Testimony of

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Committee on Energy and Commerce
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"Connecting America: Broadband Solutions to Pandemic Problems"

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Chairman Doyle, Ranking Member Latta, and members of the Subcommittee, thank you for holding this important hearing and for the opportunity to testify. I am the President and CEO of the Wireless Infrastructure Association (WIA), representing the companies that build, develop, own, and operate the nation's wireless facilities. Our members include infrastructure providers, wireless carriers, equipment manufacturers, and professional services firms. WIA advocates for the widespread, responsible deployment of wireless infrastructure to enable mobile broadband access for communities everywhere. The wireless infrastructure industry is committed to making next generation communications technology available to more Americans than ever before. The importance of broadband is dramatically underscored by the increased reliance on broadband during this unprecedented COVID-19 pandemic. We welcome the focus of the Subcommittee and Congress on promoting our shared goal of expediting broadband deployment and winning the race to 5G.

Importance of Broadband Networks During the Pandemic

COVID-19 brought forth new challenges and new opportunities for broadband deployment. Today, there is an even deeper recognition of how essential reliable wireless connectivity is to every household and to every industry. The wireless industry's network investments enabled the entire economy to sustain itself during the pandemic. We helped businesses to stay afloat, children to continue learning, and doctors to see patients. Work-from-home, remote learning, and telehealth have all generated an unprecedented demand for wireless connectivity anchored by the need for wireless infrastructure. And the wireless industry is meeting the challenge.

Imagine if this pandemic had occurred 10 years ago, when average wireline speeds were 4 Mbps.[1] There was no Zoom capability to help us work from home, nothing resembling today's virtual learning for children, or telemedicine to replace a doctor visit. Far beyond the pandemic's devastating impact we have seen on businesses and jobs, the economy and our way of life truly would have collapsed. Today, with average speeds on mobile networks alone of over 65 Mbps,[2] broadband has enabled millions of Americans to transition quickly to working and learning from home. This means that traffic on networks has shifted as well – often from urban cores and office parks to residential and suburban areas.[3] All done without a hitch. Because the networks performed so well amid the added demand, I believe it is underappreciated how much the successful leadership by Congress, the FCC, and the industry working together was responsible for this miracle.

In fact, U.S. networks' performance during the pandemic continues to demonstrate why our networks are the envy of the world. COVID drove mobile traffic up 20 percent,[4] essentially overnight. Yet, mobile data speeds kept pace. This was not the case in other countries.[5] According to an Ookla report, China's mobile download speeds saw speed decreases of up to 40 percent during their peak COVID restrictions, while Italy saw decreases of up to 23 percent, and Spain saw decreases up to 15 percent.[6] Over two-thirds of European countries experienced mobile speed decreases of up to 30 percent in late March, according to OpenSignal.[7]

U.S. wireless success is not accidental. Nearly $30 billion invested every year by the wireless industry,[8] a timely supply of spectrum due to the leadership by of this Subcommittee and the FCC, a regulatory framework that promotes investment in responsible wireless infrastructure, and U.S. wireless industry innovation all combined to put the U.S. in a better position than Europe during the pandemic.

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[1] *See* Blair Levin & Larry Downes, *The Internet After COVID-19: Will We Mind the Gaps,* ASPEN INST. (Apr. 15, 2020), https://www.aspeninstitute.org/blog-posts/the-internet-after-covid-19-will-we-mind-the-gaps/ (examining the differences between the status of U.S. networks from 2010 to 2020).

[2] *Speedtest Global Index*, SPEEDTEST, https://www.speedtest.net/global-index/united-states#fixed (last visited Feb. 15, 2021).

[3] *How Wireless Kept Americans Connected During COVID-19*, CTIA at 3 (June 23, 2020), https://api.ctia.org/wp-content/uploads/2020/06/How-Wireless-Kept-Americans-Connected-During-COVID-19-2.pdf.

[4] *Id.* at 2.

[5] *See id.* at 7 (comparing U.S. mobile broadbands speeds to other countries).

[6] *Tracking COVID-19's Impact on Global Internet Performance*, OOKLA (Mar. 13, 2020), https://www.speedtest.net/insights/blog/tracking-covid-19-impact-global-internet-performance/#/United%20States (last updated July 20, 2020).

[7] Francesco Rizzato, Sam Fenwick, & Ian Fogg, *Mobile Experience During the COVID-19 Pandemic: 4G Download Speed*, OPENSIGNAL (Apr. 08, 2020), https://www.opensignal.com/2020/04/08/mobile-experience-during-the-covid-19-pandemic-4g-download-speed (analyzing 4G download speeds across Asia, Europe, the Middle East, Africa South and Central America, and North America on a weekly basis between the last week of January and the fourth week of March).

[8] *See 2020 Annual Survey Highlights*, CTIA at 3 (Aug. 25, 2020), https://api.ctia.org/wp-content/uploads/2020/08/2020-Annual-Survey-final.pdf (noting industry investment was $29.1 billion in 2019).

Bridging the Digital Divide

Despite the enormous positive impact of broadband in sustaining vital communications through the pandemic, many Americans could not share those benefits. At least 18 million Americans do not have a high-speed, broadband Internet connection according to the latest data from the FCC.[9] These Americans cannot fully participate in today's economy and democracy, tend to lag in school, and their local communities are not able to keep pace with the economic growth potential that broadband brings. While the number of new broadband subscribers continues to grow, studies and data indicate that the rate of broadband deployment in urban, suburban, and high-income areas is outpacing deployment in rural and low-income areas. This disparity has adverse economic and social consequences on those left behind.

This Subcommittee and the entire federal government are to be commended for the many efforts undertaken to address the digital divide. One important challenge that was addressed is the inaccurate maps that hinder the ability to determine which areas will receive grants to expand deployment. Under the continued leadership of this Subcommittee, the necessary funding for the FCC to collect accurate information and create more effective broadband availability maps was included in the Consolidated Appropriations Act.[10]

The Consolidated Appropriations Act also included several important provisions to bridge the digital divide. NTIA, for example, is required to establish an Office of Minority Broadband Initiatives to focus on broadband access at historically Black colleges and universities, Tribal colleges, and universities, and other minority-serving institutions, including their surrounding communities. The measure also included important funding for the FCC for its COVID-19 Telehealth Program. This vital program will help health care providers bring connected care services to patients at their homes or mobile locations in response to the COVID-19 pandemic. Finally, the Consolidated Appropriations Act created two new grant programs at NTIA to support broadband connectivity on tribal lands and to support broadband infrastructure deployment in areas lacking broadband, especially rural areas. WIA stands with this Subcommittee in seeking bipartisan and sustainable solutions to ensuring that all communities can benefit from robust broadband service.

WIA recently filed reply comments on the FCC's proceeding on the Emergency Broadband Benefit Program (EBB). This Subcommittee was instrumental in the creation of this program. The EBB program presents an important opportunity to address the digital divide by breaking down barriers to affordability so that underserved populations can be connected and can take advantage of the opportunities provided by broadband connectivity. Wireless services should have an important role in the program. WIA and its members are committed to working with the FCC and this Subcommittee to ensure that the program is implemented effectively.

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[9] 2020 BROADBAND DEPLOYMENT REPORT at 52, FED. COMMC'NS COMM'N (April 24, 2020), https://docs.fcc.gov/public/attachments/FCC-20-50A1.pdf.
[10] Consolidated Appropriations Act of 2021, H.R. 133, 116th Cong. § 905 (2020) (enacted).

Closing the Homework Gap

The COVID-19 pandemic has exposed the digital divide more starkly, and it has become most apparent in education. Students without a reliable at-home broadband connection suffer from a homework gap. Pew has found that thirty-five percent of households earning less than $30,000 a year do not have broadband. More specifically, two million children live in households that rely exclusively on cellular networks, and there are three million households with school-aged children that do not have at-home broadband connections at all.

Students without sufficient access are more likely to lag in education and unless made up by other means may be less competitive in the workforce. Numerous studies have shown a high correlation between the geographic areas where students have no access to broadband with lower educational attainment, lower lifetime earning ability, greater health issues and lower life expectancy.

This problem has become especially pronounced during the pandemic as most school systems shifted to online learning. This school year, many are still conducting online learning and will do so for the foreseeable future. For families lacking broadband, the homework gap will only be exacerbated as students need internet connectivity to continue their schoolwork from home.

Last week, the full Committee approved recommendations for budget reconciliation that creates an Emergency Connectivity Fund. This fund would enable eligible schools and libraries to provide connected devices, internet service, and hotspots to students and teachers for broadband use at home. WIA is committed to work with this Subcommittee and members on both sides of the aisle working to implement equitable solutions to address the homework gap.

Expanding Broadband Infrastructure and Access

To address these increased demands and new challenges, Congress should build upon its longstanding efforts to ensure that broadband deployment expands across the country. It is the mission of my industry, and I am proud to say of my life, to make broadband available to as many Americans as possible. Notwithstanding the performance of U.S. networks, there are still Americans who lack basic broadband access. Whether due to affordability challenges or a lack of connectivity, we all must work together to address this problem, and WIA is ready to work with the Subcommittee to meet this moment.

Given the dramatic benefits of broadband for consumers, business and the overall economy as witnessed in the pandemic, sufficient subsidies for deployment in unserved and underserved areas are clearly warranted. Federal investments of the magnitude approved by the House last year as part of the "Moving Forward Act,"[11] that included Majority Whip James Clyburn's "Affordable Internet for All Act,"[12] are needed and will offer outsized return on investments to the U.S. economy and for the quality of life in our country. We look forward to working with

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[11] Moving Forward Act, H.R. 2, 116th Cong. (2020).
[12] Accessible, Affordable Internet for All Act, H.R. 7302, 116th. Cong. (2020).

both sides to promote broadband infrastructure legislation and hope it can be done in a bipartisan manner given the broad level of support that it enjoys among so many in Congress and on this Subcommittee.

Such an effort should make the best use of collocation, which accelerates broadband deployment and efficiently leverages existing infrastructure and capital for new infrastructure while reducing disruption to communities. Shared infrastructure was critical to accelerating broadband deployment in the 4G era and is again proving so as 5G rolls out.[13] WIA welcomes the focus and attention by many members of this Subcommittee on promoting collocation.

Congress should also ensure that funds can be used for operational expenses, such as leases, as well as capital expenses, be deployed expeditiously, and recipients are held accountable for outcomes. It should be truly technology neutral with the end in mind: getting critical infrastructure built to foster greater bandwidth to consumers using the most cost-efficient means. We can apply the lessons of the industry's successful performance in the pandemic and 4G to expedite 5G deployment to ensure that all Americans can access advanced broadband networks.

<u>Creating Good Jobs and Preparing People with Registered Apprenticeship and Training</u>

As the House was approving such monumental legislation last year, President Biden pledged during his campaign to "bring broadband to every American household" with an investment of $20 billion in broadband infrastructure, which he estimated had the potential to create 250,000 new jobs. President Biden was right to highlight that expanding access to broadband is a direct and indirect job creator – putting hundreds of thousands of people to work in good paying jobs that can build careers and rebuild our economy.

To help ensure a diverse pipeline of job-ready workers ready for these jobs, Congress should take bold action to invest in registered apprenticeships and evidence-based job training and support. Last year, then-candidate Biden underscored this point saying his program for expanding broadband access would "require federally funded projects . . . to employ workers trained in registered apprenticeship programs."[14] This is a laudable commitment to workers and their development.

Today, registered apprenticeship in the broadband industry is new and would quickly need resources to scale to this level. I suggest that to increase the efficiency, equity, and success of a broadband infrastructure investment, a corresponding initiative is needed to develop the broadband workforce through additional support for registered apprenticeships and the educational and training system. An immediate expansion of education and skills training will create a pipeline for wireless infrastructure jobs in a growing industry of the future. Anchored in

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[13] *See* Alan Pearce et al., *Wireless Broadband Infrastructure: A Catalyst for GDP and Job Growth 2013 – 2017*, INFO. AGE ECON. at 7 (Sept. 2013) (exploring how the use of existing infrastructure and then-novel wireless structures, like small cells, were key to meeting increasing consumer demand during the adoption of 4G technology).

[14] *2020 Presidential Candidate Questionnaire*, COMMC'NS WORKERS OF AM. (May 14, 2020), https://cwa-union.org/national-issues/legislation-and-politics/cwa-political/2020-presidential-candidate-questionnaire#telecom.

registered apprenticeship and evidenced-based strategies to train and match people to broadband jobs, this sustainable pipeline will ensure all Americans, including underserved populations, will gain access to these high-growth, family-sustaining careers.

An infrastructure package contemplated by Congress and the Biden Administration provides an historic opportunity to put Americans impacted by the pandemic back to work in broadband jobs that truly matter to the long-term economic health of the country. These are high-wage jobs that provide opportunities for advancement as the wireless industry continues to grow and will speed economic recovery. As wireless technology evolves, the workforce needs to evolve with it. The skills of yesterday no longer suffice for the demands of today and tomorrow's wireless jobs.

Congress can support successful efforts now underway by the industry to prepare to meet the demands of 5G, the most technologically complex generation yet. The Department of Labor is already working to develop the pipeline of skilled workers needed to deploy broadband across the country and to win the race to 5G.[15] Secretary of Labor Marty Walsh noted in his recent confirmation hearing that "The Department (of Labor) has worked closely with the telecommunications and wireless industry for a number of years. . . . DOL looks forward to continuing its partnership with WIA and others in the industry to help scale up these programs to support 5G deployment."[16] More federal efforts that build on current success are warranted to expand training programs so the U.S. can build the advanced networks of tomorrow by building a properly skilled workforce today. Of the more than $850 million in DOL grants for apprenticeship, less than 1 percent has gone to support broadband, 5G, or the broader telecommunications workforce.[17]

Including support for 5G and broadband training in any future infrastructure package will further this Subcommittee's goal of bringing advanced broadband services to communities throughout the U.S. It will create new jobs, reskill workers displaced by the economic disruption of the pandemic, and present new opportunities for the existing workforce. The immediate need is best served by utilizing existing, successful programs and evidence-based or proven models for apprenticeship workforce development and other training and support programs. Funds should target employers that adopt apprenticeships to develop their workforce with the skills needed to deploy broadband quickly, efficiently, and safely. Given the existing need for skilled labor, Congress can seize this opportunity to reskill diverse and dislocated workers to fill these jobs.

WIA has led efforts to expand wireless workforce training and development.[18] WIA is the national sponsor of the Telecommunications Industry Registered Apprenticeship Program

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[15] Press Release, U.S. Dep't of Labor, U.S. Department of Labor Announces Nearly $100 Million in Apprenticeship Grants to Close the Skills Gap (Feb. 18, 2020), https://www.dol.gov/newsroom/releases/eta/eta20200218.

[16] *Nomination of Marty Walsh to Secretary of Labor,* Additional Questions for the Record, Hon. Marty Walsh (Feb. 11, 2021) (responding to a question from Sen. Tim Scott).

[17] *See Registered Apprenticeships Reimagined: Lessons Learned from the American Apprenticeship Initiative*, NAT'L GOVERNORS ASS'N, at 10, table 3 (Nov. 9, 2020), https://www.nga.org/wp-content/uploads/2020/11/NGA_AAI_Report.pdf (showing cumulative investments for DOL grant programs).

[18] *See Letter to House Leadership from Eleven Telecommunications Industry Representatives* (Jan. 27, 2021), https://wia.org/wp-content/uploads/workforce-letter-jan-2021_house_final.pdf (encouraging House leadership to expand opportunities for apprenticeships, particularly in the telecommunications industry).

(TIRAP), a multi-employer, nationwide registered apprenticeship program credentialed by DOL to support wireless workforce development.[19] WIA has worked to move forward our relatively new industry, partnering to create TIRAP in 2014 with the DOL, the FCC, and a consortium of employers. TIRAP brought registered apprenticeships into the wireless industry for the first time and is now helping telecommunications workers create sustainable careers, while supporting 5G infrastructure build-out and deployment needs. To date, TIRAP has signed up 50 employers of all sizes and has registered more than 2,200 apprentices in a growing number of telecommunications occupations.

Recently, eleven trade associations representing the entire telecommunications industry united by co-signing a letter urging Congress to support workforce skills training to deploy next generation wired and wireless networks.[20] We noted the telecommunications industry is ideally suited for apprenticeship, which is a new but growing solution in our industry. We also backed the expansion of broadband training at institutions of higher education.

Registered apprenticeships are proven to help employers recruit and retrain workers, including underserved and underrepresented populations, provide case management, support services, and training to completion. Yet, substantial startup costs to apprenticeship and other types of evidence-based education and training can present substantial barriers for employers and workers. Apprentices require significant training and supervision before they become fully productive, which also poses a barrier if employers are not equipped to provide on-the-job and classroom training.

We therefore suggest that Congress fund direct training expenses for employees that lead to higher skills, wage gains, and career advancement. Eligible costs should include:

- Employer-sponsored training;
- Assessment and certification expenses;
- Equipment and consumable training supplies;
- On-the-job training and mentorship costs; and,
- Supervision, tracking, and apprenticeship administration.

Funding should be included as part of a broadband bill or as part of a much larger, broader investment in workforce development in the upcoming jobs and infrastructure package. Expanding apprenticeships nationally in the wireless industry should be a top priority for Congress as it looks to spur economic growth and to promote broadband deployment.

Along with supporting employers, Congress should strengthen programs at institutions of higher education, such as community and technical colleges, Tribal Colleges and Universities (TCUs),

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[19] *About TIRAP*, TIRAP, https://www.tirap.org/about-tirap/ (last visited Feb. 15, 2021).
[20] *Letter to House Leadership from Eleven Telecommunications Industry Representatives*, *supra* note 18; *see also Telecom Industry Unites Behind Call for Broadband Workforce Development to White House, Congress*, WIRELESS INFRA. ASS'N (Jan. 27, 2021), https://wia.org/telecom-industry-unites-behind-call-for-broadband-workforce-development-to-white-house-congress/.

and historically Black colleges and universities (HBCUs). Academic institutions have not widely adopted programs for broadband and 5G to keep pace with the rapid growth of our industry. A critical need remains for programs of study in broadband engineering, network deployment and field activities, cybersecurity, and network engineering. There is also a great need for courses that modernize existing programs, including hands-on field activities. To target funds to actual needs, federal investments should be employer-driven partnerships with educational institutions to develop degrees and programs of study on broadband deployment and 5G training. Congress should also directly fund new programs with HBCUs and TCUs to expand offerings in high-skill occupations such as electrical engineering and wireless engineering.

Current models exist for successful, effective partnerships between industry and educational institutions. With DOL support, TIRAP is collaborating to develop curricula to implement at five community and technical colleges to provide academic support to apprentices.[21] WIA and the Power and Communication Contractors Association (PCCA) are collaborating to expand these programs at these colleges: Monroe County Community College (Michigan), Somerset Community College (Kentucky), State Technical College of Missouri, Terra State Community College (Ohio), and Wisconsin-Indianhead Technical College.[22] PCCA developed successful utility technician training programs that WIA is enhancing with wireless curricula to teach workers skills for 5G deployment.

National intermediaries are also an efficient solution to recruit and place candidates, such as students and returning service veterans, into positions where there is high demand. Intermediary model also helps employers overcome the process-related barriers while entering the registered apprenticeship programs. Funding should support:

- Development and adoption of national industry-recognized credentials and curricula leading to those credentials;
- National registered apprenticeship sponsorship;
- Development of occupations, standards, and certifications; and,
- Outreach, job-matching, and placement.

Congress, especially members of this Subcommittee, has embraced the value of workforce training and apprenticeship. Reps. Walberg and Clarke recently introduced the "Telecommunications Skilled Workforce Act."[23] This bill addresses the workforce demands in the telecommunications industry. We strongly support this measure and thank Reps. Walberg and Clarke for their leadership.

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[21] Amy-Gabrielle Bartolac, *DoL Awards WIA Funding to Develop 5G Workforce*, WIRELESS INFRA. ASS'N (Sept. 28, 2020), https://wia.org/dol-awards-wia-funding-to-develop-5g-workforce/.
[22] Amy-Gabrielle Bartolac, *WIA Awarded $6 Million DOL Grant to Train 5G Workforce*, WIRELESS INFRA. ASS'N (Feb. 19, 2020), https://wia.org/wia-awarded-6-million-dol-grant-to-train-5g-workforce/.
[23] *Walberg, Clarke Introduce Bipartisan Bill to Build Skilled Telecom Workforce* (Feb. 11, 2021), https://walberg.house.gov/media/press-releases/walberg-clarke-introduce-bipartisan-bill-build-skilled-telecom-workforce.

Developing the workforce through training and apprenticeship requires long lead times. Now is the time, as we look to deploy 5G, to incentivize apprenticeship in telecommunications. The stakes are high. China can use centralized authority to quickly shift massive labor resources through government intervention. China is effectively using steroids to pump up its 5G buildout. In the U.S., the industry is leading without cheating. We simply ask Congress to support private sector efforts to ensure the educational system keeps up with our rapidly growing needs.

Wireless Industry and Workforce Contributions During the Pandemic

During the pandemic, wireless infrastructure companies pledged to continue serving their local communities.[24] The pandemic, of course, dramatically affected the needs of emergency services, hospitals, and medical professionals. Many locations around the country experienced overflowing emergency rooms as COVID cases mounted.[25] This meant that medical professionals and patients relied even more on broadband connections to deliver critical care via telemedicine. People have logged into countless telemedicine sessions to determine whether they needed to risk going to a hospital or if they should stay home. Wireless was a literal lifeline, which saved more lives than we will ever know.

Wireless providers are offering extra capacity to first responders and COVID testing sites.[26] They are letting people delay paying bills if they are facing financial difficulties.[27] Some, such as JMA Wireless, have retooled their facilities to manufacture ventilators and PPE.[28] Carriers waived fees, increased data, and kept hotspots open for underserved Americans.[29] Wireless companies have also provided free service and resources to schoolchildren who lack broadband access.[30] There are hundreds of examples of the wireless industry stepping up to help those in

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[24] *See, e.g.*, *Keep Americans Connected,* FED. COMMC'NS COMM'N, https://www.fcc.gov/keep-americans-connected (last visited Feb. 15, 2021) (evincing the over 800 organizations that pledged to ease the burden of connectivity due to the coronavirus pandemic).

[25] *See, e.g.*, Will Stone & Sean McMinn, *Near Crisis, Some Hospitals Face Tough Decisions in Caring for Floods of Patients* (Nov. 25, 2020), https://www.npr.org/sections/health-shots/2020/11/25/939103515/near-crisis-some-hospitals-face-tough-decisions-in-caring-for-floods-of-patients (noting a 100% month over month increase in COVID-19 hospitalizations).

[26] *See* AT&T, *COVID-19: FirstNet & First Responders Archive,* AT&T (last visited Feb. 15, 2021), https://about.att.com/pages/COVID-19/covid19_FN_archive.html (outlining COVID-19 response including making all AT&T LTE commercial spectrum bands and Band 14 Spectrum available to FirstNet participants); *see also* VERIZON, *11/30 Update: Verizon is Prepared to Serve Customers During COVID-19,* VERIZON (Nov. 30, 2020), https://www.verizon.com/about/news/update-verizon-serve-customers-covid-19 (noting $48 million in contributions and donations to nonprofits directed at serving, among others, healthcare workers and first responders).

[27] *See Keep Americans Connected*, *supra* note 24 (discussing how signatories pledged to "not terminate service to any residential or small business customers because of their inability to pay their bills due to the disruptions caused by the coronavirus pandemic . . . .").

[28] *See JMA Offers Free Open-Source Ventilation System Blueprints to All Manufacturers,* INSIDE TOWERS (Apr. 9, 2020), https://insidetowers.com/cell-tower-news-jma-offers-free-open-source-ventilation-system-blueprints-to-all-manufacturers/ (detailing JMA's efforts to divert assets to meet the critical ventilator shortage).

[29] *Keep Americans Connected*, *supra* note 24.

[30] *See, e.g.*, *Companies Have Gone Above and Beyond the Call to Keep Americans Connected During Pandemic*, FED. COMMC'NS COMM'N, https://www.fcc.gov/companies-have-gone-above-and-beyond-call-keep-americans-connected-during-pandemic (last visited Feb. 15, 2021) (detailing efforts of various service providers to expand access to those in critical need, including students).

need, as well as countless efforts by wireless industry personnel continuing their work in the field to maintain and extend service across the country.

Collaboration with Municipalities

The pandemic clearly put a strain on local governments, as it did for so many others. With the transition to telework and limited access to government buildings, permit processing and other services related to network building were understandably disrupted. WIA and our members were grateful for the collaboration with municipal government leaders. In the early months of the pandemic, WIA convened a series of meetings with municipality government leaders to promote solutions to specific bottlenecks in communities, as well as broader approaches that were succeeding in enabling broadband buildout to continue during this time, particularly in critical areas to address pandemic needs. Increasing electronic filing, drop boxes, and holding community meetings online were some of the key commonsense solutions. Building wireless infrastructure requires partnerships with local communities. WIA was grateful to facilitate these important conversations, in collaboration with municipality leaders, including NATOA and the National League of Cities.[31]

BDAC Disaster Response and Recovery Working Group Recommendations

Industry, public interest, and local governments also came together to address the crisis through the FCC's Broadband Deployment Advisory Committee (BDAC). I was honored to serve as the Vice-Chair of the BDAC's Disaster Response and Recovery Working Group. As the pandemic spread across the country, the FCC asked us to shift our focus to determine in real-time how to keep communities connected. I am very proud of our work – a unanimous, consensus report that outlined the difficulties that industry faced in continuing to offer reliable, fast broadband as network traffic shifted and the demand for data increased overnight.[32] But, it also shows the heroic efforts that our partners in local government accomplished to continue performing their responsibilities while also being called upon to perform other jobs and helping with other departments during the crisis.

The report detailed the societal impacts of the pandemic, the impacts on local governments, and the impacts on networks and infrastructure. It provided recommendations for broadband availability and greater network resiliency during disasters, as well as network traffic engineering practices to maintain connectivity. For example, we recommended that the FCC continue to employ Special Temporary Authorizations for spectrum use to support networks in targeted areas for limited periods of time.[33] The FCC and other federal agencies should have funding sources available for a pandemic response, which could be used to address the root

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[31] Angelina Panettieri & Nancy Werner, *Keeping Local Permits and Licenses Moving During COVID-19*, NAT'L LEAGUE OF CITIES (May 4, 2020), https://www.nlc.org/article/2020/05/04/keeping-local-permits-and-licenses-moving-during-covid-19/.

[32] *Report and Recommendations: COVID-19 Response*, FED. COMMC'NS COMM'N BROADBAND DEP. ADVIS. COMM. DISASTER RESPONSE & RECOVERY WORKING GRP., (Oct. 29, 2020), https://www.fcc.gov/sites/default/files/bdac-disaster-response-recovery-approved-rec-10292020.pdf [hereinafter *BDAC DRRWG Report*].

[33] *Id.* at 49.

issues of broadband availability and adoption. Access letters, like those provided by the Department of Homeland Security (DHS),[34] were vital for essential infrastructure providers to ensure that their crews could continue to provide service during the pandemic. DHS should continue to engage with personnel on "access letter qualifications and related rights for critical infrastructure providers through such programs or documents as the Interoperability Communications Technical Assistance Program, the National Emergency Communications Plan, and FEMA's National Response Framework."[35] In addition, communications providers should have updated emergency and disaster response plans that account for weather, as well as pandemic events. Overall, the way that industry worked together with local governments and the FCC in response to the pandemic should be a model going forward.

As FCC Acting Chairwoman Jessica Rosenworcel has noted,[36] incentive-based systems for municipalities to facilitate broadband deployment are well-considered. The wireless infrastructure industry supports federal incentives to encourage broadband deployment through policies, such as encouraging the use of existing infrastructure through Sections 6409 and 224, limiting fees to actual and objectively reasonable costs to access rights of way, and establishing clarity on pole replacement costs among utilities and attachers, while and encouraging one-touch make-ready policies.

4G Success and the Race to 5G

The U.S. has led the world in mobile wireless communications, winning the race to 4G. This victory was made possible by unrivaled industry investment in wireless infrastructure and fueled by a successful strong, unified, bipartisan commitment between industry and government. Federal policies supported investments by the wireless industry to deliver greater connectivity across the country and spur American technological innovation.

We need to repeat the success of winning the 4G race, which spurred millions of new jobs and the creation of entire new industries, such as the app economy. Wireless industry investments during the 4G era totaled $261 billion – a 43 percent increase from the decade prior.[37] The U.S. wireless industry is now poised to invest another $275 billion to build 5G networks, which will create 4.6 million direct and indirect jobs and contribute $1.7 trillion to the U.S. GDP in the next decade.[38] As of May 2020, current 5G design and buildout had already created 106,000 direct

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[34] Letter from Christopher C. Krebs, Director, Cybersecurity and Infrastructure Security Industry, on Essential Critical Infrastructure Workers (May 27, 2020), https://michmab.com/wp-content/uploads/2020/06/CISA-Disaster-Access-Letter-20-May-2020_DIR-Signed.pdf.

[35] *BDAC DRRWG Report*, *supra* note 32, at 50.

[36] *Accountability and Oversight of the Federal Communications Commission*, Additional Questions for the Record, Hon. Jessica Rosenworcel (May 15, 2019), https://docs.house.gov/meetings/IF/IF16/20190515/109479/HHRG-116-IF16-Wstate-RosenworcelJ-20190515-SD001.pdf.

[37] *The 4G Decade Quantifying the Benefits*, CTIA at 8 (July 29, 2020), https://api.ctia.org/wp-content/uploads/2020/07/The-4G-Decade.pdf.

[38] Enrique Duarte Melo at al., *5G Promises Massive Job and GDP Growth in the US*, BCG (Feb. 2, 2021), https://www.bcg.com/publications/2021/5g-economic-impact-united-states?awsPersonalize=true&awsPersonalizeView=standaloneArticle.

jobs in installation and engineering.[39] At the current rate of deployment, there will be 500,000 more, new, direct broadband and 5G jobs through 2025.[40]

Current and planned wireless industry investments and unparalleled innovation position the U.S. to win the race to 5G. We are united again, as today's hearing highlights, to continue the successful partnership between the wireless industry and the federal government. We applaud the many successful bipartisan policies the federal government has implemented to support the three key legs of the stool needed to succeed: infrastructure, spectrum, and the workforce.

Conclusion

Wireless broadband helps to drive America's innovation economy and fuels the nation's economic future. The U.S. has always been the global leader in wireless innovation.

That is why the leadership of this Subcommittee is so critical. Several Members of this Subcommittee recently wrote to the President asking him to ensure that we address the challenge of broadband access.[41] The signatories came from both parties. We all recognize these challenges and need to work together toward solutions. WIA appreciates the opportunity to partner with the Subcommittee in addressing these important issues. We are deeply grateful for the bipartisan recognition of the importance of infrastructure by this Subcommittee, by Congress, by the FCC and the Administration. All have implemented policies to promote wireless broadband deployment, and all are working to build on recent successes.

Thank you again, Chairman Doyle and Ranking Member Latta, for holding this hearing and inviting me to testify. I look forward to continuing to work with you and the rest of the Subcommittee to make additional progress on these very important issues.

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[39] Michael Mandel & Elliott Long, *The Third Wave: How 5G Will Drive Job Growth Over the Next Fifteen Years*, Prog. Policy Inst. at 8 (Sept. 2020), https://www.progressivepolicy.org/publication/the-third-wave-how-5g-will-drive-job-growth-over-the-next-fifteen-years/.

[40] *See* Majed Al Amine et al., *Smart Cities: How 5G Can Help Municipalities Become Vibrant Smart Cities*, ACCENTURE STRATEGY at 4 (Feb. 3, 2017), https://api.ctia.org/wp-content/uploads/2017/02/how-5g-can-help-municipalities-become-vibrant-smart-cities-accenture.pdf (determining that 120,000 jobs will be created every year during the first seven years of 5G deployment).

[41] Press Release, Office of Rep. Peter Welch, *Rural Broadband Caucus Co-Chairs Lead Letter Urging President Biden to Prioritize Rural Broadband in Upcoming Infrastructure Package* (Feb. 10, 2021), https://welch.house.gov/media-center/press-releases/rural-broadband-caucus-co-chairs-lead-letter-urging-president-biden.