



POSITION STATEMENT

STRENGTHENING BROADBAND INITIATIVES

***Adopted by the IEEE-USA
Board of Directors (18 Nov. 2020)***

Affordable/appropriate broadband for every U.S. residence is an essential public good. In the coming decades, faster, more widespread, and more cost-effective broadband services will more fully intertwine users with employment, education, health care, government, and entertainment services. To assure economic competitiveness and a viable work force, it must be the policy of all levels of government and private actors to assure appropriate levels of broadband access for each community

IEEE-USA recommends action in the following areas:

Providing broadband access to remote areas and underserved communities.

- Broadband services opportunities be made available for all users, including rural and disadvantaged communities.
- Congress or the FCC redefine “Service availability” as “access for every residence” in a census district, not just one residence.
- Federal, state and local governments provide incentives along with flexible requirements for continuing and expanding their broadband initiatives.
- Congress mandate the FCC’s Lifeline program be expanded for low-income households to include subsidies for broadband access, in addition to subsidies provided for telephones.
- Congress expand E-Rate incentives beyond schools and libraries to reach into underserved communities.

Fair pricing for basic unbundled service:

- Federal and state licensing, regulation and agreements mandate unbundling of broadband infrastructure from applications/content and minimize the consumer cost of appropriate broadband access.

Elimination of restrictions on competition:

- Federal and state legislation be formulated to encourage competition and to remove state/local restrictions that are barriers to competition, innovation, or municipal provision.
- State and local restrictive agreements granted, and regulations drawn initially to provide economically viable first service to communities be removed when their protective status is no longer required to maintain economic viability.
- Exclusive agreements be reviewed to assure the provision of appropriate public services in education, health care and community engagement

Incentives and support to facilitate universal access:

- Federal and state agencies create incentives (tax, regulatory, etc.) to re-purpose the current generation of equipment to expand (un-bundled) current technology access in underserved communities as that equipment is replaced by new technology rolled out in the economically attractive areas.
- Basic equipment and training be supported to assure residents can participate in the economic, health and public benefits of broadband access.

Tracking emerging public broadband benefits and capabilities:

- Urgently conduct a comprehensive study of broadband's impact on society in the 2020 pandemic, particularly lessons learned in communities with high-bandwidth broadband, and those with little or no broadband service.
- An objective ongoing public information campaign be launched to help consumers, and local policymakers identify available broadband alternatives and reference applications that warrant community attention/consideration.
- Congress and the administration develop a comprehensive national strategic plan outlining America's long-term connectivity needs for a digitally enabled world.

BACKGROUND

The COVID-19 pandemic makes clear that ubiquitous broadband infrastructure is essential for working, education, emergency response, and health care “at home”. Communities with limited or no service have been handicapped in all these areas, as have individuals and enterprises without adequate, affordable access.

The pandemic also revealed the need for ubiquitous broadband to give society the agility and adaptability required to respond to challenges/opportunities in the future. Internet-based services dramatically improved Americas’ ability to respond to the pandemic and made the subsequent lock-down period more tolerable for millions of Americans – where it was available.

The appropriate broadband implementation for a given community will vary. It is a local policy decision requiring regular review to determine community value in terms of services such as healthcare, education, and community engagement. Private, market-based broadband services may not satisfy these needs.

Residential broadband availability and affordability will distinguish communities and regions in the forefront of broadband expansion. As new applications become available, the value of increased capabilities on broadband services and the further penetration of connected devices in our daily lives will raise the bar for technologically empowered communities. It is imperative that less-fortunate communities be enabled to join and maintain the broadband expansion.

Examples of emerging applications include:

Capability	Use Cases
Virtual Presence	Medical, Education, Employment, Government Access
Self-driving Car/Truck Interaction	Transit, health care, commerce, safety
Sensor Net Capacity	Security systems, Internet of Things
Virtual/Augmented Reality	Gaming, education, employment

Wireless technology will provide more capacity and much lower latencies (lower delays through the network to enable real-time interaction with people and machines at great distances). This technology may deliver services comparable to fiber-optic connections in locations where the users are close to the cell sites, including small cells on, for example, utility poles. Fiber to the residence can meet broadband expansion objectives where it can be made available. Fiber infrastructure on public streets may be essential as the internet backbone regardless of the final delivery

medium to the residence--fiber or wireless. New or replacement fiber deployments can be the low cost, maximum flexibility/capability option in some locales. Emerging satellite and drone technology may also be practical internet delivery technology. Equipment replaced in infrastructure upgrades can be repurposed to provide lower cost connectivity in underserved communities.

As we move beyond the metropolitan areas into sparsely occupied or mountainous terrain, all of these approaches become economically challenging at a reasonable consumer cost. Further, they are unlikely to attract commercial suppliers. Prior government initiatives expanded the availability of limited broadband to rural subscribers across the United States. Those services need to be upgraded to keep pace with the demand for speed and low latency. New infrastructure investment initiatives will be needed at the community level-to assure appropriate, affordable access for all Americans.

All levels of government must plan on change: appropriate broadband in a given community is a moving target as new applications and new technology emerge. Most 21st century jobs and automation will require basic competency in broadband applications, this needs to become part of our educational standards and our national infrastructure. Leaving disadvantaged students behind due to a lack of access to affordable broadband during their educational years will have a lifelong impact in their ability to effectively participate in tomorrow's society. Ubiquitous broadband tying our country together will drive our economy forward and give our nation the adaptability needed to thrive in the 21st century.

This statement was developed by IEEE-USA's Committee on Communications Policy, and represents the considered judgment of a group of U.S. IEEE members with expertise in the subject field. IEEE-USA advances the public good and promotes the careers and public policy interests of the nearly 180,000 engineering, computing and allied professionals who are U.S. members of the IEEE. The positions taken by IEEE-USA do not necessarily reflect the views of IEEE, or its other organizational