

## **Executive Summary**

### **Background Information**

- Current Space Assignments
  - The Associates Degree and Practical Nursing programs share 14,900 square feet of space in building number 3.
  - The Nursing Assistant program uses 1,060 square feet of space in building 8.
  - The Medical Laboratory Technology program uses 1,304 square feet of space in building 9.
- Long-Range Facility Planning Project Results
  - All information reviewed indicated BCCC needs to expand offerings in Allied Health programs.
- Projected High Growth Occupations
  - Allied Health Occupations are among the fastest growth occupations in North Carolina.
  - North Carolina is experiencing a critical shortage of nurses.
- Number of Applications for Current Class Seats
  - BCCC has space for approximately 50% of the qualified students in Associates Degree Nursing and Practical Nursing programs.

### **Benefits of a New Allied Health Building**

- Increase in the Number of Students and Increase in Potential Student Earnings
  - Within the first five years of operation, BCCC projects Allied Health programs contained in the new space to grow by 29%. This increase includes an approximately 17% increase in Associate Degree Nursing students, an approximately 33% increase in Practical Nursing students, an approximately 100% increase in Nursing Assistant students per class, and an approximately 62% increase in Medical Laboratory Technology students.
  - The new facility would allow for the capacity to expand from 120 to 160 Associates Degree Nursing students, with an initial expansion of 20 students in the first five years the facility is open.
  - The new facility would allow for the capacity to expand from 30 to 50 Practical Nursing students, with an initial expansion of 10 students in the first five years the facility is open.
  - Nursing Assistant courses could be expanded from 12 students per class to 24 students per class.
  - The new facility would allow for the capacity to expand from 16 to 30 Medical Laboratory Technology students, with an initial expansion of 10 students in the first five years the facility is open.
  - With an estimated useful life of 50 years, the initial expansion of students would allow for an additional 1,300 students to enter Allied Health programs at BCCC. Over these student's careers, BCCC estimates these students would have the ability to earn approximately \$744 million in

additional income based on what these students were earning before they entered the program.

- It is estimated that once the capacity of the new Allied Health Building is reached, the income earned by the additional students taught in the facility will be well above \$1 billion.
- Increased Efficiency
  - The new Allied Health Building will allow BCCC to expand class sizes for all programs moved into this space.
- Nursing Simulation
  - A nursing simulation lab will be constructed as part of the new facility, which will bring new technology into use in nursing programs.
- Indirect Benefits
  - The new facility will free classroom space in the vacated buildings for other programs. Enrollment for the Fall semester of 2008 is the highest in BCCC history.
  - BCCC projects an overall 18% increase in FTE from 2007-2013.
- Decrease in Opportunity Cost
  - Qualified students will be eligible to enter the program sooner and will therefore be able to get into the workforce sooner.

#### **Cost of a New Allied Health Building**

- Building Cost
  - The new Allied Health Building is projected to be a 33,383 square feet, classroom and lab building.
  - The building is projected to cost approximately \$6.7 million.
- Cost per Total Student
  - The building has the capacity to hold 264 students at any one time. Using the capacity of the building at one time, it can be calculated that the building would cost \$25,379 per student.
  - The building is expected to be in use for 50 years with the capacity for 264 students to use the building at any one time. The building has the capacity to serve 13,200 students during the life of the building. Using the total capacity of students, leads to a cost of \$508 per student served during the life of the building.
- Cost per Additional Allied Health Student Served
  - BCCC anticipates the capacity to have 86 additional allied health students per year using the building at a one time cost of \$77,907 per additional student.
  - If we project the new building will be in use for at least 50 years, it will have the capacity to serve an additional 4,300 students at a cost of \$1,558 per additional student served during the life of the building.
- Operating Cost of the new Building
  - On average, operating costs for a new Allied Health Building are expected to be approximately \$165,000 per year for the first five years of operation.

## **Background Information**

### **1. Current Space Designated to Programs**

Allied health programs at Beaufort County Community College are spread over three classroom buildings.

The Associates Degree Nursing and Practical Nursing programs share 14,900 square feet in building number 3. The Associates Degree Nursing program uses 2,864 square feet of classroom space and 1,309 square feet of lab space in this building. BCCC currently enrolls 60 Associates degree students each fall for the two year program. Associates Degree Nursing students are separated into two classes. One class contains 40 students and the other 20.

The Practical Nursing program uses 768 square feet of classroom space and 770 square feet of lab space in this building. The Practical Nursing program enrolls 30 students each fall for the one year program. The practical nursing program teaches one class of 30 students.

The Nursing Assistant program is contained in building 8 on the BCCC campus. The program uses 452 square feet of classroom and 608 square feet of lab space for Nursing Assistant I and Nursing Assistant II offerings. There is currently a limit of 12 students per class because of the lack of space.

The Medical Laboratory Technology program currently uses 1,304 square feet of space in building 9 as both a classroom and lab. This program is operating in a space that was originally designed for another science lab and science lab space is in high demand. BCCC currently averages 16 students in the Medical Laboratory Technology program.

### **2. Long-Range Facility Planning Project Results**

Beaufort County Community College underwent a Long-Range Plan Study with guidelines set out by the N.C. Community College System. The results from all areas of this process led to a need to look for ways to increase current offerings in Allied Health Programs. Some of the results from this process include data regarding industry growth from a Regional Scan and Program Demand Report developed by Economic Modeling Specialists Incorporated (EMSI) and program growth perceptions from a BCCC Faculty and Staff Survey.

EMSI, contracted by the N.C. Community College System, listed home health aides, personal and home care aides, nursing aides, orderlies, and registered nurses as showing the most growth in identified high growth industries. The faculty/staff survey supported the EMSI data by projecting the Associate Degree Nursing Program in Curriculum and Emergency Medical Services in Continuing Education as two of the fastest growing programs for the 2007-2013 time period.

Local community representatives agreed. An invitation to attend a listening forum was extended to fifty-four individuals from the BCCC service-area representing the following sectors: health care, law enforcement, fire and rescue, public education, four-year college, small and large businesses, local government, public services, manufacturing, agriculture, and social services. The listening forum was held October 31, 2007 in the College's multi-purpose room of its Public Safety Building, #10. BCCC senior administration moderated, presented data, and facilitated focus groups. Thirty-three individuals attended.

When asked what existing College programs or training opportunities need to expand, those present during the focus group listening session agreed with the industry growth data in the EMSI report and the survey projections of the BCCC faculty and staff. In addition, a large number of comments related to health care needs such as "home healthcare, hospital care, expanding NA's and RN's etc," "any of the medical programs (aging population will need support)," "surgical techs," "EMT – day and night, basic – intermediate," "nursing," "any new medical technology," and "pharmacy" to name a few.

### **3. Projected High Growth Occupations**

From 1999-2005, North Carolina experienced a .2% growth in total employment but for allied health jobs, the growth was 45.8%. Eight of the 10 fastest growing occupations in our State are allied health professions.

According to the NC Center for Nursing, our State currently needs 7,000 more RNs than we can produce. By 2015 that shortage is expected to be nearly 20,000 and by 2020, it could exceed 32,000.

Approximately 85% of workers enrolled in allied health education programs are trained through community colleges. Nine out of ten nurses educated in North Carolina stay in North Carolina. In all health professions, most students remain near their home community when they enter the workforce, which helps to address the growing need of keeping trained health professionals in rural areas.

Locally, EMSI projects there will be an increase of 150 registered nurses needed from 2007 to 2013 in the service area of Beaufort County Community College. This increase represents a total increase of 21% in this field. Based on information provided by University Health Systems, BCCC feels this increase may actually be higher over this same time period.

Overall, EMSI data indicates jobs in healthcare occupations will increase by 852 jobs in our service area from 2007-2013. This represents an increase of 27% increase over that time period.

#### 4. Number of Applications for Current Class Seats

The Associates Degree Nursing program historically receives more applications from qualified students than BCCC has seats available in the program. The table below summarizes this information for the last few years.

**Table 1: Associates Degree Nursing Acceptance Rate**

	2003	2004	2005	2006	2007	2008
Qualified	78	89	74	86	95	115
Accepted	42	42	42	60	60	60
% Accepted	54%	47%	57%	70%	63%	52%

The Practical Nursing program historically receives more applications from qualified students than BCCC has seats available in the program. The table below summarizes this information for the last few years.

**Table 2: Practical Nursing Acceptance Rate**

	2003	2004	2005	2006	2007	2008
Qualified	32	34	50	60	53	60
Accepted	20	20	20	20	30	30
% Accepted	63%	59%	40%	33%	57%	50%

Nursing assistant classes are started as soon and as often as there are 12 qualified students interested in taking the courses.

The medical laboratory technology program operates as a standard curriculum program and a cap of 16 is set for the number of students allowed to take the courses. There is no information available about the number of students not allowed to start the program.

**Benefits of a New Allied Health Building**

**1. Increase in the Number of Students and Increase in Potential Student Earnings**

It is currently projected that the new allied health building would allow the Associates Degree Nursing program the capacity to expand from 120 students to 160 students. Current plans are to increase the Associates Degree Nursing program by 20 students within the first five years the new building is operational. The remaining capacity would be filled at a future date. A simple calculation can be prepared showing the potential increase in earnings for the additional students being allowed to enter the program because of the new space. If we assume a 60% graduation rate, the initial increase of 20 students will lead to 12 additional graduates from the program. If we assume each student entered the program is making \$10.00 per hour in another field and after graduating accepted an RN position making \$21.83 (as provided by EMSI), this represents a gain of \$24,606 per student per year. If we assume the students all work in the field for 30 years, the total increase in income will be approximately \$738,192 per student. BCCC depreciates buildings using a 50 year estimated useful life. If we assume the new Allied Health Building will also have this estimated useful life, we can project the number of graduates over this time period. Assuming the initial expansion of 20 students allows for 12 graduates per year, we can expect the new building to lead to an increase of 600 additional graduates from the Associates Degree Nursing program. Using the same figures as above, we can expect these 600 additional students to have additional income of approximately \$443 million dollars over their careers.

**Table 3: Additional Increased Income for Associates Degree Nursing Students Served**

	<b>Initial Expansion</b>
Entering Hourly Rate	10.00
Entering Annual Salary	20,800.00
Leaving Hourly Rate	21.83
Leaving Annual Salary	45,406.40
Additional Income - Yearly	24,606.40
Years of Employment in new Career	30.00
Additional Income - Career	738,192.00
Number of Students Served in Building	600.00
Additional Income - All students	<b>442,915,200.00</b>

It is currently projected that the new allied health building would allow the Practical Nursing program the capacity to expand from 30 students to 50 students. Current plans are to increase the Practical Nursing program by 10 students within the first five years the new building is operational. The remaining capacity would be filled at a future date. A simple calculation can be prepared showing the potential increase in earnings for the additional students being allowed to enter the program because of the new space. If we assume a 70% graduation rate, the initial increase of 10 students will lead to 7 additional graduates from the program. If we assume each student entered the program is making \$10.00 per hour in another field and after graduating accepted an LPN position making \$16.65 (salary.com), this represents a gain of \$13,832 per student per year. If we assume the students all work in the field for 30 years, the total increase in income will be

approximately \$414,960 per student. BCCC depreciates buildings using a 50 year estimated useful life. If we assume the new Allied Health Building will also have this estimated useful life, we can project the number of graduates over this time period. Assuming the initial expansion of 10 students allows for 7 graduates per year, we can expect the new building to lead to an increase of 350 additional graduates from the Practical Nursing program. Using the same figures as above, we can expect these 350 additional students to have additional income of approximately \$145 million dollars over their careers.

**Table 4: Additional Increased Income for Practical Nursing Students Served**

	<b>Initial Expansion</b>
Entering Hourly Rate	10.00
Entering Annual Salary	20,800.00
Leaving Hourly Rate	16.65
Leaving Annual Salary	<u>34,632.00</u>
Additional Income - Yearly	13,832.00
Years of Employment in new Career	<u>30.00</u>
Additional Income - Career	414,960.00
Number of Students Served in Building	<u>350.00</u>
Additional Income - All students	<u><b>145,236,000.00</b></u>

It is currently projected that the new allied health building would allow the Nursing Assistant program to expand from 12 students to 24 students per class. From July 2006 until June 30, 2008, BCCC conducted 23 Nursing Assistant I and Nursing Assistant II courses. There were 190 students who took part in these courses. During the first two years the building is in operation, BCCC expects to conduct approximately 25 Nursing Assistant I and Nursing Assistant II courses. BCCC expects to serve approximately 350 students in these courses. A projection of increased earnings for these students is not provided because the expected increase in earnings is minimal compared to the other Allied Health programs. The increase in qualified Nursing Assistants in the area should provide for better health care in the region which is difficult to quantify.

It is currently projected that the new allied health building would allow the Medical Laboratory Technology program the capacity to expand from 16 students to 30 students per class. Current plans are to increase the Medical Laboratory Technology program by 10 students within the first five years the new building is operational. The remaining capacity would be filled at a future date. A simple calculation can be prepared showing the potential increase in earnings for the additional students being allowed to enter the program because of the new space. If we assume a 70% graduation rate, the initial increase of 10 students will lead to 7 additional graduates from the program. If we assume each student entered the program is making \$10.00 per hour in another field and after graduating accepted a Medical Laboratory Technology position making \$17.15 (salary.com), this represents a gain of \$14,872 per student per year. If we assume the students all work in the field for 30 years, the total increase in income will be approximately \$446,160 per student. BCCC depreciates buildings using a 50 year estimated useful life. If we assume the new Allied Health Building will also have this estimated useful life, we can project the number of graduates over this time period.

Assuming the initial expansion of 10 students allows for 7 graduates per year, we can expect the new building to lead to an increase of 350 additional graduates from the Medical Laboratory Technology program. Using the same figures as above, we can expect these 350 additional students to have additional income of approximately \$156 million dollars over their careers.

**Table 5: Additional Increased Income for Medical Laboratory Technology Students Served**

	<b>Initial Expansion</b>
Entering Hourly Rate	10.00
Entering Annual Salary	20,800.00
Leaving Hourly Rate	17.15
Leaving Annual Salary	35,672.00
Additional Income - Yearly	<u>14,872.00</u>
Years of Employment in new Career	30.00
Additional Income - Career	<u>446,160.00</u>
Number of Students Served in Building	350.00
Additional Income - All students	<u><b>156,156,000.00</b></u>

**Table 6: Allied Health Enrollment from Initial Expansion**

	<b>Current Enrollment</b>	<b>Expected (1st 5 Year) Enrollment</b>	<b>Percent Increase</b>
Associates Degree Nursing	120	140	17%
Practical Nursing	30	40	33%
Nursing Assistant	12	24	100%
Medical Laboratory Technology	16	26	63%
Total	<u>178</u>	<u>230</u>	<u>29%</u>

**Table 7: Expected Increased Student Earnings from Initial Expansion**

	<b>Current Enrollment</b>	<b>Initial Enrollment Increase</b>	<b>Capacity Enrollment</b>	<b>Additional Grads Life of building</b>	<b>Additional Graduates Increased Career Income</b>
A.D.N	120	140	160	420	442,915,200
L.P.N	30	40	50	245	145,236,000
N.A.	12	24	24	N/A	NA
M.L.T	16	26	30	245	156,156,000
	<u>178</u>	<u>230</u>	<u>264</u>	<u>910</u>	<u>744,307,200</u>

## 2. Increased Efficiency

The current operation of the Associates Degree Nursing programs with 40 students in one class and 20 students in the other class is not efficient. The new space will be designed to allow for a more even number of students in each class; therefore, decreasing the higher cost per student in the section containing the smaller number of students.

The Practical Nursing program could be expanded with more students per class and lower the cost to the college to educate each student.

The current operation of Nursing Assistant classes does not allow the college the opportunity to breakeven on these courses. The increase in the number of students per class should allow the college the opportunity to breakeven on these courses.

The Medical Laboratory Technology program is currently operated in a space that was not designed for this program. The new space should make the operation of this program more efficient.

### 3. Nursing Simulation

The new Allied Health Building will contain a nursing simulation lab. This space will allow students the opportunity to take part in clinical activities without having to go to hospitals as often. Students should see a decrease in their costs because they will no longer have to find transportation to various hospitals in the area. The college should see savings because BCCC will not have to pay transportation costs for instructors traveling to these various clinical sites as often. The lab will allow students the opportunity to demonstrate various skills in a test environment without posing a danger to a patient.

### 4. Indirect Benefit

The new Allied Health Building will free classroom space for other programs. BCCC projects an overall 18% increase in FTE from 2007-2013. General education programs continue to be high growth programs for BCCC. These programs require general purpose classroom space and the vacated Nursing building will provide space for these courses.

Enrollment continues to expand at BCCC during downturns in the economy. Table 8 below shows trends in enrollment for BCCC over the past 10 years.

**Table 8: BCCC Enrollment Trends**

	1998- 1999	1999- 2000	2000- 2001	2001- 2002	2002- 2003	2003- 2004	2004- 2005	2005- 2006	2006- 2007	2007- 2008	2008- 2009
Fall	1,528	1,433	1,374	1,702	1,684	1,703	1,661	1,450	1,476	1,555	1,730
Spring	1,481	1,392	1,379	1,600	1,714	1,653	1,574	1,387	1,437	1,508	
Total	3,009	2,825	2,753	3,302	3,398	3,356	3,235	2,837	2,913	3,063	

Note: Fall 2008 Enrollment figures are preliminary

Please note the increases associated with enrollment as they relate to periods of economic distress. Enrollment for the Fall 2008 semester is the highest recorded enrollment in BCCC history.

### 5. Decrease in Opportunity Cost

Information was provided earlier about the number of qualified students who are not allowed to enter allied health programs each year because of the limited number of seats in these programs. Many of these students remain out of the workforce while they wait to be admitted. The additional seats made available by the new building will allow the waiting time to decrease for these students and will enter the workforce sooner.

## **Cost of a New Allied Health Building**

### **1. Building Cost**

The new allied health building is projected to be a 33,383 square foot classroom and lab building. The building is projected to cost approximately \$6.7 million.

### **2. Cost per Total Student**

We are currently projecting the new building will have the capacity to hold 160 Associates Degree Nursing students, 50 Practical Nursing students, 24 Nursing Assistant students, and 30 Medical Laboratory Technology students at one time. This represents a capacity of 264 students or \$25,379 per student if one looks at this as a one time cost. BCCC depreciates buildings using a 50 year estimated useful life. If we assume the new Allied Health Building will also have this estimated useful life, we can project the capacity of students the building will stand to serve is 13,200 students. This represents a cost of \$508 per student served during the life of the building.

### **3. Cost per Additional Allied Health Student Served**

Another way to look at the project \$6.7 million construction cost of the space is based on the cost per additional student admitted into these programs. As stated earlier, we project to have the capacity to increase by 40 Associate Degree Nursing students, 20 Practical Nursing students, 12 Nursing Assistant students, and 14 Medical Laboratory Technology students. This represents the capacity to increase by 86 students per year or a one time cost of \$77,907 per student. If we project the new building will be in use for at least 50 years, it will stand to serve an additional 4,300 students. This represents a cost of \$1,558 per additional student served during the life of the building.

### **4. Operating Cost of the new Building**

Operating costs for the new facility include staffing, plant maintenance, and utility costs. BCCC computed these costs using the current operating costs of our facilities and projecting the cost into the future with a minor increase each year. On average, operating costs for a new Allied Health Building are expected to be approximately \$165,000 per year for the first five years of operation.