

A REPORT FROM THE INSTITUTE FOR EMERGING ISSUES

CHANGING  
LANDSCAPES:  
BUILDING  
THE GOOD  
GROWTH  
STATE?

October 2009

**A failing infrastructure  
cannot support a healthy economy.**

**Wayne Klotz  
President, American Society of Civil Engineers**



## Why Infrastructure? Why Now?

North Carolina's growth is placing great strain on its built infrastructure and natural resources – key elements for realizing sustained economic growth. Over the next quarter of a century the state will become home to at least four million new residents. They will need places to live, work and play. The private sector will drive much of the state's new development, but North Carolina and its local governments will be called upon to make unprecedented infrastructure investments in roads, water and sewer systems and schools. The decisions we must make about those investments require us to reflect on the way we want to live and the way we build.

Now is the time to revisit our vision for North Carolina's future and set into motion a plan to build a resilient infrastructure that can withstand the increasingly powerful external pressures that have become more significant in recent years, such as rising energy costs, climate change, natural disasters and financial crises. This plan will sustain our competitiveness over the long-term, preserve our high quality of life and our natural environment and serve the needs of all North Carolinians. For this reason, IEI's program of work focuses on those policies and practices that will shape the way we build in the years ahead in order to increase our resiliency to unforeseen shocks.

At the Emerging Issues Forum in February 2009, participants agreed that infrastructure investment is a top priority for North Carolina. As indicated below, participants felt that North Carolina must make some considerable changes to the way it builds and funds its major infrastructure if it is to remain competitive in the 21st century.

### Forum Survey Answers:

*North Carolina's existing system for building and funding infrastructure will meet our needs for the foreseeable future.*

Strongly Agree	1%
Agree	4%
Disagree	34%
Strongly Disagree	54%
Don't Know	7%

*The chief obstacle to fixing our state's infrastructure problems is:*

Lack of money	16%
Not the right vision and leadership	24%
Inefficient spending	10%
Dysfunctional institutional structures at the state and local levels	47%
Don't know	3%

**Addressing our infrastructure problems  
in a comprehensive way is a  
once-in-a-generation opportunity.**

**Christopher J. Dodd  
U.S. Senator, State of Connecticut**

# Fast Facts: The State of Our Infrastructure

## *United States*<sup>1</sup>

### Transportation

- More than 26%, or one in four, of the nation's bridges are either structurally deficient or functionally obsolete.
- One-third of major roads in the United States are in poor or mediocre condition.
- 45% of major urban highways are congested.
- The Federal Aviation Administration (FAA) predicts 3% annual growth in air travel.
- Transit use increased 25% between 1995 and 2005.

### Water/Sewer

- Out of more than 85,000 dams in the United States, 4,000 have been listed as deficient and more than 15,000 are potentially high hazard dams.
- Leaking pipes account for an estimated 7 billion gallons of clean drinking water lost in the United States every day.
- In 2007, the United States produced 254 million tons of municipal solid waste. More than a third was recycled or recovered, representing a 7% increase since 2000.
- Aging systems discharge billions of gallons of untreated wastewater into surface waters each year.

### Schools

- In the United States, 15% of schools are overcrowded and 30% of students attend schools that are overcrowded.
- Even though overcrowding exists, from 1995 to 2004, public school districts built more than 12,000 new schools and managed more than 130,000 renovation and improvement projects.<sup>2</sup>

## *North Carolina*<sup>3</sup>

### Transportation

- There has been a 65% increase of vehicle miles travelled on North Carolina's highways from 1990 to 2007.
- 31% of the state's bridges are labeled structurally deficient or functionally obsolete.
- 27% of major roads are in poor or mediocre condition.

### Water/Sewer

- North Carolina has 1,218 high hazard dams (dams whose failure would cause loss of life and significant property damage). Of these dams, 79% have no emergency action plan.
- North Carolina ranks 12th in the total number of hazardous waste producers.
- North Carolina has more than 530 public water systems statewide to serve 67% of the state's population.
- 75% of North Carolina towns reported their storm system was in fair or poor condition.

### Schools

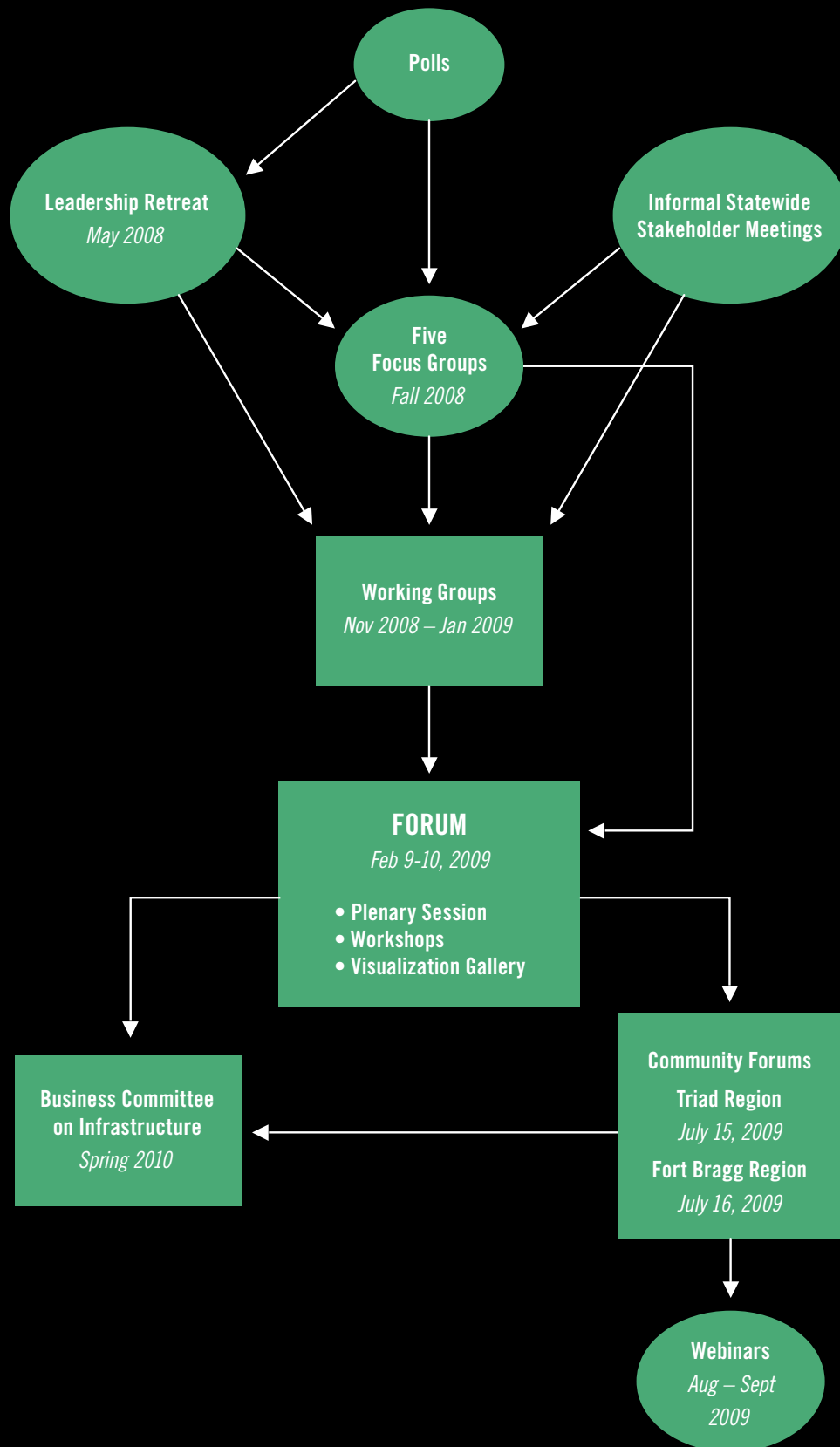
- In North Carolina, 46% of schools will require some form of renovation in the next five years – one-third will be needed in less than two years.
- More than 190 schools will be considered obsolete in five years or less.
- 13% of all public school students are in mobile classrooms.

1. *Report Card for America's Infrastructure*. The American Society of Civil Engineers, 2009, [www.infrastructurereportcard.org](http://www.infrastructurereportcard.org)

2. *Growth and Disparity: 10 Years of U.S. Public School Construction*. Building Educational Success Together (BEST), 2006, [www.21csf.org](http://www.21csf.org)

3. *North Carolina Infrastructure Report Card*. The American Society of Civil Engineers, 2009, <http://nc.asce.org/ReportCard.html>

# Putting the Pieces Together: IEI's Model Public Policy Process



# **IEI @ Work: A Timeline of Programmatic Activities**

## **Spring/Summer 2008**

IEI conducts extensive research, speaks with leaders statewide, and surveys North Carolinians across the state to learn about the challenges facing our state and its communities due to our growing population and the impact this growth will have on our built infrastructure. These efforts yield a focus on the core infrastructure systems of transportation, water/sewer and school construction.

## **May 2008**

As the official start of the model public policy process, IEI brings together a select group of leaders from business, government, education and nonprofits at its Leadership Retreat in Greensboro. Participants are charged with identifying a visionary agenda for addressing our dramatic infrastructure challenges. This gathering allows IEI to better understand the challenges facing the state and to begin to structure a program of work that is responsive to these challenges and complementary to the good work already being done statewide.

## **Fall 2008**

IEI travels across the state to host a series of five Focus Groups in Jackson, Brunswick, Union/Anson, Granville/Vance/Warren and Pasquotank Counties. The goal of the Focus Groups is to learn about the unique infrastructure challenges facing varied communities statewide and to identify the assets available in each community as it addresses these challenges.

## **November 2008 – January 2009**

Informed by the output of the Focus Groups, IEI convenes a Working Group charged with identifying the most critical challenges for North Carolina to address if it is to build and maintain resilient physical infrastructure that is distributed in a balanced and equitable way. The Working Group, an important component of IEI's model public policy process, determines eight statements of direction that, if pursued, will put the state closer to achieving this goal.

## **February 2009**

IEI holds its 24th annual Emerging Issues Forum, "Changing Landscapes: Building the Good Growth State?" A sold-out crowd of more than 1,100 business, government, higher education and nonprofit leaders fill the Raleigh Convention Center to hear speakers from across the state, the country and the world discuss their views on how to build the good growth state.

## **July 2009**

From the Forum emerges a clear call to focus on financing options to pay for the infrastructure our state and its communities will require in the years ahead. In partnership with UNC-TV and PBS's *Blueprint America* series, IEI convenes two Community Forums in the Triad and Fort Bragg regions to explore the infrastructure financing options available to local governments as their struggle to pay for the services their residents need is exacerbated by the widespread economic recession. Community Forum participants indicate that public-private partnerships (PPPs) are the most important funding mechanism to explore as local governments seek to raise sufficient revenue to build and maintain critical infrastructure at the same time state funds become less reliable.

## **August – September 2009**

In response to Community Forum output, IEI and UNC-TV organize a series of webinars led by national and state experts to explore best practices of PPPs and the effective use of PPPs in North Carolina.

## **Spring 2010**

IEI convenes a Business Committee on Infrastructure (BCI) to further explore the use of PPPs in North Carolina. The BCI seeks to clarify the viability of extending authority for PPPs in North Carolina by examining various national models under the lens of our state's particular needs. BCI output will be used to support legislative efforts in the 2010 session of the North Carolina General Assembly.

# Focus Groups

IEI conducted Focus Groups in the fall of 2008 to ensure that any statewide plan to balance growth and infrastructure needs incorporated the unique challenges facing diverse communities across the state, with a particular recognition that while all communities are experiencing some type of infrastructure challenge, not all are experiencing population growth.

The following locations were chosen for Focus Groups because of their unique demographics, economy and geography, all of which affect the way a community responds to its infrastructure needs.

- Jackson County
- Brunswick County
- Granville/Vance/Warren Counties
- Union/Anson Counties
- Pasquotank County

The goals of the Focus Groups were to 1.) identify the challenges facing each community in terms of maintaining a sound built environment in the face of external changes, 2.) determine the vision for the future of the community, and 3.) evaluate the various assets available to the community as it wrestles with change.

IEI's Focus Groups covered a wide range of challenges, many shared among very diverse communities. For example, each community visited expressed a concern over the ability of its leadership to effectively address infrastructure challenges today in a way that will ensure a high quality of life tomorrow. Also, these communities struggle with a declining tax base as the number of retirees increases and the general population mix shifts, drawing concern about having sufficient revenues to pay for needed infrastructure. Finally, each community places a great deal of value on the preservation of open space and the rural character of the area. Protecting this natural asset is a top priority across the state.

IEI's work undoubtedly was enriched by these first-hand accounts. The Focus Groups provided valuable anecdotes of a community's struggle to mitigate the impact of population change in an effort to build stronger communities and provide a high quality of life for residents and visitors alike. Below is a review of what IEI learned in each community.

## Jackson County

Located in North Carolina's southwestern-most corner, Jackson County prides itself on its spectacular natural asset: the Appalachian Mountains. The area is home to the Cherokee Boundary and Western Carolina University (WCU), which enrich the community with tourism and human capital, respectively. However, one of the most significant concerns of Focus Group participants was the rapid rate of development, which has been destroying the very natural beauty that has long brought tourists to the area. This development has also spurred a rise in property costs forcing teachers and WCU professors, among others, to live outside the county and endure long commutes to work. With proactive leadership and an understanding of the comprehensive nature of the challenges facing the community, Focus Group participants are confident their community leaders can grow Jackson County in a way that preserves its greatest assets and enhances the quality of life for residents both new and old.

## Brunswick County

Brunswick County, on the coastal border with South Carolina, has been slow to receive some of the growth and development that New Hanover County (home to Wilmington) has just to its north. However, the area is steadily growing, but of note is the type of growth the area is receiving. More than 40 percent of Brunswick County's residents are retired. This trend significantly impacts the county's tax base in terms of property and sales tax revenues. In the words of one Focus Group participant, "Growth in Brunswick County is not adding value." One of the area's primary goals is to attract a younger, educated population, which will in turn lure business and spur economic development, creating a more balanced and sustainable community.

## Union/Anson Counties

Union and Anson counties are two neighboring counties just east of Mecklenburg with unique circumstances. Union County is the fastest growing county in the state, growing nearly 50 percent since 2000. All of this growth is concentrated in the western part of the county as Charlotte steadily expands. Anson County, just east of Union, is experiencing population decline. In IEI's Focus Group, representatives from Union County warned those from Anson County to use the time they have to plan carefully for the growth that is slowly making its way across eastern Union County and across the county line to Anson. Union County leaders regret not having the time necessary to think through how to plan for the "right" growth and how to proactively structure this growth in a way that will sustain the county's long-term competitiveness and high quality of life by ensuring the health of its own economy – not one dependent on Charlotte's commuters.



## Granville/Vance/Warren Counties

Located north of the Triangle on the Virginia state line, Granville, Vance and Warren Counties are currently struggling to maintain their quality of life. With a collaborative vision for regional growth, perhaps these communities can overcome these challenges together. This Focus Group identified school performance, affordable homes, a declining tax base, workforce shortage, and repairing aging systems like water and transportation as their biggest concerns. However, they do have some assets in education, particularly one of the few technical high schools in the country along with several locally run education initiatives.

## Pasquotank County

The strongest asset to the community has long been its location on North Carolina's beautiful northeastern coast, which has drawn a considerable number of new in-state and out-of-state residents and retirees to the area. Residents are gravitating toward the waterfront and toward Elizabeth City's downtown area, specifically, which has driven up property costs causing a lack of affordable housing and rental property for the community's working class. IEI learned that the area has had success in working across county and even state lines to provide some of the core infrastructure its residents require. In fact, Pasquotank County and other northeastern counties are more closely aligned with Hampton Roads, VA than they are with our own state capital. Community leaders have adopted a "do-it-yourself" attitude as a reaction to a perceived lack of interest in their community from North Carolina's state leadership.

## Focus Group Members

Tom Anderson – Vance Co.  
*Vance County Government*

Susan Arch – Jackson Co.  
*Arch Hotels*

Jennifer Baptiste – Anson Co.  
*Anson County Government*

Maurice Berry – Pasquotank Co.  
*Farmer*

Linda Cable – Jackson Co.  
*Jackson County Government*

John C. Church, Jr. – Warren Co.  
*Warren County Government*

Frank Deese – Union Co.  
*Mayor, Town of Marshville*

Lewis Dozier – Brunswick Co.  
*ROCCA*

Lynn Edwards – Anson Co.  
*Anson County Chamber of Commerce*

Ernie Fleming – Warren Co.  
*Warren County Commission*

William Flythe – Brunswick Co.  
*Brunswick County Government*

Maria Garcia – Pasquotank Co.  
*Northeastern Community Development Corp.*

Daune Gardner – Union Co.  
*Mayor, Town of Waxhaw*

Walter Gardner – Warren Co.  
*Mayor, Town of Warrenton*

Terry Garrison – Vance Co.  
*Vance County Commission*

Stephen Greiner – Brunswick Co.  
*Brunswick Community College*

Joe Harley – Jackson Co.  
*Institute for the Economy and the Future, Western Carolina University*

Misty Harris – Anson Co.  
*Anson County Government*

Mary Jean Herzog – Jackson Co.  
*Western Carolina University*

Luan Ingram – Union Co.  
*Union County Public Schools*

Andy Ireland – Jackson Co.  
*Institute for the Economy and the Future, Western Carolina University*

Lee Jensen – Union Co.  
*Union County Government*

Ken Krulik – Warren Co.  
*Warren County Government*

Kevin Martin – Anson Co.  
*Farmer*

John McKay – Union/Anson Co.  
*South Piedmont Community College*

Jordan McMillen – Vance County  
*Vance County Government*

David Moore – Jackson Co.  
*Coward Hicks & Siler*

Daniel Ostergaard – Jackson Co.  
*Institute for the Economy and the Future, Western Carolina University*

The Honorable William Owens –  
Pasquotank Co.  
*NC House of Representatives*

Jennifer Palestrant –  
Pasquotank Co.  
*Elizabeth City Area Chamber of Commerce*

Brian Smith – Brunswick Co.  
*WB Properties & Construction, LLC*

Joe Stanley – Brunswick Co.  
*Joe & Moe's Automotive*

Brandon Stephens – Jackson Co.  
*Eastern Band of Cherokee*

Jay Tilley – Granville Co.  
*Granville County Economic Development Commission*

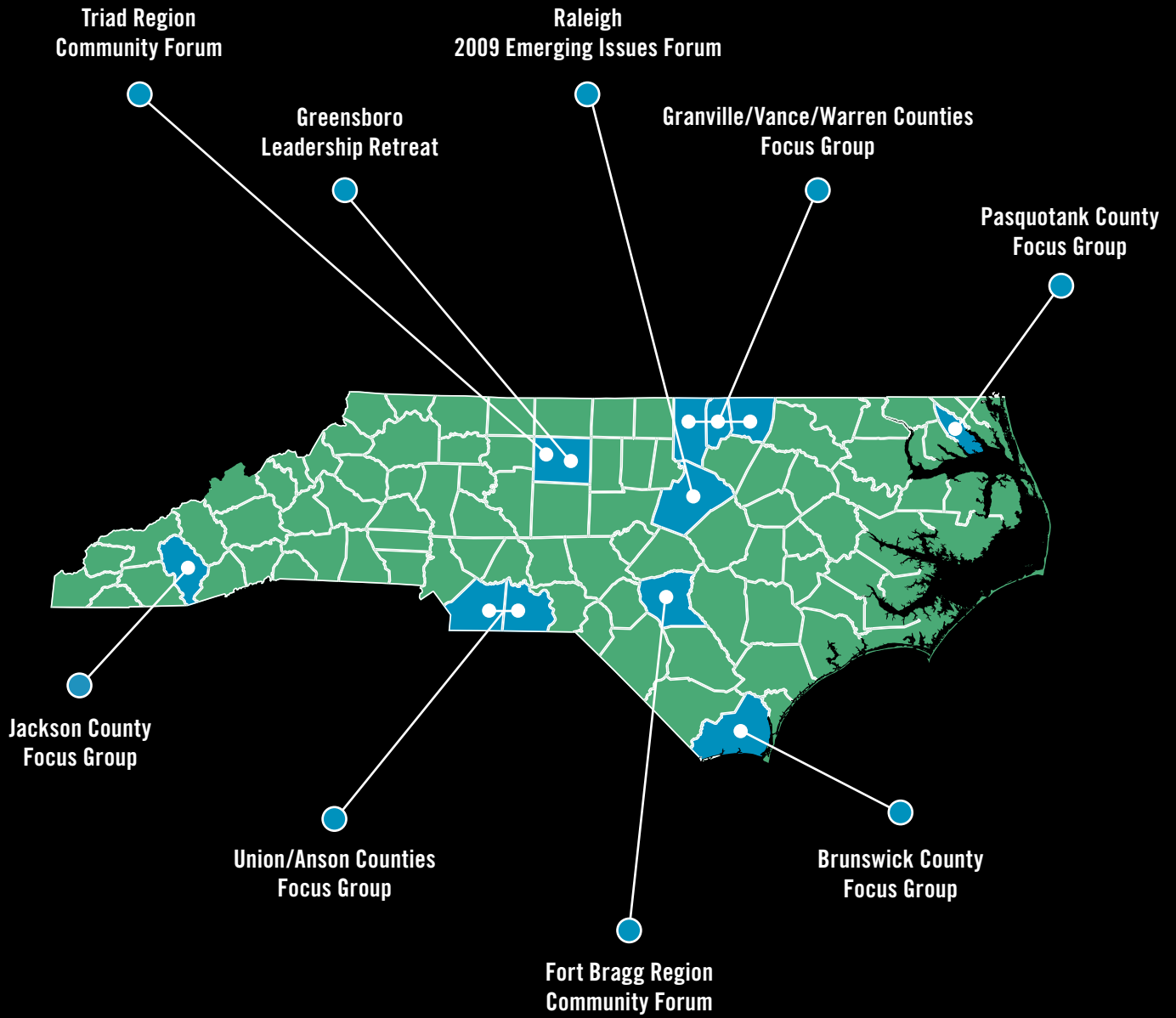
David Twiddy – Pasquotank Co.  
*Gateway Bank & Trust*

Carl Webber – Union Co.  
*Town of Marshville*

Resea Willis – Brunswick Co.  
*Brunswick Housing Opportunities*

Linda Worth – Warren County  
*Warren County Government*

## IEI on the Road



## Working Groups

In preparation for the 2009 Emerging Issues Forum and work beyond, IEI convened a Working Group to define broad goals, or statements of direction, that will guide North Carolina as it addresses its current and future infrastructure challenges. Folding in what was learned through the Focus Groups, the Working Group members identified a range of high impact practices, or action items, leading to positive effects across the state on the way we build communities. IEI then used this output to inform the agenda of the Forum in a meaningful way by introducing the challenges and opportunities discussed and debated by Working Group members to a broader audience. Furthermore, the Working Group's synthesis of these challenges directly informed IEI's post-Forum efforts as we work to put ideas into action through changes in the regulatory and financial framework at the state level and through the design and adoption of best practices at the local level.

The Working Group met three times between November 2008 and January 2009. Through focused debate and dialogue, a set of eight statements of direction were agreed upon by IEI's Working Group as critical for North Carolina to address if it is to build and maintain resilient physical infrastructure that is distributed in a balanced and equitable way. While the statements of direction reflect unanimous agreement by Working Group members, no consensus was sought in determining the bulleted menu of action items allowing for a diversity of perspectives to be included.

## Statements of Direction

### **1. Governance structures should be responsive to the state's built infrastructure challenges by forging collaborative relationships and redefining government responsibilities for developing, maintaining and financing our built infrastructure.**

- Actively study and implement new forms of regional government decision-making and financing authority for transportation and water/sewer infrastructure. Approaches may differ in metro areas and rural areas.
- The state should financially reward intergovernmental collaboration and discourage fragmented approaches by withholding funding.
- Explore a state policy to expand broadband infrastructure statewide.
- Explore county funding of roads.
- Revisit the current structure, authority, accountability and boundaries of existing regional entities, for example, regional economic development agencies, Councils of Government, MPOs and RPOs.

### **2. Built infrastructure should be financed and managed in an economically sustainable manner, considering government needs and abilities, with a plan for future service shortages, crises and changing conditions.**

- Local governments should evaluate existing funding authorities for maximum utility and provide dependable built infrastructure.
- Provide incentives for co-location of built infrastructure.
- Create built infrastructure funding mechanisms that are fair, equitable and broad-based.
- Develop a coherent funding framework that incorporates local, state, federal and private funding options.
- Increase transparency and accountability in funding allocation.
- Increase the statewide real estate transfer tax to pay for infrastructure needs.
- Requirements for surcharge on existing water/sewer users to pay future expansion and improvements.
- Charge impact fees for financing expansion of new development.
- Explore alternative public revenue sources for built infrastructure.

**3. Community planning should engage residents so they are able to understand the positive and negative consequences related to various land uses and can inform decision-making about built infrastructure investments and the long-term vision for the way North Carolina builds and grows.**

- Require financial disclosure with planning proposals (e.g. if we do x then taxes will increase by y).
- Communicate what the incremental costs are for new development.
- Educate citizens so that built infrastructure is not taken for granted.
- Include city planning and management curriculum in high schools.
- Develop a web based citizen interface to communicate the built infrastructure footprint.
- Hold "Community Planning 101" for community residents.

**4. Built infrastructure should be designed and operated so that it enhances, complements or sustains clean air and water, healthy farms and forests and abundant open space.**

- Identify failing built infrastructure and target funds to fix or abandon as appropriate.
- Strive to ensure that built infrastructure enhances the environment either directly or indirectly in the design and planning process.
- Develop a process for conducting environmental enhancement evaluation (change mind-set from environmental impact to environmental enhancement).
- Develop incentives and requirements for reducing carbon footprint.
- Enforce existing environmental laws.
- Identify funding for a stormwater retrofit program.
- Encourage research of costs and benefits and beneficial use of ecosystem services to be incorporated into planning processes.
- Promote the development of statewide policy for the implementation of low impact development and green development including clean energy.
- Create public awareness efforts and educate citizens about our environmental impacts so the public will support needed changes.
- Conserve more land by providing dedicated increased funding for land conservation programs.
- Expand tax incentives for land owners who wish to preserve their land.

**5. Future growth should create communities that offer transportation choices that are reliable, accessible, efficient, complementary, affordable, desirable and enhance public and environmental health.**

- Adopt transportation funding mechanisms that are more transparent to system users (VMT, tolls, HOT/HOV, congestion pricing).
- Commit to longer term funding of nonmotorized and transit infrastructure (not annual budgets for capital investments).
- Develop incentive programs to connect local governments and planning with transit operations and service expansion.
- Provide tax benefits to workers and employers to use alternative modes.
- Integrate transportation infrastructure planning into other built infrastructure categories – it is the nexus for the connections between places and development.
- Reduce the weighting of mobility by private car as a criterion for transportation investment.
- Target highway investments toward existing infrastructure that support other long term 'good growth' goals.
- Incorporate climate change and sea level rise impacts into transportation investments and decisions.
- Identify assets that can be leveraged for creating additional choices – corridors, freight facilities, park and ride lots, etc.
- Maintain the condition of our existing freight network.
- Explore new technologies to improve the efficiency of operations on our freight network.
- Explore new funding and operations strategies to provide transportation choices in rural areas.

**6. Communities should offer water/sewer/stormwater infrastructure that is reliable, accessible, efficient, affordable, economically sustainable and enhances public and environmental health.**

- Study and encourage use of low impact design for irrigation and stormwater runoff.
- Make drought plans mandatory statewide.
- Invest in research and development for cleaner, more cost-efficient water and wastewater treatment technologies.
- Encourage direct potable reuse of wastewater.
- Use gray water and rainwater for irrigation and cooling mechanisms.
- Make interconnections of water systems mandatory.
- Coordinate regional water/sewer authorities with land use planning.
- Improve fiscal analysis of installation of water and sewer systems (direct and indirect costs).
- Encourage rate structures for water/sewer that account for direct individual costs and benefits (e.g. increasing block rate).
- Provide strong education for water conservation techniques.
- Create rate structures that fully capture depreciation.
- Examine cost-justified impact fees.
- Encourage 'gray to green' stormwater retrofits of existing neighborhoods and built infrastructure.
- Establish local and regional water/sewer delivery areas to limit sprawl and conserve limited resources.
- Strengthen permitting and inspection regulations for well, septic and package sewer systems.

**7. Communities should locate, build and maintain schools in a manner that is affordable, energy and resource efficient and enhances student learning.**

- County school boards and county governments should encourage collaboration beyond government boundaries to efficiently serve student population centers.
- Evaluate existing built infrastructure to determine retrofitting or selective abandonment.
- Look to existing built infrastructure to improve current school structures prior to new construction.
- Redefine schools to be community centers including recreation, arts, libraries, public meeting spaces and community colleges.
- Consider development of "right size" (i.e. 500 student population) schools instead of large school "factories."
- Encourage school boards and county governments to actively pursue public-private partnerships for school financing.
- Explore giving school boards taxing authority.
- Incent green-building (i.e. LEED certification) and daylighting of school buildings.
- Encourage the construction of urban school design (multi-story, compact footprint) in urban settings.

**8. North Carolina's communities should offer a range of housing options that are affordable, energy and resource efficient and located so as to provide residents with appropriate access to transportation, jobs, schools and services.**

- School land should include affordable housing below market.
- Transit-oriented development should require affordable, below market rate housing.
- Foster and support efforts for providing employer-assisted housing.
- Foster public-private partnerships to develop housing around new employment locations.
- Incent developers to offer a range of housing prices in new housing development or redevelopment.
- Encourage higher density and different housing designs in areas where development has already occurred.

**We should consider different funding mechanisms to pay for our infrastructure, audit our practices and make sure we're maximizing every dollar spent.**

**Janet Cowell  
North Carolina State Treasurer**

## Working Group Members

Kofi Boone  
*Professor of Landscape Architecture*  
*NC State University College of Design*

Vicki Bott  
*Associate Director for Public Policy Research*  
*Urban Institute, UNCC*

Betsy Clark  
*President and CEO*  
*DiamondWater, LLP*

Keith Debbage  
*Professor*  
*Department of Geography, UNC-Greensboro*

Chris Estes  
*Executive Director*  
*NC Housing Coalition*

Phillip Gibson  
*President*  
*The Mayberry Group, LLC*

Ann Hartell  
*Research Associate*  
*Institute for Transportation Research*  
*and Education*

John Hood  
*President and CEO*  
*John Locke Foundation*

Philip Isley  
*Councilman*  
*City of Raleigh*

Ed Kitchen  
*Vice President*  
*The Joseph M. Bryan Foundation*

George List  
*Professor and Head*  
*Department of Civil, Construction and*  
*Environmental Engineering*  
*NC State University*

Lisa Martin  
*Director of Regulatory Affairs*  
*NC Home Builders Association*

Benjamin Matthews  
*Director, School Support Division*  
*NC Department of Public Instruction*

Todd Miller  
*Executive Director*  
*NC Coastal Federation*

Ricardo Perez  
*Multicultural Community Investor*  
*Triangle Area*

Patrice Roesler  
*Deputy Director*  
*NC Association of County Commissioners*

Martin Sharpless  
*Vice-President*  
*Gilbane Building Company*

Pam Wall  
*Executive Director*  
*Triangle Tomorrow*

Nancy White  
*Director*  
*UNC Coastal Studies Institute*

Reid Wilson  
*Executive Director*  
*Conservation Trust of North Carolina*

Patrick Woodie  
*Vice President of Rural Development Programs*  
*NC Rural Economic Development Center*

Rick Zechini  
*Director of Government Affairs*  
*NC Association of Realtors*

**Recessions are periods of rebirth,  
a rethinking of how we live and how we want  
to live, new things come into creation.**

**David Brooks**  
**Columnist, *The New York Times***



## 2009 Emerging Issues Forum

The annual Emerging Issues Forum draws attention to the most critical challenges facing North Carolina by bringing diverse perspectives from near and far together to debate promising ways to address these challenges.

The 24th annual Emerging Issues Forum, *Changing Landscapes: Building the Good Growth State?*, was by all accounts a success. The sold-out crowd at the Raleigh Convention Center and number of people listening to the live audio stream on our website was a testament to the timeliness of the topic and the caliber of the Forum speakers.

Senator Chris Dodd of Connecticut kicked off the two-day event with powerful words about the importance of not just our economic investment in infrastructure but also our intellectual investment. We must acknowledge that times have changed. Ken Livingstone, former Mayor of London, echoed this sentiment and stressed that changing the way we build to meet the current and future demands of our people is not easy, and sometimes unpopular. Making sacrifices and bold choices today to secure our future takes visionary leadership and a great deal of political will.

At the time of the Forum, the American Recovery and Reinvestment Act of 2009 (also known as the stimulus package) was being heavily debated in Congress. To shine some light on those discussions, we invited several members of North Carolina's congressional delegation – including Congressmen G.K. Butterfield, David Price and Heath Shuler – to participate in a panel discussion. We learned that regardless of where the stimulus money is allocated, the bottom line is that the state cannot pay for its infrastructure needs on its own. The needs are too great and the current revenues too few. (See below for more about how North Carolina is using stimulus money for infrastructure projects.)

We also learned that the answer is not just to build more, it is to build better and in ways that complement our natural environment and protect the quality of life of our people. Rand Wentworth, President of the Land Trust Alliance and former commercial real estate developer, knows from personal experience that preservation of open space and smart development go hand in hand. Later, we heard from Andrés Duany, founder of the concept of New Urbanism, that our built infrastructure can be one of our greatest equalizers.

We were honored to have David Brooks, *The New York Times* columnist, share his engaging views on our changing social landscape and for Bruce Katz to address the ways these social changes manifest themselves on an institutional level through a regional approach to growth management.

Private investment experts along with our State Treasurer Janet Cowell addressed the ever-pressing issue of paying for the infrastructure we need and a panel of national experts facilitated by State Senator Daniel Clodfelter shared best practices so that we can be sure we're paying for projects that are efficient and effective.

After two days of exciting debate, Forum attendees walked away better appreciating how sound built infrastructure will support our communities, our businesses and our people. Recognizing the urgency of investing in our infrastructure, the discussion yielded a clear need to further explore appropriate and sufficient funding mechanisms to support our infrastructure, both in times of economic uncertainty and in times of prosperity. The energy at the Forum, as speakers and participants mingled and shared ideas, stirred up an excitement around infrastructure that many had never experienced. Forum speaker Wayne Klotz, President of the American Society of Civil Engineers, said it best: "Infrastructure is sexy!"

### North Carolina and the American Recovery and Reinvestment Act

*Since the Forum, North Carolina has received more than \$123 million in federal stimulus money so far. A variety of transportation projects are underway in the Fort Bragg region that will help alleviate the strain on the region's infrastructure due to growth related to the Base Realignment and Closure Commission. For example, stimulus dollars are being used to fund the next leg of the I-295 loop around Fayetteville. In the Triad, Greensboro and High Point were awarded \$6 million in federal stimulus money to improve and expand the area's transit, including the purchase of light rail cars and the construction of bus shelters.*

*It was announced in late August that the stimulus package will help fund projects in Jacksonville and Gastonia. Jacksonville was awarded \$1.5 million for five 28-foot buses and a parking facility. Gastonia will get \$2.1 million to buy five 35-foot clean diesel buses.*

*Today, the state continues to apply for additional stimulus money for specific infrastructure projects, most recently submitting an application for \$300 million to rebuild the bridge on I-85 over the Yadkin River in Davidson and Rowan counties. The bridge was deemed "deficient" and "obsolete" by the NC Department of Transportation.*

*U.S. Transportation Secretary Ray LaHood said the Recovery Act has awarded more than \$5 billion in grants for transit improvements around the country. The White House estimates that the stimulus funding will create or save 105,000 jobs in North Carolina.*

## North Carolina Moves Ahead: An Update on IEI's Forum Workshops

At the 2009 Emerging Issues Forum, attendees participated in one of seven concurrent workshops that offered an opportunity to dig deeper into some of the specific challenges facing different infrastructure systems in North Carolina. One of the workshops was conducted virtually, allowing for statewide participation. Below is an update on efforts that were fueled by exciting debate during the Forum's workshops.

### ENERGY

North Carolina passed SB 3 in the 2008 legislative session which requires a set-aside for renewable energy generation. That law spurred development of renewable energy companies in the state. Renewable energy must connect to the electricity grid in some manner but currently the state has not fully developed appropriate incentives or rules for how this would happen. This workshop focused on providing the energy infrastructure for North Carolina's future growth and energy demands.

**Recommendations:**

- Educate about smart grid, grid operations and grid infrastructure
- Establish investment certainty for both renewable energy generation and energy efficiency

**Update:**

- \$4.5 billion is available on smart grid research through the American Recovery and Reinvestment Act. Several North Carolina companies, including Duke Energy and Progress Energy, are taking a visible leadership role in this national initiative to jumpstart smart grid deployment.
- The State Energy Office, the Weatherization Program and other energy functions in state government are realigned to be within the North Carolina Department of Commerce, recognizing the increased role of energy in the economic future of the state.
- North Carolina State University and Keystone Development kick off construction of a 72,000 sq. ft. building on NC State's Centennial Campus to house the national headquarters of the FREEDM Systems Center, the National Science Foundation Engineering Research Center focused on renewable energy integration and smart grid science technology. When construction is complete, the Center is slated to be a Green Energy Hub driving research, education and economic development.
- Duke Energy opens the Envision Center at Advanced Energy on NC State's Centennial Campus – an interactive demonstration of smart grid and the expected positive impacts on houses, businesses and communities in North Carolina.

## TRANSPORTATION

Federal transit officials briefly withheld \$25 million in grants for local transportation projects in North Carolina, saying the state Department of Transportation is inadequately managing how such money is spent. As a result, the NC General Assembly created the 21st Century Transportation Commission to study the state's transportation infrastructure, such as road and bridge building and repair and public transit needs, resulting in recommendations for raising revenues to pay for these needs. The state Department of Transportation faces a projected \$65 billion budget shortfall over the next 20 years based on current needs. North Carolina has long placed a higher priority on investing in new projects than in maintaining the current system. It is important to position North Carolina to obtain the economic benefits of a global market by providing an easy and reliable transportation network among the state's ports, railways, highways and airports. Centrally located on the east coast, North Carolina has the potential to be a major point of entry, exit and distribution to and from the rest of the world. These two workshops focused on intermodal and multimodal transportation.

- Recommendations:**
- Create more local and regional options for financing transportation improvements
  - Use existing resources in smarter ways – maximize density, incorporate affordable housing
  - Produce a statewide logistics strategy integrated into an overall transportation plan that addresses mobility, economic development and sustainable growth

- Update:**
- Congestion Relief/Intermodal Transport Fund bill (HB 148) and its companion bill (SB 151) were introduced on February 11. HB 148 passed the House in April 2009 and the Senate in August 2009 and was signed into law by Governor Perdue at the end of August 2009. The bill establishes a fund to be used by local governments and transportation authorities for the following:

- public transportation
- short line railroads for maintenance and expansion of freight service
- railroads for intermodal and multimodal facilities and inland ports
- state ports for terminal railroads
- expansion of intercity passenger rail

The bill also extends the taxing authority of local governments to generate revenue for public transportation.

- Adoption and integration of a statewide logistics strategy into North Carolina's comprehensive transportation plan (2009).
- The NC Department of Transportation launched new project prioritization processes developed in part to complement the statewide logistics strategy.

## WATER AND SEWER

Historically, the federal government provided water/sewer funding but that funding has been substantially reduced and the state has not stepped in to fill the void. Many of the water/sewer systems paid for by the federal government years ago are aging out and the large number of systems due to be replaced has raised financial concerns. Local governments finance their projects primarily through the private sector in the absence of grants and public sector loans. North Carolina has more than 5,000 water/sewer systems and more than half of those are private systems that cannot be consolidated with larger systems due to the incompatibility of their engineering. The state has not developed a plan to consider what to do with these private unsustainable systems. This workshop focused on the capacity and sustainability of financially troubled water and sewer infrastructure systems.

- Recommendations:**
- Create a state vision and strategic plan for drinking water, wastewater and stormwater infrastructure
  - Dedicate a permanent funding source for water, wastewater and stormwater

- Update:**
- Fiscal Research Division's March 2009 presentation, *Overview of Water & Sewer Infrastructure Challenges*, to the Senate Finance Committee noted that legislators should consider a strategic plan or vision for water/sewer funding. The presenter specifically cited the discussion in this workshop, *Sustaining Our Water and Sewer Systems*, as a venue where this idea was discussed and supported.
  - The House Appropriations Subcommittee on Natural and Economic Resources thoroughly discussed water/sewer issues, particularly the disconnect between the various funding organizations and the role of the State Water Infrastructure Commission. The House budget contained two provisions related to consolidating water/wastewater funding. In the House version of the budget, section 13.1D created a Legislative Study Commission on Water and Wastewater Infrastructure. Section 13.1E directed the four primary water/sewer funders to work together through the State Water Infrastructure Commission to streamline the application and reporting process. This provision also allocated \$50,000 for SWIC for the 2009-10 fiscal year. Neither of these provisions made it into the conference version of the budget, but the General Assembly Studies Act of 2009 contains a provision for a Legislative Study Commission on Water and Wastewater Infrastructure which will meet in the interim before next year's short session.

## SCHOOLS

The shortfall in school construction funds is a result of growth in urban/suburban areas and the unmet need for modernization of facilities in districts that are not growing or growing less rapidly. This forces each school district to face a difficult question: How can we continue to support population growth and keep up with regulatory and technology standards in schools given the lack of sufficient funds? This workshop evaluated and examined funding challenges for the current construction needs of the North Carolina school system.

- Recommendations:**
- Expedite shared facility agreements by adopting readily available prototypes
  - Remove barriers to permitting, financing, design and construction, allowing for easier leverage of private capital for school construction projects

- Update:**
- Introduction of the Education Infrastructure Act (S822) in the 2009 legislative session in support of public-private partnerships for financing school construction. This bill did not see action in the 2009 session.
  - The topic of public-private partnerships as an option for financing infrastructure, including but not limited to school maintenance and construction, is a focus of IEI's work post-Forum.

## HIGH RISK CONSTRUCTION

Given the lessons learned since Hurricane Katrina, coastal states must plan wisely for natural disasters and future development must consider the vulnerability of the coast to the built infrastructure. Sea level rise due to global climate change is making this discussion even timelier. Currently, insurance companies are withdrawing coverage of beachfront property in North Carolina due to the increased vulnerability of coastal properties. The lack of economic growth we are currently experiencing leads to shrinkage in the labor force, decline in the tax base and an oversupply of housing along the coast. This housing glut gives us a small window of opportunity to examine how we build along the coastline in the event demand picks up in the years ahead. This workshop focused on better complementing the natural environment in the way we build.

**Recommendations:**

- Enhance existing tools (e.g. flood mapping) to enable North Carolina to improve pre- and post-disaster planning
- Utilize engagement organizations wherever possible in this effort

**Update:**

- Gavin Smith, Executive Director of UNC's Center for the Study of Natural Hazards, is seeking external funding (from the Federal Emergency Management Agency and the National Science Foundation) for pre- and post-disaster planning.

## TECHNOLOGY

*A Virtual Workshop*

We need to re-examine growth and construction as technology infrastructure continues to provide us with more opportunities to connect people and provide resources online. Utilizing technology infrastructure for multiple purposes allows us to connect more people together at a lower cost while providing a higher quality of life through a menu of convenient choices. This virtual workshop focused on the profound effect that increased use of technology will have on not only what we build but how we build.

**Recommendation:**

- Expand the use of virtual approaches as an alternative for training, simulation and communication

**Update:**

- The 2009 North Carolina School Administrators Conference was held virtually for the first time to save money and training dollars for school districts.
- The North Carolina Department of Public Instruction shifted its professional development programs online.

# Turning Ideas into Action: Post-Forum Community Engagement

IEI partnered with UNC-TV to fuse the work of PBS's *Blueprint America* series and IEI's program of work on Growth and Infrastructure in an effort to inform, engage and mobilize a broader statewide audience around promising infrastructure investment strategies and the importance of cross-jurisdictional collaboration when managing, building and maintaining our critical built infrastructure. Based on extensive deliberations by IEI's Working Group as well as engaging discussions at the 2009 Emerging Issues Forum, IEI is focused on these two areas post-Forum.

As we well know, North Carolina's infrastructure is in disrepair. In fact, the American Society of Civil Engineers gave us an average of C- in nine infrastructure categories in its 2009 infrastructure report card. As we heard at the 2009 Emerging Issues Forum, a sub-standard network of physical infrastructure will not meet the needs of our state's dynamic and rapidly growing population. We need sufficient and reliable infrastructure and we need secure revenue streams to pay for it.

## Community Forums

In July 2009, IEI and UNC-TV partnered to convene two Community Forums in the Triad and Fort Bragg regions which focused specifically on local financing options to pay for needed infrastructure. The record turnout in each community indicated that the concern over how to pay for the regions' infrastructure is one that is certainly hitting home for a variety of reasons, not least of which is the struggling economy and the uncertain future of public revenues. Based on the discussions and survey responses from Community Forum attendees, participants indicated that public-private partnerships (PPPs) are the most important funding option to explore in order to meet their region's infrastructure needs. *(See survey results below.)*

## Webinars

For this reason, as the second phase of its partnership with UNC-TV, IEI hosted two webinars that focused on the use of PPPs. This was an opportunity for North Carolinians across the state to ask questions and learn more about PPPs: What are they and how do they work? What are best practices, both at the national and state level? What kind of legislation is needed for fair and effective PPPs to thrive?

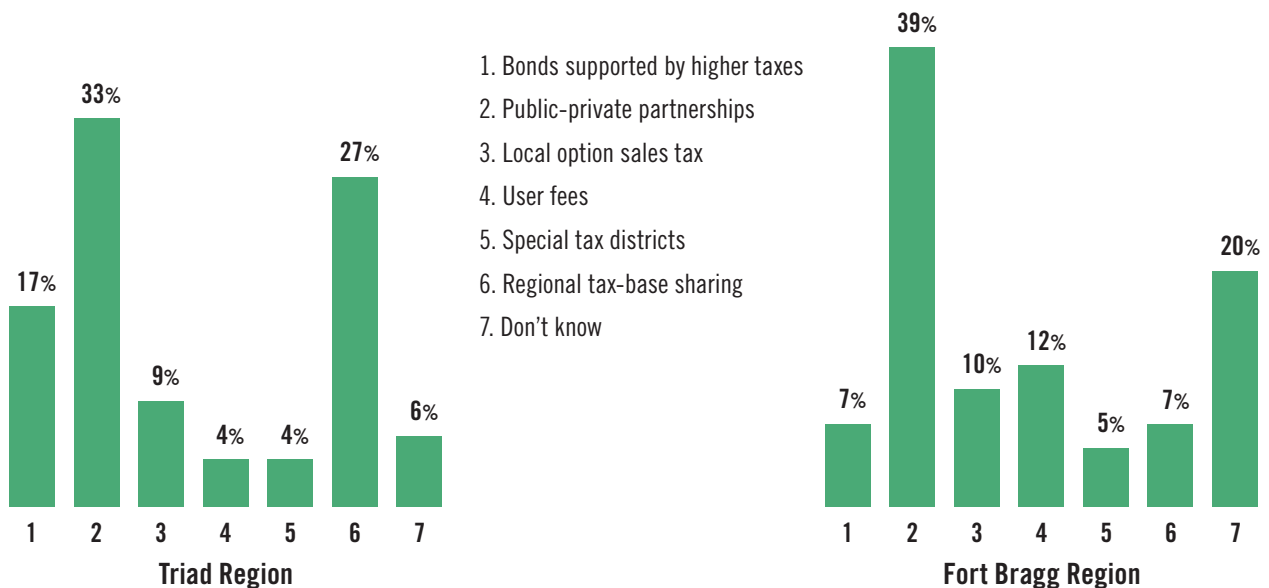
We were honored to have a speaker from the 2009 Emerging Issues Forum work with us again as moderator of the first webinar. Richard Little, Director of the Keston Institute for Public Finance and Infrastructure Policy at the University of Southern California, shared examples of effective PPPs across the country, underscoring the need for a diversity of funding sources for infrastructure projects.

The second webinar was moderated by Mary Nash Rusher, a partner with Hunton & Williams law firm in Raleigh, and David Jones, a partner with K&L Gates law firm in Charlotte. As experts on the legal authority for PPPs in North Carolina, they spoke candidly about what it takes to make these partnerships work for all parties under current North Carolina law and what can be done to improve upon the process in the future.

The organic focus of IEI's community engagement activities on infrastructure financing and, in particular, the opportunities available to leverage private capital for public infrastructure will provide significant background for the work of the Business Committee on Infrastructure which will further explore the viability of PPPs in North Carolina.

## ***What are the most important funding sources/practices that should be considered by local governments for regional infrastructure?***

Survey results obtained from more than 200 participants at IEI's Community Forums



## **Next Steps**

Amidst the most severe economic crisis in our lifetime, investment in safe, reliable, efficient and effective physical infrastructure has forced its way to the forefront as an important option for repairing an ailing economy and securing a prosperous future for North Carolina and the nation. Traditional ways of funding the infrastructure we need will not meet current and future demands.

Through IEI's model public policy process, it is clear that North Carolinians are most concerned with how we will pay for the infrastructure we need. Furthermore, we learned from Forum and Community Forum participants that we must look to the private sector to share the financial burden of infrastructure investment moving forward since public revenues have become increasingly unreliable. IEI recognizes the need to further explore the future of public-private partnerships (PPPs) and will convene a Business Committee on Infrastructure (BCI) in Spring 2010.

### **IEI's Business Committee on Infrastructure**

While public-private partnerships (PPPs) will not resolve our state's growing need for infrastructure funding, they may be an important tool that should be available to state and local entities as they build and repair the infrastructure in their communities. The BCI will seek to clarify the viability of extending authority for PPPs in North Carolina by examining various national models under the lens of our state's particular needs.

Committee members will hear from experts about the advantages and disadvantages of different PPP models and what each might mean for North Carolina in order to determine what elements hold promise for our state.

The BCI will then identify whether, and in what ways, North Carolina's statutory law could more effectively enable the promising elements of PPPs determined by the committee. As a final product, the committee will develop a detailed list of guiding principles to recommend and provide focus for a NC General Assembly Select Committee on PPPs, if one is needed. Public sector stakeholders will be involved in the BCI process to offer feedback on these guiding principles.

# Risk Assessment of PPPs

Type	Description	Public	RISK	Private
Design-Bid-Build (DBB)	Design and construction contracts awarded separately to private sector engineering and contracting firms			
Design-Build (DB)	Combines the design and construction phases into one fixed-fee contract			
Design-Build-Operate-Maintain (DBOM) Build-Operate-Transfer (BOT)	Selected contractor is responsible for the design, construction, operation and maintenance of the facility for a specified time			
Design-Build-Finance-Operate (DFBO) Design-Build-Finance-Operate-Maintain (DBFMO)	Similar to DBOM, but contractor is also responsible for all or a major part of the project's financing			
Build-Own-Operate (BOO)	The private partner owns the facility and is assigned all operating revenue risk and any surplus revenues for the life of the facility			



## What is a PPP?

“PPP” stands for Public-Private Partnership. The National Council for Public-Private Partnerships defines a PPP as “a contractual agreement between a public agency (federal, state, or local) and a private sector entity. Through this agreement, the skills and assets of each sector (public and private) are shared in delivering a service or facility for the use of the general public. In addition to the sharing of resources, each party shares in the risks and rewards potential in the delivery of the service and/or facility.”

## What are some common misconceptions about PPPs?

PPPs are NOT a replacement for traditional procurement methods, and do not bring “free money” to the table. Instead, PPPs are simply “another tool in the tool box” for state and local decision-makers. In other words, consider PPPs when they make sense given project constraints:

- Time – PPPs can offer faster delivery, critical to meet externally-driven deadlines.
- Dollars – PPPs can reduce cost by being efficient and can add private sector capital.
- Staff – PPPs can help augment internal staff at the public sector partner.

## What are some examples of successful PPPs in North Carolina?

- The proposed Mid-Currituck Toll Bridge project in Currituck County is North Carolina’s first venture into the world of PPPs for major transportation infrastructure. The state of North Carolina signed a contract with ACS, a Spanish construction firm, to build the bridge. The private sector partner will be responsible for the design, construction, financing, operations and maintenance of the project. The revenues the state receives from the collection of tolls will then be used to repay the private investor over time. This type of project should produce enough revenue to pay for itself in 30 to 40 years. Construction should begin in late 2010, with the bridge expected to open to traffic in 2013.
- The Winston-Salem City Hall project was financed using a PPP. In this example, the city owned the land, turned it over to the private partner who, along with affiliated investors, built the structure. The private sector now rents some of the space to the City of Winston-Salem under a long-term lease.
- To date, there are no examples of successful PPPs for school construction projects due to limitations of the current legislation (S.L. 2006-232 entitled “Public-Private Partnerships for Schools”). Some argue that the legislation strips away the very benefits of PPPs – savings of time and money – by requiring the public sector partner to bid out the project and precluding the private sector from receiving the same low interest rates available to the public sector.

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