

# Infrastructure/Connectivity Committee Action Plan

## Mission Statement

The Infrastructure/Connectivity Committee developed the following mission statement to provide a framework for the important discussion surrounding industry recovery and resilience: “With a goal of creating the most connected, resilient region in the country, this Committee will focus on assessing and improving the digital health of our business, education, and healthcare services sectors.”

## Pandemic Impact

Infrastructure and connectivity are the foundation of economic growth, recovery, and resilience in the Hampton Roads region following the onset of the coronavirus (COVID-19) pandemic. In order to flatten the curve and prevent the spread of the virus, the region and country have been forced to undergo partial shutdowns and strict social distancing. Access to high-speed broadband has facilitated the shift to web-based work and the conversion of processes that were once face-to-face to online, remote operations. The transition to virtual environments through work from home, distance learning, and other practices has put unexpected stress on existing networks and the people that rely on them. Broadband is the key to resiliency and maintaining remote operations across business, education, and healthcare – the Committee has reviewed and analyzed how the pandemic has impacted these sectors while identifying strategies and recommendations for industry recovery and overall resiliency.

## Current State of the Industry

The business (including both public and private sectors), education, and the healthcare communities were significantly impacted by the stress of having to quickly adapt to remote operations. In the following sections, these challenges and lessons learned are explored towards achieving greater resiliency following the pandemic.

### **Business**

In order for businesses and workplaces to survive during the early phases of the pandemic, they were forced to quickly adapt by adopting reliable, remote business tools to keep workers employed despite social distancing requirements. However, the primary challenge is that businesses were not prepared to operate remotely once the pandemic began. Some companies were financially unable to offer the required access to the internet, devices, software, security, and other resources to allow their employees to work from home, and many did not have a plan to facilitate the transition with such short notice. This left employees without their own financial resources or reliable connectivity unable to work from home, thus further hindering businesses. Along with other economic factors, this led businesses to close and fire or lay off employees until remote practices could be implemented, if at all. However, companies that invested in the technology to allow employees to work remotely (i.e. cloud platforms, portable computing devices) were able to continue business operations. The resiliency of those businesses was only possible because of the broadband infrastructure that allows those employees to stay connected. The Committee notes that not all businesses can function remotely; however, the pandemic has encouraged business of all sizes to reconsider how technology (that runs on broadband) can be used to increase efficiency or remain relevant in a socially distant environment.

Based on Infrastructure/Connectivity Committee findings, lessons learned include the need for business continuity plans that prepare the region for any disaster. For example, a government agency that accepts paperwork in person could limit future business disruption by (1) determining which processes truly require face-to-face interactions and then (2) creating online applications and digital processes that citizens can use at home or through community kiosks. While some larger companies proactively offered their employees devices and a “work from home” option prior to the pandemic, smaller companies faced greater difficulties in adjusting. To reduce this moving forward, businesses should be encouraged to identify current short falls and implement policies to allow a more seamless transition to work from home in the future by identify processes that can be conducted remotely, gauging the ability of employees to work from home, and identifying solutions to support decentralized operations. Furthermore, encouraging all businesses to have an online and social media presence is a priority. To determine the current state of businesses, a census of digital usage, remote work, and requirements could be taken by the Chamber of Commerce and the Economic Development authorities of local municipalities. Additionally, educational opportunities for creating and enhancing these online capabilities should be promoted by these agencies.

### **Education**

Education is the most immediate concern identified by the Committee because children are the leaders and workforce of the future. With K-12 and college students returning to campus, solutions on how to increase student access and internet reliability are of critical importance. Thousands of students throughout the region lack internet access, thus leading to digital inequities. Some students suffer from insufficient broadband access due to their location while other families are unable to afford service. Local ISP’s such as Cox Communications offer subsidized internet access to families with children on government assistance, but those not on government assistance do not qualify. College students are also not able to benefit from the subsidized service. Another concern is that students may not have enough devices for schoolwork. Families with multiple students may not have enough computers or sufficient bandwidth to enable distance learning, especially when web conferencing is involved or if a parent is working from home.

The lesson learned regarding education is that the same broadband access that remote businesses require is also needed to support the education of the most vulnerable population in the community, the children. Now, more than ever, the availability and quality of broadband needs to be improved across all communities as home broadband connections must be able to support both business operations and distance learning. Additionally, there should be plans and financial resources in place to support distance learning initiatives. Disparities affecting students that are unable to continue studies during the pandemic will be exacerbated and should be addressed to promote more equitable short and long-term outcomes.

School divisions are responsible for limiting disruption and providing online learning platforms. However, those platforms are for naught if local government and broadband service providers are not able to work together to develop funding solutions to provide the broadband infrastructure that connects students to the resources that the school divisions make available. Seeking funding sources such as through grants and local organizations will help supply more students with resources necessary for their studies. A proposed solution for K-12 students that is currently underway is to equip buses with Wi-Fi and allow students to complete work in school parking lots from their cars, but this will not help

families with parents who work during the day. Another solution is placing the Wi-Fi equipped buses in neighborhoods with low access rates, but the lack of devices problem resurfaces. Some schools are supplying students with laptops and hotspots, but jurisdictions with less resources are unable to accommodate student needs without additional funding. Mobile connectivity through hotspots should be prioritized. The student population most in need is more likely to have to receive childcare at locations different than their primary residence or may be experiencing homelessness. Access to mobile hotspots will ensure that children, as well as other members of the family, will maintain connectivity throughout the pandemic, and perhaps, beyond.

## **Healthcare**

Healthcare is another industry that the Committee highlighted. The pandemic has substantially decreased access to in-person healthcare, and groups that are disproportionately affected by lack of access to healthcare overall also lack telehealth and are often more affected by disparities in general. Due to the pandemic, many healthcare providers have shifted to only seeing patients with more urgent concerns, leaving people without routine care. In addition, many patients, especially those from vulnerable groups such as senior citizens, are reluctant to visit offices due to fear of infection. However, the challenge is that without access to broadband, they are also unable to participate in telehealth, and without insurance, care can be cost prohibitive. Adequate connectivity is another concern. One Committee member spoke of patients who lost connectivity during virtual appointments and that mobile telehealth options were being considered to allow persons in communities with less access to receive care.

The lessons learned include that although telehealth facilitates remote access to providers and promotes continuity of care, those without broadband connectivity are neglected. Furthermore, those with unreliable or spotty coverage will be unable to maintain the connection necessary for virtual visits. Although phone-based telehealth is an option, not all conditions can be treated without visual observation; therefore, those without access to web conferencing options are placed at a disadvantage.

A foundation of telehealth – through the presence of broadband access, affordable and reliable broadband service, and established relationships with healthcare providers – must be obtained to ensure remote care and patient operations can be maintained regardless of future disasters that force remote operations. Additionally, there is need for support from state and federal governments to ensure that insurance providers will continue to reimburse telehealth. Telehealth is the wave of the future, and without continued coverage, many community members will no longer be able to afford care. Subsidized or free options should be considered for those without insurance that do not qualify for Medicaid. Greater knowledge of telehealth services within the community is also necessary.

## **The Future**

The following target areas address strategic goals that will support regional recovery and resilience through infrastructure and connectivity:

**Ubiquitous Access** – In order to achieve the goal of becoming “the most connected, resilient region,” Hampton Roads must increase its broadband access while making it available to all. This can be achieved through constructing more wired and wireless networks that address service areas with limited or insufficient broadband access. One means for creating additional access will be through the Southside

Network Authority's Regional Connectivity Ring (a fiber network that will connect the municipally-owned fiber of Hampton Roads cities) which will connect to the ultra-high speed subsea internet cables landing in Virginia Beach. This Authority, acting as a "middle mile" for access, will market the fiber ring to ISPs and other institutions who can "light up" this fiber and provide the "last mile" to end users ensuring that more widespread access to broadband is achieved.

**Device Usage, Digital Literacy, and Cybersecurity** – Businesses and families must have access to enough desktops, laptops, or tablets to provide connectivity to all members requiring access. Businesses must have adequate resources to support increased network traffic in office or through work from home, and families must ensure that devices allow for distance learning as well. Digital literacy must also be stressed in the workplace, in schools, and at home to ensure that users are knowledgeable about both how to use devices while ensuring proper cybersecurity measures and training are being implemented as Hampton Roads moves towards an increasingly virtual environment. Regional partners such as the Old Dominion University Women's Business Center should be engaged to provide digital literacy and cybersecurity training to local organizations.

**Competition** – Promoting broadband access not only means increasing the availability of networks in the area, but also ensuring that internet prices are affordable to increase adoption. The region must facilitate industry entry for new companies and increased competition between service providers. More providers will result in greater internet provider options from which consumers can choose and prices will be more affordable. Furthermore, in addition to affordability, service must be reliable, possess upload and download speeds efficient enough to support all users and devices within a home or business, and undergo continuous advancements such as implementing 5G, which will be stimulated through increased competition. Clean, green energy must also be solicited to attract businesses in other sectors. Supporting the goal of welcoming data centers, the electrical utility grid must be upgraded.

**Collaboration** – Regional collaboration must be increased to promote growth in infrastructure and connectivity. Collaboration between neighboring jurisdictions, between service providers and the jurisdiction in which they operate, and between the public and private sectors will promote more widespread broadband access. Currently, companies are facing governmental roadblocks in certain cities, so the need for collaboration and uniform regulations must be emphasized to facilitate continuous advancement (i.e. creating one standard for 5G deployment across the region to ensure quicker implementation of this important technology region-wide). The aforementioned Southside Network Authority is a great example of successful collaboration between the five southside cities (Chesapeake, Norfolk, Portsmouth, Suffolk, and Virginia Beach) that aim to increase access and affordability in Hampton Roads through partnership between key private and public stakeholders. Furthermore, an ongoing regional committee focused on broadband deployment, expansion, and innovation should be created to ensure the region is "future ready" and marketable as a lucrative digital port to attract new businesses.

**Community Education and Marketing Efforts** – The region must continuously work to keep members of the community abreast of broadband, infrastructure initiatives and the potential benefits these advancements will provide to residents. In addition, it will be important to provide ongoing lobbying efforts to educate elected officials at all levels of government about the need for broadband connectivity for the region, assistance with funding to create connectivity, device availability, and education for consumers and businesses on digital literacy. The Virginia General Assembly, as well

as officials such as the governor and city leadership, should be presented with important information and implored to allocate funding to support increased broadband connectivity. As such, a “Collective Movement” is necessary where community thought leaders are actively sharing information on available and affordable broadband options, where to obtain devices for distance learning, and maps that identify free public Wi-Fi access. Educational Resources should be made available to households and businesses that require economic relief when and if disasters hit, such as the CARES Act in the wake of the coronavirus pandemic. Community thought leaders focused on expanding broadband initiatives should inform the public of current legislative efforts involving laws on all relevant topics including distance learning (for example, HB 5009 which would require students to participate in in-person classes if they do not have access to broadband despite the pandemic) and the importance of advocating for greater connectivity and funding to achieve it.

The new normal for infrastructure and connectivity in Hampton Roads will be a fully connected region. The Infrastructure/Connectivity Committee’s goal will only be achievable by ensuring that every man, woman, and child has equal access to broadband connectivity and working devices that allow them to connect to it. As discussed amongst the Committee, in 2020, connectivity is a basic human need along the same lines as clean drinking water and electricity – it is the Hampton Roads region’s goal to ensure that is accessible, affordable, and reliable.

Meeting these strategic goals will allow the region to better manage through future shocks, whether pandemic-related or as a result of other natural or manmade disasters (i.e. hurricanes, flooding, pandemic, terrorism), as the community will have the resources and know-how to operate remotely in a more seamless manner. This connectedness will enable the region to thrive and grow to place Hampton Roads at a competitive advantage relative to other regions in the country.

## Metrics

The most effective metrics for understanding the recovery and resilience of infrastructure and connectivity within Hampton Roads will be through a series of longitudinal surveys and research on the evolving status of connectivity. Available Federal Communications Commission data is insufficient, so surveys should be developed and delivered to businesses, parents, students, and the community as a whole to assess regional needs. Although users may not know what levels of broadband they have or require, they should be able to articulate their internet usage to provide a better understanding of needs. Additionally, collaborative research between companies, jurisdictions, and other stakeholders will provide data-driven results to establish a regional baseline that will allow the continuous assessment of regional broadband access, adoption, and efficiency over time. History has already established that internet consumption and reliance have grown; therefore, there is a need to prepare now for increased future consumption

A survey delivered to local businesses will allow the collection of data on the percentage of businesses that can operate remotely, how internet usage has changed (or remains the same), if organizational internet access is adequate, internet access needs, and more. A survey of K-12 parents and guardians will help determine the number of students lacking broadband connectivity and devices. Identifying gaps will help jurisdictions seek devices and funding to provide sufficient access to each student. College students face similar issues, and by also identifying gaps in higher education, colleges and universities be able to allocate or seek funding to further assist students.

Finally, data collected on the overall community will allow researchers to develop a broadband map that serves a few primary purposes: it will show where coverage dead zones are located, communities that are disproportionately affected by lack of connectivity, locations that provide free access for those without, and opportunities for business and community growth and development. By establishing a baseline of broadband access and adoption in the area, regional leaders will be able to implement continuous improvements and ultimately address the last mile.

## Imagery

- Cybersecurity
- Data Centers
- Distance Learning
- Regional Connectivity Ring
- Social Distancing
- Transatlantic Cables
- Web Conferencing
- Work from Home

## Resources

- [AT&T – AT&T in Hampton Roads](#)
- [AT&T – COVID-19: Our Response](#)
- [AT&T – Education Related Initiatives](#)
- [Benton Institute for Broadband and Society – Our Broadband Moment - Acting Now and Looking Forward](#)
- [Broadband Now – Broadband Service in Virginia](#)
- [Brookings – 5 Steps to Get the Internet to All Americans: COVID-19 and the Importance of Universal Broadband](#)
- [CBS News – The Great Broadband Divide: Living Without High-Speed Internet Access](#)
- [Commonwealth Connect – Broadband Toolkit](#)
- [Commonwealth Connect – Governor Northam’s 2020 Plan to Connect Virginia](#)
- [Cox Communications – Connect2Compete](#)
- [Cox Communications – News Release: Hampton Roads Is Now a Gig Region](#)
- [CTIA - America’s Wireless Companies Respond to COVID-19: July 2020 Recap](#)
- [Lawnstarter – The Digital Divide in Hampton Roads](#)
- [Miami Herald – Student Arrested for Cyberattack Against Miami Schools Used ‘Easy to Prevent’ Program](#)
- [Microsoft – Airband Initiative](#)
- [NCTA – Introducing 10G: The Next Great Leap for Broadband](#)
- [Richmond Times-Dispatch – Editorial: As Online Schooling Begins, Digital Disparities No Longer Can Be Overlooked](#)
- [State Council of Higher Education for Virginia – A Closer Look at Virginia’s Digital Divide in Education](#)
- [Virginia Economic Review – America After COVID-19](#)
- [World Economic Forum – Accelerating Digital Inclusion in the New Normal](#)
- [World Economic Forum – Digital Development Joint Action Plan and Call for Action](#)