Call to Order
Opening Remarks
Committee Reports
  • Digital Transformation Committee
  • Cybersecurity/Privacy Committee
    • Cyber Education Pathways
    • Whole of State Approach
Broadband Update
Other Business
Adjournment
Opening Remarks

Secretary Jim Weaver, Board Chair
Committee Reports

Digital Transformation

NC DIT

NORTH CAROLINA DEPARTMENT OF INFORMATION TECHNOLOGY
• Debriefed with CIO on further areas of work
  • Encouraged DIT to continue to provide additional work opportunities for DT
• 3 Prospective Work Areas
  • Identity Management & Personas
  • DT Roadmap Roadshow (selected)
    • Keith Briggs will be point
  • Rural Broadband
• Upcoming Meetings
  • Dec 16th (Optional/Roadshow Strategy & Citizen Portal updates)
  • Jan 20th (Optional/Roadshow Finalization & Digital Identity Update)
  • Feb 17th (Formal/Check In & Plan for March ITSB Mtg)
Committee Reports

Cybersecurity/Privacy

NC DIT
• Overall update: Jeff Tarte
  o Cyber Education Pathways – Keith Werner and Rob Main
  o Whole of State Approach – Randy Cress and Robbie Felicio
Cybersecurity Education Pathways – DRAFT Framework

MISSION: to identify, educate, develop, train, employ, and retain aspiring cybersecurity practitioners for apprenticeship or internship programs for local government, state government, NCCCS, and university system.

GOAL: Develop a comprehensive program to create a sustainable cybersecurity human capital pipeline.

PROBLEM STATEMENT: Recruitment and retention of cybersecurity professionals for public sector is challenging with competition and demand for human resources extremely high. Resource gaps persist and continue to grow, with 17,660 open cyber related positions open in NC (source: Cyber Seek). Management of evolving cybersecurity risk is essential to the security of the state.
PROPOSAL: Develop a multi-pronged pathway to increase the number and quality of people pursuing public sector cybersecurity work in North Carolina

- Work with the Office of State Human Resources to develop pathway
  - Develop Apprenticeship, Internship, and Mentoring programs
  - Create Cyber Fellows program (model after Teaching Fellows)
- Develop curriculum and inventory existing certificate programs
- Align with existing programs (e.g. Carolina Cyber Center at Montreat College)
- Clearly articulate inventory of jobs
- Target recruitment to:
  - Transitioning military
  - Community College Students
  - Middle and High School Students
  - University Students
- Identify job placements in state, local, and education system positions
- Identify private sector partnerships
- Seek funding to support program
Broad demographic

- 100 Counties
- 552 Municipalities
- Varying levels of IT centralization across internal departments
  - Elected Officials reporting structure
  - Staff resource allocations
  - Funding levels from tax revenue, state and federal
Cybersecurity Maturity Varies

- Full IT staff with dedicated CISO role
- Limited IT staff
- One-man shops
- Outsourced IT operations

Citizen services remain consistent (Public Safety, Water/Sewer, Social and Health Services, Tax and Vital Records)
Understanding the threat landscape?

- National Cyber Security Review
- National Guard Assessments
- 911 Board PSAP Cyber Assessment
- CJIS Auditing
National Cybersecurity Review (NCSR)

Self Assessment Process

- Subjective review - good process, limited understanding
- Possible area of guidance from State/Peer resources

Tied to NC Emergency Management Grants as a requirement

- Potential for other funding and/or grants tied to County response
National Guard Assessments (NCNG)

**Structured Process**
- Policy Review
- Procedures
- System and Network Baselining

**Free to Counties**
- Time commitment from staff
- Actionable final report
Assessment Overload? (Perspective)

- Many new outside reviews of what can be improved

- Impact from significant cyber events (own and neighbors) prompt budget allocations - what can we do to fix? $$
What is the journey for better cyber posture?

- State Resources
  - Managed Intrusion Detection / Prevention and 24x7 monitoring (SecureWorks iSensor)
  - Assessments (Optional and Mandatory)
  - Incident Response support
  - Legislative reporting requirements
IP Address Attribution Needed for Local Government

- Difficult to support when critical CVEs are announced
- BitSight
- Shodan.io
- Tenable Nessus Scanning

- Locals may not be aware of all public IP exposure
  - Turnover
  - Multiple departments
  - Vendor equipment
We have the pieces to the puzzle

Trying to identify what the finished solution is (Framework alignment)

Need support with strategies to get it completed before an event
WHOLE OF STATE

Mr. Randy Cress \ LTC Felicio
The State of North Carolina takes a whole of state approach that continuously works with Federal, State, Local, Tribal and Territorial entities in cyber security preparedness as well as being able to respond immediately to a cyber-attack.

Quick Reaction Support (Cyber QRF) > Cyber 911

Security Assessment Support \ Penetration Testing > Prevention \ Validate

Continuous Monitoring > Actively monitoring threats

Training and Outreach > Education and rehearsals

Forensics Support > How did it happen & preventing it from happening again

Surge Capability Support > Respond to large-scale attack
• **Quick Reaction Support (Cyber QRF):** The QRF has trained Incident Responders who can lead agencies into initial triage and through the completed process
  - Scoping call in minutes
  - On scene of the cyber attack anywhere in the state within hours
  - Contain the incident
  - Provide technical expertise to restore services as quickly as possible.
  - Past 12 months completed more than 20 Incident Responses

• **Security Assessment/Penetration Testing Support:** The Assessment Team provides cybersecurity hygiene audits/ assessments on networks and infrastructure.
  - Work hand-in-hand with each agency
  - Provide a comprehensive evaluation on their technology and environment,
  - Utilize industry best practice solutions to identify vulnerabilities, gaps in security policy, along with detailed recommendations for improvement.
  - Past 12 months completed more than 50 assessments across state
Strategy - Cyber Hygiene Cycle

Assessment
- Utilize assessment report to prioritize and address vulnerabilities
- Determine acceptable risk levels and document risk mitigation strategy
- Develop internal processes, policies and procedures to improve security posture
- Leverage report to determine additional resource requirements

Penetration Testing
- Assessment of information security program, environmental factors, and technical area review
- Purpose is to identify potential gaps in coverage as well as provide baseline of improvement recommendations
- Conducted using industry best practices and DOD Security Technical Implementation Guidelines (STIGs)
- Output is comprehensive report outlining vulnerabilities and recommended solutions

Remediation
- Address vulnerabilities outlined in penetration testing report
- Identify additional risk acceptance and document mitigation strategy
- Evaluate processes, policies, and procedures to ensure comprehensive coverage
- Leverage report to determine additional resource requirements

Remediation
- Validate the steps taken during remediation to ensure appropriate resolution
- Identify additional areas of concern including user awareness and network monitoring capability
- Output is comprehensive report detailing actions taken and recommended solutions
• **Continuous Monitoring:** The Team provides monitoring for more than 150 agencies including state partners, county governments, and community colleges.
  - Continuous oversight and early warning notifications
  - Alert agencies to potential changes in their security posture in real time.
  - Technical expertise to resolve the issue as soon as its identified
  - Reducing downtime and spread of attack vectors.
  - Ability to look across numerous platforms to research threats
  - Notify agencies targeted by malicious actors.

• **Training and Outreach:** The Team conducts in person and virtual regular training and table-top exercises with state partners across a variety of cyber security related matters.
  - Example subjects: Cyber Hygiene Best practices, election security, web security, continuity of operations planning, incident response plan development, and vulnerability management.
  - Ransomware tabletop exercises and full scale exercises open to state partners that allowed them to see how an incident develops from start to finish, and the steps to take to contain.
• **Forensics Support:** Identify the attack vectors and root cause of the incident, as well as indicators of compromise to help prevent the attack from reoccurring.
  - Threat hunting and reach back forensic analysis
  - Utilize processes approved by LE including Secret Service, FBI, and CISA
  - Shared between agencies that will help mitigate future attacks.

• **Surge Capability Support:** This surge capability allows for specialized skillsets onto the team to meet whatever the mission requires.
  - For example, if a threat hunter is required, they can utilize M-Day guardsmen with that skillset to track the attack vector.
  - When an incident requires additional expertise in technologies across multiple counties or municipalities, mutual aid is provided by other IT professionals across the NCLGISA Strike Team.
  - Allows the team to run simultaneous missions
Cyber QRF – 911 \ Surge Capabilities

Cyber Incident Response Overview

• 8 Incident Responses in 2019
  • 2 – County/County Sheriff’s Office
  • 2 – City
  • 2 – State Agency
  • 1 – Community College
  • 1 – K-12 School System

• 23 Incident Responses in 2020, numerous Events
  • 8 – County/Tribal (1 associated with SolarWinds hack)
  • 5 – City
  • 1 – State Agency (associated with SolarWinds hack)
  • 3 – Community College/University
  • 6 – K-12 School System

• 6 Incident Responses in 2021 to date, >100 Events
  • 2- Local Government
  • 1- SCADA/ICS
  • 1- County Rescue Squad
  • 1- Community College/University
  • 116 exposed organizations to MS ProxyLogon hack
The way forward

Continue to build upon success of the N.C. Joint Cybersecurity Task Force in proactive and responsive activities with local governments, LEAs and North Carolina community colleges.

(FORMALIZE MISSION and CHARTER)

Expand scope of continuous monitoring for state and local governments.

(Outreach & Training)

Establish a statewide program for monitoring of threats and optimize cyber intelligence sharing.

( FORMALIZE SOP for sharing JCTF \ Fusion Center)
Broadband Update

Nate Denny, Deputy Secretary for Broadband and Digital Equity

NC DIT
BROADBAND UPDATE

IT STRATEGY BOARD MEETING
DEC. 10, 2021

NATE DENNY
DEPUTY SECRETARY, DIVISION OF BROADBAND AND DIGITAL EQUITY

NCDIT
North Carolina Department of Information Technology
Division of Broadband and Digital Equity
Agenda

1. Introductions
2. Goals for building digital equity
3. State budget funding
4. Infrastructure Investment & Jobs Act (IIJA) funding
5. Broadband strategic plan
6. Division organization
7. Priorities
Approximately 1.1 million North Carolina households lack access to high-speed internet in their homes\(^2\) and cannot afford it. Many residents also lack the skills to effectively use it. We can achieve digital equity in North Carolina by addressing the following factors:

**Infrastructure**
At least 266,000 North Carolina households, likely much higher, currently do not have access to high-speed internet of 100/10+ due to lack of infrastructure.\(^3\)

**Affordability**
Approximately 1.3 million households would have to pay more than 2% of their annual income to afford a broadband cost of $60/month.\(^4\)

**Digital Literacy and Enablement**
An estimated 430,000 households are without a home laptop or desktop computer. Of those, approximately 180,000 do not have a smartphone.\(^5\) As many as 1.2 million adults may lack the digital literacy required to begin taking advantage of digital services.\(^6\)

---

1. Data on this slide is based on a 2021 study by McKinsey & Company. | 2. U.S. Census Bureau, 2019 American Community Survey (ACS) Microdata | 3. FCC Form 477, FCC 2019 block demographic estimates | 4. U.S. Census Bureau, 2019 American Community Survey (ACS) Microdata | 5. U.S. Census Bureau, 2019 American Community Survey (ACS) Microdata; 2021 Census Pulse Survey | 6. National Center for Education Statistics | 7. U.S. Census Bureau, 2019 American Community Survey (ASC) Microdata, for respondents who don’t have an internet subscription or that only have cellular data or only have dial-up, satellite or other.
## Key Success Metrics

<table>
<thead>
<tr>
<th>Metric</th>
<th>N.C. Today</th>
<th>N.C. 2025</th>
</tr>
</thead>
<tbody>
<tr>
<td>Households with broadband internet access</td>
<td>“95.5%”</td>
<td>98%</td>
</tr>
<tr>
<td>Households with broadband internet subscriptions</td>
<td>73%</td>
<td>80%</td>
</tr>
<tr>
<td>Households with children with broadband internet subscriptions</td>
<td>81%</td>
<td>100%</td>
</tr>
<tr>
<td>Adoption rates across racial subgroups</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Native American</td>
<td>57%</td>
<td>80%</td>
</tr>
<tr>
<td>• Black</td>
<td>64%</td>
<td>80%</td>
</tr>
<tr>
<td>• Latinx</td>
<td>68%</td>
<td>80%</td>
</tr>
<tr>
<td>• White</td>
<td>76%</td>
<td>80%</td>
</tr>
</tbody>
</table>
Governor Cooper’s plan invests about $1 billion of American Rescue Plan funds (and $30 million of state funds) in the following areas to achieve digital equity in North Carolina. We will also leverage significant private sector investment.

**Infrastructure**

- **$971M**
  - Completing Access to Broadband (CAB)
- **$380M**
  - GREAT Grant
- **$400M**
  - Stop Gap Solutions
- **$90M**
  - Stop Gap Solutions
- **$380M**
  - GREAT Grant
- **$100M**
  - Broadband Make Ready Accelerator (Pole Replacement Fund)
- **$1M**
  - Broadband Mapping

**Awareness and Digital Literacy**

- **$50M**
  - Improve awareness and enable North Carolinians to realize the benefits of high-speed internet through digital literacy and upskilling aimed at accessing the digital economy.

**Administrative**

- **$15M**
  - Supplement existing state administrative capacity to support high-speed internet efforts.
### Additional federal funding

Infrastructure Investment & Jobs Act (IIJA)

<table>
<thead>
<tr>
<th>Program</th>
<th>Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FCC Affordable Connectivity Program</strong></td>
<td>$14.2 billion</td>
</tr>
<tr>
<td>• Transitions Emergency Broadband Benefit Program</td>
<td></td>
</tr>
<tr>
<td>• Reduces subsidy from $50 to $30 per month</td>
<td></td>
</tr>
<tr>
<td>• Transitions this month</td>
<td></td>
</tr>
<tr>
<td><strong>Broadband Equity, Access, and Deployment (BEAD) Program</strong></td>
<td>$42.45 billion</td>
</tr>
<tr>
<td>• High-cost areas ($4.245B), Formula grants ($37.356B)</td>
<td></td>
</tr>
<tr>
<td>• Initial minimum allocation of $100M per state or territory</td>
<td></td>
</tr>
<tr>
<td>• Must include affordability component; prohibits exclusion of municipal networks</td>
<td></td>
</tr>
<tr>
<td><strong>Enabling Middle Mile Broadband Infrastructure Program</strong></td>
<td>$1 billion</td>
</tr>
<tr>
<td><strong>Tribal Broadband Connectivity Program</strong></td>
<td>$2 billion</td>
</tr>
<tr>
<td><strong>State Digital Equity Planning Grant Program</strong></td>
<td>$60 million</td>
</tr>
<tr>
<td><strong>State Digital Equity Capacity Grant Program</strong></td>
<td>$1.44 billion</td>
</tr>
<tr>
<td><strong>Digital Equity Competitive Grant Program</strong></td>
<td>$1.25 billion</td>
</tr>
</tbody>
</table>


N.C. Broadband and Digital Equity Strategic Plan

**Vision**

A connected North Carolina where all residents can access, afford, and effectively use technologies necessary to participate and thrive in a digital society.

**Guiding Principles**

- Equity
- Collaboration
- Innovation
- Transparency
- Accountability
- Fiscal responsibility

**Goals**

- **Build a sustainable team to deliver digital equity to North Carolina**
  - Exercise good stewardship of public resources.
  - Collaborate with partners to establish guidance and policy to improve digital equity for all North Carolinians.
  - Provide technical expertise to communities, residents, and other stakeholders.
  - Build capacity to efficiently and effectively deliver investments in broadband infrastructure and digital literacy.
  - Maintain transparency and visibility into mission progress.
  - Advocate on behalf of North Carolinians with internet providers and other stakeholders.
  - Maintain focus on end-user needs.

- **Enable more North Carolinians to afford high-speed internet**
  - Raise the percentage of North Carolina households with high-speed internet subscriptions from 73% to 80%.
  - Raise the percentage of North Carolina households with children with high-speed internet subscriptions from 81 to 100%.
  - Increase adoption rates to 80 percent across minority subgroups.
  - Advocating for additional federal investment in improved high-speed internet affordability programs.
  - Build affordability into infrastructure projects and secure equity through project delivery.

- **Increase digital literacy among all North Carolinians**
  - Lead digital inclusion activities across the state.
  - Build public-private partnership to deliver computers to 96,000 low-income North Carolina households and break-fix services for 275,000 additional devices.
  - Open innovative connectivity hubs in unserved communities across North Carolina. (pilot 5).
  - Advocate for additional federal investment in improved high-speed internet affordability programs.
  - Build affordability into infrastructure projects and secure equity through project delivery.
  - Provide digital literacy training that incorporates cybersecurity and privacy principles.

- **Expand broadband access across the state**
  - Ensure 98 percent of North Carolina households have access to 100.20 Mbps or better service.
  - Facilitate the deployment of last-mile broadband infrastructure through the GREAT grant program.
  - Partner with counties to competitively-bid broadband infrastructure projects.
  - Utilize stop-gap funding to address additional unserved areas and support utility pole replacement to expedite broadband deployment.

- **Leverage data to identify and understand community needs**
  - Develop more comprehensive location-based maps of infrastructure availability, adoption, and pricing.
  - Map digital equity across demographic groups.
  - Build strong partnerships with internet provider community to access better data.
  - Develop processes for communities and other stakeholders to share broadband planning data.
  - Use data to make strategic, proactive investments in communities that are disconnected.

**Mission**

Provide resources to our partners in the private, not-for-profit, and public sectors to efficiently and effectively expand broadband and increase digital equity and literacy.
Priorities

1. Address capacity needs (hiring, partners for governance, risk management, project and grant management)
2. Issue mapping RFP
3. Launch GREAT and CAB as soon as possible
4. Drive Affordable Connectivity Program enrollment, mitigate harm from cuts
5. Build device partnerships and digital equity grant programs
6. Plan for Infrastructure Investment & Jobs Act funds, position the state and stakeholders to be competitive
Next Meeting:
March 18, 2021

2022 Meeting Dates
• March 18
• June 17
• September 16
• December 16
Thank you for your time this morning—have an excellent holiday season!