ARIZONA
COMMERCE AUTHORITY

Gila County Strategic Plan & Network Design for Broadband
Project Narrative

Project Description and Timeline – Infrastructure Matters

The main objectives of the Gila County Strategic Plan & Network Design for Broadband include the following:

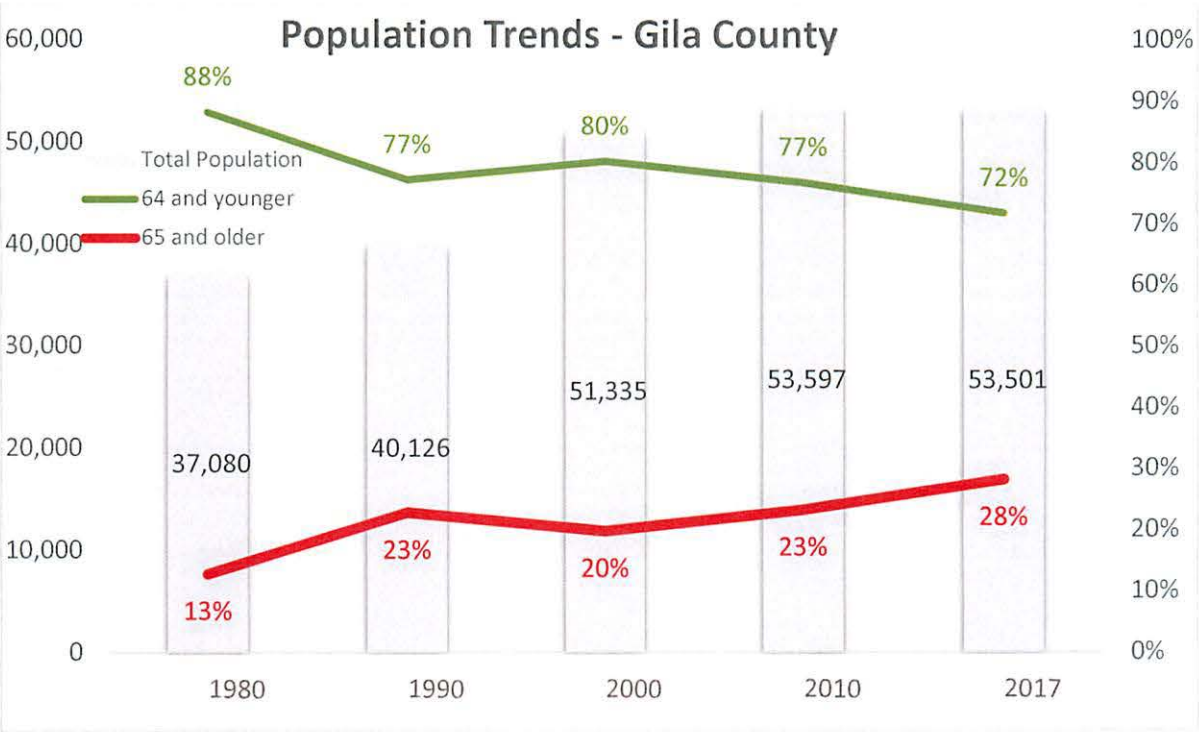
- Develop a strategic plan to provide affordable, reliable, universally available fiber-optic based broadband to as many, if not all, areas of Gila County. The strategic plan would incorporate the following:
    - ✓ Utilize a Broadband Improvement District to lease or build-out the fiber optic infrastructure. The Broadband Improvement District would act as a utility and own the fiber network.
    - ✓ Manage the fiber optic infrastructure but make it available to all interested Internet Service Providers (ISPs).
    - ✓ Both residential and commercial property owners would be offered the option to opt-in to the Broadband Improvement District, investing in their property by adding fiber connectivity.
    - ✓ The infrastructure cost to the first, middle and last mile of the fiber optic network would be funded by the property owners who elect to opt-in. They would be offered financing options, including:
        - Financing via an improvement district concept where a tax-based bond would be used to distribute the cost over a period of 20 years.
        - Upfront lump-sum payment
- Develop a next generation Open Access network design
    - ✓ Allow all interested ISPs the use of the network to offer services, increasing competition and lowering cost.
    - ✓ Utilize active network design to allow users the flexibility to change providers digitally without disruption of services.
- Develop a conceptual network footprint for Gila County and specify inside plant and outside plant equipment for the Open Access network to determine the cost of the infrastructure.
- Determine a monthly network operation fee.
- Develop community engagement plan and take rate.
- Determine the feasibility of the Broadband Improvement District utilizing cost, fees and community interest.

Why the project is needed

Rural areas in Arizona lag behind urban areas in economic vitality. This is remarkably evident in Gila County. Broadband services offered via satellite and copper medium are usually slow – often not meeting the 25/3 Mbps broadband requirements and are expensive because of the limited Internet service providers. Fiber optic cable-based Internet service providers typically first satisfy anchor

opportunities and then ignore homes and small business in rural areas because of the higher cost of providing infrastructure to reach the rural customers. The absence of competition and the higher costs associated to providing broadband service may result in significant rural areas never enjoying the connectivity benefits that urban areas enjoy.

Population growth from 2010 to 2017 in the State of Arizona was 10% compared to a negative growth for Gila County in the same time-frame. 2017 data (see chart below) also shows that 28% of the population in Gila County is 65 years or older compared to the Arizona average of 17%. The absence of an affordable, robust and reliable Internet network has contributed to these trends and will result in the deterioration of these trends in the future.



In today's economy, to compete for job creation and population growth, a robust broadband network is required. A "do-nothing" approach on the part of Gila County will result in a downward spiral for health care, education opportunities and economic development. This will impact the overall sustainability of our community and result not only in depopulation but a loss of generations of home-grown talent.

How the proposed project addresses those needs

This project would develop a model and plan to allow Gila County and other rural counties and cities to provide an open fiber optic network to all property owners, funded by the Broadband Improvement District mechanism, open to all interested Internet service providers - which would increase competition in offering affordable broadband service.

Number of community anchor institutions served

The fiber optic network would be available to all anchor institutions in Gila County, and 27-plus schools, courthouses and hospitals have been identified. Gila County is committed to participating as the first anchor institution. As the plan's feasibility is rolled out is it expected that many, if not all, of the cities and towns in Gila County would be connected to the network. The Gila County Strategic Plan & Network Design for Broadband will help determine this information.

Number of households served

The objective is to serve all populated areas of Gila County, and the number of households is estimated at 15,243. The Gila County Strategic Plan & Network Design for Broadband will help provide this information.

Number of businesses served

The network will be available to all businesses in Gila County, and the Gila County Strategic Plan & Network Design for Broadband will help determine the business take rate.

Total population served

The Gila County Strategic Plan & Network Design for Broadband will help determine what percentage of the population will be served, but the total population that would benefit from this project would be 53,597.

The anticipated economic development benefit achieved by construction of improvements

In recent years, Gila County has lagged behind the state of Arizona's growth rate. The Arizona Department of Administration, Office of Employment and Population provided the following statistics forecasting population changes thru 2055. The state as whole and Maricopa County have projected growth rates of 48% and 49%, respectively. Many of the rural counties will experience negative or negligible growth.

ARIZONA STATE AND COUNTY POPULATION PROJECTIONS: 2018 TO 2055

Year	Arizona	Apache County	Cochise County	Coconino County	Gila County	La Paz County	Maricopa County	Navajo County
2018	7,076,200	73,300	130,300	145,600	54,900	21,900	4,294,500	112,700
2055	10,504,500	63,200	130,400	163,100	53,300	21,900	6,414,100	115,200
	48%	-14%	0%	12%	-3%	0%	49%	2%

AZ Department of Admin, Office of Employment & Population Statistics, 12/28/2018

The forecast is for Gila County to undergo a negative population growth of 3%. A broadband-rich community in Gila will help change this forecast driving job growth and population growth.

Total miles of fiber to be installed

The Broadband plan will develop the proposed fiber network and the associated mileage.

Location of new fiber (aerial, underground or both?)

It is expected that new fiber will be both aerial and underground. The network design will provide mileage for each.

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Stated commitment to operate and maintain the network for a minimum of five (5) years upon completion of the improvements

Gila County's commitment is to create an Improvement District under the supervision of the county that would operate and maintain the network indefinitely.

The intended uses of the RBDG B funds in respect to planning

The funds will be used to hire consultants to work with Gila County to develop the Strategic Plan and the Network Design for the Broadband infrastructure. The provisioning process would comply with State of Arizona and Gila County procurement requirements, and the consultant would need to show evidence of experience and competence in providing similar services to other cities or counties.

Timeline for completion of the infrastructure improvements

The work will be performed using two consulting contracts:

1. Feasibility – Target Completion October 2020
2. Network Design – Target Completion December 2020

Details of award match and plans if not funded

The 23.8% match will be available upon award of the grant and will be used to fund consultants. There are no other sources other than the applicant responsible for a match. The Gila County Board of Supervisors unanimously approved the grant match at its Oct. 15, 2019, meeting.

Gila County is committed to developing a strategic plan to provide affordable and reliable fiber-optic based broadband to Gila County; developing a next generation Open Access network design; developing a conceptual network footprint for Gila County and specify inside plant and outside plant equipment for the Open Access network to determine the cost of the infrastructure; determining a monthly network operation fee; developing a community engagement plan and take rate, and determining the feasibility of the Broadband Improvement District utilizing cost, fees and community interest. If this project is not funded through the ACA, it will be a multi-year project and await funding availability.

Project Description and Timeline – Development Matters

The current ISPs in Gila County do not have a redundant or reliable broadband network, and, as a result, any outage to the current network can range geographically from a local to a regional impact. The duration may last from hours to days. An outage results in paralyzing all business activity that is dependent on Internet connectivity. Gila County has experienced three outages that have lasted more than eight hours. The first- and middle-mile fiber optic network that provides broadband service to Gila County poses a daily risk to business continuity and is a significant barrier to new business development for the County.

Even more importantly, in addition to the unreliable network, there is a well-documented "digital divide" between rural and urban areas for broadband access to small business and residential properties. The population density level of rural communities like Gila County do not provide the desired investment return for fiber and/or looped networks, and, therefore, broadband service is provided by a limited number of ISPs via non-redundant and unreliable networks. Only 66% of the population in Gila County have access to wired broadband Internet versus 92% for Maricopa County. Under the current business driver where the Internet Service Providers are motivated by return on investments it is not rationale to expect that rural areas will ever get to the connectivity parity of the urban areas in Arizona. The problem is that the interests of the Internet service providers are not aligned with the interests of the Internet consumers, and the current model does not offer any incentive to change.

APS and CableOne plan to add additional fiber optic loops to the existing network, and this will help improve the reliability of the first and middle mile. A scenario where the Internet service providers who own the fiber optic network connect the most profitable users in the network – anchor institutions – and ignore the small businesses and home owners, however, is not a strategy to strengthen the capacity and competitiveness for economic growth and thereby ultimately will not contribute to improve economic conditions and quality of life in rural Gila County.

Project Approach

- Work with City Attorney to establish legal authority for the County to operate broadband infrastructure.
- Develop Broadband Strategy.
- Conduct Market Analysis to clearly identify current average prices and speeds from the available carriers operating
- Provide comparison of available business models currently deployed in the U.S. including the incumbent model and successful / viable county broadband models.
- Develop Community Engagement Plan.
- Document community survey results.
- Specify Inside Plant and Outside Plant Equipment for the network for an Open Access Model
- Prepare RFP Template that can be used by Gila County for the Network Operations platform, Engineering, and Construction.
- Prepare Risk Analysis.
- Establish a projected Monthly Network Operations Fee for residents and businesses.
- Create Network Design for Fiber to the Business and Fiber to the Premise Network.
- Prepare Cost Breakdown for Network Materials
- Prepare Projected Cost Breakdown for Network Installation.
- Create Financial Pro-Forma based on Cost Structure.
- Establish a projected cost per premise based on a breakdown of all cost variables. Identify potential sources for construction financing and long-term financing.
- Determine the optimal legal structure for the project and the associated options for financing the network.
- Develop recommendations for Phase 1 (Pilot) including key considerations such as target subscriptions (Take-Rate), density characteristics, proximity to other city infrastructure, the strategic value of connectivity for the county in that area, etc.