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**LIVE GROW WORK**

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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* works with 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 your unique vision with your capacity to achieve lasting economic and social change.



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## EXECUTIVE SUMMARY

The uniqueness of the North Carolina Research Campus (NCRC) and the size of its anticipated impacts make it imperative for local governments and regional entities to plan for its arrival and maximize its potential. The purpose of this *SWOT Analysis* is to understand the Kannapolis area's economic and community competitive position in order to leverage the NCRC investments to attract and create private sector jobs and businesses. The outcome is a set of issues for Kannapolis, Cabarrus County, and regional entities to best capture all of the positive aspects of the NCRC development.

Three comparison communities were selected for this *SWOT Analysis*: **Cary, North Carolina; Rockville, Maryland; and Rochester, Minnesota**. These three places are dynamic communities with established presences in a combination of biotechnology, technology, and medicine. These comparison areas have worked hard at becoming places where people want to live and businesses want to be. The current assets of these communities represent decades of private and public sector engagement. The purpose of the comparison communities is to provide examples for Kannapolis to learn from, in terms of how these other communities have excelled or lagged behind.

Kannapolis and Cabarrus County governments, economic development organizations, and other entities have contributed to many improvements in the community. However, the area's economic history and lack of prior biotechnology and research activity mean that Kannapolis, Cabarrus County, and the region have much to do to become fully prepared and competitive for a new biotech cluster.

### Key Findings and Implications

Qualitative and quantitative research was conducted to understand the Kannapolis area's competitive position in five areas: quality of life, infrastructure, education and workforce development, innovation and entrepreneurship, and business costs. The following is an overview of the key findings from the research.

- **Finding:** Kannapolis has lower educational attainment levels than the comparison communities, and performance and investment in the public school systems are also behind.
- **Implication:** Kannapolis and Cabarrus County must step up efforts to improve overall public education performance, offer greater options for advanced and gifted students, and emphasize the linkages between education and employment.
- **Finding:** North Carolina has been very proactive in establishing workforce training programs in biotechnology, and Kannapolis area organizations and higher education institutions are making proactive efforts to prepare local residents for potential employment at NCRC.

- **Implication:** More needs to be done to increase career awareness and aptitude in science and biology at the K-12 level. Local leaders need to work on identifying skills and positions that are likely to be needed for NCRC jobs, communicate these opportunities to local residents, and offer post-secondary training specifically designed for those opportunities.
- **Finding:** While there have been many positive improvements in recent years, Kannapolis still lags behind the comparison communities in many quality of life factors. These include opportunities for civic engagement and community connections; recreational, cultural, and entertainment amenities; and investment in libraries and other facilities.
- **Implication:** Kannapolis and other local governments need to make significant investments and place high importance on improving amenities and government services for current and future residents.
- **Finding:** Rochester has the most urban pattern of development, while Rockville has made the most significant efforts in promoting smart growth, alternative modes of transportation, mixed-use neighborhoods, and a vibrant downtown area.
- **Implication:** Young professionals seek dynamic communities with thriving urban cores when deciding on a place to live. The development of NCRC presents the opportunity to shape the built environment in a way that is attractive, pedestrian-scale, and sustainable. A mix of housing options and proactive planning efforts (transportation, land use, zoning, etc.) are needed to guide future development of the area.
- **Finding:** The comparison communities are considerably more diverse in terms of racial mix, foreign languages spoken, and religions. Kannapolis is less diverse and has a reputation of not being particularly welcoming to newcomers from different regions and backgrounds.
- **Implication:** The Kannapolis and Cabarrus County community must welcome diversity and improve communication with people of varying backgrounds. The region must also promote itself as a welcoming community that embraces diverse religions, ethnicities, lifestyles, and view points. Not doing so can be detrimental to the Kannapolis area's ability to attract new residents associated with NCRC.
- **Finding:** Historically, the Charlotte region is behind the comparison community regions in its graduate level programs and university research capacity.
- **Implication:** The presence of multiple top-tier research universities at NCRC is a unique situation that should be leveraged. The presence of UNC, Duke, and NC State is unprecedented. This is also an opportunity for UNC-Charlotte to increase its involvement in bioinformatics. Local leaders should pursue increased higher education programming at the Research Campus, through avenues such as distance learning or short overview courses.

- **Finding:** The Research Triangle and Washington, D.C. regions have long histories and are leaders in innovation and entrepreneurial activity. While the Charlotte region is behind in innovation capacity, it is competitive in its levels of entrepreneurial activity. However, Kannapolis and the surrounding area need to develop a true entrepreneurial culture.
- **Finding:** The Charlotte region is able to benefit from strong and coordinated state-level support for biotechnology. The region also has an established support structure for entrepreneurs at varying stages of their businesses, but lacks strong networks of – and for – entrepreneurs.
- **Implication:** The Kannapolis area and the Charlotte region need more effective networks for entrepreneurs to help create a greater sense of entrepreneurial spirit and culture. It is also important for small business support organizations to understand the needs of biotechnology start-ups and work with biotechnology support organizations to be able to be relevant to NCRC businesses.
  
- **Finding:** The Charlotte region has established business funding sources via commercial loans, but it is still developing its angel and venture capital investment potential.
- **Implication:** The Charlotte region as a whole needs to continue to develop breadth and depth in funding options for start-up firms, not just for biotech companies, but also for entrepreneurs who want to start companies to serve NCRC businesses or households. The region’s banks and other finance professionals must also become more educated about how biotech businesses work and what their specific funding needs are likely to be.
  
- **Finding:** While high speed internet and cellular phone services are widely available, Kannapolis is behind the comparison communities in wireless internet availability – although new developments plan to have wireless access.
- **Implication:** Kannapolis must create an image that it is technologically savvy and up-to-date. Plans for creating a free wireless internet zone on the NCRC campus and surrounding area need to be implemented.
  
- **Finding:** Tax rates in Kannapolis are competitive – neither particularly high or particularly low.
- **Implication:** Kannapolis and Cabarrus County will need to explore traditional and alternative revenue streams to make necessary investments in infrastructure and city services to meet the expectations of newcomers to NCRC.
  
- **Finding:** North Carolina and Maryland have an aggressive approach to biotechnology development and have created a positive environment for biotechnology activity.
- **Implication:** Competition is continuing to increase, and the Kannapolis area and Charlotte region have a lot of work ahead of them in establishing a biotechnology cluster.

**Conclusion**

Although Kannapolis has no prior presence in biotechnology, the state and region have many pieces in place that will help the development of a specific cluster around the Research Campus. The research showed that the Kannapolis area’s strengths include:

- **Proximity to Charlotte** and the opportunity to capture some of the natural growth out of the metro area.
- **Strong and coordinated regional support for entrepreneurship**, with programs that provide technical assistance, education, outreach, and incubator services.
- **Strong state support for biotechnology**, including workforce training programs, incentive packages, and public policy, networking, and advocacy support for biotechnology.
- **Organizations working together** in the Charlotte region to prepare for NCRC.

However, there are a number of areas that Kannapolis, Cabarrus County, and other area entities need to focus on in order to prepare for the North Carolina Research Campus and maximize its opportunities. Those issues came out of the key findings and are highlighted in the table below. The end result of these efforts should be a change in the reality and perception of the Kannapolis area as a community that is welcoming and desirable to residents and businesses.

<b>OVERARCHING NEEDS</b>	
<ul style="list-style-type: none"> <li>▪ <b>Plan and invest for growth</b></li> <li>▪ <b>Communicate changes and opportunities to current and potential residents</b></li> </ul>	
<b>PRIORITY ISSUES</b>	<b>ADDITIONAL FOCUS AREAS</b>
<ul style="list-style-type: none"> <li>▪ Improve K-12 education</li> <li>▪ Prepare the workforce</li> <li>▪ Expand amenities and improve government services</li> <li>▪ Promote smart growth and create a sense of place</li> <li>▪ Embrace diversity</li> </ul>	<ul style="list-style-type: none"> <li>▪ Develop breadth and depth in funding options for start-up firms</li> <li>▪ Develop effective networks for entrepreneurs</li> <li>▪ Pursue increased higher education programming at the Research Campus</li> <li>▪ Consider creating a free wireless internet zone on the NCRC campus and surrounding area</li> <li>▪ Educate service providers about needs of biotechnology start-ups</li> <li>▪ Continue developing state and regional partnerships</li> </ul>

Kannapolis and the entire region are presented with an enormous opportunity to leverage the investments in the North Carolina Research Campus. The scope of the project, its statewide impact, the institutions involved, and significant private sector interests make this truly a unique project. The Research Campus is likely to



transform the Kannapolis community and move the area towards a knowledge-based economy.

That said, the potential economic impacts described in the *Estimating the Economic Impact of the North Carolina Research Campus* document will not happen without targeted investments, proactive planning and marketing, and a welcoming attitude. Kannapolis, Cabarrus County, and other parts of the region need to make sure the area is attractive to potential residents and businesses. With increasing competition for biotechnology activity and talented workers, Kannapolis and Cabarrus County will have to be aggressive to maximize the potential benefits of the Research Campus.

Biotechnology workers and businesses have a great deal of choice in their selection of location, so communities must make every effort to define their niches and competitive advantages. The people who come to NCRC for research jobs will have high expectations. If they do not find what they are looking for in the Kannapolis area – an open, welcoming place that embraces diversity, emphasizes excellence in education, has quality housing options, recreation and entertainment amenities, and responsive city services – they may choose to live or work elsewhere.

Local and regional leaders cannot wait to “see what happens” before addressing the issues identified in this document. A reactive response will be too late and result in lost opportunities. The North Carolina Research Campus is providing the impetus for positive changes and improvements in the community. These changes should result in a better quality of life for existing and future residents and a stronger climate for businesses. Kannapolis and the surrounding area have the opportunity of a lifetime.

### **Next Steps**

There are many positive steps already being taken in the region to be sure that this opportunity is maximized. However, there is more to be done. There is an immediate need for specific action plans in a few key areas. These include education and workforce development, small business and entrepreneur development, quality of life enhancement, and growth management.

Work on the action plans needs to begin immediately. However, the City of Kannapolis cannot accomplish it all on its own. Key public and private sector partners are needed. The North Carolina Research Campus will have impacts across counties, governments, and different types of organizations. These entities need to work together and be active participants in the development of a business and living environment that promotes and fosters biotechnology activity.

## PROJECT BACKGROUND

### Community Context

Kannapolis' roots in textile manufacturing go back to 1906, when James William Cannon combined several farms to form the Cannon Mills Company. As Cannon Mills grew to be the world's largest producer of household textiles, it also drove the local economy. The company was renamed Fieldcrest Cannon after its merger with Fieldcrest Mills, Inc. in 1985. Then in 1997, Pillowtex Corporation acquired Fieldcrest Cannon. Global pressures and the changing economy contributed to the abrupt closing of all Pillowtex operations in July 2003. Nearly 8,000 employees were laid off nationwide, including nearly 5,000 in Cabarrus and Rowan Counties.<sup>1</sup>

Many of the Pillowtex employees in Kannapolis had come from generations that had worked in the textile industry. Many had not completed high school and most had little technical skills. About half of those laid off enrolled at Rowan-Cabarrus Community College to get their GEDs, take continuing education courses, or complete degree or certificate programs. Finding work for the former Pillowtex employees remains difficult. As of March 2005, only a third of the Pillowtex employees had found new jobs, and many of those who are re-employed work for lower wages.<sup>2</sup>

Despite the closing of Pillowtex, the Kannapolis area economy has remained relatively strong and has benefited from a strong regional economy. Unemployment rates are low (3.4 percent in Cabarrus County, 4.2 percent in Rowan County in April 2006), and the size of the labor force has continued to increase as new residents have moved into the counties (2.1 percent population increase in Cabarrus County and 0.3 percent increase in Rowan from 2003 to 2004). In addition, real per capita income (adjusted for inflation) increased in both counties from 2003 to 2004 (by 1.4 percent in Cabarrus and Rowan), although this growth in income was less than the state's overall rate (2.5 percent).

The Kannapolis Gateway Business Park is nearly fully developed, with recent announcements of Haas CNC Racing and Novant Health locating there and with MarkPiercePoole, Inc. building an industrial speculative building there. Kannapolis is also experiencing significant growth in residential development, including development of million-dollar homes. Major residential developments include Kellswater Bridge and Afton Village, both of which are examples of traditional neighborhood development with cluster homes, neighborhood amenities, and retail/mixed-use components.

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<sup>1</sup> Bell, Adam. "Pillowtex: Nonunion deal struck: Agreement in principle cited with 1,300 who worked for onetime Kannapolis textile giant." *The Charlotte Observer*. June 23, 2006.

<sup>2</sup> North Carolina Employment Security Commission.

## North Carolina Research Campus

In September 2005, the plans for the North Carolina Research Campus (NCRC) were unveiled. David Murdock, owner of Castle & Cooke, Inc. and Dole Food Company, Inc., announced plans to convert the former Pillowtex/Cannon Mills site into a 350-acre research campus focused on biotechnology related to food and nutrition. Mr. Murdock purchased the Cannon Mills Plant 1 site in December 2004 and owns another 100 acres in the downtown Kannapolis area. He plans to invest \$1 billion in construction and development and an additional \$200 million to start a venture capital fund for start-up companies at NCRC.

A number of universities, including UNC-Chapel Hill, North Carolina State University, UNC-Charlotte, and Duke University will have a research presence at NCRC. When completed, the campus will have over one million square feet of office and laboratory space, 350,000 square feet of retail and commercial space, and approximately 1,100 residential units.<sup>3</sup> The main components of the North Carolina Research Campus will be<sup>4</sup>:

- A 311,000 square foot David H. Murdock Core Laboratory Building, which will house the Dole Nutrition Institute, a biogenic manufacturing facility, and the core laboratory. UNC-Chapel Hill and North Carolina State University will be the lead researchers at the Dole Nutrition Institute, conducting research on nutrition, fruits, and vegetables. Duke University will run the core laboratory, which will contain a DNA sequencing facility, micro-array facilities, mass spectrometry facilities and all other specialized tools and laboratories available for use by all NCRC tenants. One of the key pieces of equipment is a 950 MHz nuclear magnetic resonance (NMR) spectrometer, which at this time is the only one of its kind in the world.
- North Carolina State University's Institute for Fruit and Vegetable Science, which will focus on research in plant genomics, metabolic profiling, and cell biology.
- UNC-Chapel Hill's Institute for Excellence in Nutrition, which will focus on the relationship between nutrition and the brain, obesity and cancer.
- Duke University's Institute for Translational Medicine, which will take basic scientific discoveries and translate them into practical medical solutions.
- Cabarrus Family Medicine and Northeast Medical Center health care facilities, to provide care for NCRC tenants and engage in research with the universities.
- A Laboratory Corporation of America (LabCorp) testing facility.
- A boarding high school for females, focused on science and math.

<sup>3</sup> "North Carolina Research Campus Plans Unveiled." September 12, 2005. [http://www.ci.kannapolis.nc.us/news\\_o.asp?newID=736](http://www.ci.kannapolis.nc.us/news_o.asp?newID=736). Residential unit numbers are from Castle & Cooke build-out schedule.

<sup>4</sup> <http://www.ncresearchcampus.net/what.html>

- A 40,000 square foot job training and education center run by the North Carolina Community College System to prepare workers (including former Pillowtex/Cannon Mills workers) for jobs in the biotech industry.
- A new Kannapolis city government center and library.
- A 120-room hotel and wellness center, a 1,000-seat conference center, and a retail area that will include shops, restaurants, and a movie theater.
- Apartments, townhomes, and condos.

The campus is expected to be developed in two phases, with Phase 1 completion in 2007. Construction is underway for the Core Laboratory, and the research facilities for the universities are expected to begin construction by the end of 2006.

The economic impact analysis of NCRC estimated that the 5,535 research and other jobs at NCRC have the potential to attract an additional 9,291 biotechnology jobs to Rowan and Cabarrus Counties by 2032, resulting in a total of 13,616 new jobs in Cabarrus and 4,520 new jobs in Rowan.<sup>5</sup> These jobs are expected to draw an additional 6,800 residents to Cabarrus County and 1,800 residents to Rowan County by 2012.<sup>6</sup> Clearly, the uniqueness of this project and the size of its anticipated impacts make it imperative for local governments and regional entities to plan for its arrival and maximize its potential.

### **SWOT Analysis**

The City of Kannapolis retained *Market Street Services*, an economic and community development consulting firm based in Atlanta, Georgia, to conduct an economic impact analysis and SWOT (strengths, weaknesses, opportunities, and threats) analysis of the North Carolina Research Campus. The results of the analysis serve as a foundation for the development of a Biotechnology Growth Strategy.

The purpose of this *SWOT Analysis* is to understand the Kannapolis area's economic and community competitive position in terms of its ability to leverage the NCRC investments to attract and create private sector jobs and businesses. The outcome will be a set of issues for Kannapolis, Cabarrus County, and regional entities to address to best plan for the NCRC development. Both quantitative and qualitative research was used to assess how Kannapolis is doing, particularly as they relate to biotechnology development. The *SWOT Analysis* looks at the Kannapolis area's competitive position in five areas:

- Quality of life
- Infrastructure
- Education and workforce development

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<sup>5</sup> Refer to *Market Street's* "Estimating the Economic Impact of the North Carolina Research Campus" report for additional information and details on the potential economic impacts.

<sup>6</sup> Anticipated population growth related to NCRC is 26,300 in Cabarrus County and 14,100 in Rowan County by 2032.

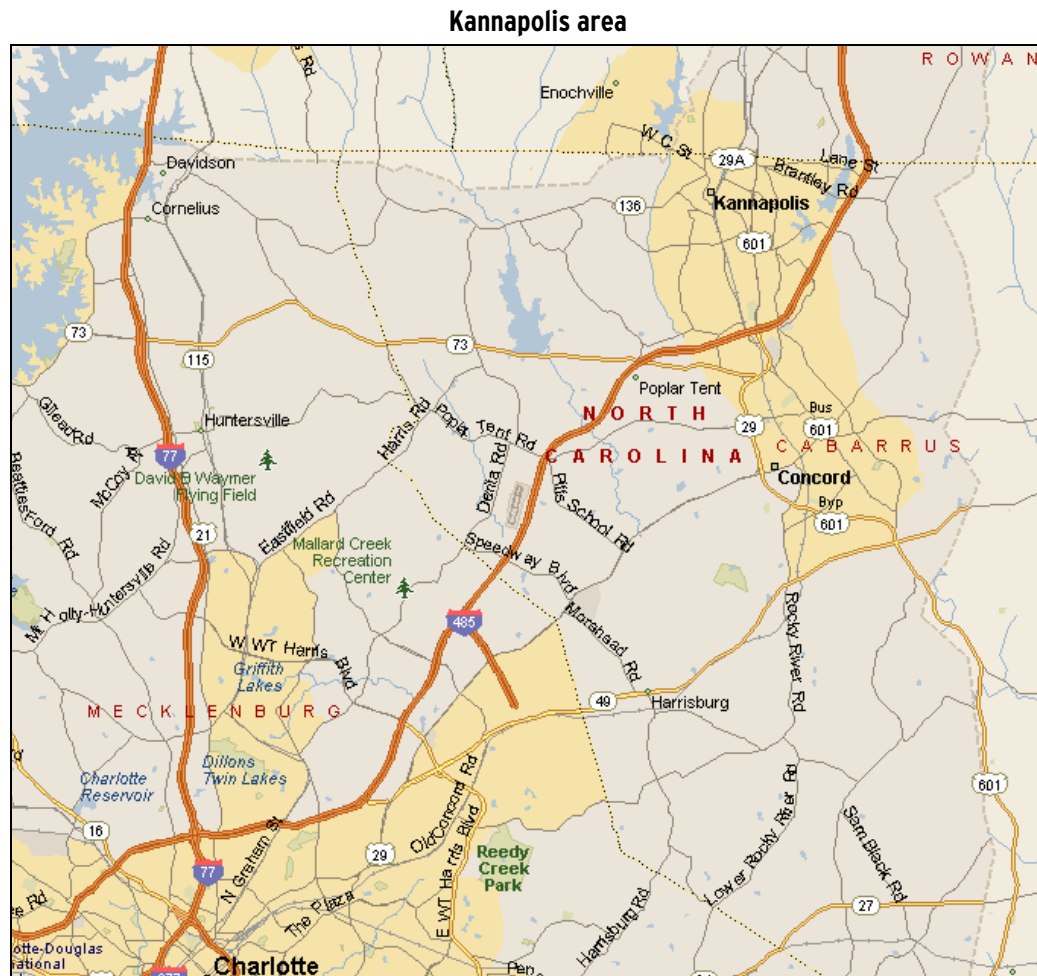
- Innovation and entrepreneurship
- Business costs

This *SWOT Analysis* is a companion document to the *Estimating the Economic Impact of the North Carolina Research Campus* report. It is important to understand that the potential job creation presented in economic impact analysis will not occur without addressing the issues presented in this *SWOT Analysis*.

## GEOGRAPHY AND COMPARISON COMMUNITIES

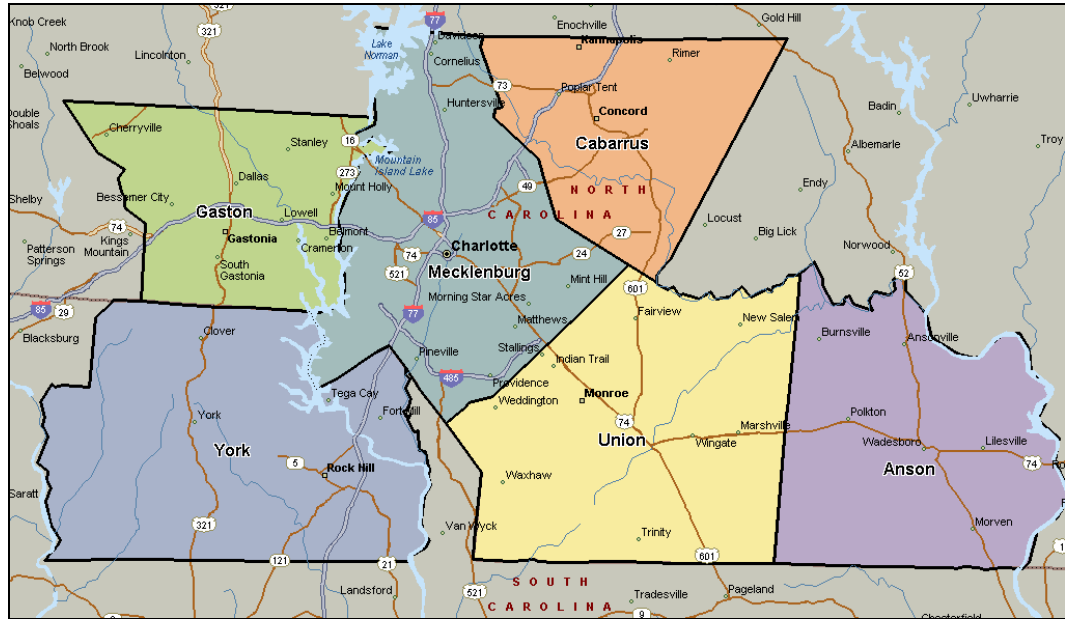
### Geography

Kannapolis is located about 25 miles northeast of downtown Charlotte off Interstate 85. It is located in both Cabarrus and Rowan Counties. Concord, Cabarrus County’s largest city, is seven miles south of Kannapolis on the other side of I-85. Concord is best known for the Concord Mills outlet mall (the top tourist destination in the state), Lowe’s Motor Speedway, and other NASCAR and motorsports-related history.



This *SWOT Analysis* focuses on Kannapolis and Cabarrus County. The City of Concord and Rowan County will also be impacted by NCRC, but are not addressed directly in the research. Information is also provided for the Charlotte metropolitan area (MSA), when regional data may be relevant. The Charlotte MSA includes six counties: Anson, Cabarrus, Gaston, Mecklenburg, Union, and York (SC).

**Charlotte Metropolitan Area (MSA)**



**Comparison Communities**

*Market Street* worked with the City of Kannapolis to select three comparison communities for this *SWOT Analysis*. These communities were selected based on some similarities to what the future of Kannapolis could be if the opportunities of the North Carolina Research Campus are maximized. It must be noted, however, that the truly unique nature of the NCRC and its potential impact on the Kannapolis area means that the comparison communities are not equivalent to Kannapolis. Instead, the purpose of the comparison communities is to provide examples of growth for Kannapolis to learn from, in terms of how these other communities have excelled or lagged behind.

The comparison communities selected for this *SWOT Analysis* are: **Cary, North Carolina**; **Rockville, Maryland**; and **Rochester, Minnesota**. The following table shows key characteristics of the comparison communities and the main reasons they were chosen.

**Kannapolis and Comparison Communities: Key Characteristics**

Community	Kannapolis, NC	Cary, NC	Rockville, MD	Rochester, MN
County	Cabarrus	Wake	Montgomery	Olmstead
MSA	Charlotte	Raleigh	Washington, DC	Rochester
Distance from Core City	25 mi	12 mi	21 mi	0 mi

Community	Kannapolis, NC	Cary, NC	Rockville, MD	Rochester, MN
City Population 2004	38,547	101,265	57,100	93,284
MSA Population 2004	1,474,734	914,680	5,139,549	174,821
City Growth 1990-2000	24%	116%	108%	21%
City Growth 2000-2004	3.9%	6.4%	19.4%	6.4%
County Biotech Jobs 2004 (Health care not included)	20*	5,169	14,690	94**
County Biotech Jobs, % of Total 2004	0.0%	1.3%	3.3%	0.1%
MSA Biotech Jobs 2004	709*	6,184*	47,958	161**
MSA Biotech Jobs, % of Total 2004	0.1%	1.4%	1.7%	0.2%
<b>Brookings Institution's Signs of Life: Growth of Biotechnology Centers in the U.S. Classification of 51 Metro Areas in the U.S.</b>	No Significant Biotech Research or Commercialization	Biotechnology Center	Biotechnology Center	Not ranked
<b>Biotech Influence</b>	NCRC, with presence of UNC- Charlotte, UNC- CH, NC State, Duke	Private sector biotech companies	Along I-270 corridor & in Montgomery County - strong biotech activity	Mostly medicine and technology; Mayo Clinic and IBM; Minnesota Partnership for Biotechnology and Medical Genomics
<b>Economic Transformation</b>	Textiles based economy transforming	Before 1920s, a mfg town; then developed residentially as RTP grew	Fast growing suburb with very strong service/ technology based economy and major federal government presence	Grew when railroad came in 1870s; has been strong in health care since late 1800s when Mayo Clinic was started
<b>University Influence</b>	None immediate; UNC-Charlotte nearby	None immediate; Duke, UNC-CH, NC State nearby	Johns Hopkins' Montgomery Center campus; University of Maryland and Johns Hopkins main campus nearby	Mayo Clinic Graduate School and College of Medicine, University of Minnesota- Rochester
<b>Local Research Park</b>	NCRC	RTP - 14 mi	Shady Grove Life Sciences Center	BioBusiness Center being planned
<b>Selection Criteria</b>	(N/A)	<ul style="list-style-type: none"> <li>▪ Growing suburb</li> <li>▪ RTP presence</li> <li>▪ Nearby research universities</li> <li>▪ Well educated, high tech workforce</li> </ul>	<ul style="list-style-type: none"> <li>▪ Growing suburb</li> <li>▪ Strong regional biotech activity</li> <li>▪ Nearby research universities</li> <li>▪ Well educated, high tech workforce</li> </ul>	<ul style="list-style-type: none"> <li>▪ Strong medical and technology presence</li> <li>▪ Well educated, high tech workforce</li> <li>▪ Urban growth patterns</li> <li>▪ Focus on planning and downtown</li> </ul>

\*Does not included non-disclosed data; \*\*Estimated using County Business Patterns ranges of employment



## COMMUNITY INPUT

To supplement the quantitative and qualitative research for this *SWOT Analysis*, *Market Street* included a community input component in this process. *Market Street* conducted about 25 interviews with key individuals who have been involved with the planning of NCRC or its impacts in the greater community. *Market Street* also created an online survey that was open to a limited group of regional stakeholders, community leaders, and interested citizens through the City of Kannapolis' distribution list. The online survey garnered 128 responses. This was not intended to be a comprehensive input process; rather, the purpose was to get perspectives from a number of key community stakeholders.

While specific community input responses are presented throughout this document, the following section discusses some general sentiments that the online survey participants have about Kannapolis and the North Carolina Research Campus. These sentiments should be taken into consideration as the City of Kannapolis and others plan for the Research Campus.

### Greatest Strength

Participants were asked an open ended question about what they believed Kannapolis' one greatest strength to be. The most frequently mentioned responses were its **people, opportunities** (for growth, Research Campus), **location**, and **small town feel**.

### Greatest Challenge

Participants were asked an open ended question about what they believed the greatest challenge for the future of Kannapolis is. The most frequently mentioned responses were related to **planning for growth** (related to NCRC – infrastructure, housing, education, city services), **adapting to change** (including mindset, diversity, and culture), and **obtaining jobs for local citizens**.

### Envisioning Change

Participants were asked how they envisioned the community changing as a result of the Research Campus. Many participants were optimistic about the possibilities. The most frequently mentioned responses expected **growth** (jobs and bigger, busier community), **better quality of life** (more desirable community) but **rising costs of living**, and the **transformation to a diverse, knowledge-based community** with emphasis on education. Some participants were more pessimistic and did not believe that the opportunities of NCRC would help the average citizen in Kannapolis.

**Responses from the community input process reflect excitement and optimism about the potential for the Research Campus. There is an understanding that change will happen - both positive and negative - and the community will need to adjust to it. However, there is also**

**fear about how the changes will affect the community and whether current residents will be left behind. Kannapolis, Cabarrus County, and other entities will not only need to work together to plan for change; they will need to communicate their plans and help to ease the transition between the “old” and the “new”.**

## COMPARISON COMMUNITIES

Cary, Rockville, and Rochester are dynamic communities with significant presences in a combination of biotechnology, technology, and medicine. These comparison areas have worked hard at becoming places where people want to live and businesses want to be. This section provides some context about three key characteristics of these communities: geographic location, technology and biotechnology economy, and diversity. These characteristics have contributed to the development of the local economies and contribute to the reputations that the comparison communities have today.

### Location

The location of a community and its access to other places can be significant factors in its ability to attract new residents. Both Cary and Rockville have experienced strong population growth over the last 15 years, partly due to their close proximity to the core of growing metro areas and their interstate highway access to the rest of their region. As its own small metro area, Rochester is more isolated from other population centers and lacks immediate interstate highway access. These factors combined with overall lack of population growth in the Midwest have resulted in modest population growth in Rochester.

**If Kannapolis and Cabarrus County continue working on strengthening regional linkages to Charlotte, their location and highway access will certainly contribute to attracting new residents and businesses.**

### Technology and Biotechnology Base

The strong, technology and/or biotechnology focus of the comparison communities and their regions creates high level employment opportunities for educated workers. Cary is just a few miles from Research Triangle Park (RTP), one of the country's best known research parks. RTP is home to major technology and biotechnology companies, including IBM, BASF, GlaxoSmithKline, and Nortel Networks. Rockville is located along the I-270 Technology Corridor, also known as DNA Alley. Sixty percent of the Maryland's 365 bioscience companies are located in the Montgomery County area.<sup>7</sup> Top-tier research universities and institutions in the Cary and Rockville areas support the technology and biotechnology base for those regions.

Rochester is different from the other comparison communities in that its two largest employers, the Mayo Clinic (28,000 employees) and IBM (4,400 employees) drive the local economy. A number of smaller medical and computer technology firms also contribute to Rochester's economic base. The Mayo Clinic's graduate and medical

<sup>7</sup> MdBio. "Bioscience in Maryland 2006" presentation. <http://www.mdbio.org/publications/reports.php>.

school and its research activities are a strong substitute for the top-tier research universities that the other comparison communities have. Also, the University of Minnesota and the Mayo Clinic formed the Minnesota Partnership for Biotechnology and Medical Genomics in 2004 to expand their biogenomic research.

**Kannapolis is building its biotechnology base from scratch and there is little biotechnology activity in the Charlotte region to build on. However, the critical mass of the universities and institutions at the NCRC is expected to draw private sector biotechnology-related firms.**

## Diversity

Communities with strong research and technology activity also typically have large concentrations of minorities and foreign-born residents. A recent report by the AeA (formerly the American Electronics Association) showed the following statistics<sup>8</sup>:

- One in every four scientists and engineers in the U.S. is foreign born.
- Half of all doctoral degrees in math and science and 60 percent of all engineering doctoral degrees awarded in the U.S. go to foreign nationals.
- Over 40 percent of the nation's master's degrees in engineering, computer science, and math are awarded to foreign nationals.
- Nearly half of all Nobel Prizes awarded to researchers in the U.S. between 1901 and 1991 were won by foreign-born individuals or their children.

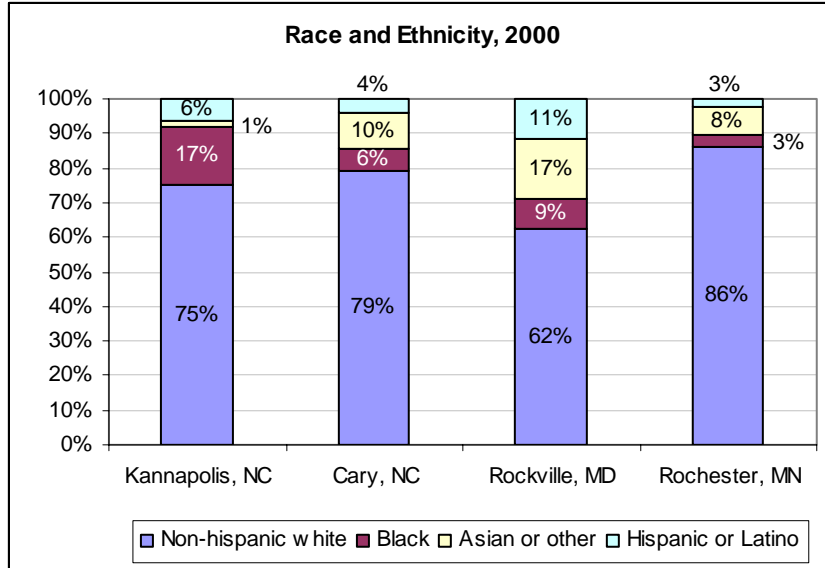
These statistics highlight the importance for Kannapolis to be welcoming and open to people from varied backgrounds as the North Carolina Research Campus begins to attract researchers and other professionals. Diversity and openness of a community were also cited as key factors that college-educated, young adults consider when choosing a place to live.<sup>9</sup>

Based on 2000 data from the U.S. Census, Kannapolis is 25 percent minority, the second highest relative to the comparison communities. However, it has by far the smallest proportion of Asian residents compared to the other communities. As the North Carolina Research Campus brings in scientists and researchers, the Kannapolis area's Asian population is likely to grow significantly to be more in line with the comparison communities.

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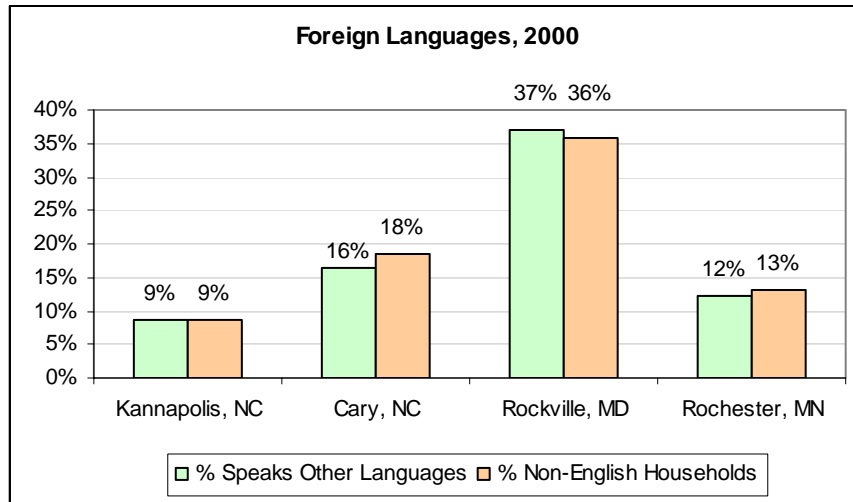
<sup>8</sup> AeA. "Attracting the Best and Brightest to the United States." June 2006.  
[http://www.aeanet.org/publications/idjj-visa\\_reform\\_overview.asp](http://www.aeanet.org/publications/idjj-visa_reform_overview.asp).

<sup>9</sup> CEOs for Cities. June 9, 2006. Survey of 1,000 25-to-34 year old, college educated men and women from diverse backgrounds and locations, conducted March 3-11, 2006.  
[http://www.ceosforcities.org/news/pr/files/Yankelovich\\_Survey\\_Release\\_FINAL.pdf](http://www.ceosforcities.org/news/pr/files/Yankelovich_Survey_Release_FINAL.pdf).



Source: U.S. Census Bureau

The 2000 data also show that the comparison communities (particularly Rockville) have a much higher percentage of its population (age 5 and over) that can speak a foreign language and a correspondingly high percentage of households where English is not the primary language. Newcomers to Kannapolis will bring a greater proportion of residents who speak other languages.



Source: U.S. Census Bureau

Diversity is also reflected in the number of religions in a community. The Cary Chamber of Commerce website states that, “Cary’s religious spectrum includes nearly 200 places of worship for Lutheran, Catholic, Methodist, Muslim, Sikh, Buddhist, Jewish, Hindu, Baptist, Presbyterian, Episcopalian, Jehovah’s Witness and

Latter Day Saints.”<sup>10</sup> An internet search found Jewish, Buddhist, and Muslim places of worship and religious organizations in Rockville, as well as a wide variety of Christian faiths (including ones for Koreans, Japanese, and Latvians). Rochester’s religions are similarly diverse and include specific places of worship for Hispanics, Hmong, Greeks, Quakers, and Mormons. Kannapolis, on the other hand, has much less religious diversity. It appears that all of its places of worship are for the Christian, many of which are Baptist, faith – although there are a few churches for Spanish-speaking residents as well as a Mormon church.

**Online Survey Responses: Diversity<sup>11</sup>**

	<b>Above Average</b>	<b>Average</b>	<b>Below Average</b>
Ability to embrace a diverse community	33%	30%	32%
Openness to newcomers from varied backgrounds	32%	29%	29%

Results from the online survey indicate that the Kannapolis area has work to do in terms of its citizens being able to welcome a diverse group of newcomers. Only about one-third of respondents rated the “ability to embrace a diverse community” and “openness to newcomers from varied backgrounds” as good or excellent. In addition, some open-ended comments included:

- “Until people native to this area do get to know you, they tend to be close-minded and standoff-ish. This is especially true, in my experience, if the newcomer does not hold the same religious and/or cultural history.”
- “I have also discouraged my son and his family from moving here due to the close-mindedness, racism and unwillingness of long-time residents to welcome and embrace people of different cultures and ethnic backgrounds.”
- “There are too many Mexicans in the US. It takes jobs from the Americans.”
- “We are getting a lot of Hispanics buying real estate making it hard for the average family.”

The persistence of these types of comments and attitudes can be detrimental to the city’s ability to attract people from more metropolitan, diverse areas to live in the area, even if these new residents work at NCRC. While there may be only a small group of current residents with such viewpoints, being vocal about their views makes it appear to outsiders that many more residents feel that way.

**There is no question that an influx of researchers and scientists to NCRC will make Kannapolis more diverse. It is critical for Kannapolis to create an atmosphere that is open and welcoming to people with different backgrounds and lifestyles. This requires new services and programs (i.e. ESL programs, community “ambassadors”, publishing documents**

<sup>10</sup> <http://www.carychamber.com/pages/CarysQualityofLifeFaith.asp>

<sup>11</sup> “Above average” is the sum of survey responses for Excellent and Good. “Below average” is the sum of survey responses for Below Average and Poor. Percentages do not add up to 100% because Don’t Know responses are not shown.

in multiple languages, or offering more foreign languages in schools), as well as a cultural shift that could be seen in international celebrations, interfaith community ministries, and especially groups of people from different backgrounds working and socializing together.

## QUALITY OF LIFE

Talented researchers and professionals who work in biotechnology-related fields are in high demand, and many have the option of choosing where they want to live – not just the neighborhood, but also the city or region of the country. For this reason, quality of life is one of the most important factors in being able to attract these talented workers – and their businesses – to a community.

While quality of life is a subjective term that has different meanings to different people, a few points are evident. First, a community needs to have a range of recreational, cultural, and entertainment amenities to appeal to families, young professionals, and others. Second, educated, talented professionals expect responsive and efficient government services and want ways to be connected to the community. These and other quality of life concepts are discussed in this section. The Kannapolis area has a lot of work to do to improve amenities and the quality of life for existing and future residents.

## Communications and Image

The effort that a community puts forth to “sell” itself can result in attracting new residents and visitors, as well as connecting with existing residents. These responsibilities fall on the local government as well as other community organizations, such as the local chamber, convention and visitors bureau, or economic development agency.

*Market Street* made a brief assessment of how each comparison community handles their communications and image. This assessment was based purely on information provided on local government and organizations’ websites. While this is not the only way that communities should connect with residents and visitors, it is an increasingly important way, particularly with educated professionals and their families.

### Primary Communications and Image Approaches

Community	Communications and Image Approaches
Kannapolis	<ul style="list-style-type: none"> <li>▪ Residents can subscribe to 3 City email newsletters on City Council meetings, business news, and economic development.</li> <li>▪ City's <i>Kannapolis Magazine</i> provides latest news and updates about Kannapolis area.</li> <li>▪ Kannapolis Weblink allows public access to City documents via document imaging system.</li> <li>▪ City conducted its first citizen survey in 8 yrs in Dec. 2005 to understand community perceptions on various issues.</li> <li>▪ City website has welcome section to provide community overview.</li> <li>▪ Cabarrus County televises its meetings and other government and community information.</li> <li>▪ Focus of CVB website is on racing and NASCAR.</li> </ul>



Community	Communications and Image Approaches
Cary	<ul style="list-style-type: none"> <li>▪ Large part of the Chamber’s website is devoted to promoting the town as a great place to live/relocate and raise a family.</li> <li>▪ One of the first links on the Town’s website is one for new residents to provide information on government and other services that they may need to get established.</li> <li>▪ Town conducts a biennial Citizen Satisfaction Survey to get residents’ opinions on town services and various issues related to quality of life.</li> <li>▪ Town is in its 8<sup>th</sup> year of a comprehensive, strategic communications plan.</li> <li>▪ Residents can register for email notification of Town news releases.</li> <li>▪ The Town and County televise meetings and other government information.</li> <li>▪ <i>Cary Magazine</i> is a lifestyle magazine for western Wake County, published bimonthly.</li> <li>▪ CaryNow! Is a website focused on marketing activities and events in Cary.</li> </ul>
Rockville	<ul style="list-style-type: none"> <li>▪ Rockville Economic Development Inc.’s website has a lot of information about community assets and new developments.</li> <li>▪ Residents can register for email notification of City news releases and meeting agendas.</li> <li>▪ RockNet is a volunteer group of citizens who have set up a website to promote communications between citizens, community groups, businesses, and the city government.</li> <li>▪ City has a Kidsville website for children to get community and government information.</li> <li>▪ City’s new “Alert Rockville” emergency notification system will send messages through email and phone/pager text messages.</li> <li>▪ The City’s meetings and other government information can be watched on TV or streamed live from the City’s website. County meetings are also televised.</li> <li>▪ Residents can subscribe County RSS feeds to get County news delivered to their desktop.</li> <li>▪ Focus of CVB website is on location within DC metro area.</li> </ul>
Rochester	<ul style="list-style-type: none"> <li>▪ City does not appear to have much of a communications program.</li> <li>▪ Residents can register for County documents and news releases via email.</li> <li>▪ CVB website is geared towards visitors to Mayo Clinic, although it does sell itself as a good place to live.</li> </ul>

**The City of Kannapolis has done a good job of keeping the community updated on news and developments. It should continue to improve its electronic communications methods to reach out to a larger portion of the population. As the NCRC being built, Kannapolis should work with other community partners (such as Cabarrus and Rowan Counties, Chamber, and CVB) to develop a consistent marketing message that provides useful community information to new and potential residents. In addition, the community input shows a need for the City, NCRC, and other entities to communicate the changes, plans, and opportunities associated with NCRC to current residents - to inform and so they do not feel left behind.**

## **Community Connections**

A recent survey of young professionals found that two-thirds of highly mobile 25-to-34 year olds will decide where to live and then look for a job. This demographic group seeks a community that “offers professional opportunities” and allows them to “connect with others and have meaningful social interactions.”<sup>12</sup> That means that communities need opportunities for their residents to get involved in activities where they can meet others with similar interests, grow professionally, or become engaged in volunteer efforts. These kinds of opportunities enhance residents’ quality of life and help them develop stronger bonds within the community.

<sup>12</sup> CEOs for Cities. June 9, 2006. Survey of 1,000 25-to-34 year old, college educated men and women from diverse backgrounds and locations, conducted March 3-11, 2006.

The following table lists the primary programs and organizations for young professionals to interact with each other, develop leadership skills, and build community connections. The list focuses primarily on young professionals' organizations and leadership programs; it does not include organizations focused on specific professions, hobbies, or other interests.

**Opportunities for Community Connections**

Community	Community Connection Opportunities
Kannapolis area	<ul style="list-style-type: none"> <li>▪ Cabarrus Chamber has 9-month Leadership Cabarrus program.</li> <li>▪ Kannapolis has an 8-week Citizens in Action program for residents to learn about local government.</li> <li>▪ Charlotte has a Jaycees program.</li> <li>▪ Charlotte Young Professionals is an event-oriented networking organization.</li> <li>▪ Young Active Professionals is a Charlotte young professionals group that organizes social events.</li> <li>▪ The Urban League Central Carolinas has a young professionals auxiliary group.</li> </ul>
Cary area	<ul style="list-style-type: none"> <li>▪ Cary Chamber has a 9-week Leadership Cary program and a 6-month Youth Leadership Cary program.</li> <li>▪ Cary also has a Jaycees program.</li> <li>▪ Town has a free School of Government program (8 sessions) to help citizens understand how the town government works.</li> <li>▪ Leadership Triangle is a regional leadership program.</li> <li>▪ The nearby Raleigh Chamber has a Young Professionals Network.</li> <li>▪ The Triangle Urban League has an affiliate chapter for young professionals called The Network.</li> <li>▪ Other organizations focused on young professionals: Triangle Meetup, Triangle Net Impact, Triangle Sports Social Club, and North Carolina Museum of Art Contemporaries.</li> </ul>
Rockville area	<ul style="list-style-type: none"> <li>▪ The Montgomery County Chamber has a young professionals network, and Rockville has a Jaycees program.</li> <li>▪ Leadership Montgomery offers a Core leadership program as well as ones geared towards youth, seniors, and executives.</li> <li>▪ City offers a free, 8-week Rockville University program about the community and local government.</li> <li>▪ Other metro area young professionals organizations: DC Professionals in the City, Young Nonprofit Professionals Network of DC, Young African Professionals Network, Things to Do DC</li> </ul>
Rochester area	<ul style="list-style-type: none"> <li>▪ Rochester Chamber has a 9-month Leadership Greater Rochester program.</li> <li>▪ Rochester also has a Jaycees program.</li> </ul>

**Although Charlotte has some networking groups for young professionals, Kannapolis has none. Kannapolis should consider ways to engage the young professionals who will be coming to work at NCRC. For example, the Cabarrus Chamber could tailor its leadership program to involve new NCRC staff and orient them to the area. An additional approach is to partner with the Charlotte young professionals group to establish a chapter in Kannapolis. These kinds of opportunities will help newcomers feel more comfortable in the community and allow them to make connections quickly.**

**Recreational Assets and Amenities**

Outdoor recreational amenities and organized recreational programs provide outlets for community residents to exercise, learn new skills, develop new hobbies, and

connect with other residents. Programs for teenagers are also a way to keep them off the streets and out of trouble.

**Parks and Recreation Expenditures, Fiscal Year 2006\***

<b>Parks &amp; Recreation</b>	<b>% of Total Budget</b>	<b>Expenditures Per Capita</b>
Kannapolis	6%	\$34
Cary	9%	\$77
Rockville	28%	\$247
Rochester	16%	\$104
Cabarrus County	0.7%	\$7
Wake County	0.3%	\$3
Montgomery County	2%	\$35
Olmstead County	3%	\$11

Source: Finance offices of above cities and counties.

\*Data for Wake County and City of Kannapolis are for FY 2007. Data for Rochester are for FY 2005. Budget for Montgomery County is for Recreation only; it has a separate Park & Planning Commission with \$107.6 million budget.

The previous table shows city and county parks and recreation expenditures as a percentage of the general fund and also per capita.<sup>13</sup> Kannapolis spends the lowest amount per capita, less than half of Cary’s expenditures and one-eighth of what Rockville spends. However, the Kannapolis Parks and Recreation Department budget has increased from \$400,000 when the department was first created in 2000 to \$1.2 million in 2006. At the county level, Cabarrus County’s expenditures are also relatively small. The following table summarizes the highlights of recreational amenities offered by each city and county.<sup>14</sup>

**Highlights of Recreational Amenities**

<b>Community</b>	<b>Recreational Highlights</b>
Kannapolis	<ul style="list-style-type: none"> <li>▪ Five parks, including new Safrit Park with county’s first lighted soccer fields, 2 softball fields, a playground, and walking trails.</li> <li>▪ Five athletic leagues and 43 programs for children and families; some jointly planned with the YMCA, library, and others.</li> <li>▪ Plans for future greenway system, including linkages to NCRC. Some parts are already built.</li> <li>▪ NCRC will include 6 miles of greenways, 13 miles of new sidewalks, 8-10 miles of new bike lanes, more than 2,000 new trees, and 28 acres of new parks and public open spaces.</li> </ul>

<sup>13</sup> The City of Rochester has a Municipal Service Fund for parks and recreation. The total budget was considered to be the sum of the general fund, municipal service fund, and library fund. Olmstead County has a separate library fund; their total budget was considered to be the sum of the general fund and the library fund. It should be noted that \$60.7 million (40%) of Cabarrus County’s \$152.6 million general fund budget for FY 2006 goes to the local school district; this was not true of the other comparison communities’ budgets.

<sup>14</sup> While residents can access parks and amenities in nearby cities or counties, data are presented here only for Kannapolis, the comparison communities, and their counties.

Community	Recreational Highlights
Cary	<ul style="list-style-type: none"> <li>▪ 20 public parks, greenway system of six park trails (8.8 miles total) and ten greenway trails (11 miles total), and 3 special use facilities.</li> <li>▪ Award-winning Teen Scene/Teen Council program for teenagers.</li> <li>▪ 3 community centers, a senior center, nature preserve, and nature center offer large number of recreational programs.</li> <li>▪ Adult leagues in four sports and youth leagues in three sports; also sports clinics are offered.</li> <li>▪ SAS Soccer Park has 7 soccer fields, including a 7,000 seat main stadium. It is surrounded by a cross country course for collegiate events.</li> <li>▪ Cary Tennis Center has 30 lighted courts, including a stadium court for professional play and regional/local tournaments.</li> <li>▪ USA Baseball is developing a sports complex at Thomas Brooks Park with 4 full-size baseball fields.</li> <li>▪ Skate-Cary facility for BMX biking, inline skating, and skateboarding (extreme sports).</li> <li>▪ Triangle Aquatic Center opening in May 2007 with 50m competition pool and 1,000 seats.</li> <li>▪ 6,000 acre William B. Umstead State Park borders Cary and Raleigh.</li> </ul>
Rockville	<ul style="list-style-type: none"> <li>▪ 58 public parks, climbing gym, swim center, nature center, golf course, senior center, skate park, 9 recreation centers.</li> <li>▪ Since 1998's Bikeway Master Plan, added 20 miles of bike/pedestrian paths, signed 20 miles of bike routes, and 2 miles of bike lanes.</li> <li>▪ 6,300 acres Seneca Creek State Park just northeast of Rockville area.</li> </ul>
Rochester	<ul style="list-style-type: none"> <li>▪ 100 city parks (3,500 acres), 60+ miles of trails, 56 playgrounds, 42 tennis courts, 14 picnic shelters, 2 outdoor pools, a beach, 35 horseshoe courts, 46 ball diamonds, 28 foot/soccer fields, 11 basketball courts, 2 dog parks, 18 sand volleyball courts, 1 archery range, 3 cross country ski trails, 2 Frisbee golf courses and 2 garden plot sites.</li> <li>▪ Parks &amp; Rec Department operates 3 golf courses, 1 golf learning center, 5 sports complexes, volleyball center, recreation center, civic center, and nature center.</li> <li>▪ Ten adult leagues in six sports; various youth sports organizations available.</li> <li>▪ Other recreational programs for youth, adults, and disabled.</li> <li>▪ Forestry Division has urban tree program.</li> <li>▪ Plans for a new 130-acre Cascade Lake Park, with trails, boating, fishing, amphitheater, playgrounds.</li> <li>▪ R. J. Dorer Memorial Hardwood Forest north of Rochester area.</li> </ul>
Cabarrus County	<ul style="list-style-type: none"> <li>▪ Three county parks and 35 school parks. Frank Liske Park is 230 acres with a lake, soccer complex, softball fields, walking trails, volleyball courts, and tennis courts.</li> <li>▪ Parks &amp; Rec Department offers youth athletic leagues in four sports, adult softball leagues, tennis lessons, and a few youth camps and athletic camps.</li> </ul>
Wake County	<ul style="list-style-type: none"> <li>▪ Six county parks totaling about 2,000 acres and a 5.5 mile portion of the American Tobacco Trail (continues into Durham County for 7.4 miles, with plans for 23 miles total).</li> <li>▪ Parks, Rec, &amp; Open Space Department runs a week of day camp for children.</li> <li>▪ Department also manages the Consolidated Open Space Plan. County has about 53,000 acres (9.5% of county's land area) of protected open space; goal is to protect 30% of county's land area, or about 165,000 acres.</li> </ul>
Montgomery County	<ul style="list-style-type: none"> <li>▪ Extensive recreation program, including aquatics, camps &amp; fun centers, leisure programs (arts, crafts, dance, music, and other development), adult and youth sports leagues and clinics, senior programs, and programs for teens and disabled.</li> <li>▪ Separate Parks and Planning Department with separate \$107.6 million budget (\$65 million for Park Fund; rest for capital improvements and planning) runs 395 county parks totaling 33,000 acres (8,800 acres developed) and 34 miles of trails.</li> <li>▪ Parks and Planning also has Arts in the Park public arts program and runs summer camps and other educational programs.</li> </ul>
Olmstead County	<ul style="list-style-type: none"> <li>▪ Two county parks: one 1,330 acres with lake for camping, hiking, fishing, and canoeing; another 620 acres with zoo, nature center, trails, and camping.</li> </ul>

The low per capita expenditures on parks and recreation in Kannapolis and Cabarrus County can be seen in the comparisons of available amenities among the other communities. The comparison communities have invested in significantly larger acreages of parks, greenways and trails, and also offer extensive recreational

programs for many different groups of residents. To supplement its outdoor recreational options, Kannapolis is within a reasonable driving distance of two state parks (Lake Norman to the west and Morrow Mountain to the east), and residents use the parks in Concord. The comparison communities are even more accessible to nearby or adjacent state parks.

**Online Survey Responses: Recreational Amenities<sup>15</sup>**

	<b>Above Average</b>	<b>Average</b>	<b>Below Average</b>
Availability of bike lanes	5%	16%	68%
Availability of parks/greenspace	31%	43%	23%
Location recreational opportunities	33%	42%	23%
Regional recreational opportunities	49%	28%	21%

The community input process indicated that although Kannapolis has greatly improved its recreational facilities over the last few years, there is still much more to be done. Open-ended comments included:

- “I am very impressed with the amenities that are available for families in the areas of parks & recreation.”
- “Need to enhance recreation facilities in terms of organized sports fields, etc. Need to include X Games-type sports like roller hockey, skateboarding, etc.”
- “Kannapolis has an outstanding public recreation program, especially the area where movies and bands play.”
- “Cost of the park facilities are too high for the average person in Kannapolis.”
- “The last few years have seen a big increase in parks and greenspace. It will just take a while to get us where we would like to be. Gary is doing a tremendous job.”
- “Streets are not bicycle friendly nor are there any hiking or outside health opportunities that are perceptible.”
- “Our current leadership does not seem to be vested in the preservation of open greenspace.”
- “Please keep the momentum going for the parks and greenspace!”
- “The city severely lacks youth fields for athletics.”

**Parks, trails, and preserved greenspace are an important part of enhancing the quality of life in a community, as are recreational program offerings. When combined with other community planning elements, greenspace investments also help maintain a certain quality of life and promote environmental sustainability even as the community grows rapidly. Kannapolis and Cabarrus County must make significant investments to “catch up” to the recreational amenities of the comparison communities.**

<sup>15</sup> “Above average” is the sum of survey responses for Excellent and Good. “Below average” is the sum of survey responses for Below Average and Poor. Percentages do not add up to 100% because Don’t Know responses are not shown.

## Cultural and Entertainment Amenities

Cultural and entertainment amenities provide another important outlet for a community’s residents and visitors. The City of Kannapolis provides a few entertainment options during the summer, supplemented by minor league baseball games. The Lowe’s Motor Speedway and Concord Mills outlet mall in nearby Concord are large tourist draws to the area.

The following table shows the highlights of the cultural and entertainment amenities of Kannapolis and its comparison communities. Cary has greater capacity than Kannapolis for concerts and sporting events. Rockville does not have as many cultural or entertainment amenities; however it is in the process of redeveloping its downtown, and there quite a few performing and visual arts venues elsewhere in Montgomery County. The heart of Rochester’s cultural and entertainment area is in the downtown area with the Mayo Civic Center, Rochester Art Center, and Rochester Civic Theatre next to each other. A few historic mansions and semi-professional sport teams round out the city’s attractions.

**Highlights of Cultural and Entertainment Amenities**

Community	Cultural and Entertainment Highlights
Kannapolis	<ul style="list-style-type: none"> <li>▪ City offers Summer Concert Series (with 22,000 attendees to five concerts in 2004) in Village Park Amphitheater; also Summer Movies in the Park series and Stories Under the Stars series, jointly planned with Kannapolis Branch Library.</li> <li>▪ Kannapolis Intimidators minor league baseball team plays at Fieldcrest Cannon Stadium.</li> <li>▪ Cannon Village Home Furnishings Market has 34 shops.</li> <li>▪ Piedmont Dance Conservatory has performances as well as classes.</li> </ul>
Cary	<ul style="list-style-type: none"> <li>▪ Parks &amp; Rec Department puts on multiple concerts and special events.</li> <li>▪ Booth Amphitheatre with 7,000 person capacity for rock/pop concerts, symphony, festivals, and Movies by Moonlight series.</li> <li>▪ Hosts professional, collegiate, and other tournaments at the 7,000 seat SAS Soccer Park and cross country course, Cary Tennis Center, and Thomas Brooks Park sports complex.</li> </ul>
Rockville	<ul style="list-style-type: none"> <li>▪ Rockville Town Square downtown area under redevelopment.</li> <li>▪ F. Scott Fitzgerald Theatre at Rockville Civic Center Park is 500-seat facility for performing arts.</li> <li>▪ Jewish Community Center of Greater Washington offers a number of programs and events.</li> </ul>
Rochester	<ul style="list-style-type: none"> <li>▪ Rochester Civic Music/Riverside Concerts is a city department that provides multiple concert series, both free and ticketed. Over \$800,000 per year is budgeted to this program.</li> <li>▪ Rochester Art Center opened in 2004, with now proposed Zumbro Gardens. A few other galleries around town.</li> <li>▪ Mayo Clinic offers a general tour and art and architecture tour of its facility.</li> <li>▪ Other attractions include Plummer House of the Arts (49 room mansion), Soldiers Field Veterans Memorial, Mayowood Mansion, and Heritage House.</li> <li>▪ Rochester Orchestra &amp; Chorale plays at the Mayo Civic Center.</li> <li>▪ Other performing arts: Chorale Arts Ensemble, Masque Youth Theatre, Rochester Repertory Theatre, and Southeast Minnesota Youth Orchestra.</li> <li>▪ Rochester Civic Theatre, Hill Theatre, and Mayo Civic Center are additional venues.</li> <li>▪ Rochester Giants semi-professional football team, Rochester Honkers summer collegiate baseball league, and Rochester Royals amateur baseball team play in Rochester.</li> </ul>
Cabarrus County	<ul style="list-style-type: none"> <li>▪ Lowe’s Motor Speedway.</li> <li>▪ Concord Mills outlet mall.</li> <li>▪ Old Courthouse Theatre offers a variety of performances.</li> <li>▪ Cabarrus Arts Council coordinates activities within the county.</li> </ul>

Community	Cultural and Entertainment Highlights
Wake County (includes Raleigh)	<ul style="list-style-type: none"> <li>▪ RBC Center – hosts concerts and Carolina Hurricanes, and NC State Men’s Basketball.</li> <li>▪ Top college sports teams nearby.</li> <li>▪ Carolina Hurricanes professional hockey plays at RBC Center.</li> <li>▪ Carolina Mudcats AA Minor League Baseball plays at Five County Stadium.</li> <li>▪ State museums (North Carolina Museum of Art, Museum of History, Museum of Natural Sciences), PLAYSPACE Children’s Museum, and Exploris Museum/IMAX Theater are located in Raleigh.</li> </ul>
Montgomery County	<ul style="list-style-type: none"> <li>▪ County’s Recreation Department runs “Summer Sounds in the Parks” series with 15 concerts at 3 parks.</li> <li>▪ Parks and Planning Department runs Shakespeare Under the Stars and Summer Twilight Concerts at Brookside Gardens series.</li> <li>▪ Performing arts venues: Adventure Theatre, BlackRock Center for the Arts, Imagination Stage, Music Center at Strathmore, Olney Theatre Center for the Arts, and Round House Theatre.</li> <li>▪ Visual arts venues: Dennis &amp; Phillip Ratner Museum, Metropolitan Center for the Visual Arts, Gaithersburg Arts Barn, Strathmore Hall Arts Center, and Glen Echo Park.</li> <li>▪ Tournaments at the Maryland SoccerPlex and Discovery Sports Center – 19 outdoor soccer fields, 3,200 seat championship field, and 66,000 square foot multi-sport facility.</li> <li>▪ National Institute of Health in Bethesda offers tours of parts of its facility.</li> </ul>
Olmstead County	<ul style="list-style-type: none"> <li>▪ Not much else in the county other than Rochester.</li> </ul>

Community input participants agree that there are few amenities in the immediate Kannapolis area. However, they were much more positive about regional access to Charlotte and its amenities.

**Online Survey Responses: Cultural and Entertainment Amenities**

	Above Average	Average	Below Average
Local cultural and entertainment amenities	30%	19%	49%
Regional cultural and entertainment amenities	56%	18%	23%
Local shopping and dining opportunities	29%	33%	38%
Regional shopping and dining opportunities	72%	17%	11%

**Both Cary and Rockville benefit from being centrally located within large metropolitan areas that have many cultural and entertainment amenities. Rochester is part of a much smaller metro area with most amenities located inside of the city. While Kannapolis residents can tap into the culture and entertainment options in Charlotte, the City will need to continue to develop activities locally that will enhance the community’s quality of life, as well as keep residents’ disposable income in the local area.**

**Environmental Sustainability**

Environmental sustainability is a concept that encompasses many different issues. In general, it deals with a sustainable approach to growth and development, one that minimizes impact on the environment. Sustainability affects the quality of life for a community’s residents and the future quality of life for children; a degrading environment can have negative visual and health impacts.

The following table lists the efforts of Kannapolis and its comparison communities in promoting environmental sustainability. Leadership and policy set by the local government set the tone for the way citizens interact with their environment. Activities such as farmers markets, parks, and greenways allow residents to connect with the physical environment and enjoy its benefits. Recycling, public transportation, water reclamation, and other city programs provide the community with solutions for protecting and conserving natural resources. In addition, the local government’s leadership and approach towards open space preservation and planning for growth and development have large impacts on patterns of growth and transportation.

**Highlights of Environmental Sustainability Efforts**

Community	Environmental Sustainability Efforts
Kannapolis	<ul style="list-style-type: none"> <li>▪ No recycling program.<sup>16</sup></li> <li>▪ Piedmont Farmers Market, Tuesdays and Saturdays, June – October.</li> <li>▪ Plans for future greenway system, including linkages to NCRC. Some sections are already built. Greenways, bike lanes, 2,000 new trees, and 28 acres of parks and open space will be part of NCRC.</li> <li>▪ Limited alternative transportation options. Six bus routes run from 5:30am to 8:30pm, but only once per hour and not on Sundays.</li> <li>▪ Pedestrian-scale development planned for NCRC and possibly for surrounding area; little emphasis on smart growth planning orientation in the past.</li> <li>▪ NCRC development will include stream restoration projects along Bakers Creek and downtown.</li> <li>▪ Major on-going water conservation program in Kannapolis and Concord.</li> <li>▪ City recently sold 2,800 acres of land to the Land Trust of Central NC for preservation.</li> </ul>
Cary	<ul style="list-style-type: none"> <li>▪ Curbside recycling program.</li> <li>▪ Cary Downtown Farmers Market, Tuesdays and Saturdays, April – November.</li> <li>▪ Greenway system of six park trails (8.8 miles total) and ten greenway trails (11 miles total).</li> <li>▪ Building region’s first bio-solids dryer to bake sludge residue from wastewater process to turn into fertilizer pellets.</li> <li>▪ First in the state to have a water reclamation facility to use treated wastewater for irrigation; an expansion is proposed.</li> <li>▪ Has spent \$330,000 on the first phase of a bicycle network.</li> <li>▪ Expects to host two light rail stations as part of regional system.</li> <li>▪ Limited alternative transportation options. Three bus routes run every 30 min to 1 hr.</li> <li>▪ Pattern of development has mostly been PUDs (planned unit developments), which has contributed to sprawl. However, town is making efforts to preserve open space.</li> <li>▪ Town plans an ethanol fueling station.</li> </ul>
Rockville	<ul style="list-style-type: none"> <li>▪ Mandatory curbside recycling program.</li> <li>▪ Farmers Market in downtown, Wednesdays and Saturdays June – October.</li> <li>▪ Since 1998’s Bikeway Master Plan, the city added 20 miles of bike/pedestrian paths, signed 20 miles of bike routes, and 2 miles of bike lanes.</li> <li>▪ County has good rail/subway connectivity to the rest of the metro area.</li> <li>▪ City was recertified in November 2005 as Gold level Chesapeake Bay Partner for restoring and protecting the Bay, its rivers, and its streams.</li> <li>▪ Master Plan for Town Center area is focused on pedestrian-scale development.</li> </ul>

<sup>16</sup> Kannapolis has attempted a curbside recycling program in the past, but it was discontinued due to the cost.



<b>Community</b>	<b>Environmental Sustainability Efforts</b>
Rochester	<ul style="list-style-type: none"> <li>▪ Downtown Farmers Market, Saturdays May – October.</li> <li>▪ Extensive park system and 60+ miles of trails.</li> <li>▪ Bus system with 16 weekday routes, as well as weekend and evening routes.</li> <li>▪ 3 privately owned ethanol fueling stations open to the public.</li> <li>▪ City has a water reclamation plant that is expanding.</li> <li>▪ City and County Planning Department is combined.</li> <li>▪ Many urban/walkable areas in City.</li> </ul>
Cabarrus County	<ul style="list-style-type: none"> <li>▪ Five drop-off recycling convenience centers open to county residents.</li> <li>▪ Cabarrus Soil and Water Conservation District provides technical and financial assistance to landowners for conservation efforts; it also provides outreach educational programs.</li> <li>▪ Livable Communities Blueprint addresses parks, greenways, and bike lanes, although it needs updating.</li> </ul>
Wake County	<ul style="list-style-type: none"> <li>▪ 11 drop-off recycling convenience centers open to county residents, 2 multi-material recycling facilities.</li> <li>▪ Through its Consolidated Open Space Plan, the county has about 53,000 acres (9.5% of county’s land area) of protected open space; goal is to protect 30% of county’s land area, or about 165,000 acres.</li> </ul>
Montgomery County	<ul style="list-style-type: none"> <li>▪ 3 drop-off recycling centers/facilities.</li> <li>▪ County offers ethanol fueling station open to the public.</li> <li>▪ County recently unanimously voted to purchase 20% of renewable energy for all county municipal buildings by 2011.</li> <li>▪ Park and Planning Department manages 45 miles of paths/trails within county parks; Department of Public Works’ Bikeway Program maintains 95 miles of bike facilities (paths, bike lanes, and shared lanes on roads).</li> <li>▪ Commuter Services Division helps set up carpools and vanpools and promotes use of alternative transportation.</li> <li>▪ Park and Planning Department has large focus on master plans for many communities.</li> </ul>
Olmstead County	<ul style="list-style-type: none"> <li>▪ Mandatory curbside recycling program for all county residents, plus a drop-off recycling center.</li> <li>▪ City and County Planning Department is combined.</li> </ul>

Kannapolis has placed some emphasis on environmental sustainability in areas such as water conservation, and it is creating more of pedestrian-scale environment with the NCRC development. Kannapolis/Cabarrus County is the only community among its comparisons without a curbside recycling program; some comparison communities have mandatory recycling.

**Online Survey Responses: Environment**

	<b>Above Average</b>	<b>Average</b>	<b>Below Average</b>
Environmentally responsible culture	22%	34%	33%
Quality of air, water, and the environment	30%	19%	49%
Availability of sidewalks	13%	42%	42%

Community input indicated a greater need for health-oriented, environmentally responsible services and investments. A number of open-ended responses focused on sidewalks and recycling:

- “Get sidewalks on South Ridge Avenue!!!...Make the community walkable-friendly!!”
- “There aren’t any sidewalks where I live.”

- “There is no area for safe walking/cycling other than downtown or in one of the parks.”
- “Sidewalks linking neighborhoods with schools and parks are very much needed.”
- “We pay city taxes, but there is no recycling pick-up.”
- “We need curbside recycling brought back!! Let’s make Kannapolis GREEN!!”

**Kannapolis and Cabarrus County need to place more emphasis on parks, greenways, alternative transportation options, addressing air quality non-attainment problems, and solid waste and wastewater treatment alternatives to preserve its environment as the community grows. These and other kinds of activities should reflect a long-term commitment and approach towards sustainability and quality growth, and go hand in hand with the Research Campus’ focus on health and nutrition.**

## **Health Care Access**

Access to health care services is a consideration for a growing number of Baby Boomers and families when deciding where to live. Although there are no hospitals in Kannapolis, the Northeast Medical Center is located in nearby Concord, and both the Northeast Medical Center and Cabarrus Family Medicine will have a significant presence at NCRC. The Rowan Regional Medical Center and hospitals in the Charlotte area are also within driving distance of Kannapolis.

The following table shows health care accessibility for the metro areas of the comparison communities, in terms of physicians per capita and hospital beds per capita. The Charlotte metro area lags the comparison communities and the U.S. in both measures, except that it has more hospital beds per capita than the Washington, D.C. metro area. Kannapolis is also at a disadvantage to the comparison communities because there is no medical school in the Charlotte area, making it harder to attract physicians and harder to attract NIH funding for biotechnology research activity related to medicine. For example, in 2000, NIH research funding for medical schools in the Raleigh metro area was \$367 million and \$679 million in the Washington D.C. area.<sup>17</sup>

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<sup>17</sup> Cortright, Joseph and Mayer, Heike. “Signs of Life: The Growth of Biotechnology Centers in the U.S.” Brookings Institution. June 2002.

**Health Care Accessibility**

<b>Metro Area</b>	<b>Physicians per 100K Population 2003</b>	<b>Hospital Beds Per 100K Population 2001</b>
Charlotte, NC	203.3	281.1
Raleigh-Durham, NC	431.7	384.8
Washington, DC	338.9	258.1
Rochester, MN	1,814.5	1,016.3
United States	261.1	432.2

Source: Sperling and Sander, *Cities Ranked and Rated*, 2004.

Responses from the online survey indicated that residents are generally satisfied with the availability and quality of health care services in the Kannapolis area.

**Online Survey Responses: Health Care**

	<b>Above Average</b>	<b>Average</b>	<b>Below Average</b>
Availability of health care	74%	17%	4%
Quality of health care	74%	17%	4%
Affordability of health care	45%	28%	21%

**Kannapolis area leaders should work with regional partners to attract more doctors and other health care professionals and facilities to the region to meet the demands of a growing population and aging Baby Boomers. Kannapolis should also work on overcoming its disadvantage of not having a medical school nearby by continuing to attract research centers from other universities to NCRC and focusing on a collaborative atmosphere of conducting research that may not be as easy to achieve on the campus of a single university.**

**Child Care Availability**

Child care availability is important to certain segments of the workforce, including families with two working parents and single-parent families. In 2000, the North Carolina Division of Child Development developed a star rating system for child care facilities. The system gives one star for meeting minimum licensing standards and up to five stars for higher standards in three areas: program standards, staff education, and compliance history.<sup>18</sup>

Star ratings of child care facilities in Kannapolis and Cary are shown in the following table.<sup>19</sup> Cary, with a population of about 2.5 times that of Kannapolis, has a greater

<sup>18</sup> In 2005, the star rating system was revised to be based only on program standards and staff education, with ratings from two to five stars. Child care programs that are currently operating have until January 1, 2008 to transition to this revised rating system.

<sup>19</sup> Because other states have different systems for evaluating child care facilities, information is not shown for the other comparison communities.

number (about 2.5 times) of child care facilities. Almost half of Kannapolis’ child care centers and nearly a third of its family child care homes have four or five-star ratings.

**Star Ratings of Child Care Facilities**

<b>Child Care Centers</b>	<b>Kannapolis</b>		<b>Cary</b>	
<b>Star Rating</b>	<b>Facilities</b>	<b>Percent</b>	<b>Facilities</b>	<b>Percent</b>
1-star	2	13%	6	15%
2-star	1	7%	0	0%
3-star	5	33%	7	17%
4-star	4	27%	13	32%
5-star	3	20%	15	37%
<b>Total</b>	<b>15</b>		<b>41</b>	
<b>Family Child Care Homes</b>	<b>Kannapolis</b>		<b>Cary</b>	
<b>Star Rating</b>	<b>Facilities</b>	<b>Percent</b>	<b>Facilities</b>	<b>Percent</b>
1-star	1	7%	22	54%
2-star	0	0%	0	0%
3-star	9	64%	6	15%
4-star	4	29%	7	17%
5-star	0	0%	6	15%
<b>Total</b>	<b>14</b>		<b>41</b>	

Source: North Carolina Division of Child Development. Does not include non-rated facilities or those with temporary licenses.

However, a large number of respondents to the online survey (about 40 percent) did not know about the quality, availability, or affordability of child care in the Kannapolis area. While those respondents may not have young children, there may need to be greater awareness and focus on local child care resources.

**Online Survey Responses: Child Care**

	<b>Above Average</b>	<b>Average</b>	<b>Below Average</b>	<b>Don't Know</b>
Availability of child care	27%	23%	12%	38%
Quality of child care	26%	22%	11%	42%
Affordability of child care	20%	30%	8%	41%

**Kannapolis needs to continue to increase the availability of high quality child care services as new residents move to the community. Establishment of a top notch day care facility on the Research Campus is one step in the right direction.**

**Cost of Living**

The cost of living (COL) index provides information about how expensive it is to live in an area, because it reflects not only home values, but also the costs of groceries, utilities, transportation, health care, and miscellaneous goods and services. Such costs can affect relocation decisions and a household’s standard of living. The data shown in the following table are only available for metropolitan areas and show that

the Charlotte metro area has the lowest cost of living of the comparison metro areas, relative to the national average index of 100.

#### Cost of Living Comparison, Metro Areas - 1<sup>st</sup> Quarter 2006

Metro Area Name	Index Cities	Total	Grocery	Housing	Utilities	Transportation	Health Care	Misc.
Charlotte, NC	Charlotte	91.1	91.9	77.0	77.3	99.2	105.7	102.1
Raleigh-Cary, NC	Raleigh	93.1	101.1	75.9	95.7	100.1	118.1	98.3
Washington, DC	Prince William County	125.5	103.4	168.0	125.3	110.3	99.8	107.1
Rochester, MN	Rochester	99.7	88.9	89.5	128.1	97.6	103.8	103.9

Source: ACCRA.

\* 100=National Average. Percentage each category contributes to the overall cost of living: Total (100%), Grocery (13%), Housing (30%), Utilities (9%), Health Care (4%), and Miscellaneous Good and Services (35%).

Housing costs are a large component of the cost of living, but little comparable data are available at city and county levels. The following table shows median home values in 2000, the latest year for which comparable data are available. Clearly Kannapolis and Cabarrus County are very affordable relative to the comparison communities, even as housing prices have increased.

#### Median Home Values, 2000

Community	Median Value
Kannapolis	\$81,400
Cabarrus County	\$108,900
Rockville	\$192,800
Rochester	\$110,900
Cary	\$193,000

Source: U.S. Census Bureau.

**The relatively low cost of living in the Kannapolis-Cabarrus County area is a positive aspect of the area that should be marketed. However, cost of living is just one consideration in looking at the overall quality of life of an area. In other words, many families of NCRC researchers will choose a community with a higher cost of living if they can get better amenities there.**

## **INFRASTRUCTURE AND QUALITY DEVELOPMENT**

Infrastructure affects the physical form of development and has a significant impact on the quality of life in a community. The ability of local governments to proactively plan for infrastructure and development determines whether patterns of development are coordinated or haphazard. The resulting investments influence the visual attractiveness of a community as well decisions that businesses and individuals make when choosing a community for relocation.

This section describes patterns of development and infrastructure characteristics (housing, transportation, water/sewer, and telecommunications) in the Kannapolis area and the comparison communities. Each of these issues should be considered in the planning for NCRC. Local governments will need to accelerate their infrastructure investments to ensure that these are in place when people and businesses begin arriving.

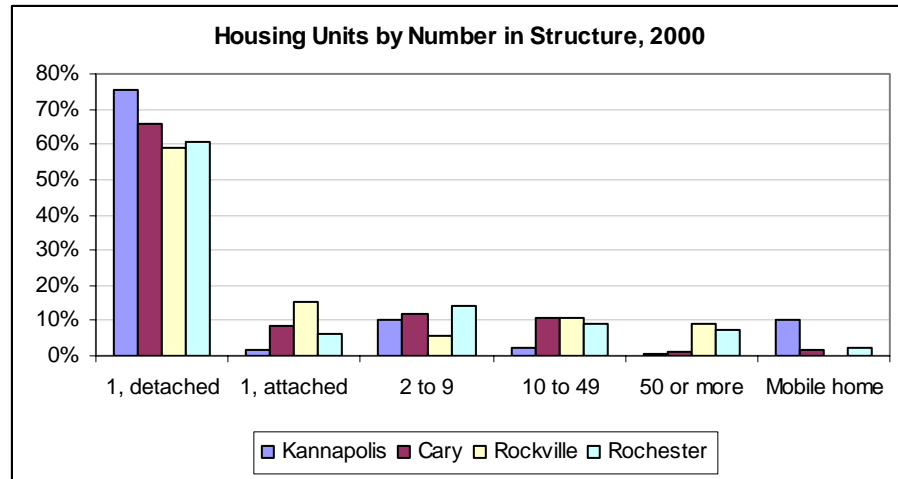
### **Housing**

Having a range of housing options is an important aspect of planning for the Research Campus; these options should offer choices of housing types as well as price ranges. The Kannapolis area housing market appears to be strong, with a number of new developments of million-dollar homes. However, a number of participants in the community input process noted that there is currently a lack of quality housing stock in the Kannapolis area at more mid-range price points. In addition to some neighborhoods in Kannapolis being blighted, a few participants noted that they did not want to live in a cookie-cutter subdivision that looks like it was “built for the masses.”

**Online Survey Responses: Housing**

	<b>Above Average</b>	<b>Average</b>	<b>Below Average</b>
Quality of housing	43%	34%	22%
Availability of desired housing	39%	35%	19%
Affordability of desired housing	38%	38%	18%

As shown in the following graph, Kannapolis has a much higher proportion of housing units that are single-family detached homes than the comparison communities. It also has a high percentage of mobile homes compared to the other communities. Rockville and Rochester have a greater number of multi-family units that are in larger complexes of 50 or more units.



Source: U.S. Census Bureau

**Along with the development of NCRC, Kannapolis will need to diversify its mix of housing units to include greater density and more options, particularly those that have an urban and mixed-use appeal. Young professionals are more likely to prefer an urban style of living.**

## Physical Development Patterns

The results of a CEOs for Cities survey of young professionals showed that college educated, 25-to-34 year olds place a high importance on quality of life aspects when considering where to live, including “a strong inclination to live downtown or close to downtown” and the desire to live somewhere where “they can connect with others and have meaningful social interactions.”<sup>20</sup> Thus, having vibrant, urban areas are important to attracting young professional workers.

Kannapolis was built up around its textile mills. Its small downtown area has some shops and low-rise buildings where the city’s municipal offices are located. Surrounding the downtown area are small homes where textile factory workers used to (and some still do) live. While some parts of Kannapolis near the downtown area are walkable, there is generally little pedestrian activity, due to the loss of retail after the Pillowtex closure and the holding of temporary office space for NCRC future tenants.

New developments indicate a trend towards more urban patterns. The Research Campus itself will include a mix of uses, a significant number of sidewalks, bike lanes, and greenways, and clustered buildings – all of which promote opportunities for activity and interaction. Residential developments are also beginning to feature a mix of uses. The Kellswater Bridge community will feature single family homes, townhome-like units, and a town center and nearby commercial center.

<sup>20</sup> CEOs for Cities. June 9, 2006. Survey of 1,000 25-to-34 year old, college educated men and women from diverse backgrounds and locations, conducted March 3-11, 2006.



**Online Survey Responses: Physical Development Characteristics**

	<b>Above Average</b>	<b>Average</b>	<b>Below Average</b>
Quality of land use planning	35%	29%	17%
Quality/attractiveness of development/growth	48%	33%	18%
Cleanliness/attractiveness of streets	41%	33%	26%
Adequacy of street signage	44%	45%	9%
Adequacy of street lighting	35%	47%	17%

Among the comparison communities, Rochester has by far the most urban pattern of development. Its downtown area is large and streets are connected in a pedestrian-scale grid pattern. There are a number of high-rise buildings within the downtown area. Rochester’s downtown is also different because of the location of the Mayo Clinic facilities in downtown. About 28,000 come to work every day in Mayo’s facilities, and every year about 1.8 million come to Mayo for medical care and training. Because of this activity, Rochester has more hotel rooms than Minneapolis, a city four times its size.<sup>21</sup> The City provides 4,600 public parking spaces in downtown in garages, surface lots, and on-street metered parking.

**Aerial View of Downtown Rochester**



Source: <http://www.city-data.com/picfiles/cpic5370.php>

<sup>21</sup> Stone, Karen. “Middle Market Highlight.” *Heartland Real Estate Business*. December 2005. <http://www.heartlandrebusiness.com/articles/DEC05/mmhighlight.html>



Cary, which has the largest population of the comparison cities, has the most sprawling pattern of development. Many of its neighborhoods have cul-de-sacs that have little connectivity to the rest of the City other than via congested collector roads. Even Cary's downtown area is low-density, with many surface parking lots and low-rise buildings.

**Downtown Cary**



Source: Google.com

Rockville is more densely developed and has somewhat better road connectivity than Cary. As shown in the following picture, Rockville's downtown area has a few mid-to-high rise buildings, although there are still some large surface parking lots in a few areas. Just north of the area shown is the master-planned redevelopment of the Town Center area.

King Farm is a neighborhood in Rockville that has received recognition and awards for its smart growth approach. With 3,200 housing units on a 430-acre site, it is a mixed-use, high-density, walkable community. The Shady Grove Metro rail station is within walking distance (providing mass transit to D.C. region), and bike paths link to parks and schools. Housing options include apartments, condos, townhomes, and single family houses. Design was paramount for this development, with parking behind buildings or in structures and buildings near lot lines. One-fourth of the land has been reserved for parks and greenspace.<sup>22</sup>

<sup>22</sup> For more information, go to [www.epa.gov/smartgrowth/case/kingfarm.htm](http://www.epa.gov/smartgrowth/case/kingfarm.htm).

**Downtown Rockville**



Source: Google.com

With the development of NCRC is the opportunity to shape the built environment of Kannapolis in a way that is attractive, pedestrian-scale, and sustainable. Proactive planning efforts (transportation plans, land use plans, zoning regulations, design guidelines, density bonuses, code enforcement, reducing blight etc.) are needed to guide the future development of the entire Kannapolis area.

**Downtown Development Efforts**

In the planning of the North Carolina Research Campus, there already has been emphasis placed on creating an urban, pedestrian-scale atmosphere. The key is to extend this level of planning to beyond the borders of the campus and into the nearby neighborhoods, at the very least. The City of Kannapolis expects to create a tax increment financing (TIF) district to generate funds for certain infrastructure improvements that will contribute to creating an urban environment. There also needs to be a master plan, accompanied by zoning codes and urban design guidelines, to create a vision for the area around the campus.

**Cary**

In 2001, the Cary Town Council adopted a master plan for the downtown area and nearby neighborhoods. The plan covers 960 acres, or about 1.5 square miles. In

2003, a new Land Development Ordinance took effect, regulating zoning, subdivisions, building appearances, and other development-related aspects. The Ordinance included guidelines for the Town Center District created for the downtown area. The Town is nearly finished with developing a Streetscape Plan for the Town Center area to address components such as pavement widths, crosswalks, sidewalks, lighting, trees, public art, parking, and signage. The Town is now in the middle of a “Picture Downtown Cary” effort to illustrate the design principles and guidelines associated with the master plan. The purpose of this effort is to communicate these goals to the community and local developers, and to generate interest in downtown development.

### **Rockville**

In 2001, Rockville’s mayor and City Council unanimously approved a master plan for the Rockville Town Center area, which covers 460 acres. While the area was already developed with quite a few restaurants and other businesses, it lacked a strong focal point for pedestrian and retail activity. City Hall, county courthouses and offices are located there, and the area is accessible from the Rockville Metro Station. The City of Rockville has been leading the development effort, but Rockville Economic Development, Inc. has also been heavily involved in promoting the plan.

A key part of the plan is the development of the Town Square, which will include retail, restaurant, entertainment, residential, and office uses. The Town Square will also be home to the new Rockville Regional Library, the Metropolitan Center for the Visual Arts, a business incubator, and three public parking garages. The focal point of Rockville Town Square will be an open-air plaza for gatherings and community events. Development of the Town Square began in June 2004, through a public/private partnership among developers and city, county, state, and federal governments. The total estimated project cost for the Town Square is \$300 million, with 70 percent coming from the private sector. The first buildings will open in late 2006. The final build-out will include 175,000 square feet of retail space and restaurants, 1,900 parking spaces (of which 1,000 will be open to the public in three garages), and 644 condominium units. The development of the rest of the Town Center area is expected to follow after the Town Square is completed.

Initial interest in the Town Square has been substantial. In addition to the returning retail and restaurant tenants, new businesses will include: Primo Italiano, Lebanese Taverna and Sushi Damo restaurants; the Hair Cuttery, the Papery, and an ice cream shop. The “Windows on Rockville Town Square” condominium units above the shops and restaurants have been selling well, with prices ranging from \$200,000 to \$1.2 million. However, 15 percent (96 units) have been reserved for moderate income residents, as required by the City. The five-story Arts and Innovations Center will be home to the Metropolitan Center for the Visual Arts (VisArts), an incubator, and a museum quality retail galleria. VisArts plans to use the space for artist studios and housing, teaching studios, interactive programs, and events.

The goal of the plan is to make the Town Square area pedestrian-oriented and a focal point for civic, business, leisure and cultural activities. Design elements have been important to achieving this goal. The parking garages will be “inside” of the development, with the retail establishments wrapped around the outside at the street level. Wider sidewalks, shorter blocks, the Town Square Plaza, and outdoor dining will contribute to the pedestrian focus.

### **Rochester**

Although Rochester already has significant business activity in its downtown area, city leaders are making an effort to create a focal gathering place within downtown. In fall of 2004, the city adopted a five-year plan for downtown development that identified four distinct downtown development districts. In 2005, the Rochester Downtown Alliance was formed, and the city created a tax increment financing (TIF) district to spur downtown development. The Downtown Alliance is a public/private partnership, with half of its \$300,000 budget funded by the City and the Mayo Clinic, and half funded by the special services district agreed to by downtown business owners.

The city worked with the Rochester Downtown Alliance and the Project for Public Spaces to create a “Vision for a New First Street Promenade” report released in January 2006. The plan calls for the improvement of First Street into a promenade that connects First and Second Avenues and linking to the Peace Plaza and Annenburg Plaza. Currently, the area lacks much public activity and is unattractive. The vision is for the First Street Promenade to be a gathering area that is pedestrian-oriented, with street-level retail, better signage, and attractive streetscape elements. The City is now working with a firm to develop detailed plans and specifications for the Promenade, with the goal of construction starting by the end of 2006.

Private sector development activity has already been picking up. A five-story condo project with 70 units priced between \$150,000 and \$400,000 has been proposed. The indoor Galleria Mall near the First Street Promenade is undergoing \$750,000 in renovations to update the interior and make a more seamless transition from indoors to outdoors. The Minnesota Partnership for Biotechnology and Medical Genomics is constructing a 100,000 to 150,000 square-foot facility for occupancy by mid-2008. Other potential projects include artist studios and housing and a 63-unit apartment building geared towards young professionals.

**Although Rochester has the most urban and largest downtown area, Rockville has made the most progress in developing a vibrant core downtown area. While Rockville’s efforts have involved a public/private partnership, the City of Rochester created a TIF district and downtown plans that have spurred private sector development. Cary is not nearly as far along in its downtown development efforts, despite its planning efforts over the last five years. There are a number of different tools and approaches that can be used for downtown development. Kannapolis can use the experiences of the comparison communities and others to create a strategy that will build on the NCRC projects to create a thriving downtown core.**



## Other Planning Efforts

A community’s efforts in planning for various aspects of growth and community improvement indicate awareness that these topics are important and are critical first steps in addressing problems and issues. The following table gives a brief list of recent planning efforts in Kannapolis and each of the comparison communities.

**Recent Community Plans**

Community	Recent Planning Efforts
Kannapolis	<ul style="list-style-type: none"> <li>▪ Long Range Transportation Plan (2000)</li> <li>▪ Unified Development Ordinance (2003)</li> <li>▪ 2015 Land Use Plan (2004)</li> <li>▪ NC 73 Transportation/Land Use Corridor Plan (2004)</li> <li>▪ NC 73 Small Area Land Use &amp; Economic Development Plan (2006)</li> <li>▪ Walkable Community Plan (to be completed Dec. 2006)</li> <li>▪ North Carolina Research Campus related plans (to be developed)</li> </ul>
Cary	<ul style="list-style-type: none"> <li>▪ Public Art Master Plan (2001)</li> <li>▪ Comprehensive Plan                             <ul style="list-style-type: none"> <li>○ Land Use Plan (2003)</li> <li>○ Parks, Recreation &amp; Cultural Resources Facilities Master Plan (2003)</li> <li>○ Growth Management Plan (2000)</li> <li>○ Comprehensive Transportation Plan (2001)</li> <li>○ Open Space &amp; Historic Resources Plan &amp; Program (2001)</li> </ul> </li> <li>▪ Parks, Greenways &amp; Bikeways Master Plan (2003)</li> <li>▪ Consolidated Housing and Community Development Plan (2004)</li> <li>▪ Economic Development Action Plan (2006)</li> <li>▪ Comprehensive Pedestrian Plan (under development)</li> </ul>
Rockville	<ul style="list-style-type: none"> <li>▪ Town Center Master Plan (2001)</li> <li>▪ Comprehensive Master Plan (2002)</li> <li>▪ Master Street Tree Plan (2002)</li> <li>▪ Bikeway Master Plan Update (2004)</li> <li>▪ Various neighborhood plans</li> </ul>
Rochester	<ul style="list-style-type: none"> <li>▪ Downtown Plan (2004)</li> <li>▪ Cascade Lake Park Master Plan (2005)</li> <li>▪ Vision for a New First Street Promenade (2006)</li> <li>▪ Urban Service Area Land Use Plan (2003)</li> </ul>
Cabarrus County	<ul style="list-style-type: none"> <li>▪ Livable Community Blueprint (2002)</li> <li>▪ Strategic Plan for Economic Development (2006)</li> <li>▪ Various neighborhood and corridor plans</li> </ul>
Wake County	<ul style="list-style-type: none"> <li>▪ Growth Management Strategy Report (2003)</li> <li>▪ Consolidated Open Space Plan (2006)</li> <li>▪ Unified Development Ordinance (2006)</li> <li>▪ Land Use Plan (undergoing revision)</li> </ul>
Montgomery County	<ul style="list-style-type: none"> <li>▪ Go Montgomery! Transportation Plan (2002)</li> <li>▪ Land Preservation, Parks, and Recreation Plan (2005)</li> </ul>
Olmstead County	<ul style="list-style-type: none"> <li>▪ Land Use Plan (2003)</li> <li>▪ Long Range Transportation Plan (2005)</li> </ul>

Note: Includes plans listed on city and county websites.

**The City of Kannapolis has the foresight to recognize that it will need many different strategies to plan for the North Carolina Research Campus. The City and Cabarrus County should also be proactively planning for other community aspects, including parks, greenways, housing, and government services.**

## Transportation Access

Transportation access is usually both a local and regional issue. This is true for Kannapolis as well; households who move to the area to take NCRC jobs will live in many areas around the Charlotte region. While Kannapolis and Cabarrus County have excellent interstate access, certain parts of the highways need widening – much of this is planned to begin in FY2010. The area also lacks a regional transportation system, and the local bus system has very limited service. There is an Amtrak train station in Kannapolis, providing service between Charlotte and Raleigh as well as between Atlanta and New York City.

Construction of Charlotte's light rail system is underway. However, service will be limited to Mecklenburg County, with a few stations in Iredell County included in the plans for the North Corridor line. The Metropolitan Transit Commission voted in June not to extend the Northeast Corridor line past I-485 into Cabarrus County. Included in the 2025 Corridor System Plan is a bus rapid transit line from UNC-Charlotte to Concord Mills by 2025. Establishing light rail or bus rapid transit connections between Charlotte and Cabarrus County (and into Kannapolis) may take years, but is very important for creating a physical link between these two areas.

Access to the airport is also important for business travelers; in the case of NCRC, direct flights to other biotech centers and major metro areas will be essential. The Charlotte-Douglas International Airport has 587 daily departures to 123 non-stop destinations (including 27 international destinations).<sup>23</sup> The cities that US Airways and United Express serve include Boston, Los Angeles, Philadelphia, Raleigh-Durham, San Diego, San Francisco, Seattle, and Washington, D.C., giving the Charlotte region excellent access to the nation's biotech centers. Although there is no commercial service, the nearby Concord Regional Airport is the fourth busiest in the state and serves a growing general aviation market.

In terms of the comparison communities, Rockville has the best interstate highway access, while Rochester has the worst. Rockville also has the most extensive public transportation system, with a county bus system that links to the regional rail and commuter bus systems. Of the comparison communities, Cary has the least developed public transportation system – and also the most sprawling pattern of development. The Raleigh region as a whole is behind many other metro areas in developing a regional transportation system. All of the comparison communities have reasonably good access to one or more airports, with Rockville having the most options.

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<sup>23</sup> Source: <http://www.charmeck.org/Departments/Airport/About+CLT/Fast+Facts.htm>

### Transportation Access

Community	Transportation Infrastructure
Kannapolis	<ul style="list-style-type: none"> <li>▪ <b>Highway:</b> I-85 to Charlotte, Piedmont Triad, &amp; Research Triangle areas in NC, plus other major markets; regional access to I-77</li> <li>▪ <b>Air:</b> Charlotte Airport, 30 mi away</li> <li>▪ <b>Public transportation:</b> Concord Kannapolis Transit – 6 bus routes</li> </ul>
Cary	<ul style="list-style-type: none"> <li>▪ <b>Highway:</b> I-40 &amp; nearby I-85 to Charlotte, Piedmont Triad, Richmond, and other major markets; regional access to I-95</li> <li>▪ <b>Air:</b> Raleigh-Durham Airport, 8 mi away</li> <li>▪ <b>Public transportation:</b> C-Tran – 3 bus routes, links to Triangle Transit Authority regional bus &amp; shuttle service; Capital Area Transit bus service in Raleigh nearby</li> </ul>
Rockville	<ul style="list-style-type: none"> <li>▪ <b>Highway:</b> I-270, I-495, &amp; nearby I-95 to D.C., Baltimore, &amp; northern VA; regional access to I-70, I-66</li> <li>▪ <b>Air:</b> Reagan Airport (22 mi away), Dulles Airport (26 mi), Baltimore Airport (40 mi)</li> <li>▪ <b>Public transportation:</b> Ride On – 80 bus routes throughout county and links to 4 Metrorail stations that serve entire region, plus Metrobus and Maryland Transit Authority commuter bus routes</li> </ul>
Rochester	<ul style="list-style-type: none"> <li>▪ <b>Highway:</b> US Hwy 52, nearby I-90; largest metro area within 150 mile radius is Minneapolis-St. Paul (about 80 miles away)</li> <li>▪ <b>Air:</b> Rochester Airport (10 mi away) or Minneapolis-St. Paul Airport (77 mi)</li> <li>▪ <b>Public transportation:</b> City of Rochester – 17 weekday bus routes, plus special routes for peak hours, weekends, and evenings</li> </ul>

In job centers and other areas of significant activity, having single-passenger vehicles as the only mode of transportation quickly results in congestion and strained roadways. Road widenings are sometimes a temporary solution and can make a corridor less attractive and other modes of transportation more difficult to implement in the long run. A much more sustainable approach is to develop many modes of transportation options to support carpools, public transportation, walking, and biking.

The following table shows the way residents in each comparison community got to work in 2000. The Kannapolis and Cary areas had much higher rates of use of single-passenger vehicles to get to work than the Rockville area. Because of its excellent public transportation system, the Rockville area experiences higher use of buses and trains for commuting. Rochester has enough in-town living options that 5 percent of its working residents walk to their jobs – more than the other comparison communities.

**Means of Transportation to Work, 2000**

	Kannapolis	Cabarrus County	Cary	Wake County	Rockville	Montgomery County	Rochester	Olmsted County
Car, truck, or van:	95%	96%	93%	92%	78%	80%	87%	89%
Drove alone	80%	83%	84%	81%	68%	69%	76%	77%
Carpooled	15%	12%	9%	11%	11%	11%	11%	11%
Public transportation:	1%	0%	0%	1%	14%	13%	4%	3%
Bus or trolley bus	0%	0%	0%	1%	4%	4%	4%	3%
Streetcar or trolley car	0%	0%	0%	0%	0%	0%	0%	0%
Subway or elevated	0%	0%	0%	0%	10%	8%	0%	0%
Railroad	0%	0%	0%	0%	0%	0%	0%	0%
Ferryboat	0%	0%	0%	0%	0%	0%	0%	0%
Taxicab	0%	0%	0%	0%	0%	0%	0%	0%
Motorcycle	0%	0%	0%	0%	0%	0%	0%	0%
Bicycle	0%	0%	0%	0%	0%	0%	1%	1%
Walked	2%	1%	1%	2%	2%	2%	5%	4%
Other means	1%	0%	1%	1%	0%	0%	0%	0%
Worked at home	2%	2%	5%	4%	5%	5%	3%	4%

Source: U.S. Census Bureau

Although Kannapolis community input participants are generally satisfied with accessibility to highways and the airport, they are less satisfied with the maintenance of local roads and are concerned about increasing traffic congestion. Open-ended comments included:

- “The changes and construction have created havoc in Kannapolis streets and roads but once completed, should add jobs for all in Cabarrus and road improvements hopefully will be made with better access to the area.”
- “Road/intersection congestion is increasing at an alarming rate.”
- “The conditions of the roads are poor and they are only spot-fixed to shut the neighborhoods up. They need to be fixed with the future in mind.”
- “Other than the downtown district, highway/street maintenance is virtually non-existent. “

**Online Survey Responses: Transportation**

	Above Average	Average	Below Average
Condition of highway and roads	28%	39%	33%
Accessibility & adequacy of highway & road network	49%	30%	22%
Accessibility of air transportation	44%	37%	18%

**Local leaders need to understand that transportation decisions have a significant and long-term impact on land use and patterns of growth. The Kannapolis and Cabarrus County area will need a comprehensive transportation plan to handle the increased traffic and commuting to the area as a result of NCRC. This plan will need to consider multiple modes of transportation and long term investments, as well as move the area towards addressing its air quality non-attainment problems. Local governments and agencies will also need to work more closely with Charlotte/Mecklenburg County and other regional partners in developing a**



regional transportation system. The significance of the NCRC project may be able to accelerate development of the UNC-Charlotte/Concord Mills bus rapid transit line, as well as extend the line into Kannapolis.

## Water/Sewer Infrastructure and City Services

Physical infrastructure, such as water and sewer, needs to be able to handle growth. Certain biotechnology laboratory and manufacturing operations also need access to a reliable supply of water. Community input participants seem generally satisfied with government services, but expressed some concern about water/sewer capacity and rates. Water capacity has been an issue for Kannapolis in the recent past. Kannapolis Lake is the city’s primary source of drinking water, with secondary sources of raw water from Lake Don T. Howell in Cabarrus County and Second Creek in Rowan County. Kannapolis also buys water from Salisbury and Concord and is pursuing additional interbasin transfers from the Catawba and Yadkin Rivers. Open-ended comments about water and sewer included:

- “The county better get control of its tax rates and Kannapolis City needs to reduce and roll back its water and sewer rates. They have tripled in the eight years I have lived here...if the trend continues I will consider moving!”
- “I live in the Priceton subdivision. We don’t have city sewer. I believe this would help the city of Kannapolis as well as the surrounding subdivisions.”
- “We need to make a concerted effort to reinvest in our aging infrastructure.”
- “Need more water capacity for the city and for the county.”

### Online Survey Responses: Infrastructure

	Above Average	Average	Below Average
Capacity of water/sewer	46%	31%	12%
Quality of government services (police, fire, parks, etc.)	62%	28%	5%

The following table shows water and sewer rates for Kannapolis and the comparison communities. Both water rates and sewer rates are more expensive in Kannapolis than the comparison communities, although in some cases the base charge is higher in the comparison communities. Rates in Kannapolis are related to the cost of providing alternative water sources during the drought and investments in new lines to encourage growth.

**Water and Sewer Rates**

	<b>Kannapolis</b>	<b>Cary</b>	<b>Rockville</b>	<b>Rochester</b>
Water Rates (per 1,000 gallons)	\$5.40	\$3.28 up to 5K gallons, \$3.75 for 5K-8K gallons, \$5.33 for 8K-23K gallons	\$1.62 up to 12K gallons, \$2.33 for 12K-24K gallons	\$0.88
Base Charge	\$3.30	\$3.07 for 5/8" meter; \$26.51 for 2" meter	\$2.00 for 5/8" meter; \$16.00 for 2" meter	\$5.01 for 5/8" meter; \$34.89 for 2" meter
Sewer Rates (per 1,000 gallons)	\$5.30	\$4.86	\$3.63	\$1.89
Base Charge	\$3.80	\$3.07 for 5/8" meter; \$26.51 for 2" meter	Included with water base rate	\$5.80

Source: City of Kannapolis, Town of Cary, City of Rockville, City of Rochester

**The water and sewer infrastructure in Kannapolis and in the region will need to keep up with demands from population growth and businesses. The costs of water and sewer put Kannapolis at a slight disadvantage relative to the comparison communities, but this is just one of many factors that potential firms and residents consider when choosing a new community.**

**Telecommunications**

Telecommunications availability is a necessity for most businesses and workers. In most metro areas these days, cellular phone service and high speed internet are provided by multiple carriers. Responses to the online survey indicate that availability of cellular phone and high speed internet services is satisfactory in the Kannapolis/Cabarrus County area.

**Online Survey Responses: Telecommunications**

	<b>Above Average</b>	<b>Average</b>	<b>Below Average</b>
Availability of cellular phone services	67%	25%	4%
Availability of high speed internet services	65%	21%	6%

The e-NC Authority is the state organization that is continuing the work of the Rural Internet Access Authority to increase internet access for all of North Carolina, especially the rural areas. According to the e-NC Authority, the five North Carolina counties in the Charlotte metropolitan area (including Cabarrus) all had at least 70 percent of households with access to high speed internet service in 2005.<sup>24</sup> High speed internet is readily available in the region.

<sup>24</sup> Source: e-NC Authority. <http://www.e-nc.org/pdf/HSA-Map-2005.pdf>

Another telecommunications service that is increasingly available is wireless internet access. This provides workers and businesses with greater flexibility in having internet access. In many cities, there are localized wireless “hotspots” set up by coffee shops, hotels, and other businesses for use by their customers and employees. A growing number of municipal governments are investing in wireless internet infrastructure citywide or to serve downtown areas. Muniwireless.com identified 58 cities and counties with citywide or regional wireless networks, 32 cities with localized networks (generally downtown), and 69 cities and counties that are in the process of deploying or contracting for wireless service, as of April 2006.<sup>25</sup>

A brief search for publicly accessible wireless hotspots in Kannapolis and Concord resulted in just a few locations – Starbucks (3 existing locations), Holiday Inn Express, Fairfield Inn, Microtel Inn, Panera Bread, and George Washington Bookstore and Tavern. The comparison communities had many more hotspots publicly listed. Wake County has a public safety/municipal use-only wireless network in place. The City of Rockville has recently issued a Request for Expression of Interest (RFEI) to create a wireless hotspot by 2007 in the Town Square area that is currently being developed.

New developments in Kannapolis are implementing wireless internet accessibility. The Kellswater Bridge community will offer wireless internet and fiber to the home, and the NCRC is planning to have a wireless internet across the campus.

A number of universities and private companies have created a consortium to create an advanced telecommunications network that can be used to conduct research. The National LambdaRail (NLR) is a 15,000-mile fiber optic network that runs from New York to Seattle and from Jacksonville, Florida to Sunnyvale, California, with a number of north-south connections between the two east-west lines. The network provides researchers with incredible amounts of bandwidth – 40 lightpaths that can each transmit data at 10 gigabytes per second in parallel. The \$100 million in infrastructure took three years to build and was funded by the member universities and companies. Research projects are already underway using this new network.

The Raleigh-Durham area is part of the NLR infrastructure, as Duke, UNC-Chapel Hill, and NC State University are members and participants. These universities also joined with Wake Technical Community College to create the NC BioGrid, which is a portal and computing grid to support bioinformatics tools and data. UNC-Charlotte has access to NLR via its participation in the North Carolina Research and Educational Network (NCREN), which is a statewide private network for research and education. The D.C. area is part of the NLR network, led by the MidAtlantic Terrascale Partnership, a consortium of research institutions in Virginia, Maryland, and D.C. Rochester is not part of the NLR network. Access to the NLR network is a technology advantage that helps to serve biotech computing needs.

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<sup>25</sup> Source: <http://www.muniwireless.com/reports/docs/April2006summary.pdf>

Technology and telecommunications infrastructure will be extremely important to businesses and employees at NCRC. Plans for creating a free wireless internet zone on the NCRC campus and surrounding area need to be implemented. This will provide convenient access for NCRC visitors, as well as support the cutting-edge technology environment and image of NCRC.

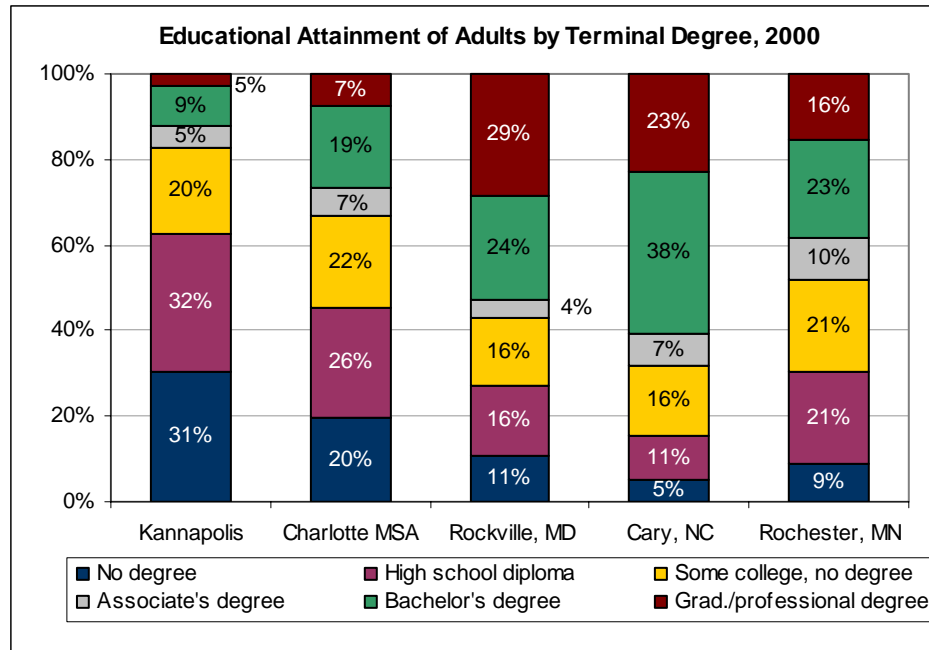
## **EDUCATION AND WORKFORCE DEVELOPMENT**

Underlying the discussion of education and workforce development as it relates to the North Carolina Research Campus is a number of concepts. At the K-12 levels, a high performing public education system is crucial, because well-educated parents demand it, and because graduates need to be prepared to take jobs or further their education in science, technology, and medicine. Higher education serves to train and educate students for jobs in those fields, and research conducted at universities provides the backbone for innovation, commercialization, and the resulting economic benefits. Finally, workforce development initiatives link education and businesses and create learning opportunities for workers at many different skill and knowledge levels.

This section assesses the education systems and workforce development resources of the Kannapolis area and the comparison communities. While the Charlotte region has strong workforce training initiatives, it is up against tough competition in the Raleigh-Durham and Washington, D.C. regions. The Kannapolis area's biggest disadvantage relative to the comparison communities is in its K-12 public education systems, which must be brought up to higher standards if the community is going to attract households of NCRC employees.

### **Educational Attainment**

For communities building their biotechnology-related sectors, having a highly educated and skilled workforce is critical. Kannapolis is at a disadvantage to the comparison communities in educational attainment, as shown in the following graph. A fundamental issue separating Kannapolis from Rockville, Cary, and Rochester is its high proportion of adults without a high school diploma – nearly one third. Furthermore, only 14 percent of Kannapolis' adults hold at least a bachelor's degree – less than half of the proportion in Rochester and only about one-fourth the proportions in Cary and Rockville. Cabarrus County as a whole had slightly better educational attainment levels – 78 percent with a high school diploma and 19 percent with a bachelor's degree. Kannapolis' educational attainment figures are not unlike other communities formerly dependent on traditional manufacturing. However, for the Kannapolis area to be a competitive community in biotechnology it must build a more competitive workforce.

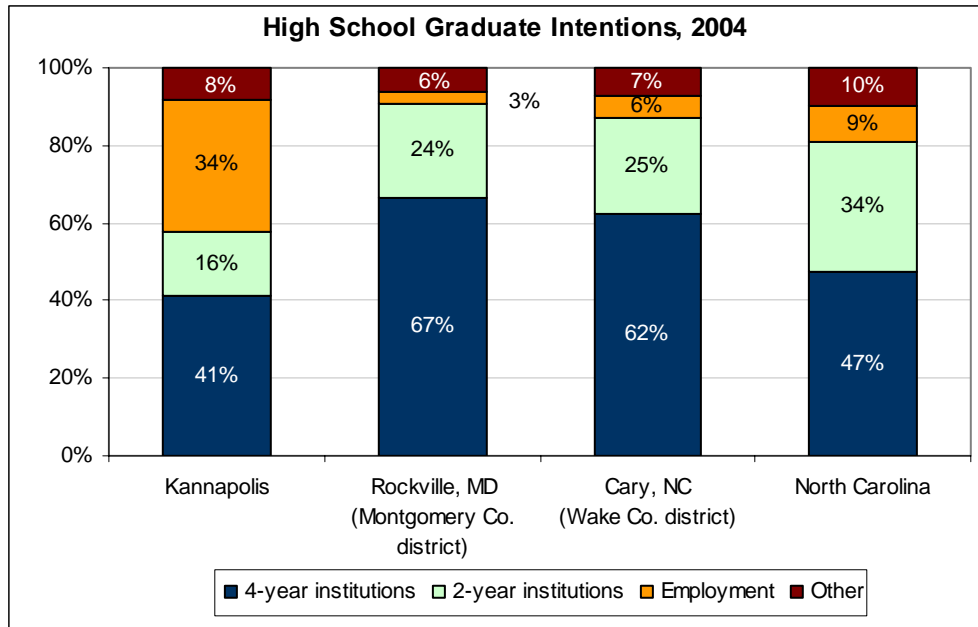


Source: U.S. Census Bureau

More current data on planned educational attainment can be gathered through high school exit interviews. These interviews conducted of graduating high school students provide information about their next steps beyond high school. The results of these interviews can help community leaders gauge future labor supply and quality.

As shown in the following graph, a smaller proportion of Kannapolis' graduating high school students in 2004 planned to attend a two- or four-year institution of higher education (58 percent) than in Cabarrus County (75 percent), Rockville (Montgomery County school district, 91 percent), Cary (Wake County school district, 87 percent), or the state (81 percent).<sup>26</sup> As Kannapolis' economy shifts away from traditional manufacturing and toward biotechnology opportunities, expectations of high school students must also shift. Local high-wage jobs will increasingly require advanced training and at least a two-year degree.

<sup>26</sup> Data for Rochester, Minnesota was unavailable. The Minnesota Department of Education does not collect any data from graduating high school students about their post-graduation plans.



Source: North Carolina Public Schools "Statistical Profile 2005," Montgomery County Senior Exit Survey Class of 2004 (published in 2005)

Note: "Other" includes military, trade school programs less than 2-years and other plans

**Because of the community's lower educational attainment levels, the North Carolina Research Campus' initial workforce needs will largely be filled by new workers drawn to the area by the job opportunities. A highly skilled and educated workforce will be an important factor in growing and sustaining Kannapolis' biotechnology sector. Most jobs in biotechnology require advanced training. Kannapolis area schools should vigorously promote higher educational opportunities available to students after graduation. The districts should make internship and apprentice programs in math and science available to high school students as well to promote linkages between education and employment in Kannapolis.**

## K-12 School Performance and Investments

The quality of a community's public school system underpins the quality of its workforce. Communities must ensure that its schools are equipping students with the skills necessary to work in key local business sectors. The North Carolina Research Campus will draw many professionals to the area that will likely have the highest expectations for Kannapolis' schools. Strong and attractive communities typically place heavy investment in their youth and their public school systems.

Per pupil expenditures (PPEs) are often used as an indicator of school investments. Total per pupil expenditures in Kannapolis and Cabarrus County for the 2003-2004 academic year were lower than amounts spent in the comparison communities and the state, although this is partially related to the higher cost of living in the comparison communities. Lower PPEs can indicate a lack of investment in school systems and a community's youth. However, higher PPEs do not necessarily

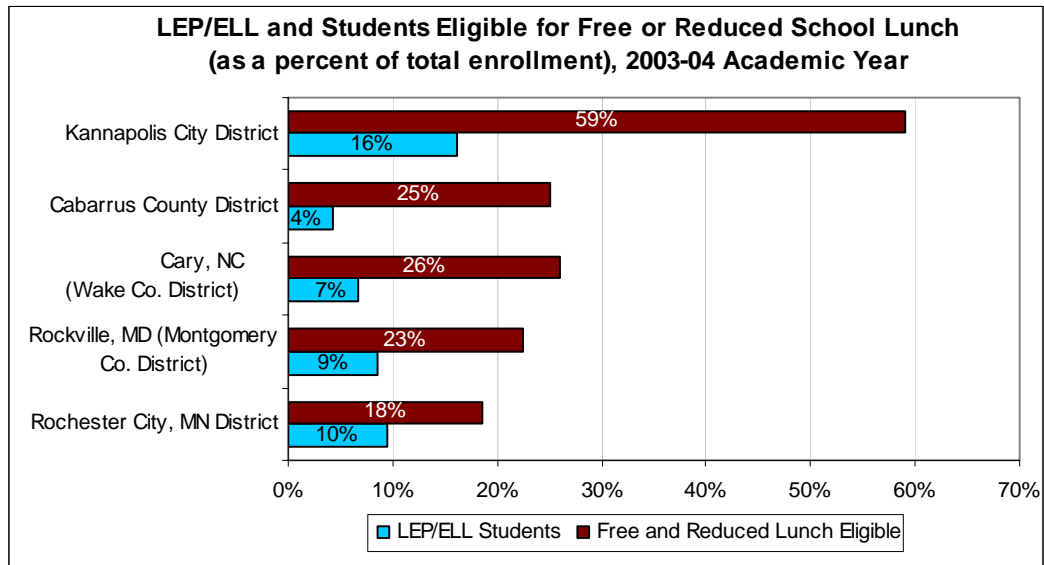
implicate higher quality schools; it is costlier to teach students who come into the school system with special needs. Examining each district's special-needs student populations and their standardized test performance can help gauge whether current PPEs are giving students the resources they need to succeed.

**Total Per Pupil Expenditures for the 2003-04 Academic Year**

	2003-04	Change since 1999-2000	
		Amount	Percent
Kannapolis City District	\$6,728	\$744	12.4%
Cabarrus County District	\$6,312	\$604	10.6%
Cary, NC (Wake Co. District)	\$6,989	\$765	12.3%
Rockville, MD (Montgomery Co. District)	\$10,994	\$2,031	22.7%
Rochester City, MN District	\$7,120	\$631	9.7%
North Carolina	\$7,006	\$726	11.6%

Source: North Carolina Public Schools Statistical Profiles 2001-2005 and the National Center for Education Statistics, Maryland Department of Education, and Rochester Public Schools

The following graph shows the percentage of students who are limited in their English proficiency (LEP) or who are English language learners (ELL), and the percent who are eligible to take part in the federal free or reduced school lunch program. More than half of Kannapolis City District students qualify for a free or reduced cost lunch (59 percent), more than twice the proportions in the Cabarrus County District and the comparison communities. Kannapolis also has the highest proportion of LEP/ELL students.

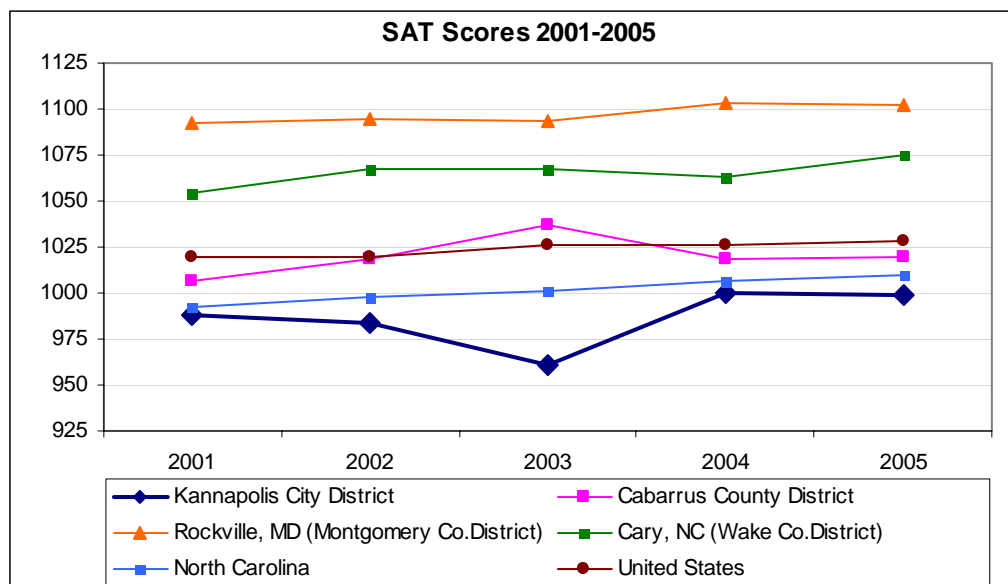


Source: National Center for Education Statistics  
 Note: LEP/ELL stands for Limited English Proficient/English Language Learners



Kannapolis' high proportion of special needs students and its low PPE have affected average SAT scores. As shown in the following graph, Kannapolis' average SAT scores have lagged behind those of Cabarrus County, Cary, Rockville, and the state for the past five years.<sup>27</sup> Although Cabarrus County scores have been higher than the state average, they are still lower than the national average and significantly lower than averages for Wake County and Montgomery County.<sup>28</sup> Wake and Montgomery have SAT scores that have been consistently higher than the national average.

These numbers help clarify Kannapolis' low per pupil expenditure figure. Current funding for Kannapolis City Schools is inadequate, particularly given its high proportion of special needs students. Funding must be increased so Kannapolis students can excel in the classroom and beyond. At current levels, the community is under-investing in its children and, by extension, the community's future workforce.



Computer literacy is a crucial skill needed to perform many jobs in today's technology-driven economy. The availability of computers and internet access in schools is an indicator of a community's investment in technology education. Kannapolis' computer availability for students is better than that offered in Cabarrus County schools. However, students across the state and in Cary (Wake County district) have better access to computers and the internet in schools than Kannapolis

<sup>27</sup> SAT scores are not available for Rochester because the ACT is generally the preferred college entrance exam in Midwestern states. In 2005, Minnesota's students had the highest average ACT scores in the country at 22.3 compared to 21.0 in Maryland, and 20.2 in North Carolina. Rochester Public Schools report their district wide ACT average score at 23.6, indicating relatively high performance on this standardized test.

<sup>28</sup> In 2005, 65% of Cabarrus 12<sup>th</sup> graders took the SAT, compared to 79% in Wake County, 35% in Kannapolis City, about 80% in Montgomery County, Maryland, and 49% in the U.S.

and Cabarrus County students. This too points to underinvestment in Kannapolis and Cabarrus County schools.

**Computer Availability in North Carolina Public Schools, 2004-05**

	<b>Students per Computer</b>	<b>Students per Internet-Enabled Computer</b>
Kannapolis City District	3.78	4.27
Cabarrus County District	4.03	4.35
Cary, NC (Wake Co. District)	3.09	3.15
North Carolina	3.33	3.53

Source: North Carolina Department of Public Instruction, Educational Technology Implementation & Planning

As a state, North Carolina lags behind Minnesota and Maryland in graduation rates. *Education Week*, which recently published a report comparing graduation rates in each state as well as the 50 largest districts in the U.S., showed North Carolina’s graduation rate in 2002-2003 to be 66.2 percent, compared to 74.4 percent in Maryland and 79.0 percent in Minnesota.<sup>29</sup> The Wake County and Montgomery County school districts in particular have done very well. These districts had the 2<sup>nd</sup> and 4<sup>th</sup> highest graduation rates (82.2% and 81.5%) of the 50 largest U.S. districts, respectively.<sup>30</sup>

North Carolina categorizes its public schools based on the percentage of students performing at their grade level and achieving their expected learning. In Kannapolis, all seven schools had at least 80 percent of their students testing at or above grade level for the 2004-05 school year. This indicates that Kannapolis schools have students who are highly capable of learning and achieving in the classroom. However, community leaders must raise the bar in terms of student expectations.

**Online Survey Responses: Pre-K and K-12 Education**

	<b>Above Average</b>	<b>Average</b>	<b>Below Average</b>	<b>Don't Know</b>
Quality of pre-K programs	32%	25%	6%	39%
Availability of pre-K programs	28%	22%	10%	40%
Quality of K-12 public schools	41%	29%	12%	18%

A large number of respondents to the online survey were not aware of the quality or availability of pre-K programs in the area. This indicates a potential need to inform newcomers about pre-K options and continue to expand and improve those options. Despite the test scores in Kannapolis and Cabarrus County being lower than the

<sup>29</sup> Source: *Education Week*, “Diplomas Count”, June 2006, <http://www.edweek.org/media/ew/dc/2006/41s-dc-patterns.pdf>.

<sup>30</sup> Rochester and Cabarrus County were not among the 50 largest districts and therefore did not make the list. Charlotte-Mecklenburg did make the list – it was ranked 26<sup>th</sup> with a graduation rate of 56.0 percent.

comparison communities, respondents to the online survey gave fairly positive rankings for the quality of the K-12 schools. Those who chose to make open-ended comments were less positive:

- “Schools are suffering with over-crowdedness.”
- “I feel AL Brown has the weakest reputation – mostly due to the diversity of students. However, our elementary is excellent.”
- “As a former employee of Kannapolis City Schools, I believe that the school district goes above and beyond the current larger school districts in the area.”
- “Educational programs that help prepare our youth for the global future need to be progressive, encouraging inquiry-based approaches and personal investigation of science, history, literature, political issues, and philosophies...Questioning of the status quo in Kannapolis, and in the schools especially, is not welcome. How can our schools grow and continue to improve and meet our future needs if the vested interests in our community are not open to the possibility of change?”
- “Excellent private schools in the region as well.”

**Kannapolis and Cabarrus County must increase investments in their public school systems and improve student performance. Kannapolis’ higher proportion of special needs students indicates that the systems need more funding to provide the resources necessary for all students to excel and achieve in the classroom. In order to have a K-12 system more competitive with Cary, Rockville, and Rochester, Kannapolis and Cabarrus County must improve resources available to both their teachers and students.**

## **Advanced K-12 Programs**

Magnet and other types of customized programs offer additional learning opportunities for students. The North Carolina School of Science and Math is delivering distance learning to the A.L. Brown High School in Kannapolis. The School for Environmental Studies in Cabarrus County is a magnet program for grades 5-8 (63 students in 2004-2005) that focuses on the study of air, water, land, space, energy and living systems. However, in 2004-2005, its students in grades 5, 6, and 7 had lower reading and math scores than the district average.<sup>31</sup> Cabarrus County also offers some limited resources for gifted students, ranging from a few hours a week in a small group session at the elementary level to honors and advanced placement (AP) courses at the high school level. These types of programs are the minimum that should be expected of a school district.

### **Rockville**

Rockville has high expectations of its students and has shown so by creating magnet programs and specialized academies that foster accelerated learning in intensive learning environments. For example, magnet programs in science, mathematics,

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<sup>31</sup> Source: Public Schools of North Carolina. 2004-2005 Report Card.  
<http://www.ncreportcards.org/src/distDetails.jsp?pYear=2004-2005&pLEACode=130>.

and computer science at the high school level aim to promote critical thinking and problem solving skills through independent and collaborative research. Many high schools in the district also offer less intensive “academy” options which allow students to develop skills of interest in small learning communities. Academy focus areas include entrepreneurship; human service professions; international studies; science, math and technology; and leadership.

### **Cary**

Cary also offers advanced learning opportunities to its best and brightest high school students. Wake County Public School System just introduced an innovative program called Wake’s Early College of Health and Sciences. Students attending this school complete accelerated courses, allowing them to graduate high school with not only a diploma, but also with an associates degree. Students completing the Early College of Health and Sciences program will be eligible, in most cases, to enter four-year universities as college juniors. The Wake County Public School System also has a magnet program similar to those offered in Rockville called the Center for Leadership and Technology. This magnet school provides a rigorous learning environment for students interested in the humanities as well as math, science, and technology.

### **Rochester**

In addition to having accelerated and honors classes, the Rochester Public School System provides part-time specialists at each school to work with gifted and talented students. The system also offers independent study, high school mentorships, and dual credit opportunities.

Because of the sheer size of their public school systems, Rockville and Cary have both the capacity and the demand needed to offer such programs. The 2003-04 academic year enrollments for Montgomery and Wake counties were 139,201 and 113,765, respectively. These numbers dwarf enrollments in Rochester (22,164), Cabarrus County (26,385), and Kannapolis (4,525). However, Kannapolis and Cabarrus County should strive to offer specialized academies and advanced course options to both increase student expectations and to engage students in its emerging biotech industry.

**In order to develop its programming capacity, Kannapolis and Cabarrus County Schools should explore partnering with each other and area technical and community colleges to increase options available to students. Because of the importance of the NCRC, particular focus should be placed on creating specialized math and science programs that promote critical thinking and teamwork through research.**

## **Linkages to Higher Education**

Institutions of higher education are important assets for building a workforce, conducting innovative research, and creating new knowledge. The research centers that Duke University, NC State University, and the University of North Carolina’s

Chapel Hill and Charlotte campuses will bring will be important additions to the North Carolina Research Campus, Kannapolis, and the region.

Critical linkages exist between higher education institutions, research and innovation, and businesses. The NCRC will bring research, innovation, and new businesses to Kannapolis. It will also bring the presence of many top university research centers. The primary focus of the university presence will be on research rather than academic/educational opportunities for local residents and workers.

The following table shows the total enrollments and the number of PhDs and first-professional degrees granted at major universities within 60 miles of Kannapolis and the comparison communities. Compared to Rockville and Cary, Kannapolis is at a disadvantage because, currently, there are limited opportunities for residents to get advanced degrees locally – particularly degrees related in fields related to biotechnology.

While UNC-Charlotte offers PhD programs in biology, health sciences, and mathematics, its programs are relatively new and small. Wake Forest University is farther away from Kannapolis, but offers a greater variety of PhD programs largely due to its prestigious medical school. Programs include biology, biochemistry, biomedical engineering, chemistry, microbiology and immunology, and molecular genetics. However, these two institutions combined granted only 88 PhDs in 2005 compared to 1,079 granted at universities near Cary and 1,097 at the major research universities near Rockville. Rochester is also at a competitive disadvantage. The Mayo Clinic is the only institution in Rochester with advanced degree programs in science-related fields, and its graduate and medical schools are very small. Just 24 PhDs were granted in 2005 at the Mayo Graduate School. However, the Mayo Clinic's international reputation helps draw some of the medical field's top researchers to Rochester to work and study there.

**Enrollment and Degrees Granted at Major Universities and Institutions within 60 Miles of  
Kannapolis, Cary, Rochester, and Rockville**

		Total Enrollment, 2005	PhDs, 2005		First-Professional Degrees, 2005	
			Total	In Math and Science Based Programs	Total	In Health Professions & Related Clinical Sciences
<b>Kannapolis</b>	<i>Total</i>	26,350	88	69	271	106
	UNC - Charlotte	19,846	40	26	0	0
	Wake Forest University	6,504	48	43	271	106
<b>Cary</b>	<i>Total</i>	69,605	1,079	600	1,153	528
	Duke University	12,770	277	164	470	72
	NC State -Raleigh	29,957	343	224	73	73
	UNC- Chapel Hill	26,878	459	212	610	383
<b>Rochester</b>	<i>Total</i>	472	24	24	41	41
	Mayo Graduate School	307	24	24	0	0
	Mayo Medical School	165	0	0	41	41
<b>Rockville</b>	<i>Total</i>	77,415	1,097	579	1,483	556
	Georgetown University	13,233	80	26	810	154
	Howard University	10,623	114	30	525	254
	Johns Hopkins University	18,626	387	286	123	123
	University of Maryland	34,933	516	237	25	25

Source: National Center for Education Statistics, IPEDS database

Note: Math or science based programs include biological and biomedical sciences; computer and information sciences; engineering; engineering technologies; health professions and related clinical sciences; science technologies; mathematics and statistics; and physical sciences. First-Professional Degrees "total" include programs in: chiropractic (D.C. or D.C.M.), dentistry (D.D.S. or D.M.D.), law (L.L.B. or J.D.), medicine (M.D.), optometry (O.D.), osteopathic medicine (D.O), pharmacy (Pharm.D.), podiatry (D.P.M., Pod.D., D.P.), theology (M.Div., M.H.L., B.D.), or ordination veterinary medicine (D.V.M.).

The comparison communities have all developed linkages between their institutions of higher learning and their business communities. Often times, these universities have stepped up to provide a needed service within the local biotech industry such as workforce training and networking opportunities. The following table outlines the key linkages established in each community. Linkages in Cary and Rockville are particularly strong because their biotech industries are significant and already well developed.

### Linkages Between Higher Education and Biotechnology

Region	Higher Education and Biotech Linkages
Charlotte	<ul style="list-style-type: none"> <li>▪ The \$1 billion <b>North Carolina Research Campus</b> in Kannapolis will include research centers from several North Carolina universities: Duke, NC State, UNC-Chapel Hill, and UNC-Charlotte. The research originating from the NCRC is expected to draw biotech companies to the Kannapolis area.</li> <li>▪ The <b>North Carolina Biotechnology Center</b> is a non-profit government-sponsored alliance which works to develop the state's biotech industry. The center is opening its fifth regional office at the Charlotte Research Institute on UNC-Charlotte's campus.</li> <li>▪ UNC-Charlotte is constructing a \$35 million <b>Bioinformatics Center</b>, scheduled for completion in 2008. This will not only expand the region's biotechnology research infrastructure, but the Center will also allow UNC-Charlotte to expand its degree offerings in bioinformatics.</li> </ul>
Raleigh-Durham	<ul style="list-style-type: none"> <li>▪ The region's research universities have strong relationships with <b>Research Triangle Park</b> and local biotechnology companies through their faculty and administration.</li> <li>▪ Duke identified a need to teach the scientific principles of biotechnology to business professionals in pharmaceutical sales and related lines of work. In 1994, Duke began offering a week long course called "<b>Biotechnology for Business</b>" which offers intensive seminars on topics like genetics, molecular biology, pharmacology, and bioinformatics.</li> <li>▪ The <b>Carolina Student Biotechnology Network</b> is a non-profit spin-off organization from UNC-Chapel Hill which builds networking and career linkages between the region's students and its biotech industry. The organization's annual TEAM-UP event connects Research Triangle Park's angel investors with entrepreneurial graduate students from Duke, UNC-Chapel Hill, and NC State.</li> <li>▪ North Carolina State University is developing its <b>Centennial Campus</b>, part of which will include the Centennial Biomedical Campus. It will be anchored by the College of Veterinary Medicine and connect the university to businesses and government agencies.</li> </ul>
Washington, D.C.	<ul style="list-style-type: none"> <li>▪ <b>Montgomery College's High Technology and Science Center</b> allows County residents to take advantage of programs and courses integrally related to the high technology industries of Montgomery County, especially biotechnology.</li> <li>▪ Similar to the organization in Chapel Hill, the <b>Johns Hopkins' Biotech Network</b> is a student-run organization that engages students of all levels, faculty, alumni, and biotech professionals in career networking opportunities.</li> <li>▪ <b>Johns Hopkins' Advanced Biotechnology Studies Program</b> provides master's degrees in bioinformatics, biotechnology, and bioscience regulatory affairs, available on the Montgomery County Campus (at the Shady Grove Life Sciences Center).</li> <li>▪ The <b>University of Maryland's Center for Advanced Research in Biotechnology</b> is located in Rockville. The university also has 4 other Biotechnology Institute centers in Baltimore and its College Park campus.</li> <li>▪ Through a \$30 million gift, the University of Maryland is establishing a new <b>bioengineering department</b> and degree program.</li> </ul>
Rochester	<ul style="list-style-type: none"> <li>▪ The <b>Minnesota Partnership for Biotechnology and Medical Genomics</b> is a partnership between the Mayo Clinic and the University of Minnesota. The state has invested over \$20 million to expand research facilities at the Mayo Clinic so that it can take a lead role in the partnership. The partnership is expected to have an estimated economic impact of \$290 million annually by 2010. The private sector's BioBusiness Alliance of Minnesota is a key stakeholder in the project. Their 20-year vision for the state's biotech industry helped form this academic research alliance.</li> </ul>

**The comparison communities all have strong world-renowned higher education institutions very close by. While its research programs and facilities are not as large, UNC-Charlotte is**

increasing its research capacity. The NCRC is a unique opportunity to bring together top universities from across the state. Although the focus of these university facilities will be research, opportunities to offer academic and educational programs should be pursued. These could range from distance learning opportunities to short overview courses for lawyers or data analysts.

## Workforce Development Resources

As Kannapolis’ economy moves toward biotechnology and away from textile manufacturing, it will be critical to have appropriate and accessible workforce development resources available to workers and employers. Kannapolis and Cabarrus County must ensure that the skill sets of their workers match those demanded by new employers.

**Online Survey Responses: Workforce**

	<b>Above Average</b>	<b>Average</b>	<b>Below Average</b>
Quality of the workforce	26%	47%	23%
Availability of the workforce	47%	38%	9%

While respondents to the online survey were generally positive about the availability of the Kannapolis area workforce, they were less so about the quality of the local workforce. Although some interviewees described workers as loyal, hardworking, and dependable, many of those who were previously at Pillowtex also lack the problem solving, critical thinking, and computational skills that would be needed for more advanced positions. Open-ended comments included:

- “Sometimes it is difficult to find quality employees that have the skills and desire to perform the tasks required.”
- “The workforce in Kannapolis is below average because of the popular belief that the textile industry would be here forever.”
- “Overall the workforce is available, trainable, and loyal. However, there are gaps in the educational level of many in the existing workforce.”
- “The workforce is there, however many have grown complacent. Many expect higher wages that are not in line with the job they are employed to do.”

Because many local residents lack even a high school degree, Kannapolis’ workforce development strategy must serve two very different groups of workers. On one hand, programs must be put in place to ensure that former Pillowtex employees have the chance to receive training to gain employment related to NCRC opportunities. On the other hand, advanced education and training opportunities should also be available for highly skilled workers who will be relocating to the area to work at the NCRC. For example, those who come to NCRC with a bachelor’s degree may desire to pursue master’s or doctorate level degrees.



### Biotech-Related Workforce Development Efforts

Region	Description
Charlotte	<ul style="list-style-type: none"> <li data-bbox="537 369 1424 548">▪ <b>Rowan-Cabarrus Community College (RCCC):</b> Extensive re-training program for former Pillowtex and other textile workers. Industrial engineering technology program has a concentration in biotech. Has collaborative agreement with Gaston and CPCC to develop an associate's degree program in biotech. Considering other new biotech programs and partnerships with other colleges. Recently hired a biotech director to plan a biotech curriculum, infuse biotech in current programs, and increase awareness of biotech requirements.</li> <li data-bbox="537 554 1424 617">▪ <b>Centralina Workforce Development Board:</b> Worked on assisting former Pillowtex workers. Working closely with RCCC to prepare for NCRC.</li> <li data-bbox="537 623 1424 718">▪ <b>Centralina Economic Development Commission (CEDC):</b> The CEDC Bioinformatics Committee will provide education about bioinformatics and determine the needs of this fast-changing industry, including workforce development.</li> <li data-bbox="537 724 1424 819">▪ <b>BioWork:</b> A 128-hour introductory course in manufacturing technology and science, focused on biotechnology, chemical, and pharmaceutical manufacturing. Created by NC Biotech Center and offered for the first time at the Cabarrus Business and Technology Center.</li> <li data-bbox="537 825 1424 972">▪ <b>BioNetwork:</b> A state-wide initiative to bring North Carolina's community college course offerings in line with the state's economic agenda of expanding the biotech industry. The Network's BioEd Center (housed in Gaston College, outside of Charlotte) is leading this effort, and has worked to develop new biotech courses that teach skill sets desired by the biotech businesses.</li> <li data-bbox="537 978 1424 1125">▪ <b>National Center for the Biotechnology Workforce Grants:</b> In 2005, eight community colleges in North Carolina each received a \$160,000 grant from the NCBWG to create job-training programs in biotechnology. Two of them, Mitchell Community College in Statesville, and Davidson County Community College in Lexington, are about 35 miles from Kannapolis.</li> <li data-bbox="537 1131 1424 1203">▪ <b>Community Colleges:</b> Associate degree programs in biotechnology and nanotechnology are available from Forsyth TCC in Winston-Salem.</li> </ul>
Rochester	<ul style="list-style-type: none"> <li data-bbox="537 1209 1424 1272">▪ <b>Mayo Clinic:</b> Provides workforce development training in a number of the health industry's related fields.</li> <li data-bbox="537 1278 1424 1341">▪ <b>Rochester Community and Technical College:</b> Offers comprehensive programs in health care, clinical research, and laboratory science.</li> <li data-bbox="537 1348 1424 1434">▪ <b>Rochester Public Schools:</b> The School Board approved the creation of a biotechnology engineering course as part of its Project Lead the Way program to increase interest in engineering.</li> </ul>

Region	Description
Raleigh-Durham	<ul style="list-style-type: none"> <li data-bbox="540 331 1416 426">▪ <b>North Carolina Biotechnology Center:</b> This statewide government sponsored organization is headquartered in Research Triangle Park. The Center works with businesses to assess their workforce needs. It also helps train workers through the state's BioNetwork courses offered at local community colleges.</li> <li data-bbox="540 453 1416 548">▪ <b>N.C. Department of Commerce Division of Employment and Training:</b> This agency is spearheading the effort to align and coordinate workforce and economic development efforts in the Research Triangle Region, particularly those efforts concentrating on biotech and other targeted industries.</li> <li data-bbox="540 575 1416 669">▪ <b>BioWork:</b> A 128-hour introductory course in manufacturing technology and science, focused on biotechnology, chemical, and pharmaceutical manufacturing. Created by NC Biotech Center and offered at Central Carolina CC, Durham TCC, Johnston CC, Piedmont CC, Wake TCC, and Wilson TCC.</li> <li data-bbox="540 697 1416 768">▪ <b>Durham Chamber of Commerce:</b> Nationally recognized by the U.S. Chamber of Commerce as a model workforce intermediary, particularly for its training programs related to biomanufacturing.</li> <li data-bbox="540 795 1416 867">▪ <b>Biomanufacturing Research Institute &amp; Technology Enterprise (BRITE):</b> The Golden Leaf Foundation awarded \$1.5 million to North Carolina Central University for this Center for Excellence and biotech related programs at the bachelor's, master's, and doctoral levels.</li> <li data-bbox="540 894 1416 989">▪ <b>Biomanufacturing Training and Education Center (BTEC):</b> This facility for hands-on, industry-specific education and training is under construction at NC State. BTEC will be the permanent home of the BioNetwork Capstone Center, which will focus on short-course training of incumbent workers, new hires, and community college students.</li> <li data-bbox="540 1016 1416 1110">▪ <b>Community Colleges:</b> Certificate and associate degree programs in bioprocess technology, bioquality technology, clinical trials, laboratory technology, industrial pharmaceutical technology, and bioinformatics are available from Central Carolina CC, Durham TCC, Johnston CC, Piedmont CC, and Wake TCC.</li> <li data-bbox="540 1138 1416 1253">▪ <b>Wake County Public Schools:</b> The Career and Technical Education program offers courses in biotechnology and agriscience research at the high school level and exploring biotechnology at the middle school level. The Wake Early College of Health and Sciences is beginning to be offered – students graduate with a high school diploma plus associates degree.</li> </ul>

Region	Description
Washington, D.C.	<ul style="list-style-type: none"> <li data-bbox="540 331 1417 478">▪ <b>University of Maryland's Biotechnology Institute (UMBI):</b> The University introduced a biotech workforce-training program earlier this year, which will be based in Rockville at the Institute's Center for Research in Advanced Biotechnology. The Good Manufacturing Practices Training Program is first of its kind in the I-270 corridor. It will provide advanced biotech manufacturing training to both students and industry professionals to improve safety and product quality.</li> <li data-bbox="540 506 1417 600">▪ <b>University of Maryland - Shady Grove:</b> For the first time, students will be able to complete a four-year public education in Montgomery County. One of the first day programs being offered will be in biotechnology, where students will be able to tap into the strong network of biotech activity throughout the Shady Grove Life Sciences Center.</li> <li data-bbox="540 627 1417 722">▪ <b>Johns Hopkins University - Shady Grove:</b> At this Montgomery County location, short 3-month lab courses provide an introduction to biotechnology for working professionals. Students can pursue a Certificate in Biotechnology Enterprise by completing four core courses and two electives.</li> <li data-bbox="540 749 1417 844">▪ <b>Community Colleges:</b> Associate degrees in biotechnology, biomedical engineering technology, biotechnology laboratory technician, and pre-medical technology are available from Montgomery College, Howard Community College, Baltimore City Community College, and the Community College of Baltimore County.</li> <li data-bbox="540 871 1417 961">▪ <b>Montgomery County Public Schools:</b> The Career and Technology Education division allows students to enroll in high school biotechnology and medicine programs that include an internship. The DNA Resource Center at Wootton High School allows teachers, trainers, and researchers to develop lab programs for students.</li> </ul>

The following table outlines key biotech-related workforce development efforts in Kannapolis and the comparison communities. North Carolina has many state-led workforce development initiatives which Kannapolis can capitalize on in the future. Recently, the state allocated tobacco settlement money into an endowment for bioscience research projects. The endowment included \$60 million for biomanufacturing and pharmaceutical workforce development training. Furthermore, the state's *BioNetwork* initiative is working to align course offerings of community colleges with the needs of the state's biotech industry. This will include offering two-year technician degrees and on-line courses in biotechnology in the future.

**Education and workforce development in biotechnology is needed at many different levels and for different audiences. While the number of biotechnology workforce programs available in the Kannapolis area is growing and Rowan-Cabarrus Community College is active in developing new programs, there needs to be more participation at the K-12 levels. Opportunities should be pursued at middle and high school levels to increase career awareness and aptitude in science and biology. To do this, teachers and counselors will also need to be educated. There is strong backing at the state level for biotechnology training and workforce development. Efforts should be made to further develop innovative programs and collaborative partnerships to link education and training to biotechnology careers.**

## INNOVATION AND ENTREPRENEURSHIP

With its combination of universities, businesses, incubators, and venture capital funding, innovation and entrepreneurship are key focuses of the North Carolina Research Campus. There is great potential for the commercialization of research to translate into advancements in the biosciences, formation of high-growth companies, and the creation of high paying jobs. This section provides a brief overview of levels of innovation and entrepreneurial activity in the Kannapolis area and the comparison communities, and then assesses the various types of support for this activity.

### Innovation Capacity

Innovation occurs at the intersection of research and business. The combination of universities, businesses, and government agencies at or near the NCRC has the potential to make finding practical applications of research and commercializing research quicker and easier. Currently, the Charlotte area's limited research capacity puts it at a disadvantage compared to established biotechnology communities.

Highlights of data regarding innovation capacity include:

- Kannapolis lags behind the comparison communities in patent activity. While only six patents were recorded in Kannapolis for 2005, the number of patents awarded in the comparison communities range from 229 in Rockville to 379 in Cary. This is equivalent to 15.6 patents per 100,000 residents in Kannapolis, compared to 323.7 in Rochester and 401.1 in Rockville. As a region, the Charlotte area also lagged behind the comparison community metropolitan areas in patents per 100,000 residents.<sup>32</sup>
- Academic R&D expenditures at UNC-Charlotte are much smaller, in terms of total amount and expenditures per student, than the research universities in comparison communities.<sup>33</sup> However, in terms of the proportion of industry-sponsored R&D funding, UNC-Charlotte was nearly comparable to the Research Triangle universities (9.2% for UNC-Charlotte vs. 11.5% for Duke, NC State, and UNC-Chapel Hill). Johns Hopkins is the top-ranked university in the country for total R&D expenditures (including its Applied Physics Laboratory with \$670 million), and Duke is top ranked in the country for total industry sponsored R&D expenditures.

<sup>32</sup> Patents per 100,000 residents by MSA in 1998 (latest data available): Charlotte-Gastonia-Rock Hill 18.6; Raleigh-Durham-Chapel Hill 76.7; Washington, DC 27.6; Rochester 179.1.

<sup>33</sup> In 2004, total academic R&D expenditures at UNC-Charlotte were \$17.4 million, compared to a combined \$1.2 billion for Duke, NC State, and UNC-Chapel Hill and a combined \$2.1 billion for Johns Hopkins, and the University of Maryland's College Park, Baltimore, Baltimore County, and Biotechnology Institute campuses. The Mayo Foundation in Rochester reported \$351 million in sponsored research expenditures in 2003.

- The Research Triangle and Baltimore area universities are within the top 117 universities for technology transfer activity, based on universities that reported technology transfer activity to the Association of University Technology Managers.
- Durham, Chapel Hill, and Research Triangle Park attracted a combined \$761 million in National Institute of Health (NIH) funding in 2004. Rockville attracted \$276 million and Rochester attracted \$167 million. By comparison, Charlotte attracted just \$5.7 million in NIH awards in 2004. NIH is the largest single source of funding for biotechnology research from the federal government.

**The Research Triangle and Washington D.C./Baltimore areas have long histories as leaders in innovation and research capacity. With the opportunities presented by NCRC and recent growth at UNC-Charlotte, the Charlotte region is gaining momentum in increasing its research capacity and putting itself “on the map” as a hotbed for research and innovation activity. While the Charlotte region has a long way to go, regional, state, and private sector organizations are laying the foundation for making a strong push in this area.**

## Entrepreneurship

Dynamic economies include high levels of entrepreneurial activity. The willingness to take risks and start companies based on new ideas will be an important outcome of NCRC development efforts. It is critical to create an environment that nurtures and supports that entrepreneurial spirit.

While there is no single perfect source of entrepreneurship data, available indicators show that the Charlotte region is quite competitive in terms of its entrepreneurial activity. It is on par with the Raleigh-Durham and Washington, D.C. regions for start-up activity and self-employment.

**Indicators of Entrepreneurial Activity**

<b>Metro Area</b>	<b>Business Starts Per 1,000 Businesses 2001-2006</b>	<b>Change in Number of "Non-Employers" 2002-2004</b>	<b>Non-Farm Proprietorship as a Percent of Total Employment</b>
Charlotte, NC	53.5	15%	15%
Raleigh-Durham-Chapel Hill, NC	53.5	15%	16%
Washington, DC	59.6	12%	15%
Rochester, MN	27.2	9%	16%

Source: Harris InfoSource, U.S. Census Bureau, U.S. Bureau of Economic Analysis

\*The U.S. Census defines non-employers as “businesses that have no paid employees and are subject to federal income tax.” The U.S. BEA defines non-farm proprietorship as “number of sole proprietorships and the number of individual business partners not assumed to be limited partners.”

The fact that entrepreneurial activity in the Charlotte metro area is strong is a positive asset for development of the NCRC. While entrepreneurs and start-ups are likely to come from elsewhere to start their businesses at or near NCRC, they will come to a region that has a competitive degree of entrepreneurial spirit that has already been established. The key is to grow this spirit throughout Kannapolis and Cabarrus County.

## **Support for Innovation and Entrepreneurship**

Innovation and entrepreneurship processes do not occur in an isolated environment. Entrepreneurs and researchers rely on other people and networks to share ideas, find resources, and solve technical or organizational issues. Bringing a business concept to fruition also requires money, and research-intensive activities in biotechnology require large amounts of capital. Organizations, agencies, and networks that provide services including financial assistance, networking, professional development, and operational assistance are part of the support system for innovation and entrepreneurship in a region.

### **Financial Support**

The resources available to finance a new business or expand an existing one are critical to business owners. Entrepreneurs and business owners use a number of different financing methods, depending on the size of their venture and the stage and nature of their business. While high growth biotechnology companies are more likely to seek large infusions of financing such as venture capital and eventually, initial public offerings, personal savings and loans are ways that more traditional small businesses get started.

Venture capital is an important source of finance for high growth companies. A financing firm makes investments in start-up or expanding firms in exchange for an equity position. Banks and commercial lenders are generally not able to accept this form of risk. The following table shows venture capital activity in 2<sup>nd</sup> quarter 2006, the most recent quarter for which complete data are available.<sup>34</sup> While the data shown are for just one quarter, the comparisons of the scale of venture capital activity going on in the four different regions are still applicable.

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<sup>34</sup> No detailed historical data are available publicly from Pricewaterhouse Coopers.

**Venture Capital Activity, 2<sup>nd</sup> Quarter 2006**

Metro Area	Number of Deals	Total Investment (Millions)	Industries
Charlotte	1	\$15	Medical Devices and Equipment
Raleigh-Durham	16	\$117	Biotechnology, Medical Devices and Equipment, Business Products and Services, Telecommunications, Software, Industrial/Energy, Semiconductors, Networking and Equipment, Electronics/Instrumentation, IT Services
Rochester	0	\$0	
Washington, DC - Baltimore	54	\$455	Biotechnology, Medical Devices and Equipment, Consumer Products and Services, Telecommunications, Software, Industrial/Energy, Semiconductors, Healthcare Services, Electronics/Instrumentation, IT Services

Source: PriceWaterhouseCoopers "MoneyTree Survey"

The Washington, DC region had by far the largest venture capital investments, totaling \$455 million in 2<sup>nd</sup> quarter 2006. Biotechnology was the sector with the most investments, with 13 deals. There were five venture capital deals in Rockville, Maryland – four of which were in biotechnology and totaled \$107 million. Minnesota companies attracted nine investments, all of which were in the Minneapolis-St. Paul area.

In North Carolina, 16 of the state's 18 deals went to the Raleigh-Durham area. One of the firms was a Cary biotechnology company for \$1.6 million. The only venture capital deal in Charlotte in 2<sup>nd</sup> quarter 2006 was \$15 million to Alveolus, a medical device manufacturing firm that makes nonvascular stents.

Another source of capital for start-up firms is angel investors. These are individuals who are willing to invest their assets in start-ups, usually through personal contacts or firms in the region where the angels live. Because very few angel investments are publicized, data about angel capital activity in a community are generally not available. However, in metro areas where there are a significant number of angel investors, some groups have formed to bring these individuals together for educational and collaborative purposes. The following table shows angel investment groups in each comparison community. While this is not an exhaustive list, it gives an indication of the strength of angel capital activity in a community. The Rockville area has the greatest number of formalized angel networks of the comparison communities. The Charlotte Area Angel Network called Wed3 is a membership group that seeks to act as "matchmaker" for start-up companies, investors, and real estate developers. The group is regionally focused and appears to meet on a regular basis. The Ben Craig Center at UNC-Charlotte has assembled the Carolina Angel Forum, which meets four times per year to review presentations from entrepreneurs.

### Angel Capital Investment Groups

Community	Angel Capital Groups
Kannapolis	<ul style="list-style-type: none"> <li>▪ Wed3 – The Charlotte Area Angel Network</li> <li>▪ Carolina Angel Forum – Charlotte, NC</li> </ul>
Cary	<ul style="list-style-type: none"> <li>▪ Blue Angel Ventures – Morrisville, NC</li> <li>▪ Angel Investor Retreat (organized by Council for Entrepreneurial Development) – Durham, NC</li> </ul>
Rockville	<ul style="list-style-type: none"> <li>▪ Active Angel Investors – Vienna, VA</li> <li>▪ Chesapeake Emerging Opportunities Club – Columbia, MD</li> <li>▪ Washington Dinner Club – Washington, DC</li> <li>▪ Maryland Technology Funding Network</li> <li>▪ Dingman Center for Entrepreneurship Angel Breakfasts – College Park, MD</li> </ul>
Rochester	<ul style="list-style-type: none"> <li>▪ None publicized</li> </ul>

Source: Angel Capital Association

Although loans are less utilized by high growth companies, they are still a valuable source of business financing for entrepreneurs. The most recognized small business loan is the 7(a) program offered by the U.S. Small Business Administration (SBA). These loans are made by commercial lending institutions and guaranteed by the SBA for the purpose of financing small business activities. The next table shows the total 7(a) program loan activity from 2001 to 2005. While Cabarrus County lags the comparison communities in total number and amount of loans, this is expected since Montgomery and Wake are much larger and more urban counties. Also, Cabarrus' average loan amount is higher than the averages in the comparison communities.

### SBA Loan Activity 2001-2005

County	Number of Loans	Total Loan Amount	Average Loan Amount
Cabarrus	82	\$20,029,526	\$244,263
Montgomery	906	\$130,931,015	\$144,515
Olmstead	150	\$21,063,873	\$140,426
Wake	712	\$128,253,123	\$180,131

Source: U.S. Small Business Association

**The Charlotte region has established avenues for commercial loans, and it is developing its angel and venture capital investment potential. Although it is said that venture capital will find and follow good ideas, Mr. Murdock's plan to establish a \$200 million venture capital fund will certainly make a notable difference in available funding for NCRC biotech-related businesses. The Charlotte region as a whole needs to continue to develop breadth and depth in funding options, not just for biotech companies but also for entrepreneurs who want to start companies to serve NCRC businesses or households. The region's banks and other finance professionals must also become more educated about how biotech businesses work and what their specific funding needs are likely to be.**



**Organizational Support**

Organizational support helps to build the foundation for developing a biotechnology cluster. These organizations operate with varying geographic scopes (local, regional, state, national) and varying purposes. Most of the significant biotechnology-focused organizations are trade organizations focused on policy, advocacy/awareness, professional development, and networking.

The state of North Carolina is a leader in organizational support for biotechnology. The North Carolina Biotechnology Center is the first government-sponsored organization dedicated to developing the biotechnology industry. With a \$13.3 million budget, it is able to provide grants for research, workforce training, economic development, and business education. The Center also serves as an advocate for biotechnology throughout the state and is a go-to organization that brings businesses, universities, and other organizations together. The new regional office being established in Charlotte will provide the region with key support from the Center.

Another notable success is the way that multiple groups, universities, and organizations have been working together to advance biotechnology in North Carolina. While there are a number of biotech initiatives addressing workforce training, education, advancing research, and developing technology infrastructure, these initiatives are fairly well coordinated – a great deal of which is attributable to the N.C. Biotech Center. The comparison communities do not exhibit this level of coordination and cooperation.

**Industry-Specific Support Organizations**

Region	Organization
Charlotte	<ul style="list-style-type: none"> <li data-bbox="532 1226 1412 1402">▪ <b>North Carolina Biotechnology Center</b> – A statewide, state-funded organization to support biotechnology research, education, and businesses. Headquarters are in the Research Triangle Park, and a regional office is being established in Charlotte. In 2005, the Center awarded 96 grants totaling \$4.5M for research, business education, workforce training, and regional economic development. The Center also helps businesses with financing, technology transfer, technology development, business plans, networking, and strategic partnerships.</li> <li data-bbox="532 1423 1412 1522">▪ <b>North Carolina Genomics and Bioinformatics Consortium</b> – Created by the NC Biotech Center to bring together universities, businesses, government, and non-profits to focus on genomics and bioinformatics. The Consortium continued work on the NC BioGRID and partnered to put on a Computational Biotechnology Conference.</li> <li data-bbox="532 1543 1412 1669">▪ <b>NCBIO</b> – Statewide trade association affiliated with the national Biotechnology Industry Organization. NCBIO works on public policy at local, state, and federal levels. NCBIO has formed a few membership working groups, including the Biomanufacturers Forum and the Emerging Companies Forum, and is considering creating forums for its members in the pharmaceutical, agricultural and medical device sectors.</li> <li data-bbox="532 1690 1412 1810">▪ <b>Regional Bioinformatics Network</b> – A group assembled by the Centralina COG's "Centralina Economic Development Commission" (formed to implement a regional economic development strategy). The purpose of the group is to support the cluster by providing networking and educational events for those involved in bioinformatics to connect and providing a voice for bioinformatics work in the Charlotte region.</li> </ul>

Region	Organization
Raleigh-Durham	<ul style="list-style-type: none"> <li>▪ <b>North Carolina Biotechnology Center</b> – See above.</li> <li>▪ <b>North Carolina Genomics and Bioinformatics Consortium</b> – See above.</li> <li>▪ <b>NCBIO</b> – See above.</li> </ul>
Washington, D.C.	<ul style="list-style-type: none"> <li>▪ <b>MDBIO</b> – A division of the Technology Council of Maryland. Its main functions are business development, financing and assistance, networking, professional development, advocacy, and K-12 education/awareness.</li> <li>▪ <b>Maryland Technology Development Corporation</b> – A statewide, state-funded organization to fund technology transfer and development programs and entrepreneurial business assistance. Also provides funding for incubator feasibility studies and incubator development.</li> <li>▪ <b>VaBIO</b> – A statewide trade association. Its focuses are education and professional development for its members, public policy at the local, state and federal levels, and increasing public awareness.</li> </ul>
Rochester	<ul style="list-style-type: none"> <li>▪ <b>BioBusiness Alliance of Minnesota</b> – Formed in early 2005 as a network for businesses, universities, health care, and government. The organization is still in its infancy – to date, it has completed a statewide assessment of biobusinesses.</li> <li>▪ <b>Life Sciences Alley</b> – A merger of MNBIO and Medical Alley in 2005. This trade organization focuses on education and training, networking, public policy, and advocacy.</li> <li>▪ <b>Minnesota Partnership for Biotechnology and Medical Genomics</b> – A new collaboration among the state, University of Minnesota, and the Mayo Clinic. The Partnership funded a recently completed research facility at the Mayo Clinic in Rochester, which includes collaborative laboratory space, offices, and meeting space.</li> </ul>

Entrepreneurs need effective personal contacts to help get their businesses off the ground. While many of these contacts are made through informal networks, formal networks provide another avenue for entrepreneurs to make contacts. Networks serve to link entrepreneurs with peers, mentors, and other people who can share their experiences. Through an effective network, entrepreneurs can seek assistance with start-up issues that include funding, business plans, operation and management, and technical assistance. Networks that are run by and for entrepreneurs are most effective for creating entrepreneurial spirit and a “culture of entrepreneurship” in a region.

The most significant formalized entrepreneur networks are shown in the following table. Most are focused on technology or high growth firms. Of the comparison communities, the Washington, D.C. area has the strongest entrepreneur networks, while the Rochester area does not have any formalized networks. The Council for Entrepreneurial Development serves as an influential advocate for entrepreneurs; its work is mostly within the Raleigh-Durham area or at the state level. Charlotte does not appear to have particularly active entrepreneur networks; this is an area where the Charlotte region and Cabarrus County should focus on for improvement.

### Entrepreneur Networks

Region	Organization
Charlotte	<ul style="list-style-type: none"> <li>▪ <b>Business Innovation and Growth Council (BIG)</b> – Formerly part of the Charlotte Chamber, split off as its own organization in April 2006. Its focus is on high growth entrepreneurs and envisions providing support, resources, and access for its members. It is launching a new website and getting its programs in place.</li> <li>▪ <b>Entrepreneurs' Organization</b> – (Formerly the Young Entrepreneurs' Organization.) A nationwide peer-learning and professional development organization. The Charlotte chapter has 36 members.</li> </ul>
Raleigh-Durham	<ul style="list-style-type: none"> <li>▪ <b>Council for Entrepreneurial Development (CED)</b> – Founded in 1984 to identify, enable and promote high growth entrepreneurs in the Research Triangle area and North Carolina. Provides programs and services in education, capital formation, mentoring, and communications. It is now the largest entrepreneurial support organization in the U.S. Co-sponsor of the annual state Biotech conference and monthly Biotech Forum. CED's newly expanded Entrepreneurial Center will host NC State's part-time MBA program starting in Fall 2006.</li> <li>▪ <b>Entrepreneurs' Organization</b> – (Formerly the Young Entrepreneurs' Organization.) A nationwide peer-learning and professional development organization. The Raleigh-Durham chapter has 29 members.</li> <li>▪ <b>TiE-Carolinas</b> – A chapter of a nationwide entrepreneur networking group. Most events are in the Raleigh-Durham area.</li> </ul>
Washington, D.C.	<ul style="list-style-type: none"> <li>▪ <b>TiE-DC</b> – A chapter of a nationwide entrepreneur networking group. This is one of the largest business networking organizations in the area.</li> <li>▪ <b>MIT Enterprise Forum of Washington-Baltimore</b> – Promotes high-tech entrepreneurship via forums on issues including capital growth, business plans, and overcoming challenges. One of 24 chapters of the MIT Enterprise Forum.</li> <li>▪ <b>Washington Network Group</b> – Organization of professionals in business, finance, technology, and foreign and government affairs. Its three focus areas are entrepreneurship, technology, and international business.</li> <li>▪ <b>Northern Virginia Technology Council</b> – Membership organization for technology companies. Focuses on education, networking, and public policy. Its committees include the Entrepreneur Committee and Emerging Business Committee.</li> <li>▪ <b>Washington DC Technology Council</b> – Membership organization for technology companies. Focuses on education, networking, and public policy. Assists members with access to capital, including hosting the annual Early Stage Capital Forum.</li> <li>▪ <b>Tech Council of Maryland</b> – Membership organization for technology companies. Focuses on education and networking.</li> </ul>
Rochester	<ul style="list-style-type: none"> <li>▪ None identified in Rochester area</li> </ul>

Most metro areas have a variety of programs for small business support and assistance. These include small business development centers, chambers of commerce, and university business programs. Most metro areas also have at least one incubator for fledgling companies in technology or biotechnology. The combination of these programs provides necessary infrastructure for helping to develop and promote entrepreneurship.

The following table shows notable entrepreneur support programs in the Kannapolis area and the comparison communities. This is not a comprehensive list of programs and organizations; it shows the ones that are significant or innovative. The Charlotte

region’s entrepreneur support programs are fairly well coordinated and provide a breadth of services for varying stages of start-ups. While the entrepreneur support organizations in Charlotte are lacking in number and prowess compared to the Raleigh-Durham and Washington, D.C. area organizations, the Charlotte region is able to provide a solid support network for aspiring and successful entrepreneurs. Also, the Charlotte metro area was ranked second in *Entrepreneur Magazine’s* 2006 “Hot Cities for Entrepreneurs.”<sup>35</sup> Rochester is the weakest of the comparison communities in its assistance for small businesses and entrepreneurs.

**Entrepreneur and Small Business Support Organizations and Programs**

Region	Organization
Charlotte	<ul style="list-style-type: none"> <li>▪ <b>Incubators</b> – The Ben Craig Center Incubator at UNCC, and a planned incubator at NCRC.</li> <li>▪ <b>Ben Craig Center</b> – Housed at UNCC, the Center runs the incubator and also provides advisory services, organizes the Carolina Angel Forum, and hosts seminars on financing, business growth, and other topics. It is a partner with the <b>Small Business Technology Development Center (SBTDC)</b>, which is co-located in the incubator.</li> <li>▪ <b>SBTDC</b> – Has submitted proposal for new office at NCRC to work with the NCRC incubator and other local entrepreneurs.</li> <li>▪ <b>BizHub Network</b> – A new initiative of the City of Charlotte and the Charlotte Chamber. It is co-located with the <b>Institute for Entrepreneurship</b> at the Central Piedmont Community College campus. The purpose is to provide a list of resources to entrepreneurs in the Charlotte region, connecting virtual and physical resources.</li> <li>▪ <b>MBA Programs</b> – UNC-Charlotte has program. Wake Forest has ranked program but farther away.</li> <li>▪ <b>Cabarrus Business and Technology Center</b> – Opened in August 2005 by Cabarrus County to provide seminars for entrepreneurs. Also provides customized training for industry, and is starting a biotechnology information series on what biotechnology is.</li> <li>▪ <b>Small Business Center at Rowan-Cabarrus Community College</b> – Part of Small Business Center Network at community colleges throughout the state. Provides seminars, counseling, workshops, and referrals to entrepreneurs.</li> </ul>
Raleigh-Durham	<ul style="list-style-type: none"> <li>▪ <b>Incubators</b> – BD Technologies’ for-profit BioVenture Center at RTP, and 5 non-profits: First Flight Venture Center for technology companies, Midway Business Center targeting women &amp; minority-owned businesses, NC State Technology Incubator, Raleigh Business &amp; Technology Center, and Triangle South Enterprise Center (Dunn, NC).</li> <li>▪ <b>MBA Programs</b> – Top programs at Duke University, UNC-Chapel Hill, also NC State.</li> <li>▪ <b>Duke University Center for Entrepreneurship and Research Commercialization (CERC)</b> – Provides classes, assistance with grant preparation, and serves as a connecting point for technology, entrepreneurship, and the business world.</li> <li>▪ <b>SBTDC</b> – 3 offices in Chapel Hill, Durham, and Raleigh at universities.</li> </ul>

<sup>35</sup> <http://www.entrepreneur.com/bestcities/index.html>

Region	Organization
Washington	<ul style="list-style-type: none"> <li>▪ <b>Incubators</b> – 3 technology incubators in Montgomery County (funded by Maryland Technology Development Corporation), many more in region.</li> <li>▪ <b>MBA Programs</b> – Top programs at Georgetown, University of Maryland, plus many others in region.</li> <li>▪ <b>Center for Entrepreneurship</b> – Part of Macklin Business Institute at Montgomery College. Hosts BioEntrepreneur Forum, Entrepreneurship Expos, and other outreach programs.</li> <li>▪ <b>Dingman Center for Entrepreneurship</b> – Part of the Smith School of Business at University of Maryland. Services include assistance with business pitches, involvement in mentor program, and access to Angel Breakfasts.</li> </ul>
Rochester	<ul style="list-style-type: none"> <li>▪ <b>Incubators</b> – none in the area.</li> <li>▪ <b>MBA Programs</b> – Available at University of Minnesota-Rochester.</li> </ul>

Despite the breadth of regional programs, small businesses in the Kannapolis area are unsure about how to get assistance. In particular, local businesses and individuals are interested in tapping into potential opportunities arising from the Research Campus, but many are unsure about how to go about this. Open-ended comments from the online survey included:

- “It’s harder for the small business owner to get support around here, especially the ones who grew up here and are not used to the rising prices.”
- “I do not think businesses should be given big tax breaks or other, over the top, incentives to come do business in our community.”
- “Extremely interested in participating in small business related to Biotech Campus but unsure where to go, who to see, how to finance, etc.”
- “While our community has seen major changes in ethnic demographics, the underlying receptiveness to business development and ownership by minority groups has remained chilly.”

**The Charlotte region is able to benefit from strong and coordinated state-level support for biotechnology. The region also has an established support structure for entrepreneurs at varying stages of their businesses. It is important for these entrepreneur and small business support organizations to understand the needs of biotechnology start-ups and work with biotechnology support organizations to be able to be relevant to NCRC businesses. Raleigh-Durham has already achieved this. The Charlotte region needs more effective networks for entrepreneurs - networks that are run by entrepreneurs for entrepreneurs, with ancillary support from institutions and service providers. Locally, Kannapolis and Cabarrus County entities need to work with interested individuals and businesses to help them tap into opportunities at NCRC.**

## **BUSINESS COSTS**

Typically, business costs are not much of an issue for most communities in North Carolina. This is certainly true in the Kannapolis area. The following section assesses two main factors that affect cost considerations of firms looking to establish or relocate their businesses: taxes and incentives. The analysis looks at local and state tax rates, and conversely, considers expenditures on government services and financial incentives for biotechnology firms. These factors are part of an overall business climate that should provide a supportive environment for biotechnology and other businesses. North Carolina in general has a strong business climate and has been very supportive of biotechnology initiatives. However, competition among states is continuing to increase.

### **Taxes**

High tax rates make communities less competitive as places to do business and to live. However, many people and businesses are located in high-cost communities, because taxes and costs are one of many location factors. Also, low tax rates can sometimes indicate a possible unwillingness to tax to make targeted investments in education, government services, and infrastructure.

The following table shows state income and sales tax rates for the comparison community states. Overall, North Carolina is competitive with Maryland and Minnesota.

**State Tax Rates**

	<b>North Carolina</b>	<b>Maryland</b>	<b>Minnesota</b>
Individual Income Tax	6.0 - 8.5%	2.0 - 4.75%	5.35 - 7.85%
Corporate Income Tax	6.9%	7.0%	9.8%
Sales & Use Tax	4.5%	5.0%	6.5%
Sales Tax Exemptions	Food & prescription drugs	Food, OTC & prescription drugs	Food, OTC & prescription drugs

Source: Federation of Tax Administrators

Local governments levy property taxes and local sales taxes to raise revenue for government functions. As a whole, tax rates in Kannapolis are competitive with the comparison communities. Because property tax values are generally lower than the comparison communities (at least for now), property tax bills in Kannapolis are lower even though rates are on the high end of the comparison community rates.

**Local Tax Rates**

	<b>Kannapolis*</b>	<b>Cary</b>	<b>Rockville*</b>	<b>Rochester</b>
Local Sales Tax	2.5%	2.5%	0%	0.5%
Combined State & Local Sales Tax	7.0%	7.0%	5.0%	7.0%
Combined City & County Property Tax (per \$100 assessed value)	\$1.1259 - \$1.1270	\$1.0170 - \$1.0540	\$0.936	\$0.942 - \$1.074

Sources: North Carolina Department of Revenue, Maryland State Department of Assessments and Taxation, Minnesota Department of Revenue, Olmstead County. Does not include property taxes for special service districts. County property tax rates are added to city rates. Property is assessed at 100% of value.  
 \*Note: Kannapolis property tax rates are shown for Cabarrus (\$1.1259) and Rowan (\$1.1270) portions. Maryland has local income taxes (rather than local sales taxes). The local income tax rate for Montgomery County is 3.2%.

Kannapolis and Cabarrus County will need to invest in infrastructure to prepare for the arrival of businesses and residents associated with NCRC. Budget data show that Kannapolis spends the most per capita on police services but the least per capita on fire services. Cabarrus County lags behind all of the comparison communities on per capita expenditures on libraries. These and other services are important to creating a strong quality of life for new and existing residents. Libraries are one indication of a community’s investments in knowledge-based resources.

**Budgets for City Services, 2006**

	<b>% of Total Budget</b>	<b>Expenditures Per Capita</b>
<b>Police</b>		
Kannapolis	29%	\$176
Cary	15%	\$134
Rockville	13%	\$119
Rochester	23%	\$147

	<b>% of Total Budget</b>	<b>Expenditures Per Capita</b>
<b>Fire</b>		
Kannapolis	16%	\$98
Cary	16%	\$145
Montgomery County	12%	\$165
Rochester	17%	\$111

	<b>% of Total Budget</b>	<b>Expenditures Per Capita</b>
<b>Libraries</b>		
Cabarrus County	1.5%	\$15
Wake County	1.8%	\$20
Montgomery County	2.6%	\$37
Rochester	8.2%	\$53

Source: Finance offices of above cities and counties.

\*Data for Wake County and City of Kannapolis are for FY 2007. Data for Rochester are for FY 2005.

**Tax rates in Kannapolis and North Carolina are competitive - neither particularly high nor particularly low. However, Kannapolis and Cabarrus County will need to make significant investments to “catch up” to the comparison communities and meet the expectations of quality of life and government services that newcomers to NCRC will have. Traditional as well as new or alternative revenue streams and funding sources should be explored.**

## Incentives

Business development incentives are one factor that businesses consider when locating in a community. Many other factors are even more important to biotechnology firms, including the business climate, a skilled workforce, and strong quality of life. Still, incentives can tip the balance the selection among a few communities that all have strong credentials. Most states and many local governments provide incentives for businesses with significant capital investment or job creation potential. Many states now have incentive programs focused on biotechnology-related activities.

The North Carolina Board of Science and Technology (NCBST) provides matching funds for firms that have been awarded SBIR or STTR research grants from the federal government. NCBST also reimburses qualified North Carolina firms for a portion of the costs of preparing and submitting proposals for SBIR or STTR funding. The state legislature created the Life Science Industry Revenue Bonding Authority to assist with financing of facilities but has not funded it yet. The North Carolina Biotechnology Center provides grants and loans for research and businesses, and the Golden Leaf Foundation set aside \$30 million of its endowment for venture capital investments.

Maryland recently passed a Biotechnology Investment Tax Credit to promote investment in seed and early-stage, privately-held biotech companies. The investor receives a tax credit of 50 percent of an eligible investment, up to \$50,000 for individual investors and \$250,000 for corporations and venture capital firms. Maryland also offers research and development tax credits to qualified firms. The Basic R&D Tax Credit is three percent of eligible R&D expenses that do not exceed the firm's average R&D expenses over the last four years, and the Growth R&D Tax Credit is 10 percent of eligible R&D expenses that do exceed the firm's four-year average.

Maryland has made significant investments in biotechnology research centers. It also offers two facilities financing programs, and invested \$16.5 million in venture capital. Seed and pre-seed capital is available through various programs, including the Maryland Technology Transfer Fund, Challenge Investment Program, Enterprise Investment Program, and the Fort Detrick Technology Transfer Initiative. In fact, the Maryland Technology Development Corporation (including its Technology Transfer Fund) was just ranked the top source of venture capital for early stage firms for the third year in a row.<sup>36</sup> The Department of Business and Economic Development, which runs the Challenge Investment Program and Enterprise Investment Program, was ranked the third most active source of venture capital for early stage firms. The MDBio Foundation's Project Accelerator Awards provide cash awards to assist with commercialization. Montgomery County's Technology Growth Program is one of a

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<sup>36</sup> *Entrepreneur* magazine. "2006 Top 100 Venture Capital Firms." Based on data from the PriceWaterhouseCoopers' MoneyTree survey.



few local government incentive programs for biotechnology and technology; it offers gap financing in the form of a five-year loan or a grant convertible to a loan.

Minnesota recently established a Bioscience Zone along the corridor from Minneapolis-St. Paul to Rochester. Companies who locate in the sub-zones (including near Mayo Clinic) are eligible for various tax credits and exemptions. However, the total incentives package was capped at \$1 million total for 2004 and 2005 combined, and no tax credits or exemptions were available for 2006.

**Both North Carolina and Maryland have been very aggressive in funding biotechnology investments and incentives. That, combined with agencies, organizations, and universities that support and are involved with biotechnology, creates a positive environment for biotechnology development in both states. North Carolina and its communities will have to continue to be competitive on many fronts to make themselves attractive to firms and their workers.**

## CONCLUSION

The North Carolina Research Campus presents a unique opportunity to develop a biotechnology cluster in food and nutrition, essentially from scratch. Clearly, private sector biotech activity is high risk and research intensive – advances and commercialization can take years, and many start-ups have lost large amounts of money before turning a profit. However, the upside potential is significant. For communities, biotechnology brings research dollars, new people, and high wage jobs. For society, this effort in biotechnology holds the promise of advancements in health care and nutrition, resulting in longer and healthier lives.

David Murdock's investment and the participation of top research universities are unprecedented, but success of the North Carolina Research Campus and its potential positive impacts are not guaranteed. Competition for biotechnology workers, businesses, and research dollars is intense, and there are many established biotech centers across the U.S. with very powerful assets. Kannapolis, Cabarrus County, and the Charlotte region will need to make great strides in addressing the issues identified in this document, as well as actively define and promote the niches and competitive advantages of the region and the Research Campus.

Biotechnology workers and businesses have a great deal of choice in their selection of location, and the people who come to NCRC for research jobs will have high expectations. If they do not find what they are looking for in the Kannapolis area – an open, welcoming place that embraces diversity, emphasizes excellence in education, has quality housing options, recreation and entertainment amenities, and responsive city services – they may choose to live or work elsewhere.

### Strengths and Opportunities

The research and findings of this *SWOT Analysis* show that the Kannapolis area should leverage its primary strengths and opportunities:

- The City of Kannapolis and other local entities have been proactive about the **public communication** of plans and activities related to NCRC. This communication needs to continue, and different approaches and messages should be considered.
- Kannapolis and the Charlotte region benefit from strong **state support for biotechnology**. This is reflected by the organizations and programs that focus on biotechnology. North Carolina has been aggressive in creating workforce training programs, developing incentive packages, and providing public policy, networking, and advocacy support for biotechnology. However, competition for biotechnology is intense, and other states are also aggressively pursuing opportunities.

- There is strong and coordinated **regional support for entrepreneurship**, with programs that provide technical assistance, education, outreach, and incubator services. It will be essential for these organizations to understand the needs of biotechnology start-ups and work with biotechnology support organizations to be able to be relevant to NCRC businesses.
- Kannapolis' **proximity to Charlotte** creates the opportunity to capture some of the natural growth out of the metro area. This will depend on the improvement of the quality of life, school systems, and infrastructure in Kannapolis.
- Organizations in the Charlotte region have been **working together** to prepare for the Research Campus. For example, the Rowan-Cabarrus Community College has been actively developing partnerships in expanding its biotechnology programs. These kinds of coordinated and collaborative efforts are necessary to make NCRC a success.

### Issues to Address

There are many local and regional issues that need to be considered and acted upon as the Research Campus is developed. Areas where improvements or enhancements are needed are discussed throughout this document. However, the five key issue areas that are discussed below require immediate attention. The action plans to address these issues need to be completed and implemented as soon as practical.

- **PRIORITY Issue #1: Improving K-12 education.** Kannapolis and Cabarrus County must step up efforts to improve overall public education performance, offer greater options for advanced and gifted students, and emphasize the linkages between education and employment.
- **PRIORITY Issue #2: Preparing the workforce.** More needs to be done to increase career awareness and aptitude in science and biology at the K-12 level. Local leaders need to work on identifying skills and positions that are likely to be needed for NCRC jobs, communicate these opportunities to local residents, and offer post-secondary training specifically designed for those opportunities.
- **PRIORITY Issue #3: Expanding amenities and improving government services.** While there have been many positive improvements in recent years, Kannapolis still lags behind the comparison communities in many quality of life factors. These include opportunities for civic engagement and community connections; recreational, cultural, and entertainment amenities; and investment in libraries and other facilities.
- **PRIORITY Issue #4: Promoting smart growth and creating a sense of place.** Young professionals seek dynamic communities with thriving urban cores when deciding on a place to live. The development of NCRC presents the opportunity to

shape the built environment in a way that is attractive, pedestrian-scale, and sustainable. A mix of housing options and proactive planning efforts (transportation, land use, zoning, etc.) are needed to guide future development of the area.

- **PRIORITY Issue #5: Embracing diversity.** The Kannapolis and Cabarrus County community must welcome diversity and learn how to communicate and work with people of varying backgrounds. The region must also promote itself as a welcoming community that embraces diverse religions, ethnicities, lifestyles, and viewpoints.

In addition to the previous priority issues, specific attention should be given to the following issues:

- The Kannapolis area and the Charlotte region as a whole need to continue to develop breadth and depth in **funding options** for start-up firms, not just for biotech companies but also for entrepreneurs who want to start companies to serve NCRC businesses or households. The region's banks and other finance professionals must also become more educated about how biotech businesses work and what their specific funding needs are likely to be.
- The Kannapolis area and the Charlotte region need more **effective networks for entrepreneurs** to help create a greater sense of entrepreneurial spirit and culture. It is also important for small business support organizations to **understand the needs of biotechnology start-ups** and work with biotechnology support organizations to be able to be relevant to NCRC businesses.
- The presence of multiple top-tier research universities at NCRC is a unique situation that should be leveraged. Local leaders should pursue **increased higher education programming** at the Research Campus, through avenues such as distance learning or short overview courses.
- Kannapolis must create an image that it is technologically savvy. Plans for creating a **free wireless internet zone** on the NCRC campus and surrounding area need to be implemented.
- The Kannapolis area entities (governments, higher education, biotechnology, and economic development) need to continue to **develop state and regional partnerships** to maximize the impact and influence of the Research Campus.

The issues discussed above feed into two overarching requirements – the need to **plan and invest for growth** and the need to **communicate changes and opportunities** to current and potential residents. The desired end result of the efforts to plan for the North Carolina Research Campus is clear: A positive **change in**

**the reality and perception** of the Kannapolis area into a community that welcomes this great opportunity and the new businesses and residents that can come from it.

### **Next Steps**

*Market Street* believes that there are many positive steps already being taken in the region to be sure that this opportunity is maximized. New cooperation, new staff, and new partnerships are being put in place to move Kannapolis and the surrounding area ahead.

However, there is more to be done. There is an immediate need for specific action plans in a few key areas. These include education and workforce development, small business and entrepreneur development, quality of life enhancement, and growth management.

While some of the effort involves further research, much of it is about creating an action agenda. Once work is underway on the priority action plans, other areas such as government services and communications and marketing can be addressed.

Work on the action plans needs to begin immediately. However, the City of Kannapolis cannot accomplish it all on its own. Key public and private sector partners are needed. The North Carolina Research Campus will have impacts across counties, governments, and different types of organizations. These entities need to work together and be active participants in the development of a business and living environment that promotes and fosters biotechnology activity.