

CAROLINA context

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THE PROGRAM ON PUBLIC LIFE

is a non-partisan organization devoted to serving the people of North Carolina and the South by informing the public agenda and nurturing leadership.

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DIRECTOR'S NOTE

As a guiding theme, the UNC Program on Public Life seeks to document and analyze how demographic trends and economic changes continue to transform North Carolina. Previous issues of Carolina Context have dealt with population growth projections and a study of sector-based job-training. Now in this issue, Carolina Context tells a dramatic story of change in one of the state's traditional manufacturing sectors: textiles.

The principal author of this white paper, Carol Conway, has written extensively on international trade issues facing North Carolina and the South. She offers a concise summary of textiles past, present and future — and she outlines suggested policy responses by state government, higher education, business and nonprofits. In telling the story of textiles, she has drawn on her own experience: as deputy director of the Southern Growth Policies Board, as a senior fellow at the UNC Kenan Institute of Private Enterprise, and as a program director at the UNC Center for International Understanding.

In addition, she has drawn on research at the N.C. State University College of Textiles and Duke University's Center on Globalization, Governance and Competitiveness, directed by Dr. Gary Gereffi. We are grateful for the collaboration of researchers at our neighboring universities.

Mike Hensen, Senior Program Coordinator, helps manage the Duke center's analysis of the state's economy and served as a co-author of this paper. He can be contacted at mike.hensen@duke.edu. Ryan Denniston, a Senior Graduate Research Assistant at Duke University, also helped with the analysis.

At the College of Textiles, Dr. Nancy L. Cassill, Professor and Interim Head of the Department of Textile & Apparel Technology & Management, oversees the industry analysis website. Stacey Frederick, a doctoral student, oversaw the work of gathering information and compiling the database for both N.C. State and Duke Universities. Another NC State graduate student, Holli Nelson, did the research on performance textiles. Stacey Frederick can be contacted at sefreder@ncsu.edu.

A note about data: As Carol Conway points out, industry research is a messy business.

In 1997, the U.S. Census Bureau created a hiccup in its data gathering and reporting by tossing out the familiar U.S. Standard Industrial Code (SIC). Actually, NAFTA can be "blamed" for this. To improve comparability of industry data among the U.S., Canada, and Mexico, the three countries jointly created the North American Industry Classification System (NAICS). NAICS brought us more into line with the International Standard Industrial Classification System (ISIC). It also included new categories to track the fast-growing services and high technology sectors.

Although Census created "cross-walks" to translate old SIC data into the NAICS format, it is imperfect.

Also, public and private data collectors capture information in different ways and at different times, and researchers vary in their methods. Nevertheless, the overall picture of the textile industry is quite consistent.

As always, we welcome comments and critique of these white papers. You can read previous issues of Carolina Context on our website, www.southnow.org. There, you will also find back issues

EXTREME MAKEOVER: NORTH CAROLINA'S TEXTILE COMPLEX

This paper explores these three major findings:

- The textile sector has always churned with competition.
- Phoenix-like, a new sector has emerged from the ashes of the traditional textile industry.
- State policy needs to put the "global" in global competitiveness.

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of our state and regional electoral trends publications, NC DataNet and SouthNow. By presenting data and analysis on economic, demographic and electoral trends, we hope to contribute to improving the practice of democracy in our state.

As we engage in the task of documenting and describing the dynamics of change in North Carolina, the Program has initiated and sustained an array of activities: Publishing the Carolina Context series of policy-oriented white papers,

forming a bipartisan Policy Advisory Council of distinguished faculty and policy thinkers in the public and private sectors, and conducting dinner-discussions to give North Carolina lawmakers opportunities to talk with university faculty outside of the day-to-day pressures of legislative work.

We thank the General Assembly for the recurring appropriation that supports the Program's policy white papers. We also thank the Z. Smith Reynolds Foundation for its long-standing

support of our ability to convene policymakers and opinion leaders. We're also grateful for the support the Program has received from Progress Energy to finance printing of NC DataNet and SouthNow, from Blue Cross/Blue Shield of North Carolina to launch the Emerging Tar Heel Leaders initiative, and from the Triangle Community Foundation for further research on North Carolina trends and philanthropy.

— FERREL GUILLORY

Director, Program on Public Life



Textiles Past: Three Big Shocks

Many North Carolinians may think that the textile industry is dead, or nearly so, with the leading cause being (take your pick) NAFTA, China, or the elimination of import quotas. The reality, however, is that the textile industry today faces challenges but is thriving in new ways.

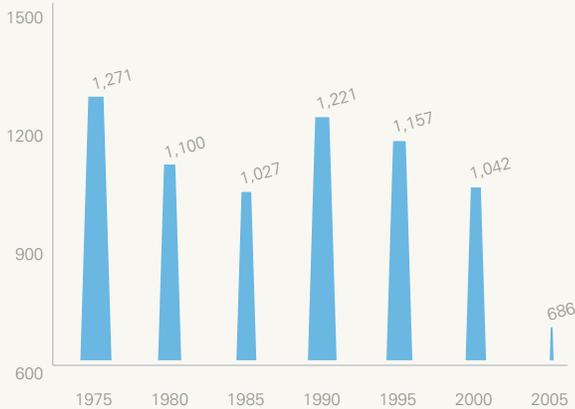
In fact, the textile industry has roiled with change ever since it arrived in North Carolina. In one study, University of North Carolina researchers tracked all known North Carolina textile plants at five-year intervals between 1970 and 2005. They found that plants entered and exited with high frequency, some entering as start-ups and many others re-opening under new management or in another location in the state.

Although many other factors had an influence, the textile sector felt three distinct shocks.

The first shock came in the 1950s as textile firms began replacing labor with technology. Automation was a powerful weapon in a purely *domestic* battle for position. Technology replaced jobs, but the industry as a whole was growing, and it still required large numbers of low-paid workers.

The second shock came from foreign competition in the 1970s and 1980s, long before NAFTA (the North American Free Trade Agreement). In the two decades between 1977 and 1997, North Carolina suffered a net loss of nearly 82,000 textile jobs, especially in cut-and-sew operations.

NUMBERS OF NORTH CAROLINA TEXTILE PLANTS, 1975–2005
(excludes apparel plants)



	1975	1980	1985	1990	1995	2000	2005
Textile plants at the start of the year	1,271	1,100	1,027	1,221	1,157	1,042	686
Unchanged between the two periods	NA	901	832	803	892	741	532
Closed sometime in past five years	NA	371	268	224	329	416	510
Opened sometime in past five years	NA	199	195	418	265	301	154
Net Change	NA	-172	-73	194	-64	-115	-356
Percent exiting	NA	29%	24%	22%	27%	36%	49%
Percent entering	NA	16%	18%	41%	22%	26%	15%

Source: Davison’s Textile Blue Books for 1975, 1980, 1985, 1990, 1995, 2000, 2005.

As sewing machines migrated to Mexico, Central America and the Caribbean, North Carolina’s textile plants supplied the cloth and yarn. Total sales from the state’s traditional textile sector actually kept rising right up to the start of NAFTA.

The third shock began in the late 1990s. It wasn’t just the implementing of NAFTA or the dismantling of the Multi-Fiber Agreement; it was the fusion of technology and globalization that took down much of the state’s traditional industry. New technology vastly reduced the cost of managing global business, and broke the supply chains that had anchored textile production to this hemisphere. When sewing machines were shipped out of places like Honduras for China, U.S. textile brokers missed the boat. China’s textile industry bought virtually all its materials from its own plants and other suppliers in Asia. In just one decade, 1996 to 2006, North Carolina lost 153,000 textile jobs. Another 10,000 North Carolina textile jobs were lost in 2007.

In total, between 1977 and 2007, North Carolina suffered a net loss of about a quarter million textile jobs. Employment in North Carolina’s traditional textile industry falls below 70,000 today.

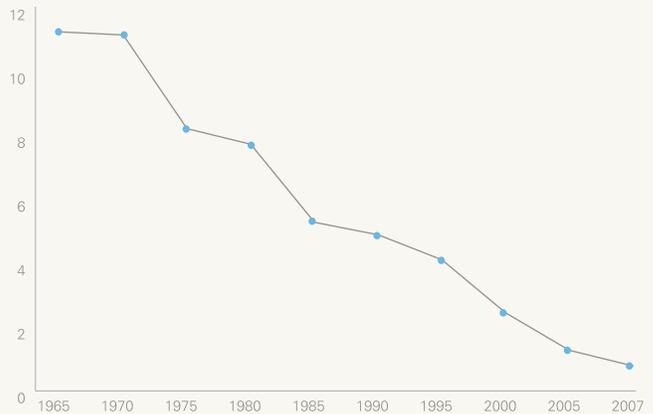
For the state as a whole, textile’s decline was softened by rapid growth in services, construction, and knowledge-based industries. The traditional textile industry’s contribution to the rapidly growing state economy had been shrinking for a long time. Even from the workers’ perspective, the quarter-million job loss over three decades wasn’t as drastic as it sounds. In the 1980s and early 1990s, the average dislocated worker found another job relatively quickly and suffered only a modest pay cut, if any at all. UNC research showed that the state’s dislocated apparel workers found *better* jobs after being laid off—almost anything paid better.

Gradually, however, the technology skills required for even entry level jobs in modern manufacturing rose beyond the capabilities of many dislocated textile workers. The recession of 2001 dealt a knock-out punch for the workers without transferable skills.

Note, though, that wages in much of the textile industry continued to rise, likely a reflection of the increased use of skilled workers in the firms that survived.

TEXTILES AS A SHARE OF NORTH CAROLINA GSP

Source: Bureau of Economic Analysis, U.S. Department of Commerce



NORTH CAROLINA TEXTILE OUTPUT, SELECTED YEARS

(in billions, adjusted for inflation using the year 2000 as the benchmark)
Source: U.S. Census Bureau

	1990	1995	2000	2005
Textiles & Apparel Combined	\$8.2	\$9.5	\$7.2	\$5.1
Textiles Only	\$6.4	\$7.5	\$5.2	\$3.4
Apparel Only	\$1.8	\$2.0	\$2.0	\$1.7

ANNUAL AVERAGE EMPLOYMENT

Source: Duke University

	NAICS	1996	2001	2006	2007
Textile Mills: Apparel	313	140,703	92,710	49,112	42,906
Textile Mills: Non-apparel	314	23,104	17,051	10,125	9,665
Apparel Manufacturing	315	69,020	40,073	20,993	17,085
Total		232,827	149,834	80,230	69,656

AVERAGE ANNUAL WAGES, 1996–2006

Source: Employment Security Commission of North Carolina

	NAICS	Average Annual Wage per Employee			% change 1996–2001	% change 2001–2006
		1996	2001	2006		
Textile Mills — Apparel	313	\$ 23,364	\$ 27,294	\$ 31,941	17%	17%
Fiber Yarn and Thread Mills	31311	\$ 22,649	\$ 25,812	\$ 29,493	14%	14%
Broadwoven Fabric Mills	31321	\$ 24,854	\$ 28,240	\$ 32,272	14%	14%
Narrow Fabric Mills/Schiffli Embroidery	31322	\$ 20,783	\$ 25,725	\$ 30,926	24%	20%
Nonwoven Fabric Mills	31323	\$ 35,862	\$ 43,606	\$ 49,604	22%	14%
Knit Fabric Mills	31324	\$ 23,822	\$ 28,465	\$ 31,685	19%	11%
Textile and Fabric Finishing Mills	31331	\$ 21,755	\$ 25,467	\$ 31,037	17%	22%
Fabric Coating Mills	31332	\$ 26,559	\$ 29,167	\$ 36,362	10%	25%
Textile Mills — Non-apparel	314	\$ 20,030	\$ 25,309	\$ 29,967	26%	18%
Carpet and Rug Mills	31411	\$ 22,607	\$ 27,041	\$ 31,265	20%	16%
Curtain and Linen Mills	31412	\$ 18,527	\$ 23,350	\$ 27,891	26%	19%
Textile Bag and Canvas Mills	31491	\$ 20,679	\$ 23,638	\$ 25,682	14%	9%
All Other Textile Product Mills	31499	\$ 21,357	\$ 27,606	\$ 32,449	29%	18%
Apparel Manufacturing	315	\$ 18,743	\$ 24,493	\$ 35,183	31%	44%
Hosiery and Sock Mills	31511	\$ 22,693	\$ 27,197	\$ 41,732	20%	53%
Other Apparel Knitting Mills	31519	\$ 17,673	\$ 23,546	\$ 25,898	33%	10%
Cut and Sew Apparel Contractors	31521	\$ 15,536	\$ 21,607	\$ 25,141	39%	16%
Mens Cut and Sew Apparel Mfg	31522	\$ 16,592	\$ 19,526	\$ 23,439	18%	20%
Womens Cut and Sew Apparel Mfg	31523	\$ 16,122	\$ 27,195	\$ 25,134	69%	-8%
Other Cut and Sew Apparel Mfg	31529	\$ 14,982	\$ 20,478	\$ 33,512	37%	64%
Accessories and Other Apparel Mfg	31599	\$ 17,364	\$ 19,641	\$ 21,116	13%	8%

Note: The average annual wage found in the annual data is computed by dividing total wage payments by the average insured employment. These figures are not true average wage scales because (1) the wages, but not employment, of all the different persons on the payroll are reflected, and (2) the assumption is made that workers worked the full quarter or year although a number of workers are not employed the whole year or quarter, and certain plants may stand idle a portion of the quarter or year. These average wages should be considered merely as indicators of wage trends rather than actual wage rates.

Textiles Present: A Transformed Industry

Although it didn't get much attention in the media, the North Carolina textile industry adapted. Most traditional plants buckled under pressure, but a significant minority of owners decided to engage in the modern global competition by using new business tactics. A 2004 study of North Carolina textile and apparel firms found these common characteristics of the surviving plants:

- 1- International engagement.
- 2- Commitment to design and innovation in both products and processes.
- 3- Investment in factory-floor technology and skilled people.
- 4- Customer-focus quality control and service reliability.
- 5- Supply-chain collaboration, as opposed to every-plant-for-itself.
- 6- Product diversity, with an emphasis on performance textiles.

Thus, today's North Carolina textile industry isn't just a smaller version of its old self.

It's now thoroughly international — through exports, imports, ownership, workers, managers, customers, research, finance, law. Gone are the days when most U.S. textile exports returned in finished form for U.S. consumption. North Carolina textiles and apparel accounted for at least 13 percent of the state's manufacturing exports in 2006.

In its 2006 report, *The State of the Union of the Textile Industry in North Carolina*, North Carolina State University's College of Textiles describes the industry as a "textile complex" that includes not only the manufacturers, but also firms that provide the textile industry with management services, new product development, design, logistics, and research. This wider definition of the industry encompasses roughly 1,400 establishments with more than 112,000 jobs and sales of more than \$35 billion.

Is this definition of the industry simply a numbers game, designed to puff up the importance of the textile industry? No, not if a changed perspective opens doors to new strategies, products and careers.

Textiles Future: Performance & Global Engagement

The 2004 survey of textile executives provided evidence of a transformation taking place in the industry. A majority of executives thought their competitive advantage rested not on cost or import protection, but on a faster response time, higher quality, and long-term business relationships. In supplemental interviews, some managers said they counted on no more than a five-year run for an innovative product; they assumed a cheap knock-off would eventually take the business. Those managers were continually investing in new-product design and strategies to identify the next new thing.

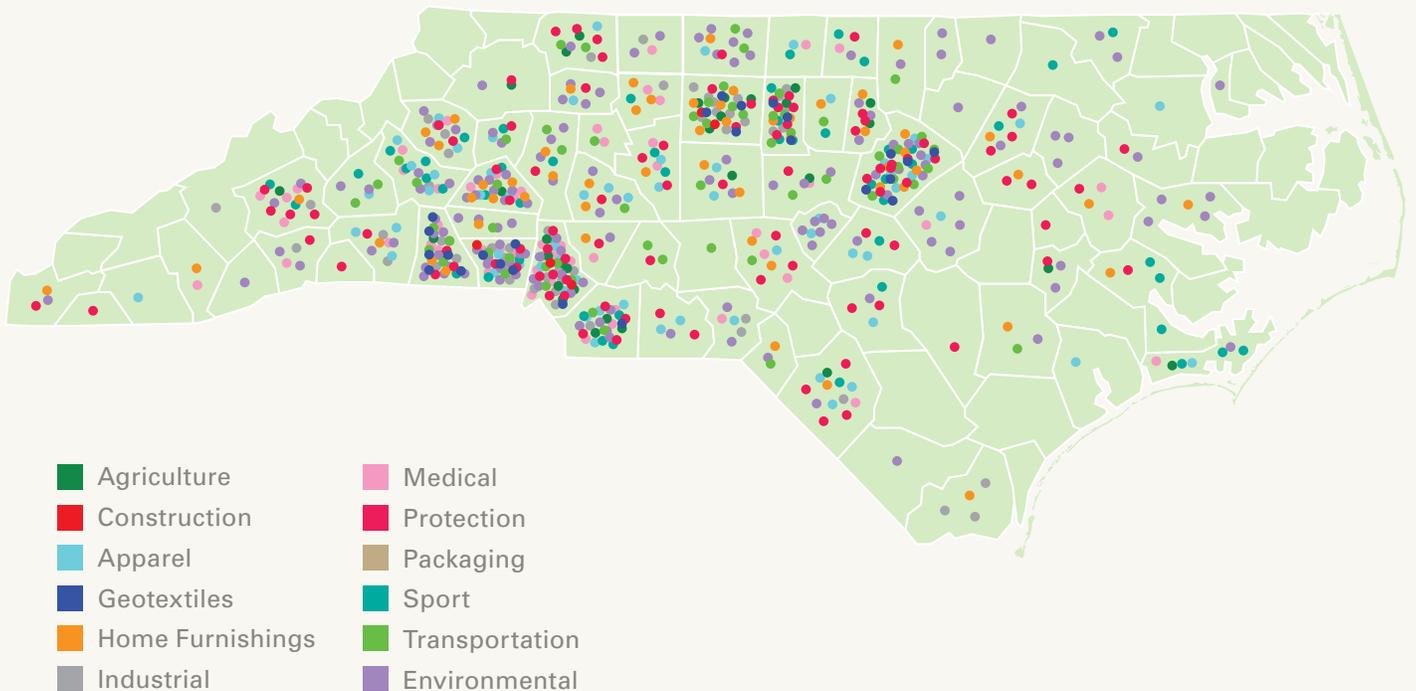
“Performance textiles” provides an example of where the modern industry is headed. The College of Textiles defines them as “textile materials and products manufactured primarily for their technical and performance properties, in addition to their aesthetic or decorative characteristics.” They are found in 76 of the state’s 100 counties. North Carolina is currently the world capital of the performance textile sector. In 2006 there were more than 500

such companies, employing about 60,000 North Carolinians and generating some \$20 billion in sales.

Buzz Off Insect Shield, based in the Triad, illustrates the kind of product and marketing that comes from the performance-textile sector. Its website (<http://www.insectshield.com>) declares, “Insect Shield® Repellent Apparel products are proven and registered to repel mosquitoes, ticks, ants, flies, chiggers and midges (no-see-ums).” The repellent is odorless, invisible, and colorless, does not change the feel of the clothing, and is good for up to 70 washings.

Instead of relying on fashion and price to sell its apparel, *BuzzOff* caters to specific high-end buyers like hikers, hunters, fishers, and gardeners. Rather than selling directly to customers, *BuzzOff* provides links to the brand-name retailers that carry its products. The retailers are those known for their outdoor product lines and lifestyles, like L.L. Bean, Mad Dog Gear, and ExOf-

PERFORMANCE TEXTILE SECTORS



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ficio. *BuzzOff* passes the pricing issue on to its retailers, which does make the products more expensive.

The *BuzzOff* website takes a serious tone in its marketing messages, emphasizing global citizenship, environmental protection and technology at work in it encourages consumers or institutions to buy certain products in bulk, like its insect shield blanket, for distribution to poor communities around the world.

Another “new” reality of global competitiveness is an old one — liability. Modern manufacturing increasingly consists of smaller-size firms that may not have long experience or deep pockets to manage their legal affairs.

BuzzOff has been involved in a complex lawsuit that stemmed out of a 2005 complaint by a competitor over allegations of trademark infringement and unfair product comparisons. The competitor is an old Midwestern family-owned business that now manufactures a wide line of household products in more than 70 countries with 12,000 employees .

Such is the nature of modern competition. Technology, innovation, globalization, and a shifting customer profile have created new markets, even for small firms. North Carolina businesses compete in a complex global marketplace, even if their only competitor is another American firm. Technology and innovation are necessary but not sufficient for industry survival.

NORTH CAROLINA'S PERFORMANCE TEXTILE INDUSTRY, 2006

	Est. Sales (\$ billions)	Number of Firms	Examples
Industrial	\$7.9	273	Filters, insulation, storage tanks
Transportation	\$3.4	92	Seat belts; airbags; upholstery in cars, boats, planes
Apparel	\$2.4	73	Insect-repellant socks; anti-bacterial clothing; thermal protection gear
Protection	\$1.6	91	Flame retardant bedding, cut-resistant materials; house wrap
Medical	\$1.5	69	Drug delivery systems; medical hosiery; wipes; scaffolds for tissue growth
Sport	\$1.4	69	Tennis balls; tents; tarps; umbrellas
Home Furnishings	\$1.1	90	Non-toxic and wear-resistant carpets, upholstery, awnings
Packaging	\$0.7	60	Disposable materials; endurance materials
Construction	\$0.7	32	Wood replacement; belt sanders; house wrap; wall coverings
Environmental	\$0.3	36	Biodegradable materials, water purification filters, wind turbine blades
Agriculture	\$0.2	35	Fishing gear
Geotextiles	\$0.2	40	Erosion control linings; drought-resistant soil fillers
Totals	\$21.4	960	



Textiles — And State Policy

North Carolina policies already encourage industrial modernization, innovation, and the enhancement of clusters. We have given less attention to international engagement. Evidence abounds that, in any industry, exporting is strongly correlated with growth and survival of firms. Just “being out there” opens new doors and sparks innovation.

The main questions for North Carolina policymakers are therefore:

- How can more of the state’s traditional industries recognize and act on these opportunities?
- How can those firms become better prepared to manage successfully in a global business environment boiling with new challenges?

There’s no 12-step program to restore lost textile jobs, but perhaps the first step towards creating good new jobs is to acknowledge that trade-bashing impairs our ability to comprehend and master global competition. North Carolina policymakers need both the tools and public support necessary to promote an increase in international knowledge, international networks, and international commerce.

Government

Leaders at all levels need to become comfortably conversant about global trends and global cause-and-effect. Travel abroad is essential to understanding the scale of opportunity and risk and thus making good policy judgments. The public’s perception of all trips as junkets must end. Earning public trust begins with dialog, principled decisions, and total transparency from start to finish.

The state should create a system to manage its international affairs since the topics are complex and easy to manipulate. The consequences of a rogue policy, program or official pronouncement could be devastating to an industry, population, or the state’s security.

Higher Education

Universities need to set high goals — not just “feasible” goals — to infuse international knowledge and activity across the campus. A special focus should be on the campuses with a high proportion of students from disadvantaged backgrounds. Possession of global knowledge and experience is as urgent today as it was 10–20 years ago to provide universal access to computers and the Internet.

A significant share of faculty already has data, expertise and overseas connections that can be applied to serve the UNC system, community colleges, and state economic development. The UNC Tomorrow Commission addressed this issue.

Community colleges can play a pivotal role in business outreach and public education about international matters. They have the networks, credibility and, theoretically, flexibility to take the entire state global within a few years, not decades.

Business Leaders

In some states, big corporations are highly visible champions for trade and global action. Microsoft, Boeing, Home Depot, Disney — they have an obvious stake in global success and are not reticent about making it known. North Carolina has similar companies that can step up to assure that the state think and act globally. It would be especially meaningful if larger textile

companies could testify about why they went global and what it means for the state — both the good and the bad. Business organizations affiliated with growth industries could also play a much larger role in vocalizing support for progressive thinking about global competition.

Nonprofits and Foundations

Some of North Carolina’s most internationally engaged entities are nonprofits, like RTI International, and charitable groups that do work in developing countries. These are influential, credible, and highly networked institutions that could help educate the public, connect elected leaders, and work with each other to advance the state’s reputation abroad.

State policymakers could consider an international strategic plan, using as a model the state of Washington’s Global Competitiveness Council, Rising to the Challenge of Global Competition. (See <http://www.governor.wa.gov/priorities/economy/council/finalreport.pdf>.) The Council, a diverse and balanced group of state leaders, commissioned an objective review of the state’s situation and came up with a wide-ranging set of recommendations that specify which entity is responsible for what tasks.

Resources

State leaders can learn more about the policy implications of North Carolina’s textile complex by exploring two new websites that offer useful details:

North Carolina State University’s (NCSU)

www.textileconnect.com, especially http://www.nctextileconnect.com/documents/descriptive_analysis_nc_textile_complex.pdf and http://www.tx.ncsu.edu/jtatm/volume5issue4/performance_tex.html, and http://www.nctextileconnect.com/value_chain.cfm.

Duke University’s <http://www.cgge.duke.edu>, but especially http://www.soc.duke.edu/NC_GlobalEconomy/index.shtml, which includes recent news on the industry in addition to explanations and data on seven key NC industries. The site includes county maps showing jobs loss and plant location http://www.soc.duke.edu/NC_GlobalEconomy/textiles/maps.shtml#map3.

Both are cooperating with the North Carolina Department of Commerce to supply data and intelligence to foster more business opportunities for the state’s textile and textile-related companies.

For additional information on trends in global commerce, particularly related to the southern U.S., please visit gi.unc.edu, the web site connected to the Center for Global Initiatives at the University of North Carolina.



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