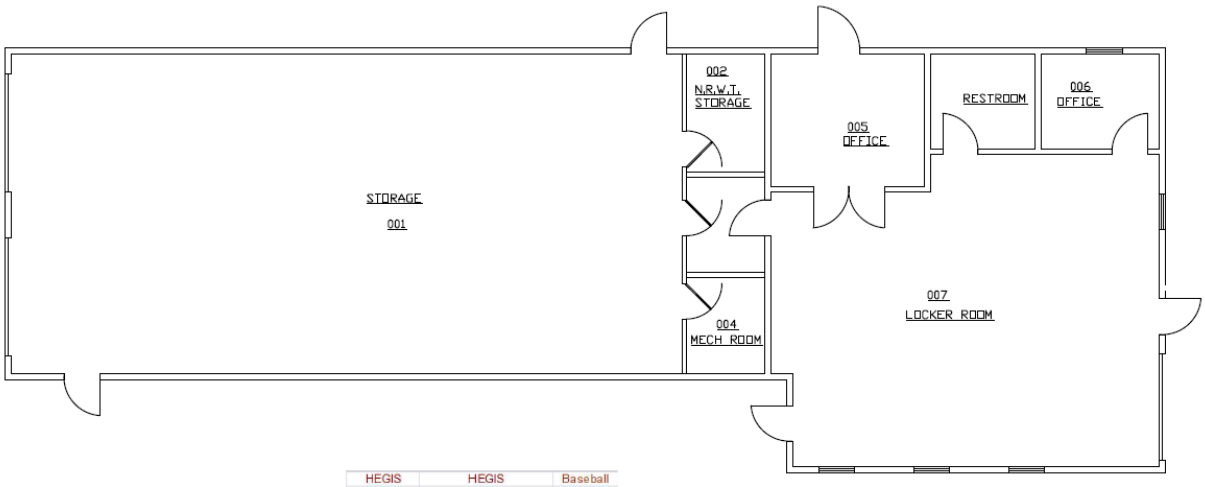
Renovations: Parking lot paved in 2011

Description:

Building C Baseball Clubhouse was constructed in 1998 to house an aquaculture program. The building was renovated in 2005 to house the baseball team and storage for the Adventure Sports Institute. The current layout of the building is shown below. The building has 2,882 GSF with 2,649 NASF for an efficiency of 92%. The building is a wood framed pole building with wood trusses, metal siding/roofing, and metal siding on the interior walls & ceilings. There are no fire alarms, and the building does not have a sprinkler system. Heating is provided by propane forced air furnaces and there is no cooling system. The parking lot for the building was paved during the summer of 2011 to bring the building into compliance with ADA regulations.

Assessment:

An assessment by Grimm & Parker was not conducted.



HEGIS CODE	HEGIS CATEGORY	Baseball Club House
300	OFFICE	176
700	SUPPORT	2,473
	Total NASF:	2,649
	Total GSF:	2,882
	Efficiency (%):	0.92

001 Storage

007 Clubhouse

W Storage (Former Welding Shop)

Programming: Former Lab, Storage

Condition Code: 1-Satisfactory

Adequacy of Space: Good

Sprinkler System: No

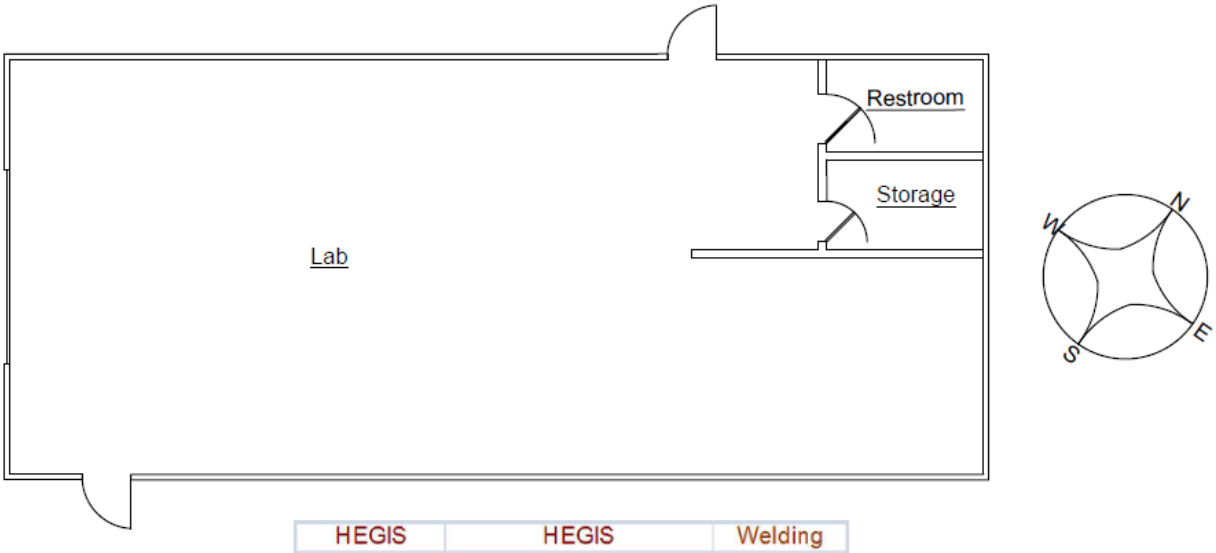
Renovations: Parking lot paved in 2011

Description:

Building W Welding Shop was constructed in 1998 to temporarily house GC's welding program that has since moved to CTTC. The Welding Shop currently serves as storage space (currently for the Field House Contractor, i.e., Rycon). The current layout of the building is shown in Fig. 5.21. The building has 1,464 GSF with 1,409 NASF for an efficiency of 96%. The building is a wood framed pole building with wood trusses, metal siding/roofing, and metal siding on the interior walls & ceilings. There are no fire alarms. Heating is provided by propane forced air furnaces and there is no cooling system.

Assessment:

An assessment by Grimm & Parker was not conducted.



HEGIS CODE	HEGIS CATEGORY	Welding Shop
200	LABORATORY	1,355
700	SUPPORT	54
	Total NASF:	1,409
	Total GSF:	1,464
	Efficiency (%):	0.96

Former Welding Lab

Outreach Centers

Garrett College operates three outreach facilities, i.e., Northern Outreach Center (NOC), Southern Outreach Center (SOC), and Career Technology Training Center (CTTC) located in Grantsville, Oakland, and Accident, respectively. The outreach facilities currently total 31,766 GSF. Outreach centers are primarily used by Continuing Education & Workforce Development Division.

Career Technology Training Center

Programming: Technology Classrooms & Labs, Offices

Condition Code: 1-Satisfactory

Adequacy of Space: Good

Sprinkler System: Yes

Renovations: 2010 Phase 1

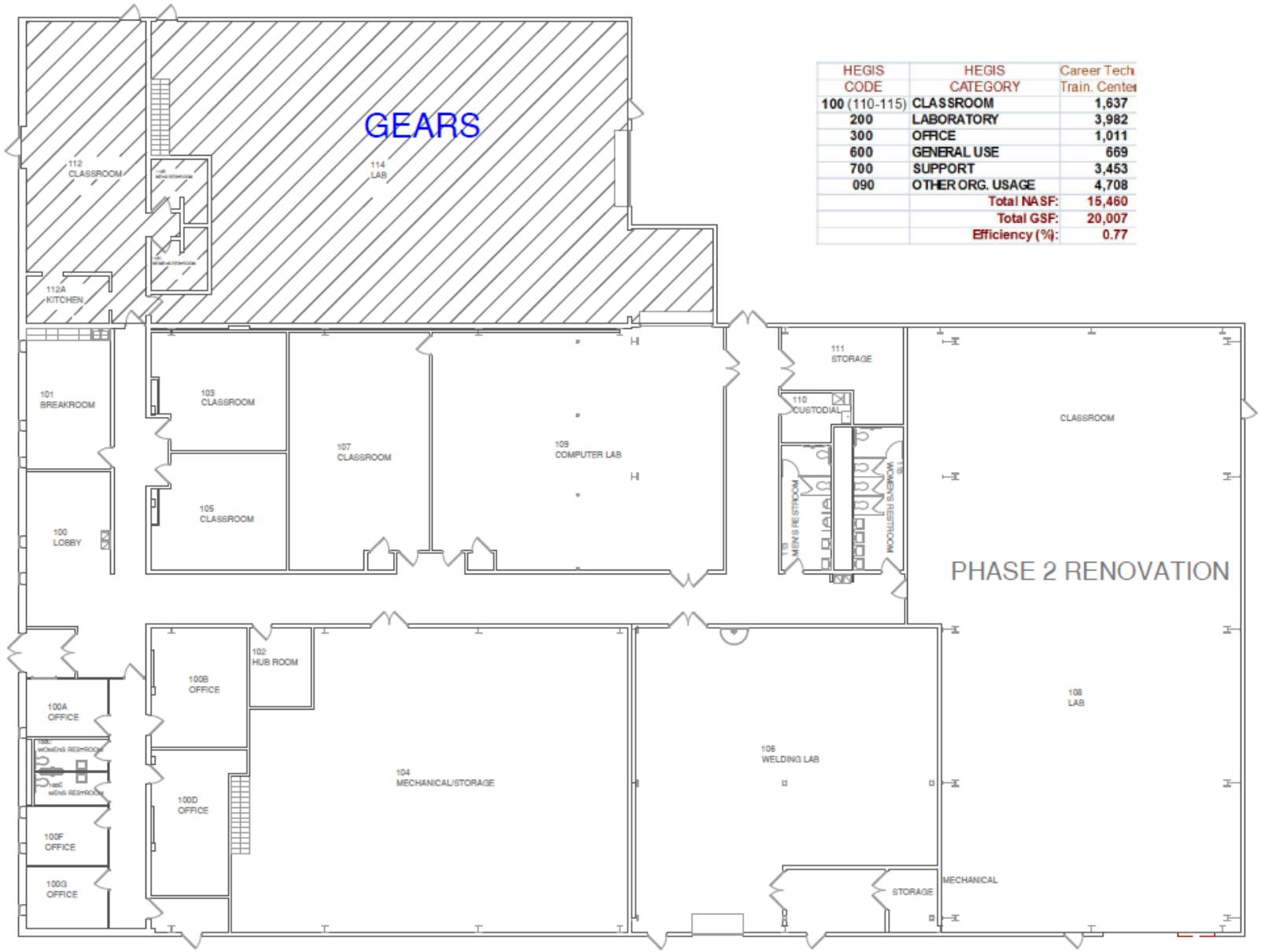
Description:

The CTTC is located in the Accident Industrial Park was originally owned by Phenix Technologies (electrical transformer manufacturer) and was purchased by Garrett County Economic Development. The CTTC is leased to GC and serves as a facility for career training and technology classes. Renovation of the building has been broken into two phases. Phase 1 was complete in FY11, and Phase 2 is expected to be complete during the spring of FY12. The building is steel framed with metal siding. Heating is provided by way of propane and air conditioning units are located on the exterior of the building. The below figure illustrates the current layout of the building. GC currently occupies 20,007 GSF (15,460 NASF, efficiency of 77%) which will increase to 25,223 GSF (19,986 NASF, efficiency of 79%) upon completion of the Phase 2 expansion. Moreover, the building houses GEARS, a local middle & high

school robotics club; accordingly, the Garrett County Board of Education pays the utilities for the GEARS program. Fire alarms are monitored by a private security company.

Assessment:

An assessment by Grimm & Parker was not conducted.



HEGIS CODE	HEGIS CATEGORY	Career Tech Train. Center
100 (110-115)	CLASSROOM	1,637
200	LABORATORY	3,982
300	OFFICE	1,011
600	GENERAL USE	669
700	SUPPORT	3,453
090	OTHER ORG. USAGE	4,708
	Total NASF:	15,460
	Total GSF:	20,007
	Efficiency (%):	0.77

105 Classroom

109 Computer Lab

106 Welding Lab

100 Lobby

Northern Outreach Center (NOC)

Programming: Classroom, Lab, Office & Support

Condition Code: 1-Satisfactory

Adequacy of Space: Good

Sprinkler System: No

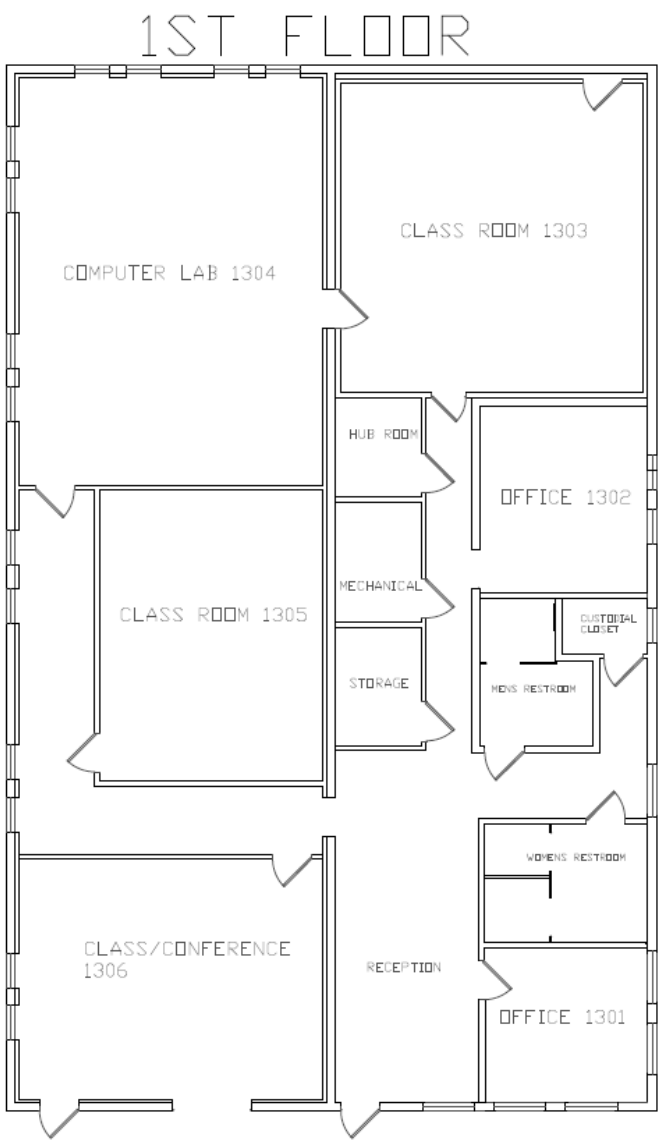
Renovations: 1st Floor in 2005, Basement upgrades in 2011

Description:

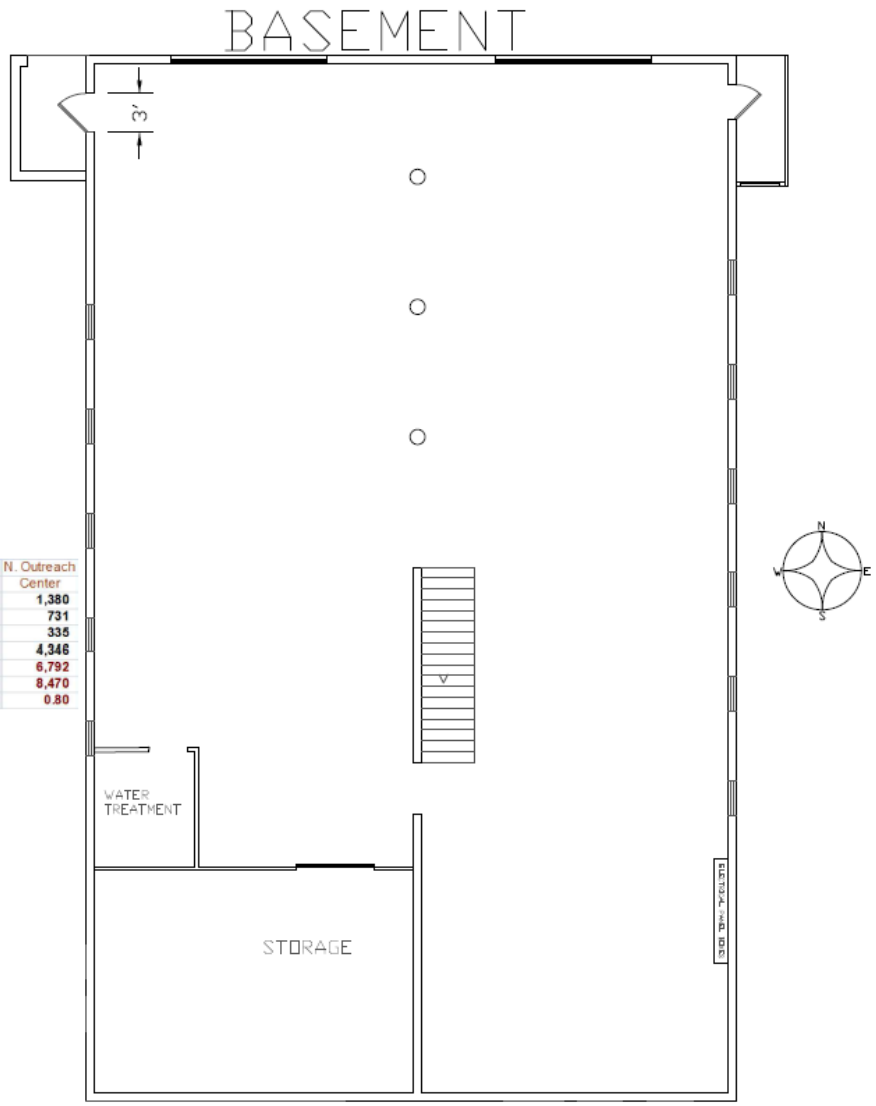
The NOC was formerly the Garrett County Roads Department (Grantsville Office). The building has been leased by GC since 2005 from the Garrett County Commissioners. The facility serves as the Mountaintop Truck Driving Institute, space for Continuing Education programming, and space for occasional Academic programming. In 2005, the exterior and first floor interior were renovated by College facilities personnel to reflect the current layout seen in Fig. 5.16 and encompasses 8,470 GSF with 6,792 NASF for an efficiency of 80%. During the summer of 2011 facilities personnel performed upgrades on the basement to make the space compliant under fire & ADA codes. There are no fire alarms, and the building does not have a sprinkler system.

Assessment:

An assessment by Grimm & Parker was not conducted.



HEGIS CODE	HEGIS CATEGORY	N. Outreach Center
100 (110-115)	CLASSROOM	1,380
200	LABORATORY	731
300	OFFICE	335
700	SUPPORT	4,346
	Total NASF:	6,792
	Total GSF:	8,470
	Efficiency (%):	0.80



Southern Outreach Center (SOC)

Programming: Classroom, Offices

Condition Code: 1- Satisfactory

Adequacy of Space: Good

Sprinkler System: No

Renovations: 2011 office and classroom addtions

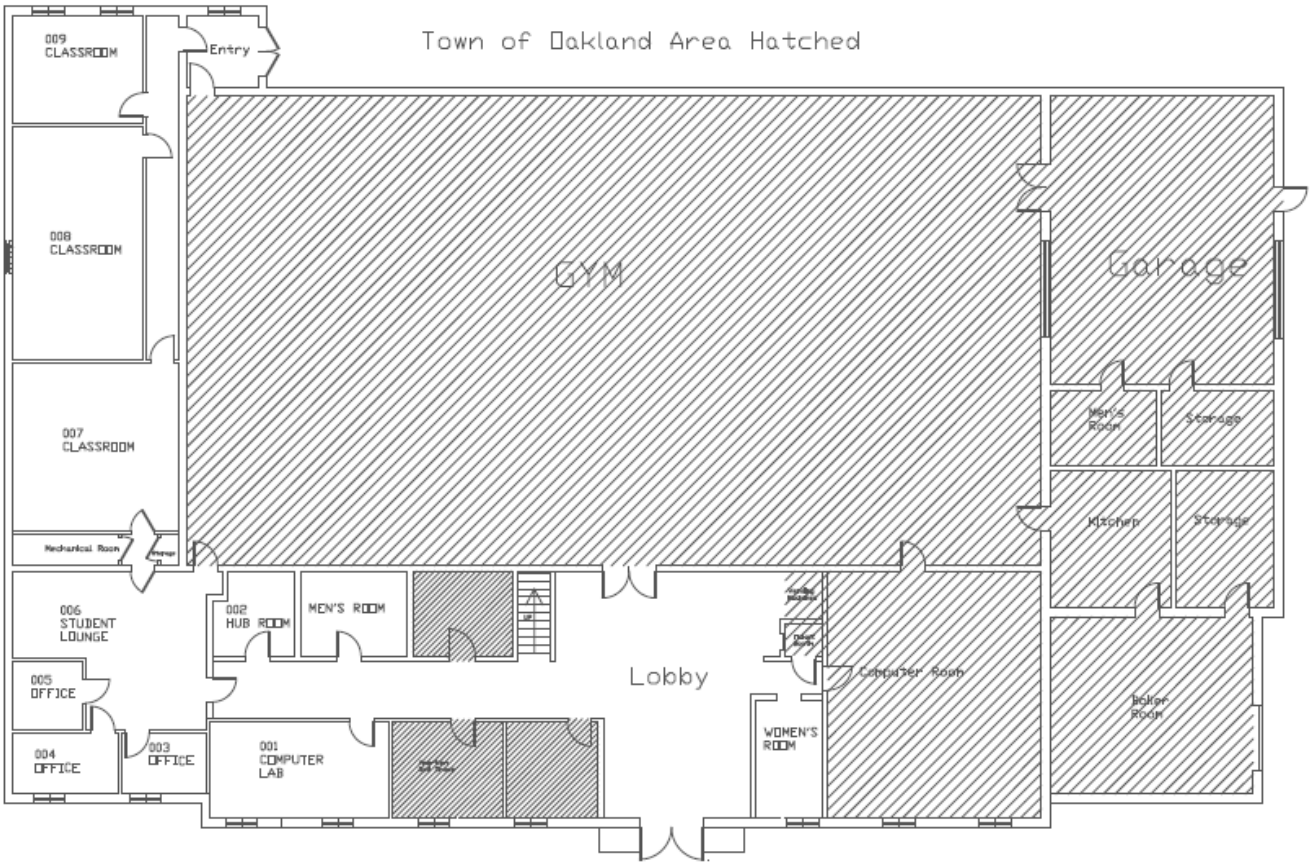
Description:

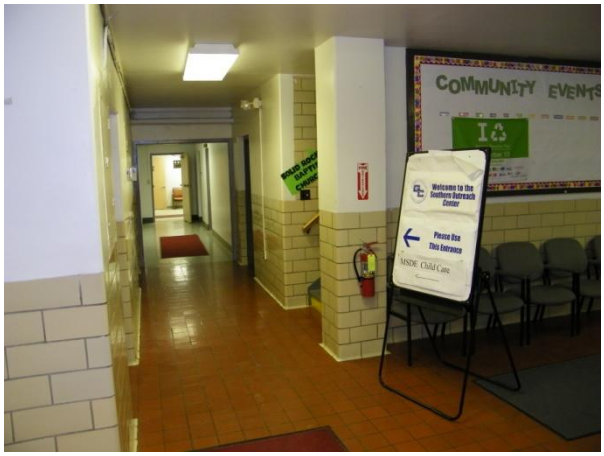
The SOC was formerly the Oakland Armory of the Maryland National Guard. Upon transfer of ownership to the Town of Oakland in 1999, GC has leased the space from the Town. The space is utilized for Con-Ed programming, i.e., GED classes, Early Childhood development classes, etc. A recent renovation in the early spring of 2011 has expanded GC's area at SOC and is reflected by the current layout seen below. The total cost of the renovations was roughly $120,000. The College occupies 3,296 GSF with 1,977 NASF for an efficiency of 60%. There are no fire alarms, and the building does not have a sprinkler system. GC does not operate or maintain the heating and cooling of the building.

Assessment:

An assessment by Grimm & Parker was not conducted.

100 (110-115)	CLASSROOM	930
300	OFFICE	224
	Total NASF:	1,154
	Total GSF:	1,391
	Efficiency (%):	0.83





Entrance


Room 008


Room 007


Room 006

IV. INSTITUTIONAL EVALUATION

A. Site Analysis

B. Impact of User Trends

A. Site Analysis

Adequacy of Space for Development

As seen in the following figure the College has ample space for development over the next ten years. Three areas have been identified as suitable sites for development in terms of feasible building sites, parking areas, athletic field locations, etc. Area #1 is roughly 1.42 acres; Area #2 is roughly 5.89 acres; Area #3 is approximately 17.2 acres; for a total of 24.5 acres. Area #1 and #2 lie within Deep Creek Lake Residential Zoning (left of the red dashed line) and Area #3 is not restricted by any zoning ordinances. In other words, should the College wish to develop Area #1 or Area #2 the development must be approved by the Deep Creek Lake Zoning Board, and if the College were to develop Area #3 approval by a zoning board is not required. Although the College has plenty of space for development over the next ten years, plans for development beyond ten years should include acquiring adjacent lands for more space.

It is important to note that, there are currently two storm water management (SWM) ponds on the campus. SWM pond #1 provides runoff storage for the adjacent parking lots and SWM pond #2 provides runoff storage for Buildings 900 & 950 and their corresponding parking lots. As shown below, the outfall for SWM pond #2 crosses beneath Mosser Road and surfaces in the adjacent field at a concrete structure. Storm water is then conveyed by an underground pipe approximately 750 feet along Sunset Ridge Drive until it surfaces at a concrete inlet. The water is then conveyed through a pipe roughly 800 feet until it day lights behind the Double G Campground. As part of an agreement between the Garrett County Government and the College, the College has perpetual responsibility for maintaining the entire SWM conveyance.

Area #1:

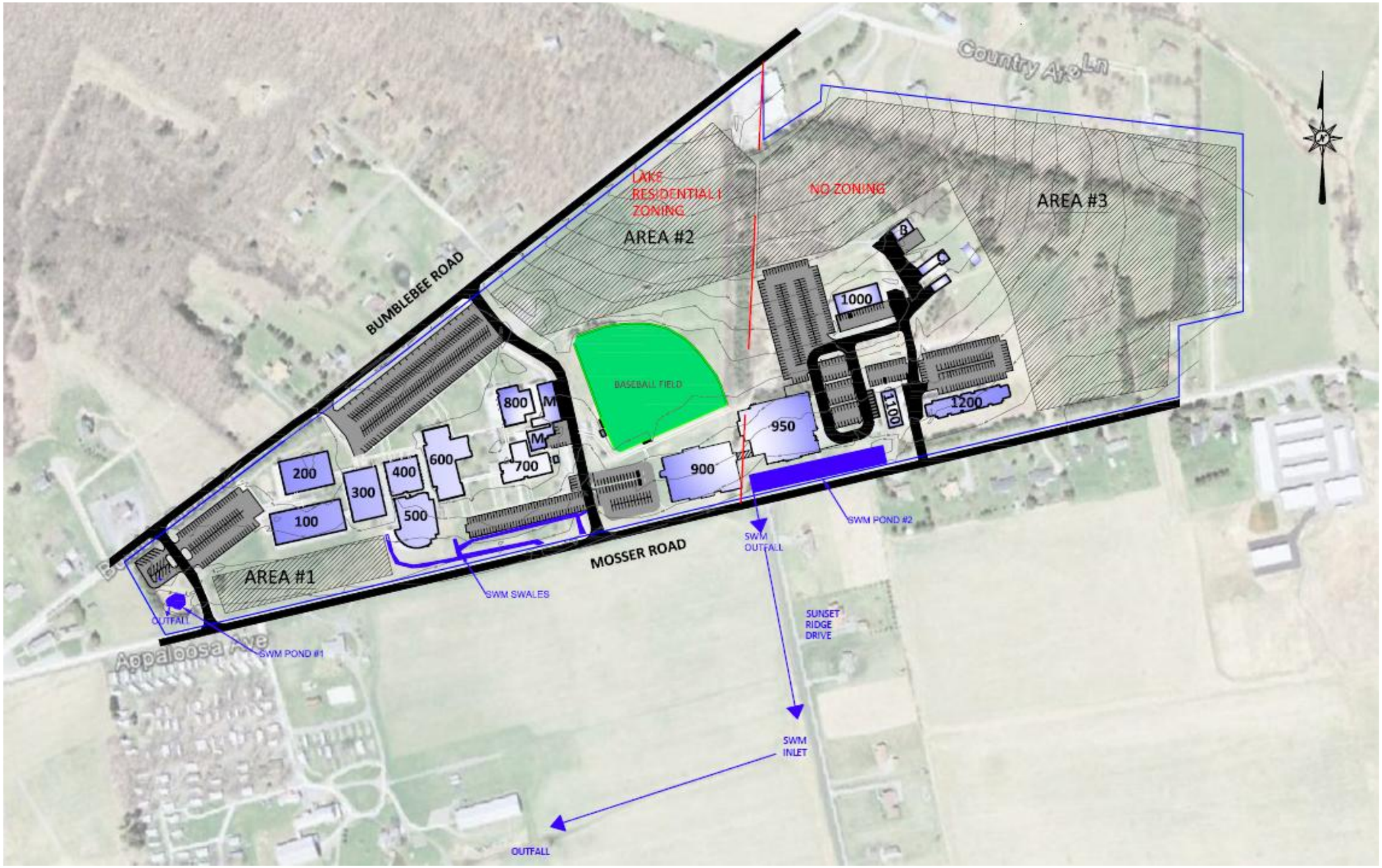
The approximate 1.42 acres would be suitable for a parking lot or small building. If Area #1 is developed, SWM pond #1 could be enlarged to provide more storage for the development. Moreover, since the area has a relatively low slope, i.e. 3%, the site will not require tremendous amounts of site grading. Given that there is a main electrical power line, sewer line, and water line following Mosser Road, utility infrastructure for Area #1 should be relatively easy to install.

Area #2:

The 5.89 acre lends Area #2 is an appropriate site for a building or parking area. The area slopes from the southwest corner to the northeast corner at a 4.5% grade. An electrical transformer is located in the south west corner of the area and serves the baseball field lights; the service could be upgraded should the College wish to develop the area. Water and sewer are also convenient to the area, i.e., a sewer main runs parallel to Bumble Bee Road, and a water main is located near the line dashed red line below.

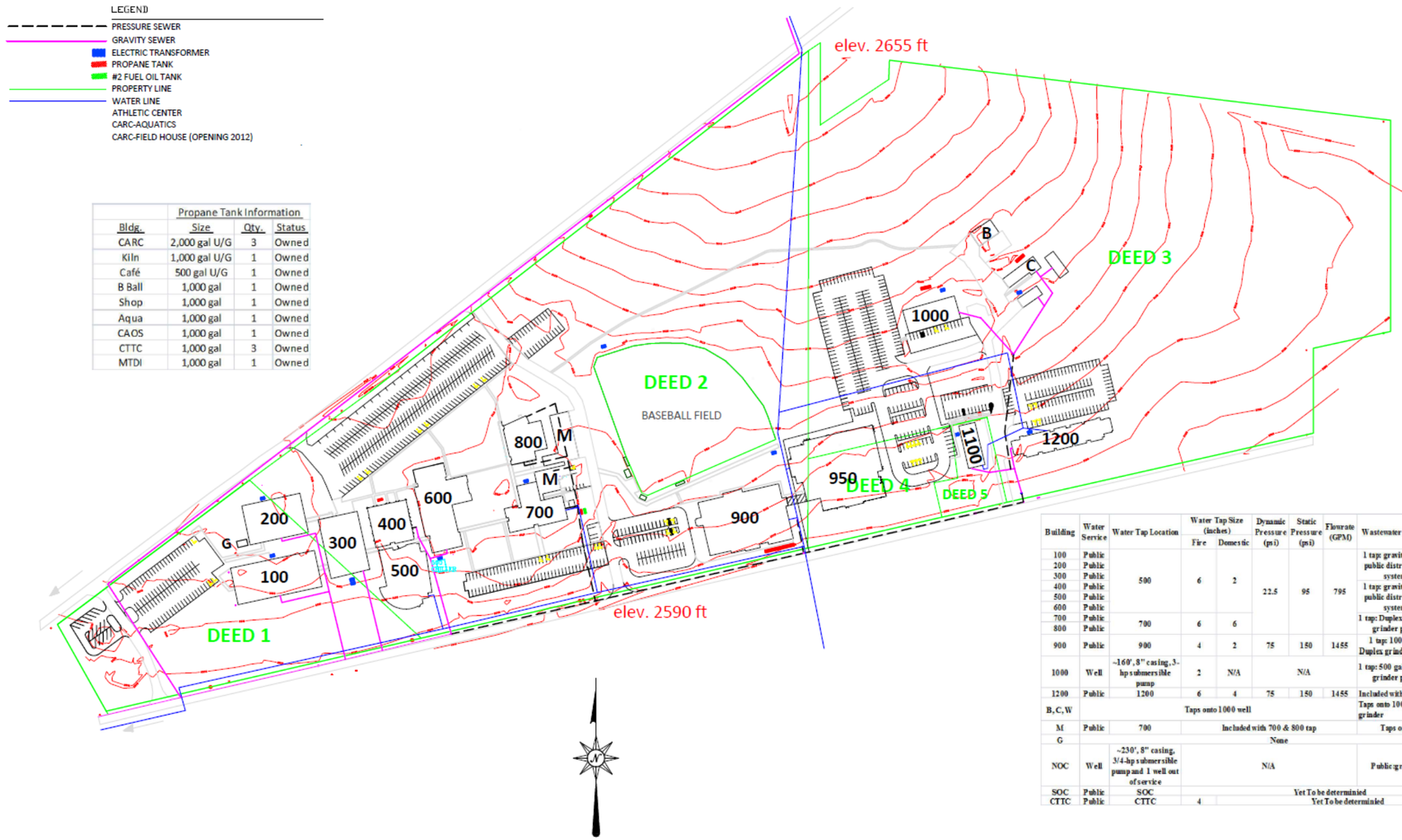
Area #3:

The 17.2 acres is suitable for buildings or Athletic facilities/fields. Since the area is approximately 1,200 feet from the main academic corridor of the College, constructing a parking lot in the area would not be practical. The closest water and sewer mains are located near Building 1200, and electrical infrastructure would need to be installed from Mosser Road. Since the area has a large footprint, there would be sufficient space for SWM structures.


Country Aire Ln
LAKE RESIDENTIAL I ZONING
NO ZONING
AREA #2
AREA #3
BUMBLEBEE ROAD
BASEBALL FIELD
1000
1100
1200
950
900
800
700
600
500
400
300
200
100
AREA #1
MOSSER ROAD
SWM POND #2
SWM OUTFALL
SWM SWALES
OUTFALL
SWM POND #1
Appaloosa Ave
SUNSET RIDGE DRIVE
SWM INLET
OUTFALL

Adequacy of Utilities

As seen below, public water, sewer, and electricity are conveniently located near the campus, i.e., along Mosser & Bumble Bee Road. Natural gas service is not available in the immediate area; therefore, the College utilizes #2 fuel oil and propane to heat its facilities. As the College expands and develops the site, there appears to be no major problems with accessing public utilities.



	Propane Tank Information		
Bldg.	Size	Qty.	Status
CARC	2,000 gal U/G	3	Owned
Kiln	1,000 gal U/G	1	Owned
Café	500 gal U/G	1	Owned
B Ball	1,000 gal	1	Owned
Shop	1,000 gal	1	Owned
Aqua	1,000 gal	1	Owned
CAOS	1,000 gal	1	Owned
CTTC	1,000 gal	3	Owned
MTDI	1,000 gal	1	Owned

Building	Water Service	Water Tap Location	Water Tap Size (inches)		Dynamic Pressure (psi)	Static Pressure (psi)	Flowrate (GPM)	Wastewater System	Equivalent Residential Units
			Fire	Domestic					
100	Public	500	6	2	22.5	95	795	1 tap: gravity fed to public distribution system	6
200	Public								21
300	Public								
400	Public							1 tap: gravity fed to public distribution system	
500	Public								
600	Public								
700	Public	700	6	6				1 tap: Duplex 500 gal. grinder pump	
800	Public								
900	Public	900	4	2	75	150	1455	1 tap: 1000 gal. Duplex grinder pump	10
1000	Well	~160', 8" casing, 3-hp submersible pump	2	N/A	N/A			1 tap: 500 gal. Duplex grinder pump	4
1200	Public	1200	6	4	75	150	1455	Included with 900 tap	32
B, C, W	Taps onto 1000 well							Taps onto 1000 grinder	
M	Public	700	Included with 700 & 800 tap					Taps onto 700 grinder	
G	None								
NOC	Well	~230', 8" casing, 3/4-hp submersible pump and 1 well out of service	N/A					Public gravity	Yet To be determinied
SOC	Public	SOC	Yet To be determinied						
CTTC	Public	CTTC	4	Yet To be determinied					

Adequacy of Parking

As seen below in a table submitted to MHEC in July of 2011, overall the College currently has adequate parking spaces, i.e., only a deficit of 21 full time faculty & staff parking spaces. Although, by 2021 the College expects to have a deficit of 180 FTDE-T spaces and 56 FT-Faculty & FT-Staff, accordingly the ten-year capital plan should include expanding parking on the main campus.

COLLEGE NAME: Garrett College	**Table 4 COMPUTATION OF PARKING NEEDS**						
July 1, 2011							
PARKING	FACTOR	Need	Inventory	Surplus/	Need	Inventory	Surplus/
CATEGORY		Current	Current	(Deficit)	10 Years	10 Years	(Deficit)
FTDE-T	0.75	394	394	0	571	391	(180)
FT-Fac and FT-Staff	0.75	81	60	(21)	117	61	(56)
SUBTOTAL		**475**	**454**	**(21)**	**688**	**452**	**(236)**
Visitors	0.02	10	11	1	14	92	78
REGULAR SPACES		**485**	**465**	**(20)**	**702**	**544**	**(158)**
Reserved Accessible*		9	20	11	9	15	6
ALL SPACES		**494**	**485**	**(9)**	**711**	**559**	**(152)**

Relationship of Institution to Adjacent Land Uses

As stated earlier and shown below in a figure, roughly half (area in yellow) of the College's land lies within Deep Creek Lake Zoning and the other half is not restricted by zoning.

Adjacent lands are zoned as town residential (orange) and commercial resort (red hatch). With the exception of a campground (red hatch) the lands adjacent to the College are being utilized for private homes.

Obstacles to Delivery of Services

From a facilities & site perspective, there are several key obstacles to prohibiting the College from effectively providing services to students and the community over the next ten years. The obstacles are as follows:

- Outdated facilities as indicated in the College's Academic Plan, e.g., obsolete classrooms that reflect a poor image of the College to perspective students and the community and hinder the learning process.
- Lack of adequate assembly, meeting, and lab space for science and technology, as outlined in the CC tables.
- Insufficient parking as shown by the computation of parking needs.

Facility Needs

As discussed in the College's Academic Plan, "While the College has recently added a new library (LRC), residence hall (owned by the Foundation), and athletic and recreation complex, most of the campus facilities create an environment that does not support learning. The campus itself is not well-planned and its aging buildings (most are 35-40 years old) have seen only minor renovations or improvements. Most of these buildings have inadequate and/or poorly functioning HVAC systems. Most instruction occurs in classrooms that are unattractive and lack modern amenities. Classroom furniture is uncomfortable."

To further support the Academic Plan, a common need was clearly identified in Grimm & Parker Architects facilities assessment for Buildings 200-800 & 1000 in the spring of 2011. In particular, Grimm & Parker found that Buildings 200, 400, 600, 700, and 800 are in serious need of renovation. Upon a short walk through Building 600 Learning Resource Center, Building 900 Aquatics, and Building 950 Field House, it becomes quite obvious that Buildings 200, 400, 600, 700, and 800 are not conducive to a modern learning environment.

Conversions/Modifications

Due to the opening of a new gymnasium in the Spring of 2012 (Building 950 Field House) Building 800 Athletic Center/Gymnasium will be vacant, and the College will have adequate athletic space. The College will need to convert or modify the space for other programming.

New Construction

There are no immediate plans over the next ten years to construct new facilities; however, the need to move the baseball field has become even more apparent with the recent opening of Building 900 Aquatics.

Technological

The College will address technology upgrades that will be included in renovations, modifications, or conversions as needed.

Demolition

The College does not plan to demolish any buildings in the next ten years. Although many buildings need renovations, they have not deteriorated to the point to warrant demolition due to an intensive program of deferred and preventive maintenance.

B. Impact of User Trends

Space Utilization

The following table is a snap shot of space utilization on the main campus. Space utilization at Garrett College is similar to the guidelines recommended by MHEC (60% for Occupancy and 44% for Utilization). The average utilization rate for classrooms and labs during the spring 2011 semester was 46%, and the average occupancy rate was 59%.

Spring 2011 Main Campus	
Avg. Utilization Rate	46%
Avg. Occupancy Rate	59%
FTDE	498
FTEF	41

Since spring enrollments are historically lower than fall enrollments, the assumption that the spring 2011 data reflect the utilization and occupancy rates during the entire year at the College is conservative.

With the exception of the Career Technology Training Center (CTTC), the College uses space on its main campus and outreach centers effectively. The College does not utilize space at the Career Technology Training Center (CTTC) effectively. The main reason, at this time, for the lack of utilization is that Continuing Education certificate programming and Academic programming at this location is being developed.

Space Guideline Calculations

On the following pages are the College's space guideline calculations as submitted and approved by the Maryland Higher Education Commission for FY2012 (submitted July 1, 2011). In summary as shown in Table #3 during the next ten years enrollment is projected to increase (i.e., from FY2012 FTDE of 525 to a FY2021 FTDE of 761) thereby creating significant space deficits in the following areas:

- Hegis 200 Lab: 7,899 NASF
- Hegis 300 Office: 11,811 NASF
- Hegis 610-15 Assembly: 8,869 NASF
- Hegis 630-35 Food Facility: 2,620 NASF

Table 1
FACILITIES INVENTORY BY BUILDING

USE INVENTORY DATA FROM FACILITIES INVENTORY REPORT - APRIL1, 2011

COLLEGE NAME: Garrett College
July 1, 2011

Oldest ----------> Newest

	Year Constructed	1971	1971	1971	1972	1976	1979	1982	1999	1999	1999	2000	2005	2005	2006	2007	2007	2007	2010	July 2011	On-Campus Overflow		July 2011	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	Subtotal	1	2	Subtotal	Total
HEGIS CODE	HEGIS CATEGORY	Shaw Learning Ctr	Fine Arts	Gymnasium	Maint. Shop A	Information Technology	Continuing Education	Student Center	Adventure Outdoor Study	Baseball Club House	Welding Shop	S. Outreach Center	N. Outreach Center	Garrett Hall Dormitory	Baseball Practice	Laker Hall Dormitory	LRC	Maint. Shop B	Career Tech Train. Center	On Campus Permanent			On Campus Overflow	On Campus Space
100 (110-115)	**CLASSROOM**	**2,327**				**1,811**	**4,367**		**565**			**930**	**1,380**				**0**	**0**	**1,637**	**13,017**			**0**	**13,017**
200	**LABORATORY**	**4,544**	**1,392**	**0**	**0**	**3,160**	**933**	**0**	**1,040**	**0**	**1,355**	**0**	**731**	**0**	**0**	**0**	**2,135**	**0**	**3,982**	**19,272**			**0**	**19,272**
210-15	Class Laboratory	4,544	1,392			2,493	472		874		1,355		731				902		2,165	**14,928**			**0**	14,928
220-25	Open Laboratory					667	461		166								1,233		1,817	**4,344**			**0**	4,344
250-55	Research Lab.																			**0**			**0**	0
300	**OFFICE**	**4,694**	**1,945**	**228**	**114**	**2,424**	**2,524**	**1,956**	**867**	**176**	**0**	**224**	**335**	**0**	**0**	**0**	**2,368**	**400**	**1,011**	**19,266**			**0**	**19,266**
310-15	Office/ Conf. Room	4,694	1,945	228	114	2,424	2,524	1,956	867	176		224	335				2,368	400	1,011	**19,266**			**0**	19,266
320-25	Testing/Tutoring																			**0**			**0**	0
350-55	*Included w/ 310*																			**0**			**0**	0
400	**STUDY**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6,561**	**0**	**0**	**6,561**			**0**	**6,561**
410-15	Study																2,251			**2,251**			**0**	2,251
420-30	Stack/Study																3,524			**3,524**			**0**	3,524
440-55	Processing/Service																786			**786**			**0**	786
500	**SPECIAL USE**	**0**	**0**	**7,851**	**0**	**774**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,560**	**0**	**0**	**0**	**0**	**11,185**			**0**	**11,185**
520-23	Athletic			7,851											2,560					**10,411**			**0**	10,411
530-35	Media Production					774														**774**			**0**	774
580-85	Greenhouse																			**0**			**0**	0
600	**GENERAL USE**	**154**	**4,079**	**0**	**0**	**425**	**1,807**	**5,049**	**1,074**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**244**	**225**	**669**	**13,726**			**0**	**13,726**
610-15	Assembly		3,131																	**3,131**			**0**	3,131
620-25	Exhibition		825																	**825**			**0**	825
630-35	Food Facility							2,205												**2,205**			**0**	2,205
640-45	Day Care																			**0**			**0**	0
650-55	Lounge	154	123				111	2,105	202								244	225	669	**3,833**			**0**	3,833
660-65	Merchandising							739	441											**1,180**			**0**	1,180
670-75	Recreation																			**0**			**0**	0
680-85	Meeting Room					425	1,696		431											**2,552**			**0**	2,552
700	**SUPPORT**	**605**	**99**	**295**	**2,355**	**1,151**	**391**	**225**	**1,956**	**2,473**	**54**	**0**	**4,346**	**0**	**0**	**0**	**281**	**4,475**	**3,453**	**22,159**			**0**	**22,159**
710-15	Data Processing					906	103						51				138		129	**1,327**			**0**	1,327
720-25	Shop				2,355						54		4,295					3,750		**10,454**			**0**	10,454
730-35	Central Storage		99	295		245	288	225	1,956	2,473							143	725	3,324	**9,773**			**0**	9,773
740-45	Vehicle Storage																			**0**			**0**	0
750-55	Central Service	605																		**605**			**0**	605
760-65	Hazmat Storage																			**0**			**0**	0
800	**HEALTH CARE**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**			**0**	**0**
900	**RESIDENTIAL**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**10,814**	**0**	**23,892**	**0**	**0**	**0**	**34,706**			**0**	**34,706**
050	**INACTIVE AREA**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**			**0**	**0**
060	**ALTER. OR CONV.**	**1,437**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1,437**			**0**	**1,437**
070	**UNFINISHED AREA**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**			**0**	**0**
090	**OTHER ORG. USAGE**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4,708**	**4,708**			**0**	**4,708**
	Total NASF:	**13,761**	**7,515**	**8,374**	**2,469**	**9,745**	**10,022**	**7,230**	**5,502**	**2,649**	**1,409**	**1,154**	**6,792**	**10,814**	**2,560**	**23,892**	**11,589**	**5,100**	**15,460**	**146,037**			**0**	**146,037**
	Total GSF:	**21,553**	**14,110**	**10,960**	**3,000**	**15,000**	**15,000**	**12,105**	**8,160**	**2,882**	**1,464**	**1,391**	**8,470**	**14,190**	**2,560**	**37,469**	**18,128**	**6,250**	**20,007**	**212,699**			**0**	**212,699**
	Efficiency (%):	**0.64**	**0.53**	**0.76**	**0.82**	**0.65**	**0.67**	**0.60**	**0.67**	**0.92**	**0.96**	**0.83**	**0.80**	**0.76**	**1.00**	**0.64**	**0.64**	**0.82**	**0.77**	**0.69**			**#DIV/0!**	**0.69**

Table 2
FACILITIES INVENTORY CHANGES

COLLEGE NAME: Garrett College
July 1, 2011

HEGIS CODE	HEGIS CATEGORY	July 2011 Before Gains/ (Losses)	CARC Aquatics Gains	CARC [Building Name] (Losses)	[Project Name] [Building Name] Gains	[Project Name] [Building Name] (Losses)	Fall-2012 After Gains/ (Losses)	CARC Gymnasium Gains	CARC [Building Name] (Losses)	Fall-2014 After Gains/ (Losses)	[Project Name] [Building Name] Gains	[Project Name] [Building Name] (Losses)	Fall-2016 After Gains/ (Losses)	Projected Programs [Building Name] Changes	Projected Programs [Building Name] Changes	Projected Programs [Building Name] Changes	Projected Programs [Building Name] Changes	Projected Programs [Building Name] Changes	Fall 2020 After Gains/ (Losses)
100 (110-115)	**CLASSROOM**	**13,017**	**1,812**	**0**	**0**	**0**	**14,829**	**0**	**0**	**14,829**	**0**	**0**	**14,829**	**0**	**0**	**0**	**0**	**0**	**14,829**
200	**LABORATORY**	**19,272**	**0**	**0**	**0**	**0**	**19,272**	**0**	**0**	**19,272**	**0**	**0**	**19,272**	**0**	**0**	**0**	**0**	**0**	**19,272**
210-15	Class Laboratory	14,928					14,928			14,928			14,928						14,928
220-25	Open Laboratory	4,344					4,344			4,344			4,344						4,344
250-55	Research Lab.	0					0			0			0						0
300	**OFFICE**	**19,266**	**971**	**0**	**0**	**0**	**20,237**	**1,116**	**0**	**21,353**	**0**	**0**	**21,353**	**0**	**0**	**0**	**0**	**0**	**21,353**
310-15	Office/ Conf. Room	19,266	971				20,237	1,116		21,353			21,353						21,353
320-25	Testing/Tutoring	0					0			0			0						0
350-55	*Included w/ 310*	0					0			0			0						0
400	**STUDY**	**6,561**	**0**	**0**	**0**	**0**	**6,561**	**0**	**0**	**6,561**	**0**	**0**	**6,561**	**0**	**0**	**0**	**0**	**0**	**6,561**
410-15	Study	2,251					2,251			2,251			2,251						2,251
420-30	Stack/Study	3,524					3,524			3,524			3,524						3,524
440-55	Processing/Service	786					786			786			786						786
500	**SPECIAL USE**	**11,185**	**12,142**	**0**	**0**	**0**	**23,327**	**20,144**	**0**	**43,471**	**0**	**0**	**43,471**	**0**	**0**	**0**	**0**	**0**	**43,471**
520-23	Athletic	10,411	12,142				22,553	20,064		42,617			42,617						42,617
530-35	Media Production	774					774	80		854			854						854
580-85	Greenhouse	0					0			0			0						0
600	**GENERAL USE**	**13,726**	**0**	**0**	**0**	**0**	**13,726**	**1,235**	**0**	**14,961**	**0**	**0**	**14,961**	**0**	**0**	**0**	**0**	**0**	**14,961**
610-15	Assembly	3,131					3,131			3,131			3,131						3,131
620-25	Exhibition	825					825			825			825						825
630-35	Food Facility	2,205					2,205			2,205			2,205						2,205
640-45	Day Care	0					0			0			0						0
650-55	Lounge	3,833					3,833			3,833			3,833						3,833
660-65	Merchandising	1,180					1,180	360		1,540			1,540						1,540
670-75	Recreation	0					0			0			0						0
680-85	Meeting Room	2,552					2,552	875		3,427			3,427						3,427
700	**SUPPORT**	**22,159**	**360**	**0**	**0**	**0**	**22,519**	**1,560**	**0**	**24,079**	**0**	**0**	**24,079**	**0**	**0**	**0**	**0**	**0**	**24,079**
710-15	Data Processing	1,327	109				1,436			1,436			1,436						1,436
720-25	Shop	10,454					10,454			10,454			10,454						10,454
730-35	Central Storage	9,773	136				9,909	848		10,757			10,757						10,757
740-45	Vehicle Storage	0					0			0			0						0
750-55	Central Service	605					605	712		1,317			1,317						1,317
760-65	Hazmat Storage	0	115				115			115			115						115
800	**HEALTH CARE**	**0**	**0**	**0**	**0**	**0**	**0**	**1,632**	**0**	**1,632**	**0**	**0**	**1,632**	**0**	**0**	**0**	**0**	**0**	**1,632**
900	**RESIDENTIAL**	**34,706**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
050	**INACTIVE AREA**	**0**	**0**		**0**	**0**	**0**	**0**		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
060	**ALTER. OR CONV.**	**1,437**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
070	**UNFINISHED AREA**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
090	**OTHER ORG. USAGE**	**4,708**	**2,536**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	Total NASF:	**146,037**	**17,821**	**0**	**0**	**0**	**120,471**	**25,687**	**0**	**146,158**	**0**	**0**	**146,158**	**0**	**0**	**0**	**0**	**0**	**146,158**

Table 3
COMPUTATION OF SPACE NEEDS

COLLEGE NAME: Garrett College
July 1, 2011

HEGIS CODE	HEGIS CATEGORY	Need Current	Inventory 2010-11	Surplus/ (Deficit)	Need 10 Years	Inventory 2020	Surplus/ (Deficit)
100 (110-115)	**CLASSROOM**	**9,845**	**13,017**	**3,172**	**14,270**	**14,829**	**559**
200	**LABORATORY**	**18,746**	**19,272**	**526**	**27,171**	**19,272**	**(7,899)**
210-15	Class Laboratory	16,541	14,928	(1,613)	23,975	14,928	(9,047)
220-25	Open Laboratory	2,205	4,344	2,139	3,196	4,344	1,148
250-55	*No Allowance*						
300	**OFFICE**	**23,702**	**19,266**	**(4,436)**	**33,164**	**21,353**	**(11,811)**
310-15	Office/ Conf. Room	22,202	19,266	(2,936)	31,664	21,353	(10,311)
320-25	Testing/Tutoring	1,500	0	(1,500)	1,500	0	(1,500)
350-55	*Included w/ 310*						
400	**STUDY**	**6,481**	**6,561**	**80**	**7,956**	**6,561**	**(1,395)**
410-15	Study	3,281	2,251	(1,030)	4,756	2,251	(2,505)
420-30	Stack/Study	2,000	3,524	1,524	2,000	3,524	1,524
440-55	Processing/Service	1,200	786	(414)	1,200	786	(414)
500	**SPECIAL USE**	**36,600**	**11,185**	**(25,415)**	**36,600**	**43,471**	**6,871**
520-23	Athletic	34,000	10,411	(23,589)	34,000	42,617	8,617
530-35	Media Production	1,600	774	(826)	1,600	854	(746)
580-85	Greenhouse	1,000	0	(1,000)	1,000	0	(1,000)
600	**GENERAL USE**	**25,403**	**13,726**	**(11,677)**	**27,344**	**14,961**	**(12,383)**
610-15	Assembly	12,000	3,131	(8,869)	12,000	3,131	(8,869)
620-25	Exhibition	1,500	825	(675)	1,500	825	(675)
630-35	Food Facility	3,325	2,205	(1,120)	4,825	2,205	(2,620)
640-45	*No Allowance*						
650-55	Lounge	978	3,833	2,855	1,419	3,833	2,414
660-65	Merchandising	1,600	1,180	(420)	1,600	1,540	(60)
670-75	*No Allowance*						
680-85	Meeting Room	6,000	2,552	(3,448)	6,000	3,427	(2,573)
700	**SUPPORT**	**11,713**	**22,159**	**10,446**	**12,763**	**24,079**	**11,316**
710-15	Data Processing	2,500	1,327	(1,173)	2,500	1,436	(1,064)
720-25	Shop/ Storage	5,111	20,227	15,116	6,140	21,211	15,071
730-35	*Included w/ 720*						
740-45	*Included w/ 720*						
750-55	Central Service	4,000	605	(3,395)	4,000	1,317	(2,683)
760-65	Hazmat Storage	102	0	(102)	123	115	(8)
800	**HEALTH CARE**	**500**	**0**	**(500)**	**500**	**1,632**	**1,132**
900	***No Allowance***						
050-090	***No Allowance***						
	Total NASF:	**132,990**	**105,186**	**(27,804)**	**159,768**	**146,158**	**(13,610)**

ONLY ON CAMPUS
PERMANENT SPACE SHOULD
BE INCLUDED ON THIS TABLE

SEE "SPACE ALLOCATION
GUIDELINES" SHEET FOR
FORMULAS AND DEFINITIONS

ENROLLMENT/ EMPLOYMENT STATISTICS

N/A =

Hard Data =

Formulas = #DIV/0!

	ACTUAL Fall 2010	PROJECTED Fall 2020-MHEC
FTDE-C	525	761
FTDE-N		
FTDE-T	525	761
WSCH-Lec-C	6,563	9,513
WSCH-Lec-N		
WSCH-Lec-T	6,563	9,513
WSCH-Lab-C	2,363	3,425
WSCH-Lab-N		
WSCH-Lab-T	2,363	3,425
FTE	723	816
BVE	20,000	20,000
FT-Fac	21	30
FT-Libr	4	6
PT-Fac	59	86
FTEF	40	58
FT-Staff	87	126
PHC-T	326	473

	ACTUAL Fall 2010-MHEC	PROJECTED Fall 2020-MHEC
Headcount	850	1,033

Table 4
COMPUTATION OF PARKING NEEDS

COLLEGE NAME: Garrett College
July 1, 2011

PARKING CATEGORY	FACTOR	Need Current	Inventory Current	Surplus/ (Deficit)	Need 10 Years	Inventory 10 Years	Surplus/ (Deficit)
FTDE-T	0.75	394	394	0	571	391	(180)
FT-Fac and FT-Staff	0.75	81	60	(21)	117	61	(56)
SUBTOTAL		**475**	**454**	**(21)**	**688**	**452**	**(236)**
Visitors	0.02	10	11	1	14	92	78
REGULAR SPACES		**485**	**465**	**(20)**	**702**	**544**	**(158)**
Reserved Accessible*		9	20	11	9	15	6
ALL SPACES		**494**	**485**	**(9)**	**711**	**559**	**(152)**

* 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 SPACE	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

V. Facilities Master Plan Proposals

A. Alternatives to Meet Needs

B. Surge Space

C. Estimated Capital & Operating Costs of Alternatives

D. Local Funding Time Frame

E. Consistency with Maryland Smart Growth

A. Alternatives to Meet Needs

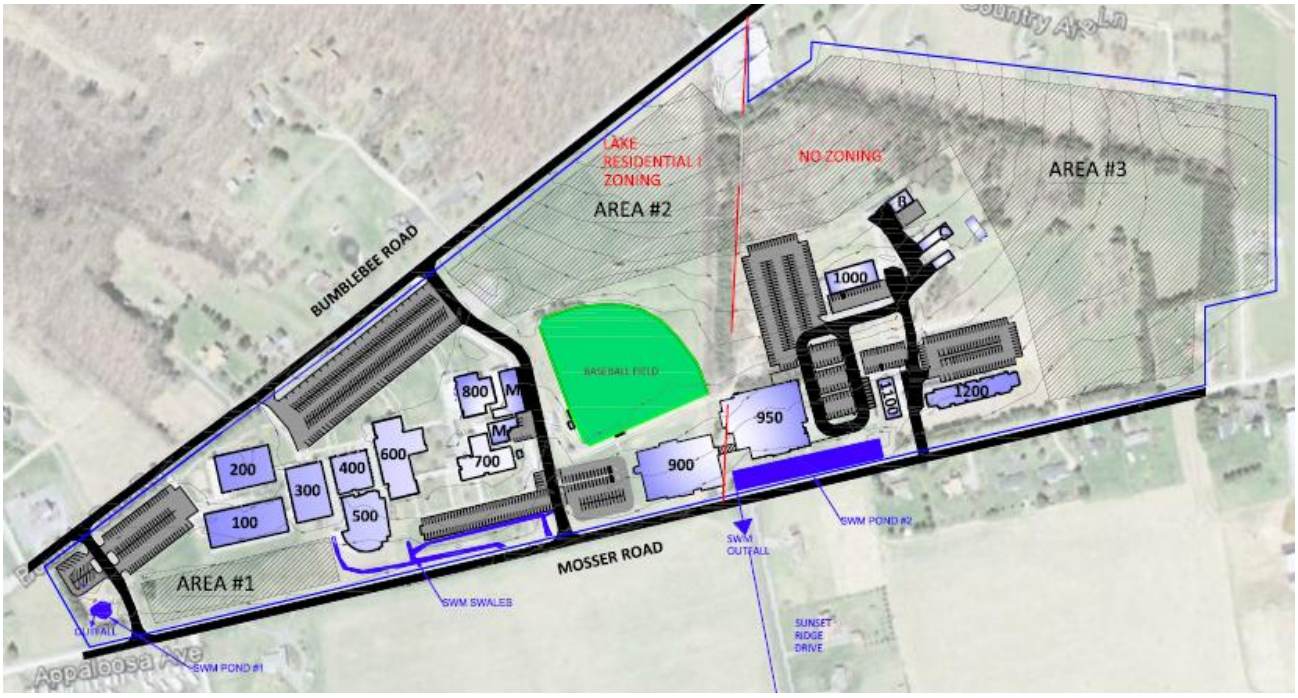
As indicated in the Institutional Evaluation, the most pressing needs for the College during the next ten years are as follows:

1. Insufficient parking
2. Baseball field relocation.
3. Outdated Facilities requiring renovation and re-design
    - Building 200 Continuing Education
    - Building 400 Student Center
    - Building 600 Shaw Learning Center
    - Building 700 Fine Arts/Administration
4. Lack of Adequate Space
    - Lab Space
    - Assembly Space
    - Meeting Space

Accordingly, the College has developed a 10 year plan to meet the above stated needs.

Parking (no State Funding required).

After reviewing the College's space for development, as seen below Area's #1 & #2 have been identified as ideal locations for future parking lot construction. For example, both areas lie on the perimeter of the College's site thereby providing easy access from Bumblebee & Mosser Roads. Moreover, the locations will not occupy valuable interior space on the campus' site allowing for future development and limiting the flow of traffic in high pedestrian areas (i.e., the academic corridors).



Garrett College Site Development Space

In the case of Area #1, the adjacent Storm Water Management (SWM) pond could be enlarged to manage storm water runoff from a new parking lot. There is adequate room in area to construct a SWM structure or Buildings 900 & 950's SWM pond could potentially be used to manage additional runoff from a parking lot in Area #2.

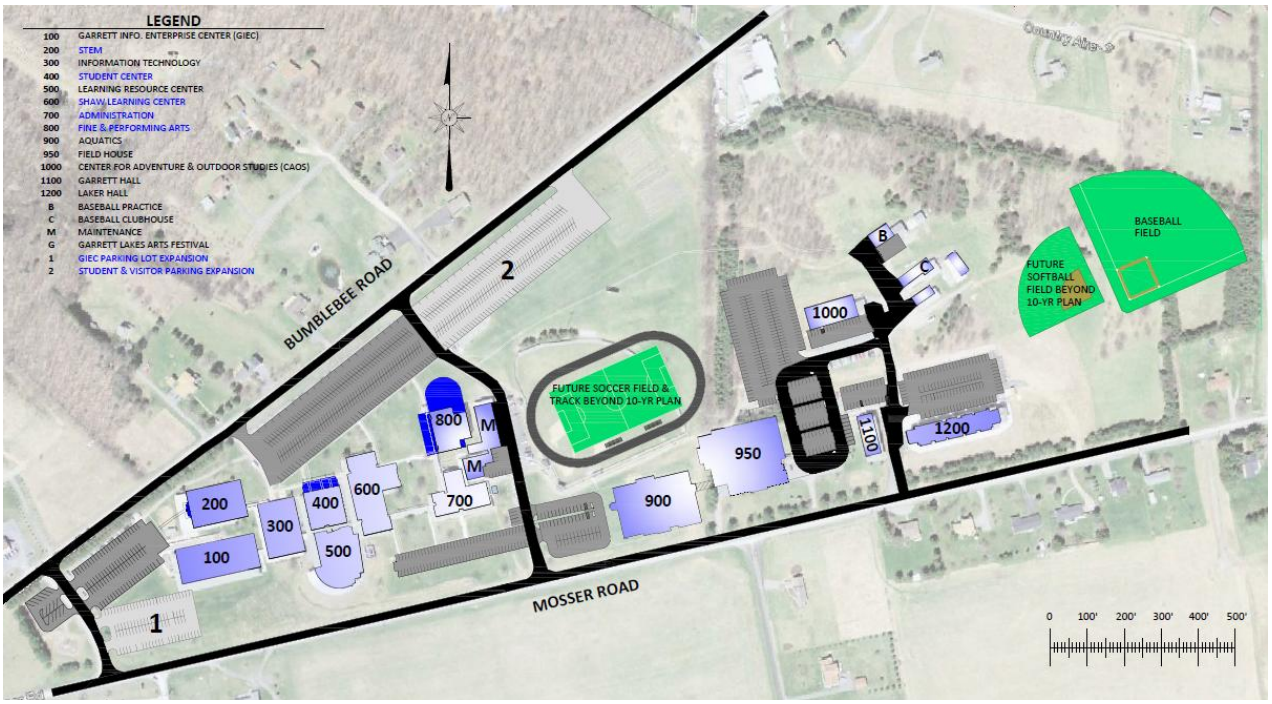
Although both areas lie within Deep Creek Lake Zoning, it is not expected that approval of the new parking lots by the Zoning Board would be problematic. Area #1 would provide roughly 96 new parking spaces and Area #2 could provide roughly 285 additional parking spaces. Therefore, the College could increase the amount of parking by a total of roughly 381 spaces.

Baseball Field Relocation (No State funding required).

Over the past decade many exciting changes have occurred at Garrett College (GC). GC's enrollment and facilities have increased substantially. With the expansion of new facilities, GC's baseball field is now in dire need of relocation as seen below. In 1995 the baseball field occupied the east end of the developed campus and was located in what seemed to be a great location.

1995 Garrett College Site (Google Earth)

Fast forward through 16 years of campus growth, and the baseball field is now located in the center of the campus.



Garrett College Site Development Space

With the construction of Buildings 900 Aquatics & 950 Field House, it is highly probable that vehicles (including College owned and privately owned) as well as the buildings will experience damage from foul balls and/or wild throws.

During the construction of Building 900 Aquatics the architect proposed to erect a fence to protect the Aquatics & Field House, however the design was abandoned due to a high cost (~ $40,000) and little to no guarantee that foul balls would not hit buildings or cars. Moreover, the College investigated the feasibility of erecting a new backstop and fencing, but the once again cost of the project was too high (~ $100,000) and there was no guarantee that foul balls would not hit buildings or cars. Therefore after reviewing the College's space for development, the space in Area #3 was identified as a logical space to relocate the field.

Relocating the Baseball Field to Area #3 will serve numerous objectives as follows:

- Eliminates balls from hitting campus buildings.
- Eliminates GC liability from balls hitting privately owned vehicles and people, i.e., vehicles may park in Laker Hall parking lot which will provide a safe distance from the new location.
- Centralizes baseball activities, i.e., the Baseball Clubhouse and Baseball Practice building are near the new location.
- Provides site for a future girl's softball and soccer field & track.

Parking for the field would be provided by Laker Hall's and the new field house parking lots, and since Area #3 is not zoned, the College would not be required to seek approval of the Deep Creek Zoning Board.

Outdated Facilities & Lack of Adequate Space

During the next 10 years the College plans to renovate the following buildings:

- Building 200 Continuing Education
- Building 400 Student Center
- Building 600 Shaw Learning Center
- Building 700 Fine Arts/Administration

The renovations will include reconfiguring as well as reprogramming some buildings to address space deficits. Buildings 400 Student Center and Building 800 Athletic Center/Gymnasium renovations will also include additions in an effort to efficiently address space deficits.

Building 200 Continuing Education

Building 200 will be renovated and programmed for Science, Technology, Engineering, & Math (STEM) curriculums. Expansion of STEM programs has been identified in the College's Academic Plan as a top priority for the institution. This will also address the need identified in the College's Academic Plan for upgraded science labs/classrooms. Moreover, it will allow the College to further develop the engineering, robotics, technology certification programs. From a facilities perspective, renovation of the building will allow for more efficient use of energy, manpower, etc.

Furthermore, renovating the building for science labs will help to alleviate or possibly eliminate the College's lab space deficit. A conceptual layout of the building is shown at the end of the section.

Building 600 Shaw Learning Center

Building 600 will be renovated and remain as the primary academic building. Since the science labs will be relocated to Building 200, space will be available for new faculty offices which in turn will make space available for classrooms and open labs (i.e., the temporary faculty offices in the building can be used for classroom space). A conceptual layout of the building is shown at the end of the section.

Building 400 Student Center

Building 400 will be renovated to include a modern food facility. Current departments that are located in the building (e.g., Financial Aid, Enrollment, Admissions) will be relocated to Building 700 to free up space in the Student Center. The plan includes an addition to the north end of the building to provide more space for a dining hall, because the current dining hall seats roughly 80 students and does not efficiently serve the student population, i.e., students routinely do not have a place to sit for lunch. A conceptual layout of the building is shown at the end of the section.

Building 700 Fine Arts/Administration

Building 700 will be renovated for offices. The building will serve as the primary center for College Administration and Student services, such as financial aid, registrar and business office. The art, theatre, and music departments will be relocated to Building 800. By reconfiguring the building it appears that much of the College's office space deficits will be addressed. A conceptual layout of the building is shown at the end of the section. Moreover, renovating the building will support the goal of making the

campus more friendly and accessible to students and the public as identified in the College's Academic Plan.

Building 800 Athletic Center/Gymnasium

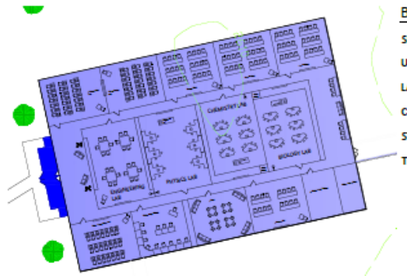
The College plans to renovate Building 800 to include a performing arts center, Continuing Education offices, and a multipurpose meeting/conference room. As per Grimm & Parkers facility assessment, the building is suitable for such a renovation due to its original structural design (i.e., steel framed construction). Moreover, the renovation will address the College's auditorium space deficit. Likewise the Performing Arts Center will benefit the community; in that Garrett County does not have a community center for the performing arts. A conceptual layout of the building is shown at the end of the section.

LEGEND

CURRENT BUILDING ENVELOPE

CONCEPTUAL ADDITION

CONCEPTUAL BUILDING 200-STEM



BUILDING DETAILS:

SF=15231

UPGRADED ENTRANCE ON WEST SIDE

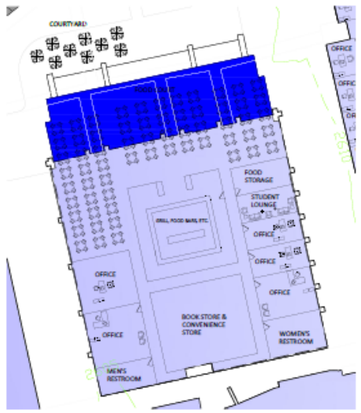
LAB SPACE = 7343 SF

CLASSROOM SPACE= 2910 SF

STUDY=735 SF

TESTING TUTORING=735 SF

CONCEPTUAL BUILDING 400-SC



BUILDING DETAILS:

TOTAL SF= 12872

2630 SF ADDITION TO NORTH END

FOOD COURT SEATING = 260

STUDENT AREAS = 869 SF

GRILL/FOOD BAR= 1640 SF

BOOKSTORE & CONVEN.= 1400 SF

OFFICE = 1700 SF

CONCEPTUAL BUILDING 600-LEARNING CENTER

BUILDING DETAILS:

TOTAL SF= 21553

31 FACULTY OFFICES

CLASSROOM = 7200 SF

CLASSROOM LAB = 1457 SF

STUDY/LOUNGE= 530 SF

FACULTY BREAKROOM = 400 SF

CONCEPTUAL BUILDING 700-ADMINISTRATION

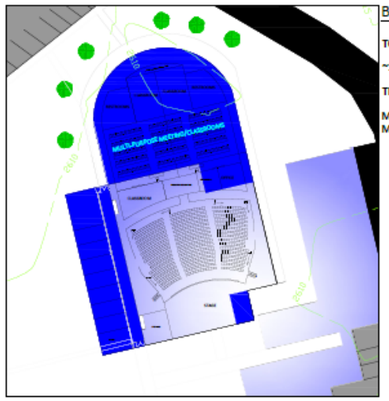
BUILDING DETAILS:

TOTAL SF= 14110

30 OFFICES

STAFF BREAK AREA

CONCEPTUAL BUILDING 800-FINE & PERFORMING ARTS



BUILDING DETAILS:

TOTAL SF ~ 21,124

~11,000 SF ADDITION TO NORTH END

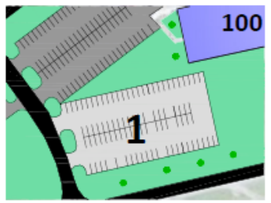
THEATRE SEATING = 570

MULTI PURPOSE MEETING/CLASSROOM SEATING=135

CONCEPTUAL PARKING EXPANSIONS

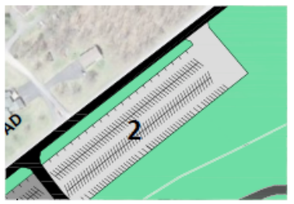
PARKING LOT 1

BUILDING 100 GIEC PARKING
96 SPACES



PARKING LOT 2

EXPANSION OF STUDENT & VISITOR PARKING
285 SPACES



B. Surge Space

The overall strategy to provide surge space during the College's next 10 year capital improvement projects is to use Building 800 Athletic Center. The College can temporarily reconfigure the gymnasium for office space, classroom space, and a cafeteria while renovations of Buildings 200, 400, 600 and 700 are completed. The temporary space will be constructed in-house by using Facilities personnel and local contractors, and it is expected that the College will experience a significant cost savings versus having the surge space constructed by general contractors. The College has completed several significant renovations and temporary projects in the past (e.g., renovation of the Northern Outreach Center and temporary faculty offices in the old Library). Funding for the surge space will be accomplished through fund balance and local sources.

Building 200 STEM Renovation

Continuing Education and the President's Office will be relocated temporarily to Building 800 Athletic Center/Gymnasium. Whereas upon completion of the Building 700 Administration and Student Services renovation the President's Office can be permanently housed in the Administration building, Con-Ed can be temporarily relocated to Building 700 Administration and Student Services until the Building 800 Performing Arts and Conference Center renovation is complete.

Building 400 Student Center Renovation

Temporarily construct a cafeteria in Building 800 Athletic Center/Gymnasium.

Building 600 Shaw Learning Center Renovation

Utilize classroom and lab space in the newly renovated Building 200 STEM. The renovation can be completed in two phases by first renovating the current lab spaces for faculty offices and then renovating the vacated faculty offices, i.e., the current permanent and temporary spaces. Faculty offices will be temporarily housed in Building 800 Athletic Center/Gymnasium.

Building 700 Fine Arts/Administration Renovation

Utilize temporary office space in Building 800 Athletic Center/Gymnasium. Relocate the art, music, and theatre programs to Building 600 Shaw Learning Center. After Building 800 is renovated for a Performing Arts and Conference center the art, music, and theatre programs can be relocated to Building 800.

Building 800 Performing Arts and Conference Center Renovation

Complete the renovation as the final part of the capital improvement plan thereby eliminating the need for surge space.

Parking

Construction of the proposed parking lots will not require surge space.

Baseball Field Relocation

The College plans to complete the baseball field relocation during the off season thereby avoiding the need for surge space.

C. Estimated Capital & Operating Costs of Alternatives

Capital

The cost of each project was estimated using data from recent College capital projects as seen in the below table. Historical construction costs were tabulated and a Cost/Gross Square Foot was calculated, and then each Cost/GSF was adjusted for inflation using the Consumer Price Index. The Cost/GSF was then averaged so that reasonable assumptions could be made for estimating the Cost/GSF for each of the College's proposed projects.

Recent Garrett College Capital Project Costs

Project	Construction Type	Year Constructed	Building GSF (000's)	Site Aquistion	A&E Cost ($ 000's)	Construction Cost ($ 000's)	FF&E (000's)	Total Cost ($ 000's)	Cost/GSF ($)	Adjusted for Inflation ($)
500 Learning Resource Center	Commercial	2005	18.13	-	325	4,690	400	5,415	299	**346**
1200 Laker Hall	Residential/Commerical	2008	37.47	-	560	7,440	-	8,000	214	**229**
900 Aquatics	Commercial	2010/11	32.50	688.5	648	12,408	174.0	13,918	428	**428**
950 Field House	Commerical	2011/12	41	688.5	449	9,252	174.0	10,564	258	**258**
									Average Cost	**315**

As seen below each proposed project was assigned a Cost/GSF with the exception of the Baseball Field Relocation. The cost for relocating the baseball field that is shown below was quoted to the College during the summer of 2011 by a local contractor. Although the Cost/GSF in the above table is due to new construction, it is believed that the Cost/GSF used for each project below is a reasonable conservative estimate (i.e., renovation costs are usually less than new construction costs). The parking lot expansions are estimated to cost $540 k allowing 7% of the project cost for A&E; the remaining 93% for construction, and the College plans to manage the project in-house. The baseball field relocation is expected to cost $629k as per a local contractor's quote, and the College plans to manage the project in-house. For each renovation the estimated cost breakdown allows for 7% of the total project cost for A&E; 83% of the total project cost for construction; 5% of the total project cost for FF&E, and 5% of total project cost for project management. Building 200 STEM's renovation is estimated to cost $ 6.092 million. Building 400 Student Center's renovation is estimated to cost $4.055 million. Building 600 Shaw Learning Center's renovation is estimated to cost $6.789 million. Building 700 Administration and Student Services renovation is estimated to cost $4.445 million. Building 800 Performing Arts and Conference Center renovation is estimated to cost $8.45 million. Total capital expenditures during the ten year period are estimated at $31 million.

Projected Garrett College Capital Expenditures for FY 12- FY21

Project	Construction Type	GSF	Cost/GSF ($)	Total ($000's)	A&E ($000's)	Construction ($000's)	FF&E ($000's)	Project Management ($000's)
Building 200 Stem	Commercial Renovation	15,231	400	6,092	426	5,057	305	305
Building 600 Shaw Learning Center	Commercial Renovation	21,553	315	6,789	475	5,635	339	339
Building 400 Student	Commercial Renovation	12,872	315	4,055	284	3,365	203	203
Building 700 Administration and Student Services	Commercial Renovation	14,110	315	4,445	311	3,689	222	222
Building 800 Performing Arts	Commercial Renovation	21,124	400	8,450	591	7,013	422	422
Parking Lot Expansions	Heavy/Highway	120,000	4.50	540	38	502	-	-
Baseball Field Relocation	Heavy/Highway	-	-	629	20	609	-	-

Operating

Considering that the alternatives do not include any new construction, the College does not believe that its operating costs will increase for the following reasons:

1. Renovations of buildings will increase the energy efficiency of five campus buildings. A significant cost reduction in heating and air conditioning should be realized with the renovations.
2. The renovations of the buildings will not require an increase in support personnel (e.g., maintenance, custodial, etc).
3. Whereas some buildings will be reprogrammed, all the alternatives will remain open to students & the public under the current College schedule (M-F 8:30 a.m. – 10 p.m.).

D. Local Funding Time Frame

Whereas the State of Maryland will share in 50% of the cost of approved capital projects at Garrett College, a local match of 50% is required to obtain the State funding. As seen below in a table, during the past 14 years the State has decreased the State share percentages from 63.7% to 50.0% due largely in part to increased property values in Garrett County as well as a decrease in public school enrollments. The College does not plan on seeking state aid to perform the parking lot expansions or baseball field relocation, and hopes to complete the projects before major renovations begin in FY2015.

State Share Percentages For CIP Years: FY 2000 - FY 2013*

Community College Capital Projects

College	FY 2000	FY 2001	FY 2002	FY 2003	FY2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Allegany	69.9%	69.7%	68.0%	70.0%	70.0%	69.3%	69.6%	68.4%	70.0%	70.0%	70.0%	70.0%	70.0%	70.0%
Anne Arundel	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Baltimore County (CCBC)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Calvert	51.6%	52.1%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carroll	59.1%	59.5%	59.5%	59.4%	58.4%	58.6%	57.3%	57.4%	57.4%	57.8%	57.7%	58.6%	57.5%	56.4%
Cecil	63.3%	63.5%	63.4%	63.5%	63.5%	63.8%	62.7%	62.7%	62.2%	62.8%	62.9%	63.7%	62.5%	62.3%
Charles (CSM)	58.2%	58.0%	75.0%	75.0%	75.0%	75.0%	75.0%	75.0%	75.0%	75.0%	75.0%	75.0%	75.0%	75.0%
Chesapeake	75.0%	75.0%	75.0%	75.0%	75.0%	75.0%	75.0%	75.0%	75.0%	75.0%	75.0%	75.0%	75.0%	75.0%
Frederick	58.0%	57.6%	57.5%	57.5%	57.0%	57.2%	56.1%	56.1%	56.7%	56.3%	56.8%	57.3%	56.5%	56.2%
Garrett	**63.7%**	**62.9%**	**62.1%**	**61.2%**	**60.6%**	**59.8%**	**57.2%**	**55.3%**	**54.0%**	**53.6%**	**52.0%**	**52.0%**	**50.3%**	**50.0%**
Hagerstown	61.9%	61.0%	60.6%	59.5%	59.2%	58.9%	58.9%	58.5%	60.8%	61.7%	62.9%	63.7%	63.3%	63.1%
Harford	60.4%	59.9%	59.4%	59.1%	58.7%	58.6%	58.0%	57.7%	58.2%	58.9%	58.8%	59.9%	58.9%	58.0%
Howard	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Montgomery	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Prince George's	58.0%	59.5%	60.2%	61.3%	62.2%	63.0%	62.3%	62.9%	63.3%	63.2%	63.0%	63.0%	60.9%	58.2%
St. Mary's	61.6%	61.1%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Wor-Wic	75.0%	75.0%	75.0%	75.0%	75.0%	75.0%	75.0%	75.0%	75.0%	75.0%	75.0%	75.0%	75.0%	75.0%

* Source: MSDE State Aid Calculation Report. MSDE's Report is the base for capital improvement projects budgeted two years beyond the report year…(e.g., MSDE FY11 Report = MHEC FY13 CIP CC Capital Projects)

Taking into account that the United States economy has been in its worst recession since the Great Depression, many local and state governments have experienced significant decreases in revenue. Garrett County's local government has been impacted by the recent recession; therefore, the College recognizes that it is highly likely that the County will not have the available resources to fully match 50% of the local share in the College's capital improvement projects. Accordingly, the College plans to embark on a fundraising campaign through the help of the Garrett College Foundation to cover minor shortfalls in local funding.

As seen in the below table, the College's overall strategy to fund its capital improvement projects is to first seek an affidavit of support from the Garrett County Commissioners in FY2013 (July). Major renovations will not begin until FY2015 in order to allow time to obtain the necessary local funding from the County. In summary, the College plans to obtain $15.5 million in local funding (i.e., from the County or private donations or a combination) to complete its capital improvement plan. The funding timeframe also takes into account growing local support for programs such as STEM. Additionally, the timeframe will provide the College time to construct temporary surge space in the gymnasium for renovations.

Local Funding Plan	Fiscal Year	Estimated Project Cost ($000's)	State Share ($000's)	Local Share ($000's)
Building 200 STEM	**15**	**6,092**	**3,046**	**3,046**
Building 600 Shaw Learning Center	**16**	**6,789**	**3,395**	**3,395**
Building 400 Student Center	**18**	**4,055**	**2,027**	**2,027**
Building 700 Administration and Student Services	**17**	**4,445**	**2,222**	**2,222**
Building 800 Performing Arts and Conference Center	**19**	**8,450**	**4,225**	**4,225**
Seek Affidavit of Support for GC Government	**12**	**-**	**-**	**-**
Baseball Field Relocation	**13**	**629**	**-**	**314**
Parking Lot Expansions	**14**	**540**	**-**	**270**

E. Consistency with Maryland Smart Growth

The College's capital improvement plan has taken into account the four goals of Maryland Smart Growth as follows:

1. Smart Growth Goal: Support existing communities by targeting resources to support development in areas where infrastructure exists.

   GC's Capital Improvement Plan Response: Maintain a sustainable approach to campus development by renovating existing infrastructure.

2. Smart Growth Goal: Save our most valuable natural resources before they are forever lost.
   GC's Capital Improvement Plan Response: The plan has identified several buildings that lack modern energy efficiency and plans to eliminate those inefficiencies through renovations.

3. Save taxpayers from the high cost of building infrastructure to serve development that has spread far from our traditional population centers.

   GC's Capital Improvement Plan Response: As stated before the College is located in the center of the County which provides residents with similar travel times to campus. The plan does not call for any construction outside of the already established campus.

4. Smart Growth Goal: Provide Marylanders with a high quality of life, whether they choose to live in a rural community, suburb, small town, or city.

   GC's Capital Improvement Plan Response: Renovations of the buildings in the plan will provide the students and the community with a modern sustainable college campus. Moreover, upon completion the main campus will be completely updated with the exception of one building (Building 300 IT).

VI.10-year Facilities Master Plan

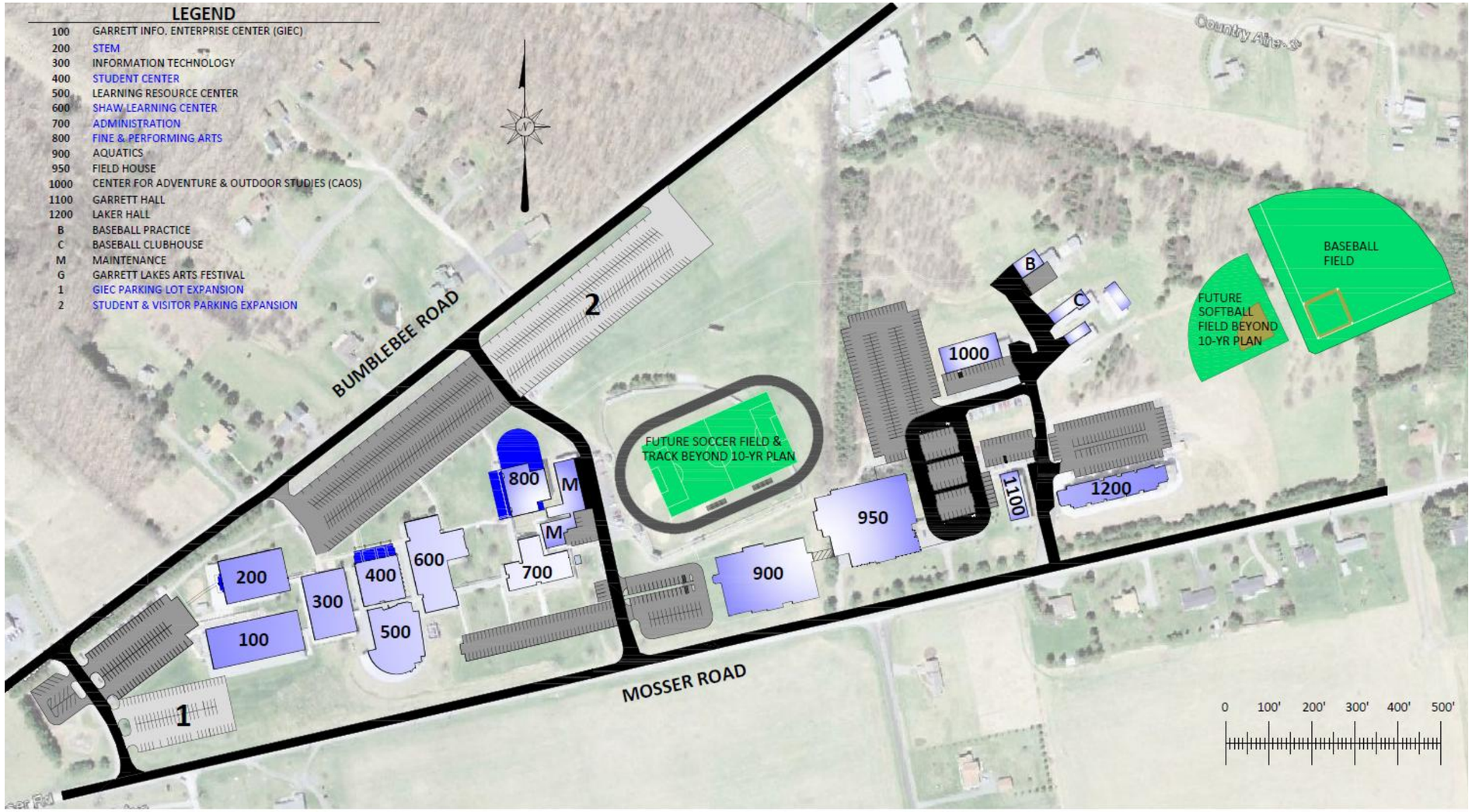
A. Proposal

B. Prioritization of Proposals

C. Implementation of Plan

A. Proposal

To achieve the mission and vision of Garrett College during the next 10 years the College will embark on a capital improvement plan that mainly consists of renovating existing infrastructure. As seen below by the completion of the plan, the College will have expanded parking by roughly 381 spaces, relocating the baseball field and providing a future site for a soccer field & track as well as reserving a future site for a softball field, and renovated Buildings 200, 400, 600, 700, and 800. In addition to renovating Buildings 200, 700, and 800, the buildings will be reprogrammed to better suit the College's mission and vision.



GARRETT COLLEGE

10-Yr Proposed Capital Improvement Plan

B. Prioritization of proposals

Short Range Priorities

1. Relocate the Baseball Field for the following reasons:
    - Eliminates balls from hitting campus buildings.
    - Eliminates GC liability from balls hitting privately owned vehicles and people, i.e., vehicles may park in Laker Hall parking lot which will provide a safe distance from the new location.
    - Centralizes baseball activities, i.e., the Baseball Clubhouse and Baseball Practice building are near the new location.
    - Provide a site for a soccer field & track as well as identify a site for a softball field.
    - Funding timeframe as outlined in the Section V.
    - Management of the project can be completed in-house.

2. Expand parking for the following reasons:
    - In preparation for increased enrollment over the next 10 years as well as increased public usage of renovated facilities, i.e., Building 800 Performing Arts and Conference Center
    - To alleviate parking current parking issues on campus
    - Funding timeframe as outlined in the Section V.
    - Management of the project can be completed in-house.

Mid Range Priorities

3. Renovate Building 200 for STEM programming for the following reasons:
    - Assist in achieving the following goals as outlined in the College's Academic Plan:
        - Enhance the quality of the teaching and learning environment.
        - Develop instructional programs that define Garrett College as one of the region's premier institutions for post-secondary education.
        - Better serve the student body.
        - Improve access and support a more diverse campus community.
    - Mitigate building deficiencies outlined in Grimm & Parker's assessment
    - Allow time for the College to obtain local funding as outlined in Section V.
    - Provide adequate lab space.

4. Renovate Building 600 Shaw Learning Center for the following reasons:
    - Assist in achieving the following goals as outlined in the College's Academic Plan:
        - Enhance the quality of the teaching and learning environment.
        - Develop instructional programs that define Garrett College as one of the region's premier institutions for post-secondary education.
        - Better serve the student body.
        - Improve access and support a more diverse campus community.
    - Mitigate building deficiencies outlined in Grimm & Parker's assessment
    - Allow time for the College to obtain local funding as outlined in Section V.
    - Provide modern classrooms and faculty offices.

5. Renovate Building 400 Student Center

- Assist in achieving the following goals as outlined in the College's Academic Plan:
  - Better serve the student body.
  - Improve access and support a more diverse campus community.
- Address significant food facility space deficits
- Mitigate building deficiencies outlined in Grimm & Parker's assessment
- Allow time for the College to obtain local funding as outlined in Section V.

Long Range Priorities

6. Renovate Building 700 to house Administrative offices and Student Services for the following reasons:

- Assist in achieving the following goals as outlined in the College's Academic Plan:
  - Better serve the student body.
  - Improve access and support a more diverse campus community.
- Address significant office space deficits
- Centralize College Administration and student service functions
- Mitigate building deficiencies outlined in Grimm & Parker's assessment

Allow time for the College to obtain local funding as outlined in Section V.

7. Renovate Building 800 Athletic Center for a Performing Arts and Conference Center

- Assist in achieving the following goals as outlined in the College's Academic Plan:
  - Enhance the quality of the teaching and learning environment.
  - Develop instructional programs that define Garrett College as one of the region's premier institutions for post-secondary education.
  - Better serve the student body.
  - Improve access and support a more diverse campus community.
- Mitigate building deficiencies outlined in Grimm & Parker's assessment
- Allow time for the College to obtain local funding as outlined in Section V.
- Address significant auditorium space deficits
- Provide a facility in the County to promote the performing arts.

Prioritization of the projects is shown in the following table:

Project Priority		**Fiscal Year**
1	**Building 200 STEM**	15
2	**Building 600 Shaw Learning Center**	17
3	**Building 400 Student Center**	21
4	**Building 700 Administration and Student Services**	19
5	**Building 800 Performing Arts and Conference Center**	22
6	**Baseball Field Relocation**	13
7	**Parking Lot Expansions**	14

C. Implementation of plan

Summary of Individual Projects

Baseball Field Relocation

The Baseball field will be relocated to the area shown on the previous 10-yr Proposed Capital Improvement Plan. It will include a modern playing field, dugouts, grandstand, bleachers, fencing, lights, and an ADA accessible walkway. Parking will be provided in Laker Hall's parking lot. Planning began in the summer of 2011 with the model as shown below as well as obtaining a quote from an area contractor for the cost of the project. The project is proposed for the summer of FY2013 and will likely be phased into FY2014 or FY20 15. Cost projections are summarized in a table at the end of this section.

<u>Building 200 STEM Renovation</u>

Building 200 will be renovated and programmed for Science, Technology, Engineering, & Math (STEM) curriculums. Expansion of STEM programs has been identified in the College's Academic Plan as a top priority for the institution. This will also address the need identified in the College's Academic Plan for upgraded science labs/classrooms. Moreover, it will allow the College to further develop the engineering, robotics, technology certifications, etc. programs. From a facilities perspective, renovation of the building will allow for more efficient use of energy, manpower, etc.

Furthermore, renovating the building for science labs will help to alleviate or possibly eliminate the College's lab space deficit.

Building 600 Shaw Learning Center Renovation

Building 600 will be renovated and remain as the primary academic building. Since the science labs will be relocated to Building 200, space will be available for new faculty offices which in turn will make space available for classrooms and open labs (i.e., the temporary faculty offices in the building can be used for classroom space).

Building 400 Student Center Renovation

Building 400 will be renovated to include a modern food facility. Current departments that are located in the building (e.g., Financial Aid, Enrollment, Admissions) will be relocated to Building 700 to free up space in the Student Center. The plan includes an addition to the north end of the building to provide more space for a dining hall, because the current dining hall seats roughly 80 students and does not efficiently serve the student population, i.e., students routinely do not have a place to sit for lunch.

Building 700 Administration and Student Services Renovation

Building 700 will be renovated for offices. The building will serve as the primary center for College Administration and Student Services. The art, theatre, and music departments will be relocated to Building 800. By reconfiguring the building it appears that much of the College's office space deficits will be addressed. Moreover, renovating the building will support the goal of making the campus more friendly and accessible to students and the public as identified in the College's Academic Plan.

Building 800 Athletic Center/Gymnasium Renovation

The College plans to renovate Building 800 to include a performing arts and conference center, Continuing Education offices, and a multipurpose meeting/conference room. As per Grimm & Parkers facility assessment, the building is suitable for such a renovation due to its original structural design (i.e., steel framed construction). Moreover, the renovation will address the College's auditorium space deficit. Likewise the Performing Arts Center and conference center will benefit the community; in that Garrett County does not have a community center for the performing arts.

Implementation Strategy and Project Costs

As seen in the next table, the College's implementation strategy will consist of completing the Baseball Field Relocation and replacing it with a girl's softball field and also Parking Lot Expansions in FY's 2013-2015. No State funding will be required for this project. The College plans to begin submitting Part #1 & #2 Programs to MHEC by FY2014 for the Building 200 STEM Renovation and each year thereafter submit the corresponding programs in order to maintain the implementation strategy shown below. FY2015 will mark the beginning of an aggressive sequence of renovations and will conclude in FY2021 with FF&E for Building 800 Performing Arts and Conference Center. Overall the ten year capital improvement expenditures are projected to cost $31 million dollars. FY 2013 expenditures are expected to be $324 k for design and initial construction of the Baseball Relocation and $304 k for construction completion of the Baseball Field Relocation. During FY2014 expenditures are estimated to be $38 k for the Parking Lot Expansion's A&E. FY2015 expenditures are expected to be $929k for construction of the parking lots and A&E for the Building 200 STEM Renovation. FY2016 will mark the beginning of the much needed and anticipated construction renovation of Building 200 STEM renovation and the design of Building 600 Shaw Learning Center's renovation for an estimated total of $5.837 million. In FY2017 the College will be

closing out the Building 200 STEM Renovations, beginning the construction renovation of Building 600 as well as the design of Building 700's renovation with total expenditures estimated at $6.59 million. FY 2018 will mark the closeout of Building 600's renovation, construction renovation of Building 700, and design of Building 400's renovation with total expenditures estimated at $4.535 million. FY2019 will include the closeout of Building 700's renovation, construction renovation of Building 400, and design of the Performing Arts Center in Building 800 with total expenditures of roughly $4.382 million. FY2020 will mark the peak of expenditures with an estimated cost of $7.638 million and includes closeout of Building 400's renovation and construction of the long awaited Performing Arts and Conference Center. In FY 2021 expenditures will drop drastically to $422k with the closeout of the Building 800 renovation.

Implementation Strategy ($000's)											
Project	**FY12**	**FY13**	**FY14**	**FY15**	**FY16**	**FY17**	**FY18**	**FY19**	**FY20**	**FY21**	**Totals**
Building 200 STEM				426	5,361	305					6,092
Building 600 Shaw Learning Center					475	5,974	339				6,789
Building 400 Student Center							284	3,568	203		4,055
Building 700 Administration and Student Services						311	3,911	222			4,445
Building 800 Performing Arts and Conference Center								591	7,436	422	8,450
Baseball Field Relocation	324	304									629
Parking Lot Expansions			38	502							540
Totals	324	304	38	929	5,837	6,590	4,535	4,382	7,638	422	30,999

Architecture & Engineering
Construction
Furniture, Fixtures & Equipment

VII. Attachments.

A. Garrett College Academic Plan Summary

B. Organizational Charts

C. Academic Programs

D. Grimm & Parker Architects Facility Assessment

Academic Plan Summary

Garrett College has established six Institutional Goals that it considers fundamental and indeed critical to the accomplishment of its Mission and Vision: ***Accessibility, Student Satisfaction and Success, Educational Effectiveness, Workforce Development, Community Service,*** **and** ***Effective Use of Financial, Human, and Physical Resources.*** The five strategies and associated initiatives outlined here link to and directly support one or more of these mission-critical goals. The process that lead to the creation of these strategies and initiatives was informed and guided by analysis of an extensive volume of information and data that have been gathered from a wide array of sources, both internal and external to the College, including meetings with the Garrett County Commissioners, representatives from the Garrett County Schools and Board of Education, and a number of community focus groups.

Enhance the Quality of the Teaching and Learning Environment

Garrett College's Mission is diverse, but it is first and foremost an institution where teaching and learning is to take place. Thus, the quality of the teaching and learning environment goes to the very heart and essence of the institution. It is therefore crucial that the College strive to continually improve the quality of the instruction it provides and the programs it delivers. It must also work to create a physical environment that supports and is conducive to the learning process. The following initiatives are designed to improve and enhance the quality of the teaching and learning environment.

- Improve and sustain instructional quality. Examples include:
    - Ensuring that the number and quality of full-time faculty is adequate to meet enrollment demand.
    - Implementing an ongoing faculty development program, including establishment of a Teaching and Learning Center devoted to providing training in a variety of topics of interest to faculty, including the use of instructional technology.
    - Sustaining a student learning outcomes assessment program that regularly assesses student learning at all levels (i.e., course, program, and institutional)
    - Upgrading instructional facilities, and science laboratories in particular, bringing them up to current standards.

- Create and maintain appropriate environments that promote learning. Examples include:
    - Holding ourselves accountable for meeting professional standards.
    - Refurbishing classrooms to make them more attractive and functional.
    - Upgrading instructional equipment and replacing existing classroom furnishings with furniture that is attractive, comfortable, and functional.

- Initiate a process of continuous program improvement with respect to the College's existing programs. Potential examples include:
    - Reviewing and revising curricula.
    - Ensuring that the curricula for career programs is current with industry standards.

- Ensuring that the facilities and equipment used by career programs are adequate and up to date with respect to industry standards. Examples include:
  - An indoor climbing wall for the Adventure Sports Management Program.
  - Global Positioning System (GPS) and other field equipment for the Natural Resources and Wildlife Technology Program.
- Identifying applicable industry-recognized certifications and ensuring that students are adequately prepared to pass the tests to receive these certifications.
- Identifying appropriate performance indicators and establishing peer and aspirational benchmarks as appropriate.

Develop Instructional Programs that Define Garrett College as One of the Region's Premier Institutions for Postsecondary Education and Lifelong Learning

Part of Garrett College's Vision is to be "… recognized as a small college that offers excellent academic programs that prepare our students for further study or entry into careers", and to be "… known for signature programs offering curricula ranging from those focusing on the acquisition of advanced technical skills to the wise management of the area's natural resources." Moreover, given the County's aging population and a concomitant decline in the number of high school age students in particular, the College is likely to become increasingly dependent on attracting out-of-county and out-of-state students in order to grow enrollment and possibly even to maintain it at current levels. If this is the case, the College will need more programs that have the ability to attract these students, either because of their quality or because of their relative uniqueness or a combination of the two. At the same time, the College desires to have at least a few programs, such as engineering, that are capable of attracting more talented and better prepared students who can provide some balance to the increasingly large numbers of students who are under-prepared and who struggle academically.

The College also desires to distinguish itself through newly developed non-credit courses and programs that provide opportunities for lifelong learning as well as workforce development. The following initiatives involve development of new programs for which there is either a demonstrated need or for which the College is uniquely equipped to deliver, in large part because of its location and the surrounding natural environment.

- Improve and expand the College's programs that involve science, technology, engineering, and mathematics (STEM), as well as training leading to the acquisition of advanced technical skills and training directed toward the application of new and emerging technologies which in turn may lead to the formation of new businesses. Potential examples include:
  - A.S. degree program in Mechanical Engineering Technology
  - A.A.S. degree program in Cyber-security
  - A.A.S. degree program in Robotics
  - A.A.S. degree program in generic Technical Skills
  - Non-credit STEM entrepreneurship training program

- Create new programs and other educational opportunities such as corporate training, summer camps, and experiential learning that are set in the context of the region's (County's) natural

environment and complement its tourism/adventure sports industry, that take advantage of the synergies between existing programs such as Adventure Sports Management and Natural Resources and Wildlife Technology, and that have the potential to promote economic development and attract more students, especially those coming from outside the local area. Potential examples include:

- Eco-tourism concentration offered jointly by the ASI and NRWT programs
- Event management and tourism/hospitality concentrations linked to the A.A.S. degree program in Business Management
- Leadership development component as developed by ASI integrated into other degree programs (e.g., Business Management, General Studies
- Corporate training, summer camps, experiential learning opportunities

Better Serve the Student Body

The ultimate measure of an institution's effectiveness with respect to carrying out its educational mission is the success of its students. Student success is usually considered to be graduation (i.e., completion). However, in some cases, it may consist in a successful transfer to another institution either prior to or after graduation. However, a number of processes, programs, and support services are needed in order for students to be successful, particularly the growing number of students who are considered at-risk. The initiatives that follow are aimed at improving and/or expanding the support services that the College needs to provide in order to ensure that a greater number of students succeed in completing their programs of study or are otherwise successful in achieving their educational goals.

- Develop and implement strategies specifically aimed at increasing the number of students who successfully complete their programs of study (graduate) or who successfully transfer to other postsecondary institutions either before or after graduation, depending on their particular educational goals.

- Develop and implement an academic advising program that, taking into account students' educational and career goals, moves them from initial registration (course selection) through graduation as efficiently as possible (including any developmental studies that may be required), provides guidance to undecided students to help them establish more specific educational and career goals as early as possible, and facilitates transfer for students wishing to pursue further education at another college or university.

- Improve and expand the full range of academic and other student support services to match enrollment demand, giving particular attention to the provision of the support services needed by under-prepared and other at-risk students (such as those who are in academic difficulty), as well as students with special needs.

- Formulate and implement a comprehensive enrollment management plan that establishes targets for enrollment growth and retention goals that are sustainable and in balance with the College's available resources with respect to instruction and student support services.

- Pursue and establish relationships with other postsecondary institutions to facilitate transfer and articulation, broaden educational opportunities both locally and remotely, and open up opportunities for mutually beneficial cooperation.

Improve Access and Support a More Diverse Campus Community.

Despite its rural and relatively isolated location, coupled with the fact that Garrett County's population is 98% white, Garrett College's 17.5% minority student population represents a significant achievement with respect to creating a more racially or ethnically diverse campus community. However, as was pointed out earlier, Garrett College is different from most community colleges in that a large majority of its students are traditional age and they attend full-time. Enrollment of part-time and adult students has continued to decline as a proportion of the College's overall student population. The County's adult population in particular is not being well served. Apart from online course offerings (which also need to be increased), relatively few credit courses are being offered at times or locations that are convenient for adult students. At the same time, while the Garrett County Scholarship Program and other forms of aid are providing opportunities for greater numbers of local students to access higher education, the number of incoming students who are academically underprepared for college-level work is steadily increasing. For fall 2011, about 84% of the entering Garrett County students tested into one or more developmental courses. Experience has shown that students needing developmental work are much more likely to fail with respect to successfully completion of their academic programs.

- Actively collaborate with the Garrett County Schools to assist in helping students prepare for and transition to postsecondary education and to access a broader spectrum of educational opportunities, including dual-enrollment, receipt of articulated and/or transcripted credit, etc.

- Improve access by ensuring that course schedules and the locations where courses are offered are responsive to the needs of part-time and adult students, and by increasing the number of Distance Learning courses and programs the College offers.

Help Build Garrett County's Future

Workforce Development is one of the College's principal activities, as is indicated in its Mission Statement. It involves both the credit and non-credit divisions of the institution and is therefore a key component of the College's current Strategic Plan, as well as this Academic Plan. It is also a key component of Garrett County's recently approved Economic Development Strategic Plan. Using the Career Technology Training Center (CTTC) as a centralized hub for workforce development, providing training to encourage growth and expansion of local businesses, and preparing an exemplary workforce that will attract new businesses continue to be driving forces. The County's stagnant population growth, and declining public school enrollment, further illustrates the necessity of retaining our existing workforce and developing new strategies for growth. Through innovative partnerships, the development of responsive curricula to address employer needs, and the provision of leadership on County-wide initiatives, Garrett College can make a positive impact on the economic health and growth of Garrett County. The initiatives that follow address training needs for business leaders and entrepreneurs as well as short-term job training programs leading to licensure and/or certification.

- Develop training opportunities which support economic development through the creation of new businesses providing jobs to County residents, the development of existing businesses

which are poised for expansion and growth, and the preparation of a competitive workforce. Potential examples include:

- Leadership Academy
- Lean Efficiency
- Entrepreneurship
- Workforce Certification

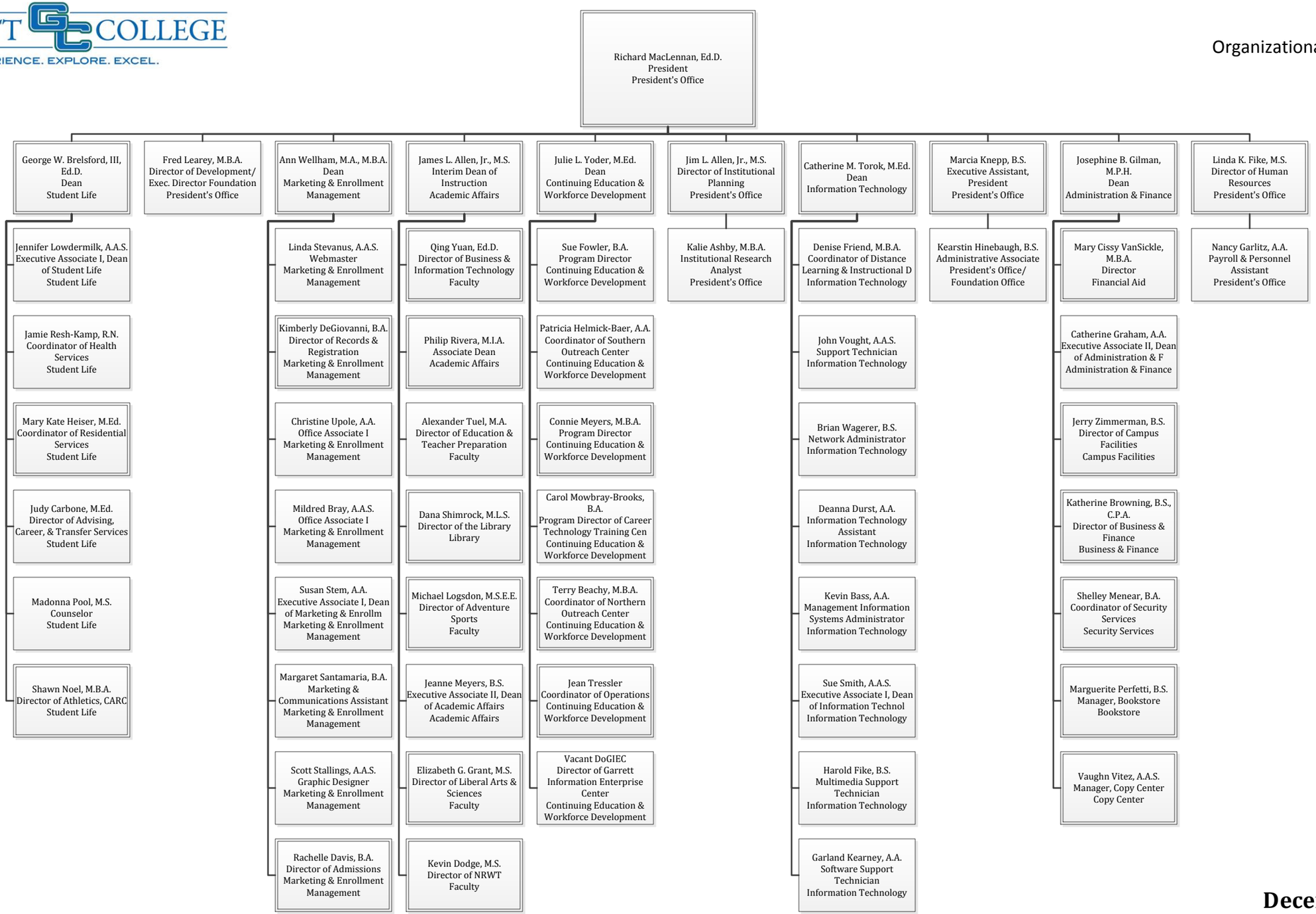
- Provide short-term training, predominantly leading to licensure and certification, to address ongoing local and regional employment needs (e.g. health care, construction, tourism and manufacturing), while responding to emerging and cyclical employment trends. Potential examples include:
    - Machine tool
    - Electrical
    - Plumbing
    - Phlebotomy
    - Natural Gas Drilling and Hydraulic Fracturing (Marcellus Shale)
    - Green Construction
    - Health Informatics (Electronic Health Records)

In order to successfully implement this ambitious agenda there are certain facilitating actions the College must also take:

- Develop a comprehensive enrollment management plan.
- Organize instructional resources (i.e., human, fiscal, physical) as needed to facilitate the implementation of the strategies and initiatives that are outlined in this Academic Plan.
- Identify the College's staffing needs with respect to faculty and professional and support staff, taking into account enrollment demand, attrition due to retirement, and giving particular attention to the desired balance between full- and part-time faculty, and then allocate the resources necessary to achieve the desired staffing levels.
- Eliminate barriers that exist between the Academic and the Continuing Education and Workforce Development divisions in order to make more effective use of our instructional resources and to be able to provide a fuller range of educational, training, and experiential learning programs and opportunities for both credit and non-credit students, including opportunities for "career laddering".
- Leverage external resources to facilitate program improvement and expansion. Potential examples include:
    - Adventure Sports Center International (ASCI)
    - Garrett Trails
    - WISP Resort
- Develop and submit to the Maryland Higher Education Commission (MHEC) 10-Year Facilities Master Plan which is designed to support the strategies and initiatives outlined in this Academic Plan.

GARRETT COLLEGE
EXPERIENCE. EXPLORE. EXCEL.

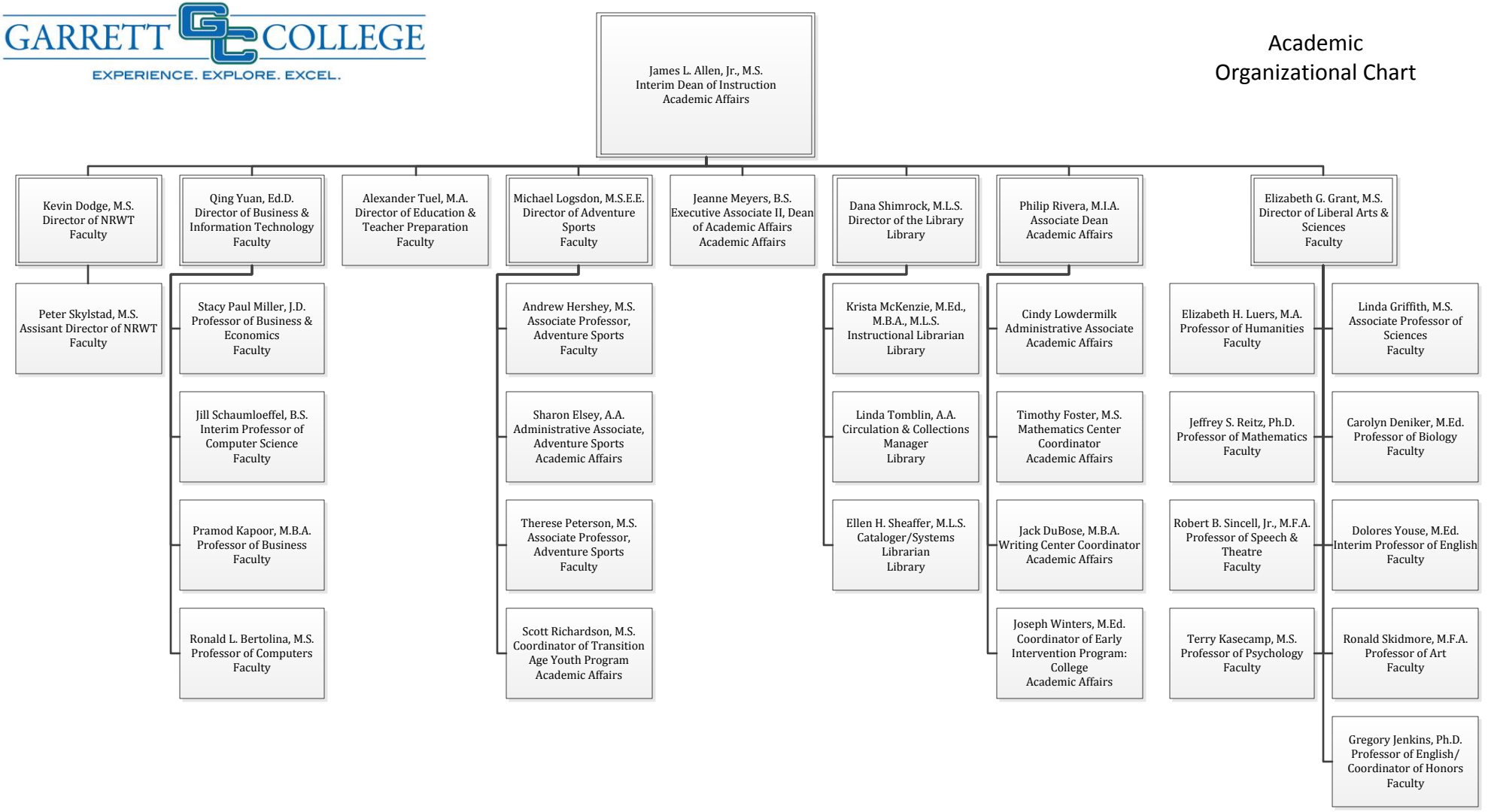
Organizational Chart



December 2011

GARRETT COLLEGE
EXPERIENCE. EXPLORE. EXCEL.

Academic Organizational Chart



December 2011

ACADEMIC PROGRAMS

ASSOCIATE IN ARTS DEGREE / TRANSFER PROGRAMS

These programs are designed for transfer to a four-year institution.

Arts and Sciences:
- *Fine and Performing Arts*
- *Liberal Arts*
- *Mathematics/Science*
- *Social and Behavioral Sciences*
  - *--Psychology (FSU Transfer)*
  - *--Social Work (FSU Transfer)*
- *Wildlife/Fisheries*

Business Administration
General Studies
Teacher Education:
- *Early Childhood Education*
- *Elementary Education*
- *Physical Education and Health*
  - *--Recreation*
  - *--Teaching and/or Coaching*
- *Secondary Education*

ASSOCIATE OF ARTS IN TEACHING DEGREE

These programs are designed for transfer to a four-year Maryland institution.

Teacher Education:
- *Early Childhood Ed/Early Childhood Special Ed*
- *Elementary Ed/Elementary Special Education*

ASSOCIATE OF SCIENCE IN ENGINEERING DEGREE

The ASE degree is designed for transfer into parallel four-year engineering programs in Maryland.

Electrical Engineering

ASSOCIATE IN APPLIED SCIENCE

These programs are designed for immediate entry into the workforce.

Adventure Sports Management
Business and Information Technologies:
- *Business Management*
- *Computer Applications for Business*

Computer and Information Technologies:
- *Graphic Web Design*
- *Network Administration*

Juvenile Justice
Natural Resources and Wildlife Technology

CERTIFICATE PROGRAMS

These programs provide job entry skills and knowledge.

Adventure Sports Management Certificate
Arts and Sciences:
- *Social Services Certificate*

Business and Information Technologies:
- *Business Management Certificate*
- *Computer Applications for Business*

Computer and Information Technologies:
- *Computer Repair/Network Technician*
- *Cyber Security*
- *Graphic Web Design*
- *Network Administration Certificate*

NON-DEGREE TRANSFER PROGRAMS

These programs require transfer for completion.

Culinary Arts
Allied Health Services:
- *Pre-Dental Hygiene*
- *Pre-Human Services Associate*
- *Pre-Medical Assistant*
- *Pre-Medical Lab Technician*
- *Pre-Nursing (ACM)*
- *Pre-Nursing (Davis & Elkins)*
- *Pre-Occupational Therapy Assistant*
- *Pre-Physical Therapy Assistant*
- *Pre-Radiology Technology*
- *Pre-Respiratory Therapy*

ADVENTURE SPORTS MANAGEMENT DIVISION

The Adventure Sports Management program, the first of its kind in the nation, was developed and officially announced to the public at the 1992 United States Whitewater Olympic Team Trials, organized and conducted by Garrett College and held on the nearby Savage River. Efforts to institutionalize adventure education at the collegiate level extends back to the mid-1980's when western Maryland's Garrett and Allegany counties hosted the 1989 Whitewater World Championships. At that time, it was realized that because of its distinctive four-season climate, diverse geographical and geological features, and ease of access to a majority of eastern United States population, western Maryland's Garrett College was a perfect location for such an academic program.

The mission of the Adventure Sports Management program is to develop leaders and professionals in adventure sports and outdoor recreation industries who have a strong sense of environmental stewardship and community service. In an effort to meet its mission, the program has developed a broad set of programmatic outcomes that addresses these main points: the gaining of information literacy; improved communication skills, both verbally and written; the demonstration of an understanding of environmental and earth sciences as they relate to the recreation profession; the modeling of technical proficiencies required for success in the Adventure Sports industry; the understanding of diverse teaching and learning styles; the application of effective leadership skills; and the management of risks.

The Adventure Sports Management program awards the Associates in Applied Science (AAS) degree, and many of its graduates transfer to four-year colleges and universities across the US. In addition, Garrett College awards a Certificate in Adventure Sports for those individuals seeking training specifically in adventure sports coursework. Beyond the awarding of accredited college degrees and certificates, the Adventure Sports Management program makes available independent third-party certifications from many nationally/internationally recognized organizations including the American Association of Snowboard Instructors (AASI), the American Canoe Association (ACA), the American Mountain Guide Association (AMGA), Leave-No-Trace (LNT), the National Association for Search and Rescue (NASAR), the Professional Association of Diving Instructors (PADI), the Professional Ski Instructors of America (PSIA), and the US Department of Transportation sanctioned Wilderness First Responder (WFR) advanced first aid certification.

A question often asked is, "What does an Adventure Sports graduate do?" Besides successfully transfer to other colleges and universities, here is a partial list of job titles earned by recent program graduates: Director, Wisp Ski School; Director, Outdoor Recreation Program, Franklin Pierce College; Director, West Virginia University's Adventure West Virginia New Student Wilderness Orientation program; Wilderness (Therapeutic) Instructor, Alldredge Academy; Challenge Course Facilitator, Mammoth Ski Area (CA); Chief Guide, Seneca Rocks Mountain Guides (WV); Course Instructor, North Carolina Outward Bound; Youth Activity Coordinator, Cruise Lines; Outdoor Instructor/Programmer, Harford County (MD) Department of Parks and Recreation; Administrative Assistant, Adventure Sports Center International; and Maryland DNR Park Ranger, Point Lookout State Park.

For more information, check out the website of the program's closely associated Adventuresports® Institute at www.adventuresportsi.org, email us at adventuresports@garrettcollege.edu, or call the office at 301-387-3330.

ADVENTURE SPORTS MANAGEMENT -- ASSOCIATE IN APPLIED SCIENCE DEGREE

GC CURRICULUM CODE: 207

GER REQUIRED CREDITS: 22

English Composition
- ENG101 Comp I--Expos Writing 3

Arts and Humanities
- SPC101 Intro to Communication 3
- HUM210 Society & the Environment 3

Social and Behavioral Sciences
- GER Soc & Behavioral Science Course 3

Science
- ESC121 Physical Geography
  - or PHY130 Physical Science
  - or BIO104 Prin. of Biology..... 4

Mathematics
- MAT105 College Algebra
  - or MAT210 Statistics 3

Interdisciplinary/Emerging Issues
- CIS105 Intro to Computers 3

INSTITUTIONAL REQUIREMENTS:.....2

- ASI Skills Course 2
- Approved Identity & Difference Course 0

MAJOR COURSES: 32

- ASI110 Back Country Living..... 3
- ASI Basic Skills Courses 2
- ASI Intermediate Skills Courses 3
- ASI Instructor Level Course..... 1
- ASI Rescue Skills Course..... 1
- ASI101 Intro ASI, Park, Recreation..... 3
- ASI164 Adv. Level First Aid & CPR..... 3
- ASI170 Guiding & Instructing Adv Sports..... 3
- ASI200 ASI Program Mgmt. 3
- ASI201 Leadership/Grp Dynamics 3
- ASI206 Practicum Preparation..... 1
- ASI207 Practicum (90 hours) 1
- Colloquia..... 1
- BIO110 Natural History..... 4

ELECTIVES: 9

Choose any 9 (or more) credits, in consultation with your academic advisor, that form a cluster of courses that assists you in meeting your career goals. Please see suggested elective tracks.

TOTAL CREDIT HOURS REQUIRED: 65

GER Courses must be on the Approved General Education Course list.

I&D Course must be on the Identity and Difference Course list. Course used to fulfill another requirement may be reused here. Min. C- grade required.

RECOMMENDED SEQUENCE

FALL
- ENG101 Comp I--Expos Writing.....3
- ASI Skills Classes.....3
- ASI101 Intro ASI, Park, Recreation.....3
- ASI104 Colloquium I 0.25
- ASI110 Back Country Living 3
- BIO110 Natural History..... 4

TOTAL.....16.25

INTERSESSION
- ASI164 Adv. Level First Aid & CPR.....3

SPRING
- CIS105 Introduction to Computers.....3
- HUM210 Society & the Environment 3
- ASI Rescue Skills Course.....1
- ASI Instructor Level Course.....1
- ASI Supporting Course Work 5
- ASI105 Colloquium II 0.25
- ASI206 Practicum Preparation..... 1

TOTAL.....14.25

FALL
- SPC101 Intro to Communication 3
- GER Social & Behavioral Science 3
- MAT105 or MAT210 3
- ASI Skills Course.....1
- ASI Supporting Course Work 4
- ASI201 Leadership/Group Dynamics 3
- ASI204 Colloquium III 0.25

TOTAL.....17.25

SPRING
- GER Science 4
- ASI Skills Classes.....2
- ASI Supporting Course Work 4
- ASI200 ASI Program Management 3
- ASI205 Colloquium IV 0.25
- ASI207 Practicum 1

TOTAL.....14.25

ADVENTURE SPORTS SUGGESTED TRACKS

Business/Retail Track

Designed for the student interested in pursuing adventure sports in an administrative capacity, opening a small business, and/or working in the retail industry. Select 9 or more of the following credits:

BUS101 Introduction to Business 3
ACC210 Financial Accounting 3
ACC213 Managerial Accounting 3
BUS170 Introduction to Management
or BUS201 Principles of Marketing 3

Competitive Athlete/Coaching Track

Designed for the student interested in pursuing adventure sports in the role of a competitive athlete or coach. Select 9 or more of the following credits:

PED117 Personalized Health & Fitness 2
PED118 Weight Training 1
BIO200 Anatomy & Physiology 4
PED119 Aerobic Exercise 1
PED250 Care & Prevention of Athletic Injuries 3
PED291A Training for the Competitive Athlete 2

Education/Instruction Track

Designed for the student interested in pursuing adventure sports as an instructor in the field, or educator in a school system. Select 9 or more of the following credits:

PSY101 General Psychology 3
PSY102 Human Growth/Development 3
EDU201 Foundations of Education 3
PSY211 Educational Psychology 3

Environmental Track

Designed for the student interested in pursuing adventure sports in ecotourism or as a naturalist. Students completing this track may request a waiver of BIO110 Natural History. Select 9 or more of the following credits:

ESC121 Physical Geography 4
BIO120 Dendrology 3
NRW180 Herbaceous Plant Identification 2
NRW181 Wildlife Biology 3
BIO150 General Ecology 3
NRW283 Fisheries Biology and Management 3
NRW105 Environmental Science 2

Multi-Media/Art Track

Designed for the student interested in portraying adventure sports through digital media and/or creative art. Select 9 or more of the following credits:

ART101 Basic Design I 3
ART102 Basic Design II 3
ART201 Drawing I 3
ART207 Ceramics I 3
ART208 Printmaking 3
CIS201 Web Design 3
CIS150 Desktop Publishing 3
CIS151 Image Editing/Photoshop 3
CIS200 Animation 3

Therapeutic Recreation Track

Designed for the student interested in utilizing adventure sports to aid people with illness or physical/mental disabilities. Select 9 or more of the following credits:

ASI109 Therapeutic Recreation in AVS 3
EDU210 Intro to the Exceptional Individual 3
PSY101 General Psychology 3
PSY102 Human Growth/Development
or PSY221 Adolescent Psychology 3

ADVENTURE SPORTS MANAGEMENT -- CERTIFICATE

GC CURRICULUM CODE: 116

REQUIRED COURSE WORK: 29.5

ASI101 Intro to ASI, Park, Recreation 3
ASI110 Back Country Living 3
ASI164 Adv. Level First Aid & CPR 3
ASI170 Guiding & Instructing AdvSprts 3
ASI200 ASI Program Mgmt. 3
ASI201 Leadership/Group Dynamics 3
ASI206 Practicum Preparation 1
ASI104 Colloquia 0.25
ASI105 Colloquia 0.25
ASI Basic Skills Courses 2
ASI Intermediate Skills Courses 3
ASI Instructor Level Skills Course 1
ASI Rescue Skills Course 1
ASI109 Intro Therapeutic Recreation
or BUS101 Intro to Business 3

TOTAL CREDIT HOURS REQUIRED: 29.5

RECOMMENDED SEQUENCE

FALL

ASI Skills Courses 3
ASI Rescue Skills Course 1
ASI101 Intro ASI, Park, Recreation 3
ASI104 Colloquium I 0.25
ASI110 Back Country Living Skills 3
ASI201 Leadership/Group Dynamics 3
ASI206 Practicum Preparation 1
TOTAL 14.25

INTERSESSION

ASI164 Adv. Level First Aid & CPR 3

SPRING

ASI105 Colloquium II 0.25
ASI170 Guiding & Instructing AdvSprts 3
ASI200 ASI Program Mgmt. 3
ASI109 Intro Therapeutic Recreation
or BUS101 Intro to Business 3
ASI Skills Course 2
ASI Instructor Level Course 1
TOTAL 12.25

Students receiving the Adventure Sports Certificate must demonstrate mathematics competency equivalent to MAT098 Intermediate Algebra, through placement or completion of the course.

Students receiving the Adventure Sports Certificate must demonstrate English competency equivalent to ENG101/103 preparedness through placement testing or completion of the course.

ARTS & SCIENCES DIVISION

The Arts and Sciences cover a broad range of subjects and disciplines. Students enrolled in the Arts and Sciences programs select a major program to graduate with an A.A. Degree or option in preparation for transfer to a four-year college or university. The focus of this academic major may be as diversified as fine and performing arts, social and behavioral sciences, liberal arts, or mathematics/sciences. Academic advisors will assist students in appropriate course selection and guide them in reviewing transfer requirements to four-year institutions.

FINE AND PERFORMING ARTS -- ASSOCIATE IN ARTS DEGREE

GC CURRICULUM CODE: 300

GER REQUIRED CREDITS:.....32

English Composition
ENG101 Comp I--Expos Writing 3
Arts and Humanities
SPC101 Intro to Communication..... 3
GER Literature Course..... 3
GER Humanities Course 3
Social and Behavioral Sciences
Two GER Soc & Behavioral Sciences courses from two different disciplines..... 6
Science
Two GER Science Courses *(not BIO104)* (at least one must be a lab course)..... 8
Mathematics
MAT105 College Algebra or MAT210 Introductory Statistics 3
Interdisciplinary/Emerging Issues
CIS105 Intro to Computers 3

INSTITUTIONAL REQUIREMENTS:.....2

PED, HEA, or ASI Course(s)..... 2
Approved Identity & Difference Course 0

ELECTIVES 9

Choose courses after consultation with advisor.

MAJOR COURSES: 21

Complete 21 hours in either the Fine Arts, Acting/Directing, or Design/Technical track.

FINE ARTS TRACK:
ART101 Basic Design I..... 3
ART102 Basic Design II..... 3
ART103 Art Appreciation 3
ART201 Drawing I 3
Intro Studio Focus ART206, 207, or 208 3
Adv Studio Focus ART246, 247, or 248 3
THE104 or THE204 3

ACTING/DIRECTING TRACK:
ART103 Art Appreciation 3
THE101 Intro to the Theatre..... 3
THE104 or 106 3
THE105 Fundamentals of Acting I..... 3
THE107 Fundamentals of Acting II..... 3
THE204 Introduction to Stage Design..... 3
THE210 or 3 cr. from THE211-214 3

DESIGN/TECHNICAL TRACK:
ART101 or 201 3
ART103 Art Appreciation 3
THE101 Intro to the Theatre.....3
THE104 Fund. Tech. Theatre: Stagecraft 3
THE105 Fundamentals of Acting I 3
THE106 Theatre – Costume/Light/Sound.....3
THE204 Introduction to Stage Design.....3

TOTAL CREDIT HOURS REQUIRED: 64

GER Courses must be on the Approved General Education Course list.

I&D Course must be on the Identity and Difference Course list. Course used to fulfill another requirement may be reused here. Min. C- grade required.

RECOMMENDED SEQUENCE

FALL

ENG101 Comp I--Expos Writing.....3
GER Science 4
GER Social & Behavioral Science 3
Major Coursework 6
TOTAL 16

SPRING

SPC101 Intro to Communication 3
MAT105 College Algebra 3
CIS105 Intro to Computers 3
PED, HEA or ASI 1
Major Coursework 6
TOTAL 16

FALL

GER Science 4
GER Social & Behavioral Science 3
Major Coursework 6
Electives 3
TOTAL 16

SPRING

GER Literature 3
GER Humanities.....3
PED, HEA or ASI 1
Major Courses 3
Electives 6
TOTAL.....16

LIBERAL ARTS OPTION -- ASSOCIATE IN ARTS DEGREE

GC CURRICULUM CODE: 330

GER REQUIRED CREDITS:.....31

English Composition
ENG101 Comp I--Expos Writing 3
Arts and Humanities
SPC101 Intro to Communication..... 3
ENG102 Intro to Literature 3
GER Humanities Course
ENG251, ENG252, PHL101, or PHL110 3
Social and Behavioral Sciences
Two GER Soc & Behavioral Sciences Courses from two different disciplines 6
Science
Two GER Science Courses *(not BIO104)* (at least one must be a Lab course) 7
Mathematics
GER Math Course 3
Interdisciplinary/Emerging Issues
CIS105 Intro to Computers 3

INSTITUTIONAL REQUIREMENTS:.....2

PED, HEA, or ASI Course(s)..... 2
Approved Identity & Difference Course 0

MAJOR COURSES: 12

ENG104 Arg. & Persuasive Writing 3
HIS101 Western Civilization to 1500
or HIS111 American History to 1865..... 3
HIS102 Western Civilization 1500-Present
or HIS112 American History since 1865..... 3
Foreign Language..... 3

FINE ARTS COURSEWORK: 6

Two courses from two different disciplines
ART103, MUS110, MUS115, or THE101 6

ELECTIVES 13
Choose courses after consultation with advisor.

TOTAL CREDIT HOURS REQUIRED: 64

GER Courses must be on the Approved General Education Course list.

I&D Course must be on the Identity and Difference Course list. Course used to fulfill another requirement may be reused here. Min. C- grade required.

RECOMMENDED SEQUENCE

FALL

ENG101 Comp I--Expos Writing..... 3
GER Social & Behavioral Science 3
GER Humanities 3
GER Mathematics 3
PED, HEA or ASI 1
Major or Fine Arts Course 3
TOTAL 16

SPRING

ENG102 Intro to Literature 3
GER Science 4
Major and/or Fine Arts Courses 6
Electives 3
TOTAL 16

FALL

CIS105 Intro to Computers 3
SPC101 Intro to Communication 3
Major or Fine Arts Course 3
Electives 7
TOTAL 16

SPRING

GER Social & Behavioral Science 3
GER Science 3/4
PED, HEA or ASI 1
Major and/or Fine Arts Courses 6
Electives 2/3
TOTAL 16

Students interested in majoring in English or Journalism should follow the Liberal Arts transfer curriculum.

MATHEMATICS / SCIENCES OPTION -- ASSOCIATE IN ARTS DEGREE

GC CURRICULUM CODE: 320

GER REQUIRED CREDITS:.....32

English Composition
ENG101 Comp I--Expos Writing 3
Arts and Humanities
SPC101 Intro to Communication..... 3
GER Literature Course..... 3
GER Humanities Course 3
Social and Behavioral Sciences
Two GER Soc & Behavioral Sciences Courses
from two different disciplines..... 6
Science
One two-semester GER Science Sequence
from the following selection..... 8
BIO101 & BIO102 General Biology
or CHE101 & CHE102 General Chemistry
or PHY101 & PHY102 General Physics
or PHY111 & PHY112 Gen Physics (Calc)
Mathematics
MAT190 Calculus
or MAT210 Introductory Statistics 3
Interdisciplinary/Emerging Issues
CIS105 Intro to Computers 3

INSTITUTIONAL REQUIREMENTS:.....2

PED, HEA, or ASI Course(s)..... 2
Approved Identity & Difference Course 0

MAJOR COURSES: 19

Select FOUR courses from the following:
BIO101*, BIO102, BIO141, BIO200, BIO201, CHE101,
CHE102, ESC101, ESC121, MAT110, MAT190, MAT191,
MAT192, PHY101* and/or PHY102 16
Select ONE additional course (101 or above) in
(BIO*, CHE, ESC, and/or PHY*)..... 3
*If BIO101 taken, cannot take BIO104;
if PHY101/111 taken, cannot take PHY130.

ELECTIVES 11
Choose courses after consultation with advisor.

TOTAL CREDIT HOURS REQUIRED: 64

GER Courses must be on the Approved General Education Course list.

RECOMMENDED SEQUENCE

FALL

ENG101 Comp I--Expos Writing 3
GER Social & Behavioral Science 3
GER Mathematics 3
PED, HEA or ASI..... 1
Major Course 4
TOTAL 14

SPRING

SPC101 Intro to Communication 3
GER Literature..... 3
GER Science 4
Major Course 4
Elective 3
TOTAL 17

FALL

GER Humanities 3
CIS105 Intro to Computers 3
Major Course 4
Electives 6
TOTAL 16

SPRING

GER Social & Behavioral Science 3
GER Science 4
PED, HEA or ASI..... 1
Major Courses 7
Electives 2
TOTAL 17

I&D Course must be on the Identity and Difference Course list. Course used to fulfill another requirement may be reused here. Min. C- grade required.

Students interested in majoring in Biology, Chemistry, Physics, or Mathematics should follow the Mathematics/Science transfer curriculum.

SOCIAL AND BEHAVIORAL SCIENCES -- ASSOCIATE IN ARTS DEGREE

GC CURRICULUM CODE: 310

GER REQUIRED CREDITS:.....31

English Composition
- ENG101 Comp I--Expos Writing 3

Arts and Humanities
- SPC101 Intro to Communication..... 3
- GER Literature Course..... 3
- GER Humanities Course 3

Social and Behavioral Sciences
- Two GER Soc & Behavioral Sciences Courses from two different disciplines..... 6

Science
- Two GER Science Courses *(not BIO104)* (at least one must be a Lab course) 7

Mathematics
- GER Math Course..... 3

Interdisciplinary/Emerging Issues
- CIS105 Intro to Computers 3

INSTITUTIONAL REQUIREMENTS:.....2

- PED, HEA, or ASI Course(s)..... 2
- Approved Identity & Difference Course 0

MAJOR COURSES: 18

Select SIX courses in at least two of the following areas: ECN, GEO, HIS, PSY, SOC

ELECTIVES 13

Choose courses after consultation with advisor.

TOTAL CREDIT HOURS REQUIRED: 64

GER Courses must be on the Approved General Education Course list.

I&D Course must be on the Identity and Difference Course list. Course used to fulfill another requirement may be reused here. Min. C- grade required.

RECOMMENDED SEQUENCE

FALL

ENG101 Comp I--Expos Writing	3
GER Social & Behavioral Science	3
GER Humanities	3
GER Science	4
Elective	3
TOTAL	16

SPRING

GER Literature	3
GER Social & Behavioral Science	3
GER Mathematics	3
PED, HEA or ASI	1
Major Courses	6
TOTAL	16

FALL

SPC101 Intro to Communication	3
PED, HEA or ASI	1
Major Courses	6
Electives	6
TOTAL	16

SPRING

CIS105 Intro to Computers	3
GER Science	3/4
Major Courses	6
Electives	3/4
TOTAL	16

SOCIAL AND BEHAVIORAL SCIENCES – PSYCHOLOGY (FSU ARTICULATION) -- ASSOCIATE IN ARTS DEGREE

GC CURRICULUM CODE: 311

GER REQUIRED CREDITS:.....35

English Composition
ENG101 Comp I--Expos Writing 3
Arts and Humanities
SPC101 Intro to Communication..... 3
ENG102 Comp II-Intro to Literature..... 3
FSU GER Humanities Course
(HIS, LIT, PHL, or Languages) 3
FSU GER Fine Arts Course
(ART, MUS, or THE) 3
Social and Behavioral Sciences
Two GER Soc & Behavioral Sciences Courses from two different disciplines (Not HIS) 6
Science
BIO109 Human Biology & the Env 4
One GER Science Course *(not BIO104)*..... 4
Mathematics
MAT105 College Algebra
or MAT210 Introductory Statistics 3
Interdisciplinary/Emerging Issues
CIS105 Intro to Computers 3

INSTITUTIONAL REQUIREMENTS:.....2

PED, HEA, or ASI Course(s)..... 2
Approved Identity & Difference Course 0

PSYCHOLOGY COURSES: 9

PSY101 General Psychology..... 3
PSY230 Psychology of Adjustment 3
PSY240 Intro to Abnormal Psychology..... 3

PSYCHOLOGY ELECTIVES: 6

PSY102 Human Growth & Development 3
PSY140 Psychology of Women 3
PSY220 Child Psychology 3
PSY221 Adolescent Psychology..... 3
PSY235 Forensic Psychology 3
(at least one course should be a developmental psychology course - PSY102, 220, or 221)

ELECTIVES 12

Any ECN, GEO, HIS, POL, PSY, SOC, or SST 3
Electives (consult with advisor) 9

TOTAL CREDIT HOURS REQUIRED: 64

GER Courses must be on the Approved General Education Course list.

I&D Course must be on the Identity and Difference Course list. Course used to fulfill another requirement may be reused here. Min. C- grade required.

RECOMMENDED SEQUENCE

FALL

ENG101 Comp I--Expos Writing.....3
SPC101 Intro to Communication 3
GER Science 4
CIS105 Into to Computers 3
PSY101 General Psychology..... 3
TOTAL 16

SPRING

ENG102 Comp II-Intro to Literature 3
GER Mathematics 3
GER Social & Behavioral Science 3
PED, HEA or ASI 1
PSYCHOLOGY ELECTIVES..... 6
TOTAL 16

FALL

GER Humanities 3
PSY230 Psychology of Adjustment 3
PSY240 Intro to Abnormal Psych 3
PED, HEA or ASI 1
Electives..... 6
TOTAL 16

SPRING

GER Fine Arts 3
GER Social & Behavioral Science 3
GER Science 4
Electives 6
TOTAL 16

SOCIAL AND BEHAVIORAL SCIENCES - SOCIAL WORK (FSU ARTICULATION) -- ASSOCIATE IN ARTS DEGREE

GC CURRICULUM CODE: 312

GER REQUIRED CREDITS:.....35

English Composition
- ENG101 Comp I--Expos Writing 3

Arts and Humanities
- SPC101 Intro to Communication..... 3
- ENG102 Comp II-Intro to Literature..... 3
- FSU GER Humanities Course (HIS, LIT, PHL, or Languages) 3
- FSU GER Fine Arts Course (ART, MUS, or THE) 3

Social and Behavioral Sciences
- Two GER Soc & Behavioral Sciences Courses from two different disciplines (Not HIS) 6

Science
- BIO109 Human Biology & the Env 4
- One GER Science Course *(not BIO104)*..... 4

Mathematics
- MAT210 Introductory Statistics 3

Interdisciplinary/Emerging Issues
- CIS105 Intro to Computers 3

INSTITUTIONAL REQUIREMENTS:.....2

- PED117 Personalized Health & Fitness..... 2
- Approved Identity & Difference Course 0

MAJOR COURSES: 12

- PSY101 General Psychology..... 3
- SOC101 Principles of Sociology..... 3
- SOC201 The Family 3
- SOC211 Social Problems 3

ELECTIVES 15

- Two courses from ECN, GEO, HIS, POL, PSY, SOC, or SST 6
- Electives (consult with advisor) 9

TOTAL CREDIT HOURS REQUIRED: 64

GER Courses must be on the Approved General Education Course list.

I&D Course must be on the Identity and Difference Course list. Course used to fulfill another requirement may be reused here. Min. C- grade required.

RECOMMENDED SEQUENCE

FALL

ENG101 Comp I--Expos Writing	3
BIO104 Principles of Biology	4
GER Social & Behavioral Science	3
GER Humanities	3
CIS105 Intro to Computers	3
TOTAL	16

SPRING

ENG102 Comp II-Intro to Literature	3
Major Courses	6
MAT210 Introductory Statistics	3
GER Social & Behavioral Science	3
TOTAL	15

FALL

SPC101 Intro to Communication	3
GER Social & Behavioral Science	3
GER Fine Arts	3
Major Courses	3
Electives	3
PED117 Personalized Health & Fitness	2
TOTAL	17

SPRING

GER Science	4
Major Courses	6
Electives	6
TOTAL	16

SOCIAL SERVICES CERTIFICATE

GC CURRICULUM CODE: 140

REQUIRED COURSE WORK: 27

ENG101 English Comp I—Exp. Writing 3
PSY101 General Psychology 3
PSY102 Human Growth & Development 3
PSY230 Psychology of Adjustment 3
PSY240 Intro to Abnormal Psychology 3
SOC101 Principles of Sociology 3
SOC201 The Family 3
SPC101 Intro to Communication 3
PSY/SOC Elective 3

WILDLIFE / FISHERIES OPTION -- ASSOCIATE IN ARTS DEGREE

GC CURRICULUM CODE: 340

GER REQUIRED CREDITS:.....35

English Composition
- ENG101 Comp I--Expos Writing 3

Arts and Humanities
- SPC101 Intro to Communication..... 3
- ENG102 Comp II-Intro to Literature..... 3
- GER Humanities Course (HIS, LIT, PHL, or Languages) 3
- GER Fine Arts Course (ART, MUS, or THE) 3

Social and Behavioral Sciences
- Two GER Soc & Behavioral Sciences Courses from two different disciplines (Not HIS)..... 6

Science
- CHE101 General Chemistry I 4
- ESC121 Physical Geography..... 4

Mathematics
- MAT210 Intro to Statistics 3

Interdisciplinary/Emerging Issues
- CIS105 Intro to Computers 3

INSTITUTIONAL REQUIREMENTS:.....2

- PED, HEA, or ASI Course(s)..... 2
- Approved Identity & Difference Course 0

MAJOR COURSES: 26

- BIO101 General Biology I..... 4
- BIO102 General Biology II 4
- BIO150 General Ecology 3
- BIO120 Dendrology..... 3
- BIO210 Plant Systematics 4
- CHE102 General Chemistry II 4
- MAT190 Calculus I 4

ELECTIVES: 1

Check with advisor about transferability.

TOTAL CREDIT HOURS REQUIRED: 64

GER Courses must be on the Approved General Education Course list.

I&D Course must be on the Identity and Difference Course list. Course used to fulfill another requirement may be reused here. Min. C- grade required.

RECOMMENDED SEQUENCE

FALL

- ENG101 Comp I--Expos Writing 3
- GER Social & Behavioral Science 3
- CIS105 Intro to Computers 3
- BIO101 General Biology I 4
- BIO120 Dendrology..... 3

TOTAL 16

SPRING

- ENG102 Comp II-Intro to Literature 3
- GER Fine Arts 3
- ESC121 Physical Geography 4
- PED, HEA or ASI..... 1
- BIO102 General Biology II 4
- Elective 1

TOTAL 16

FALL

- CHE101 General Chemistry I 4
- BIO150 General Ecology 3
- BIO210 Plant Systematics 4
- MAT190 Calculus I 4

TOTAL 15

SPRING

- SPC101 Intro to Communication 3
- GER Humanities 3
- GER Social & Behavioral Science 3
- PED, HEA or ASI..... 1
- CHE102 General Chemistry II 4
- MAT210 Intro Statistics 3

TOTAL 17

This transfer program is articulated with the Wildlife & Fisheries Program at Frostburg State University.

BUSINESS & INFORMATION TECHNOLOGY DIVISION

Business and Information Technologies offer programs designed to prepare students for the business careers of today and the future. The programs can accommodate a wide variety of interests--accounting, management, marketing, sales, advertising, economics, public relations, banking and investing, to name a few. There are many employment opportunities for business majors, including small businesses, corporations, banks, or entrepreneurial enterprises.

BUSINESS ADMINISTRATION -- ASSOCIATE IN ARTS DEGREE

GC CURRICULUM CODE: 350

GER REQUIRED CREDITS:.....31

English Composition
- ENG101 Comp I--Expos Writing 3

Arts and Humanities
- SPC101 Intro to Communication..... 3
- GER Literature Course..... 3
- GER Humanities Course 3

Social and Behavioral Sciences
- PSY101 General Psychology 3
- GER Soc & Behavioral Sciences Course..... 3

Science
- Two GER Science Courses (at least one must be a lab course)..... 7

Mathematics
- MAT105 College Algebra or MAT210 Introductory Statistics 3

Interdisciplinary/Emerging Issues
- CIS105 Intro to Computers 3

INSTITUTIONAL REQUIREMENTS:.....2

- PED, HEA, or ASI Course(s)..... 2
- Approved Identity & Difference Course 0

MAJOR COURSES: 24

- ACC210 Financial Accounting..... 3
- ACC213 Managerial Accounting..... 3
- BUS101 Intro to Business..... 3
- BUS170 Intro to Management 3
- BUS201 Prin of Marketing..... 3
- BUS203 Business Law..... 3
- ECN201 Economics I (Macro)..... 3
- ECN202 Economics II (Micro)..... 3

ELECTIVES: 7

Check with Advisor about transferability.

TOTAL CREDIT HOURS REQUIRED: 64

GER Courses must be on the Approved General Education Course list.

I&D Course must be on the Identity and Difference Course list. Course used to fulfill another requirement may be reused here. Min. C- grade required.

RECOMMENDED SEQUENCE

FALL

- ENG101 Comp I--Expos Writ.....3
- CIS105 Intro to Computers 3
- BUS101 Intro to Business 3
- ACC210 Financial Accounting 3
- MAT105 College Algebra or Elective 3
- TOTAL 15

SPRING

- GER Literature Course 3
- GER Science Course 4
- ACC213 Managerial Accounting 3
- BUS170 Intro to Management.....3
- SPC101 Intro to Communication 3
- TOTAL 16

FALL

- BUS201 Prin of Marketing 3
- BUS203 Business Law 3
- ECN201 Economics I (Macro) 3
- Electives.....3
- PSY101 General Psychology.....3
- PED, HEA or ASI Course 1
- TOTAL 16

SPRING

- GER Social and Behavioral Science 3
- ECN202 Economics II (Micro) 3
- GER Humanities Course.....3
- GER Science Course 3
- Electives.....4
- PED, HEA or ASI Course 1
- TOTAL 17

BUSINESS ADMINISTRATION (FSU ARTICULATION) -- ASSOCIATE IN ARTS DEGREE

GC CURRICULUM CODE: 351

GER REQUIRED CREDITS:.....35

English Composition
- ENG101 Comp I--Expos Writing 3

Arts and Humanities
- SPC101 Intro to Communication..... 3
- ENG102 Comp II-Intro to Literature..... 3
- FSU GER Humanities Course (HIS, LIT, PHL, or Languages) 3
- FSU GER Fine Arts Course (ART, MUS, or THE) 3

Social and Behavioral Sciences
- Two GER Soc & Behavioral Sciences Courses from two different disciplines (Not HIS)..... 6

Science
- Two GER Science Courses 8

Mathematics
- MAT105 College Algebra or MAT210 Introductory Statistics 3

Interdisciplinary/Emerging Issues
- CIS105 Intro to Computers 3

INSTITUTIONAL REQUIREMENTS:.....2

- PED, HEA, or ASI Course(s)..... 2
- Approved Identity & Difference Course 0

MAJOR COURSES: 24

- ACC210 Financial Accounting..... 3
- ACC213 Managerial Accounting..... 3
- BUS101 Intro to Business..... 3
- BUS170 Intro to Management 3
- BUS201 Prin of Marketing..... 3
- BUS203 Business Law..... 3
- ECN201 Economics I (Macro)..... 3
- ECN202 Economics II (Micro)..... 3

ELECTIVES: 3

Check with Advisor about transferability.

TOTAL CREDIT HOURS REQUIRED: 64

GER Courses must be on the Approved General Education Course list.

I&D Course must be on the Identity and Difference Course list. Course used to fulfill another requirement may be reused here. Min. C- grade required.

RECOMMENDED SEQUENCE

FALL

- ENG101 Comp I--Expos Writing.....3
- MAT105 or MAT210 3
- CIS105 Intro to Computers 3
- BUS101 Intro to Business 3
- ACC210 Financial Accounting 3

TOTAL 15

SPRING

- ENG102 Comp II-Intro to Literature 3
- SPC101 Intro to Communication 3
- GER Science Course 4
- ACC213 Managerial Accounting 3
- BUS170 Intro to Management..... 3

TOTAL 16

FALL

- GER Fine Arts 3
- PED, HEA or ASI Course 1
- BUS201 Prin of Marketing 3
- BUS203 Business Law 3
- ECN201 Economics I (Macro) 3
- Electives..... 3

TOTAL 16

SPRING

- GER Humanities Course.....3
- GER Social & Behavioral Science 6
- GER Science Course 4
- PED, HEA or ASI Course 1
- ECN202 Economics II (Micro) 3

TOTAL 17

BUSINESS MANAGEMENT -- ASSOCIATE IN APPLIED SCIENCES DEGREE

GC CURRICULUM CODE: 201

GER REQUIRED CREDITS:.....22

English Composition
- ENG101 Comp I--Expos Writing 3

Arts and Humanities
- SPC101 Intro to Communication..... 3
- GER Humanities Course 3

Social and Behavioral Sciences
- GER Soc & Behavioral Science Course 3

Science
- GER Science Lab Course..... 4

Mathematics
- MAT105 College Algebra..... 3

Interdisciplinary/Emerging Issues
- CIS105 Intro to Computers 3

INSTITUTIONAL REQUIREMENTS:.....2

- PED, HEA, or ASI Course(s)..... 2
- Approved Identity & Difference Course 0

MAJOR COURSES: 30

- ACC210 Financial Accounting 3
- ACC213 Managerial Accounting 3
- BUS101 Intro to Business..... 3
- BUS170 Intro to Management..... 3
- BUS201 Principles of Marketing 3
- BUS203 Business Law 3
- BUS285 Business Development Project..... 3
- BUS294 Field Experience in Bus. Mgmt. 3
- ECN104 Introduction to Economics..... 3
- Any ACC, BUS, ECN, or CIS Course 3

ELECTIVES: 10

Choose courses after consultation with advisor.

TOTAL CREDIT HOURS REQUIRED: 64

GER Courses must be on the Approved General Education Course list.

I&D Course must be on the Identity and Difference Course list. Course used to fulfill another requirement may be reused here. Min. C- grade required.

RECOMMENDED SEQUENCE

FALL

- ENG101 Comp I--Expos Writ.....3
- CIS105 Intro to Computers 3
- BUS101 Intro to Business 3
- ACC210 Financial Accounting 3
- MAT105 College Algebra 3
- PED, HEA or ASI Course 1

TOTAL 16

SPRING

- SPC101 Intro to Communication 3
- ECN104 Introduction to Economics.....3
- BUS170 Introduction to Management 3
- GER Arts and Humanities Course 3
- ACC213 Managerial Accounting 3
- Elective 1

TOTAL 16

FALL

- GER Social and Behavioral Science 3
- BUS201 Principles of Marketing 3
- BUS203 Business Law 3
- Electives.....6
- PED, HEA, or ASI Course 1

TOTAL 16

SPRING

- GER Science Course 4
- BUS285 Business Development Project 3
- BUS294 Field Experience in Bus. Mgmt. 3
- Electives..... 6

TOTAL 16

BUSINESS MANAGEMENT -- CERTIFICATE

GC CURRICULUM CODE: 101

REQUIRED COURSE WORK: 21

ACC210 Financial Accounting 3
ACC213 Managerial Accounting 3
BUS101 Intro to Business 3
BUS170 Intro to Management 3
BUS203 Business Law 3
CIS105 Intro to Computers 3

BUSINESS & INFO TECHNOLOGY ELECTIVES 6

Any ACC, BUS, ECN, or CIS courses 6

TOTAL CREDIT HOURS REQUIRED: 24

RECOMMENDED SEQUENCE

FALL

ACC210 Financial Accounting 3
BUS101 Intro to Business 3
BUS203 Business Law 3
BAIT Elective 3
TOTAL 12

SPRING

ACC213 Managerial Accounting 3
BUS170 Intro to Management.....3
CIS105 Introduction to Computers.....3
BAIT Elective 3
TOTAL 12

Students receiving the Business Management Certificate must demonstrate mathematics competency equivalent to MAT098 Intermediate Algebra and ENG101 through placement or completion of the course.

COMPUTER APPLICATIONS FOR BUSINESS OPTION -- ASSOCIATE IN APPLIED SCIENCES DEGREE

GC CURRICULUM CODE: 212

GER REQUIRED CREDITS:.....22

English Composition
ENG101 Comp I--Expos Writing 3
Arts and Humanities
SPC101 Intro to Communication..... 3
GER Humanities Course 3
Social and Behavioral Sciences
GER Soc & Behavioral Sciences Course..... 3
Science
GER Science Lab Course..... 4
Mathematics
MAT105 College Algebra..... 3
Interdisciplinary/Emerging Issues
CIS105 Intro to Computers 3

INSTITUTIONAL REQUIREMENTS:.....2

PED, HEA, or ASI Course(s)..... 2
Approved Identity & Difference Course 0

MAJOR COURSES: 36

ACC210 Financial Accounting 3
BUS101 Intro to Business..... 3
BUS294 Field Experience 3
CIS122 Spreadsheet Applications 3
CIS123 Database Applications 3
CIS121 Presentation Software Applications .. 3
CIS150 Desktop Publishing..... 3
CIS120 Word Processing Applications 3
CIS151 Image Editing 3
CIS200 Intro to Animation 3
CIS201 Web Page Design 3
Any ACC, BUS, ECN, or CIS Course 3

ELECTIVES: 4

Choose electives with advisor consultation.

TOTAL CREDIT HOURS REQUIRED: 64

GER Courses must be on the Approved General Education Course list.

I&D Course must be on the Identity and Difference Course list. Course used to fulfill another requirement may be reused here. Min. C- grade required.

RECOMMENDED SEQUENCE

FALL

ENG101 Comp I–Expos Writing 3
CIS105 Intro to Computers 3
BUS101 Intro to Business 3
CIS150 Desktop Publishing 3
CIS120 Word Processing Applications 3
PED, HEA or ASI Course 1
TOTAL 16

SPRING

SPC101 Intro to Communication 3
MAT105 College Algebra 3
CIS123 Database Applications 3
CIS151 Image Editing 3
GER Arts and Humanities Course 3
PED, HEA or ASI Course 1
TOTAL 16

FALL

ACC210 Financial Accounting 3
CIS200 Intro to Animation 3
CIS121 Presentation Software Applications ...3
GER Social & Behavioral Sciences Course.....3
Electives..... 4
TOTAL 16

SPRING

BUS294 Field Experience 3
GER Science Course 4
CIS201 Web Page Design 3
CIS122 Spreadsheet Applications 3
BAIT Elective 3
TOTAL 16

COMPUTER APPLICATIONS FOR BUSINESS -- CERTIFICATE

GC CURRICULUM CODE: 114

REQUIRED COURSEWORK: 27

CIS122 Spreadsheet Applications 3
CIS123 Database Applications 3
CIS121 Presentation Software Applications 3
CIS150 Desktop Publishing 3
CIS120 Word Processing Applications 3
CIS151 Image Editing 3
CIS200 Introduction to Animation 3
CIS201 Web Page Design 3
CIS105 Introduction to Computers 3

COMPUTER & INFORMATION TECHNOLOGY DIVISION

Computer and Information Technologies programs prepare students for technology-based careers. Students can earn national certifications as a Microsoft Certified Systems Engineer, an A+ Computer Repair Technician, or a Net+ Technician.

COMPUTER REPAIR/NETWORK TECHNICIAN -- CERTIFICATE

GC CURRICULUM CODE: 122

REQUIRED COURSEWORK: 18

CIS130 Programming Logic 3
CIS161 PC Maintenance & Repair 3
CIS163 Introduction to Cisco Networking 4
CIS164 Router Fundamentals 4
Electives (choose two courses from the following) 3
- CIS170 Computer Science Programming I 4
- CIS240 Linux+ 3
- CIS242 Infrastructure 3
- CIS243 Directory Services 3
- CIS244 Directory Services Design 3

CYBER SECURITY -- CERTIFICATE

GC CURRICULUM CODE: 125

REQUIRED COURSEWORK: 24

CIS130 Programming Logic 3
CIS160 Operating Systems 3
CIS220 Networking Fundamentals (Net+) 3
CIS230 Security+ 3
CIS231 Computer Forensics 3
CIS241 Managing Server 3
Electives (choose two courses from the following) 6-8
- CIS161 PC Maintenance & Repair 4
- CIS163 Intro to Cisco Networking 4
- CIS164 Router Fundamentals 4
- CIS170 Computer Science Programming I 4
- CIS240 Linux+ 3
- CIS242 Infrastructure 3
- CIS243 Directory Services 3
- CIS244 Directory Services Design 3

GRAPHIC WEB DESIGN -- ASSOCIATE IN APPLIED SCIENCES DEGREE

GC CURRICULUM CODE: 226

GER REQUIRED CREDITS:.....22

English Composition
ENG101 Comp I--Expos Writing 3
Arts and Humanities
SPC101 Intro to Communication..... 3
GER Humanities Course 3
Social and Behavioral Sciences
GER Soc & Behavioral Sciences Course..... 3
Science
GER Science Lab Course..... 4
Mathematics
MAT105 College Algebra..... 3
Interdisciplinary/Emerging Issues
CIS105 Intro to Computers 3

INSTITUTIONAL REQUIREMENTS:.....2

PED, HEA, or ASI Course(s)..... 2
Approved Identity & Difference Course 0

MAJOR COURSES: 33

ART101 Basic Design I..... 3
ART102 Basic Design II..... 3
ART201 Drawing I 3
BUS101 Intro to Business..... 3
BUS294 Field Experience 3
CIS123 Database Applications 3
CIS150 Desktop Publishing..... 3
CIS151 Image Editing 3
CIS200 Introduction to Animation 3
CIS201 Web Page Design. 3
Any ACC, BUS, ECN, or CIS Course 3

ELECTIVES: 7

Choose after consultation with advisor.

TOTAL CREDIT HOURS REQUIRED: 64

GER Courses must be on the Approved General Education Course list.

I&D Course must be on the Identity and Difference Course list. Course used to fulfill another requirement may be reused here. Min. C- grade required.

RECOMMENDED SEQUENCE

FALL

ART101 Basic Design I.....3
SPC101 Intro to Communication 3
CIS150 Desktop Publishing 3
CIS200 Animation 3
CIS105 Intro to Computers 3
PED, HEA or ASI Course 1
TOTAL 16

SPRING

ART102 Basic Design II.....3
ART201 Drawing I 3
CIS123 Database Applications 3
CIS151 Image Editing 3
CIS201 Web Page Design 3
PED, HEA or ASI Course 1
TOTAL 16

FALL

BUS101 Intro to Business 3
ENG101 Comp I–Expos Writing 3
GER Humanities Course.....3
GER Soc & Behavioral Sciences Course 3
MAT105 College Algebra 3
TOTAL 15

SPRING

BUS294 Field Experience 3
GER Science Course 4
BAIT Elective 3
Electives..... 7
TOTAL 17

GRAPHIC WEB DESIGN -- CERTIFICATE

GC CURRICULUM CODE: 126

REQUIRED COURSEWORK: 27

ART101 Basic Design I 3.0
ART102 Basic Design II 3.0
ART201 Drawing I 3.0
CIS123 Database Applications 3.0
CIS150 Desktop Publishing 3.0
CIS151 Image Editing 3.0
CIS200 Introduction to Animation 3.0
CIS201 Web Page Design 3.0
CIS105 Introduction to Computers 3.0

NETWORK ADMINISTRATION OPTION -- ASSOCIATE IN APPLIED SCIENCES DEGREE

GC CURRICULUM CODE: 221

GER REQUIRED CREDITS:.....22

English Composition
ENG101 Comp I--Expos Writing 3
Arts and Humanities
SPC101 Intro to Communication..... 3
GER Humanities Course 3
Social and Behavioral Sciences
GER Soc & Behavioral Sciences Course..... 3
Science
GER Science Lab Course 4
Mathematics
MAT105 College Algebra..... 3
Interdisciplinary/Emerging Issues
CIS105 Intro to Computers
or CIS130 Programming Logic 3

INSTITUTIONAL REQUIREMENTS:.....2

PED, HEA, or ASI Course(s)..... 2
Approved Identity & Difference Course 0

MAJOR COURSES: 32

CIS161 PC Maintenance & Repair 4
CIS160 Operating System..... 3
CIS163 Intro to Cisco Networking 4
CIS164 Router Fundamentals 4
CIS221 Advanced Routing & Switching..... 4
CIS222 WAN Technologies..... 4
CIS230 Security+ 3
CIS241 Managing Server 3
CIS242 Infrastructure..... 3

MAJOR ELECTIVES:.....9

Select THREE courses from the following:

CIS170 Computer Sci Programming I, 4 crs.
and/or CIS210 Computer Sci Programming II, 4 crs.
and/or CIS220 Network Fund. (Net+), 4 crs.
and/or CIS231 Computer Forensics, 3 credits
and/or CIS240 Linux+, 3 crs.
and/or CIS243 Directory Services, 3 crs.
and/or CIS244 Directory Services Design, 3 crs.

TOTAL CREDIT HOURS REQUIRED: 65

GER Courses must be on the Approved General Education Course list.

I&D Course must be on the Identity and Difference Course list. Course used to fulfill another requirement may be reused here. Min. C- grade required.

RECOMMENDED SEQUENCE

FALL

ENG101 Comp I–Expos Writing 3
SPC101 Intro to Communication 3
CIS105 or CIS130.....3
CIS161 PC Maintenance & Repair.....4
CIS163 Intro to Cisco Networking..... 4
TOTAL 17

SPRING

CIS160 Operating System 3
CIS164 Router Fundamentals 4
MAT105 College Algebra 3
GER Social Science 3
Elective 3
TOTAL 16

FALL

CIS221 Advanced Routing & Switching.....4
CIS230 Security+ 3
CIS241 Managing Server.....3
GER Humanities Course.....3
Elective 3
TOTAL 16

SPRING

GER Science Course 4
CIS222 WAN Technologies 4
CIS242 Infrastructure.....3
PED, HEA or ASI Course(s) 2
Electives..... 3
TOTAL 16

NETWORK ADMINISTRATION -- CERTIFICATE

GC CURRICULUM CODE: 121

REQUIRED COURSEWORK: 23

CIS160 Operating Systems 3
CIS163 Intro to Cisco Networking 4
CIS164 Router Fundamentals 4
CIS240 Linux+ 3
CIS241 Managing Server 3
CIS242 Infrastructure 3
Elective (choose one course from the following) 3-4
- CIS161 PC Maintenance & Repair 4
- CIS170 Computer Science Programming I 4
- CIS243 Directory Services 3
- CIS244 Directory Services Design 3

ENGINEERING DIVISION

The Associate of Science in Engineering (ASE) program is a two-year transfer program that prepares students who wish to pursue a bachelor's degree in electrical engineering or other engineering majors in the state of Maryland. The curriculum is built around a strong basic core of mathematics, the sciences including chemistry and physics, and computer technology. Students will gain knowledge of engineering theory through engineering courses and application of theory to real world problems. The program will provide students hands-on experience in the design, development, implementation, and management of projects and in the communication and presentation of their ideas and project plans.

Electrical Engineering A.S.E. Degree..... page 32

ELECTRICAL ENGINEERING -- ASSOCIATE OF SCIENCE IN ENGINEERING DEGREE

GC CURRICULUM CODE: 325

GER REQUIRED CREDITS:.....31

English Composition
- ENG101 Comp I--Expos Writing 3

Arts and Humanities
- SPC101 Intro to Communication..... 3
- GER Humanities Course 3

Social and Behavioral Sciences
- Two GER Soc & Behavioral Science Courses From two different disciplines 6

Science
- CHE101 General Chemistry I 4*
- CHE102 General Chemistry II 4*

Mathematics
- MAT190 Calculus I..... 4*

Interdisciplinary/Emerging Issues
- CIS170 Computer Science Programming I 4*

INSTITUTIONAL REQUIREMENTS:.....2

- PED, HEA, or ASI Course(s)..... 2
- Approved Identity & Difference Course 0

MAJOR COURSES: 35

- ENR100 Intro to Engineering Design..... 3*
- PHY111 Gen Physics I (Calc-based) 5*
- PHY112 Gen Physics II (Calc-based) 5*
- MAT191 Calculus II 4*
- MAT192 Calculus III 4*
- MAT250 Differential Equations 3*
- ENR210 Basic Circuit Theory..... 3*
- ENR211 Electrical & Digital Circuit Lab 2*
- ENR230 Sci & Engineering Computations.... 3*
- ENR240 Digital Logic Design 3*

TOTAL CREDIT HOURS REQUIRED: 68

GER Courses must be on the Approved General Education Course list.

I&D Course must be on the Identity and Difference Course list. Course used to fulfill another requirement may be reused here. Min. C- grade required.

ADDITIONAL GRADUATION REQUIREMENTS:

- ***Must achieve a grade of "C" or better in all computer science, engineering, mathematics, and natural/physical science courses.***

RECOMMENDED SEQUENCE

FALL

- ENG101 Comp I--Expos Writing.....3
- CHE101 General Chemistry 4
- ENR100 Intro to Engineering Design 3
- MAT190 Calculus 4
- SPC101 Intro to Communication 3

TOTAL 17

SPRING

- CHE102 General Chemistry II.....4
- PHY111 Gen Physics I (Calc-based).....5
- CIS170 Comp Science Programming I.....4
- MAT191 Calculus II 4

TOTAL 17

FALL

- GER Humanities Course 3
- PED, HEA, or ASI Course(s) 2
- PHY112 Gen Physics II (Calc-based).....5
- MAT192 Calculus III 4
- ENR210 Basic Circuit Theory..... 3

TOTAL 17

SPRING

- GER Social Science 3
- GER Social Science 3
- ENR211 Electrical & Digital Circuit Lab 2
- ENR230 Sci & Eng Computations.....3
- ENR240 Digital Logic Design 3
- MAT250 Differential Equations 3

TOTAL 17

This ASE program is designed for transfer to a four-year MARYLAND institution. Students wishing to transfer out-of-state should consult with the Director of Business and Information Technology or the Director of Advising, Career, & Transfer Services to develop an educational plan.

GENERAL STUDIES -- ASSOCIATE IN ARTS DEGREE

GC CURRICULUM CODE: 360, 361 FSU ARTICULATION, 359 ONLINE

GER REQUIRED CREDITS:.....31

English Composition
- ENG101 Comp I--Expos Writing 3

Arts and Humanities
- SPC101 Intro to Communication..... 3
- GER Literature Course[1]..... 3
- GER Humanities Course[2] 3

Social and Behavioral Sciences
- Choose TWO from two different areas:
- ECN, GEO, HIS[3], POL, PSY, SOC..... 6

Science
- Two GER Science Courses
- (at least one must be a Lab course) 7

Mathematics
- GER Math Course 3

Interdisciplinary/Emerging Issues
- CIS105 Intro to Computers 3

INSTITUTIONAL REQUIREMENTS:.....2

- PED, HEA, or ASI Course(s)..... 2
- Approved Identity & Difference Course 0

ELECTIVES: 31

Check with advisor about transferability.

TOTAL CREDIT HOURS REQUIRED: 64

GER Courses must be on the Approved General Education Course list.

I&D Course must be on the Identity and Difference Course list. Course used to fulfill another requirement may be reused here. Min. C- grade required.

RECOMMENDED SEQUENCE

FALL

ENG101 Comp I--Expos Writing	3
GER Math Course	3
GER Social Science	3
HUM Elective	3
Elective	3
PED, HEA or ASI	1
TOTAL	16

SPRING

GER Science	4
GER Literature	3
Electives	9
TOTAL	16

FALL

GER Social Science	3
SPC101 Intro to Communication	3
CIS105 Intro to Computers	3
Electives	7
TOTAL	16

SPRING

PED, HEA or ASI	1
GER Science	3/4
Electives	11/12
TOTAL	16

(1) ENG102 required for students transferring to Frostburg State University
(2) Students transferring to Frostburg State University are required to adhere to FSU's GER categories
(3) Frostburg State University does not include HIS in the Social Sciences area

JUVENILE JUSTICE DIVISION

The Juvenile Justice curriculum offers a degree program that prepares students to work with youth in a variety of settings including residential facilities, diversion programs, and community intervention programs.

Students gain an understanding of the dynamics and theories of juvenile delinquency and of the scope and range of interventions for delinquent and at-risk behaviors. Students study the unique features of the juvenile justice system, diversion and community justice, and interaction between delinquent youth and the myriad service providers and professionals associated with the juvenile and justice systems.

The program equips students with a solid practical skills set including conflict management, leadership, and experience in juvenile justice settings working with adjudicated youth. The Juvenile Justice A.A.S. degree prepares students for employment in juvenile services or to transfer to related justice studies beyond the Associate's degree.

Juvenile Justice A.A.S. Degree..... page 36

JUVENILE JUSTICE -- ASSOCIATE IN APPLIED SCIENCES DEGREE

GC CURRICULUM CODE: 230

GER REQUIRED CREDITS:.....22

English Composition
ENG101 Comp I--Expos Writing
or ENG103 Technical Writing 3
Arts and Humanities
SPC101 Intro to Communication..... 3
GER Humanities Course 3
Social and Behavioral Sciences
PSY101 General Psychology 3
Science
BIO109 Human Bio & the Environment 4
Mathematics
MAT105 or MAT210..... 3
Interdisciplinary/Emerging Issues
CIS105 Intro to Computers 3

INSTITUTIONAL REQUIREMENTS:.....2

PED, HEA, or ASI Course(s)..... 2
Approved Identity & Difference Course 0

MAJOR COURSES: 12

SOC120 The Juvenile Justice System 3
SOC160 Conflict Mgmt & Resolution 3
SOC240 Models of Juv Jus Intervention 3
PSY221 Adolescent Psychology 3

PRACTICAL EXPERIENCE: 3

SOC280 Practicum Experience
or SOC207 Face-to-Face: Exploring Issues .. 3

SUPPORTING COURSEWORK.....12

Select FOUR courses from the following:
SOC105 Intro to Law Enforcement, 3 cr.
and/or SOC110 Intro to Criminal Justice, 3 cr.
and/or SOC220 Juvenile Delinquency
and/or SOC231 Leadership Development, 3 cr.
and/or PED150 First Aid, 3 cr.
and/or PSY230 Psych of Adjustment, 3 cr.
and/or SOC201 The Family, 3 cr.
and/or SOC211 Social Problems, 3 cr.
and/or SOC215 Deviant Behavior, 3 cr.

ELECTIVES 13

TOTAL CREDIT HOURS REQUIRED: 64

GER Courses must be on the Approved General Education Course list.

I&D Course must be on the Identity and Difference Course list. Course used to fulfill another requirement may be reused here. Min. C- grade required.

RECOMMENDED SEQUENCE

FALL

ENG101 or ENG103	3
SPC101 Intro to Communications	3
SOC120 The Juvenile Justice System	3
Major Course	3
Elective	3
PED, HEA, or ASI	1
TOTAL	16

SPRING

CIS105 Intro to Computers	3
PSY101 General Psychology	3
Major Courses	3
SOC160 Conflict Mgmt & Resolution	3
BIO109 Human Bio & the Environment	4
TOTAL	16

FALL

MAT105 or MAT210	3
GER Humanities	3
SOC240 Models of Juv Jus Intervention	3
Major Required Courses	3
Elective	3
PED, HEA, or ASI Course	1
TOTAL	16

SPRING

SOC280 or SOC207	3
PSY221 Adolescent Psychology	3
Major Courses	3
Electives	7
TOTAL	16

NATURAL RESOURCES & WILDLIFE TECHNOLOGY DIVISION

The Natural Resources and Wildlife Technology program strives to graduate technicians who are well prepared for employment in the field of natural resources management and environmental protection, who understand and appreciate the interrelationships among all the components of the ecosystem, and who recognize the socioeconomic and political forces affecting resource management and environmental protection decisions. While taking a holistic approach to resource management, the program emphasizes wildlife, fisheries, and forest management, and soil and water conservation. Career opportunities for graduates include jobs in wildlife management, fisheries management, forest management, environmental consulting, ecological restoration, soil and water conservation, water quality monitoring, environmental inspection, nature interpretation and education, and parks and recreation.

Natural Resources & Wildlife Technology A.A.S. Degree ..... page 38

NATURAL RESOURCES & WILDLIFE TECHNOLOGY -- ASSOCIATE IN APPLIED SCIENCES DEGREE

GC CURRICULUM CODE: 203

GER REQUIRED CREDITS:.....21

English Composition
ENG101 Comp I--Expos Writing
or ENG103 Technical Writing..... 3**
Arts and Humanities
SPC101 Intro to Communication 3*
HUM210 Society & Environment 3*
Social and Behavioral Sciences
PSY101 General Psychology
or PSY150 Psychology of Human Relations
or SOC101 Principles of Sociology 3*
Science
BIO104 Principles of Biology
or BIO101 General Biology I/Lab
or BIO102 General Biology II/Lab..... 4*
Mathematics
GER MAT Course..... 3*
Interdisciplinary/Emerging Issues
CSC180 Intro to GIS 2*

INSTITUTIONAL REQUIREMENTS:.....3

ASI110 Back Country Living Skills..... 3
Approved Identity & Difference Course 0

MAJOR COURSES: 46

NRW103 Ag/Nat Res Practical Skills I 1*
NRW104 Ag/Nat Res Practical Skills II 1*
ESC210 Soils 3
ESC265 Soil & Water Conservation 4
BIO120 Dendrology 3*
BIO150 General Ecology 3
ENT170 Geospatial Data Coll/Analysis 4*
^ENT201 Chem/Quant Mthds for Ag/NR..... 2
ENT225 Water Quality Assessment 3
NRW101 NRWT Seminar I 0.5*
NRW105 Env Sc/Contemp NatRes Issues
or NRW106 Env Sc/Cont NatRes Issues..... 2*
NRW180 Herbaceous Plant Identification
or BIO210 Plant Systematics 2*
NRW181 Wildlife Biology 3*
NRW270 Forest Measurements 2
NRW275 Forest Management 3
NRW283 Fish Biology & Mgmt 3
NRW286 Wildlife Tech/Habitat Mgmt I 3
NRW287 Wildlife Tech/Habitat Mgt II 3
NRW289 NRWT Seminar II 0.5

TOTAL CREDIT HOURS REQUIRED: 70

GER Courses must be on the Approved General Education Course list.
I&D Course must be on the Identity and Difference Course list.
Course used to fulfill another requirement may be reused here.
Min. C- grade required.

RECOMMENDED SEQUENCE

FALL

NRW103 Ag/Nat Res Practical Skills I 1.0
ASI110 Back Country Living Skills 3.0
BIO120 Dendrology 3.0
GER Science Course 4.0
GER English Composition 3.0
GER Math Course 3.0
NRW101 NRWT Seminar I 0.5
TOTAL 17.5

SPRING

NRW104 Ag/Nat Res Practical Skills II 1
CSC180 Introduction to GIS 2
ENT170 Geospatial Data Coll/Analysis 4
GER Social Science Requirement 3
NRW105 Env Sc/Contemp Nat Res Issues 2
NRW181 Wildlife Biology 3
SPC101 Introduction to Communication 3
TOTAL 18

SUMMER

NRW180 Herbaceous Plant Identification 2
TOTAL 2

FALL

ESC210 Soils 3
BIO150 General Ecology 3
ENT201 Chem/Quant Mthds for Ag/NR 2
NRW270 Forest Measurement 2
NRW283 Fisheries Biology/Management 3
NRW286 Wildlife Tech/Habitat Mgmt I 3
TOTAL 16

SPRING

ESC265 Soil and Water Conservation 4.0
ENT225 Water Quality Assessment 3.0
HUM210 Society and The Environment 3.0
NRW275 Forest Management 3.0
NRW287Wildlife Tech/Habitat Mgmt II 3.0
NRW289 NRWT Seminar II 0.5
TOTAL 16.5

*** Must achieve a grade of "C" or better.**
**** Must achieve a grade of "C-" or better.**

^ Student may request waiver of ENT201 when CHE101, CHE102, & MAT210 are taken.

TEACHER EDUCATION DIVISION

The Teacher Education program prepares students who aspire to teach at the preschool, elementary, or secondary level for transfer into a four-year teacher education curriculum. Students have the opportunity to participate in classroom activities in the public schools as part of their pre-professional course work.

Successful completion of PRAXIS I may be required for entry into many education programs. Students are highly encouraged to complete the PRAXIS I exam before applying to a transfer institution.

EARLY CHILDHOOD EDUCATION/EARLY CHILDHOOD SPECIAL EDUCATION - ASSOCIATE OF ARTS IN TEACHING DEGREE

GC CURRICULUM CODE: 381

GER REQUIRED CREDITS:.....36

English Composition
- ENG101 Comp I--Expos Writing 3

Arts and Humanities
- ENG102 Comp II—Intro to Literature 3
- ART115 Visual Imagery 3

Social and Behavioral Sciences
- PSY101 General Psychology 3
- GEO201 Cultural Geography 3
- HIS111 American History to 1865
  or HIS112 American History since 1865
  or HIS121 Twentieth Century World 3

Science
- BIO101 General Biology I 4
- PHY130 Physical Science 4
- ESC121 Physical Geography
  or CHE101 General Chemistry I 4

Mathematics
- MAT105 College Algebra 3

Interdisciplinary/Emerging Issues
- CIS105 Intro to Computers 3

INSTITUTIONAL REQUIREMENTS:.....2

- PED117 Personalized Health & Fitness 2
- Approved Identity & Difference Course 0

MAJOR COURSES: 26

- EDU105 Career Analysis in Education 1
- EDU101 Early Childhood Educ. I 3
- EDU102 Early Childhood Educ. II 3
- EDU201 Foundations of Education 3
- EDU210 Intro Exceptional Individual 3
- EDU270 Process/Acquisition of Reading 3
- EDU275 Teaching Lab 1
- MAT121 Elementary Mathematics I 3
- MAT122 Elementary Mathematics II 3
- PSY220 Child Psychology 3

TOTAL CREDIT HOURS REQUIRED: 64

GER Courses must be on the Approved General Education Course list.

I&D Course must be on the Identity and Difference Course list. Course used to fulfill another requirement may be reused here. Min. C- grade required.

ADDITIONAL GRADUATION REQUIREMENTS:

- ***Must pass PRAXIS I exam (students with a 1100 math & reading SAT score or a 24 ACT score are exempt)***
- ***Minimum CGPA 2.75***

RECOMMENDED SEQUENCE

FALL

ENG101 Comp I–Expos Writing	3
ART115 Visual Imagery	3
EDU105 Career Analysis in Education	1
PSY101 General Psychology	3
MAT105 College Algebra	3
CIS105 Intro to Computers	3
TOTAL	16

SPRING

ENG102 Comp II–Intro to Literature	3
EDU101 Early Childhood Education I	3
EDU201 Foundations of Education	3
BIO101 General Biology I	4
PED117 Personalized Health & Fitness	2
TOTAL	15

FALL

EDU270 Process/Acquisition of Reading	3
PHY130 Physical Science/Lab	4
PSY220 Child Psychology	3
MAT121 Elementary Mathematics I	3
EDU210 Intro Exceptional Individual	3
TOTAL	16

SPRING

GEO201 Cultural Geography	3
EDU275 Teaching Lab	1
ESC121 or CHE101	4
MAT122 Elementary Mathematics II	3
EDU102 Early Childhood Education II	3
HIS121 or HIS111 or HIS112	3
TOTAL	17

This AAT program is designed for transfer to a four-year MARYLAND institution. Students wishing to transfer out-of-state should consult with the Director of Education & Teacher Preparation and the Director of Advising, Career, & Transfer Services to develop an educational plan.

Students may be required to take additional special education or inclusion courses as part of the requirements for a baccalaureate degree and teacher education certification at four-year institutions.

EARLY CHILDHOOD EDUCATION OPTION -- ASSOCIATE IN ARTS DEGREE

GC CURRICULUM CODE: 378

GER REQUIRED CREDITS:.....31

English Composition
- ENG101 Comp I--Expos Writing 3

Arts and Humanities
- SPC101 Intro to Communication..... 3
- ENG102 Comp II—Intro to Literature 3
- GER Humanities Course 3

Social and Behavioral Sciences
- PSY101 General Psychology 3
- GER Soc & Behavioral Sciences Course..... 3

Science
- Two GER Science Courses 7

Mathematics
- GER Math Course 3

Interdisciplinary/Emerging Issues
- CSC105 Intro to Computers 3

INSTITUTIONAL REQUIREMENTS:.....2

- PED, HEA, or ASI Course(s)..... 2
- Approved Identity & Difference Course 0

MAJOR COURSES: 26

- EDU105 Career Analysis in Education..... 1
- EDU101 Early Childhood Educ. I 3
- EDU102 Early Childhood Educ. II 3
- EDU201 Foundations of Education 3
- EDU210 Intro Exceptional Individual 3
- EDU270 Process & Acquis. of Reading..... 3
- EDU275 Teaching Lab 1
- PSY220 Child Psychology 3
- SOC201 The Family 3
- SOC211 Social Problems 3

ELECTIVES 5

Choose after consultation with advisor.

TOTAL CREDIT HOURS REQUIRED: 64

GER Courses must be on the Approved General Education Course list.

I&D Course must be on the Identity and Difference Course list. Course used to fulfill another requirement may be reused here. Min. C- grade required.

RECOMMENDED SEQUENCE

FALL

ENG101 Comp I–Expos Writing	3
PSY101 General Psychology	3
EDU105 Career Analysis in Education	1
SPC101 Intro to Communication	3
GER Science Course	4
TOTAL	16

SPRING

EDU101 Early Childhood Educ. I	3
EDU201 Foundations of Education	3
ENG102 Comp II–Intro to Literature	3
PSY220 Child Psychology	3
GER Math Course	3
GER Science Course	3 or 4
TOTAL	15 or 16

FALL

EDU102 Early Childhood Educ. II	3
EDU210 Intro to Exceptional Indiv.	3
GER Arts and Humanities	3
SOC201 The Family	3
Elective	3
PED, HEA, or ASI Course	1
TOTAL	16

SPRING

CSC105 Intro to Computers	3
EDU270 Proc & Acquisition of Reading	3
EDU275 Teaching Lab	1
GER Soc & Behavioral Sciences Course	3
SOC211 Social Problems	3
Elective	2
PED, HEA, or ASI Course	1
TOTAL	16

This AA program is designed for transfer to an out-of-state institution. Students wishing to transfer to a Maryland institution should follow the AAT program.

Successful completion of PRAXIS I may be required for entry into many education programs. Students are highly encouraged to complete the PRAXIS I exam before applying to a transfer institution.

ELEMENTARY EDUCATION/ELEMENTARY SPECIAL EDUCATION -- ASSOCIATE OF ARTS IN TEACHING DEGREE

GC CURRICULUM CODE: 380

GER REQUIRED CREDITS:.....36

English Composition
- ENG101 Comp I--Expos Writing 3

Arts and Humanities
- SPC101 Intro to Communication..... 3
- ENG102 Comp II–Intro to Literature..... 3

Social and Behavioral Sciences
- PSY101 General Psychology..... 3
- GEO201 Cultural Geography..... 3
- HIS111 American History to 1865
  or HIS112 American History since 1865
  or HIS121 Twentieth Century World..... 3

Science
- BIO101 General Biology I 4
- PHY130 Physical Science 4
- ESC121 Physical Geography
  or CHE101 General Chemistry I..... 4

Mathematics
- MAT105 College Algebra..... 3

Interdisciplinary/Emerging Issues
- CIS105 Intro to Computers 3

INSTITUTIONAL REQUIREMENTS:.....2

- PED117 Personalized Health & Fitness 2
- Approved Identity & Difference Course 0

MAJOR COURSES: 26

- ART115 Visual Imagery 3
- EDU105 Career Analysis in Education..... 1
- EDU201 Foundations of Education 3
- EDU210 Intro Exceptional Individual 3
- EDU270 Process/Acquisition of Reading 3
- EDU275 Teaching Lab 1
- MAT121 Elementary Math I..... 3
- MAT122 Elementary Math II..... 3
- PSY211 Educational Psych 3
- PSY220 Child Psychology 3

TOTAL CREDIT HOURS REQUIRED: 64

GER Courses must be on the Approved General Education Course list.

I&D Course must be on the Identity and Difference Course list. Course used to fulfill another requirement may be reused here. Min. C- grade required.

ADDITIONAL GRADUATION REQUIREMENTS:

- ***Must pass PRAXIS I exam (students with a 1100 math & reading SAT score or a 24 ACT score are exempt)***
- ***Minimum CGPA 2.75***

RECOMMENDED SEQUENCE

FALL

CIS105 Intro to Computers	3
ENG101 Comp I--Expos Writing	3
EDU105 Career Analysis in Education	1
MAT105 College Algebra	3
PSY101 General Psychology	3
SPC101 Intro to Communication	3
TOTAL	16

SPRING

BIO101 General Biology I	4
EDU201 Foundations of Education	3
ENG102 Comp II – Intro to Literature	3
PED117 Personal Health & Fitness	2
PSY220 Child Psychology	3
TOTAL	15

FALL

EDU210 Intro Exceptional Individual	3
ESC121 or CHE101	4
HIS111 or HIS112 or HIS121	3
MAT121 Elementary Math I	3
EDU270 Process/Acquisition of Reading	3
TOTAL	16

SPRING

ART115 Visual Imagery	3
EDU275 Teaching Lab	1
GEO201 Cultural Geography	3
MAT122 Elementary Math II	3
PSY211 Educational Psychology	3
PHY130 Physical Science	4
TOTAL	17

This AAT program is designed for transfer to a four-year MARYLAND institution. Students wishing to transfer out-of-state should consult with the Director of Education & Teacher Preparation and the Director of Advising, Career, & Transfer Services to develop an educational plan.

Students may be required to take additional special education or inclusion courses as part of the requirements for a baccalaureate degree and teacher education certification at four-year institutions.

ELEMENTARY EDUCATION OPTION -- ASSOCIATE IN ARTS DEGREE

GC CURRICULUM CODE: 370

GER REQUIRED CREDITS:.....31

English Composition
- ENG101 Comp I--Expos Writing 3

Arts and Humanities
- SPC101 Intro to Communication..... 3
- ENG102 Comp II – Intro to Literature 3
- GER Humanities Course 3

Social and Behavioral Sciences
- PSY101 General Psychology 3
- GER Soc & Behavioral Sciences Course..... 3

Science
- Two GER Science Courses from two different disciplines..... 7

Mathematics
- GER Math Course 3

Interdisciplinary/Emerging Issues
- CSC105 Intro to Computers 3

INSTITUTIONAL REQUIREMENTS:.....2

- PED, HEA, or ASI Course(s)..... 2
- Approved Identity & Difference Course 0

MAJOR COURSES: 20

- EDU105 Career Analysis in Ed 1
- EDU201 Foundations of Ed 3
- EDU210 Intro to the Exceptional Child 3
- EDU270 Process/Acquisition of Reading 3
- EDU275 Teaching Lab 1
- MAT121 Elementary Math I 3
- MAT122 Elementary Math II 3
- PSY211 Educational Psych 3

ELECTIVES: 11

Choose after consultation with advisor.

TOTAL CREDIT HOURS REQUIRED: 64

GER Courses must be on the Approved General Education Course list.

I&D Course must be on the Identity and Difference Course list. Course used to fulfill another requirement may be reused here. Min. C- grade required.

RECOMMENDED SEQUENCE

FALL

- EDU105 Career Analysis in Ed.....1
- ENG101 Comp I--Expository Writing 3
- PSY101 General Psychology.....3
- GER Science Course 4
- GER Math Course.....3
- Elective 2

TOTAL 16

SPRING

- EDU201 Foundations of Education.....3
- EDU210 Intro to the Exceptional Child 3
- SPC101 Intro to Communication 3
- GER Literature Course 3
- GER Science Course 4

TOTAL 16

FALL

- CSC105 Introduction to Computers.....3
- GER Soc & Behavioral Sciences Course 3
- PSY211 Educational Psychology 3
- MAT121 Elementary Mathematics I.....3
- Elective 3
- PED, HEA or ASI Course 1

TOTAL 16

SPRING

- EDU270 Processing/Acquisition of Reading ..3
- EDU275 Teaching Lab 1
- GER Humanities Course.....3
- MAT122 Elementary Math II 3
- Electives 5
- PED, HEA or ASI Course 1

TOTAL 16

This AA program is designed for transfer to an out of state institution. Students wishing to transfer to a MARYLAND institution should follow the AAT program.

Successful completion of PRAXIS I may be required for entry into many education programs. Students are highly encouraged to complete the PRAXIS I exam before applying to a transfer institution.

PHYSICAL EDUCATION & HEALTH OPTION - RECREATION CONCENTRATION -- ASSOCIATE IN ARTS DEGREE

GC CURRICULUM CODE: 376

GER REQUIRED CREDITS:.....32

English Composition
- ENG101 Comp I--Expos Writing 3

Arts and Humanities
- SPC101 Intro to Communication..... 3
- ENG102 Comp II--Intro to Literature 3
- GER Humanities Course 3

Social and Behavioral Sciences
- PSY101 General Psychology 3
- SOC101 Principles of Sociology..... 3

Science
- BIO101 General Biology I 4
- BIO200 Human Anatomy & Phys I 4

Mathematics
- MAT105 College Algebra
  or MAT210 Introductory Statistics 3

Interdisciplinary/Emerging Issues
- CIS105 Intro to Computers 3

INSTITUTIONAL REQUIREMENTS:.....2

- PED117 Personalized Health & Fitness 2
- Approved Identity & Difference Course 0

MAJOR COURSES: 12

- ASI101 Intro Recreation, Parks, Adv. Sp. 3
- ASI109 Intro Therapeutic Recreation..... 3
- ASI164 Adv Level First Aid & CPR..... 3
- PED210 Physical Education Practicum..... 3

ELECTIVES: 3

- PED or ASI Physical Activities..... 3

RECREATION CONCENTRATION: 16

- BIO110 Natural History..... 4
- BUS101 Intro to Business..... 3
- BUS170 Intro to Management..... 3
- PSY221 Adolescent Psychology
  or PSY102 Human Growth & Dev..... 3
- SOC211 Social Problems 3

TOTAL CREDIT HOURS REQUIRED: 65

GER Courses must be on the Approved General Education Course list.

I&D Course must be on the Identity and Difference Course list. Course used to fulfill another requirement may be reused here. Min. C- grade required.

RECOMMENDED SEQUENCE

FALL

- ENG101 Comp I--Expos Writing.....3
- ASI101 Intro Recreation, Parks, Adv Sp 3
- SPC101 Intro to Communication 3
- GER Arts and Humanities Course 3
- PSY101 General Psychology 3
  TOTAL 15

SPRING

- ENG102 Comp II--Intro to Literature 3
- BIO101 General Biology I.....4
- PSY221 or PSY102.....3
- SOC101 Principles of Sociology 3
- ASI109 Intro Therapeutic Recreation 3
  TOTAL 16

FALL

- BUS101 Intro to Business 3
- BIO110 Natural History.....4
- CIS105 Intro to Computers 3
- PED117 Personalized Health & Fitness.....2
- BIO200 Human Anatomy & Phys I 4
  TOTAL 16

INTERSESSION

- ASI164 Advanced Level First Aid & CPR.....3

SPRING

- SOC211 Social Problems.....3
- GER Math Course.....3
- PED210 Physical Education Practicum 3
- BUS170 Intro to Management.....3
- PED or ASI Activities 3
  TOTAL 15

Successful completion of PRAXIS I may be required for entry into many education programs. Students are highly encouraged to complete the PRAXIS I exam before applying to a transfer institution.

PHYSICAL EDUCATION & HEALTH OPTION – TEACHING AND/OR COACHING CONCENTRATION -- ASSOCIATE IN ARTS DEGREE

GC CURRICULUM CODE: 372

GER REQUIRED CREDITS:.....32

English Composition
- ENG101 Comp I--Expos Writing 3

Arts and Humanities
- SPC101 Intro to Communication..... 3
- ENG102 Comp II--Intro to Literature 3
- GER Humanities Course 3

Social and Behavioral Sciences
- PSY101 General Psychology 3
- GEO201 Cultural Geography..... 3
- HIS111 American History to 1865
  or HIS112 American History since 1865
  or HIS121 Twentieth Century World..... 3

Science
- BIO101 General Biology I 4
- BIO200 Human Anatomy & Phys I 4

Mathematics
- MAT105 College Algebra
  or MAT210 Introductory Statistics 3

Interdisciplinary/Emerging Issues
- CIS105 Intro to Computers 3

INSTITUTIONAL REQUIREMENTS:.....2

- PED117 Personalized Health & Fitness 2
- Approved Identity & Difference Course 0

MAJOR COURSES: 12

- BIO130 Principles of Nutrition. 3
- PED152 Foundations of PE..... 3
- HEA152 Foundations of Health Ed..... 3
- PED150 First Aid..... 3

TEACHING CONCENTRATION: 14

- EDU105 Career Analysis in Education..... 1
- EDU201 Foundations of Education 3
- EDU210 Intro Exceptional Individual 3
- EDU275 Teaching Lab 1
- PSY102 Human Growth & Development 3
- PSY211 Educational Psychology..... 3

ELECTIVES: 4

Choose after consultation with Advisor.

TOTAL CREDIT HOURS REQUIRED: 64

GER Courses must be on the Approved General Education Course list.

I&D Course must be on the Identity and Difference Course list. Course used to fulfill another requirement may be reused here. Min. C- grade required.

RECOMMENDED SEQUENCE

FALL

- ENG101 Comp I--Expos Writing.....3
- BIO130 Principles of Nutrition.....3
- PED152 Foundations of PE 3
- MAT105 or MAT210 3
- EDU105 Career Analysis in Ed.....1
- PSY101 General Psychology 3

TOTAL 16

SPRING

- ENG102 Comp II--Intro to Literature 3
- BIO101 General Biology I.....4
- SPC101 Intro to Communication 3
- CSC105 Intro to Computers. 3
- EDU201 Foundations of Education..... 3

TOTAL 16

FALL

- PSY102 Human Growth & Development 3
- EDU210 Intro Exceptional Individual.....3
- HEA152 Foundations of Health Ed 3
- BIO200 Human Anatomy & Phys II 4
- PSY211 Educational Psychology 3

TOTAL 16

SPRING

- EDU275 Teaching Lab 1
- Elective Course 3
- Elective Course 3
- GEO201 Cultural Geography.....3
- PED150 First Aid 3
- HIS111 or HIS112 or HIS121 3

TOTAL 16

Successful completion of PRAXIS I may be required for entry into many education programs. Students are highly encouraged to complete the PRAXIS I exam before applying to a transfer institution.

Students wanting to transfer to a 4 year institution to pursue a Coaching pathway should follow this concentration.

SECONDARY EDUCATION -- ASSOCIATE IN ARTS DEGREE

GC CURRICULUM CODE: 371

GER REQUIRED CREDITS:.....35

English Composition
ENG101 Comp I--Expos Writing 3
Arts and Humanities
SPC101 Intro to Communication..... 3
ENG102 Comp II-Intro to Literature..... 3
ART115 Visual Imagery
or MUS110 Music Appreciation
or THE101 Introduction to Theatre..... 3
Social and Behavioral Sciences
PSY101 General Psychology 3
HIS111 American History to 1865
or HIS112 American History since 1865
or HIS121 Twentieth Century World..... 3
SOC101 Principles of Sociology
or GEO201 Cultural Geography
or POL140 American National Govt 3
Science
Two GER Science courses from the following ... 8
BIO101 General Biology I
or CHE101 General Chemistry I
or ESC121 Physical Geography
or PHY130 Physical Science
Mathematics
MAT105 College Algebra..... 3
Interdisciplinary/Emerging Issues
CIS105 Intro to Computers 3

INSTITUTIONAL REQUIREMENTS:.....3

PED150 First Aid..... 3
Approved Identity & Difference Course 0

MAJOR COURSES: 14

EDU105 Career Analysis in Ed..... 1
EDU201 Foundations of Education 3
EDU210 Intro to the Exceptional Individual... 3
EDU275 Teaching Lab 1
PSY102 Human Growth & Development 3
PSY211 Educational Psychology..... 3

MAJOR ELECTIVES:.....12

Select based on desired teaching area; Math, Science, Social Studies, etc. Choose after consultation with advisor.

TOTAL CREDIT HOURS REQUIRED: 64

GER Courses must be on the Approved General Education Course list.

I&D Course must be on the Identity and Difference Course list. Course used to fulfill another requirement may be reused here. Min. C- grade required.

RECOMMENDED SEQUENCE

FALL

ENG101 Comp I--Expos Writing 3
PSY101 General Psychology.....3
MAT105 College Algebra 3
SPC101 Intro to Communication 3
CIS105 Intro to Computers 3
EDU105 Career Analysis in Ed..... 1
TOTAL 16

SPRING

ENG102 Comp II-Intro to Literature 3
EDU201 Foundations of Education.....3
GER Science Course 4
PED150 First Aid 3
HIS111 or HIS112 or HIS121 3
TOTAL 16

FALL

EDU210 Intro to Exceptional Individual.....3
SOC101 or GEO201 or POL140.....3
PSY211 Educational Psychology 3
EDU Major Elective 3
GER Science Course 4
TOTAL 16

SPRING

PSY102 Human Growth & Development 3
ART115 or MUS110 or THE101 3
EDU275 Teaching Lab 1
EDU Major Electives 9
TOTAL 16

ADDITIONAL GRADUATION REQUIREMENTS:

- ***Must pass PRAXIS I exam (students with a 1100 math & reading SAT score or a 24 ACT score are exempt)***
- ***Minimum CGPA 2.75***

GRIMM+ PARKER ARCHITECTS

FACILITY ASSESSMENT

FOR

GARRETT COLLEGE

McHENRY, MARYLAND

MAY 27, 2011

1355 Beverly Road | Suite 105 | McLean VA 22101 | ph 703 903 9100 | fx 703 903 9755
www.grimmandparker.com

GRIMM + PARKER
ARCHITECTS

May 27, 2011

To:

Jerry Zimmerman
Director of Facilities
Garrett College
687 Mosser Road
McHenry, Maryland 21541

RE: Garrett College Facility Assessment
Grimm and Parker Project Number 21103

Jerry,

We are pleased to present to the College the attached Facility Assessment. The scope of the assessment includes the following:

Site – Campus roads, parking lots, and pedestrian pathways
Building 100 - GEIC
Building 200 - Continuing Education
Building 300 – Information Technology
Building 400 – Student Center
Building 500 – Learning Resource Center
Building 600 – Shaw Learning Center
Building 700 – Fine Arts (Including Mechanical Plant)
Building 800 - Gymnasium
Building 1000 - CAOS

Grimm and Parker and Gipe Associates performed the Facility Assessment between the months of March and April of 2011. Dan Tichinel, Hugh Schrier, and Michael Sweitzer provided background information on the existing facilities and accompanied Grimm and Parker and Gipe Associates during the field assessments.

The majority of the existing facilities were constructed in the 1970s and 1980s. In general the building structures and exterior walls appear to be in good condition. Many of the shingle roofs require replacement and the majority of the window systems on campus are recommended to be replaced. Much of the campus appears to be in compliance with accessibility guidelines, however there are some improvements recommended in the report. Many of the mechanical and electrical systems on campus are beyond their useful life, and are recommended to be replaced.

Garrett College Facility Assessment
May 27, 2011

Please refer to the attached report for a detailed description of the existing facilities, evalulations of the existing systems, and recommendations for each facility. We appreciate the opportunity to work with the College. Please let me know if you have any questions or need any further assistance.

Sincerely,

David Whale, AIA LEED AP
Vice President
Grimm + Parker Architects

BETHESDA | MCLEAN | CALVERTON

11785 Beltsville Drive Suite 1400 | Calverton MD 20705 | Tel 301.595.1000 | Fax 301.595.0089 | www. grimmandparker.com

Campus Site Assessment

Campus Roads

Existing Conditions:

There are two roads on Campus that are owned and maintained by the College: the central campus road (located between the maintenance building and the Baseball Field) and Laker Drive, which is located on the east side of the campus between Garrett Hall and Laker Hall. A third road, located to the west of the GIEC parking lot is owned and maintained by the County, and is not included in this report. The three existing roads appear to adequately serve the campus needs.

Recommendations:

The central campus road and the adjacent maintenance facility parking areas are recommended to be resurfaced within the next 5 years. The south end of Laker Drive is scheduled to receive improvements as part of the CARC Construction project. The remainder of Laker Drive is recommended to be resurfaced within the next 5 years.

Campus Parking Lots

Existing Conditions:

Parking on campus is provided in 7 primary parking lots: GIEC, Student, Faculty, Garrett Hall, Laker Hall, and CAOS. The existing parking lots appear to adequately serve the current campus needs. Two new parking lots are under construction for the CARC Aquatic Center and Gymnasium.

Recommendations:

It is recommended that the GIEC lot, the Garrett Hall lot, the CAOS lot and the small parking lot to the north of the Baseball Field be paved within the next 5 years. The Faculty Parking Lot and the Student Parking lot have been recently repaved and are in good condition. Repairs are recommended at the entrance to the main Student Parking lot off of Bumblebee Road. Concrete wheel stops are recommended at parking areas that abut concrete sidewalks to prevent damage to the sidewalks, and to keep the sidewalk clear for pedestrians. The Laker Hall parking lot is in good condition.

Campus Pedestrian Pathways

Existing Conditions:

A network of covered and open-air pedestrian walkways connect the buildings on campus and connect the parking areas to each building. Handicap accessible routes have been provided between the handicap accessible parking spaces and each building. In general the existing walkway surfaces are in good condition.

Recommendations:

Repairs are required in several locations where existing concrete sidewalks abut parking areas. Repairs are required to damaged areas of the stamped asphalt paving. Tactile surfaces are recommended at all curb ramps and transitions between sidewalk and parking areas to warn the visually impaired of danger. Handrails at the stairs between the Faculty Parking Lot and Building 700 are not code compliant.

The concrete walk at the north edge of the Faculty Parking Lot is recommended to be widened to provide a better connection to the future CARC buildings, CAOS Building, and dormitories. A better pedestrian pathway between the dormitories and the CAOS building is recommended. In addition, these

are two areas where the potential for vehicular / pedestrian conflicts exist, so a means should be provided to slow traffic down in these area where pedestrians are crossing vehicular traffic.

GIEC Building
Building 100

Construction:
The building is a 1-story structure consisting of concrete footings, concrete slab on grade, steel columns and pitched steel joists. The building envelope is comprised of brick veneer with 2" foam insulation board and 8" CMU backup exterior walls. The roof system is asphalt shingle on rigid insulation on metal deck. Windows are a combination of fixed and projected vent aluminum windows with insulated glazing.

Deficiencies
The following items were observed:

Building Envelope
- Walls:
  - Exterior walls appear to be in good condition.
- Entrances:
  - Building Entrances appear to be in good condition.
- Windows:
  - Windows are in good condition.
- Roof:
  - The asphalt shingle roof system is in good condition.
  - Evidence of water infiltration at soffits.

Building Interior
- Building interior is in good condition.

ADA Compliance:
The building is handicap accessible.
- An accessible automatic door operator is recommended at the main building entrance.

Capacity for Renovation/Expansion
There is room for expansion on the south side of the building. Given the steel structure, and non-load bearing partitions, the building can be reconfigured relatively easily.

Heating System
Existing Conditions:
The heating system for this building is served by the central campus heating water system. The Learning Resource Building pump serves this building. A TEE was installed in the main heating line that serves the Library. The original building, constructed in 2002, utilized oil fired rooftop units for the heating source. Based on continuous operational problems with these units the oil fired rooftop units were replaced when the building was constructed in 2006. The hot water heating system now serves heating coils located in the three (3) air handling units that serve the building.

Recommendations:
Based on the multiple heating system zones, multiple taps from those heating lines and the current constant flow pumping and control system, it is recommended these multiple and parallel heating mains be replaced with a common larger heating water line and variable flow pumping system as described under the central heating plant system recommendations. It is also recommended that the

building heating system be replaced when the HVAC system is replaced and extended to individual VAV box heat coils.

Air Distribution System

Existing Conditions:

Three (3) central station air handling units (AHU) serve the building. One AHU serves the front (south) and perimeter spaces, one AHU serves the interior spaces and one unit serves the back (north) perimeter spaces. These units are located adjacent to each other in a mechanical penthouse. Originally three (3) oil fired rooftop units served the building but due to on-going functional issues these units were replaced by the central station air handling units and the roof area was enclosed to form a mechanical penthouse space. The units, manufactured by York, are approximately six (6) years old and consist of a mixing box, filter section, hot water heating coil. Direct expansion (R-22 Refrigerant) cooling coil and supply fan. Each units cooling coil is piped to an independent air cooled condensing unit located on the north side of the building on a concrete pad at grade. Outdoor air is ducted to the unit from gravity roof intake vents located directly above the units. The units are controlled in a variable volume, variable temperature fashion (i.e. VVT). Space thermostats will modulate control dampers located in supply air ducts that serve the space. The air handling unit will vary the temperature of the supply air based on the zone requirement for either heating or cooling. This does not provide the same controllability of a conventional variable air volume system. Based on the size and configuration of the spaces within this building, multiple air handling units can serve the same space. For instance, perimeter rooms that are large and/or deep can be served by the perimeter air handling unit to handle the building skin heat losses and heat gains while the interior portion of the room can be served by the interior air handling unit.

Evaluation:

The building seems to function satisfactorily but does not have the capability of precise temperature control that a standard VAV system would have since the existing system is a VVT system, operating in either a heating or cooling mode. Some spaces served by an interior and perimeter air handling unit can be simultaneously cooled by one unit and heated by another. It was noticed that the air terminal devices (diffusers, registers and grilles) are very noisy.

Recommendations:

As a minimum the air devices are recommended to be replaced with ones adequately sized for classroom applications per ANSI S12.60-2002. The existing systems have approximately ten years of life expectancy before the system will need to be replaced. The long term recommendation is to replace the system with a variable air volume distribution system either tied in to the proposed central cooling plant or utilize R410 Direct Expansion units similar to those that currently exist. Air handling units are recommended to be upgraded to utilize variable speed drives when the system is upgraded to conserve energy and VAV terminal units are recommended to be equipped with hot water heating coils controlled by 2-way modulating valves.

Auditorium:

Automatic Temperature Controls

Existing Conditions:

The air handling units are equipped with controls provided by Johnson Controls, Inc. These controls are interfaced with the Wattmaster building control system. The Wattmaster control system also controls all the thermostating controlled VVT dampers.

Recommendations:
All controls are electric/electronic actuation. It is recommended that this building be tied into the recommended central campus energy management system.

Plumbing
Existing Conditions:
The buildings domestic water system is served by the learning resource building (500). Domestic hot water is generated by an electric (19 gallon/2500 watt) domestic water heater. A trap priming station serves floor drains located in toilet rooms. A backflow preventer is located above the ceiling.

Evaluation:
There do not appear to be any problems at this time with the existing plumbing systems.

Fire Protection
Existing Conditions:
The building is not protected by a sprinkler system.

Recommendations:
It is recommended that a fire protection/wet pipe sprinkler system be provided for the building.

Electrical
Existing Conditions:
The electrical service to the Garrett Information Center is 208/120V, 3 phase, 4 wire, derived from a pad-mounted utility transformer. The electric service is located in the Mech Room. There are two service disconnects, the first in the 1600A switchboard, and a separately metered 400A service disconnect serving the TSSC area. Surge protection is provided at the service entrance.

The electric service from the utility is reported to have widely fluctuating voltages. Ground fault interrupting devices are typically set to 20% for over/under voltage in order to prevent nuisance tripping.

The electrical distribution equipment is manufactured by Square D and is in good condition, although the main switchboard appears to be physically full. Two electrical closets are located off the main corridor for panelboards serving lighting, receptacle and computer loads. Feeders are generally routed under the floor. Computer panels have cascaded surge protective devices.

Recommendations:
Monitoring/logging the incoming service current and voltage is recommended in order to determine the scope of power quality issues with voltage fluctuations on the campus.

Emergency
Existing Conditions:
There is no emergency electrical distribution system in the building. Egress lighting is provided via ceiling mounted emergency heads with battery backup. LED exit signs have integral battery backup. The fire alarm system is also provided with battery backup at the booster panel.

Lighting

Existing Conditions:

Lighting throughout the building consists of recessed parabolic louver fixtures with supplemental compact fluorescent downlights. The fixtures are equipped with electronic ballasts. Linear fluorescent lamps are T8. Lamping is now standardized on 28 watt lamps with 4100k color temperature. Control of interior lighting circuits is via local, manual toggle switches.

Building mounted high pressure sodium wall packs provide lighting for the exterior of the building. These are controlled via photocell and timeclock wired in series.

Recommendations:

Recommendation for energy savings include automatic shut-off of building lighting systems per the International Energy Conservation Code (IECC). This can be accomplished effectively by installing local occupancy sensors. Alternatively, lighting branch circuits can be routed through a contactor and controlled via the building management system. However, local timed overrides are required for this type of control.

Fire Alarm

Existing Conditions:

The building has a stand-alone, fully addressable fire alarm system. The fire alarm control panel, located in the Mech Room, is Edwards EST2. An alphanumeric annunciator is located in the waiting room off the entry vestibule. The system generally appears compliant with current codes and ADA requirements, with audible and visual notification devices. The fire alarm system does not notify a UL Central Station. Alarm notification is local only, with security personnel contacting 911 in the event of an emergency.

A Simplex fire alarm control panel serves the TSSC area, which is monitored as a sub-panel by the main building FACP. Because the systems are the same manufacturer, they are not seamlessly integrated. An alarm event on the Simplex system requires that the personnel go to the Simplex panel to ascertain the situation, silenced and reset the panel before the building EST2 control panel can be silenced and reset.

The EST2 panel in the GEIC building is cross-tripped with the EST2 panel in the Learning Resource Center. This enables occupants in the main campus to be notified in the event of an alarm anywhere in those buildings. However, only a general alarm notification is annunciated on the FACP that does not generate the signal. This requires personnel to physically go to the panel originating the alarm signal in order to ascertain the situation, silence and reset the panel. Then the other panel has to be manually silenced and reset. The end result is that the duration of the process between alarm initiation, and silencing the building alarm is indeterminate. The process is complicated by the sub-panel in the TSSC area, if that is the source of the alarm. The ability to silence the system(s) from remote annunciators has been deliberately disabled so that security personnel must investigate the source of the alarm signal in order to silence the system from the FACPs.

Recommendations:

A single, integrated system is recommended for the main campus in order to expedite personnel response. Notification of a UL listed central station is also recommended as the security personnel are not necessarily in a single location with 24 hour attendance.

Voice/ Data/Video

Existing Conditions:

Services on the main campus originate from the Tech Building. Telephone service is voice over internet protocol (VOIP) via fiber optic cabling routed overhead through the buildings. The data rack in the GEIC Building is located in the Computer Hub room centrally located off the corridor. Data outlets are wired back to this rack, in addition to wireless routers mounted flush in ceilings, strategically placed, with lockable covers for wireless access in the building. A copper voice trunk is routed from the Information Technology building for analog voice service.

A dedicated service from Verizon is also provided to the building, with a 110 terminal block field within the Hub room. CATV service with RG6 cabling and taps is also distributed from this location.

Security

Existing Conditions:

A dedicated Best Access System control panel serves the GEIC building, and is locally programmed. As this building is not for general student use, doors to this building are kept locked. There is no direct interface with the system in the Fine Arts Building. There is no intrusion detection system in the building.

Continuing Education Building
Building 200

Construction:
The building is a 1-story structure consisting of concrete footings, concrete slab on grade, steel columns, exterior bearing walls and pitched steel joists. The building envelope is comprised of brick veneer with 2" foam insulation board and 8" CMU backup exterior walls. The roof system is built-up roof system on rigid insulation on metal deck. Windows are a combination of fixed and projected vent aluminum windows with uninsulated glazing.

Deficiencies
The following items were observed:

Building Envelope
- Walls:
  - Exterior walls appear to be in good condition.
- Entrances:
  - Building Entrances appear to be in good condition.
- Windows:
  - Windows are are recommended to be replaced with new thermally broken aluminum windows with 1" low-e insulated glazing to improve energy efficiency.
- Roof:
  - The built-up roof system appears to be in good condition.

Building Interior
- Building interior was last renovated in the late 1980s.
- Acoustics could be improved if existing operable partitions in the large dividable classroom were replaced with high STC rated operable panel partition system.

ADA Compliance:
The majority of building components handicap accessible.
- An accessible automatic door operator is recommended at the main building entrance.
- Should consider widening existing 4 foot wide corridor if building is to be renovated in the future to allow accessible turn around clearance.
- Tiered classroom is not handicap accessible.

Capacity for Renovation/Expansion
There is limited room for expansion on the north side of the building. Given the steel structure, and non-load bearing partitions, the building interior can be reconfigured relatively easily.

Heating System
Existing Conditions:
The heating system for this building is primarily served by the campus heating water system. Some electric resistance heaters are still utilized. The Student Center pump serves this building. 2" heating lines were tapped into the student center mains between The Student Center (building 400) and the Learning Resource Center (building 500). The original building, constructed in 1979, was originally heated by oil fired unit heaters. When the building function changed around 1983 these oil fired unit heaters were removed and the heating system was extended from The Student Center to serve this

building. This building is located at the furthest point from the central heating plant. The system pumps being located on the return side causes problems in trying to bleed air out of the system.

Three (3) in-line circulators still exist and serve three (3) hydronic zones within the building. The heating system serves perimeter unit ventilators (1 pipe distribution system), heating coils and terminal heating units.

Evaluation:
The existing heating system within the building is inadequate, beyond its useful life and lacks controllability. It also is served from the student center which was not designed to serve this building. The use of electric heat is not energy efficient and is beyond its useful life.

Recommendations:
Based on the multiple taps from the existing heating water system, the current arrangement of the pumping and piping distribution system and functional problems related to the heating system for this building, it is recommended that the existing heating lines be replaced with a common larger line and variable flow pumping system as described under the central heating plant system recommendations. Additionally the entire heating system within the building is recommended to be replaced in its entirety.

Air Distribution System
Existing Conditions:
The building is served by a combination of three (3) split system air handling units and classroom unit ventilators. The equipment and systems are almost thirty (30) years old. A small one (1) ton split DX unit is the oldest and serves the President's office. A 7 ½ ton multi zone unit and a 5 ton single zone unit serve the majority of the building except for perimeter classrooms which are served by vertical unit ventilators. Transfer air louvers in classroom doors allow relief air to migrate through to the corridor. This condition does not meet current code requirements and is a life safety issue. The air handling units have a hot water heating coil, direct expansion cooling coil and supply fan. Refrigerant piping connects the cooling coils to remote air cooled condensing units (R-22 Refrigerant). Compressors have failed and have been replaced several times. The air distribution system is constructed of fiberglass duct board, not conventional galvanized steel. Extensive amounts of flexible duct connect diffuser to duct mains.

The IT hub room does not have air conditioning and gets very hot as a result of heat gains generated by the electronic equipment.

Evaluation:
There are significant functional and operational problems with this facility based on the age and type of equipment and materials used. Code and life safety issues exist and fiberglass ductwork is a concern.

Recommendations:
Similar to the heating system, it is recommended the existing HVAC system be replaced in its entirety. It is recommended that a variable air volume air distribution system with VAV terminal control units equipped with hot water heating coils be provided. Additionally refer to the central plant recommendations for the possibility of creating a campus central cooling plant or satellite (1 of 2) central cooling plant at this building.

Automatic Temperature Controls

Existing Conditions:

There is limited (if any) local only controls (thermostats) in the building.

Evaluation:

The controls are antiquated and beyond their useful life.

Recommendations:

It is recommended the ATC system be replaced in its entirety and be upgraded when the building is renovated /HVAC system replaced with a direct digital control (DDC) system using electric/electronic actuation and tied into the recommended central campus energy management system, described under central plant systems.

Plumbing

Existing Conditions:

The buildings domestic water system is served by the learning resource building (500). Domestic hot water is generated by a 40 gallon electric water heater as manufactured by RUDD.

Recommendations:

Based on the age of the systems it is recommended the plumbing system be replaced when the building is renovated.

Fire Protection

Existing Conditions:

The building is not protected by a sprinkler system.

Recommendations:

It is recommended that a fire protection/wet pipe sprinkler system be provided for the building.

Additional Comments:

This building from a mechanical standpoint should have all the systems and equipment replaced in its entirety. Being located at the west end of the campus and having 480V electric service, it is a good candidate to house a central campus cooling plant much like building 700 houses the central campus heating plant. The proposed cooling plant could serve the entire campus or operate as a satellite cooling plant serving the west half of the campus while another satellite plant, proposed to be located in building 800 could serve the east half of campus.

Both Buildings 200 and 800 are the highest priorities from a mechanical system standpoint to have their systems and equipment replaced in the immediate future.

Electrical

Existing Conditions:

Electrical service to the Continuing Education building is 480/277V, 3 phase, 4 wire from a utility pad-mount transformer. In the main electrical room (Mech 222), the secondary feeder terminates in a wire trough with multiple fused switch service disconnects. These are 400A (fused @ 225A) for a 75kVA dry type transformer, 200A for panel P, 100A for panel L, 100A for water heaters (no longer in use) and 60A formerly serving panel Q, also not used. The original distribution equipment is manufactured by Square D.

The building was originally a shop area with fuel oil area heaters with perimeter electric heat. All of the area heaters, and most of the perimeter electric heat has been removed. Busways serving the areas have been removed, with their feeders reused to serve local panels.

The 75kVA transformer, fed from panel Q, provides 208/120V, 3 phase, 4 wire service for the building. This was installed after the original installation, and replaced a smaller capacity transformer. The transformer footprint is larger than the original housekeeping pad, and is leveled with wood blocking where it overhangs. The transformer serves a 200A panel X, a 100A single phase feeder to the Garrett Lakes Office Building, and a 70A computer panel. The transformer is within the code required clearance space directly under the computer panel, which was installed in 1989. With the addition of loads on the secondary of the 75kVA transformer, the code required secondary overcurrent protection of 125% the FLA has been exceeded.

Receptacles connected to the computer panel are color coded orange, which is an industry standard that identifies them as isolated ground type. While the color coding differentiates to the users which outlets are for computer use, it should be noted that there is no isolated ground in the system. However, this panel is fed directly off the secondary of a transformer, which is where the equipment ground and isolated ground would be bonded together in the system.

The electric service from the utility is reported to have widely fluctuating voltages. Ground fault interrupting devices are typically set to 20% for over/under voltage in order to prevent nuisance tripping.

Recommendations:
It is recommended that the original electrical distribution be replaced, as they have exceeded their anticipated useful life of 25-30 years. A distribution panel can be installed in place of the trough and individual service disconnects to allow greater flexibility for future loads. The panels and transformer should be physically reconfigured, and new feeders installed to provide code required clearance, as well as overcurrent protection. Cascaded surge protection, with a service entrance SPD at the main is recommended as well.

Monitoring/logging the incoming service current and voltage is recommended in order to determine the scope of power quality issues with voltage fluctuations on the campus.

Emergency
Existing Conditions:
Dual head battery lighting units have been installed in the building for code required emergency egress lighting. Most of the exit signs have integral battery backup.

Recommendations:
Recommendations for emergency power source include providing exterior emergency egress lighting at building entrances/exits, and replacing the occasional remaining exit sign without battery backup.

Lighting
Existing Conditions:
The majority of the lighting in the building dates to the renovation in the late 1980s, with recessed 2'x4' lensed troffers typically throughout in classrooms and corridors, including the connecting link to the

Information Technology building. Recessed 1'x4' lensed troffers are used in the corridor outside the main electric room to accommodate the narrow space. The lighting in the building and connecting link is 277V. Fluorescent lighting fixtures were retrofit with T8 lamps and electronic ballasts approximately 15 years ago. Newer recessed 2'x4' troffers have been installed in the corridors. Lamping is standardized on 28 watt lamps with 4100k color temperature.

The lighting fixtures vary in condition from fair to poor. Control of interior lighting circuits is via local, manual toggle switches.

Building mounted high pressure sodium wall packs provide lighting for the exterior of the building. The original incandescent recessed fixtures mounted in entry soffits are abandoned in place. Flood lights with 400 watt metal halide lamps illuminate the parking areas. There is no exterior emergency egress lighting. Parking lot fixtures are controlled via photocell and timeclock wired in series.

Recommendations:
Recommendation for energy savings include automatic shut-off of building lighting systems per the International Energy Conservation Code (IECC). This can be accomplished effectively by installing local occupancy sensors. Alternatively, lighting branch circuits can be routed through a contactor and controlled via the building management system. However, local timed overrides are required for this type of control.

Replacement of the majority of the lighting fixtures, where fixture lenses have yellowed over time, is also recommended.

Fire Alarm
Existing Conditions:
The fire alarm system is an Edwards EST2 addressable system, installed 5 years ago. A booster panel, located in the main electrical room, is tied into the Fire Alarm Control Panel in the Learning Center. The system generally appears compliant with current codes and ADA requirements, with audible and visual notification devices. The fire alarm system does not notify a UL Central Station. Alarm notification is local only, with security personnel contacting 911 in the event of an emergency.

Voice/ Data/Video
Existing Conditions:
The original incoming telephone service, located in the main electrical room, is abandoned. Services on the main campus originate from the Tech Building. Telephone service is voice over internet protocol (VOIP) via fiber optic cabling routed overhead through the buildings. The data rack in the Continuing Education Building is located in Custodial adjacent to the President's Office. Data outlets are wired back to this rack, in addition to wireless routers mounted flush in ceilings, strategically placed, with lockable covers for wireless access in the building.

Recommendations:
Removal of all unused, abandoned low voltage cabling is recommended.

Security
Existing Conditions:
A Best Access System control panel is located in the Fine Arts/Administration Building. This panel provides access control via card readers to the building entry doors on the main campus. This enables

isolation of the buildings, via laptop, in the event of an emergency lockdown situation. There are door contacts to alert whether the door has been propped open, but no intrusion detection system otherwise.

Information Technology
Building 300

Construction:
The building is a 1-story structure consisting of concrete footings, concrete slab on grade, steel columns and steel joists. The building envelope is comprised of brick veneer with 2" foam insulation board and 8" CMU backup exterior walls. The roof system is built-up roofing on rigid insulation on metal deck. Windows are a combination of fixed aluminum and projected vent aluminum windows with insulated glazing.

Deficiencies
The following items were observed:

Building Envelope
- Walls:
  - Exterior walls appear to be in good condition.
- Entrances:
  - Building Entrances appear to be in good condition.
- Windows:
  - Windows are failing, and are recommended to be replaced.
- Roof:
  - The built-up roof system appears to be in good condition.

Building Interior
- Interior finishes have been recently replaced.
- The carpet requires repairs in several spaces.
- Some of the interior partitions only extend to the ceiling height, which does not provide adequate sound attenuation between spaces.

ADA Compliance:
The building appears to be handicap accessible.

Capacity for Renovation/Expansion
There is room for expansion on the south side of the building. Interior partitions could be reconfigured within the structural column bays to accommodate future campus needs.

Heating System
Existing Conditions:
The heating system for this building is served by the Central Campus Heating Water System. The heating water lines serving the Library are tapped between the Library/Learning Resource Center Building 500 and Student Center Building 400 and extended to the Information Technology Building. A separate tap from the Student Center currently serves a section of this building which used to be a Lecture Hall, but was recently converted to Office spaces. Two circulating pumps are located in the building and serve the perimeter heating units and interior air handling unit. The heating system also serves duct-mounted heating coils located above the ceiling for each packaged rooftop unit.

Recommendations:
Based on multiple taps of the existing pumping and piping distribution system which then has been extended to GIEC (Building 100), Continuing Education (Building 200) and this building, it is recommended the multiple central heating loops be replaced with a common larger heating water line as described under the Central Heating Plant System recommendations. Additionally it is recommended the buildings heating water distribution system be connected to variable flow, two-way modulating control valves and be extended to serve individual VAV box heating coils when the air distribution systems are replaced so as to provide individual room control.

Air Distribution System
Existing Conditions:
The main Computer Room/Hub Room is cooled by three (3) five (5) ton low ambient type ductless split A/C units as manufactured by Mitsubishi. Each unit is independently thermostatically controlled. The condensing units are located on the roof. When sub-zero ambient conditions exist, these units no longer function to provide cooling.

The Main Building, primarily consisting of Computer Lab Spaces, is heated, cooled, and ventilated by four (4) packaged cooling-only rooftop units with duct-mounted hot water heating coils.

Two (2) rooftop units are five (5) ton capacity, constant volume single zone units utilizing scroll type compressors. These units each serve two (2) rooms apiece. The units were manufactured by York and are approximately fifteen (15) years old.

The remaining two (2) rooftop units are ten (10) ton capacity units, constant volume single zone type serving a VVT Air Distribution System. A VVT System uses a constant air volume unit in conjunction with variable air flow to individual spaces by modulating a thermostatically controlled supply air duct damper and static pressure controlled supply air to return air bypass damper. The control system determines if the air handling unit operates in a heating mode or cooling mode by polling space thermostats, resets the supply air temperature, then allows room thermostats to modulate the quantity of supply air delivered to the space. These units are original to the 1980's renovation when the building was converted from the Trades Shops to Classrooms. The units have two (2) stages of cooling (two reciprocating compressors), and the units were manufactured by York. All rooftop units (5 and 10 tons) utilize R-22 refrigerant, which is no longer manufactured.

The old Lecture Hall Area was recently converted to Offices; however, there is no cooling just heating.

The existing five (5) ton units are fifteen (15) years old and have an average life expectancy of 15-20 years. The main ten (10) ton units are over 20 years old and beyond their average useful life expectancy.

Additionally one room which was also part of the old Lecture Hall is currently being utilized as a computer equipment repair shop, has an old electric heat horizontal unit ventilator and hot water baseboard radiation for heating and ventilation only.

Evaluation:
The existing main computer room units freeze up at sub zero/windy outdoor air conditions. The existing HVAC units are functional but are near the end of their anticipated life expectancy and utilize the no longer manufactured R-22 refrigerant.

The old Lecture Hall area is uncomfortable since it does not have mechanical cooling which is needed much of the year since the spaces for the most part are interior (heat gain is greater than heat loss).

Recommendations:
The main computer room units should be provided with an automatic lookout control to prevent the units from operating at sub zero outdoor air conditions. Additionally an outdoor air vent and exhaust fan could be provided to reduce room heat levels during these sub zero conditions or act as an emergency back-up system.

The HVAC units will need to be replaced in the near future due to their age. The converted Lecture Hall to offices is in immediate need to be provided with a system that can provide mechanical cooling. Ultimately it is recommended the air distribution systems be converted to a conventional variable air volume system using variable air volume terminal control units equipped with hot water heating coils, 4-pipe (heating water and chilled water) central station air handling units so unit fans can be equipped with energy savings variable speed drives. Refer to the central plant systems for heating plant upgrades and new central chilled water plant.

Automatic Temperature Controls
Existing Conditions:
The building uses electric/electronic controls. A Wattmaster Control System controls the VVT dampers and duct-mounted heating coil valves. An old Honeywell System controls the outdoor air / return air economizer dampers in the rooftop units.

Recommendations:
It is recommended the control system be upgraded for full Wattmaster Control over all units and systems and be digitally interlocked to the Campus Central Energy Management System. As recommended under the central plant system description.

Plumbing
Existing Conditions:
The domestic water system is an extension form the Library cold water system. A 120-gallon, 4.5 kW electric water heater, as manufactured by State, provides domestic hot water to the building.

Fire Protection
Existing Conditions:
Currently, the building does not have a Fire Protection System.

Recommendations:
It is recommended the Fire Service from the Library Building be extended to and serve a wet pipe sprinkler system for this building.

Electrical
Existing Conditions:
Secondary service is obtained from the utility pad-mount transformer that also serves Building 400. The main distribution panelboard is configured in two sections, each rated for 1200A, 208/120V, 3 phase, 4 wire. A 1200A main fused service disconnect is in the panelboard located on the exterior wall. A trough interconnects this panel with the second section, located on the adjacent wall. The switchboard is

manufactured by Cutler-Hammer, and is original to the building. The only reported issue has been loosened bolt lugs on the switch serving the automatic transfer switch (ATS). This was discovered after investing why ATS kept switching to the generator source, even though normal power was available in the building. The panel connections were checked and tightened on that panel section, but not the other. Surge suppression has been provided for the service entrance.

The original lighting and appliance panelboards are still in operation in the building, with the exception of the welding shop feeder. Replacement branch breakers for these panels are readily available. These are physically full. Additional distribution equipment, manufactured by General Electric and Square D, has been installed to accommodate new loads and revised space usage. A dedicated panel is located within the Computer Room.

The electric service from the utility is reported to have widely fluctuating voltages. Ground fault interrupting devices are typically set to 20% for over/under voltage in order to prevent nuisance tripping.

Recommendations:
Recommendations include replacing the main distribution panel, as well as the remaining original panelboards as they have reached their anticipated useful life of 25-30 years. Circuit breaker type panelboards are recommended in lieu of replacement in kind with fused switch units. Cascaded surge protection is recommended on the electrical distribution system, at the service entrance and at downstream panels serving sensitive electronic loads.

Monitoring/logging the incoming service current and voltage is recommended in order to determine the scope of power quality issues with voltage fluctuations on the campus.

Emergency
Existing Conditions:
The emergency service consisted of a tap ahead of the main switchboard service disconnect, with separate enclosed switches for the fire alarm system and exit lights. A separate service disconnect ahead of the building main disconnect was recognized by the National Electrical Code (NEC) as an emergency source when the building was constructed. However, this is no longer a case. Dual head battery lighting units have been installed in the building, and most of the exit signs have been replaced with battery backup units in order to provide code recognized emergency egress lighting.

A diesel generator has been installed with an automatic transfer switch to serve the Data Center. The generator contains a 100 gallon sub-base fuel tank, and is located adjacent to the utility transformer. The generator loads are considered by code as optional standby. The generator is rated 75kW, 208/120V, 3 phase, 4 wire with a 200A, 3 pole, 3 wire transfer switch, both of which are manufactured by Onan Cummins. Computer receptacles connected to the generator source are color coded orange, which is an industry standard that identifies them as isolated ground type. While the color coding differentiates to the users which outlets are for computer use, it should be noted that there is no isolated ground in the system.

Recommendations:
Recommendations for emergency power source include adding emergency lighting units and/or replacing the occasional exit sign without battery backup, consistent with the remainder of the campus.

Lighting

Existing Conditions:

A good portion of the lighting is original to the building. Fluorescent lighting fixtures were retrofit with T8 lamps and electronic ballasts approximately 15 years ago. Newer recessed 2'x4' troffers have been installed in the corridors. Lamping is standardized on 28 watt lamps with 4100k color temperature.

The Lobby has incandescent wall wash type downlights for display purposes in addition to recessed 2'x4' parabolic louver fixtures. These are used in computer labs as well and appear in good condition. Recessed 2'x4' lensed fixtures are installed in the corridors and Data Center. These vary in condition from good to fair, with fixtures having yellowed, discolored lenses. Control of interior lighting circuits is via local, manual toggle switches.

A single building mounted 250W high pressure sodium wall pack provides lighting at the exterior of the building. There is no exterior emergency egress lighting.

Recommendations:

Recommendation for energy savings include automatic shut-off of building lighting systems per the International Energy Conservation Code (IECC). This can be accomplished effectively by installing local occupancy sensors. Alternatively, lighting branch circuits can be routed through a contactor and controlled via the building management system. However, local timed overrides are required for this type of control.

Replacement of lighting fixtures in fair condition is also recommended, where fixture lenses have yellowed over time. Installation of emergency egress lighting at building exits is also recommended.

Fire Alarm

Existing Conditions:

The fire alarm system is an Edwards EST2 addressable system, installed 5 years ago. The Information Technology building contains a booster panel with local battery backup, located in the main electrical room. This is tied into the Fire Alarm Control Panel in the Learning Resource Center. The system generally appears compliant with current codes and ADA requirements, with audible and visual notification devices. The fire alarm system does not notify a UL Central Station. Alarm notification is local only, with security personnel contacting 911 in the event of an emergency.

Voice/ Data/Video

Existing Conditions:

Services on the main campus originate from this Building. The main point-of-presence (MPOP) and main distribution frame (MDF) are one in the same in the Computer Hub Room. A 600 pair copper voice cable serves the campus, with 110 terminal blocks designated for: Continuing Education, Student Center/Learning Resource Center, Admin, Tech Center Hub Room (three), GIEC (four), and CAOS. This provides analog voice services where required.

Incoming fiber optic cabling is routed to a handhole adjacent to the connecting corridor to GIEC, then into the building overhead to the Computer Hub Room. A total of six data racks are in a single lineup in the Hub Room. Data outlets are wired back to this rack, in addition to wireless routers mounted flush in

ceilings, strategically placed, with lockable covers for wireless access in the building. Telephone service is voice over internet protocol (VOIP) via fiber optic cabling routed overhead through the buildings.

RF antennas are used to provide data service to the Center for Adventure and Outdoor Studies, which is not physically connected to the main campus building.

A satellite disk immediately adjacent to the building provides service for Academic TV. The associated cabling enters the building at the same location as the incoming fiber.

Security

Existing Conditions:

Access control to the building is via the Best Access System control panel located in the Fine Arts/Administration Building. This panel provides access control via card readers to the building entry doors on the main campus. This enables isolation of the buildings, via laptop, in the event of an emergency lockdown situation. There are door contacts to alert whether the door has been propped open, but no intrusion detection system otherwise.

Student Center
Building 400

Construction:
The building is a 1-story structure consisting of concrete footings, concrete slab on grade, steel columns and glue-laminated wood beams and rafters. The building envelope is comprised of brick veneer with 2" foam insulation board and 8" CMU backup exterior walls. The roof system is asphalt shingle on rigid insulation on wood deck. Windows are a combination of fixed and projected vent aluminum windows with uninsulated glazing.

Deficiencies
The following items were observed:

Building Envelope
- Walls:
  - Exterior walls appear to be in good condition for the age of the building.
- Entrances:
  - Building Entrances appear to be in good condition.
- Windows:
  - Sliding Glass doors do not operate properly. Storefront system is recommended to be replaced with Thermally Broken aluminum system with 1" depth, low-e, insulated glazing.
- Roof:
  - The asphalt shingle roof system is failing and is recommended to be replaced.

Building Interior
- Interior partitions only extend to the ceiling height, which does not provide adequate sound attenuation between spaces.
- Limited grout failure was observed in the quarry tile floor in the dining room.
- A new grease trap is recommended.
- Guards are not code compliant at the loft level and the stairs that access the loft.

ADA Compliance:
The majority of the building components are handicap accessible. Below is a list of deficiencies:
- An accessible push-button automatic door operator is recommended at the accessible building entrance.
- Height of paper towel dispensers are not accessible.
- The stair door at the main level is not accessible.

Capacity for Renovation/Expansion
There is no room for expansion of the building. Given the size of the building and the location of the kitchen, there is limited capability of making significant alterations to the layout of the building. With the addition of an elevator, the loft (mezzanine) space could be utilized more efficiently. Expansion of the bookstore should be considered to allow for more merchandise, storage, and work space. Ideally the bookstore should be able to accommodate 3 full-time employees and 2 flex workstations.

Heating System

Existing Conditions:
The heating system for this building is served by the Central Campus Heating Water System. The heating water piping system and distribution pumps are original to the 1982 construction and are approximately 29 years old. The existing heating water pumps are located in the Main Boiler Room with the heating water pipes extending through the Fine Arts/Administration Building 700 and Shaw Learning Center Building 600. The heating water system serves air handling unit heating coils, which utilize 3-way electric/electronic modulating mixing valves.

The heating lines in the loft area were tapped and extended to serve a portion of the Information Technology Building 300.

Recommendations:
It is recommended the entire heating water system within the building be replaced with the associated air distribution equipment and converted to variable flow as recommended in the central heating plant recommendations.

Air Distribution System
Existing Conditions:
The building houses the Dining Hall, Kitchen, Book Store, and Offices. It shares a common Main Street type corridor with the Learning Resource Center Building 500. It was originally constructed like a Cape Cod style house, with both perimeter sides open to a center loft area. At some point, the West side of the loft area was enclosed with a wall to separate the perimeter offices from the open loft area. The Kitchen and other offices are located under the loft, while the East side Dining Hall is still open to the Loft Area. The building was originally just heated and ventilated. About 12 years ago, air conditioning was added for the Office Areas only, while the rest of the building (Dining Hall, Kitchen, and ancillary spaces) is still only heated and ventilated.

A five-ton split fan coil unit located within the First Floor Mechanical Equipment Room serves the interior rooms located under the loft. This is a small single zone constant volume unit with remote air-cooled condensing unit. A duct-mounted hot water coil provides heat to the space. The equipment was manufactured by York. This system is approximately 12 years old.

Similarly, a larger single zone constant volume unit with two (2) stages of cooling was provided approximately 12 years ago. Cooling is provided by a 2-step single semi-hermetic compressor using R-22 refrigerant. The air handling unit is located above the ceiling in a low roof condition, which is accessed through the loft storage room. The unit is not very accessible, but needed to be located where it is, since it was added after the original construction; and the building is physically limited as a result of the style of its architecture. The unit also contains a hot water heating coil. The unit serves the West perimeter office spaces.

An original four (4) zone multi-zone heating and ventilating air handling unit used to serve the two previously described interior and perimeter office spaces and north and south ends of the main dining area. When the offices were retrofitted with separate air handling units with cooling, the existing two (2) zone ducts from this unit were capped off. Currently, only half of the air flow is needed through this unit. The unit has a hot deck with heating coil controlled by a 3-way modulating mixing valve and a cold deck, which does not contain a coil, but is used to bypass air around the heating coil. A zone damper is located at the outlet of each zone at the unit discharge. The damper extends over the cold/bypass deck

and hot deck. An automatic damper is controlled by the space thermostat. As the damper modulates open to the hot deck, it simultaneously closes to the cold/bypass deck. It simulates a constant air volume, variable supply air temperature conditions by mixing hot air with bypass air to provide the supply air temperature needed to satisfy the space temperature set-point. The air through these decks, which sit on top of each other within the AHU casing, is a combination of outdoor air and return air which is mixed by the supply fan , then diverted to hot and cold decks based on the outlet zone damper position. This unit is original, is 29 years old, and is located in the loft perimeter storage room.

The Kitchen is served by a heating and ventilating unit and exhaust fan. The Kitchen contains multiple refrigerators and freezers with integral top-mounted air-cooled condensing units, which reject heat to the occupied space. A kitchen hood complete with Ansul type fire protection system is also located in the kitchen. The refrigerators and freezers overheat and sometimes shut down as a result of elevated space temperatures, which create high refrigerant head pressures, typically around 110 deg F ambient air conditions.

At the peak of the loft, at the north gabled end, two wall-mounted propeller fans are used to evacuate stratified heat within the building and provide some air movement in the loft area. These thermostatically controlled exhaust fans are seldom used, as they generate a significant amount of noise which radiates through the building, especially the Dining Hall space, which is still open to the loft area. The office side of the loft is walled up to the underside of the roof, negating the ability to exhaust stratified heat in that half of the building. Ceiling fans help air movement in the Dining Hall; however, this space gets extremely hot, since there is no air conditioning.

Evaluation:
Overall, the systems and equipment do not provide the proper indoor environmental conditions (temperature, humidity, acoustics); they are not systems typically used in an educational setting; they are inaccessible to properly service and maintain; and, for the most part, they are beyond their anticipated life expectancies.

Recommendations:
It is recommended the entire HVAC System be replaced in its entirety. The Dining Hall should be provided with a split type single zone constant volume heating and cooling unit with an energy-efficient remote air-cooled condensing unit, utilizing R-410 refrigerant. Conditioned/cooled supply air also needs to be distributed to the Kitchen area with supplemental exhaust fans to extract rejected heat off of the refrigerators and freezers. Similarly, the Kitchen Hood and associated exhaust fans and controls are recommended to be replaced in their entirety to meet current Code requirements.

The Offices should be supplied with two (2) separate units similar to the existing ones with VVT type room controllers to enhance controllability and comfort levels.

A separate air handling system is recommended for the Loft Area. All systems shall provide heating, cooling, and ventilation to maintain indoor environmental conditions suitable for educational facilities which meet current Code and Energy Conservation requirements.

The units need to be located in spaces accessible for maintenance and servicing. This may require new mechanical space be it an addition or defined space within the building.

As a long term solution and to be consistent with recommendations for the campus, it is recommended that the units and air distribution system be replaced with a traditional 4-pipe central station (chilled water/heating water) air handling unit equipped with variable speed fans and serving a traditional variable air volume system utilizing variable volume terminal control units equipped with hot water heating coils.

Automatic Temperature Controls

Existing Conditions:

The original construction utilized local pneumatic controls. These controls were removed and replaced with a Wattmaster electric/electronic control system. This system provides limited local control of equipment.

Recommendations:

Ultimately, it is recommended that the entire building HVAC System be replaced including the control system. The recommended control system shall be electric/electronic activation, direct digitally controlled (DDC) and tie into the campus EMS as recommended under the central plant systems description.

Plumbing

Existing Conditions:

The building's domestic water system is an extension from the Learning Resource Building (500). Domestic hot water is generated by a local 120-gallon, 36 kW electric water heater.

Recommendations:

The plumbing system should be replaced when the building is renovated.

Fire Protection

Existing Conditions:

The building is fully protected by a wet pipe sprinkler system, which was required and installed as part of the Learning Resource Center (500) Project in 2006.

Electrical

Existing Conditions:

The Student Center electric service is derived from a utility pad-mount transformer that also serves Building 300. The main switchboard, located in the main electrical room, is rated for 800A, 208/120V, 3 phase, 4 wire. It is a General Electric AV Line with fused switches. The switchboard is original to the building, as are two lighting and appliance panels adjacent to the switchboard , and the kitchen panel. The building was originally equipped with an emergency generator, located in the main electrical room. This has been removed, and the panel served by the generator is now general use.

The building panels are physically full, so supplemental panels have been installed to accommodate additional branch circuits. A panelboard dedicated for computer loads, provided with a surge suppression device has been installed in the main electric room, fed directly from the switchboard. This panel is manufactured by Square D. A new 225A main lug only General Electric panel has been installed in the last year within the same space. This feeds a 100A sub-panel in the attic, but has space for future branch breakers.

The Kitchen panel is located recessed within the kitchen space. Maintaining the code required clearance in front of this equipment, as well as local disconnects within the kitchen, is problematic with the lack of sufficient square footage within the space. An emergency power off (EPO) pushbutton in the kitchen cuts off a shunt trip breaker serving the fryer only. The kitchen range was initially electric, fed directly off the main switchboard. This has been replaced with a propane unit.

The building ground system is reported to be inadequate by Garrett College facilities personnel. There have been incidents of people receiving a shock when touching equipment that should be solidly grounded. The electric service from the utility is also reported to have widely fluctuating voltages. Ground fault interrupting devices are typically set to 20% for over/under voltage in order to prevent nuisance tripping. Incandescent lighting is reported to operate at most for 60 days before requiring replacement of 130V bulbs.

Recommendations:
Recommendations include replacing the original switchboard and panels as they have reached their anticipated useful life of 25-30 years. The kitchen panel is also recommended to be provided with a shunt trip main breaker, with HVAC equipment re-fed from another panel as required. Installation of new feeders and branch circuits with insulated ground conductors is recommended.

Monitoring/logging the incoming service current and voltage is recommended in order to determine the scope of power quality issues with voltage fluctuations on the campus.

Emergency
Existing Conditions:
The original emergency generator has been removed, and emergency lighting has been provided consistent with the remainder of the campus. Dual head battery lighting units have been installed in the building in order to provide code recognized emergency egress lighting. Many of the exit signs have been replaced to include integral battery backup. All exit signs, with or without battery backup, utilize LEDs.

Recommendations:
Recommendations for emergency power source include providing battery units and exit signs throughout.

Lighting
Existing Conditions:
The Dining Hall and main corridor are open to the structure above, and utilize pendent mounted linear direct/indirect fluorescent fixtures. The Dining Hall is one of the few areas on campus where the lamps and ballasts have not been retrofit. These utilize high output T12 lamps and magnetic ballasts. The first few rows of fixtures have been replaced with individual pendants fit with compact fluorescent lamps, due to their proximity to the loft stairs.

The other fluorescent lighting fixtures were retrofit with T8 lamps and electronic ballasts approximately 15 years ago. Lamping is standardized on 28 watt lamps with 4100k color temperature. Linear direct fluorescent fixtures with T8 lamps and electronic ballasts are installed in the corridors. Incandescent track lighting is also in place at the entry from the Learning Center, relamped with retrofit CFL bulbs. The remaining areas of the building have standard height ceilings, with a variety of fixture types. Downlights and linear fixtures with compact fluorescent retrofit lamps are in use in the Dining Hall area.

Recessed 2'x4' troffers are in the Bookstore and offices. Recessed 2'x2' lensed troffers are in the corridor outside the restrooms, some of which have cracked lenses. Surface mounted 2'x4'troffers, spaced in pairs to be configured as 4'x 4' fixtures, are in the kitchen. These are starting to rust, which is expected for the age of the fixtures in the environment.

Lighting was not originally installed in the loft space above the kitchen. Installation of single lamp, fluorescent library stack fixtures is in process by the College. These fixtures were purchased, but not installed when the Learning Resource Center was constructed. The mechanical space accessible from the loft has a combination of incandescent bases with screw-in compact fluorescent lamps, and newer fluorescent strip fixtures.

Control of interior lighting circuits is via local, manual toggle switches.

Recessed downlights with HID lamps were originally in soffits around the building. These have been replaced outside the Dining Hall with surface mounted fixtures with an uplight component, that is typically used in parking garages. Control is via photocell and timeclock wired in series. There is no exterior emergency egress lighting.

Recommendations:
Recommendations for energy savings include automatic shut-off of building lighting systems and individual space control per the International Energy Conservation Code (IECC). Lighting circuits should be modified to provide switches in each space, including local occupancy sensors. In lieu of occupancy sensors, lighting branch circuits can be routed through a contactor and controlled via the building management system. However, local timed overrides are required for this type of control.

Replacement of lighting fixtures in fair to poor condition, such as the kitchen is recommended. Installation of emergency egress lighting at building exits is also recommended.

Fire Alarm
Existing Conditions:
The fire alarm system is an Edwards EST2 addressable system, installed 5 years ago. The Student Center contains a booster panel with local battery backup, located in the main electrical room. This is tied back to the Fire Alarm Control Panel in the Learning Resource Center. The system generally appears compliant with current codes and ADA requirements, with audible and visual notification devices. Heat detectors are located in the Kitchen, and the hood fire suppression system is monitored by the fire alarm system. The fire alarm system does not notify a UL Central Station. Alarm notification is local only, with security personnel contacting 911 in the event of an emergency.

The system graphic annunciator is located at the entrance outside the main electrical room, as this is the point of Fire Company access. A remote alphanumeric display is also at that location. The ability to silence the system from the building remote annunciators has been disabled.

Voice/ Data/Video
Existing Conditions:
The original incoming telephone service, located in the main electrical room, is abandoned. Services on the main campus originate from the Tech Building. The Student Center is served directly from the IDF in the Learning Center. Telephone service is voice over internet protocol (VOIP) via fiber optic cabling

routed overhead through the buildings. Wireless routers mounted flush in ceilings, strategically placed, with lockable covers are located in the building for wireless access.

Coax cabling for CATV serves a television monitor in the Dining Hall. CATV is distributed from the Learning Center IDF.

Recommendations:
Removal of all unused, abandoned low voltage cabling is recommended.

Security
Existing Conditions:
Access control to the building is via the Best Access System control panel located in the Fine Arts/Administration Building. This panel provides access control via card readers to the building entry doors on the main campus. This enables isolation of the buildings, via laptop, in the event of an emergency lockdown situation. There are door contacts to alert whether the door has been propped open, but no intrusion detection system otherwise.

Additional Comments
A local sound system is installed in the Dining Hall.

Romex wiring was evident in the storage area accessible from an office at the Loft level. This wiring is not permitted per code for non-residential occupancies.

Learning Resource Center
Building 500

Construction:
The building is a 1-story structure consisting of concrete footings, concrete slab on grade, steel columns and pitched steel joists. The building envelope is comprised of brick veneer with 2" foam insulation board and 8" CMU backup exterior walls. The roof system is asphalt shingle on rigid insulation on metal deck. Windows are a combination of fixed storefront and projected vent aluminum windows with insulated glazing.

Deficiencies
The following items were observed:

Building Envelope

- Walls:
  - Exterior walls appear to be in good condition.
- Entrances:
  - Building Entrances appear to be in good condition.
- Windows:
  - All windows appear to be in good condition
- Roof:
  - The metal roof system appears to be in good condition.
  - There are leaks at the clerestory structure, which require correction.

Building Interior

- Recommend replacing carpet at main student thoroughfare adjacent to the Student Center with a more durable floor finish. Carpet is suitable at the student computer / study areas adjacent to the circulation path.
- Supervision of the book stack areas is challenging given the location of the circulation desk, arrangement of the book stacks and the height of the stacks.
- Access to pendant mounted light fixtures at high ceiling areas is challenging for lamp replacement.

ADA Compliance:
The building appears to be handicap accessible.

Capacity for Renovation/Expansion
There is limited room for expansion on the south, east, and west sides of the building. There are limited opportunities to reconfigure the interior spaces of the LRC if required in the future for the expansion of technology or future library needs.

Heating System
Existing Conditions:
The heating system for the building is served by the Central Campus Heating Water System. The building was constructed in 2006 and included a new boiler and pumps in the Main Heating Plant and piping to the Library Building. Heating lines were extended from this loop to feed the Garrett Information Enterprise Center (GIEC) Building 100. The heating system serves an air handling unit

preheat coil, terminal control unit (VAV box), heat coils, perimeter baseboard radiation and a unit heater located in the air handling unit mechanical equipment room.

Evaluation:
The heating system is five years old and in good operational condition.

Recommendations:
Refer to the Central Heating Plant System description for recommendations.

Cooling System
Existing Conditions:
The Learning Resource Center is the only building with an air-cooled chiller used to generate chilled water even though it only serves a single air handling unit. The unit is approximately 30 tons in capacity and was manufactured by York. The chiller is located at grade within a masonry courtyard adjacent to the air handling unit Mechanical Room. It is on the East side of the Learning Resource Center between Buildings 500 and 600. Underground piping systems connect the chiller and extend to the air handling unit room. A buffer tank was provided to create sufficient water volume to prevent nuisance low water temperature chiller trips based on minimum compressor run times at low load conditions.

A single base-mounted end suction pump circulates water to the air handling unit cooling coil. A modulating electric/electronic 3-way mixing valve is controlled by a supply air duct temperature sensor. The pumping system is constant volume. The pump is manufactured by Armstrong. The system is original to the building constructed in 2006 and is in good operating condition. A redundant pump is recommended.

The Information Technology Hub Room has an independent ductless split A/C unit with low ambient control.

Evaluation:
The cooling system is five years old and in good operational condition.

Air Distribution System
Existing Conditions:
A single large single zone variable air volume air handling unit serves the entire building including offices, classrooms, and stack areas. The unit consists of a mixing box, hot water preheat coil, chilled water cooling coil and supply air fan. An Ebtron outdoor airflow measuring station is located in the outdoor air duct to insure minimum outdoor air flow at low supply air fan flow rates. The supply fan is equipped with a variable frequency drive to modulate fan speed. The air handling unit and supply air fan variable speed drive were both manufactured by York.

Additionally, this system uses an in-line return air fan equipped with a variable speed drive used to volumetrically track the supply air fan flow.

An electric, canister type, humidifier as manufactured by Nortec, injects steam into the air handling unit supply air stream to increase humidity levels during the heating season.

Conventional variable air volume terminal control units equipped with heating coils are used to thermostatically control the spaces they serve. In cooling mode, the unit's primary air damper will

modulate the amount of cold air delivered to the space. In the heating mode, the terminal heating coil control valve will modulate to increase supply air temperature to maintain space temperature set-points. Unlike a VVT System, each thermostatically controlled VAV terminal unit can either provide heating or cooling at any time, such that interior spaces can be cooled, while simultaneously, perimeter spaces can be heated.

Evaluation:
The air distribution system is five years old and in good operational condition.

Automatic Temperature Controls
Existing Conditions:
This building is controlled by a Johnson Controls (JCI) Direct Digital Control (DDC) System using electric/electronic actuation. It has an interface to the Main Heating Plant JCI controller also provided under this building's construction. These panels/controls are the only JCI Control System on Campus and although the newest, it has for the most part not been properly serviced by JCI when issues occur and is too sophisticated to do so locally. Based on this lack of service by the local JCI Branch Office, it is NOT recommended to provide this manufacturer as the Central Campus EMS.

Plumbing
Existing Conditions:
The building has a 6-inch incoming combined cold water service providing both domestic water and fire protection service. Incoming water pressure was recently upgraded and is approximately 170 psig. A 2-inch domestic water service with backflow preventer and pressure reducing valve (set at 65 psig) serves the Library, Student Center (400), Information Technology Building (300), GIEC (100), and Continuing Education (200) Buildings.

A Neptune water meter with remote read-out is located in the water entrance Mechanical Room.

An electric domestic water heater as manufactured by Lochinvar provides domestic hot water to the Library Building, the water heater is located in the Main Air Handling Unit Room.

Evaluation:
The plumbing systems are five years old and are in good condition.

Fire Protection
Existing Conditions:
The combined 6-inch water service serves two (2) 4-inch sprinkler zones. One zone serves the Library, and Student Center which is fully protected by a wet pipe sprinkler system. The other zone is not yet active and is for future. The system alarm zone valve has piping extended to the Main Air Handling Unit Room, which is adjacent to a common interior corridor shared by both the Learning Resource Center (500) and the Student Center (400).

Electrical
Existing Conditions:
Secondary service is obtained via an Allegheny Power pad-mount transformer. The main distribution panel is 500A, 480/277V, 3 phase, 4 wire, manufactured by Square D. Surge protection is provided at the service entrance. Panelboards fed from dry type transformers to provide 208/120V, serve

receptacle and small motor loads. These are located in the main electrical room 535 off the lobby adjacent to the Student Center.

The electrical distribution equipment, approximately 5 years old, is in good condition. Spares and spaces are available in each panel to accommodate future loads.

Emergency

Existing Conditions:

There is no emergency standby source in the building. Emergency egress lighting is via integral battery ballast in select lighting fixtures, and self-contained battery backup LED exit signs.

Lighting

Existing Conditions:

Energy efficient fluorescent lighting is utilized throughout the Learning Resource Center. Compact fluorescent downlights illuminate the lobby area, and recessed parabolic 2'x2' fixtures are in use in office spaces. Pendant mounted linear fluorescent and circuline fixtures with biax lamps are installed in the high ceiling spaces in the library stack area, supplemented by wall sconces.

Relamping is problematic in this building. Scaffolding is required to relamp the pendant fixtures in the library area, some of which are over 30' above the finished floor.

Lighting control is local, via manual toggle switches.

Building mounted wall sconces provide lighting provide egress lighting at exterior doors. Control is via a common photocell.

Recommendations:

Recommendation for energy savings include automatic shut-off of building lighting systems per the International Energy Conservation Code (IECC). This can be accomplished effectively by installing local occupancy sensors. Alternatively, lighting branch circuits can be routed through a contactor and controlled via the building management system. This may be a more feasible solution in the library area. However, local timed overrides are required for this type of control.

Fire Alarm

Existing Conditions:

An Edwards EST2 fire alarm control panel is located in the main electric room. A booster panel adjacent to the FACP serves the Learning Resource Center. The system generally appears compliant with current codes and ADA requirements, with audible and visual notification devices. It was noted that there is no smoke detector in proximity of the FACP, as required by NFPA. The fire alarm system does not notify a UL Central Station. Alarm notification is local only, with security personnel contacting 911 in the event of an emergency.

Booster panels in the Fine Arts/Administration building, Athletic Center, Shaw Learning Center are connected to this FACP, and function as one system. Remote alphanumeric annunciators are located in the Fine Arts/Admin Bldg and Athletic Center, with a graphic annunciator in the Student Center as the designated fire department access point.

The EST2 panel in the Learning Resource Center is cross-tripped with the EST2 panel in the GEIC building. This enables occupants in the main campus to be notified in the event of an alarm anywhere in those buildings. However, only a general alarm notification is annunciated on the FACP that does not generate the signal. This requires personnel to physically go to the panel originating the alarm signal in order to ascertain the situation, silence and reset the panel. Then the other panel has to be manually silenced and reset. The end result is that the duration of the process between alarm initiation, and silencing the building alarm is indeterminate. The process is complicated by the sub-panel in the TSSC area, if that is the source of the alarm. The ability to silence the system(s) from remote annunciators has been deliberately disabled so that security personnel must investigate the source of the alarm signal in order to silence the system from the FACPs.

Recommendations:
A single, integrated system is recommended for the main campus in order to expedite personnel response. Notification of a UL listed central station is also recommended as the security personnel are not necessarily in a single location with 24 hour attendance.

Voice/ Data/Video
Existing Conditions:
Services on the main campus originate from the Tech Building. Telephone service is voice over internet protocol (VOIP) via fiber optic cabling routed overhead through the buildings. The data rack in the Learning Resource Center, located in a closet next to the Library desk,contains three data racks. Data outlets are wired back to this rack, in addition to wireless routers mounted flush in ceilings, strategically placed, with lockable covers for wireless access in the building. A copper voice trunk is also routed from the Tech Building for analog voice, terminated to a patch panel. Horizontal wiring from the Student Center is terminated in this Hub Room. The CATV drop in the Student Center is distributed from this location as well.

Security
Existing Conditions:
Access control to the building is via the Best Access System control panel located in the Fine Arts/Administration Building. This panel provides access control via card readers to the building entry doors on the main campus. This enables isolation of the buildings, via laptop, in the event of an emergency lockdown situation. There are door contacts to alert whether the door has been propped open, but no intrusion detection system otherwise.

Shaw Learning Center
Building 600

Construction:
The building is a 1-story structure consisting of concrete footings, concrete slab on grade, steel columns and pitched steel joists. The building envelope is comprised of brick veneer with 2" foam insulation board and 8" CMU backup exterior walls. The roof system is asphalt shingle on rigid insulation on metal deck. Windows are a combination of fixed and projected vent aluminum windows with uninsulated glazing. The faculty office area was renovated in 2008.

Deficiencies
The following items were observed:

Building Envelope

- Walls:
  - Exterior walls appear to be in good condition for the age of the building. There is some evidence of water infiltration at the east wall.
- Entrances:
  - Building Entrances appear to be in good condition.
- Windows:
  - All windows are beyond their useful lifespan, and are recommended to be replaced with Thermally Broken aluminum windows with 1" depth, low-e, insulated glazing.
- Roof:
  - The asphalt shingle roof system is failing and is recommended to be replaced.

Building Interior

- Recommend replacement of all original ceiling grid and tile to improve lighting efficiency and acoustics.
- Recommend replacing all original light fixtures with energy efficient, recessed ceiling mounted light fixtures.
- Access to the Main Electric Room through the Chemistry Storage Room is not ideal.
- Panic Devices reduce the egress width of doors below width required by the current Building Code.
- Interior partitions only extend to the ceiling height, which does not provide adequate sound attenuation between spaces.
- Sight lines between lab tables and chalkboards appear to make teaching a challenge in the Chemistry Lab.
- Emergency Eye Wash is not operating properly in the Chemistry Laboratory.
- There does not appear to be a gas shut-off switch in the Chemistry Laboratory.
- Recommend replacement of fume hood in Chemistry Laboratory with newer more efficient, quieter model.
- Recommend capping abandoned plumbing in Physics Storage Room.
- Some cracks observed in CMU wall at north corridor.
- The depth of Classroom 604 is not ideal for teaching / flexibility.
- Evidence of roof leaks were observed below roof vents.

ADA Compliance:
The majority of the building components are handicap accessible. Below is a list of deficiencies:

-
- An accessible push-button automatic door operator is recommended at the accessible building entrance.
- Height of paper towel dispensers are not accessible.
- Accessible sink and workstation are recommended at the Chemistry and Physics Laboratories

Capacity for Renovation/Expansion
There is limited room for expansion on the south side of the building. Given the steel structure, and non-load bearing partitions, the building can be reconfigured relatively easily.

Heating System
Existing Conditions:
The heating system for the building is served by the Central Campus Heating Water System. The heating water piping systems and distribution pump are original to the 1971 construction and are 40 years old. The existing heating water lines extend from the Main Boiler Room through the Fine Arts/Administration Building (700) to the Shaw Learning Center (600). The heating water distribution system within the building serves air handling unit heating coils equipped with 3-way modulating control valves.

Recommendations:
It is recommended the existing heating water piping system and distribution pump which are now 40 years old be replaced in their entirety. Refer to the Central Heating Plant System description for additional recommendations. It is also recommended the building heating water distribution system be converted to variable flow while utilizing two-way modulating control valves. The heating system should be capable for extension to individual VAV box heat coils when the building is renovated.

Air Distribution System
Existing Conditions:
This building is the Main Classroom Building, which houses classrooms, faculty offices, science classrooms, and copy center. Four (4) separate air handling systems serve the building and an independent unit serves the Copy Center. The building was originally designed based on the open classroom landscape philosophy. In 2002, the HVAC Systems were replaced; and in 2008, when the new Library Building was constructed, the existing Library space in this building was converted into offices. The perimeter offices have full height partitions; whereas the interior office areas have high, but not full height partitions (i.e., still open landscape layout).

All four (4) air handling systems are split type using indoor air handling units, located above the ceiling and equipped with a direct expansion (DX) cooling coil and hot water heating coil. Remote outdoor air cooled condensing units are strategically located at grade along the perimeter of the building in close proximity to the air handling units they serve. Refrigerant piping connects the indoor air handling unit cooling coil to the remote air-cooled condensing units. The units use Refrigerant R-22, which is no longer manufactured. The indoor air handling units and outdoor air cooled condensing units were manufactured by York.

Individual small energy recovery ventilators (ERV) are associated with each air handling unit to pre-condition outdoor air by using waste heat from the relief air system. The energy recovery ventilator consists of an outdoor air injection fan, relief/exhaust air fan, and heat recovery device, all located within a common housing. The heat recovery device is considered a static plate type heat exchanger,

which utilizes a hydroscopic resin to transfer both heat through conduction and humidity/moisture through the resin material based on vapor pressure differential.

Basic operation is interlock with the air handling unit. When operating in the occupied mode, the ERV is energized and the minimum Code required outside air is delivered through the heat recovery device and ducted to the air handling unit mixing box. The unit's relief/exhaust fan pulls this same quantity of air flow out of the return air duct, through the heat recovery device, then discharges it back outside. Heat and moisture are transferred from the conditioned relief air stream to the unconditioned outdoor air stream to reduce the heating and cooling capacity needed to condition this outdoor air. These units are located above the ceiling and adjacent to the air handling unit. The ERV's are manufactured by RenewAire.

The air handling systems are considered a variable volume, variable temperature or VVT System. The air handling unit provides a constant flow of heated or air conditioned supply air. Damper located in the supply air duct modulate amounts of heated or cooled air delivered to a space to maintain space temperature. All spaces within the air handling unit zone get either cooling or heating, unlike conventional variable air volume systems where the supply air is constant at the air conditioning supply temperature setpoint (typically between 55 deg to 59 deg) and heating occurs at each terminal control unit, which also contains a modulating damper. A VVT System is a simpler approach to a true variable air volume (VAV) System, and is commonly used in smaller DX systems where constant flow through the unit's cooling coil is required. In a VVT System, a static pressure controlled damper in a bypass duct, which connects the supply main to the return main, bypasses supply air as individual room dampers throttle supply air to the space.

Zoning of the air handling units is critical to the successful performance of a VVT System as all spaces in each air handling unit zone receive either heating or cooling. Perimeter rooms must be separated from interior rooms, zoning based on exterior exposure (North, South, East, West), and function (Offices, Conference Rooms, Classrooms, Computer Labs) all affect the occupant comfort levels using this type of system.

Currently, one air handling unit serves two (2) science rooms on the south end of the building, as well as two west perimeter classroom. Similarly, another air handling unit serves 3 classrooms on the North end of the building as well as perimeter offices and classrooms on the West side of the building. A third air handling unit serves a suite of offices (interior and east side) and a fourth air handling unit serves perimeter and interior offices, which was the old Library Area extending Easterly from the Main Building.

Evaluation:
The units and systems appear to be in good working condition, have an anticipated life expectancy of 20 years, and are currently 9 years old.

The Chemistry Lab was currently retrofitted with canopy hoods over the work benches to capture heat and odors. Return air still exits from the space, which is no longer allowed by Code. Two (2) fume hoods exist; however, they have not been updated with face velocity monitoring systems. There did not appear to be sufficient outdoor air for make-up air of these exhaust systems.

The Copy Center contains a split DX 5-ton Computer Room unit which was also installed in 2002. It is a very small room and appears to be oversized for the sensible heat load in the space.

The unit also has a humidifier and dehumidification control sequence so as to maintain both temperature and humidity levels. The unit has been problematic from an operating standpoint.

Recommendations:
An exhaust fan is recommended for copy rooms to reduce airbourne toner dust associated with the reproduction process and equipment.

The building Information Technology Hub Room is recommended to be conditioned by an independent ductless split A/C unit, which can operate at low ambient conditions. The current IT Hub Room does not have an independent cooling source and is always too hot.

In approximately ten (10) years it is recommended the HVAC system and equipment be replaced with a 4-pipe (chilled water/heating water) central station air handling units used in conjunction with variable speed fans and variable air volume distribution system. Variable air volume terminal control units would be equipped with hot water heating coils and be thermostatically controlled. Refer to the central cooling plant description for additional information regarding recommendations.

Automatic Temperature Controls
Existing Conditions:
The automatic temperature control system was updated/replaced during the 2002 HVAC System renovation. The current system is all electric/electronic actuation tied into a Wattmaster Building Control System with remote access through an analog modem.

Evaluation:
The existing cabinet unit heaters serving the corridors, entryways, etc., are original to the building. When the building was upgraded and the pneumatic control system was eliminated, these units were not converted to electric/electronic control and just ran wild. It is recommended these units be upgraded to local electric/electronic control by using a return air bulb controlling an electric/electronic coil control valve with fan operation interlocked with an aquastat.

Recommendations:
It is recommended that the building system be interlocked digitally to an upgraded campus web-based energy management system as recommended under the central systems description.

Plumbing
Existing Conditions:
Domestic water is provided from the incoming water service from the Learning Resource Center (Library) Building 500. Domestic hot water is generated by local electric domestic hot water heaters. The plumbing systems appear to be in good condition.

A local point of use, Barnstead Pure Water System, serves the Chemistry Lab. A local air compressor also serves the Chemistry Lab.

Fire Protection
Existing Conditions:
The building is not protected by a sprinkler system.

Recommendations:
It is recommended that a Fire Protection/Wet Pipe Sprinkler system be provided for the building.

Electrical
Existing Conditions:
The original building service was 600A, derived from the Fine Arts/Administration Building switchboard. The original main panel (MDPB) is manufactured by General Electric, and is located in the electric closet. The electrical service was upgraded in 2002 to accommodate an HVAC upgrade. A dedicated utility pad-mount transformer was installed for the building to serve a 1200A main fused switch, 208/120V, 3 phase, 4 wire switchboard manufactured by Square D. This is located in the workroom off the Chemistry Lab. The original service was then backfed from the new switchboard. Surge protection has been provided for the service entrance.

The original General Electric panelboards are still in place throughout the building, in the electric closet, recessed mounted into the block walls, and dedicated surface mounted panelboards in the Biology and Computer labs. The Biology Lab panel has a shunt trip for emergency shutoff from a mushroom button at the room exit. The Chemistry Lab, in contrast, does not have a dedicated panel or emergency power off capability.

The original building panels are physically full, so additional distribution equipment has been installed as needed over the years to accommodate new loads. These include General Electric subpanels for the print shop and library computers, and a 400A Square D panel in the electric closet for HVAC loads. The electrical service is indicated to be at capacity by Garrett College facilities personnel. Surge suppression devices (SPDs) have been installed at panelboards serving computer loads.

Recommendations:
Recommendations include replacing the original panelboards as they have exceeded their anticipated useful life of 25-30 years. A dedicated panel with emergency off shunt trip capability is also recommended for the Chemistry Lab.

Emergency
Existing Condtions:
A 100A "emergency" panel is fed from a 50A feeder from panel EM in the Fine Arts/Administration Building. This panel is located adjacent to panel BA and serves exit signs, night light circuits and the Chemistry Lab exhaust fan.

A separate service disconnect ahead of the building main disconnect was recognized by the National Electrical Code (NEC) as an emergency source when the building was constructed. However, this is no longer a case. Dual head battery lighting units have been installed in the building in order to provide code recognized emergency egress lighting. Many of the exit signs have been replaced to include integral battery backup, although not all have been converted. All exit signs, with or without battery backup, utilize LEDs.

Recommendations:
Recommendations for emergency power source include providing battery units and exit signs throughout. Alternatively, a generator may be installed with a transfer switch to serve panel EM life safety loads. The original "emergency" source is now derived from a separate utility service. Signage is required to alert emergency responders that there is more than one live source in the building.

Lighting

Existing Conditions:

A good portion of the lighting in the building is the original. Surface mounted fluorescent lighting fixtures were retrofit with T8 lamps and electronic ballasts approximately 15 years ago. Lamping is standardized on 28 watt lamps with 4100k color temperature. Existing surface mounted fixtures were reused/reconfigured to suit revised space arrangements. The original lighting fixtures vary in condition from fair to poor. Newer walls extend only to the existing ceiling. A contactor controls multiple lighting circuits, which suited the original library open space configuration. The lighting was not recircuited to provide individual control of fixtures in each office.

Newer recessed 2'x4' troffers have been installed in the long corridor. The lenses are significantly discolored, despite being only 7 years old. Recessed 2'x4' fixtures and volumetric troffers with T5 HO lamps, and 50%/100% stepped dimming, are installed in a recently renovated portion of the building consisting of partitioned offices and are in good condition. The original lighting layout and switching arrangement was maintained, with partition walls extending to 12" below the ceiling. Control of interior lighting circuits is via local, manual toggle switches.

Building mounted high pressure sodium wall packs provide lighting for the exterior of the building. The original incandescent recessed fixtures mounted in entry soffits are abandoned in place. Flood lights with 400 watt metal halide lamps illuminate the parking areas. There is no exterior emergency egress lighting. Parking lot fixtures are controlled via photocell and time clock wired in series. A contactor is located above the ceiling in the building with photocell control (mounted at link hallway) to control the flag pole lights.

Recommendations:

Recommendations for energy savings include automatic shut-off of building lighting systems and individual space control per the International Energy Conservation Code (IECC). Lighting circuits should be modified to provide switches in each space, including local occupancy sensors. In lieu of occupancy sensors, lighting branch circuits can be routed through a contactor and controlled via the building management system. However, local timed overrides are required for this type of control.

Replacement of lighting fixtures in fair to poor condition is also recommended, as well as installation of emergency egress lighting at building exits.

Fire Alarm

Existing Conditions:

The fire alarm system is an Edwards EST2 addressable system, installed 5 years ago. This building contains a booster panel, located in the Mechanical Room adjacent to panel BA, which is tied into the Fire Alarm Control Panel in the Library Building. The system generally appears compliant with current codes and ADA requirements, with audible and visual notification devices. However, a full building inventory has not been performed. The fire alarm system does not notify a UL Central Station. Alarm notification is local only, with security personnel contacting 911 in the event of an emergency.

Voice/ Data/Video:

The original incoming telephone service, located in the main electrical room, is abandoned. Services on the main campus originate from the Tech Building. Telephone service is voice over internet protocol (VOIP) via fiber optic cabling routed overhead through the buildings. Three data racks are centrally located in a dedicated IDF closet. Data outlets are wired back to this rack, in addition to wireless routers mounted flush in ceilings, strategically placed, with lockable covers for wireless access in the building. A 25 pair CAT 3 cable provides analog voice service, terminated to a patch panel in one of the data racks.

Power services to the IDF include two 208V, 20A outlets and two 120V, 20A outlets.

Security

Access control to the building is via the Best Access System control panel located in the Fine Arts/Administration Building. This panel provides access control via card readers to the building entry doors on the main campus. This enables isolation of the buildings, via laptop, in the event of an emergency lockdown situation. There are door contacts to alert whether the door has been propped open, but no intrusion detection system otherwise.

Fine Arts Building
Building 700

Construction:
The building is a 1-story structure consisting of concrete footings, concrete slab on grade, steel columns and pitched steel joists. The building envelope is comprised of brick veneer with 2" foam insulation board and 8" CMU backup exterior walls. The roof system is asphalt shingle on rigid insulation on metal deck. Windows are a combination of fixed and projected vent aluminum windows with uninsulated glazing.

Deficiencies
The following items were observed:

Building Envelope

- Walls:
  - Exterior walls appear to be in good condition for the age of the building.
- Entrances:
  - Building Entrances appear to be in good condition.
- Windows:
  - All windows are beyond their useful lifespan, and are recommended to be replaced with Thermally Broken aluminum windows with 1" depth, low-e, insulated glazing.
- Roof:
  - The asphalt shingle roof system is failing and is recommended to be replaced.
  - Demolition or redesign/replacement of roof is recommended over infill storage area between the Fine Arts Building and the Maintenance Shop.

Building Interior

- Recommend replacement of all original ceiling grid and tile to improve lighting efficiency and acoustics.
- Access to the Main Electric Room through the Stage is not ideal.
- Panic Devices reduce the egress width of doors below width required by the current Building Code.
- Change in level of the stage causes a tripping hazard, particularly where it is in close proximity to the stage access stair.
- Guard rails are not provided at stage access stairs.
- Code compliant guard rail and handrail are not provided at the Control room.
- Code compliant stairs, guards, and handrails are not provided to the mechanical room level.
- Surface mounted light fixtures are recommended to be replaced with energy efficient, recessed ceiling mounted light fixtures.
- Interior partitions only extend to the ceiling height, which does not provide adequate sound attenuation between spaces.

ADA Compliance:
The majority of the building components are handicap accessible. Below is a list of deficiencies:

- Companion seats are required for the 4 wheel chair spaces in the auditorium.
- Access to the stage is currently provided by exiting the auditorium and entering the stage off of the exterior corridor. Egress from the stage is not accessible.
- Access to the stage from the handicap seating areas is recommended within the Auditorium.

- Accessible handrails are not provided to the stage.
- Inadequate clearance is provided on the pull side of the exterior door of the Kiln Room.
- An accessible push-button automatic door operator is recommended at the accessible building entrance.
- Height of tampon dispensers and paper towel dispensers are not accessible.

Capacity for Renovation/Expansion
There is room for expansion on the south side of the building. Given the steel structure, and non-load bearing partitions, the building can be reconfigured relatively easily. The sloped floor of the auditorium would have to be addressed if this space were to be repurposed.

Heating System
Existing Conditions:
The heating system for the building is served by the Central Campus Heating Water System. The heating water plant is located within this building since it was one of the original buildings when the Campus was created in 1971. The central heating plant will be described separately.

Recommendations:
The existing building heating distribution system is recommended to be replaces and upgraded for variable flow. Existing 3-way control valves shall be replaced with two-way modulating type. The heating system shall be capable of being extended to new equipment and VAV terminal control units equipped with hot water heating coils.

Air Distribution System
Existing Conditions:
Three (3) separate air handling unit zones exist within the building. The air handling unit zones consist of the Auditorium, Art Area, and the Music and Office Administration Areas.

Auditorium
Existing Conditions:
The Auditorium is centrally located in the building and extends out from the back of the building. The Auditorium utilizes ceiling fans to aid in the distribution of air in this high volume space. Two (2) separate air handling units, ductwork, diffusers, and controls serve the Auditorium. The original unit is forty (40) years old and provides heating only (no outdoor air for ventilations). The existing air handling unit was manufactured by Trane and is located within the gabled roof area of the Main Building. Approximately twenty (20) years ago, a separate split direct expansion cooling-only (no outdoor air for ventilation) air handling unit, ductwork, diffusers and controls were provided. The system consists of an indoor York air handling unit located above the ceiling of the Main Building and refrigerant pipes connect the direct expansion cooling coil to a remote two (2) compressor air-cooled condensing unit mounted at grade. Currently, when heating is needed, the original heating-only unit is locally energized. When cooling is needed, the cooling-only air handling unit and remote air-cooled condensing unit are energized to provide air conditioning. The control system for these units is totally independent and local with no integration by using a common thermostat or controller. The existing supply air devices used for both systems are standard horizontal throw diffusers and the return grilles are high and at the rear (entry) of auditorium. Typically, supply air devices used in high volume spaces are vertical throw type (e.g., linear slot diffusers) aided by high and low returns at the Stage Area to promote air movement at occupant level (low returns) while capturing heat from the Stage lights (high returns). The need for ceiling fans in the space for air circulation is partially a result of the air distribution system. This design,

however, was common for the era, especially for a system designed for heating only. Space limitations required the cooling system to be put in similarly, since the space was retrofitted later for air conditioning.

Evaluation:
According to ASHRAE, the ductwork, air handling units, controls, air-cooled condensing unit, and air terminals (diffusers/grilles/registers) are all beyond the median service life expectancy. Additionally, the equipment is not efficient compared to today's requirements. The cooling system uses Refrigerant R-22, which is no longer manufactured. The systems do not provide the code required outdoor air quantities for ventilation.

Recommendations:
Recommendations include replacement of the entire HVAC System, including controls, ductwork, air devices, air-cooled condensing units. A single heating and cooling air handling type of unit utilizing hot water heating from the central plant, remote high efficiency condensing unit (i.e., digital modulating scroll type) using environmentally friendly/high efficiency Refrigerant R-410 (new refrigerant type typically used in systems that previously used R-22) or chilled water from the recommended central chilled water plant and direct digital controls using electric/electronic actuation tied into the Central Campus Energy Management System. Energy-conserving control sequences such as free cooling economizer cycles, night setback control, demand controlled ventilation and dehumidification control sequences. Additionally, the use of heat recovery devices to precondition the required quantities of ventilation (outdoor) air needed by Code will be required to comply with current ASHRAE 90.1 Energy Standards.

Music And Office/Administration Suite
Existing Conditions:
These areas are served by a common constant volume air handling unit. The Music Suite is located adjacent to the Auditorium on the North exposure, while the Office/Administration Suite consists of both interior and perimeter spaces located on the South exposure. The existing air handling unit is original to the 1971 construction and is forty (40) years old. The unit is a heating and ventilating type air handling unit served by the Central Campus Heating Plant. Approximately sixteen (16) years ago, a direct expansion (DX) refrigerant (R-22) coil was added in the supply air ductwork and connected to a remote air-cooled condensing unit located on-grade. The air handling unit is located in the gabled roof area above the ceiling. All controls are local. The air distribution system (air flow rates, ductwork diffusers, etc.) and associated insulation was designed for heating only applications where heating and cooling systems need to be sized based on the cooling requirement. This, coupled with interior spaces, which require cooling when perimeter spaces require heating, and only a single thermostat for control, results in uncomfortable space temperatures in all the spaces to avoid extreme conditions in some areas when trying to satisfy other areas (i.e., everyone suffers a little). Too small of a duct system and air flow rates for air conditioning purposes create extremely cold supply air temperatures during cooling, creating drafts as well as condensation dripping from supply air diffusers. Enabling additional stages of cooling capacity based on space temperatures will lower the supply temperature to the point where condensate on the cooling coil will freeze and ice up the cooling coil to the point it blocks air flow through the coil which then needs to be thawed out.

Evaluation:
According to ASHRAE, all systems are beyond their useful life expectancy, the system and equipment is not sized for air conditioning, is locally controlled only and has no provisions to separately control

perimeter spaces from interior spaces, North exposure rooms from South exposure rooms, or different office types/functions with the Music Classroom. The current R-22 refrigerant is no longer manufactured, and the current equipment is inefficient compared to equipment manufactured today.

Recommendations:
It is recommended the entire HVAC System, including air handling unit, air-cooled condensing unit, ductwork, controls, etc., be replaced in their entirety. New systems and equipment need to comply with current ASHRAE 90.1 Energy Standards, be tied into the Campus Energy Management System, and be provided with thermostatic controllability for each room. A similar split type unit (VVT) with hot water heating is recommended or for enhanced capability/energy savings 4-pipe central station unit (VAV) is recommended. A high efficiency R-410 condensing unit using digital modulating scroll compressors or chilled water from the recommended central cooling plant is recommended.

Art Area

Existing Conditions:
The Art Area consists of a Gallery Space, Art Classroom, Faculty Office, and associated Storage Areas. This air handling system was replaced approximately ten (10) years ago and consists of an indoor heating/cooling air handling unit located in the gabled roof area above the ceiling and a remote air-cooled condensing unit located at grade. The air handling unit and remote condensing unit were manufactured by York International. The unit consists of a hot water heating coil served by the Central Heating Plant; and cooling is by the split DX refrigerant system. The refrigerant is R-22, which is no longer manufactured. All controls are local.

Evaluation:
The equipment and system appear to be in good condition, are reliable and maintain comfort levels. According to ASHRAE, the System has a median life expectancy of twenty (20) years.

Recommendations:
At this time, the only recommendation is to upgrade the controls for interlock with the Central Campus Energy Management System. Additionally in the future the system should be replaced with a 4-pipe central station air handling unit if a central chilled water plant, as recommended, is provided.

Automatic Temperature Control (Atc) System

Existing Conditions:
As described in the air distribution systems, the building ATC System is local pneumatic control, which is antiquated and being eliminated throughout the Campus.

Recommendations:
It is recommended all existing pneumatic controls, including damper actuators, control valves, etc., be replaced with direct digitally controlled electric/electronic actuation and be interlocked to the proposed Central Campus Energy Management System as recommended under the central systems description.

Plumbing

Existing Conditions:
A 4-inch incoming water service enters the main heating plant Boiler Room. This incoming water line splits in the Boiler Room to serve a 6-inch fire protection service and a 2-1/2-inch domestic cold water service. The domestic water service has a Neptune Water Meter with remote read-out, Watts backflow

Gymnasium
Building 800

Construction:
The building is a 1-story structure consisting of concrete footings, concrete slab on grade, masonry bearing walls and steel joists. The building envelope is comprised of brick veneer with 2" foam insulation board and 12" CMU backup exterior walls. The roof over the gymnasium is a built-up roof over rigid insulation on metal deck. The lower roof system is asphalt shingle on rigid insulation on metal deck. Windows are a combination of fixed and projected vent aluminum windows with uninsulated glazing.

Deficiencies
The following items were observed:

Building Envelope
- Walls:
  - Exterior walls appear to be in good condition for the age of the building.
- Entrances:
  - Building Entrances appear to be in good condition.
- Windows:
  - All windows are beyond their useful lifespan, and are recommended to be replaced with Thermally Broken aluminum windows with 1" depth, low-e, insulated glazing.
- Roof:
  - The asphalt shingle roof system is failing and is recommended to be replaced.
  - The built-up roof over the Gymnasium is nearing the end of its useful lifespan, and is recommended to be replaced in the next 5 years.

Building Interior
- Recommend replacement of all original ceiling grid and tile to improve lighting efficiency and acoustics.
- Surface mounted light fixtures are recommended to be replaced with energy efficient, recessed ceiling mounted light fixtures.
- Combination of electrical panels and plumbing / janitor sink is not ideal.
- Panic Devices reduce the egress width of doors below width required by the current Building Code.

ADA Compliance:
The majority of the building components are handicap accessible. Below is a list of deficiencies:
- Accessible lavatory and urinal are not provided in the Men's restroom.
- Height of paper towel dispensers are not accessible.

Capacity for Renovation/Expansion
There is room for expansion on the north side of the building, and potentially to the west of the exterior enclosed walkway. The load bearing partitions limit the flexibility of future renovations. The 2-story volume of the gymnasium could lend itself to functions such as a multi-purpose space, black box theater, auxiliary gymnasium, etc. Alternatively, the gymnasium could be reconfigured into a 2-story building, however getting natural light into these spaces would be a challenge.

Heating System

Existing Conditions:

The building is heated and ventilated only. The heating for the building is served by the Central Campus Heating Water System. The Gymnasium heating water pump is located in the Main Boiler Room. The pump and piping to and serving the Gym Building is original to the 1971 construction and is 40 years old. The enclosed breezeway connection from the Gym Building 800 to the Fine Arts and Administration Building 700 is not heated or conditioned in any way. The existing heating lines are located above the breezeway ceiling.

The Campus plans to construct a new Athletic Center, which will allow this building to be renovated and/or converted to another function.

Evaluation:

The existing heating lines have froze before as a result of failure of the single circulating pump (no standby). The pipes are 40 years old and at the end of their expected life.

Recommendations:

It is recommended the existing heating water piping system which is now 40 years old be replaced in its entirety back to the boiler and be sized based on conditioning the breezeway as well as the future capacity needs for this Facility. Refer to the Central Heating Plant System description for additional recommendations.

Air Distribution System

Existing Conditions:

The Gymnasium Building has the main playing area central located with the Men's Locker Room and Faculty Offices located on the South Side of the Play Area and the Women's Locker Room and Faculty Offices located on the North Side of the building.

Main Gymnasium:

The Main Gymnasium is heated and ventilated only. Four heating and ventilating units (two each side at 1/3 points) are located in the space, are exposed and hung tight to the underside of the structure. Each unit consists of a mixing box, hot water heating coil, supply fan, and discharge air plenum with supply air register. The units were manufactured by Trane and are original to the 1971 construction. The units are connected to an outdoor air plenum box, which is attached to an exterior intake louver. The bottom of the outdoor air/return air mixing box is a return air grille. Independent outdoor air and return air pneumatically actuated dampers modulate to vary the amount of return air and outdoor air for ventilation purposes. The heating coil uses a thermostatically controlled pneumatically actuated mixing valve to vary heating water flow through the coil to maintain the space temperature set-point . An in-line circulating pump provides a constant flow of water through the coil to minimize the potential of freezing the coil. The supply fan is constant volume and blows the air through an integral supply air register (i.e., there is no supply air distribution system). Two roof-mounted gravity relief vents with gravity back draft dampers are located at 1/4 points at each end to prevent over-pressurization of the space when additional outdoor air is injected for cooling purposes.

These units also provide the make-up- air source for the Locker Rooms. Transfer grilles are used to provide make-up air to be transferred from the Main Gym into the Locker Room. These grilles are located in the wall at the front (adjacent to the breezeway) corners of the Gym and at the Vestibule

Area of the Locker Rooms when entering from the West Breezeway end of the building. The Locker Rooms have an exhaust fan mounted on the roof, which provides the ventilation source.

Floor and ceiling-mounted cabinet unit heaters within the locker Room Area provide the necessary heat.

Recommendations:
The entire HVAC system is 40 years old and beyond its anticipated life expectancy. It is recommended the HVAC system, controls, piping, fans, cabinet unit heaters, etc., be replaced in their entirety. The type of HVAC proposed will be somewhat contingent upon the building's ultimate use. From a consistency standpoint, a split type VVT System with indoor air handling unit(s) and outdoor air-cooled condensing unit(s) are recommended. The air-cooled condensing units should use refrigerant R-410 and be the high efficiency type utilizing digital modulating scroll compressors. As an enhanced system a 4-pipe (chilled water and heating water) central station air handling unit with variable speed fans used in conjunction with thermostatically controlled variable air volume terminal units equipped with hot water heating coils are recommended.

If an air or water-cooled central chilled water plant is considered, it could be located in this building similar to the heating plant located in the Fine Arts and Administration Building. Both of these buildings are located at the East end of the Main Campus. Parallel pipe mains (heating water and chilled water) could be extended westerly to serve all the buildings.

Refer to the central cooling plant recommendation under the central plant discriptions.

Automatic Temperature Controls
Existing Conditions:
As described in the air distribution systems, the building ATC System is local pneumatic control which is antiquated and being eliminated throughout the Campus. The Gym Building 800 and Fine Arts/Administration Building 700 are the two (2) remaining buildings which utilize pneumatic controls.

Recommendations:
It is recommended all pneumatic controls including damper actuators, control valves, etc., be replaced with direct digitally controlled (DDC) electric/electronic actuation and be interlocked to the recommended Central Campus Energy Management System. As recommended under the central systems descriptions.

Plumbing
Existing Conditions:
The building domestic water system is served by the main service described in the Fine Arts/Administration Building description.

Fire Protection
Existing Conditions:
The building is not currently protected by a sprinkler system.

Recommendations:
It is recommended that a sprinkler system served by the 6-inch main sprinkler service located in the Fine Arts/Administration Building be extended to serve the Gymnasium Building. The sprinkler system

may have to be a dry pipe type if the connecting breezeway is not heated or the pipes are not protected otherwise from freezing.

Electrical

Existing Conditions:

The electric service for the Athletic Center is derived from the main switchboard in the Fine Arts/Administration Building. A 225A feeder serves a 208/120V, 3 phase, 4 wire panelboard in Mechanical Room 805. This panel (CA) is original to the building, and is manufactured by General Electric. A portion of the bus bar is burned out due to a bad breaker. A sub-panel (CB), also original, is located recessed mounted in the hallway to the Faculty Office. These panels are physically full. A load center for the bleachers, manufactured by Square D, was added adjacent to CA.

Recommendations:

Recommendations include replacing panel CA with the damaged bussing, as well as the remaining original panelboards as they have exceeded their anticipated useful life of 25-30 years.

Emergency

Existing Conditions:

A 100A "emergency" panel is fed from a 50A feeder from panel EM in the Fine Arts/Administration Building. This panel is located adjacent to panel CA and serves exit signs and night light circuits.

A separate service disconnect ahead of the building main disconnect was recognized by the National Electrical Code (NEC) as an emergency source when the building was constructed. However, this is no longer a case. Combination dual head battery lighting units/exit signs have been installed in the building in order to provide code recognized emergency egress lighting.

Recommendations:

Recommendations for emergency power source include providing battery units and exit signs throughout. Alternatively, a generator may be installed with a transfer switch to serve panel EM life safety loads.

Lighting

Existing Conditions:

The original gymnasium lighting fixtures utilized an incandescent source. These were replaced with 400 watt metal halide lamp fixtures, and recently retrofit with 360 watt pulse start metal halide lamps. These fixtures are in good condition, with the impact resistant lenses recently replaced. Wall mounted fluorescent fixtures were added over the doorways to provide an instant on light source, as HID lamps have a strike/restrike time of several minutes. These are connected to a night light circuit on the "emergency" panel in addition to the emergency battery units.

The remaining fixtures in the Athletic Center appear to be original, in fair condition, retrofit with T8 lamps and electronic ballasts approximately 15 years ago. Lamping is now standardized on 28 watt lamps with 4100k color temperature. Incandescent shower fixtures have been relamped with compact fluorescent screw-in type bulbs for additional energy savings. Control of interior lighting circuits is via local, manual toggle switches.

Building- mounted high pressure sodium wall packs provide lighting for the exterior of the building. The original incandescent recessed fixtures mounted in entry soffits are abandoned in place. High pressure

sodium wallpacks are also used in the covered walkway between the Athletic Center and the Fine Arts/Administration Building. These have discolored lenses, yellow to brown in color.

Flood lights with 400 watt metal halide lamps illuminate the parking areas. There is no exterior emergency egress lighting. Parking lot fixtures are controlled via photocell and timeclock wired in series.

Recommendations:
Recommendation for energy savings include automatic shut-off of building lighting systems per the International Energy Conservation Code (IECC). This can be accomplished effectively by installing local occupancy sensors in spaces with instant-on lighting. Alternatively, lighting branch circuits can be routed through a contactor and controlled via the building management system. However, local timed overrides are required for this type of control.

Replacement of lighting fixtures in fair condition is also recommended, where fixture lenses have yellowed over time. Installation of emergency egress lighting at building exits is also recommended.

Fire Alarm
Existing Conditions:
The fire alarm system is an Edwards EST2 addressable system, installed 5 years ago. This building contains a booster panel, located in Mechanical Room 805, which is tied into the Fire Alarm Control Panel in the Library Building. The system generally appears compliant with current codes and ADA requirements, with audible and visual notification devices. However, a full building inventory has not been performed. The fire alarm system does not notify a UL Central Station. Alarm notification is local only, with security personnel contacting 911 in the event of an emergency.

Recommendations:
Smoke detector coverage

Voice/ Data/Video
Existing Conditions:
The original incoming telephone service, located in a closet off the Women's Locker Room, is abandoned. Services on the main campus originate from the Tech Building. Telephone service is voice over internet protocol (VOIP) via fiber optic cabling routed overhead through the buildings. The data rack is ??. Wireless routers are mounted flush in ceilings, strategically placed, with lockable covers for wireless access in the building.

Recommendations:
Analog Voice/CATV

Security
Existing Conditions:
Access control to the building is via the Best Access System control panel located in the Fine Arts/Administration Building. This panel provides access control via card readers to the building entry doors on the main campus. This enables isolation of the buildings, via laptop, in the event of an emergency lockdown situation. There are door contacts to alert whether the door has been propped open, but no intrusion detection system otherwise.

Center for Adventure and Outdoor Studies (CAOS) Building 1000

Construction:
The building is a 1-story structure consisting of concrete footings, concrete slab on grade, wood posts, and pitched wood trusses. The building envelope is comprised of exposed seam metal wall panels with wood stud backup system. The roof system is fiberglass shingles. Windows are a combination of fixed and projected vent aluminum windows with uninsulated glazing.

Deficiencies
The following items were observed:

Building Envelope
- Walls:
  - Exterior walls generally appear to be in good condition. There is air infiltration through the electrical outlets on the exterior wall. Air barrier on exterior sheathing and insulation behind electrical outlets would provide a better barrier.
- Entrances:
  - Building Entrances appear to be in good condition. Seals at glazing are recommended to be replaced.
- Windows:
  - Seals at windows are are recommended to be replaced
- Roof:
  - The fiberglass roof shingle system appears to be in good condition.

Building Interior
- Carpet is recommended to be replaced.

ADA Compliance:
The building is handicap accessible.
- An accessible automatic door operator is recommended at the main building entrance.

Capacity for Renovation/Expansion
There is very limited room for expansion of the building. Given the wood roof trusses, which span the entire building, the building interior can be reconfigured relatively easily.

Heating/Cooling System
Existing Conditions:
Three residential style high efficiency type (<5 tons) propane furnaces with "A" type cooling coil and remote air-cooled condensing units serve this Facility. Two (2) units are located in Mechanical closets and serve adjacent classroom and office spaces, zoned North and South exposures. A third unit contains an "A" style coil, but a remote condensing unit and refrigeration piping has not been installed, thus the unit acts as a heating unit only. This unit serves large storage/warehouse areas located at the East end of the Facility. All three (3) units are re-circulating type only (no outdoor air for ventilation). The units were installed in 1999 when the original building was constructed. The units were manufactured by York and are in good operating condition. The units have an average life expectancy of fifteen (15) years and the units are currently twelve (12) years old.

Evaluation:
The units serve both classrooms and offices as well as different exterior building exposures. An even temperature from room to room is not obtainable and comfort issues exist within the building.

Recommendations:
A variable refrigerant volume (VRV) heat pump system (super heat type) is recommended to be used in junction with a dedicated outdoor air system (DOAS) so as to provide individual room temperature control and to provide the code required outdoor air quantities for ventilation. Since this building is not adjacent to the main campus building it cannot tie into the central system. A water to air geothermal heat pump is also an alternative.

Additionally it is recommended the new system be connected to the proposed/recommended campus energy management system described under the central plant systems.

Plumbing
Existing Conditions:

Currently, this building is one of two still served by a private water well. It is fed with a 2" line from building "C", which houses the well pump pressure switch and Well Xtrol pressurized hydropneumatic tank. An additional Well Xtrol hydropneumatic tank is located in this building to provide additional storage. A water softener is used to pretreat this water. Water quality is tested and recorded in accordance with the State of Maryland requirements. A 120-gallon, 36 kW electric water heater generates the domestic hot water for the building.

Recommendations:
It is recommended that this building be divorced from the local private well and be served by the public municipal system which serves the adjacent dormitory buildings.

Fire Protection
Existing Conditions:
The building is not protected by a wet pipe sprinkler system. The three (3) mechanical rooms housing the propane fired furnaces are protected by a wet pipe sprinkler system served from the domestic water system.

Recommendations:
It is recommended the entire building be protected by a wet pipe sprinkler system when connected to the public water system.

Electrical
Existing Conditions:
The electrical service to the building is 600A, 208/120V, 3 phase, 4 wire via a utility pad-mount transformer. The main distribution panel is located on the exterior wall of the Mechanical room with three 100A lighting and appliance sub-panels located immediately adjacent. Two are labeled for receptacle loads, the third for lighting. A fourth 100A sub-panel is located in the Hub Room. There is also a 100A feeder for an electric dryer in the adjacent storage area.

The electrical distribution equipment is manufactured by General Electric, and is original to the building. No problems have been reported with the panels, which have not yet reached their anticipated useful life of 25-30 years.

The electric service from the utility is reported to have widely fluctuating voltages. Ground fault interrupting devices are typically set to 20% for over/under voltage in order to prevent nuisance tripping.

Recommendations:
Monitoring/logging the incoming service current and voltage is recommended in order to determine the scope of power quality issues with voltage fluctuations on the campus.

Emergency
Existing Conditions:
There is no emergency electrical distribution system in the building. Egress lighting is provided via ceiling mounted emergency heads with battery backup. LED exit signs have integral battery backup. The fire alarm system is also provided with local battery backup.

Lighting
Existing Conditions:
Lighting throughout the building consists of recessed 2'x4' lensed troffers in finished spaces. The fixtures are equipped with electronic ballasts. Linear fluorescent lamps are T8. Lamping is now standardized on 28 watt lamps with 4100k color temperature. The campus had also standardized on three lamp fixtures by the time this building was constructed. These are generally in good condition, although the occasional fixture is showing discoloration in the lenses.

The storage areas utilize low-bay HID fixtures with prismatic lenses, with 250 watt metal halide lamps. These were previously installed in the Tech Building and are in good condition, although these are not ideal for the space. The mounting height is lower than the manufacturer recommended, resulting in poor uniformity in the space. There is no quartz restrike or backup "instant on" lighting. Control of interior lighting circuits is via local, manual toggle switches.

Building mounted compact fluorescent wall packs provide lighting for the exterior of the building. The pole mounted fixtures in the adjacent parking lot have been removed to accommodate the construction activity in the area. Exterior lighting is controlled via photocell and timeclock wired in series. There are no exterior emergency egress lights.

Recommendations:
Recommendation for energy savings include automatic shut-off of building lighting systems per the International Energy Conservation Code (IECC). This can be accomplished effectively by installing local occupancy sensors in areas with fluorescent "instant on" lighting. Alternatively, lighting branch circuits can be routed through a contactor and controlled via the building management system. However, local timed overrides are required for this type of control.

Replacement of HID fixtures with fixtures utilizing a fluorescent source is recommended. Installation of exterior emergency egress lighting at building entrance/exits is also recommended.

Fire Alarm

Existing Conditions:
The building has a stand-alone, fully addressable fire alarm system. The Edwards EST2 control panel is located in the Mechanical Room. The system generally appears compliant with current codes and ADA requirements, with audible and visual notification devices. However, a full building inventory has not been performed. The fire alarm system does not notify a UL Central Station. Alarm notification is local only, requiring security personnel contact 911 in the event of an emergency.

Voice/ Data/Video
Existing Conditions:
The original incoming telephone service, located in the Mechanical room was 25 pair copper cable derived from Garrett Dorm. This is not in use. Services on the main campus originate from the Tech Building. Telephone service is voice over internet protocol (VOIP), transmitted via RF antennas mounted to both buildings. The data rack is located in the Hub Room off the main Lobby. Data outlets are wired back to this rack, in addition to wireless routers mounted flush in ceilings, strategically placed, with lockable covers for wireless access in the building.

Recommendations:
Removal of all unused, abandoned low voltage cabling is recommended.

Security
Existing Conditions:
There is currently no access control system or intrusion detection system in the CAOS building. An access control system had been installed, but the manufacturer has gone out of business. Conversion to the campus standard Best Access System will require modifications to the doors/hardware.

Central Heating Plant

Existing Conditions:

The Central Heating Plant is located in Building 700, the Fine Arts/Administration Building. The plant is original to the 1971 construction and serves all the buildings (100-800) and Maintenance Building on the main part of the Campus. The system has been altered, modified, and extended over the years as the Main Campus grew from three (3) buildings to nine (9) buildings.

Three (3) boilers generate heating hot water for the Campus. Two (2) boilers are original to the 1971 construction and are 40 years old. These boilers are oil-fired, 3-pass, fire tube type, 113 boiler horsepower (BHP) capacity (3,769 MBH) and were manufactured by Kawanee. All tubes are active and original. The burners were replaced approximately 15 years ago and are ones manufactured by Webster. The third boiler was installed as part of the Library (Building 500) project and is approximately five (5) years old. The boiler is oil-fired, 4-pass fire tube type, 125 boiler horsepower (BHP) capacity (4,175,000 MBH) with integral burner and was manufactured by Cleaver Brooks, Model CB-101-125-125.

A 100-gallon above-ground propane tank serves the burner pilots while an underground double-wall fiberglass, 20,000 gallon fuel oil tank stores Number 2 fuel oil used by all three boilers. A duplex fuel oil pump transfers oil from the storage tank to small day tanks located at each burner. Supply and return pipes connect the day tank to the burner and separate supply and return lines connect the day tank to the main storage tank. These small day tanks are used as a buffer between the high burner pump rate and low consumption rate. A Gilbarco Leak Detection and Monitoring System was installed about twenty (20) years ago when the fuel oil tank was replaced. This leak detection system is also connected to sensors monitoring an underground storage tank housing gasoline and diesel oil used for transportation vehicles.

Based on the age and efficiency differences, the Cleaver Brooks boiler is typically used as Stage 1 or primary heat generator. The original Kawanee boilers are typically used as lag boilers during cold weather conditions when additional capacity is needed or if the Cleaver Brook boiler fails or requires service. All lead/lag selection of the boilers is manual.

Multiple pumps exist to distribute heating water throughout the Campus. These distribution pumps for the most part are located in the Main Boiler Room adjacent to the boilers. The distribution pumps consist of:

- Two (2) main pumps are base-mounted end suction type rated for 850 GPM, 91 feet of head, 30 HP, 1800 RPM, 6-inch suction x 5-inch discharge and 11.5" impeller as manufactured by Armstrong. These pumps were installed as part of the Library project in 2006 and are in good condition.

- One (1) pump services the Gym Building (800), is a base-mounted end suction pump type rated for 115 GPM, 40 feet of head, 3 HP, 1800 RPM and was manufactured by Taco. This pump is original (1971) and is 40 years old. It was rebuilt about 5 years ago and the motor has been replaced. There is no redundancy upon pump failure.

- One (1) pump serves the Shaw Learning Center (600), is a base-mounted end suction type rated for 146 GPM, 50 feet of head, 5 HP, 1800 RPM, and was manufactured by Taco. This pump is original (1971) and is 40 years old. It has been rebuilt at least once before. There is no redundancy upon pump failure.

- One (1) pump serves the Fine Arts Building (700), is base-mounted end suction type rated for 78 GPM, 20 feet of head, 1 HP, 1800 RPM, and was manufactured by Taco. This pump is original (1971) and is 40 years old. It has been rebuilt at least once before. There is no redundancy upon pump failure.

- One (1) pump serves the Library Building (500); it is base-mounted, end suction type, rated for 105 GPM, 80 feet of head, 5 HP, 1800 RPM and was manufactured by Armstrong. This pump was installed in 2006 as part of the Library Project. There is no redundancy upon pump failure.

- Two (2) pumps serve the Student Center (400) and are in-line circulating type. The pumps were installed in 1982 as part of the Student Center Project.

- One (1) small in-line circulating pump serves the current Maintenance Building.

All pumps are constant volume/constant speed type. Each pump/piping zone utilizes a 3-way pneumatic control valve to mix hot supply water with warm return water so as to provide individual zone supply water temperature reset capability based on the building needs and/or outdoor air temperature.

Originally, the Continuing Education Building (1979 construction) was served by its own individual boiler system and at some point when the building was renovated, the boiler was removed and the existing pipe mains from the Central Boiler Plant were tapped and extended to serve this building. Other taps in the existing piping mains were made and extended to the remaining buildings.

Evaluation:
Generally, with the exception of the Cleaver Brooks boilers, the fuel oil tank and leak detection system and main heating plant pumps, all systems and equipment is beyond its anticipated life expectancy and is inefficient compared to current energy standards, Code requirements, and typical design practices. The pumping/piping distribution system is not very efficient with multiple parallel lines serving various building and multiple taps to serve other building within the main campus. All pumping is constant volume but is not set up in the traditional primary – secondary style or distributed pumping where each building is served by the primary loop and remote pumps are located in the building they serve. Although the system is old and not the most energy efficient it does effectively provide heat where needed throughout the campus.

Recommendations:
Recommendations include replacing the two (2) existing Kawanee boilers. Similar Cleaver Brooks style boilers are recommended for consistency.

Additionally it is recommended the pumping and distribution piping be replaced in its entirety. The pumping system should be developed in a typical constant volume primary loop limited to the Boiler Room to circulate heating water through the heat generating equipment (i.e., boiler). All the current constant volume secondary pumps should be replaced with a single lead and standby variable speed pump, which can circulate heating water to all buildings. An industrial quality differential

pressure transmitter (Rosemount DP 2051) located in the Continuing Education Building 200 would control the distribution pump speed and flow. When reduced flow/capacity can satisfy the Campus Load, the use of a variable flow pump will significantly decrease pumping cost. For example, if a 100 HP pump reduces to 50% speed and corresponding flow, only 12.5 HP of energy is used. These pump motors will also be the premium efficiency type saving pumping energy even at full load conditions.

The original heating pipe mains extending through the Campus are also 40 years old and are recommended to be replaced and upsized to meet current and future loads. The secondary pump should also be upsized to accommodate future loads, since there is no penalty in using energy as described above. This will provide future flexibility for expansion, conversion of existing use and/or modernization of existing facilities. This work is recommended to take place during the summer to minimize disruption to Campus and to take advantage of the limited time heating is not required.

Coupled with this recommendation is the need to change all 3-way mixing type automatic control valves to 2-way throttling type. This would occur at all the heating coil valves across the main campus.

Central Cooling Systems

Existing Conditions:

The campus does not currently utilize a central chilled water cooling system. The buildings, where cooled, utilize all decentralized systems. Typically individual air handling equipment that provide cooling use a direct expansion (DX) system consisting of an indoor evaporator coil within the air handling unit and its associated remote air cooled condensing unit. Most units are split type which requires refrigerant piping to connect the indoor evaporator coil to the remote air cooled condensing unit. There are a couple roof mounted packaged type units serving Building 300. Most if not all these units utilize refrigerant R-22. R-22 as of July 2010, is no longer manufactured. The replacement refrigerant R410 operates at different pressures and is not a drop-in replacement type of refrigerant which means any type of failure of the existing R-22 equipment has to be replaced with remanufactured equipment or all components (evaporator coil, refrigerant piping, air cooled condensing units) need to be replaced in their entirety with a R410 system. With this type of system, compressors are often replaced and life expectancy is lower than other types of cooling systems.

Evaluation:

Decentralized direct expansion systems are the lowest cost system to install and are often the highest cost system to operate, service and maintain. These DX Systems also have the shortest median life expectancy according to ASHRAE (American Society of Heating Ventilation and Air Conditioning Engineers). These systems have performed well for the college but are very difficult to control since they have limited steps of capacity (typically on or off or off-50% - 100% capacity). Several units need to be replaced, are at the end of their median life expectancy or have had compressors replaced, with some replaced multiple times. For the most part the air cooled condensing units are located at grade around the building they serve. The cycling nature of units (compressors and condenser fans) create disruptive noise levels and takes away from the asthetics of the buildings. Roof mounted units are more difficult to service and repair.

Recommendations:

Recommendations to reduce operating, service and maintenance cost while enhancing controlability reducing noise levels and eliminating multiple exterior units at each building would include a single central cooling system or two satellite central cooling plants. The use of a single or multiple central utility cooling plants are utilized at most colleges, small and large, private and public.

Single or multiple central cooling plants provide equipment redundancy, minimizes the connected cooling capacity by maximizing the campus cooling diversity as well as minimizing the amount of equipment that needs to be serviced and maintained. It also can remotely locate this equipment to minimize the aesthetic impact and noise at each building.

It is recommended a single cooling plant be located at Building 200 or 800. As an alternate two (2) smaller central cooling plants can be located at each of these building which reside at the far east and west ends of the main campus.

The recommended cooling plant would consist of a minimum of two (2) air cooled or water cooled chillers, piped in parallel utilizing a constant primary, variable secondary pumping distribution system. The central cooling plants can be developed such that the main secondary pumping and piping distribution system be initially installed with provisions to incrementally purchase generation equipment (chillers and primary pumps) as the existing R-22 DX systems are phased out and the chilled water system extended. Additionally if two satellite chilled water plants are utilized, both systems could be tied in, including the one air cooled chiller which currently serves building 500.

If sufficient land exist a geothermal system utilizing water to water heat pumps in a central system or water to air heat pumps in a similarly decentralized system approach can be utilized. The disadvantage of a geothermal system on a college campus is once installed, the location of the Earth heat exchanger cannot be used for future buildings. A geothermal Earth heat exchanger can be located under permanent parking areas and athletic fields.

Automatic Temperature Control (Atc) System/Central Energy Management (Ems) System

Existing Conditions:

Currently a central campus energy management system does not exist. Most buildings are served by local electric/electronic controls. The Learning Resource building (500) and central heating plant have some direct digital control capability but the campus is not well serviced by the control company.

All automatic control valves are pneumatically actuated. The control system has very limited capability and control decisions (lead-lag, enable-disable) are typically done manually by Facilities Personnel. The ATC pneumatic air compressor is in a failed condition and the single compressor shop air compressor currently provides compressed air to the ATC System using the existing ATC air compressor storage tank only to provide volume needed to operate the pneumatic controls for the Heating Plant, Fine Arts/Administration Building, and Gymnasium. The existing pneumatic system was provided by Honeywell and is original to the building construction in 1971. There is also limited local Johnson Metasys Control.

Automatic Temp Controls

Evaluation:

The lack of any central control or monitoring system is a real disadvantage since spaces, buildings, units, systems cannot be fully automated, monitored, or controlled through a central campus energy management system (EMS). All issues have to be locally trouble shooted, adjusted, sequenced, scheduled,, enabled/disabled, etc. which requires facilities personnel be available/accessible at all times.

Automation features to conserve energy such as starting and stopping boilers based on load conditions/outdoor air temperatures, unit scheduling for specific events, outdoor air free cooling cycles etc. are either manually controlled or are at fixed set points.

Recommendations:
It is recommended the campus be provided with and upgraded to a web based open protocol direct digital controlled (DDC) energy management system IEMS) that can communicate with all buildings through the campus network system. A Bacnet system is the recommended open protocol communication system for the energy management system. The recommended system is Tridium using the Niagra-AX software framework and JACE to provide connectivity to systems within the building.

In conjunction with these recommendations, the local pneumatic automatic temperature control system needs to be replaced and upgraded to a direct digital control (DDC) system using electric/electronic actuation.

Currently, the most prevalent, but limited control system used by most buildings is a Wattmaster System. These systems for the most part still use analog dial-up modems and/or are just locally controlled on a building-by-building basis. Although it may lack some of the flexibility and sophistication of other more common systems by Honeywell, Siemens, Johnson Controls, etc., it seems to provide the necessary control functions for the systems it controls.

As a minimum, it is recommended the Campus be provided with a direct digital web-based Campus Control System where all buildings can be remotely controlled and monitored using an upgraded Prism Wattmaster System that can interface with existing Wattmaster building controllers.

Additional Comments:
Most of the buildings on campus utilize constant volume direct expansion air distribution cooling systems. While a variable volume variable temperature (VVT) system modulates the amount of supply air flow to a space in response to room thermostat set points a supply air to return air bypass with static pressure controlled modulating damper insures a constant air volume through the unit. This is necessary because the units have one or two steps of cooling capacity (50% - 100%) as a result of being small capacity direct expansion type units. Typically VVT system are used in small DX type of systems as a result of the equipment limitations.

The use of a conventional variable air volume (VAV) system provides better space temperature control while conserving energy. This type of system when supplied with a chilled water source has modulating cooling capacity (0% -100%) control and a constant airflow across the cooling coil is not required. This allows the unit supply and/or return fans to be provided with variable speed drives to reduce fan energy consumption any time the sytem is not operating at its peak/highest demand condition. This system is the installed system for the Learning Resource Center Building 500 which utilizes a small 30 ton air cooled chiller in lieu of decentralized direct expansion equipment.

Enhanced comfort will be provided in a conventional VAV System since heating coils for each thermostatically controlled space will be provided instead of one thermostatically controlled heating coil for all spaces served by that air handling unit.

College campus's are often a work in progress, always changing based on educational needs. A variable air volume system is flexible and can easily adapt to the changes of spaces and functions which occur within the building over the lifetime of the unit/system.

A VVT System is not as flexible and its successful operation is contingent on unit zoning based on exterior exposure and space function. All spaces that the unit serves is polled to determine which space has the greatest need then all the spaces are provided with that supply air temperature be it heating or cooling. Essentially the system operates like a single zone constant volume system with one thermostat controlling the air handling. This air is then modulated by a thermostatically controlled damper in the supply air duct.

A variable air volume system provides cold dehumidified air to all spaces all the time. Successful operation is not contingent upon building exposure (perimeter or interior) or type of function in the space (classroom, offices, computer room, etc.). It modulates the amount of cooling air to each space based on the space thermostat requirements. For rooms requiring heating, each VAV terminal control unit is equipped with a hot water heating coil which is also controlled by individual space thermostats. This increases the quality of individually controlled spaces for both heating and cooling based on the quantity of space VAV terminal control units and not just the amount of air handling units.

This energy savings and controllability is an important consideration as to whether a central chilled water cooling plants(s) is considered for the campus.