Lighting Up the Future

The Desert Goes Digital

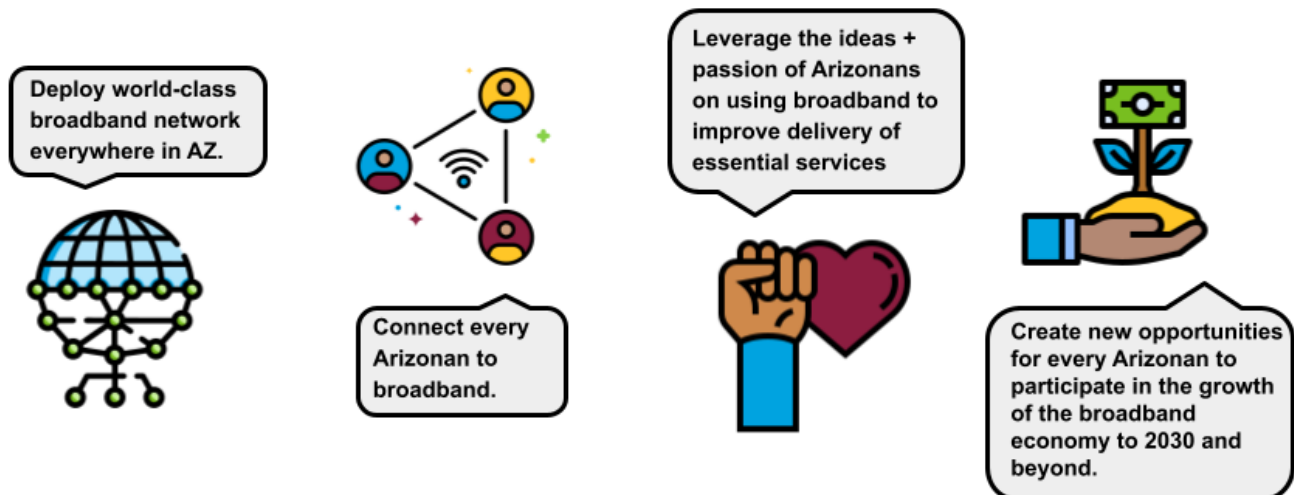Arizona's Grand Canyon-sized broadband vision to connect + engage

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Executive summary

Imagine an Arizona where every person is engaged and is an active participant in shaping the future of the communities in which they reside. The COVID-19 global pandemic has only sharpened focus on the need for a statewide, integrated vision to support Arizona's broadband needs through 2030. The shift to "remote everything" will not likely swing back to pre-2020 realities anytime soon, if ever.
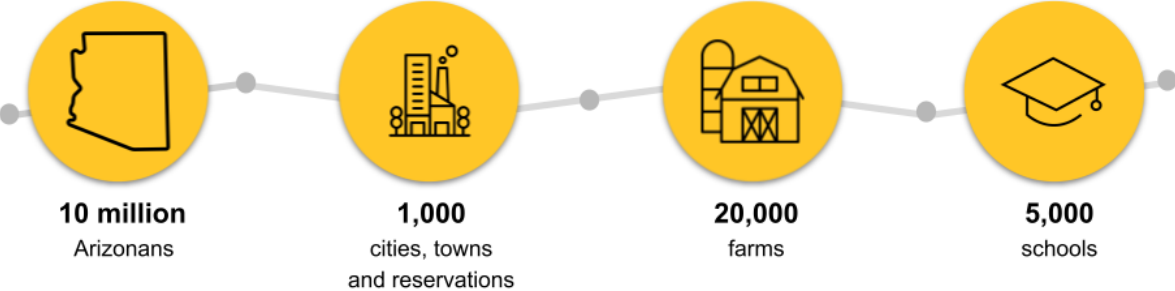
As Arizona imagines its future in 2030, we are inspired by the boundless vistas of our skies, the beauty of our landscapes, the industry and character of our citizens, the attractiveness of our climate and our uncommon commitment to collaborate on the things that really matter. It has become apparent that broadband *really* matters.

The cost to those excluded from the broadband economy is significant. There are as many as 1 million Arizonans who are unconnected or under-connected to schools, jobs, and healthcare. The impact of connectivity extends to Arizona's overall economy and to the social fabric of the Grand Canyon State. The goal of Lighting up the Future is the sharing of a big and bold vision for Arizona's broadband future. Starting today and over the next decade, Arizona's Lighting Up the Future will:

Deploy world-class broadband network everywhere in AZ.

Connect every Arizonan to broadband.

Leverage the ideas + passion of Arizonans on using broadband to improve delivery of essential services

Create new opportunities for every Arizonan to participate in the growth of the broadband economy to 2030 and beyond.

Human impact

Scale is an important consideration for this vision, and we launch with a clear sense of our commitment to our stakeholders -- our community:

10 million	1,000	20,000	5,000
Arizonans	cities, towns and reservations	farms	schools

Coalition of the willing

To achieve these ambitious goals, an unprecedented coalition of civic and business leaders, along with technologists, educators, and grassroots activists have come together to collectively address and commit to overcoming major challenges on behalf of all Arizonans. This coalition includes, but is not limited to, elected and civic leaders, leaders from technology and business, and a diverse group of champions of digital equity and inclusion. Changemakers and leaders are invited to become signatories of this vision on the final page.

Our intention is to present **Lighting Up the Future** to Governor Ducey as an integral part of Arizona's opportunity to respond to Federal investments in broadband, digital equity and inclusion, and Smart City/Smart State efforts.

Highlights of Arizona's broadband vision for 2030

I. The Availability Gap

Not unlike other parts of the country, Arizona's broadband is unevenly distributed. Some parts of the State have some of the most high speed, low latency and robust broadband anywhere in the country. Other geographies in the State, many with population centers (totalling ~250,000 persons) have little or no broadband at all.

To address the availability gap, we acknowledge that there is no market-driven logic to expect private sector providers to build out world-class digital infrastructure where, because of lack of population density, there is no chance of a return on investment. Therefore, we call upon the State of Arizona, its relevant agencies, the Counties and their respective administrations, along with federal government partners, to advance a range of policy options and resource investments to assure that all geographic areas and population centers in the State have robust broadband capacity. Specifically, to close the availability gap over the next decade, **Lighting Up the Future** calls for:

Digital Infrastructure Corridors (ADIC)

The ADIC plan will enable AZ to place fiber bundles in noted conduits to advance public purposes to include education, transportation and economic development. It will also incentivize private sector investors to bring capital into unserved and underserved parts of the State through fiber and related digital investments that support commercial services and consumer needs.

Arizona Community Anchor Institution Network (ACAIN)

Following national best practices, we support the development of ACAIN to help schools, healthcare facilities, and local and state offices enabling the public on a world-class broadband network to serve Arizonans through the delivery of public services.

Arizona Public Broadband Service to Connect the Unconnected (CTUc)

The CTUc will be a pioneering public "hybrid" option, leveraging new federal policy encouraging community anchor institutions (e.g., universities) to advance digital equity and inclusion. CTUc will focus on serving the broadband availability needs of underserved communities up to and including on-prem equipment.

Rather than wait for the FCC to define a standard for broadband availability for Arizona, we offer a definition that is informed by the experience of COVID-19 in concert with our own technical and policy assessment of likely new standards.

By 2030, all Arizonans should have no less than symmetrical 100 Mb/s consumer/personal wired broadband available. Additionally, as new and advanced wireless technologies are deployed, including ubiquitous deployment of 5G, and the likely early deployment of consumer available 6G by 2030, we believe that wireless broadband availability should also be benchmarked at 50 Mb/s up and down for stationary uses. Mobile and transit-bases experiences will improve through incentives for pico cell deployments across the State. By 2030, the average mobile broadband availability experience should be no less than 40 Mb/s symmetrical.

Every school and public library in Arizona should have no less than 10 Gig/s symmetrical by 2030 served to the school/library, 1 Gigabit services should be available in every classroom and WiFi or alternative options for deployment in the school should be required to be no more than one generation behind current industry standards per each e-rate round of funding.

II. The Adoption Gap

There are millions of Arizonans who have broadband available to them but who have not adopted broadband in their homes. Indeed, in terms of the number of Arizonans affected, the Adoption Gap is approximately three times larger than the Availability Gap (a total of 750,000). There are two principal causes of the Adoption Gap. One is a lack of digital readiness. A second, and more significant cause, is the unaffordability of entry-level broadband services for a

significant portion of the population. Overwhelmingly the population needing to close the adoption gap are poor, elderly, and disabled Arizonans (and/or combinations thereof).

Addressing Digital Readiness

Digital readiness refers to skills needed to use internet services to find, evaluate, create and communicate information. The lack of these skills poses significant barriers for certain population groups adopting and fully using broadband services. Our **Lighting Up the Future** vision includes:

Establish **AZ Digital Navigators Corps** in partnership with AZ schools, colleges, universities, libraries, tribal associations, and community orgs to aid unconnected persons and solve a wide range of adoption issues.

Establish and fund **training programs at AZ's public housing communities** connected to the ACAIN, in partnership with community colleges as part of education and workforce development efforts.

Establish a **digital literacy program for homeless shelters, food kitchens, and re-entry programs** around the State to help those in transition gain skills to apply for public housing, workforce training programs and maintain social communications.

Leverage existing programs for military veterans to focus opportunities for digital workforce bootcamps and marketplace place exchanges and **match veterans with workplace digital skills needs.**

Establish a New American program in partnership with churches and other community organizations to **support immigrant absorption and acculturation needs** of individuals and families.
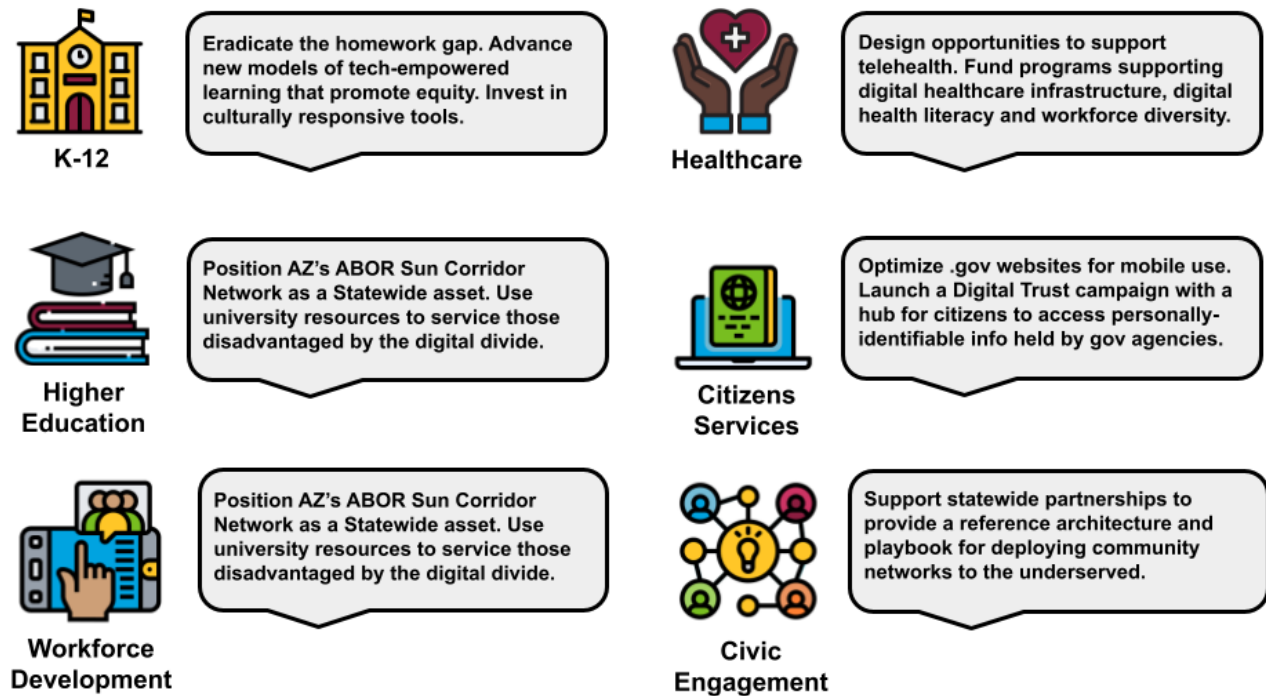
Addressing Affordability

We support calls for revamping the Federal LifeLine program to allow those in economic need to easily apply for support to pay for or get subsidized broadband, products, and services.

In addition to incumbent wired and wireless carrier and cable offerings, we encourage the inclusion of a public option CTUc to allow community organizations, non-profits, coops, and others to be eligible for supporting broadband adoption. Many MVNOs have found a niche in the wireless industry, we believe there is a niche opportunity for public broadband service providers to leverage affinity relationships, customer experience offerings, creative bundling, and other services that will ensure the right mix of services and customer engagements for sustainable adoption for eligible populations.

III. The Utilization Gap

Deploying networks everywhere and assuring that everyone has the skills and means to connect are necessary steps. However, alone they are not sufficient to achieve digital equity and inclusion for all Arizonans; digital platforms are needed to improve essential services. COVID-19 has forced our economy and society to run a massive — if unplanned — experiment

in "remote everything." While that experiment has produced some positive trends, such as greater utilization of telehealth, it has also shown that we have room to improve in other areas, such as education. This is an opportunity to innovate and to be intentional in developing these new capabilities, and to ensure that they lift up all Arizonans, equitably.

K-12
Eradicate the homework gap. Advance new models of tech-empowered learning that promote equity. Invest in culturally responsive tools.

Healthcare
Design opportunities to support telehealth. Fund programs supporting digital healthcare infrastructure, digital health literacy and workforce diversity.

Higher Education
Position AZ's ABOR Sun Corridor Network as a Statewide asset. Use university resources to service those disadvantaged by the digital divide.

Citizens Services
Optimize .gov websites for mobile use. Launch a Digital Trust campaign with a hub for citizens to access personally-identifiable info held by gov agencies.

Workforce Development
Position AZ's ABOR Sun Corridor Network as a Statewide asset. Use university resources to service those disadvantaged by the digital divide.

Civic Engagement
Support statewide partnerships to provide a reference architecture and playbook for deploying community networks to the underserved.

K-12 Education

Broadband-enabled new educational products and services have created significant new, compelling learning tools and platforms. Unfortunately, uneven access to and implementation of these technologies is exacerbating rather than narrowing gaps in educational outcomes. In the rapidly evolving digital learning space, we must ensure that new educational infrastructure provides all students with equal access to tools and digital content. Further, we need to provide teachers the support they need to enable students to maximize the value of digital content. To do so, **Lighting Up the Future** proposes to:

- Eradicate the homework gap via broadband access and adoption, and by ensuring students have support for digital learning from teachers and other appropriately trained adults, such as online navigators and tutors.
- Partner with Arizona schools of education and teacher colleges to focus on advancing new models of technology-empowered teaching and learning that promote equity and improve outcomes for all students.
- Invest in culturally responsive and relevant online learning tools with particular partnership opportunities with tribal communities.
- Improve access for at-risk students to educational experiences that improve their ability to utilize technology.

- Undertake a statewide program to measure and document improving outcomes for all students and in particular learners from at-risk communities.

Workforce Development

The coalition of the willing supporting **Lighting Up the Future**, and in particular the governor's office, state legislature, tribal government, and city halls across the State should expand access to digital resources and technical assistance for enterprises located in our neighborhoods, rural areas, tribal reservations, and communities of color, taking the following actions:

- The Department of Economic Security (DES), city economic and workforce programs, and tribal governments develop more broadband, technology and telecommunications sector- related registered apprenticeship training programs -- both standalone and in partnership with education and community non-profit organizations with mission-related commitments.
- The State and Cities should provide incentives for companies, states, municipalities, nonprofit organizations and the private sector to create and scale new workforce development and digital skills training programs.
- DES should increase and improve data collection related to workforce development.
- DES should modernize their unemployment benefits systems to offer unemployed citizens access to opportunities for future employment more effectively.

Healthcare

With healthcare services increasingly provided online, the government must ensure that everyone has access to user-friendly, health-enabling tools that connect them to high-quality, affordable health care services and medical information they can understand.

- Leverage diverse talents and perspectives from the **Lighting Up the Future** coalition to design and recommend short-term as well as longer term opportunities to support telehealth on a go forward basis to meet the needs of Arizona's diverse population sets.
- Fund programs supporting digital health care infrastructure and technical assistance, digital health literacy and workforce diversity.
- The Department of Economic Security along with the Department of Health and both the State and Counties should allocate funding to develop, recruit, and retain health care professionals from underrepresented groups.
- Arizona should aggressively pursue the FCC's Connected Care Pilot Program and the Telehealth Program and focus on improving health outcomes for low income communities and communities of color.

Higher Education

Arizona's universities and colleges, with some of the best broadband networks in the world, remain an underutilized resource for digital equity and inclusion. Community colleges in the state are providing national leadership for the technology-driven future of work through the Reskilling and Recovery Network (RRN) for jobs with upward mobility, and digital skills play a central role. Research and development aimed at improving teaching and training are also underfunded. To address those shortfalls, **Lighting Up the Future** recommends:

- Leveraging best practices from across the nation by positioning a State-wide asset for leveraging broadband to address public purposes including education, research and development, healthcare, transportation, and economic development.
- Using university resources to help institutions servicing those who have been disadvantaged by the digital divide. <mark>This includes addressing digital literacy in community college programs for workforce upskilling, such as the Technology and Innovation Workforce Development Fund and the Arizona Advanced Technologies Network.</mark>
- Focusing future research on understanding how digital education can improve outcomes and overcome persistent performance gaps.
- Understanding and promoting best practices for using digital education to build a more equitable and inclusive society.
- Increasing efforts to identify, develop, test, and deploy applications of digital educational technologies that foster economic and social mobility.

Citizens Services

By focusing on connecting the unconnected, low income and minority communities in Arizona will benefit from greater online access to public services from the State, county, and city providers. **Lighting Up the Future** acknowledges that significant effort and investment has been made in information systems, software, and application development. There remains significant room for improvement as many systems are outdated.

- Optimize government websites for mobile use.
- Launch an Arizona wide Digital Trust campaign to include the establishing a one-stop-shop for citizens to access and control personally-identifiable information held by government agencies.
- Improve automated online government customer support.
- Accelerate the digitization of forms for data entry, signing and submission.

Civic Engagement

Lighting Up the Future will support the work of [The Connective](#) and the [Institute for Digital Progress](#) understanding the vitality of statewide partnerships. Our blueprint embraces both the build out of wireless and wired infrastructures as well as the development of services and operational models that will provide value to the community. The Connective and IDP will provide a reference architecture and playbook for deploying community networks to unserved and underserved communities across the region.

Signatures

Elected Officials	Business Leaders	Civic Leaders
Your name here.	Your name here.	Your name here.
Your name here.	Your name here.	Your name here.

Your name here.	Your name here.	Your name here.