**Arizona Technology Council Public Policy Guide 2022**

**Arizona Broadband Policy Workbook (V01C)**

The Arizona Technology Council (<https://www.aztechcouncil.org/>) is actively working to draft their 2022 Public Policy Guide and will refine and lock down the content in late August, finalizing the editing and going to press in September. Because you are an active participant in Arizona’s broadband community, we wanted to solicit your input for this year’s update.

Attached is the final version of the of the four State Broadband Policy sub-sections and what had been newly developed, a substantial Federal Broadband Policy section from the 2021 Public Policy Guide. The full 2021 Public Policy Guide is attached and remains available <https://www.aztechcouncil.org/public-policy/> FYI.

A few things on my mind for updating in this year’s issuance:

**Federal Broadband Speeds:**

Last year we recommended a 100 Mbps download speed become the aspirational goal for new federally funded deployments. In fact the federal requirement became 100/10 Mbps as a goal and 25/3 Mbps performance as the absolute minimum a bit later in the year. Last year’s language read:

*Pursue a minimum broadband download speed goal of 100 megabits per second (Mbps) to guide infrastructure investments and program implementation to the greatest extent practical. Although the Federal Communications Commission defines broadband as an internet connection at a speed of 25 Mbps download and 3 Mbps upload, this may be inadequate for data intensive applications such as IoT, telemedicine and eLearning that will have ever-increasing bandwidth requirements.*

John Kelly/Tridadbocates commented that he “would be looking to upgrade the definition of broadband. 100 Gbps up and down? A man can dream.” I’ve always appreciated John’s definition from years ago that broadband needs to be fast enough so as not to bore a 10-year old.

The Senate infrastructure bill incorporates rules for state and local funding calling for broadband projects to deliver “service that reliably meets or exceeds symmetrical upload and download speeds of 100 Mbps.” In instances where this is not achievable due to “geography, topography or excessive costs,” projects delivering minimum speeds of 100 Mbps down and 20 Mbps up may be approved.

There are issues with requiring a minimum of 100/20 Mbps and even greater issues with achieving symmetric 100 Mbps capabilities to all. Even the new LEO satellites may have issues delivering 20 Mbps upload speeds and some terrestrial technologies are inherently asymmetric. Considering using the Senate bill speed language summary above for this year nonetheless.

But I do have an additional concern with scaling the backhaul as guidelines usually state their requirements as being able to simultaneously deliver such speeds to all households simultaneously. Everyone then uses scaling of perhaps 1:6 or 8 as we understand per user network loading factors and the impracticality of scaling backhaul capacity otherwise. Even FTTP projects have trouble provisioning their backhaul buy without scaling assumptions. How do we state some rational explanation of and formula(s) for scalling backhaul for estimated time of day peak usage for example? The feds should really clarify and specify “reliably” delivered bandwidth metrics.

AZBSN Notes 8/23/21: We all want better broadband than we got. Aspirational vs. Required speeds problematic with real world implementations.

**Federal Land Management and Rights of Way (ROW):**

Brad Burgess of ADOT commented that “Federal Rights-of-Way are definitely a barrier that I see firsthand from our encroachment permittees. One quick example is Sparklight in Gila County and I'm sure Ken Conner will gladly tell you about the current situation with USFS. It has the ability to make or break a project. I know a shot-clock was implemented for wireless facilities at the federal level, not sure if something similar could be implemented for federal easements of wired fiber optics (underground, aerial, etc...) along highway rights-of-way.”

Mark requested specific revised language suggesting a shot-clock or something similar for wired infrastructure deployment permitting and perhaps other updates in how such deployments could be eased and accelerated. Last year’s language read:

*Federal land management agencies—particularly the U.S. Forest Service, Bureau of Land Management and Bureau of Indian Affairs—play crucial roles in permitting and siting broadband infrastructure. The federal government should implement improved planning and permitting coordination between public lands management agencies and tribal governments, as telecommunications projects often cross multiple federal lands and tribal jurisdictions. The government should drive collaboration across agencies, simplify processes and improve timelines for permitting broadband infrastructure projects crossing federal and tribal lands and rights of way, especially those co-located with existing structures and other linear infrastructure, such as roads, rail lines, transmission lines and pipelines. States should be included to further coordinate, data share and ease multijurisdictional project planning and permitting, which has traditionally presented obstacles to private and public investment.*

AZBSN Notes 8/23/21: Awaiting Brad Burgess/ADOT reply.

**Arizona Land Management and Rights of Way (ROW):**

Arizona enacted House Bill 2596 aimed at expanding broadband access in Arizona that will help Arizonans living in rural and tribal areas gain access to fast, affordable and reliable internet as it:

* Allows private broadband providers to install, operate and maintain telecommunications equipment within the Arizona Department of Transportation’s (ADOT) rights-of-way.
* Allows ADOT to grant access to its own broadband conduit to private telecommunications companies in a non-exclusive and non-discriminatory manner — reducing the cost of installing rural broadband infrastructure.
* Creates the “Smart Highway Trust Fund” to deposit leasing revenues generated from the use of ADOT rights-of-way, which are to be used for operation and maintenance of telecommunications facilities within ADOT’s rights-of-way.

Mark has also asked Brad Burgess/ADOT if any further State legislative or Executive Branch actions would be useful at this point.

AZBSN Notes 8/23/21: Municipal policing and revenue expectations often disincent providers from investing and deploying in communities.

**Arizona Commerce Authority’s Broadband Office & Initiatives:**

The Arizona Commerce Authority’s State Broadband Director, Jeff Sobotka has been delivering on AZBSN’s recommendations from last year, driving collaboration among public and private stakeholders, and driving a number of new initiatives. After a year’s timeout, the ACA’s broadband grant fund is being substantially recapitalized to the tune of some $100M and two ADOT highway fiber builds are moving forward. Enormous federal relief funding streams have begun and if the infrastructure funding passes Congress, will present once in a generation opportunities to drive digital equity. KPMG’s Arizona broadband strategic study remains underway. What should the Tech Council recommend to the ACA and possibly the legislature above and beyond last year’s version. We need to update for new grant funding and otherwise refresh our recommendations accordingly.

***Leveraging ACA and Other Broadband Grants –*** *Empower the ACA to continue awarding and managing broadband grants to local partnerships and ventures with clear, achievable plans to provide or improve broadband services in unserved and underserved rural areas while also providing community assessments or technical designs, matching funds for federal and other grants, and specific project implementation investments. The ACA recently awarded $3 million to provide matching funds to offset planning and construction costs for expanding broadband services. The state should recapitalize that funding via pandemic relief funds or legislative allotment for a follow-on tranche of $10 million or more and expand and sustain the broadband grant program.*

*Allow ACA’s state broadband director to maximize and leverage the use of E-rate funding alongside the Arizona Department of Education and Arizona State Library, Archives and Public Records so they can help bring broadband services to the many rural schools and libraries with unresolved broadband issues. ACA should act as a clearinghouse to identify and line up complementary broadband grants and other financial support. It also should cultivate public-private partnerships working towards an overall broadband infrastructure approach that meets the full range of needs for all rural communities in the most cost-effective manner, including policies and practices encouraging competition from multiple service providers in each community to serve rural residences, businesses, local governments, health care facilities and public safety.*

***State Government Broadband Planning and Initiatives –*** *Develop a statewide strategy and oversight mechanisms as the pandemic brings new waves of federal monies on top of traditional Federal Communications Commission/National Telecommunications and Information Administration and U.S. Department of Agriculture programs. One consideration is a Broadband Development Authority to coordinate and optimize Arizona communities, education institutions, nonprofit organizations and broadband providers use of these digital-equity funding resources. Ensure a level playing field for incumbent and new entrant broadband providers. Provide up-to-date state broadband mapping capabilities to track broadband coverage and fiber deployments integrated with demographic and community anchor institution details. Make the data and mapping tools publicly available through the AZGEO Clearinghouse and open sourcing.*

Henry Goldberg has specifically suggested we consider “Including fundamental principles that should guide the future goals for middle-mile fiber deployment in the state.”

There’s a lot going on federally regarding e-rate and universal service programs, broadband infrastructure funding, improved broadband mapping, spectrum reallocations, and more. What else should Arizona be doing to prepare for leveraging these changes at the state level?

AZBSN Notes 8/23/21: Specific language about broadband office and staffing up. Broadband Development Authority.

**Arizona Broadband Stakeholder Network (AZBSN):**

Henry Goldberg suggests “Referencing directly the AZBSN COVID-19 Digital Access Task Force and its Nov. 2020 Digital Access Strategy Report.” AZBSN did receive a mention last year in the **Arizona’s Community Role in Broadband** section as follows:

*The Arizona Technology Council supports the Arizona Broadband Stakeholder Network as it facilitates opportunities for collaboration, coordination, information sharing and communication among key public, private and nonprofit stakeholders.*

Perhaps something like this for this year:

*The Arizona Technology Council supports the* *Arizona Broadband Stakeholder Network (AZBSN) as it facilitates opportunities for collaboration, coordination, information sharing and communication among key public, private and nonprofit stakeholders and recommends its Strategy Report of 2020 as the bridge between the State’s Broadband Strategic Plan of 2018 and pending State strategic updates.*

AZBSN Notes 8/23/21: Use Task Force language.

**Arizona Corporation Commission’s (ACC) Universal Service Fund:**

The Arizona Corporation Commission’s (ACC) long-standing Arizona Universal Service Fund (AUSF) is geared only to legacy POTS phone support in high-cost areas and has been actively considering modernizing the program as in many other states to allow for broadband deployment support in similar high-cost circumstances.

*Examine and evolve the Arizona Corporation Commission’s long-standing Arizona Universal Service Fund currently geared only toward legacy telephone support in high-cost areas. Modernizing the fund as many other states have would allow broadband deployment support in similar high-cost circumstances.*

John Kelly/Triadvocates chimed in “I would suggest something about refunding the State’s e-rate matching fund. This was the fund that was originally staked by the ACC to help support the work that ADE and Milan are doing to provide matching funds to help schools do a better job of drawing down e-rate. I believe that fund is now dwindling and unable to support some of the bigger and more challenging projects. While there will be a short term surfeit of federal dollars available, the matching funds requirement that is sometimes/ofttimes required can be a go/no-go. I don’t have language per se, but maybe Milan can suggest a pithy bullet.”

John suggests a restart of something similar to the ACC’s $8M special fund accompanied that was accompanied by ADE’s $3M allocation that let Arizona leverage some $150M in new infrastructure builds to schools and libraries under the FCC’s special 2-year e-rate program with Arizona having been one of seventeen State participants. The Tech Council Public Policy Committee previously overruled me on just this issue as they have a number of ILEC & CLEC members who generally oppose ACC special fees like this and seeming reluctance at the ACC itself. However AZBSN chose to include just such a recommendation in our Report late last year. John is spot on about the need for grant leverage funds and that should to my mind be part of our recommendation regarding revision and modernization of the ACC’s AUSF.

Henry Goldberg additionally suggests “the ACC consider reforming the Arizona Universal Service Fund to support broadband infrastructure development by rural electric co-ops.”

How can we reframe and revise our recommendations to help the ACC move forward with Tech Council recommendations and perhaps different AZBSN ones?

AZBSN Notes 8/23/21: Issue for further discussion. Lea pushing. Should be specific about how the money should be used for leverage. NARUC task force.

**Sun Corridor Network & State Universities Role in Digital Equity:**

Derek Masseth/Sun Corridor Network has approved last year’s Sun Corridor Network language (see below) for use again this year. However, Sun Corridor Network has become a more dynamic and impactful player this past year and is likely to play a significant role in middle mile and even last mile infrastructure initiatives around the State especially in light of ADOT’s hopefully moving toward one or more public private partnerships and the pending KPMG updated strategic plan. Ben Blink at the Governor’s Office has committed to a in depth review of the AZTC State broadband draft later this month and may have something relevant to contribute then.

Even if we stand pat on the Sun Corridor language, with ASU’s Lighting Up the Future and related tri-university initiatives coming on and the universities’ newly acquired appetite for seeking broadband grants, we could use some new language and thinking about how the Tech Council can encourage and support the universities’ underlying vision and future digital equity efforts. Maybe just a new sentence or two about the emerging tri-university role including a specific mention of Lighting Up the Future. I’ve asked Lev Gonick/ASU UTO, Dominic Papa/ACA Smart Regions, and Derek Masseth/Sun Corridor Network to come up with something.

***Sun Corridor Network*** *– Encourage policies to enable the Sun Corridor Network, Arizona universities’ research and education collaborative network, to flourish and expand services to a broader base of users. A robust Sun Corridor Network enables discovery, innovation and research outcomes among postsecondary researchers and educators. This infrastructure is critical to attracting world-class researchers and research funding to Arizona. A future-proofed K-20 education technology infrastructure is essential to enable modern digital-learning technologies and methods necessary for a workforce equipped for the knowledge-based economy.*

*Support the network’s public-private partnership strategy to bring high bandwidth access to Internet2—the national education/research network and community—and the commercial internet to the Arizona K-20 community. Support the network’s participation in the Arizona Department of Transportation’s investment in highway corridor fiber deployments and their anticipated public-private partnerships to grow and manage a robust state network. This will lead to the improvement of rural broadband network capacity and availability across the region, as well as improved regional research collaborations. Successful rollout of these strategies will enable the network and its member universities—Arizona State University, The University of Arizona and Northern Arizona University—to bring better and lower-cost internet and Internet2 access to K-12 schools, community colleges, universities, tribal nations, government entities and other institutions by leveraging economies of scale and shared infrastructure while driving better broadband availability for all. Support the network’s National Science Foundation grant-funded efforts to interconnect Arizona’s community colleges in support of joint science-research drivers and STEM education initiatives.*

AZBSN Notes 8/23/21: Language from AZBSN report. Strategic plan needed? Or already a moving train? KPMG state strategic plan to serve that role? Strategic partner to state? Under ABOR. ADE has a vendor code under USAC. Rethinking?

**Arizona Final Mile Project:**

Arizona’s Final Mile Project (<https://www.finalmileproject.com/>) was funded by ADE for $1.5M to manage an RFP process that is contracting for the design, construction, implementation, and provision of educational broadband services to students’ homes in five rural underserved communities. Seek expansion of the program, possible partnering or oversight, and an ongoing funding stream. Who will craft language?

AZBSN Notes 8/23/21: Endorse and rally support this year.

**Federal Broadband Infrastructure Funding & State Block Grants:**

Some variation of the Senate’s $1.2T Infrastructure Package with $65B for broadband will make it through the Congress and be enacted yielding big State block grants. Last year’s Public Policy Guide’s language strongly supports increased State flexibility in designing and implementing their grant programs in a competitively managed way. Review and update if needed.

The current Broadband Equity, Access and Deployment (BEAD) Program in the Senate-passed $1.2T infrastructure bill seems to be disadvantaging Community Anchor Institutions (CAIs) by unduly broadening the definition of what a CAI is and relegating CAIs to a third priority tier of consideration. Do our associates in the K-12 and library community craft some recommendation around that?

Henry Goldberg “suggests that federal/FCC policy be modified to leverage E-rate-funded fiber infrastructure at schools and libraries for rural communities' use in "to and through" Internet access architectures for effective last-mile as well as middle-mile backhaul.” Indeed, SHLB has been a great proponent of this and encourages Congress to re-introduce the “Accessible, Affordable Internet for All Act,” or to propose a similar package that includes funding to bring gigabit capacity to every CAI, promotes deployment of broadband networks “to and through” CAIs, and more generally promotes deployment of middle-mile broadband infrastructure that is open to interconnection and shared use to promote last mile build-out. Mark will craft specific draft language to that effect.

Also, as part of the BEAD program, current language requires providers who receive money from the state grants be required to offer a low-cost plan, although the bill does not specify a price. Should we recommend specifically that such 100/20 Mbps broadband services be available at a $75 or less per month cost to residential users, a price that would be fully offset for Tribal members receiving an ECF or similar subsidy and lowering monthly costs to $25 for non-Tribal members? Mark will be recommending ECF be fully funded for an additional five years then evaluated for possible permanent enactment.

AZBSN Notes 8/23/21:

**Additional Federal Broadband Policy Issues:**

Blair Levin also holds forth on “Seven Steps the FCC Should Take on Broadband in Fesponse to the Infrastructure Bill” in his Brookings Institution 8/16/21 post at <https://www.brookings.edu/blog/the-avenue/2021/08/16/seven-steps-the-fcc-should-take-on-broadband-in-response-to-the-infrastructure-bill/> including:

The need to rethink what kind of networks to fund.

What is the role and treatment of new LEO constellations & higher capacity GEO generations?

Adding anchor institutions to the mapping process.

Undertaking a process to review and reform the universal service mandate and contribution base.

AZBSN Notes 8/23/21: Flesh out these three especially.

**State Educational Technology Policy:**

Per John Kelly/Triadvocates, there are some nice recommendations in the ED Tech Task Force Long term plan that might be good to steal from: [ADE Tech Task Force - Long Term Plan Subcommittee Recommendations.pdf (azed.gov)](https://www.azed.gov/sites/default/files/2021/07/ADE%20Tech%20Task%20Force%20-%20Long%20Term%20Plan%20Subcommittee%20Recommendations.pdf)

*Excerpt: Recommendations to Achieve Long Term Goals & Increased Learning Opportunities Establish an Office of Digital Teaching and Learning (ODTL) within ADE. This office would serve multiple functions: 1) as the single point of contact for LEAs seeking assistance, support or coordination. 2) as the lead within ADE to coordinate different agency divisions of expertise, and 3) as a bridge to other organizations and institutions with concurrent and overlapping responsibilities. For example, the AZ Dept of Administration (ADOA) including the State Procurement and CIO offices; and the AZ Department of Homeland Security including the chief information security officer. 4) The ODTL would be a hybrid role would need to include information technology advisory functions while maintaining a keen focus on supporting educator excellence and LEA capacity building.*

Also from John Kelly/Triadvocates, “The Legislature last year expanded access to career and technical education to 9th graders and those needing to complete just after 12th grade, but only in defined “in demand” industries. The Office of Economic Opportunity in ACA does that work. From a tech perspective, we need to make sure that what they define as “in demand” is not just number of jobs, but also quality of jobs and strategic value of jobs. I don’t know if data center techs will be “in demand” because they don’t employ many, but it is an example of a very strategic role in AZ right now. Perhaps the categories need to be more broadly defined and inclusive within different industry classifications. This means that the recommendation from 2021 – to restore fourth-year CTED funding in key industries is now done and can be removed (although we may need to do some clean up).” This is likely an issue for the editors of the overall Arizona ed tech policy.

Goes beyond the scope of the broadband policy being contributed to the larger State **Education, Workforce Development and Workplace** section so Mark will pass it on to editors Cathleen Barton and Molly Castelazo.

AZBSN Notes 8/23/21: Reconsider Sun Corridor role as referenced in above. Refer rest to Education editors as noted.

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