

# *Connecting Arizona:*

## *Ensuring Broadband Access for All*



*"This ain't nothing next to  
the Digital Divide."*

Fall 2002

Arizona Telecommunications and Information Council (ATIC)

<http://www.researchedge.com/atic>

## EXECUTIVE SUMMARY

**VISION:** *By 2010, Arizonans should be able to benefit from the use of broadband in the same manner as those living in what are currently classified as the “most wired cities in the world.” Such broadband access will allow them to be healthier, more informed, more educated, and more productive.*

Broadband Internet deployment is essential to the educational, economic and community development of Arizona’s communities. Though a variety of State initiatives have pushed Arizona’s broadband deployment forward over the past few years, many of Arizona’s communities still lack high-speed, last-mile services. The Government Information Technology Agency (GITA) estimates less than half of Arizona’s 87 cities and towns with populations over 500 have such services immediately available. Of the cities that do have broadband access, many are still challenged by middle and last-mile deficits, and also must endure generally higher than average costs because of a lack of competition.

Much anecdotal evidence exists displaying the benefits of broadband access in Arizona’s communities – such as 250 teleworkers/home-based business operators that have moved to Yavapai County due to the availability of broadband. Anecdotal evidence also abounds showing the penalties that communities pay for not having sufficient telecommunications infrastructure – such as Safford having lost a business location that would have employed 50 to 200 employees with starting wage 22% higher than Graham County’s average starting wage.

Though our vision sounds great on paper, there are significant impediments that Arizonans are facing which prevent this from becoming a reality.

The purpose of this document is twofold. First, to describe the factors that inhibit the equitable deployment of broadband access across the State. And second, to describe the benefits to be achieved from advancing broadband access in terms of both competitiveness and capability. The bottom line is

that aggressive action must be taken soon to encourage broadband investment and deployment in Arizona, with particular emphasis on the needs of rural and lower-income areas. A variety of issues relating to the complex world of broadband telecommunications infrastructure is addressed in this document through a quickly readable question and answer format.

This document was created by the Strategic Planning Committee of the Arizona Telecommunications and Information Council (ATIC) with the expressed intent of addressing Arizona’s broadband deployment issues and status. It provides a menu of action items which - with government and legislative consideration and support - could encourage further deployment and competition.

The most basic need is to incent private sector service providers to deploy broadband services. Our goal is to accelerate deployment of an advanced telecommunications infrastructure that will insure availability of advanced telecommunications services and affordable, high quality, high-speed Internet access throughout the State. The strategy is to remove barriers and develop public policies and market-driven strategies that will encourage competition, private-sector investment in, and rapid deployment of the following equipment/services:

1. Broadband equipment and services which will serve rural and under-served areas of the State with last mile broadband service delivery to businesses, residents, government organizations, etc. The Last Mile is the Internet connection between the end-user and their Internet service provider (ISP)

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2. Broadband equipment, services, and infrastructure builds that will bring sufficient bandwidth from the Internet backbone to rural and under-served areas (middle mile). The Middle Mile is the Internet connection between the ISP (in a rural community, for example) and an Internet backbone provider (IBP; in Phoenix or Tucson, generally)

The purchase, installation and operation of the appropriate broadband equipment, however, often does not meet Return on Investment (ROI) requirements of a service provider's ROI model. Generally the biggest inhibitor to broadband deployment is the balance between deployment costs, monthly end user rates low enough to entice subscription, and the length of time required for the provider to recover the deployment costs.

Where no market-driven solution can be found, we need to identify ways in which communities and the State can "fill-in" the gaps.

Other needs exist as well, such as establishment of more than one path for telecommunications transport to/from a community (redundancy) in order to maintain connectivity in the event of network casualties.

Finally, this document describes specific recommendations for initiatives which ATIC believes must be implemented or continued in order to meet the desired goals. ATIC strongly encourages Arizona policy makers to explore, debate and improve each of these initiatives. These recommendations are largely built upon a review of successful efforts being carried out in other states, including the establishment of either funding mechanisms or tax credits to reduce the cost of private investment in broadband deployment.

### **The Arizona Telecommunications and Information Council (ATIC)**

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**ATIC is an economic development foundation of the Governor's Strategic Partnership for Economic Development (GSPED). The ATIC vision for Arizona is "Arizona's citizens, businesses, and organizations have access to advanced telecommunications services and information technologies enabling them to participate in the global economy."**

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## **QUESTIONS AND ANSWERS**

### ***What is the scope of this document's recommendations?***

The scope of this document, created by the ATIC Strategic Planning Committee, is to address Arizona's broadband deployment status, and provide a menu of action items which may encourage further deployment. A variety of issues relating to broadband deployment and telecommunications infrastructure are addressed in this document through a quickly readable, question and answer format.

These recommendations are designed to address the availability of so-called "last mile" and "middle mile" broadband technologies.

### **DEFINITIONS:**

***Last mile*** -- the Internet connection between the end user and their Internet service provider (ISP)

***Middle mile*** -- the Internet connection between the ISP (in a rural community, for example) and an Internet backbone provider (IBP; in Phoenix, Tucson, Albuquerque, or Los Angeles, generally)

***Broadband*** – The FCC defines broadband as an Internet connection at a speed of 200 kilobits per second (kbps) in either direction. The defined speed is the subject of much debate, and projected to increase over time. Some believe the best definition to be: The speed necessary to deliver content without testing the attention span of a 10-year old!

### ***Why should I care?***

A hundred years ago, lack of a railroad stop condemned many towns to a lingering death. Thirty years ago, interstate interchanges helped many communities to prosper, while those on back roads stagnated. Now the "information superhighway" is rapidly evolving. The telecommunications infrastructure, high-speed Internet access and other advanced telecommunications services are essential for Arizona's educational, economic and community development.

Whether it is for business, government, education, or community services, technology is *changing the way we live and work*. And, wired or wireless, we are moving from a world of simple voice communication and isolated desktop computing to an interconnected world. The landmark report, *Living in a Networked World*, published by the Washington DC-based Computer Systems Policy Project, chronicles the *business, consumer and public policy implications of a Networked World*.

The report reflects that the proliferation of the Internet, mobile phones, communication devices, eCommerce and networks marks only the very beginning of a new age of anytime/anywhere connectedness where everyone and everything is connected at all times. This "connectedness" is transforming the Internet into a network that touches every aspect of our lives, changing our world and the way we live, work, educate, and govern ourselves, as well as interpersonal and international relations. The convergence of voice, data and video, the growth of communication bandwidth, and the low cost of access devices are paving the way for a new, inclusive model of connectedness. The focus of the next generation of information technology will shift from faster computers, speedier connections and less expensive prices to creating networked communities.

### ***What is our vision of connectivity?***

It is 2010 – throughout Arizona, organizations and individuals are living in a "connected world." All have access to applications and services via the Internet that make them healthier, more informed, more educated, and more productive. There is no difference in ability to communicate and do business with the world between Seoul, Korea (one of the most "wired" cities in the world), a small community of 150 in Northeastern Arizona, and low-income regions of Greater Phoenix and Tucson.

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### *How competitive is Arizona's broadband deployment – compared to the world?*

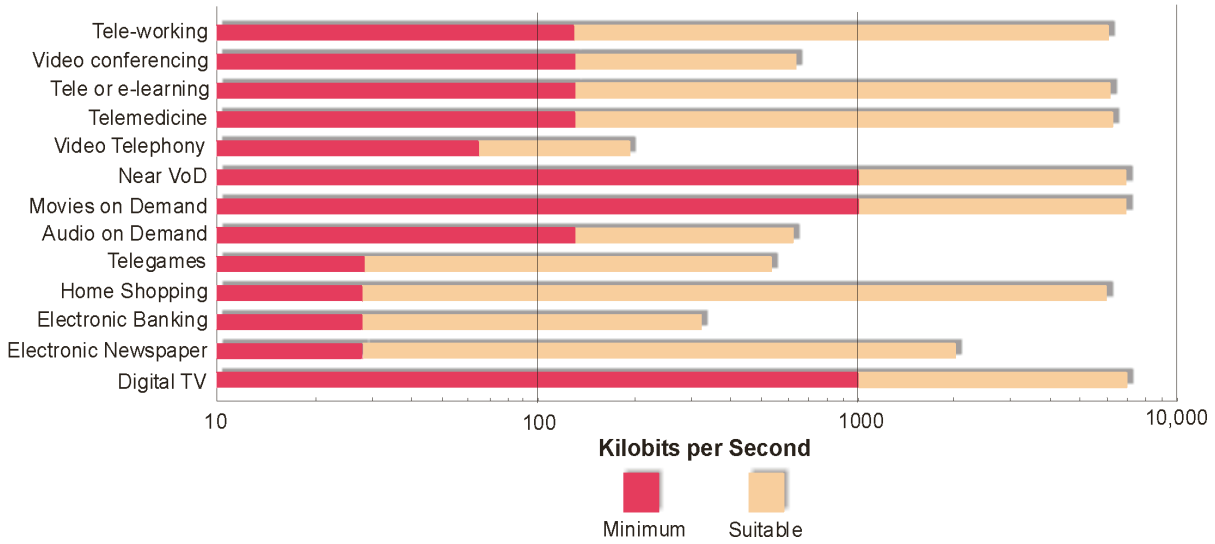
In the 21<sup>st</sup> Century, Arizona competes globally for business locations. Economic development officials are charged with attracting companies that pay high salaries, while impacting the environment only minimally. Typically, such companies are often the most information intensive (e.g., the bioindustry), and rely heavily on state-of-the-art telecommunications infrastructure. If Arizona expects to not only attract new industries, but support the competitiveness of existing business, it must gauge its telecom infrastructure against not only other states, but against its competing locations in other countries. Unfortunately, not only is Arizona not leading in the U.S., but the U.S. appears to be falling behind globally.

The United States is currently ranked seventh in the world in household broadband deployment, exhibiting a 10.4% deployment figure, versus South Korea's 51.7%, Hong Kong's 26%, and Canada's 19.7% (eMarketer, "*Broadband & Dial-Up Access*," Aug. 2002). The same eMarketer study anticipates that the U.S. will fall to 10<sup>th</sup> by 2004. The Organization for Economic Cooperation and Development (OECD), using second quarter 2002 data, ranks the U.S. as sixth among the OECD countries (which does not include Hong Kong, thus making the U.S. actually at least seventh), and third in rate of deployment among the OECD countries (exceeded by Japan and Canada).

The FCC ranked Arizona 11th in the U.S. for both household penetration of broadband, and rate of increase in broadband deployment during the latter half of 2001. Though Arizona has won awards for broadband deployment programs, these programs have also uncovered specific problems that must be overcome to accomplish ubiquitous deployment.

In 2002, less than half of Arizona's 87 cities and towns with populations over 500 have a broadband service such as cable modem, DSL, or fixed wireless (broadband defined: 200kbps in either direction). This leaves the remaining communities in the pre-1995 economy, with limited access to distance learning, telemedicine, e-government, a less than satisfactory quality of life, and an anti-business environment. Unfortunately, those areas not served, or under-served, by broadband connections often have the highest unemployment and poverty rates. Meaning: those areas to which we need to bring economic development and revitalization most lack the necessary infrastructure to grow existing, and start/attract new, businesses. Not only are the infrastructure and services not available for the businesses, which drive the local economies, but they are also unavailable to the residents, educational facilities, critical services (e.g., police, fire), health institutions and government offices. In some cases, where the infrastructure appears to be available, it is not "affordable," due to the lack of competition.

**Minimum and Suitable Speeds Required by Application**



Source: *Planned Approach, Inc.*

<b>Dial-up modem</b> = 56kbps max.	<b>xDSL</b> = 128kbps to 1500kbps (1.5 Mbps)
<b>Cable Modem</b> = 300kbps to 1500kbps (1.5Mbps)	<b>T1</b> = 1500kbps (1.5Mbps)
<b>Wireless</b> = 128kbps to 10000kbps (10Mbps)	<b>Fiber</b> = Up to 40,000,000 kbps (40Gbps) per laser, multiples thereof

*Does more bandwidth really make a difference? Doing what?*

*Looking at the above graph, and noting the 56kbps or slower speeds available in Arizona communities without broadband, we can see that members of these communities lack the minimum speeds to take advantage of life-changing applications, such as tele-working, e-learning, and telemedicine.*

*If the broadband is there, will it really make a difference? Do we have success stories?*

CommSpeed, an ISP based in Prescott Valley, reports at least 250 tele-workers/home-based business operators have moved to Yavapai County due to the availability of their wireless high-speed services.

These new residents reside and make a living in rural communities such as Clarkdale, Camp Verde, Cornville, and Lake Montezuma.

Cardiac Care, a Verde Valley-based medical practice, uses CommSpeed's high speed wireless connections to

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transfer large files resulting from computerized tomography (CT scan), and magnetic resonance imaging (MRI) tests. Broadband technology has allowed Cardiac Care to expand from its services from one location in Cottonwood to three in rural Verde Valley.

### *What price do our communities pay for insufficient telecom infrastructure?*

The foundation of most broadband networks still relies on the central office and interoffice facilities (IOF) of the incumbent local exchange carrier (ILEC), otherwise known as the local telephone company. Where ILECs have strong infrastructure, keeping pace with the community's growth, this is often the enabler from which many local cable and wireless companies can extend last mile Internet service into the community. There are growing cases, however, where these last mile providers are forced to find a different source for Internet traffic.

We have several communities in Arizona exhibiting case studies where the lack of telecom infrastructure inhibited growth of the local economy, or has caused the loss of existing businesses. The following are just a few examples:

Safford, Arizona will finally get the middle-mile connectivity it needs in early 2003 from Valley Telecom. Other communities are not yet so fortunate. Prior to getting this connectivity, Safford has had at least four inquiries from call centers interested in expanding there. Though call centers might seem unattractive to those in Greater Phoenix or Tucson, they can fill a great need in rural Arizona communities. Unfortunately, due to a well-known lack of telecom infrastructure – the foundation for call center business – the Graham County Chamber has had to stop pursuing all call center opportunities. Graham County, with a population over 35,000, has an unemployment rate that has hovered above 7% for the past several years. These call center opportunities ranged in size from 50 to 200 employees, and had starting wages in excess of \$7.50/hour – whereas the average starting wage in Graham County is currently \$6.14/hour. Call centers of this size will usually occupy anywhere from

5,000 to 40,000 square feet, which would have filled some vacant storefronts in Safford, bringing in rental incomes averaging \$10,000/month per storefront.

“Community A,” an unnamed rural community in Arizona with a population over 15,000 and an unemployment rate consistently above 10%, has also lost company relocation opportunities due to a lack of telecom infrastructure. In one case, a company would have started 200 local citizens at a wage of \$7.50/hour, and increased it to \$8.50/hour after one year. The average starting wage in this county is \$6.42/hour. In this case, the company would have occupied 45,000 square feet of an existing building, bringing in \$18,000/month in lease revenue. As the buying power and market of the Spanish-speaking population in the U.S. is growing at a tremendous rate, the bilingual workforce of Community A would make it an ideal location for companies wishing to service that population over the Internet and telephone.

Unfortunately, this labor force strength, which could have been used to draw down the unemployment rate, was left untapped due to the lack of sufficient telecom infrastructure.

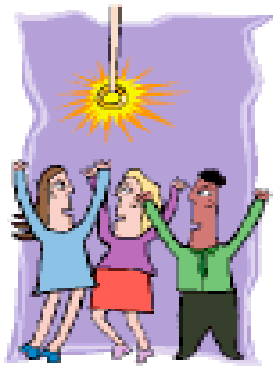
“Company A,” a developer of a real estate office management software application in Northeastern Arizona, has created high paying, “New Economy” jobs. In 2001, the founder of “Company A” indicated that the lack of available and affordable telecom infrastructure was possibly going to drive his company to move at least a portion of its operations elsewhere. In 2002, the owner announced that due to the same problem with telecom infrastructure and service affordability, he indeed was moving part of his operation to Scottsdale. This means a loss of some existing positions, the opportunity cost of lost future expansion in rural Arizona, and the loss of several hundred lodging room nights – as “Company A” also moves its training conferences to Scottsdale.

“Company B,” working on the leading edge of laser-based solutions for the semiconductor and flat-panel display industries, had great difficulty getting broadband options in a metro Phoenix industrial location. As a startup, they had experienced cable-

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modem access while operating from the owner's home. Such high-speed access is necessary, as the company transfers large engineering files to and from company operations in Florida and with customers worldwide. When they moved to the new Greater Phoenix location, no cable-modem or DSL service was available – and they settled for ISDN (128kbps). As the company grew, they chose a more upscale airpark location. Like many companies in that airpark, they discovered again there was a lack of wireline (e.g., DSL or cable modem) broadband solutions for business, which had prompted approximately four line-of-sight wireless companies to begin offering service in the area. They are now happy with their choice of a wireless provider.

Other communities, businesses, residents, and government organizations in Arizona have pressing needs, as well. The more time that passes without sufficient infrastructure, the greater the loss of possible economic growth or existing economic activity – as well as lost educational opportunities for residents and operational efficiencies for enterprises.



### ***What is being done to enhance Arizona's broadband connectivity today?***

Numerous companies and organizations are rolling out, or considering roll out of, broadband last-mile services. We must give great credit to these companies that are attempting to fill the need and establish working long-term business models. These include companies, such as Valley Telecom (southeastern Arizona rural fiber build), Commspeed (second largest licensed wireless ISP in the U.S. – based in Prescott Valley), CableOne and CableVision (deploying cable modem service in rural Arizona), Frontier (rural DSL deployment), SRP Telecom (use of microwave to connect Apache County), and others. We must further encourage these companies in their efforts, and some specific ways to do so are identified in the initiatives list at the end of this report.

The Greater Arizona Development Authority (GADA) led the way by launching a pilot assessment program for five communities and regions in Arizona. This effort was extremely valuable in developing a statewide program. Results from this assessment will be used by local policy makers to evaluate broadband strategies.

The Arizona Department of Commerce is launching the statewide Community Telecom-munications Assessment (CTA) Program. This program has the following two phases:

1. Broadband Technologies Study – This report, with estimated release date of January 2003, will detail broadband last mile (and possibly middle mile) technologies, costs of deployment, financing mechanisms, and identify Federal, State, and local policy issues that affect their deployment.
2. Community Telecommunications Assessments – Communities will be applying to the Commerce Department for funding of telecommunications infrastructure inventories,

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broadband demand assessments/surveys, and technology/business recommendations for broadband deployment.

The Government Information Technology Agency (GITA) is assisting the Commerce Department with the CTA program under its comprehensive Telecommunications Open Partnerships of Arizona (TOPAZ) program. TOPAZ includes the following additional strategies:

- Leveraging of State purchasing power via the State carrier services contract (State of Arizona Government is the largest telecom user in Arizona) and its relationships with telecom providers to encourage further deployment of broadband services, and introduce competitive pricing and services throughout Arizona.
- Encouraging community-level demand aggregation, and even telecommunications task forces, to engage telecom carriers on local issues, including broadband deployment. The State carrier services contract is being used as a catalyst for this demand aggregation.
- Tracking of broadband deployment in Arizona, by community, and further investigating existing infrastructure.
- Creating a single Executive Branch point of contact within GITA for broadband policy and strategy development and implementation.

Throughout the State, communities have formed telecommunications-related task forces to address their own broadband challenges and opportunities, and to share information. These task forces often include members of the public and private sector and, depending upon the community, are led by a chamber of commerce, economic development organization, or government official.

There are also various programs throughout Arizona, which are increasing the demand for broadband, and can be leveraged to increase deployment. These include the Arizona Telemedicine Program, use of the

Federal E-rate program by schools and libraries, and the Cox Education Network (CEN).

The CEN, available wherever an Arizona public school student can access the Internet, could be Arizona's competitive broadband advantage. Whereas many states and countries are seeking to develop a "killer application" which will drive up the demand for broadband and encourage deployment, the State of Arizona has already spent over \$29 million on this "content" side of the broadband equation. This investment should be leveraged, driving continued broadband deployment to schools, homes, and libraries.

The Arizona State Department of Library, Archives, and Public Records has played a key role in obtaining Gates Foundation Grants and Federal technology funding (e.g., E-rate) totaling over \$10 million to install computers and broadband, and to ensure adequate training for staff, in libraries throughout Arizona. Federal e-rate funding for schools in Arizona, totaling in the tens of millions of dollars, has been coordinated through the Arizona Department of Education.

### *If you could identify one or two things that would enhance broadband deployment, what would they be?*

There is a need to encourage deployment of the following equipment/services:

- Broadband equipment and services which will serve rural and under-served areas of the State with last mile broadband service delivery to businesses, residents, government organizations, etc.
- Broadband equipment, services, and infrastructure builds that will bring sufficient bandwidth from the Internet backbone to rural and under-served areas (middle mile). Where some "middle-mile" capacity exists, there is a need to build redundant paths to avoid entire

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regions of the State from being taken offline (loss of long distance, enhanced services, and Internet) by a single fiber cut (e.g., backhoe) or damaged radio (e.g., lightning strike).

### ***We understand the need to encourage last mile deployment, but why the middle mile?***

Due to the recent advancements in wireless technology, deployment of broadband networks has become more cost-effective – especially in rural or low-income areas with distributed populations. Cable providers are also considering further deployments in rural communities. For these last-mile providers to deploy their networks and charge reasonable rates, however, they must have access to sufficient and reasonably priced “middle-mile” connections – the T1 or higher capacity lines that provide the connection between the communities and the Internet backbone points-of-presence that commonly reside in Phoenix and Tucson (though some communities must connect to Albuquerque or Los Angeles). If a common middle mile infrastructure is not available, through which they can procure T1s and above at reasonable rates, they must construct their own middle mile infrastructure. Not only does this increase the financial exposure of the last mile providers, but the cost is passed on to end users – often increasing a residential broadband service price by at least \$15 per month.

### ***Since September 11, we’ve heard a great deal about the need for redundancy as well. Should we be discussing that also?***

Indeed, the need for redundancy in the telecommunications system was recognized on 9/11. Telecommunications infrastructure was not an identified target that day, but it was damaged or destroyed at a time when it was most needed. This occurred in major metropolitan areas.

Many of Arizona’s rural communities are “fed” by a single route of fiber or microwave radio systems. Repeatedly, communities and even regions of the State have been “cut off” from the rest of the world due to damage inflicted on these single-point-of-failure routes. In the event of an emergency or disaster, most

communities would have no backup system, unless cell/wireless phone companies had built their own parallel network into the community.

The issue of redundancy becomes especially critical when one begins to talk about cyber-terrorism, where the actual infrastructure could become a target. With single routes into communities, it would be quite easy for a terrorist incident to be compounded by additional targeting of the telecom infrastructure.

### ***I’ve heard that it is also difficult for the visually impaired to access the Internet. What can be done to bridge this digital divide?***

The visually impaired have long represented a significant challenge to the world of computing. While the use of Braille and other tactile graphics technologies continue to play a large role, newer technologies are emerging to either augment or replace traditional Braille as a user interface. Significant headway is being made in haptics research, and products that perform video and/or audio translation are available today. Coupling those with web portal concepts that integrate seamlessly to enable things like automatic resizing of web page text or text translated to audio will begin to make major impacts on things the visually impaired can do that weren’t possible before. While many of these technologies are products or applications in and of themselves, they too depend upon adequate telecommunications resources.

### ***I’ve heard about towns and public utilities deploying their own solutions in other states. What about using municipally-owned telecom utilities to deploy broadband?***

The first reaction of many communities when they reach a peak of frustration with the incumbent provider is to “get into the business themselves.” There are many communities around the country that opted to start and operate their own telecommunications utility. Traditionally, this meant they essentially replaced a privately-owned monopoly, with a publicly-owned monopoly – one that not only built a network, but operated it, and sold services at retail to end-users. Many communities have argued that they enjoy greater

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services at lower prices, while opponents argue that these utilities are subsidized by tax dollars – putting a drain on the local economy.

A new breed of municipally-owned telecom infrastructure is now developing, though, in which a community or municipality installs and owns the underlying infrastructure, but often allows another entity to operate it, and multiple parties to offer voice, video and data services to the end-users. Proponents say this is the same paradigm as having publicly-owned streets to every home, but allowing anyone to drive on them. As the municipalities own the rights-of-way, it eliminates the age-old arguments with providers about digging up streets. This deployment model is fairly new, but there are communities throughout the United States – such as the city of Provo, Utah, and a public utility in Grant County, Washington – which are deploying fiber to every home and business.

The biggest advantage of municipally or public utility-owned infrastructure is the expected return on investment (ROI) schedule. Traditionally, public utilities (and 30 years ago, telephone companies) work on return on investment schedules of 15 to 20 years. Due to the increased competition in the telecommunications marketplace, and the emphasis on maintaining stock prices, private sector telecom companies generally invest when they can be assured of an 18 month to three-year return on investment. The highest bandwidth solutions, such as fiber-to-the-home, are also the most expensive to install. In the current competitive environment, it would be almost impossible to find a private sector company willing to wait 15 to 20 years to recoup their investment in a fiber-to-the-home project.

Nevertheless, whether Arizona communities choose to own their own infrastructure, or rely on the private sector, they will be competing for company and residential locations in the future with communities which have chosen to deploy fiber-to-the-home and business scenarios. This is all the more reason for Arizona to take a proactive stance on broadband deployment.



Zipp™ is the Grant County Public Utility District's new *ULTRA SPEED* fiber optic distribution network.

Bringing Fiber to every home, business & farm in Grant County, Washington.

Using Gigabit Ethernet over a fully "Open-Access" fiber network

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### ***What initiatives should Arizona policy makers consider in order to ensure Arizona's broadband future?***

1. An income tax credit, based on the equipment purchase price, for businesses or individuals that deploy broadband services to rural and under-served communities. To qualify, such services must be made available to residents and businesses, in addition to government, educational, and other users in the community. The tax credits would have a ceiling amount per year, and be scheduled for sunset review in three years. It is recommended that the Montana (20%) and Idaho (3%) models be closely examined.
2. An income tax credit, based on equipment purchase and installation price, for businesses that deploy inter-city/town transport services to rural and under-served communities. Such deployments may range from building new microwave point-to-point links, to establishing or expanding a point-of-presence (POP) on existing fiber, to deployment of aerial or trenched fiber, to installation of satellite dishes for significant bandwidth backhaul. To qualify, Internet service and transport must be made available to either Internet service providers or end-users in the qualifying community. The tax credits would have a ceiling amount per year, and be scheduled for sunset review in three years.
3. An expedited right-of-way permitting process for establishment of inter-city/town transport ("middle mile"), including coordination of State and Federal rights-of-way, must be established.
4. Use of existing financing mechanisms, such as the Commerce and Economic Development Commission and the Greater Arizona Development Authority, should be explored as vehicles to aid in deployment of broadband services and inter-city/town transport in rural and under-served communities. If existing mechanisms are deemed insufficient or inefficient, then new financing mechanisms should be established. This includes the exploration of enhancing municipal bonding capabilities for telecom infrastructure. The Michigan Broadband Development Authority should be closely examined.
5. Expansion of the existing Arizona Universal Service Fund, so that it may be used to finance deployment of advanced (broadband) services. Georgia's Universal Access Fund (an interim fund) and Texas' Telecommunications Infrastructure Fund (TIF) should be examined as models.
6. Continued and expanded funding of the Arizona Department of Commerce's Community Telecom-munications Assessment program – which provides funding for communities to assess their telecom infrastructure and broadband demand, and identify desirable methods to increase broadband deployment.
7. Establishment of a statewide strategic plan for broadband deployment, with participation from stakeholders throughout Arizona (an Arizona Partnership for the New Economy recommendation).
8. Investigate use of State-owned facilities, such as microwave towers and rooftops, to enable private sector broadband deployment to communities.
9. Investigate use of new Federal homeland security dollars to enable establishment of redundant public networks, as well as broadband deployment (indicated by Federal agencies as necessary for enhanced security operations).
10. Encourage establishment of public/ private partnerships to enable broadband deployment – on either the supply or demand side of the equation.

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11. Continued support of GITA's TOPAZ program, and the Telecommunications Development Manager position as a single point of contact in the Executive Branch for broadband policy, strategy and implementation.
12. Priorities should be based on identification of areas of greatest need, in combination with documented community commitment and demand. Areas considered may include those identified with the most unmet demand through

the Community Telecommunications Assessment (CTA) program, and those currently classified as Enterprise Zones. All Enterprise Zones have higher-than-average poverty and unemployment rates.

### **SUMMARY**

#### ***Where do we go from here?***

Broadband Internet deployment is essential to Arizona's economic success in the 21st century. Though we have seen the level of broadband deployment increasing in Arizona, our State is not leading in this area, nor is the U.S. leading the world. Arizona has made strides to encourage broadband deployment, but needs to enhance these efforts in order to secure a competitive position for future economic development. In other states, many initiatives have either been executed successfully, or are currently in their beginning stages. These initiatives should be thoroughly investigated for their applicability in enhancing Arizona's broadband deployment. This document is a starting point for policy makers to consider and discuss Arizona's broadband deployment. The ATIC Board and its Strategic Planning Committee are available as further resources on this subject. More information on ATIC is available at [www.researchedge.com/atic](http://www.researchedge.com/atic).