

Growth and Infrastructure

Submitted to the Institute for Emerging Issues, NC State University

March 2010

Jeff Michael

Director, Urban Institute, University of North Carolina-Charlotte

Growth and Infrastructure

Institute for Emerging Issues

Jeff Michael
December 21, 2009

Introduction

Infrastructure has historically been defined as “public works”, meaning those amenities built “with public funds for public use” (*The Merriam-Webster Dictionary* 1998). Given this definition, infrastructure is commonly thought of in terms of public investments in transportation and schools, the two areas where the public has been most willing to tax itself for the common good. This essay provides an overview of the development of these two forms of infrastructure in North Carolina, how they have influenced and been influenced by the state’s growth, and what role public policy plays in ensuring the adequacy of all forms of infrastructure in meeting the needs of future generations.

Today infrastructure is more broadly understood to include more than just transportation and schools. With the era of cheap energy coming to an end, the public is increasingly concerned about the state’s energy infrastructure, including both publicly and privately held power generation facilities and distribution networks. In a globally connected world made even more so by the rise of the internet, state policy makers increasingly worry about the “digital divide” and the need to improve high speed connections to the world wide web in the state’s more rural and economically-distressed areas. And with unprecedented demands on the state’s limited natural resources, from water to open space, the term “green infrastructure” has recently gained currency in public policy discussions.

While all of these forms of infrastructure are important to North Carolina’s future competitiveness, this essay focuses on the two more traditional forms, transportation and schools, for several reasons. For one, the issues of energy, water and open space are being dealt with in greater detail by a separate author in this IEI Scholars Council series. More importantly, this essay uses transportation and schools, with their long history of public investment, to demonstrate how North Carolina leaders have been willing to use infrastructure more generally speaking both to encourage and manage growth. For additional context, other forms of infrastructure are introduced throughout, but they are not given the same level of attention as transportation and schools.

The Historical Relationship Between Growth and Infrastructure

Infrastructure and growth have always been inextricably tied in North Carolina. Early in the state’s history, infrastructure was an essential tool in the effort to promote growth and development, with the lack of “improvements” during the eighteenth and nineteenth centuries blamed by many for North

Carolina's reputation as the "Rip Van Winkle" state. The twentieth century witnessed an unprecedented period of growth, and it was no coincidence that it was also a period of significant investment in the state's people and infrastructure, from the network of paved roads that earned the state the nickname the "Good Roads State", to a program of electrification made possible by the development of the state's energy infrastructure. By the beginning of the twenty-first century, North Carolina had become so successful in promoting economic development that the focus on infrastructure shifted from using it primarily to promote growth, to determining how best to expand its capacity to accommodate an increase in population unparalleled in the state's history. Mediating this relationship between growth and infrastructure has always been land use policy (or the lack thereof), and the role land use plays in either enhancing or impeding the balance between the two.

In addition to being known as the "Rip Van Winkle" state during its early years, North Carolina was also called the "Vale of Humility between Two Mountains of Conceit", a reference to its more affluent and aristocratic neighbors to the north and south. Both nicknames spoke to the modest achievements of North Carolina, both economically and culturally, during America's early growth as a nation. Even the nickname "the Tar Heel State", however proudly embraced today, grew out of the importance of the tar and turpentine industry to North Carolina's early economic history. Based on natural resource extraction and heavily dependent on slave labor, the tar and turpentine industry did not project the sort of economically progressive image that distinguished other states during the early nineteenth century, particularly those in New England and the Middle-Atlantic .

In fact, the first four decades of the nineteenth century are together considered by many historians as one of North Carolina's most backward periods. With little in the way of investment in public education and a reputation for poor transportation (including substandard roads and few navigable rivers), North Carolina offered little to encourage industry during this period. The economic situation was so bleak that nearly half of North Carolina's counties lost population during the decade between 1830 and 1840 (Powell 1989, 249) with the state as a whole growing by just over 2% during a decade that saw the United States' population grow by over 32% (U.S. Census Bureau). Unfortunately, North Carolina's greatest export during the antebellum period was its people, as many of the state's best and brightest joined the nation's westward expansion to new U.S. territories in the hopes of a brighter economic future elsewhere.

Given this economic malaise, many of the state's leaders during the first half of the nineteenth century pointed to the need for better infrastructure (or "improvements" as they were often referred to at the time) as a means of stimulating North Carolina's stagnant economy. As early as 1820, leaders such as Archibald D. Murphey and a newly-established Board of Internal Improvements were calling for a system of improved turnpikes, canals and other transportation systems (Powell 1989, 260-265). By 1850, the railroads had arrived, setting the stage for the industrial development that would eventually transform North Carolina from a largely agrarian state into a major center of manufacturing. Along with the harnessing of the Piedmont's rivers to power manufacturing operations, the railroads forever altered the economic landscape of North Carolina and set into motion a period of sustained population growth that has continued unabated to this day.

In fact, the state's investment in infrastructure began to pay dividends in the latter decades of the century. Between 1870 and 1880, North Carolina's population grew by over 30% as people were drawn to the state's emerging industries such as textiles, tobacco and furniture. This dramatic growth occurred just forty years after the anemic growth of the 1830s and during a decade when the state was still reeling from the aftermath of the Civil War. This is an astounding figure even by comparison to the state's more recent history, which saw only a 21% growth rate during the much-heralded 1990s and a 14.6% growth rate in the years since 2000.

By the turn of the twentieth century, North Carolina was well on its way to becoming a more industrialized state with a growing urban population. However, by nearly every measure, North Carolina remained a poor state, with limited educational and job opportunities for most of her citizens. Not surprisingly, as the new century began, the state's leaders once again turned to infrastructure improvements to promote economic progress.

As noted in a 2000 report on North Carolina's growth for the Z. Smith Reynolds Foundation by the Brookings Institute, "the main way the state influences growth is through where it directs significant infrastructure funding" (Brookings Institute 2000, 17). What was true at the end of the twentieth century was no less true at its beginning, with the biggest difference between the two eras primarily in how their leaders felt infrastructure's power should be wielded. North Carolina's leadership in 1900 saw infrastructure mainly as a way to catalyze desperately-needed economic growth, while more recent leaders have come to understand that infrastructure is more complex, requiring special care as it is used strategically to promote economic progress while simultaneously making sure that, if successful, it remains adequate to accommodate and manage growth's excesses. The state's twentieth century experience with both public education and transportation are representative of this policy shift.

PUBLIC EDUCATION IN THE TWENTIETH CENTURY

Since the mid-19th Century, public education in North Carolina has been a joint endeavor between the state and county governments, with the state setting curriculum and providing money for operations, and counties providing funds for the development and maintenance of facilities. This relationship dates back to North Carolina's 1868 Constitution, but the state's role was not fully realized until the beginning of the twentieth century, when, in 1901, Governor Charles Aycock secured from the General Assembly the "first major statewide educational appropriation" (Fitzpatrick 2008, *History of North Carolina School Management and Funding*, 3). This deliberate focus on public education at the state level by Governor Aycock set into motion a series of progressive reforms in the first half of the twentieth century that improved not only the quality of education for North Carolina's children, but the facilities in which they learned.

The consolidation of school districts in the 1910s and 1920s (many of which served only a single, one-room schoolhouse) was one of the most significant education reforms of the period, and was followed by the School Machinery Act in 1933, which established the basic framework for how North Carolina's system of public education is structured and funded to this day. This includes the state's reliance on the

sales tax instead of property taxes to fund education, and the expectation that counties continue to fund the construction and maintenance of school facilities (Fitzpatrick 2008, 5). While this basic structure has remained relatively intact, “one noteworthy change (has been) a growing role for the state in providing school construction funds” (Fitzpatrick 2008, 6).

The state’s increased willingness to supplement county funds for school construction stems from both equity concerns resulting from disparities between the state’s wealthier and poorer counties, and a growing recognition of the increased strain on county budgets caused by the need to build new schools to serve the state’s growing population. In 1987, the School Facilities Finance Act established the Public School Building Capital Fund, followed in 1996 by the Public School Building Bond Act. Then, in 2005, a significant new source of state revenue for school construction was established with the creation of the NC State Lottery Fund. Sixty-five percent of the Lottery Fund’s profits were allocated to the Public School Building Capital Fund, with the remaining 35% “earmarked for counties in need” (Fitzpatrick 2008, 7).

Even with these new sources of revenue from the state, many of North Carolina’s counties still struggle to keep up with school construction needs caused by the state’s rapid growth. This has led a number of counties to explore alternative funding mechanisms, such as adequate facilities ordinances, to better align funding for school construction with population growth and land use decisions, particularly those related to residential development. These funding mechanisms will be addressed in greater detail later (in the section on land use), and together represent a classic example of the intersection between the funding of infrastructure needs and land use policy.

TRANSPORTATION IN THE TWENTIETH CENTURY

Transportation has always been a key determinant of population growth. North Carolina’s earliest European settlement patterns reflected the importance of maritime travel in the seventeenth and eighteenth centuries, with the state’s oldest towns, such as Bath, Edenton, and New Bern, established along the coast. Subsequent population expansion into the Piedmont’s “backcountry” occurred along old Native American trading paths, which were obvious transportation corridors for settlers migrating from such places as Pennsylvania and the Virginia Tidewater because of their use of natural fords to cross the Piedmont’s many streams and rivers. These trading paths were transformed into major turnpikes serving wagon transportation, with new market towns such as Salisbury and Hillsborough emerging along their lengths. The railroads arrived in the nineteenth century, ushering in North Carolina’s era of industrialization and establishing a number of new industrial cities and small agriculturally-oriented towns across the state.

The emergence of the automobile in the early twentieth century led to demands for improvements to the state’s network of unpaved market roads, coinciding with the national “Good Roads Movement”. North Carolina’s response to this call for improved roads was so successful that it eventually became known as the “Good Roads State” for its extensive network of paved secondary roads, especially compared to many of its southern peers (Fitzpatrick 2008, *History of Highway Funding and Management*

in North Carolina, 1). As with public education, decisions made in the first half of the twentieth century established the foundation upon which much of the state's current transportation funding policy is built.

Just as public education had been left to local governments during the nineteenth century, transportation was also left primarily to the counties prior to 1900. This began to change in the 1920's, when Governor Cameron Morrison made roads a central policy focus of his administration. In 1921, the Doughton-Connon-Bowie Act authorized the issuance of \$50 million in state bonds for road improvements and created both the State Highway Commission and the State Highway Fund. The legislation also established North Carolina's first gasoline tax, which to this day remains one of the major sources of revenue for the state's transportation system (Fitzpatrick 2008, 2).

By the 1930s, the State had assumed responsibility for all county roads, increasing the gasoline tax to pay for the construction and maintenance of a truly statewide highway system. With the passage of the Powell Bill in the 1950s, the state further assumed responsibility for a number of municipal roads that were considered integral to the state highway system, and provided additional support for municipal road systems by dedicating one half cent of the gasoline tax for the maintenance of eligible municipal roads. The Powell Bill represented the last structural change in transportation policy until 1989, when the Highway Trust Fund Act was passed (Fitzpatrick 2008, 3-4).

In 1956, a major new player entered the field of transportation funding with the federal government's creation of the Interstate Highway System. Not only did this provide an additional source of revenue in the federal government for the creation of a network of limited access highways across the state, it also set into motion a new pattern of suburban growth on the outskirts of the state's urban areas. Interstate highway systems made it more convenient for workers to commute longer distances to work, thereby opening up more land for the low-density, suburban style residential development that was already beginning to characterize the fringe areas of the nation's cities in post World War II America. The consequences of this pattern of growth and its relationship to transportation policy will be addressed further in the following section on land use.

The 1989 Highway Trust Fund Act was passed during Governor James G. Martin's administration, in response to growing concerns about the quality of North Carolina's roads and the state's financial ability to maintain its existing highway system. It was the state's first major transportation legislation in nearly forty years, and aimed to place an interstate-quality highway within close proximity of every North Carolinian. It also set about creating a number of urban loops around the state's major cities while also paving all remaining secondary dirt roads. To help pay for these improvements and to further shore up the state's revenue structure for transportation, the Highway Trust Fund Act created the Highway Use Tax, an updated version of the existing sales tax on automobile purchases. It also established the state's "equity formula" for distributing money from the Highway Trust Fund. Twenty years later, this equity formula remains in place, and has been the target of much criticism in recent years as North Carolina struggles to fund the transportation needs of the state's growing urban areas (Fitzpatrick 2008, 4-5).

In his 2008 report on North Carolina's transportation system for the Institute for Emerging Issues, John D. Fitzpatrick captured the essence of the state's current situation in regards to transportation when he wrote "(i)ncreasing demands tied to population growth, declining revenues, and increasing costs of construction are creating a sense of urgency rarely felt in the past" (Fitzpatrick 2008, 6). With North Carolina's population having grown by nearly 40% since 1990, the state's highway system has experienced a significant increase in usage in recent years. In fact, during the period 1990-2007, the American Society of Engineers' 2009 Report Card for American Infrastructure noted that vehicle travel on North Carolina's highways increased 65% (American Society of Engineers 2009). Much of the state's population growth is concentrated in its booming metropolitan areas, and according to the 21st Century Transportation Committee, seven percent of the state's highway system carries forty-five percent of its traffic (21st Century Transportation Committee 2008).

This increased usage is occurring at a time when the existing highway infrastructure is in need of major repair. The 2009 Report Card for American Infrastructure ranked 31% of North Carolina's bridges as "structurally deficient or functionally obsolete" (American Society of Engineers 2009). Unfortunately, these repair needs are competing with new transportation projects at a time when the dual impact of rising construction costs and declining revenues (caused in part by declines in revenue from the gasoline tax due to more fuel-efficient cars) is taking its toll on the state's transportation budget.

Alternative transportation strategies are also getting serious attention as North Carolina tries to alleviate congestion on its highways and address growing concerns about air quality. The 2008 21st Century Transportation Committee recommended, among other things, a special state fund separate from the Highway Trust Fund for intermodal projects such as public transportation, bike and pedestrian improvements, and rail freight and ports (21st Century Transportation Committee 2008). Public transportation in particular, especially in the form of mass transit, has been elevated in recent discussions about North Carolina's transportation future.

Mass transit is attractive not only because it has the potential to alleviate highway congestion in the state's urban centers; it also offers a partial solution to North Carolina's ongoing air quality problem. In 2008, "one quarter of North Carolina counties (24 counties) did not meet national air-quality standards for either ozone or particulate matter," with that number expected to grow as the US Environmental Protection Agency "ratchets down the acceptable level of emissions to protect human health better" (Tazewell 2008, 28). This situation has placed cities such as Charlotte in the vulnerable position of potentially losing their federal highway dollars for being classified by the EPA as "non-attainment."

Mass transit offers the state an opportunity not only to get more carbon dioxide-producing automobiles off the road, but to encourage more transit-oriented development that can help minimize urban sprawl. The 2007 opening of the first line in Charlotte's new light rail system, the first of its kind in North Carolina, has already proven successful in terms of ridership and in spawning new transit-oriented development along its route. Funded in 1997 with a local-option, half cent sales tax authorized by the state legislature and approved by local voters, Charlotte's light rail system has stimulated interest in mass transit in other urban areas of the state, and encouraged legislators in 2009 to authorize other municipalities to seek similar voter-approved local option sales taxes for transit.

Whether it's the repairing of existing transportation infrastructure, the building of new roads, or the creation of mass transit systems, North Carolina enters the twenty-first century with tremendous financial challenges to build and maintain a modern, multi-faceted transportation system. Recent legislation has tried to address these challenges in a piecemeal fashion, from the creation of the NC Turnpike Authority in 2002 to explore the creation of toll roads (Fitzpatrick 2008, 6), to the 2006-07 legislation giving counties authority to participate in financing highway construction and maintenance (Walden 2009, 4). The 21st Century Transportation Committee's 2008 Report to the legislature offered a number of recommendations for funding North Carolina's transportation needs, but until the adoption of a truly comprehensive strategy for dealing with the state's overall transportation system, such remedies will be nothing more than temporary solutions to a major, ongoing infrastructure problem.

OTHER INFRASTRUCTURE

North Carolina's recent and anticipated population growth is placing strains on other forms of infrastructure as well, each with its own history of state inaction or apathy followed by increased involvement once the consequences of state inaction became clear. For example, water and sewer systems, once the domain primarily of private interests, gradually came under the stewardship of local governments in the twentieth century. However, recognizing their importance both to public health and economic development (particularly in rural areas), the State of North Carolina increasingly assumed a funding role in support of these local systems.

Other infrastructure, including the state's "green infrastructure" of open space, clean air, and natural resources, are under the dual stresses of overuse and inadequate funding. Former Governor Jim Hunt's ambitious goal of protecting one million acres by the year 2010 is unlikely to be met, as already-strapped state trust funds that support land conservation have experienced dramatic budget cuts in the wake of the state's recent fiscal woes. North Carolina's energy infrastructure is being impacted not only by the state's growing population, but also by global issues such as climate change and the decline of non-renewable sources of energy. And the issue of affordable housing has risen in importance as state and local officials look for creative solutions to counter the effect that North Carolina's booming population is having on housing prices.

The Role of Land Use Policy in Managing Growth and Infrastructure

As North Carolina explores solutions to solving its growing infrastructure needs, much of the attention focuses on finding additional revenue to fund the expansion of existing capacity, whether it's in the form of new school facilities, highway projects, or water lines. However, state and local officials are increasingly recognizing the importance of "how" the state grows in determining the nature and scope of future demands on infrastructure. In particular, the role land use policy plays in directing how the state's growth manifests itself across the landscape has received more attention in recent decades,

including the question of whether “smarter” growth can minimize the impacts of the state’s population expansion on its already-stressed infrastructure.

One of the most-often quoted statistics of recent years is the projection by the NC State Demographer’s Office that “North Carolina is expected to grow by a staggering four million additional residents by 2030, one of the fastest rates in the country” (Southern Environmental Law Center 2009, 2). This would be like adding the present-day population of South Carolina to the state over the next twenty years. The manner in which the state and local governments accommodate this growth will have huge implications for the adequacy of North Carolina’s future infrastructure, and hence quality of life.

If North Carolina’s sprawling pattern of growth of the past thirty years is any indication, even greater challenges await the state in maintaining the infrastructure necessary to accommodate this growth. Several recent studies have highlighted this challenge. A 2003 study by the NCPiRG Education Fund analyzed data from the Natural Resource Conservation Service’s (NRCS) Natural Resource Inventory between 1982 and 2002, and found that North Carolina lost 2.8 million acres of cropland and forest land during that period, or 383 acres every day. This was not just an urban issue, as rural counties “saw an almost equal percentage increase in developed land as urban metro area counties.” While population growth has driven much of this land conversion, an entrenched pattern of sprawling growth is also influencing these conversion rates, as development increased eighty-two percent during that period even though population growth was only forty-two percent (Coyne and Ousts 2003, 5-13).

A similar study released in 2007 by researchers at UNC Charlotte used satellite imagery to track land conversion rates between 1976 and 2006 in a twenty-four county region surrounding Charlotte (including twenty-one counties in North Carolina). That study found that the region went from having only two percent of its land classified as “developed” in 1976, to seventeen percent in 2006, with developed lands projected to increase to thirty percent by the year 2030. As an indication of the sprawling nature of much of that growth, the study also found that the amount of land being consumed by development in 2006 was 142 acres per day, or .42 acres per person compared to only .07 acres per person in 1976 (UNC Charlotte 2007).

Such sprawling growth impacts more than just the state’s “green infrastructure” of recreational open space, productive farmland and forest resources. As noted in the earlier section on transportation, low-density, sprawling growth leads to more automobiles on the state’s highways and longer commutes for the state’s workers, many of whom must then deal with serious traffic congestion that also contributes to the state’s growing air quality problem. Previously rural counties suddenly find themselves having to pay for expensive new schools to serve growing numbers of residential developments on the outskirts of the state’s major cities, creating fiscal strains on those counties’ budgets as they learn that residential growth doesn’t always pay for itself in terms of its contribution to the local tax base relative to the services it demands. And what had previously seemed inconceivable in a water-rich state like North Carolina, state and local government officials increasingly find themselves in conflict with one another and with neighboring states over water rights as they try to meet the water consumption needs of a growing population.

As North Carolina's leaders began to seriously wrestle with the impacts of sprawling growth in the 1990s, many elected officials and policymakers began calling for a "smarter" form of growth as they embraced an emerging national smart growth movement. In addition to preserving more of the state's diminishing open space and better protecting its natural resources, the idea of smart growth suggested a wiser use of *fiscal* resources, where growth could be managed in such a way as to mitigate its impacts on existing infrastructure. Further underscoring this relationship between growth and infrastructure, the smart growth movement also recognized the potential for strategically using infrastructure to encourage growth where it is most desired while steering it away from areas that are culturally or environmentally sensitive.

The smart growth movement found official expression in North Carolina at the statewide level during Governor Jim Hunt's fourth term, with the creation of the NC Commission on Smart Growth Management and Development, known as the "Smart Growth Commission." This was certainly not the first time the state had ventured into the realm of land use policy as a growth management tool. The Coastal Area Management Act of 1974 was a major breakthrough in establishing a significant state regulatory role in a field traditionally reserved for local governments. However, the Smart Growth Commission was the first attempt at a truly *statewide* approach to comprehensive land use planning.

The Smart Growth Commission submitted a formal report to the General Assembly in 2001, and among its recommendations were calls for the more efficient use of public resources and the provision of more options for local governments in managing growth, including the authority to use innovative land use tools such as transfer of development rights programs. Even as the Commission called for stronger planning statewide, it kept the focus for growth management at the local level, with regional approaches reserved only for such issues as transportation and open space planning. Despite its emphasis on maintaining North Carolina's tradition of local authority for growth management decisions, the legislature never fully acted on the Smart Growth Commission's recommendations (Franklin 2007, 28). This left many proponents of better growth management frustrated and worried about North Carolina's ability to manage its anticipated growth in the coming decades.

Such concerns are heightened by North Carolina's status as a modified Dillon Rule state, meaning that local governments must seek state approval for powers not previously granted to them. A good example is the previously mentioned recommendation by the Smart Growth Commission to grant local governments the authority to use more land use-related tools to manage growth, such as transfer of development rights programs. In the absence of such authority, there will continue to be uncertainty as to whether local governments in North Carolina can indeed employ such land use tools that are already being effectively used in other parts of the country.

Since the State of North Carolina controls the taxing authority of local governments, their options for funding the growing infrastructure needs of their communities are also limited. David Owens, Professor of Public Law and Government at UNC's School of Government and one of the state's leading experts on local government authority, doesn't accept the argument that local governments don't have adequate regulatory authority to manage growth. However, he does believe that their revenue options for meeting the infrastructure needs associated with growth are limited. In 2007, he was quoted as saying that "(local governments) don't use the range of (regulatory) authority they already have. They

can do all the planning and land use regulation they want;" but, "(t)hey have a much more limited palette to deal with the fiscal implications of growth" (Franklin 2007, 35).

While North Carolina does not allow local governments to charge impact fees on new development to cover the general costs of growth, an increasing number of counties and municipalities have adopted adequate public facility ordinances, which tie approval of new developments to an assessment of whether the local infrastructure, such as school facilities, is adequate to accommodate the new development. If not, approval may still be granted if the developer pays for the cost of expanding the capacity of the particular infrastructure deemed inadequate. However, even adequate facilities ordinances are being challenged legally, and in the absence of clearer legislative authority on such funding mechanisms, the ability of local governments to pay for the costs of growth will remain somewhat constrained.

The General Assembly, to its credit, has recognized the challenges facing local governments, and has in recent years passed legislation intended to provide more flexible options for local funding of growth-related infrastructure. In 2007, the General Assembly gave local governments the authority to ask voters to allow land transfer taxes on a county-by-county basis. However, every local referendum on the issue since the legislation was passed has failed, dimming the hopes of many that the land transfer tax might one day provide much-needed fiscal relief for expanding infrastructure. Similarly, in 2009 the General Assembly extended to other local governments the authority previously granted only to Mecklenburg County to levy a one half cent sales tax for transit. However, given the economic climate of the past year, no county chose to put the option up for approval by local voters in the 2009 elections.

Even North Carolina's liberal annexation laws, long considered an important tool for local governments in expanding their tax bases and managing growth around their municipal boundaries, came under serious attack in the 2009 legislative session. While no substantive changes were made to those laws in 2009, the issue is likely to be revived in the near future. As North Carolina approaches the second decade of the twenty-first century, the best that can be said for local governments' ability to keep pace in building infrastructure to accommodate the state's growing population is that it has an increasingly sympathetic legislature, but one that hasn't yet agreed upon an adequate set of local revenue and regulatory options to meet that challenge.

Regional Approaches and the Role of the Private Sector

As an alternative to state support in managing growth, local governments are increasingly looking to one another for regional approaches to meeting shared challenges. The Charlotte region's CONNECT initiative (co-facilitated by the Centralina Council of Governments) and the recently-established NC Mountain Resources Commission are two examples of regional planning and collaboration that, while lacking regulatory authority, have the potential to create common local responses to regional concerns such as transportation, air quality, water resources and open space protection. In addition, such efforts

are proving effective in mobilizing both private sector and federal support for regional infrastructure needs.

Private community foundations have also stepped forward in recent years to help focus attention on regional growth-related issues, and in some cases even to raise private capital to address local infrastructure needs. The Foundation For The Carolinas in Charlotte first entered the growth management field in the late 1990s with two initiatives promoting smart growth: the Carolinas Land Conservation Network and Voices & Choices, a regional planning organization. While neither initiative has survived, they were the precursors to the foundation's latest, and most ambitious, planning-related venture – the Carolina Thread Trail, launched in 2007. A 14-county effort to establish an interconnected network of recreational trails throughout the greater Charlotte region, the Carolina Thread Trail has already raised over \$15 million in private funds to assist local governments in the planning and development of greenways aimed at meeting the growing recreational needs of this booming metropolitan region.

Similarly, the Community Foundation of Western North Carolina's "Mountain Landscapes Initiative" is an effort to leverage private foundation resources to foster regional planning in the mountains of western North Carolina. For a region historically suspicious of government planning and regulation, the foundation's role in fostering local and regional dialogue about growth management issues has been welcomed by many who have long recognized the challenges facing any local government hoping to initiate such a conversation. Combined with the newly-established NC Mountain Resources Commission, the Mountain Landscapes Initiative has helped bring about a new era of receptiveness to land use planning in the western part of the state.

Regional collaborations focusing on growth and infrastructure issues have also started to recognize the importance of working across state lines, particularly to harness the political clout necessary to attract federal support for expensive and complex interstate infrastructure projects. Perhaps the best example of this is the new Piedmont Alliance for Quality Growth, a collaboration of municipal governments, private interests and academic institutions established in 2009 to focus on what organizers are calling the Piedmont Atlantic "Megaregion", a corridor stretching along Interstate 85 from Birmingham, Alabama up through Atlanta and Charlotte to the Research Triangle Park. On the Alliance's agenda are future discussions about high-speed passenger rail between Washington, DC and Atlanta, and long-term water supply strategies for the southeastern US. Participants in the Alliance recognize that any such large-scale infrastructure projects will require the financial and regulatory support of the federal government to become reality, and that interstate collaboration will be the key to winning that support.

Finally, state and local governments are increasingly looking to the private, for-profit sector to help catalyze and pay for growth in targeted areas where planners hope to take advantage of existing infrastructure while mitigating pressures for continued outward sprawl. Local governments throughout the state are now revisiting zoning ordinances that for years had either intentionally or inadvertently encouraged sprawl through provisions requiring low density residential development and the rigid separation of land uses. In urban areas, zoning changes are being implemented with the goal of encouraging the private sector to invest in transit-oriented development, which encourages denser,

mixed-use developments around transit stops with the goal of fostering higher ridership, thereby making public transit more viable in the long-term.

In 2004, North Carolina voters approved a constitutional amendment allowing the use of tax increment financing, or TIF, to pay for infrastructure improvements. This was just another example of the public sector's recent efforts to leverage private investments to help balance growth. While the use of TIF in North Carolina has been limited since it became legal five years ago, a number of local governments across the state are exploring it as a means of spurring economic growth in long-neglected corridors and paying for coveted infrastructure such as passenger rail. In fact, discussions about expanding Charlotte's successful mass transit system have frequently raised the prospect of using TIF as one of the means for paying not only for the expansion of the existing light rail line, but for the addition of a new commuter rail line to north Mecklenburg County and a cross-town streetcar line that would connect two economically depressed areas to Charlotte's center city.

Public investment in downtown revitalization is just another example of how local governments in North Carolina are trying to entice the private sector to invest in long-neglected areas to provide a counterbalance to the centrifugal force of sprawling growth. Whether it's in the form of streetscape improvements, tax credits for the redevelopment of abandoned properties, or major public investments in downtown civic, cultural and recreational facilities, local governments throughout the state have been aggressively seeking to redirect growth back to their historic cores, where the existing infrastructure can more easily accommodate future growth. In fact, the rebirth of the downtowns of many of North Carolina's growing cities, from Asheville in the west to Wilmington in the east, has been one of the more promising success stories in the ongoing effort to reverse nearly a half-century of sprawling growth that has severely strained the state's existing infrastructure.

CONCLUSION

As North Carolina looks to a future of continued population growth that will firmly establish it among the nation's ten most populous states, infrastructure once again has emerged as a central focus of the state's response to growth concerns. Unlike the previous two centuries, when North Carolina was concerned about too *little* growth and looked to infrastructure to jump-start the state's economic progress, today's leaders are wrestling with how to improve the state's infrastructure both to accommodate and manage for an unprecedented period of sustained growth that began in the latter part of the twentieth century and is expected to continue well into the twenty-first. The 2000 Brookings Institute report on North Carolina's growth for the Z. Smith Reynolds Foundation remains a relevant document ten years later not only for the excellent snapshot of North Carolina that it provided at the dawn of the new century. The report also presented a number of challenging questions about the unknown consequences of the state's growth including:

- What is the full extent of the environmental consequences of growth?
- What are the fiscal costs of growth for NC's metropolitan areas?

- What are the social consequences of North Carolina's growth patterns? (Brookings Institute 2000, 17)

Ten years later, North Carolina continues to struggle with the answers to these questions. While the true environmental, fiscal and social costs of the state's growth may still be hard to assess, however, there is a growing awareness that the state's infrastructure, long viewed as a significant catalyst for the stimulation of growth, is ironically in danger of being overwhelmed by it.