EXECUTIVE ORDER 91
TASK FORCE ON CONNECTING NORTH CAROLINA

REPORT TO GOVERNOR ROY COOPER

January 28, 2020

Introduction

Access to high-speed internet is essential to North Carolina's people, businesses, schools, non-profits, communities and governments. Governor Roy Cooper issued Executive Order 91 on March 14, 2019, to promote internet access across the state of North Carolina.[1] That executive order created the Governor's Task Force on Connecting North Carolina and charged the task force with identifying and removing barriers to affordable, high-speed internet access.
As Governor Cooper said in issuing the Executive Order, "In today's schools and workplaces, high-speed internet is not optional. Too many North Carolinians lack internet access they need to apply for jobs, do homework or run a small business. We must address this digital divide to give every community in North Carolina an equal opportunity to thrive using today's technology."

The Governor's order created the Connecting NC Task Force will work to align state agencies' efforts to remove barriers to high-speed internet. Specifically, E.O. 91 directed the task force to (1) assess the state's progress in meeting the recommendations in the 2016 State Broadband Plan, *Connecting North Carolina*; (2) identify opportunities in the state's efforts to promote broadband internet connectivity for residents, businesses, and government institutions; (3) propose metrics and standards by which Gov. Cooper can evaluate the state's success in achieving these goals; and (4) identify recommendations for state agencies to prioritize and address for immediate action.

The 2016 *Connecting North Carolina* report contained more than 80 recommendations to improve broadband accessibility, adoption, and use in North Carolina. As of December 2019, the N.C. Department of Information Technology and other state agencies have fully implemented 11 of these recommendations; another 44 are underway. The task force has assessed progress in the categories of broadband availability, broadband adoption, homework gap, telehealth, and public safety.

Broadband Availability: 2016 v. 2019

In 2016, North Carolina's broadband deployment rate ranked slightly above the U.S average of 93 percent and was the highest deployment rate among southeastern states.[2] This represented a seven percent increase in deployment rates between 2013 and 2014.

[1] Available at https://governor.nc.gov/documents/executive-order-no-91-establishing-task-force-connecting-north-carolina-promoting.
[2] Federal Communications Commission (FCC), 2016 Broadband Progress Report, Appendix E.

Using the latest data available from the Federal Communications Commission (FCC), North Carolina continues to rank above the national average at 94.8[3] percent of households with access to broadband speeds. North Carolina is the 14th most connected state and falls slightly below Florida among southeastern states. The FCC's collection methodology and analysis overstates the coverage data.

Other data collection and mapping initiatives put the state's access ratios much lower. Based on usage data collected from customers, Microsoft estimates availability (45.7 percent in North Carolina) is much lower than the FCC's reporting. Because availability of broadband is a key barrier to usage, these adoption ratios, discussed below, provide evidence that not as many households have access to broadband as reported.

The NCDIT Broadband Infrastructure Office is improving the accuracy of coverage data by looking at private mapping services, sharing citizens surveys and speed tests, and using other data available to the state. The FCC recently announced it will improve its data collection and reporting of coverage data in the near future. Internet service providers and others have also undertaken mapping initiatives and those may provide improved mapping. Finally, data submitted by applicants to the state's new broadband infrastructure grant program and federal grant programs will provide valuable information to verify broadband services.

- **Implementing broadband availability recommendations**

DIT's Broadband Infrastructure Office has implemented several of the State Broadband Plan's recommendations to increase broadband availability. Some recommendations have been implemented as originally conceived in the plan, others have been modified, but achieve the same goal as the original recommendation intended.

The most substantial contribution to increasing broadband availability is the design and implementation of a grant program to lower capital expenditures for private providers (AV2.3).[4]

[3] FCC 2019 Broadband Deployment Report.

[4] This report cites specific recommendations found in the State Broadband Report. These recommendations are coded as follows:

AV: Broadband Availability
AD: Broadband Adoption
HG: Homework Gap
ED: Economic Development
TH: Telehealth
PS: Public Safety

Gov. Cooper's first budget proposed a $17.5 million grant program to invest in private sector deployment of last-mile broadband infrastructure. In 2018, the N.C. General Assembly created the Growing Rural Economies with Access to Technology (GREAT) grant program through S.L. 2018-5 and appropriated $10 million to DIT for competitive grants to private providers of broadband services to facilitate the deployment of broadband service to unserved areas of the state. In May 2019, DIT awarded $9.8 million in grants to 14 companies to expand access in 19 Tier 1 economically distressed counties. Gov. Cooper proposed expanding the GREAT grant program in the FY 2019-21 budget beyond Tier 1 counties and recommended investing another $30 million in the program in the first year of the biennium.

Executive Order No. 91 directly and indirectly addresses several of the recommendations in the State Broadband Plan. The task force will update the plan, address county-owned infrastructure regulations[5], make recommendations to update state building codes[6], and implement other recommendations such as designing a railroad crossing policy[7] and a one touch/climb once policy[8]. In addition, E.O. 91 charged DIT and the N.C. Department of Transportation to design a dig once policy.[9] Finally, E.O. 91 directed DIT to compile recommendations to close the homework gap.

Finally, in 2018, DIT's Broadband Infrastructure Office compiled and released the Community Broadband Playbook.[10] The playbook provides a robust resource for local governments and stakeholders to encourage broadband expansion in their communities. The playbook assists communities learn how to lower barriers for ISP's to access their local infrastructure[11] and leverage existing grants to fund broadband deployments.[12]

Broadband Adoption: 2016 v. 2019

Much has changed in the landscape of broadband adoption since the 2016 issuance of *Connecting North Carolina*. At the time, the most recent broadband adoption data available was the FCC's December 2014 data. At the time, a mere 16 percent of North Carolina's households adopted broadband at the FCC recommended speed threshold (25:3, meaning 25 megabits per second download and 3 megabits per second upload).[13]

[5] *Connecting North Carolina*, AV1.4 on page 17.
[6] *Id* at AV2.5 on page 19.
[7] *Id* at AV1.6 on page 18.
[8] *Id* at AV1.7 on page 18.
[9] *Id* at AV1.5 on page 17.
[10] Community Broadband Playbook. https://www.ncbroadband.gov/playbook/
[11] *Connecting North Carolina*, AV 1.1 on page 17.
[12] *Id* at AV1.2 on page 17.
[13] *Id* at page 19.

Three years later, 59.4 percent of North Carolina's households adopt wireline service at the FCC's recommended speed threshold according to the FCC's most recent data publication (Dec. 2017).[14] At any speed threshold, the state's adoption average was 74.1 percent in 2015 and increased to 75.8 percent as of December 2017. Across all speeds, North Carolina trails the U.S. average by just a few points. At any speed threshold, the U.S. average adoption rate is 78.1 percent[15], while at 25:3 broadband speeds the U.S. average adoption rate is 60.2 percent.[16]

The state also has access to additional sources of broadband adoption and utilization data not available in 2016. For instance, the American Community Survey (ACS), an annual household survey conducted by the U.S. Census Bureau, added a set of questions in 2012 to track household internet and computer ownership. In December 2018, the first full five-year data set was made available. The dataset provides computer ownership and broadband adoption rates at a more granular level than the FCC adoption data. However, the adoption rates do not delineate subscription by speed but by technology type alone. In addition, Microsoft released broadband usage data in 2019 collected from their internal data reporting broadband use at the FCC recommended speed threshold at the county level by state.[17]

Finally, since the plan's completion, the adoption challenge has received an increasing amount of attention from local, state, and national peers and leaders. In addition, BIO and its peers across the state and country have increasingly focused on addressing the underlying challenges that cause the digital divide and ensuring communities are digitally equitable through digital inclusion programming, policies and tools.

- **Implementing broadband adoption recommendations**

Over the past three years, the Broadband Infrastructure Office led several efforts to increase broadband adoption rates throughout the state. Some efforts were a direct result of recommendations set forth in the State Broadband Plan. Others were developed in response to opportunities unforeseen in 2016. For example, the Office successfully partnered with the State Library to create a Digital Inclusion Librarian position housed at the State Library, fulfilling one of the broadband adoption recommendations.[18] However, the position is not funded by an endowment as originally anticipated. Instead, the position is time-limited to two years and funded through a $250,000 grant award from the Institute of Museum and Library Services

[14] FCC 2019 Broadband Deployment Report, Appendix 8.
[15] American Community Survey, 2013-2017 5 Year Averages
[16] FCC 2019 Broadband Deployment Report, p.29.
[17] Microsoft Airband: An update on connecting rural America. https://news.microsoft.com/rural-broadband/.
[18] *Connecting North Carolina* AD2.2, page 24.

(IMLS) as part of a pilot program the Office and the State Library are leading to equip local libraries to lead the elimination of the homework gap in their communities. The Digital Inclusion Librarian oversees the project and will design a toolkit for libraries or local governments to utilize to implement similar programs.[19]

In addition, the Office formed the N.C. Digital Equity and Inclusion Collaborative (NCDEIC) in 2017 to foster collaboration among digital inclusion leaders to bridge the state's digital divide. The creation of the NCDEIC was not an SBP recommendation; however, the group of digital inclusion organizations are collectively and individually working to achieve the SBP's goals and recommendations. In particular, the NCDEIC is compiling existing digital literacy tools, best practices, and curricula to develop a set of standardized curricula for the state.[20]

The implementation of most of the remaining adoption recommendations is underway. The Office is working to develop methods to provide information on the various discount (or low-cost) offers available to low-income households for broadband service provided by the Internet Service Providers.[21]

BIO will add a discount offer locator tool on its webpage after the data populating the tool is updated. In addition, the Office will partner with various stakeholders such as the state's Local Education Agencies (LEAs), healthcare organizations, and non-profit partners to distribute this information once it's complete.[22] Similarly, the Office has investigated ways to provide information about Lifeline, the FCC program designed to assist low-income households in obtaining voice services, to partners and low-income households.[23] While the Lifeline program was modernized to allow its subsidies to be allocated to broadband services in 2016, the program has since undergone substantial changes that have caused difficulties in leveraging the funding to mitigate broadband subscription costs. The Office continues to investigate the best ways to highlight and advertise the program to North Carolina's low-income households.

The Office continues to seek opportunities to leverage existing infrastructure, including MCNC's middle-mile network to expand broadband service to local libraries.[24] The Office also continuously monitors federal, state, and local policies that impact broadband adoption, including the adoption of mobile services.[25]

[19] *Id* at AD4.1 and AD4.3 on page 25, and HG3.1 and HG3.2 on page 31.
[20] *Id* at AD4.1 and 4.2 on page 25.
[21] *Id* at AD1.1 on page 23.
[22] *Id* at HG3.1 on page 31; and TH4.2 on page 40.
[23] *Id* at AD1.1 on page 23; HG3.1 on page 31; and TH4.1 on page 40.
[24] *Id* at AD2.1 on page 24.
[25] *Id* at AD3.1 on page 24.

Closing the Homework Gap

Of the various aspects of the digital divide, the homework gap was identified as the most pressing issue by the stakeholders surveyed for the prioritization of goals in the broadband plan. Since 2016, the Office and its partners have successfully implemented and initiated several of the plan's homework gap recommendations including, gathering better data on the homework gap.[26] In 2017, the Office partnered with the William Ida Friday Institute for Educational Innovation to issue a pilot survey to K-12 households to garner better data on the homework gap. The results and recommendations to close North Carolina's homework gap were compiled in the Homework Gap report published in 2019.

In 2018, the Office partnered with the N.C. Department of Public Instruction (NCDPI) and Project Tomorrow to add questions for parents of K-12 students to their annual survey, the Speak UP! survey to gather additional data. The Office is currently investigating additional options to continue to study the size and scope of NC's homework gap.[27] The Office also added survey questions to NCDPI's bi-annual Teacher Working Condition's Survey to determine how many teachers assign homework that requires internet access so the impact of the homework gap can be measured.[28]

The Office has also consistently advocated for E-Rate reform to the FCC on behalf of the state[29], included K-12 schools as partners in reaching K-12 households with information and homework gap solutions[30], and continues to encourage the expansion of low-cost mobile service solutions as a temporary solution for expanding access to affordable high speed internet adoption.[31]

Finally, the IMLS-funded "Addressing the K-12 Homework Gap through Broadband Adoption" pilot project connects local libraries and local schools with resources to collaboratively close the homework gap in their communities.[32] This pilot project provides libraries in Caswell, Hyde, Mitchell, and Robeson Counties with hot spots that can be checked out by families for the school year, and also conducts a series of workshops on digital literacy in coordination with local middle schools. Families that complete six workshops receive a free desktop from one of North Carolina's refurbishing non-profit organizations.

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[26] *Id* at HG2.1 on page 31.
[27] *Connecting North Carolina*, HG2.1 and 2.2 on page 31.
[28] *Id.*
[29] *Id* at HG1.1 on page 29.
[30] *Id* at HG3.1 on page 31.
[31] *Id* at HG1.3 on page 30.
[32] *Id* at HG1.3 on page 30 and HG3.1 and 3.2 on page 31.

Telehealth

Since the plan's release, telehealth has increasingly become a topic of conversation among North Carolina's policymakers, health care providers, and community stakeholders. New telehealth technologies hit the market daily, and the opportunities for leveraging the technologies to provide care to unserved patients continue to increase. As these opportunities increase so does the need for the availability, adoption, and use of affordable robust broadband internet service. To form a plan to address these needs, the Broadband Infrastructure Office partnered with the Department of Health and Human Services Office of Rural Health and was awarded an $98,273 grant from the Appalachian Regional Commission (ARC) POWER fund for a Technical Assistance Feasibility Study Project. The collaborative project, called the "*Broadband Feasibility Study for Telehealth Deployment in Western North Carolina,"* is a 12-month feasibility study to identify the broadband and healthcare opportunities, challenges, and gaps in the ARC region and investigate where implementation of telehealth services can bridge healthcare gaps, reduce costs to the consumer and provider, and improve health outcomes. The data collection and feasibility study conclude in February, and project partners will issue a report in March that uses the data collected to create recommendations for the region. This data will inform the design of a statewide plan to leverage public-private partnerships to increase positive health outcomes and economic opportunities for North Carolinians .[33]

BIO anticipates the study will also provide information to compile telehealth best practices for healthcare providers, provide data for how much funding is needed to extend broadband service to all healthcare facilities, and identify opportunities for pilot studies using different telehealth modalities.[34]

In addition, the Office of Rural Health has expanded their team's telehealth capacity by creating a new Telehealth Specialist position and created the Health Information Technology Team to lead telehealth efforts and support the use of information technology tools in rural healthcare organizations.[35]

Public Safety

In 2018, North Carolina joined the nationwide FirstNet contract, the nationwide broadband network specifically built for public safety agencies and first responders. Construction and

[33] *Id* at TH7.1 on page 40.
[34] *Id* at, TH2.1, TH3, and TH5 on page 40.
[35] *Id* at TH7.2 on page 40.

operation of the FirstNet network is paid for by the federal government and will provide first responders with state-of-the-art communication devices, tools, and other resources. DIT and the Broadband Infrastructure Office continue support for the FirstNet network deployment along with engagement with cellular providers that market service to public safety. DIT is supporting increased network coverage and working with various government and private partners to address existing and anticipated concerns.[36]

In 2018, DIT transitioned the work of the FirstNetNC office to the newly created First Responder Emerging Technologies, or FirstTech, program within the Broadband Infrastructure Office.[37] The FirstTech program was created in DIT to provide an innovative look and collaboration point for technologies that benefit all of the public safety disciplines.[38] The FirstTech program also provides a platform for collaboration and connection to facilitate discussions on reducing duplicative efforts and sharing of resources between all levels of government involved in providing public safety services.[39]

In addition, the N.C. 911 Board awarded the contract for a statewide NG911 project after completing a competitive RFP process.[40] N.C. Emergency Management (NCEM) has also continued the Statewide Interoperability Coordinator role as a full-time position.[41] DIT's FirstTech program is supporting this position with subject matter expertise for first responder communications, and program personnel are detailed at times to NCEM to support large scale events such as the response to Hurricane Florence. NCEM also led the formal recognition of the Statewide Interoperability Executive Committee (SIEC) as a standing sub-committee of the State Emergency Response Committee. DIT has two seats on the SIEC and continues to support the efforts of that group.[42]

State Broadband Plan Implementation by Cabinet Agencies

The State Broadband Plan published in 2016 contains more than 80 recommendations to improve broadband accessibility, adoption, and use in North Carolina. As of December 2019, the N.C. Department of Information Technology and other state agencies have fully implemented 11 of these recommendations; another 44 are underway. To implement the recommendations in a timely manner, Cabinet agencies represented on the Governor's

[36] *Id* at PS1 on page 43.
[37] *Id* at PS1.1 on page 43.
[38] *Id* at PS1.2 on page 43.
[39] *Id* at PS3 on page 43.
[40] *Id* at PS2 on page 43.
[41] *Id* at PS3.1 on page 43.
[42] *Id* at PS3.2 on page 43.

broadband task force will lead implementation of the recommendations that fall within their realm of expertise.

As follows is a list of outstanding recommendations each agency is responsible for implementing. Recommendations are organized by the responsible agency and the section of the plan in which they appear. Each recommendation is assigned a code number, an organization lead, and a list of partners. For an overview of the individual recommendations, agencies can consult the corresponding section of the State Broadband Plan. DIT has included actions steps to support implementation of each recommendation. The Cabinet agency can choose to follow these action steps or construct their own. However, if the agency constructs their own, they should apprise the task force of proposed steps to implement assigned recommendations.

The task force will continue to meet monthly to update progress across Cabinet agencies on supporting broadband access and adoption. DIT staff supporting the task force will meet with individual agency representatives during February and March. The task force will share an updated status report in April 2020.

The definitions of codes for the recommendation numbers are provided below.

Codebook Definitions
AV: Broadband Availability
AD: Broadband Adoption
HG: Homework Gap
ED: Economic Development
TH: Telehealth
PS: Public Safety

Task Force priorities for State Broadband Plan implementation			
1	**Identify and promote digital equity and inclusion resources for use by community organizations and digital governments. (In progress)** - Identify list of programs that nonprofits have created and that communities have implemented. - Determine and share best practices. - Design metrics for evaluation and distribution plan. - Draft project summary and report documentation.	DIT	AD1.3
2	**Obtain funding for last-mile connectivity to libraries. (In progress)** - Identify libraries lacking high-speed connectivity, as well as funding needs, current contracts, and available service providers.	DIT DNCR	AD2.3

	- Identify funding sources starting with E-rate (including resources to help filing for E-rate).		
3	**Foster aggregation and creation of digital literacy tools. (In progress)** - Build upon existing digital literacy tools. - Highlight existing intergenerational digital literacy training programs for replication. - Identify digital literacy best practices and publish case study models.	DIT	AD4
4	**Improve mapping of broadband wireline and wireless coverage and infrastructure. (In progress)** - Leverage DIT partnership with NTIA to identify relevant data. - Identify and develop additional data collection, including speed reporting. - Create online platform for data mapping and display and integrate mapping with NC OneMap initiative. - Advocate for data collection and mapping by federal agencies (FCC and NTIA). - Advocate for NCGA action to require better, more specific data from N.C. internet service providers.	DIT	New
5	**Explore development of a state railroad crossing policy.** - Gather information on states' railroad-crossing policies. - Engage stakeholders in policy development and implementation. - Write project summary and report documentation.	DOT DOC	AV1.6
6	**Leverage ongoing R&D of next-gen technologies to expand broadband access and adoption.** - Identify and make appropriate investments in next-generation technologies that increase broadband access and adoption.	DOC DIT	AV3 ED3
7	**Better leverage the Healthcare Connect Fund (HCF)** - Partner with N.C. Telehealth Network and MCNC to ensure eligible healthcare providers, especially SafetyNet sites, are aware of HCF and how to participate.	DHHS DIT	TH1
8	**Endorse, and assist in distributing telehealth best practices.** - Engage stakeholders to create, endorse, and assist in distributing telehealth best practices. - Evaluate current telehealth best practice models with defined outcomes	DHHS	TH2
9	**Provide education to patients on various low-cost broadband subscription options.** - Engage stakeholders to identify best ways to educate patients about low-cost broadband options. - Create low-cost broadband service provider inventory and produce audience-appropriate literature on options. - Provide education specific to Reformed Lifeline Program.	DHHS DIT	TH4
10	**Conduct telehealth modality case studies.** - Determine current best practice models in use for each telehealth modality.	DHHS	TH5

	- Use best practice findings to create workflow models for other health care providers. - Create stakeholder engagement plan and identify telehealth funding opportunities. - Evaluate progress with measurable goals and benchmarks.		
11	**Advocate for additional resources for DHHS Office of Rural Health for health IT technical assistance.** - Define DHHS statewide telehealth short- and long-term objectives. - Determine optimal staffing model for telehealth consultation and implementation based on telehealth goals.	DHHS	TH7.2
12	**Develop and publish tool kit for libraries to help increase digital literacy and broadband adoption among low-income families. (In progress)** - Publish findings and toolkit developed through the State Library and Broadband Infrastructure Office initiative funded by IMLS grant. - Identify list of programs other libraries have implemented. - Identify options and funding to continue support for the Digital Librarian position currently supported by the IMLS grant. - Develop outreach and communication plan for educating libraries, including stakeholder engagement.	DNCR DIT	HG1 AD1
13	**Expand service delivery to low-income families through Homework Help program. (In progress)** - Pursue additional resources to expand the program and identify other libraries in need of the program. - Coordinate and develop plan to merge the Digital Librarian Toolkit with Homework Help to ensure programs meet patrons' needs. - Develop outreach and communication plan for educating libraries, including stakeholder engagement.	DNCR	HG1 AD1
14	**Develop policy for "Dig Once" where DOT invites the installation or installs conduit for telecommunications. (In progress)** - Engage stakeholders and partners in policy implementation. - Determine best practices from other states or municipalities to lease or utilize conduit. - Create digestible informational communication on best practices implementation. - Engage stakeholders and district staff to distribution communication about the policy. - Create central location for conduit location/mapping. - Develop model guidance for local government use.	DOT	AV2.2
15	**Identify projects with the potential for fiber deployment.** - Review construction or digging efforts and add a checklist item to review possibility to lay fiber.	DEQ DOT DIT	AV2.2

	- Solicit feedback from stakeholders about opportunities to lay fiber during a project.		
16	**Create streamlined process for leasing of state towers and other vertical assets. (In progress)** - Implement provisions in SL 2018-5. - Develop process for application and review. - Create online application submission. - Catalogue list of other projects. - Determine uniform fair market value standard for rural counties. - Coordinate with DIT, DPS-VIPER, UNC-TV and other agencies to create process for vetting applications.	DOA DIT DPS	AV1