



**NARUC Telecom Staff Meeting**  
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# Broadband Drives Economic Transformation



# Mission

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The e-NC Authority is dedicated to ensuring that all North Carolina citizens, businesses and communities are aware of, know how to use and have access to high-speed Internet services at affordable prices, creating local opportunities for technology-based economic development and job creation.



# Digital Factoid

(Facts that require expansion of broadband)

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- An email message with an attachment actually requires up 8 times its initial size
  - **storage requirements due to replication, back-ups, copies, etc.**
- Digital “shadow” data is growing exponentially
  - **(surveillance, web search histories, financial transaction journals, mailing lists, etc)**
- Conversion of film to digital almost over
  - **Over 1B digital and camera phones sold last year**
  - **less than 10% of images still captured on film**
  - **Enormous amounts of metadata (scripts, related materials, etc)**
- In 2007, the amount of information created, captured or replicated exceeds capacity



# Digital Factoid - 2

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- Diversity of data and file sizes is enormous
  - **Movies (GBs), photos (MBs), email (KBs), RFID (bps)**
  - **Number of file packages and types is rapidly growing**
- 70% of the digital information is created by individuals
  - **Email, pictures, phone calls**
  - **Web histories, financial transactions, mailing lists, etc**
- Media, entertainment and communications industries are growing at double digit rates
- Data and storage requirements associated with mobile devices continue to rapidly increase
  - **Often characterized with a desire to share with others**



# Digital Factoid - 3

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- 281 Exabytes of information created in 2007
  - **45 GB per person across the globe**
- Estimated that 1.8 Zettabytes will be created in 2011
  - **6X from 2007 (Billion Gigabytes)**
- almost half the data in 2011 will not have a permanent home
- Power consumption for data centers per rack was 1 KW in 2000
  - **it is now 10 KW per rack with plans to move to 20 KW**



# North Carolina

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## **NORTH CAROLINA SOME STATISTICS**

- Population 9.5 million people
- 83.33% of households have available access to Broadband
- 2002 44.7% available to rural households
- 2007 79.64% available to rural households
- 2007 state average 83.33% availability to households



# OPERATIONAL COMPANIES IN NORTH CAROLINA

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- AT&T, EMBARQ, VERIZON, NORTH STATE, LEXCOM, WINDSTREAM,
- 9 TELEPHONE COOPERATIVES AND ELECTRIC COOPERATIVES
- A NUMBER OF OTHER INDEPENDENT COMPANIES AND INDEPENDENT WIRELESS SERVICE PROVIDER COMPANIES
- PANGAEA 501-c 120 Miles Fiber (expect wireless off the fiber and some fiber Off the fiber)
- PINE Wireless Very Small Area of Coastal Zone. 250 customers
- GOVERNMENT Wilson 50,000 population \$28 million bond issue Fiber and fixed wireless
- Some Towns have cable deployment Morganton
- Some Towns have fiber Laurinburg (law suit held up their right to run)
- Some Towns have fiber deployment and fixed wireless (Clay County-Hayesville)
- REAL TIME PLANNING
- Salisbury 28,736 population \$11.7 Million Bond Request Fiber & Fixed Wireless
- AROUND 30 OTHER COUNTIES WORKING ON PLANS FOR COUNTYWIDE FILL IN



# E-NC Authority Activities

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- BETWEEN 2001-2007
- Provided leadership in broadband deployment and technology based economic development
- Created seven Business and Technology Telecenters and provided guidance and oversight
- Telecenters created 1490 jobs, worked with 123 tenants, 22,635 clients were provided business services
- Direct economic revenue impact to the NC State Domestic Product from Telecenters \$159,832,986
- Developed and Ran Three Southeast Wireless Conferences
- Developed and managed process of e-communities plans in 85 Rural Counties
- Assisted in development of 137 Public Access Centers for Digital Literacy for Citizens
- Developed three state cross border initiatives and Cross Borders Conferences
- Three Citizen Surveys of deployment in North Carolina (Citizen Polls)
- Seven 100 County Surveys of deployment of broadband (Company Data Collected)



# E-NC Authority Activities (cont'd)

- Researched Regional Broadband School Networks and assisted in fund raising
- From legislature of \$22 million and federal government \$46 million
- All 2000+ schools now have access to broadband-partners MCNC, Friday Institute
- Oversaw Incentives program for broadband deployment
- More than 400 grants for broadband, digital literacy, public access sights, research initiatives and business and technology Telecenters were awarded and managed.
- 14 major research projects relating to broadband and NC initiated and completed
- Broadband deployment percentage gains according to Brookings Institute caused more than \$3 billion direct impact to the economy in NC (without a multiplier effect added)
- Managed program of citizen contact for broadband requests and complaints
- Currently ready to release RFP for statewide TeleHealth Network



# Using New Tools to Make Decisions

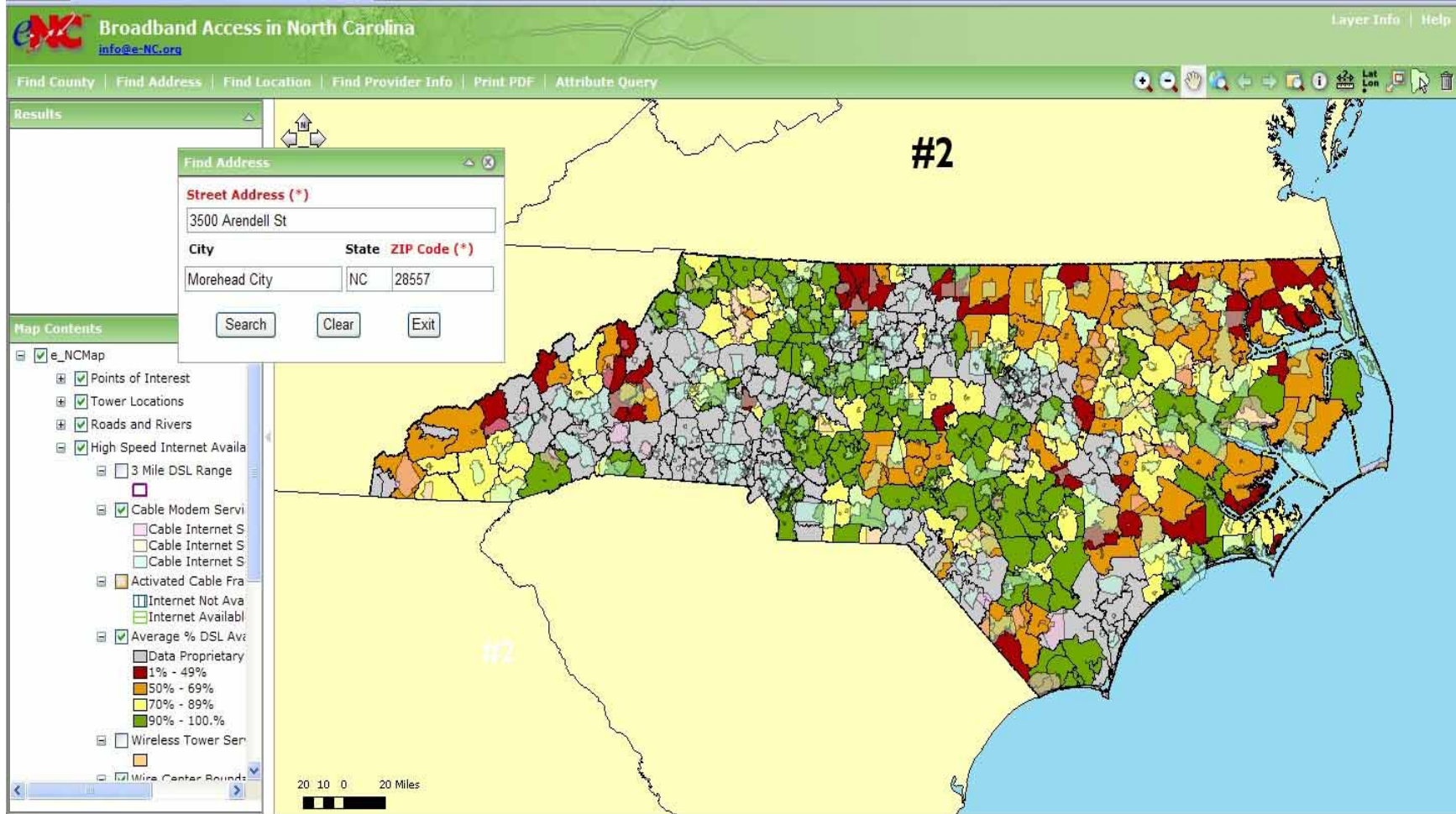
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North Carolina was the first state to map broadband. WE have now enhanced that mapping and we have used mapping to assist in decisions on more than 400 grants that we have made to counties and communities in North Carolina

*(e-NC does not consider mapping anything but a tool that has to be combined with other activities such as those described in the earlier slides. It takes a combination of activities in order to drive broadband deployment and uptake.)*

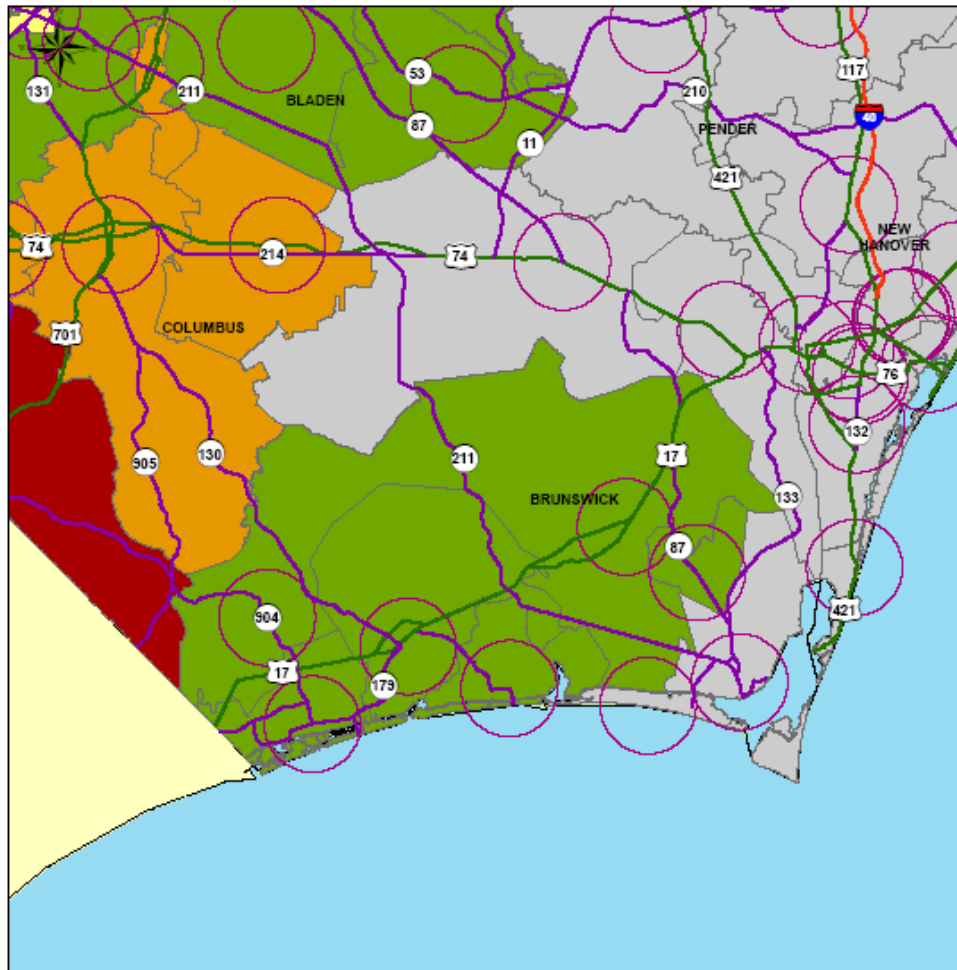


# Mapping



# Mapping

## Brunswick



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### Legend

- Interstates
- US Highways
- NC Highways
- 3 Mile DSL Range
- Average % DSL Availability
  - Data Proprietary
  - 1% - 49%
  - 50% - 69%
  - 70% - 89%
  - 90% - 100%
- Wire Center Boundaries
- County Boundaries
- North Carolina
- Other States
- Ocean

### Disclaimer

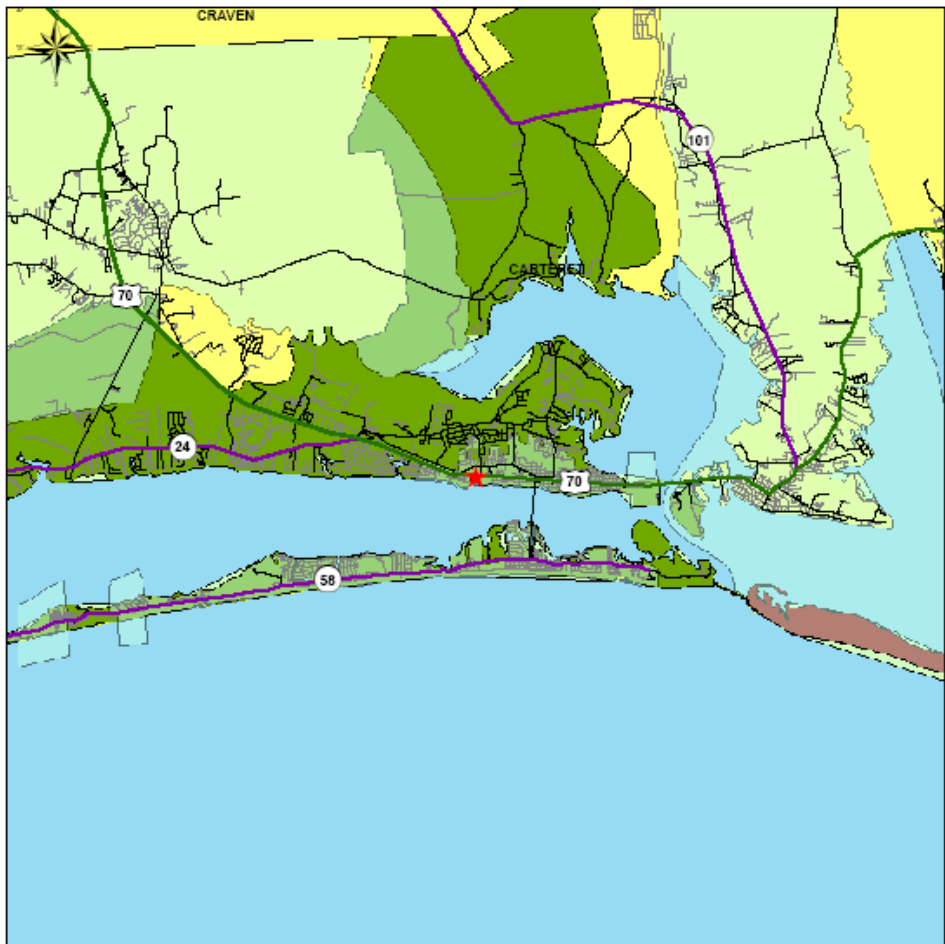
Broadband service percentages presented were derived from e-NC's analysis of data from providers, census tract data, cable and DSL service areas, and interpolation of all such data. Composite percentages are not averages of Broadband service providers' percentages. Composite percentages are affected by overlapping service areas, population and housing reporting data, geographical variations and other variables.

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0 2 4 8 12 16 Miles

# Mapping

find\_address result

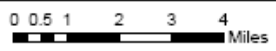


- Legend**
- Interstates
  - US Highways
  - NC Highways
  - Secondary Highways
  - Local Streets
- Cable Modem Service Areas**
- Cable Internet Service Not Available
  - Cable Internet Service Partially Available
  - Cable Internet Service Available
- Average % DSL Availability**
- Data Proprietary
  - 1% - 49%
  - 50% - 69%
  - 70% - 89%
  - 90% - 100%
- Wire Center Boundaries  
County Boundaries  
North Carolina  
Other States  
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**Disclaimer**

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# Mapping Costs

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- Web costs yearly
- Updating of the mapping tools
- GIS personnel costs (1/2 time continuation + full time to create from scratch)
- Purchase of any data – tower maps
- Gathering of company data (1/2 time)
- Addition of other decision making layers of GIS – exchange with state GIS
- Redo GIS tools every 3 to 5 years



# Costs for 50 States and for Broadband Authority and Mapping

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- Cost to develop and manage yearly a broadband state authority (\$2 million yearly x 50 states) = \$100 million\*
- Costs to develop a broadband map and maintain yearly \$400,000 (\$400K x 50 states) = \$20 million  
*(\$50K per year of \$400K is to be placed in a fund to develop GIS tools and web site updates every 3 to 5 years)*
- Costs to independently verify data from providers = \$20 million
- Miscellaneous NTIA = \$10 million

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Total Yearly Cost = \$150 million

**We question the \$350 million identified in the Stimulus package just for the purpose of mapping.**



# Concluding Remarks

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- Community economic transformation requires ubiquitous communication networks.
- Economic competitiveness will come to those who
  - **Can put together the best team to obtain broadband**
  - **Can marshal the best resources and capabilities**
  - **Can sustain the environment of innovation**
  - **Can educate and reeducate its people**



# To Reach Us ....

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*Connecting  
North Carolina  
to a Better Future*

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**[www.e-nc.org](http://www.e-nc.org)**