Piedmont Alliance for Quality Growth

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UNC Charlotte Urban Institute
Shaping a shared future

Who will lead? And to where?
Urban Growth Modeling

Landsat Satellite

Impervious Surfaces in Charlotte

1976

- Charlotte
- Developed
- Natural/Rural
- Protected open space
- Water

Footprint: 0.07 acres per person
2030

- Charlotte
- Developed
- Natural/Rural
- Protected open space
- Water

Conversion Rate: 93 acres per day
Footprint: 0.50 acres per person
Expansion of the North Carolina Urban Growth Model

Key Findings for Growth in the 4 County Region:

- Development increased nearly 500 percent between 1976 and 2006 at an average rate of 6 acres per day.
- An additional 47,500 acres are forecast to be developed by the year 2030, or about 6% of the region's current private, undeveloped land.
- Buncombe and Henderson Counties account for the majority of this forecasted development, contributing 24,650 and 19,000 acres respectively.
- Henderson County is expected to experience the greatest relative increase in the region: an 8.1% change in developed acres by 2030.
- Forecasted gains in developed acres for Madison and Transylvania Counties are 5,950 and 2,600 acres representing 110% and 40% increases, respectively, in developed acres for the two counties.

Sponsors
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LEGEND
Original Study
Stage 1 Expansion
Stage 2 Expansion
Stage 3 Expansion
Visualization and the Urban Growth Model
Findings

- NC ranks 2nd out of 50 states in total state-maintained road mileage; but ranks 49th in total revenue per lane-mile, and 47th in spending per land mile.

- 57% of all urban interstate miles in NC and 47% of rural interstate miles are congested.
Findings

• NC currently spends approximately 5% of its annual transportation budget on freight and passenger rails, ferries, mass rapid transit, busses, bicycling, pedestrian and other non-highway transportation options.

• To meet current needs and to prepare NC for 2030, an estimated additional investment of over $65 billion is required to plan, design, build and maintain all aspects of the state’s transportation systems.
Findings

• NC is a federal transportation “donor” state, sending more in transportation funds to Washington that it receives in return, for both highways and transit.

• NC currently has over 2,500 structurally deficient bridges and ranks 41st out of the 50 states in terms of bridge deficiencies. That would require the replacement of 400 bridges annually; currently NC DOT only replaces a little more than 100 bridges annually.
Mass Transit

Photo courtesy of Gary O’Brien
Charlotte Observer
Findings

NC population is expected to grow to 12 million by 2030 (from 8.5 million in the mid 2000s), resulting in water consumption increasing “from 241 billion gallons per year for all households to 335 billion gallons if consumption continues at its current path” (citing NC Water 2030 Study).
Findings

NC uses/withdraws more water per day than Georgia due to NC’s greater use of water for thermoelectric power (in 2000, NC withdrew 11,400 million gallons per day (mgd) with a population of 8,049,313, compared to Georgia, which used only 6,500 mgd with a population of 8,186,453.
Currently, there are inadequate methods for assessing the state’s supply/demand balance; new hydrologic models for each of the state’s river basins are currently under construction by the NC Division of Water Resources.
Locations with high development & conservation value