Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program

Submitted Date:	**Easygrants ID: 5569**
Funding Opportunity: Broadband Technology Opportunities Program	**Applicant Organization:** CALIFORNIA BROADBAND COOPERATIVE, INC
Task: Submit Application - BTOP	**Applicant Name**: Mr. Robert W Volker

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A. General Application Information

Applicant Information	
Name and Federal ID for Applicant	
DUNS Number	831438424
CCR # (CAGE)	5M5D1
Legal Business Name	CALIFORNIA BROADBAND COOPERATIVE, INC
Point of Contact (POC)	ROBERT VOLKER 7075518210 Ext. rvolker@praxisfiber.com
Alternate POC	MICHAEL ORT 5105994062 Ext. mort@praxisfiber.com
Electronic Business POC	MICHAEL ORT 5105994062 Ext. mort@praxisfiber.com
Alternate Electronic Business POC	ROBERT VOLKER 7075518210 Ext. rvolker@praxisfiber.com

Name and Contact Information of Person to be Contacted on Matters Involving this Application:	
Prefix	Mr.
First Name	Robert
Middle Name	W
Last Name	Volker
Suffix	
Telephone Number	707-551-8210

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Fax Number	707-552-8120
Email	rvolker@praxisfiber.com
Title	Chief Executive Officer

Additional Contact Information of Person to be Contacted on Matters Involving this Application:

Project Role	Name	Phone	Email
Secondary Point of Contact	Dr. Michael T, Ort	7075518220	mort@praxisfiber.com

Environmental Point of Contact

Prefix: Mr. Name: McEntee, Michael Suffix: Telephone Number: 9492615414 Title: Director of Biology
Prefix: Name: Loui, Lisa Suffix: Telephone Number: 9492625414 Title: Senior Biologist Permit Specialist

Organization Classification	
Type of Organization	Cooperative or Mutual
Is the organization a small business?	No
Does the organization meet the definition of a socially and economically disadvantaged	No

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small business concern?	

Authorized Organizational Representative	
AOR Name	VOLKER, ROBERT
Result	Applicant Authorized

Project Title and Project Description

Project Title: Digital 395 Middle Mile

Project Description: Digital 395 is a 583 mile fiber optic network between Carson City NV & Barstow CA providing Mid-Mile broadband & route diversity to 15% of California. Serving 25,949 households, 2571 businesses, 237 anchors, & 68 POIs in the Eastern Sierra, the Cooperative represents a CPUC-funded public-private partnership aimed at long-term economic development. It creates 1107 shovel-ready jobs over 2 years.

CCI Priority Checklist

The following items were selected from the CCI Priority Checklist:

1. This project will deploy Middle Mile broadband infrastructure to community anchor institutions.

2. The project will deploy Middle Mile broadband infrastructure and has incorporated a public-private partnership among government, non-profit and for-profits entities, and other key community stakeholders.

3. This project will deploy Middle Mile broadband infrastructure in economically distressed areas.

4. This project will deploy Middle Mile broadband infrastructure to community colleges.

5. This project will deploy Middle Mile broadband infrastructure to public safety entities.

6. This project will deploy Middle Mile broadband infrastructure and either includes a Last Mile infrastructure component in unserved or underserved areas or has received commitments from one or more Last Mile broadband service providers to utilize the Middle Mile components. Any Last Mile components in rural areas do not exceed 20% of the total eligible costs of the project.

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Comprehensive Community Infrastructure Components

The following items were selected from the Comprehensive Community Infrastructure Components:

Middle Mile

BIP Applicants

Have you also applied to BIP for funding in the sample proposed funded service area?

- No

If Yes, please provide the project title and Easygrants ID number:
Title of Joint BIP Application:
Easygrants ID:

Other Applications

Is this application being submitted in coordination with any other application being submitted during this round of funding?

- No

Easygrants ID	Project Title

If YES, please explain any synergies and/or dependencies between this project and any other applications.

Individual Background Screening

Is the Applicant exempt from the Department of Commerce requirements regarding individual background screening in connection with any award resulting from this Application?

- No, Applicant is subject to these requirements

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If the answer to the above question is "No," please identify each key individual associated with the Applicant who would be required to complete Form CD-346, "Applicant for Funding Assistance," in connection with any award resulting from this Application:

Name	Title	Employer
Robert Volker	Chief Executive Officer	California Broadband Cooperative
Michael Ort	Chief Operations Officer	California Broadband Cooperative

B. Executive Summary, Project Purpose and Benefits

Essay Question

Executive Summary of the proposed project:

The Digital 395 network is a 583 mile, optical fiber middle mile project between Carson City, NE, and Barstow, CA designed to provide broadband services to Mono, Inyo and eastern Kern Counties, - 15% of CA known as the "Eastern Sierra". The route mainly follows the US 395 highway, a major transportation corridor between southern and northern Nevada. The service area contains 36 communities as well as six Indian reservations. In addition to these civilian areas, the region is host to two military bases: Naval Air Weapons Station China Lake, and the USMC Mountain Warfare Training Center.

For historical reasons, the region has developed a "narrow' economic base dominated by seasonal tourism and has about 3% of land privately held. Because of this, state and local leaders throughout the Eastern Sierra recognize that a robust broadband infrastructure that affordably serves key institutions and extends service to all is a key requirement for the area's future economic and social development. One County Supervisor was quoted as saying, "broadband holds our fate."

Unfortunately, market economics have prevented anything resembling a modern broadband infrastructure to materialize over the past several decades. The area is served with a piece-meal,

1980's telephone backhaul network that is exhausted, compromised, and incomplete. Having deployed a patchwork of radio, fiber and copper, the out-of-region companies that collectively control the telecommunications infrastructure admit to "being unable to make the business case" for further broadband investment. To make conditions worse, there is no diverse routing in the region and over the past four years the region has experienced six complete isolating events, the result of wildfires, dig ups, and other mayhem. In such instances, wireless has been of no help – cellular coverage is only operable in about 60% of the US395 corridor and is dependent on the same wireline backhaul network.

While telephone services are available throughout most (but not all) the region, from a broadband perspective, it is underserved, with several communities having no broadband whatsoever. The relatively lower income level of the region, coupled with the relatively higher cost of high-speed Internet access, has kept broadband adoption rates low – about 14% overall. Cable providers and local ISPs have been unable to address this due to the high cost of transport into the region and the telephone company has been highly selective in choosing which towns to offer DSL. This project addresses all these issues.

The proposed funded service area consists of 25,949 households and 2,571 businesses. There are approximately 237 community anchor institutions that the network will directly connect, including 49 educational, 15 health care, 13 libraries, and 35 public safety entities. In addition to the two military bases cited, courthouses, municipal utilities, regional federal offices for BLM, USFS, and miscellaneous other agencies make up 125 more anchors. The project plans to also direct connect some 68 Points of Interest.

The services proposed for the Digital 395 are a full range of carrier grade, wholesale, services intended to: (1) enable affordable broadband to existing service providers, (2) create an entrepreneurial platform for new entrants, (3) enhance the dependability of the telecommunications infrastructure with route redundancy, and (4) enable another diverse route out of southern California and Nevada to strengthen the national telecom grid. The proposed service offerings on the network are: 1) Dark Fiber, 2) Collocation; 3) Point to Point Transport Service; 4) SONET Transport Service; 5) IP Ethernet Service and 6) Public Internet Access Service. There are no end user service offerings.

By offering a variety of services from dark fiber facilities to IP services we intend to enable a new era of local service alternatives benefiting end user demand and affordability. By removing

the area's historic Middle Mile facility bottleneck, the project will not only force service providers to reduce pricing and improve service, but it will open an alternative Internet backbone route attractive to long-haul carriers, freeing up capacity and reducing transport costs in alternative routes. The availability of dark fiber thus enables local broadband affordability while providing benefits to others out of area.

The Digital 395 network will support all foreseeable medical, educational, commercial, and military applications at affordable rates. Price comparisons indicate that proposed pricing for Public Internet access on the Cooperative network will be approximately 30% lower than currently available wholesale alternatives for area service providers and comparable to rates in CA metro areas. Other services also exhibit similar savings from current alternatives. In addition to lower cost public internet access, an increased variety of IP, SONET and dark fiber middle mile service offerings will enable new networking applications to be implemented locally.

The obligations for non-discrimination and interconnection will be addressed both organizationally and in the architecture of the network. The California Broadband Cooperative, Inc. will own and operate the Digital 395 network. In this capacity, it will function as a not-for-profit entity offering wholesale services to telecommunications service providers, ISPs and utilities, as well as large governmental, educational, and medical institutions. Its patron members will elect the Board of Directors, who will set policy.

The Digital 395 Middle Mile network will fully comply with the principles in the FCC's Internet Policy Statement. The network management polices will be posted on the Cooperative's website. The management of network facilities will not favor or discriminate based on service provider or applications. Interconnection will be supported via collocation or at any other technically feasible point. Interconnection with area service providers will be aggressively pursued by the Cooperative.

The Digital 395 fiber optic network is designed as a point-to-point network. Initially equipped [redacted] the backbone is capable of supporting up to [redacted] data rate with the installation of high speed transmission cards. The fiber optic backbone [redacted] that will provide connectivity between the core node sites.

Access to the 10 Gbps backbone core network is accomplished through 15 distribution nodes along the route. These distribution nodes function as traffic collection points for lower level

traffic providing access and egress to the backbone core system. The distribution nodes will be equipped with a variety of standard interfaces to accept member traffic from DS1/DS3 and SONET level to Gigabit Ethernet. All points on the network will be capable of providing a minimum of 2.5 Gbps service.

Network connections to the Public Internet will be a minimum of two diverse locations at the north & south terminus of the network with at least one Public Internet port at each location. The Public Internet peering port at each terminus will be carrier diverse so that the North and South public peering ports are secured from different national networks.

As a new entity established for this initiative, California Broadband Cooperative, Inc., has retained [redacted] and its union-represented sister company, [redacted] to develop, engineer and construct the project. Once the Digital 395 network is fully commissioned, [redacted] will assume the role of the Cooperative's management company. In this role, [redacted] will be taking responsibility for the day-to-day operation and maintenance of the network. It is expected that [redacted] will continue in this role for several years until the Cooperative business matures and requires a dedicated staff. The Praxis Companies are major California fiber optic contractors who have designed and constructed private and public networks to some 33,785 homes in over 350 projects during the past several years. Praxis also has experience developing fiber networks on Native American reservations under CPUC and RUS grant programs. The core Praxis project team has over 120 years of telecommunications experience, with a wide range of markets, technologies and clients.

The overall cost of the network is [redacted] and is requesting federal assistance of [redacted] The State of California (CPUC) has made [redacted] available in matching grants funds to meet state policy objectives. Although portions of the network will complete within 18 months, commissioning of the final, complete network is expected at the end of two years. Without funding available through this grants program, the economic analysis indicates it would not otherwise be constructed.

The total estimated job-years is 1107.

Project purpose:

The Digital 395 Middle Mile project addresses all five core BTOP statutory purposes.

It extends access to broadband services to the isolated, unserved community service areas of Benton, Keeler, Cartago, Olancha, Pearsonville, Boron, Johannesberg, and Randsberg. Also the Benton Paiute Reservation located in Benton currently does not have access to Internet services.

The Digital 395 Middle Mile project also improves service to underserved, rural communities by lowering the cost and improving the quality of Internet backhaul services. Currently the communities along the Digital 395 route cannot afford to secure low cost, high bandwidth access to the Internet because their backhaul service choices are limited by the areas only middle mile service provider to point to point private line service priced on a per mile basis. The Digital 395 service area extends approximately 553 miles along the eastern Sierra region of California and Nevada. For communities at the north end of the service area their closest peering connection to the national Internet is Los Angeles approximately 500 miles away making mileage based private line services prohibitively expensive.

Unfortunately, market economics have prevented anything resembling a modern broadband infrastructure to materialize in the area over the past several decades. The area is served with a piece-meal, 1980's telephone backhaul network that is exhausted, compromised, and incomplete. Having deployed a patchwork of radio, fiber and copper, the out-of-region ILEC company that controls the middle mile infrastructure admits to "being unable to make the business case" for further broadband investment. To make conditions worse, the region is currently served by a spur cable route without diverse routing. Over the past four years the region has experienced six complete isolating events, the result of wildfires, dig ups, and other mayhem. In such instances, wireless has been no help – cellular coverage is only operable in about 60% of the US395 corridor and is dependent on the same wireline backhaul network.

The Digital 395 project will extend broadband access via fiber optic facilities to 237 anchor institutions in communities along US-395 route. Included in that number are 47 K-12 schools, 13 libraries, 15 health care providers, 2 community colleges and 19 other community support organizations. Because less than 3% of the land in the area is privately held and open for development, communities along the Digital 395 route have evolved to be densely clustered developments along the highway separated by considerable distances. By extending a fiber optic cable along the highway route and spurring off to customer premises we are able to directly reach almost all the Critical Community Institutions in the region. Also our connections into the Los Angeles and Reno tier one peering points will deliver direct connections to the national Internet network.

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The Digital 395 Middle Mile project will improve access to and use of Broadband services by public safety agencies. The proposed network will serve 35 public safety entity locations. The long distances and often inclement weather conditions along the US-395 corridor between the communities in the Eastern Sierra region make public safety work challenging. The fiber rich environment created by the Digital 395 project will enable new public safety applications particularly video applications like roadway surveillance, remote site monitoring and remote arraignment for public safety agencies Not only will the Digital 395 project extend fiber connectivity directly to the public safety agencies but it will finally provide a true diverse connection between Southern CA and Reno NV so that in the event of a communications cable cut the area will no longer be isolated.

The Digital 395 project will stimulate demand for broadband, economic growth and job creation. State and local leaders throughout the Eastern Sierra have long recognized that a robust broadband infrastructure that affordably serves all residents and businesses is a key requirement for the area's future economic and social development. The Eastern Sierra has a long history of benign neglect from the rest of the State of California. When much of the region's water resources were diverted to Los Angeles in the last century, a once-vigorous agricultural area was transformed to desert, leaving not only a desiccated landscape, but also an atrophied economy now solely dominated by seasonal tourism. With only 3% of the land privately held, and an absence of a scalable, efficient transportation system (no rail, airport, or Interstate highway) plus a increasingly protected, sensitive ecological environment (Mono Lake), economic development alternatives have been further restricted, leaving the information services sector as the only hope for the betterment of region's citizens. According to the last CPUC broadband study the region's broadband penetration stands at 14%. This is due in large part to the high cost of monthly service and limited service offerings. A survey of the areas broadband service providers indicate that many have last mile infrastructure that could support higher speed services but the economics of backhaul from the area's only middle mile provider make offering a competitive sub $50/mo Internet service challenging. We believe that by facilitating the availability of high speed communications the region will finally have a resource that will allow its economic development to catch up to the rest of California.

Recovery Act and Other Governmental Collaboration:

The Digital 395 Project is collaborating with several California and Federal programs to leverage recovery act objectives.

At the State level two programs are the California Advanced Service Fund (CASF) and The California Teleconnect Fund (CTF).

The CASF program will promote universal service in unserved and underserved areas in the state by awarding funding to qualifying certificated applicant carriers. The funding will be used for projects that will a) provide broadband services to areas currently without broadband access and b) build out facilities in underserved areas. California Broadband Cooperative filed an application for the Digital 395 Middle Mile project and was awarded a $19.3 M grant to be used as matching funds for the ARRA BTOP program. The CPUC cited the unserved/underserved status of the proposed Eastern Sierra Digital 395 middle mile service area and the not for profit public private partnership nature of CBC as the primary reasons for the award.

The CTF program provides 50% discount on selected telecommunications services to qualifying schools, libraries, government-owned and operated hospitals and health clinics, and community-based organizations. Services qualifying for the discounts include: T-1, DS-3, up to and including OC-192 services, and Internet access services. Many CCI's in the Digital 395 service area are eligible and CBC will conduct an outreach program to ensure that eligible Anchor Institutions can avail themselves of all discounts.

Other programs we are working with include:

The Southern Sierra Telehealth Program that has a large rural telemedicine program and requires 100 mbps broadband connectivity to the Inyo/Mono/Kern county hospitals and health care providers.

The Instructional Technology Service Station Library Program will offer videoconferencing capability through room based and PC based technology. This medium will offer residents access to courses and programs that will be developed to address basic literacy needs, technology skill building, job searches, workforce preparation, lifelong learning, healthy living and business development/e-commerce. Each library in the project will require a 10mbps connection to the internet.

The Department of Energy's Smart Grid Investment program authorized under Title XIII of EISA which includes the [redacted]

[redacted] have several hydro generation facilities that need broadband connections. In addition to [redacted] and [redacted], the proposed Digital 395 service area also has several large solar power generation providers that are part of the ARRA smart grid investment program will be working to connect to the network.

The California Department of Transportation (CALTRANS) Intelligent Highways project supports vehicle sensors and real time video and electron signage to monitor and manage conditions along the SR 395 roadway. We anticipate providing dark fiber for this application.

Fit with BTOP CCI Priorities:

The project will deploy middle mile infrastructure to community anchor institutions (CAI)- Working with State and County personnel we identified 282 CAIs in the Digital 395 (D-395) service area. We have plans to connect 237 of those. This number includes 47 schools, 13 libraries, 15 medical and 19 Community service organizations. CAIs not directly connected were deemed to distant from the middle mile cable route to be served economically (>1/2 mi). Those CAIs will be served through last mile connections provided by the ILEC.

The project will deploy middle mile broadband infrastructure and has incorporated a public private partnership among government, non profit and other key community stakeholders- A broad based collation of partners were assembled for this project including the State of CA CPUC, CIO & CalTRANS offices, State of NV-DOT, Counties of Inyo, Mono and Kern, The Communications Workers of America, Private partners include network development company, [redacted]. The California Broadband Co-op (CBC) is a non profit 401c12 whose 7 seat Board of Directors will be comprised of 3 County representatives, 1 State Agency, 1 local agency, 1 Service Provider and the managing Service Provider Company.

The Digital 395 project is also collaborating with the [redacted] project to create a network peering node in Reno, Nv. Those three projects will potentially share a fiber optic terminal, Layer 3 router, carrier colocation space, and internet access from multiple national carriers. By interconnecting these three networks we will be able to jointly lower our costs of equipment and Internet access, exchange traffic and create a true regional network that encompasses over 831 route miles.

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This project will deploy middle mile infrastructure in economically distressed areas- Unemployment in the D-395 service area is currently at 13.4%. [redacted] are implementing a program to hire and train local labor to construct portions of the network.

This project will deploy Middle Mile infrastructure to community colleges- The D-395 will directly serve two out of the three community colleges in the proposed service area. The unserved college has refused an offer of a service connection, although contingency plans are in place to connect the College at a later date.

This project will deploy Middle Mile broadband infrastructure to public safety entities- The D-395 project will directly serve all 35 public safety locations identified in the proposed service area survey.

This project will deploy Middle Mile infrastructure and either includes a Last Mile Infrastructure component in unserved or underserved areas or has received commitments from one or more Last Mile broadband service providers to utilize Middle Mile components. Any last mile components in rural areas do not exceed 20% of the total eligible costs of the project- The project has received commitments or letter of interest of service from 5 of the 7 identified last mile service providers in the service area. Direct connections will be made to all ILEC central offices. Last Mile service providers that can be reached economically will be connected also. There are no last mile components.

Is the applicant seeking a waiver of the Buy American provision pursuant to section x.Q of the NOFA?

- No

Is the applicant deliquent on any federal debt?

- No

If Yes, justification for deliquency:

Are you seeking a waiver of any requirement set forth in the NOFA that is not mandated by statute or applicable law?

- No

Is the applicant a current recipient of a grant or loan from RUS?

- No

C. Partners

Are you partnering with any other key institutions, organizations, or other entities for this project?

- Yes

If YES, key partners are listed below:

Project Role: Other Name: Haga, Robert Phone: 4157032538 Email: rwh@cpuc.ca.gov Address 1: 505 Nan Ness Address 2: Address 3: City: San Francisco State: California Zip Code: 94102 Organization: California Public Utilities Commision (CPUC) Organization Type: State or State Agency Small business: No Socially and economically disadvantaged small business concern: No
Project Role: Other Name: Dickenson, Jon Phone: 9163199223 Email: jon.dickenson@state.ca.gov Address 1: 1325 J Street Suite 1600 Address 2: Address 3: City: Sacramento State: California Zip Code: 95814 Organization: California State Office of the CIO Organization Type: State or State Agency Small business: No Socially and economically disadvantaged small business concern: No
Project Role: Other Name: Holste, Craig

Phone: 7608720670
Email: craig.holste@dot.ca.gov
Address 1: 500 South Main Street
Address 2:
Address 3:
City: Bishop
State: California
Zip Code: 93514
Organization: Caltrans
Organization Type: State or State Agency
Small business: No
Socially and economically disadvantaged small business concern: No

Project Role: Other
Name: Chisel, Robert
Phone: 7758887440
Email: rchisel@dot.state.nv.us
Address 1: 1263 South Stewart St
Address 2:
Address 3:
City: Carson City
State: Nevada
Zip Code: 89712
Organization: Nevada Department of Transportation
Organization Type: State or State Agency
Small business: No
Socially and economically disadvantaged small business concern: No

Project Role: Other
Name: Carunchio, Kevin
Phone: 7608780292
Email: kcarunchio@inyocounty.us
Address 1: 168 North Edwards St
Address 2:
Address 3:
City: Independence
State: California
Zip Code: 93526
Organization: Inyo County
Organization Type: County Government
Small business: No
Socially and economically disadvantaged small business concern: No

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Project Role: Other
Name: Hazard, Duane
Phone: [redacted]
Email: [redacted]
Address 1: PO Box 554
Address 2:
Address 3:
City: Mammoth Lakes
State: California
Zip Code: 93546
Organization: Mono County
Organization Type: County Government
Small business: No
Socially and economically disadvantaged small business concern: No

Project Role: Other
Name: Hyatt, Judy
Phone: 6618683651
Email: hyattj@kern.ca.us
Address 1: 400 North China Lakes Blvd
Address 2:
Address 3:
City: Ridgecrest
State: California
Zip Code: 93555
Organization: Kern County
Organization Type: County Government
Small business: No
Socially and economically disadvantaged small business concern: No

Project Role: Contractor
Name: Ort, Michael
Phone: 5105994062
Email: mort@praxisfiber.com
Address 1: 1101 Nimitz Ave
Address 2:
Address 3:
City: Vallejo
State: California
Zip Code: 94592
Organization: Praxis Associates, Inc.

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Organization Type: For-profit Entity
Small business: Yes
Socially and economically disadvantaged small business concern: Yes

Project Role: Other
Name: Rooker, Alex
Phone:
Email: [redacted]
Address 1: 2160 Valley Oaks Ln #1065
Address 2:
Address 3:
City: Sacramento
State: California
Zip Code: 95691
Organization: Communications Workers of America (CWA)
Organization Type: Other
Small business: No
Socially and economically disadvantaged small business concern: No

Project Role: Contractor
Name: Volker, Robert
Phone: 9256403600
Email: rvolker@inyonetworks.com
Address 1: 1101 Nimitz Ave
Address 2:
Address 3:
City: Vallejo
State: California
Zip Code: 94592
Organization: Inyo Networks, Inc.
Organization Type: For-profit Entity
Small business: Yes
Socially and economically disadvantaged small business concern: Yes

Description of the involvement of the partners listed above in the project.

Digital 395 has been a fully-collaborative, active public-private partnership between local and state agencies, organized labor and private enterprise.

The ten active partners are:

State Partners:

1. The California Public Utilities Commission (CPUC) has materially contributed $19.3MM seeking to meet the Governor's broadband objectives. The CPUC doubled the percentage awarded to any other CA applicant. CPUC staff participated in planning scope of the project, areas served, and the cooperative's structure. The CPUC has legal on-going detailed oversight of project. CBC's CPCN will assure on-going CPUC oversight once operational. Benefits: Statewide communications policy goals will be met.

2. California State Office of the CIO has been involved in coordinating legislative support of the project, assisting planning and streamlining CEQA activities. The Office of the CIO sponsored the Governor's Broadband Taskforce, which set direction for California's broadband initiatives. Benefits: Improved E911 dependability in PFSA and meet Taskforce goals. A State agency will be represented on the CBC's Board of Directions.

3. Caltrans and Nevada DOT have assisted the project with route planning, advised on environmental studies and permits. They will provide will rights-of-way (ROW) for over 450 miles of the route. Benefits: DOTs will have access to significantly discounted fiber for highway management and longer-term interests in developing Intelligent Transportation System (ITS) applications. They will have at-cost services at all of their administrative and operations centers in the PFSA.

Local Gov't Partners

The three Counties of Inyo, Mono and Kern are key partners in the D395 initiative. The counties have helped identify local needs, ideal routes, employment initiatives, led citizen outreach, and actively met legislators, CPUC Commissioners and regional agencies for support. They make available RoW on county roads/streets, in-kind space for facilities, and environmental studies support. They will benefit by having at-cost services, broaden the region's base for future economic development, improve government services, realize approximately $1.9MM in tax revenue during the current budget crisis, and stimulate local jobs. Counties will have 3 seats on the CBC's Board to ensure on-going local representation.

Private Sector Partners

Praxis Associates, Inc., the prime contractor on this project, is an economically disadvantaged small business partner who funded the one-year development and design of the Digital 395 project, led the project team and authored the current NOFA application for California Broadband Cooperative. As an experienced telecommunications firm, Praxis brings extensive experience in designing and constructing fiber networks for AT&T, Google, municipalities, and other federal- and state-funded projects. Praxis has assembled a core team of very experienced telecommunications professionals to lead the project. Praxis has advanced a $1MM loan to CBC in matching funds. Benefits: Having been severely impacted by the economic recession, Praxis benefits by putting its employees, now idle, back to work.

Communications Workers of America (CWA) partnership role is to assist Praxis in attracting and training telecommunications workers on the project. The CWA represents Praxis construction employees. The union has a telecommunications training program that will be used to develop skills for workers hired from the local economy to construct the network. The program will build communications specific as well as broader, transferable job-skills for those hired. This program is strongly supported by the local elected leadership to address a growing unemployment problem in the region. Benefits: Jobs for members, improved skills and competitiveness of union-represented telecommunications workers in job market. The CWA was a visible supporter of the ARRA legislation for the very reason of its involvement in this project.

Inyo Networks, Inc. partnership role is to be contracted to perform on-going network operations for California Broadband Cooperative, once the network is established. Inyo Networks holds a CPCN with the CPUC, has an experienced telecommunication staff, and will oversee operations during the first five years of operation. As the network management company, Inyo Networks will have a seat on the Board of CBC.

D. Congressional Districts

Applicant Headquarters

- California

Project Service States

California

Project Service Areas

California - 22

California - 25

Will any portion of your proposed project serve federally recognized tribal entities?

- Yes

Indicate each federally recognized tribal entity your proposed project will serve.

Big Pine Paiute Tribe of the Owens Valley

Lone Pine Paiute-Shoshone Reservation

Fort Independence Reservation

Benton Paiute Tribe

Bishop Paiute Tribe

Bridgeport Indian Colony

Have you consulted with each of the federally recognized tribal entities identified above?

- Yes

E. Service Area Details

Is the applicant seeking a waiver for providing less than 100% coverage of a service area?

- No

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Project Details

Service Area Type: Middle Mile
Service Area Name: Digital 395 Middle Mile PFSA
Rural Classification of the Last Mile Service Area: Rural
Service Status of the Last Mile Service Area: Underserved

If Service Status is "Underserved" please select at least one applicable option from this list.
No more than 50% of the households in the proposed funded service area have access to facilities-based, terrestrial broadband service at greater than the minimum broadband transmission speed;
The rate of broadband subscribership for the proposed funded service area is 40% of households or less.

Total Square Miles in Service Area: 7,334
Total Population in Proposed Service Area: 64,032
Total Number of Households in Service Area: 25,949
Total Number of Businesses in Service Area: 2,571
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 237
Unemployment Rate in the Service Area: 13
Median Income in the Service Area: 39,388
Estimated Percentage of Households with Access to Broadband: 71
Estimated Percentage of Households Subscribing to Broadband: 14

F. Community Anchor Summary

Community Anchor Summary	
Schools (k-12)	47
Libraries	13
Medical and Healthcare Providers	15

Submitted Date:	Easygrants ID: 5569
Funding Opportunity: Broadband Technology Opportunities Program	**Applicant Organization:** CALIFORNIA BROADBAND COOPERATIVE, INC
Task: Submit Application - BTOP	**Applicant Name**: Mr. Robert W Volker

Public Safety Entities	35
Community Colleges	2
Public Housing	0
Other Institutions of Higher Education	2
Other Community Support Organization	19
Other Government Facilities	104
TOTAL COMMUNITY ANCHOR INSTITUTIONS	**237**
Historically Black colleges and Universities	0
Tribal Colleges and Universities	0
Alaska Native Serving Institutions	0
Hispanic Serving Institutions	0
Native Hawaiian Serving Institutions	0
TOTAL MINORITY SERVING INSTITUTIONS	**0**

G. Project Benefits

Demographics

Jobs	
How many direct jobs-years will be created from this project?	416

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How many indirect jobs will be created from this project?	292
How many jobs will be induced from this project?	399

Methodology used to estimate jobs:
The Digital 395 route was extensively engineered in the field to determine the exact OSP location, terrain, obstructions, and geology. This information was included in the budget to determine work volumes and work activities. Seven types of underground construction was identified and modeled for crew size and known industry productivity. Based on the volumes of linear feet, productivity factors, and crew size, we created a bottoms up estimate of direct labor requirements. To these we added 6:1 factors in spans of control, and modeled the logistics staff to handle equipment, transportation, traffic control, etc. To this, we added estimates for engineering, inspectors and survey teams based on permits and project documentation. In total, plant operations equated to between 355 and 368 Job-Years, depending on seasonality assumptions in the model.

A GA staff of accounting, project mgmt, HR, IT and general managers produced another 42 to 54 of Job-Years (based on work activities over project lifecycle). In total, the job-year ranges from 397 to 422, with a likely avg. of 409 jobs. Most variance is due to seasonality (date starting) and reporting requirements.

Using the Council of Economic Advisor's guide, and after calculating 292 Indirect Jobs and 399 Induced jobs, the formula gave Total Direct Jobs at 416. We believe this number is so close to our bottoms up estimate that we feel best to adopt the formula-based TOTAL of 1107 jobs.

Project Impact:
The Digital 395 Middle Mile project will directly service 237 Community Anchor Institutions via a fiber optic connection. We have identified a total of 282 anchor institutions in the proposed Digital 395 Middle Mile. To date we have received 49 letters of interest identifying 175 anchor institution locations that are interested in being served by the Digital 395 Middle Mile network.

The identified community Anchor institutions include 47 schools, 13 libraries, 15 medical institutions, 35 public safety locations, 2 community colleges, 2 higher education research facilities, 19 community service organizations and 104 Federal, State and County government facilities.

The proposed Digital 395 Middle Mile facilities will serve a wide range of unmet needs for the Anchor Institutions. Among the Anchor Institutions the primary request was for [redacted] connections to the Public Internet. Also our interviews indicated a large demand for Ethernet Virtual Private Line services. Some applications mentioned included [redacted] which intends to deliver 10Mbps to all of the hospitals in the region and at least T1s to all Rural Clinics over the proposed infrastructure. The project will provide economic transport to [redacted] to serve the region's schools and libraries with [redacted] connectivity. There was also a high degree of interest in dark fiber services from the Federal State and County agencies.

Perhaps the most important issue mentioned, particularly among the First Responders, was the fact that the proposed project will bring secure, redundant communications to all institutions in Eastern Sierra. It will link all First Responder organizations into a common infrastructure, as well as support teleconferencing and telemedicine applications to reduce travel costs and help local government meet California's recently legislated Carbon Emission targets. Finally the project provides vital communications for national defense that will include the USMC's remote training center in Mono and the Navy's China Lake military facilities.

The proposed network service area has 2,571 business establishments identified along with 5 IXCs, 6 ISPs, 36 central offices and 20 wireless and cell sites.

Digital 395 will interconnect to all telephone central offices in the region using CLEC interconnection. We believe that the Verizon the ILEC is an excellent candidate for dark fiber services. Since Verizon has only one backbone into this area, the proposed project will create route diversity for voice and data. In the past four years, the region has been entirely isolated six times with trunk-related damages. Public safety concerns have put great pressure on Verizon to complete the backhaul route through Mono County, as well as replace a 20 mile aerial fiber section recently installed in violation of "scenic highway" law. The carrier has resisted making these investments, and a dark fiber purchase on Digital 395 would address the issues. Finally, the existing direct-buried cable route from the south end of the region is of concern. Installed in late 1980s-early 1990s, this fiber cable is undersized by today's internet-era standards (<20 fibers) and is deteriorating due to hydrogen aging, limiting its transmission properties over time.

Vulnerable Populations:
The Digital 395 Middle Mile project will extend broadband service to the Benton Paiute Indian Reservation outside Benton, CA. The area is currently unserved.

In addition, The Digital 395 Middle Mile Network will have six points of interconnection established to serve the Native American Reservations along the proposed middle mile route.

Digital 395 Middle Mile private-sector partner Praxis Associates as part of the Digital 395 community outreach activities has designed and delivered to three area Native American communities [redacted] shovel-ready designs for fiber to the premise networks to be interconnected to the Digital 395 Middle Mile network. These designs represent a significant investment to assistant broadband connectivity and were provided at no charge.

As indicated in several of the letters from the local school boards, educators in the area have expressed concerns for the availability of affordable broadband. (This is evident in data available from the CPUC that shows that broadband penetration in the area is 14%.) In this regard, they indicate that many school children are unable to effectively connect to the schools from home and have challenges with their home studies. While Digital 395 as a wholesale provider will not directly connect to these homes, it will help decrease the cost of broadband through Last Mile service providers. It will also enable higher and more extensive bandwidth availability in many of the wireless and unserved areas of the region. Educators have expressed concerns about the uneven opportunities that the children of the Eastern Sierra have in developing job skills that will be considered basic knowledge in the future.

The regions median household income is 20% below state average.

Level of Need:
State and local leaders throughout the Eastern Sierra counties recognize that a robust broadband infrastructure that affordably serves all residents and businesses is a key requirement for the area's future economic and social development. With only 3% of the land privately held, an absence of a scalable, efficient transportation system (no rail, airport, or Interstate) and a protected, sensitive ecological environment, economic development has been further restricted, leaving the information services sector as the region's last hope.

Unfortunately, market economics have prevented anything resembling a modern broadband infrastructure to materialize over the past several decades. The area is served with a piece-meal, 1980's telephone backhaul network that is exhausted, compromised, and incomplete. Having

[redacted]

broadband investment. To make conditions worse, there is no diverse routing in the region and over the past four years the region has experienced six complete isolating events, the result of wildfires, dig ups, and other mayhem. In such instances, wireless has been no help – cellular coverage is only operable in about 60% of the US395 corridor and is dependent on the same wireline backhaul network.

The entirety of the Digital 395 service area is 7,334 square miles. Approximately 71.4% is underserved with the remainder 28.6% unserved including the communities of Benton, Benton Paiute Reservation, Keeler, Cartago, Olancha, Pearsonville, Boron, Johannesberg and Randsberg. The relatively lower income level of the region, coupled with the relatively high unemployment (13.4%) and higher than statewide average cost of high-speed Internet access, has kept broadband adoption rates low – about 14% overall according to the most recent CPUC Broadband study. Cable providers and local ISPs have been unable to address the low adoption rate due to the high cost of transport into the region and the telephone company has been highly selective in choosing which towns to offer DSL. This project addresses all these issues.

The proposed Digital 395 middle mile route overlaps at several points with an existing [redacted] According to sources within the Inyo County Government the existing fiber optic route was originally constructed by Continental Telephone around 1990. The information we have is that the cable is a direct buried, small fiber count (< 20 fibers) that is fed out of Victorville, CA. and extends to Bishop, CA. Our Inyo County government sources have told us that [redacted] indicated that their ability to upgrade the route capacity is limited because the cable is old and in an exhaust condition. This information was provided by [redacted] to County officials after a series of cable cuts isolating the north end of the Owens Valley area for days at a time several years ago. Because of these outages, officials in Mono County have written several letters to the California Public Utilities Commission (CPUC) requesting that [redacted] to complete the cable route to their adjacent Nevada properties in order to provide route diversity. Due to the proprietary nature of the information, we were unable to determine the exact profile of the facilities from [redacted] however we have been told from several sources that the total capacity is limited to [redacted] terminal system installed at the time of the original cable installation. Due to its age, the cable, it is likely experiencing hydrogen aging, a condition which clouds the glass fibers making upgrading to a higher bit rate impossible. The original Contel fiber cable ends in Bishop CA.

Around 2000, [redacted] in an effort to accommodate growth in the Mammoth area. According to several environmental activists, the fiber route selected was not properly permitted with several aerial sections illegally placed along a Federal scenic highway. Those sections are now the subject of a series of complaints at the CPUC with the complaining parties requesting several fiber sections be removed and placed underground. [redacted] acknowledges the permitting error, it asserts that the cost to underground the illegal sections would be prohibitive. At this time the issue is still unresolved.

Unfortunately the issues with [redacted] networks in the Digital 395 Middle Mile service area are unlikely to be resolved anytime soon. The small market/high cost structure of rural service areas was recently reaffirmed by [redacted] in public comments and eventual sale of several rural exchanges in California and Nevada, to Frontier Communications. The [redacted] Digital 395 middle mile service area were not part of the recent sale, however [redacted] intentions are clear. Even if the exchanges are part of an eventual sale Frontier is likely to not be in a better position than [redacted] to upgrade facilities because their recent purchases were highly leveraged leaving few resources for investment.

The cost and availability of backhaul service is a major problem for the area's competitive service providers. According to our interviews with several [redacted] networks have the capacity to deliver up to 20mbps service to end users, but the high cost of backhaul from [redacted] them from economically offering service – one said they are being "choked by [redacted]" In a recent interview with a prospective Digital 395 wholesale customer, the interviewee mentioned that his company currently pays approximately [redacted] He has also received quotes for [redacted]

Another competitive provider offered a December, 2008 1.544 Mbps Public Internet service quote from [redacted] for an end user resale application in Bishop, CA which was [redacted]

As a result of these costs, the competitive service providers in the area are challenged to differentiate their products from the ILEC DSL and satellite, whose system has more channels. Due to the marginal profitability, these properties are frequently traded and if they fail, will leave the area with even less competitive choices.

[redacted]challenges are similar to [redacted] but in more remote areas. Since collocation and tower space will be available at the nodes on the route, Interconnection to Internet backhaul will lower barriers to entry, creates a level playing field – promoting service-based competition. The network will also provide backhaul support to Cellular providers, along the entire US395 route – a major corridor – with about 40% coverage.

The Digital 395 Middle Mile service area suffers not only from a lack of facilities but also service choices. The demand for Ethernet based Virtual Private Line service is growing in response to the high cost of point-to-point private line service. Unlike their metropolitan service areas, [redacted] services in the rural area. For potential customers like [redacted] which intends to deliver 10Mbps to all of the hospitals in the region or the California Research and Education Network, that wants to serve the region's schools and libraries with [redacted] Internet connectivity the lack of Ethernet transport service is debilitating.

In addition to the absence of Ethernet services there is not any dark fiber services available.

For wholesale and Critical Community Anchor customers that require dark fiber for their applications, [redacted] proposed will create a fiber rich environment that will facilitate the development of applications with unique local connectivity requirements. These bandwidth intensive applications like [redacted] consolidation, Defense Department and telemedicine applications often require specialty optical electronics not readily compatible with a traditional networking electronics.

Several years ago Inyo County was able to create a [redacted] linking several County offices in the city of Independence through a franchise agreement with the cable company. While the network operates at [redacted] Independence buildings, access outside the City of Independence is restricted to [redacted] Inyo County would like to secure dark fiber to extend this network to serve the majority of the County offices along the Digital 395 middle mile route.

H. Technology

Technology Type

Indicate the technology that will be used to deliver last mile services. The following items were selected:

Wireline - Fiber-optic Cable

Other:

Technology Questions

Methodology for Area Status:

Step 1: Database -- Established a baseline database in ArcGIS Software as a repository for all data.

Step 2: Existing Broadband Coverage -- Obtained shapefiles of the 8-10-09 California Broadband Availability Maps from the CPUC website (http://www.cpuc.ca.gov/PUC/Telco/Information+for+providing+service/Broadband+Availability+Maps.htm) compiled by the Geographic Information Center (GIC) California State University, Chico, under CPUC contract. They reflect areas California service providers report they served (by download speed). The shapefiles were uploaded and deposited as a layer in our ArcGIS database.

Step 3: Census Blocks -- Downloaded Census Block (CB) polygons from TIGER on US Census Bureau website.

Step 4: Census Data -- Obtained the following volumes for each TIGER CB from the GIC: (a) Total Population, (b) Total Households, (c) Total Businesses.

Step 5: Institutions -- A list of institutions were compiled from: (1) lists of educational and local government service addresses provided by County IT departments, (2) list of Institutions from GIC (sources: CA Office of Statewide Health Planning, CA Dept of Education, ERSI for business count). Cross-referenced with telephone directories and a physical inspection of consolidated list during engineering field work.

Step 6: Service Areas – Service Area polygons were created for the Mid-Mile Project to identify discrete service as they relate to Nodes, competitor mid-mile providers, and last-mile the services providers. This data was also used to locate Institutions.

Step 7: Coverage by Facilities Based, Terrestrial Broadband Providers – Used the CPUC Maps, field inspections, interviews and service provider websites to determine footprint of their networks. The combined information indicated that all parts of the proposed funded service area except Benton, Olancha, Coso and Boron had service coverage at the minimum transmission rate [redacted] These three areas were identified as "Unserved," while the remaining areas were considered to have met the partial criteria of "Served or Underserved."

Step 8: Access to At Least [redacted] – Using advertising information, determined that land-line service providers; [redacted] met or exceeded the minimum speed within their service areas.

Step 9: Rate of Broadband Subscribership -- Using Broadband Adoption Reports from CPUC website (derived from the December 31, 2008 FCC Form 477), we determined that all service areas were well below [redacted] designating the remaining of the PFSA is Underserved.

Step 10: Project Statistics – Please see Supplemental Documents, "Service Area Summary", containing this data by Last Mile Service Area. We determined that [redacted] our service area is underserved, with [redacted]

Description of Network Openness:

The Digital 395 Network will be owned and operated by the California Broadband Cooperative Inc., which is a member owned cooperative. Membership is open to all wholesale level customers and prospective members are required purchase facilities or services in order to join the Cooperative. To ensure a level playing field for all members; the Cooperative will operate using an "at cost" business model with operating policies to determined by the Board of Directors. The Board of Directors will be drawn from the membership body and will be elected on the basis of one member, one vote.

The Digital 395 Middle Mile Network will fully comply with the principles in the FCC's Internet Policy Statement. The management of network facilities will not favor or discriminate based on service provider or applications. The network management polices will be posted on the Cooperative's website.

The intent of the Digital 395 open network design is to seek out interconnection opportunities and serve as many potential wholesale level customer requirements in the service areas as possible. The backbone network routing in the service areas is designed to closely pass as many potential member facilities as possible. [redacted]

The north and south network terminus locations were selected to provide interconnection to as many national and regional service provider networks as possible. At those locations we have direct access or ready interconnection facilities to [redacted] For service providers not directly on-net at those locations we believe that interconnection can be readily accomplished through transit facilities from one of those service providers.

The Digital 395 Network will allow interconnection with other carrier facilities at any technically feasible point. Technically feasible points of interconnection include all network nodes, cable storage and splice boxes. Optical interconnection via a meet point splice will be supported and interconnection at SONET standard rates will be supported.

The Digital 395 network backbone will provide for [redacted] We anticipate that by creating a fiber rich environment that nearly any reasonable requirement for dark fiber facilities can be accommodated at a reasonable cost.

The Digital 395 infrastructure will also allow rack collocation for interconnecting service provider transmission equipment at the core and aggregation nodes. Provisions were also made to ease interconnection with wireless providers. The network nodes will all be equipped with 40' towers with multiple antenna mounts that will enable wireless signals to be terminated and interconnected onto the fiber optic middle mile facilities.

System Design:

Key network components are: 1) the last mile fiber connection to the Community Anchor premise; 2) the middle mile optical packet backbone network and 3) connection to the IXC carrier or Internet point of presence. The Digital 395 Middle Mile Network will consist of 16 core and tributary nodes designed as a physical point-to-point network with a logical ring service

architecture. The network will require all new construction and network components. All network elements will be funded with BTOP assistance.

The last mile connection to the end user premise is at minimum, a four-strand, single mode fiber optic connection to a network node. [redacted]

The last mile fiber local loop interconnects at a network node for access to the 10 Gb backbone network. Access to the [redacted] is accomplished thru tributary nodes colocated with, or remote to the backbone fiber nodes. The tributary nodes function as traffic collection points for lower level traffic providing access and egress to the backbone network system. The tributary nodes are designed in a star topography that homes back to a designated backbone node. The backhaul capacity from the tributary nodes to the backbone nodes operate at [redacted] data rate and are upgradeable to a [redacted] maximum data rate.

The backbone network is capable of supporting all legacy [redacted] data rates as well as emerging Ethernet [redacted] services. Network traffic carried on the [redacted] backbone will be segregated using [redacted] and tagged to ensure data security and end to end service quality through to the terminating node serving the [redacted]

At initial commissioning, the [redacted] backbone network will utilize four fibers in different cable buffer tubes to provide the maximum protection in the point-to-point design. Two of the fibers will be the primary traffic path and two of the fibers will function as the protection path. Network traffic will be simultaneously routed over all fibers with the network terminals constantly monitoring for errors and selecting the highest performing route. Designed with [redacted] protection on the backbone electronic cards, the [redacted] backbone terminals have card level protection on all main electronic components so in the event of a failure or degraded service condition the traffic will automatically switch over to the diversity path. This protection switching would be transparent to the network users. Only in the event of a complete cable cut or shelf failure would service be interrupted.

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[redacted]

Is the applicant seeking a waiver pursuant to section IX.C of the NOFA so as to sell or lease portions of the award-funded broadband facilities during their life?

No

I. Project Budget

Project Budget		
	Federal Grant Request	**Match**
Last Mile	0	0
Middle Mile	[redacted]	
Total		

Project Budget Total: [redacted]

Match Percent: [redacted]

Projects Outside Recommended Funding Range:

-

Outside Leverage	
Applicant is providing matching funds of at least 20% towards the total eligible project costs?	Yes
Matching cost detail	Matching funds for California Broadband Cooperative, Inc. (CBC) were provided by two entities: (1) California Public Utilities Commission; and (2) Praxis Associates, Inc. California Public Utilities Commission: Adopted Resolution T-17232 on December 3, 2009 to provide California Broadband Cooperative

	[redacted] funding from the California Advanced Services Fund (CASF) contingent upon ARRA funding. This is a Match Grant that represents 19% of the total budget. The funding will be used for non-specific administrative, design or construction purposes, and payments can be drawn as federal funding require (i.e., either drawn first or on a pro rata basis though the project construction period). Payments may be requested in [redacted] increments specified in a previous CASF (Resolution T-17143). Terms include: (1) Inyo Networks receiving Commission approval on its CPCN application (completed December 18, 2009), CBC receiving an ARRA grant for 80% of the total estimated projects cost, and (3) the Commission completing a CEQA review. The contingent award does not require CBC to post a performance bond. (The full text of Resolution T-17232 has been unloaded in Section 18 – Government and Key Partners).* [redacted] signed a loan agreement with [redacted] This will be in the form of debt that represents 1% of the total budget. The funding can be used for non-specific administrative costs relating to the construction of the project. Payments may be requested as funds are drawn from other sources on a pro rata basis. Terms include: Monthly payments at 10% interest to be made over 120 months (10 Years). There is no penalty for early pay-off. Funding of this debt is contingent upon receipt of an ARRA grant for 80% and a CPUC CASF grant for 19%. The Loan Agreement for this funding has been uploaded in Section 18 – Government and Key Partners.** Together these Matching funds equate to [redacted] which is 20% of the total construction budget. *NOTE 1: It may be of interest to the BTOP review team that CPUC Decision T-17143 awarded standard 10% in matching funds for ARRA applicants based on conformity with CASF funding qualifications as defined by Decision D07-12-054, which closely

	paralleled NOFA qualifying guidelines. Due to needs of the area served and California policy objectives, an Alternative Resolution was drafted for CBC to receive an amount at 19%. While the CCI program ("BTOP 2") has indicated that 30% or greater will "receive additional consideration," CBC would like to point to the challenges relating to altering CPUC matching funding amounts in the timeframes available since February 11, 2010, when the CCI Guidelines were issued. **NOTE 2: [redacted] has provided this funding in the absence of specific In-Kind contributions from the Counties of Inyo and Mono, who have offered material support for the project in the form of administrative assistance with permits, as well as rights-of-way and land use for equipment during construction operations. Due to local administrative requirements, the Board of Supervisors for these Counties could not legally enter into a specific contractual arrangement in advance of "a tangibly funded and ready-to-proceed project." On the basis of this, [redacted] promised debt funding to close the 20% gap. Letters from the Counties addressing their support have been uploaded in Section 18 – Government and Key Partners. In the absence of specific County contributions, we have not included any estimate of their contributions to the project in cash or In-Kind.
Unjust enrichment	This project does not receive, nor has it applied for, any Federal support for non-recurring costs in the area for which it is seeking an award. California Broadband Cooperative, Inc. does not have any sub-recipients for this application. California Broadband Cooperative Inc. has not applied for federal support in the same proposed funded service area as this proposed BTOP project.
Disclosure of federal and/or state funding	California Broadband Cooperative, Inc. had requested state matching funds from the California Advanced Services Fund (CASF). On

sources	December 3, 2009, the California Public Utilities Commission (CPUC) approved Resolution T-17232 to award the California Broadband Cooperative, Inc. [redacted] from the CASF, contingent upon the successful awarding of this BTOP Application. There are no sub-recipients in this project. There has been no additional request for other federal or state funds, nor has there been receipt of funds from any other state or federal source.
Budget reasonableness	The all inclusive unit cost of Digital 395 is [redacted] When adjusted to the federal grant component only [redacted] This figure includes all permits, buildings, central office gear, power, and connectivity to [redacted] central offices, six last mile service providers, and several dozen cell sites and towers. It also includes a long-term lease on some 30 miles of dark fiber. Comparison to BTOP 1 Awards: We examined published information on 15 funded BTOP projects and noted wide cost differences which appear attributable to (1) scale, (2) geography, (3) broadband speeds, and (4) extent to which existing network operations are being expanded. It was also clear that most BTOP 1 awards were projects located in rural areas of eastern states which, is known to historically have lower unit-costs than [redacted] This information is well-documented in data available in the former [redacted] Analysis indicates that per-foot costs fall into two main tiers: just under or around $10.00 and in the low [redacted] While the descriptions are unclear on the services delivered, type/method of plant deployed (aerial, underground or buried) we noted comparability [redacted] Without specific details of these projects, we explain costs according to comparison in our budgetary items: (1) project quantities are based

	upon over a year of field work, designs and measurements, (2) materials pricing are based upon actual contracted unit prices or bona fide quotes from major industry vendors – these prices are very favorable to standing prices we know major telecommunications carriers pay; (3) unit prices for excavation is customary for the state, and validated by excavation consultants and equipment vendors. (4) Labor unit prices for placing, splicing and testing OSP are aggressive, but achievable based on competitive state-wide bidding. (5) Costs for buildings and electronics are based on actual costs of similar RUS project, and [redacted] (6) Permit and environmental studies provided by experienced quotes, County and Caltrans staff. (7) Cost of land based on real estate studies (8) Admin, legal and acctg sizing reflect experience with projects of this size, rates are customary for skills needed or quotes, (9) Sales tax and exempt materials costs area specific. Moreover, this is designed as a carrier-grade, flexible and low-maintenance network for long-term (100 year) investment. The environment has no existing structure (poles/conduit) and the terrain is rocky and mountainous, and environmentally challenging. This network is a permanent communications fix for wireline and wireless in the region, and will provide basic infrastructure for expansion with minimal disruption to the future environment. This area has been neglected and the project requires a fully new operational infrastructure.
Demonstration of need	Simply put, Digital 395 would not be constructed in the Eastern Sierra without significant governmental assistance. Historically underserved by the region's [redacted] the Eastern Sierra region is an area [redacted] traditionally been unwilling to invest in due to high cost construction and relatively small market size. This perspective was made concrete recently when Verizon "voted with their feet" and announced the sale of their local rural exchanges to Frontier. On several past occasions when pressed by local officials to improve service reliability, Verizon indicated they could "not make the

	business case." Verizon is not without justification: the financial analysis presented in this application clearly demonstrates that without grant funding the investment cannot be justified. The NPV with [redacted] calculated at a [redacted] application is [redacted] of the project is going to require a 2 year construction time horizon with the grant funds expended within that timeframe. If the grant funds were all to be expended in year one, the NPV would roughly equal the requested loan amount. With regards to loans and other applications, the California Broadband Cooperative (CBC) was born out of a consensus by several Eastern Sierra community leaderships groups to seek an alternative to the conundrum of high-cost-to-serve and low local revenue opportunities. Grant funding is required because the cost of capital recovery would drive the price for service so high as to make services unaffordable. The opportunity jointly presented under ARRA and by the California Public Utilities Commission changed this and brought the Cooperative forward. CBC. has not previously applied for funding of any kind due to its recent incorporation and lack of any financial history. Inquiries to Co-Bank have indicated that it does not fund startups and without an operating history CBC does not qualify under its loan program, nor does it qualify under the RUS guidelines since it does not provide traditional telephone services. Unlike many areas, the Digital 395 route cannot be constructed piecemeal. The geographical area is served only by its two end-points, and a partial construction does not solve the network reliability issue. Furthermore, local services in the areas by themselves are

	unsustainable purely as a broadband access service without the sale of dark fiber on the route. For this reason, the project sustainability requires a scaled investment. CBC has established market based pricing consistent with rates offered by carriers in California's urban areas. Community institutions can receive subsidized service under CPUC (CIT) and Federal programs (E-Rate) however under those programs the service provider is made whole.

Funds to States/Territories

States	Amount of Federal Grant Request
California	81,195,375

Funds to States/Territories Total: $81,195,375

J. Historical Financials

Matching Funds			
	2007	**2008**	**2009**
Revenue	0	0	0
Expenditures	0	0	0
Net Assets	0	0	0
Change in Net Assets from Prior Year	0	0	0
Bond Rating (if applicable)	NA	NA	NA

K. Project Readiness

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BTOP Organizational Readiness

Support for the California Broadband Cooperative (CBC) Digital 395 Broadband operations will come from key project partners [redacted] Those partners will be responsible for establishing, training and managing the in house CBC operations staff during the first five years of operation.

During the first 18 mo. construction period of the project, CBC network facility turn-up will be supported utilizing the existing [redacted] This support will consist of monitoring and testing the Digital 395 network facilities for network health, physical and systems security of the network nodes under construction. Currently this [redacted] that includes among others, over 350 [redacted] networks that [redacted] has constructed.

During the project's initial 18 mo. period, a jointly operated [redacted] facility located at [redacted] will be constructed. The establishment of the this facility in [redacted] will create local area jobs with the residents trained in [redacted] functions by Inyo personnel. Once operational, the Bishop facility will perform 1st line network monitoring, service turn up and daily administrative functions for the network's customers. The [redacted] will continue to provide backup and escalation support to the [redacted]

The initial service offerings of CBC are "fixed rate" services billed on a monthly basis. The initial service rate elements established will be dependent on the customer access rate and service type. This service arrangement will allow for easily implemented BSS systems and understandable and customer bill format.

[redacted] personnel will provide billing and customer care during the project implementation using established Praxis/Inyo BSS systems. The Customer Service Center will be open from 8 am (PDT) to 5 pm Monday through Friday. [redacted] will operate on a [redacted]

The location of the [redacted] will be selected for customer convenience and access to the Digital 395 network infrastructure. The Bishop NOC Business office will create jobs that will be staffed with residents from the surrounding communities with the CBC customer service representatives trained by [redacted]

As service offerings are expanded, on demand usage based services types may be required. This change will impact the currently envisioned billing process, driving it to greater levels of sophistication. At that time, involvement with one of the [redacted] has selected this option as the least costly alternative to enlarging both budget and staff. We believe the ASP service bureau business model will allow the greatest service flexibility and the shortest implementation time frames.

Construction and Vendor Contracts

California Broadband Cooperative, Inc. (CBC) will contract out the construction and commissioning of the Digital 395 project on a turnkey basis. We have identified 12 potential vendors and have secured commitment letters that are included in 18.6 Government and Key Partners upload section.

Three partner vendors established CBC for the purpose of applying for available State and Federal grant opportunities and have funded all operational expenses to date. They were selected without competitive bid. They are Praxis Associates, its union subsidiary, [redacted] a certificated Service Provider that shares management with

[redacted] has worked to improve broadband access in the Eastern Sierra by (i) working with the [redacted] elected leadership, the [redacted] and community anchor institutions to identify broadband availability and demand; (ii) surveying the proposed service area to identify and design the most-critically needed network facilities; and (iii) analyzing possible funding strategies and organizational structures to construct and operate network facilities in the proposed service area.

Upon grant award, CBC's Board of Directors will expand to include unaffiliated outside Directors in order to ensure that the Board will be independent of the Praxis management control going forward.

CBC intends to competitively bid all materials required for the Digital 395 project.

Customer Base

California Broadband currently does not serve any customers within the proposed funded service area.

[redacted] as a partner in the project will be responsible for management and business operations of the Digital 395 network does not currently serve any customers within the proposed funded service area.

Licenses, Regulatory Approvals and Agreements

Cooperative Incorporation:
The California Broadband Cooperative, Inc. was incorporated July 6, 2009 under the California Corporation Cooperative Law statutes.
California Certificate of Public Convenience and Necessity (CPCN):
Pending filing with California Public Utilities Commission (CPUC). Application is currently drafted and awaiting filing with the CPUC. Estimated approval is in 120 days.
Interconnect Agreements:
American Fiber Systems- Proposal received for Dark Fiber/Colocation- Pricing and draft contract received for Reno colocation and dark fiber section between Reno and Carson City

[redacted]

Encroachment Permits:
Counties of Mono, Inyo, and Kern- County officials advised they are prepared to issue permits as needed and will support a negative declaration on the sections of county roadway rights-of-way.
BLM and US Forestry - NEPA statutory exemption for BTOP projects in place
CalTrans- CA Governor's Office and Department of Business, Transportation, and Housing (BTH) has committed to a streamlined permitting process on projects using the CalTrans rights-of-way.
Nevada Department of Transportation- Agreed to support project permits when filed
Environmental Assessments:
Qualified Environmental consulting firm retained Permitting plan in place for required permits NEPA/CEQA, CWA, etc.

SPIN Number

L. Environmental Questionnaire

Project Description

Digital 395 will install 553 miles of optical fiber and place 15 small pre-fabricated buildings in 6 rural counties between Carson City, Nevada and Barstow, CA. Fiber cable will be installed in one of 3-1.25 inch ducts that will be constructed using one of the following excavation methods: 27.4% trenching, 17.5% horizontal boring, and 55.1% plowing. Small, pre-fabricated concrete vaults will be located approximately every 4,000 ft. for cable installation and infrequent maintenance. Buildings will be enclosed by chain link fencing and have an adjacent 40 ft. monopole towers for wireless clusters. The network will interconnect with all Last Mile service providers and directly connect to 304 critical and points of interest by 337,950 ft. of underground fiber facilities routed through town streets.

Facilities are sized for 50 years of expected growth. The network will be "open architecture" and operated by a Cooperative to facilitate resource sharing and minimize future environmental disturbance.

Extensive environmental consultation has been conducted with local authorities including CA and NV DOT, County planners, Indian Reservations and Rachelle Chong, former FCC Commissioner & special broadband appointment in the Governor's office. In an effort to locally model NEPA CEs recently announced for this NOFA, the State CIO will assist in coordinating all agencies involved to initiate timely CEQA compliance.

Property Changes

Digital 395 will install 553 miles of underground optical fiber through four California and two Nevada counties using state and county rights-of-way except for a two mile section on an improved utility maintenance road. The fiber route passes through a variety of land use and zoning types, including residential, commercial, industrial, and open space. Buildings will be installed on land use types zoned for utilities. [redacted] network electronics will be located in communities along the route. [redacted]

concrete pads, enclosed [redacted] will be cleared for each node -- 30,000 square feet in all.

The project will not change any land use or zoning types. No property changes other that indicated for site preparation are planned, nor are the any building rearrangements proposed.

Underground construction will disturb a total of [redacted] Plowing is estimated to disturb [redacted] Trenching is estimated to disturb [redacted] Directional boring is estimated to disturb [redacted] Ingress and egress to job sites will be on paved or unpaved county roads, typically by work-crew car pooling in company or private vehicles. Materials will be centrally stored until ready for installation, when they will be delivered to the worksite at time of construction.

Buildings

Fifteen [redacted] will be placed on land already zoned for commercial, industrial or utility use. The carrier "hotel" interconnection site at [redacted] will require indoor electrical rearrangements for the installation of racks and electronics. The specific route for Digital 395 was chosen to minimize the exposure of project activities to undisturbed environments. The project plans to use disturbed areas of the US 395 and SR 6 highway Rights-of-Way (ROW). Several alternative routes on existing county roads will be used to avoid environmentally sensitive areas, such as around the Walker River area. Those roads are broad county-maintained dirt roads in Mono and Douglas County. Once, a two-mile section of the route will use an existing, routinely-maintained Southern California Edison utility access road.

Wetlands

The proposed project route crosses or runs adjacent to several streams and wetlands, including freshwater emergent and freshwater forested/shrub wetlands. The fiber optic line will be installed within existing Caltrans and Nevada DOT ROWs or County maintained dirt roads. The areas anticipated to be affected by the project are already disturbed by past construction and ROW maintenance activities. As a preventative measure, construction techniques will be modified in wetland areas (e.g., horizontal directional drilling). Minimization and mitigation measures will be utilized to minimize and avoid impacts to wetlands.

Critical Habitats

A database review of the USFWS and CNDDB identified 83 sensitive species or communities found within the project vicinity, but not on the construction route (project footprint). This search includes areas adjacent to the project footprint that contain various habitat types. As stated above, the fiber optic line will be installed within existing Caltrans ROW or County maintained dirt roads. The list of species (Common Name) is below and specie accounts are included in Supplemental Documents as "Environmental-Specie Accounts" due to space limitations.

northern goshawk
coyote gilia
Yosemite toad
California floater
pallid bat
golden eagle
pinyon rock-cress
stylose rock-cress
silver-leaved milk-vetch
Long Valley milk-vetch
Lemmon's milk-vetch
Fish Slough milk-vetch
Mono milk-vetch
Shockley's milk-vetch
burrowing owl
smooth saltbush
upswept moonwort
scalloped moonwort
Swainson's hawk
Inyo County star-tulip
Booth's hairy evening-primrose
Owens sucker
greater sage-grouse
northern harrier
Townsend's big-eared bat
Hall's meadow hawksbeard

Owens pupfish
July gold
canescent draba
Sweetwater Mountains draba
spear-fruited draba
tall draba
Panamint alligator lizard
Scribner's wheat grass
willow flycatcher
southwestern willow flycatcher
spotted bat
prairie falcon
hot springs fimbristylis
California wolverine
Blandow's bog moss
Inyo hulsea
travertine band-thigh diving beetle
alkali ivesia
seep kobresia
silver-haired bat
hoary bat
western white-tailed jackrabbit
northern leopard frog
Sierra marten
Pacific fisher
Torrey's blazing star
dwarf monolepis
Owens Valley vole
western small-footed myotis
long-legged myotis
Lahontan cutthroat trout
Nevada oryctes
small-flowered grass-of-Parnassus
scalloped-leaved lousewort
Inyo phacelia

Parish's popcorn-flower
slender-leaved pondweed
Owens Valley springsnail
Wong's springsnail
Sierra Nevada yellow-legged frog
Owens speckled dace
bank swallow
short-fruited willow
snow willow
Owens Valley checkerbloom
alkali tansy-sage
prairie wedge grass
foxtail thelypodium
Transmontane Alkali Marsh
Little bulrush
Water Birch Riparian Scrub

Floodplain

The proposed Digital 395 Project involves installation of approximately 553 miles of optical fiber through Mono, Inyo, San Bernardino and Kern Counties, California, as well as Carson and Douglas Counties, Nevada. The project route passes through 100-year floodplains throughout these areas, as identified on National Flood Insurance Maps by the Federal Emergency Management Agency; however, the project does not propose the construction of any facilities within these floodplains. Only buried optical fiber is proposed to be installed within these floodplains. The proposed project would not place houses or structures that would impede or redirect flood flows within a 100-year flood hazard area. The project also would not expose people or structures to significant risk of loss, injury, or death involving flooding.

Protected Land

The proposed Digital 395 Project passes through California's Mono, Inyo, and Kern Counties, as well as Carson and Douglas Counties in Nevada. There are six known Indian Reservations on or adjacent to the project route and multiple anticipated historic and/or cultural resources within a [redacted] The proposed project involves installation of optical fiber underground and does not propose to alter any buildings or structures that were constructed more

than 50 years ago. Coordination with SHPO/THPO has been initiated and will be conducted to identify and verify any information regarding historic and tribal resources in compliance with all appropriate laws and regulations.

Coastal Area

The Digital 395 proposed funded service area is not within the boundaries of a Coastal Zone Management Area (CZMA).

Brownfield

The route of the fiber optic cable for the Digital 395 proposed funded service area is not located within a brownfield site as defined by this questionnaire. Two known superfund sites are located in the approximate area [redacted]

Submitted Date:	**Easygrants ID: 5569**
Funding Opportunity: Broadband Technology Opportunities Program	**Applicant Organization:** CALIFORNIA BROADBAND COOPERATIVE, INC
Task: Submit Application - BTOP	**Applicant Name:** Mr. Robert W Volker

Uploads

The following pages contain the following uploads provided by the applicant:

Upload Name	File Name	Uploaded By	Uploaded Date
Service Offerings and Competitor Data	18.1 Service Offerings & Competitor Data_D395MM.xls	Volker, Robert	03/26/2010
Network Diagram	18.2 Network Diagram_D395MM.pdf	Volker, Robert	03/24/2010
Build Out Timeline	18.3 Build Out Timeline_D395MM.pdf	Volker, Robert	03/25/2010
List of Community Anchors and Points of Interest	18.4 Community Anchor Inst & Points of Interest_Digital 395 MM.xls	Volker, Robert	03/25/2010
Management Team Resumes and Organization Chart	18.5 Management Team Resumes & Organization Chart_D395MM.pdf	Volker, Robert	03/25/2010
Government and Key Partnerships	18.6 Government & Other Key Partnerships_D395MM.pdf	Volker, Robert	03/25/2010
Historical Financial Statements	18.7 Historical Financial Statemnets__D395MM.pdf	Volker, Robert	03/25/2010
Budget Narrative	18.8 CCI Budget	Volker, Robert	03/26/2010

	Narrative_D395MM.pdf		
Detailed Budget	18.9 CCI Detailed Budget_D395MM.xls	Volker, Robert	03/26/2010
Pro-forma Forecast	18.10 Pro Forma Financial Forecast_D395MM.xls	Volker, Robert	03/26/2010
Subscriber Estimates	18.11 Subscriber Estimates_D395MM.xls	Volker, Robert	03/26/2010
Dashboard Metrics	18.12 Key Metrics Dashboard_D395MM.pdf	Volker, Robert	03/26/2010
Service Area Data	18.13 Service Area Data_D395MM.xls	Volker, Robert	03/26/2010
Network Maps	18.15 Network Map_D395MM.pdf	Volker, Robert	03/26/2010
BTOP Certifications	18.16 BTOP Certification_D395MM.pdf	Volker, Robert	03/26/2010
SF-424 C and D	18.17 SF-424C & SF-424D_D395MM.pdf	Volker, Robert	03/26/2010
Supplemental Information	18.18 Supplemental_Environmental-Specie Accounts_D395MM.pdf	Volker, Robert	03/26/2010

Supplemental Information	18.18 Supplemental Information_Service Area Summary_D395MM.pdf	Volker, Robert	03/26/2010