Town of Oro Valley
Innovation & Technology

The Town of Oro Valley is pleased to apply for a broadband infrastructure grant through the Arizona Broadband Development Grant Program. The Connect OV Project's goal is to improve broadband availability and speeds in Oro Valley. Through this project, the Town will establish a middle-mile fiber optic network and partner with service providers to improve broadband speeds in Oro Valley and eliminate underserved areas. Through partnership with service providers, Connect OV is projected to:

- Construct 26 miles of fiber to be used by the Town, service providers, and community
- Serve 473 businesses
- Serve 14,889 households
- Serve 19 anchor institutions
- Serve 36,187 population

This application is supported by the Oro Valley Town Council Strategic Leadership Plan FY21-23, as objectives within the plan address promoting the development of primary employment development, local entrepreneurism, and expanding broadband services throughout the Town. Recognized as the "Upscale Tech Mecca" of Southern Arizona by the Arizona Daily Star, the Town seeks to cement this reputation by providing a fiber optic network that supports and enhances the Town's tech-related reputation.

In terms of real-world benefits, the Town would realize significant advantages from a fiber optic network for underserved Town constituents as well as ensuring that high-speed internet is available for:

- Underserved home based business owners
- Underserved new home-based entrepreneurs and business startups
- Future retail and commercial development that lacks high speed internet access
- Existing and future primary employer development and those support organizations such as the University of Arizona Center for Innovation
- K-8 and High School students who are learning remotely
- Future areas of annexation and development

Additionally, a town managed fiber network creates options for residents to improve their access speeds to continue remote workforce development skills, training, and degree attainment, in an expanding e-commerce based economy and social structure, and participate in civic discussions via web-based applications and portals. Finally, a fiber network will allow the Town to connect all its internet-dependent operations to provide better service to constituents.

Thank you for your consideration of this grant proposal.

Project Narrative

The Connect OV project's goal is to establish a fiber optic network owned and managed by the Town of Oro Valley that encourages competition by private internet service providers to improve services to residents and business while connecting Town assets together. This project will establish 26 miles of middle-mile fiber backbone to improve competition and connectivity in the Town targeting areas that are unserved or underserved. The Town is committed to operate and maintain the fiber optic infrastructure for 5 years and beyond as this will be a crucial asset to the Town's constituents and operations. The 2020 census shows the Town as a population of 47,070. People from all demographic strata move to Oro Valley because of its employment opportunities, renowned quality of life, excellent public safety, and community engagement.

The Town of Oro Valley is entering into a new phase of high-tech primary employer development, emerging tech-related development, tech-related workforce development, and entrepreneurism. Currently, Oro Valley's primary employment clusters are centered around bioscience (Roche Tissue Diagnostics) and aerospace and defense industries (Honeywell and Meggitt Securaplane). However, the Town's recent recruitment of Leonardo USA Inc., a leading company in laser and optics uses, has demonstrated that there is a continued need to ensure that sufficient broadband capacities are available to provide high speed internet for current and future tech-dependent primary employers. Additionally, new startup companies such as Polycharge are creating advanced technologies related to electric vehicle battery storage. Other entrepreneurs are creating new primary employer opportunities at the University of Arizona center of Innovation in Oro Valley and in residences throughout the town. Based on a recent study conducted by StartUp Tucson related to the Oro valley entrepreneurial ecosystem, it is anticipated that 60% of the future startup companies will be related to service industry and consulting, life science, or software and technology companies.

Moreover, tech-dependent industry clusters are also dependent on a technologically-proficient workforce. Each of the above primary employer clusters needs systems engineers, tech analysts, lab assistants, lab techs, and other associated employees to operate at peak efficiency and production capacity. Having access to high-speed internet will ensure that colleges and universities are able to continue to produce needed tech positions and allow employees in those positions to continue skills training and degree attainment coursework without interruption or poor, inconsistent service.

The Need for Broadband in Oro Valley

Oro Valley is primarily served by Lumen DSL and Comcast DOCSIS based service. The FCC Form 477 census shows there are other terrestrial wireless providers, but they are not marketed and are widely unknown in the area. The 477 data also shows that most areas do not meet the stated goal of the grant to provide 100/100Mbps speeds for service. The Connect OV project will establish a dark fiber network to promote competition among fiber-based service providers that will increase speeds and reduce costs in the area.

Project Description and Timeline

[redacted]

Legend

Oro Valley Limits

Existing Fiber Connections

Proposed Fiber

Phase 1

Phase 2

Connect OV Project Phases

The Town plans to follow an “Infrastructure Provider” model which involves the Town building and installing conduit and dark fiber assets. The Town can then lease these assets to businesses, broadband providers, local schools, and libraries. In this model, the Town does not provide high speed internet services, only access to the infrastructure. Internet service would be provided by internet service providers who specialize in providing and supporting internet access. Internet service providers would lease the fiber from the Town to provide broadband services. This minimizes operating and maintenance costs to maintaining the physical fiber optic plant, but not the equipment to provide internet service. The lessee would be responsible for maintaining their equipment for their services. The main benefit of this model is it improves the cost and availability of fiber infrastructure to internet service providers, businesses, and community organizations. Through a competitive process, the Town has identified 3 partners for the Connect OV project. Cox, Dakotapro, and Login are service providers in the community who are interested in increasing the availability and speed of broadband in the Town.

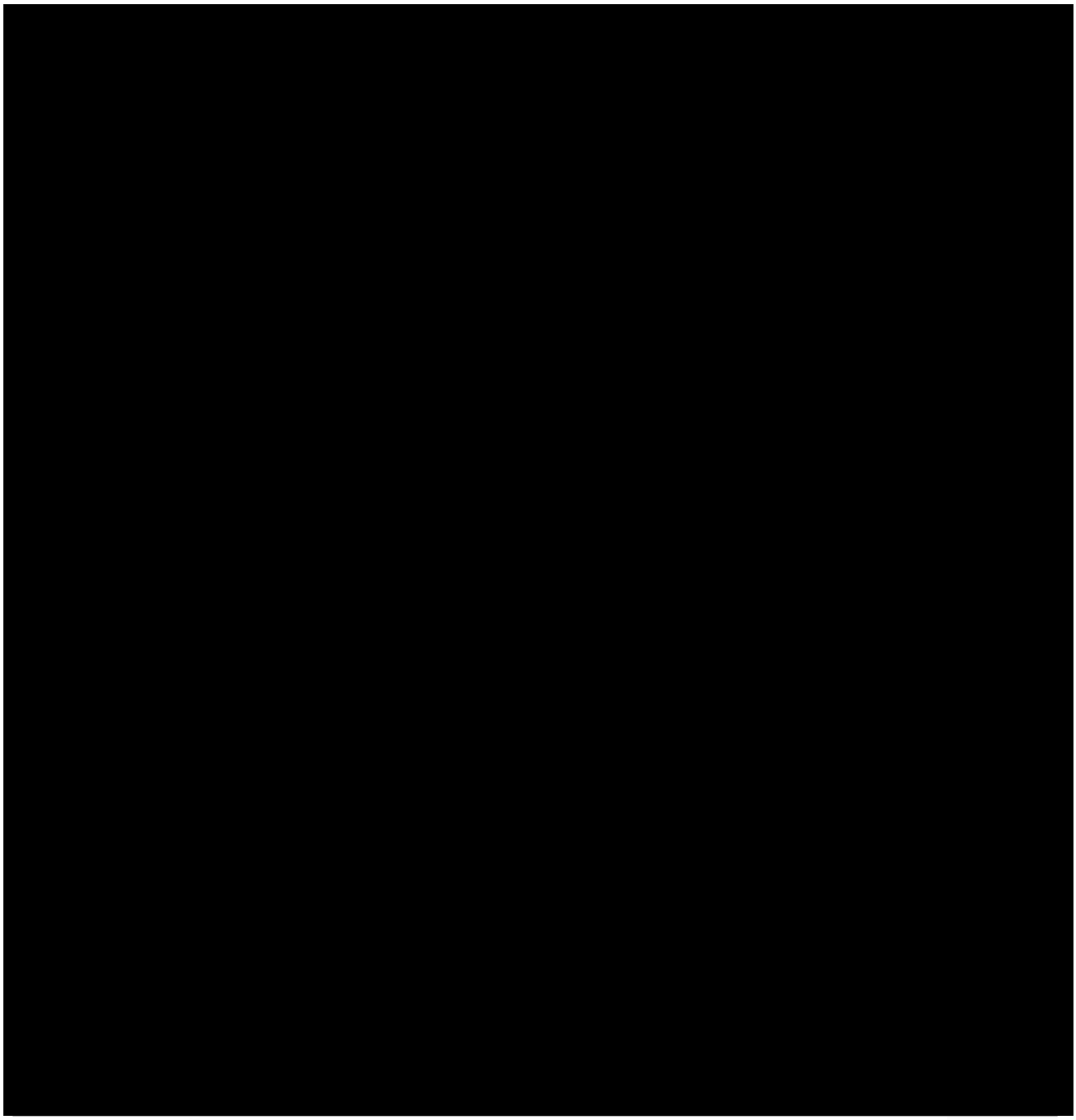
Infrastructure Construction

The Town has partnered with Arizona Communications Experts (ACE) for this project. ACE has a proven track record in Arizona and is committed to providing a reliable communication infrastructure, quality components and the latest in connectivity solutions. ACE currently holds contracts with: Tucson Unified School District, Marana Unified School District, Flagstaff Unified School District, Honeywell, and all regional Military Bases. In addition, ACE has excellent working relationships with all major General and Electrical Contractors in Southern Arizona. ACE was selected through a competitive process and chosen for this project specifically due to their indoor and outdoor plant construction, aerial cable installation, underground conduit pathway and horizontal directional boring capabilities and experience.

Fiber Network Specifications

The Town will use the funds to establish a fiber optic network along arterial and collector roadways. This network will consist of an underground plant with 2ea 4” conduits with 4ea innerducts, pull boxes as needed but no more then 500’ apart. The initial plant will have a single 144 strand OS2 cable, with capacity to expand as needed. This plant will be able to support 72 connections, up to 100Gbps depending on distance, equipment, and conditions. This infrastructure gives service providers plenty of capacity to supply internet speeds exceeding 100/100Mbps per customer offering.

The fiber routes and phasing have been designed by the Town and its service provider partners to address areas lacking connectivity, options for service, and Town resources. Based on census data, this middle-mile backbone fiber network will enable service providers to serve 25,330 to 36,187 constituents (10,422 – 14,889 households), and 473 businesses. This includes the following anchor institutions: 2 university facilities, Oro Valley Hospital, 3 Golder Ranch fire stations, 6 public schools, 2 charter schools, 4 private schools, and the Oro Valley Chamber of Commerce.



Legend

Oro Valley Limits

Target Area

Proposed Fiber

Phase 1

Connect OV Project Phases

Timeline

[redacted]

Finances

The project has been broken up into 2 phases, with each phase having a design and construction portion. The Town intends to use the grant to fund [redacted] of the construction of the project, and any residual portion of the engineering design. The Town will initiate engineering services as its portion of the match [redacted] in July 2022 and as a budgeted project in FY22-23. The Town will be sole provider of matching funds and will provide a letter of commitment. In the absence of ABDG funding, the Connect OV project will not be able to proceed as quickly as outlined above as the Town does not have sufficient capital resources to build out the anticipated fiber network. While Connect OV will progress along the design and strategy described above, the Town may only be able to establish a mile or two of fiber per year without grant support. This grant will advance the timeline and capacity the Town has to enable this project, and therefore will provide services to the community quickly as the spirit of the grant intends.

Other Project Outcomes

Town Use

In addition to providing middle-mile fiber available to internet service providers, this project will enable connectivity to a variety of Town assets, reducing recurring telecommunications costs. The fiber backbone will be utilized by various Town departments to connect assets like Water Utility pump stations, traffic signals, Police substations, parks facilities, and more. The Town would use this network to enable public internet access at Town facilities. Additionally, this fiber optic network would be in addition to other fiber optic networks in the area, providing layers of redundancy to the region and contributing to the resiliency of services.

Public Safety

Public Safety will specifically benefit from this project as several Public Safety technologies require secure high-speed connectivity to function. Technologies like License Plate Readers (LPR), intersection traffic cameras, gunshot detectors, etc. all require connectivity to provide real-time to near real-time response to crime and incidents.

Economic Development

Access to high-speed internet providing sufficient speeds at which businesses can conduct operations is essential to ensuring that primary employer recruitment and development, local entrepreneurs and new business startups, and residents can participate meaningfully in an economy in which e-commerce is an influential factor. In fact, the Connect OV project supports Town Council objectives under Goal 1B and from the FY21-23 Strategic Plan to prioritize actions that attract high quality employers and incentivize entrepreneurial and home-based businesses.

Generally, the anticipated economic development benefit achieved by construction of such improvements includes the following:

- Primary employer recruitment, attraction, and expansion opportunities
- Further development of an emerging incubator and accelerator-supported entrepreneurial ecosystem in the bioscience and aerospace/defense clusters

- Support of the local startup business community, including home-based retail and commercial opportunities
- Support of regional and local workforce initiatives designed to increase job creation in high tech clusters.

Primary Employer Development and Support

The Town partners with Sun Corridor, Inc. to forecast future employment in the bioscience and aerospace and defense clusters, the predominant sources of primary employment for the town. According to forecast generated January 2022, the town is expected to realize an additional 93 jobs in the bioscience cluster and 124 jobs over the next five years in the aerospace cluster. These estimates consider expanded jobs from existing businesses but does not include those that will be generated from primary employer recruitment and new company development such as the new jobs the town from expects from company relocations like Leonardo USA, Inc. [redacted] Additionally, companies in the bioscience and aerospace and defense clusters are anticipated to continue to make capital investments in buildings, infrastructure, and equipment to expand operations and accommodate additional employees. While it is difficult to provide a specific estimate for these capital expenditures, Roche Tissue Diagnostics in Oro Valley has made capital investments in excess of [redacted] over the last three years to expand local operations, and the company owns additional land to allow for future expansion.

Further supporting primary employer job creation, the Oro Valley town council passed a resolution in March 2000 allowing light tech development, including research and development, related manufacturing, and warehousing, in Community Commercial and Regional Commercial zoning districts. This concept not only allows for new development in the zoning districts, but is intended to support the adaptive reuse of existing buildings within the districts as a response to changing consumer purchasing dynamics in the retail business sector. Ensuring that undeveloped pads and vacant buildings have access to high-speed internet ensures that companies looking to develop or occupy those sites can do so with the understanding that broadband communication will not be a limiting factor.

[redacted]

As a final consideration, there are approximately 110 acres of developable land in the innovation park commercial/light industrial subdivision which is the location of primary employers in the bioscience and aerospace and defense clusters, namely Roche Tissue Diagnostics, Meggitt Securaplane, and the future site of Leonardo USA, Inc. This undeveloped acreage is anticipated to be developed with high tech or tech related uses, and access to reliable, high-speed internet as part of site infrastructure will be crucial in marketing and promoting build out of the subdivision.

Entrepreneurial Business Development

In the summer and fall of 2021, Startup Tucson worked to prepare an initial entrepreneurial needs assessment report of the Oro Valley entrepreneurial ecosystem for the Town of Oro Valley Community and Economic Development Department. The goal of the assessment was to discover the makeup of Oro Valley's entrepreneurial ecosystem and the current and needs of these Oro Valley entrepreneurs. The town understands that creating a vibrant entrepreneurial ecosystem is a way of creating additional primary employer job creation opportunities that do not rely on recruitment efforts. Rather, the town can establish and nurture new business ventures that are associated with the bioscience and aerospace and defense clusters, are founded as home-based businesses, and with local retail and commercial opportunities.

The entrepreneurial needs assessment included the following types of companies likely to establish soon:

- 2 Bioscience Startups
- 1 Medical Office
- 2 Fitness Companies
- 1 Real Estate Development Company

- 1 Marketing Company

Entrepreneurs in new and emerging businesses, especially bioscience and emerging tech industries, identified increased incubators and accelerators as well as infrastructure investment as critical areas for growth. In addition to physical transition spaces for graduates emerging from incubators or accelerators, infrastructure investment recommendations included high speed internet, as much of their product development depends on information transfer at high, dependable speeds. In addition, entrepreneurs in general requested assistance with marketing, access to demographic information and case studies, organization of resources, funding, and talent.

Another observation from the entrepreneurial needs assessment is that Oro Valley businesses lack a comprehensive online presence. This online presence would include a social media marketing campaign, a business-specific website and an e-commerce platform if applicable. Promoting these business support concepts assumes that businesses have access to reliable high-speed internet.

Economic Resiliency

The Town of Oro Valley enhanced its already-robust business support strategies during the first year of the Covid-19 Pandemic via the OVSafeSteps program. Responding to business challenges of operating with pandemic-related restrictions, the Town distributed nearly $1,000,000 in assistance to local businesses with 50 or fewer employees for PPE reimbursement, marketing cost reimbursement, IT and marketing coaching, and business support. The Town relied heavily on e-communications to administer this program and to fashion additional resiliency programs (OVNextSteps).

The Connect OV project supports OVNextSteps by diversifying the number of internet service providers available to Oro Valley businesses, thereby enhancing communication via email and social media announcements with businesses about resources, events and support services using the business email database created as part of the OVSafeSteps program. All said, the Town and its business customers need access to reliable, high-speed internet to make this program successful.

Type	Project	Applicant	GEOID
Urban	Connect OV	Oro Valley - Login - Cox - DakotaPro	04019004713
Urban	Connect OV	Oro Valley - Login - Cox - DakotaPro	04019004614
Urban	Connect OV	Oro Valley - Login - Cox - DakotaPro	04019004615
Urban	Connect OV	Oro Valley - Login - Cox - DakotaPro	04019004619
Urban	Connect OV	Oro Valley - Login - Cox - DakotaPro	04019004620
Urban	Connect OV	Oro Valley - Login - Cox - DakotaPro	04019004622
Urban	Connect OV	Oro Valley - Login - Cox - DakotaPro	04019004633
Urban	Connect OV	Oro Valley - Login - Cox - DakotaPro	04019004634
Urban	Connect OV	Oro Valley - Login - Cox - DakotaPro	04019004635
Urban	Connect OV	Oro Valley - Login - Cox - DakotaPro	04019004636
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Urban	Connect OV	Oro Valley - Login - Cox - DakotaPro	04019004640
Urban	Connect OV	Oro Valley - Login - Cox - DakotaPro	04019004641
Urban	Connect OV	Oro Valley - Login - Cox - DakotaPro	04019004642
Urban	Connect OV	Oro Valley - Login - Cox - DakotaPro	04019004643
Urban	Connect OV	Oro Valley - Login - Cox - DakotaPro	04019004713
Urban	Connect OV	Oro Valley - Login - Cox - DakotaPro	04019004716