The North Carolina Global Transpark: A Brief History from the Regional Planning Perspective

James C. Burke and Leanne Sulewski
University of North Carolina Greensboro

The North Carolina Global TransPark (GTP) recently attracted Spirit AeroSystems, contracted to build the fuselage panels for the Airbus A350, to the underutilized facility at Kinston. With it 11,500-foot runway, access to the North Carolina State Ports by rail, the 2,000 acres of land, and training facilities, the GTP proved to be the appropriate site for the company. Its location between several military air bases is an additional advantage. For seventeen years, it has been the source of frustration for the state, and many have called it a "boondoggle." Recently developments appear to suggest a promising future, if somewhat different from its original purpose. It is appropriate at this point, to review the theoretical foundations of the GTP concepts and the history of its implementation. The facility was plagued from the outset with public relations missteps, intersectional discord, and unrelenting criticism. However, demographic factors associated with the thirteen counties of the former Global TransPark Development Zone (now North Carolina's Eastern Region) have made the site less attractive to the type of manufacturers the planners intended to attract. These factors include a low percentage of resident college graduates in proportion to those with less than a high school education, and low population density compared to the state's metropolitan counties. Regardless of the potential success of the GTP, the region requires greater access to educational opportunities for its overall preparation for future economic development.

Introduction

In early May of 2008, Governor Mike Easley announced that the Global TransPark in Kinston had finally attracted a significant client. Spirit AeroSystems will be manufacturing fuselage panels for the Airbus A350. The company received a substantial incentive package worth more than $125 million from the State of North Carolina, however the TransPark's lengthy runway, its 2,000 acres of available land, the facilities training center, and rail access to the ports of Morehead City and Wilmington led the company to select this site. Governor Easley believed the TransPark was the best thing going in North Carolina at this time (*Wilmington Star- News*, 15 May 2008). Aircraft related manufacturing seems a very appropriate activity for the facility, not only for its unique manufacturing capabilities, but also for its central location near East Carolina University, Seymour Johnson Air Force Base, New River Marine Corps Air Station, and Pope Air Force Base, near Fort Bragg, which is about one hundred miles to the southwest. Each of these places train people who become qualified for aircraft related manufacturing.

Does this change of fortunes vindicate the planner of the TransPark? When the facility is paid for, it is likely that researchers in the field of transportation geography and regional planning will need to take a second look at the state's infamous "boondoggle." It is appropriate at this point, to review the history of the TransPark, and to identify the problems that plagued its first seventeen years. This study

examines the history of the GTP project from its conception, and indentifies the regional concerns associated with it.

North Carolina's Global TransPark (GTP) plan began with a one-hour meeting in 1990 between Governor James Grubbs Martin and John D. Kasarda of UNC-Chapel Hill's Kenan-Flagler Business School. Kasarda, a sociologist, proposed a technologically advanced industrial complex centered at a cargo airport with highway and rail connections. Like similar airport-centered cities that he had observed in China, this facility would serve as a connecting node in the emerging global economy. He used the word "Aerotropolis" to describe his vision (*Wall Street Journal*, 2 December 1992). In a number of empirical studies and professional publications, Kasarda and his colleagues established a strong argument for organizing geographically dispersed manufacturers, suppliers, and clerical services linked by a sophisticated telecommunication network to an airport-centered multi-model hub.

From such a facility, air transport would provide a rapid link to the national and global markets. Nearby highway and railroad connections would deliver product components to a dedicated site within the core of the hub for final assembly and disperse finished goods into the distribution network as the market required. Kasarda referred to this as "agile manufacturing," with unified telecommunications networks, transportation systems, and support services. He and his colleagues advocated the integration of sophisticated computer programs into the management of industrial logistics (Irwin and Kasarda, 1991; Vastag, Kasarda and Boone, 1994; Kasarda, 1998; Kasarda and Rondinelli, 1998; Kasarda, 2001; Greis, Olin, and Kasarda, 2003). Economic geographers and others have labeled this method of industrial production "just-in-time" production, a term subsumed under the economic philosophy of Post-Fordism. This appeared to be the emerging economic revolution in the closing years of the twentieth century, and the progressive minded in North Carolina government embraced the idea of building such a facility to counter the decline in the state's traditional manufacturing of textiles, furniture, and tobacco products.

The planners of the North Carolina Global TransPark (GTP), a 2,400-acre business park/cargo airport north of Kinston built with an 11,500-foot runway designed to accommodate heavy air-freight traffic, estimated that the project would create 55,000 jobs. By 2007, the facility had instead become the home of a few small companies that also served some passenger aircraft. While the facility appeared to be making progress in attracting business, it was not able to operate without the aid of the state. The burden of a $32 million debt, due the state in 2009, would have had to be renegotiated (Raleigh *News and Observer*, 31 January 2007, 3 January 2008). Many North Carolinians had accepted it as a failed venture, while others now anticipate that the time will come when the TransPark develops its niche in the state's economy. A similar logistical concept, the Inland Ports, a cooperative initiative between the State Ports Authority, the railroads, Charlotte/Douglas and Piedmont/Triad airports, has proven profitable. What geographic factors have contributed to the difficulties of the former and the success of the latter, and perhaps the ultimate attractiveness of both? Finally, what are the demographics of North Carolina's Eastern Region and how have they worked against the TransPark's success on the scale of Research Triangle Park or the Piedmont Triad?

Outsourcing and Post-Fordism

The decline of eastern North Carolina began with the outsourcing of traditional jobs, such as textile manufacturing, during the latter decades of the twentieth century. The term *outsourcing* refers to a cost-cutting strategy that has become central to the corporate canon during the last few decades, facilitated in part by advances in telecommunication and computer technology. Corporations seeking cheap labor, limited or no environmental policy constraints, and lax government oversight can relocate part of their manufacturing process to underdeveloped nations. While the practice is recent, it resembles similar arrangements under European imperial capitalism during the nineteenth century (Stearns, 1998, 150-156). It has become a politically contentious issue in the United States because of its destabilizing effect on regional and state economies when factories re-

locate. On an individual level, displaced workers must enter the academic environment to enhance their education to acquire a different profession or else resign themselves to lower paying jobs in the service sector. By extension, it creates a type of degree inflation where by the demands of the emerging job market require a college education and/or specialized certification. The university is increasingly adjusting its mission to the demands of the market (Delanty, 2002). On the other side of the outsourcing argument, the class dynamics in an earlier industrial economy, which have historically led to economic and social reforms, are now geographically and culturally displaced from "first world" consumers (Kester, 1993, 75-76). However, the apparent benefits of outsourcing initially manifested in lower product cost to the consumer and high dividends to shareholders are transitory. Its net result is the creation of trade deficits and ubiquitous debt as traditional industrial economies retool to accommodate the new paradigm. This, unfortunately, is the starting point for discussing the more elegant aspects of Post-Fordism.

Post-Fordism is a communication based, time dependent method of industrial organization that reduces the need to maintain large inventories of production material and finished products, eliminates redundant facilities, and locates the diverse functions of the company in geographically advantageous places. This production paradigm evolved in parallel with downsizing and outsourcing of certain industries and in response to the emerging global economy. Yet, there is nothing in this organization of manufacturing that requires the locating parts of the process outside national boundaries. Fordism, named for Henry Ford and his assembly line production methods, organizes all the functions of an industrial process in one location. Raw materials are fashioned into components in one division, assembled in another, and warehoused for distribution. Administration, accounting, sales, research and development, and production are centrally located. Labor in the Fordist manufacturing paradigm divided into single task specialties. In contrast, Post-Fordist labor is flexible. Workers, trained in multiple tasks and production processes, can adapt to manufacturing different products to meet specific and changing demands.

Post-Fordist production responds to specific time-based market demands. By extension, the Post-Fordist industrial paradigm leads to a reorganization of the socioeconomic landscape. Facilities for the final assembly of products are located at multimodal nodes, preferably with interstate highway access, rail service, and airfreight service. Facilities or separate companies involved in manufacturing parts, preassembled units, or packaging and shipping are located in close proximity to the manufacturing plant. The multi-modal network can supply the basic material from remote providers and ship out the final product. Self-sufficient communities, replete with their own service economies, form clusters of interrelated manufacturing centers along the access routes to the shipping facilities. Corporate headquarters can be remotely located in a financial metropolis near banking and government, while research and development facilities are located near sources of intellectual expertise, such as universities. Clerical and account activities are dispersed or outsourced, and telecommunications link all divisions of labor.

The new production paradigm also places demands on transportation. Transportation of goods and labor must constantly adapt to changing origins and destinations determined by the demands of the market. The synchronizing of transportation terminals facilitates the integration of transportation modes, rather than the competition between modes (Rodrique, 1999, 256-257, 259). The study of logistics in transport geography is an expansion of the concept of space/time convergence to include the structure and flow of goods through nodes and networks. The concept of *logistical friction* is a central concept in transport geography, including variables beyond the cost of transportation, such as inefficiencies in the organization of the supply chain, the sources of delays caused by the nature of the transportation system's connecting facilities, and elements of the intervening physical geography between locations that contribute to transportation time and cost. Contemporary corporate site location strategy for certain facilities is directed towards seeking those places with the best access to market areas and a capacity for handling large volumes of freight. Large

ports, major airports, and the intersection of interstates highways offer potential market access (Hesse and Rodrique, 2004, 176, 179). Reducing the delays from urban congestion cuts the operator's delivery costs. The proximity of rail and marine transport relieves pressure on existing roads as well as demands for road development (Dinwoodie, 2006, 309, 318-318).

However, facilities and infrastructure alone do not make for the ideal environment for Post-Fordist industrial strategies. A multi-modal alliance between airlines, ports, trucking companies, and railroads improves efficiency and maximizes the benefits of existing infrastructure. Zhang and his colleagues have identified strategic components for the establishment of a multi-modal airfreight network that serves the global economy. First are the *integrators* engaged in web-based transportation logistical management. These services coordinate the flow between carriers. Second are the *forwarders* that accumulate and distribute freight, such as the trucking companies and railroads. The airlines, railroad, and trucking companies that enter into multimodal alliances or merge can improve their profits and increase the efficiency of air cargo transport by diminishing the need for specialized outside logistical services contractors (Zhang *et al.,* 2007, 234-237, 239, 244-245).

A History of the GTP from Primary Sources

The history of the North Carolina Global TransPark is a compilation of press reports, legislative documents, and official reports. Solid research and practical observations appear to support the concepts behind the facility. However, the nature of the planning problems surrounding its early existence constitutes a mix of managerial missteps and public relations blunders that have agitated long-standing urban and regional rivalries.

The name "Global TransPark" did not appear until 1991 when it was created in North Carolina's Department of Economic and Community Development as part of a marketing plan to draw a favorable comparison with the successful Research Triangle Park. The General Assembly approved the expenditure of $117,000 for an ad campaign for the project (Greensboro *News & Record*, 4 November 1991). The term "Global TransPark" became confusing when it was overused in the titles of several related, yet discreet, administrative entities. These included the N.C. Global TransPark Development Zone (Figure 1), N.C. Global TransPark Development Commission, and N.C. Global TransPark Authority.[1]

The plan attracted early criticism in 1991 when Robert W. Poole, Jr. of the John Locke Foundation, a North Carolina conservative think-tank, attacked the idea of such a facility as explained in Governor Martin's published essay on the project. Poole noted problems with existing cargo airports in Texas and Alabama, and argued that a new airport "must meet real needs and be located where the market dictated – not simply where a planner would like it to be." Citing a 1991 Federal Aviation Administration study, he noted that the passenger airlines carried sixty percent of the nation's air cargo.

Charlotte/Douglas International Airport, Raleigh-Durham International Airport, and Piedmont Triad International, as well as a site near Seymour Johnson Air Force Base in Goldsboro, were among the initially recommended sites for the GTP (Figure 2). Limited space between Pope Air Force Base and Fort Bragg worked against placing the site near Fayetteville. The editor of the Fayetteville *Observer* noted that the Laurinburg/Maxton Airport, one of the sites under consideration, had scant infrastructure and was located near sensitive wetlands (Fayetteville *Observer*, 12 February 1992). Charlotte sent city officials to Raleigh before the 19 May 1992 selection date in an effort to convince officials that Charlotte/Douglas was well equipped and had sufficient land to expand (Charlotte *Observer*, 21 April 1992). The selection committee, headed by Governor Martin, favored less developed sites with more growth space. The finalists were Laurinburg/Maxton Airport and Kinston Regional Jetport (Charlotte *Observer*, 11 May 1992). Officials selected Kinston Regional Jetport. John Kasarda observed that the 30,000 acres of surrounding land were suitable for industrial use (Charlotte *Observer*, 20 May 1992). The Fayetteville *Observer* immediately editorialized the opinion that the project was likely to fail if located in such a depressed region and that the projected $156 million cost of the facility would serve the state

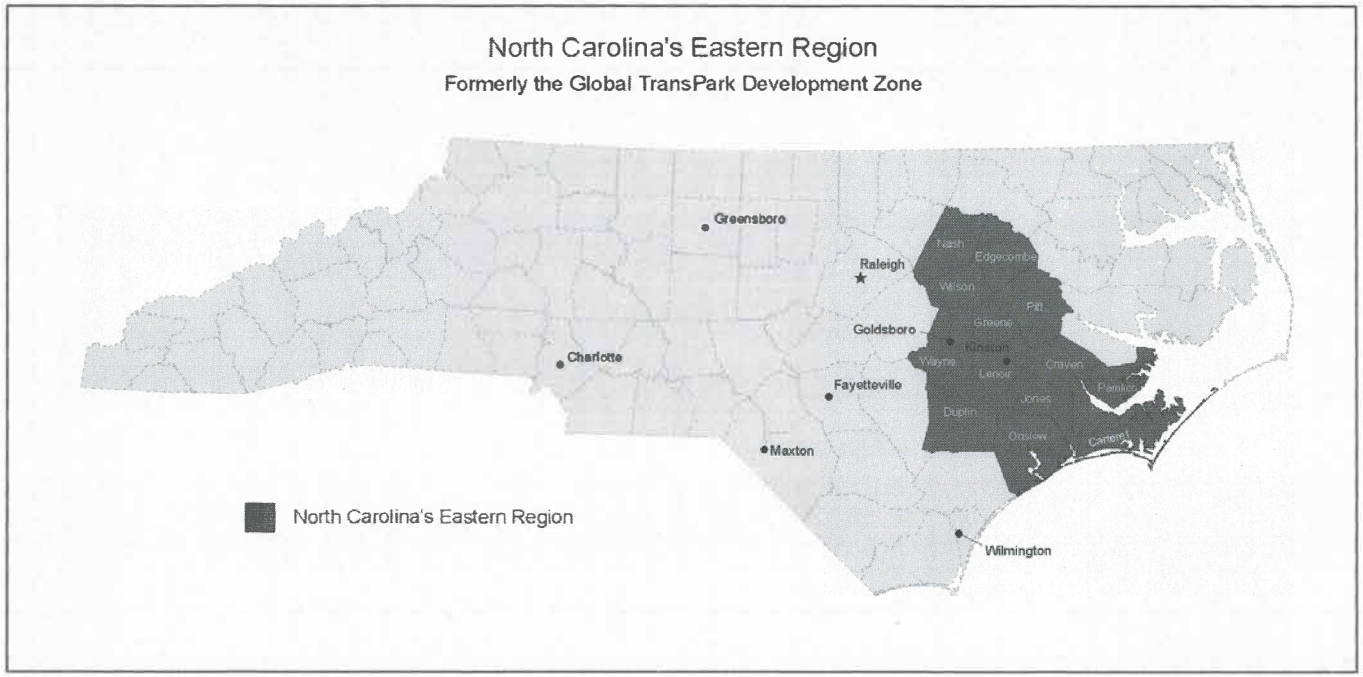

Figure 1. North Carolina's Eastern Region, Formerly the Global TransPark Development Zone. Source: Map by Leanne Sulewski

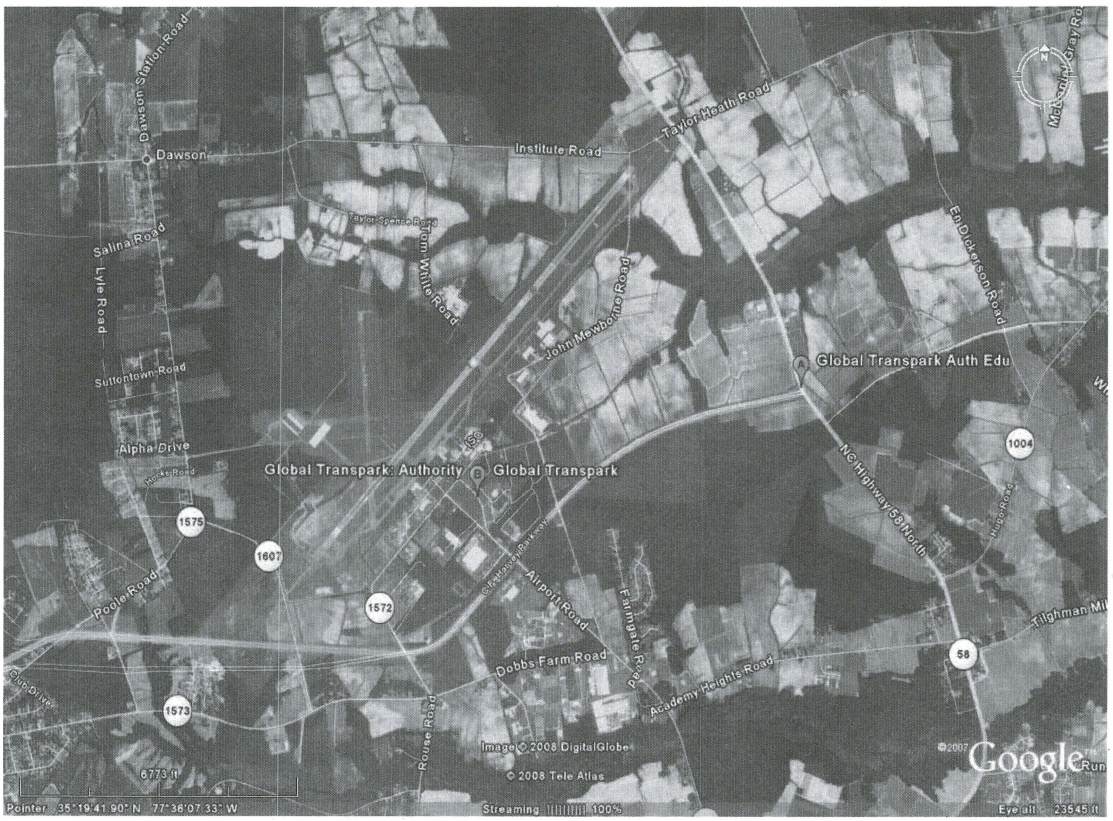

Figure 2. This Google Earth image shows the North Carolina Global TransPark runway, road network, and growth space. Most of the land surrounding the TransPark site appears to be agricultural. Source: GoogleEarth

better if applied to education and repairing existing infrastructure. In addition, the owners of the supposedly vacant land at Kinston organized against the plan (Fayetteville *Observer*, 6 December 1992). In 1994, New Hanover County declined the invitation to join the Global TransPark Development Zone. The county, asked to pay more into the project than the other counties of the zone, saw no benefit in supporting Kinston and Goldsboro when the old competition from Norfolk and Morehead City remained unchanged. The New Hanover County Airport Authority endeavored to build its own industrial complex. This plan evolved in improvement in runway and facility improvements as well as the acquisition of more land for future growth (Wilmington *Star News*, 26 May 1994, 11 August 1994, 18 October 1994, 9 September 1998).

Small things also set people in the region against the facility. The Global TransPark Development Commission irritated the commissioners of bordering counties when they erected their "Entering" and "Leaving Global TransPark Development Zone" signs along I-40, US 17, and other major highways. The North Carolina Department of Motor Vehicles and the Kinston license plate agency offended many residents of Eastern North Carolina by having special "GTP" license plates for all drivers in the TransPark Development Zone counties when they purchased new plates. When the TransPark Development Commission offered to spend public money

to build a special school for the children of employees of the Japanese automotive firm, AMSO, so the students would not fall behind their counterparts in Japan, a member of the commission representing Carteret County resigned in protest (Wilmington *Star-News*, 24 September 1994; Charlotte *Observer*, 31 August 1994; Wilmington *Star-News*1995). Other elements of the Japanese affair are amusing.

> At a meeting with a Smithfield Foods Inc. representative last month, Gov. Hunt pitched the idea of TransPark flying fresh cuts of prime pork to Japan from the company's hog-slaughtering plant in Tar Heel, about 100 miles from TransPark. ... Raoul Baxter, president of Smithfield's international unit, shares the governor's enthusiasm about the potential of selling fresh, North Carolina pork in Japan. He predicts the Smithfield, Va. company's newly launched "flying pig program" — which is in the testing stages — ultimately could grow to five plane-loads a week.
> (*Wall Street Journal*, 15 March 1995)

GTP officials also contemplated using the TransPark for developing a global market for North Carolina tobacco products. Governor Hunt noted a Department of Health and Human Service task force concluded that "American cigarettes in foreign markets does not increase the number of smokers in those markets" (Durham *Herald-Sun*, 29 November 1995). At the end of 1995, the TransPark Development Commission approved a $22,500 grant to study the impact of the proposed IBP hog processing plant in Edgecombe County (Durham *Herald-Sun*, 29 November 1995; Greensboro *News and Record*, 9 December 1995).

Support for the TransPark in Charlotte and Raleigh was waning by 1996, and Governor Hunt advised the TransPark Authority to "rein in some of its spending practices." In 1998, North Carolina offered $100 million in incentives to Federal Express to locate a new $300 million package sorting hub at one of the state's airports. Additional packages were offered by Charlotte, Greensboro, Raleigh-Durham, and the TransPark. Charlotte and Raleigh-Durham were the only airports to meet the company's exact requirements, but Piedmont Triad International Airport, the TransPark, and two South Carolina airports (Columbia and Greenville-Spartanburg) were also among the finalists. Kinston, thirty miles from I-95, was deemed to be too far out of the way. [Erskine Bowles noted in a *Wall Street Journal* interview in 2000, that there were 105 stoplights on US 70 between Kinston and Raleigh. A company such as Federal Express, that selected Greensboro as its hub, would never locate to the TransPark because of so many stoplights.]

Other attempts to attract large corporations to the TransPark were also unsuccessful. An attempt to lure Lockheed Martin to the TransPark to build a new spacecraft named VentureStar failed in the late 1990s, a wasted effort that produced disparaging headlines (Charlotte *Observer*, 7 April 1996; Wilmington *Star-News*, 2 April 1998; *Wall Street Journal*, 4 February 1998, 26 August 1998, 5 January 2000). In addition, other agencies began to compete with GTP. Charlotte/Douglas International Airport and Norfolk Southern began planning a $90 million global cargo complex in 1999. They were also trying to bring the CSX Rail Line in on the deal. Their proposals were similar to the TransPark, but their infrastructure was already in place (Charlotte *Observer*, 12 April 1999).

By the time the TransPark runway (Figure 2) was officially opened in December of 2002, the General Assembly had cut the facility's annual budget to $1.6 million, pushing the TransPark authority to begin to develop its passenger, rather than cargo, airport options and drawing swift opposition from the region's other airports – New Bern, Greenville, and Jacksonville. Their existence depended on the 300,000 passengers using their combined services annually. They had supported the TransPark's construction as a cargo airport, but were not about to nurture a rival in their own backyard. To their dismay, many passengers did fly from Kinston. In 2006, 65,000 passengers used the jetport to make connection to Atlanta through Delta Airlines and the At-

lantic Southern Airline (Charlot*te Observer*, 25 July 2002, 27 December 2002; Raleigh *News and Observer*, 31 January 2007).

The combination of delays from concerns "over environmental impacts, engineering problems, and the sheer immensity of constructing an 11,500-foot runway," and its poor prospects for success led the 2002 North Carolina General Assembly to consider ending funding for the Global TransPark. TransPark officials tried to thwart this by warning the General Assembly that the state would have to repay FAA grants if funding was terminated. This turned out it be inaccurate, because the funds would not have to be returned as long as the facility remained in public hands.

The term "buffalo hunting" refers to incentive packages offered to corporations to locate their facilities in a particular location. Taxpayers ultimately pay for these in some form, and local governments often augment these packages. In 2003, the hopes of Transpark "buffalo hunters" were high that Boeing would select the Global TransPark for a new facility to build its 787 passenger jet. After Boeing selected Seattle for the new site, the Fayetteville *Observer* expressed the opinion that Boeing had used the incentives offered by North Carolina as leverage to get a better offer from the state of Washington. This might or might not have been accurate, but it made the "buffalo hunters" appear as hapless rubes that "were played" by the large corporation. Such a disappointment directed fault towards the TransPark and reinforced the public's impression that the project was a waste of public funds and that the state needed to "try something else" (Fayetteville *Observer*, 23 December 2003; Wilmington *Star-News*, 27 December 2003).

In a 2004 "buffalo hunt," North Carolina offered an incentive package to the computer manufacturer Dell. The company was attracted to the Piedmont International Airport in Greensboro, where Federal Express had already located. They passed over the "almost-empty" TransPark. The Fayetteville City Council, working with county leaders and lobbyists, the Ferguson Group, set out on their own to seek federal funding to attract business. State Senator Larry Shaw expressed frustration that Raleigh "overlooks the East and Cape Fear, and these regions should make a point of finding out about new opportunities as soon, or before, Raleigh becomes aware of them" (Fayetteville *Observer*, 24 December 2004). Raleigh promoted the Kinston facility, neglected Fayetteville, and in the process rekindled the perennial sectional rivalries of the past.

Newspaper articles about the TransPark in 2005 and 2006 reflect both a need to make the site useful and its long legacy of futility and embarrassment. During 2005-06, the General Assembly considered a proposal to merge the NC State Ports Authority, the North Carolina Railroad, and the Global TransPark Authority into one agency. The annual revenue generated by the railroad and ports amounted to $43.4 million dollars in 2006, and the TransPark received a $1.6 million appropriation from the state. The TransPark falls under the authority of the NC Department of Transportation, the ports are under the NC Department of Commerce, and the North Carolina Railroad – incorporated in 1849 – is a private corporation in which the state owns all the shares and leases the corridor to the Norfolk Southern Railroad. Such a merger was difficult to imagine (Wilmington *Star-News*, 24 April 2006). For the various carriers to act in concert while being responsible to different state agencies with different mission statements seemed almost impossible. The railroad and ports were moving vast quantities of bulk products, profitably. The TransPark was a liability. Although the TransPark had been attracting more clients recently, it remains heavily indebted to the state. This brings the history of the TransPark to its recent change of fortune.

The Obstacles to the GTP's Success

Many missteps seem to have contributed to the TransPark's image as a failure. The press accounts of the early years of the North Carolina Global TransPark give the impression that the project went forward without proper planning. The action of officials in Raleigh as well as the Global TransPark Authority led to public contempt for the project and eroded corporate confidence in its success. Funding for the project was premature, allocated by the Gen-

eral Assembly before securing any commitment from potential clients. The TransPark Authority inflamed resentment within the Eastern Region and across the state with its public relations campaigns and it became a sink of consultant fees without producing any profits or debt service. Some of the proposed usages of the TransPark were absurd, pork exports to Japan and cigarettes for the global market being the most extreme examples. The TransPark drew passenger service away from airports, creating the resentment of nearby airport authorities, rather than developing as a cargo airport as originally touted. When North Carolina was recommended as a prime site in the "buffalo hunts," overlooked cities adopted a "go it alone" strategy to counter Raleigh's perceived neglect. These serious flaws beg an examination of the state's regional planning policy.

Several questions must be asked regarding North Carolina's economy and the concept of "just-in-time manufacturing." How does the "knowledge class" of college graduates determine regional economies? What are North Carolina's homegrown regional industries? Are they traditional industries, Post-Fordist, or a mix? Does GTP's disappointing performance point to a failure of the educational system, is it the result of poor location, or is the whole Aerotropolis concept a modern internal improvements fad that gave way to more diversified applications?

In *Improving North Carolina's Economic Development Delivery System, A Report to the North Carolina General Assembly*, Michael I. Luger and Leslie S. Stewart of the Office of Economic Development of the Kenan Institute at UNC-Chapel Hill identify education as the primary attractor for new business.

> When the number one factor in business site selection is well-trained and/or well-educated labor, a low college attainment rate alone – which one can discover on a first-pass web search of a community – will take the place off the site selection list without anyone ever making the first inquiry. All the "marketing" or incentives in the world are not going to drive a company needing Ph.D. engineers to a remote area where few residents attend college. (Luger and Stewart, 2003, Section 2, 6)

Of the thirteen counties of North Carolina's Eastern Region, originally the Global TransPark Development Zone, the percentage of individuals with undergraduate degrees in twelve of these counties is less than twenty percent (Figure 3). The counties of North Carolina's Eastern Region, formerly the GTP Development Zone, had a significantly higher percentage of individuals that had not completed high school than most of the top seven counties having the highest percentage of college graduates (in gray). Pitt County is the home of East Carolina University, and Watauga County has a small population and is home to Appalachian State University. The population per square mile in the counties of North Carolina's Eastern Region is significantly lower than the urban counties. The percent of unemployed people and those living below poverty level is also higher in the Eastern Region, as compared to the urban counties of Mecklenburg, Guilford, Wake, and New Hanover. As expected, the median household income for the Eastern Region is lower than the counties with high percentages of college graduates and greater population density (Table 1). When the complete Census data from Table 1 is analyzed using Pearson Correlation Coefficient, it not surprising that there are negative correlations between median household income and the unemployed, people living in poverty, and high school dropouts. Conversely, there should be a positive correlation between college graduates and median household income. The most interesting correlation is that between population per square mile, median household income and a college education. This suggests that the division between the college educated and high school dropout are more pronounced in the low population density counties (Table 2). This is not a favorable recommendation for the counties of the former GTP Development Zone. Has the low population density been the result of outward migration? Jones County is only now beginning to regain its 1960 population level. The population of Edgecombe County has fluctuated by thousands over

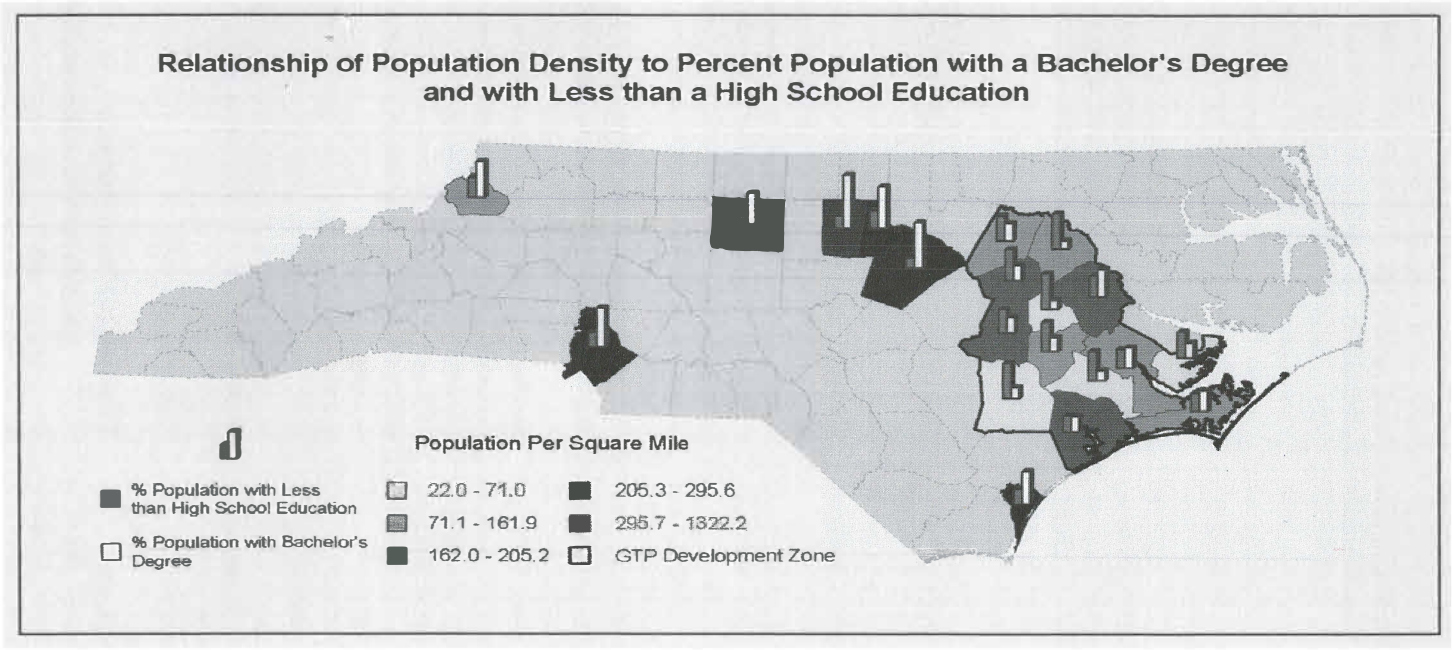

Figure 3. Relationships of Population Density to Educational Attainment in North Carolina, Map by Leanne Sulewski. Source: U.S. Census Bureau. (2000). Census 2000; (2004) Median Household Income http://censtats.census.gov

the entire period. Lenoir County gained fewer than four hundred people over sixteen years. Duplin County experienced recent growth after four decades of stagnation, perhaps the result of the construction of I-40 through the county in the 1990s. Onslow and Wayne, both the sites of military bases, have experienced steady growth. The population of Carteret, a coastal county, has doubled. Nash County has grown by a third. The remaining counties have experienced steady grown (Table 3). The rural east appears to be losing its college educated work force to the metropolitan centers of the Piedmont. Although the region has attracted well-to-do retirees and seasonal tourists, the chasm between the affluent and impoverished in the east continues to expand (Raleigh *News and Observer*, 22 March 2007). Statistics from the 2000 US Census and other official sources indicate that all the counties of North Carolina's Eastern Region, formerly the Global TransPark Development Zone, have few residents with at least a bachelor's degree.

The technically oriented jobs of a facility such as GTP require a well-educated and technologically sophisticated work force to attract corporations that offer good salaries. Ironically, the Global TransPark offers facilities designed for the current Post-Fordist industrial economy in a depressed region that has been losing its educated population because of a lack of employment opportunities. Although the several military bases in the region offer the facility the potential for an alternative work force, the low number of college graduates in the region limit GTP's potential for attracting clients.

The extreme disparity between the educational percentages and ranking of the counties of North Carolina's Eastern Region and the key counties of the Piedmont have placed the region in the condition of "contingent marginality." That is, the region is not well prepared to negotiate the present market place because of inadequate labor skills (Mehretu, *et al*, 200, 90-91). Traditional Fordist jobs, such as those in the former textile industry of the eastern counties, require a minimal education to accomplish what is termed "low trust" tasks, such as attending a machine. These are the jobs that are often outsourced to the third world. The Post-Fordist work model, driven by "market flux, global competition, and rapid technology," redesigned jobs to fit an autonomous "high trust" model with a focus on mental skills (Vallas, 1999, 77-80). A "knowledge class" became the center of such a work force, and the role of the domestic unskilled laborer is now limited. Indeed, information in itself is a commodity (Kester, 1993, 77, 83). Universities have responded to the needs of the information-based capitalism of the global market, and as a result, they are central to the economic health of the state (Delanty, 2002, 185, 187-188).

The impact of these changes in the work model has serious implications for North Carolina's Eastern Region. Improvements to the infrastructure of a region and the building of state of the art industrial complexes like the Global TransPark will not attract corporations that need a large pool of skilled, flexible-tasking workers. The "One North Carolina Image" that the state wants to promote cannot be achieved when whole blocks of counties become marginalized by educational disparities, as has been the case in eastern North Carolina.

In a recent UNC Tomorrow Listening Forum held at Rocky Mount, residents attending the meeting concurred that only education can provide the bridge between the old and new economies, and that the out-migration of the region's bright students must end. The University of North Carolina needs to be accessible and affordable as it was originally mandated. The connections between K-12, community colleges, and the university should be seamless, and the UNC system needs to reach into rural communities through distance learning resources and satellite campuses to bridge the gap between a Fordist and Post-Fordist labor force (University of North Carolina, 2007).

The Inland Port Success

Charlotte and Greensboro are inland ports, a concept pioneered by the North Carolina State Ports Authority in the 1980s. These Piedmont cities,

Table 1. Demographics of the counties of North Carolina's Eastern Region, formerly the GTP Development Zone. Source: US Census Bureau

County	% Bachelor Degree	% Persons below poverty	% Unemployed	% Less then HS	Pop. Per Sq. Ml.	Median Income '04
Greene	8.2	20.2	7.3	34.6	71	32203
Edgecombe	8.5	19.6	9.6	34.4	110.1	32193
Jones	9.5	16.9	5	27.8	22	33326
Duplin	10.5	19.4	7.4	34.2	60	31893
Lenoir	13.5	16.6	8	28.1	149.1	32123
Pender	13.6	13.6	5.7	23.2	47.2	37394
Pamlico	14.7	15.3	5.7	24.8	38.4	35200
Onslow	14.8	12.9	6.9	15.7	196	34995
Wayne	15	13.8	6.3	22.8	204.9	35018
Wilson	15.1	18.5	7.2	30.6	199	34649
Nash	17.2	13.4	5.5	24.4	161.9	38394
Craven	19.3	13.1	5.3	17.9	129.1	39141
Carteret	19.8	10.7	5	17.9	114.2	40423
Pitt	26.4	20.3	6.8	20.1	205.2	35444
Guilford	30.3	10.6	5.5	17	648.8	42545
New Hanover	31	13.1	5.7	13.7	805.6	42579
Watauga	33.2	17.9	8.2	18.4	136.4	34165
Mecklenburg	37.1	9.2	5.2	13.8	1322.2	49683
Durham	40.1	13.4	5.1	17	770	44048
Wake	43.9	7.8	3.9	10.2	754.6	57846
Orange	51.5	14.1	3.7	12.4	295.6	46621

Counties of the former GTP Development Zone had a significantly higher percentage of individuals that had not completed high school than most of the top seven counties having the highest percentage of college graduates (in gray). Pitt County is the home of East Carolina University. Watauga County, home of Appalachian State University, has a small population. The population per square mile in the counties of North Carolina's Eastern Region is significantly less, with the percentage of unemployed and person living below poverty higher, than most of the counties with the highest number of college graduates. The median household income estimate in 2004 for North Carolina's Eastern Region is lower than the counties with high percentage of college graduates and higher population density per square mile.

Table 2. Correlation analysis of North Carolina Eastern Region county demographic data (from Table 1).

		% Bachelor Degree	% Persons below Poverty	% Unemployed	% Less then HS	Pop/mi².	Median Income '04
% Bachelor	*r*	1	-0.525(*)	-0.581(**)	-0.820(**)	0.682(**)	0.826(**)
Degree	*p*		0.015	0.006	0.000	0.001	0.000
	n	21	21	21	21 21	21	
% Persons	*r*	-0.525(*)	1	0.723(**)	0.777(**)	-0.624(**)	-0.808(**)
below Poverty	*p*	0.015		0.000	0.000	0.003	0.000
	n	21	21	21	21	21	21
% Unemployed	*r*	-0.581(**)	0.723(**)	1	0.676(**)	-0.401	-0.747(**)
	p	0.006	0.000		0.001	0.072	0.000
	n	21	21	21	21	21	21
% Less then HS	*r*	-.820(**)	0.777(**)	.676(**)	1	-.620(**)	-.793(**)
	p	0.000	0.000	0.001		0.003	0.000
	n	21	21	21	21	21	21
Pop. Per mi²	*r*	.682(**)	-.624(**)	-0.401	-.620(**)	1	.770(**)
	p	0.001	0.003	0.072	0.003		0.000
	n	21	21	21	21	21	21
Median	*r*	.826(**)	-.808(**)	-.747(**)	-.793(**)	.770(**)	1
Income '04	*p*	0.000	0.000	0.000	0.000	0.000	
	n	21	21	21	21	21	21

* Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

When the complete Census data from Table 1 is analyzed using Pearson Correlation Coefficient, the most interesting correlation is that between population per square mile, median household income and a college education. This suggests that the division between the college educated and high school dropouts are more starkly defined in the low population density counties.

linked to the ports at Wilmington and Morehead City by rail, attract commerce from industries located in the interior and to the west. For these inland ports, the volume of international trade has increased since the 1980s, and they are now examples of the "large distribution-center business model," in which companies create large distribution facilities to serve a larger market and which is now the business standard. Cargo arrives and leaves the ports rapidly in containers that are off-loaded onto rail cars and trucks. True, large corporations, such as Lowe's and QVC, have located their distribution centers in the eastern counties of Northampton and Edgecombe (North Carolina State Ports Authority, 2007). The actual extent of the market influence of the ports extends to the Piedmont and beyond. Imports and exports at Morehead City and Wilmington represent a greater share of the state's economy than the output and consumption of their respective regions.

Manufacturing in North Carolina is diverse, divided between cutting-edge technology, durable goods, and traditional bulk commodities, such as phosphate. The export market for agricultural products, especially tobacco and cotton, persists. The significance of the ports is magnified by their connection to big inland distribution centers and high value manufacturers. The North Carolina Department of Commerce's *Profiles of Industry* features six key industries other than agriculture. They are "Biotechnology, Pharmaceuticals, and like Science, Business and Financial Services, Chemicals, Plastics and Rubber, Information and Communication Technologies, Motor Vehicles and Heavy Equipment, Textiles, Apparel, and Textile Machinery" (North Carolina Department of Commerce, 2008). Most of these contribute to the top twenty-five export categories.

An examination of the tonnage statistics for the Port of Morehead City from 1997 to 2006 shows that the major export from the port has been phosphate. Scrap metal, sulfur, rubber, and other bulky raw materials were consistently included in the top five commodities that were imported. The Port of Wilmington imports and exports more general merchandise. In 2006, the port exported 167,280 tons and imported 241,065 tons of general merchandise (North Carolina State Ports Authority, 2006). The US Census Bureau lists tobacco and related products as North Carolina's numbers one and two exports for the years 2003 through 2006. Between 2005 and 2006, leaf tobacco exports increased 60 percent from $419 million to $670 million. The number three export was turbo-aircraft parts, followed by blood products, integrated circuits, cotton, chemicals and wood pulp, enriched uranium, and machine parts. The remainder of the list includes a mix of items such as mechanical shovels, pharmaceuticals and motor vehicle parts (US Census Bureau, 2008). North Carolina has a mixed economy ranging from agriculture to the manufacturing of high value durable goods to biotech. It contributes to the domestic market and the global economy.

Just-In-Time Distribution

Just-in-time manufacturing is the making of goods as they are demanded, rather than storing parts and goods in warehouses and filling orders from them. The nature of the just-in-time economy appears to have evolved into a concentration of inventory in geographically strategic locations within the existing transportation network. Consumer goods are sent to retail distributers to meet the specific demands for a product within a region or at a specific location. Items reach the shelves "just-in-time." The integration of a distribution center, parcel service, and a cargo airport appears to be more compatible with the "large distribution-center business model" for specific markets such as individual consumers, and special conditions like time sensitivity, low weight, and high value. Manufacturers serving a national or global market may increase efficiency by adjusting production to specific market demands, but the distribution center is more integrated into the multimodal transportation network.

The Aerotropolis mystique is based upon the reality that cargo aircraft can overcome the logistical friction of land and ocean and deliver goods as quickly as possible. However, there is little reason to believe that the existing regional airports of North Carolina, such as Charlotte/Douglas, Piedmont/Triad, Raleigh/Durham and smaller facilities in the eastern and western counties, are less able to handle an increase in the time sensitive goods of the global

Table 3. Population statistics for the counties of North Carolina's Eastern Region prior the construction of the GTP, and the most current population estimates. Source: Forstall, R. (1995). *North Carolina, Population of Counties by Decennial Census: 1900-1990*; US Census Bureau. (2008). *USA Counties.* http://censtats.census.gov

County	Census 60	Census 70	Census 80	Census 90	Est. 06
Jones	11005	9779	9705	9414	10204
Pamlico	9850	9467	10398	11372	12785
Greene	16741	14967	16117	15384	20157
Nash	61002	59122	67153	76677	92312
Duplin	40270	38015	40952	39995	52790
Edgecombe	54226	52341	55988	56558	53964
Lenoir	55276	55205	59819	57274	57662
Carteret	30940	31603	41092	52556	63584
Wilson	57716	57486	63132	66061	76624
Craven	58773	62554	71043	81613	94875
Wayne	82059	85408	97054	104666	113847
Pitt	69942	73900	90146	107924	145619
Onslow	82706	103126	112784	149838	150673

economy than a dedicated facility like the Global TransPark. In the decade that the state searched for clients for the cargo airport, the existing regional airports upgraded their services and attracted business. Air transport does not supplant rail, highway, and ocean transport. The economy of the state is not based upon the production of high-value, low weight, time-sensitive items exclusively. There is still a global demand for traditional agricultural products, bulky mineral and forest products, and heavy machinery. The ports, railroads, and trucking companies have established profitable alliances. The multimodal distribution based model has worked in practice and includes a broad range of products, whereas the dedicated airport city concept depends upon certain classes of manufactured items, such as those with high value and low weight. It is also dependent upon the presence of a large pool of a certain class of workers, the highly skilled and educated. The major manufacturing that will soon take place at the TransPark is unique. While the Piedmont can supply more than its share of trained individuals to assemble computers, dispatch parcels, manage records, develop software, and test pharmaceuticals, there is a high concentration of military facilities in the east and Cape Fear region training people to handle and maintain aircraft. There are universities in the region that graduate a sufficient number of highly trained professionals, even though most of the Ph.D. programs are located in the Piedmont. In addition, locating the Spirit AeroSystems facility in space-hungry Raleigh, Greensboro, or Charlotte would not have been advantageous.

Conclusion

North Carolina's Eastern Region has few college educated residents, and unfortunately the demands of the present economy require workers that can perform "high trust" tasks. The press quickly identified the more obvious planning errors that plagued the Global TransPark during its early years. It is easy to speculate that had it been located in another region it might have fared better. However, the location, with its proximity to the ports and available growth space, is appropriate for a specific class of manufacturing, and might prove to be a resound-

ing success against the odds in the future. The glaring fact remains that the time when a person could secure life-long employment with a high school education is past. All the superlatives bandied about by the planners of the TransPark – state of the art, high tech, just-in-time, agile manufacturing – depend on the "knowledge class." Politicians, planners, and educators frenquently refer to the nation's place in the global economy, but rarely cast a critical eye on its future development. There are no guarantee that the present economic landscape will remain stable. It is an experiment in so far as nothing like it has existed before.

In the early nineteenth century, every part of the state was enthralled by visionary schemes for canals and railroads. Nathaniel Macon, North Carolina's venerated elder statesman in its early years, steadfastly held to his conviction that the state would be better off if it applied its treasure towards advancing public education and its university rather than follow the commercial fads of the day (Dodd, 1903, 388). He was so right. In the present fast-paced world of global capitalism, commercial fads come and go rapidly. Yesterday it was the Aerotropolis, today it is the large distribution-center business model, and tomorrow the cost of petroleum products will lead to some other business paradigm. It is certain that agile minds will be required to meet the challenges. In addition, it is both ridiculous and socially unacceptable to promote conditions that accelerate the migration of college graduates from the east and west to the Piedmont. Recent experience has made it apparent that water resources in the Piedmont are becoming a serious weakness for industry in the region. The present drought has persisted, and if it is long term, as predicted, the limits of this critical resource will prompt planners to encourage growth elsewhere. From a political standpoint, the economic marginalization of any one section of the state will interfere with any state plan for economic improvements. North Carolina's one hundred counties are divided into four distinct regions with uneven population totals. The regions can align against state policy decisions that they perceive to benefit one region while the others pay for it. Slighted regional centers, like Fayetteville during the "buffalo hunts," might adopt the "go it alone" strategies that will undermine well-intentioned policy in the future. Finally, the recent developments with the TransPark indicate that North Carolina's Eastern Region is an appropriate location for certain high tech manufacturing.

Success or failure, the TransPark history cannot be removed from the region it was intended to improve. Without the aid of improvements in the access to education, the region will not provide workers for the economic landscape of today or tomorrow. The region needs "just-in-time" access to higher education. The University of North Carolina and the North Carolina Community College System will have to find a way of delivering it – with or without walls. Joseph Caldwell, first president of the University of North Carolina expressed similar thoughts in 1832 that are appropriate for the counties of the east today.

> How can we imagine that a people like ourselves, living in an age of knowledge everywhere distributed through a thousand channels, can continue indifference to its opportunities? (Coon, 1908, 557)

References

Coon, C. L. (1908). *The Beginnings of Public Education in North Carolina.* Raleigh, NC: Edwards & Broughton.

Delanty, G. (2006). The Governance of Universities: What is the Role of the University in the Knowledge Society. *Canadian Journal of Sociology*, 185-198.

Dinwoodie, J. (2006). Rail freight and sustainable urban distribution: Potential and practice. *Journal of Transport Geography*, 309-320.

Dodd, W. E. (1903). *The Life of Nathaniel Macon.* Raleigh, NC: Edward & Broughton.

Forstall, R. L. (1995). *North Carolina, Population of Counties by Decennial Census:1900-1990.* Washington, DC: US Bureau of Census, Population Division.

Hesse, M., & Rodrique, J. (2004). The transport geography of logistics and freight distribution.

Journal of Transport Geography , 171-184.

Kasarda, J. (2001). Logistics & The Rise of the Aerotropolis. *Real Estate Issues* , 43-48.

Kasarda, J. (1999). Time-Based Competition & Industrial Location in the Fast Century. *Real Estate Issues* , 24-29.

Kasarda, J., & Rondinelli, D. (1998). Innovative Infrastructure for Agile Manufacturers. *Slone Management Review* , 73-82.

Kester, G. (1993). Out of Sight Is out of Mind: The Imaginary Space of Postindustral Culture. *Social Text* , 72-92.

Luger, M., & Stewart, L. (2003). *Improving North Carolina's Economic Development Delivery System, A Report to the General Assembly In responce to Senate Bill 1115, S.L. 2002-26.* Raleigh, NC: State of North Carolina and The Frank Hawkins Kenan Institute of Private Enterprise .

Mehretu, A., Pigozzi, B., & Sommers, L. (2000). Concepts in Social and Spatial Marginality. *Geografiska Annaler 82 B (2)* , 89-101.

National Cancer Institute/CDC. (2008). *State Cancer Profiles.* Retrieved March 25, 2008, from Cancer Control P.L.A.N.E.T.: www.statecancer profiles.cancer.gov/

NewsBank (2008). "Charlotte Observer," "Fayetteville Observer," "Greensboro News & Record," "Herald-Sun (Durham)," "News & Observer (Raleigh)," "Star News (Wilmington) *America's Newspapers.* Retrieved May 5, 2008 from http://newsbank.com/

North Carolina. (2005)."Senate Bill 606, Ratified Bill, An Act to Amend the Powers of the Global TransPark Development Commission and to Change the Name of the Global TransPark Development Zone to North Carolina's Eastern Region" *General Assembly of North Carolina, Session 2005* Retrieved March 27, 2007 from http://ftp.ncga.state.us/Sessions/2005/Bills/Senate/HTML/S606v5.html

North Carolina (2007). "Chapter 63A, North Carolina Global TransPark Authority Act" *North Carolina General Statutes* Retrieved March 27, 2007 from http://www.ncleg/EnactedLegislation/Statutes/HTML/ByChapter/Chapter_63A.html

North Carolina Department of Commerce. (2008). *Profiles of Industry.* Retrieved March 24, 2008, from Why North Carolina: www.nccommerce.com/en/Business Services/LocateYourBusiness/WhyNC/Profiles of industry/

North Carolina State Ports Authority. (2006). *Port of Morehead City 2006 Tonnage and Trade Statistics.* Retrieved March 23, 2008: www.ncports.com/web/ncports.nsf/

North Carolina State Ports Authority. (2007, November 27). *Inland Terminals in Charlotte and Greenshor Were Nation's First.* www.ncports.com/web/ncports.nsf/

ProQuest. (2007). *The Wall Street Journal.* Retrieved April 19, 2007 from http://proquest.com/

Rodrique, J. (1999). Globalization and the synchronization of transport terminals. *Journal of Transport Geography* , 255-261.

Stearns, P. (1998). *The Industrial Revolution in World History.* Boulder, CO: Westview Press.

U.S. Census Bureau. (2008). *State Exports for North Carolina.* Retrieved March 23, 2008, from Foreign Trade Statistics: www.census.gov/foreign-trade/statistics/state/data/nc.html

University of North Carolina. (2007, September 10). *UNC-Tomorrow Listening Forum, Summary of Public Input, Rocky Mount (Nash Community College.* www.nctomorrow.org/contents.php/reports_documents/regional_forum_reports.htm

Vallas, S. (1999). Rethinking Post-Fordism: The Meaning of Workplace Flexibility. *Sociological Theory* , 68-101.

Vastag, T., Kasarda, J., & Boone, T. (1994). Logistical Support for Manufacturing Agility in Global Markets. *International Journal of Operations & Production Management* , 73-85.

Zhang, A., Chunmei, L., Hui, Y., & Leung, L. (2007). Intermodal alliance and rivalry of transport chains: The air cargo market. *Transportation Research Part E 43* , 234-246.