

ECONOMIC IMPACT ANALYSIS

Carolina North

Submitted by
MARKET STREET SERVICES, INC.
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LIVE GROW WORK

Market Street brings original insights and clarity to the evaluation and revitalization of the places where people, live, grow and work. *Market Street* inspires trust in all community stakeholders – citizens, educators, leadership and industry – because our holistic, proactive process takes into account all the aspects that shape community life. Through honest and informed assessments, *Market Street* can equip you with the tools to create meaningful change. Our solutions successfully merge our unique vision with your economic and social realities.

EXECUTIVE SUMMARY

Carolina North

Carolina North is a proposed development on the 1,000 acre site owned by the University of North Carolina-Chapel Hill. It will be a living and learning community, seeking innovation through research and new partnerships.

UNC-Chapel Hill asked *Market Street Services* to do an economic impact analysis of Carolina North to look at the effect of this new development on the local and state economy. *Market Street* was hired based on our national reputation for high-quality work and honest assessments, and it is with this approach that we present this report.

This analysis is conservative in its approach and captures only the main sources of economic impact. There are a number of economic impacts that we have not included, because they are difficult to quantify or are small relative to the main impacts in this analysis. To show both short and long-term impacts, we analyzed the project at the end of the 2nd phase (about 15 years after starting construction) and at full build-out (about 50 years after starting construction).

What is Economic Impact Analysis?

Economic impact analysis estimates the effects of change in the economy from a new project or event. New investments affect the economy by creating jobs and new business activity as business expenditures and household disposable income flow through the local economy. Thus, economic impact analysis shows the total number of jobs, income, and business revenue generated by the project.

Impact Analysis Results

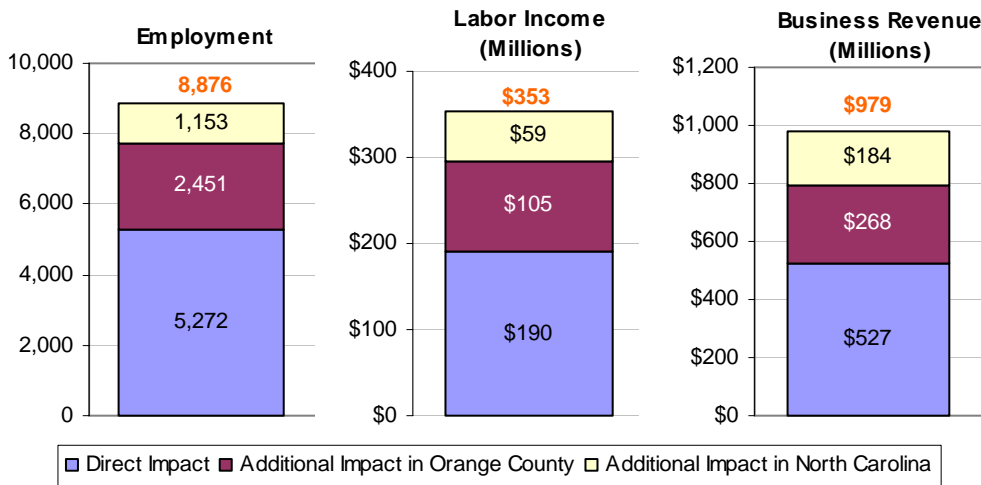
IMPACT OF CONSTRUCTION

When the Carolina North development is completed, about eight million square feet of mixed-use space will have been built. The first two phases, with approximately 2.4 million square feet of development, account for over \$527 million in construction expenditures.

By the end of Phase 2:

- ⇒ Nearly 9,000 jobs will be created as a result of construction expenditures.
- ⇒ This equates to \$353 million in salary and other personal income.
- ⇒ And \$979 million in business revenue will be generated.

Total Construction Impacts at the End of Phase 2



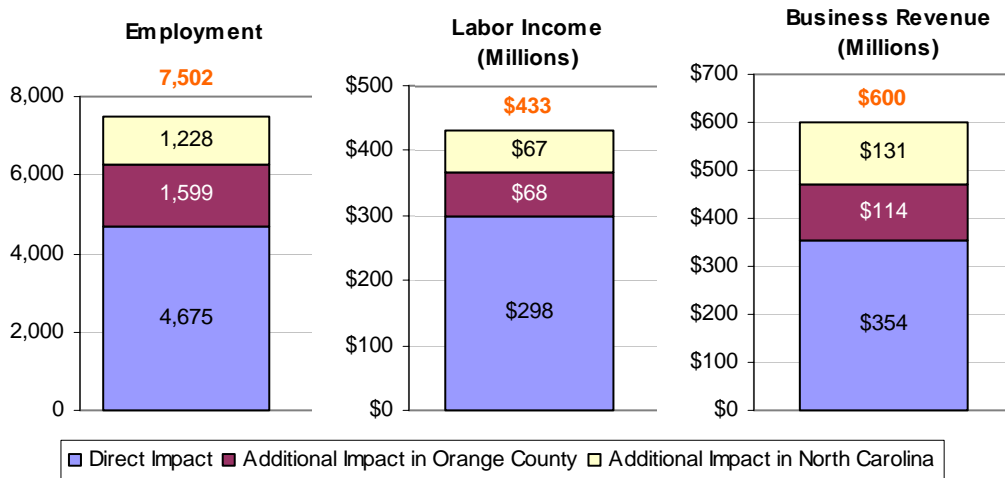
IMPACT OF OPERATIONS

In addition to the significant construction impacts, Carolina North will have a continuing impact from the everyday operations of the university uses, joint research and private firms, retail businesses, as well as the household expenditures of Carolina North employees. Impacts from these components are ongoing and increase as more of Carolina North is built out and occupied.

At the end of Phase 2:

- ⇒ Over 7,500 full-time, ongoing jobs will be created as a result of Carolina North operations.
- ⇒ This equates to \$433 million in annual salary and other personal income.
- ⇒ And \$600 million in annual business revenue will be generated.

Annual Operational Impacts at the End of Phase 2



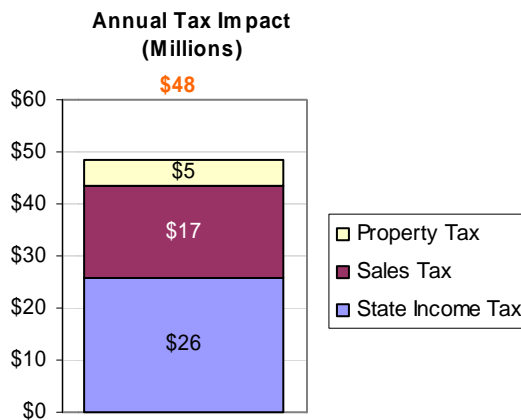
TAX IMPACT

The Carolina North development will provide a new and significant source of revenue to both Carrboro and Chapel Hill, as well as to Orange County and North Carolina. This impact analysis looks at property, sales, and income tax from direct Carolina North expenditures. Actual tax impact will be considerably higher from indirect expenditures and other types of taxes that have not been estimated here.

By the end of Phase 2:

- ⇒ Carolina North is expected to generate \$48 million in tax revenue annually: \$26 million in state income tax, \$17 million in sales tax, and \$5 million in property taxes.
- ⇒ Construction expenditures will generate an additional \$5.8 million in sales tax revenues. These are not recurring revenues.

Annual Tax Revenue from Direct Impacts at the End of Phase 2*



*Does not include one-time construction spending

Summary

Carolina North is a project with major economic impacts over its long development period. To put this in perspective, the impact of Carolina North annual operations at the end of Phase 2 (which excludes construction expenditures) is more than the current employment in the entire retail sector in Orange County and more than twice the total salary and wages paid to the county’s retail employees.

There is more to Carolina North than the economic impacts it has from construction and operational expenditures. At least as important as its expenditure impacts are the

impacts that Carolina North will have on increased research and intellectual capacity for the state of North Carolina.

- ⇒ Every dollar spent by the state of North Carolina on university research funding can typically be leveraged to attract an additional \$9 from federal and private sources.
- ⇒ Money invested in research facilities and programs attract top faculty and students capable of doing cutting-edge research.
- ⇒ Research done at Carolina North can attract new and expanding firms to whom proximity to the university is critical.

Carolina North will allow UNC-Chapel Hill to be a leading research university in this increasingly competitive environment. It will also be a key catalyst in helping the State be a force in the New Economy. Carolina North has important long-term and far-reaching benefits for its local communities, the region, and the State of North Carolina.

THE STATE OF NORTH CAROLINA'S ECONOMY

These past four years have been the most difficult in recent history in terms of quality investment and job growth for many parts of the country. The State of North Carolina has suffered huge job losses across multiple sectors, including many traditional and “new economy” manufacturing jobs. That reality, combined with several natural disasters, has put the North Carolina economy in a most unusual position. In fact, North Carolina lost 180,000, or 24 percent of its manufacturing jobs between 2000 and 1st quarter of 2004. Across all industries, the state lost over 160,000 jobs (4 percent) during this period. While there are some signs of recovery, even the most positive forecasters admit that job growth is very weak.

In these times a project of the quality and size of Carolina North is indeed rare. Whether viewed from local job creation criteria, dollars of investment, or a state capacity perspective, this project is a major positive. The following report details its economic impact from a number of perspectives. The assumptions are modest and the models utilized conservative. In the first two phases alone (2007 to 2020), the gains in the local economy and North Carolina reflect similar numbers to a medium sized firm building new headquarters in the area year after year. This is one of the most important projects in North Carolina’s distinguished economic development history, both in terms of economic impact and the growth of the state’s innovation capacity.

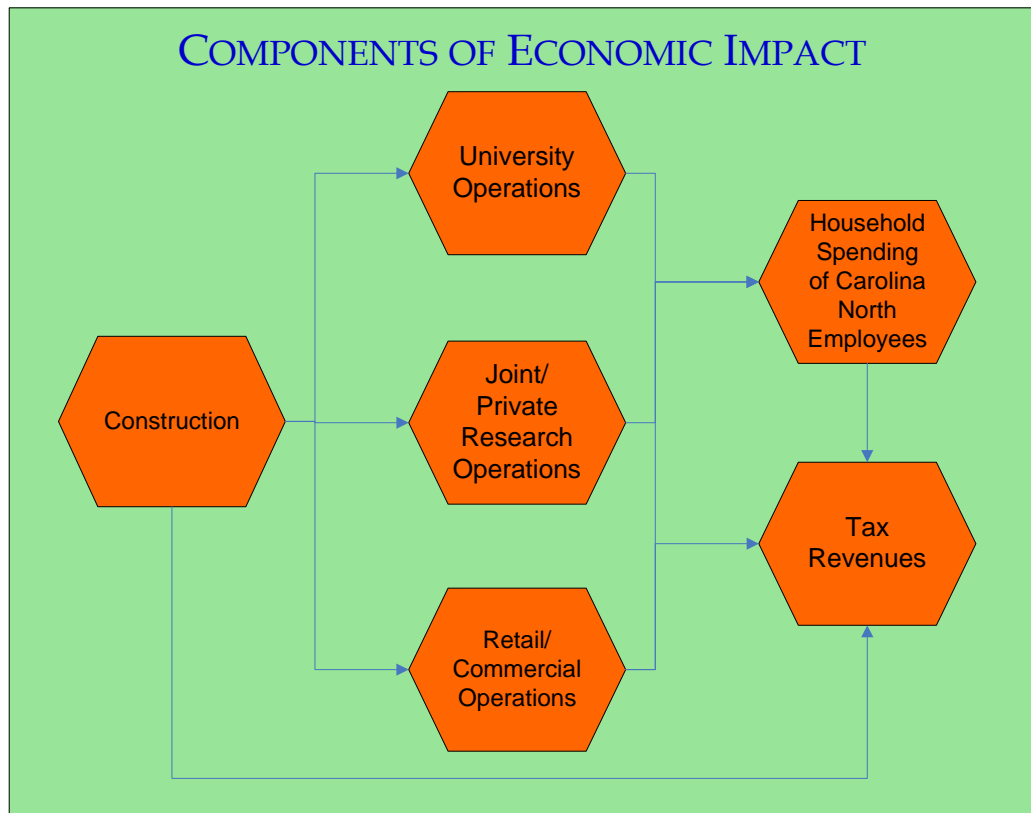
CAROLINA NORTH ECONOMIC IMPACT ANALYSIS

The University of North Carolina at Chapel Hill (UNC) is the beneficiary of approximately 1,000 acres of land surrounding the Horace Williams Airport, about two miles north of the main UNC campus. Most of the site is located within the boundaries of Chapel Hill, but some of the land is in Carrboro. UNC and its advisory groups have been working on a master development plan for this property since 1995. Called “Carolina North,” the site will be transformed into an innovation and research center that includes university, public, private, and residential uses.

The purpose of the Carolina North economic impact analysis is to look at the effect of this new development on the local and state economy. Thus there were two geographic study areas for the impact analysis, Orange County and North Carolina. Orange County includes the towns of Carrboro and Chapel Hill, which together contained over half of the county’s population in 2000. (Hillsborough is the other municipality within Orange County.)

Carolina North is to be developed in multiple phases over a 50 year period. The proposed start date of the project is 2007, with full build-out accomplished in 2056. This report looks at the economic impact of Carolina North at the end of Phase 2 (2020) and then over the entire 50-year period, to cover both short-term and long-term impacts.

Carolina North is to be a mixed-use development that includes a combination of university research space, private or joint research space, 1,400 to 1,800 housing units, and service/retail space. The construction and operation of these uses both contribute to the economic impact.



This analysis is conservative in its approach and captures only the main sources of economic impact. There are a number of economic impacts that we have not included, because they are difficult to quantify or are small relative to the main impacts in this analysis. For example, Carolina North is likely to attract visitor spending from those who come to the area for conferences, classes, and meetings, but there is not enough information at this time to estimate the number of visitors that Carolina North would draw to the project and the area.

THE ROLE OF *MARKET STREET SERVICES*

Market Street Services is an economic and community development consulting firm located in Atlanta, Georgia. Founded in 1997, we are focused on helping communities, regions, and states make strategic decisions about their economies, set specific goals, and develop implementation strategies to meet those goals. The University of North Carolina-Chapel Hill asked *Market Street* to help them, the communities in Orange County, Chapel Hill, and Carrboro, and the North Carolina state officials understand what the economic impact of Carolina North would be. *Market Street* was hired based on our national reputation for high-quality work and honest assessments, and it is with this approach that we present this report. While we understand that economic impact analysis is not an exact science, we have used reasonable and conservative assumptions to make the best approximations. Our goal is to be honest, fair, and objective in all of the work that we do.

CONCEPTUAL FRAMEWORK

An economic impact analysis estimates the effects of change in economic activity brought about by a specific project or event. New investments affect the economy by creating jobs and new business activity as business expenditures and household disposable income flow through the local economy. This “multiplier effect” highlights the fact that a new project or event can have a much greater impact than just the immediate change in investment in the local economy. Impact analysis and multiplier estimation are based upon input-output models, which quantify how changes in demand by households, governments, and industry sectors affect other industry sectors.

Economic impact analysis accounts for three types of changes in the economy:

- *Direct effects*: the original expenditures and jobs created by the new project. For example, “Enviroolina, Inc.,” an environmental consulting firm, opens its office at Carolina North, hires consultants, and buys office supplies and equipment.
- *Indirect effects*: the expenditures and jobs created by industries buying from other industries. For example, the office supply distributor buys trucks and hires drivers.
- *Induced effects*: changes in local spending caused by income changes in the directly and indirectly affected industry sectors. For example, the environmental consultants, office supply salespersons, and truck drivers shop at the mall and give their kids piano lessons.

The IMPLAN software package was used in the evaluation of Carolina North. IMPLAN was originally developed by the U.S. Forest Service and is widely used in economic impact analysis.¹ The software estimates input-output models based upon data from the U.S. Bureau of Labor Statistics, the U.S. Bureau of Economic Analysis, and other federal and state government agencies.

The results of economic impact analysis provide the following information:

- *Employment*: the number of jobs created directly, indirectly, and induced by the impact.
- *Labor income*: personal income generated directly, indirectly, and induced by the impact.
- *Output*: the value of an industry's total production, roughly equated to business revenue, generated directly, indirectly, and induced by the impact.

MODEL DATA AND ASSUMPTIONS

This section explains the data and assumptions used in the impact analysis. All dollar figures are in future value terms.

Construction

The impact from construction alone is enormous. The first two phases account for over \$527 million in direct expenditures. When the Carolina North development is completed, approximately eight million square feet of commercial, institutional, and residential space will have been built, in addition to deck and surface parking. This results in \$3.25 billion in construction expenditures over the 50 year period, assuming construction costs increase at a typical 2.5 percent inflation rate. To be conservative, we assume that the impact occurs at the final year of each phase.

¹ A few examples of other studies that have used IMPLAN for impact analysis in North Carolina are:

1. Connaughton et. al. UNC Charlotte Belk College of Business Administration. "The Economic Impacts of the Motorsports Industry on the North Carolina Economy." October 2004. <http://www.ui.uncc.edu/images/MotorsportsImages2004/Motorsports%20Report%2010-05-04.pdf>.
2. Kilpatrick and Luger. Kenan Institute of Private Enterprise. "The Economic Impact of Proposed Reductions in Medicaid Spending in North Carolina." April 11, 2002. <http://www.healthlaw.org/pubs/2002.NC.econimpact.doc>.
3. D.K. Shifflet & Associates for Durham Convention and Visitors Bureau. "The Economic Impact of Visitors to Durham, N.C." October 29, 2001. <http://www.imakenews.com/durhamcvb/IMPLAN.pdf>.
4. Traill and Wohl. National Economic Development and Law Center. "The Economic Impact of the Child Care Industry in North Carolina." 2004. <http://www.ncsmartstart.org/national/images/NCCCEIRFullReport.pdf>.

Construction Expenditures (Millions)

Construction Component	Phase 1 & 2	Total
Commercial	\$19.5	\$90.0
Institutional	\$421.6	\$2,418.9
Residential	\$76.1	\$415.1
Deck Parking	\$10.0	\$328.0
Total	\$527.2	\$3,252.1

The employment shown in the impact analysis assumes that a different set of workers is hired for each phase. This is reasonable, considering the long timeframe for the project.

University Operations

University uses will occupy about 60 percent of the institutional/research space at Carolina North, resulting in approximately 2.5 million square feet of new, usable space for UNC-Chapel Hill. Economic impact analysis of the university operations were broken into two categories: program-based expenditures and facilities maintenance. To approximate the program-based expenditures, we took the average of the current budgets for the Sheps Center for Health Services Research and the Department of Cell and Molecular Physiology. These are representative of the types of programs that would exist at Carolina North. Estimates of personnel, payroll, and operating budgets were made on a square footage basis using the average of the two departments. By the time the Carolina North development is completed, 10,030 faculty and staff are projected to be working there.

Annual Operations for University Component

	By End of Phase 2	Project Completion
Space for institutional (sq ft)	769,000	2,500,000
Personnel (faculty + staff)	3,085	10,030
Total salary & wages*	\$141.2M	\$1.39B
Total other operations*	\$166.6M	\$1.64B

*Represents new economic impact. Does not include payroll and operations budget from 200,000 square feet of existing programs potentially relocating to Carolina North.

To be sure to capture only new economic impact, we assume that 200,000 square feet of the university space will be relocated from other space leased by existing programs at UNC-Chapel Hill; the economic impact of these operations are excluded because they are not considered to be new. The remaining 2.3 million square feet of university space will generate new economic impact. Assuming that the university operating budget grows at the rate of inflation (2.5 percent), the university portion of Carolina North will reach \$166.6 million in new operating expenditures at the end of

Phase 2 and \$1.64 billion upon project completion.² This is in addition to \$141.2 million in salary and wages at the end of Phase 2 and \$1.39 billion in salary and wages upon project completion.

The maintenance of facilities is not included in the UNC program budgets and represents an additional impact. We assume that maintenance is \$7 per square foot in 2007 and increases by 2.5 percent annually.

Joint/Private Operations

Forty percent of the institutional/research space at Carolina North will be set aside for joint research and private firms. Companies like GlaxoSmithKline and the Sylvan Learning Center can benefit from proximity to the research facilities at Carolina North and may choose to locate there. At the end of Phase 2, over 700,000 square feet of space for joint research and private uses will be built. When the Carolina North development is complete, there will be 2.28 million square feet of leasable space for these firms. Carolina North is to be predominantly for programs and users, and is not speculative space. Therefore, we have not assumed any vacancy rates.

We assume that the joint/private space is built at the same rate as the institutional space for university uses. We applied the same ratio of personnel to square footage as the university uses to get an estimate of over 2,000 total joint/private employees at the end of Phase 2 and 6,740 when Carolina North is complete. To model these firms' economic activities, we assume that they are involved with scientific research and development services.

Retail/Service Operations

As a mixed-use development, Carolina North will include 300,000 gross square feet of service retail space. Retail sales were calculated using the conservative estimate of \$172.74 per leasable square foot for North Carolina shopping centers from the National Research Board's 2003 *Shopping Center Census*. Assuming a 2.5 percent inflation rate, annual sales from the retail/service space will reach \$24.5 million at the end of Phase 2 and \$182.2 million when the project is completed. To model these businesses' economic activities, we assume that 25 percent of the space is for restaurants and 75 percent is used by general merchandise stores. These are generic uses that approximate the activities likely to occur at Carolina North.

² The 2.5% inflation rate is conservative, considering that the UNC Chapel Hill operating budget increased by 4.4% annually between 1999 and 2003. Source: UNC Fact Book

Household Spending

The economic impact of household spending is significant, as Carolina North employees spend their disposable income on typical household activities. These impacts are captured in the induced effects of the Carolina North operations.

To be conservative, we have not modeled the economic impact of second earners in the Carolina North households. They represent new economic impact only if the second earner takes a job that is new to the area, rather than taking a job that already existed. It is difficult to estimate the number of new jobs that second earners would take, and although 46 percent of Orange County households have more than one worker³, we have not included them in the impact analysis.

Tax Revenues

The Carolina North development will provide a new and significant source of revenue to both Carrboro and Chapel Hill, as well as Orange County and North Carolina. This tax impact analysis is an estimate of the state and local tax revenues generated by the major *direct* expenditures associated with Carolina North. We use current tax rates to estimate future revenue. Property, sales, and income taxes are the only taxes considered. Total tax impact will be much higher but is considerably more difficult to estimate. Additional tax revenues will come from the indirect and induced economic activity of Carolina North, as well as other types of taxes, such as franchise and license taxes and local permitting fees.

PROPERTY TAXES

Property taxes are paid to Orange County, Chapel Hill, and Carrboro, including the Chapel Hill-Carrboro City School District, and apply to the residential component and the buildings of the joint/private and the service/retail uses. The land for the joint/private and service/retail buildings is owned by UNC-Chapel Hill and is exempt from property taxes. The total tax rate for Chapel Hill is \$1.655 per \$100 assessed value in 2004-2005, and the total tax rate for Carrboro is \$1.7948 per \$100 assessed value.⁴ The total rates include \$0.880 for Orange County and \$0.200 for the school district. All of the service/retail and residential development is in Carrboro in Phases 1 and 6, while the other phases occur in the Chapel Hill part of Carolina North. The institutional space is all in Chapel Hill except for the 30 percent of the space from Phase 1 being built in Carrboro.

³ Source: U.S. Census Bureau, 2000.

⁴ Source: North Carolina Department of Revenue, http://www.dor.state.nc.us/publications/2004-05TaxRates_Prelim.xls.

To be conservative, we use the construction cost as an estimate of the value of the housing and buildings. The value of the buildings is assumed to be the same as the assessed value. For residential property, we have included the cost of land (assumed to be 20 percent of the construction cost) in calculating property tax revenue. We assume that property values increase at the 2.5 percent inflation rate, and we ignore taxes on real property other than the land and buildings. At the end of Phase 2, \$305 million in commercial buildings and houses will be subject to property tax. This figure will rise to \$2.51 billion when the Carolina North construction is completed.

SALES TAXES

The general sales tax rate in Orange County is 7.0 percent, where 4.5 percent goes to North Carolina and 2.5 percent goes to Orange County.⁵ Orange County distributes the sales tax to municipalities based on a per capita basis. Based on 2000 U.S. Census population data, this means about 14 percent of the county's sales tax revenue goes to Carrboro and 41 percent goes to Chapel Hill.

We consider sales tax from three main sources: 1) household expenditures of Carolina North employees, 2) revenue of Carolina North retail component, and 3) construction expenditures from the development of the retail/service and joint/private components (the university component is tax-exempt). The sales tax revenue on construction expenditures is a one-time occurrence, but revenues from the other sources are recurring and will increase with each phase of development.

The calculation of sales tax from household expenditures uses wages for university, joint/private, and retail/service employees. It uses the disposable income factor of 76.7 percent from the IMPLAN model data, and the *Sales and Marketing Management's* 2003 Survey of Buying Power estimates that retail sales are 52.4 percent of household disposable income in Orange County. Also, we assume that 52.2 percent of Carolina North employees will live in Orange County and spend their money there.⁶

The calculation of sales tax revenue from the retail sales at Carolina North uses the sales figures from the impact analysis. As mentioned before, we assume that the retail component includes 75 percent general merchandise stores and 25 percent restaurants, both of which are taxed at 7 percent. If the retail mix changes to include some services (tax preparation, daycare, etc.), the sales tax may not apply. Still, this is

⁵ North Carolina redistributes the local portion of sales tax based on complex formulas that, according to the Sales and Use Tax Division of the Department of Revenue, cannot be determined in advance. As the best approximation, we assume that Orange County receives the full 2.5 percent of local sales taxes. Historically, Orange County has received more than this share.

⁶ Based on location of residence for UNC Chapel Hill faculty and staff. Source: UNC Fact Book. 2003-2004.

a conservative estimate of sales tax revenue, as it does not include purchases by the joint/private businesses, purchases by the retail businesses, or any other indirect or induced purchases.

The calculation of sales tax from construction expenditures assumes that the taxable portion is the building materials, which accounts for 30 percent of total construction expenditures. We assume that only 50 percent of the building materials are purchased within Orange County.

Revenues Subject to Sales Tax

	By End of Phase 2	Project Completion
Orange County estimated retail sales from Carolina North employee expenditures	\$87.5M	\$477.4M
North Carolina estimated retail sales from Carolina North employee expenditures*	\$224.8M	\$1.23B
Carolina North estimated retail sales	\$24.5M	\$182.2M
Taxable construction expenditures in Orange County	\$41.1M	\$270.1M
Total taxable expenditures from construction*	\$82.3M	\$540.2M
Total expenditures subject to sales tax in Orange County	\$153.1M	\$929.7M
Total expenditures subject to sales tax in North Carolina*	\$331.5M	\$1.95B

*Includes Orange County estimated retail sales

INCOME TAXES

The state income tax impact is derived from the income of Carolina North employees and revenues of the joint/private and retail/service businesses. As stated previously, we have not included the income taxes of the second earners of these households. Total salary and wages for Carolina North employees will reach an estimated \$417 million by the end of Phase 2 and \$2.28 billion when the development is completed. Personal income tax was derived after applying the following ratios to the salary and wages of the Carolina North employees:

- 97.6 percent of salary & wages is federal taxable income.⁷
- 92.0 percent of federal taxable income is state taxable income.⁸
- The North Carolina effective income tax rate was 6.8 percent from 2000 to 2002.⁹

⁷ Source: Internal Revenue Service, Statistics of Income. 1997-2001 (5-year average)

⁸ Source: North Carolina Department of Revenue. 2000-2002 (3-year average)

⁹ Source: North Carolina Department of Revenue. 3-year average over all returns

Total joint/private and retail/service sales revenue is expected to reach \$192 million by the end of Phase 2 and \$1.51 billion when the Carolina North development is completed. The corporate income tax revenue was estimated by applying the following ratios to the estimated revenue of these businesses:

- 3.1 percent of total receipts (revenue) is federal taxable income.¹⁰
- Assume that 100 percent of federal taxable income is state taxable income. This is reasonable for companies that do business entirely within North Carolina and have no special circumstances to make state taxable income different than federal taxable income.
- The North Carolina corporate income tax rate is 6.9 percent.¹¹

IMPACT ANALYSIS RESULTS

This is a conservative economic impact analysis, in that it makes reasonable assumptions, examines the main, measurable impacts, and does not include smaller impacts or those that are difficult to quantify. The economic impact results presented here are new impacts that occur as a direct cause of Carolina North. All dollar figures are in future value terms.

Impact of Construction

Typically, construction impacts are short-lived. However, because the Carolina North project extends across 50 years, the construction impacts are large and continuous during this time period.

By the end of Phase 2 (2020):

- 5,272 jobs will be created in construction and stimulate an additional 3,604 jobs in the North Carolina economy, and 2,451 additional jobs in the Orange County economy.
- This equates to \$190 million in salary and other personal income, stimulating an additional \$164 million in personal income in North Carolina, where \$105 million is in Orange County.
- The \$527 million in construction expenditures will generate an additional \$452 million of business revenue in the North Carolina economy, where \$268 million is in Orange County.

¹⁰ Source: Internal Revenue Service, Statistics of Income, 2001.

¹¹ Source: North Carolina Department of Revenue.

Total Construction Impacts by the End of Phase 2
(Dollars in Millions)

Phase 1 & 2	Direct Project Impact (Orange County)	Additional Impact in Orange County	Additional Impact in North Carolina (outside Orange County)	Total Impact
Employment	5,272	2,451	1,153	8,876
Labor Income	\$190	\$105	\$59	\$353
Output	\$527	\$268	\$184	\$979

By the time Carolina North construction is completed (2056):

- 18,686 jobs will be created in construction and stimulate an additional 12,708 jobs in the North Carolina economy, and 8,605 additional jobs in the Orange County economy.
- This equates to \$1.16 billion in salary and other personal income, stimulating an additional \$997 million in personal income in North Carolina, where \$634 million is in Orange County.
- The \$3.25 billion in construction expenditures will generate an additional \$2.77 billion of business revenue in the North Carolina economy, where \$1.63 billion is in Orange County.

Total Construction Impacts at Project Completion
(Dollars in Millions)

Project Total	Direct Project Impact (Orange County)	Additional Impact in Orange County	Additional Impact in North Carolina (outside Orange County)	Total Impact
Employment	18,686	8,605	4,102	31,394
Labor Income	\$1,163	\$634	\$363	\$2,159
Output	\$3,252	\$1,635	\$1,132	\$6,018

Impact of Carolina North Operations

In addition to the large construction impacts, Carolina North will have a huge impact from its everyday operations. This includes university uses, joint research and private firms, retail and service businesses, as well as the household expenditures of Carolina North employees. Impacts from these components are ongoing annually and increase as more of Carolina North is built out and occupied.

At the end of Phase 2:

- 4,675 jobs will have been created at Carolina North. This will have stimulated an additional 2,827 jobs in North Carolina, where 1,599 of these jobs will also be in Orange County.
- This equates to \$298 million in annual salary and other personal income, stimulating an additional \$135 million in personal income in North Carolina, where \$68 million is in Orange County.
- The \$354 million in sales revenue and annual operating expenditures will generate an additional \$245 million of annual business revenue in the North Carolina economy, where \$114 million is in Orange County.

Annual Operational Impacts at the end of Phase 2
(Dollars in Millions)

Phase 1 & 2	Direct Project Impact (Orange County)	Additional Impact in Orange County	Additional Impact in North Carolina (outside Orange County)	Total Impact
Employment	4,675	1,599	1,228	7,502
Labor Income	\$298	\$68	\$67	\$433
Output	\$354	\$114	\$131	\$600

When the Carolina North development is completed:

- 16,991 jobs will have been created at Carolina North. This would have stimulated an additional 10,546 jobs in North Carolina, where 5,893 of these jobs are in Orange County.
- This equates to \$2.63 billion in annual salary and other personal income, stimulating an additional \$1.23 billion in personal income in North Carolina, where \$617 million is in Orange County.
- The \$3.12 billion in annual operating expenditures and sales revenues generates an additional \$2.12 billion in business revenue in North Carolina, \$962 million of which is in Orange County.

Annual Operational Impacts at Project Completion
(Dollars in Millions)

Project Total	Direct Project Impact (Orange County)	Additional Impact in Orange County	Additional Impact in North Carolina (outside Orange County)	Total Impact
Employment	16,991	5,893	4,653	27,536
Labor Income	\$2,626	\$617	\$616	\$3,859
Output	\$3,122	\$962	\$1,160	\$5,244

Impact of Tax Revenues

This impact analysis looks at three types of taxes: property, sales, and income tax from direct Carolina North expenditures. Actual tax impact will be considerably higher from indirect expenditures and other types of taxes that have not been estimated here.

By the end of Phase 2:

- Carolina North will generate \$26 million in state income tax annually. Most of this will come from taxes on employee salary and wages, the rest will come from income tax paid by Carolina North businesses.
- Carolina North retail businesses and household expenditures will generate \$17 million in sales tax annually. Orange County would receive \$2.8 million, and \$14.6 million will go to the state of North Carolina and other counties. Orange County receives considerably less than North Carolina, because nearly half of Carolina North employees are likely to live outside of Orange County and spend their money where they live. These sales tax estimates do not include purchases made by the joint/private businesses or any indirect sales tax revenues.
- Construction expenditures will generate an additional \$5.8 million in sales tax revenues. Orange County would receive \$1.0 million, and \$4.7 million would go to North Carolina and other counties. These are not recurring revenues.
- Property taxes from the residential component and buildings of the joint/private and retail/service operations would reach \$5.2 million annually. Of that amount, \$2.7 million will go to Orange County, \$0.6 million to the school district, \$1.3 million to Chapel Hill, and \$0.6 million to Carrboro.

When the Carolina North development is completed:

- Carolina North will generate \$142 million in state income tax annually. Again, most of this will come from taxes on employee salary and wages.
- Carolina North retail businesses and household expenditures will generate \$99 million in sales tax annually. Orange County would receive \$16 million, and \$82 million will go to the state of North Carolina and other counties.
- Construction expenditures will have generated an additional \$38 million in sales tax revenues. Orange County would receive \$6.8 million, and \$31 million would go to North Carolina and other counties. Again, these are not recurring revenues.
- Property taxes from the residential component and buildings of the joint/private and retail/service operations would reach \$42 million annually. Of that amount, \$22.1 million will go to Orange County, \$5.0 million to the school district, \$11.9 million to Chapel Hill, and \$3.2 million to Carrboro.

OTHER SOCIOECONOMIC BENEFITS

There is more to Carolina North than the economic impacts it has from construction and operational expenditures. At least as important as its expenditure impacts are the impacts that Carolina North will have on increased research and intellectual capacity for the state of North Carolina. Together, UNC-Chapel Hill and North Carolina State University received almost 90 percent of their research funding from federal and private sources in 2002.¹² That means that for every dollar received from the State of North Carolina, these universities are able to leverage that to obtain an additional \$9 in federal and private grants and contracts. Money invested in research facilities and programs result in benefits that can be difficult to quantify:

- Carolina North can increase the ability of UNC-Chapel Hill to attract top undergraduate and graduate students to whom research is important. Carolina North would provide students with opportunities to engage in research that may not have previously existed.
- Carolina North can increase the ability of UNC-Chapel Hill to attract top faculty and research staff. The lure of new, state-of-the-art research facilities and program funding can give UNC-Chapel Hill a competitive edge in recruiting.
- Providing students and faculty with better research opportunities also results in increasing the intellectual capacity of these current and future leaders of the economy. This is critical not just for UNC-Chapel Hill, but especially for the state of North Carolina.
- Carolina North and UNC-Chapel Hill are important sources of employment for the State of North Carolina. Carolina North provides an opportunity for North Carolina to retain human capital and intellectual talent within the state. This applies not just to students who graduate from the university, but also scientists and researchers who seek employment at top-tier programs.
- If the Research Triangle Park (RTP) is any indication, Carolina North will attract research-based or technology-based private firms. A 1999 survey of firms that represented 84 percent of employees at RTP revealed that 97 percent of those employees would not likely be in the Research Triangle Region if it were not for RTP.¹³ Survey respondents reported that proximity to the Region's universities were important for these major reasons:
 - Access to university graduates as employees
 - Courses and training for employees
 - Cultural, social, and recreational amenities

¹² Source: Huron Consulting Group. "Enhancing the Ability of North Carolina's Public Research Universities to Contribute to State Economic Development." March 2004. p. 6.

¹³ Source: Hammer, Siler, George Associates. "The Research Triangle Park: The First Forty Years." February 11, 1999. p. 6-7.

- Opportunities to contract or sub-contract
- Use of faculty for consulting
- The firms that locate to Carolina North are likely to be involved with cutting-edge, innovative activities and provide high-paying, quality jobs to their employees. The ability of private firms to use UNC-Chapel Hill as a resource increases their competitiveness in a globalizing marketplace. Interaction between UNC-Chapel Hill and these firms can lead to new patents and attract additional funding for further research.
- The university component of Carolina North can also attract increased private funding for research and development. In 2002, UNC-Chapel Hill ranked 90th in industry-sponsored R&D at colleges and universities.¹⁴ By contrast, Duke University took the top ranking and North Carolina State University came in 15th. Industry-sponsored R&D made up only 1.8 percent of total R&D funding at UNC-Chapel Hill in 2002.¹⁵ Clearly, this represents an opportunity for UNC-Chapel Hill to increase the proportion of privately sponsored research to be comparable to other top ranked research universities.
- Research done at Carolina North can spawn new firms, as has already occurred to a certain extent with research from the main UNC campus. This can be improved upon by establishing an incubator at Carolina North. The incubator would support start-up businesses until they are ready to make it on their own. For example, the 25-year old Advanced Technology Development Center at the Georgia Institute of Technology has been quite successful with this; its member companies attracted \$227 million in capital activity in 2003.¹⁶

As a mixed-use development, Carolina North will provide amenities for the Orange County community, including retail and dining options, civic space (such as a library and auditorium), recreational space, and an elementary school site. Through these activities and programs through UNC-Chapel Hill, integration and interaction between the university and the residential community can increase.

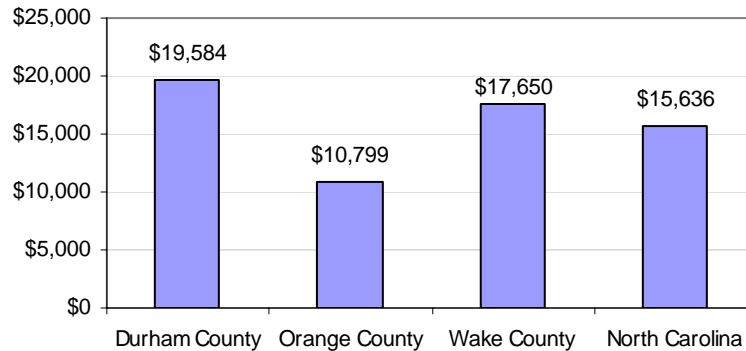
Orange County appears to be “leaking” retail sales to other counties. According to the Orange County Economic Development Commission, per capita retail sales were only \$10,799 in Orange County, far lower than that for Durham County, Wake County, and the state of North Carolina.

¹⁴ Source: National Science Foundation. “TABLE B-38. Industry-sponsored R&D expenditures at universities and colleges, ranked by fiscal year 2002 industry-sponsored R&D expenditures: fiscal years 1995-2002” <http://www.nsf.gov/sbe/srs/nsfo4330/sectb.htm>.

¹⁵ Source: National Science Foundation. “TABLE B-36. R&D expenditures at public universities and colleges, by source of funds: fiscal year 2002” <http://www.nsf.gov/sbe/srs/nsfo4330/sectb.htm>.

¹⁶ Source: ATDC. <http://www.atdc.org/success.asp>. Capital activity refers to investments or acquisitions.

Per Capita Retail Sales, FY 2003



Looking at retail sales as a percent of effective buying income is another indicator of retail sales leakage. If the percentage is less than 100, this means that the community is making purchases outside of their geographic area. As shown in the table below, there is considerable retail leakage from Chapel Hill and Orange County (no data were available for Carrboro). Raleigh appears to capture more than their share of retail sales. The retail component of Carolina North can help to keep retail sales dollars within Orange County without threatening existing businesses. Resulting benefits include increased sales tax revenue for Orange County and its municipalities, support of businesses within these jurisdictions, and increased retail and eating options for local residents and employees.

Retail Sales as Percent of Effective Buying Income

Raleigh-Durham-Chapel Hill metro area	72.7%
Orange County	52.4%
Chapel Hill	63.8%
Durham	84.0%
Raleigh	106.7%

Source: 2003 Survey of Buying Power, Claritas

SUMMARY

Carolina North is a project with major economic impacts over its long development period. In the first two phases alone, construction of Carolina North will have contributed nearly 9,000 jobs, over \$350 million in salary and wages, and nearly \$1 billion in business revenue within the state of North Carolina.¹⁷ By the end of the second phase, annual impacts of the university, joint/private, and service/retail operations will create 7,500 jobs, over \$430 million in salary and wages, and \$600

¹⁷ In present value (2004) dollars, this is equivalent to \$259 million in salary and wages and \$717 million in business revenue, assuming 2.5 percent inflation and the construction schedule outlined by Stonebridge Associates.

million in business revenue within the state.¹⁸ To put this in perspective, the impact of Carolina North annual operations at the end of Phase 2 (which excludes construction expenditures) is more than the current employment in the entire retail sector in Orange County and more than twice the total salary and wages paid to the county's retail employees.¹⁹

Carolina North is expected to generate \$48 million in annual tax revenues by the end of Phase 2. While these revenues go to multiple government entities (Chapel Hill, Carrboro, the State of North Carolina, Orange County, and other counties), this is considerably more than the entire \$22 million budget adopted by the town of Carrboro for 2004-2005.²⁰ Note that the tax impact is a conservative estimate that considers only the property, sales, and state income tax generated by the direct operations of Carolina North. Also, it does not include the non-recurring \$5.8 million in sales tax revenue generated by construction expenditures during this period.

Additional impacts of Carolina North will be realized over the long term, through the results of increased research and innovation. With the ability to attract top faculty, students, companies, and other researchers, Carolina North has the potential to transform the University of North Carolina into a first class research institute. The entire state of North Carolina stands to benefit from the expanded intellectual capacity and increased innovation.

¹⁸ In present value (2004) dollars, this is equivalent to \$292 million in salary and wages and \$404 million in business revenue, assuming 2.5 percent inflation.

¹⁹ Source: North Carolina Employment Security Commission. There was an average of 6,240 people employed in retail (NAICS 44) within Orange County in 2003, who were paid \$133 million in salary and wages. The salary and wages of Carolina North employees will reach \$433 million by 2020, which is equivalent to \$292 million in 2004 dollars (assuming 2.5% annual inflation).

²⁰ Source: Town of Carrboro. The \$47 million annual tax impact of Carolina North in 2020 is equivalent to \$32 million in 2004 dollars (assuming 2.5% annual inflation).