

**Needs Assessment: Associate in Nursing,  
Registered Nurse Qualified for 18 County Region  
Served by East Georgia College**

**Prepared for: East Georgia College**

**Prepared by: Bureau of Business Research  
and Economic Development  
Georgia Southern University**



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## EXECUTIVE SUMMARY

This study examines the need for qualified Registered Nurses in the 18 county region served by East Georgia College.<sup>1</sup> National labor market trends show that the demand for LPN and RN qualified individual is expected to grow at an average rate of 10%-20% and above average rate of 21%-35% respectively.

The national trend in the demand for RNs is present in the area served by East Georgia College. Based on 2005, an average of 42 jobs per quarter per county were created in the 18 county region in Health Care and Social Assistance, sector 62 of the NAICS code. That was a total of 3,000 jobs created in 2005. On a quarterly basis in Bulloch, Laurens and Toombs counties between 90 and 135 Health Care and Social Assistance jobs were created. In the remaining counties on a quarterly basis in 2005 between 15 and 60 Health Care and Social Assistance jobs were created. Job creation is by definition the number of new jobs that are created by either new businesses or the expansion of existing businesses. This means there was a very active job market for RN qualified candidates.

The turnover rate essentially measures net jobs created relative to job losses as a percent of total employment. The turnover rate in the 18 counties served by East Georgia College is approximately 11% or a net annual growth in the demand for RNs of approximately 1,650 jobs.<sup>2</sup> In all of Georgia, the annual supply of RN qualified candidates is only 2,000.

The findings of a gap between the supply of RNs and the demand for RNs in 2005, was confirmed for 2006 by a survey of 853 health care providers and health care services employers in the 18 counties. Nearly a third, 28%, of the respondents indicated that they had on average 2.4 openings for RNs in the month of December. That is an estimated 570 job openings for the month. Looking to 2007, 23% of the respondents expected to add at least one RN position. That is equivalent to approximately 517 newly created RN jobs in 2007. Finally, and most telling about the current shortage on qualified RNs, 25% of the respondents indicated that they were employing between 1 and 4 LPNs in positions they would prefer to fill with a qualified RN.

The growth in employment for RNs in Georgia is expect to average 36% based on the 2002-2012 Occupational Outlook compared to a 19% growth rate for LPNs. The much higher growth rate in the demand for RNs compared to LPNs will result in high career-ladder-mobility for those LPNs able to access higher education opportunities. A RN makes approximately \$20,000 more per year than and LPN and in Georgia both RNs and LPNs earn about 95% of the U.S. average wage.

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<sup>1</sup>The region served includes 18 counties: Appling; Bryan; Bulloch; Burke; Candler; Effingham; Emanuel; Evans; Jefferson; Jenkins; Johnson; Laurens; Montgomery; Screven; Tattnal; Toombs; Treutlen; and Washington.

<sup>2</sup> Total regional employment in the 18 counties in Health Care and Social Assistance in 2005 was approximately 15,000. A turnover rate of 11% equates to a net annual increase in the demand for RNs 1,650, or 11% of 15,000.

On the survey of health care providers and health care service businesses, when asked if they had LPNs on their staff that would seek to complete RN qualification if they could do so while they continued to work, 56% responded yes with an average of 2.4 LPNs who would continue their education. That is equivalent to an estimated demand for the LPN bridge of 1,150 candidates.

Examining the supply and demand for RN qualified candidates in the 18 county region served by East Georgia College, indicates a clear, unfilled gap. State-wide, only about 2,000 RN qualified candidates graduate in any given year. Net annual growth in jobs for RN qualified candidates in the 18 counties is an estimated 1,650 jobs. This one region could employ about 80% of total state RN graduates.

By other measures, the gap is also clear. For one month alone, the number of openings was approximately 570 unfilled position. Employers anticipate creating net additional new positions for RNs in 2007. Finally, 25% of employers are currently employing between 1 and 4 LPNs in positions for which they would prefer to hire a RN.

In terms of the economic impact of the program, the expenditures associated with the providing the program, the expenditures by the students in the program and the movement of graduates into the available jobs in the region has a total long-run impact of creating 90 new jobs. Gross regional output increases by \$3.8 million annually. Disposable income in base year 2000 dollars increases by \$3.7 million annually.

**INTRODUCTION**

East Georgia College seeks to determine the need for a locally provided Associate in Nursing, Registered Nurse (RN) qualified and for a program permitting Licensed Practical Nurses (LPNs) to bridge to an Associate in Nursing, Registered Nurse qualified. This report first examines the overall national and state-wide market for LPNs and RNs. Second, the report examines the demand side of the market for Registered Nurses. Expected state-wide growth in additional positions for Registered Nurses are presented along with estimated annual needs for 18 counties: Appling; Bryan; Bulloch; Burke; Candler; Effingham; Emanuel; Evans; Jefferson; Jenkins; Johnson; Laurens; Montgomery; Screven; Tattnal; Toombs; Treutlen; and Washington. Annual estimates of total jobs, jobs created, and turnover rates etc are all from 2005. The 2005 data was updated by a survey of 853 health care providers and health care service businesses across all 18 counties. Third, the data on demand for RNs is examined in light of the region’s net supply of graduating RNs. Fourth, the report looks at the annual supply of Licenses Practical Nurses graduating from regional technical colleges as a portion of the potential market for the bridge program. Finally, the report presents an estimate of the economic impact of the proposed program.

**MARKET OVERVIEW: LPNs and RNs**

Like other occupations in the medical services field, both the RN and LPN occupations are expected to grow nationally and in Georgia. Table 1 shows that U.S. employment as a LPN is expected to grow at about 17% over 2004-2014. This growth will produce 28,250 average annual opening, where openings include positions due to growth and replacement. In Georgia, employment growth in LPN jobs is expected to increase by 19% based on the 2002-2012 occupational outlook. This growth will result in 910 average annual openings. Overall a growth rate of between 10%-20% is considered average.

**TABLE 1**  
**Market Trends: National and Georgia**

<b>Employment</b>	<b>U.S. Georgia</b>		<b>U.S. Georgia</b>	
	<b>% Change in Employment</b>		<b>Average Annual Job Opening Due to Growth</b>	
LPN	17%	19%	28,250	910
RN	29%	36%	120,340	3,160
<b>Wages</b>	<b>Median Hourly Wage</b>		<b>Median Annual Wage</b>	
LPN	\$16.94	\$14.99	\$35,200	\$31,200
RN	\$26.28	\$24.78	\$54,700	\$51,500

Projected Growth Rates for U.S. are based on the 2004-2014 Occupational Outlook

Projected Growth Rates for Georgia are based on the 2002-2012 Occupational Outlook

The market for RNs is expected to grow at a faster than average rate of between 21%-35%. The expected growth rates in employment for RNs for the U.S. and Georgia respectively will be between 29% and 36%. Average annual job openings for RNs in the U.S. based on the 2004-2014 occupational outlook will be 120,340, growth plus

replacement. Average annual job openings for RNs in Georgia based on the 2002-2012 occupational outlook will be 3,160.

The median hourly and median annual wage for a RN compared to a LPN is significantly higher. On average a RN earns about \$10.00 more per hour than an LPN. The net difference on an annual basis is that an RN will earn about \$20,000 more than an LPN. Both the LPN and RN in Georgia earn about 95% of the national wage. On average, Georgia wages tend to be approximately 80%-85% of the U.S.

The educational standard for RNs is about evenly split between those holding a BA degree and those with only some college. Approximately 58% of RNs hold a BA degree while 40% have some college. Only 2% of RNs have only a high school degree. An overwhelming portion of LPNs have only some college, 71%.

### ***Conclusion Based on National and State Trends***

The much higher rate of growth in the market demand for RNs relative to LPNs suggest that providing a degree program that will both prepare students to enter the RN market directly and that will also prepare those working as LPNs to bridge to the RN market will be a degree program in high demand. Second, as will be shown below, there is a substantial demand for RNs including that some positions now held by LPNs would go to a RN if a candidate could be found. Since, RNs in Georgia earn about 95% of the national median wage and earn on average approximately \$20,000 more than LPNs, improving the opportunity for place bound students to advance their education, will have a valuable economic impact in the rural communities served by East Georgia College.

### **DEMAND IN THE REGION SERVED BY EAST GEORGIA COLLEGE<sup>3</sup>**

The demand for RNs in the 18 county region served by East Georgia College was examined in two ways. First, from the Local Employment Dynamics data base total employment in NACIS 62, the Health Care and Social Assistance Sector, jobs created in sector 62 and average monthly salaries in sector 62 for 2005 were examined. Then for 2006 and for projections of 2007, a survey of 853 health care providers and health care services businesses in the 18 county East Georgia College service area was conducted.

### ***Overview of the Health Care and Social Assistance Sector: 2005***

Table 2 show total employment in Health Care and Social Assistance, NACIS 62, for Georgia and for each of the 18 counties along with: 1) jobs created per quarter in sector 62; 2) jobs created per quarter as a percent of total jobs in sector 62; 3) turnover in sector 62; 4) average monthly earnings for sector 62 and average monthly earnings for new hires in sector 62; and 5) average monthly earnings for all sectors and average monthly earnings new hires all sectors. The table is based on all four quarters of 2005 from the Local Employment Dynamics database.

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<sup>3</sup> The region served includes 18 counties: Appling; Bryan; Bulloch; Burke; Candler; Effingham; Emanuel; Evans; Jefferson; Jenkins; Johnson; Laurens; Montgomery; Screven; Tattnal; Toombs; Treutlen; and Washington.

**TABLE 2****Local Employment Dynamics Indicators: NACIS 62 Health Care and Social Assistance**

	<b>Georgia</b>	<b>Appling</b>	<b>Bryan</b>	<b>Bulloch</b>	<b>Burke</b>	<b>Candler</b>	<b>Effingham</b>	<b>Emanuel</b>	<b>Evans</b>	<b>Jefferson</b>
<b>Job Creation</b>	27,517	24	25	111	48	10	28	74	49	14
<b>Job Creation/Total Employment</b>	6.7%	3.2%	5.8%	4.2%	7.4%	2.1%	5.0%	5.5%	19.4%	3.2%
<b>Turnover Rates</b>	10.7%	9.2%	13.6%	13.5%	9.0%	7.4%	10.2%	9.0%	17.6%	8.9%
<b>Average Monthly Earnings</b>	\$3,234	\$2,618	\$2,569	\$2,770	\$2,248	\$2,416	\$2,260	\$2,212	\$1,757	\$2,023
<b>Average Monthly Earnings: New Hires</b>	\$2,159	\$1,753	\$1,875	\$1,742	\$1,468	\$1,754	\$1,527	\$1,994	\$1,338	\$1,484
<b>Average Monthly Earnings All Sectors</b>	\$3,385	\$3,077	\$2,553	\$2,345	\$3,378	\$2,102	\$2,805	\$2,226	\$2,161	\$2,515
<b>Average Monthly Earnings: New Hires All Sectors</b>	\$2,203	\$1,584	\$1,620	\$1,346	\$1,814	\$1,393	\$1,706	\$1,509	\$1,475	\$1,572
<b>Total Employment</b>	408,743	742	430	2,668	653	479	564	1,346	253	435
<b>Average Monthly Earn Sector/Average all Sectors</b>	0.96	0.85	1.01	1.18	0.67	1.15	0.81	0.99	0.81	0.80
<b>Average New Hire Sector/Average Monthly Sector</b>	0.67	0.67	0.73	0.63	0.65	0.73	0.68	0.90	0.76	0.73
	<b>Jenkins</b>	<b>Johnson</b>	<b>Laurens</b>	<b>Montgomery</b>	<b>Scriven</b>	<b>Tattnall</b>	<b>Toombs</b>	<b>Treutlen</b>	<b>Washington</b>	<b>Average</b>
<b>Job Creation</b>	10	6	135	2	15	63	92	24	20	42
<b>Job Creation/Total Employment</b>	4.3%	2.9%	3.9%	3.2%	4.9%	27.0%	4.3%	14.5%	2.3%	4.9%
<b>Turnover Rates</b>	6.0%	6.7%	9.0%	9.8%	8.3%	30.2%	8.9%	11.5%	6.2%	10.8%
<b>Average Monthly Earnings</b>	\$2,282	\$1,872	\$2,636	\$1,603	\$1,852	\$2,033	\$2,990	\$1,530	\$2,088	\$2,209
<b>Average Monthly Earnings: New Hires</b>	\$1,545	\$1,521	\$1,789	\$979	\$1,369	\$1,441	\$2,241	\$1,036	\$1,608	\$1,581
<b>Average Monthly Earnings All Sectors</b>	\$2,271	\$2,132	\$2,495	\$2,200	\$2,241	\$1,988	\$2,270	\$1,991	\$2,588	\$2,408
<b>Average Monthly Earnings: New Hires All Sectors</b>	\$1,731	\$1,958	\$1,680	\$1,459	\$1,569	\$1,501	\$1,529	\$1,199	\$1,529	\$1,565
<b>Total Employment</b>	232	206	3436	63	304	233	2132	165	882	846
<b>Average Monthly Earn Sector/Average all Sectors</b>	1.01	0.88	1.06	0.73	0.83	1.02	1.32	0.77	0.81	0.92
<b>Average New Hire Sector/Average Monthly Sector</b>	0.68	0.81	0.68	0.61	0.74	0.71	0.75	0.68	0.77	0.72



For the 18 counties in the East Georgia College service area, the Health Care and Social Assistance sector, NACIS 62, on average employs about 850 people per county. Bulloch, Emanuel, Laurens and Toombs counties have much higher total employment in the sector with between 1,300 and 3,500 per county. Montgomery County is the smallest in total Health Care and Social Assistance employment with only 63. Treutlen is the next smallest with only 165 employed in sector 62. All other counties have at least 200 or more employed in Health Care and Social Assistance. The combined 18 counties account for 3.7% of total employment in sector 62 in Georgia.

Job creation is by definition the number of new jobs that are created by either new area businesses or the expansion of employment by existing firms. The turnover rate is the number of new hires that were not employed by the employer during the previous four quarters plus the number of separation all divided by total employment.<sup>4</sup> It measures the proportion of workers that are new to the job.

Jobs created in Health Care and Social Assistance average 42 per county per quarter for 2005. Jobs created per quarter as a percent of total jobs in sector 62, is 4.9%. Bulloch, Laurens and Toombs counties had the highest number of jobs created per quarter, 111, 135 and 92 respectively, all representing around 4% of total sector employment. In Candler, Jefferson, Jenkins, Johnson, Montgomery and Screven counties 15 or fewer new jobs were created per quarter. In the remaining counties job creation ranged between 20 and 63 per quarter.

Turnover rates in Health Care and Social Assistance, essentially net jobs created relative to losses as a percent of total employment average 10.8% for the 18 counties. This is almost exactly the rate of turnover for the state in sector 62, 10.7%.

In 7 of the 18 counties, the average monthly earning for the Health Care and Social Assistance sector, sector 62, is greater than the average monthly earning for all sectors. These counties are: Bryan; Bulloch; Candler; Jenkins; Laurens; Tattnall; and Toombs. This means that for these counties the jobs created in the Health Care and Social Assistance are above average wage generators. Overall the average monthly wage in the Health Care and Social Assistance sector is at least 73% of the county average wage for all sectors. On average new hires in the Health Care and Social Assistance sector earn about 70% of the average wage for the sector.

### ***Conclusion Based on 2005***

A total of 846 jobs were created per quarter in the Health Care and Social Assistance sector in 2005, an average of 42 jobs per quarter per county. Job creation as a percent of total sector employment was about 4.9% in the 18 counties compared to 6.7% for the state as a whole. While job creation is slightly below the state average rate, the sector has a healthy annual positive growth in jobs created. In 7 of the 18 counties, the average wage for the Health Care and Social Assistance sector is at least equal to or greater than

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<sup>4</sup> The Turnover Rate =  $1/2 * (\text{accessions} + \text{separation}) / \text{employment}$

the average wage for all sectors in the county. The average monthly earning in the sector is \$2,209 compared to an average monthly wage in all sectors of \$2,408. New hires in the Health Care and Social Assistance sector start at about 70% of the sector average wage.

***Survey of Employers 2006 and Outlook 2007***

A survey of 853 health care services employers in the 18 counties was conducted to update the 2005 data on the status of current demand. Of the questionnaires sent, there were 123 valid responses, a sample of 14%.

On Question 1, do you currently have openings for RNs, 28% of the respondents said yes. The average number of openings was 2.4 jobs. The number of opening ranged between 1 and 12.

On Question 2, in 2006 how many openings for RNs did you have, 115 of the respondents answered that they had openings sometime during the year. The average number of openings was 1.7.

On Question 3, in 2006 for the openings you had on average how long did it take to find a qualified RN candidate: 1) 25% said less than a month; 2) 22% said 1-2 months; and 3) 49% said more than 2 months.

On Question 4, in 2006 how many RNs left positions with your organization, there were 104 respondents with an average on 1.3 RNs leaving positions in 2006.

On Question 5, how many new (added) positions for RNs do you expect to have in 2007, 64% do not expect to add any positions. However during 2007, 23% expect to add at least 1 position; 6.4% expect to add 2 positions; 4.6% expect to add 3 positions; and 2.8% expect to add 4 or more positions.<sup>1</sup>

On Question 6, how many RNs do you expect you will need to hire to replace people leaving employment with your organization in 2007, 27% expect to need to replace between 1 and 3 people and 8.3% expect to need to replace 4 or more.

On Question 7, how many LPNs do you currently employ, that are filling a position that you would hire an RN to do if you could find a qualified RN, 25% said that they were employing between 1 and 4 LPNs in positions they would prefer to fill with a RNs.

On Question 8, are there LPNs on your staff that would seek to complete qualifications as a RN if they could continue working while taking classes, 56% said yes and the average

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<sup>1</sup>It is well documented that businesses tend to be conservative when estimating the number of new positions that will be created in any given time period.

number of LPNs who would seek to complete RN qualifications if they could continue to work was 2.4.

On Question 9, what is the average age of an RN in your organization, 65% said 40 to 50 years of age and 14.8% said age 50 plus. This is an older and aging workforce.

On Question 10, how many RNs currently employed by your organization will reach retirement age in the next 5 years, 41% said at least one person will retire, but the range was between 1 and 20 retirements.

### ***Conclusions Based on the Survey of Health Care Services Businesses***

With 28% of the respondents indicating that they had an average of 2.4 opening currently, that is as in December 2006, one can estimate that for the 853 health care service providers in the 18 counties, there were approximately 570 job openings. As a percent of estimated total sector employment of approximately 15,220, job opening in December 2006 represented 3.7% of estimated total employment.

In all of 2006, 90% of the sample or 115 out of 128 respondents, said they had an average of 1.7 openings during the year. Extrapolating to the population, during the year there were approximately 1,290 openings or openings during the year were 8.5% of estimated total sector employment.

Looking to 2007, with approximately 23% of the respondents answering that they expected to add at least one position during the year; and with 6.4%, 4.6% and 2.8% respectively expecting to create 2, 3 and 4 net new jobs during the year, based on 853 health care services business, it is estimated that approximately 517 net new jobs will be created in 2007. Businesses tend to be conservative when estimating new job growth, so this estimate should be considered a minimum number of new jobs expected in 2007.

While, openings due to retirement do not appear to be a big source of expected new jobs, LPNs employed in positions for which an RN would be preferred are estimated at between 200 and 800 positions or between 1.3% and 5.3% of estimated total employment. Thus increasing the number of qualified RNs will likely lead to replacement of lower paying LPNs with higher paying RNs.

Finally, 56% of the respondents indicated that they had 2.4 LPNs in their employ that would likely seek RN qualifications if they could do so while still employed. That will amount to approximately 1,150 prospective students who would seek the bridge program to upgrade skills.

### **SUPPLY OF RNs**

The total annual supply of RNs based on graduations from the University System of Georgia is slightly less than 2,000. About 45% of the annual RN graduates obtain an Associate Degree and 55% obtain a Bachelor Degree. On average within the rural region

served by East Georgia College, Georgia Southern graduates approximately 80 BA in Nursing students per year.

Six area technical colleges: Swainsboro Technical College; Altamaha Technical College; Heart of Georgia Technical College; Ogeechee Technical College; Sandersville Technical College and, Southeastern Technical College all offer only LPN qualified degrees. Middle Georgia College offers a pre-professional degree in nursing and an Associate Degree in Nursing.

Sandersville and Middle Georgia have fairly small programs, each graduating approximately 25 to 35 students per year with an Associate Degree in Practical Nursing and Related Programs. Southeastern Tech graduates approximately 45 students per year with an Associate Degree in Practical Nursing and Related Programs. The other three Technical Colleges, Altamaha, Heart of Georgia and Ogeechee graduate between 120 and 160 students per year with an Associate in Practical Nursing and Related Programs. Combined the area technical colleges produce about 525 LPN qualified graduates per year. It will take only a 5% capture rate of annual LPN graduates to generate 25 bridge students for the proposed program.

Additionally, as noted above in the discussion of the survey of health care providers, over 50% of the firms sampled indicated that on average they had 2.4 individuals currently employed as LPNs who would likely seek additional education to qualify for a RN position. Over the entire population of health care providers and health services businesses in the region, that provides an estimated pool of 1,150 candidates for the bridge program.

### **SUPPLY AND DEMAND: THE GAP IN THE MARKET**

There is clear evidence of a gap between the demand for RN qualified individuals and the supply of RN qualified individuals. In all of Georgia, the annual supply of RN qualified graduates is only 2,000. Based on the 2002-2012 occupational outlook for Georgia, average annual job openings are estimated at over 3,000 per year.

Health care providers and health care services businesses in rural communities typically rely on a place bound workforce. This labor pool is not likely to move to seek education or employment because of other obligations, e.g. family and community ties. This report has shown that there are clearly upward mobility employment opportunities in the local, 18 county, market. Jobs created in Health Care and Social Assistance sector represent about 4.9% per quarter of the sector's total jobs for the 18 counties served by East Georgia College. Thus vacancies created by growth within the region constitute significant opportunities for RN qualified graduates. Finally, 25% of the health care providers and health services businesses indicated that for between 1 and 4 positions currently held by an LPN they would prefer to employ a RN qualified candidate. Hence, between 200 and 800 jobs could be upgraded to RN position if the supply of RNs in the region increased.

There is a considerable wage premium for RN qualified personnel compared to LPN qualified personnel. RNs on average have a median wage \$20,000 higher than the median wage paid to LPNs. The economic impact of the additional RN qualified candidates is discussed below.

**ECONOMIC IMPACT: PROGRAM AND GRADUATES**

This portion of the study relied on the REMI economic model to estimate the total impact of the proposed program. The direct impact includes the program staffing, estimated on the basis of 1 faculty person per 10 students. Additionally, it was assumed that the three-year associate degree students would have traveled elsewhere to receive an RN education, so retention of them in the economy is considered a direct impact. The economic impact was estimated for East Georgia College service region of 18 Counties: Appling, Bryan, Bulloch, Burke, Candler, Effingham, Emanuel, Evans, Jefferson, Jenkins, Johnson, Laurens, Montgomery, Screven, Tattnall, Toombs, Treutlen, and Washington. These counties are considered to be the service delivery region for the college and all have a direct economic linkage.

***Estimation of students, staff, and increased RN workforce***

For simulation purposes, this study used 50 students (25 in the bridge program and 25 in the regular RN program) as a total potential capacity of the RN program at East Georgia College.<sup>5</sup> This number was partially derived from the University of Georgia records of RN programs across the state of Georgia, and from Kathryn L. Riffle, the founder of the program. Although building a program up to 50 students in the short term may be difficult in regards to staffing capacity, there is excess demand for RN qualified candidates, as shown above. The Table 3 shows the expected graduation schedule of RNs.<sup>6</sup>

**TABLE 3  
RN Graduates**

	<b>2008</b>	<b>2010</b>	<b>2015</b>	<b>2020</b>
<b>Bridge (LPN to RN)</b>	25	25	25	25
<b>RN students</b>		25	25	25
<b>Total</b>	<b>25</b>	<b>50</b>	<b>50</b>	<b>50</b>

The staffing need for the RN program was based on the requirements for accreditation with the Commission on Collegiate Nursing Education. Therefore, it is expected that for every 10 students in the program, there will be 1 professor.<sup>7</sup> The Table 4 shows the expected staffing schedule.

**TABLE 4**

<sup>5</sup> The expected program length for those entering the regular RN program is three years. The expected program length for the Bridge program (LPN to RN) is only one year.

<sup>6</sup> The typical RN is expected to make \$51,500 annually in 2005 dollars. This study adjusted the gross wage bill based on this higher than average wage for the nursing sector and increased it by 3% a year to account for inflation.

<sup>7</sup> The average wage for a faculty member and support staff was not expected to be abnormally higher or lower than the average for each occupation.

<b>Faculty/Staff Schedule</b>		<b>2007</b>	<b>2008</b>	<b>2010</b>	<b>2015</b>	<b>2020</b>
<b>Faculty</b>		1	3	5	5	5
<b>Support Staff</b>			1	1	1	1
		<b>1</b>	<b>4</b>	<b>6</b>	<b>6</b>	<b>6</b>

This program is expected to primarily utilize Emanuel Medical Center within Swainsboro, Georgia during the first few years of the program. Although Kathryn L. Riffle has indicated, in the long term, the program will need to develop additional facilities (including specialized lab space), this study did not include that cost. However, this study does include an increase in facility improvements that would be typical for the increase of 6 staff members at the college.

The only other major input into the study was the increased expected spending from the students within the RN program. This study assumed that those students in the Bridge portion of the program were likely to be “nontraditional” students that live within the region. Since it is unlikely that a majority of them would have furthered their education without this program, a portion of their student spending was captured as net new activity: spending on books, supplies, transportation (only relative to the program), and other expenses. The students in the regular RN program were expected to be traditional students that have either moved to the college or would have moved away for other opportunities. In this situation, all student spending is expected to generate new economic activity to the region. The typical spending includes books, supplies, room, board, transportation, and other expenses. The Table 5 shows the total estimated student spending schedule for both types of programs.

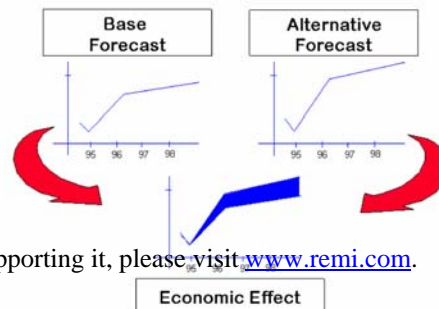
**TABLE 5**  
**Student Spending (Regular and Bridge) Schedule (2004\$)**

	<b>2007</b>	<b>2010</b>	<b>2015</b>	<b>2020</b>
<b>Room only</b>	\$ 93,350	\$ 93,350	\$ 93,350	\$ 93,350
<b>Board only</b>	\$ 56,650	\$ 56,650	\$ 56,650	\$ 56,650
<b>Transportation</b>	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000
<b>Books and Supplies</b>	\$ 50,000	\$ 50,000	\$ 50,000	\$ 50,000
<b>Other Expenses</b>	\$ 117,400	\$ 117,400	\$ 117,400	\$ 117,400
<b>Total</b>	<b>\$ 392,400</b>	<b>\$ 392,400</b>	<b>\$ 392,400</b>	<b>\$ 392,400</b>

**Economic Model: REMI**

The model used to show the economic impact of the RN program at East Georgia College was Regional Economic Modeling Inc. (REMI).<sup>8</sup> This model is a dynamic economic impact model that can analyze multiple impacts geographically and overtime. Additionally, this model

**FIGURE 1**  
**Estimating the Economic Effect**



<sup>8</sup> For more information about REMI and documentation supporting it, please visit [www.remi.com](http://www.remi.com).

incorporates these impacts with the preexisting growth expectations of each region. The concept of how REMI isolates the economic impact is shown in Figure 1. In this figure there is a base forecast (the preexisting growth of the economy absent of the proposed impact), an alternative forecast (the new forecast with the proposed project), and the economic effect (an isolation of the economic impact or the difference between the base forecast and the alternative forecast).

***Economic Impact***

Table 6 shows the total economic impact of the proposed project on employment between 2007 and 2020. The total increase in employment in 2007 is estimated to be 2 jobs and by 2010 it is expected to increase to 89 jobs. The reason why employment takes three years to reach full capacity is because the study added an educational phase that takes three years for students to complete and become eligible for the workforce. For simulation purposes, the new employment was entered into Education and Nursing sectors, which is within the Service sector in the REMI model.

**TABLE 6**  
**Total Employment**

	<b>2007</b>	<b>2010</b>	<b>2015</b>	<b>2020</b>
<b>Manufacturing</b>	0	0	0	0
<b>Non-Manufacturing</b>				
Natural Resources, Mining, Utilities	0	0	0	0
Construction	0	5	6	5
Wholesale Trade	0	0	0	0
Retail Trade	0	9	8	7
Information, Finance, and Real Estate	0	2	1	1
Transportation and Warehousing	0	0	0	0
<b>Services</b>				
Education	1	6	6	6
Health	0	52	52	52
Other	0	13	12	12
<b>Government</b>				
State & Local	0	2	7	9
<b>*Total Employment</b>	<b>2</b>	<b>89</b>	<b>92</b>	<b>92</b>

\*Numbers may not add up due to rounding.

Table 7 shows the impact in terms of total output. That is for each person employed in the economy there is an associated amount of goods and services produced. The table shows that the total output is expected to increase by \$49,714 in 2007 and increase to \$3,805,854 in 2020. It should be noted that the largest portion of the increase in output is within the Health sector, \$1,579 in 2007 increasing to \$1.9 million in 2020.

**TABLE 7**  
**Total Output**

	<b>2007</b>	<b>2010</b>	<b>2015</b>	<b>2020</b>
<b>Manufacturing</b>	\$ 868	\$ 48,491	\$ (42,842)	\$ (58,239)
<b>Non-Manufacturing</b>				
Natural Resources, Mining, Utilities	\$ 1,196	\$ 72,899	\$ 61,014	\$ 56,637
Construction	\$ 4,530	\$ 248,200	\$ 338,600	\$ 293,500
Wholesale Trade	\$ 954	\$ 79,870	\$ 81,540	\$ 92,510
Retail Trade	\$ 8,106	\$ 515,900	\$ 593,700	\$ 660,900
Information, Finance, and Real Estate	\$ 3,154	\$ 247,049	\$ 232,586	\$ 228,392
Transportation and Warehousing	\$ 4	\$ 9,107	\$ 5,255	\$ 5,472
Services				
Education	\$22,770	\$ 144,500	\$ 147,300	\$ 150,900
Health	\$ 1,579	\$ 1,714,530	\$ 1,798,480	\$ 1,883,160
Other	\$ 6,553	\$ 454,735	\$ 464,898	\$ 492,622
<b>*Total Output</b>	<b>\$49,714</b>	<b>\$ 3,535,281</b>	<b>\$ 3,680,530</b>	<b>\$ 3,805,854</b>

\*Numbers may not add up due to rounding.

Although the simulated business will have a significant impact in terms of jobs and output, these two components do not represent all the economic benefits of the project. Table 8 shows the impact on total personal income and total disposable income.<sup>9</sup> As such, it is estimated that total personal income will increase by \$7.4 million and total disposable income will increase by \$3.7 million by 2020.

**TABLE 8**  
**Income**

	<b>2007</b>	<b>2010</b>	<b>2015</b>	<b>2020</b>
<b>Personal Income (Nom \$)</b>	\$ 80,110	\$ 4,475,000	\$ 6,020,000	\$ 7,370,000
<b>Disposable Income (Fixed 2000\$)</b>	\$ 51,500	\$ 2,815,000	\$ 3,361,000	\$ 3,708,000

In addition to an increase in the region in both total and real incomes, there will also be an increase in optimal and actual capital stock, as show in Table 4.<sup>10</sup> Optimal capital stock represents the demand for either the residential or business capital stock, and actual

<sup>9</sup> Personal income includes the sum of wage and salary disbursements, other labor income, proprietors' income rental income, personal dividend income, personal interest income, and transfer payments, less personal contributions for social insurance. Real disposable income is the amount of real dollars available for consumption and savings.

<sup>10</sup> Residential and Business Actual Capital Stock is the amount of capital accumulated over time net of depreciation. Residential and Business Optimal Capital Stock is the amount of capital required to satisfy the current demand in a region. Optimal capital stock minus actual capital stock equals the future investment needed to satisfy current demand.



capital stock represents the real value in the increase of capital stock. As such, the total increase in residential actual capital stock is expected to reach \$5.7 million by 2020. Business actual stock is expected to increase by \$1.8 million.

**TABLE 9**  
**Capital Stock (Fixed 2000\$)**

<b>Residential</b>	<b>2007</b>	<b>2010</b>	<b>2015</b>	<b>2020</b>
<b>Actual Capital Stock</b>	\$3,815	\$721,000	\$3,403,000	\$5,676,000
<b>Optimal Capital Stock</b>	\$122,100	\$6,729,000	\$8,492,000	\$9,888,000
<b>Non-Residential</b>				
<b>Actual Capital Stock</b>	\$5,722	\$339,500	\$1,249,000	\$1,812,000
<b>Optimal Capital Stock</b>	\$167,800	\$3,670,000	\$3,502,000	\$3,365,000

Another way to look at the economic contributions of this project is to look at how it affects population and labor increases, as shown in Tables 9, 10, and 11. In 2010, the total population increase is expected to be 34 and the total labor force is expected to be 29. By 2020, population is expected to increase to 117 and labor force to 67. The reason why there is a lag in the increase in population and labor force relative to employment is because of the time it takes to attract and hire economic migrants into the region.

**TABLE 10**  
**Population by Age Range**

	<b>2007</b>	<b>2010</b>	<b>2015</b>	<b>2020</b>
<b>Ages 0-14</b>	0	9	24	33
<b>Ages 15-24</b>	0	7	12	14
<b>Ages 25-64</b>	0	18	50	66
<b>Ages 65 &amp; Older</b>	0	0	1	3
<b>Total</b>	0	34	88	117

**TABLE 11**  
**Labor Force**

	<b>2007</b>	<b>2010</b>	<b>2015</b>	<b>2020</b>
<b>Ages 16-24</b>	0	6	8	8
<b>Ages 25-54</b>	0	18	41	49
<b>Ages 55 &amp; Older</b>	0	5	9	9
<b>Total</b>	0	29	58	67

**Conclusions: Economic Impact**

The expenditures associated with the providing the program, the expenditures by the students in the program and the movement of graduates into the available jobs in the region has a total long-run impact of creating 90 new jobs. Gross regional output

increases by \$3.8 million annually. Disposable income in base year 2000 dollars increases by \$3.7 million annually.