Infrastructure Needs of the Megaregion

Presented by: Dr. Catherine Ross, Professor and Director
Center for Quality Growth and Regional Development (CQGRD)

Rail-Volution, Lowes Miami Beach, October 31–November 3, 2007

Image Sources: Greater Raleigh CVB, Durham CVB, Alabama CVB, MARTA
Overarching Issues and the Megaregion

Why Megaregions

Why is there a need to invest in infrastructure at a larger scale?

How do we enhance global competitiveness and what is the role of infrastructure?

What kind of infrastructure do we need?

Challenges to Sustainability

The Competitive Advantage
Mobility in the Megaregion

Cascadia
The Cascadia region includes Seattle, Portland, and Vancouver, British Columbia with high-speed rail, while promoting the area's unique natural and urban environments. Other strategies highlight the area's shared high-tech opportunities, commitment to environmental sustainability, and cultural diversity in art, music, and green building.

Northern California
The high quality of life, cultural heritage, and environmental assets of the Northern California region make it an attractive and expensive place to live. How can sustainable land use strategies be employed while limiting the skyrocketing cost of living?

Southern California
With some of the largest parts in the nation, the economy of Southern California is deeply tied to the logistics and goods movement industry. This region is taking aggressive action to build infrastructure that reduces its role as a global megaregion while providing opportunities for its fast-growing native-born and immigrant populations.

Texas Triangle
By 2040, Texas will add an additional 18.5 million people, or 40 percent of the population of Texas, will live in the metropolitan areas that comprise the Texas Triangle. Three of the nation's 10 largest cities are in the Triangle, including Houston, which has spent more than $5 billion on transportation. This greater Houston region is already the largest urban area in the U.S. and is expected to grow to over 10 million people by 2040.

Kansas City
The Greater Kansas City region has a population of 2.4 million people. It is located between two major transportation routes, I-70 and I-29, and is a significant economic hub for the Midwest. The region is facing challenges associated with its growing population and increasing traffic congestion, which is expected to reach 7 million people by 2040.

Arizona Sun Corridor
The Sun Corridor is equivalent to the Florida Keys, but with a population of 30 million. The region includes Phoenix, Mesa, and Tempe, and is one of the fastest-growing regions in the United States. The region is facing challenges associated with its growing population and increasing traffic congestion, which is expected to reach 7 million people by 2040.

Political West
The region includes the states of California, Oregon, Washington, and Nevada. The region is facing challenges associated with its growing population and increasing traffic congestion, which is expected to reach 7 million people by 2040.

Great Lakes
The Great Lakes region is exploring ways to grow its economy in face of the declining role of the manufacturing sector. The region's assets include the nation's natural resources and its location at the core of what is potentially a leading public university.

Northeast
The Northeast is a powerhouse of density and economic output, producing 18 percent of the nation’s Gross Domestic Product. It is expected to add 6 million new residents by 2040. The region is facing challenges associated with its growing population and increasing traffic congestion, which is expected to reach 7 million people by 2040.

Piedmont Atlantic
The Piedmont Atlantic region is one of the fastest-growing regions in the nation and is facing challenges associated with its growing population and increasing traffic congestion, which is expected to reach 7 million people by 2040.

Florida
The Florida megaregion is one of the fastest-growing in the nation and is expected to add 10 million new residents by 2040. The region is facing challenges associated with its growing population and increasing traffic congestion, which is expected to reach 7 million people by 2040.

Gulf Coast
The Gulf Coast region is facing challenges associated with its growing population and increasing traffic congestion, which is expected to reach 7 million people by 2040.

Metro Area Population

10 Emerging Megaregions

Theoretical Planning Frame for 21st-century Urbanization

- Megacities
- Megaregions
- Longer range planning
- Making Places
Infrastructure planning is a national priority and a lever to enhance growth.

America’s infrastructure is adequate for the 21st century with limited technological and modal integration.

Increased competitiveness in the global economy engendered through state of the art infrastructure that is:

- efficient and consists of different technologies,
- with different cost structures
- serving different trip purposes and different travelers
Continuing Challenges

- general deteriorated state of infrastructure
- inadequate transit
- climate change
- congestion
- insufficient rail freight and passenger capacity
- unsafe bridges and dams
- creating unhealthy places
- creating unattractive places
Continuing Challenges

- From Sidewalks to Jet Ports: making investment decisions considering the impacts locally and at the multi-state level

- Connecting MSAs and all parts to multiple spaces

- Connecting depressed areas to economically viable ones

- Infrastructure must support megaregion economic specialization with specialized infrastructure (reducing competition among megaregions and positioning them globally)
Mobility in the Piedmont Atlantic MegaRegion

The Piedmont Atlantic MegaRegion (PAM) is a megaregion located in the southeastern United States. It includes metropolitan areas such as Atlanta, Charlotte, and Raleigh, among others. The map shows the connectivity between these cities, emphasizing the importance of mobility in this region.
Mobility in the Megaregion

PAM’s Metro Corridor

Anchored by large metropolitan areas that create a chain of related urbanized areas.
How will people live and work in the future?
- **Transportation Options:** Southeast High Speed Rail

- **Green Infrastructure:** innovative financing to protect lands

- **Spatial Planning:** a strategic and forward looking strategy for growth and development to decrease inequities and promote overall sustainability

- **Indicators:** Developing quality of life, economic and sustainability indicators for the megaregions
- increasing traffic congestion
- limited water resources
- degradation of air quality
- rapid land consumption
- large increases and shifts in population
Challenge and Opportunity

- Need for long time, focused investment
- New roles for states, local government, regions and the nation
- America trailing other countries in innovative finance and integrated multimodal, multi-level infrastructure planning
- Integrated theoretical account to redevelop the built environment using infrastructure in innovative ways
III. Challenges and Opportunities

New road to Beijing Airport

Japan’s bullet trains

SOURCE: ULI, Infrastructure 2007
Mobility in the Megaregion

Challenges to Sustainability

- Transportation contributes to global warming
- Increasing traffic, poorly maintained vehicles and an aging fleet cause increases in vehicle emissions
- Congestion continues to spread temporally and spatially
- Substantial amounts of increased travel will take place in rural and suburban areas

The transportation sector is the second largest producer of CO₂ in the US.
- Demand for oil is rapidly using up the world's readily available reserve
- Emissions causing health problems increasing in specific areas
- Smog and acid rain are exported to other surroundings
- Deaths and injuries occur in unacceptable numbers

Asthma affects nearly 20 million Americans.
A Megaregion Framework: the integration of regional planning, land use planning, population growth to guide infrastructure expenditures at a larger scale

- Need for long-term infrastructure investment
- The changing role of America on the global stage
- Sustainability and energy resources
- Creating infrastructure networks and financing them
- The suburban challenge
- Climate Change
Mobility in the Megaregion

VI. The Competitive Advantage

- Making Places Competitive
- The Role of technology
- Mega projects in Megaregions
- Infrastructure Standards and Evaluation
- Equity Partnerships and Infrastructure
- Lessons from abroad