



APRIL 2014

2013-2020 COLLEGE OF THE ALBEMARLE FACILITIES UTILIZATION AND CAMPUS MASTER PLAN UPDATE

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EXECUTIVE SUMMARY

In 2002 and again in 2007/2008, Boomerang Design - MBAJ completed a facilities utilization study and campus master plan for College of The Albemarle (COA). Guided by these plans, the College has made numerous improvements to its facilities, while experiencing significant growth in enrollment. In light of these changes and in anticipation of further growth, the College contracted with Boomerang Design earlier this year to update its Facility Study and Campus Master Plan. As requested, Boomerang Design has developed an updated document that will serve as a guide for college facilities for the next five to ten years.

Like the previous facility studies, this update sought to verify use of current campus facilities; determine and quantify needs for additional space; determine a plan for best use of current facilities; determine needs for future space; and create a campus master plan for facilities development. This updated report focused on the utilization of space at the Elizabeth City Campus and the Edenton-Chowan campus. In addition, minor updates/recommendations have been made for the Dare and Currituck campuses.

Process

On April 22, 2013, COA President, Dr. Kandi Deitemeyer, and her leadership team were oriented to the study on the Elizabeth City campus by Angela Crawford Easterday of Boomerang Design. Following this orientation, full-time faculty and staff at the College were asked review the previous list of program needs to confirm if the list aligned with their current needs and whether or not the priority of projects needed to be updated. In addition, a meeting was held on the Edenton-Chowan campus on July 10, 2013, to further discuss the needs and focus of that campus. The results of the updated space needs are listed by campus and by department later in this document under the heading *Program of Current Space Needs*.

Concurrently, COA Institutional Effectiveness Director Dr. Eric Lovik prepared enrollment and population projections for the College, as well as population projections by age group for the College's service areas. These data were used to create a ratio that links enrollment growth to facilities and support spaces, in projecting future space needs for COA. Thus, all findings and observations in this report are driven by today's needs and projected student demand.

Boomerang Design also updated drawings of all of the COA facilities and prepared worksheets that show current square footage, as well as deficiencies in square footage, for each

area of the College. With all data in hand, Boomerang Design began the task of developing possible scenarios for meeting the College's space needs.

METHODOLOGY OF THE STUDY

This report includes the basic elements of an architectural master plan for facilities development; a plan for best use of current facilities; and a determination of needs for future space. In addition, a thorough program assessment, which projects future space needs based on data gathered from the entire college community, is included.

Limited funds for new construction, along with growing demands for accountability, heighten the need for campus master planning. New models of learning spaces are constantly emerging; programs are being added to and removed from the mix of college offerings; collaboration with other colleges and universities is demanded by students, as well as by funding bodies. All of these things can impact facility usage and projected needs.

This Boomerang Design facilities study/campus master plan update was an interactive process that gathered input from the President and senior leadership at the College. Components of the document include an assessment of programs and services that takes into account current and anticipated needs of program offerings at the College; identification and assessment of the current use of facilities; and demographic projections, which link growth in population to growth in enrollment. Boomerang Design also used the College's 2012-2015 Strategic Plan to align the master plan update with the six Strategic Directives (aims) identified by the College.

Boomerang Design gathered data for the COA study through meetings, site visits, and one on one conversation with key leadership at the College. In addition, building plans that represent which department is utilizing each space in every building on all campuses were updated. These plans were color coded by department under the premise that use of a space 75 percent of the time or more "assigns ownership" to a particular purpose or group. Ideally, a college will show far more shared space than "owned" space within their facilities.

In addition, Boomerang Design acquired enrollment data and projections from the College. This data was used to project program growth or decline from the years 2011/2012 through 2018/2019. In addition, any expected growth was linked to a department's need for additional space during this same time period.

PROGRAM OF CURRENT SPACE NEEDS

ELIZABETH CITY CAMPUS

LEADERSHIP

Since the 2008 Master Plan update, the College has constructed additional space to accommodate a new Board of Trustees Conference Room, a new President's Suite, and other administrative offices. The College is currently reorganizing staff locations for better usage of the space such that the President's Office, College Advancement/Planning/ Research, Development/Foundation, and Human Resources would be located contiguously or at least in close proximity to one another. In addition, the marketing and communication function are being relocated near one another to benefit both a functional need as well as for shared use of equipment.

Business & Finance

The addition to Building A (AE) has provided additional space for the Business and Finance Department. While there is limited room for growth, the additional space has relieved many of the needs identified in 2008. In addition, the College has acquired usage of an off-site storage facility to provide for the needed storage identified in the 2008 Master Plan. The greatest needs within the Business and Finance Department are to rethink the cashier and business office space which were minimally changes in the Building A Renovations, and for the construction of a Maintenance and Receiving facility (Facility Support Services) for the storage of equipment, golf carts, and janitorial supplies, as well as a small workshop and a space to receive equipment/shipments/mail. In addition, a covered area is needed for the storage of exterior equipment and motorcycles. Ideally, an area adjacent to a new Maintenance Building would be designed for college-owned vehicle parking.

Parking area	Secured area for college vehicles	Exterior area
Maintenance Facility	Pre-engineered building with shed for equipment	6,500 sq. ft.
MIS Larger space/ Equipment Space/ computer repair area	Merge MIS equipment into 1 space	Planned with current relocation of department into the brick house

Total Current Space Needs:

6,500 sq. ft.

Human Resources

The needs for Human Resources have been met.

Institutional Advancement

Development/Foundation

Storage/workroom/bulk mailing area	2 x current space	200 sq. ft. (100 sq. ft. additional space)
Convention/banquet space	Seat up to 300 for special events; include kitchen areas; share with Workforce Development	See Workforce Development needs
Work-study office	Quiet space, supervised	100 sq. ft.

Total Current Space Needs:

200 sq. ft.

Marketing and Communication

The College has proposed moving all marketing offices together and keeping the Foundation offices together. These moves will increase the efficiency of these areas.

Space for additional equipment		150 sq. ft.
Workspace at Dare locations	1 office	See programs of space for Dare

Total Current Space Needs:

150 sq. ft.

Institutional Effectiveness

The space currently occupied by Institutional Effectiveness is adequate and located in close proximity to the President's office; however, there is an overall concern for how well the classrooms are utilized throughout all campuses. Peak times for classes on campus are from 10:00 a.m. until 3:00 p.m. (typical for most community colleges).

Security

The College is currently in the process of relocating the Security Department from the Brick House into Building C.

Student Success and Enrollment Management

Current Student Success and Enrollment Management are not in need of additional space; however, there may be future opportunities to relocate areas within their office suite for better efficiency and service to students. Overall the office suite has a 'doctor's office' feel and lacks the desired openness. The College is assessing switching the location of Disability Services with that of Career Services for better accessibility. Overall, the greatest need for the Student Success and Enrollment Management office suite is better security behind the registration desk. Currently, the door locks from the wrong side making it easily accessible from the main public hallway.

Student Support Services

In November 2013, the Student Center completed a total renovation of their space. At this time, Student Support Services space is adequate.

LEARNING

Arts and Sciences

Performing Arts Center

The fine arts faculty and classrooms would like to be located in closer proximity to the Performing Arts Center, ideally in an addition to the building that would provide additional shop space and storage space. At this time it is not feasible to add onto the Performing Arts Center without additional demand and program growth.

Large multipurpose room for meetings/catering	Collaborate w/Foundation Office	See Conference/Training Center for Workforce & Continuing Education
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Classrooms

Larger classrooms	15 to 20; seat up to 30 each	900 sq. ft. min.; consider different type of classroom furniture and arrangement
Faculty offices	Place faculty offices near classroom space in fine arts (drama, art, music)	

Business and Applied Technologies

Business Administration

Space for equipment	Copier, scanner and fax for use by division	150 sq. ft.
Storage	Large closet, include file space for Co-op program	100 sq. ft.
Larger open classroom	40 stations	1,500 sq. ft.

Total Current Space Needs:

1,750 sq. ft.

Computer Engineering Technology

NCIH room	Additional one; seat 40 with adjacent office	1,000 sq. ft. NCIH Room 100 sq. ft. Office
Offices for adjunct faculty	See Miscellaneous	0 sq. ft.

*Total Current Space Needs:**1,100 sq. ft.***Cosmetology**

Larger/updated lab	1.5 x current size	1,000 sq. ft. additional space
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*Total Current Space Needs:**1,000 sq. ft.***Library**

The College Library is currently in design for complete renovation of the building. Once completed, the new Library will provide for private and semi-private small and large group study rooms, a separate reading room, an updated learning environment, tutoring areas, an updated lecture hall, and a separate testing room.

Miscellaneous

Adjunct faculty offices	Locate in each building	5 @ 600 sq. ft. each = 3,000 sq. ft.
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*Total Current Space Needs:**3,000 sq. ft.*

WORKFORCE DEVELOPMENT AND CONTINUING EDUCATION

The addition of the Currituck Regional Aviation and Technical Training Center has provided opportunities to expand Workforce and Continuing Education classes. As the College continues to grow and demand increases, additional space is needed to provide more workforce development opportunities within the COA service area. Such programs include, Public Safety, Law Enforcement, EMS, Nurse Aide, and Fire and Rescue. These programs need not only classroom/lab and storage space, but opportunities for simulation environments as well.

In addition, there is an increased demand for Transportation Technology courses such as Truck Driver Training and Diesel Mechanics courses. The Virginia Maritime Association has asked COA to consider adding CDL courses to partner with their 'Driver the Port' initiative whose goal is to grow by 100 new truck drivers each year to keep pace with the increasing number of imports and exports of containerized freight moving through the Port of Virginia. The Virginia Maritime Association already has teamed with a number of Virginia Community Colleges and training schools. In order for COA to offer Truck Driver Training Courses, a large property with a driving pad and storage for four (4) trucks and trailers, a driving simulation lab, and a classroom are needed. The driving pad could be utilized for other Public Safety training courses and motorcycle safety courses as well.

At the Elizabeth City Campus, the Workforce and Continuing Education Department would like to capitalize upon offerings that bring more people to campus. Ideally, a large conference/training center would bring local businesses to the College and provide a benefit for the businesses utilizing the College as a partner and resource. In addition, a Continuing Education center with a focus on Public Safety, EMS, Fire, Law Enforcement, and BLET courses is needed. Preference to this type of training would be located in Currituck County near the RATTC if possible.

Workforce Development		
EMS classrooms	2 classrooms to accommodate 30 students each	2 @ 850 sq. ft. each = 1,700 sq. ft.
EMS lab	Adjacent to (or possibly combined) with a classroom	900 sq. ft.
Nurse Aide class/lab	Accommodate 20 students; must have hot water in lab	1,200 sq. ft.
Health classroom	Multipurpose with counter/island for pharmacy tech; medication aide	900 sq. ft.
Professional Arts class/lab	Multipurpose lab/shop space for art, stained glass, etc.	1,200 sq. ft.
BLET Training room	Gym/Matt Space for training	1,200 sq. ft.
Locker rooms	For BLET/Public Safety/TDT Courses	(2) @ 300 sq. ft. each = 600 sq. ft.
Driving track	Currently use the Edenton Airport; for BLET driver training	Min. 5 acres (size depends on driving range maneuver training needs and additional space to meet stormwater regulations)
Truck Driver Training Program	Classroom to seat 20; simulation driving room; storage	Classroom = 600 sq. ft. Simulation = 400 sq. ft. Storage = 300 sq. ft.
Diesel and Heavy Equipment Mechanics Program	Lab with garage bays, classroom to seat 20, and storage	Lab = 6,000 sq. ft. Classroom = 600 sq. ft. Storage = 1,200 sq. ft.
Logistics and Supply Chain Management Program	Large open space with conveyor belt type computer simulators; room for students to	4,000 sq. ft.

	design, build and maintain and manage moving products for warehouses	
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Total Current Space Needs:

20,800 sq. ft.

Conference & Training Center		
Multipurpose training room	For Small Business Center that can accommodate 200-300; dividable; available to be used by COA Foundation, other departments/divisions and outside groups	4,500 sq. ft.
Catering kitchen	Adjacent to Multipurpose Training Room	300 sq. ft.
Small Business Center computer lab	Accommodate 24 workstations; share with other continuing education programs	900 sq. ft.
Conference rooms	(2) Breakout/smaller conference rooms	(2) @ 320 sq. ft. each = 640 sq. ft.
Resource Center	To support the Small Business Center with a computer, work area, and resource library for small businesses	400 sq. ft.
Office Suite		1,200 sq. ft.
Storage		1,000 sq. ft.
Business Incubator		1,200 sq. ft.
Workroom	Small Business Center	150 sq. ft.

Total Current Space Needs:

10,290 sq. ft.

EDENTON-CHOWAN CAMPUS

Since the 2008 Master Plan, COA's Edenton-Chowan Campus has consolidated to one location at the former DF Walker School site. The consolidation has provided additional space for the College; however, it lacks identity within the County and presents no 'front door' to the community. Currently, the former two-story DF Walker High School sits on the main corner of the campus and is the highest building on the site; but, it is not heavily utilized due to significant repair and abatement needs.

In addition, the Edenton-Chowan Campus is in a transition period of trying to establish viable niche programs that will draw students to campus. There are a number of opportunities that have been suggested by faculty and staff at the Edenton-Chowan campus, as well as from other College of The Albemarle campuses.

In addition to curriculum programs, there is ample space to offer additional courses in Workforce Development programs such as: geothermal, solar, and photovoltaic, sustainable agriculture, hydroponics, food safety, OSHA certification, boat building, LEED construction, etc. Previously the Edenton-Chowan Campus offered a curriculum program in Building Construction Technology. In addition WD&CE courses in HVAC, plumbing, masonry, and various other Construction modules were offered, but these have not been available for some time. The former boat-building facility with multipurpose classrooms and labs is adequate to meet these curriculum and WD&CE training needs.

Overall the campus facilities are relatively small and are positioned to offer a multitude of training. However, some programs offered on campus such as the Nurse Assistant I and II do not have adequate space to offer their labs. In addition, space is needed to offer certification testing for Nurse Assistant students.

In partnership with the Edenton-Chowan Public Schools, the college has recently increased its outreach to rising juniors and seniors in their Career and College Promise course offerings. The campus has also seen an increase in local students desiring to take face-to-face college transfer classes on a campus close to home. To offer a full complement of college transfer courses to the high school and adult population, space is needed for a Biology Lab.

Recent updates on campus have reduced space for student gatherings. A larger Student Commons/Lounge, a conference room, and a seminar room are needed on campus in a central highly visible location. There is currently no meeting space on campus outside of classrooms.

LEADERSHIP

Workforce Development building		Overall update needed
Technology upgrades		Throughout campus
Signage upgrades		Throughout campus
Development of a collegiate campus with a distinguishable front door, landscaping, and adequate lighting		Create a Sense of Place throughout campus

Miscellaneous

Student Commons/Lounge	Centrally located with good visual connection	1,000 sq. ft.
Conference room	Meeting space on campus for 12-15; centrally located	300 sq. ft.
Seminar room	Seat 20-30	750 sq. ft.

*Total Current Space Needs:**2,050 sq. ft.***ACADEMICS****Business Technologies****Culinary Arts**

Culinary	Upgrade the Culinary building to create a teaching lab (kitchen) with adjacent classroom and multipurpose meeting/dining room	Complete renovation of the 4,900 sq. ft. Culinary building; update the exterior grilling area
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Workforce Development**Workforce Development and Continuing Education**

Nurse Aide I Lab	Better space to accommodate 20 students; needs to have hot water in the lab	1,200 sq. ft.
Nurse Aide II Lab	Expand classroom/lab to accommodate 20 students	400 sq. ft.
Department of Corrections classroom		850 sq. ft.
Department of Corrections Training room	Gym/Matt Space for training	1,200 sq. ft.
Culinary Arts	Classroom space, grilling area, small dining space	See Culinary Arts above
Multipurpose lab	With adjacent classroom for Boat Building and Sustainable Technologies	1,500 sq. ft.

*Total Current Space Needs:**5,150 sq. ft.*

DARE COUNTY CAMPUSES

LEADERSHIP

Administrative

The administrative area is located at the Russell Twiford site in Dare County and encompasses the dean's office, business office, computer tech support, and custodial services. The administrative area, interior and exterior, are in need of a general face-lift and modernizing. The administrative space is adequate for the next 5 years.

In addition, the restrooms at the Russell Twiford campus are in need of updating, and at the Roanoke Island Campus, there is no accessible restroom for the gymnasium. COA would like to see one of the unused locker rooms renovated into two large accessible restrooms to accommodate PE classes and sports teams who use the gym. The gymnasium is currently shared between the County, Parks and Recreation and COA.

Computer tech workspace	For diagnosis and repair of computers	150 sq. ft.
Faculty Lounge	Space is adequate; add counters for storage	0 sq. ft.

Total Current Space Needs:

150 sq. ft.

Student Success and Enrollment Management

Recent changes to the testing have made the space adequate over the next 5 years. In addition, COA has one office now available for staff visiting from Elizabeth City and this meets their current needs.

Student Support Services

Current space is adequate.

LEARNING

Since the 2008 Master Plan, College of the Albemarle has renovated the main building and Basic Skills building as well as constructed the new Professional Arts Building at the Roanoke Island Campus. The renovations and new construction have allowed COA to vacate leased spaces in Manteo and additionally provide for program growth.

A Physics lab is needed to enhance the Associate of Science Degree Offerings. The lab should accommodate 28 students.

Arts and Sciences

Physics lab	28 stations with separate storage for equipment and chemicals	1,500 sq. ft. class 100 sq. ft. storage
Adjunct Faculty Office	The area currently used by adjunct faculty needs to be renovated and modernized	Current space is adequate

Total Current Space Needs:

1,600 sq. ft.

Business and Applied Technologies

Current space is adequate.

SUGGESTED NEW PROGRAMS & SERVICES

Below is the list of suggested new programs and services identified for consideration in the planning process, which were gleaned from conversations with the President, Senior Leadership and some Trustees.

Suggested New General Spaces

More large flex training/multipurpose spaces at all campuses

Civic Theater/Auditorium at Dare (current Auditorium is located below base flood – this is a big issue); could be used for Workforce Development and Continuing Education to hold events

New Student Center space at Edenton-Chowan

Better Distance Education space at all campuses

Testing Center at Elizabeth City

More dedicated space for Public Safety, Law Enforcement, EMS, Nurse Aide, and Fire and Rescue at Elizabeth City

More Simulation environments

More storage for Public Safety programs

More flex/multipurpose spaces at Edenton-Chowan for Art/Creative and Heavy Duty Upholstery Repair classes

Suggested New Programs

More Hospitality/Tourism programs at Dare

Bartending program at Dare and Edenton-Chowan

More Sustainable programs at Edenton-Chowan

More Workforce Development programs at Edenton-Chowan (Plumbing, Carpentry, Masonry, Boat Repair – certificate programs)

Wine Making program at Edenton-Chowan

Hydroponics program at Edenton-Chowan

Food Safety program at Edenton-Chowan

Food Service Truck program at Edenton-Chowan

OSHA Certification program at Edenton-Chowan

Heavy Duty Upholstery Repair at Edenton-Chowan

Childcare Program at Edenton-Chowan

Transportation/Truck Driver Training (classroom and track) at Edenton-Chowan

Suggested New Services

Video Conferencing from high tech area at Elizabeth City

More equipment trainers at Edenton-Chowan

Partner with a local farm at Edenton-Chowan

General Suggestions

Better connectivity (technology) at Edenton-Chowan

Upgrade technology and smart boards at Edenton-Chowan

Better landscaping, brick wall, collegiate feel for Edenton-Chowan

Better signage at Edenton-Chowan

Relocate Russell Twiford campus spaces to Roanoke Island at Dare

Improve the campus infrastructure at Elizabeth City (roadways, sidewalks, parking, roof replacement, window replacement, auditorium metal paneling, lighting, signage, landscaping)

Update the Building A main hallway at Elizabeth City that was not part of new addition

More parking at Elizabeth City and Edenton-Chowan campuses

POPULATION AND ENROLLMENT PROJECTIONS

COA Institutional Effectiveness Director, Erik Lovik, provided enrollment and population data for the study. The data includes the following:

- 2010 Population by Age by County for COA's seven-county service area
- 2010 – 2019 Estimates and Projected Population by County from the N.C. Office of State Budget Management
- 2008/2009 – 2017/2018 COA Enrollment/FTE Goals and Growth Projections
- 2011/2012 COA Unduplicated Headcount

Total population in the COA seven county service area, is expected to stay relatively flat (> 1% growth) thru 2019. Analyzing population projections between 2011 and 2019 by age by county data from NCOSBM, there are some growth opportunities between the ages of 18-44 year olds in Dare, Chowan, Currituck, Gates, and Perquimans Counties during this time period. These pockets of growth in an age range ideal for the College could lead to marketing and targeted programs for COA locations.

Appendix C of this report contains population and enrollment projections for the College of The Albemarle service area. The growth projections were tied to the overall space needs by campus as the basis for projected space through 2020.

ASSUMPTIONS UNDERLYING ENROLLMENT PROJECTIONS

The enrollment projections make the following assumptions:

1. The College's market share of population will remain constant. That is, the College will continue to attract the same percentage of students from each age group.
2. Retention rates will remain constant.
3. Each department's percentage of total college enrollment will remain constant.
4. The population projections (upon which the enrollment projections are based) are valid, and there will be no dramatic change in the area's economy to cause significant out-migration or in-migration.

Given these assumptions, it is evident that the enrollment projections are negligible. Their primary value is their function as a framework for analysis. The College might increase its market share of the area population by increasing its marketing efforts or by revising its program/course offerings. Individual departments must use their expert opinion about their programs to make adjustments to their projected enrollments. The adjustment enrollments can then be totaled to obtain an adjusted total enrollment for the College.

GENERAL RECOMMENDATIONS

1. Develop a comprehensive Facilities Maintenance/Capital Improvements list for all campuses that includes types of finishes/systems, when these items were put into service, cost of upkeep/maintenance, life expectancy, year for replacement, and replacement costs. A comprehensive list will better enable the College to foresee and plan for replacement of finishes/systems, possibly even buildings. It is a great resource to share with each local municipality as well.
2. Renovate existing classrooms and labs to facilitate collaborative, engaged classroom environments thru technology, equipment and furnishings. Provide appropriate, regular instructor training on how to utilize the new classroom equipment. Consider implementing an accountability requirement to ensure COA's investments are utilized. Provide directional signage and building designation signage that is current/more up-to-date.
3. Consider development of collaborative offices to eliminate many private offices that are not utilized all day. Space is significantly lacking on all campuses for adjunct faculty, and implementation of office suites that provide open work areas, collaboration area, work room, lounge space, conference space and private work areas would provide COA with the greatest flexibility.
4. With any renovation or new construction, expand technology and technology staff/resources to support current and future growth of the campus.
5. Consider developing a comprehensive, COA campus standard signage plan that will enable all campuses to have a COA consistency. This includes marquee signage, pedestrian and parking lot signage, building signage, room signage, and accent signage on all campuses.
6. At Elizabeth City, continue to look for opportunities to bring businesses and other professionals onto the campus. Market the resources of COA and its Small Business Center Excellence. In addition, consider hiring a traffic engineer to look at better ways to enter/exit campus and plan for emergency evacuation situations.
7. At Edenton, find and highly market those niche programs that will draw students to campus. Consider more outreach to the high school.
8. At Dare, work towards consolidation of the campuses to one site. This will take a number of years and a large financial investment. Given the limitations on renovating the older facilities at the Roanoke Island Campus, there will come a time when the insurance rates and need for renovations will require raising existing structures and building new facilities on campus.
9. At Currituck, the College and County have shown they are committed to working together to further educate and train those in the Hampton Roads area. Continue to look for opportunities for economic development and cross-sharing training needs.

ANALYSIS OF SPACE, CURRENT AND PROJECTED

The Existing Space Assignments by Building and Current Space Assessments with Future Projections for COA can be found in Appendix A and Appendix C, respectively. The projected space need for each department/division and program is directly proportional to the demographic projections for the College's service area. The current space need (actual space used plus needed space) was multiplied by a growth factor for future years. This growth factor is the ratio of current enrollment by division to projected enrollment by division and, thus, is directly related to the demographic projections for the service area of each campus.

Located in Appendix C is a chart labeled 'Current Space Assessment with Future Projections' that depicts the current space need versus the projected space need for the College. COA is not unlike most North Carolina Community Colleges that have very limited resources and a great need to be very efficient; thus having a lot of multipurpose spaces.

Overall, the projected growth needs based upon enrollment projections is minimal. The College's greatest needs lie in Workforce Development and Continuing Education facilities to expand programs, support local businesses, and team with local municipalities to support industry needs. In addition, the College has a great need to maintaining its existing facilities, while trying to update technology when and where possible. Most of the College's facilities are 30+ years old and facilities this age start needing replacement of exterior envelopes (roofs and windows), systems (HVAC), and overall campus 'sprucing up' (interior updates, landscaping, sidewalk replacement, signage, lighting). In the following pages, this master plan update will address not only the needs for additional space, but also a list smaller projects that can be managed as funding becomes available.

ARCHITECTURAL RECOMMENDATIONS

COLLEGE OF THE ALBEMARLE

Master Plan Scenario

Referenced Documents:

- Summaries of Survey Data by Program and Service Area
- Appendix A: Current Site Plan and Existing Space Assignments by Building
- Appendix C: Current Space Assessments with Future Projections
- Appendix D: Proposed Space Assignments by Building, 2020 Main Campus Master plan

Introduction

Currently, COA devotes 253,965 square feet of assignable space to program and/or service functions on all campuses. The Current Space Assessment spreadsheets contained in Appendix C indicate an additional need of 53,790 assignable square feet to meet existing program and service demands of today on all campuses. By 2017/2018, given the projected enrollment, the College should prepare for a space need of approximately 54,229 assignable square feet more than the present facilities can accommodate. These projections assume that the College adds no new programs or services to its present offerings. Naturally, the square footage requirements and project priorities would be altered if the College chooses to offer new programs or services, particularly without eliminating others.

It is important to note that the assignable projected space deficits for the year 2017/2018 are net amounts that represent only assignable program or service space from the 2012/2013 current space needs. Thus, they do not include any area required by code for building support features such as restrooms, mechanical and electrical systems, corridors, and walls. The Gross Space Assessment Summary Table (Appendix C) uses a common factor of forty percent (40%) to arrive at a total gross square footage need. Thus, the College gross space deficit through 2017/2018 would be approximately 75,920 gross square feet. The College currently has 3,600 square feet of space available in Building C to accommodate program needs.

Most of the space deficit lies in the need for a conference/training/small business spaces, workforce development (law enforcement, nurse aid, emergency services, and continuing education), truck driver training, diesel and heavy mechanics, and logistics and supply chain management.

College's have greater ability to bring on/revise program offerings when spaces are as a flexible and multipurpose as possible. This report provides multipurpose space recommendations and suggestions on maximizing efficiencies on campus.

The following pages represent an architectural master plan working document that should be updated as the College experiences new growth in population and offers new programs. Unlike past master plans, this report does not separate campus improvements into phases, but rather lists the improvements in a method that will allow the College to quickly align potential funding with the list of campus improvements needed. In addition, attached in Appendix E is a report on the conditions of existing roofs at the Elizabeth City Campus and an estimate of repair/replacement costs.

PROPOSED CAMPUS IMPROVEMENTS (NEW CONSTRUCTION, BUILDING RENOVATIONS, CAMPUS UPGRADES)

ELIZABETH CITY CAMPUS

The Elizabeth City Campus is the main campus for COA. It sits on 51⁺ acres situated along the Albemarle Sound. The campus is located directly adjacent to Albemarle Hospital and is accessed from North Road Street. The campus includes five (5) major buildings, as well as several smaller structures. The major buildings on campus appear to be situated out of any flood plains depicted by Pasquotank County GIS and NC Flood Plain Mapping. Currently, the campus has two entrances/exits from North Road Street (one with a signal, one without). The South entrance (not signaled) is located less than 500' from a signaled entrance to Albemarle Hospital. Because of the close proximity of the two entrances, it would be very difficult for COA to relocate their main entrance further south. It would also be very difficult to add another entrance/exit off campus. The College might consider widening the signaled entrance with additional lanes leaving campus, as well as roadway improvement work along North Road Street for acceleration/deceleration lanes. Our recommendation is for COA to consider working with a traffic engineer/design firm who can look at the current traffic flow on campus and offer suggestions on improved circulation.

The 2020 master plan for the Elizabeth City Campus focuses on repairs, upkeep and maintenance to existing facilities and the addition of two new facilities on campus – a Conference and Training Center and a Facility Support Services building.

Because there is currently very little funding available for new projects and overall, there is expected to be little growth throughout COA's Service Areas, this master plan presented on the following pages has been set up to offer COA a number of manageable projects to renovate and update existing facilities when funding remains tight as well as some new construction projects for when additional funding resources are available. Most of the projects listed are not tied to another

project and therefore can be accomplished in any order depending upon the greatest need and resources available at the time.

New Construction

New Conference and Training Center

- New 20,000 – 25,000 square foot facility
- Approximately \$6- \$7M 2014 turnkey cost (construction, equipment, A/E fees)
- Small Business Center
 - Computer Lab
 - Resource Center/Conference Room
 - Workroom
- Continuing Education Offices
- Computer lab
- Large dividable training center (can be shared with Foundation for banquet needs)
- Distance Learning Classroom(s)/NCIH
- Small Business Incubator/Flex Space
- Catering Kitchen
- Small Break/Vending area
- Storage and Support spaces
- Relocate MIS into new facility

New Support Services Building

- Single-story, approximately 6,500 square foot facility with outside covered storage and adjacent secured parking for college vehicles
- Approximately \$1.2M 2014 turnkey cost (construction, equipment, A/E fees)
- Space Needs:
 - Maintenance Shop
 - Receiving
 - Mail
 - Storage
 - Dry Goods
 - Janitorial
 - Miscellaneous
 - Offices
 - Maintenance Director
 - Shared for Mechanics
 - Grounds Equipment – exterior covered
 - Small break room
 - Support facilities

Facility Renovations

Building A

- Original building corridor finish upgrades
 - New flooring to match new addition
 - Paint
 - 2x2 Tegular ceiling tiles and grid
 - Lighting
- Original building restroom upgrades
 - Replacement fixtures – water saving fixtures
 - New flooring
 - Paint
 - Lighting
- President's Office Suite Security
 - Replace door closest to the parking lot from stairwell with a solid core wood door and replace door hardware with only a panic bar from inside the suite (no handle from the stairwell)
 - Provide a door and lock from the hallway across from the cashier's window to secure the President's Office suite
- Capital Improvements/Repairs
 - Window Replacement as seals begin to fail

Community Auditorium (D)

- Lobby and entrance upgrades
 - Paint
 - Ceiling upgrades
 - Add a wheelchair lift and demolish the ramp
 - Rework the railings
 - Add a concessions window and shelf between the Lobby and adjacent storage room
 - Lighting upgrades
- Exterior metal panel facade
 - Replace the metal panel façade on the stage house with something that is more aesthetically pleasing and requires less maintenance - \$200,000*
- Add a humidity control system
- Capital improvements/repairs
 - Window replacement as seals begin to fail
 - Roof replacement*
 - Auditorium Lower Roof \$79,000
 - Auditorium Upper Roof \$79,000
 - HVAC system replacement

Building B

- Capital Improvements/Repairs
 - Window replacement as seals begin to fail
 - Roof repair/replacement*
 - Library and Building A flat roof repair \$24,500
 - Shingles \$60,000
 - HVAC system replacement

Building C

- Finish upgrades throughout the building
 - New flooring/revive terrazzo flooring
 - Paint
- Restroom upgrades
 - Replacement fixtures – water saving fixtures
 - Lighting
- Technology
 - Update classroom technology for all spaces that have not been updated in the last five years
 - Shop
- Renovate the vacated machine shop for program areas
 - EMS classrooms and lab (until new facility is built)
 - Continuing Education Professional Arts space
 - Other academic needs
- Renovate Academic Support space (if relocating to Building B after renovation is complete)
 - Nurse Aide class/lab (until new facility is built)
 - Other academic needs
- Capital improvements/repairs
 - Window replacement as seals begin to fail
 - Roof replacement*
 - Flat roof \$35,500
 - Mansard and shingles \$200,000
 - Steep Slope Shingles \$300,000
 - HVAC system replacement

Foreman Center (FC)

- Offices
 - New flooring
 - Paint
 - 2x2 Tegular ceiling tiles and grid
 - Provide service window to hallway with counter to service students
 - Add a sound masking system to control noise issues within the open office/cubicle environment

- Reassign offices for Adjunct Faculty when new Conference Center and Workforce Development Buildings are constructed

** Estimate provided by Garland Co; refer to Appendix E for full report*

Campus Upgrades

Signage

- Refer to Appendix G
 - Update exterior Campus Signage
- Update campus entrance signage along North Road Street
- Update interior campus signage for a complete, consistent, comprehensive plan to get students from outside of the campus to their classroom door
 - Building Name/Number Exterior Signage
 - Interior Lobby Signage/Directory
 - Classroom/Room Signage

Security

- Implement a card swipe door lock at highly sensitive areas on campus including Security, MIS, Facilities, and the MLT space on the second floor of the Owens Center.
- Other security measures include cameras on the second floor of Building C, at the Auditorium, along the boardwalk, in the new Library, on the second floor of Building B, and in the Student Center.
- Refer to Appendix F
 - Key recommendations:
 - Signage along perimeter of campus signifying college property
 - Lighting upgrades – parking lots, around buildings, where darkened by trees
 - Key Control System Policy
 - Electronic Security Review and Plan
- Campus Evacuation Policy

Parking

- When possible work towards maximizing existing parking lots
- Provide adequate parking with each new building constructed

Miscellaneous

- Classrooms – consider renovating existing classrooms for new technology needs and replacing furniture that is more mobile to allow for multiple classroom layouts that will engage students.

EDENTON-CHOWAN CAMPUS

The Edenton-Chowan Campus for COA sits on approximately 11 acres shared by the County and the College and located in Downtown Edenton. Since the last master plan update, the College has relocated the Edenton-Chowan Campus from leased space in town to the current site. The campus is located directly across the street from John A. Holmes High School, which offers an incredible opportunity for shared resources and draw of students from the public school to the College. The campus includes five (5) buildings along with a greenhouse. In addition, the Parks and Recreation Department has a gymnasium on the property that is heavily used by the community. Currently, the campus' greatest detriment is the lack of a front door for the College along the main roadway North Oakum Street. Visitors to campus must access the College's campus administration via a private side street.

The Edenton-Chowan Campus has the potential to be a gem for the community it serves, as well as a campus where niche 'go-to' programs are offered by COA. Currently, the Edenton-Chowan campus' greatest opportunity is to create a welcoming entrance and overall college campus identity. The former two-story, DF Walker High School building sits on a prominent corner of the site and blocks the COA campus from the main street frontage. The former school remains partially used, but in its state of disrepair is hindering the ability of the College to create the much needed campus front door. The former school has cultural and historical significance to some citizens of the County, but its usefulness continues to decline without an investment in complete renovation/rehabilitation of the building. The estimated costs to bring the former school up to current code and renovate for the needs of the College are significant (refer to Appendix H) and the College, in concert with the County, need to determine if renovation of the facility is feasible. If it is determined that the structure is worth investment, then it should be renovated for the needs of COA's Workforce Development and Continuing Education programs, general academic classrooms, and for relocation of the campus administrative offices. The property around the

building should also be landscaped, lighted, and identified with campus signage to signify this facility as the 'front door' to the campus. If it is determined that the former school needs to be removed from the site, then a smaller, new, one-story facility can be built in its place to provide for the needs identified. Should the former school be removed there is an opportunity to recognize the significance of the former school through a remembrance area on site.

If the College and the County cannot determine how to move forward with the former DF Walker School, another option for creating a 'front door' to the campus would be for the College to build a new Administration and Workforce Development Building on the open property at the corner of North Oakum and Dicks Streets.

New Construction

New Admin/Workforce Development and Continuing Education Building (*corner of property*)

- Single-story, approximately 11,000 square foot facility; 'Front Door' to the campus
- \$2.25M - \$2.5M 2013 turnkey cost (construction, equipment, A/E fees)
- Programs:
 - Department of Corrections
 - Matt/Fitness room
 - Classroom
 - Showers
 - Nurse Aide I and II
 - Simulation labs with 8 beds each
 - Classrooms
- Biology Laboratory
- Small break/vending area
- Relocate Campus Administration offices to new building
- Additional Support/Adjunct Faculty office(s) and work room
- Provide additional outdoor landscaping, courtyard, patios, etc. to define campus 'Front Door'

Facility Renovations

Administrative Building

- If a new Admin/Workforce Development building is constructed, consider repurposing the existing Admin building for a student center with study lounge, computer 'plug-in' area and multipurpose training space.
 - Additional technology drops
 - Paint
 - Lighting
 - May need to increase the size of the restrooms

Classroom Building (*Currently Workforce Development Building*)

- Finish upgrades throughout the building
 - New flooring
 - New lighting
 - Paint
- Restroom upgrades
 - Replacement fixtures – water saving fixtures
 - Lighting
- Repurpose Nurse Aide lab/classrooms into additional multipurpose/training rooms
- Repurpose Student Center (if moves to existing Admin Building) for an additional computer lab

Culinary Arts Lab

- Completely renovate the existing Culinary building
 - Update the kitchen
 - Separate the multipurpose room into a production style classroom and a smaller dining/multipurpose room
 - Update the exterior grilling area
- Finish upgrades throughout the building
 - New flooring
 - New lighting
 - Paint
- Restroom upgrades
 - Replacement fixtures – water saving fixtures
 - Lighting
- Capital improvements/repairs
 - Window replacement as seals begin to fail
 - Roof replacement
 - HVAC system replacement

Campus Upgrades

Signage

- Refer to Appendix G
 - Update exterior Campus Signage
- Update Campus entrance signage along North Oakum and Blades Streets or North Oakum and Dicks Streets (depending upon if the former DF Walker School is raised)
- Update Interior Campus signage for a complete, consistent, comprehensive plan to get students from outside of the campus to their classroom door
 - Building Name/Number Exterior Signage
 - Interior Lobby Signage/Directory
 - Classroom/Room Signage

Landscaping

- Update Campus landscaping; provide areas for student gathering on campus
 - Patios
 - Pergolas
 - Plantings
 - Signage/landscaping walls to identify the College property

Parking

- When possible look work towards maximizing existing parking lots
- Provide adequate parking with the new building constructed

Security

- Cameras are currently located on the exterior of two buildings. Additional cameras should be considered for critical interior spaces and for all building exteriors.
- Refer to Appendix F
 - Key recommendations:
 - Signage along perimeter of campus signifying College property
 - Lighting upgrades – parking lots, around buildings, where darkened by trees
 - Key Control System Policy
 - Electronic Security Review and Plan
- Campus Evacuation Policy

DARE COUNTY CAMPUS

The Dare County Campus is located on two sites in Manteo, NC. The Russell Twiford location occupies 31,750 gross square feet in two buildings and two parking lots situated on 2.9 acres owned by the College. The Russell Twiford site provides space for the Dare County Campus Administration, the campus library, the student lounge, the Distance Ed/Information Highway room, science labs, and shared/general purpose classrooms. The Roanoke Island site (formerly the location for Manteo Middle School) for COA sits on approximately 14.65 acres along the Albemarle Sound; the property is owned by Dare County. In 2008/2009, the College constructed a new 23,000 square foot Professional Arts building and renovated the portion of the former middle school occupied by the College. Construction of the new building allowed the College to vacate various leased spaces throughout Manteo.

Ideally COA would like to be located on one consolidated site in Manteo, which would benefit both current resource allocations as well as student's opportunities if all of COA Dare services were on one site. Given the limited property at Russell Twiford, over time the College and County are advised to look at moving all of the Dare County Campus to the Roanoke Island Campus. However, the Roanoke Island Campus is currently occupied by the College, the Parks and Recreation Department, and Dare County Schools (Alternative School), and presently there is no space available within the properties owned by Dare County Schools. A move to consolidate COA to one site would require significant funding and a number of years to implement. At this time no funding has been set aside to build new facilities or to relocate the Alternative School. As the COA Dare County Campus grows, ideally the Alternative School would be relocated to another facility built for Dare County Schools.

In addition, all buildings excluding the new Professional Arts Building and Boat Storage Building recently constructed on the Roanoke Island Campus, fall below base flood. In July 2012, the U.S. Congress passed the Biggert-Waters Flood Insurance Reform Act of 2012 (BW-12) which

calls on the Federal Emergency Management Agency (FEMA), and other agencies, to make a number of changes to the way the National Flood Insurance Program (NFIP) is run. Key provisions of the legislation will require the NFIP to raise rates to reflect true flood risk and change how Flood Insurance Rate Map (FIRM) updates impact policyholders. The changes will mean premium rate increases starting this year for Dare County are 25%, per year until insurance premiums reflect the full risk rates. Since the passing of this law, new legislation has amended this reform act to eliminate an immediate spike in yearly insurance premiums. Under the new bill, insurance rates will go up 5-18% per year until the premiums reach the full-risk rate. This increase in premiums could, over-time, begin to push owners to replace buildings that are located in areas identified as 'highest risk of flooding.' Dare County should monitor insurance premiums and evaluate them against replacement costs for the former Manteo Middle School buildings on the Roanoke Island Campus. It is important to note that this master plan focuses on COA's needs and not the overall usage of the Manteo Middle School by other entities. Currently the Dare County Alternate School, the community auditorium, and Parks and Recreation also share this campus. Demolition of the former Maneto Middle School facility would affect these areas as well. In addition, the Food for Thought Inc. is located at the corner of Business 64 and Grenville Street and it is a critical service to Dare County. Any future development of COA will need to consider if the program stays in its current location or is relocated elsewhere on the current site.

Consolidation to one site for Dare County is ideal for the College, but would require significant investment from Dare County. This master plan provides a guideline to what would be needed should consolidation of Russell Twiford and Roanoke Island locations be considered.

New Construction at Roanoke Island Campus

New Administration/Classroom/Student/Library Building (Russell Twiford Consolidation Part I)

- Currently the Dare County Campus needs approximately 12,000 gross square feet of space more than the current facilities can hold. With the goal of consolidating the Dare County Campus to one location, additional space is needed to relocate the administrative offices at Russell Twiford.
- Multi-story approximately 20,000 – 25,000 square foot facility
- \$6M - \$6.5M 2013 turnkey cost (construction, equipment, A/E fees)
- Programs:
 - Campus Administration
 - Offices
 - Workroom
 - Office for adjunct faculty
 - Storage
 - Student Success Center/Tutoring/Testing/Assessment
 - Campus Library
 - Science Lab
 - Physics
 - Prep room and storage
- Two tiered 40-seat Distance Education classrooms
- General/Multipurpose classrooms
- Student Lounge
- Provide additional outdoor landscaping, courtyard, patios, etc.

New Classroom Building (Russell Twiford Consolidation Part II)

- Addition of a second building at Roanoke Island would provide for complete consolidation from Russell Twiford
- Multi-story approximately 20,000 – 25,000 square foot facility
- \$6M - \$6.5M 2013 turnkey cost (construction, equipment, A/E fees)
- General/Multipurpose classrooms

New Health Sciences/Workforce Development Building (raise former Manteo Middle School – COA portion and Basic Skills Building)

- Multi-story approximately 20,000 – 25,000 square foot facility
- \$6M - \$6.5M 2013 turnkey cost (construction, equipment, A/E fees)
- Training labs
- Nursing labs
- Workforce Development offices
- Small Business Center

New Classroom/Foundational Studies Building (*raise former Manteo Middle School*)

- Multi-story approximately 20,000 – 25,000 square foot facility
- \$6M - \$6.5M 2013 turnkey cost (construction, equipment, A/E fees)
- Foundational Studies classrooms and offices
- General/Multipurpose classrooms

Security

- In Dare, there are no cameras at the Russell Twiford campus and they should be considered, while the campus is utilized. The Roanoke Island Campus has adequate coverage of security cameras.

CURRITUCK CAMPUS

In 2012, COA began construction on the Regional Aviation and Technical Training Center which is the first facility for the College in Currituck County. The 43,000 sq. ft. RATTC is situated in a 600+ acre business and industrial park and located immediately adjacent to the Currituck County Regional Airport. The RATTC has been certified by the FAA and is one of the first schools in the United States to run an entire FAA part 147 overhaul facility. In addition, the facility boasts a unique learning environment that offers fully engaged learning experiences for students both inside and outside the classroom. The facility currently offers courses to support the College's Business and Applied Technologies curriculum courses as well as Workforce Development and Continuing Education courses.

Currituck County is an area the College should strongly consider for future expansion and course offerings, especially those to support Workforce Development. The successful collaboration between Currituck County and COA along with Currituck County's development initiatives provides opportunities for the College and County's partnership to be further expanded.

ADDITIONAL NEEDS

In addition to the necessities listed for each COA Campus, the College is in need of a Workforce Development and Continuing Education Facility to be located in one of the College's existing service areas. A Workforce Development and Continuing Education Center focus would include training for emergency services, law enforcement, and nurse aid. Ideally this type of facility would be established as a joint training facility between the College and a municipal partner. The best opportunities for this type of a joint facility are in Currituck and Pasquotank Counties. Currently the College does not have enough land to support this type of facility.

In addition, the College has a demand and need to create a truck driver training, diesel and heavy mechanics, and logistics and supply chain management center to support the Virginia Maritime Association 'Drive the Port' program that can offer real jobs to graduates. Currently COA utilizes the Chowan County Airport for its BLET driving courses; however this is not always viable and will not allow the College to expand its program offerings. COA has no property large enough at any of its campuses to build such a program. COA should locate this program in a neutral place rather than at a specific campus.

In order for COA to offer Truck Driver Training Courses, a large property 8-9 acre + property is needed to build a driving pad and storage for four (4) trucks and trailers, a driving simulation lab, and a classroom are needed. The driving pad could be utilized for other Public Safety training courses and motorcycle safety courses as well.

Workforce Development and Continuing Education Building

- Multi-story approximately 20,000 square foot. training and education facility to be located within one of the College's Service Areas; ideally to be a joint facility between a local municipality and the College to serve the training needs of the municipality and the College
- Acreage needed: approx 4-5 acres
- Approximately \$5 Million 2014 turnkey cost (construction, equipment, A/E fees)
- Programs:
 - EMS
 - Classrooms
 - Lab

- Basic Law Enforcement
 - Matt/Fitness Room
 - Classroom
 - Simulation Lab
 - Showers
 - Armory
- Nurse Aide I and II
 - Simulation Labs with 8 beds each
 - Classrooms
- Multipurpose Classrooms
 - Various Certification Programs
 - Share with Learning
- Computer lab
- Regional Simulation labs where possible
- Locker rooms
- Outdoor training course
- Support Offices

Transportation Technology and Commerce Training Facility (<i>additional property needed</i>)
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- Single-story, approximately 22,000 square foot facility; located on a large property ideally in the Edenton area
- Acreage needed: approx 8-9 acres
- Approximately \$5-6M 2013 turnkey cost (construction, equipment, A/E fees) – depending upon the site development costs
- Programs:
 - Truck Driver Training
 - Classroom
 - Simulation Driving Room
 - Storage
 - Exterior Driving Range/Pad
 - Diesel and Heavy Equipment Mechanics Program
 - Large open bay with garage doors
 - Classroom
 - Storage
 - Logistics and Supply Chain Management Program
 - Large open warehouse space with conveyor belt type computer simulators
 - Classroom
 - Storage
- Small break/vending area
- Support Offices and facilities

ADDITIONAL RECOMMENDATIONS COLLABORATION OPPORTUNITIES

ENGAGED, COLLABORATION MINDED CLASSROOM DESIGN

College of The Albemarle is pushing the envelope on engaging students through the use of collaboration-based classroom design, which was implemented at the Currituck County Campus. As COA continues to renovate classrooms and training labs on campus, it is important to evaluate opportunities to create collaborate environments both inside the classroom and outside the classroom. Collaboration-minded classrooms create an environment where students and faculty can be engaged with one another, be engaged in the instruction, offer instruction to their peers, and learn to work together communicate with one another. The Colleges who teach their students in a collaborative environment prepare students with better skills in critical thinking, teamwork, work ethic, and the ability to communicate with one another. Creating collaborative classrooms (thru renovation of existing facilities or building new facilities) can be accomplished thru additional technology and equipment and furnishings that promote mobility and collaborative opportunities.

COLLABORATIVE OFFICE DESIGN

If colleges are going to ask their students and faculty to be collaborative in the classroom environment, then colleges should consider modeling what they are teaching in the classroom by reducing the number of individual offices and begin adding professional collaborative office suites. Colleges today face significant space constraints due to limited resources for new construction and growing numbers of faculty and staff to support enrollment increases over the past few years. Outside of senior administration and a few areas of the college, there is typically an unwritten expectation that full-time faculty should be given private offices. In an environment where faculty and staff offices are not being utilized all day, every day, this results in significant inefficiency of space. Supplement this with the need for adjunct faculty space, faculty/staff break rooms, faculty/staff workrooms, conference rooms, etc., a college has a difficult time providing an








environment that supports students, supports its faculty and staff, and offers opportunities for collaboration. Over the past ten years, Boomerang Design has found that this is a strain felt by most of the colleges across North Carolina and West Virginia where we have worked. Today's collaborative office environments bridge the design of private offices with the design of open cubicles. An environment of all private offices is not an efficient use of space and is very costly to an institution both in its inflexibility and its costs to renovate. While an environment of all open cubicles does provide the greatest flexibility, it does not provide for faculty/staff to counsel a student, hold a meeting, or have a private conversation and has been proven to lower overall productivity. A true collaboration office suite provides space for each type of need along with areas for engaging, training, work room, lounging, etc.

A collaborative office environment is not implemented without some criticism from the faculty and staff that would no longer have a private office. The criticisms are from the loss of status/expectations; from those who have difficulty getting along with another co-worker; and from those not accustomed to sharing space. However, the landscape of the College can be changed, by offering more collaboration amongst the faculty and staff and by maximizing college resources. If implemented correctly, a stronger community emerges.





COA has implemented a test of a collaborative office environment at the Currituck Campus and should continue to monitor whether or not this type of office environment works best on a campus supports collaborative learning classrooms.

LEGEND







COLLEGE LEADERSHIP

-  PRESIDENT
-  BUSINESS AND ADMINISTRATIVE SERVICES
-  HUMAN RESOURCES
-  INSTITUTIONAL ADVANCEMENT
-  INSTITUTIONAL EFFECTIVENESS
-  STUDENT SUCCESS & ENROLLMENT MANAGEMENT
-  STUDENT SUPPORT SERVICES



WORKFORCE DEVELOPMENT & CONTINUING EDUCATION

-  EMERGENCY MEDICAL
-  SMALL BUSINESS CENTER
-  WORKFORCE AND CONTINUING ED SUPPORT
-  AVIATION MAINTENANCE TECHNOLOGY

LEARNING

-  ARTS AND SCIENCES
-  BUSINESS & APPLIED TECHNOLOGIES
-  DISTANCE EDUCATION
-  FOUNDATIONAL STUDIES & ACADEMIC SUPPORT
-  HEALTH SCIENCES & WELLNESS PROGRAMS
-  LIBRARY

MISCELLANEOUS

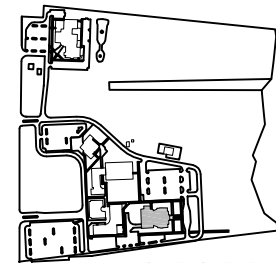
-  SHARED/MULTIPLE DISCIPLINE
-  BUILDING SUPPORT (CORRIDOR/TOILET
ROOMS/JANITOR/MECHANICAL)



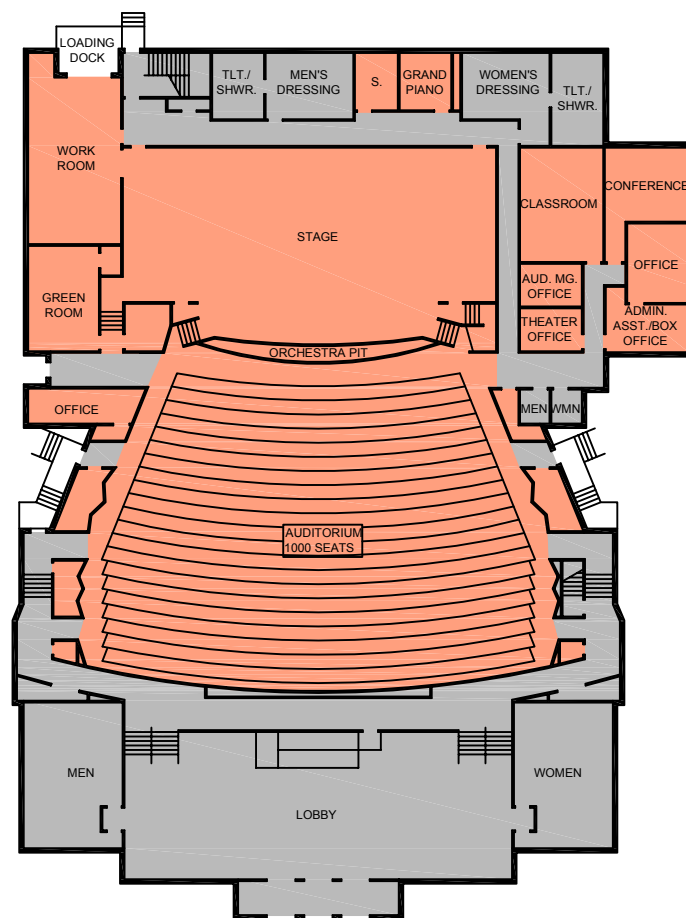


BUILDING "A" SECOND FLOOR

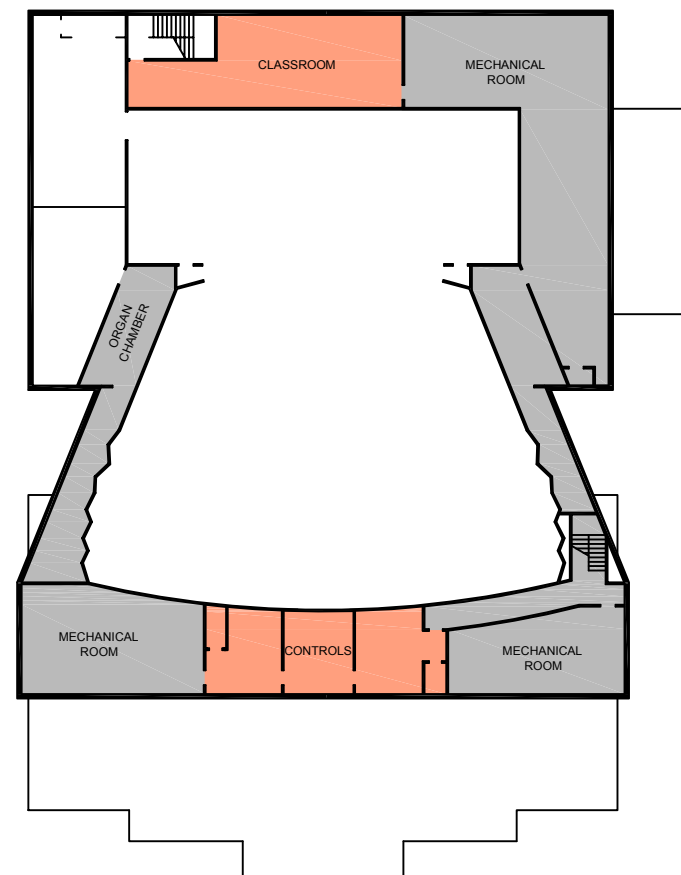
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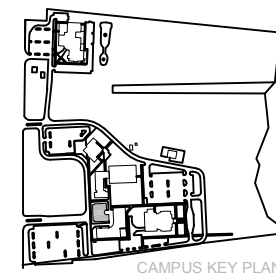
CAMPUS KEY PLAN



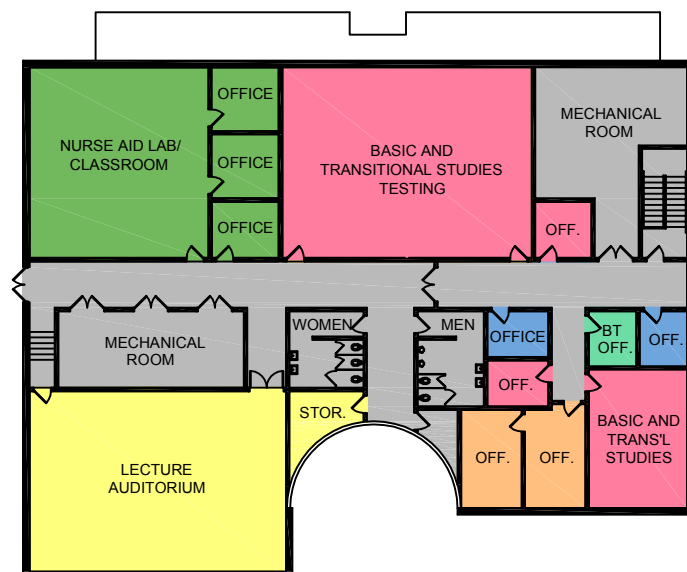
AUDITORIUM FIRST FLOOR PLAN
SCALE: 1" = 40'



AUDITORIUM SECOND FLOOR PLAN
SCALE: 1" = 40'

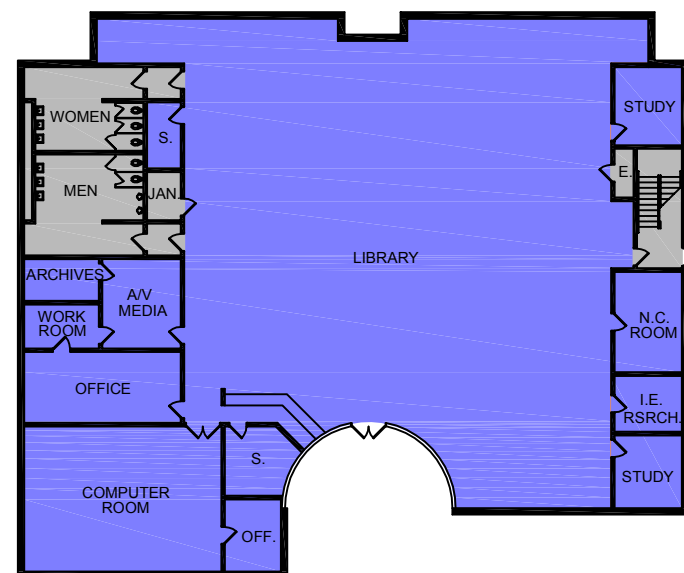


CAMPUS KEY PLAN



BUILDING 'B' SECOND FLOOR

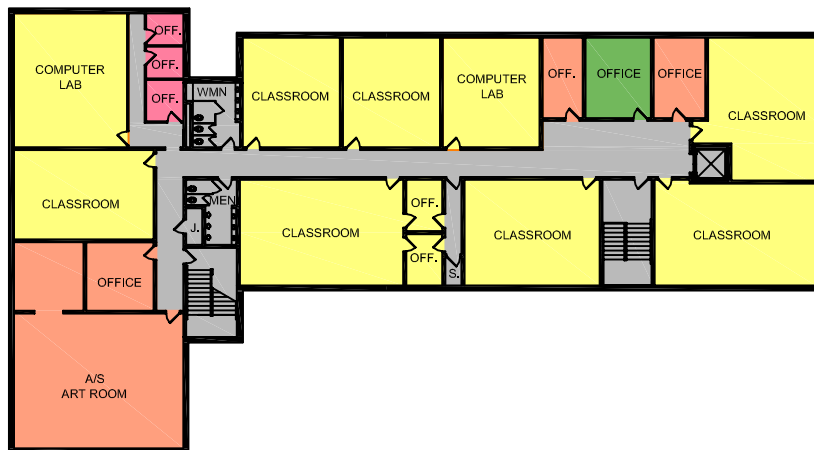
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BUILDING 'B' FIRST FLOOR

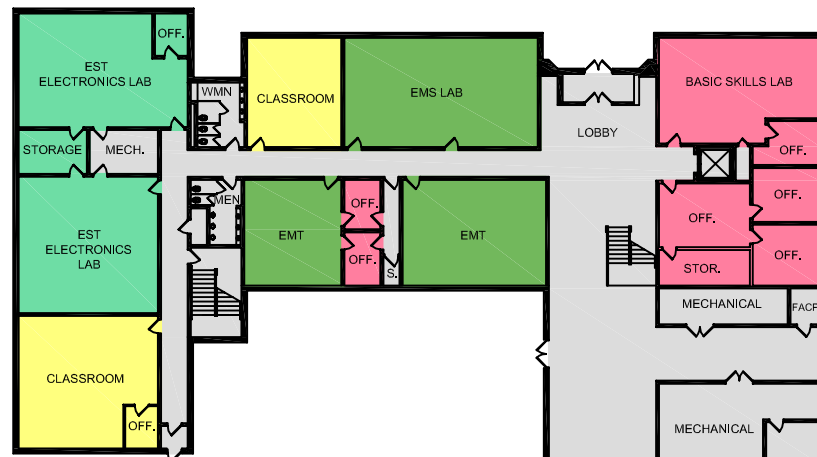
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NOTE: THIS BUILDING IS UNDERGOING DESIGN AND RENOVATION DURING THE 2013-2014 SCHOOL YEAR



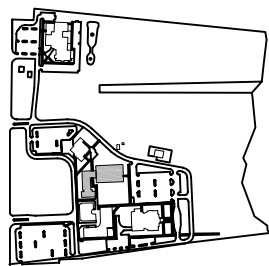
BUILDING 'C' SECOND FLOOR

SCALE: 1" = 40'

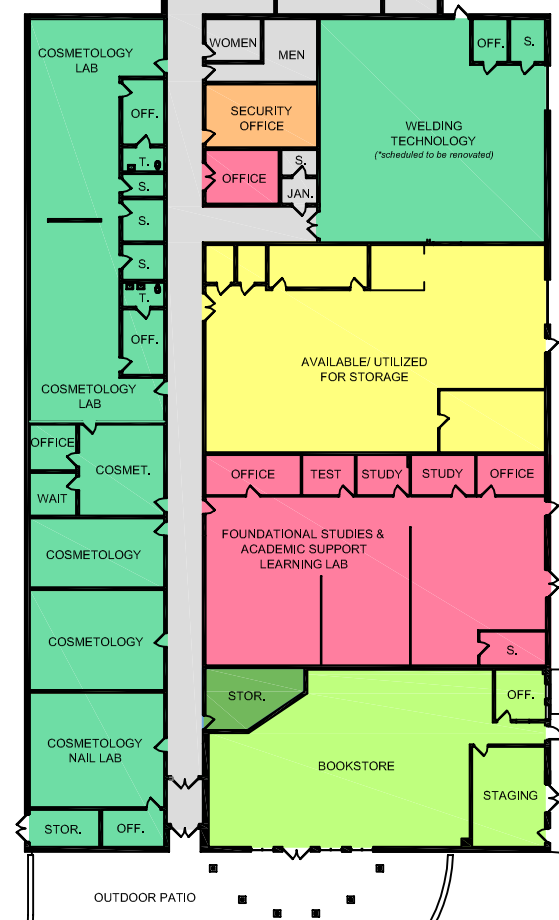


BUILDING 'C' FIRST FLOOR PLAN

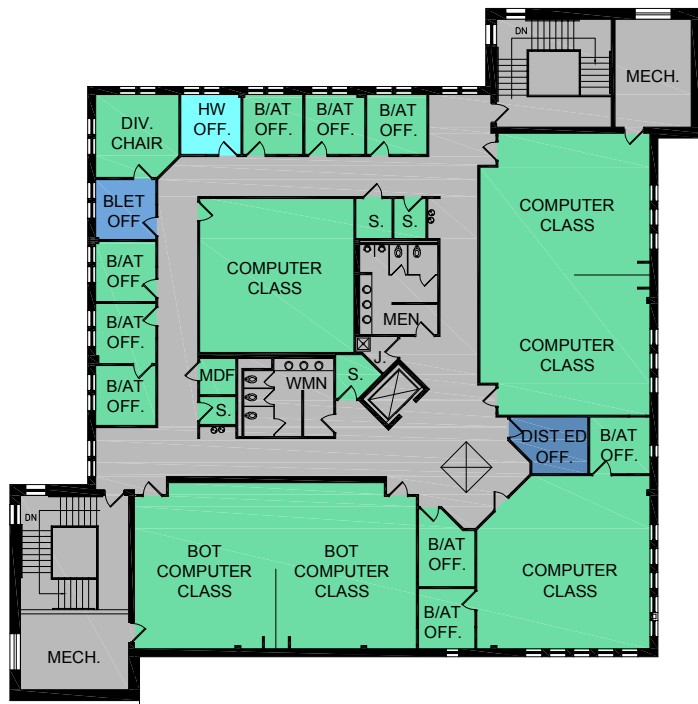
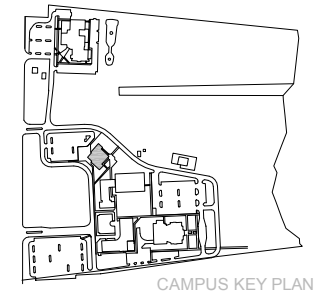
SCALE: 1" = 40'



CAMPUS KEY PLAN

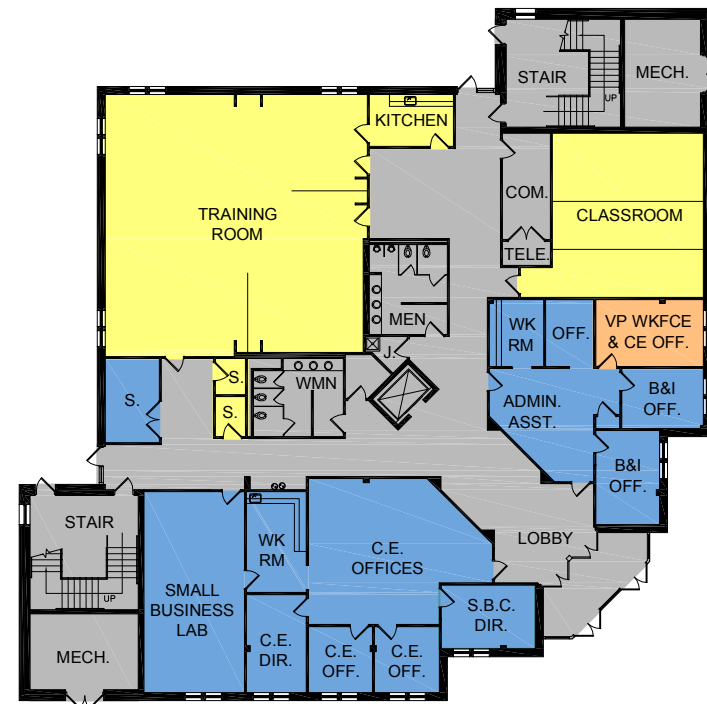


OUTDOOR PATIO



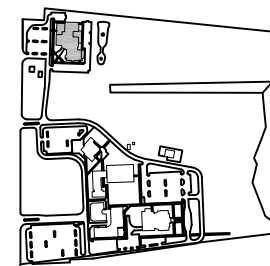
FOREMAN TECHNOLOGY CENTER SECOND FLOOR

SCALE: 1/32" = 1'-0"

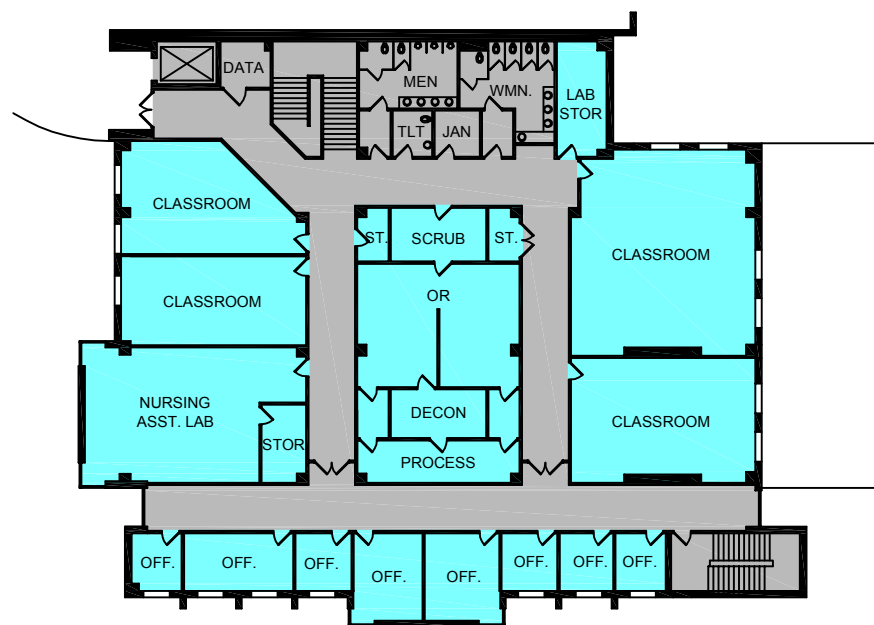


FOREMAN TECHNOLOGY CENTER FIRST FLOOR

SCALE: 1/32" = 1'-0"

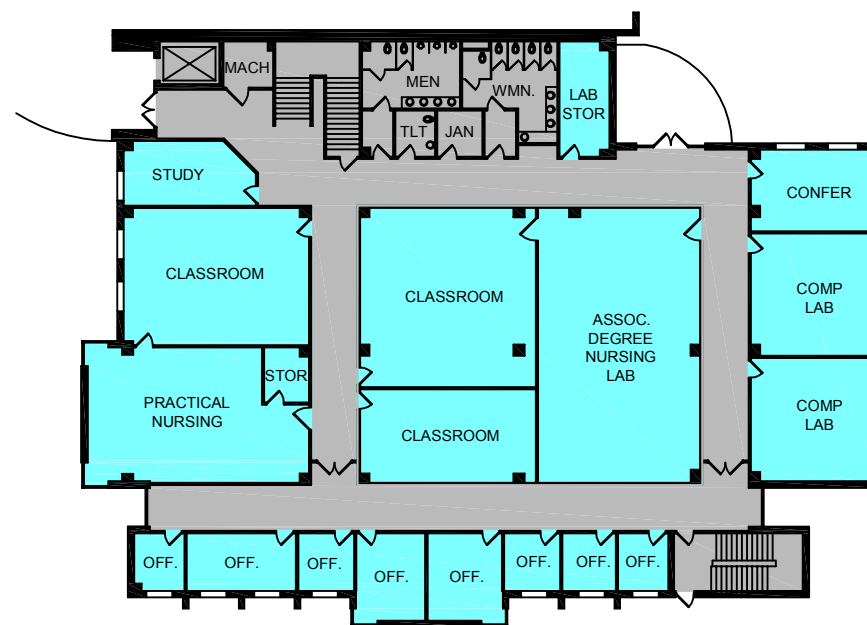


CAMPUS KEY PLAN



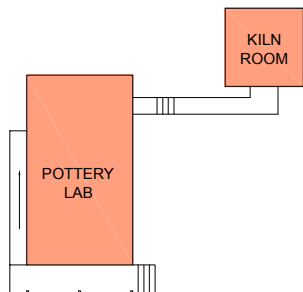
OWENS CENTER SECOND FLOOR

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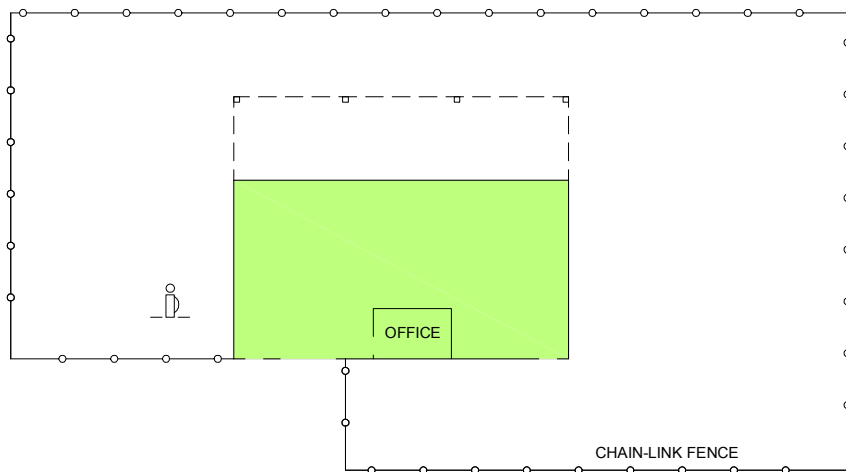


OWENS CENTER FIRST FLOOR

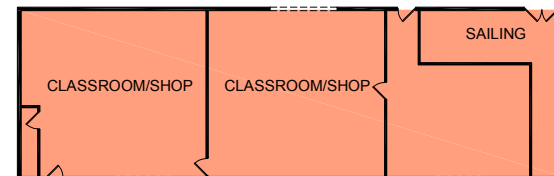
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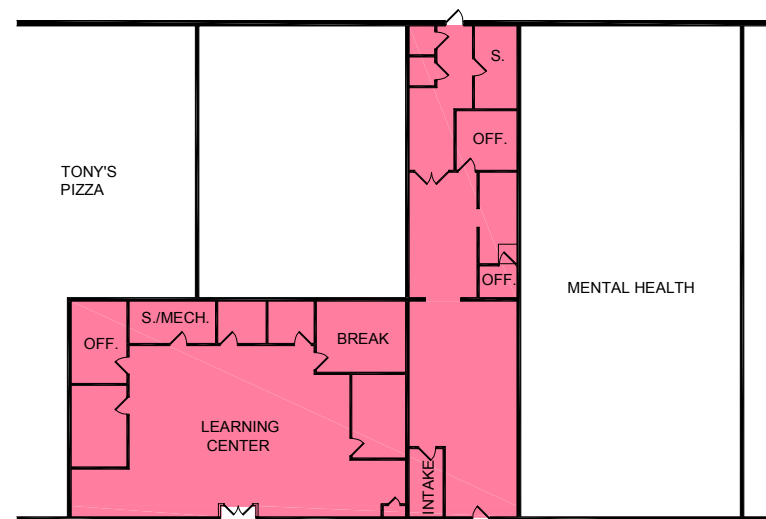
POTTERY LAB
SCALE: 1/32" = 1'-0"



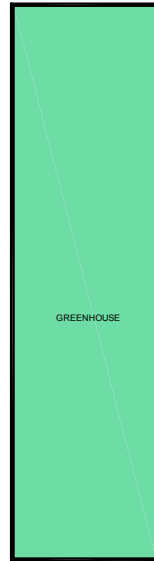
MAINTENANCE BUILDING
SCALE: 1/32" = 1'-0"



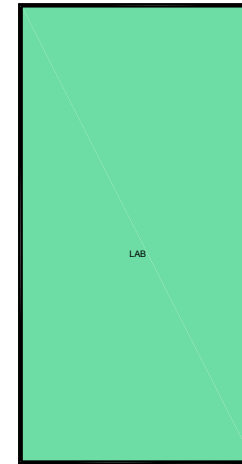
RIVERSIDE EXTENSION
SCALE: 1/32" = 1'-0"



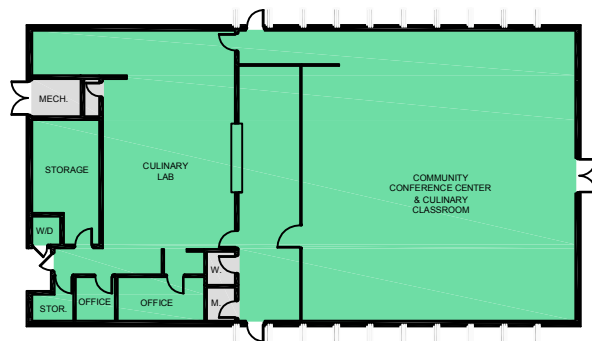
EDGEWOOD LEARNING CENTER
SCALE: 1/32" = 1'-0"



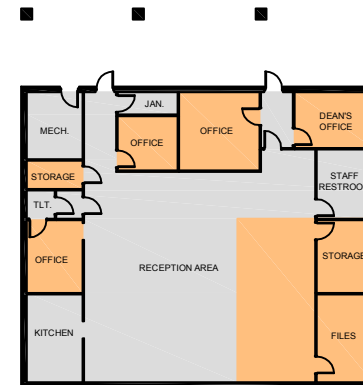
GREENHOUSE FLOOR PLAN
SCALE: 1/32" = 1'-0"



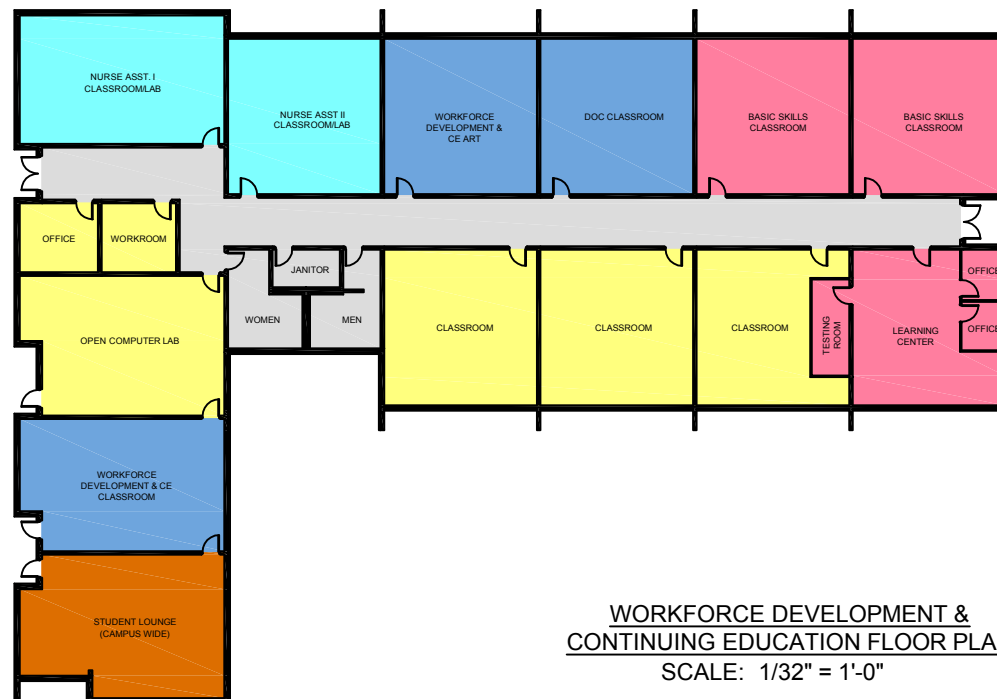
RENEWABLE ENERGY TRAINING
CENTER FLOOR PLAN
SCALE: 1/32" = 1'-0"



CULINARY ARTS BUILDING FLOOR PLAN
SCALE: 1/32" = 1'-0"



ADMINISTRATION/STUDENT
SUCCESS/ ENROLLMENT
MANAGEMENT FLOOR PLAN
SCALE: 1/32" = 1'-0"



WORKFORCE DEVELOPMENT &
CONTINUING EDUCATION FLOOR PLAN
SCALE: 1/32" = 1'-0"



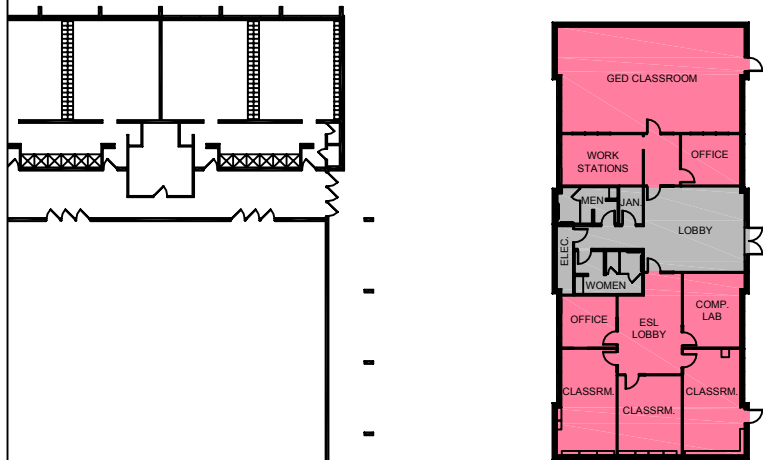
INDUSTRIAL TECHNOLOGY BUILDING
FLOOR PLAN
SCALE: 1/32" = 1'-0"



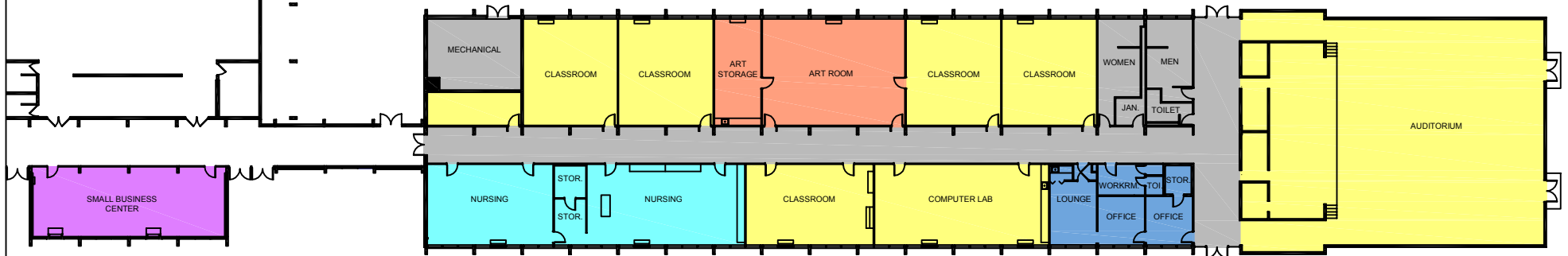
ADMINISTRATION/STUDENT
SERVICES/LIBRARY/STUDENT
CENTER/LABS/CLASSES BLDG.

DIANNE BAUM ST. CLAIR TECHNOLOGY CENTER
SCALE: 1" = 40'

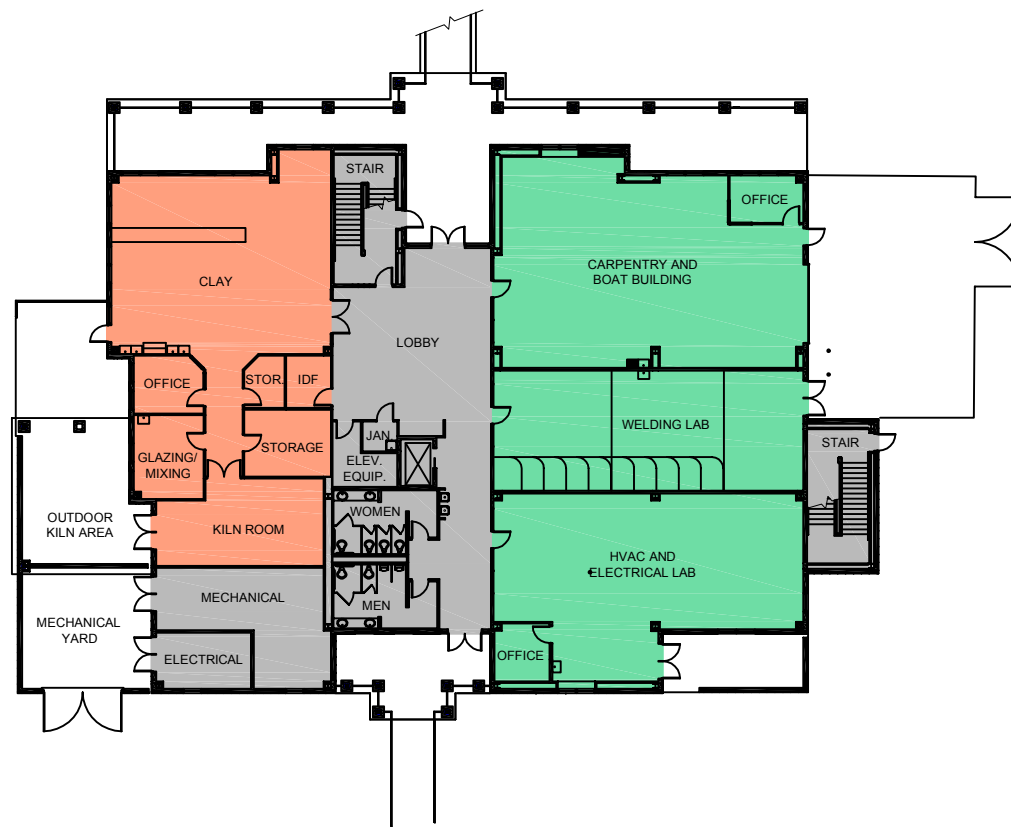
COA DARE COUNTY/
RUSSELL TWIFORD CAMPUS



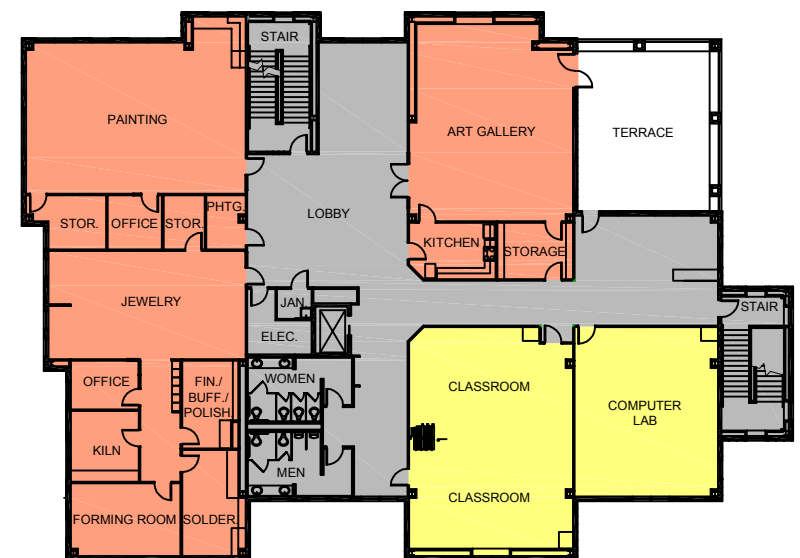
BASIC SKILLS BUILDING
SCALE: 1/32" = 1'-0"



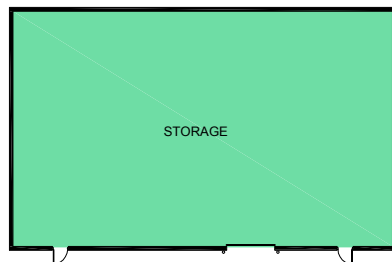
WORKFORCE DEVELOPMENT & CONTINUING EDUCATION
SCALE: 1:40



PROFESSIONAL ARTS BUILDING
FIRST FLOOR
 SCALE: 1/32" = 1'-0"



PROFESSIONAL ARTS BUILDING
SECOND FLOOR
 SCALE: 1/32" = 1'-0"



CURRITUCK COUNTY REGIONAL AVIATION
& TECHNICAL TRAINING CENTER
FIRST FLOOR
SCALE: 1" = 40'-0"



College of The Albemarle

Est. 1960

COA Strategic Plan (2012-15)

College of The Albemarle prides itself on its rich history dating back to the founding in December 1960. Today, over 50 years later, the college is poised to embrace new opportunities in the 21st century. This strategic plan does not change the college's identity or purpose, but rather provides direction for the future. COA will continue to provide quality education and workforce development just as it has over the past five decades, but with even greater commitment to enhancing lives.

VISION

College of The Albemarle will become a premier college that inspires excellence, transforms lives, and impacts the region.

CORE VALUES

1. Community. . . We value relationships and partnerships.
2. Integrity. . . We value honesty, dignity, and trust.
3. Respect. . . We value people, time, and resources.
4. Diversity. . . We value all backgrounds and perspectives.
5. Teamwork. . . We value unity and communication.

MISSION STATEMENT

The mission of College of The Albemarle is to transform lives in an accessible, supportive environment that promotes academic excellence, student success, workforce development, community partnerships, and responsible stewardship.

STRATEGIC DIRECTIVES

The six general goals that the college aims to achieve are these:

1. To maintain an accessible, supportive learning environment.
2. To promote academic excellence.
3. To foster student success.
4. To develop the regional workforce.
5. To partner with the community.
6. To demonstrate responsible stewardship.

ENVIRONMENTAL SCAN

Effective planning for the future depends on understanding the context of the present situation. Multiple sources of data were used to assess College of The Albemarle's external environment, including the following:

- United States Census Data
- Bureau of Labor Statistics
- HamptonRoads.com
- Outer Banks Chamber of Commerce
- North Carolina Employment and Labor Force Data
- North Carolina Office of State Budget & Management
- North Carolina Community College System

Indicators regarding the external environment are grouped into social, economic, and educational categories.

SOCIAL INDICATORS

- Gender: The regional population is evenly split between men and women.
- Ethnicity: With the exception of three counties, the regional population of non-majority residents exceeds 30%.
- Age: There is a smaller proportion of the youth population (1 in 5 residents are under 18 yrs).
- Population: Populations in five counties are projected to decline through 2020. Chowan and Perquimans counties are projected to experience small population growth instead of decline.
- Veterans: The 7-county region is home to over 15,000 veterans.

Self-assessment questions:

- In light of the demographic characteristics of the region, do the college's student and employee populations reflect similar characteristics in terms of diversity?
- Is there opportunity to market to specialized segments of the population?
- Considering the projected population trends, are there opportunities to reach new pools of prospective students?

ECONOMIC INDICATORS

- Financial Needs: Unemployment remains high in local areas (4 counties near or above 10%). Many residents live below the poverty level (5 counties with 15% or more).
- The Outer Banks attracts 7 million visitors each year through the travel and tourism industry.
- Over half of the working residents in 4 counties commute outside their home county for employment, including two-thirds of working residents in Camden and Gates counties

- Over 40% of working residents in 3 counties (Chowan, Dare, and Pasquotank) both live and work in their home county
- Top Employers: In this region, the largest employers represent public education, the hospital, and the Coast Guard Base.
- Career Growth: In this region, job positions in education, health services, leisure and hospitality, and providing services will represent the largest growth in employment through 2016. Specific occupations projected to grow statewide include registered nurses, computer support specialists, paralegals, medical records/health information technicians, dental hygienists, medical lab techs, veterinary techs, respiratory therapists, civil engineering techs, electrical/electronic engineering techs, interior designers, funeral directors, and broadcast technicians.

Self-assessment questions:

- Considering the financial needs of many students, does COA award financial aid assistance to all who qualify?
- Knowing how significant the travel and tourism industry is on the Outer Banks, is the college maximizing opportunities to engage the visiting and short-term residents?
- In light of the projected career growth areas, is the current mix of courses and programs forward-looking?

EDUCATIONAL INDICATORS

- The majority of the region's adult population has a high school education ranging from 77% (Chowan County) to 92% (Dare County).
- The adult population has various levels of a college education (10% with bachelor's degree in Gates County compared to 32% in Dare County).
- Northeastern North Carolina has two other institutions of higher education (Elizabeth City State University and Mid-Atlantic Christian University).
- There are nearly 30 postsecondary institutions in the Hampton Roads region of Virginia.
- COA students who transfer to a University of North Carolina institution perform very well academically at the four-year institution.
- The State Board of Community College's system-wide goals are economic and workforce development, enrollment management, accountability in the use of technology, and development of resources.

Self-assessment questions:

- Are there any additional opportunities to work with other higher education institutions in the region?
- Does COA offer any specialized programs that are not available in the south Hampton Roads area?
- Are there any state level programs that the college has not considered pursuing?

SWOT ANALYSIS

Data for this SWOT analysis was collected from feedback by academic program and administrative unit leaders during the past two years of reviews, as well as this spring's Institutional Climate Survey. The SWOT analysis covers both internal and external perspectives.

INTERNAL	
Strengths	Weaknesses
• Faculty and staff (qualifications, experience and dedication)	• Faculty unprepared to use technology
• Leadership (positive change)	• Low morale
• Programs (quality and relevance)	• Low salaries
• Technology	• Decision making
• Affordable tuition	• Inconsistent communication
• Student centered	• Leadership needs to be focused
• Open admissions	• Safety and security concerns
• Sufficient resources	• Not using data to its fullest
• Communication is improving	• Cumbersome, outdated processes
• Fiscally responsible	• Lack of collaboration, too many silos
• Locations/visibility	• Dependency on paper, insufficient use of technology
• Facilities are good	• Some facilities need improvement
• Flexible to meet community needs	
• Workforce preparation	
• Inter-departmental collaboration	

Self-assessment questions:

- Looking at the list of internal strengths, what areas should the college promote/market?
- What internal weaknesses need immediate attention?

EXTERNAL	
Opportunities	Threats
<ul style="list-style-type: none"> • New partnerships in the region (Currituck campus, Chowan County initiative) 	<ul style="list-style-type: none"> • Operating on reduced state funding
<ul style="list-style-type: none"> • Legislative flexibility for use of state funding 	<ul style="list-style-type: none"> • Responding to the new FTE funding formula
<ul style="list-style-type: none"> • Strong employment in selected areas (Currituck County) 	<ul style="list-style-type: none"> • Rising costs of equipment and supplies for certain areas
<ul style="list-style-type: none"> • Travel and tourism in the Outer Banks 	<ul style="list-style-type: none"> • Lack of public awareness of programs and opportunities
<ul style="list-style-type: none"> • Increasing (or continuing) demand for qualified workers in health professions 	<ul style="list-style-type: none"> • Enrollment appears to have reached its plateau
	<ul style="list-style-type: none"> • Economic challenges (unemployment, poverty, low property values, etc.)
	<ul style="list-style-type: none"> • Greater employment opportunities in the Hampton Roads area may draw current and potential employees away from COA
	<ul style="list-style-type: none"> • Opportunities at other four-year and online institutions may impact enrollment

Self-assessment questions:

- Are there opportunities from outside the college that should be explored further?
- How should the college respond to the external threats?

STRATEGIC PLAN

In order to accomplish strategic directives, the college must implement specific, measurable actions. The strategic directives and their strategic actions are listed below along with key performance indicators that serve as specific measurements.

SD1. To maintain an accessible, supportive learning environment

- Deliver learning support services.
- Provide reasonable accommodations to students with disabilities.
- Integrate technology into classrooms and labs.
- Facilitate campus-wide access to appropriate technologies and resources.
- Maintain safe and secure facilities.

Key Performance Indicators for Strategic Directive #1

- Classroom space
- Traditional courses (capacity/enrollment)

- Hybrid and Internet courses (capacity/enrollment)
- Reasonable accommodations for students with disabilities
- Facility usage
- Writing and tutoring lab activities, # students served, topics presented, etc.
- Requests for reasonable accommodations for students with disabilities
- Technology equipment in classrooms, comp labs - # stations, etc.
- Clery Act Campus Crime report

Additional considerations: The Technology Plan supports this strategic directive

SD2. To promote academic excellence

- a. Prepare students to think critically.
- b. Identify high demand areas for new courses and programs.
- c. Attract and retain qualified faculty who strive for excellence.
- d. Encourage students to attain academic excellence at COA.
- e. Deliver a general education that develops learning competencies in core areas.
- f. Enable students to perform well academically at four-year institutions.

Key Performance Indicators for Strategic Directive #2

- Faculty credentials
- Faculty professional development report
- Student GPA by program
- Passing rates of developmental students in college-level courses
- Dean's list, President's list
- Phi Theta Kappa Honor Society
- General education assessments/rubrics
- Transfer students' GPA at University of North Carolina institutions

Additional considerations: The SACS Compliance Certification and Quality Enhancement Plan support this strategic directive.

SD3. To foster student success

- a. Recruit and retain a diverse student population that reflects the regional population.
- b. Promote student development through co-curricular programs.
- c. Award exemplary student leadership.
- d. Enable students to successfully complete their educational programs.

Key Performance Indicators for Strategic Directive #3

- Admissions and enrollment demographic data
- High school visits and college fairs

- Retention rates
- Graduation rates
- Licensure exam pass rates
- Employment rates
- Athletics, student government, clubs/orgs
- Athletic recognitions
- Who's Who Award and other distinguished recognitions

Additional considerations: The Strategic Enrollment Management Plan and Quality Enhancement Plan support this strategic directive.

SD 4. To develop the regional workforce

- a. Respond to the needs of small businesses.
- b. Prepare competent workers to support regional businesses and industries.
- c. Increase student knowledge of career opportunities.

Key Performance Indicators for Strategic Directive #4

- Small Business Center courses taught, # of classes, # students
- Small Business Center's annual report
- WD&CE courses taught, # of classes, # students
- Client satisfaction surveys
- Career fairs
- Cooperative education employer evaluations
- Completers/Graduates surveys – # students employed

SD5. To partner with the community

- a. Provide opportunities for cultural enrichment.
- b. Engage the life of the Albemarle region.
- c. Offer college space for community activities.
- d. Seek feedback through program and campus advisory groups.
- e. Enhance fundraising through relationships with local donors.

Key Performance Indicators for Strategic Directive #5

- COA auditorium events (# offered, # attendance)
- Space use reports, room rentals, etc.
- Participation on area boards and workforce development initiatives (NERDB, etc.); presence in community events such as potato festival, holiday parades, etc.
- Donor relations data

SD6. To demonstrate responsible stewardship

- a. Use the physical facilities at each location effectively.
- b. Promote environmental sustainability.
- c. Maximize financial resources to ensure the best use of funding.
- d. Acquire external funding to support existing and new programs and initiatives.
- e. Improve the knowledge and skills of college employees through professional development opportunities and rewards.

Key Performance Indicators for Strategic Directive #6

- County budgets/capital maintenance
- Balanced budget
- Unit Action Plan requests
- Facilities use reports
- Installation of sustainable technology at campuses
- Energy savings through 4-day work weeks during the summer
- Employee AFAS/Institutional Climate survey data
- Employee awards
- Professional development
- Hiring/turnover data
- Professional development activities – individual staff development plan

Additional considerations: The Campus Facilities Master Plan and PLT Leadership Development Plan support this strategic directive.

*For further information or to ask questions about this,
please contact Dr. Eric Lovik at eric_lovik@albemarle.edu.*

2013 Facility Utilization and Campus Master Plan Update -- Enrollment/FTE Goals and Growth Projections

	2008-09 CU	2009-10 CU	2010-11 CU	2011-12 CU	2012-13 CU			2013-14 CU	2014-15 CU	2015-16 CU	2016-17 CU	2017-18 CU	
	2008 BS/OE	2009 BS/OE	2010 BS/OE	2011 BS/OE	2012 BS/OE	Goal	Comments on Enrollment History	2013 BS/OE	2014 BS/OE	2015 BS/OE	2016 BS/OE	2017 BS/OE	Comments on Enrollment Projections
CURRICULUM (5 year goal 2008-13 = 18.8% growth)													
Curriculum Unduplicated Annual Headcount	3483	3710	3963	3795	3458	4138	2008-09 through 2012-13 unduplicated enrollment declined 2.5%; unduplicated headcount reached its 5-year high during 2010-11 of 3,963 which represented a 13.8% increase, then it decreased thereafter; 2012-13 headcount is 743 students less than the goal	3480	3567	3656	3747	3841	assumes 2.5% increase each year
Curriculum FTE	1904	2185	2178	2160	1970	2262	2008-09 through 2011-12 FTE increased 13.4%; 2011-12 FTE was 102 less than the goal	2018	2069	2121	2174	2228	assumes 2.5% increase each year
BASIC SKILLS (5 year goal 2008-13 = 10.4% growth)													
Basic Skills Unduplicated Annual Headcount	2553	2497	2303	1795	1552	2757	2009 through 2012 unduplicated enrollment declined 37.8%; 2012 headcount was 1,205 less than the goal	1575	1590	1597	1613	1628	
Basic Skills FTE	258	241	245	205	215	285	2009 through 2012 FTE declined 20.5%; 2012 FTE was 80 less than the goal	208	210	211	213	215	assumes 1.0% increase each year
OCCUPATIONAL EXTENSION (5 year goal 2008-13 = 20.5% growth)													
Occupational Extension Unduplicated Headcount	5786	5336	5126	4759	4237	6430	2008-09 through 2011-12 unduplicated enrollment declined 20.6%; 2012 headcount was 2,193 less than the goal	4237	4343	4451	4563	4677	assumes 2.5% increase each year
Occupational Extension FTE	242	243	335	229	272	292	2009 through 2012 FTE declined 5.4%; 2012 FTE was 63 less than the goal	299	329	362	398	438	assumes 10% increase in FTE each year

Notes:

1. Basic Skills and Occupational Extension enrollment totals reflect a calendar year, not an academic/fiscal year
2. The 2012-13 year has not completed but the curriculum headcount represents fall 2012, spring 2013, and the number of students registered for summer 2013; final enrollment totals are not yet available. The 2012-13 headcount does not include summer 2013.
3. Source for headcount: Unduplicated Headcount for Term/Year report in Informer (same data reflected in campus enrollment reports and county presentations)
4. Source for FTE: COA budget book -- actual FTE totals

	Undup Headcount	
Gender		% Total
Female	1699	65.6%
Male	892	34.4%
TOTAL	2591	100.0%

	Undup Headcount	% Total
Ethnicity		
Asian	28	1.1%
African American	502	19.4%
Latino/Hispanic	107	4.1%
Native American	17	0.7%
White	1830	70.6%
Multiple	40	1.5%
Unknown	67	2.6%
TOTAL	2591	100.0%

	Undup Headcount	
County		% Total
Camden	224	8.6%
Chowan	259	10.0%
Currituck	389	15.0%
Dare	476	18.4%
Gates	102	3.9%
Pasquotank	748	28.9%
Perquimans	199	7.7%
All Others	194	7.5%
TOTAL	2591	100.0%

	Undup Headcount	% Total
Academic Program		
Air Conditioning, Heating & Refrigeration Technology	18	0.7%
Architectural Technology	29	1.1%
Associate Degree Nursing	46	1.8%
Associate in Art Transfer Diploma	12	0.5%
Associate in Arts	625	24.1%
Associate in Fine Arts	36	1.4%
Associate in General Education	575	22.2%
Associate in Science	105	4.1%
Associate in Science Transfer Diploma	4	0.2%
Basic Law Enforcement Training	16	0.6%
Business Administration	145	5.6%
Career and Technical Education Pathway Culinary Arts	8	0.3%
Computer Engineering Technology	30	1.2%
Computer Information Tech	45	1.7%

Computer Integrated Machining	14	0.5%
Computer Integrated Machining, Cert 1	2	0.1%
Computer Programming	17	0.7%
Core 44 College Transfer Pathway-Business and Economics	64	2.5%
Core 44 College Transfer Pathway-Engineering and Mathematics	8	0.3%
Core 44 College Transfer Pathway-Humanities and Social Science	131	5.1%
Core 44 College Transfer Pathway-Life and Health Sciences	1	0.0%
Cosmetology	43	1.7%
Criminal Justice Technology	11	0.4%
Culinary Technology	10	0.4%
Culinary Technology, Level I	1	0.0%
Early Childhood Associate	108	4.2%
Early Childhood Education	6	0.2%
Electrical, Entry Level I	1	0.0%
Electrical/Electronics Technology	18	0.7%
Foodservice Technology, Level I	18	0.7%
General Occupational Technology	4	0.2%
HVAC, Entry Level I	1	0.0%
Machining Technology	3	0.1%
Marine Sciences	23	0.9%
Medical Assisting	10	0.4%
Medical Laboratory Technology	9	0.3%
Medical Office Administration	76	2.9%
Office Administration	17	0.7%
Phlebotomy	3	0.1%
Practical Nursing	19	0.7%
Pre-Major in Elementary Edu.	40	1.5%
Professional Crafts: Jewelry	21	0.8%
Professional Crafts: Jewelry/Basic Jewelry	3	0.1%
Special Credit Non-Degree	79	3.0%
Surgical Technology	7	0.3%
Web Technologies	4	0.2%
Welding	4	0.2%
No major declared	121	4.7%
TOTAL	2591	100.0%

Campus	Headcount
Elizabeth City Campus	2864
Dare County Campus	570
Edenton-Chowan Campus	337
Roanoke Island Site	84
TOTAL (Duplicated)	3855

- Notes:
1. Within campus totals are unduplicated, but across campuses they are duplicated because students may take courses at more than one campus
 2. PCI and other non-campus sites are excluded
 3. Distance education/internet courses are excluded

- Sources:
1. Fall 2012 unduplicated headcounts = Unduplicated Headcount for Term/Year Copy -- EGL's copy with more items
 2. Campus headcounts = Tk20 - Student Course Schedule (EGL copy)

	Estimates			Projections								
	2010 US Census	2010 NC OSBM	July 2010	July 2011	July 2012	July 2013	July 2014	July 2015	July 2016	July 2017	July 2018	July 2019
Camden	9,980	9,983	9,983	10,065	9,922	9,802	9,702	9,618	9,546	9,488	9,439	9,398
Chowan	14,793	14,757	14,757	14,796	14,743	14,761	14,723	14,731	14,702	14,703	14,679	14,674
Currituck	23,547	23,647	23,647	24,007	23,767	23,550	23,355	23,179	23,017	22,869	22,740	22,620
Dare	33,920	34,007	34,007	34,291	34,810	35,330	35,852	36,374	36,895	37,415	37,935	38,455
Gates	12,197	12,168	12,168	12,173	11,830	11,569	11,371	11,219	11,103	11,014	10,946	10,897
Pasquotank	40,661	40,644	40,644	40,319	39,941	39,740	39,607	39,519	39,458	39,418	39,394	39,374
Perquimans	13,453	13,482	13,482	13,551	13,660	13,771	13,878	13,988	14,096	14,204	14,314	14,424
TOTAL	148,551	148,688	148,688	149,202	148,673	148,523	148,488	148,628	148,817	149,111	149,447	149,842

Sources:

http://www.osbm.state.nc.us/ncosbm/facts_and_figures/socioeconomic_data/population_estimates/demog/countytotals_2010_2019.html

<http://quickfacts.census.gov/qfd/states/37000.html>

Age by County

County	Age Groups																			Total	Median Age
	0-2	3-4	5	6-9	10-13	14	15	16-17	18-19	20-24	25-34	35-44	45-54	55-59	60-64	65-74	75-84	85-99	100+		
Camden	321	266	134	585	609	151	167	303	235	415	1,009	1,561	1,722	643	562	783	391	126	0	9,983	40.19
Chowan	519	352	183	721	740	194	208	385	314	721	1,541	1,531	2,184	1,153	1,098	1,590	937	379	7	14,757	44.81
Currituck	751	570	315	1,236	1,286	344	365	720	534	1,162	2,466	3,411	4,287	1,709	1,425	1,915	857	292	2	23,647	41.38
Dare	1,076	763	408	1,489	1,472	391	374	820	610	1,590	4,098	4,540	5,746	2,848	2,561	3,213	1,564	442	4	34,007	43.63
Gates	385	301	155	609	666	178	187	391	306	660	1,181	1,593	2,062	887	769	1,087	544	203	4	12,168	42.02
Pasquotank	1,603	1,088	529	2,024	1,955	471	490	1,033	1,644	3,510	5,233	4,933	5,876	2,506	2,227	2,978	1,804	729	11	40,644	36.6
Perquimans	416	320	152	581	650	140	152	350	288	663	1,336	1,426	1,979	1,026	1,085	1,777	832	308	1	13,482	46.54

Source:

http://www.osbm.state.nc.us/demog/countytotals_agegroup_2010.html

County	Age Groups												45-54	55-59	60-64	65-74	75-84	85-99	100+	Total	Median Age
	0-2	3-4	5	6-9	10-13	14	15	16-17	18-19	20-24	25-34	35-44									
2011 Dare	1,089	754	374	1,532	1,496	364	393	782	674	1,553	4,144	4,503	5,560	2,918	2,674	3,415	1,599	465	2	34,291	43.91
2019 Dare	1,388	902	444	1,555	1,612	456	458	840	704	1,607	4,521	5,133	5,097	3,058	3,191	5,171	2,316	750	4	39,207	44.97
	299	148	70	23	116	92	65	58	30	54	377	630	-463	140	517	1,756	717				
	127%	120%	119%	102%	108%	125%	117%	107%	104%	103%	109%	114%	92%	105%	119%	151%	145%				
2011 Camden	295	249	134	578	610	156	154	303	259	424	1,040	1,525	1,728	693	566	823	392	134	2	10,065	40.67
2019 Camden	312	209	105	367	467	122	129	253	226	535	1,269	1,124	1,464	835	728	1,012	560	191	3	9,911	43.62
	17	-40	-29	-211	-143	-34	-25	-50	-33	111	229	-401	-264	142	162	189	168				
	106%	84%	78%	63%	77%	78%	84%	83%	87%	126%	122%	74%	85%	120%	129%	123%	143%				
2011 Chowan	503	350	179	707	746	191	193	394	347	693	1,605	1,534	2,126	1,146	1,094	1,622	971	389	6	14,796	44.72
2019 Chowan	418	279	139	639	717	187	166	372	362	813	1,672	1,748	1,578	1,084	1,037	1,938	1,117	431	7	14,704	43.96
	-85	-71	-40	-68	-29	-4	-27	-22	15	120	67	214	-548	-62	-57	316	146				
	83%	80%	78%	90%	96%	98%	86%	94%	104%	117%	104%	114%	74%	95%	95%	119%	115%				
2011 Currituck	743	535	297	1,231	1,334	327	351	735	586	1,167	2,556	3,344	4,315	1,804	1,498	2,006	876	300	2	24,007	41.77
2019 Currituck	813	538	268	993	1,122	328	312	626	616	1,314	3,037	2,860	3,593	2,162	1,933	2,677	1,320	347	2	24,861	43.54
	70	3	-29	-238	-212	1	-39	-109	30	147	481	-484	-722	358	435	671	444				
	109%	101%	90%	81%	84%	100%	89%	85%	105%	113%	119%	86%	83%	120%	129%	133%	151%				
2011 Gates	348	296	149	598	661	177	178	372	335	677	1,206	1,548	2,056	908	774	1,120	553	214	3	12,173	42.43
2019 Gates	352	227	110	456	561	151	135	280	295	800	1,693	1,120	1,563	1,000	889	1,321	716	237	3	11,909	43.1
	4	-69	-39	-142	-100	-26	-43	-92	-40	123	487	-428	-493	92	115	201	163				
	101%	77%	74%	76%	85%	85%	76%	75%	88%	118%	140%	72%	76%	110%	115%	118%	129%				
2011 Pasquotank	1,556	1,111	536	2,020	2,015	445	464	990	1,532	3,564	5,202	4,789	5,740	2,556	2,241	3,050	1,760	733	15	40,319	36.59
2019 Pasquotank	1,206	824	424	1,981	2,194	529	491	969	1,548	3,525	4,852	4,808	4,735	2,727	2,581	3,801	1,951	798	11	39,955	37.82
	-350	-287	-112	-39	179	84	27	-21	16	-39	-350	19	-1,005	171	340	751	191				
	78%	74%	79%	98%	109%	119%	106%	98%	101%	99%	93%	100%	82%	107%	115%	125%	111%				
2011 Perquimans	397	311	162	587	644	160	140	312	328	679	1,360	1,394	1,955	1,022	1,066	1,824	891	318	1	13,551	46.84
2019 Perquimans	400	266	134	552	676	168	156	305	298	724	1,592	1,542	1,624	1,075	1,153	2,199	1,423	427	12	14,726	48.86
	3	-45	-28	-35	32	8	16	-7	-30	45	232	148	-331	53	87	375	532				
	101%	86%	83%	94%	105%	105%	111%	98%	91%	107%	117%	111%	83%	105%	108%	121%	160%				

ELIZABETH CITY CAMPUS
COLLEGE OF THE ALBEMARLE

Existing Assignable Space By Building

Program/Service Area	Building											Totals
	Auditorium	Building A	Building B*	Building C	Foreman Center	Owens Building	Pottery Laboratory	Maintenance	Security/ BLET	Riverside Extension	Edgewood Extension	
Leadership												
President	0	4,035	400	355	210	0	0	0	0	0	0	5,000
Business and Administrative Services	0	3,145	0	2,730	0	0	0	1,625	250	0	0	7,750
Human Resources	0	0	0	0	0	0	0	0	0	0	0	0
Institutional Advancement	0	1,270	0	0	0	0	0	0	0	0	0	1,270
Institutional Effectiveness	0	0	0	0	0	0	0	0	0	0	0	0
Student Success & Enrollment Mgt.	0	5,450	0	0	0	0	0	0	0	0	0	5,450
Student Support Services	0	4,555	0	0	0	0	0	0	0	0	0	4,555
Learning												
Arts and Sciences	17,165	13,760	0	0	0	0	495	0	0	2,870	0	34,290
Business and Applied Technologies	0	0	95	11,690	5,415	0	0	0	0	0	0	17,200
Distance Education	0	0	0	0	110	0	0	0	0	0	0	110
Foundational Studies & Academic Sppt.	0	0	2,225	6,165	0	0	0	0	0	0	4,030	12,420
Health Sciences & Wellness Programs	0	955	0	0	105	14,805	0	0	0	0	0	15,865
Library	0	0	9,110	0	0	0	0	0	0	0	0	9,110
Workforce Development & Continuing Education												
Aviation Maintenance Technology	0	0	0	0	0	0	0	0	0	0	0	0
Emergency Medical	0	0	1,545	1,850	0	0	0	0	0	0	0	3,395
Small Business Center	0	0	0	0	0	0	0	0	0	0	0	0
Workforce & Continuing Education	0	0	255	0	3,040	0	0	0	0	0	0	3,295
Miscellaneous												
Shared/ Multiple Discipline Areas	0	7,455	1,630	11,650	2,815	0	0	0	0	0	0	23,550
TOTALS (net s.f.)	17,165	40,625	15,260	34,440	11,695	14,805	495	1,625	250	2,870	4,030	143,260

EDENTON-CHOWAN
COLLEGE OF THE ALBEMARLE

Existing Assignable Space By Building

Program/Service Area	Building						Totals
	Administration / Student Success/ Enrollment Management	Culinary Arts	Greenhouse	Renewable Energy Training Center	Workforce Development & Continuing Education	Industrial Technology Building	
Leadership							
President and Support	1,340	0	0	0	0	0	1,340
Business and Administrative Services	0	0	0	0	0	0	0
Human Resources	0	0	0	0	0	0	0
Institutional Advancement	0	0	0	0	0	0	0
Institutional Effectiveness	0	0	0	0	0	0	0
Student Success & Enrollment Mgt.	0	0	0	0	0	900	900
Student Support Services	0	0	0	0	865	0	865
Learning							
Arts and Sciences	0	0	0	0	0	90	90
Business and Applied Technologies	0	4,845	2,520	3,380	0	6,875	17,620
Distance Education	0	0	0	0	0	0	0
Foundational Studies & Academic Sppt.	0	0	0	0	2,415	105	2,520
Health Sciences & Wellness Programs	0	0	0	0	1,615	140	1,755
Library	0	0	0	0	0	0	0
Workforce Development and Continuing Education							
Aviation Maintenance Technology	0	0	0	0	0	0	0
Emergency Medical	0	0	0	0	0	0	0
Small Business Center	0	0	0	0	0	0	0
Workforce & Continuing Education	0	0	0	0	2,375	210	2,585
Miscellaneous							
Shared/ Multiple Discipline Areas	0	0	0	0	3,435	3,445	6,880
TOTALS* (net s.f.)	1,340	4,845	2,520	3,380	10,705	11,765	34,555

DARE COUNTY CAMPUS
COLLEGE OF THE ALBEMARLE

Existing Assignable Space By Building

Program/Service Area	Building					Totals
	Russell Twiford Admin/Class Building	Russell Twiford Diane Baum St. Clair Tech Ed Ctr.	Roanoke Island Workforce Dev. & Con Ed. Bldg.	Roanoke Island Basic Skills Building	Roanoke Island Professional Arts Building	
Leadership						
President	390	0	0	0	0	390
Business and Administrative Services	190	195	0	0	0	385
Human Resources	0	0	0	0	0	0
Institutional Advancement	0	0	0	0	0	0
Institutional Effectiveness	0	0	0	0	0	0
Student Success & Enrollment Management	640	0	0	0	0	640
Student Support Services	1,270	0	0	0	0	1,270
Learning						
Arts and Sciences	3,770	0	1,610	0	7,200	12,580
Business and Applied Technologies	0	0	0	0	4,975	4,975
Distance Education	0	3,060	0	0	0	3,060
Foundational Studies & Academic Spt.	0	0	0	3,010	0	3,010
Health Sciences & Wellness Programs	0	0	2,030	0	0	2,030
Library	2,585	0	0	0	0	2,585
Workforce Development & Continuing Education						
Aviation Maintenance Technology	0	0	0	0	0	0
Emergency Medical	0	0	0	0	0	0
Small Business Center	0	0	1,070	0	0	1,070
Workforce & Continuing Education	180	0	905	0	0	1,085
Miscellaneous						
Shared/Multiple Discipline Areas	4,600	4,120	8,980	0	1,970	19,670
TOTALS* (net s.f.)	13,625	7,375	14,595	3,010	14,145	52,750

COLLEGE OF THE ALBEMARLE
FACILITIES UTILIZATION STUDY

Existing Assignable Space By Building

Program/Service Area	Building				Totals
	Elizabeth City	Edenton Chowan	Dare County	Currituck County	
Leadership					
President and Support	5,000	1,340	390	0	6,730
Business and Administrative Services	7,750	0	385	0	8,135
Human Resources	0	0	0	0	0
Institutional Advancement	1,270	0	0	0	1,270
Institutional Effectiveness	0	0	0	0	0
Student Success & Enrollment Mgt.	5,450	900	640	0	6,990
Student Support Services	4,555	865	1,270	0	6,690
Learning					
Arts and Sciences	34,290	90	12,580	0	46,960
Business and Applied Technologies	17,200	17,620	4,975	23,400	63,195
Distance Education	110	0	3,060	0	3,170
Foundational Studies & Academic Sppt.	12,420	2,520	3,010	0	17,950
Health Sciences & Wellness Programs	15,865	1,755	2,030	0	19,650
Library	9,110	0	2,585	0	11,695
Workforce Development and Continuing Education					
Aviation Maintenance Technology	0	0	0	0	0
Emergency Medical	3,395	0	0	0	3,395
Small Business Center	0	0	1,070	0	1,070
Workforce & Continuing Education	3,295	2,585	1,085	0	6,965
Miscellaneous					
Shared/ Multiple Discipline Areas	23,550	6,880	19,670	0	50,100
TOTALS* (net s.f.)	143,260	34,555	52,750	23,400	253,965

COLLEGE OF THE ALBEMARLE FACILITIES UTILIZATION STUDY

Current Space Assessment with Future Projections

All locations

Program/Service Area	Current Space			Enrollment				Growth Factors		Projected Space Need 2017/ 2018 (s.f.)
	Current Space (actual) (s.f.)	Current Space Need (s.f.)	Current Total Need (actual + needed) (s.f.)	FTE 2011/2012	Unduplicated Headcount 2011/2012	FTE Growth Projections 2017/2018	Unduplicated Headcount Growth Projections 2017/2018	FTE 2017/2018	Headcount 2017/2018	
Leadership										
President and Support	6,730	150	6,880	2,160	3,795	2,228	3,841	3.15%	1.21%	6,963
Business and Administrative Services	8,135	6,500	14,635	2,160	3,795	2,228	3,841	3.15%	1.21%	14,812
Human Resources	0	0	0	2,160	3,795	2,228	3,841	3.15%	1.21%	0
Institutional Advancement	1,270	400	1,670	2,160	3,795	2,228	3,841	3.15%	1.21%	1,690
Institutional Effectiveness	0	0	0	2,160	3,795	2,228	3,841	3.15%	1.21%	0
Student Success & Enrollment Mgt.	6,990	0	6,990	2,160	3,795	2,228	3,841	3.15%	1.21%	7,075
Student Support Services	6,690	0	6,690	2,160	3,795	2,228	3,841	3.15%	1.21%	6,771
Learning										
Arts and Sciences	46,960	5,450	52,410	1,404	N/A	1,448	N/A	3.15%	1.21%	53,044
Business and Applied Technologies	63,195	0	63,195	586	N/A	604	N/A	3.15%	1.21%	63,960
Distance Education	3,170	0	3,170	2,160	3,795	2,228	3,841	3.15%	1.21%	3,208
Foundational Studies & Academic Sppt.	17,950	0	17,950	205	1,795	215	1,628	4.88%	-9.30%	16,280
Health Sciences & Wellness Programs	19,650	0	19,650	170	N/A	175	N/A	3.15%	1.21%	19,888
Library	11,695	0	11,695	2,160	3,795	2,228	3,841	3.15%	1.21%	11,837
Workforce Development and Continuing Education										
Aviation Maintenance Technology	0	0	0	229	4,759	438	4,677	91.27%	-1.72%	0
Emergency Medical	3,395	0	3,395	229	4,759	438	4,677	91.27%	-1.72%	3,337
Small Business Center	1,070	0	1,070	229	4,759	438	4,677	91.27%	-1.72%	1,052
Workforce & Continuing Education	6,965	36,240	43,205	229	4,759	438	4,677	91.27%	-1.72%	42,461
Miscellaneous										
Shared/ Multiple Discipline Areas	50,100	5,050	55,150	2,160	3,795	2,228	3,841	3.15%	1.21%	55,817
TOTALS* (net s.f.)	253,965	53,790	307,755							308,194

COLLEGE OF THE ALBEMARLE
FACILITIES UTILIZATION STUDY

Projected Space Assessment Summary

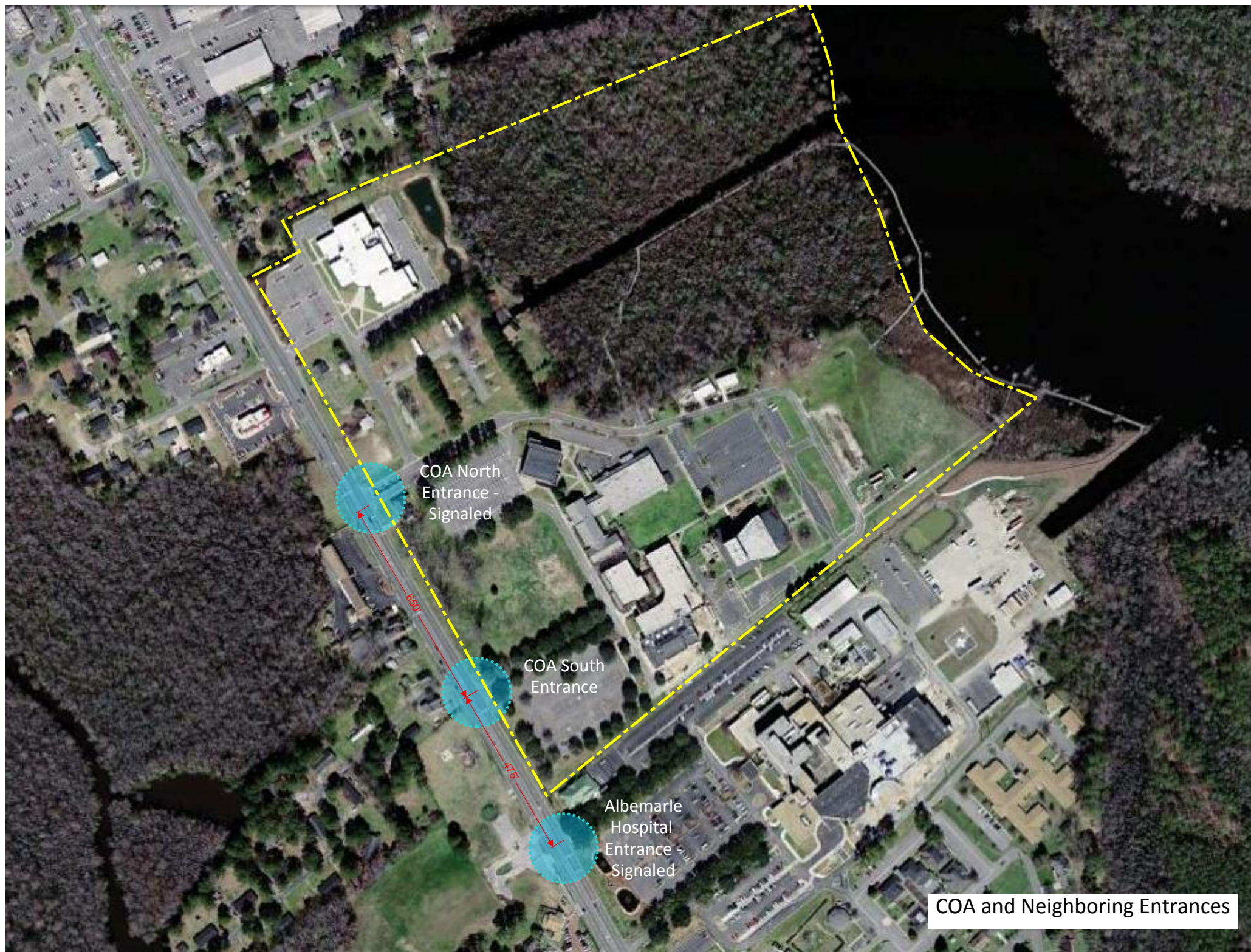
Program/Service Area	Year 2012/2013			Year 2017/2018	
	Current Space (actual) (s.f.)	Current Total Need (actual + needed) (s.f.)	Current Space Deficit	Additional Projected Space Need (s.f.)	Projected Space Deficit (s.f.)
Leadership					
President and Support	6,730	6,880	150	6,963	233
Business and Administrative Services	8,135	14,635	6,500	14,812	6,677
Human Resources	0	0	0	0	0
Institutional Advancement	1,270	1,670	400	1,690	420
Institutional Effectiveness	0	0	0	0	0
Student Success & Enrollment Mgt.	6,990	6,990	0	7,075	85
Student Support Services	6,690	6,690	0	6,771	81
Learning					
Arts and Sciences	46,960	52,410	5,450	53,044	6,084
Business and Applied Technologies	63,195	63,195	0	63,960	765
Distance Education	3,170	3,170	0	3,208	38
Foundational Studies & Academic Sppt.	17,950	17,950	0	16,280	(1,670)
Health Sciences & Wellness Programs	19,650	19,650	0	19,888	238
Library	11,695	11,695	0	11,837	142
Workforce Development and Continuing Education					
Aviation Maintenance Technology	0	0	0	0	0
Emergency Medical	3,395	3,395	0	3,337	(58)
Small Business Center	1,070	1,070	0	1,052	(18)
Workforce & Continuing Education	6,965	43,205	36,240	42,461	35,496
Miscellaneous					
Shared/ Multiple Discipline Areas	50,100	55,150	5,050	55,817	5,717
TOTALS* (net s.f.)	253,965	307,755	53,790	308,194	54,229

COLLEGE OF THE ALBEMARLE
FACILITIES UTILIZATION STUDY

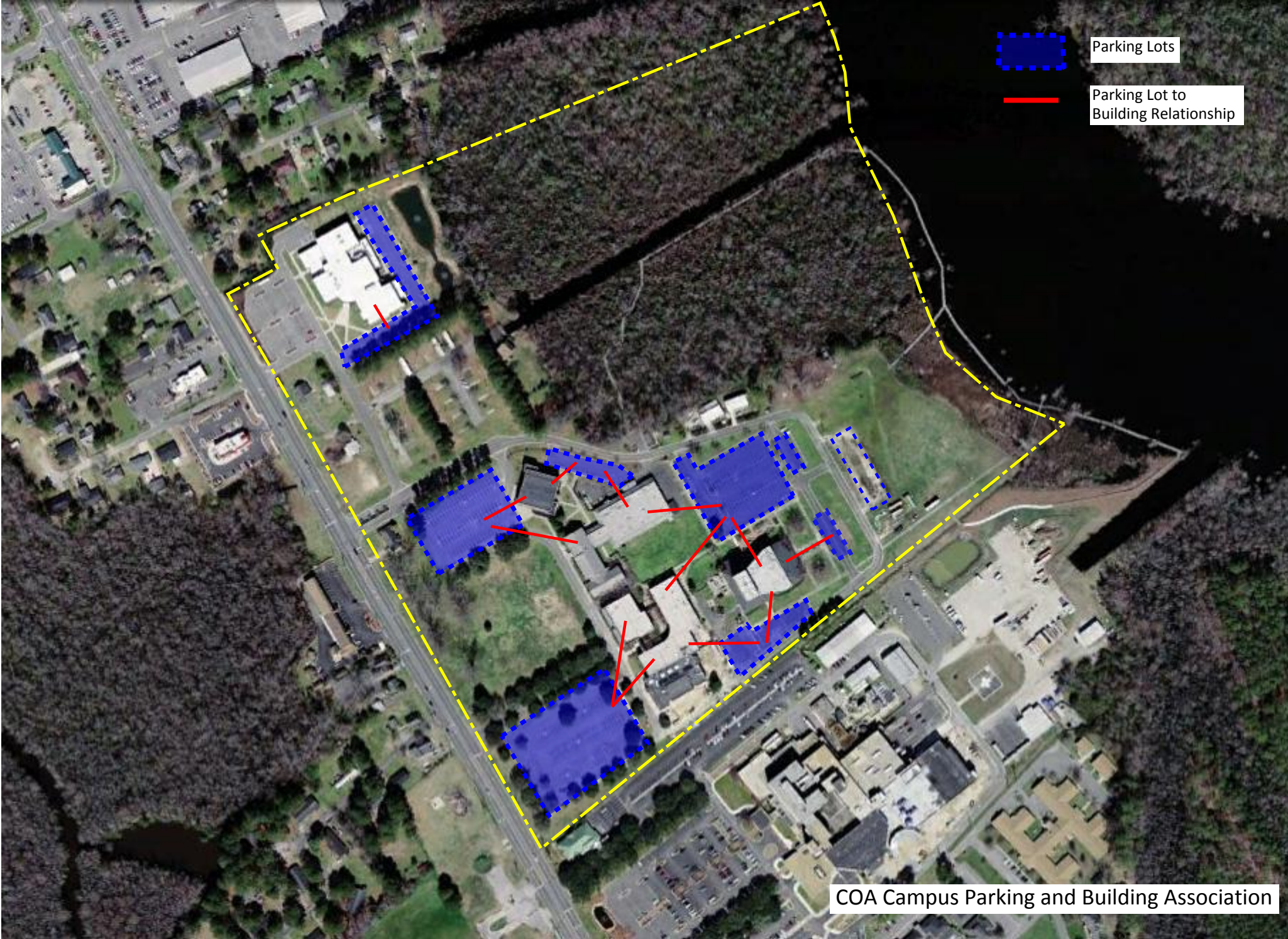
Assignable Space Assessment Summary

Program/Service Areas	Year 2012/2013	Year 2017/2018
Combined Totals		
Current Space (2012/2013) actual area (net s.f.)	253,965	253,965
Projected Space Need actual + needed area (net s.f.)	307,755	308,194
Projected Space Deficit needed - actual area (net s.f.)	53,790	54,229
Building Support Factor* 40% of net deficit area	21,516	21,692
Total Gross Space Deficit net deficit area (40%) (gross s.f.)	75,306	75,921

(* 40% building support factor estimates additional space for walls, circulation, toilets, mechanical, etc.)



COA and Neighboring Entrances

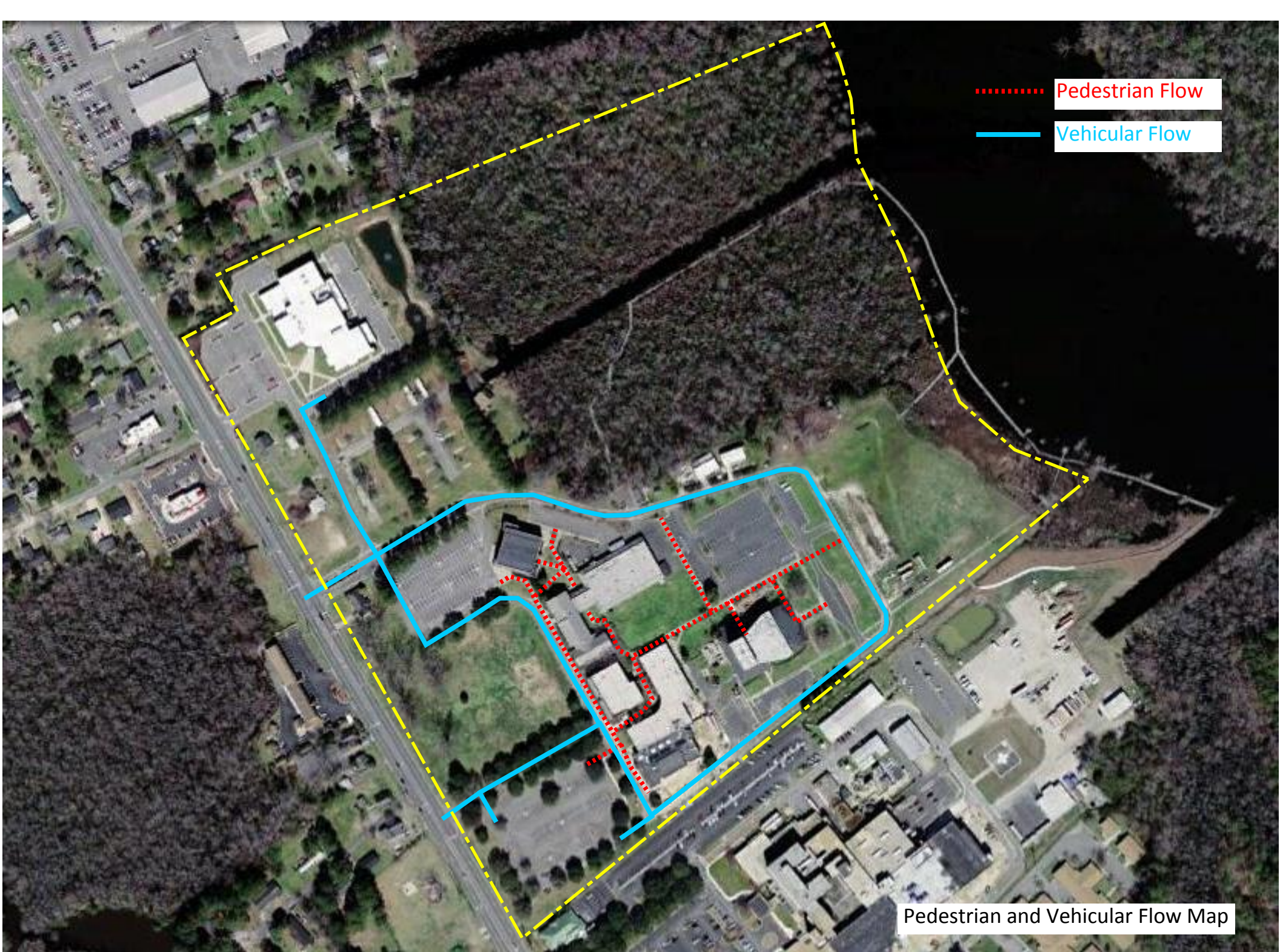


Parking Lots



Parking Lot to
Building Relationship

COA Campus Parking and Building Association





POSSIBLE
BUILDING
SITE

POSSIBLE
BUILDING
SITE

POSSIBLE
BUILDING
SITE

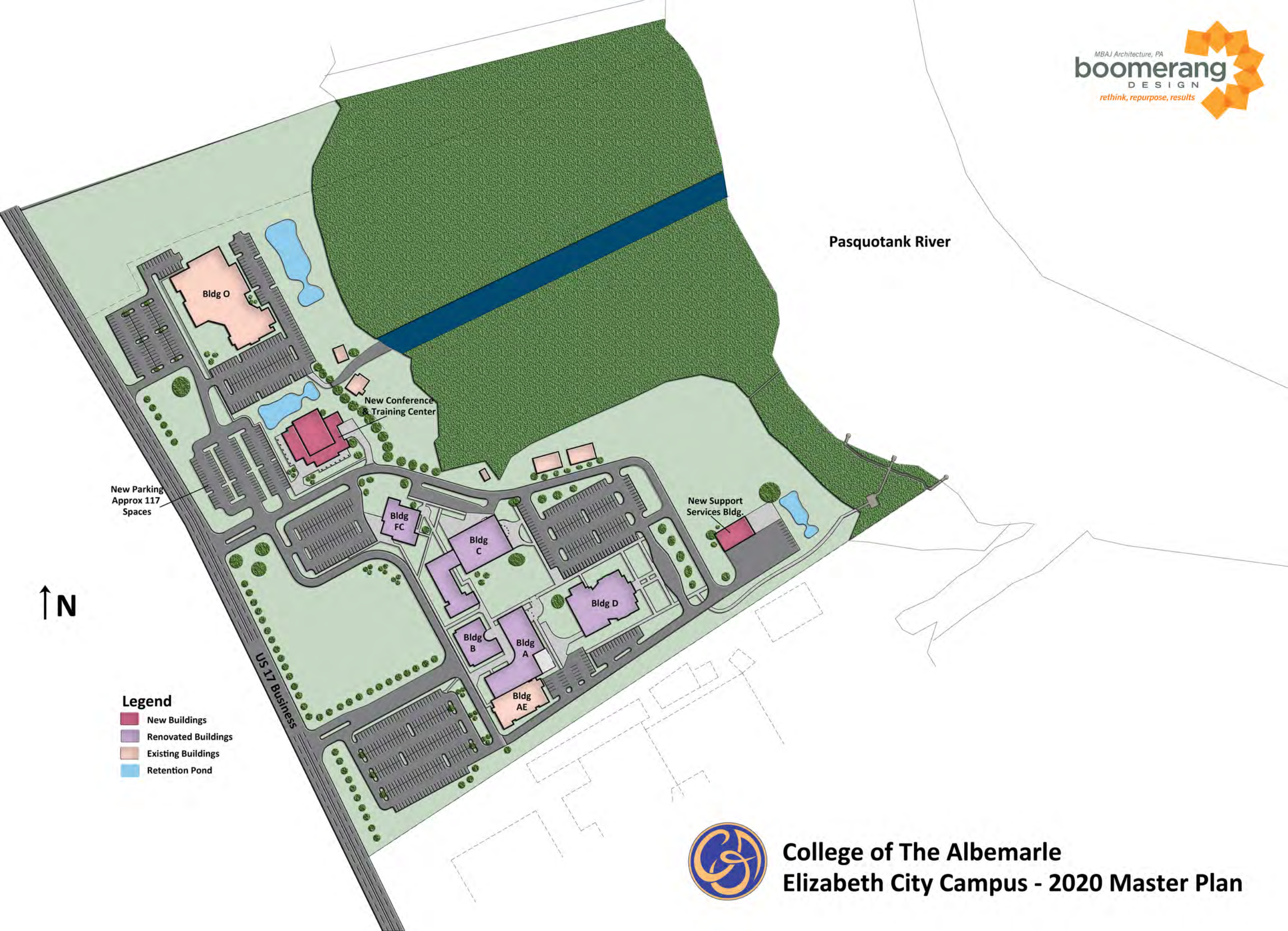
Approx. 100 yr.
flood plain

Approx. 500 yr.
flood plain

Approx. 500 yr.
flood plain

Approx. 100 yr.
flood plain

COA Future Building Sites



Legend

- New Buildings
- Renovated Buildings
- Existing Buildings
- Retention Pond







- Legend**
- New Buildings
 - Renovated Buildings
 - Existing Buildings
 - Retention Pond

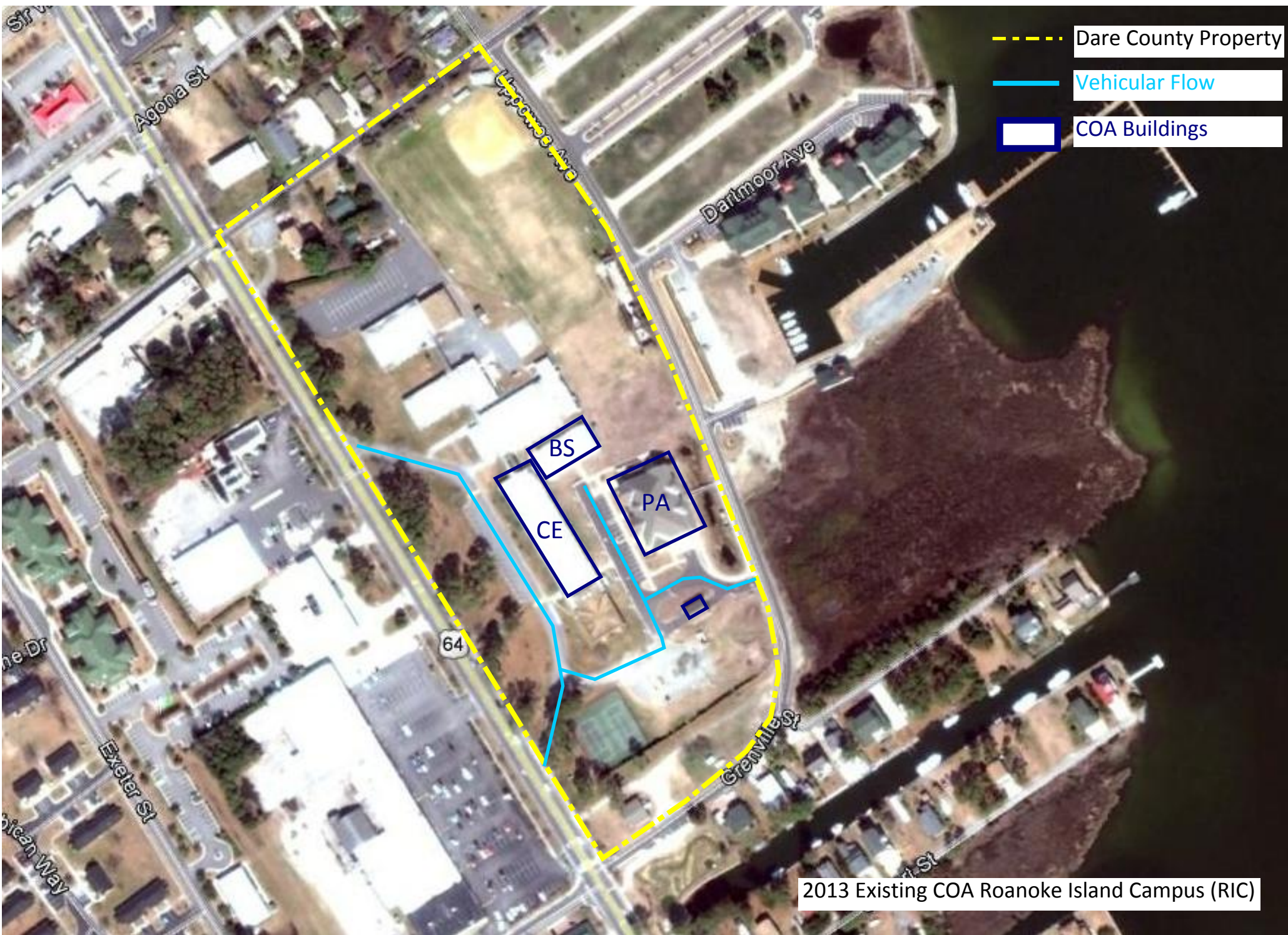




Legend

- New Buildings
- Renovated Buildings
- Existing Buildings
- Retention Pond





- Dare County Property
- Vehicular Flow
- COA Buildings

2013 Existing COA Roanoke Island Campus (RIC)



2013 Existing COA Roanoke Island Campus



Legend

- New Buildings
- Renovated Buildings
- Existing Buildings
- Retention Pond





Elizabeth City Campus roof repair, projected cost summary

Data provided by Garland Co.

Updated 8/26/13

	2013	2014	2015	Total
Auditorium lower	79,000			
Auditorium upper	79,000			
Library & A Bldg flat roof repair	24,500			
Library shingles	60,000			
C Building flat roof		35,000		
C Building mansard shingles		200,000		
C Building steep slope shingles			300,000	
Stage tower siding		200,000		
	242,500	435,000	300,000	977,500

The Garland Company, Inc.

Roof Asset Management Program



College of The Albemarle Roof Asset Management Program

Prepared By
Rob Banks

Prepared For
Mr. Bob Howard

August 23, 2013

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Client Data

Client: College of The Albemarle

Client Data

Name	College of The Albemarle		
Address 1	1208 N Rd.	Address 2	-
City	Elizabeth City	State	NC
ZIP	27909	Country	United States

Contact Info

Contact Person	Bob Howard	Title	-
Mobile Phone:	252-536-2551	Office Phone:	252-335-0821
Email:	robert_howard@albemarle.edu		



Facility Summary

Client: College of The Albemarle

Facility: College of The Albemarle

Facility Data

Address 1	1208 N Rd.
Address 2	-
City	Elizabeth City
State	NC
ZIP	27909
Type of Facility	Higher Education
Square Footage	43,000
Contact Person	Bob Howard

Roof Sections

Name	Date Installed	Square Footage	Roof Access
Auditorium Lower		12,000	Internal Roof Hatch
Auditorium Upper		4,000	Internal Roof Hatch
Auditorium Upper Wall Panels		11,000	Ladder Needed
Building C Flat Roof		11,500	Internal Roof Hatch
Building C Mansard		10,000	Internal Roof Hatch
Building C Steep Slope Shingles		18,100	Internal Roof Hatch
Library Mansard		2,900	Ladder Needed
Library and Building 100 Flat Roofs		39,000	Internal Roof Hatch



Construction Details

Client: College of The Albemarle

Facility: College of The Albemarle

Roof Section: Auditorium Lower

Roof Info

Year Installed	-	Square Footage	12,000
Slope Dimension	1/12"	Roof Height	40'
Roof Access	Internal Roof Hatch	System Type	Modified BUR

Roof Assembly

Roof #	Layer Type	Description	Attachement	R-Value	Insulation Thickness
1	Deck	Metal Deck	Mechanically attached	-	-
1	Insulation	Perlite	Mechanically attached	-	-
1	System	Modified BUR	Hot asphalt	-	-
1	Surfacing	Aluminum coating	Brush applied	-	-

Details

Perimeter Detail	Wall Flashing, Metal Edge, Drip Edge
Flashing Material	BUR



Inspection Report

Client: College of The Albemarle

Facility: College of The Albemarle

Report Date: 05/15/2013

Roof Section: Auditorium Lower

Inspection Information

Inspection Date	05/15/2013	Core Data	No
Inspection Type	Visual Inspection	Leakage	Yes
Deck Conditions	Good		

Flashing Conditions

Perimeter	Failed	Wall	Fair
Projections	Fair	Counterflashing	Poor

Miscellaneous Details

Reglets	N/A	Debris	No
Control Expansion Joints	N/A	Ponding Water	N/A
Parapet Wall	N/A	Coping Joints	Poor

Perimeter

Rating	Failed
Condition	Moisture entry was detected at many points at the membrane perimeter flashing gravel stop detail. The membrane has become separated from the metal edge detail allowing water to enter behind the edge detail then track under/into the roof system/building envelope.

Field

Rating	Fair
Condition	The protective coating that keeps the UV rays from breaking down the asphalt roof system has diminished. Small spots of alligating in the top membrane are observed.

Penetrations

Rating	Fair
Condition	Great slope facilitates the moisture off the roof and away from the small number of rooftop projections.

Drainage

Rating Good

Condition The 1/12 slope on the roof system facilitates quick removal of surface moisture off the roof system.

Overall

Rating Fair

Condition The lower auditorium roof sections benefit from great slope in their deck substrates facilitating fast water run off. Harmful UV rays, thermal cycling and age have lessened the effectiveness of the coating applied to the built-up roof system. Breakdown is most obvious on the perimeter edges at the gravel stop transition between the metal and asphalt membrane. This separation has allowed moisture into the building envelope.



Rooftop view of the built-up roof system. Note the nice slope but the degrading roof coating protection layer.



Most of the reported leaks have been evidenced at the roof/wall panel transition as well as the perimeter edge metal detail.



A close-up view of the deteriorated sealant detail at the wall panel roof flashing transition.



The top membrane ply has separated from the perimeter metal edge.



The entire perimeter edge detail needs to be stripped in additional roof plies. Evidence of moisture migration noted at several open points in membrane laps.



Rust was noted in several spots on the Upper Auditorium wall panel assembly. Identified some evidence of rust repairs in the past. Also, repairs have been made to the base wall panel low roof transition detail in areas to slow the flow of moisture migration into the building envelope.



Solution Options

Client: College of The Albemarle


Facility: College of The Albemarle

Roof Section: Auditorium Lower

Inspection Options

Solution Option:	Inspection	Action Year:	2013
Section Square Footage:	12,000	Expected Life Years:	-
Estimated Cost:	-		
Scope of Work:	The Upper Auditorium roof section should be inspected quarterly and after any high wind rain event.		

Restore Options

Solution Option:	Restore 	Action Year:	2013
Section Square Footage:	12,000	Expected Life Years:	15
Estimated Cost:	\$79,000.00		
Scope of Work:	All perimeter edge metal flashing must be reinforced with additional roof plies and all roof anomalies repaired. The roof system is then pressure washed to remove any dirt, loose coating or debris before two coats of an white urethane energy star approved coating are installed. Manufacturer inspections during installation and a 15 year long term warranty are included.		



The Garland Company, Inc.
Low Slope Roofing Wind Uplift Calculations
3800 East 91st Street
Cleveland, Ohio 44105-2197
Phone: (800) 321-9336 Fax (216) 883-2046

Project **Albermarle Community College**
 Roof **Auditorium High Roof**
 Sales Rep. **Rob Banks**

Location **Elizabeth City, NC**

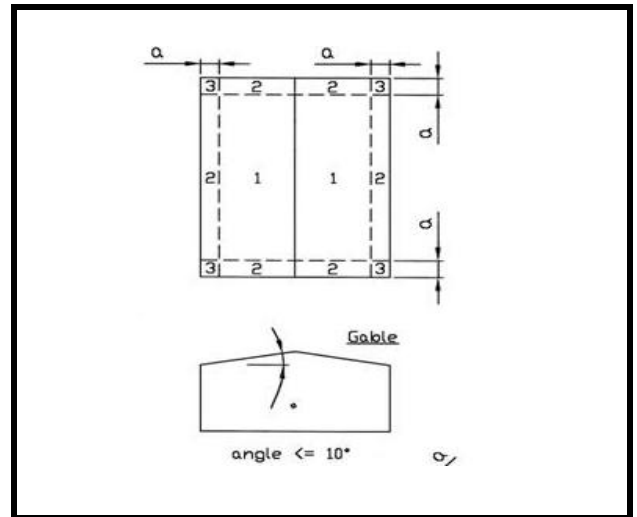
Zone 1 psf **30.0**
 (mid roof)

Zone 2 psf **50.3**
 (eaves, ridge, hip)

Zone 3 psf **75.7**
 (corners)

Edge Zone Width "a" **4** ft. **0** in.

Fastener Safety Factor **3.00**
 Importance **III**
 Importance Factor **1.15**
 Wind Speed (mph) **109**
 Ultimate Pullout Value **456**
 Exposure Category **B**
 Design Roof Height **60.00**
 Minimum Building Width **40.00**
 Roof Pitch (X, Y) **0.25** : **12**
 Snow Load (psf)



System Type: **Modified Bitumen**

System Type: **Modified Bitumen**

Surfacing: **Mineral Surface**

Attachment Method: **Cold**

Zone 1

Zone 2

Zone 3

(mid roof) **12** fasteners
 per 4' x 8' board

(eaves, ridge, hip) **18** fasteners per
 4' x 8' board

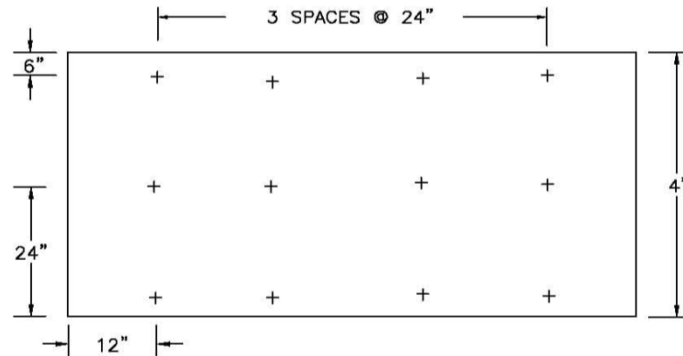
(corners) **24** fasteners
 per 4' x 8' board

NOTES:

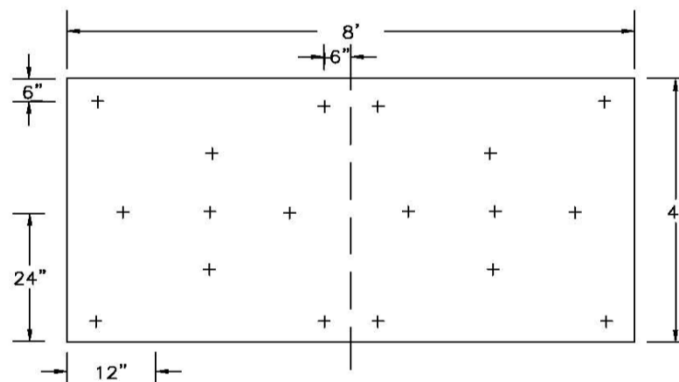
- *Unless specifically stated otherwise, these calculations are based on ASCE 7-05 (American Society for Civil Engineers); if a specific building code is required, please specify.
- *It is recommended to include the "Negative Uplift Pressures" in the specifications as well as the Safety Factor, Importance Factor, Building Category, Wind Speed, Ultimate Pullout Value, and Exposure.
- *The Wind Speed is determined based upon geographical location.
- *The Exposure and Importance Factors are needed to determine the uplift pressures.

If you have any questions, please call 800-321-9336 or respond to engineering@garlandind.com

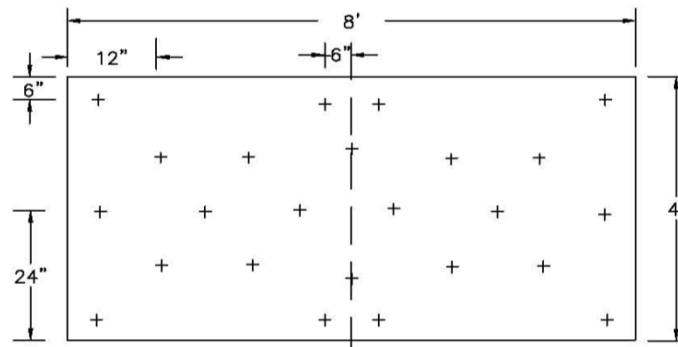
ZONE 1 INSULATION BOARD FASTENER PATTERN: 12 FASTENERS PER BOARD



ZONE 2 INSULATION BOARD FASTENER PATTERN: 18 FASTENERS PER BOARD



ZONE 3 INSULATION BOARD FASTENER PATTERN: 24 FASTENERS PER BOARD



THE GARLAND COMPANY, INC.

3800 EAST 91st STREET
CLEVELAND, OHIO 44105-2197
—PHONE 1-800-321-9336—
FAX 1-216-641-0633

DETAIL:

4 X 8 BOARD PATTERN

SECTION:

INSULATION BOARD FASTENER PATTERN

REV: 1 9/05

The Garland Company, Inc.
3800 East 91st Street
Cleveland, Ohio 44105-2197
Phone: (800) 321-9336 Fax (216) 883-2046



PROJECT Albermarle Community College
ROOF SECTION Auditorium High Roof
DATE 6/10/2013
BASIC VELOCITY PRESSURE 25.39 psf
DESIGN CODE ASCE 7-05

System & Attachment Data

Building & Site Data

SYSTEM TYPE	Modified Bitumen
SYSTEM SCOPE	Modified Bitumen Cold
SURFACING	Mineral Surface
ATTACHMENT METHOD	Mech/ Fasten Insul/Board
SUBSTRATE MATERIAL	Steel
SUBSTRATE THICKNESS	22 gauge
FASTENER TYPE	Steel: OMG Standard
FASTENER SAFETY FACTOR	3
ULTIMATE FASTENER PULLOUT	456 lbs/screw
ALLOWABLE FASTENER PULLOUT	152 lbs/clip

BASIC WIND SPEED	109	mph
EXPOSURE CATEGORY	B	
TOPOGRAPHY FACTOR	1.00	
BUILDING TYPE	Enclosed	
ROOF PITCH (X, Y)	0.25	12
RUN TO RIDGE	20	
EAVE HEIGHT	60	
DESIGN ROOF HEIGHT	60.00	ft
IMPORTANCE CLASS / FACTOR	III	1.15
MIN. BLDG WIDTH	40	ft
WIND-BORNE DEBRIS REGION	No	
PARAPET	No	
ROOF ANGLE	1.19	deg
PROTECTED OPENINGS	Yes	
ROOF TYPE	Gable	

	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5		
ROOF PRESSURE (psf)	30.0	50.3	75.7	29.7	36.6		
OVERHANG PRESSURE (psf)	43.17	43.17	71.10				
EDGE ZONE WIDTH "a" =	4.00 ft						



Construction Details

Client: College of The Albemarle

Facility: College of The Albemarle

Roof Section: Auditorium Upper

Roof Info

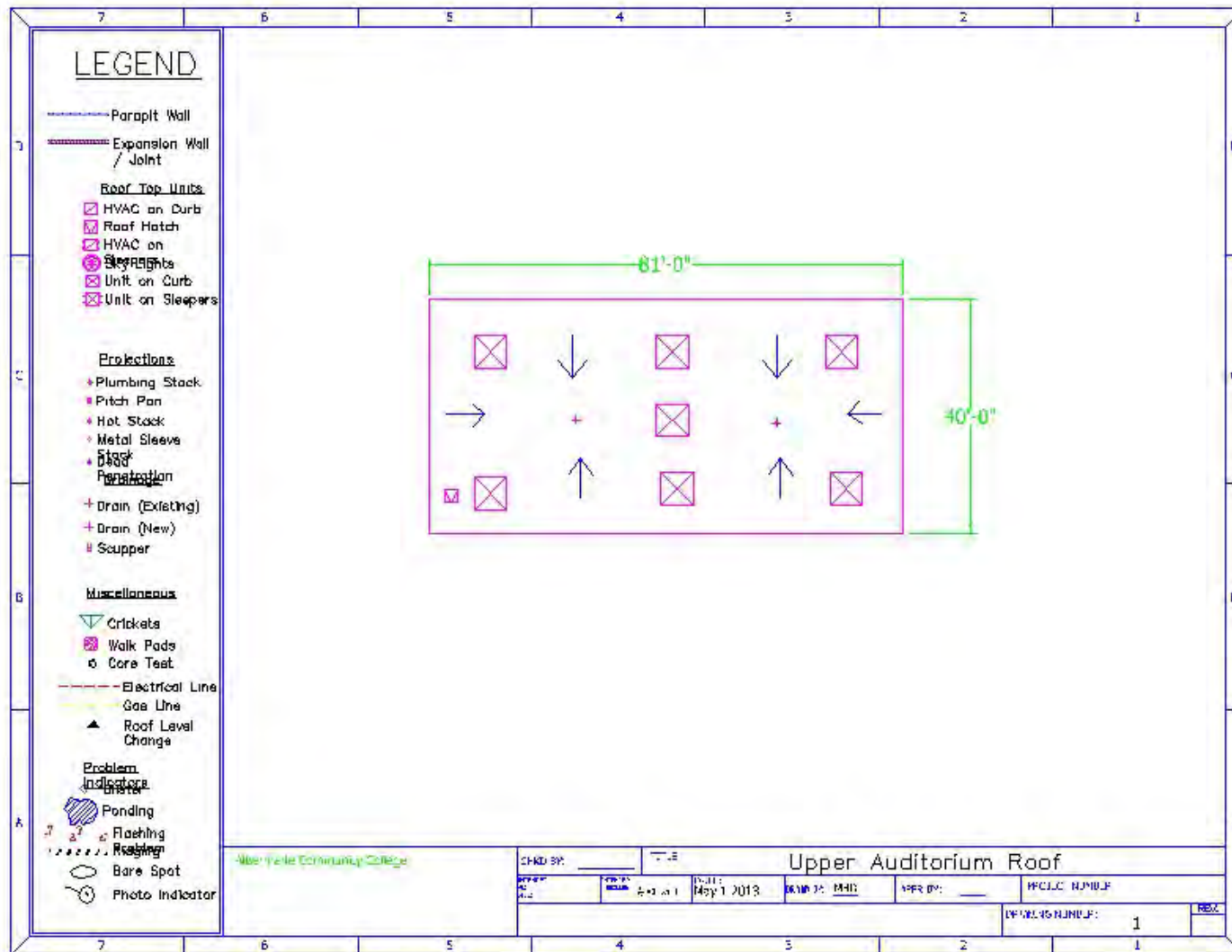
Year Installed	-	Square Footage	4,000
Slope Dimension	1/4"	Roof Height	60'
Roof Access	Internal Roof Hatch	System Type	Modified BUR

Roof Assembly

Roof #	Layer Type	Description	Attachement	R-Value	Insulation Thickness
1	Deck	Metal Deck	Mechanically attached	-	-
1	Insulation	Perlite	Mechanically attached	-	-
1	System	Built Up Roof (BUR)	Hot applied/Cold Applied	-	-
1	Surfacing	Aluminum coating	Brush applied	-	-

Details

Perimeter Detail	Parapet Wall
Flashing Material	BUR
Drain System	Internal Roof Drains
Parapet Wall	Masonry
Coping Cap	Metal





Inspection Report

Client: College of The Albemarle

Facility: College of The Albemarle

Report Date: 05/15/2013

Roof Section: Auditorium Upper

Inspection Information

Inspection Date	05/15/2013	Core Data	No
Inspection Type	Visual Inspection	Leakage	Yes
Deck Conditions	Good		

Flashing Conditions

Perimeter	Failed	Wall	N/A
Projections	Fair	Counterflashing	Fair

Miscellaneous Details

Reglets	N/A	Debris	No
Control Expansion Joints	N/A	Ponding Water	Minor
Parapet Wall	Fair	Coping Joints	N/A

Perimeter

Rating	Poor
Condition	The perimeter edge metal system is in poor condition allowing moisture entry into the field of the roof system building envelope.

Field

Rating	Poor
Condition	Trapped moisture is evidenced under the field sheets in the built-up roof system. Moist migrated from the poor condition of the perimeter metal details. The sacrificial coating protecting the smooth built-up roof from harmful UV rays has been diminished by many years of thermal cycles.

Penetrations

Rating	Fair
Condition	The many rooftop projections are in fair conditions with minimal open flashing lap joints. The protective coating applied to the flashing is wearing thin.

Drainage

Rating	Fair
Condition	The two internal roof drains do an adequate job of removing water from the roof surface, only minimal ponding water was noted.

Overall

Rating	Poor
Condition	Water is under the roof system and has entered the building envelope. The R value of the wet insulation has diminished. The perimeter metal edge detail has failed allowing water into the roofing system.



Rooftop overview picture of the Upper Auditorium roof section.



Another rooftop overview. Note the rooftop projections.



The perimeter edge metal has failed allowing moisture to migrate to the field of the roof.



The rooftop penetration flashings are in fair shape. The trapped moisture is running from the building perimeter.



A rooftop view of the failed perimeter edge metal detail.



Solution Options

Client: College of The Albemarle


Facility: College of The Albemarle

Roof Section: Auditorium Upper

Inspection Options

Solution Option:	Inspection	Action Year:	2013
Section Square Footage:	4,000	Expected Life Years:	-
Estimated Cost:	-		
Scope of Work:	The Upper Auditorium roof section should be inspected quarterly and or after any high wind storm event.		

Replace Options

Solution Option:	Replace 	Action Year:	2013
Section Square Footage:	4,000	Expected Life Years:	-
Estimated Cost:	\$79,000.00		
Scope of Work:	The Upper Auditorium roof system will be removed to the metal deck, after the deck is checked for damage, a new high performance modified bitumen roof system will be installed in cold adhesive. A white energy star approved coating will be applied to the mineral surface membrane after completion. Manufacturer inspections during installation as well as a 25 year No Dollar Limit long term warranty are included.		



The Garland Company, Inc.
R-MER Standing Seam Uplift Calculations
3800 East 91st Street
Cleveland, Ohio 44105-2197
Phone: (800) 321-9336 Fax (216) 883-2046

Project **College of the Albermarle**
Roof Section **Library Mansard**
Sales Rep. **Rob Banks**

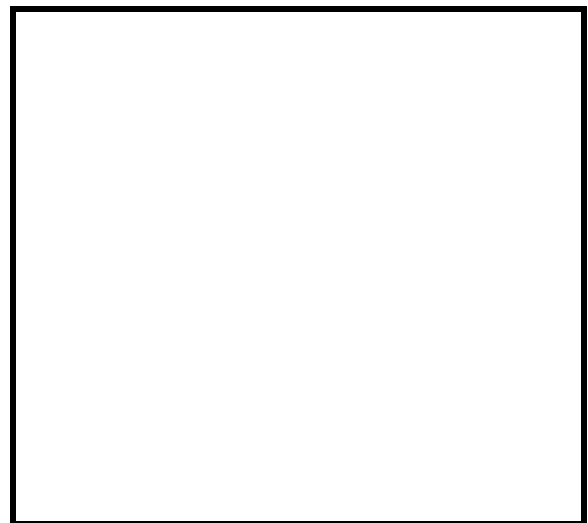
County / Parish

Elizibeth City, NC

Zone 1 30.9 Zone 2 36.1 Zone 3 36.1
(mid roof) (eaves, ridge, hip) (corners)

Edge Zone Width "a" 6 ft. 7 in.

Safety Factor 1.67
Importance Category III
Importance Factor 1.15
Wind Speed (mph) 110
Ultimate Pullout Value (lbs/screw) 428
Exposure Category C
Design Roof Height 16.38
Minimum Building Width 90.00
Roof Pitch (X, Y) 7 : 12
Snow Load (psf) _____



Recommended Panel R-MER Span 16 in. 0.040 Aluminum
Clip Spacing:
Zone 1 4 ft. 2 in. Zone 2 3 ft. 7 in. Zone 3 3 ft. 7 in.

NOTES: Rmer Span clip spacing on vertical walls to be 3'- 0" o.c.

*Unless specifically stated otherwise on the R-MER SS Data Sheet, these calculations are based on ASCE 7-05 (American Society for Civil Engineers); if a specific building code is required, please specify.

*It is recommended to include the "Negative Uplift Pressures" in the specifications as well as the Safety Factor, Importance Factor, Building Category, Wind Speed, Ultimate Pullout Value, and Exposure.

*The Wind Speed is determined based upon geographical location.

*The Exposure and Importance Factors are needed to determine the uplift pressures.

*This roofing project has not been evaluated for additional loading due to roof mounted equipment and accessories including but not limited to mechanically attached photovoltaic modules, walkway systems, mechanical roof top units, etc. Future addition of roof mounted systems may require modification of the roof system described in these documents.

If you have any questions, please call 800-321-9336 or respond to engineering@garlandind.com

The Garland Company, Inc.
3800 East 91st Street
Cleveland, Ohio 44105-2197
Phone: (800) 321-9336 Fax (216) 883-2046



PROJECT	College of the Albermarle
ROOF SECTION	Library Mansard
DATE	8/1/2013
BASIC VELOCITY PRESSURE	26.18 psf
DESIGN CODE	ASCE 7-05

Panel & Fastener Data

PANEL TYPE	R-MER Span
PANEL WIDTH	16 in
PANEL/CAP MATERIAL	0.040 Aluminum
SUBSTRATE MATERIAL	Steel
SUBSTRATE THICKNESS	22 gauge
FASTENER TYPE	Steel: (1/4-14 Tek 1 Buildex)
FASTENERS PER CLIP	2
FASTENER SAFETY FACTOR	3
CLIP PRY COEFFICIENT	1.65
ULTIMATE FASTENER PULLOUT	428 lbs/screw
ALLOWABLE CLIP LOAD	173 lbs/clip
PANEL SAFETY FACTOR	1.67

Building & Site Data

BASIC WIND SPEED	110	mph
EXPOSURE CATEGORY	C	
TOPOGRAPHY FACTOR	1.00	
BUILDING TYPE	Enclosed	
ROOF PITCH (X, Y)	7	12
RUN TO RIDGE	15	
EAVE HEIGHT	12	
DESIGN ROOF HEIGHT	16.38	ft
IMPORTANCE CLASS / FACTOR	III	1.15
MIN. BLDG WIDTH	90	ft
WIND-BORNE DEBRIS REGION	No	
PARAPET	No	
ROOF ANGLE	30.26	deg
PROTECTED OPENINGS	Yes	
ROOF TYPE	Hip	
EXTREME THERMAL RANGE	200	deg F

	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5		
ROOF PRESSURE (psf)	30.9	36.1	36.1	33.5	41.4		
OVERHANG PRESSURE (psf)	26.18	52.36	52.36				
PANEL SPAN (ft)	6.42	6.08	6.08	6.25	5.74	N/A	N/A
FASTENER SPAN (ft)	4.20	3.59	3.59	3.87	3.14		
FM RATING (FMRC 4471)							
EDGE ZONE WIDTH "a" =	6.55 ft						



Construction Details

Client: College of The Albemarle

Facility: College of The Albemarle

Roof Section: Auditorium Upper Wall Panels

Roof Info

Year Installed	-	Square Footage	11,000
Slope Dimension	-	Roof Height	-
Roof Access	Ladder Needed	System Type	Metal Wall Panel

Roof Assembly

Roof #	Layer Type	Description	Attachement	R-Value	Insulation Thickness
1	Metal Standing Seam	Galvanized	Mechanically attached	-	-

Details

Perimeter Detail	Wall Flashing
Flashing Material	Steel, Metal
Coping Cap	Metal



Inspection Report

Client: College of The Albemarle

Facility: College of The Albemarle

Report Date: 05/15/2013

Roof Section: Auditorium Upper Wall Panels

Inspection Information

Inspection Date	05/15/2013	Core Data	No
Inspection Type	Visual Inspection	Leakage	No
Deck Conditions	N/A		

Flashing Conditions

Perimeter	-	Wall	Fair
Projections	-	Counterflashing	Fair

Miscellaneous Details

Reglets	-	Debris	No
Control Expansion Joints	-	Ponding Water	-
Parapet Wall	-	Coping Joints	-

Other

Rating	Fair
Condition	The oxidized Upper Wall Panels on the Auditorium Building have been painted a few times in the past. Some areas have been touched up to more closely match the existing substrate.

Overall

Rating	Fair
Condition	Currently the upper auditorium wall panels are an eyesore on a beautiful college campus. Some reactive and proactive flashing repairs have slowed any moisture intrusion into the building envelope. A long term solution needs to be examined and budgeted. Indoor air quality issues and or a rusted metal support substrate are much bigger budgetary concerns.



Side view of the upper auditorium wall panels.



Other Side view of the upper auditorium wall panels.



Front view showing oxidation and chipping paint on the upper auditorium wall panel system



Solution Options

Client: College of The Albemarle


Facility: College of The Albemarle

Roof Section: Auditorium Upper Wall Panels

Inspection Options

Solution Option:	Inspection	Action Year:	2013
Section Square Footage:	11,000	Expected Life Years:	-
Estimated Cost:	-		
Scope of Work:	Inspect the upper auditorium wall panel system quarterly or after any heavy wind/rain event.		

Replace Options

Solution Option:	Replace 	Action Year:	2014
Section Square Footage:	11,000	Expected Life Years:	30
Estimated Cost:	\$200,000.00		
Scope of Work:	Install new metal hat channels anchored into the existing metal framing. Install 16" .040 aluminum panels per manufacturer guidelines. Install all clips, closures and trim pieces per manufacturer's recommendations to receive metal panels. Install all flashings, counterflashings, closures and sealants as required by manufacturer. Manufacturer technical inspections required during installation for quality assurance.		



**AMERICAN COATINGS AND
INSULATION SYSTEMS INC.**
PO BOX 19706
GREENSBORO, NC 27419-9706
PHONE: 336-294-0507
FAX: 336-299-9570

PROPOSAL AND CONTRACT

4/24/2013

BUILDING (C)

WILL NOT BE LIABLE FOR ANY CONSEQUENTIAL DAMAGES, LOSSES OR EXPENSES.

The maximum liability of American Coatings & Insulation Systems, Inc. shall not exceed the contract price for the merchandise or work claimed to be defective or unsuitable.

American Coatings & Insulation Systems, Inc. may withdraw this proposal in thirty days.

Respectfully submitted,

John Turner

American Coatings & Insulation Systems, Inc

ACCEPTANCE OF PROPOSAL: The above Proposal, prices and conditions are satisfactory and are hereby accepted. You are authorized to perform the work proposed, and we promise to pay as indicated above.

ACCEPTED:

By: _____

Title: _____

Contract Price: \$ _____

Date: _____



**AMERICAN COATINGS AND
INSULATION SYSTEMS INC.**
PO BOX 19706
GREENSBORO, NC 27419-9706
PHONE: 336-294-0507
FAX: 336-299-9570

PROPOSAL AND CONTRACT

**To: Richard Seymour
College Of Albemarle
Elizabeth City, NC**

**DATE: 4/24/2013
SUBJECT: Recoat Roof
BUILDING: C
SQFT: 18,917**

We offer to furnish materials, labor, supervision, equipment, tools, Workman's Compensation, Public Liability, Property Damage and Products Insurance to perform all of the work described herein:

SCOPE OF WORK:

RE-COATING WITH PREMIUM SPRAY PRODUCTS FOAM & SILICONE SEAMLESS ROOF SYSTEM

1. The existing polyurethane foam roof surface will be washed under pressure to remove all loose dust, dirt, and debris.
2. We will do an Infrared moisture survey to identify any wet insulation. This is required by Premium Spray Inc., the manufacture. If any wet insulation is found it will be removed and replaced at a cost of (\$4.00) per square foot. Owner will be notified of wet insulation so he can observe the square feet. We can give a rough estimate of wet insulation after Infrared is done.
3. Repair damaged flashing, blisters, remove wet foam if any, and correct any condition that may adversely affect the performance of the new roof system.
4. In areas of repair spray apply an average one and one half (1 ½) inch thick monolithic layer of 2.8 pound density polyurethane foam as manufactured by BASF, or equal. Foam will be sprayed to bring it up to the existing elevation of the roof around the repair.
5. Apply Premium Spray Premicote 2100 High Solid Silicone coating over existing silicone roof system.. The total minimum thickness is to be Fifteen (15) dry mils.



**AMERICAN COATINGS AND
INSULATION SYSTEMS INC.**
PO BOX 19706
GREENSBORO, NC 27419-9706
PHONE: 336-294-0507
FAX: 336-299-9570

PROPOSAL AND CONTRACT

4/24, 2013

BUILDING: (C)

6. Install ceramic roofing granules into wet topcoat at the rate of Thirty Five (30) pounds per one hundred (100) square feet.
7. All materials to be applied with manufacturers approved equipment and according to the manufacturer's recommendations.
8. A Ten (10) Year Full System No Leak Labor and Material Warranty will be issued by Premium Spray Products Corporation upon completion of our work and our receipt of final payment for same.
9. Owner to supply temporary water (standard hose connection, 10 gal/min output) and temporary power (220 volt single-phase). The Owner is to provide suitable staging areas.
10. The Owner is to cooperate with the Contractor in relocating automobiles to minimize the risk of over spray.
11. Our price will be held for thirty (30) days and is subject to negotiation thereafter to incorporate any possible cost increases.

BASE BID: **Thirty Three Thousand Fifty One Dollars (\$33,884.00)**

TERMS:

Amount of contract is due fifteen (15) days after completion of job.

All work is to be completed in a workmanlike manner according to standard practices. Any alteration or deviation from above proposal involving extra costs will be performed only upon written executed orders and will become an extra charge in addition to the proposal amount indicated. Interest and service charges of 1.5% per month (18% per annum) shall be assessed on all past due unpaid balances. When accepted, this proposal becomes a contract and the undersigned agree(s) to pay all costs of collection, including reasonable attorney's fees, in the event American Coatings & Insulation Systems, Inc. obtains legal counsel to enforce collection. American Coatings & Insulation Systems, Inc. warrants that all materials, services and workmanship furnished shall be free from defects for a period of one year from date of installation or performance of such work. **SUCH WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED. IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSES ARE SPECIFICALLY EXCLUDED AND AMERICAN COATINGS & INSULATION SYSTEM, INC.**



Construction Details

Client: College of The Albemarle

Facility: College of The Albemarle

Roof Section: Building C Flat Roof

Roof Info

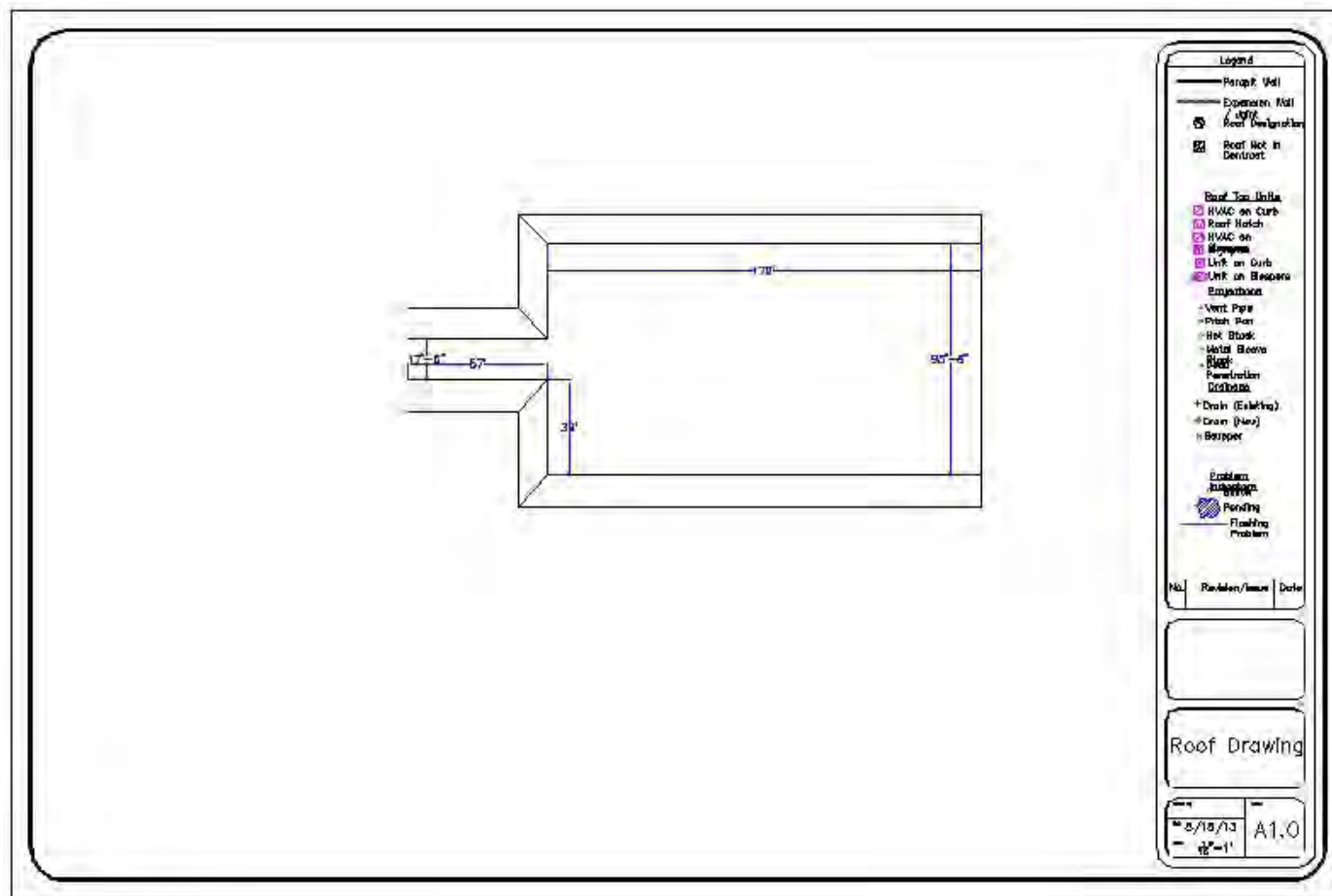
Year Installed	-	Square Footage	11,500
Slope Dimension	1/4"	Roof Height	15'
Roof Access	Internal Roof Hatch	System Type	PUF

Roof Assembly

Roof #	Layer Type	Description	Attachement	R-Value	Insulation Thickness
1	Deck	Steel	Mechanically attached	-	-
1	System	Conventional BUR	Hot asphalt	-	-
2	System	Other....	Spray applied	-	-

Details

Perimeter Detail	Parapet Wall
Flashing Material	Sprayed Polyurethane Foam
Drain System	Internal Roof Drains
Parapet Wall	Brick
Coping Cap	None





Inspection Report

Client: College of The Albemarle

Facility: College of The Albemarle

Report Date: 05/15/2013

Roof Section: Building C Flat Roof

Inspection Information

Inspection Date	05/15/2013	Core Data	No
Inspection Type	Visual Inspection	Leakage	No
Deck Conditions	Good		

Flashing Conditions

Perimeter	Fair	Wall	N/A
Projections	Fair	Counterflashing	N/A

Miscellaneous Details

Reglets	N/A	Debris	No
Control Expansion Joints	N/A	Ponding Water	Minor
Parapet Wall	Good	Coping Joints	N/A

Overall

Rating	Fair
Condition	The sprayed polyurethane foam (PUF) roof is in fair condition for it's 10 plus years of age. There are some minor areas that need corrective action and a few low areas of ponding water.



Overview of the foam section roof



Overview of the field of the roof.



Roof Overview of the sprayed foam polyurethane roof system coating.



Rooftop view of the many penetrations located on this roof section.



Asplit in the sprayed polyurethane roof section.



Solution Options

Client: College of The Albemarle


Facility: College of The Albemarle

Roof Section: Building C Flat Roof

Inspection Options

Solution Option:	Inspection	Action Year:	2013
Section Square Footage:	11,500	Expected Life Years:	-
Estimated Cost:	-		
Scope of Work:	The flat roof section on Bulding C should be inspected quarterly and after any high wind or rain events.		

Restore Options

Solution Option:	Restore 	Action Year:	2014
Section Square Footage:	11,500	Expected Life Years:	10
Estimated Cost:	\$35,000.00		
Scope of Work:	The ten plus year old sprayed polyurethane roof section is in fair condition and could be brought up to good condition with a scope of work including repairing all roof anomalies currently located in the top coat of the system. Additional foam would be applied to remove any low ponding areas and reflash all perimeter edges and rooftop projections. An additional silicone top coat would then be applied. The original foam applicator should be able to offer this option for around three dollars a square foot and then provide an additional ten years of warranty.		

Replace Options

Solution Option:	Replace	Action Year:	2015
Section Square Footage:	11,500	Expected Life Years:	30
Estimated Cost:	\$300,000.00		
Scope of Work:	-		



Construction Details

Client: College of The Albemarle

Facility: College of The Albemarle

Roof Section: Building C Mansard

Roof Info

Year Installed	-	Square Footage	10,000
Slope Dimension	5/12	Roof Height	-
Roof Access	Internal Roof Hatch	System Type	Shingles

Roof Assembly

Roof #	Layer Type	Description	Attachement	R-Value	Insulation Thickness
1	Shingles	Asbestos Tile	Nailed	-	-
1	Shingles	Asbestos Tile	Nailed	-	-

Details

Perimeter Detail	Drip Edge, Rake, Ridge
Flashing Material	Metal
Drain System	Gutter System



Inspection Report

Client: College of The Albemarle

Facility: College of The Albemarle

Report Date: 05/15/2013

Roof Section: Building C Mansard

Inspection Information

Inspection Date	05/15/2013	Core Data	No
Inspection Type	Visual Inspection	Leakage	No
Deck Conditions	Good		

Flashing Conditions

Perimeter	Poor	Wall	N/A
Projections	Good	Counterflashing	N/A

Miscellaneous Details

Reglets	N/A	Debris	No
Control Expansion Joints	N/A	Ponding Water	None
Parapet Wall	N/A	Coping Joints	N/A

Other

Rating	Fair
Condition	The asbestos shingles around the perimeter of Building C are installed in a high wind zone location. They are fastened to the structural concrete deck with either 1 or 2 nails. The large amount of slope is a plus in shedding the water quickly but a detriment to this installation method. The College of The Albemarle maintenance staff have repaired/replaced many shingles over the years. Testing confirmed the presence of asbestos in the shingle composition raising a safety concern for the repair but a bigger concern from the shingles becoming loose and falling to the ground.

Overall

Rating	Fair
Condition	



Building C mansard shingle rooftop overview.



Overview, of one side of the building C mansard. There are 3 other sides to the building C mansard roof areas.



Solution Options

Client: College of The Albemarle


Facility: College of The Albemarle

Roof Section: Building C Mansard

Inspection Options

Solution Option:	Inspection	Action Year:	2013
Section Square Footage:	10,000	Expected Life Years:	-
Estimated Cost:	-		
Scope of Work:	The Building C mansard roof area should be examined quarterly and after any high wind or rain event.		

Replace Options

Solution Option:	Replace 	Action Year:	2014
Section Square Footage:	10,000	Expected Life Years:	30
Estimated Cost:	\$200,000.00		
Scope of Work:	<ul style="list-style-type: none"> • Remove ceramic shingle tiles mechanically using wet methods (to keep any fibers from becoming friable) • Remove these tiles only as required by manufactured wind uplift calculations to install new hat channels • Minimizing amount of tear-off / exposure • Double bag as required by OSHA when dealing with asbestos • Cleanup all associated tear off debris • Install new Hat channels anchored into the existing concrete deck • Install 16" .040 alum panels as per manufacturers specifications • Install all clips closures and trim pieces per manufacturer's recommendations to receive metal panels. • Install all flashings, counter flashings, closures and sealants as required by manufacturer. • Install new Head wall flashing that doubles as a coping where necessary • Manufacture representative quality assurance inspections throughout the installation to insure the specifications are followed for the 30 year NDL long term warranty. 		



Construction Details

Client: College of The Albemarle

Facility: College of The Albemarle

Roof Section: Building C Steep Slope Shingles

Roof Info

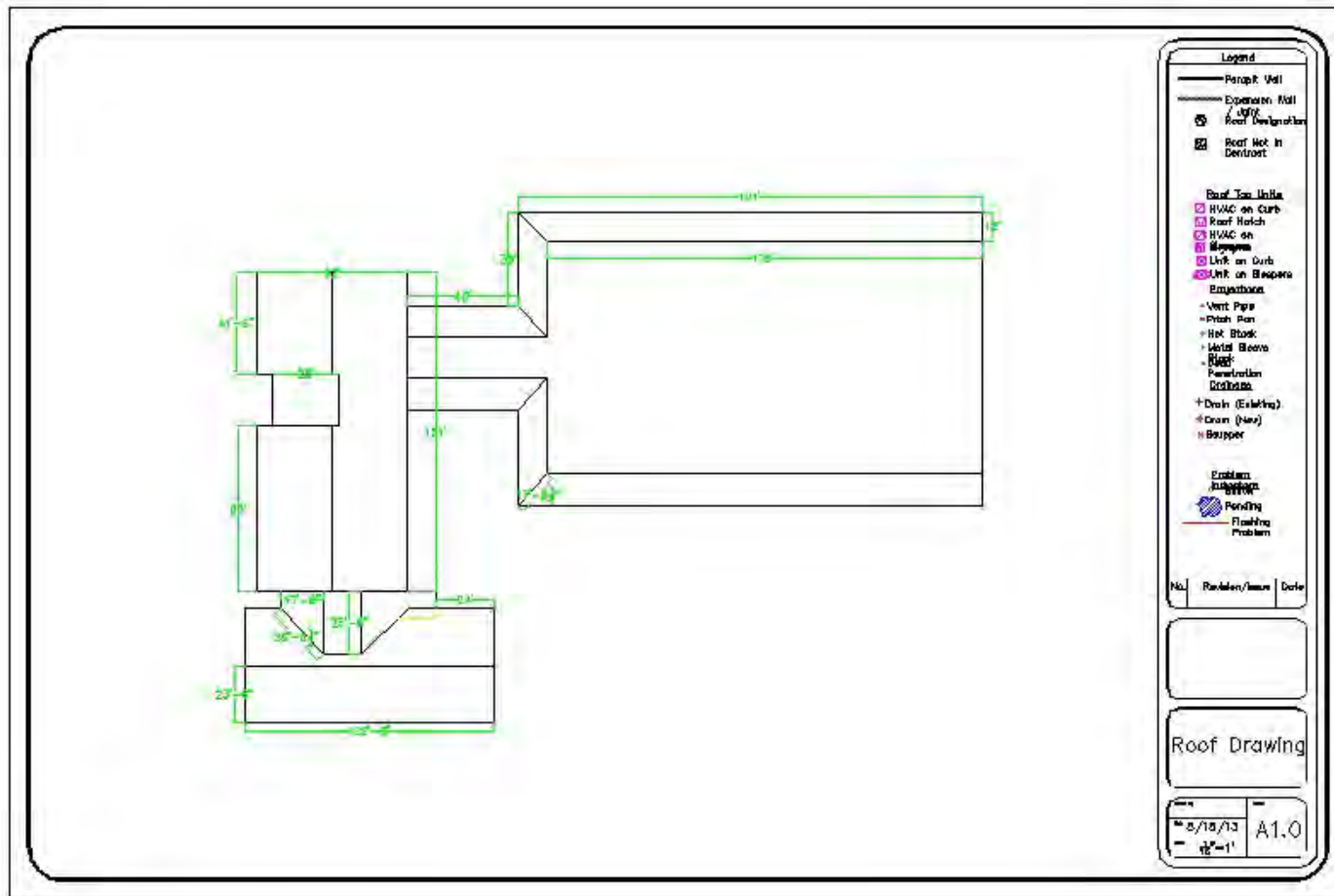
Year Installed	-	Square Footage	18,100
Slope Dimension	5/12	Roof Height	20
Roof Access	Internal Roof Hatch	System Type	Shingles

Roof Assembly

Roof #	Layer Type	Description	Attachement	R-Value	Insulation Thickness
1	Deck	Concrete	Poured - in - place	-	-
1	System	Shingles	Nailed	-	-

Details

Perimeter Detail	Wall Flashing
Flashing Material	Shingles
Drain System	Gutter System
Coping Cap	None





Inspection Report

Client: College of The Albemarle

Facility: College of The Albemarle

Report Date: 05/15/2013

Roof Section: Building C Steep Slope Shingles

Inspection Information

Inspection Date	05/15/2013	Core Data	No
Inspection Type	Visual Inspection	Leakage	No
Deck Conditions	Good		

Flashing Conditions

Perimeter	Poor	Wall	-
Projections	Fair	Counterflashing	-

Miscellaneous Details

Reglets	-	Debris	No
Control Expansion Joints	-	Ponding Water	None
Parapet Wall	-	Coping Joints	-

Overall

Rating	Fair
Condition	The large area of asbestos shingles between the Library and Building C are fastened with 1 or 2 nails into the structural concrete deck. High uplift pressures exert a strain on this installation method. Reactive and proactive repairs have been attempted. The loose shingles present a safety concern for maintenance personnel and anyone walking under foot the perimeter.



Overview of Building C and the asbestos shingles on the front portion side. There are many missing shingles near the ridges and on the back seaward side of Building C.



Rooftop view of the condition of the asbestos shingles on the building C. The College of the Albemarle Maintenance department has been very proactive and reactive in replacing worn or blown off shingles over the years.



Solution Options

Client: College of The Albemarle


Facility: College of The Albemarle

Roof Section: Building C Steep Slope Shingles

Inspection Options

Solution Option:	Inspection	Action Year:	2013
Section Square Footage:	18,100	Expected Life Years:	-
Estimated Cost:	-		
Scope of Work:	The Main roof area consists of two long roofs adjacent to foam roof and Library roof sections. This area should be inspected quarterly or after any high wind or rain events.		

Replace Options

Solution Option:	Replace 	Action Year:	2015
Section Square Footage:	18,100	Expected Life Years:	-
Estimated Cost:	\$300,000.00		
Scope of Work:	<p>The main roof section consists of two long roofs adjacent to foam roof and Library roof.</p> <ul style="list-style-type: none">• Remove ceramic shingle tiles mechanically using wet methods (to keep any fibers from becoming friable)• Remove these tiles only as required by manufactured wind uplift calculations to install new hat channels• Minimizing amount of tear-off / exposure• Double bag as required by OSHA when dealing with asbestos• Cleanup all associated tear off debris• Install new Hat channels anchored into the existing concrete deck• Install 16" .040 alum panels as per manufacturers specifications• Install all clips closures and trim pieces per manufacturer's recommendations to receive metal panels.• Install all flashings, counter flashings, closures and sealants as required by manufacturer.• Install new Head wall flashing that doubles as a coping where necessary• Manufacture representative quality assurance inspections throughout the installation to insure the specifications are followed for the 30 year NDL long term warranty.		



ASBESTOS LABORATORY REPORT

Prepared for

The Garland Company, Inc.

PROJECT: College of Albemarle Library

CEI LAB CODE: A13-8891

DATE ANALYZED: 07/31/13

DATE REPORTED: 08/01/13

TOTAL SAMPLES ANALYZED: 1

SAMPLES >1% ASBESTOS: 1

TEL: 866-481-1412

www.ceilabs.com



Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

PROJECT: College of Albemarle Library

CEI LAB CODE: A13-8891

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
		A1522116	Brown	Transite	Chrysotile 15%



ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: The Garland Company, Inc.
102 Anglers Cove
Cary, NC 27513

CEI Lab Code: A13-8891

Date Received: 07-31-13

Date Analyzed: 07-31-13

Date Reported: 08-01-13

Project: College of Albemarle Library

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS		ASBESTOS %
			Fibrous	Non-Fibrous	
A1522116	Transite	Heterogeneous		10% Binder	15% Chrysotile
		Brown		75% Silicates	
		Fibrous			
		Bound			



LEGEND: Non-Anth = Non-Asbestiform Anthophyllite
 Non-Trem = Non-Asbestiform Tremolite
 Calc Carb = Calcium Carbonate

METHOD: **EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020**

The detection limit for the method is <1% by visual estimation and 0.25% by 400 point counts or 0.1% by 1,000 point counts.

Due to the limitations of the EPA 600 Method, nonfriable organically bound materials (NOBs) such as vinyl floor tiles can be difficult to analyze via polarizing light microscopy (PLM). EPA recommends that all NOBs analyzed by PLM, and found not to contain asbestos, be further analyzed by Transmission Electron Microscopy (TEM). Please note that PLM analysis of dust and soil samples for asbestos is not covered under NVLAP accreditation.

This report may not be reproduced, except in full, without written approval by CEI LABS. CEI LABS makes no warranty representation regarding the accuracy of client submitted information in preparing and presenting analytical results. This report may not be used by the client to claim product endorsement by NVLAP or any other agency of the U. S. Government.

ANALYST: _____

A handwritten signature in black ink, appearing to read "Megan Rumble", written over a horizontal line.

Megan Rumble

APPROVED BY: _____

A handwritten signature in black ink, appearing to read "Tianbao Bai", written over a horizontal line.

Tianbao Bai, Ph.D.
Laboratory Director





107 New Edition Court, Cary, NC 27511
Tel: 866-481-1412; Fax: 919-481-1442

CHAIN OF CUSTODY

LAB USE ONLY:

CEI Lab Code: A13-8891

CEI Lab I.D. Range: A15-2116

COMPANY CONTACT INFORMATION

Company: The Garland Co. Rob Banks	Client #:
Address: 102 Anglers Cove Cary, NC 27513	Job Contact: Rob Banks
	Email: rbanks@garlandind.com
	Tel: (919) 605-5224
Project Name: College of Abnormal Library	Fax:
Project ID #: Mended AB Test	P.O. #:

ASBESTOS	METHOD	TURN AROUND TIME					
		4 HR*	8 HR*	24 HR	2 DAY	3 DAY	5 DAY
PLM BULK	EPA 600	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PLM POINT COUNT (400)	EPA 600	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PLM POINT COUNT (1000)	EPA 600	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PLM GRAVIMETRIC	EPA 600		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PLM GRAV w POINT COUNT	EPA 600		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PCM AIR	NIOSH 7400	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TEM AIR	AHERA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TEM AIR	NIOSH 7402	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TEM BULK	CHATFIELD		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TEM DUST WIPE	ASTM D6480-05	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TEM DUST MICROVAC	ASTM D5755-09	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TEM QUALITATIVE	CEI LABS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
OTHER:		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LEAD PAINT	METHOD	4 HR**	8 HR**	24 HR**	2 DAY	3 DAY	5 DAY
LEAD PAINT	EPA SW846 7000B				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LEAD WIPE	EPA SW846 7000B				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LEAD SOIL	EPA SW846 7000B				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LEAD AIR	NIOSH 7082				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
OTHER:					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

REMARKS:

☒ Accept Samples
☐ Reject Samples

Relinquished By:	Date/Time	Received By:	Date/Time
Michele Banks	7/31/13	gmr	7/31/13
			1110

*Call to confirm RUSH analysis.

Samples will be disposed of 30 days after analysis

**TAT's are not available. Lead samples are subcontracted for analysis to an ELLAP accredited lab.



The Garland Company, Inc.
R-MER Standing Seam Uplift Calculations
3800 East 91st Street
Cleveland, Ohio 44105-2197
Phone: (800) 321-9336 Fax (216) 883-2046

Project **College of the Albermarle**
Roof Section **Library Mansard**
Sales Rep. **Rob Banks**

County / Parish

Elizibeth City, NC

Zone 1 30.9 Zone 2 36.1 Zone 3 36.1
(mid roof) (eaves, ridge, hip) (corners)

Edge Zone Width "a" 6 ft. 7 in.

Safety Factor 1.67
Importance Category III
Importance Factor 1.15
Wind Speed (mph) 110
Ultimate Pullout Value (lbs/screw) 428
Exposure Category C
Design Roof Height 16.38
Minimum Building Width 90.00
Roof Pitch (X, Y) 7 : 12
Snow Load (psf) _____



Recommended Panel R-MER Span 16 in. 0.040 Aluminum
Clip Spacing:
Zone 1 4 ft. 2 in. Zone 2 3 ft. 7 in. Zone 3 3 ft. 7 in.

NOTES: Rmer Span clip spacing on vertical walls to be 3'- 0" o.c.

*Unless specifically stated otherwise on the R-MER SS Data Sheet, these calculations are based on ASCE 7-05 (American Society for Civil Engineers); if a specific building code is required, please specify.

*It is recommended to include the "Negative Uplift Pressures" in the specifications as well as the Safety Factor, Importance Factor, Building Category, Wind Speed, Ultimate Pullout Value, and Exposure.

*The Wind Speed is determined based upon geographical location.

*The Exposure and Importance Factors are needed to determine the uplift pressures.

*This roofing project has not been evaluated for additional loading due to roof mounted equipment and accessories including but not limited to mechanically attached photovoltaic modules, walkway systems, mechanical roof top units, etc. Future addition of roof mounted systems may require modification of the roof system described in these documents.

If you have any questions, please call 800-321-9336 or respond to engineering@garlandind.com

The Garland Company, Inc.
3800 East 91st Street
Cleveland, Ohio 44105-2197
Phone: (800) 321-9336 Fax (216) 883-2046



PROJECT	College of the Albermarle
ROOF SECTION	Library Mansard
DATE	8/1/2013
BASIC VELOCITY PRESSURE	26.18 psf
DESIGN CODE	ASCE 7-05

Panel & Fastener Data

PANEL TYPE	R-MER Span
PANEL WIDTH	16 in
PANEL/CAP MATERIAL	0.040 Aluminum
SUBSTRATE MATERIAL	Steel
SUBSTRATE THICKNESS	22 gauge
FASTENER TYPE	Steel: (1/4-14 Tek 1 Buildex)
FASTENERS PER CLIP	2
FASTENER SAFETY FACTOR	3
CLIP PRY COEFFICIENT	1.65
ULTIMATE FASTENER PULLOUT	428 lbs/screw
ALLOWABLE CLIP LOAD	173 lbs/clip
PANEL SAFETY FACTOR	1.67

Building & Site Data

BASIC WIND SPEED	110	mph
EXPOSURE CATEGORY	C	
TOPOGRAPHY FACTOR	1.00	
BUILDING TYPE	Enclosed	
ROOF PITCH (X, Y)	7	12
RUN TO RIDGE	15	
EAVE HEIGHT	12	
DESIGN ROOF HEIGHT	16.38	ft
IMPORTANCE CLASS / FACTOR	III	1.15
MIN. BLDG WIDTH	90	ft
WIND-BORNE DEBRIS REGION	No	
PARAPET	No	
ROOF ANGLE	30.26	deg
PROTECTED OPENINGS	Yes	
ROOF TYPE	Hip	
EXTREME THERMAL RANGE	200	deg F

	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5		
ROOF PRESSURE (psf)	30.9	36.1	36.1	33.5	41.4		
OVERHANG PRESSURE (psf)	26.18	52.36	52.36				
PANEL SPAN (ft)	6.42	6.08	6.08	6.25	5.74	N/A	N/A
FASTENER SPAN (ft)	4.20	3.59	3.59	3.87	3.14		
FM RATING (FMRC 4471)							
EDGE ZONE WIDTH "a" =	6.55 ft						



Construction Details

Client: College of The Albemarle

Facility: College of The Albemarle

Roof Section: Library Mansard

Roof Info			
Year Installed	-	Square Footage	2,900
Slope Dimension	8/12	Roof Height	25'
Roof Access	Ladder Needed	System Type	Cementitious Tile

Roof Assembly					
Roof #	Layer Type	Description	Attachement	R-Value	Insulation Thickness
1	Shingles	Asbestos Tile	Nailed	-	-

Details	
Perimeter Detail	Rake, Ridge
Flashing Material	Shingles
Drain System	Gutter System



Inspection Report

Client: College of The Albemarle

Facility: College of The Albemarle

Report Date: 05/15/2013

Roof Section: Library Mansard

Inspection Information

Inspection Date	05/15/2013	Core Data	No
Inspection Type	Visual Inspection	Leakage	No
Deck Conditions	Good		

Flashing Conditions

Perimeter	Poor	Wall	N/A
Projections	Poor	Counterflashing	N/A

Miscellaneous Details

Reglets	N/A	Debris	No
Control Expansion Joints	N/A	Ponding Water	None
Parapet Wall	N/A	Coping Joints	N/A

Overall

Rating	Fair
Condition	The asbestos shingles on the Library mansard are located in a high wind pressure location. These high uplift pressures exert tremendous strain on the 1 or 2 nails per a shingle attaching them to the structural concrete deck. Testing confirmed the presence of asbestos in the shingle composition.. Maintenance personnel have repaired/replaced shingles over the years. There are many loose shingles raising a safety concern for the current reactive repair/replacement process. Also, the steep slope and area under foot could see falling shingles after a high wind event.



Rooftop view of the Library mansard asbestos shingles. Note the great slope that has prolonged the life of the shingle. Many shingles are loose or have been repaired/replaced.



Rooftop view of the mansard roof section of the Library. Many of the shingles have been repaired or replaced.



Solution Options

Client: College of The Albemarle


Facility: College of The Albemarle

Roof Section: Library Mansard

Inspection Options

Solution Option:	Inspection	Action Year:	2013
Section Square Footage:	2,900	Expected Life Years:	-
Estimated Cost:	-		
Scope of Work:	The Library Mansard shingles should be inspected quarterly or after any high wind or rain event.		

Replace Options

Solution Option:	Replace 	Action Year:	2013
Section Square Footage:	2,900	Expected Life Years:	30
Estimated Cost:	\$60,000.00		
Scope of Work:	<ul style="list-style-type: none"> o Install new Hat channels anchored into the existing concrete deck o Install 16" .040 alum panels as per manufacturers specifications o Install all clips closures and trim pieces per manufacturer's recommendations to receive metal panels. o Install all flashings, counter flashings, closures and sealants as required by manufacturer. o Install new Head wall flashing that doubles as a coping 		



Construction Details

Client: College of The Albemarle

Facility: College of The Albemarle

Roof Section: Library and Building 100 Flat Roofs

Roof Info

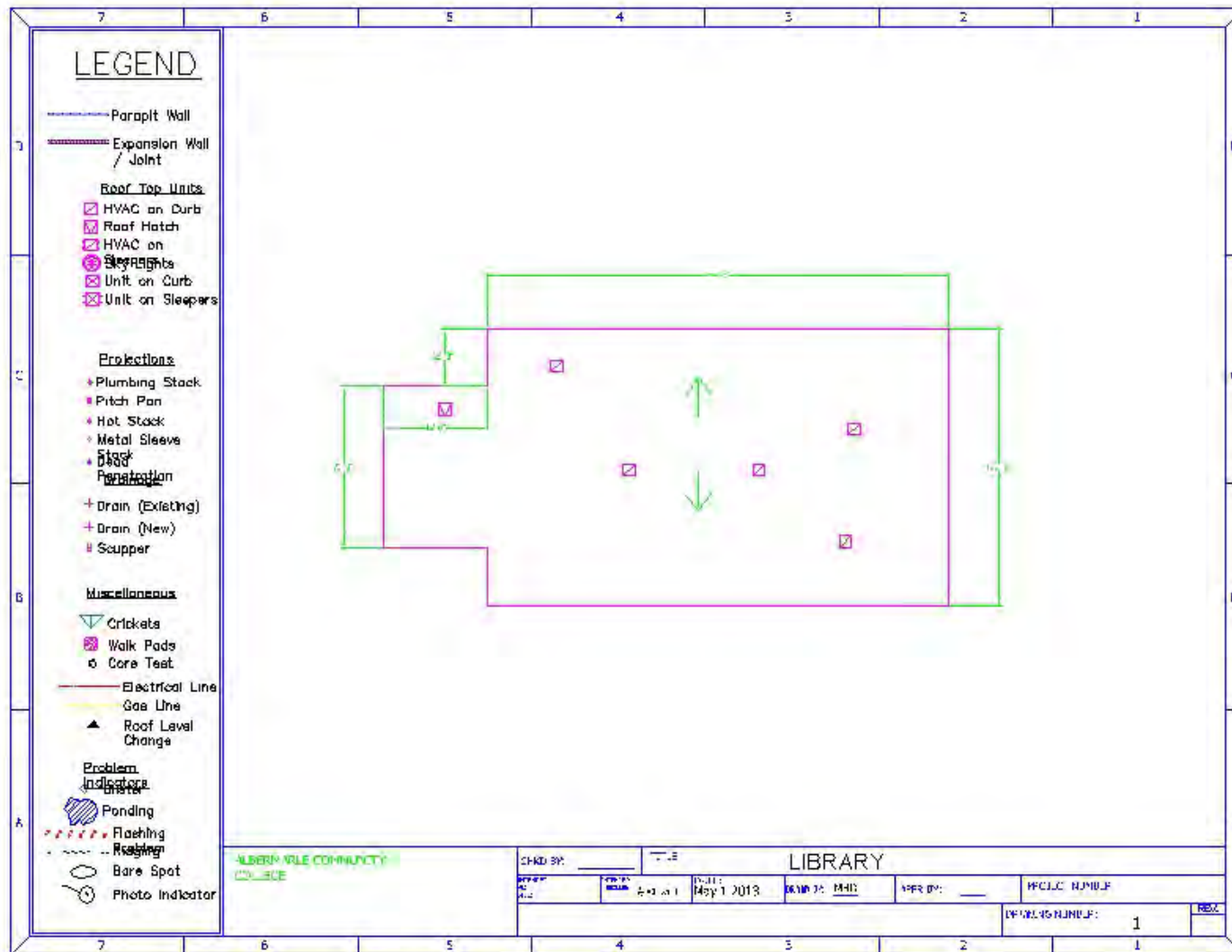
Year Installed	-	Square Footage	39,000
Slope Dimension	1/4" Tapered	Roof Height	20'
Roof Access	Internal Roof Hatch	System Type	Built Up Roof (BUR)

Roof Assembly

Roof #	Layer Type	Description	Attachement	R-Value	Insulation Thickness
1	Deck	Metal Deck	Mechanically attached	-	-
1	Insulation	Perlite	Mechanically attached	-	-
1	System	Built Up Roof (BUR)	Hot asphalt	-	-
1	Surfacing	3/8" gravel	Hot asphalt	-	-

Details

Perimeter Detail	Parapet Wall, Wall Flashing, Expansion Joint
Flashing Material	BUR
Drain System	Internal Roof Drains
Parapet Wall	Masonry
Coping Cap	Metal





Inspection Report

Client: College of The Albemarle

Facility: College of The Albemarle

Report Date: 05/15/2013

Roof Section: Library and Building 100 Flat Roofs

Inspection Information

Inspection Date	05/15/2013	Core Data	No
Inspection Type	Visual Inspection	Leakage	Yes
Deck Conditions	Good		

Flashing Conditions

Perimeter	Poor	Wall	Fair
Projections	Fair	Counterflashing	Fair

Miscellaneous Details

Reglets	Fair	Debris	No
Control Expansion Joints	Poor	Ponding Water	Minor
Parapet Wall	N/A	Coping Joints	Poor

Perimeter

Rating	Poor
Condition	The base flashings around the perimeter and interior expansion joints of the Library building need reactive and preventive maintenance to extend the roof systems life. Many open base flashing laps are evidenced that need five course repair. An installation of roof flashing cement, mesh another layer of cement followed by two concurrent applications of aluminum coating to help weather the extreme thermal cycling and expansion. An entire base flashing run adjacent to the mansard asbestos shingles needs to be removed to the deck and reflashed with a base and mineral surfaced cap sheet membrane. These urgent repairs should be budgeted for then installed before the pending interior renovation project commences.

Field

Rating	Fair
Condition	A few blisters were observed in the field of the built-up roof system as was minor flood coat and aggregate degradation from wind scour. A few minor repairs should help prolong the life of this roof system.

Penetrations

Rating	Fair
Condition	All rooftop projections should be visually inspected for splits or openings in their base flashings. An aluminum coating installation would be a great benefit after all repairs are made with roofing mastic and mesh. The flashing around the HVAC units would be a priority. This would also include waterproofing all the interior neoprene expansion joints with urethane adhesive. The roof system area around the roof hatch needs to be removed, replaced and tied into the existing system per NRCA guidelines to insure a long term leak free solution.

Drainage

Rating	Fair
Condition	The roof system drains nicely, only minor areas of ponding water were observed.

Overall

Rating	Fair
Condition	The built-up roof with flood and aggregate surfacing on the Library roof system is a fine system that needs some reactive and proactive repairs to extend the lifecycle of the roof asset. These repairs should eliminate the current leaks and extend the life of the entire roof system.



Wall flashing that needs to be stripped in with a new base and cap sheet.



Rooftop view of aged expand o flash neoprene expansion joint. Some preventative maintenance has been performed on these suspect roof transition points.



Rooftop view of aged low base flashing.



Another rooftop view of aged flashing details.



A rooftop view of a loose metal coping cap and repaired base flashing detail.



Rooftop view of open lap joint on the base flashing.



The College of the Albermarle maintenance dept has installed a temporary solution peal and stick membrane slowing the water flow into the building envelope around this roof hatch.



Solution Options

Client: College of The Albemarle


Facility: College of The Albemarle

Roof Section: Library and Building 100 Flat Roofs

Inspection Options

Solution Option:	Inspection	Action Year:	2013
Section Square Footage:	39,000	Expected Life Years:	-
Estimated Cost:	-		
Scope of Work:	The Library and 100 building roof systems should be inspected quarterly and/or after any high wind/rain event.		

Repair Options

Solution Option:	Repair 	Action Year:	2013
Section Square Footage:	39,000	Expected Life Years:	10
Estimated Cost:	\$24,500.00		
Scope of Work:	All Library and Building 100 base flashings need to be examined for splits/tears and repaired with five course repairs including mesh/mastic and aluminum coating. Special attention to the HVAC unit flashing on Building 100 is required. Along section of Library wall flashing needs to be removed and replaced with new base and mineral surfaced cap sheet membrane. The metal coping cap above the wall flashings needs repair/replacement as well. The wet roof area around the roof hatch must be replaced with new roof system. All field anomalies and blisters need to be repaired. An energy star rated urethane adhesive needs to be applied to all aging neoprene expansion joints on both the Library and Building 100. The repairs are urgent in nature due to the pending interior renovation planned. If left unattended, deck repair, roof replacement and indoor air quality issues remain bigger budgetary concerns.		



Executive Summary

Client: College of The Albemarle

Facility *	Section *	System Type	Age(years)	Square Footage	Leakage	Rating	Recommendation	Action Year
College of The Albemarle	Auditorium Lower	Modified BUR	N/A	12,000	YES	Fair	Restore	2013
College of The Albemarle	Auditorium Upper	Modified BUR	N/A	4,000	YES	Poor	Replace	2013
College of The Albemarle	Auditorium Upper Wall Panels	Metal Wall Panel	N/A	11,000	NO	Fair	Replace	2014
College of The Albemarle	Building C Flat Roof	PUF	N/A	11,500	NO	Fair	Restore	2014
College of The Albemarle	Building C Mansard	Shingles	N/A	10,000	NO	Fair	Replace	2014
College of The Albemarle	Building C Steep Slope Shingles	Shingles	N/A	18,100	NO	Fair	Replace	2015
College of The Albemarle	Library Mansard	Cementitious Tile	N/A	2,900	NO	Fair	Replace	2013
College of The Albemarle	Library and Building 100 Flat Roofs	Built Up Roof (BUR)	N/A	39,000	YES	Fair	Repair	2013
Facility Total:				108,500				
Client Total:				108,500				



Cost Estimate

Client: College of The Albemarle

Facility *	Section *	System Type	Square Footage	Recommendation	Action Year	Cost Estimate
College of The Albemarle	Auditorium Lower	Modified BUR	12,000	Restore	2013	\$79,000.00
College of The Albemarle	Auditorium Upper	Modified BUR	4,000	Replace	2013	\$79,000.00
College of The Albemarle	Auditorium Upper Wall Panels	Metal Wall Panel	11,000	Replace	2014	\$200,000.00
College of The Albemarle	Building C Flat Roof	PUF	11,500	Restore	2014	\$35,000.00
College of The Albemarle	Building C Mansard	Shingles	10,000	Replace	2014	\$200,000.00
College of The Albemarle	Building C Steep Slope Shingles	Shingles	18,100	Replace	2015	\$300,000.00
College of The Albemarle	Library Mansard	Cementitious Tile	2,900	Replace	2013	\$60,000.00
College of The Albemarle	Library and Building 100 Flat Roofs	Built Up Roof (BUR)	39,000	Repair	2013	\$24,500.00
Facility Total:						\$977,500.00
Client Total:						\$977,500.00



Priority Summary

Client: College of The Albemarle

Facility *	Section *	System Type	Age(years)	Leakage	Rating
Fair					
College of The Albemarle	Auditorium Lower	Modified BUR	N/A	YES	Fair
College of The Albemarle	Auditorium Upper Wall Panels	Metal Wall Panel	N/A	NO	Fair
College of The Albemarle	Building C Flat Roof	PUF	N/A	NO	Fair
College of The Albemarle	Building C Mansard	Shingles	N/A	NO	Fair
College of The Albemarle	Building C Steep Slope Shingles	Shingles	N/A	NO	Fair
College of The Albemarle	Library Mansard	Cementitious Tile	N/A	NO	Fair
College of The Albemarle	Library and Building 100 Flat Roofs	Built Up Roof (BUR)	N/A	YES	Fair
Poor					
College of The Albemarle	Auditorium Upper	Modified BUR	N/A	YES	Poor



Yearly Budget Summary

Client: College of The Albemarle

Facility *	Section *	Recommendation	Cost	Expected Life
Year: 2013				
College of The Albemarle	Auditorium Lower	Restore	\$79,000.00	15 Year(s)
College of The Albemarle	Auditorium Upper	Replace	\$79,000.00	N/A
College of The Albemarle	Library and Building 100 Flat Roofs	Repair	\$24,500.00	10 Year(s)
College of The Albemarle	Library Mansard	Replace	\$60,000.00	30 Year(s)
Total for 2013:			\$242,500.00	
Year: 2014				
College of The Albemarle	Auditorium Upper Wall Panels	Replace	\$200,000.00	30 Year(s)
College of The Albemarle	Building C Flat Roof	Restore	\$35,000.00	10 Year(s)
College of The Albemarle	Building C Mansard	Replace	\$200,000.00	30 Year(s)
Total for 2014:			\$435,000.00	
Year: 2015				
College of The Albemarle	Building C Steep Slope Shingles	Replace	\$300,000.00	N/A
Total for 2015:			\$300,000.00	



Work Summary

Client: College of The Albemarle

Facility *	Section *	Type	Status	Date Completed	Proj./Actual Cost	Contractor
Client Total:					\$0.00	



Warranty Summary

Client: College of The Albemarle

Facility*	Title	Type	Issuer	IssueDate	Expiration Date	Warranty#
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Executive Summary

Client: College of The Albemarle

Facility *	Section *	System Type	Age(years)	Square Footage	Leakage	Rating	Recommendation	Action Year
College of The Albemarle	Auditorium Lower	Modified BUR	N/A	12,000	YES	Fair	Restore	2013
College of The Albemarle	Auditorium Upper	Modified BUR	N/A	4,000	YES	Poor	Replace	2013
College of The Albemarle	Auditorium Upper Wall Panels	Metal Wall Panel	N/A	11,000	NO	Fair	Replace	2014
College of The Albemarle	Building C Flat Roof	PUF	N/A	11,500	NO	Fair	Restore	2014
College of The Albemarle	Building C Mansard	Shingles	N/A	10,000	NO	Fair	Replace	2014
College of The Albemarle	Building C Steep Slope Shingles	Shingles	N/A	18,100	NO	Fair	Replace	2015
College of The Albemarle	Library Mansard	Cementitious Tile	N/A	2,900	NO	Fair	Replace	2013
College of The Albemarle	Library and Building 100 Flat Roofs	Built Up Roof (BUR)	N/A	39,000	YES	Fair	Repair	2013
Facility Total:				108,500				
Client Total:				108,500				



Cost Estimate

Client: College of The Albemarle

Facility *	Section *	System Type	Square Footage	Recommendation	Action Year	Cost Estimate
College of The Albemarle	Auditorium Lower	Modified BUR	12,000	Restore	2013	\$79,000.00
College of The Albemarle	Auditorium Upper	Modified BUR	4,000	Replace	2013	\$79,000.00
College of The Albemarle	Auditorium Upper Wall Panels	Metal Wall Panel	11,000	Replace	2014	\$200,000.00
College of The Albemarle	Building C Flat Roof	PUF	11,500	Restore	2014	\$35,000.00
College of The Albemarle	Building C Mansard	Shingles	10,000	Replace	2014	\$200,000.00
College of The Albemarle	Building C Steep Slope Shingles	Shingles	18,100	Replace	2015	\$300,000.00
College of The Albemarle	Library Mansard	Cementitious Tile	2,900	Replace	2013	\$60,000.00
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Facility Total:						\$977,500.00
Client Total:						\$977,500.00



Priority Summary

Client: College of The Albemarle

Facility *	Section *	System Type	Age(years)	Leakage	Rating
Fair					
College of The Albemarle	Auditorium Lower	Modified BUR	N/A	YES	Fair
College of The Albemarle	Auditorium Upper Wall Panels	Metal Wall Panel	N/A	NO	Fair
College of The Albemarle	Building C Flat Roof	PUF	N/A	NO	Fair
College of The Albemarle	Building C Mansard	Shingles	N/A	NO	Fair
College of The Albemarle	Building C Steep Slope Shingles	Shingles	N/A	NO	Fair
College of The Albemarle	Library Mansard	Cementitious Tile	N/A	NO	Fair
College of The Albemarle	Library and Building 100 Flat Roofs	Built Up Roof (BUR)	N/A	YES	Fair
Poor					
College of The Albemarle	Auditorium Upper	Modified BUR	N/A	YES	Poor



Yearly Budget Summary

Client: College of The Albemarle

Facility *	Section *	Recommendation	Cost	Expected Life
Year: 2013				
College of The Albemarle	Auditorium Lower	Restore	\$79,000.00	15 Year(s)
College of The Albemarle	Auditorium Upper	Replace	\$79,000.00	N/A
College of The Albemarle	Library and Building 100 Flat Roofs	Repair	\$24,500.00	10 Year(s)
College of The Albemarle	Library Mansard	Replace	\$60,000.00	30 Year(s)
Total for 2013:			\$242,500.00	
Year: 2014				
College of The Albemarle	Auditorium Upper Wall Panels	Replace	\$200,000.00	30 Year(s)
College of The Albemarle	Building C Flat Roof	Restore	\$35,000.00	10 Year(s)
College of The Albemarle	Building C Mansard	Replace	\$200,000.00	30 Year(s)
Total for 2014:			\$435,000.00	
Year: 2015				
College of The Albemarle	Building C Steep Slope Shingles	Replace	\$300,000.00	N/A
Total for 2015:			\$300,000.00	



Work Summary

Client: College of The Albemarle

Facility *	Section *	Type	Status	Date Completed	Proj./Actual Cost	Contractor
Client Total:					\$0.00	



Warranty Summary

Client: College of The Albemarle

Facility*	Title	Type	Issuer	IssueDate	Expiration Date	Warranty#
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CAMPUS LIGHTING

Campus lighting is essential to the development of a safe environment for all persons on campus. A good campus lighting plan is developed to compliment landscaping and campus signage. Lighting plans should be tiered similar to a signage plan. The first tier is **Perimeter lighting** consisting of street and parking lot lighting. This type of lighting includes that at parking lots, intersections, campus entrances, bus stops, and all pedestrian crossings. **Transition lighting** is the second tier in campus lighting. This type of lighting includes that at walkways and security 'blue light' call boxes. The third tier of lighting is **Circulation lighting** for gathering areas and courtyards, or where groups of buildings clearly identify central meeting places. This type of lighting includes light bollards, building lighting, and pedestrian scale light poles. This tier of lighting should continue to all building entrances.

COA has recently completed an exterior lighting study at the Russell Twiford Campus, and should carefully evaluate and develop a campus lighting plan at all campus locations (excluding Currituck) incorporating each tier of lighting that will create a safer, more secure college environment. Because the college operates late into the evenings and will bring more of the community onto campus with the development of the master plan, the campus lighting plan should be developed early into all new construction.



Security Threat Analysis

Prepared for

**College of the Albemarle
Elizabeth City Campus**

November 2010

Prepared by

RISK MANAGEMENT ASSOCIATES, INC.



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BACKGROUND

In October 2010, Risk Management Associates, Inc. (RMA) was awarded the contract to perform a Security Threat Analysis at the College of the Albemarle (COA). The purpose of the analysis was to evaluate the security threats at each of the campuses, identify gaps in the current security program, and recommend measures that the College should consider going forward to mitigate risk levels and the severity of risks. Included in this assessment was a review of the current security officer program that is already in place at the Elizabeth City and Edenton campuses to determine the necessity and effectiveness of the current system to meet the security needs of the college currently and in the future to mitigate the risks identified. In assessing risk at each campus, RMA evaluated the physical risk to employees, students, and guests, evaluated risks to property, and determined the potential threats to employees and/or property.

The objective of this project was to assess the current security posture for each of the five campuses. RMA assessed the use of best practices and security standards consistent with the culture and operational needs using physical surveys of the facilities, interviews with staff and managers, and observation of operations.

The ultimate objective is to provide the College of the Albemarle with the information that they can use as a guideline to improve security across the system using an appropriate blend of technology, people, and processes to increase the safety and well-being of the staff, students, vendors, and visitors at each campus.

Study Methods

In a security threat assessment, the standard practice is to identify potential threats, predict their probability, and determine their criticality should such an event occur. This means that an organization must first identify specific threats for which protection may be required. Second, it must determine the likelihood of each of those individual threats becoming a reality and third, it must attempt to determine the resulting effect on staff, students, visitors, the community, property, and operation.

The next part of the study is the physical and operational security survey. In this survey, the security devices, systems, and practices are inventoried and rated for effectiveness. This includes examination of barriers and perimeters, access control, doors and windows, locks, access control systems, key and access device control, surveillance, alarms, procedures, security staffing, police support, and other systems and processes that contribute to the security posture.

The result of this survey and assessment is then compared with the threat profile. Those threats that are not addressed and effectively counteracted by components of the security program and infrastructure are deemed to be vulnerabilities. This process drives the formulation and selection of recommendations for specific measures adequate to counter the unaddressed threats.

Typically threats become actual events because the vulnerability to a threat is not recognized, countermeasures are not effective, or the threat has changed. Physical facilities, security systems, security programs, staff, students, and visitors all change over time and for this reason, the security threat assessment process must be ongoing.

The assessment of the Elizabeth City Campus was conducted on October 25, 2010. The threats identified within this report are relevant to the known facts about the assessed facilities, property, staff, policies, procedures and operations at the time of the assessment. Any modifications, additions, operational changes, or omissions of information pertaining to the facilities could have an effect on the threat assessment recommendations set forth within this document.

During the course of the study, photographs were taken of specific conditions observed on campus. These photographs were designed to assist the consultants in formulating their recommendations. However, they may also be of assistance to administrators responsible for making decisions concerning the outcome of this study. For that reason, the appropriate photographs are included within the report to illustrate the observations and findings.

Location Information

The College of the Albemarle's main campus is located in Elizabeth City, NC and provides programs and services based on the educational needs of the surrounding community, the mission of the community college program state wide.

The Elizabeth City main campus consists of five main buildings built between 1971 and 2008 at the 1208 N. Road Street (Hwy 17 Business) location. In addition there is a variety of structures that are used by the maintenance staff and others for equipment storage, vehicle storage, and offices. Most of the main buildings at the Elizabeth City Campus were two story brick with the exception of the Community Auditorium which appeared to be made of metal or another material. The ancillary buildings are industrial warehouse-type buildings. As a campus that grew over time, it has been designed with sidewalk areas that interconnect the campus buildings with open spaces and parking areas. South of the campus is the Albemarle Hospital, and one parking lot abuts the campus giving the Elizabeth City Campus additional resources in the form of lighting, CCTV camera views, and mutual aid in multiple disciplines. Northwest of the campus is the Albemarle Family YMCA which was built in 2004 and houses the Owens Health Science Center in addition to providing a facility where students can meet the physical education credit requirements when part of their course of study.

Programs Offered

Basic Adult Education Programs
College Transfer Programs
Corporate & Continuing Education Programs
General Education Programs
Industry Service Programs
Technical and Vocational Training



Assessment Summary

The goal of security risk management is to manage risk proactively and in the most cost-effective manner possible. The fact of the matter is “security” is a philosophy. It is a state of mind equal in importance to that of applications and countermeasures. That philosophy must be developed at the administrative level, reflected in the business plan, and allocated appropriate resources. In addition it must be understood at the Board of Trustees level, consistently applied at the campus, and staff level, and accepted at the parent, student, and visitor level while promoting a positive educational environment. It is the responsibility of all individuals to play a role in security, but it is the administration’s responsibility to develop a comprehensive security conscious environment, to train its stakeholders in security awareness, and to require observance of security policy and procedures of persons who traverse the environment.

Crime Theory

Requires the convergence of:

- Desirable object or objective
- Motivated perpetrator
- Lack of effective guardianship

Security seeks to provide guardianship

While conceptually the idea of a security philosophy is easy to write and understand, practically, it will be more challenging and will require planning and education to develop the trust and buy-in from all constituents. The potential for a security event occurring at the COA Elizabeth City Campus has been analyzed, and the areas of concern are discussed within this report. Recommendations for methods to

reduce risks and ensure a safe environment are explained in the next section of this report. Every attempt was made to make recommendations that the administration could fit into the campus’ culture, operations, and environment.

The recommendations proposed in this report are derived from various security-related disciplines. They include training staff the responsible for the COA security functions at the different levels and campuses, preventing unauthorized entry, and controlling access onto/into controlled space, improving the lighting, maximizing the effectiveness of existing electronic security systems and enhancing these systems where practical, and the appropriate application of accepted security techniques, procedures, and policies by the collective COA faculty and staff.

There are three sources of threat that have been identified as applying to each of the COA campuses.

- Opportunistic crime
- Incidental crime
- Student/Employee/Staff related problems and crime

Opportunistic Crime – COA campuses offer the typical academic setting that attracts the interest of opportunistic criminals, those looking for a target of opportunity for theft, robbery, or other lesser criminal acts. The offices have parking lots filled with cars. The staff and students consist of apparently affluent, well-dressed people with nice automobiles. Such facilities contain computers, televisions, electronic business equipment such as copiers and fax machines, personal belongings of the staff and students, and the suggestion or presence of at least some cash. Aside from the unique nature of the potential personal threats, the facility faces the ubiquitous threat to equipment, money, and belongings from ordinary thieves and burglars.

Incidental Crime – A COA campus is a congregation point for a subset of the population seeking the services provided there. The level of maturity and the circumstances that lead students to the COA is varied from students who as a part of their adjudication are required to attend classes that make it possible for them to attain a GED to the highly mature student working towards an Associate's Degree or other certification. In addition the COA campuses provide a valuable service in the form of a wide range of Continuing Education opportunities. Incidents may result from interactions between individuals or groups that happen to cross paths at a COA campus, with no other relationship to the COA except that the facility was the meeting point. Such incidents may result from domestic strife between individuals known to each other or between individuals who are not acquainted but have a problem related to the stress of the moment or other causation apart from the purpose of their attendance at the COA.

Employee/Staff/Student-related Crime – This includes the typical potential for workplace violence between employees. This also includes the potential for domestic violence which is a universal threat in any workplace. Violent spouses or significant others tend to seek estranged partners at work or blame others in the workplace for their domestic problems. This threat category also includes theft by employees of the COA property, the property of other employees or customers, and the misuse, diversion or theft of sensitive information.

In Risk Management Associates' professional opinion, COA and the Elizabeth City Campus is challenged with six primary security risk areas and the vulnerabilities associated with those risks. These risk areas and vulnerabilities are prioritized below:

1. Risks associated with the lack of a comprehensive college security program.
2. Risks associated with exponential growth and limited resources.
3. Risks associated with limited building access control.
4. Risks associated with limited campus perimeter control.
5. Risks associated with limited campus visitor management.
6. Risks associated with limited communication, training, and practice of security plans.

Risk Management Associates, Inc. adheres to the traditional risk management model and recommends the same practice to our clients. That model, in its broadest sense, involves the use of five principal management methods:

<i>Risk Avoidance</i>	This involves the removal of the target.
<i>Risk Reduction</i>	This technique calls for minimizing the potential loss as much as possible.
<i>Risk Spreading</i>	The potential target is spread over as large an area as possible.
<i>Risk Transfer</i>	Perhaps the most overused, the risk is transferred to other parties such as insurance companies.
<i>Risk Acceptance</i>	There may be times that a decision must be made to simply accept the risk.

The administration of the COA is now faced with the decision of choosing one or more of these methods to deal with the risks on a regional level and local level. In the consultants' opinion, the three methods that are most relevant to the COA, including the Elizabeth City Campus's security condition, are *Risk Reduction*, *Risk Transfer*, and *Risk Avoidance*. In our opinion, *Risk Spreading* and *Risk Acceptance* may be necessary but strongly recommend that they when possible are viewed as not viable alternatives due to the potential repercussions associated with these should a security event take place.

Administration should analyze the recommendations included within this report. Subsequently they should determine how and/or if to incorporate them into the philosophy, operational culture, and working environment of the COA system or make the decision to simply accept the associated risks.

Criminal Activity in the Area

RMA consultants inquired with the Elizabeth City Police Department for crime reports on and around the Elizabeth City Campus. The Elizabeth City Campus is located within the Elizabeth City Police Department jurisdiction on North Road Street. That campus is set back from the road and buffered at the front by two large parking lots and a natural open space. When looking at the front of the campus, it is bordered on the right side by the Albemarle Hospital which is accessible both on foot and by vehicle. To the left of the campus is the Albemarle Family YMCA building which is also connected to the Owens Health Science Center and provides resources to the COA for the completion of PE credits. At the back of the property is the COA Community Auditorium additional parking, natural open space and the Pasquotank River. The auditorium is used by the college as well as other business who rent the auditorium from the college for productions and shows.

The Elizabeth City Campus of the College of the Albemarle is located within the corporate limits of Elizabeth City, NC, and as such is served by the Elizabeth City Police Department (ECPD). Elizabeth City has a population of approximately 21,000 people and an area of 9.6 square miles and is the county seat of Pasquotank County and the principal municipality in the area. The population density is approximately 2,200 people per square mile. The ECPD has 53 sworn officers and 13 civilian personnel.

Crime Statistics

Part I reported crime statistics were gathered from the 2009 Uniform Crime Report for the entire city jurisdiction. No other breakdown of Part I crime was available. The following significant Part I crime was reported.

Crime	Number of Reports
Arson	2
Assault	86
Burglary / Breaking & Entering	196
Homicide	0
Larceny	562
Motor Vehicle Theft	29
Robbery	34
Rape	9

The table above is included to illustrate the types of historical evidence that needs to be considered in the development and implementation of a security philosophy and associated programs. History is often times the best predictor of the future, and short of any significant change in the environment surrounding the site, it must be assumed that administration should expect to be faced with similar types of criminal activity going forward.

In an area where there is a history of property and violent crimes, it is reasonable to expect that this trend will not only continue, but will attract additional nefarious activity to the surrounding area. As such, consultants have paid particular attention when conducting this assessment to the historical threats, and their related probability and criticality to the organization as a whole as well as its constituents. Administrators must now review this assessment and make determinations where to employ resources to mitigate these risks.

The College of the Albemarle site is on the northern edge of the city, somewhat removed from the highest density area to the south. Of note, it is also adjacent to the Albemarle Hospital which as the regional medical center, serves as a generator of calls for service and crime reporting statistics related to the emergency department and the concentration of population in crisis conditions. This counteracts any advantage of being away from the population center for the purposes of threat evaluation and analysis of crime and calls-for-service statistics.

Police Calls-for-Service Data

Crime statistics are valuable in determining the frequency of severe offenses among the population. Another indicator of the nature of a neighborhood or surrounding area is a review of the police calls-for-service. These data are now available in most jurisdictions through the 911 centers that use software programs to assist in the dispatch of emergency service. Data was obtained from the 911 call center for the current year to date, January – October 2010 for an area of approximately one-half (0.5) mile around the campus. This area includes a motel, the hospital, and several neighborhoods along a narrow development band along North Road.

Calls for service analysis can reveal positive as well as negative factors that may impact the security profile of a facility. The nature of the calls, the frequency of police presence in the area, and the reflection of guardianship indicated by the police activity demonstrate a more complete picture of the potential for crime and the level of disorder that may exist.

There were 3,231 calls for service dispatched by the 911 center in the reporting area for the year to date period through October. Of these, the EMS, fire, and routine police activity have been removed. The resulting list reflects police action in the area that is relevant to the threat and crime posture analysis.

Incident	Number of Reports
Assault	5*
Breaking & entering	2
Drug offenses	2
Damage to property	8
Disturbance	43
Domestic	3
Drunk/DWI	7
Fight	2
Fraud/scam	6
Shot fired	2
Harassment	6
Investigation	20*
Larceny	27
Robbery	1
Shoplifting	12
Soliciting for prostitution	1
Stabbing	4*
Suicide attempt	2*
Suspicious person/event	48*
Threats to individual	7
Trespassing	5
Vandalism	3

Numbers marked by an asterisk (*) are influenced by the inclusion of calls by Albemarle Hospital reporting incidents that occurred elsewhere.

The calls for service data reflected many calls for police to respond to mental health situations and other routine matters at the hospital. There were a number of routine traffic stops, routine business security checks, and alarm responses in the area. This volume of activity suggests a high police visibility and incidence of police presence in the immediate area of the COA campus.

After taking into account the effect on the calls for service related to the Albemarle Hospital, the general crime and disorder profile of the reporting area is not remarkable. Other than the proximity to the hospital, there is no significant or concentrated threat reflected in the crime statistics or the calls for service data.

SECURITY OBSERVATIONS AND RECOMMENDATIONS

The following observations provide examples of what the consultants found while conducting the fieldwork associated with this assessment. They represent what the consultants feel are the most critical security opportunities that should be addressed at the Elizabeth City Campus. The following identified risk areas will be formatted and presented in a vulnerability, risk, and recommendation format. This is necessary so that the administration can comprehend the criticality of the vulnerabilities and then have security industry recommendations as a guide when or if they determine to address the deficiencies.

Before moving forward, the consultants feel it is appropriate to commend the personnel that were interviewed at the Elizabeth City Campus. The desire to engage in good security practices was evident. The current state of security and the overall desire of those responsible for administering Elizabeth City's security function were good. Any deficiencies identified do not appear to be the result of apathy. In this analysis, the goal is not to assign blame, but to identify vulnerabilities in the existing security posture of the Elizabeth City Campus.

Physical Security

Perimeter Security

Every security program must be an integrated whole and each element must grow out of the specific needs dictated by the circumstances affecting the facility to be protected. Nevertheless, the first and basic defense is still the outer perimeter of the facility. Planning this defense is neither difficult nor complicated, but it is the product of common sense. Whereas the engineering and design of an electronic security management system requires particular sophistication and expertise, the implementation of an effective physical security program is the result of conventional wisdom and a lot of legwork expended during a security assessment.

A basic security concept is to design a series of layers so that highly protected assets are within a configuration of multiple barriers. Barriers are commonly utilized to discourage three types of penetration – accidental, by force, and by stealth. A properly installed barrier should clearly warn a potential penetration to “Keep Out”. There should be no accidental or inadvertent penetration.

Barriers may be divided into two general categories – natural and structural. Natural barriers include terrain difficult to traverse and other topographical features that assist in impeding or denying access to an area. Structural barriers are manmade and include landscaping, ditches, fences, and walls. A structural barrier physically and psychologically deters or discourages the undetermined, delays the determined, and channels the flow of authorized traffic through proper entrances.

The COA Elizabeth City Campus has a combination of natural and structural barriers. Located on Highway 17 Business, persons can access the campus via multiple entrances from the highway. There are multiple entrances onto the campus property, and these accesses are used by people who work and/or study at the COA as well as people who are there to utilize campus and county assets such as the COA Community Auditorium, the river walkway along the Pasquotank River, the baseball batting cage and equipment, and the BLET training areas. At least one guest was observed parking in the lot closest to the river and walking their dog in the natural areas between the parking area and the river. The Pasquotank River forms a natural barrier at the northeast end of the campus property. Currently there is an existing fence line between the campus and the hospital next door. Though it is not a continuous fence line, it does set a structural boundary between the two properties. With that said, there are also open spaces within the fence line that allow persons to travel between the two properties whether they are authorized to do so or not. The property has large areas of tree lines and ravine areas that also form a natural boundary around the property. The areas that house the maintenance facilities and equipment are surrounded by chain link fence, and the gates are locked when the maintenance staff goes home at the end of the day.

The property is surrounded by other commercial properties, and it would be easy for someone who is entering the property to recognize that they are on business property. The parking areas and natural spaces allow for casual surveillance in most areas.

Vulnerability: There is no real perimeter security around the COA Elizabeth City Campus, and the property is used by multiple constituents.

Risk: Someone could enter the property accidentally or otherwise and hurt themselves, hurt someone else, or steal/damage property.



Recommendation: Begin the deterrent security posture by utilizing signage at the outer boundaries of the campus that direct the behaviors of persons who enter the property. Make it clear to anyone entering the property when they are entering COA property and its intended purpose. Direct campus visitors to a centralized location where they can get access to information thereby discouraging someone with nefarious intent from “hanging around.” Educate students, faculty, and staff to direct visitors to this central location.

Fencing

The most common type of structural barrier normally used for protection is a chain link fence. Fencing an area will only delay, not permanently prevent, an entry attempt. Therefore, fencing must be supplemented or enhanced by other countermeasures such as signage and security patrols. Nevertheless, a fence can be a valuable element in an integrated protection scheme.

Based on the assessment conducted, fencing although preferred does not appear to be feasible or practical at this time. Fencing is being utilized to protect areas where large assets are stored in an effective manner. Some of the fencing was in less than ideal condition with vegetation growing on it, which gives persons with nefarious intentions both additional assistance in breaching the fence line and anonymity as it blocks the casual surveillance of passersby.



Vulnerability: Based on the accessibility and the multiple constituents that may be visiting the campus property at anytime, the campus may be seen as an easy target.

Risk: An unauthorized person could enter undetected and cause injury or asset loss.

Recommendation: As the budget permits, fencing should be added to those portions of the property that are not easily supervised.

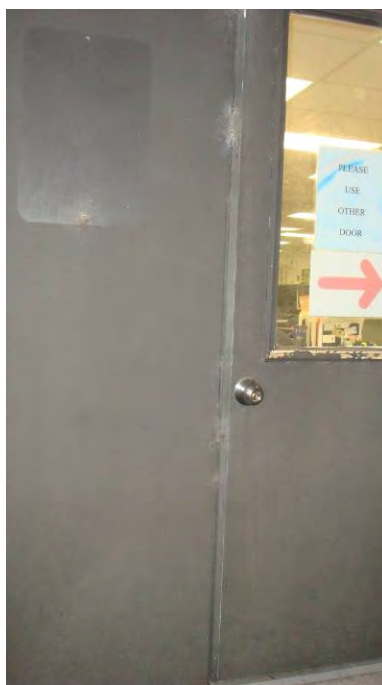
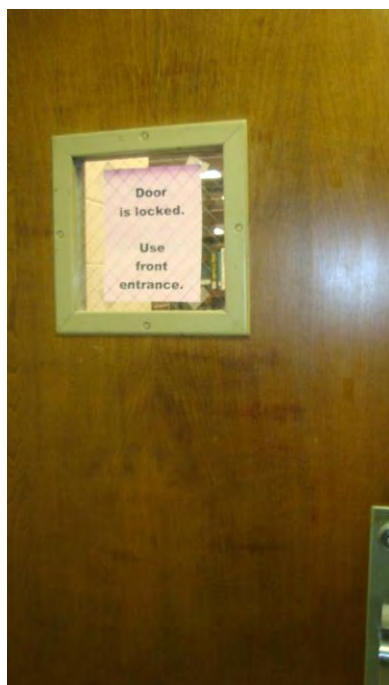
Vulnerability: Damage to fences, gates and locks is going to happen due to natural causes as well as nefarious actions of others.

Risk: Disrepair and vegetation on fence lines both attract nefarious behavior and hide the perpetrators who are looking for opportunities to cause injury or asset losses.

Recommendation: A quarterly schedule should be put in place and assigned to check all fences, gates, and locks for breeches and disrepair. As a part of this program, a repair and maintenance schedule should be implemented with assigned responsibilities and response times.

Signage

Any barrier utilized must be supplemented or enhanced by other countermeasures such as signage. In keeping with the COA's philosophy to be a "good citizen" and have an open campus environment for lawful and undisruptive use, a signage program to clearly define the expectations of the administration should be deployed. Two categories of signs, the command sign and the informational sign, are predominantly used at the COA's Elizabeth City Campus and their use should be expanded. Command signs tell people what to do or not to do. Examples are "No Trespassing", "No Admittance", and "Visitors must register at the front office." Informational signs may alert the reader to a potential danger or give other information. Examples are "Hazardous Materials" and "No Smoking".





Eastern North Carolina as a whole is located in an area that is subject to weather events (such as high winds, tornados, hurricanes and occasional snow storms etc.) in addition to other emergency and critical events. The campus has students, non-students, faculty, and staff that access its property and facilities. With a growing enrollment and need for the educational and other opportunities and services that the college provides, signage is imperative to facilitate the wanted behaviors and protect the assets of the COA. In addition, it allows the college recourse upon infractions. During the consultant's visit, there were numerous examples of the college effectively using signage to address safety issues and the "No Smoking" policy.

Vulnerability: No clear message about desired behaviors is provided to individuals coming on to campus.

Risk: Individuals are not aware of the college's expectations, thereby creating vulnerabilities for the college.

Recommendation: Use signage to notify persons they are entering college property and that it is a weapons, drug, and alcohol free campus in addition to being a smoke free campus. Remind people who enter the property that in addition to this being COA property, that there are behaviors that will not be tolerated on campus property. Be as specific in the signage as possible.

Vulnerability: There is not a clear message given about desired behaviors within the campus.

Risk: With the current atmosphere, a criminal or misguided individual might feel more inclined to commit a crime.

Recommendation: Use both command and informational signage in the parking lots, the perimeter of the building, and at the doorways to direct people while they are on campus property. Included in this should be signs at each entrance that provide notice that in addition to being smoke free the campus that there is zero tolerance for drug/alcohol use on campus and that it is unlawful to bring weapons on campus property.

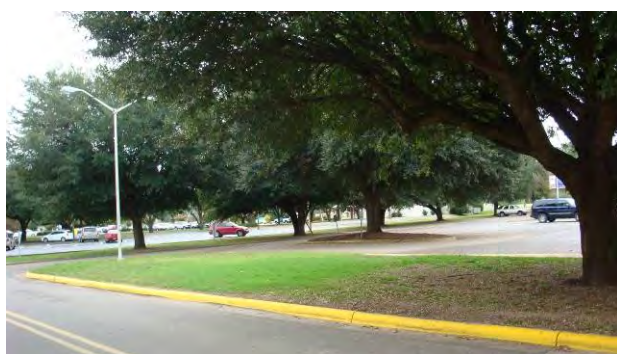
Vegetation and Crime Prevention Through Environmental Design (CPTED)

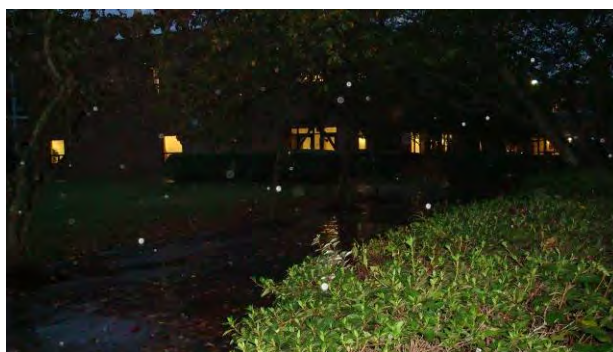
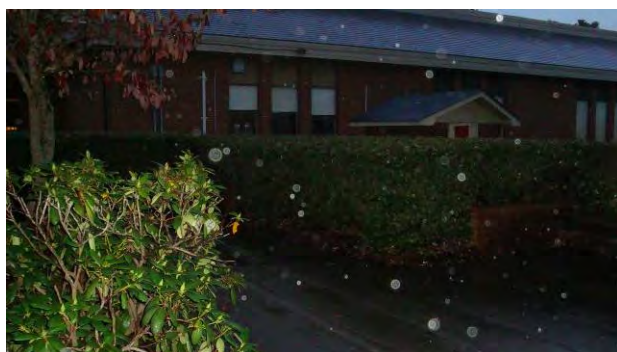
Thomas Jefferson created the concept of an “Academical Village” in the early 1800’s with the construction of what is now the University of Virginia. Since that time his concepts have morphed into what is arguably the basis for modern educational campus design. Having a physical environment that promoted intellectual stimulation and was aesthetically pleasing to the eye were desires Jefferson had in his concepts of construction. It remains the same for educators and administrators today.

In security applications, the concept of Crime Prevention through Environmental Design is one that is prominently used. The concept emphasizes that lighting, vegetation management, traffic flow, pedestrian flow, and other physical attributes can be manipulated to lessen the opportunity of a crime-related event occurring in a particular location. The consultants who visited the Elizabeth City Campus observed good use of CPTED principles at the campus. Diligence should be continued given the importance of casual surveillance and its effect on the criminal perception that their actions would be observed. In addition, properties that are well cared for are less likely to be victimized.

Security industry standards suggest that foliage be trimmed to allow for casual surveillance. Tree limbs should be trimmed seven feet from the ground and shrubbery trimmed to 24 inches high.

The COA Elizabeth City Campus is beautiful with a large variety of shrubs and mature trees that can be seen throughout the property. Security and beauty are not mutually exclusive. The balance is in how the trees and other foliage are maintained. Without careful maintenance, trees will block casual surveillance and provide hiding places for people with nefarious intent to both persons and property. In addition trees and shrubs are blocking the lighting which darkens areas which could lead to accidents and nefarious behaviors.





Vulnerability: Trees with limbs below the 7-foot level and shrubs with foliage above the 2-foot level make the possibility of concealment easier and can prevent both casual surveillance and surveillance by patrolling guards.

Risk: Someone could feel that their activities would be unseen and attack someone or break, enter, and steal.

Recommendation: Maintain standards for vegetation by trimming trees and bushes and opening areas in between plantings to reduce hiding places.

Lighting

Lighting Guidelines

Outdoor lighting is an essential and economical tool for protecting people and property from all types of crime. Statistics show that lighting is the least expensive yet one of the most effective deterrents to reducing crime. Effective lighting not only reduces the risk of accidents and crime but also reduces the liability that comes with them. Adequate lighting enhances safety and security at night while creating an environment of productive learning environment.

The objectives of security lighting are:

- To illuminate a person, object, place or condition of security interest so as to permit observation and identification;
- To be a physical deterrent through the glare effect of direct incident light upon the human eye; and
- To be a psychological deterrent by leading attackers to believe that they will be discovered and observed making an attack or penetration attempt.

Because lighting is highly visible, it is often incorrectly perceived as a major consumer of energy. Lighting consumes far less energy than heating, air conditioning, and general operations. Today's energy efficient lighting delivers significant energy savings while delivering optimum lighting levels.

The quality of lighting includes factors such as color rendering, uniformity, and glare. Visibility is directly affected by the reflective capabilities of the surrounding pavement and the façade of the building. Lighting levels will vary depending on the reflective properties of the building and pavement.

The amount of light rendered is measured in *foot-candles* or *lux*. The foot-candle is the common unit for measuring light. One foot-candle is identified as the amount of light produced by one candle at the distance of one foot. For the safety and security of students, staff and visitors moving to and from a building, a minimum of 0.5 foot-candles is needed and recommended to enable routine activities such as walking and locating steps, entrances, and exits.

Generally, lighting levels around entrances should be a minimum of 10.0 foot-candles to produce illumination needed to identify and reveal anyone who is in the area. The identification and chance of discovery factors help to discourage loitering for the purpose of committing crimes such as vandalism, assault, robbery, and burglary.

Parking lots and walkways were measured for a minimum of 0.5 fc. Door entrances and gate entrances were measured for a minimum of 10.0 fc.

New Lighting Guidelines

Recent new lighting guidelines, adopted by Illuminating Engineering Society of North America (IESNA), should be applied to for future improvements. The new lighting guidelines are significantly higher in illumination than the older standards.

A number of new security lighting guidelines for designated locations were developed in 2003 and later distributed in 2005 by the Illuminating Engineering Society of North America (IESNA). The lighting guidelines were approved when *certain circumstances* exist. Almost all of the lighting at is below the **new** guidelines. Because of this, the standard of 0.5 fc for parking areas and walkways and 10 fc for entrances was used. To assist administrators at Warsaw in understanding the new guidelines for selected locations, the following information is provided. The following information is from IESNA publication G-1-03 *Guideline for Security Lighting for People, Property, and Public Spaces*.

The new guidelines of illumination are higher than previous standards and should be used when one or more of the following qualifying conditions exist.

1. The persons and/or property in the area to be secured present a desirable target to criminals.
2. The property has a history of relevant crime or increases in crime.
3. Crime in the surrounding area is high compared to similar areas.
4. The results of a physical security survey or threat analysis indicate a problem.
5. There are changing conditions that expose persons to new security hazards or increased risk.
6. Obvious signs of antisocial behavior exist near or on the property such as graffiti, vagrants, broken windows, trash buildup, trespass, or poorly maintained property.
7. There is recurring, reasonable resident or customer complaints or concerns about security, or fear of crime.
8. High profile or troublesome areas exist such as bars, nightclubs, gambling halls, gang or teen gathering spots.
9. There are industrial or commercial applications where persons or property are prone to attack, such as ATM and night depositories, convenience stores, and railway yards.
10. Restricted access industrial or government installations are in the area.
11. A time of national emergency such as war, acts of terrorism, or declared emergencies is in effect.

The new guidelines for security illumination in IESNA publication G-1-03 are given for the following locations and tasks:

- Unoccupied spaces (acceptable losses and unacceptable losses)
- Building façades and interiors
- Facial identification
- Guarded facilities
- Automated Teller Machines and Night Depositories
- Parking facilities, parking garages, and covered space parking
- Parking lots and public parks
- Supermarket parking lots
- Fast food restaurants (lot and drive-through)
- Convenience stores and gas stations (pump areas)
- Single family residences (exterior doorways)
- Multi-family residences (common areas and mailbox)
- Senior housing (hallways and entrances)
- **Schools and institutions (parking and walkways)**
- Law enforcement, fire, ambulance, and other emergency service facilities
- Hotels and motels (parking, grounds, and walkways)

The following information is relative to parking areas, walkways, ATMs, night depositories, and facial recognition. Parking lots are a major concern when conducting security threat assessments. When one or more of the eleven conditions listed above are present, the new guidelines for parking lots change in the following manner.

2000 IESNA Standard

- Parking areas and walkways should be a minimum of 0.5 fc.
- Entrances and gateways should be a minimum of 10 fc.

New Guideline (With one or more of the eleven indicators present)

- Parking areas (open parking spaces) should be a minimum of 3.0 fc.
- Walkways should be a minimum of 0.6 fc.

Lighting is the only element in security planning for which there are recognized and generally accepted standards. Three often cited tables of standards are from the Illuminating Engineering Society of North America (IESNA), the Nuclear Regulatory Commission (NRC), and the Department of the Army (DOA). Of these, the IESNA standards are more conservative and are usually cited in corporate and industrial surveys and assessments.

The chart below shows recommended minimum levels of security lighting that are widely accepted norms for lighting in parking lots and entrances and are recognized by security experts throughout the world. These guidelines will apply where none of the eleven indicators given in IESNA publication G-1-03 are present.

APPLICATION	LUX	FOOT-CANDLES	NOTES
Large, open areas	5-20	0.5-2.0	Greater surrounding brightness requires higher illuminance in the space.
Buildings	5-20	0.5-2.0	Vertical luminance on the façade.
Perimeter/Fence	5	0.5	Luminance on the ground on either side of the fence.
Entrances	100	10	Luminance on the ground in the inspection area.
Gate houses	300	30	Luminance on the workplace in the house. Reduce during hours of darkness.

Lighting Handbook, (New York: IESNA Publications Department, 2000) chapter 29, page 18.

The table below may be used for applying guidelines for security lighting under IESNA Publication G-1-03.

APPLICATION	LUX	FOOT-CANDLES
General Parking Areas	30	3.0
Walkways	6-10	0.6 – 1.0
Parking Garages	60	6.0
Entrances	100	10.0
Automated Teller Machines	100	10.0
Storage Yards	5-20	0.5 – 2.0

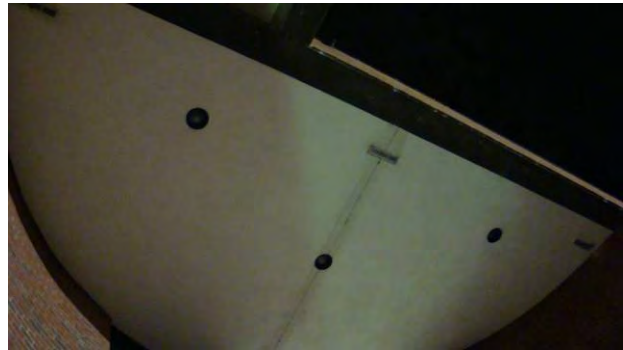
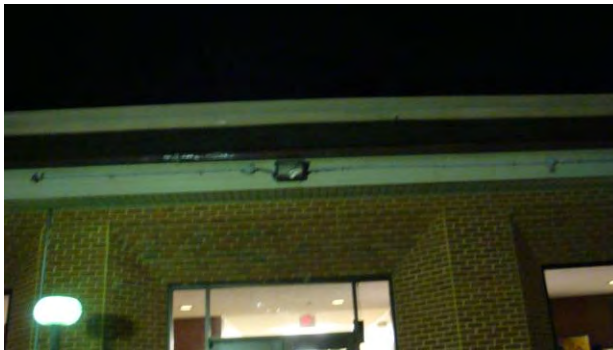
Lighting Survey

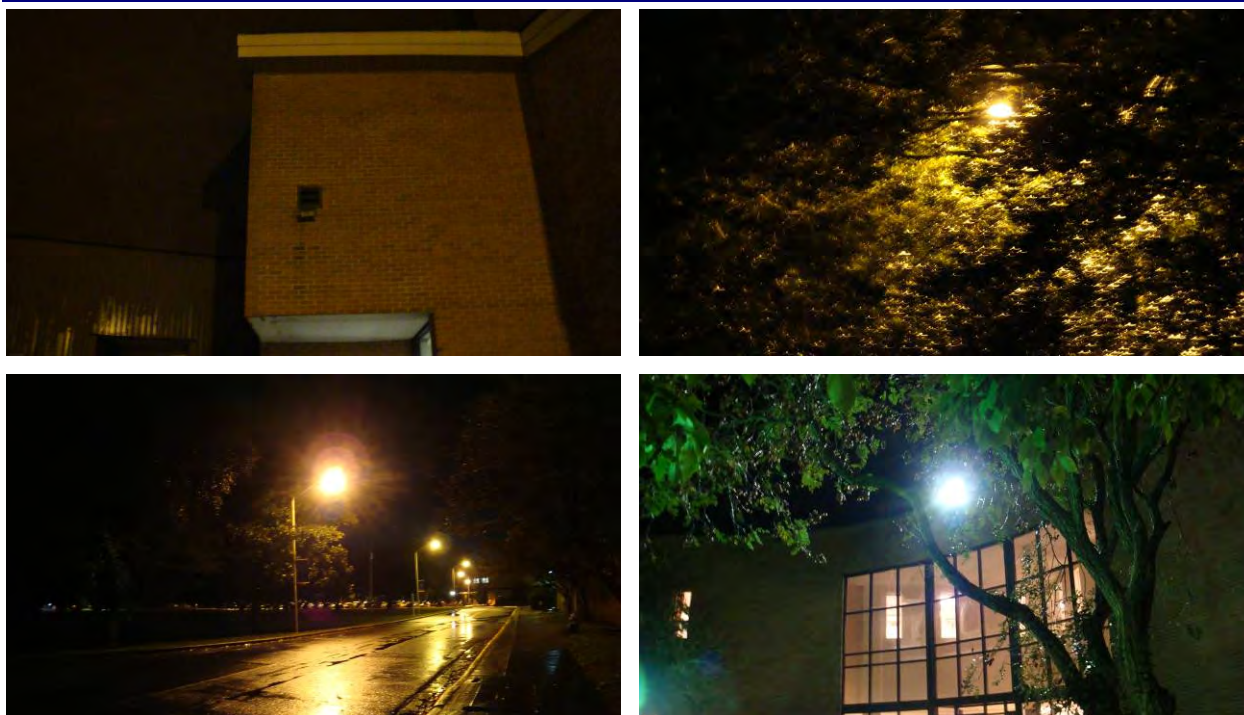
Light level in and around COA facilities is critical to three aspects of the security posture. First is the impediment and deterrent effect of lighting to incidental and opportunistic crime. Second, lighting is an enabler for casual and security surveillance by students, staff, visitors, security officers, and CCTV surveillance systems. Third, lighting schemes significantly affect the complexity of planning and conducting directed criminal activity against persons or property at the COA campuses areas during hours of darkness.

The lighting review at the COA Elizabeth City Campus was conducted on Monday, October 25, 2010. The weather was completely overcast and raining. Light readings were taken using a Cook Cal-Light 400 meter. All readings are measured in foot-candles (fc). The physical areas of concern will be discussed relative to their geographical location on the campus.

Survey Summary

The major portion of the parking areas, entrances/exits, and sidewalks were measured at or above the accepted general industry standards when the lights were not burned out or blocked by vegetation. Large trees in the parking lots at the front of the campus were blocking the effectiveness of the lights in parts of the parking lots and created dark areas that were below the general industry standards and at times measured 0.0 fc. There were dark areas along the sidewalk at the front of the campus and at doorways that should be reevaluated after fixtures are repaired and working. Between the AE, A, and B buildings there is a sidewalk that flows around and connects to another sidewalk. This area is lit by decorative pole lighting that varied in light output according to the individual light. These lights should be evaluated and if possible maintained to the greatest lighting output possible. The rest of the walkways varied between meeting the standard and registering below the minimum lighting standards based on vegetation blocking lights that were there to direct lighting on these areas and lights that were not lit. These deficiencies should be corrected and reevaluated to ensure minimum lighting standards are being met.





Parking Areas

The parking lots at the front of the campus were reviewed based on the minimum standards for lighting in parking lots. In areas of the lot where the existing lights were not obstructed by vegetation and the existing light fixtures were working, the lighting met the minimum standards. In areas of the parking lots where the parking spaces were shaded by trees or lights were not working, the lighting dropped below the minimum standards. Parking areas located on the southeast side of the campus benefited from the lighting not only at the COA but also from the hospital next door. These areas met the minimum lighting standards. The parking areas on the northeast and northwest sides of the campus varied with regards to the minimum standards based on the working condition of the lights and the proximity of the lights to the parking spaces. Special attention should be paid in these areas to maximize the effectiveness of existing lights.

Entrances/Exits

Many of the building entrances/exits at this campus had light readings below general accepted standards. These lights should be evaluated for maximum lighting output which may require higher watt bulbs or fixture updates.

Sidewalks and Walkways

Many of the walkways at the COA Elizabeth City Campus were below accepted industry lighting standards. Illumination from the parking areas and the entrance did not adequately illuminate the walkways.

Vulnerability: Low light conditions exist in the areas listed above.

Risk: A lack of adequate lighting can lead to injuries from trips and falls. Persons with nefarious intent can more easily conceal themselves in these low light areas thereby exploiting the low light levels to commit criminal activity.

Recommendations: Repair cycling light fixtures and replace burned out bulbs in fixtures. Add or install adequate lighting in areas that do not meet the minimum standards. Develop a procedure and timetable for the regular inspection and repair of campus lighting fixtures.

Parking Areas

Parking areas possess inherent vulnerabilities for all organizations and educational institutions, and the Elizabeth City Campus is no exception. Typically, parking lots are the least protected areas for an organization. The parking areas are also the access point for students, staff, and visitors as they come to the school's facilities. They are usually on the outer edges of the campus property, and they contain items of value to persons on the outside as well as those within the campus community.

The AOC security department in conjunction with the Elizabeth City Campus staff has done a number of innovative things to enhance the security of the parking lots on the campus. First, there is a security presence on campus. Second, there is a parking pass program where student, faculty, and staff members are required to obtain parking decals to park on campus property. Third, there is a detailed policy for on-campus parking of students, faculty, and staff that is available to students and personnel on the college's website, and there are designated parking spaces for students and faculty/staff. Another excellent communication tool utilized by the COA is in the form of a Campus Safety & Security brochure

Vulnerability: Items of value are being left in sight in vehicles parked on campus. Whether the vehicle is locked or unlocked, this creates vulnerabilities.

Risk: Unprotected assets draw persons with criminal intent in addition to criminal activity.

Recommendation: Provide signage and awareness training to change the behavior of the students, faculty, staff, and visitors who leave items of value in plain view in vehicles.

Building Perimeter

Another layer of security for the students, staff, visitors, and property continues with building access control. Historically, educational institutions have maintained open environments. This was because years ago the ebb and flow of students and staff throughout the school day was achieved with little or no incidents of violence. While the ebb and flow of traffic continues today, the increase in school violence from outsiders has increased, which is why building access control has become so paramount. Educational institutions have to rely on increased awareness of students, faculty, and staff to be vigilant about unauthorized intruders on campus. This is accomplished by making it easy for students and staff to identify who belongs there and who does not. In addition to that increased awareness, effective control requires that at a minimum, staff is trained to make contact with strangers in a way that fosters the positive engaging environment that is a part of the culture while enforcing access control policies and procedures.

An excellent tool to control access requires the determination, not less than annually, of the minimum number of exterior doors that should be unlocked at any given time. Whenever possible, it should be the policy at COA to manage access by utilizing only those exterior doors that are practical and/or absolutely necessary to the day-to-day operation of the campus. The security posture at the COA campuses with regard to doors and door hardware is good. During the day there is generally free access into and out of most of the buildings. The security presence at the Elizabeth City Campus is filled by part-time COA employees who are augmented by maintenance staff when necessary. The COA uses a hard key system of locks on all exterior doors. It is the responsibility of the Physical Facilities Director and his staff to open the buildings in the morning based on scheduling on campus. There are healthcare students that begin the day at 5:00 a.m., with the BLET program beginning some days at 7:00 a.m. and the Cosmetology students beginning at 7:30 a.m. The maintenance staff is responsible for opening doors prior to 7:00 a.m. when the security staff reports and takes over the related security responsibilities. The Vice President of Business and Finance is responsible for the security operations at the college. Faculty and staff are issued building, classroom/office, and/or lab keys on an “as needed” basis. None of the buildings at the Elizabeth City Campus are alarmed, and key holders have access to the campus at any time.

Vulnerability: There are multiple access points into the campus buildings.

Risk: An unauthorized person could enter and cause injury or damage.

Recommendation: Evaluate the need for more than one access into the campus on an on-going basis and develop policies to minimize the number of doors open when possible.

As already stated, the Elizabeth City COA campus has security vulnerabilities associated with sharing its space with the community who rent the auditorium and use the nature spaces and park in the campus parking areas. This makes the layers of security even more critical and raises each layer to a higher level of criticality.

Lock and Key Review

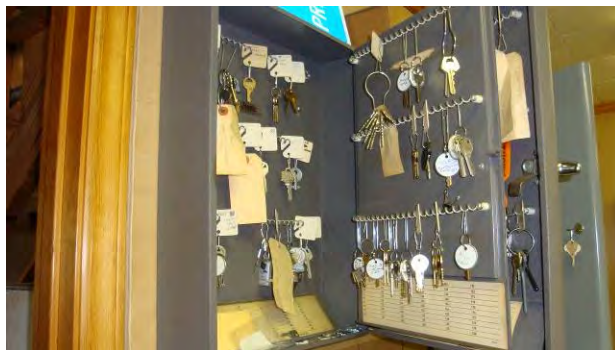
Lock and key control is integral to any security program. It is unlikely in any application that protection of students and property will be achieved without relying heavily upon locking devices. In as much as that is the case, when securing people and property there are always trade-offs among risk, cost, and convenience.

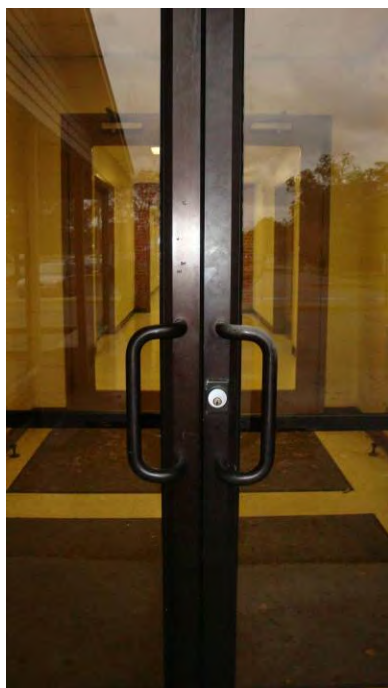
Our objective was to review specific aspects of the existing lock and key procedures at the Elizabeth City Campus. The purpose for this was to make recommendations for the key control program that would be consistent with the existing culture, administrative, and operational structure already established. Recommendations within this section will guide COA administration in maintaining the existing key program but will make provisions that elevate the level of security, are efficient and easy to manage, possess room for growth and restructuring, and have a contingency element designed for issues such as lost keys. The recommendations are also designed to conform with sound security industry practice.

A review of practices was conducted in an attempt to determine how the following three areas were managed:

- Key accountability for persons no longer employed at the facility
- Key accountability for employees currently employed at the facility
- Key requests and issuance and lost key reporting

Key control at the Elizabeth City Campus is managed by the Administrative Support Services Director and the Physical Facilities Director with notification from the Human Resources Director. There is a master key system with sub master keys and classroom keys. At the Owens Health Science Center building, an electronic access system was installed but based on problems at the user end of the system, it was later abandoned for the traditional hard key system. At this time the locks are keyed for a grand master key system with various levels underneath. The maintenance, custodial, and security staff all have grand master keys. Master keys are given to staff and faculty in addition to office keys, classroom keys, and lab keys where applicable. There is no system of key assignment identification at this time in Elizabeth City although some of that information may be captured on the Employee Orientation Schedule and the Employee Exit Schedule.





The security officers are on the campus from 7:00 a.m. until 11:00 p.m. Monday through Friday. On the weekends there are security officers scheduled at any time that there are classes being held or other events scheduled at the campus. The officers have a schedule of the campus classes/events and as a course of their rounds lock down any parts of the campus that are not being utilized. The Physical Facilities Director maintains the keys at the Elizabeth City Campus and utilizes a centralized key control box system that is kept locked when unattended. Internal of the outer shell of the building, there is a system whereby classrooms, offices, closets, and other spaces are kept locked when not needed. Communication, computer servers, telephone equipment, camera DVRs, and all critical electronic equipment are secured. Money is secured within multiple locked layers.

Building C has multiple layers of security in place and specific to providing the level of security necessary to store and maintain the weapons and ammunition that is stored as a part of the BLET program. The weapons are stored in an area of the building that includes a locked vault, an active alarm, and a storage area that is off limits to everyone with the exception of the BLET instructor, the Business and Finance Vice President, and the Physical Facilities Director. In addition, local responders have been made aware of the storage and security measures in place.

Electronic assets including servers and phone system equipment are secured in locked storage. Electronic panels should also be kept locked.

Vulnerability: The doors on campus are hard key operated using a master key system which is harder to account for and control.

Risk: There are keys or copies of keys that cannot be accounted for.

Recommendation:

1. Evaluate the key control system.
2. Reconcile and account for as many keys as possible. Keys that cannot be accounted for are a serious vulnerability and should be addressed by either disabling the locks or re-keying the locks as is feasible.
3. Establish a written key control policy that puts in place the necessary infrastructure to account for and control the issuance and identification of keys and key holders for each key. Minimize the number of keys that afford users access to campus buildings. Consider minimizing the number of key holders who have keys to the outer doors. Security officers should be the only personnel who let others into the building outside of normal business hours. Non-key holders would have to make arrangements to gain access to the buildings if it became necessary outside the hours of security coverage.

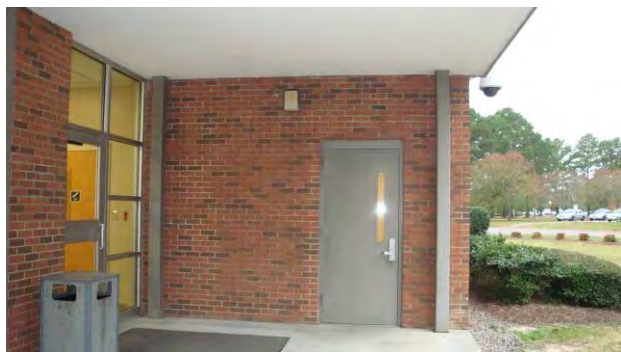
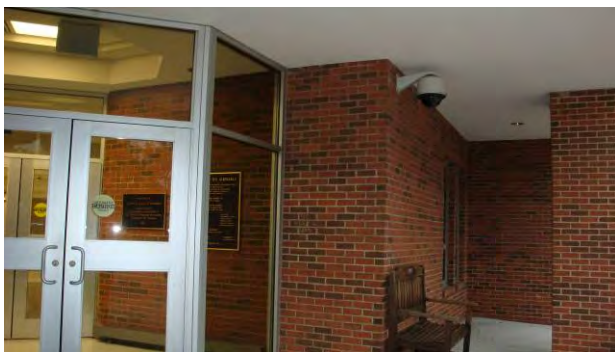
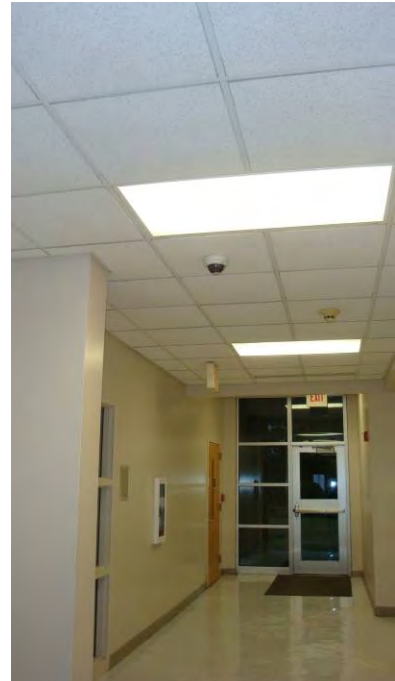


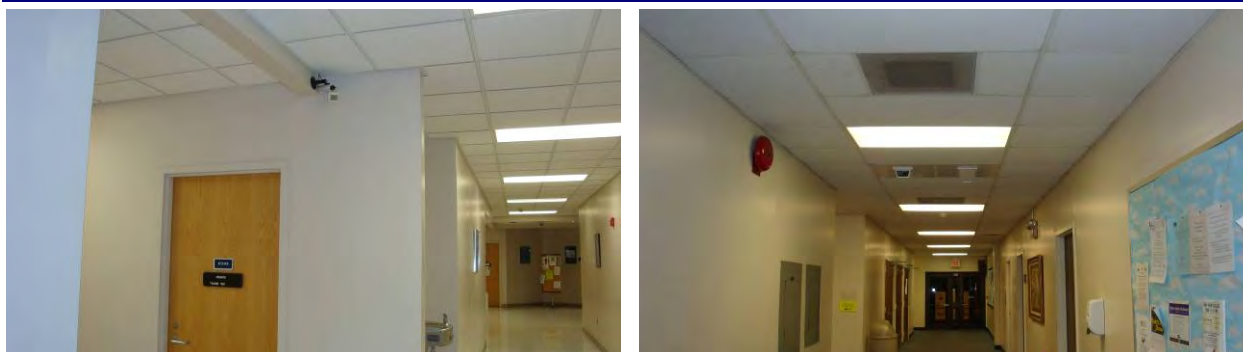
Electronic Security

In today's educational environment, electronic security is absolutely essential to a cost-effective security program. However, many school administrators, the persons actually responsible for protecting an organization's assets, are not very knowledgeable about electronic security equipment, manufacturers, and service providers. All too frequently, electronic security systems are installed, expanded, and modified on a continuing basis as the school's facilities and student and staff numbers increase. The result is a piece-meal system, with components and sub-systems that are not fully integrated or consistent with the environments standard-of-care.

Once administrators recognize that electronic security systems are only one tool in their overall security program, then they are able to create sound "system use" policies for their respective school. These policies will be the guiding force behind determining the best way to utilize electronic security systems.

In a properly designed and maintained system, each part enhances the other and all contribute to effective protection of school students, staff, visitors and property while remaining compatible with the school's operational requirements and environmental conditions. Systems integration is the most important factor when considering electronic security. Simply put, systems integration is the effective combination of interior and exterior intrusion detection sensors, controlled access points, television cameras and monitors, and alarm signal monitoring systems into one security system package that performs as a whole and complements the security personnel.





The Elizabeth City Campus currently uses cameras and a digital video system (DVRs) that record movement as it is detected by the cameras. This is an efficient use of the cameras and DVR storage space. According to the MIS Director, there are approximately 63 cameras on the Elizabeth City Campus located in buildings A, AE, B, C, and O. In addition, the college has benefited in the past from some of the cameras at the hospital where the angle views showed activity on the COA campus. The campus currently has five DVRs on campus that record movement, and historical information is stored for 30 days before it is overwritten. Campus administrators have the ability to view cameras via their computer terminals, and on a daily basis the security department is tasked with reviewing the images of the previous day for security purposes. At the time of the assessment, the college was in transition as the security technology company that they had been using is no longer supporting security installations and equipment. At the time of the assessment, at least two of the cameras in the AE building were not working and another one is beginning to fail. It was reported that there is one camera not working in building C and the cameras in building A are not viewable on the system. The Forman Technology Center has been wired for alarms but the alarm system is not currently being utilized due to some sensor issues that created a problem with false alarms. The Owens Health Science Center does have a card access system that is also currently disabled due to user problems that made the hard key system a more practical solution for the school.

The consultant endeavored to understand the electronic security posture at the campus and did not do a detailed study of the electronic components related to security. At any campus where there is growth over time and facilities built with varying degrees of electronic adaptability and limited resources, it is an on-going challenge to meet and maintain a cohesive electronic security program. The administration at the Elizabeth City Campus has done and is doing a commendable job applying its security resources to best protect the physical and intellectual assets of the COA to include the people who enter its campus every day. Electronic security countermeasures are changing at an exponential rate, and the loss of a trusted vendor partner can be a critical blow to the overall security posture of the campus. Several college departments have responsibility for some aspect of the security program, including the electronic program, in addition to their other responsibilities with varying levels of electronic experience. This is completely normal but should be addressed in such a way that the integrity of the program is maintained and enhanced in a manner that is both efficient and cost effective for the college.

Vulnerability: Most organizations are unable to utilize and benefit from the effective use of electronic security products because they lack the subject matter expertise necessary to develop, manage, and maintain a comprehensive plan.

Risk: Persons could be injured or the COA may suffer losses to reputation or assets that could have been avoided or at least mitigated using the electronic security elements that are already in place.

Recommendation: Contract with an unbiased security expert to review the electronic security in place in detail. Find out what is working and what is not and why and develop a plan of action that can be augmented over time based on sound security principles. The electronic security posture of the college is excellent, and there are elements already in place that could be integrated into the plan with minimal expense that would enhance the other layers of security in place. The use of electronic security is only going to continue to grow, and the costs associated with its implementation will continue to go down. With the change in vendors, this is the perfect opportunity to develop a relationship to use the existing infrastructure as a foundation that can be enhanced as necessary.

Philosophy, Policies, and Procedures

An analogy that RMA consultants like to use to simplify concepts of security is the comparison of a comprehensive security program to that of an onion. If viewed from the highest level, a security plan utilizing a layering approach is similar to the onion's physical make-up. Layers of security must be established in order to protect students, staff, visitors, and assets (all at the center of the onion.) The first layers must be clear and thorough policies and a focused security philosophy and approach. Both must be supported by the administration and their adherence insisted upon.

The COA campuses makes available to students, faculty, and staff copies of the student and employee handbooks in various media. There were no guidelines or procedures found for security-related grounds maintenance such as what height vegetation should be trimmed, or when and how lighting should be checked for outages or insufficiency, or a procedure to insure that lighting deficiencies or failures are corrected within a reasonable timeframe.

Vulnerability: Insufficient light and vegetation that blocks either the effectiveness of lighting or casual surveillance increases the perceived opportunity to gain access to assets.

Risk: Persons could be injured or the COA may suffer losses to reputation or assets.

Recommendation: There should be written policies and procedures that identify responsibilities for auditing the lights on a schedule of not less than monthly to identify fixtures that are not working and schedule corrective action. The same process should be completed from a CPTED perspective to ensure that conditions have not changed to increase the opportunity for someone with nefarious intent to commit a crime.

Background Investigations

Most hiring processes include an effort to assess the applicant's skill set, knowledge base, and past performance in an attempt to select the candidate most likely to become a productive, contributing member of the organization. Interviews are often conducted with finalists to narrow the field and to find the person that "fits" best in the organizational culture. References are contacted, education is verified, and the past training and experience of the candidate is determined. Unfortunately, many people seeking employment intentionally provide false, misleading, or inaccurate information. It has been estimated that 30% of all applications are falsified in some fashion and 45% of all résumés contain false or exaggerated information. One in ten applicants falsifies their name, social security number or driver's license number in an effort to hide criminal convictions. Applications often contain gaps in employment and the intentional omission of residences to avoid revealing jurisdictions where the candidate may have had encounters with the criminal justice system that they hope to hide.

Administrators must make every effort to ensure that the potential employee is not only qualified for the position, but also has the character and reputation necessary to represent the values of the organization. In educational institutions, the effort to ensure that the innocent student is not exposed to the predators who are attracted to such environments requires a proactive and well documented approach in the hiring process. Additional requirements should be established to alert administrators to potential threats posed by employees after they are hired. The concern about the employee's character and reputation should be on-going and not cast aside after employment.

At the COA the Human Resources Director is responsible for the activities that are associated with the hiring and vetting of new employees. Candidates are required to complete and submit a COA Application for Employment that is very thorough with the exception of former addresses (back seven years). The application does ask for three former employers and three references, and it requires that applicants sign a "Certificate of Applicant" where they certify that the information is true, that it may be used for investigative purposes, and that misrepresentation and falsification are grounds for dismissal. The background investigative process at the COA is to call and check the references provided by the applicant, but no developed references are attempted. In some instances former and/or the current employer is contacted. The school uses the e-Verify system to verify the candidate's social security number and name match in addition to the I-9 requirements which is very important. Employment with the COA is based on a contract that can be annual or adjusted based on the need. This applies to full-time and part-time positions, and everyone begins with an initial probationary employment period.

Vulnerability: Current full-time or part-time new hires are not completely vetted. All of these persons have access to assets, both human and material.

Risks: Someone could be or has been hired that has a discoverable potential for committing crime and may utilize that potential on COA property.

Recommendation: A potential employee should be required to provide a list of residences within the past ten years including the dates of residence. This information should be used to check for criminal records. Criminal records should be checked in any jurisdiction in which the candidate lived, worked, or went to school. Furthermore, checks should be made to verify past addresses, past employment, and past education, and developed character references should be attempted.

It is recommended that there also be a periodic review of the employee's criminal record. Employees should be required to report to a supervisor their arrest for any crime while employed at any campus at the COA. Management can then make an informed decision as to the continued employment and/or status of the employee pending the outcome of that criminal process. It is suggested that during an employee's annual review, he or she be specifically asked if he or she has been arrested or convicted of any criminal offense within the previous year. There should be periodic updates of the criminal records database checks on employees to ensure compliance with this requirement.

A common vulnerability at many campuses is the lack of vetting of contractors who work on site. Background investigative requirements should be a requirement of any contract company or person who works on any of the COA campuses. No contract employees should be allowed on site without verification of the completed requirement.

Vulnerability: Someone working for a contract company is allowed access to people and other school assets and has a discoverable potential for committing crime.

Risk: School assets may be adversely affected by contractors on campus.

Recommendations: The COA should include in all contracts for service specific requirements that contractors must meet before any of their personnel are allowed on a campus. The policy needs to be specific and hold contractors accountable for the actions of their personnel on college property.

Cash Handling

Cash handling on campus is taken seriously. At the Elizabeth City Campus there are two cashiers and a head cashier. All monies at the campus are brought to the business office. In addition to monies collected by the business office, there are monies collected by the cosmetology department, the COA Community Auditorium, and the library. All money is taken to the business office on a daily basis where it is balanced, deposited, and audited daily. There is about \$500 of petty cash kept at the business office which should be evaluated and reduced if practical. The cashier's office is behind a wall, and monies are accepted through a sliding window that is lockable and has a window blind to close off not only access but also casual surveillance. The business office has cash register drawers and a safe which is not bolted to the floor as far as was visible but appeared to be adequate. Though no written policies were received the process for

the handling of moneys, the separation of duties and the audit function appeared to meet the needs of the COA. The bookstore is within the campus but managed by Follett Higher Education Group. They are an independent contract company doing business on campus property. The staff is comprised of Follett employees who conduct business independent of the college on college property.



Vulnerability: The campus bookstore handles financial transactions separate of the college but within the college property.

Risk: The Follett employees are not subject to the COA vetting or policies and procedures for cash handling or otherwise.

Recommendation: The contract with Follett should be reviewed at the college level and include security requirements for personnel, and cash handling at a minimum.

Identification Badges

A key element of security at any school is the control of access onto and within the campus and the ability to recognize those persons who belong there and those who do not. The COA issues identification cards/badges to all full-time staff and faculty. According to the Employee Identification Cards policy, employees are required to have and display their ID cards and replace them at a nominal replacement fee if they are lost, stolen, damaged, or broken. At this time the badges do not expire. There are no visitor badge requirements and no policy or signage that directs the behavior of visitors or contractors. Students are issued identification cards and are instructed to carry them. If staff or faculty requests that a student show their identification card and the student is unable to, faculty and staff are allowed to ask the person to leave the campus until such time that they have their identification card.

Vulnerability: There is no way to know who belongs on campus and who does not. Persons with nefarious intent can easily blend in with faculty, staff, or student populations.

Risk: An unauthorized person could cause injury or asset loss.

Recommendation: Require all COA personnel to have and wear their identification badges at all times while on COA property. Train all faculty and staff at least annually on security related policies and procedures and include the importance of the badges in the overall security program. Encourage security vigilance throughout the campus by all to include but not be limited to faculty, staff, students, contractors, and visitors.

Vulnerability: Visitors with nefarious intent can get access to assets on campus.

Risk: An unauthorized person could cause injury or asset loss.

Recommendation: Create a generic contractor badge that is numbered and require that all contractors working on COA campuses wear the badges any time they are on COA property.

Vulnerability: Visitors with nefarious intent can get access to assets on campus.

Risk: An unauthorized person could cause injury or asset loss.

Recommendation: Put in place signage that directs all visitors to a central location, ask them to sign-in, and provide them with a visitors badge that they should wear at all times while on the campus.

Security Personnel

Overview

Over time the concept of “security” has evolved into several models and applications. The diversity of contemporary threats, the variations in organizational culture from entity to entity, and the differences among these entities in their capacity and will to commit resources to security needs has influenced the emergence of the conceptual model referred to as “integrated security.” This model is a dynamic and flexible approach to maintaining a security posture and protective envelope by using unique combinations of systems and functions available to the planner so as to best fit the culture, budget and operational requirements of an individual site or organization.

There are three principal parts of an integrated security plan: personnel, systems, and procedures. Each of these components serves to augment the effectiveness of the other and to permit the use of each in a unique formula determined by the difference between facilities. The development of advanced electronic security systems over the past few decades has greatly expanded the application and capabilities of various security hardware devices. Litigation in security and safety matters, governmental regulations and requirements, and the expectations of the recent generations to be guaranteed a safe and secure environment have increased the absolute necessity of developing and promulgating written plans, policies and procedures both as management guidance and as operational instructions and orders during times of crisis.

As a concept, integrated security offers a wide range of flexibility for the security planner and administrator in developing practical and sustainable security plan. While the advances in technology have vastly increased the capability and reliability of security systems, technology has not and cannot replicate or replace security personnel or the role they play within the integrated security concept. There is a tendency to see technological applications as a remedy to all modern problems and security is no exception. As opposed to the perception as an end solution, technology should only be viewed as an additional tool to be used by an intelligent and trained human operator.

The use of technology in security systems serves to extend the presence and enhance the efficiency of security personnel. The roles served by a security program are to observe, detect, identify, and respond to actions, events, or incidents that might compromise the security and safety of the site. Technology applications such as CCTV surveillance and alarm systems provide for constant observation of areas, items, ingress/egress points, and passive and active alarm systems. This extends the capability of a human asset by passively monitoring static conditions and sensing changes. CCTV extends the scope of visual observation to many times the effectiveness of a single human observer at a single fixed post or along a patrol route. These described functions serve the first two functions of the security program. The application of systems and technology to security problems can remotely monitor, view, and record images, and log and record activity on security networks. Systems will detect those conditions that they are programmed or designed for, but other than communicate automatically with a human asset,

systems and technology offers no capacity for responding to a security threat or intellectually investigating an unusual or suspicious condition beyond their programming.

The integrated security planning continues to place a human asset at the center. Using a CCTV surveillance system as an example, it has the automatic capacity to view in real time, transmit images to a screen, and record images on a media for later retrieval. There is software to enable the detection of movement in the electronic field-of-view which will trigger the system to go into alarm and cause other automatic functions to be performed. After the fact, the system can provide recorded images for investigative and identification purposes. These are valuable technological tools, but all of these features are ultimately dependent on a human asset.

Effective monitoring of an alarm system is also a human asset centered model. Although contract alarm monitoring relieves proprietary personnel of the responsibility of monitoring the system and responding to a notification, the human asset is still at the center of the system, only outsourced to a contractor. There are very few police or fire departments that offer the services of primary monitoring of the respective proprietary intrusion and fire alarm systems. In the vast majority of jurisdictions, the alarm panel processes the alarm device signal and either notifies a contract monitoring station or dials up the public safety responder directly. Direct dial up notifications do not provide exact information about the internal location or nature of the condition that the system has detected. The primary reason that most public safety agencies do not accept direct alarm reports from proprietary systems is that without some degree of analysis and verification by a human asset, the potential for false reporting is too high.

Although electronic applications can observe and report autonomously, they cannot physically respond to an event. Notifications may trigger responses by other human asset systems, but technology alone cannot interdict a crime or security incident. It may be possible for an electronic security system to be elaborate enough to fully observe and monitor all parts of a site or facility. However, this alternative would be extraordinarily expensive to install and maintain and would be largely directed against static threats. Missing in all the software and smart technology is the capacity to understand, reason, modify parameters, and adjust to situations caused by the most variable of all the factors confronting security planners, other human beings.

The use of technology has served to enhance and augment the efficiency and reliability of integrated security programs. When well-balanced, the appropriate use of technology increases the value of the human security asset to a degree that may well allow for certain reductions in force without diminishing the protective envelope. The central concept of integrated security planning is to combine the general tools and assets available to the planner in a unique manner to achieve a standard of protection within the culture, budget and operational condition at any individual site. Underlying this is the premise that a good system requires the use of all of the components to some degree to reinforce each other, with none being replaced completely through the use of the others.

The human component of an integrated security plan can be in one or more of several forms. These forms become choices that need to be addressed depending on the mission, environment, culture, population and security philosophy of the organization and specifically the site to be protected. The choices will impact the security posture in that each will have a bearing on the necessary accommodations that must be made using the other two tools, systems and procedures.

Uniformed versus Non-uniformed

Whether or not to put security personnel in a distinctive uniform is one of the most obvious choices. There are a number of internal and external factors that may be considered. A uniformed security officer is readily recognizable as serving in the security role. In our culture, we are accustomed to seeing uniformed police and security personnel on a routine basis. The presence of the uniformed officer suggests significant guardianship at the facility and presents the functional equivalent of defensible space, even in the absence of defined perimeters. Two positive attributes attach to the use of the uniform. First, there is an obvious deterrent effect in having such an officer, which by suggesting guardianship, may very well deter a crime or action at the protected site and shift the perpetrator's focus elsewhere. Second is the positive effect on the protected population in that the recognized presence typically increases their sense of well being and an associated increase in compliance with security procedures and their identification with the security program. The uniform also contributes to organizational identity within the security force, an identity link to the institution, and, ideally, to *esprit de corps* among the officers.

There are various operational security roles that are performed away from public view. Certainly, it is not essential that these roles involve the wearing of a uniform, so long as there is no public exposure, such as the security console operator. Plain-clothes personnel are able to move about the facility without undue attention from either the population or the outside public which may be an advantage in investigation or targeted security operations. The role of the security officer is first and foremost to observe and report, which arguably may be conducted as well without a uniform.

Armed versus Unarmed Officers

In this context, the term "armed" is intended to mean equipped with firearms and prepared to use deadly force when required. Firearms are not intended for non-lethal force situations. There are several non-lethal weapons that can be issued and used by security officers, such as batons, capicum spray and tasers. For the purpose of this discussion, these will be part of the equipment issued to "unarmed" security personnel.

Armed security officers are generally issued sidearms and trained for defensive use of the weapon. As such, a uniformed security officer who is not a law enforcement officer has little justification for carrying a firearm beyond the need for self-defense. Security officers protecting high-value facilities which might attract attack from armed and dedicated perpetrators may very well have need of this level of training and equipment for self-defense. The level of training required for an armed officer to safely use a firearm in a security operations environment is extraordinarily high, approaching that required of law enforcement officers. Very few armed guard training programs approach the standards required of law enforcement officers in any jurisdiction.

Proprietary versus Contract Officers

Basically, there are only two organizational relationships for the security officer. A proprietary officer is an employee of the entity that is being protected. As such, the general operational details such as recruiting, training, scheduling, administration of wages and benefits, discipline, and promotion are the responsibility of the company or institution. Usually, proprietary forces enjoy longer tenure and less turnover, though they are more expensive to operate. The intangible factors such as loyalty, organizational identification, ownership of the roles are thought to be stronger also. Discipline and termination are more tedious in proprietary forces, as the security officers generally have the same employment protection as other employees.

Contract forces are thought to be somewhat less expensive and easier to administer. Most security companies assign a project manager to a contract site to handle liaison, scheduling, discipline and wage/benefit administration. The contracting entity or facility need only communicate with the contracting company regarding post requirements, role performance, standards, and expectations. The contractor is responsible for filling the roster, staffing posts and patrols, evaluating personnel, and effecting discipline and terminations where required. In most cases, the protected entity has a right-of-refusal for contract security officers assigned to their site.

Full time versus Part time

These terms may reflect two choices that must be made regarding the staffing of the posts and roles. A full-time security force would be comprised of employees or contract personnel who are employed on a full-time basis, with the associated benefits and protections afforded that status. If the force is from a contract service provider, the point is moot, as the staffing details will be the contractor's responsibility. In a proprietary force, however, the use of part-time personnel can be a cost saving strategy as there are no full-time benefits required. A part-time force requires a larger pool of officers to fill the schedule with the associated increase in scheduling difficulties, often related to employees other job demands.

Part-time forces present more problems in providing training because of the large pool of personnel. Turnover among part-time security employees may vary, depending on the situation. A part-time force made up of otherwise fully employed personnel seeking to augment their incomes may be very stable. Such a force consisting of personnel working only part-time may be less stable as personnel seek and gain full-time employment elsewhere. Both of these elements may be affected by the location of the force. In a small town environment, the tenure may be greater than in a more dense metropolitan setting with a more mobile and fluid workforce. In a smaller force, the flexibility and versatility of using part-time personnel may be a significant advantage.

Sworn versus Non-sworn

Probably the most profound choice in the paradigm is between sworn and non-sworn officers. A sworn officer is one who is duly authorized under statute as a law enforcement officer of competent jurisdiction at the facility or site. As such, the officer must be part of a commissioned police agency or sheriff's department. North Carolina has provisions for private special police who are empowered as law enforcement officers on the premises that they are contracted to protect. North Carolina statutes also empower campus police departments for colleges and universities across the state. A sworn officer may make arrests and use force including deadly force under color of law. In almost all cases, sworn officers in North Carolina are armed as police officers.

The police power entrusted to a sworn officer is reserved for violations of law. There is no additional power over a facility population related to enforcing of rules and regulations that are not codified as part of the state law and local ordinances. This authority offers little advantage in performing the traditional roles of the security officer. On campuses with resident populations, in effect miniature cities, there is an advantage to using sworn police as a additional protection in that they can enforce law without calling for assistance from the jurisdiction. Routine security duties do not require enforcing law and ordinances, and this authority does not enhance the effectiveness of the security program in most other kinds of facilities. The one possible exception would be a facility that is extraordinarily remote with little police service available for emergency response. Sworn status expands the duty of the officer to that of a public officer in the jurisdiction, thereby creating the potential for conflict between the interests of the site and those of the public at large.

Non-sworn security officers are trained to focus on proactive security procedures and processes as opposed to reactive enforcement of law and the complexities of this role. If a facility is within the jurisdiction of a well-organized and staffed law enforcement agency, sworn, trained police service is immediately available through 911. In most circumstances, if the need arises for sworn officers to reinforce or augment the security force in non-emergency situations, they can be obtained from the local department as off-duty, part-time assistance.

These are not subtle differences, and the expectations of the security program should be carefully examined with regard to the benefit of officers having arrest power.

Security Staff

The COA has no full-time security director for the college. The responsibilities for security are under the purview of the Business and Finance Vice President and the implementation of the security program is shared by the Services, Facilities, IT, HR departments as well as administrators at each of the campuses and the campus security officers. Administrators understand the importance of security and the professionals from the different disciplines work together to secure the COA campuses and harden them and their associated assets against harm. During the day, security functions are primarily the responsibility of the Physical Facilities Director who coordinates and schedules the Elizabeth City Campus security officer force. Personnel use the campus phone system, cell phones, and a radio system as communication devices depending on the situation. In addition the COA has a proprietary software that they developed that allows administrators to dispatch emergency warnings over the network to every computer across the whole system. For weather related alerts, the college uses the Alert Now system which sends notification to persons who have signed up to receive them in both the text and voice methods. In addition, the Elizabeth City Campus has a good working relationship with both local law enforcement and staff at the Albemarle Hospital and has utilized their resources when practical. Having the BLET program on campus also enhances the security posture of the school and provides for additional resources in both casual surveillance and training. All faculty and staff are also provided with Incident Report Forms and Accident Report Forms and instructions as to the submission of these forms.

The Elizabeth City Campus of the COA has a campus security officer program made up of part-time officers who provide a security presence during all the hours that the college is in operation including rental of the COA Community Auditorium. The current security guards come from a variety of backgrounds including other security officer positions at the prison, the mall, the Coast Guard base, the water plant, and other locations. The officers are non-sworn and not authorized to carry a firearm. Officers are outfitted with uniforms that include outerwear to be worn as necessary and a badge. Candidates are required to have a least a high school education, have a valid driver's license, and be certified in CPR and first aid. In addition to uniforms, the COA provides the officers with a college cell phone, radios when necessary, an office, and a computer. The college does not have written post orders but they do provide examples of the duties that the security officers are expected to perform:

- Serves as additional visible security presence particularly to alert college police officers of matters pertaining to campus security issues.
- Patrols in and around campus including parking lots before, during, and after business and school hours on foot, bicycle, or vehicle.
- Enforces parking regulations on campus and issues parking citations as necessary; inputs citations into computer.
- Responds as needed to campus safety and security calls.
- Notifies supervisor of suspected illegal activity on campus property; reports hazardous and unusual conditions or malfunctions observed.
- Inspects for and prevents vandalism, illegal entry, theft, and fire.

- Identifies, observes, and questions persons on campus grounds when the reasons for their presence or intentions are questionable.
- Physically restrains persons involved in crimes, fights, or other acts of violence pending the arrival of sworn officers. (Based on interviews, the current company policy is for the officers to control the scene but not physically restrain anyone.)
- Takes non-police incident reports or complaints from students, visitors, faculty, and staff.
- Conducts routine investigations of minor campus incidents.
- Receives and responds to requests for help and assistance for ill, injured, or disabled persons; administers basic first aid and CPR according to established guidelines.
- Opens and closes classrooms; may provide security services for special events; controls traffic and places traffic barricades as appropriate.
- Answers questions and directs students and visitors.
- Provides routine assistance to the college population in situations such as a flat tire, keys locked in car, or dead car battery.
- Performs related duties as required.

Based on the schedule of classes and events at the Elizabeth City Campus, the security officer's roles are to administer and support the college's security program by controlling the access into buildings when not necessary, giving a face to the presence of security on the campus, enforce campus rules and regulations, and liaison with local law enforcement and the campus administration as well as staff, faculty, students and guests.

The current model in use at the Elizabeth City Campus seems adequate and well thought out when considered in relation to the choices and parameters described previously in this report. The scheduling of security officers for duty during all activities at the site seems to be adequate in a non-residential campus setting and in the absence of valuable, dangerous, or rare items and materials on campus.

There is no driving justification for use of sworn officers as a routine security measure, but the process for obtaining off-duty police personnel should be developed and maintained to guarantee such assistance when needed. Uniformed officers are advisable for recognition purposes and for any deterrent effect it may have on potential perpetrators. The part-time model seems to be successful and economical for the organization.

The campus is within the city limits of Elizabeth City and served by the Elizabeth City Police Department. Armed police officers are available to respond at all times via 911. Given the level of police activity in the area and the proximity to the 24/7 operations at Albemarle Hospital, it is reasonable to conclude that there is a high police presence in the area and response time to an emergency call would be very quick. As such, there is no reason to consider arming security officers with firearms. Consideration to the use of non-lethal devices may be considered based on training load and direct cost of the equipment.

Vulnerability: As with any critical role, the tasks and responsibilities of the security officer need to be specifically defined both for the benefit of the officer trying to adequately perform them, the administrator controlling and evaluating them, and the institution that may need to defend the actions in the face of liability. Post orders need not be elaborate, but they should exist in a cogent and understandable format, specifying tasks, outlining approved procedures, and identifying parameters for adequate performance.

The campus has job descriptors applying to the security officer's duties and roles, but they do not rise to the level of adequate post orders. Discretion is necessary the performance of the security officer's duties, but this discretion must be within defined responsibilities and guided by specific procedures found in post orders. No matter how experienced the officer and regardless of the officer's background, security post orders are essential because it sets the expectation that the college has for the role of the officers.

Risk: Performance of the security role may inadequate, oversight and discipline may be difficult, and the institution may be liable for acts or omissions that are not properly delineated and defined.

Recommendation: Basic post orders should be written for each security post and role. Coordination between campuses may make this task less burdensome. Each campus should have such post orders, and the roles and responsibilities should be similar enough to allow the preparation of a standard template that can be modified for each individual site.



Security Threat Analysis

Prepared for

**College of the Albemarle
Edenton-Chowan Campus**

November 2010

Prepared by

RISK MANAGEMENT ASSOCIATES, INC.



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BACKGROUND

In October 2010, Risk Management Associates, Inc. (RMA) was awarded the contract to perform a Security Threat Analysis at the College of the Albemarle (COA). The purpose of the analysis was to evaluate the security threats at each of the campuses, identify gaps in the current security program, and recommend measures that the College should consider going forward to mitigate risk levels and the severity of risks. Included in this assessment was a review of the current security officer program that is already in place at the Elizabeth City and Edenton-Chowan Campuses to determine the necessity and effectiveness of the current system to meet the security needs of the college currently and in the future to mitigate the risks identified. In assessing risk at each campus, RMA evaluated the physical risk to employees, students, and guests, evaluated risks to property, and determined the potential threats to employees and/or property.

The objective of this project was to assess the current security posture for each of the five campuses. RMA assessed the use of best practices and security standards consistent with the culture and operational needs using physical surveys of the facilities, interviews with staff and managers, and observation of operations.

The ultimate objective is to provide the College of the Albemarle with the information that they can use as a guideline to improve security across the system using an appropriate blend of technology, people, and processes to increase the safety and well-being of the staff, students, vendors, and visitors at each campus.

Study Methods

In a security threat assessment, the standard practice is to identify potential threats, predict their probability, and determine their criticality should such an event occur. This means that an organization must first identify specific threats for which protection may be required. Second, it must determine the likelihood of each of those individual threats becoming a reality and third, it must attempt to determine the resulting effect on staff, students, visitors, the community, property, and operation.

The next part of the study is the physical and operational security survey. In this survey, the security devices, systems, and practices are inventoried and rated for effectiveness. This includes examination of barriers and perimeters, access control, doors and windows, locks, access control systems, key and access device control, surveillance, alarms, procedures, security staffing, police support, and other systems and processes that contribute to the security posture.

The result of this survey and assessment is then compared with the threat profile. Those threats that are not addressed and effectively counteracted by components of the security program and infrastructure are deemed to be vulnerabilities. This process drives the formulation and selection of recommendations for specific measures adequate to counter the unaddressed threats.

Typically threats become actual events because the vulnerability to a threat is not recognized, countermeasures are not effective, or the threat has changed. Physical facilities, security systems, security programs, staff, students, and visitors all change over time and for this reason, the security threat assessment process must be ongoing.

The assessment of the Edenton-Chowan Campus was conducted on October 26/27, 2010. The threats identified within this report are relevant to the known facts about the assessed facilities, property, staff, policies, procedures and operations at the time of the assessment. Any modifications, additions, operational changes, or omissions of information pertaining to the facilities could have an effect on the threat assessment recommendations set forth within this document.

During the course of the study, photographs were taken of specific conditions observed on campus. These photographs were designed to assist the consultants in formulating their recommendations. However, they may also be of assistance to administrators responsible for making decisions concerning the outcome of this study. For that reason, the appropriate photographs are included within the report to illustrate the observations and findings.

Location Information

The College of the Albemarle Edenton-Chowan Campus is located in Edenton, NC, and provides programs and services based on the educational needs of the surrounding community, the mission of the community college program state wide. The Edenton-Chowan Campus is the smallest of the COA campuses from a student/attendee population. Currently there is no library on campus, and books are purchased in Elizabeth City or on-line.

Programs Offered
Basic Adult Education Programs
College Transfer Programs
Corporate & Continuing Education Programs
General Education Programs
Industry Service Programs
Technical and Vocational Training

The Edenton-Chowan Campus consists of seven buildings between the shopping center on North Broad Street and North Oakum Street. The Administration Building at 1316C North Broad Street houses classrooms, offices, a seminar room, a student lounge, conference room, and a basic skills lab. It shares space with the Employment Security Commission/JobLink Career Resource Center. The Edenton-Chowan Campus at 824 Oakum Street houses COA's Industrial Skills Technology, Culinary Technology, and Corporate and Continuing Education programs.



Assessment Summary

The goal of security risk management is to manage risk proactively and in the most cost-effective manner possible. The fact of the matter is “security” is a philosophy. It is a state of mind equal in importance to that of applications and countermeasures. That philosophy must be developed at the administrative level, reflected in the business plan, and allocated appropriate resources. In addition it must be understood at the Board of Trustees level, consistently applied at the campus, and staff level, and accepted at the parent, student, and visitor level while promoting a positive educational environment. It is the responsibility of all individuals to play a role in security, but it is the administration’s responsibility to develop a comprehensive security conscious environment, to train its stakeholders in security awareness, and to require observance of security policy and procedures of persons who traverse the environment.

Crime Theory

Requires the convergence of:

- Desirable object or objective
- Motivated perpetrator
- Lack of effective guardianship

Security seeks to provide guardianship

While conceptually the idea of a security philosophy is easy to write and understand, practically, it will be more challenging and will require planning and education to develop the trust and buy-in from all constituents. The potential for a security event occurring at the COA Edenton-Chowan campus has been analyzed, and the areas of concern are discussed within this report. Recommendations for methods to

reduce risks and ensure a safe environment are explained in the next section of this report. Every attempt was made to make recommendations that the administration could fit into the campus’ culture, operations, and environment.

The recommendations proposed in this report are derived from various security-related disciplines. They include training staff the responsible for the COA security functions at the different levels and campuses, preventing unauthorized entry, and controlling access onto/into controlled space, improving the lighting, maximizing the effectiveness of existing electronic security systems and enhancing these systems where practical, and the appropriate application of accepted security techniques, procedures, and policies by the collective COA faculty and staff.

There are three sources of threat that have been identified as applying to each of the COA campuses.

- Opportunistic crime
- Incidental crime
- Student/Employee/Staff related problems and crime

Opportunistic Crime – COA campuses offer the typical academic setting that attracts the interest of opportunistic criminals, those looking for a target of opportunity for theft, robbery, or other lesser criminal acts. The offices have parking lots filled with cars. The staff and students consist of apparently affluent, well-dressed people with nice automobiles. Such facilities contain computers, televisions, electronic business equipment such as copiers and fax machines, personal belongings of the staff and students, and the suggestion or presence of at least some cash. Aside

from the unique nature of the potential personal threats, the facility faces the ubiquitous threat to equipment, money, and belongings from ordinary thieves and burglars.

Incidental Crime – A COA campus is a congregation point for a subset of the population seeking the services provided there. The level of maturity and the circumstances that lead students to the COA is varied from students who as a part of their adjudication are required to attend classes that make it possible for them to attain a GED to the highly mature student working towards an Associate's Degree or other certification. In addition the COA campuses provide a valuable service in the form of a wide range of Continuing Education opportunities. Incidents may result from interactions between individuals or groups that happen to cross paths at a COA campus, with no other relationship to the COA except that the facility was the meeting point. Such incidents may result from domestic strife between individuals known to each other or between individuals who are not acquainted but have a problem related to the stress of the moment or other causation apart from the purpose of their attendance at the COA.

Employee/Staff/Student-related Crime – This includes the typical potential for workplace violence between employees. This also includes the potential for domestic violence which is a universal threat in any workplace. Violent spouses or significant others tend to seek estranged partners at work or blame others in the workplace for their domestic problems. This threat category also includes theft by employees of the COA property, the property of other employees or customers, and the misuse, diversion or theft of sensitive information.

In Risk Management Associates' professional opinion, COA and the Edenton-Chowan Campus is challenged with six primary security risk areas and the vulnerabilities associated with those risks. These risk areas and vulnerabilities are prioritized below:

1. Risks associated with the lack of a comprehensive college security program.
2. Risks associated with exponential growth and limited resources.
3. Risks associated with limited building access control.
4. Risks associated with limited campus perimeter control.
5. Risks associated with limited campus visitor management.
6. Risks associated with limited communication, training, and practice of security plans.

Risk Management Associates, Inc. adheres to the traditional risk management model and recommends the same practice to our clients. That model, in its broadest sense, involves the use of five principal management methods:

<i>Risk Avoidance</i>	This involves the removal of the target.
<i>Risk Reduction</i>	This technique calls for minimizing the potential loss as much as possible.
<i>Risk Spreading</i>	The potential target is spread over as large an area as possible.
<i>Risk Transfer</i>	Perhaps the most overused, the risk is transferred to other parties such as insurance companies.
<i>Risk Acceptance</i>	There may be times that a decision must be made to simply accept the risk.

The administration of the COA is now faced with the decision of choosing one or more of these methods to deal with the risks on a regional level and local level. In the consultants' opinion, the three methods that are most relevant to the COA, including the Edenton-Chowan Campus' security condition, are *Risk Reduction*, *Risk Transfer*, and *Risk Avoidance*. In our opinion, *Risk Spreading* and *Risk Acceptance* may be necessary but strongly recommend that they when possible are viewed as not viable alternatives due to the potential repercussions associated with these should a security event take place.

Administration should analyze the recommendations included within this report. Subsequently they should determine how and/or if to incorporate them into the philosophy, operational culture, and working environment of the COA system or make the decision to simply accept the associated risks.

Criminal Activity in the Area

The Edenton-Chowan Campus of the College of the Albemarle is located within the corporate limits of Edenton, NC, and as such is served by the Edenton Police Department (EPD). Edenton has a population of approximately 5,000 people and an area of 5.2 square miles. It is the county seat of Chowan County and the principal municipality in the area. The population density is approximately 1,100 people per square mile. The EPD has fourteen sworn officers and two civilian personnel.

Crime Statistics

Part I reported crime statistics were gathered from the 2009 Uniform Crime Report for the entire city jurisdiction. No other breakdown of Part I crime was available. The following significant Part I crime was reported.

Crime	Number of Reports
Arson	0
Assault	25
Burglary / Breaking & Entering	53
Homicide	0
Larceny	110
Motor Vehicle Theft	9
Robbery	12
Rape	0

The table above is included to illustrate the types of historical evidence that needs to be considered in the development and implementation of a security philosophy and associated programs. History is often times the best predictor of the future, and short of any significant change in the environment surrounding the site, it must be assumed that administration should expect to be faced with similar types of criminal activity going forward.

The College of the Albemarle sites are located in two separate locations on the north side of the city. One site is very near the edge of town and the Oakum Street location is about 0.5 miles toward the center of town.

Police Calls-for-Service Data

Crime statistics are valuable in determining the frequency of severe offenses among the population. Another indicator of the nature of a neighborhood or surrounding area is a review of the police calls-for-service. This information is now available in most jurisdictions through the 911 call centers that use software programs to assist in the dispatch of emergency service. Data was obtained from the 911 call center for the Edenton Police Department beat that includes both campus locations. The Chowan 911 center was not able to generate a radius-based list of calls-for-service but could provide the dispatch information by police beat. Edenton is divided into three police beats patrolled by a shift of one corporal and two police officers. The calls for service data in this report represent at least one-third of the police call activity for the entire city. This area is less than two square miles but is nearly twice as large as the half mile radius normally used for this analysis. As such, these numbers should not be compared or contrasted with the raw call information in the other two reports generated in this project.

Calls for service analysis can reveal positive as well as negative factors that may impact the security profile of a facility. The nature of the calls, the frequency of police presence in the area, and the reflection of guardianship indicated by the police activity demonstrate a more complete picture of the potential for crime and the level of disorder that may exist.

There were 2,123 calls dispatched by the 911 center in the reporting area for the six month period of May through October 2010. Of these, the EMS, fire, and routine police activity calls have been removed. The resulting list reflects police action in the area that is relevant to the threat and crime posture analysis.

Crime	Number of Reports
Assault/Sexual assault	16
Breaking & entering	15
Careless & reckless driving	16
Chase	1
Communicating threat	4
Disturbance	49
Domestic disturbance	40
Domestic assault	3
Drugs/alcohol	10
Fight	30
Fraud	2
Harassment/stalking	5
Hit & run	6
Indecent exposure	1
Intoxicated person	8
Investigation	54
Larceny	42
Loitering	61
Prowler	2
Robbery	1
Shoplifter	8
Shots fired	18
Subject armed	9
Suspicious activity	40
Trespass	25
Vandalism/damage to property	32

There were a large number of routine traffic stops, routine business security checks, alarm responses and calls coded “general dispatch.” This volume of activity suggests a significant police visibility and incidence of police presence in the immediate area of both COA campuses.

The reported crime statistics are slightly above the computed national average but this is not believed to be significant. The threat posture reflected by police calls for service for the entire beat including both campuses and approximately one third of the city is not considered remarkable.

SECURITY OBSERVATIONS AND RECOMMENDATIONS

The following observations provide examples of what the consultants found while conducting the fieldwork associated with this assessment. They represent what the consultants feel are the most critical security opportunities that should be addressed at the Edenton-Chowan Campus. The following identified risk areas will be formatted and presented in a vulnerability, risk, and recommendation format. This is necessary so that the administration can comprehend the criticality of the vulnerabilities and then have security industry recommendations as a guide when or if they determine to address the deficiencies.

Before moving forward, the consultants feel it is appropriate to commend the personnel that were interviewed at the Edenton-Chowan Campus. The desire to engage in good security practices was evident. The current state of security and the overall desire of those responsible for administering the Edenton-Chowan Campus' security function were good. Any deficiencies identified do not appear to be the result of apathy. In this analysis, the goal is not to assign blame, but to identify vulnerabilities in the existing security posture of the Edenton-Chowan Campus.

Physical Security

Perimeter Security

Every security program must be an integrated whole and each element must grow out of the specific needs dictated by the circumstances affecting the facility to be protected. Nevertheless, the first and basic defense is still the outer perimeter of the facility. Planning this defense is neither difficult nor complicated, but it is the product of common sense. Whereas the engineering and design of an electronic security management system requires particular sophistication and expertise, the implementation of an effective physical security program is the result of conventional wisdom and a lot of legwork expended during a security assessment.

A basic security concept is to design a series of layers so that highly protected assets are within a configuration of multiple barriers. Barriers are commonly utilized to discourage three types of penetration – accidental, by force, and by stealth. A properly installed barrier should clearly warn a potential penetration to “Keep Out”. There should be no accidental or inadvertent penetration.

Barriers may be divided into two general categories – natural and structural. Natural barriers include terrain difficult to traverse and other topographical features that assist in impeding or denying access to an area. Structural barriers are manmade and include landscaping, ditches, fences, and walls. A structural barrier physically and psychologically deters or discourages the undetermined, delays the determined, and channels the flow of authorized traffic through proper entrances.

The COA Edenton-Chowan Campuses have mainly structural barriers. The campus is located in two locations including a strip shopping center on North Broad Street and the old D.F. Walker Elementary School on North Oakum Street. Each of the properties has its own constituents. The shopping center on North Broad Street is the home of the Administrative offices for the Edenton-Chowan Campus as well as the basics skills lab, the GED preparatory classes, English as a second language, corporate and continuing education classes and a student lounge, and seminar room. In addition the Edenton-Chowan Campus space adjoins the Employment Security offices and the two offices share some resources and space in a form of partnership. At the North Oakum Street Campus, the Edenton-Chowan COA offers such programs as Industrial Skills, Culinary Technology, and Corporate and Continuing Education. Personnel expressed a heightened awareness of potential security events during holiday periods. Local law enforcement shares information that may impact the campus and staff has responded accordingly to ensure the protection of college assets.



The facilities at the shopping center do not have any obvious natural or structural barriers, but as with any shopping center, the area that belongs to the COA is congruent but separate from the other stores in the shopping center. With the COA being a smoke free campus, one area of concern at the North Broad Street campus is smokers. Smokers have in the past migrated to the front of other stores in the shopping center, and the administration at the COA have made efforts to make sure that the students do not inhibit the business or customer relationships with other business at the shopping center.

The campus buildings at the North Oakum Street address have fencing that separates the campus on multiple sides of the campus and forms a structural barrier that separates the campus from the businesses and residences that surround the campus. To the north of the campus is the Edenton Housing Authority, which is across the street from the campus entrance and separated by both Blades Street and a decorative metal and brick fence that outlines the front of the COA campus. This same decorative fencing along with chain link fencing is also on the east and south ends of the campus. On the south end of the campus are the Edenton-Chowan Schools Transportation Department and the D.F. Walker High School Association Alumni facility. To the northwest side of campus are a vacant D.F. Walker building and a building used by the Edenton Recreation department. The parking area to the west of the main entrance parking is shared by the COA and the recreation department depending on the time of day.

Vulnerability: The campus on North Broad Street shares its space with the Employment Security Commission.

Risk: Security issues that are ESC-related and not COA-related will spill into the COA property.

Recommendation: COA should consider a more defined separation of properties from the ESC facility and that the key control should also be separated.

Vulnerability: Shopping centers are prone to certain forms of criminal activities that may affect the COA facilities.

Risk: Persons or assets of the COA become victimized by criminal activities due to its proximity to other retail establishments.

Recommendation: Additional signage should be utilized to make sure that anyone in or around the North Broad Street campus knows what is expected of them on campus. In addition it is recommended that during the periods after normal business hours when the security officer is away from the campus, the front door should be locked and opened by the front desk assistant either mechanically or via remote control. A panic button be installed should the need for immediate assistance of law enforcement be necessary.

Vulnerability: The campus on North Oakum Street is in close proximity to other constituents whose issues could easily spread onto the COA space.

Risk: Persons or assets on the COA campus would be injured or the victim of someone with nefarious intent not associated with the campus.

Recommendation: COA should employ a diligent signage program to ensure that anyone on the COA property knows what behaviors are or are not accepted. This will also make it easier for security officers and law enforcement to reinforce wanted behaviors and have recourse in the case of unwanted behaviors.

Fencing

The most common type of structural barrier normally used for protection is a chain link fence. Fencing an area will only delay, not permanently prevent, an entry attempt. Therefore, fencing must be supplemented or enhanced by other countermeasures such as signage and security patrols. Nevertheless, a fence can be a valuable element in an integrated protection scheme.

Based on the assessment conducted, fencing although preferred does not appear to be feasible or practical at this time. Fencing is being utilized to protect areas where large assets are stored in an effective manner. Some of the fencing was in less than ideal condition with vegetation growing on it, which gives persons with nefarious intentions both additional assistance in breaching the fence line and anonymity as it blocks the casual surveillance of passersby.





Vulnerability: Based on the accessibility and the multiple constituents that may be visiting the campus property at any time, the campus may be seen as an easy target.

Risk: An unauthorized person could enter undetected and cause injury or asset loss.

Recommendation: As the budget permits, fencing should be added to those portions of the property that are not easily supervised.

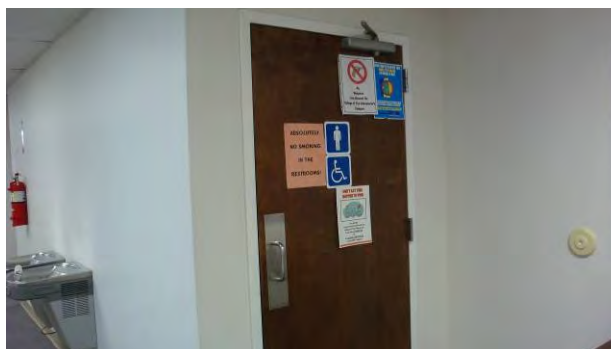
Vulnerability: Damage to fences, gates and locks is going to happen due to natural causes as well as nefarious actions of others.

Risk: Disrepair and vegetation on fence lines both attract nefarious behavior and hide the perpetrators who are looking for opportunities to cause injury or asset losses.

Recommendation: A quarterly schedule should be put in place and assigned to check all fences, gates, and locks for breeches and disrepair. As a part of this program, a repair and maintenance schedule should be implemented with assigned responsibilities and response times.

Signage

Any barrier utilized must be supplemented or enhanced by other countermeasures such as signage. In keeping with the COA's philosophy to be a "good citizen" and have an open campus environment for lawful and undistruptive use, a signage program to clearly define the expectations of the administration should be deployed. Two categories of signs, the command sign and the informational sign, are predominantly used at the COA's Edenton Chowan campuses and their use should be expanded. Command signs tell people what to do or not to do. Examples are "No Trespassing", "No Admittance", and "Visitors must register at the front office." Informational signs may alert the reader to a potential danger or give other information. Examples are "Hazardous Materials" and "No Smoking".





Eastern North Carolina as a whole is located in an area that is subject to weather events (such as high winds, tornados, hurricanes and occasional snow storms etc.) in addition to other emergency and critical events. The campus has students, non-students, faculty, and staff that access its property and facilities. With a growing enrollment and need for the educational and other opportunities and services that the college provides, signage is imperative to facilitate the wanted behaviors and protect the assets of the COA. In addition, it allows the college recourse upon infractions. During the consultant's visit, there were numerous examples of the college effectively using signage to address safety issues and the "No Smoking" policy.

Vulnerability: No clear message about desired behaviors is provided to individuals coming on to campus.

Risk: Individuals are not aware of the college's expectations, thereby creating vulnerabilities for the college.

Recommendation: Use signage to notify persons they are entering college property and that it is a weapons, drug, and alcohol free campus in addition to being a smoke free campus. Remind people who enter the property that in addition to this being COA property, that there are behaviors that will not be tolerated on campus property. Be as specific in the signage as possible.

Vulnerability: There is not a clear message given about desired behaviors within the campus.

Risk: With the current atmosphere, a criminal or misguided individual might feel more inclined to commit a crime.

Recommendation: Use both command and informational signage in the parking lots, the perimeter of the building, and at the doorways to direct people while they are on campus property. Included in this should be signs at each entrance that provide notice that in addition to being smoke free the campus that there is zero tolerance for drug/alcohol use on campus and that it is unlawful to bring weapons on campus property.

Vegetation and Crime Prevention Through Environmental Design (CPTED)

Thomas Jefferson created the concept of an “Academical Village” in the early 1800’s with the construction of what is now the University of Virginia. Since that time his concepts have morphed into what is arguably the basis for modern educational campus design. Having a physical environment that promoted intellectual stimulation and was aesthetically pleasing to the eye were desires Jefferson had in his concepts of construction. It remains the same for educators and administrators today.

In security applications, the concept of Crime Prevention through Environmental Design is one that is prominently used. The concept emphasizes that lighting, vegetation management, traffic flow, pedestrian flow, and other physical attributes can be manipulated to lessen the opportunity of a crime-related event occurring in a particular location. The consultants who visited the Elizabeth City campus observed good use of CPTED principles at the campus. Diligence should be continued given the importance of casual surveillance and its effect on the criminal perception that their actions would be observed. In addition, properties that are well cared for are less likely to be victimized.

Security industry standards suggest that foliage be trimmed to allow for casual surveillance. Tree limbs should be trimmed seven feet from the ground and shrubbery trimmed to 24 inches high.

The COA Edenton-Chowan Campus at North Oakum Street is attractive with a large variety of shrubs and mature trees that can be seen throughout the property. Security and beauty are not mutually exclusive. The balance is in how the trees and other foliage are maintained. Without careful maintenance, trees will block casual surveillance and provide hiding places for people with nefarious intent to both persons and property. In addition trees and shrubs are blocking the lighting which darkens areas and could lead to accidents and nefarious behaviors.





Vulnerability: Trees with limbs below the 7-foot level and shrubs with foliage above the 2-foot level make the possibility of concealment easier and can prevent both casual surveillance and surveillance by patrolling guards.

Risk: Someone could feel that their activities would be unseen and attack someone or break, enter, and steal.

Recommendation: Maintain standards for vegetation by trimming trees and bushes and opening areas in between plantings to reduce hiding places.

Lighting

Lighting Guidelines

Outdoor lighting is an essential and economical tool for protecting people and property from all types of crime. Statistics show that lighting is the least expensive yet one of the most effective deterrents to reducing crime. Effective lighting not only reduces the risk of accidents and crime but also reduces the liability that comes with them. Adequate lighting enhances safety and security at night while creating an environment of productive learning environment.

The objectives of security lighting are:

- To illuminate a person, object, place or condition of security interest so as to permit observation and identification;
- To be a physical deterrent through the glare effect of direct incident light upon the human eye; and
- To be a psychological deterrent by leading attackers to believe that they will be discovered and observed making an attack or penetration attempt.

Because lighting is highly visible, it is often incorrectly perceived as a major consumer of energy. Lighting consumes far less energy than heating, air conditioning, and general operations. Today's energy efficient lighting delivers significant energy savings while delivering optimum lighting levels.

The quality of lighting includes factors such as color rendering, uniformity, and glare. Visibility is directly affected by the reflective capabilities of the surrounding pavement and the façade of the building. Lighting levels will vary depending on the reflective properties of the building and pavement.

The amount of light rendered is measured in *foot-candles* or *lux*. The foot-candle is the common unit for measuring light. One foot-candle is identified as the amount of light produced by one candle at the distance of one foot. For the safety and security of students, staff and visitors moving to and from a building, a minimum of 0.5 foot-candles is needed and recommended to enable routine activities such as walking and locating steps, entrances, and exits.

Generally, lighting levels around entrances should be a minimum of 10.0 foot-candles to produce illumination needed to identify and reveal anyone who is in the area. The identification and chance of discovery factors help to discourage loitering for the purpose of committing crimes such as vandalism, assault, robbery, and burglary.

Parking lots and walkways were measured for a minimum of 0.5 fc. Door entrances and gate entrances were measured for a minimum of 10.0 fc.

New Lighting Guidelines

Recent new lighting guidelines, adopted by Illuminating Engineering Society of North America (IESNA), should be applied to for future improvements. The new lighting guidelines are significantly higher in illumination than the older standards.

A number of new security lighting guidelines for designated locations were developed in 2003 and later distributed in 2005 by the Illuminating Engineering Society of North America (IESNA). The lighting guidelines were approved when *certain circumstances* exist. Almost all of the lighting at is below the **new** guidelines. Because of this, the standard of 0.5 fc for parking areas and walkways and 10 fc for entrances was used. To assist administrators at Warsaw in understanding the new guidelines for selected locations, the following information is provided. The following information is from IESNA publication G-1-03 *Guideline for Security Lighting for People, Property, and Public Spaces*.

The new guidelines of illumination are higher than previous standards and should be used when one or more of the following qualifying conditions exist.

1. The persons and/or property in the area to be secured present a desirable target to criminals.
2. The property has a history of relevant crime or increases in crime.
3. Crime in the surrounding area is high compared to similar areas.
4. The results of a physical security survey or threat analysis indicate a problem.
5. There are changing conditions that expose persons to new security hazards or increased risk.

6. Obvious signs of antisocial behavior exist near or on the property such as graffiti, vagrants, broken windows, trash buildup, trespass, or poorly maintained property.
7. There is recurring, reasonable resident or customer complaints or concerns about security, or fear of crime.
8. High profile or troublesome areas exist such as bars, nightclubs, gambling halls, gang or teen gathering spots.
9. There are industrial or commercial applications where persons or property are prone to attack, such as ATM and night depositories, convenience stores, and railway yards.
10. Restricted access industrial or government installations are in the area.
11. A time of national emergency such as war, acts of terrorism, or declared emergencies is in effect.

The new guidelines for security illumination in IESNA publication G-1-03 are given for the following locations and tasks:

- Unoccupied spaces (acceptable losses and unacceptable losses)
- Building façades and interiors
- Facial identification
- Guarded facilities
- Automated Teller Machines and Night Depositories
- Parking facilities, parking garages, and covered space parking
- Parking lots and public parks
- Supermarket parking lots
- Fast food restaurants (lot and drive-through)
- Convenience stores and gas stations (pump areas)
- Single family residences (exterior doorways)
- Multi-family residences (common areas and mailbox)
- Senior housing (hallways and entrances)
- **Schools and institutions (parking and walkways)**
- Law enforcement, fire, ambulance, and other emergency service facilities
- Hotels and motels (parking, grounds, and walkways)

The following information is relative to parking areas, walkways, ATMs, night depositories, and facial recognition. Parking lots are a major concern when conducting security threat assessments. When one or more of the eleven conditions listed above are present, the new guidelines for parking lots change in the following manner.

2000 IESNA Standard

- Parking areas and walkways should be a minimum of 0.5 fc.
- Entrances and gateways should be a minimum of 10 fc.

New Guideline (With one or more of the eleven indicators present)

- Parking areas (open parking spaces) should be a minimum of 3.0 fc.
- Walkways should be a minimum of 0.6 fc.

Lighting is the only element in security planning for which there are recognized and generally accepted standards. Three often cited tables of standards are from the Illuminating Engineering Society of North America (IESNA), the Nuclear Regulatory Commission (NRC), and the Department of the Army (DOA). Of these, the IESNA standards are more conservative and are usually cited in corporate and industrial surveys and assessments.

The chart below shows recommended minimum levels of security lighting that are widely accepted norms for lighting in parking lots and entrances and are recognized by security experts throughout the world. These guidelines will apply where none of the eleven indicators given in IESNA publication G-1-03 are present.

APPLICATION	LUX	FOOT-CANDLES	NOTES
Large, open areas	5-20	0.5-2.0	Greater surrounding brightness requires higher illuminance in the space.
Buildings	5-20	0.5-2.0	Vertical luminance on the façade.
Perimeter/Fence	5	0.5	Luminance on the ground on either side of the fence.
Entrances	100	10	Luminance on the ground in the inspection area.
Gate houses	300	30	Luminance on the workplace in the house. Reduce during hours of darkness.

Lighting Handbook, (New York: IESNA Publications Department, 2000) chapter 29, page 18.

The table below may be used for applying guidelines for security lighting under IESNA Publication G-1-03.

APPLICATION	LUX	FOOT-CANDLES
General Parking Areas	30	3.0
Walkways	6-10	0.6 – 1.0
Parking Garages	60	6.0
Entrances	100	10.0
Automated Teller Machines	100	10.0
Storage Yards	5-20	0.5 – 2.0

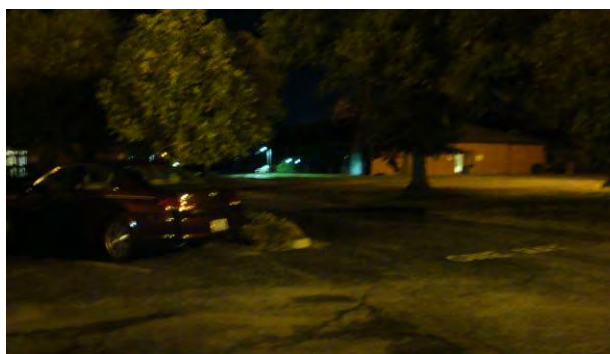
Lighting Survey

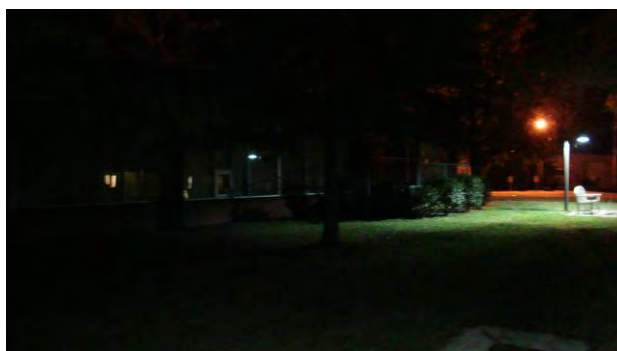
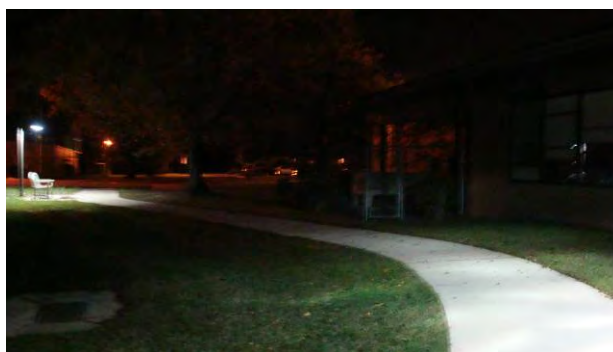
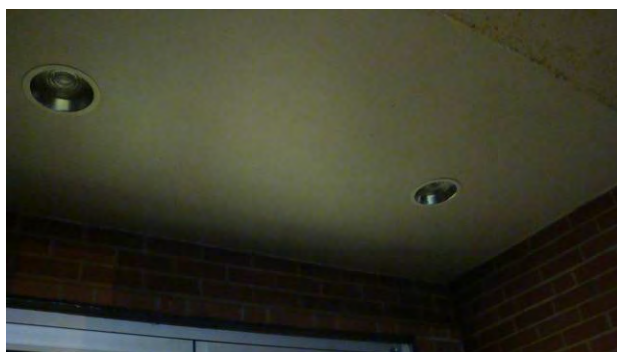
Light level in and around COA facilities is critical to three aspects of the security posture. First is the impediment and deterrent effect of lighting to incidental and opportunistic crime. Second, lighting is an enabler for casual and security surveillance by students, staff, visitors, security officers, and CCTV surveillance systems. Third, lighting schemes significantly affect the complexity of planning and conducting directed criminal activity against persons or property at the COA campuses areas during hours of darkness.

The lighting review at the COA Edenton-Chowan Campuses conducted on Tuesday, October 26, 2010. The weather was overcast but not raining. Light readings were taken using a Cook Cal-Light 400 meter. All readings are measured in foot-candles (fc). The physical areas of concern will be discussed relative to their geographical location on the campus.

Survey Summary

The Edenton-Chowan Campus lighting was pretty good with respect to the parking areas on the south side of the campus, and sidewalks were measured at or above accepted general industry standards when the lights were close enough together, not burned out or blocked by vegetation. Large trees and vegetation were blocking the effectiveness of the lights in specific areas and created dark areas that were below the general industry standards. Along the sidewalks that connected the campus buildings, there had recently been some lighting added that enhanced the security posture of the campus in addition to the safety. Lighting at building entrances were generally below the minimum standards at both campuses. In addition, the lights at the entrance to the ESC office were out which did not help the lighting at the entrance of the Edenton-Chowan Administration Building. All the lights should be evaluated and if possible maintained to the greatest lighting output possible. Lighting levels should be reviewed again after any maintenance on existing lights is complete and vegetation that is minimizing the effectiveness of light output is removed or brought up to CPTED minimum standards.





Parking Areas

The parking lots at the front of the campus were reviewed based on the minimum standards for lighting in parking lots. In areas of the lot where the existing lights were not obstructed by vegetation and the existing light fixtures were working, the lighting met the minimum standards. In areas of the parking lots where the parking spaces were shaded by trees or lights were not working, the lighting dropped below the minimum standards.

Entrances/Exits

Many of the building entrances/exits at this campus had light readings below general accepted standards. These lights should be evaluated for maximum lighting output which may require higher watt bulbs or fixture updates.

Sidewalks and Walkways

Many of the walkways at the COA Edenton-Chowan campuses were at or above accepted industry lighting standards. Illumination from the lights in place did a generally good job of illuminating the walkways as a whole though there were areas that fell below accepted standards.

Vulnerability: Low light conditions exist in the areas listed above.

Risk: A lack of adequate lighting can lead to injuries from trips and falls. Persons with nefarious intent can more easily conceal themselves in these low light areas thereby exploiting the low light levels to commit criminal activity.

Recommendations: Repair cycling light fixtures and replace burned out bulbs in fixtures. Add or install adequate lighting in areas that do not meet the minimum standards. Develop a procedure and timetable for the regular inspection and repair of campus lighting fixtures.

Parking Areas

Parking areas possess inherent vulnerabilities for all organizations and educational institutions, and the Elizabeth City campus is no exception. Typically, parking lots are the least protected areas for an organization. The parking areas are also the access point for students, staff, and visitors as they come to the school's facilities. They are usually on the outer edges of the campus property, and they contain items of value to persons on the outside as well as those within the campus community.

The Edenton-Chowan Administrative Building is in a busy shopping center that offers faculty, staff, and students adequate parking with day and night visibility. In addition the Edenton-Chowan Campus has a security presence on campus during all hours of operation. Most evening classes are held at the Administration Building. At the Edenton-Chowan Campus during the evening, the parking outside of the Culinary Arts building and to the side of the Edenton-Chowan Schools Technology Dept./Early College is used by the college and other constituents, and the arrangement has been successful.

Vulnerability: Items of value are being left in sight in vehicles parked on campus. Whether the vehicle is locked or unlocked, this creates vulnerabilities.

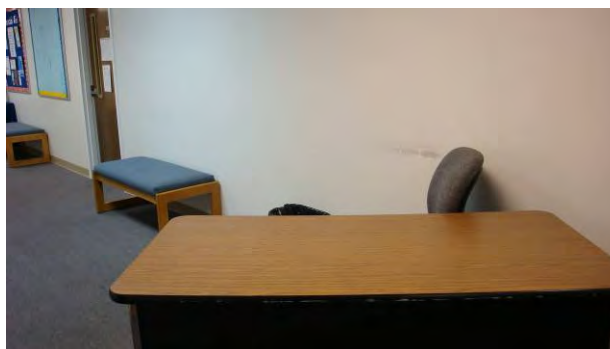
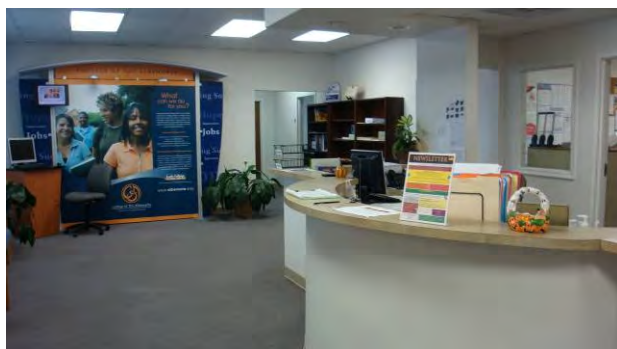
Risk: Unprotected assets draw persons with criminal intent in addition to criminal activity.

Recommendation: Provide signage and awareness training to change the behavior of the students, faculty, staff, and visitors who leave items of value in plain view in vehicles.

Building Perimeter

Another layer of security for the students, staff, visitors, and property continues with building access control. Historically, educational institutions have maintained open environments. This was because years ago the ebb and flow of students and staff throughout the school day was achieved with little or no incidents of violence. While the ebb and flow of traffic continues today, the increase in school violence from outsiders has increased, which is why building access control has become so paramount. Educational institutions have to rely on increased awareness of students, faculty, and staff to be vigilant about unauthorized intruders on campus. This is accomplished by making it easy for students and staff to identify who belongs there and who does not. In addition to that increased awareness, effective control requires that at a minimum, staff is trained to make contact with strangers in a way that fosters the positive engaging environment that is a part of the culture while enforcing access control policies and procedures.

An excellent tool to control access requires the determination, not less than annually, of the minimum number of exterior doors that should be unlocked at any given time. Whenever possible, it should be the policy at COA to manage access by utilizing only those exterior doors that are practical and/or absolutely necessary to the day-to-day operation of the campus. The security posture at the COA campuses with regard to doors and door hardware is good. During the day there is generally free access into and out of most of the buildings. The security presence at the Edenton-Chowan Campuses is filled by part-time COA employees who are current or former Department of Corrections security officers. The lead security officer works in conjunction with the Dean and other staff at the campus to provide a security presence campus wide during operating hours, and the lead security officer does spot checks at the campuses on weekends and holidays. The COA uses a hard key system of locks on all exterior doors. The custodial staff and maintenance is provided by the county and not COA employees. All of the buildings at the Edenton-Chowan Campuses are alarmed, and key holders have access to the alarm code. In addition ESC employees have access to the COA alarm code and vice versa. It is important to note that at Edenton-Chowan Administrative Building there are only two entrances. There is one entrance at the ESC office and one at the front door at the COA. This allows the staff to see anyone who enters or exits the building. This also makes it easy for the security officer to take a position where he has oversight as persons come into and exit the building. The buildings at the Edenton-Chowan Campus also have electronic sensors at the entrances that are activated as someone or something passes in front of the sensor. This sets off an audio signal that alerts others to activity in and out of the perimeter doors.



Vulnerability: There are multiple access points into the campus buildings.

Risk: An unauthorized person could enter and cause injury or damage.

Recommendation: Evaluate the need for more than one access into the campus on an on-going basis and develop policies to minimize the number of doors open when possible.

As already stated, the Edenton-Chowan Campus has security vulnerabilities associated with sharing its space with the community whether it be in the form of meetings or programs that use the COA facilities for programs unrelated to the college or organizations that have an on-going alliance with the college. This makes the layers of security even more critical and raises each layer to a higher level of criticality.

Lock and Key Review

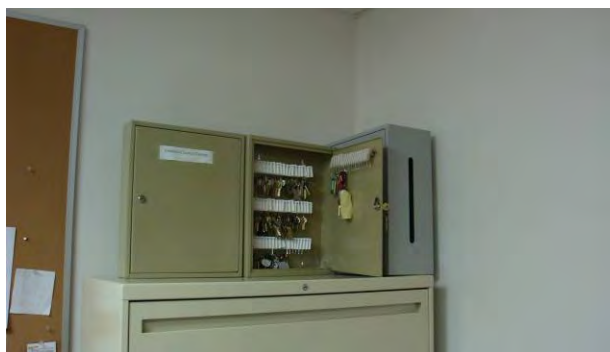
Lock and key control is integral to any security program. It is unlikely in any application that protection of students and property will be achieved without relying heavily upon locking devices. In as much as that is the case, when securing people and property there are always trade-offs among risk, cost, and convenience.

Our objective was to review specific aspects of the existing lock and key procedures at the Edenton-Chowan Campus. The purpose for this was to make recommendations for the key control program that would be consistent with the existing culture, administrative, and operational structure already established. Recommendations within this section will guide COA administration in maintaining the existing key program but will make provisions that elevate the level of security, are efficient and easy to manage, possess room for growth and restructuring, and have a contingency element designed for issues such as lost keys. The recommendations are also designed to conform with sound security industry practice.

A review of practices was conducted in an attempt to determine how the following three areas were managed:

- Key accountability for persons no longer employed at the facility
- Key accountability for employees currently employed at the facility
- Key requests and issuance and lost key reporting

Key control at the Edenton-Chowan Campus is controlled and managed from the Administration building by staff personnel who report to the Dean. The two staff persons who maintain the key control are also responsible for the monies for the campus. There is a master key system with sub master keys and classroom keys. All keys are kept in locked key cabinets that are inside several layers of security. The keys are inventoried and assigned by key number. The county is responsible for the maintenance and custodial services on campus,



and master keys are issued for this purpose. All the security officers have master keys to the facilities. All faculty and staff who are regular employees at work 25 hours per week or more have a front door key and an office key. Records are kept on all keys that are issued but it is unknown if all keys can be accounted for. The alarm system at the Administration Building requires a code to be entered to disarm or alarm the system. The code is not unique to the person but is one code for anyone who arms or disarms the system. The code is shared with key holders including those persons in security, the Dean, the county, and persons at the ESC office. At the Edenton-Chowan Campus each person who is able to arm and disarm the system has a code that is unique to them, thereby allowing the college the flexibility of identifying persons who arm or disarm the system.

The security officers are on the campus and move from one site to the other depending on the time of day and the schedule of programs. There is a security presence at all times when programs are in session. On the weekends and holidays, the security staff makes periodic spot checks at each of the campuses. Communication, computer servers, telephone equipment, and all critical electronic equipment are secured. Money is secured within multiple locked layers.

Vulnerability: The doors on campus are hard key operated using a master key system which is harder to account for and control.

Risk: There are keys or copies of keys that cannot be accounted for.

Recommendation:

1. Evaluate the key control system.
2. Reconcile and account for as many keys as possible. Keys that cannot be accounted for are a serious vulnerability and should be addressed by either disabling the locks or re-keying the locks as is feasible.
3. Establish a written key control policy that puts in place the necessary infrastructure to account for and control the issuance and identification of keys and key holders for each key. Minimize the number of keys that afford users access to campus buildings.

Vulnerability: At the Administrative Building there is only one alarm code, and it does not get changed on a regular basis.

Risk: There is no way for administrators to know who has accessed the buildings and who has not. Anyone with knowledge of the code can gain access to the facility with anonymity. With no cameras at the facility, even someone with nefarious intent and no key would be able to break in and disable the alarm.

Recommendation:

1. Work with the alarm system provider to use a system that requires each person with a code to the alarm/unarm the system to have a code unique to them. This will allow administrators to disable the codes of persons who lose their access status and accountability for the activation and deactivation of the alarm by persons with access.
2. The COA and the ESC office should have separate alarm systems and key control.
3. Maintenance and custodial staff should be vetted and have unique passwords.

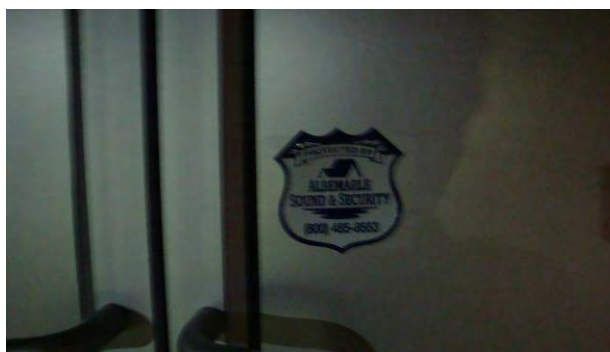
Electronic Security

In today's educational environment, electronic security is absolutely essential to a cost-effective security program. However, many school administrators, the persons actually responsible for protecting an organization's assets, are not very knowledgeable about electronic security equipment, manufacturers, and service providers. All too frequently, electronic security systems are installed, expanded, and modified on a continuing basis as the school's facilities and student and staff numbers increase. The result is a piece-meal system, with components and sub-systems that are not fully integrated or consistent with the environments standard-of-care.

Once administrators recognize that electronic security systems are only one tool in their overall security program, then they are able to create sound "system use" policies for their respective school. These policies will be the guiding force behind determining the best way to utilize electronic security systems.

In a properly designed and maintained system, each part enhances the other and all contribute to effective protection of school students, staff, visitors and property while remaining compatible with the school's operational requirements and environmental conditions. Systems integration is the most important factor when considering electronic security. Simply put, systems integration is the effective combination of interior and exterior intrusion detection sensors, controlled access points, television cameras and monitors, and alarm signal monitoring systems into one security system package that performs as a whole and complements the security personnel.

The Edenton-Chowan Campus has no cameras at either of the campuses. All the buildings are alarmed and the buildings at the Edenton-Chowan Campus have chimes that ring when something passes in front of the sensors located at the entrances. This is useful if someone knows what they are hearing because it puts persons' inside the building on notice that someone has entered or left the building. This is particularly helpful when integrated with cameras as a part of an overall security program. As already stated the alarm at the Administration building has one code for all authorized users. The system at the Edenton-Chowan Campus is specific to a user theoretically. Without the integration of cameras it still acts as a deterrent and notifies a central station that there has been a breach in the system. The central station contacts the lead security officer first and the Dean second in addition to local law enforcement.



The consultant endeavored to understand the electronic security posture at the campus and did not do a detailed study of the electronic components related to security. At any campus where there is growth over time and facilities built with varying degrees of electronic adaptability and limited resources, it is an on-going challenge to meet and maintain a cohesive electronic security program. The administration at the Edenton-Chowan Campuses appears to be doing a commendable job applying its security resources to best protect the physical and intellectual assets of the COA to include the people who enter its campus every day. Electronic security countermeasures are changing at an exponential rate, and the loss of a trusted vendor partner can be a critical blow to the overall security posture of the campus. Several college departments have responsibility for some aspect of the security program, including the electronic program, in addition to their other responsibilities with varying levels of electronic experience. This is completely normal but should be addressed in such a way that the integrity of the program is maintained and enhanced in a manner that is both efficient and cost effective for the college.

Vulnerability: Most organizations are unable to utilize and benefit from the effective use of electronic security products because they lack the subject matter expertise necessary to develop, manage, and maintain a comprehensive plan.

Risk: Persons could be injured or the COA may suffer losses to reputation or assets that could have been avoided or at least mitigated using the electronic security elements that are already in place.

Recommendation: Contract with an unbiased security expert to review the electronic security in place in detail. Find out what is working and what is not and why and develop a plan of action that can be augmented over time based on sound security principles. The electronic security posture of the college is excellent, and there are elements already in place that could be integrated into the plan with minimal expense that would enhance the other layers of security in place. The use of electronic security is only going to continue to grow, and the costs associated with its implementation will continue to go down. With the change in vendors, this is the perfect opportunity to develop a relationship to use the existing infrastructure as a foundation that can be enhanced as necessary.

Philosophy, Policies, and Procedures

An analogy that RMA consultants like to use to simplify concepts of security is the comparison of a comprehensive security program to that of an onion. If viewed from the highest level, a security plan utilizing a layering approach is similar to the onion's physical make-up. Layers of security must be established in order to protect students, staff, visitors, and assets (all at the center of the onion.) The first layers must be clear and thorough policies and a focused security philosophy and approach. Both must be supported by the administration and their adherence insisted upon.

The COA campuses makes available to students, faculty, and staff copies of the student and employee handbooks in various mediums. There were no guidelines or procedures found for security-related grounds maintenance such as what height vegetation should be trimmed, or when and how lighting should be checked for outages or insufficiency, or a procedure to insure that lighting deficiencies or failures are corrected within a reasonable timeframe.

Vulnerability: Insufficient light and vegetation that blocks either the effectiveness of lighting or casual surveillance increases the perceived opportunity to gain access to assets.

Risk: Persons could be injured or the COA may suffer losses to reputation or assets.

Recommendation: There should be written policies and procedures that identify responsibilities for auditing the lights on a schedule of not less than monthly to identify fixtures that are not working and schedule corrective action. The same process should be completed from a CPTED perspective to ensure that conditions have not changed to increase the opportunity for someone with nefarious intent to commit a crime.

Background Investigations

Most hiring processes include an effort to assess the applicant's skill set, knowledge base, and past performance in an attempt to select the candidate most likely to become a productive, contributing member of the organization. Interviews are often conducted with finalists to narrow the field and to find the person that "fits" best in the organizational culture. References are contacted, education is verified, and the past training and experience of the candidate is determined. Unfortunately, many people seeking employment intentionally provide false, misleading, or inaccurate information. It has been estimated that 30% of all applications are falsified in some fashion and 45% of all résumés contain false or exaggerated information. One in ten applicants falsifies their name, social security number or driver's license number in an effort to hide criminal convictions. Applications often contain gaps in employment and the intentional omission of residences to avoid revealing jurisdictions where the candidate may have had encounters with the criminal justice system that they hope to hide.

Administrators must make every effort to ensure that the potential employee is not only qualified for the position, but also has the character and reputation necessary to represent the values of the organization. In educational institutions, the effort to ensure that the innocent student is not exposed to the predators who are attracted to such environments requires a proactive and well documented approach in the hiring process. Additional requirements should be established to alert administrators to potential threats posed by employees after they are hired. The concern about the employee's character and reputation should be on-going and not cast aside after employment.

At the COA the Human Resources Director is responsible for the activities that are associated with the hiring and vetting of new employees. Candidates are required to complete and submit a COA Application for Employment that is very thorough with the exception of former addresses (back seven years). The application does ask for three former employers and three references, and it requires that applicants sign a "Certificate of Applicant" where they certify that the information is true, that it may be used for investigative purposes, and that misrepresentation and

falsification are grounds for dismissal. The background investigative process at the COA is to call and check the references provided by the applicant, but no developed references are attempted. In some instances former and/or the current employer is contacted. The school uses the e-Verify system to verify the candidate's social security number and name match in addition to the I-9 requirements which is very important. Employment with the COA is based on a contract that can be annual or adjusted based on the need. This applies to full-time and part-time positions, and everyone begins with an initial probationary employment period.

Vulnerability: Current full-time or part-time new hires are not completely vetted. All of these persons have access to assets, both human and material.

Risks: Someone could be or has been hired that has a discoverable potential for committing crime and may utilize that potential on COA property.

Recommendation: A potential employee should be required to provide a list of residences within the past ten years including the dates of residence. This information should be used to check for criminal records. Criminal records should be checked in any jurisdiction in which the candidate lived, worked, or went to school. Furthermore, checks should be made to verify past addresses, past employment, and past education, and developed character references should be attempted.

It is recommended that there also be a periodic review of the employee's criminal record. Employees should be required to report to a supervisor their arrest for any crime while employed at any campus at the COA. Management can then make an informed decision as to the continued employment and/or status of the employee pending the outcome of that criminal process. It is suggested that during an employee's annual review, he or she be specifically asked if he or she has been arrested or convicted of any criminal offense within the previous year. There should be periodic updates of the criminal records database checks on employees to ensure compliance with this requirement.

A common vulnerability at many campuses is the lack of vetting of contractors who work on site. Background investigative requirements should be a requirement of any contract company or person who works on any of the COA campuses. No contract employees should be allowed on site without verification of the completed requirement. This is especially important at the Edenton-Chowan Campuses because the maintenance and custodial functions are provided by county employees and not COA employees creating vulnerabilities for the college and its associated assets. In addition at the Administration Building there have been instances where volunteers, work/study students, and middle school student "job shadowers" have access to college assets with little or no vetting. Work/study students do sign a confidentiality agreement.

Vulnerability: Someone working for a contract company is allowed access to people, sensitive information and other school assets and has a discoverable potential for committing crime.

Risk: School assets may be adversely affected by contractors on campus.

Recommendations: The COA should include in all contracts for service specific requirements that contractors must meet before any of their personnel are allowed on a campus. The policy needs to be specific and hold contractors accountable for the actions of their personnel on college property.

Cash Handling

Cash handling on campus is taken seriously. At the Edenton-Chowan Campus there are two cashiers who work the reception desk and the cashier window during the day and are responsible for the monies collected on campus. All monies at the campus are brought to the business office which is located behind the reception desk. On a daily basis the monies are reported, balanced, deposited, and audited daily. Deposits are made by the security officer on a daily basis. Petty cash is stored in a cash box, and the business office has a safe which is not on the floor or bolted down but appeared to be adequate. Monies that are turned into the business office when there is no cashier available are placed through a slot in a locked cash box which is opened by the cashier the next business day. Although no written policies were received, the process for the handling of moneys, the separation of duties, and the audit function appeared to meet the needs of the COA. There is no bookstore or library at the Edenton-Chowan Campus, so students either purchase books in Elizabeth City or on-line.



Identification Badges

A key element of security at any school is the control of access onto and within the campus and the ability to recognize those persons who belong there and those who do not. The COA issues identification cards/badges to all full-time staff and faculty. According to the Employee Identification Cards policy, employees are required to have and display their ID cards and replace them at a nominal replacement fee if they are lost, stolen, damaged, or broken. At this time the badges do not expire. There are no visitor badge requirements and no policy or signage that directs the behavior of visitors or contractors. Students are issued identification cards and are instructed to carry them. If staff or faculty requests that a student show their identification card

and the student is unable to, faculty and staff are allowed to ask the person to leave the campus until such time that they have their identification card.

Vulnerability: There is no way to know who belongs on campus and who does not. Persons with nefarious intent can easily blend in with faculty, staff, or student populations.

Risk: An unauthorized person could cause injury or asset loss.

Recommendation: Require all COA personnel to have and wear their identification badges at all times while on COA property. Train all faculty and staff at least annually on security related policies and procedures and include the importance of the badges in the overall security program. Encourage security vigilance throughout the campus by all to include but not be limited to faculty, staff, students, contractors, and visitors.

Vulnerability: Visitors with nefarious intent can get access to assets on campus.

Risk: An unauthorized person could cause injury or asset loss.

Recommendation: Create a generic contractor badge that is numbered and require that all contractors working on COA campuses wear the badges any time they are on COA property.

Vulnerability: Visitors with nefarious intent can get access to assets on campus.

Risk: An unauthorized person could cause injury or asset loss.

Recommendation: Put in place signage that directs all visitors to a central location, ask them to sign-in, and provide them with a visitors badge that they should wear at all times while on the campus.

Security Personnel

Overview

Over time the concept of “security” has evolved into several models and applications. The diversity of contemporary threats, the variations in organizational culture from entity to entity, and the differences among these entities in their capacity and will to commit resources to security needs has influenced the emergence of the conceptual model referred to as “integrated security.” This model is a dynamic and flexible approach to maintaining a security posture and protective envelope by using unique combinations of systems and functions available to the planner so as to best fit the culture, budget and operational requirements of an individual site or organization.

There are three principal parts of an integrated security plan: personnel, systems, and procedures. Each of these components serves to augment the effectiveness of the other and to permit the use of each in a unique formula determined by the difference between facilities. The development of advanced electronic security systems over the past few decades has greatly expanded the application and capabilities of various security hardware devices. Litigation in security and safety matters, governmental regulations and requirements, and the expectations of the recent generations to be guaranteed a safe and secure environment have increased the absolute necessity of developing and promulgating written plans, policies and procedures both as management guidance and as operational instructions and orders during times of crisis.

As a concept, integrated security offers a wide range of flexibility for the security planner and administrator in developing practical and sustainable security plan. While the advances in technology have vastly increased the capability and reliability of security systems, technology has not and cannot replicate or replace security personnel or the role they play within the integrated security concept. There is a tendency to see technological applications as a remedy to all modern problems and security is no exception. As opposed to the perception as an end solution, technology should only be viewed as an additional tool to be used by an intelligent and trained human operator.

The use of technology in security systems serves to extend the presence and enhance the efficiency of security personnel. The roles served by a security program are to observe, detect, identify, and respond to actions, events, or incidents that might compromise the security and safety of the site. Technology applications such as CCTV surveillance and alarm systems provide for constant observation of areas, items, ingress/egress points, and passive and active alarm systems. This extends the capability of a human asset by passively monitoring static conditions and sensing changes. CCTV extends the scope of visual observation to many times the effectiveness of a single human observer at a single fixed post or along a patrol route. These described functions serve the first two functions of the security program. The application of systems and technology to security problems can remotely monitor, view, and record images, and log and record activity on security networks. Systems will detect those conditions that they are programmed or designed for, but other than communicate automatically with a human asset, systems and technology offers no capacity for responding to a security threat or intellectually investigating an unusual or suspicious condition beyond their programming.

The integrated security planning continues to place a human asset at the center. Using a CCTV surveillance system as an example, it has the automatic capacity to view in real time, transmit images to a screen, and record images on a media for later retrieval. There is software to enable the detection of movement in the electronic field-of-view which will trigger the system to go into alarm and cause other automatic functions to be performed. After the fact, the system can provide recorded images for investigative and identification purposes. These are valuable technological tools, but all of these features are ultimately dependent on a human asset.

Effective monitoring of an alarm system is also a human asset centered model. Although contract alarm monitoring relieves proprietary personnel of the responsibility of monitoring the system and responding to a notification, the human asset is still at the center of the system, only outsourced to a contractor. There are very few police or fire departments that offer the services of primary monitoring of the respective proprietary intrusion and fire alarm systems. In the vast majority of jurisdictions, the alarm panel processes the alarm device signal and either notifies a contract monitoring station or dials up the public safety responder directly. Direct dial up notifications do not provide exact information about the internal location or nature of the condition that the system has detected. The primary reason that most public safety agencies do not accept direct alarm reports from proprietary systems is that without some degree of analysis and verification by a human asset, the potential for false reporting is too high.

Although electronic applications can observe and report autonomously, they cannot physically respond to an event. Notifications may trigger responses by other human asset systems, but technology alone cannot interdict a crime or security incident. It may be possible for an electronic security system to be elaborate enough to fully observe and monitor all parts of a site or facility. However, this alternative would be extraordinarily expensive to install and maintain and would be largely directed against static threats. Missing in all the software and smart technology is the capacity to understand, reason, modify parameters, and adjust to situations caused by the most variable of all the factors confronting security planners, other human beings.

The use of technology has served to enhance and augment the efficiency and reliability of integrated security programs. When well-balanced, the appropriate use of technology increases the value of the human security asset to a degree that may well allow for certain reductions in force without diminishing the protective envelope. The central concept of integrated security planning is to combine the general tools and assets available to the planner in a unique manner to achieve a standard of protection within the culture, budget and operational condition at any individual site. Underlying this is the premise that a good system requires the use of all of the components to some degree to reinforce each other, with none being replaced completely through the use of the others.

The human component of an integrated security plan can be in one or more of several forms. These forms become choices that need to be addressed depending on the mission, environment, culture, population and security philosophy of the organization and specifically the site to be protected. The choices will impact the security posture in that each will have a bearing on the necessary accommodations that must be made using the other two tools, systems and procedures.

Uniformed versus Non-uniformed

Whether or not to put security personnel in a distinctive uniform is one of the most obvious choices. There are a number of internal and external factors that may be considered. A uniformed security officer is readily recognizable as serving in the security role. In our culture, we are accustomed to seeing uniformed police and security personnel on a routine basis. The presence of the uniformed officer suggests significant guardianship at the facility and presents the functional equivalent of defensible space, even in the absence of defined perimeters. Two

positive attributes attach to the use of the uniform. First, there is an obvious deterrent effect in having such an officer, which by suggesting guardianship, may very well deter a crime or action at the protected site and shift the perpetrator's focus elsewhere. Second is the positive effect on the protected population in that the recognized presence typically increases their sense of well being and an associated increase in compliance with security procedures and their identification with the security program. The uniform also contributes to organizational identity within the security force, an identity link to the institution, and, ideally, to *esprit de corps* among the officers.

There are various operational security roles that are performed away from public view. Certainly, it is not essential that these roles involve the wearing of a uniform, so long as there is no public exposure, such as the security console operator. Plain-clothes personnel are able to move about the facility without undue attention from either the population or the outside public which may be an advantage in investigation or targeted security operations. The role of the security officer is first and foremost to observe and report, which arguably may be conducted as well without a uniform.

Armed versus Unarmed Officers

In this context, the term "armed" is intended to mean equipped with firearms and prepared to use deadly force when required. Firearms are not intended for non-lethal force situations. There are several non-lethal weapons that can be issued and used by security officers, such as batons, capsaicin spray and tasers. For the purpose of this discussion, these will be part of the equipment issued to "unarmed" security personnel.

Armed security officers are generally issued sidearms and trained for defensive use of the weapon. As such, a uniformed security officer who is not a law enforcement officer has little justification for carrying a firearm beyond the need for self-defense. Security officers protecting high-value facilities which might attract attack from armed and dedicated perpetrators may very well have need of this level of training and equipment for self-defense. The level of training required for an armed officer to safely use a firearm in a security operations environment is extraordinarily high, approaching that required of law enforcement officers. Very few armed guard training programs approach the standards required of law enforcement officers in any jurisdiction.

Proprietary versus Contract Officers

Basically, there are only two organizational relationships for the security officer. A proprietary officer is an employee of the entity that is being protected. As such, the general operational details such as recruiting, training, scheduling, administration of wages and benefits, discipline, and promotion are the responsibility of the company or institution. Usually, proprietary forces enjoy longer tenure and less turnover, though they are more expensive to operate. The intangible factors such as loyalty, organizational identification, ownership of the roles are thought to be stronger also. Discipline and termination are more tedious in proprietary forces, as the security officers generally have the same employment protection as other employees.

Contract forces are thought to be somewhat less expensive and easier to administer. Most security companies assign a project manager to a contract site to handle liaison, scheduling, discipline and wage/benefit administration. The contracting entity or facility need only communicate with the contracting company regarding post requirements, role performance, standards, and expectations. The contractor is responsible for filling the roster, staffing posts and patrols, evaluating personnel, and effecting discipline and terminations where required. In most cases, the protected entity has a right-of-refusal for contract security officers assigned to their site.

Full time versus Part time

These terms may reflect two choices that must be made regarding the staffing of the posts and roles. A full-time security force would be comprised of employees or contract personnel who are employed on a full-time basis, with the associated benefits and protections afforded that status. If the force is from a contract service provider, the point is moot, as the staffing details will be the contractor's responsibility. In a proprietary force, however, the use of part-time personnel can be a cost saving strategy as there are no full-time benefits required. A part-time force requires a larger pool of officers to fill the schedule with the associated increase in scheduling difficulties, often related to employees other job demands.

Part-time forces present more problems in providing training because of the large pool of personnel. Turnover among part-time security employees may vary, depending on the situation. A part-time force made up of otherwise fully employed personnel seeking to augment their incomes may be very stable. Such a force consisting of personnel working only part-time may be less stable as personnel seek and gain full-time employment elsewhere. Both of these elements may be affected by the location of the force. In a small town environment, the tenure may be greater than in a more dense metropolitan setting with a more mobile and fluid workforce. In a smaller force, the flexibility and versatility of using part-time personnel may be a significant advantage.

Sworn versus Non-sworn

Probably the most profound choice in the paradigm is between sworn and non-sworn officers. A sworn officer is one who is duly authorized under statute as a law enforcement officer of competent jurisdiction at the facility or site. As such, the officer must be part of a commissioned police agency or sheriff's department. North Carolina has provisions for private special police who are empowered as law enforcement officers on the premises that they are contracted to protect. North Carolina statutes also empower campus police departments for colleges and universities across the state. A sworn officer may make arrests and use force including deadly force under color of law. In almost all cases, sworn officers in North Carolina are armed as police officers.

The police power entrusted to a sworn officer is reserved for violations of law. There is no additional power over a facility population related to enforcing of rules and regulations that are not codified as part of the state law and local ordinances. This authority offers little advantage in performing the traditional roles of the security officer. On campuses with resident populations, in effect miniature cities, there is an advantage to using sworn police as a additional protection in that they can enforce law without calling for assistance from the jurisdiction. Routine security duties do not require enforcing law and ordinances, and this authority does not enhance the effectiveness of the security program in most other kinds of facilities. The one possible exception would be a facility that is extraordinarily remote with little police service available for emergency response. Sworn status expands the duty of the officer to that of a public officer in the jurisdiction, thereby creating the potential for conflict between the interests of the site and those of the public at large.

Non-sworn security officers are trained to focus on proactive security procedures and processes as opposed to reactive enforcement of law and the complexities of this role. If a facility is within the jurisdiction of a well-organized and staffed law enforcement agency, sworn, trained police service is immediately available through 911. In most circumstances, if the need arises for sworn officers to reinforce or augment the security force in non-emergency situations, they can be obtained from the local department as off-duty, part-time assistance.

These are not subtle differences, and the expectations of the security program should be carefully examined with regard to the benefit of officers having arrest power.

Security Staff

The COA has no full-time security director for the college. The responsibilities for security are under the purview of the Business and Finance Vice President and the implementation of the security program is shared by the Services, Facilities, IT, HR departments as well as administrators at each of the campuses and the campus security officers. Administrators understand the importance of security and the professionals from the different disciplines work together to secure the COA campuses and harden them and their associated assets against harm. During the day, security functions are primarily the responsibility of the lead security officer who works closely with the Dean and staff to oversee the day-to-day security posture at the campuses. The officers use the campus phone system, cell phones, and a radio system as communication devices depending on the situation. In addition the COA has a proprietary software that they developed that allows administrators to dispatch emergency warnings over the network to every computer across the whole system. For weather related alerts, the college uses the Alert Now system which sends notification to persons who have signed up to receive them in both the text and voice methods. In addition, the Edenton-Chowan Campus has a good working relationship with both local law enforcement and encourages them to be visible on and around the campuses. All faculty and staff are also provided with Incident Report Forms and Accident Report Forms and instructions as to the submission of these forms which appears to be working effectively.

The lead security officer is a retired 30-year Department of Corrections officer, and he has a team of other DOC officers who all work part-time and who provide a security presence during all the hours that the college is in operation. The officers are non-sworn and not authorized to carry a firearm. Officers are outfitted with uniforms that include outerwear to be worn as necessary and a badge. Candidates are required to have a least a high school education, have a valid driver's license, and be certified in CPR and first aid. In addition to uniforms, the COA provides the officers with a college cell phone, radios when necessary, an office, and a computer. The college does not have written post orders but they do provide examples of the duties that the security officers are expected to perform:

- Serves as additional visible security presence particularly to alert college police officers of matters pertaining to campus security issues.
- Patrols in and around campus including parking lots before, during, and after business and school hours on foot, bicycle, or vehicle.
- Enforces parking regulations on campus and issues parking citations as necessary; inputs citations into computer.
- Responds as needed to campus safety and security calls.
- Notifies supervisor of suspected illegal activity on campus property; reports hazardous and unusual conditions or malfunctions observed.
- Inspects for and prevents vandalism, illegal entry, theft, and fire.
- Identifies, observes, and questions persons on campus grounds when the reasons for their presence or intentions are questionable.
- Physically restrains persons involved in crimes, fights, or other acts of violence pending the arrival of sworn officers. (Based on interviews, the current company policy is for the officers to control the scene but not physically restrain anyone.)
- Takes non-police incident reports or complaints from students, visitors, faculty, and staff.
- Conducts routine investigations of minor campus incidents.
- Receives and responds to requests for help and assistance for ill, injured, or disabled persons; administers basic first aid and CPR according to established guidelines.
- Opens and closes classrooms; may provide security services for special events; controls traffic and places traffic barricades as appropriate.
- Answers questions and directs students and visitors.
- Provides routine assistance to the college population in situations such as a flat tire, keys locked in car, or dead car battery.
- Performs related duties as required.

Based on the schedule of classes and events at the Edenton-Chowan Campuses, the security officer's roles are to administer and support the college's security program by controlling the access into buildings when not necessary, giving a face to the presence of security on the campus, enforce campus rules and regulations, and liaison with local law enforcement and the campus administration as well as staff, faculty, students and guests.

The current model in use at the Edenton-Chowan Campus recruits part time security officers from a pool of local NC Department of Corrections officers. This is an excellent strategy in that these officers are vetted, seasoned, and experienced in dealing with a difficult population, accustomed to a paramilitary chain-of-command and procedures and orders defining their roles. While custodial guard training is different in some ways from civilian security guard training, it has enough similarities to serve as a foundation for other site-specific orientation. The model and strategy seem to be adequate and well thought out when considered in relation to the choices and parameters described previously in this report. The scheduling of security officers for duty during all activities at the site seems to be adequate in a non-residential campus setting and in the absence of valuable, dangerous, or rare items and materials on campus.

There is no driving justification for use of sworn officers as a routine security measure, but the process for obtaining off-duty police personnel should be developed and maintained to guarantee such assistance when needed. Uniformed officers are advisable for recognition purposes and for any deterrent effect it may have on potential perpetrators. The part-time model seems to be successful and economical for the organization.

The campus is within the city limits of Edenton and served by the Edenton Police Department. Armed police officers are available to respond at all times via 911. Given the level of police activity in the area and the community service orientation of a number of the calls for service, it is reasonable to conclude that there is a high police presence in the area and response time to an emergency call would be very quick. As such, there is no reason to consider arming security officers with firearms. Consideration to the use of non-lethal devices may be considered based on training load and direct cost of the equipment. This is another advantage of using the off-duty NCDOC personnel for they most likely have already been trained and certified in the use of these weapons.

Vulnerability: As with any critical role, the tasks and responsibilities of the security officer need to be specifically defined both for the benefit of the officer trying to adequately perform them, the administrator controlling and evaluating them, and the institution that may need to defend the actions in the face of liability. Post orders need not be elaborate, but they should exist in a cogent and understandable format, specifying tasks, outlining approved procedures, and identifying parameters for adequate performance.

The campus has job descriptors applying to the security officer's duties and roles, but they do not rise to the level of adequate post orders. Discretion is necessary the performance of the security officer's duties, but this discretion must be within defined responsibilities and guided by specific procedures found in post orders. No matter how experienced the officer and regardless of the officer's background, security post orders are essential because it sets the expectation that the college has for the role of the officers.

Risk: Performance of the security role may inadequate, oversight and discipline may be difficult, and the institution may be liable for acts or omissions that are not properly delineated and defined.

Recommendation: Basic post orders should be written for each security post and role. Coordination between campuses may make this task less burdensome. Each campus should have such post orders, and the roles and responsibilities should be similar enough to allow the preparation of a standard template that can be modified for each individual site.



Security Threat Analysis

Prepared for

**College of the Albemarle
Dare County Campus**

November 2010

Prepared by

RISK MANAGEMENT ASSOCIATES, INC.



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BACKGROUND

In October 2010, Risk Management Associates, Inc. (RMA) was awarded the contract to perform a Security Threat Analysis at the College of the Albemarle (COA). The purpose of the analysis was to evaluate the security threats at each of the campuses, identify gaps in the current security program, and recommend measures that the College should consider going forward to mitigate risk levels and the severity of risks. Included in this assessment was a review of the current security officer program that is already in place at the Elizabeth City and Edenton campuses to determine the necessity and effectiveness of the current system to meet the security needs of the college currently and in the future to mitigate the risks identified. In assessing risk at each campus, RMA evaluated the physical risk to employees, students, and guests, evaluated risks to property, and determined the potential threats to employees and/or property.

The objective of this project was to assess the current security posture for each of the five campuses. RMA assessed the use of best practices and security standards consistent with the culture and operational needs using physical surveys of the facilities, interviews with staff and managers, and observation of operations.

The ultimate objective is to provide the College of the Albemarle with the information that they can use as a guideline to improve security across the system using an appropriate blend of technology, people, and processes to increase the safety and well-being of the staff, students, vendors, and visitors at each campus.

Study Methods

In a security threat assessment, the standard practice is to identify potential threats, predict their probability, and determine their criticality should such an event occur. This means that an organization must first identify specific threats for which protection may be required. Second, it must determine the likelihood of each of those individual threats becoming a reality and third, it must attempt to determine the resulting effect on staff, students, visitors, the community, property, and operation.

The next part of the study is the physical and operational security survey. In this survey, the security devices, systems, and practices are inventoried and rated for effectiveness. This includes examination of barriers and perimeters, access control, doors and windows, locks, access control systems, key and access device control, surveillance, alarms, procedures, security staffing, police support, and other systems and processes that contribute to the security posture.

The result of this survey and assessment is then compared with the threat profile. Those threats that are not addressed and effectively counteracted by components of the security program and infrastructure are deemed to be vulnerabilities. This process drives the formulation and selection of recommendations for specific measures adequate to counter the unaddressed threats.

Typically threats become actual events because the vulnerability to a threat is not recognized, countermeasures are not effective, or the threat has changed. Physical facilities, security systems, security programs, staff, students, and visitors all change over time and for this reason, the security threat assessment process must be ongoing.

The assessment of the Dare County Campus was conducted on October 25-26, 2010. The threats identified within this report are relevant to the known facts about the assessed facilities, property, staff, policies, procedures and operations at the time of the assessment. Any modifications, additions, operational changes, or omissions of information pertaining to the facilities could have an effect on the threat assessment recommendations set forth within this document.

During the course of the study, photographs were taken of specific conditions observed on campus. These photographs were designed to assist the consultants in formulating their recommendations. However, they may also be of assistance to administrators responsible for making decisions concerning the outcome of this study. For that reason, the appropriate photographs are included within the report to illustrate the observations and findings.

Location Information

The College of the Albemarle's Dare County Campus is really two campuses, both of which are located in Manteo in Dare County. The first is the Russell Twiford Campus located at 132 Russell Twiford Road. The second is the Roanoke Island Campus about a mile away from the first campus at 205 Highway 64 South Business. Both campuses in Dare County work in conjunction with the Elizabeth City and Edenton campuses to provide programs and services based on the educational needs of the surrounding community and the mission of the community college program state wide.

Programs Offered
Basic Adult Education Programs
College Transfer Programs
Corporate & Continuing Education Programs
General Education Programs
Industry Service Programs
Technical and Vocational Training

The Russell Twiford campus is located just off of US Highway 64/US-264/US-64 on Twiford Road. The location of the campus makes it ideal for the Marine Sciences Technology programs that are offered at the campus as it backs up to a tributary of the Roanoke Sound on the north side of the campus. Originally one of the buildings was converted from a roller rink in the mid-1980's, and the Diane Baum St. Clair Technology Education Center was built in 2000. West of the campus are a small group of industrial-type businesses and to the east is an upscale housing community offering scenic views of the water. The campus consists of three buildings with a connection between two of the buildings and a system of covered and uncovered boardwalks with chairs that give the campus a warm and inviting feel and would seem to encourage environmental community.



The Roanoke Island Campus is located off of US Highway 64 and is the larger of the two campuses. Included at this campus are buildings that the COA leased from Dare County in 2007. The original buildings on this campus were part of the old Manteo Middle School and the college has a 40 year lease for the buildings. The COA in 2010 added a “state of the art” professional arts building and a boat garage in addition to the four other facilities on the campus.



Assessment Summary

The goal of security risk management is to manage risk proactively and in the most cost-effective manner possible. The fact of the matter is “security” is a philosophy. It is a state of mind equal in importance to that of applications and countermeasures. That philosophy must be developed at the administrative level, reflected in the business plan, and allocated appropriate resources. In addition it must be understood at the Board of Trustees level, consistently applied at the campus, and staff level, and accepted at the parent, student, and visitor level while promoting a positive educational environment. It is the responsibility of all individuals to play a role in security, but it is the administration’s responsibility to develop a comprehensive security conscious environment, to train its stakeholders in security awareness, and to require observance of security policy and procedures of persons who traverse the environment.

Crime Theory

Requires the convergence of:

- Desirable object or objective
- Motivated perpetrator
- Lack of effective guardianship

Security seeks to provide guardianship

While conceptually the idea of a security philosophy is easy to write and understand, practically, it will be more challenging and will require planning and education to develop the trust and buy-in from all constituents. The potential for a security event occurring at one of the COA Dare County Campuses has been analyzed, and the areas of concern are discussed within this report. Recommendations for

methods to reduce risks and ensure a safe environment are explained in the next section of this report. Every attempt was made to make recommendations that the administration could fit into the campus’ culture, operations, and environment.

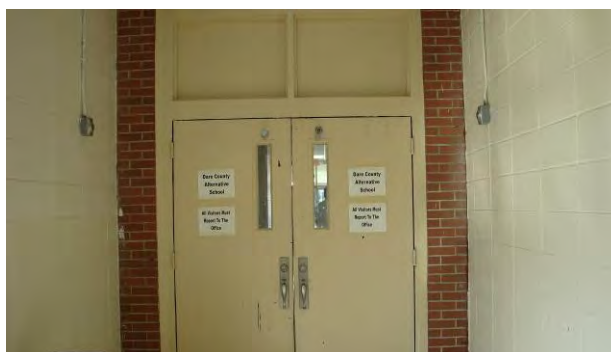
The recommendations proposed in this report are derived from various security-related disciplines. They include training staff the responsible for the COA security functions at the different levels and campuses, preventing unauthorized entry, and controlling access onto/into controlled space, improving the lighting, maximizing the effectiveness of existing electronic security systems and enhancing these systems where practical, and the appropriate application of accepted security techniques, procedures, and policies by the collective COA faculty and staff.

There are three sources of threat that have been identified as applying to each of the COA campuses.

- Opportunistic crime
- Incidental crime
- Student/Employee/Staff related problems and crime

Opportunistic Crime – COA campuses offer the typical academic setting that attracts the interest of opportunistic criminals, those looking for a target of opportunity for theft, robbery, or other lesser criminal acts. The offices have parking lots filled with cars. The staff and students consist of apparently affluent, well-dressed people with nice automobiles. Such facilities contain computers, televisions, electronic business equipment such as copiers and fax machines, personal belongings of the staff and students, and the suggestion or presence of at least some cash. Aside from the unique nature of the potential personal threats, the facility faces the ubiquitous threat to equipment, money, and belongings from ordinary thieves and burglars.

Incidental Crime – A COA campus is a congregation point for a subset of the population seeking the services provided there. The level of maturity and the circumstances that lead students to the COA is varied from students who as a part of their adjudication are required to attend classes that make it possible for them to attain a GED to the highly mature student working towards an Associate's Degree or other certification. In addition the



COA campuses provide a valuable service in the form of a wide range of Continuing Education opportunities. Unique to the Roanoke Island Campus is an alternative high school which is housed in the northern most building on campus down a corridor from the Culinary Arts building. The alternative high school is cut off from the rest of the building by locked doors on the corridor, but it does put these students in close proximity to the COA campus and associated assets. Incidents may result from interactions between individuals or groups that happen to cross paths at a COA campus, with no other relationship to the COA except that the facility was the meeting point. Such incidents may result from domestic strife between individuals known to each other or between individuals who are not acquainted but have a problem related to the stress of the moment or other causation apart from the purpose of their attendance at the COA.

Employee/Staff/Student-related Crime – This includes the typical potential for workplace violence between employees. This also includes the potential for domestic violence which is a universal threat in any workplace. Violent spouses or significant others tend to seek estranged partners at work or blame others in the workplace for their domestic problems. This threat category also includes theft by employees of the COA property, the property of other employees or customers, and the misuse, diversion or theft of sensitive information.

In Risk Management Associates' professional opinion, COA and the Dare County Campuses are challenged with six primary security risk areas and the vulnerabilities associated with those risks. These risk areas and vulnerabilities are prioritized below:

1. Risks associated with the lack of a comprehensive college security program.
2. Risks associated with exponential growth and limited resources.
3. Risks associated with limited building access control.
4. Risks associated with limited campus perimeter control.
5. Risks associated with limited campus visitor management.
6. Risks associated with limited communication, training, and practice of security plans.

Risk Management Associates, Inc. adheres to the traditional risk management model and recommends the same practice to our clients. That model, in its broadest sense, involves the use of five principal management methods:

<i>Risk Avoidance</i>	This involves the removal of the target.
<i>Risk Reduction</i>	This technique calls for minimizing the potential loss as much as possible.
<i>Risk Spreading</i>	The potential target is spread over as large an area as possible.
<i>Risk Transfer</i>	Perhaps the most overused, the risk is transferred to other parties such as insurance companies.
<i>Risk Acceptance</i>	There may be times that a decision must be made to simply accept the risk.

The administration of the COA is now faced with the decision of choosing one or more of these methods to deal with the risks on a regional level and local level. In the consultants' opinion, the three methods that are most relevant to the COA, including the Dare County Campus' security condition, are *Risk Reduction*, *Risk Transfer*, and *Risk Avoidance*. In our opinion, *Risk Spreading* and *Risk Acceptance* may be necessary but strongly recommend that they when possible are viewed as not viable alternatives due to the potential repercussions associated with these should a security event take place.

Administration should analyze the recommendations included within this report. Subsequently they should determine how and/or if to incorporate them into the philosophy, operational culture, and working environment of the COA system or make the decision to simply accept the associated risks.

Criminal Activity in the Area

The Dare County Campus of the College of the Albemarle is located within the corporate limits of Manteo, NC, and as such is served by the Manteo Police Department (MPD). Manteo has a population of approximately 1,350 people and an area of 1.8 square mile. It is the county seat of Dare County and the principal municipality on Roanoke Island. The population density is approximately 750 people per square mile. The MPD has seven sworn officers and one civilian employee.

Crime Statistics

Part I reported crime statistics were gathered from the 2009 Uniform Crime Report for the entire city jurisdiction. No other breakdown of Part I crime was available. The following significant Part I crime was reported.

Crime	Number of Reports
Arson	0
Assault	2
Burglary / Breaking & Entering	9
Homicide	0
Larceny	74
Motor Vehicle Theft	1
Robbery	0
Rape	0

The table above is included to illustrate the types of historical evidence that needs to be considered in the development and implementation of a security philosophy and associated programs. History is often times the best predictor of the future, and short of any significant change in the environment surrounding the sites, it must be assumed that administration should expect to be faced with similar types of criminal activity going forward.

The College of the Albemarle sites are located in two separate locations on the south side of town. One site is on the major thoroughfare through the center of town and the other very near the southern edge of the town limits.

Police Calls-for-Service Data

Crime statistics are valuable in determining the frequency of severe offenses among the population. Another indicator of the nature of a neighborhood or surrounding area is a review of the police calls-for-service. This information is now available in most jurisdictions through the 911 call centers that use software programs to assist in the dispatch of emergency service. Data was obtained from the 911 call center for the Manteo Police Department and the Dare County Sheriff's Department for both campus locations. The Dare County 911 center was able to generate a radius-based list of calls-for-service for both sites that are approximately 1 mile apart. The calls for service data in this report represent the police activity for slightly more than a 0.5

mile radius around each campus. There is some minor overlap of the call areas. This area of approximately 2 square miles includes business, institutional and residential neighborhoods.

Calls for service analysis can reveal positive as well as negative factors that may impact the security profile of a facility. The nature of the calls, the frequency of police presence in the area, and the reflection of guardianship indicated by the police activity demonstrate a more complete picture of the potential for crime and the level of disorder that may exist.

There were 3,031 calls dispatched by the Dare County 911 center in the Russell Twiford Road reporting area for the six month period of May – October 2010. There were 3,630 calls dispatched by the Dare County 911 center in the 64/264 Highway reporting area for the six month period of May – October 2010. Of these, the EMS, fire, and routine police activity calls have been removed. The resulting list reflects police action in each area that is deemed relevant to the threat and crime posture analysis.

Incident	Number of Reports Russell Twiford Rd.	Number of Reports 64/264 Highway
Assault	5	6
Breaking & entering /auto	7	4
Careless & reckless driving	9	22
Child molestation	1	-
Communicating threat	2	2
Damage to property	9	18
Disorderly conduct	6	4
Dispute	11	18
Disturbance	1	3
Domestic	6	13
Drug Violation	10	7
Drunk disturbance	4	6
Fight	2	8
Fraud	1	2
Hit & run	6	6
Indecent exposure	1	1
Investigation	11	29
Juvenile	1	5
Larceny	17	25
Larceny of vehicle	3	2
Obscene/harassing calls	1	3
Shoplifting	1	1
Shots fired	1	2
Suicide	-	2
Suspicious condition/person	32	59
Suspicious vehicle	9	13
Trespassing	4	5

There were a large number of routine traffic stops, routine business security checks, alarm responses, residential welfare checks, and calls coded “talk with officer.” This volume of activity suggests a significant police visibility and incidence of police presence in the immediate area of both COA campuses and a significant emphasis by the Manteo Police Department on community policing activities and proactive patrol and presence.

The reported crime statistics are predominantly below the computed national average. This is believed to be significant when considered along with the police service profile. The threat posture reflected by police calls for service for both reporting areas is not considered remarkable for the purposes of defining any specific, increased threat level.

SECURITY OBSERVATIONS AND RECOMMENDATIONS

The following observations provide examples of what the consultants found while conducting the fieldwork associated with this assessment. They represent what the consultants feel are the most critical security opportunities that should be addressed at the Dare County Campuses. The following identified risk areas will be formatted and presented in a vulnerability, risk, and recommendation format. This is necessary so that the administration can comprehend the criticality of the vulnerabilities and then have security industry recommendations as a guide when or if they determine to address the deficiencies.

Before moving forward, the consultants feel it is appropriate to commend the personnel that were interviewed at the Dare County Campus. The desire to engage in good security practices was evident. The current state of security and the overall desire of those responsible for administering the Dare County Campuses security function were good. The relationships between staff in Dare County and Elizabeth City appears to work very well. Any deficiencies identified do not appear to be the result of apathy. In this analysis, the goal is not to assign blame, but to identify vulnerabilities in the existing security posture of the Dare County Campus.

Physical Security

Perimeter Security

Every security program must be an integrated whole and each element must grow out of the specific needs dictated by the circumstances affecting the facility to be protected. Nevertheless, the first and basic defense is still the outer perimeter of the facility. Planning this defense is neither difficult nor complicated, but it is the product of common sense. Whereas the engineering and design of an electronic security management system requires particular sophistication and expertise, the implementation of an effective physical security program is the result of conventional wisdom and a lot of legwork expended during a security assessment.

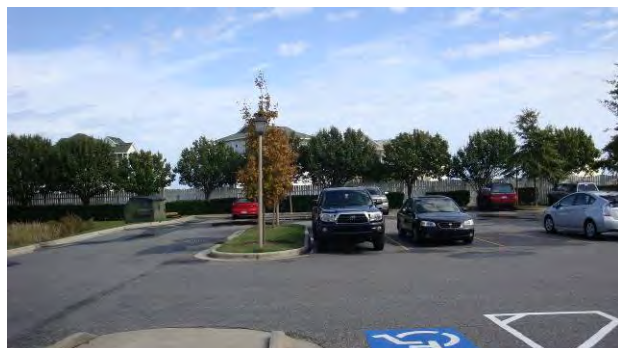
A basic security concept is to design a series of layers so that highly protected assets are within a configuration of multiple barriers. Barriers are commonly utilized to discourage three types of penetration – accidental, by force, and by stealth. A properly installed barrier should clearly warn a potential penetration to “Keep Out”. There should be no accidental or inadvertent penetration.

Barriers may be divided into two general categories – natural and structural. Natural barriers include terrain difficult to traverse and other topographical features that assist in impeding or denying access to an area. Structural barriers are manmade and include landscaping, ditches, fences, and walls. A structural barrier physically and psychologically deters or discourages the undetermined, delays the determined, and channels the flow of authorized traffic through proper entrances.

The Russell Twiford Campus has a combination of natural and structural barriers that identify the perimeter of the campus. The north end of the campus is buffered by an inlet that comes off of the Roanoke Sound. Trees and vegetation form a barrier beginning at the north side of the parking area to the west of the campus around the back along the water to the east side of the campus where it ends at the entrance to the east parking area. In addition on the east side of the campus a decorative fence line follows the tree line. Along Twiford Road there is a combination of natural barriers and a short fence that is most likely intended to keep people from parking there but also identifies the property line at the street. Unique at the Russell Twiford campus is the porches and wooden walkways that link the buildings. All of the walkways have rails that serve to control how people access the buildings and where they go on campus. These layers of barriers are subtle but effective at the Russell Twiford campus. As at other campuses, the Russell Twiford and Roanoke Island Campus facilities are accessed by a combination of people who work and/or study at the COA as well as people who are there to utilize campus and county assets such as the Diane Baum St. Clair Technology Education Center or the views of the natural areas from the deck areas and chairs provided on those spaces.



Southwest of the campus on Russell Twiford Road are businesses with no real barrier to identify the change from COA property to the other business property with the exception of the gravel parking area. Northeast of the campus on Russell Twiford Road is a sign alerting anyone traveling on that road that they are entering an area that is for the most part “off limits” to non-property owners.



The Roanoke Island Campus also has a combination of natural and structural barriers that identify the perimeter of the campus. North Virginia Dare Road (Hwy 64 Business) forms a barrier on the front or west side of the campus. The entrance to the campus is off of this road and allows for easy access to the campus by vehicle on the west, south, and east sides of the campus. Salty Dawg Lane forms a barrier on the east side of the campus in addition to the water elements.



Vulnerability: There is no real perimeter security around the COA Dare County Campuses, and the properties are used by multiple constituents.

Risk: Someone could enter the property accidentally or otherwise and hurt themselves, hurt someone else, or steal/damage property.

Recommendation: Begin the deterrent security posture by utilizing signage at the outer boundaries of the campus that direct the behaviors of persons who enter the property. Make it clear to anyone entering the property when they are entering COA property and its intended purpose. Direct campus visitors to a centralized location where they can get access to information thereby discouraging someone with nefarious intent from “hanging around.” Educate students, faculty, and staff to direct visitors to this central location.

Fencing

The most common type of structural barrier normally used for protection is a chain link fence. Fencing an area will only delay, not permanently prevent, an entry attempt. Therefore, fencing must be supplemented or enhanced by other countermeasures such as signage and security patrols. Nevertheless, a fence can be a valuable element in an integrated protection scheme.

Based on the assessment conducted, fencing although preferred does not appear to be feasible or practical at this time. Fencing is being utilized to protect areas where large assets are stored in an effective manner. The effectiveness of fencing is minimized if it is not kept in good condition and free of vegetation, with gates locked. The care and condition of fence lines are important to the overall effectiveness of presences as a crime deterrent. Gates that are left unlocked invite the curious and persons with nefarious intentions and may produce the perception that an asset is available with anonymity.



Vulnerability: Based on the accessibility and the multiple constituents that may be visiting the campus property at any time, the campus may be seen as an easy target.

Risk: An unauthorized person could enter undetected and cause injury or asset loss.

Recommendation: As the budget permits, fencing should be added to those portions of the property that are not easily supervised.

Vulnerability: Damage to fences, gates and locks is going to happen due to natural causes as well as nefarious actions of others.

Risk: Disrepair and vegetation on fence lines both attract nefarious behavior and hide the perpetrators who are looking for opportunities to cause injury or asset losses as do gates without the required locking devices.

Recommendation: A quarterly schedule should be put in place and assigned to check all fences, gates, and locks for breaches and disrepair. As a part of this program, a repair and maintenance schedule should be implemented with assigned responsibilities and response times.

Signage

Any barrier utilized must be supplemented or enhanced by other countermeasures such as signage. In keeping with the COA's philosophy to be a "good citizen" and have an open campus environment for lawful and undisruptive use, a signage program to clearly define the expectations of the administration should be deployed. Two categories of signs, the command sign and the informational sign, are predominantly used at the COA's Dare County Campuses and their use should be expanded. Command signs tell people what to do or not to do. Examples are "No Trespassing", "No Admittance", and "Visitors must register at the front office." Informational signs may alert the reader to a potential danger or give other information. Examples are "Hazardous Materials" and "No Smoking".





Eastern North Carolina as a whole is located in an area that is subject to weather events (such as high winds, tornados, hurricanes and occasional snow storms etc.) in addition to other emergency and critical events. The campus has students, non-students, faculty, and staff that access its property and facilities. With a growing enrollment and need for the educational and other opportunities and services that the college provides, signage is imperative to facilitate the wanted behaviors and protect the assets of the COA. In addition, it allows the college recourse upon infractions. During the consultant's visit, there were numerous examples of the college effectively using signage to address safety issues and the "No Smoking" policy.

Vulnerability: No clear message about desired behaviors is provided to individuals coming on to campus.

Risk: Individuals are not aware of the college's expectations, thereby creating vulnerabilities for the college.

Recommendation: Use signage to notify persons they are entering college property and that it is a weapons, drug, and alcohol free campus in addition to being a smoke free campus. Remind people who enter the property that in addition to this being COA property, that there are behaviors that will not be tolerated on campus property. Be as specific in the signage as possible.

Vulnerability: There is not a clear message given about desired behaviors within the campus.

Risk: With the current atmosphere, a criminal or misguided individual might feel more inclined to commit a crime.

Recommendation: Use both command and informational signage in the parking lots, the perimeter of the building, and at the doorways to direct people while they are on campus property. Included in this should be signs at each entrance that provide notice that in addition to being smoke free the campus that there is zero tolerance for drug/alcohol use on campus and that it is unlawful to bring weapons on campus property.

Vegetation and Crime Prevention Through Environmental Design (CPTED)

Thomas Jefferson created the concept of an “Academical Village” in the early 1800’s with the construction of what is now the University of Virginia. Since that time his concepts have morphed into what is arguably the basis for modern educational campus design. Having a physical environment that promoted intellectual stimulation and was aesthetically pleasing to the eye were desires Jefferson had in his concepts of construction. It remains the same for educators and administrators today.

In security applications, the concept of Crime Prevention through Environmental Design is one that is prominently used. The concept emphasizes that lighting, vegetation management, traffic flow, pedestrian flow, and other physical attributes can be manipulated to lessen the opportunity of a crime-related event occurring in a particular location. The consultants who visited the Dare County Campus observed good use of CPTED principles at the campus. Diligence should be continued given the importance of casual surveillance and its effect on the criminal perception that their actions would be observed. In addition, properties that are well cared for are less likely to be victimized.

Security industry standards suggest that foliage be trimmed to allow for casual surveillance. Tree limbs should be trimmed seven feet from the ground and shrubbery trimmed to 24 inches high.

The COA Dare County Campuses are very attractive with a large variety of shrubs and mature trees that can be seen throughout the properties. Security and beauty are not mutually exclusive. The balance is in how the trees and other foliage are maintained. Without careful maintenance, trees will block casual surveillance and provide hiding places for people with nefarious intent to both persons and property. In addition trees and shrubs are blocking the lighting which darkens areas which could lead to accidents and nefarious behaviors.



Vulnerability: Trees with limbs below the 7-foot level and shrubs with foliage above the 2-foot level make the possibility of concealment easier and can prevent both casual surveillance and surveillance by patrolling guards.

Risk: Someone could feel that their activities would be unseen and attack someone or break, enter, and steal.

Recommendation: Maintain standards for vegetation by trimming trees and bushes and opening areas in between plantings to reduce hiding places.

Lighting

Lighting Guidelines

Outdoor lighting is an essential and economical tool for protecting people and property from all types of crime. Statistics show that lighting is the least expensive yet one of the most effective deterrents to reducing crime. Effective lighting not only reduces the risk of accidents and crime but also reduces the liability that comes with them. Adequate lighting enhances safety and security at night while creating an environment of productive learning environment.

The objectives of security lighting are:

- To illuminate a person, object, place or condition of security interest so as to permit observation and identification;
- To be a physical deterrent through the glare effect of direct incident light upon the human eye; and
- To be a psychological deterrent by leading attackers to believe that they will be discovered and observed making an attack or penetration attempt.

Because lighting is highly visible, it is often incorrectly perceived as a major consumer of energy. Lighting consumes far less energy than heating, air conditioning, and general operations. Today's energy efficient lighting delivers significant energy savings while delivering optimum lighting levels.

The quality of lighting includes factors such as color rendering, uniformity, and glare. Visibility is directly affected by the reflective capabilities of the surrounding pavement and the façade of the building. Lighting levels will vary depending on the reflective properties of the building and pavement.

The amount of light rendered is measured in *foot-candles* or *lux*. The foot-candle is the common unit for measuring light. One foot-candle is identified as the amount of light produced by one candle at the distance of one foot. For the safety and security of students, staff and visitors moving to and from a building, a minimum of 0.5 foot-candles is needed and recommended to enable routine activities such as walking and locating steps, entrances, and exits.

Generally, lighting levels around entrances should be a minimum of 10.0 foot-candles to produce illumination needed to identify and reveal anyone who is in the area. The identification and chance of discovery factors help to discourage loitering for the purpose of committing crimes such as vandalism, assault, robbery, and burglary.

Parking lots and walkways were measured for a minimum of 0.5 fc. Door entrances and gate entrances were measured for a minimum of 10.0 fc.

New Lighting Guidelines

Recent new lighting guidelines, adopted by Illuminating Engineering Society of North America (IESNA), should be applied to for future improvements. The new lighting guidelines are significantly higher in illumination than the older standards.

A number of new security lighting guidelines for designated locations were developed in 2003 and later distributed in 2005 by the Illuminating Engineering Society of North America (IESNA). The lighting guidelines were approved when *certain circumstances* exist. Almost all of the lighting at is below the **new** guidelines. Because of this, the standard of 0.5 fc for parking areas and walkways and 10 fc for entrances was used. To assist administrators at Warsaw in understanding the new guidelines for selected locations, the following information is provided. The following information is from IESNA publication G-1-03 *Guideline for Security Lighting for People, Property, and Public Spaces*.

The new guidelines of illumination are higher than previous standards and should be used when one or more of the following qualifying conditions exist.

1. The persons and/or property in the area to be secured present a desirable target to criminals.
2. The property has a history of relevant crime or increases in crime.
3. Crime in the surrounding area is high compared to similar areas.
4. The results of a physical security survey or threat analysis indicate a problem.
5. There are changing conditions that expose persons to new security hazards or increased risk.
6. Obvious signs of antisocial behavior exist near or on the property such as graffiti, vagrants, broken windows, trash buildup, trespass, or poorly maintained property.
7. There is recurring, reasonable resident or customer complaints or concerns about security, or fear of crime.
8. High profile or troublesome areas exist such as bars, nightclubs, gambling halls, gang or teen gathering spots.
9. There are industrial or commercial applications where persons or property are prone to attack, such as ATM and night depositories, convenience stores, and railway yards.
10. Restricted access industrial or government installations are in the area.
11. A time of national emergency such as war, acts of terrorism, or declared emergencies is in effect.

The new guidelines for security illumination in IESNA publication G-1-03 are given for the following locations and tasks:

- Unoccupied spaces (acceptable losses and unacceptable losses)
- Building façades and interiors
- Facial identification
- Guarded facilities
- Automated Teller Machines and Night Depositories
- Parking facilities, parking garages, and covered space parking
- Parking lots and public parks
- Supermarket parking lots
- Fast food restaurants (lot and drive-through)
- Convenience stores and gas stations (pump areas)
- Single family residences (exterior doorways)
- Multi-family residences (common areas and mailbox)
- Senior housing (hallways and entrances)
- **Schools and institutions (parking and walkways)**
- Law enforcement, fire, ambulance, and other emergency service facilities
- Hotels and motels (parking, grounds, and walkways)

The following information is relative to parking areas, walkways, ATMs, night depositories, and facial recognition. Parking lots are a major concern when conducting security threat assessments. When one or more of the eleven conditions listed above are present, the new guidelines for parking lots change in the following manner.

2000 IESNA Standard

- Parking areas and walkways should be a minimum of 0.5 fc.
- Entrances and gateways should be a minimum of 10 fc.

New Guideline (With one or more of the eleven indicators present)

- Parking areas (open parking spaces) should be a minimum of 3.0 fc.
- Walkways should be a minimum of 0.6 fc.

Lighting is the only element in security planning for which there are recognized and generally accepted standards. Three often cited tables of standards are from the Illuminating Engineering Society of North America (IESNA), the Nuclear Regulatory Commission (NRC), and the Department of the Army (DOA). Of these, the IESNA standards are more conservative and are usually cited in corporate and industrial surveys and assessments.

The chart below shows recommended minimum levels of security lighting that are widely accepted norms for lighting in parking lots and entrances and are recognized by security experts throughout the world. These guidelines will apply where none of the eleven indicators given in IESNA publication G-1-03 are present.

APPLICATION	LUX	FOOT-CANDLES	NOTES
Large, open areas	5-20	0.5-2.0	Greater surrounding brightness requires higher illuminance in the space.
Buildings	5-20	0.5-2.0	Vertical luminance on the façade.
Perimeter/Fence	5	0.5	Luminance on the ground on either side of the fence.
Entrances	100	10	Luminance on the ground in the inspection area.
Gate houses	300	30	Luminance on the workplace in the house. Reduce during hours of darkness.

Lighting Handbook, (New York: IESNA Publications Department, 2000) chapter 29, page 18.

The table below may be used for applying guidelines for security lighting under IESNA Publication G-1-03.

APPLICATION	LUX	FOOT-CANDLES
General Parking Areas	30	3.0
Walkways	6-10	0.6 – 1.0
Parking Garages	60	6.0
Entrances	100	10.0
Automated Teller Machines	100	10.0
Storage Yards	5-20	0.5 – 2.0

Lighting Survey

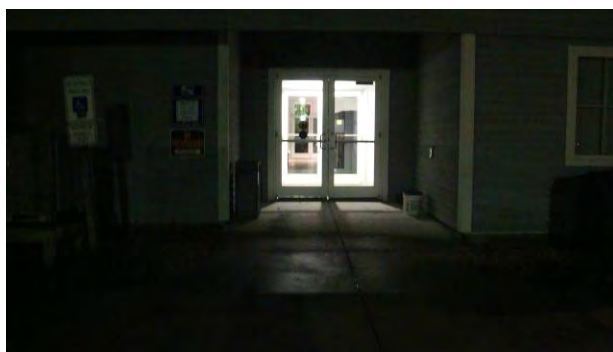
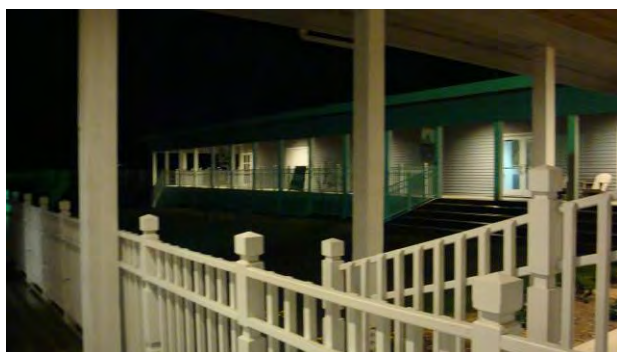
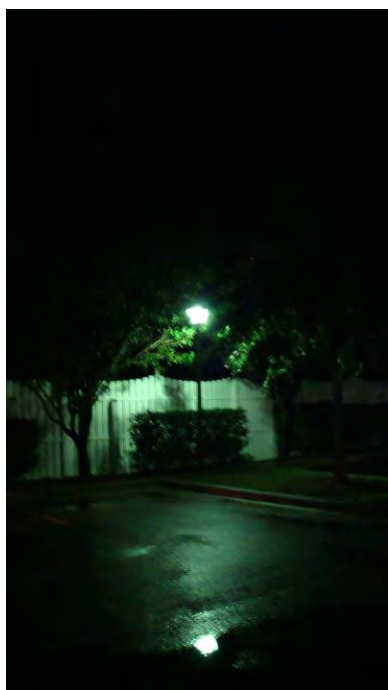
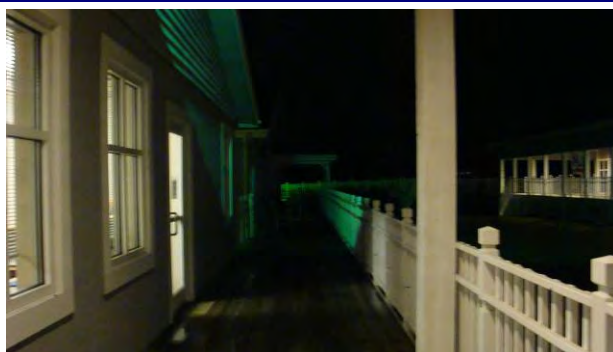
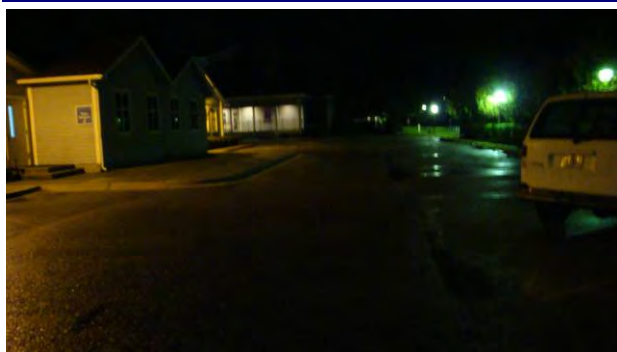
Light level in and around COA facilities is critical to three aspects of the security posture. First is the impediment and deterrent effect of lighting to incidental and opportunistic crime. Second, lighting is an enabler for casual and security surveillance by students, staff, visitors, security officers, and CCTV surveillance systems. Third, lighting schemes significantly affect the complexity of planning and conducting directed criminal activity against persons or property at the COA campuses areas during hours of darkness.

The lighting review at the COA Dare County Campus was conducted on Monday, October 25, 2010 at 9:30 p.m. The weather was completely overcast but not raining. Light readings were taken using a Cook Cal-Light 400 meter. All readings are measured in foot-candles (fc). The physical areas of concern will be discussed relative to their geographical location on the campus.

Survey Summary

The major portion of the parking areas, entrances/exits, and sidewalks were measured below accepted general industry standards. Some of the lights were burned out or blocked by vegetation but some of the lights just did not produce sufficient light to meet industry standards. Areas just under lights that were not blocked and were working correctly did meet or were close to industry standards. Large trees on the edges of the parking areas were blocking the effectiveness of the lights in parts of the parking lots and created dark areas that were below general industry standards and at times measured 0.0 fc. There were dark areas along the sidewalks. Some of the lights seemed more decorative than functional but may benefit from maintenance that increases the light output. All the existing lights should be maintained for maximum output and bushes and trees trimmed to meet CPTED standards. Once these items are corrected, the lighting should be reevaluated to ensure minimum lighting standards are being met.





Parking Areas

The parking lots at the front of the campus were reviewed based on the minimum standards for lighting in parking lots. In areas of the lot where the existing lights were not obstructed by vegetation and the existing light fixtures were working, the lighting met the minimum standards only in close proximity to the lights. In areas of the parking lots where the parking spaces were shaded by trees or lights were not working, the lighting dropped below the minimum standards.

Entrances/Exits

Many of the building entrances/exits at this campus had light readings below general accepted standards. These lights should be evaluated for maximum lighting output which may require higher watt bulbs or fixture updates.

Sidewalks and Walkways

Many of the walkways at the COA Dare County Campus were below accepted industry lighting standards. Illumination from the parking areas and the entrance did not adequately illuminate the walkways.

Vulnerability: Low light conditions exist in the areas listed above.

Risk: A lack of adequate lighting can lead to injuries from trips and falls. Persons with nefarious intent can more easily conceal themselves in these low light areas thereby exploiting the low light levels to commit criminal activity.

Recommendations: Repair cycling light fixtures and replace burned out bulbs in fixtures. Add or install adequate lighting in areas that do not meet the minimum standards. Develop a procedure and timetable for the regular inspection and repair of campus lighting fixtures.

Parking Areas

Parking areas possess inherent vulnerabilities for all organizations and educational institutions, and the Dare County Campus is no exception. Typically, parking lots are the least protected areas for an organization. The parking areas are also the access point for students, staff, and visitors as they come to the school's facilities. They are usually on the outer edges of the campus property, and they contain items of value to persons on the outside as well as those within the campus community.

There is no security staff at the COA Dare County Campuses. The COA does have a parking pass program where student, faculty, and staff members are required to obtain parking decals to park on campus property. In addition, there is a detailed policy for on-campus parking of students, faculty, and staff that is available to students and personnel on the college's website, and there are designated parking spaces for students and faculty/staff. Another excellent communication tool utilized by the COA is in the form of a Campus Safety & Security brochure

Vulnerability: Items of value are being left in sight in vehicles parked on campus. Whether the vehicle is locked or unlocked, this creates vulnerabilities.

Risk: Unprotected assets draw persons with criminal intent in addition to criminal activity.

Recommendation: Provide signage and awareness training to change the behavior of the students, faculty, staff, and visitors who leave items of value in plain view in vehicles.

Building Perimeter

Another layer of security for the students, staff, visitors, and property continues with building access control. Historically, educational institutions have maintained open environments. This was because years ago the ebb and flow of students and staff throughout the school day was achieved with little or no incidents of violence. While the ebb and flow of traffic continues today, the increase in school violence from outsiders has increased, which is why building access control has become so paramount. Educational institutions have to rely on increased awareness of students, faculty, and staff to be vigilant about unauthorized intruders on campus. This is accomplished by making it easy for students and staff to identify who belongs there and who does not. In addition to that increased awareness, effective control requires that at a minimum, staff is trained to make contact with strangers in a way that fosters the positive engaging environment that is a part of the culture while enforcing access control policies and procedures.

The Russell Twiford Campus buildings are constructed of a combination of materials with one building being older than the other. The whole campus appears to be well maintained, and there were no obvious areas of security concern with the exception of the CPTED and lighting. Outside doors on campus are a combination of metal and metal and glass which creates vulnerabilities especially on a campus without an active alarm system in place.

The Roanoke Island Campus is a combination of new construction and reuse of the old middle school campus which has been retrofitted to meet the needs of the COA. The buildings of the older sections are mainly brick with metal doors or metal and glass doors. The Professional Arts Building appears to be made of hardiplank. There are windows that open from the inside that create vulnerabilities, and consideration should be given to making them not operational, especially those that are less than 18 feet off of the ground. Windows that are more than 18 feet from ground level are not seen as being as vulnerable due to the effort necessary to breach them. Windows and glass doors are at an increased vulnerability without additional security measures. An excellent tool to control access requires the determination, not less than annually, of the minimum number of exterior doors that should be unlocked at any given time. Whenever possible, it should be the policy at COA to manage access by utilizing only those exterior doors that are practical and/or absolutely necessary to the day-to-day operation of the campus. The security posture at the COA campuses with regard to doors and door hardware is good. During the day there is generally free access into and out of most of the buildings. The role of security at the Dare County Campuses is primarily filled by the Dean and the Physical Operations Director. The COA uses a hard key system of locks on all exterior doors. It is the responsibility of the Physical Facilities Director or the custodial staff to open the buildings in the morning based on scheduling on campus. The Vice President of Business and Finance is responsible for the security operations at the college from Elizabeth City. Faculty and staff are issued keys to their offices. Master keys are issued to members of the "Dean's team" and the custodial staff. All the keys are marked "do not duplicate," and extra keys are numbered and labeled. Computer rooms and labs are opened ten to fifteen minutes before they are needed and are locked after class. The issuance of keys is kept to a minimum and issued on an "as needed" basis. None of the buildings at the Dare County Campus are alarmed.

Vulnerability: There are multiple access points into the campus buildings.

Risk: An unauthorized person could enter and cause injury or damage.

Recommendation: Evaluate the need for more than one access into the campus on an on-going basis and develop policies to minimize the number of doors open when possible.

As already stated, the Dare County Campus has security vulnerabilities associated with sharing its space with the community who rent or use the gym, the cafeteria the COA Dare County Auditorium, and the Professional Arts Building. Some events are by mutual agreement and groups like Parks & Recreation have a key to certain buildings and others have a Facilities Use Agreement with the COA. This makes the layers of security even more critical and raises each layer to a higher level of criticality.

Lock and Key Review

Lock and key control is integral to any security program. It is unlikely in any application that protection of students and property will be achieved without relying heavily upon locking devices. In as much as that is the case, when securing people and property there are always trade-offs among risk, cost, and convenience.

Our objective was to review specific aspects of the existing lock and key procedures at the Dare County Campuses. The purpose for this was to make recommendations for the key control program that would be consistent with the existing culture, administrative, and operational structure already established. Recommendations within this section will guide COA administration in maintaining the existing key program but will make provisions that elevate the level of security, are efficient and easy to manage, possess room for growth and restructuring, and have a contingency element designed for issues such as lost keys. The recommendations are also designed to conform with sound security industry practice.

A review of practices was conducted in an attempt to determine how the following three areas were managed:

- Key accountability for persons no longer employed at the facility
- Key accountability for employees currently employed at the facility
- Key requests and issuance and lost key reporting

Key control at the Dare County Campuses is managed by the Physical Operations Director. There is a master key system with sub master keys and classroom keys. At this time the locks are keyed for a grand master key system with various levels underneath. Keys masters are issued to key members of the “Dean’s team” and custodial staff. Staff and faculty are issued office keys, and classrooms and labs are opened on an “as needed basis”. The Physical Operations Director keeps a key assignment log that identifies what keys have been issued and to whom.

Communication, computer servers, telephone equipment, camera DVRs, and all critical electronic equipment are secured. Money is secured within multiple locked layers.

Electronic assets including servers and phone system equipment are secured in locked storage. Electronic panels should also be kept locked.

Vulnerability: The doors on campus are hard key operated using a master key system which is harder to account for and control than an electronic system.

Risk: There are keys or copies of keys that cannot be accounted for.

Recommendation:

1. Evaluate the key control system.
2. Reconcile and account for as many keys as possible. Keys that cannot be accounted for are a serious vulnerability and should be addressed by either disabling the locks or re-keying the locks as is feasible.
3. Establish a written key control policy that puts in place the necessary infrastructure to account for and control the issuance and identification of keys and key holders for each key. Minimize the number of keys that afford users access to campus buildings. Consider minimizing the number of key holders who have keys to the outer doors to a minimum. Security officers should be the only personnel who let others into the building outside of the normal business hours. Non key holders would have to make arrangements to gain access to the buildings if it became necessary outside of the hours of security coverage.

Electronic Security

In today's educational environment, electronic security is absolutely essential to a cost-effective security program. However, many school administrators, the persons actually responsible for protecting an organization's assets, are not very knowledgeable about electronic security equipment, manufacturers, and service providers. All too frequently, electronic security systems are installed, expanded, and modified on a continuing basis as the school's facilities and student and staff numbers increase. The result is a piece-meal system, with components and sub-systems that are not fully integrated or consistent with the environments standard-of-care.

Once administrators recognize that electronic security systems are only one tool in their overall security program, then they are able to create sound "system use" policies for their respective school. These policies will be the guiding force behind determining the best way to utilize electronic security systems.

In a properly designed and maintained system, each part enhances the other and all contribute to effective protection of school students, staff, visitors and property while remaining compatible with the school's operational requirements and environmental conditions. Systems integration is the most important factor when considering electronic security. Simply put, systems integration is the effective combination of interior and exterior intrusion detection sensors, controlled access points, television cameras and monitors, and alarm signal monitoring systems into one security system package that performs as a whole and complements the security personnel.

The Russell Twiford Campus has a total of four cameras that are hooked up to a VCR according to the MIS Director, but he has not had much involvement with the system or its installation. There is a monitor in the Dean's office suite that captures the images and displays them on the screen. This visual of the views from the security cameras puts persons on notice that they are visible and serves as a deterrent to persons with nefarious intent.

The Roanoke Island Campus has four cameras which were off-line at the time of the interviews. There are an additional nine cameras located in the Professional Arts Building. The installation and commissioning of these cameras was not complete at the time of the interview. At the time of the assessment, the college was in transition as the security technology company that they had been using is no longer supporting security installations and equipment.





The consultant endeavored to understand the electronic security posture at the campus and did not do a detailed study of the electronic components related to security. At any campus where there is growth over time and facilities built with varying degrees of electronic adaptability and limited resources, it is an on-going challenge to meet and maintain a cohesive electronic security program. The administration at the Dare County Campus is obviously making efforts to apply its security resources to best protect the physical and intellectual assets of the COA to include the people who enter its campus every day. Electronic security countermeasures are changing at an exponential rate, and the loss of a trusted vendor partner can be a critical blow to the overall security posture of the campus. Several college departments have responsibility for some aspect of the security program, including the electronic program, in addition to their other responsibilities with varying levels of electronic experience. This is completely normal but should be addressed in such a way that the integrity of the program is maintained and enhanced in a manner that is both efficient and cost effective for the college.

Vulnerability: Most organizations are unable to utilize and benefit from the effective use of electronic security products because they lack the subject matter expertise necessary to develop, manage, and maintain a comprehensive plan.

Risk: Persons could be injured or the COA may suffer losses to reputation or assets that could have been avoided or at least mitigated using the electronic security elements that are already in place.

Recommendation: Contract with an unbiased security expert to review the electronic security in place in detail. Find out what is working and what is not and why and develop a plan of action that can be augmented over time based on sound security principles. The electronic security potential at the campus is good, and there are elements already in place that could be integrated into the plan with minimal expense that would enhance the other layers of security in place. The use of electronic security is only going to continue to grow, and the costs associated with its implementation will continue to go down. With the change in vendors, this is the perfect opportunity to develop a relationship to use the existing infrastructure as a foundation that can be enhanced as necessary.

Philosophy, Policies, and Procedures

An analogy that RMA consultants like to use to simplify concepts of security is the comparison of a comprehensive security program to that of an onion. If viewed from the highest level, a security plan utilizing a layering approach is similar to the onion's physical make-up. Layers of security must be established in order to protect students, staff, visitors, and assets (all at the center of the onion.) The first layers must be clear and thorough policies and a focused security philosophy and approach. Both must be supported by the administration and their adherence insisted upon.

The COA campuses makes available to students, faculty, and staff copies of the student and employee handbooks in various media. There were no guidelines or procedures found for security-related grounds maintenance such as what height vegetation should be trimmed, or when and how lighting should be checked for outages or insufficiency, or a procedure to insure that lighting deficiencies or failures are corrected within a reasonable timeframe.

Vulnerability: Insufficient light and vegetation that blocks either the effectiveness of lighting or casual surveillance increases the perceived opportunity to gain access to assets.

Risk: Persons could be injured or the COA may suffer losses to reputation or assets.

Recommendation: There should be written policies and procedures that identify responsibilities for auditing the lights on a schedule of not less than monthly to identify fixtures that are not working and schedule corrective action. The same process should be completed from a CPTED perspective to ensure that conditions have not changed to increase the opportunity for someone with nefarious intent to commit a crime.

Background Investigations

Most hiring processes include an effort to assess the applicant's skill set, knowledge base, and past performance in an attempt to select the candidate most likely to become a productive, contributing member of the organization. Interviews are often conducted with finalists to narrow the field and to find the person that "fits" best in the organizational culture. References are contacted, education is verified, and the past training and experience of the candidate is determined. Unfortunately, many people seeking employment intentionally provide false, misleading, or inaccurate information. It has been estimated that 30% of all applications are falsified in some fashion and 45% of all résumés contain false or exaggerated information. One in ten applicants falsifies their name, social security number or driver's license number in an effort to hide criminal convictions. Applications often contain gaps in employment and the intentional omission of residences to avoid revealing jurisdictions where the candidate may have had encounters with the criminal justice system that they hope to hide.

Administrators must make every effort to ensure that the potential employee is not only qualified for the position, but also has the character and reputation necessary to represent the values of the organization. In educational institutions, the effort to ensure that the innocent student is not exposed to the predators who are attracted to such environments requires a proactive and well documented approach in the hiring process. Additional requirements should be established to alert administrators to potential threats posed by employees after they are hired. The concern about the employee's character and reputation should be on-going and not cast aside after employment.

At the COA the Human Resources Director is responsible for the activities that are associated with the hiring and vetting of new employees. Candidates are required to complete and submit a COA Application for Employment that is very thorough with the exception of former addresses (back seven years). The application does ask for three former employers and three references, and it requires that applicants sign a "Certificate of Applicant" where they certify that the information is true, that it may be used for investigative purposes, and that misrepresentation and falsification are grounds for dismissal. The background investigative process at the COA is to call and check the references provided by the applicant, but no developed references are attempted. In some instances former and/or the current employer is contacted. The school uses the e-Verify system to verify the candidate's social security number and name match in addition to the I-9 requirements which is very important. Employment with the COA is based on a contract that can be annual or adjusted based on the need. This applies to full-time and part-time positions, and everyone begins with an initial probationary employment period.

Vulnerability: Current full-time or part-time new hires are not completely vetted. All of these persons have access to assets, both human and material.

Risks: Someone could be or has been hired that has a discoverable potential for committing crime and may utilize that potential on COA property.

Recommendation: A potential employee should be required to provide a list of residences within the past ten years including the dates of residence. This information should be used to check for criminal records. Criminal records should be checked in any jurisdiction in which the candidate lived, worked, or went to school. Furthermore, checks should be made to verify past addresses, past employment, and past education, and developed character references should be attempted.

It is recommended that there also be a periodic review of the employee's criminal record. Employees should be required to report to a supervisor their arrest for any crime while employed at any campus at the COA. Management can then make an informed decision as to the continued employment and/or status of the employee pending the outcome of that criminal process. It is suggested that during an employee's annual review, he or she be specifically asked if he or she has been arrested or convicted of any criminal offense within the previous year. There should be periodic updates of the criminal records database checks on employees to ensure compliance with this requirement.

A common vulnerability at many campuses is the lack of vetting of contractors who work on site. Background investigative requirements should be a requirement of any contract company or person who works on any of the COA campuses. No contract employees should be allowed on site without verification of the completed requirement.

Vulnerability: Someone working for a contract company is allowed access to people and other school assets and has a discoverable potential for committing crime.

Risk: School assets may be adversely affected by contractors on campus.

Recommendations: The COA should include in all contracts for service specific requirements that contractors must meet before any of their personnel are allowed on a campus. The policy needs to be specific and hold contractors accountable for the actions of their personnel on college property.

Cash Handling

Cash handling at COA is taken seriously. At the Dare County Campuses, all monies are turned into the cashier as is the policy at other campuses in the COA system. All money is taken to the business office on a daily basis where it is balanced, deposited, and audited daily. Monies that are turned in outside of normal business hours are dropped into a locked money box. Any monies that are collected during normal business hours but after the daily deposit are stored in a safe. The cashier's office is behind a wall, and monies are accepted through a sliding window that is lockable and has a window blind to close off not only access but also casual surveillance. The business office has cash register drawers and a safe which is not bolted to the floor as far as was visible but appeared to be adequate. Though no written policies were received the process for the handling of moneys, the separation of duties and the audit function appeared to meet the needs of the COA. The bookstore is at the Elizabeth City campus and students can either visit that campus or purchase books on-line.



Identification Badges

A key element of security at any school is the control of access onto and within the campus and the ability to recognize those persons who belong there and those who do not. The COA issues identification cards/badges to all full-time staff and faculty. According to the Employee Identification Cards policy, employees are required to have and display their ID cards and replace them at a nominal replacement fee if they are lost, stolen, damaged, or broken. At this time the badges do not expire. There are no visitor badge requirements and no policy or signage that directs the behavior of visitors or contractors other than a brief policy that is included in the handbook. Students are issued identification cards and are instructed to carry them. If staff or faculty requests that a student show their identification card and the student is unable to, faculty and staff are allowed to ask the person to leave the campus until such time that they have their identification card.

Vulnerability: There is no way to know who belongs on campus and who does not. Persons with nefarious intent can easily blend in with faculty, staff, or student populations.

Risk: An unauthorized person could cause injury or asset loss.

Recommendation: Require all COA personnel to have and wear their identification badges at all times while on COA property. Train all faculty and staff at least annually on security related policies and procedures and include the importance of the badges in the overall security program. Encourage security vigilance throughout the campus by all to include but not be limited to faculty, staff, students, contractors, and visitors.

Vulnerability: Visitors with nefarious intent can get access to assets on campus.

Risk: An unauthorized person could cause injury or asset loss.

Recommendation: Create a generic contractor badge that is numbered and require that all contractors working on COA campuses wear the badges any time they are on COA property.

Vulnerability: Visitors with nefarious intent can get access to assets on campus.

Risk: An unauthorized person could cause injury or asset loss.

Recommendation: Put in place signage that directs all visitors to a central location, ask them to sign-in, and provide them with a visitors badge that they should wear at all times while on the campus.

Security Personnel

Overview

Over time the concept of “security” has evolved into several models and applications. The diversity of contemporary threats, the variations in organizational culture from entity to entity, and the differences among these entities in their capacity and will to commit resources to security needs has influenced the emergence of the conceptual model referred to as “integrated security.” This model is a dynamic and flexible approach to maintaining a security posture and protective envelope by using unique combinations of systems and functions available to the planner so as to best fit the culture, budget and operational requirements of an individual site or organization.

There are three principal parts of an integrated security plan: personnel, systems, and procedures. Each of these components serves to augment the effectiveness of the other and to permit the use of each in a unique formula determined by the difference between facilities. The development of advanced electronic security systems over the past few decades has greatly expanded the application and capabilities of various security hardware devices. Litigation in security and safety matters, governmental regulations and requirements, and the expectations of the recent generations to be guaranteed a safe and secure environment have increased the absolute necessity of developing and promulgating written plans, policies and procedures both as management guidance and as operational instructions and orders during times of crisis.

As a concept, integrated security offers a wide range of flexibility for the security planner and administrator in developing practical and sustainable security plan. While the advances in technology have vastly increased the capability and reliability of security systems, technology has not and cannot replicate or replace security personnel or the role they play within the integrated security concept. There is a tendency to see technological applications as a remedy to all modern problems and security is no exception. As opposed to the perception as an end solution, technology should only be viewed as an additional tool to be used by an intelligent and trained human operator.

The use of technology in security systems serves to extend the presence and enhance the efficiency of security personnel. The roles served by a security program are to observe, detect, identify, and respond to actions, events, or incidents that might compromise the security and safety of the site. Technology applications such as CCTV surveillance and alarm systems provide for constant observation of areas, items, ingress/egress points, and passive and active alarm systems. This extends the capability of a human asset by passively monitoring static conditions and sensing changes. CCTV extends the scope of visual observation to many times the effectiveness of a single human observer at a single fixed post or along a patrol route. These described functions serve the first two functions of the security program. The application of systems and technology to security problems can remotely monitor, view, and record images, and log and record activity on security networks. Systems will detect those conditions that they are programmed or designed for, but other than communicate automatically with a human asset,

systems and technology offers no capacity for responding to a security threat or intellectually investigating an unusual or suspicious condition beyond their programming.

The integrated security planning continues to place a human asset at the center. Using a CCTV surveillance system as an example, it has the automatic capacity to view in real time, transmit images to a screen, and record images on a media for later retrieval. There is software to enable the detection of movement in the electronic field-of-view which will trigger the system to go into alarm and cause other automatic functions to be performed. After the fact, the system can provide recorded images for investigative and identification purposes. These are valuable technological tools, but all of these features are ultimately dependent on a human asset.

Effective monitoring of an alarm system is also a human asset centered model. Although contract alarm monitoring relieves proprietary personnel of the responsibility of monitoring the system and responding to a notification, the human asset is still at the center of the system, only outsourced to a contractor. There are very few police or fire departments that offer the services of primary monitoring of the respective proprietary intrusion and fire alarm systems. In the vast majority of jurisdictions, the alarm panel processes the alarm device signal and either notifies a contract monitoring station or dials up the public safety responder directly. Direct dial up notifications do not provide exact information about the internal location or nature of the condition that the system has detected. The primary reason that most public safety agencies do not accept direct alarm reports from proprietary systems is that without some degree of analysis and verification by a human asset, the potential for false reporting is too high.

Although electronic applications can observe and report autonomously, they cannot physically respond to an event. Notifications may trigger responses by other human asset systems, but technology alone cannot interdict a crime or security incident. It may be possible for an electronic security system to be elaborate enough to fully observe and monitor all parts of a site or facility. However, this alternative would be extraordinarily expensive to install and maintain and would be largely directed against static threats. Missing in all the software and smart technology is the capacity to understand, reason, modify parameters, and adjust to situations caused by the most variable of all the factors confronting security planners, other human beings.

The use of technology has served to enhance and augment the efficiency and reliability of integrated security programs. When well-balanced, the appropriate use of technology increases the value of the human security asset to a degree that may well allow for certain reductions in force without diminishing the protective envelope. The central concept of integrated security planning is to combine the general tools and assets available to the planner in a unique manner to achieve a standard of protection within the culture, budget and operational condition at any individual site. Underlying this is the premise that a good system requires the use of all of the components to some degree to reinforce each other, with none being replaced completely through the use of the others.

The human component of an integrated security plan can be in one or more of several forms. These forms become choices that need to be addressed depending on the mission, environment, culture, population and security philosophy of the organization and specifically the site to be protected. The choices will impact the security posture in that each will have a bearing on the necessary accommodations that must be made using the other two tools, systems and procedures.

Uniformed versus Non-uniformed

Whether or not to put security personnel in a distinctive uniform is one of the most obvious choices. There are a number of internal and external factors that may be considered. A uniformed security officer is readily recognizable as serving in the security role. In our culture, we are accustomed to seeing uniformed police and security personnel on a routine basis. The presence of the uniformed officer suggests significant guardianship at the facility and presents the functional equivalent of defensible space, even in the absence of defined perimeters. Two positive attributes attach to the use of the uniform. First, there is an obvious deterrent effect in having such an officer, which by suggesting guardianship, may very well deter a crime or action at the protected site and shift the perpetrator's focus elsewhere. Second is the positive effect on the protected population in that the recognized presence typically increases their sense of well being and an associated increase in compliance with security procedures and their identification with the security program. The uniform also contributes to organizational identity within the security force, an identity link to the institution, and, ideally, to *esprit de corps* among the officers.

There are various operational security roles that are performed away from public view. Certainly, it is not essential that these roles involve the wearing of a uniform, so long as there is no public exposure, such as the security console operator. Plain-clothes personnel are able to move about the facility without undue attention from either the population or the outside public which may be an advantage in investigation or targeted security operations. The role of the security officer is first and foremost to observe and report, which arguably may be conducted as well without a uniform.

Armed versus Unarmed Officers

In this context, the term "armed" is intended to mean equipped with firearms and prepared to use deadly force when required. Firearms are not intended for non-lethal force situations. There are several non-lethal weapons that can be issued and used by security officers, such as batons, capicum spray and tasers. For the purpose of this discussion, these will be part of the equipment issued to "unarmed" security personnel.

Armed security officers are generally issued sidearms and trained for defensive use of the weapon. As such, a uniformed security officer who is not a law enforcement officer has little justification for carrying a firearm beyond the need for self-defense. Security officers protecting high-value facilities which might attract attack from armed and dedicated perpetrators may very well have need of this level of training and equipment for self-defense. The level of training required for an armed officer to safely use a firearm in a security operations environment is extraordinarily high, approaching that required of law enforcement officers. Very few armed guard training programs approach the standards required of law enforcement officers in any jurisdiction.

Proprietary versus Contract Officers

Basically, there are only two organizational relationships for the security officer. A proprietary officer is an employee of the entity that is being protected. As such, the general operational details such as recruiting, training, scheduling, administration of wages and benefits, discipline, and promotion are the responsibility of the company or institution. Usually, proprietary forces enjoy longer tenure and less turnover, though they are more expensive to operate. The intangible factors such as loyalty, organizational identification, ownership of the roles are thought to be stronger also. Discipline and termination are more tedious in proprietary forces, as the security officers generally have the same employment protection as other employees.

Contract forces are thought to be somewhat less expensive and easier to administer. Most security companies assign a project manager to a contract site to handle liaison, scheduling, discipline and wage/benefit administration. The contracting entity or facility need only communicate with the contracting company regarding post requirements, role performance, standards, and expectations. The contractor is responsible for filling the roster, staffing posts and patrols, evaluating personnel, and effecting discipline and terminations where required. In most cases, the protected entity has a right-of-refusal for contract security officers assigned to their site.

Full time versus Part time

These terms may reflect two choices that must be made regarding the staffing of the posts and roles. A full-time security force would be comprised of employees or contract personnel who are employed on a full-time basis, with the associated benefits and protections afforded that status. If the force is from a contract service provider, the point is moot, as the staffing details will be the contractor's responsibility. In a proprietary force, however, the use of part-time personnel can be a cost saving strategy as there are no full-time benefits required. A part-time force requires a larger pool of officers to fill the schedule with the associated increase in scheduling difficulties, often related to employees other job demands.

Part-time forces present more problems in providing training because of the large pool of personnel. Turnover among part-time security employees may vary, depending on the situation. A part-time force made up of otherwise fully employed personnel seeking to augment their incomes may be very stable. Such a force consisting of personnel working only part-time may be less stable as personnel seek and gain full-time employment elsewhere. Both of these elements may be affected by the location of the force. In a small town environment, the tenure may be greater than in a more dense metropolitan setting with a more mobile and fluid workforce. In a smaller force, the flexibility and versatility of using part-time personnel may be a significant advantage.

Sworn versus Non-sworn

Probably the most profound choice in the paradigm is between sworn and non-sworn officers. A sworn officer is one who is duly authorized under statute as a law enforcement officer of competent jurisdiction at the facility or site. As such, the officer must be part of a commissioned police agency or sheriff's department. North Carolina has provisions for private special police who are empowered as law enforcement officers on the premises that they are contracted to protect. North Carolina statutes also empower campus police departments for colleges and universities across the state. A sworn officer may make arrests and use force including deadly force under color of law. In almost all cases, sworn officers in North Carolina are armed as police officers.

The police power entrusted to a sworn officer is reserved for violations of law. There is no additional power over a facility population related to enforcing of rules and regulations that are not codified as part of the state law and local ordinances. This authority offers little advantage in performing the traditional roles of the security officer. On campuses with resident populations, in effect miniature cities, there is an advantage to using sworn police as a additional protection in that they can enforce law without calling for assistance from the jurisdiction. Routine security duties do not require enforcing law and ordinances, and this authority does not enhance the effectiveness of the security program in most other kinds of facilities. The one possible exception would be a facility that is extraordinarily remote with little police service available for emergency response. Sworn status expands the duty of the officer to that of a public officer in the jurisdiction, thereby creating the potential for conflict between the interests of the site and those of the public at large.

Non-sworn security officers are trained to focus on proactive security procedures and processes as opposed to reactive enforcement of law and the complexities of this role. If a facility is within the jurisdiction of a well-organized and staffed law enforcement agency, sworn, trained police service is immediately available through 911. In most circumstances, if the need arises for sworn officers to reinforce or augment the security force in non-emergency situations, they can be obtained from the local department as off-duty, part-time assistance.

These are not subtle differences, and the expectations of the security program should be carefully examined with regard to the benefit of officers having arrest power.

Security Staff

The COA has no full-time security director for the college. The responsibilities for security are under the purview of the Business and Finance Vice President and the implementation of the security program is shared by the Services, Facilities, IT, HR departments as well as administrators at each of the campuses and the campus security officers. Administrators understand the importance of security and the professionals from the different disciplines work together to secure the COA campuses and harden them and their associated assets against harm. During the day at the Dare County Campus, security functions are primarily the responsibility of the Physical Operations Director. There were no security officers at the Dare County Campus at the time of the assessment. Personnel use the campus phone system and cell phones as communication devices depending on the situation. In addition, the COA has a proprietary software that they developed that allows administrators to dispatch emergency warnings over the network to every computer across the whole system. For weather related alerts, the college uses the Alert Now system which sends notification to persons who have signed up to receive them in both the text and voice methods. In addition, the Dare County Campus has a good working relationship with local law enforcement. All faculty and staff are also provided with Incident Report Forms and Accident Report Forms and instructions as to the submission of these forms.

There is no driving justification for use of sworn officers as a routine security measure, but the process for obtaining off-duty police personnel should be developed and maintained to guarantee such assistance when needed. Uniformed officers are advisable for recognition purposes and for any deterrent effect it may have on potential perpetrators. The part-time model seems to be successful and economical for the campuses in Edenton and Elizabeth City using officers during operating hours. Certainly, the same effectiveness would be achieved at the Dare County Campus, especially considering the low level of crime and the high level of police-community presence.

The campus is within the city limits of Manteo Police Department. Armed police officers are available to respond at all times via 911. Given the police activity reflected in the calls for service analysis, it is reasonable to conclude that there is a high police presence in the area and response time to an emergency call would be very quick. As such, there is no reason to consider arming security officers with firearms. Consideration to the use of non-lethal devices may be considered based on training load and direct cost of the equipment.

Vulnerability: The COA has set a standard and uses a part-time security officer system at the campuses in Elizabeth City and Edenton. This system is working effectively for the college based on the historical evidence collected. Not having a similar program at the Dare County Campus may create vulnerabilities for the campus. In addition a security officer provides an additional layer of security to the assets located at the campuses.

Risk: Injury or loss to assets at either of the Dare County Campuses that could have been avoided with a security officer presence is possible.

Recommendation: The college should consider deploying a consistent system of security officers at all of the COA campuses.

SIGNAGE

College campuses can be daunting and overwhelming if clear signage and wayfinding are not an integral part of the campus. Campus signage has the ability to orient and direct students and the community onto and throughout the campus, while establishing pedestrian safety. Signage is important not only on-campus but off-campus as well; because, it helps direct people to the campus from within the community.

A good signage plan takes a tiered approach to its design. Exterior signage should begin with off-campus roadway **advanced guidance signage** that directs visitors and students from within the community. An example of this type of sign includes the DOT green signs located along US 17/North Road Street that identifies the direction to COA. The second tier would include entry features onto the campus. Examples of this type of signage include **entrance and marquee signs**, or signs that identify the entrance(s) onto the campus property. This tier of signage might extend onto the campus through the use of flags/banners on poles or through colored street signage (identifiable color other than local street signs). The third tier is on-campus **directional signage** that identifies directions for vehicular and pedestrian traffic. Examples of this type of signage include directories placed at prominent intersections and core areas on the campus. This can also include uniform parking identification by color or graphic coded visitor, staff/faculty, and student parking areas. In addition, all parking lot signage should clearly identify entrances/exits, emergency phone numbers, where permits can be obtained, the type of parking allowed, and section numbers when lots are large in scale. At the pedestrian level, directional signs include kiosks and 'You Are Here' identification maps. The fourth tier of signage is **building identification**. Building identification signs can be located in front of the building (post and panel signs) in a prominent place or physically on the building. Keep in mind that this type of signage should be a minimum of six feet away from the curb when read by vehicle or three feet away from a walkway when read by pedestrians. Building identification

signs might go a step further and include roof building identification that can help law enforcement and emergency response teams.

The remaining tiers of signage include way finding within the interiors of buildings. Interior signage should begin with **building directories** at all major building entrances and include **intermediate directional signage** within larger facilities. Interior signage shall continue through to the signage on all doors. **Door signage** for classrooms and offices should use slotted changeable inserts for flexibility. All signage should be American Disabilities Act (ADA) compliant and follow the building code and local jurisdiction for size, identification, and accessibility requirements.

The most important thing to keep in mind with any signage plan is that the signage must be clear and consistent. A good signage plan must not overwhelm students and visitors, and need not create a cluttered campus. Signage is for creating safety and clear directions for all visitors to the campus. A good signage plan will exude greater campus presence in the community and welcome all visitors to the campus.



College of The
Albemarle

Proposed Signage Plan #1

Elizabeth City, North Carolina

December 20, 2012

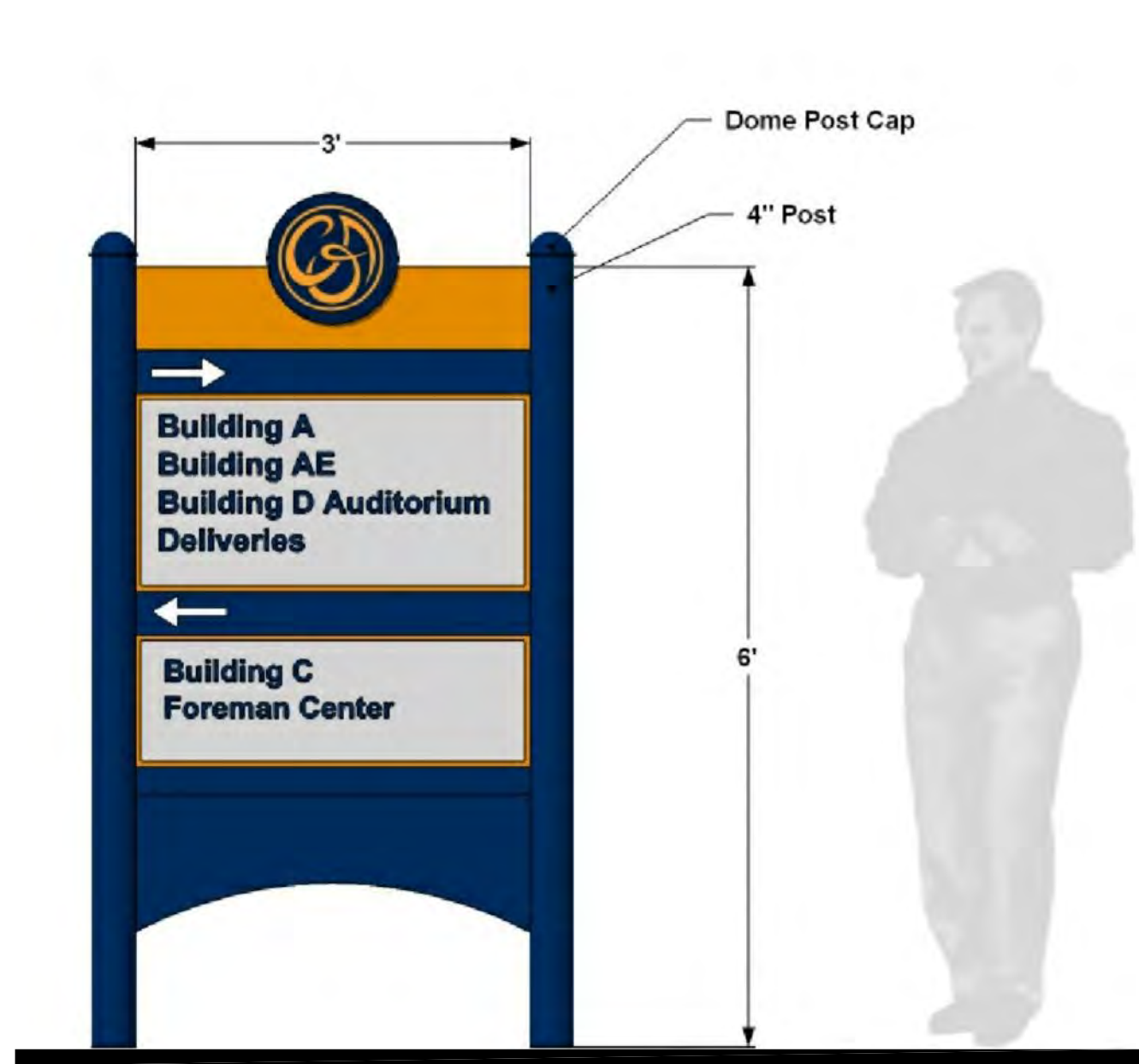


College of The
Albemarle

Proposed Signage Plan #2
Elizabeth City, North Carolina

December 20, 2012

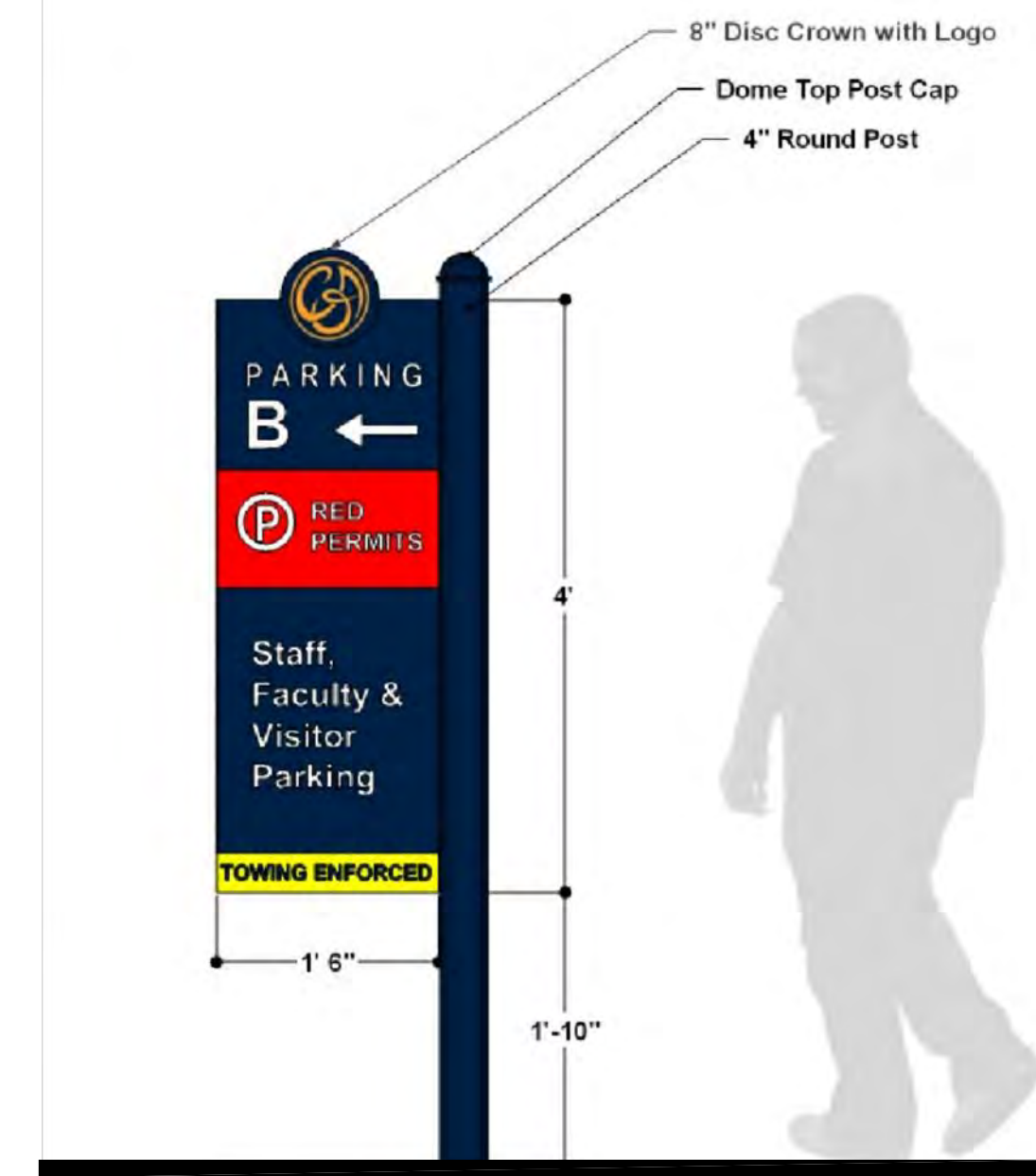




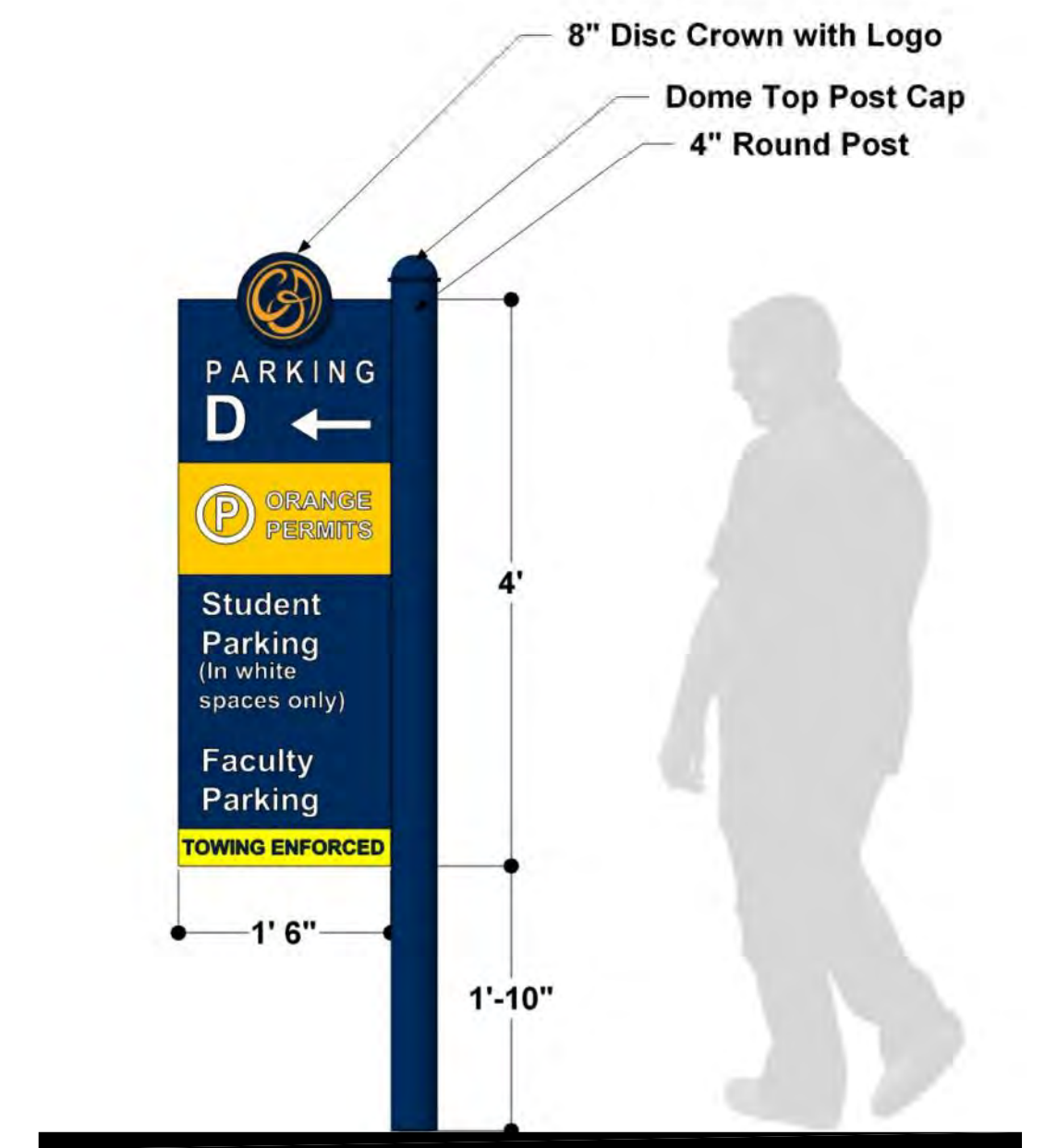
(B) Building ID Sign



(P1) Parking Lot 'A' ID Sign



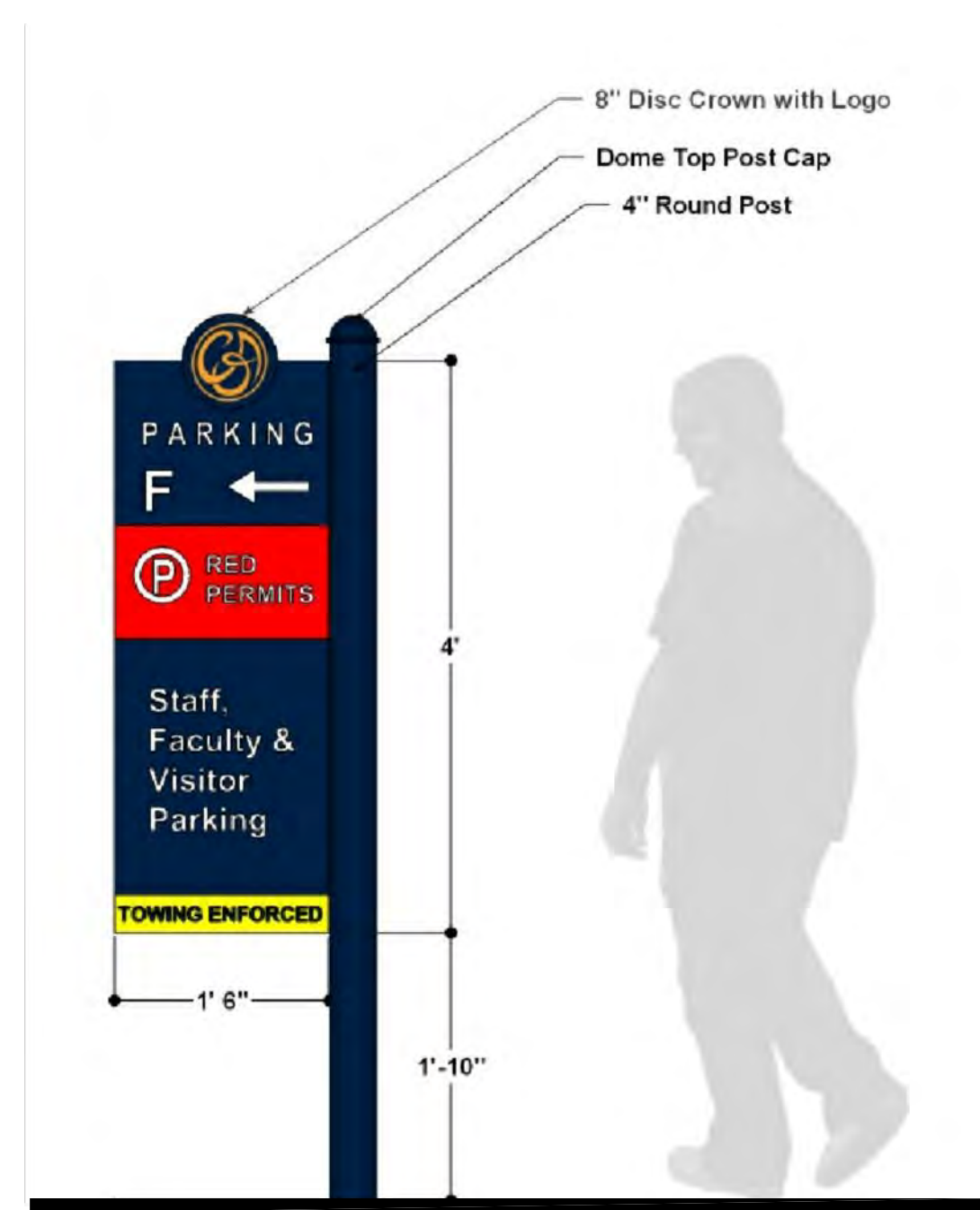
(P2) Parking Lot 'B' ID Sign



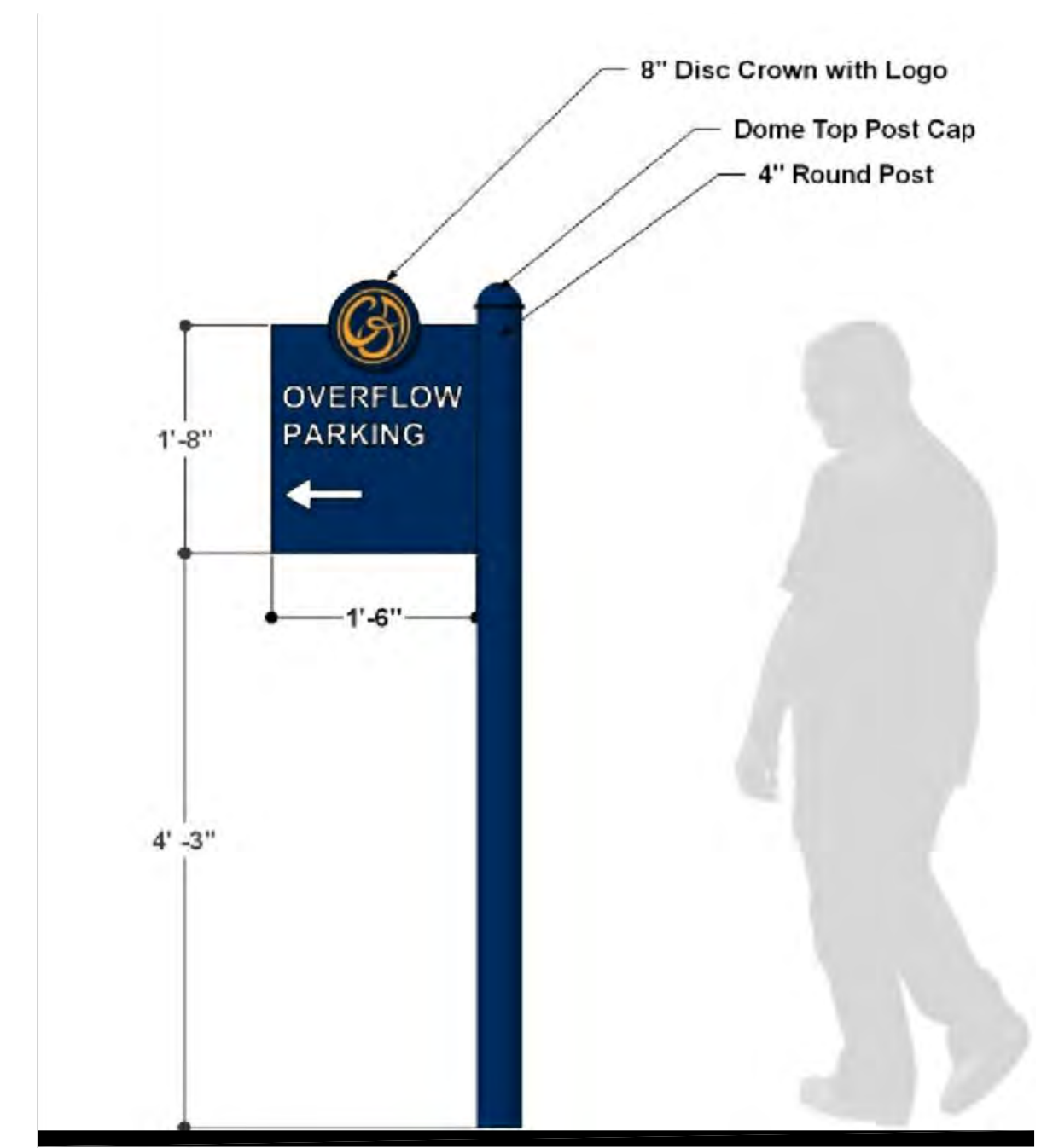
(P3) Parking Lot 'D' ID Sign



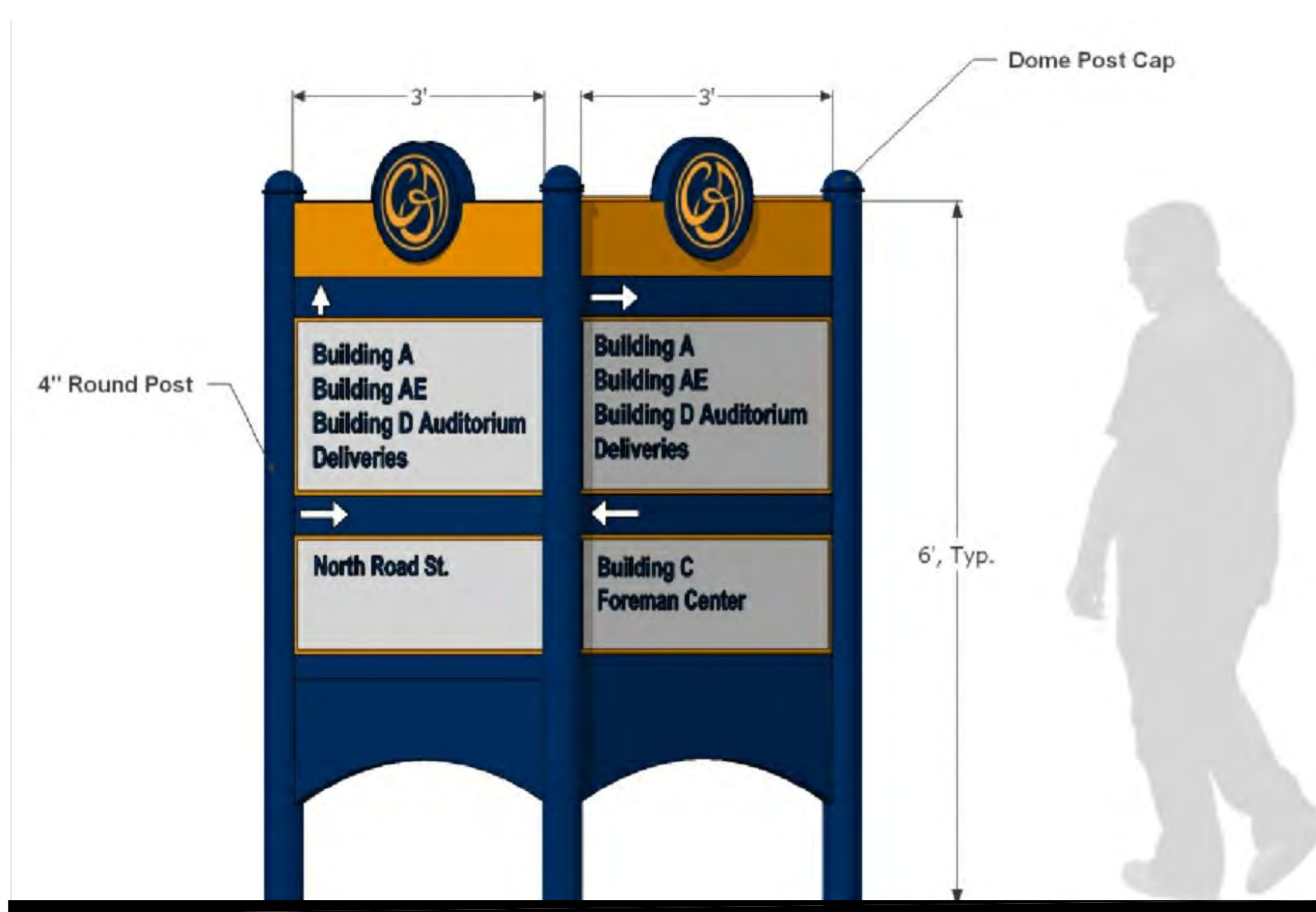
(P4) Parking Lot 'E' ID Sign



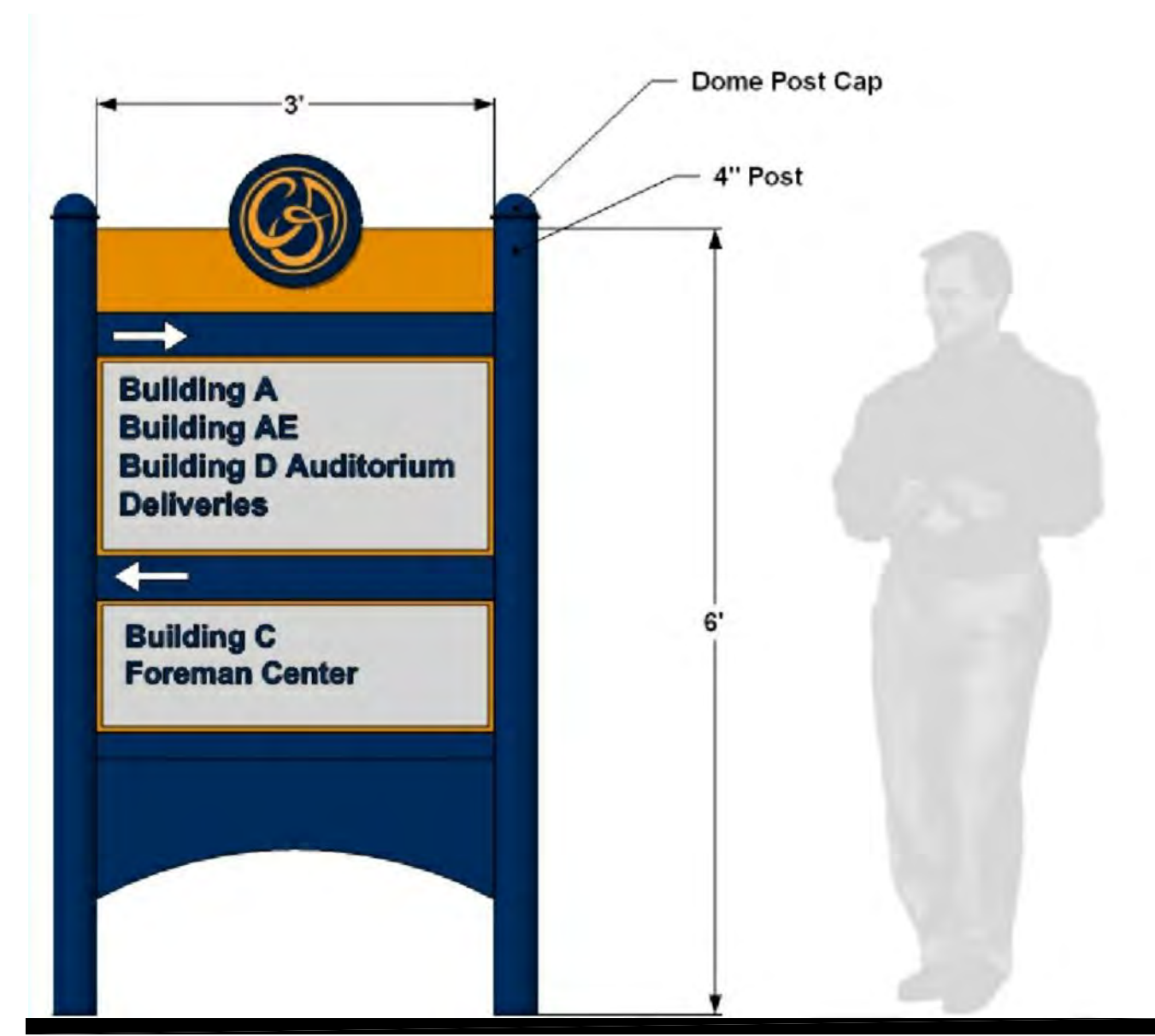
(P5) Parking Lot 'F' ID Sign



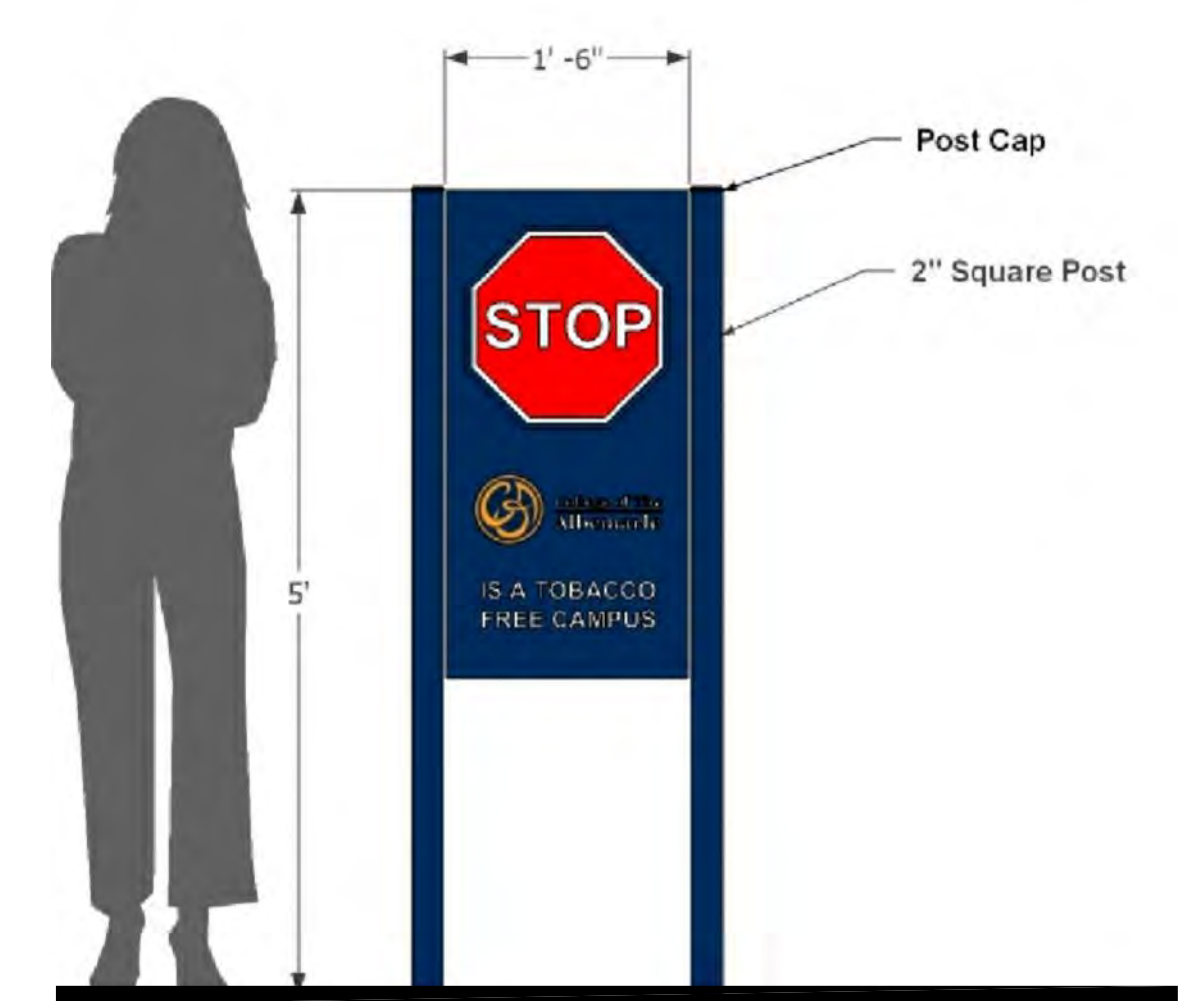
(P6) Overflow Parking Lot ID Sign



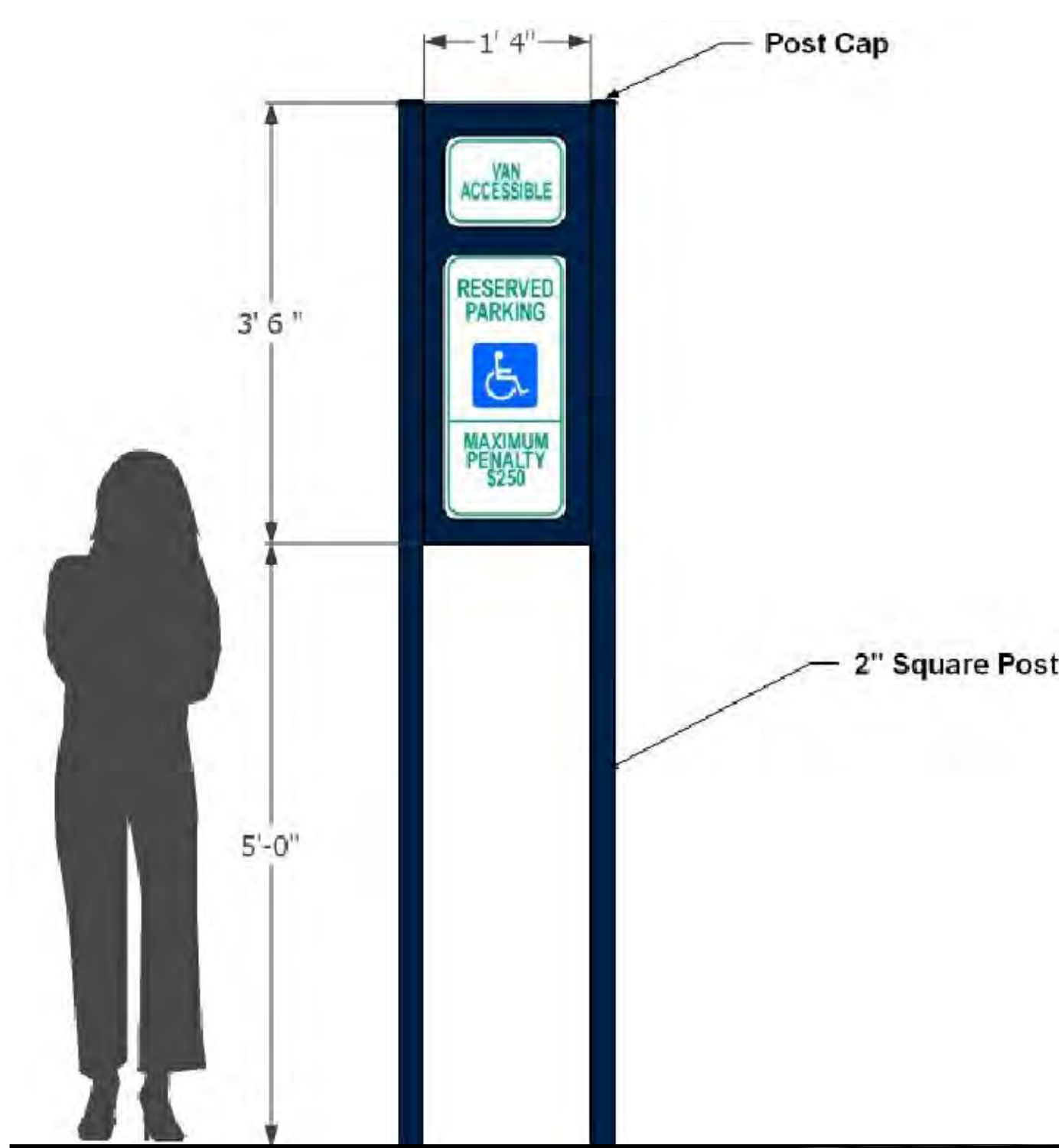
(A1) Large Vehicular Directional Sign Multi-sided



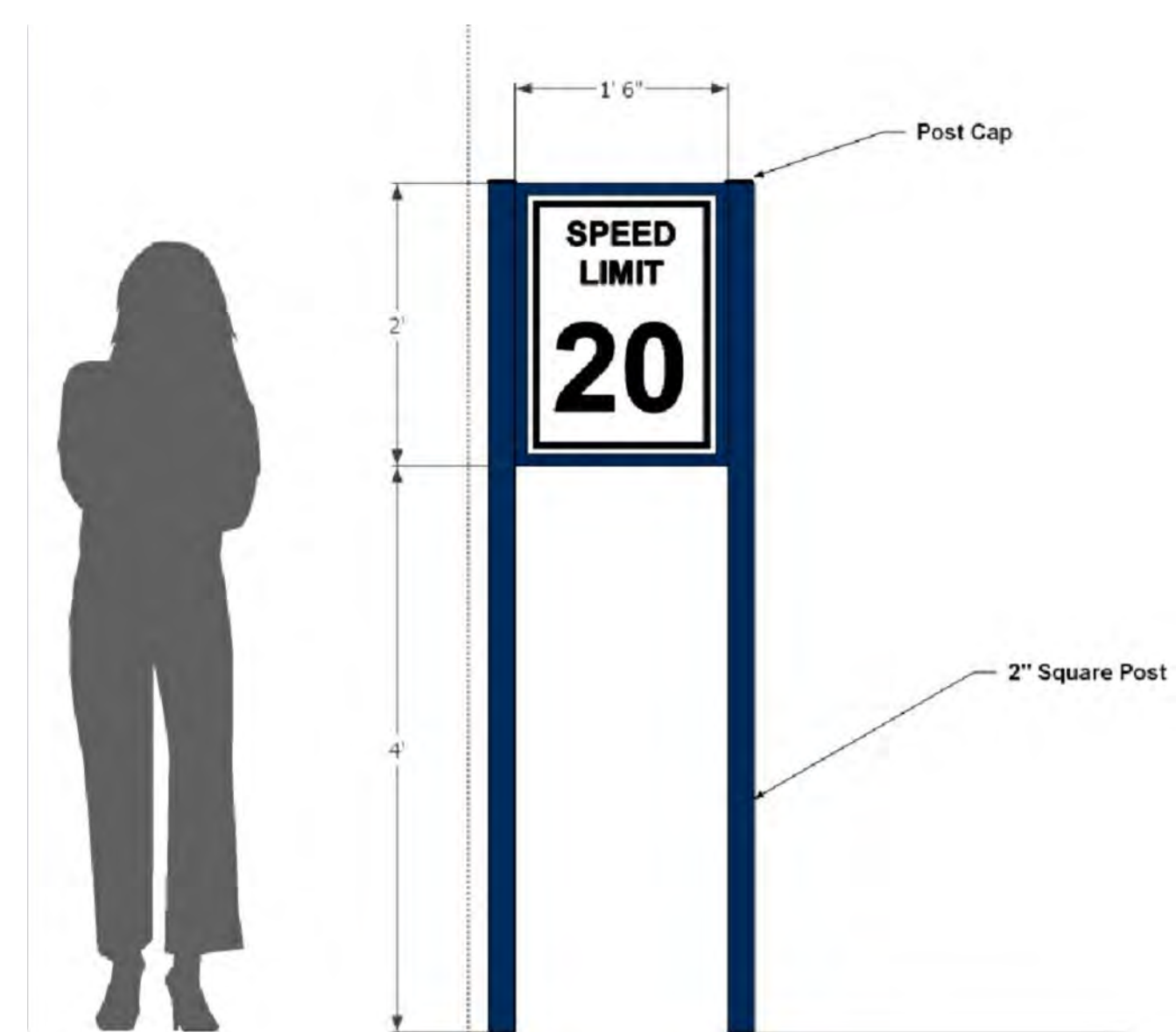
(A2) Large Vehicular Directional Sign



(T1) Stop Sign



(T2) Accessible Parking Sign

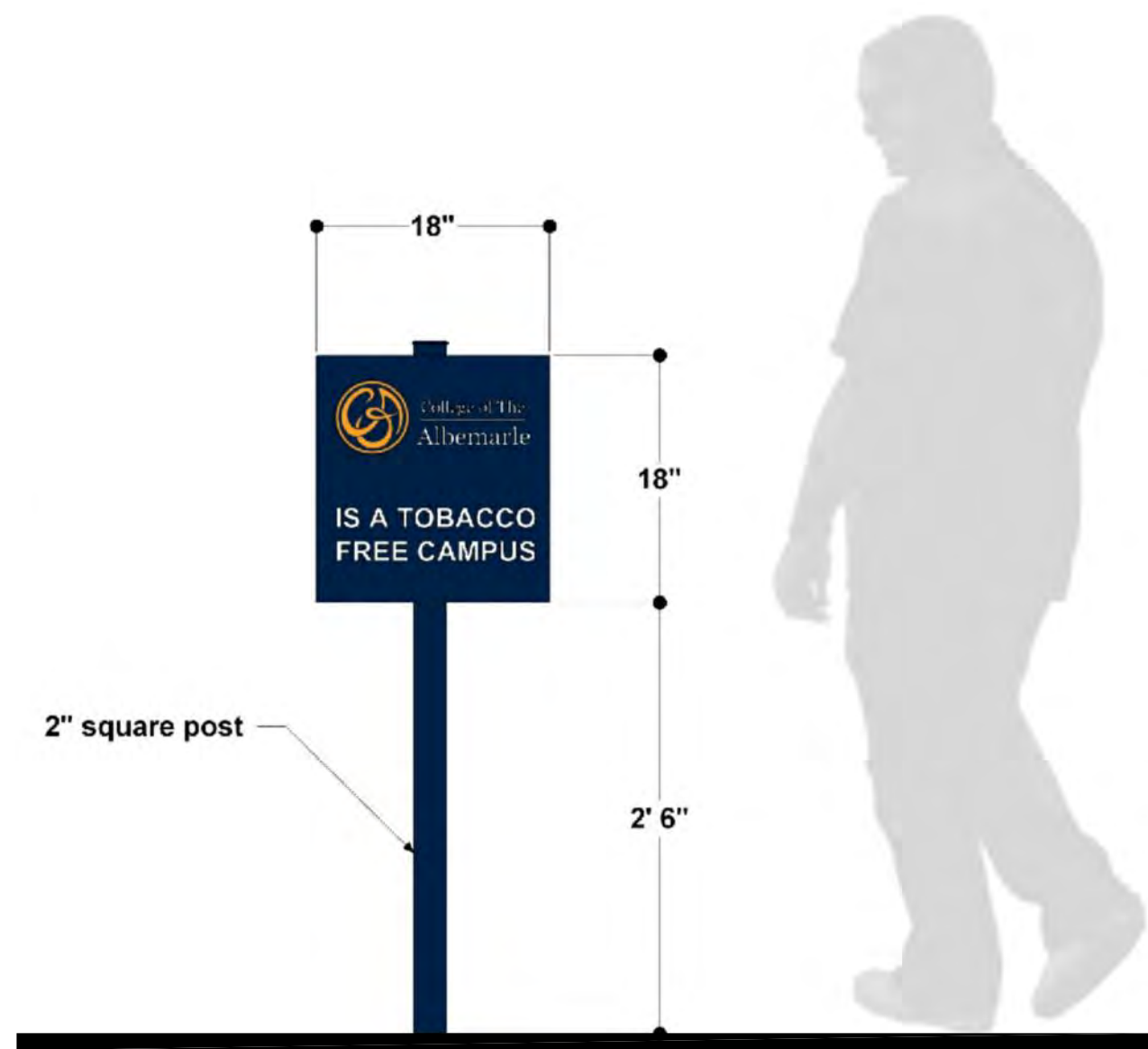


(T3) Speed Limit Sign

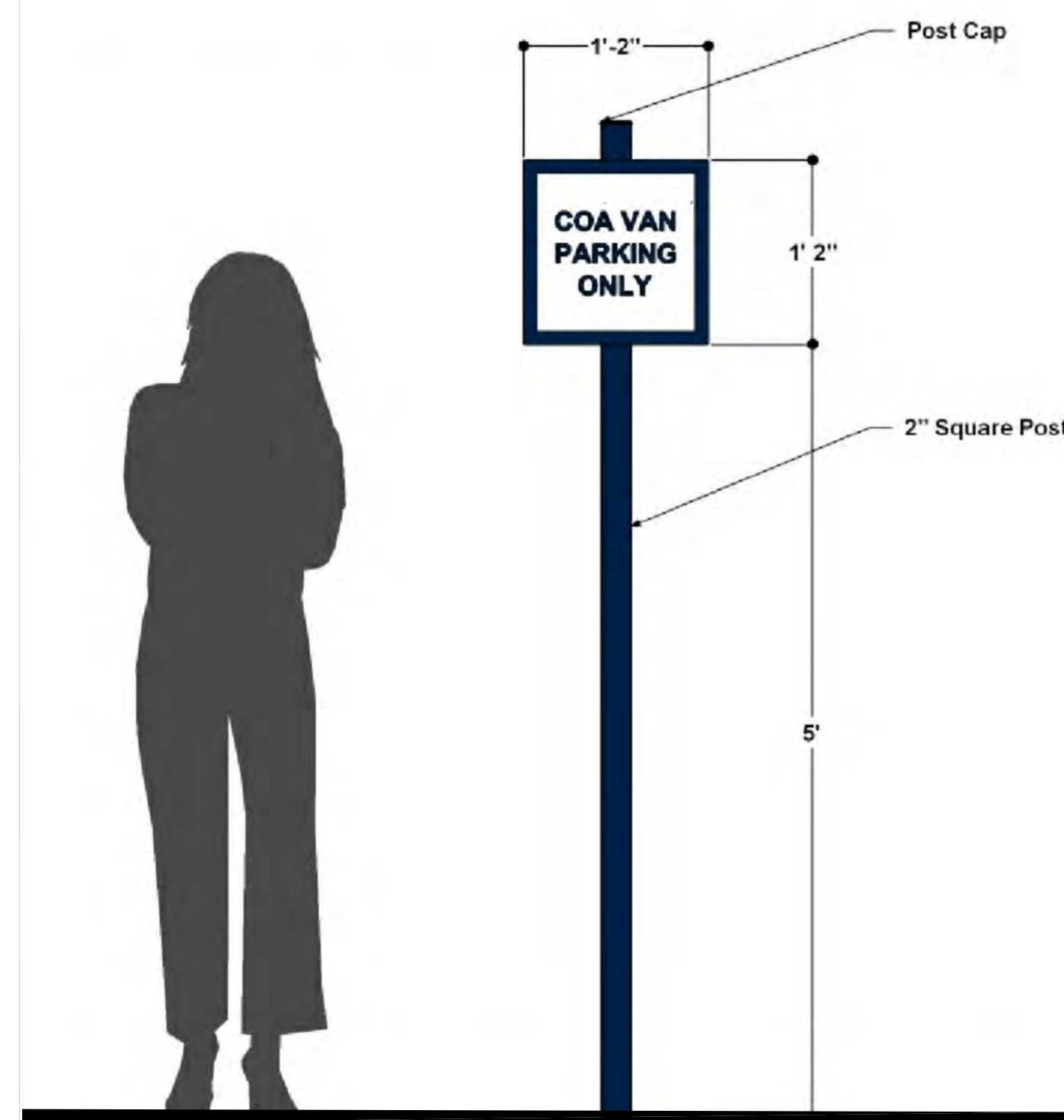


College of The
Albemarle
 Signage Types
 Elizabeth City, North Carolina

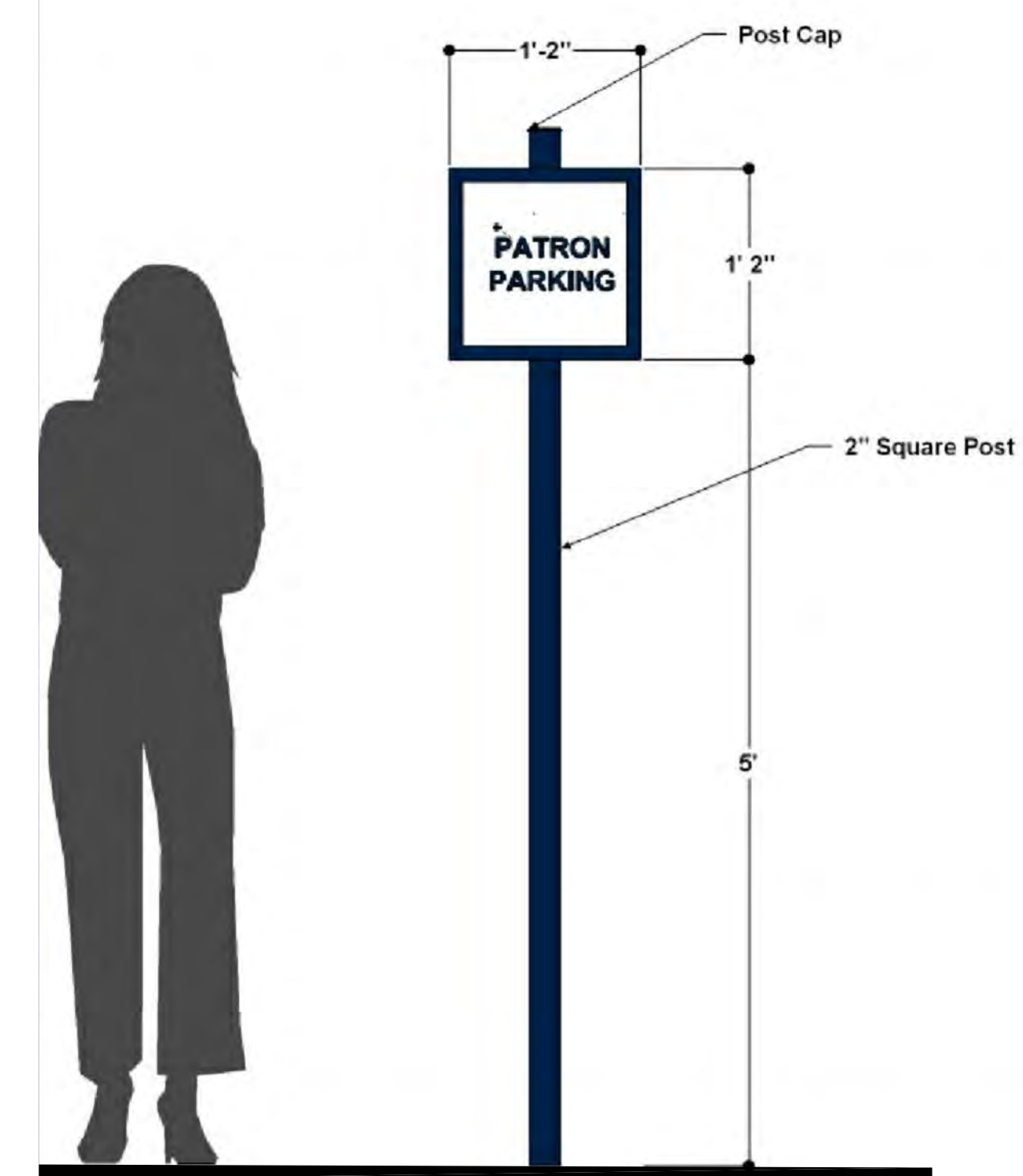
December 20, 2012



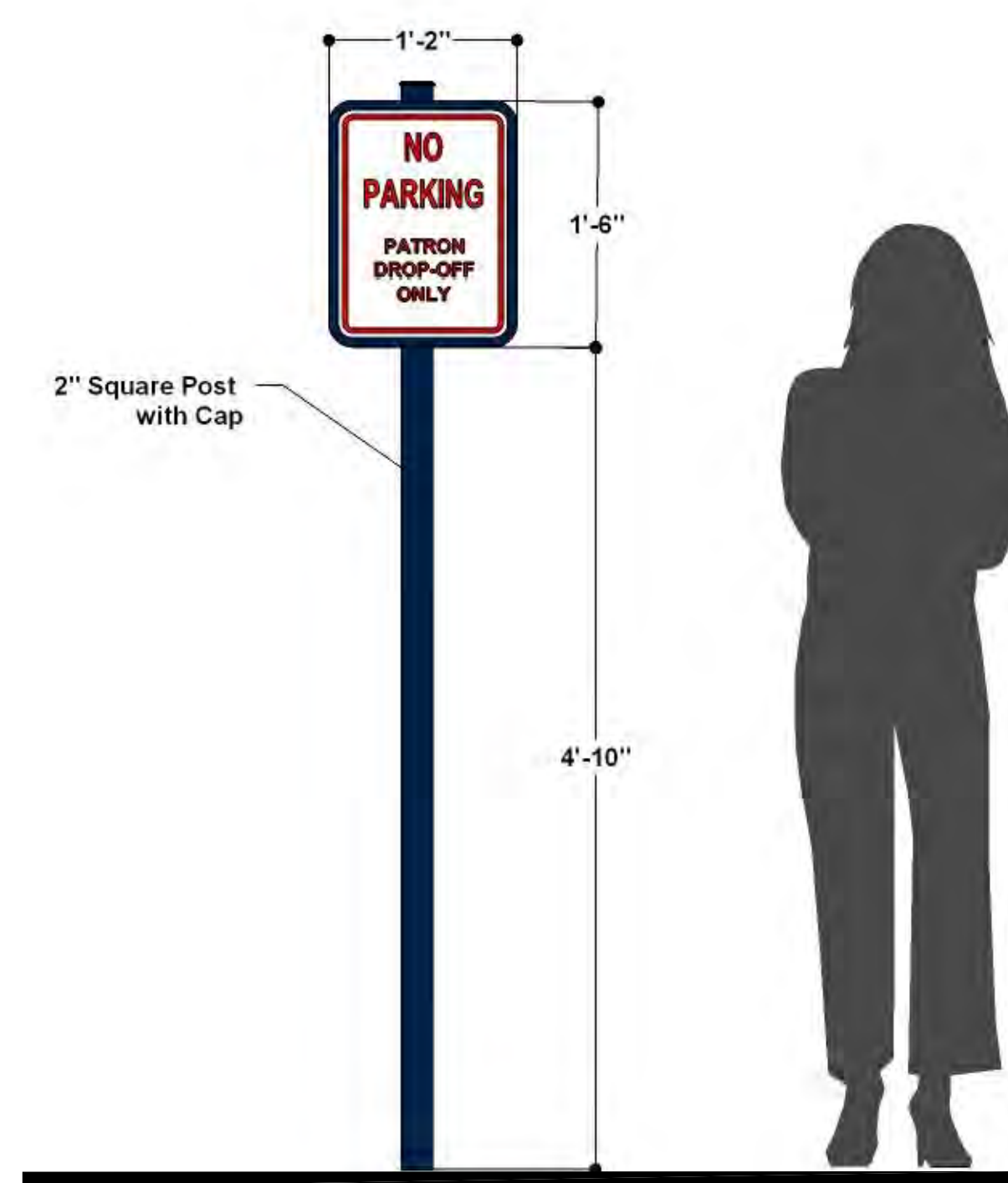
(T4) Tobacco Free Sign



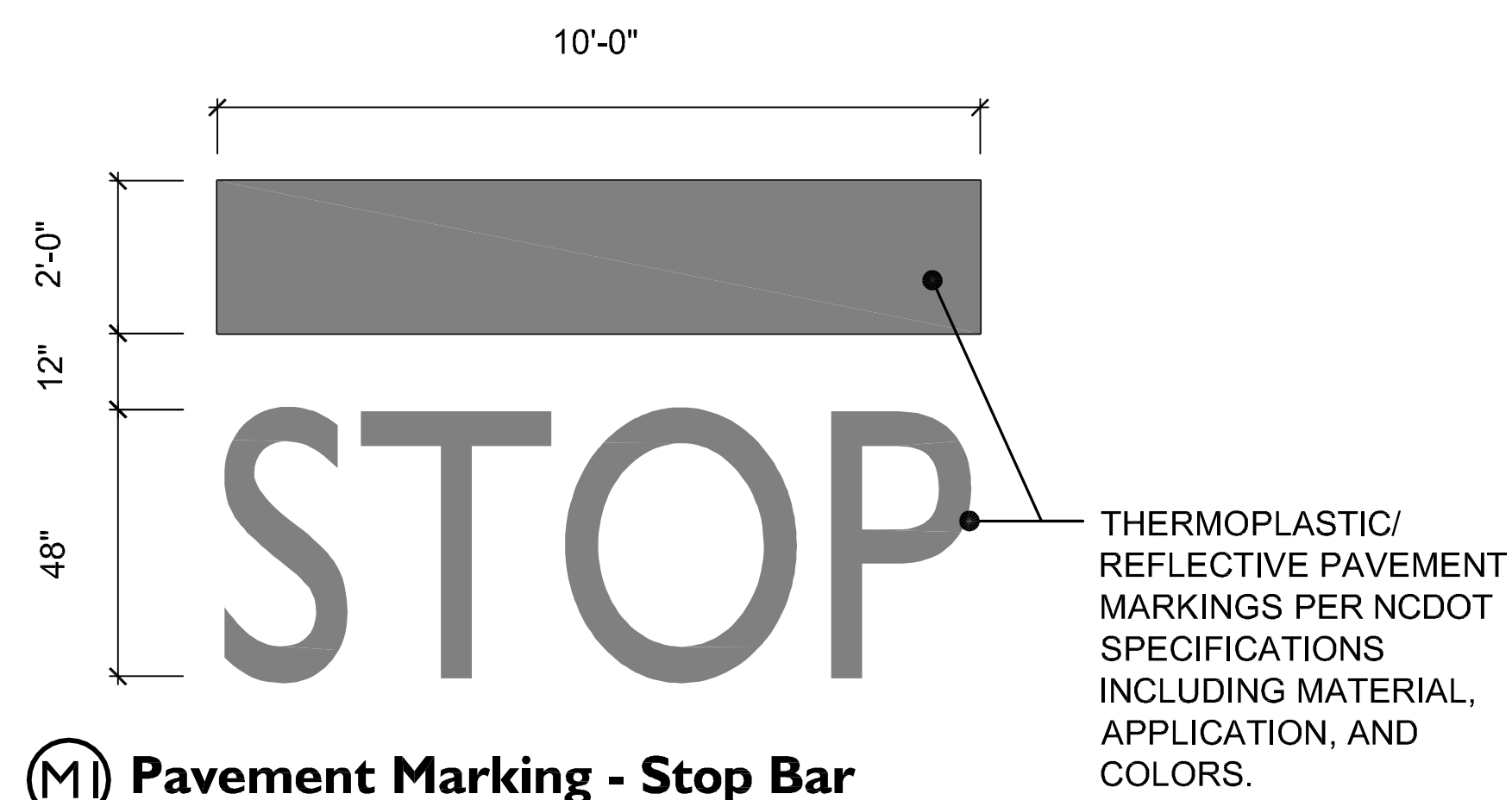
(T5) COA Van Parking Sign



(T6) Patron Parking Sign



(T7) Patron Drop-Off Sign



(M1) Pavement Marking - Stop Bar



DF WALKER

In November 2012, Boomerang Design was asked to prepare rough budget numbers to COA for renovation of the DF Walker Building into a Classroom and Administration Building. The prepared rough estimates include: one if COA were to occupy only the 1st floor of the building; one if COA were to occupy the entire building; and one to abate the building floor tile and mastic, and perform basic finish upgrades (i.e. spruce up and keep all walls in current location). It is important to note that the North Carolina Department of Insurance may or may not allow COA to close off the 2nd floor, and if it is allowed, there may be conditions would COA be required to meet. In addition DOI may require an elevator if COA occupies both floors regardless if the spaces on the 2nd floor are also offered on the 1st floor (i.e. offices and general classrooms, no specialty areas). Further in-depth sit down meetings will be required by DOI to make a determination. The renovation numbers for the 1st floor occupancy/renovation reflect replacement of all the building windows, the entire mechanical, electrical, and plumbing systems, as well as a complete new roof. More than likely, if DOI permits closing off of the second floor, COA would not be able to occupy the space for any reason nor could the space be used for storage. However, COA would also need to condition the space on the second floor even if it is not occupied to meet the state's requirements for energy efficiency.

Currently the DF Walker site is not registered as a historic site with the NC Historic Preservation office, the area on the COA Edenton Campus where the DF Walker School sits is being studied for inclusion in an adjacent Historic Boundary zone. Should this building become registered as a historic site, the renovation work may be required to meet certain historical guidelines which will add to the overall cost of the renovations.

Cost Estimates (1st floor only and Both Floors)

These rough estimates are based off an interior renovation including complete HVAC replacement, electrical replacement, roof replacement, window replacement, new finishes, technology upgrades, lighting upgrades, and accessibility upgrades. The purpose/use of the building would be renovated for Classroom and Administration space. Renovating the existing building would require at minimum, the below activities. A preliminary cost estimate is attached.

- Abatement of floor tile and mastic
- Replacement of the roof
- Replacement of the existing windows and exterior doors
- New fire alarm system, new lighting, upgrade the HVAC
- ADA upgrades to the restrooms, entrances and exits
- New finishes, paint, etc.
- Furring of exterior walls should the local authority require the building renovation to comply with the new energy code
- Site work for new sidewalks, landscaping, and a courtyard environment
- Installation of an elevator – for estimate with both floors (awaiting a call back from DOI to confirm this is required)

The cost estimate does not include abatement for Lead. An estimate for this would require completion of the abatement study by a licensed abatement company. The cost for abatement of lead (paint, insulation wrap, window sealant) can be very high – hundreds of thousands of dollars. COA might be able to encapsulate the lead paint, but there are areas where this would be difficult (i.e. the stairwells).

Cost Estimate (Selective 1st floor)

This rough estimate is based on a selective scope of work including: abatement for floor tile and mastic, new paint, new flooring and base, fire alarm upgrades, replacement of the roof, electrical and technology upgrades, plumbing fixture upgrades at toilet rooms for ADA, renovation of the former media center for COA Administrative space, and exterior landscaping and ADA access . A preliminary cost estimate is attached.

- Abatement of floor tile and mastic
- Replacement of the roof
- Replacement of the existing windows and exterior doors
- New fire alarm system
- ADA upgrades to the restrooms, entrances and exits
- New flooring, base, and paint (no new ceilings)
- Site work for new sidewalks, landscaping, and a courtyard environment

Again, this cost estimate does not include abatement for Lead. An estimate for this would require completion of the abatement study by a licensed abatement company. The cost for abatement of lead (paint, insulation wrap, window sealant) can be very high – hundreds of thousands of dollars. COA might be able to encapsulate the lead paint, but there are areas where this would be difficult (i.e. the stairwells).

DF Walker Renovation - Abatement, Administrative Area, 1st floor elect. and tech.
College of the Albemarle
November 16, 2012
Preliminary Cost Estimate

Construction Costs

<i>Abatement</i>						
	Abatement testing	1	ls			\$3,000
	Abatement flooring/mastic	1	ls			\$120,000
	Abatement lead paint, sealant, insulation wrap, etc.					TBD
<i>Demolition</i>						
	Window Demolition	1	ls			\$20,000
	Roof Demolition	145	squares	\$90.00	square	\$13,050
	Demolition Subtotal					\$20,000
<i>Alteration/Renovation</i>						
	Administrative Area	4,400	sf	\$55.00	sf	\$242,000
	Replacement windows	1	ls			\$250,000
	Plumbing Upgrades (restrooms only)	1	ls			\$12,000
	Electrical and Technology upgrades	29,000	sf	\$15.75	sf	\$456,750
	Fire Alarm upgrades	29,000	sf	\$3.00	sf	\$87,000
	Paint	29,000	sf	\$1.50	sf	\$43,500
	New flooring and base	29,000	sf	\$4.50	sf	\$130,500
	Replacement roof	14,500	sf	\$6.00	sf	\$87,000
	ADA exterior access	1	ls			\$50,000
	Landscaping	1	ls			\$30,000
	New Sitewalks	1	ls			\$10,000
	New Entrance to Admin Area	500	sf	\$250.00	sf	\$15,000
	Alteration/Renovation Subtotal					\$1,413,750
	General Conditions (Bonding, Insurance, Profit, Sales Tax, etc)					\$215,063
	Construction Subtotal					\$1,648,813
	Construction Contingency	5	%			\$82,441
	Design Contingency	10	%			\$164,881

Non Construction Costs

FF&E	TBD
Permits & Fees	\$7,500
Advertising	\$2,500
Testing, Surveys, and Subsurface	\$0
Printing	\$2,500
Abatement Design/Administration	\$5,000
A/E Fees	\$189,613
Non Construction Cost Subtotal	\$207,113

Total Estimated Project Budget	\$2,103,248
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DF Walker Renovation - 1st floor only
College of the Albemarle
November 16, 2012
Preliminary Cost Estimate

Construction Costs

<i>Abatement</i>						
	Abatement testing	1	ls			\$3,000
	Abatement flooring/mastic	1	ls			\$120,000
	Abatement lead paint, sealant, insulation wrap, etc.					TBD
<i>Demolition</i>						
	Selective Demolition	29,500	sf	\$4.00	lf	\$118,000
	Door hardware demolition					
	HVAC demolition					
	Electrical demolition					
	Plumbing fixture demolition					
	Exterior wall demolition					
	Window Demolition					
	Floor slab demo for plumbing					
	Floor slab demo for plumbing					
	Misc. demolition					
	Roof Demolition	145	squares	\$90.00	square	\$13,050
	Demolition Subtotal					\$118,000
<i>Alteration/Renovation</i>						
	Administrative Area	4,400	sf	\$55.00	sf	\$242,000
	Replacement windows	1	ls			\$250,000
	1st floor	14,500	sf	\$110.00	sf	\$1,595,000
	Door hardware replacement (repair)					
	Casework					
	Plumbing renovation for labs					
	Plumbing ADA compliance for restrooms					
	Technology upgrades					
	New doors					
	Replacement roof	14,500	sf	\$6.00	sf	\$87,000
	ADA exterior access	1	ls			\$50,000
	Landscaping	1	ls			\$30,000
	New Sitewalks	1	ls			\$10,000
	New Entrance to Admin Area	500	sf	\$250.00	sf	\$15,000
	Alteration/Renovation Subtotal					\$2,279,000
	General Conditions (Bonding, Insurance, Profit, Sales Tax, etc)					\$359,550
	Construction Subtotal					\$2,756,550
	Construction Contingency	5	%			\$137,828
	Design Contingency	10	%			\$275,655

Non Construction Costs

FF&E	TBD
Permits & Fees	\$10,000
Advertising	\$5,000
Testing, Surveys, and Subsurface	\$12,000
Printing	\$5,000
Abatement Design/Administration	\$5,000
A/E Fees	\$317,003
Non Construction Cost Subtotal	\$354,003

Total Estimated Project Budget	\$3,524,036
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DF Walker Renovation - Entire Building

College of the Albemarle

November 16, 2012

Preliminary Cost Estimate

Construction Costs

<i>Abatement</i>						
	Abatement testing	1	ls			\$3,000
	Abatement flooring/mastic	1	ls			\$120,000
	Abatement lead paint, sealant, insulation wrap, etc.					TBD
<i>Demolition</i>						
	Selective Demolition	29,500	sf	\$4.00	lf	\$118,000
	Door hardware demolition					
	HVAC demolition					
	Electrical demolition					
	Plumbing fixture demolition					
	Exterior wall demolition					
	Window Demolition					
	Floor slab demo for plumbing					
	Floor slab demo for plumbing					
	Misc. demolition					
	Roof Demolition	145	squares	\$90.00	square	\$13,050
	Demolition Subtotal					\$118,000
<i>Alteration/Renovation</i>						
	Administrative Area	4,400	sf	\$55.00	sf	\$242,000
	Replacement windows	1	ls			\$250,000
	1st floor	14,500	sf	\$110.00	sf	\$1,595,000
	2nd floor	14,500	sf	\$55.00	sf	\$797,500
	Door hardware replacement (repair)					
	Casework					
	Plumbing renovation for labs					
	Plumbing ADA compliance for restrooms					
	Technology upgrades					
	New doors					
	Replacement roof	14,500	sf	\$6.00	sf	\$87,000
	ADA exterior access	1	ls			\$50,000
	Landscaping	1	ls			\$30,000
	New Sitewalks	1	ls			\$10,000
	New Entrance to Admin Area	500	sf	\$250.00	sf	\$15,000
	New Elevator tower	1	ls			\$70,000
	Alteration/Renovation Subtotal					\$3,146,500
	General Conditions (Bonding, Insurance, Profit, Sales Tax, etc)					\$489,675
	Construction Subtotal					\$3,754,175
	Construction Contingency	5	%			\$187,709
	Design Contingency	10	%			\$375,418

Non Construction Costs

FF&E	TBD
Permits & Fees	\$10,000
Advertising	\$5,000
Testing, Surveys, and Subsurface	\$50,000
Printing	\$5,000
Abatement Design/Administration	\$5,000
A/E Fees	\$431,730
Non Construction Cost Subtotal	\$506,730

Total Estimated Project Budget	\$4,824,031
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