



Leading the Way to Tomorrow's Internet

The Corporation for Education Network Initiatives in California

February 5, 2010

Stanislaus County Supervisors
1010 10th Street, Suite 6500
Modesto, CA 95354

Dear County Supervisors:

(Vito Chiesa, Jim DeMartini, Jeff Grover, Dick Monteith, William O'Brien)

The American Recovery and Reinvestment Act (ARRA) is providing stimulus funds to increase broadband network access, particularly in rural and underserved areas, where access to and use of the Internet is below state and national averages. Several counties in the Valley and foothills of the Sierra, including yours, may be eligible for new infrastructure capacity.

CENIC, the Corporation for Education and Network Initiatives in California, already provides service to universities, colleges and schools. With this new opportunity we are making plans to apply for funding through ARRA that will allow CENIC to extend coverage into 14 central California counties: Amador, Calaveras, El Dorado, Fresno, Kings, Kern, Mariposa, Merced, Madera, Placer, Tuolumne, Tulare, San Joaquin and Stanislaus. It is our intent to offer connections to our member institutions (county offices of education, community colleges and universities) with the additional goal of connecting other public and private partners such as libraries, public safety and hospitals, providing new capacity and enhancing the business climate of your area.

I have attached a document that can provide you with more detailed information and answer some of the questions you might have about the plan and CENIC. I have asked Carol Whiteside, retired President of the Great Valley Center, and Tom West, retired CEO of National LambdaRail, to assist me in this initiative. Tom will be able to discuss the proposal with you in greater detail.

We look forward to meeting with you, to find ways that this funding opportunity might provide benefits to your organization and the residents of Stanislaus County.

Sincerely,

Jim Dolgonas
President and CEO

Attachment

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BOARD OF SUPERVISORS

16700 Valley View, Suite 400 * La Mirada, CA 90638
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The Corporation for Education Network Initiatives in California • 16700 Valley View Ave. Ste 400 • La Mirada, CA 90638

CENTRAL VALLEY NEXT GENERATION BROADBAND INFRASTRUCTURE PLAN AN OVERVIEW

The primary goal of the American Recovery and Reinvestment Act (ARRA) is to provide a fiscal boost to the Nation during this economic crisis and to lay the foundation for long-term growth and development of our economy. One of the pillars of the ARRA is that providing access to broadband services will increase economic development and improve the quality of life for all Americans. The ARRA provides \$7.2 billion dollars of stimulus funds to increase broadband network access, particularly in rural and underserved and unserved areas.

CENIC (Corporation for Education Network Initiatives in California), (See Appendix A for description) through a wholly owned company and in collaboration with commercial firms have put together a technical project plan designed to improve the availability of broadband networking infrastructure for 14 counties within the California Central Valley area: Amador, Calaveras, El Dorado, Fresno, King, Kern, Mariposa, Merced, Madera, Placer, Tuolumne, Tulare, San Joaquin and Stanislaus counties. Based on this plan, the *Central Valley Next Generation Broadband Infrastructure Plan* we intend to submit an application to the National Telecommunications and Information Administration (NTIA) by March 15, 2010 for stimulus funds.

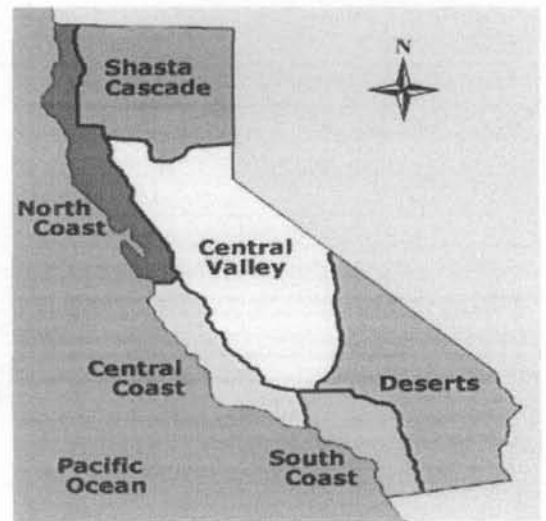
We believe the implementation of this robust network infrastructure can dramatically change the ways citizens in these 14 counties learn, work and live together. The funding of the application will also, in the short term, create jobs associated with network deployment and contribute to economic growth in the longer term.

SCOPE AND GOALS OF THE PLAN

The plan encompasses a service area of 14 counties covering 36,146 square miles, 27 percent of the state's geography and a population of 3,827,379 million, or just over 11 percent of the state's population. The project would reach over 1,660 communities within the proposed service area, most of which currently have access only to limited network speeds. Appendix B provides some context for the plan and more detail about the counties to be served by this plan.

The goals of the plan are to:

- Directly connect the CENIC member institutions (14 county offices of education, 8 community colleges and 3 universities) as anchor institutions to this new network infrastructure;
- Facilitate the ability of the other anchor institutions in the community, such as public libraries, major hospitals and public safety, to obtain or enhance their existing high speed networking capability;
- Forge strategic relationships with existing local internet providers enabling them to connect their business and resident customers to Internet services at more reasonable costs, one of the largest broadband adoption obstacles faced by most rural or underserved communities; and,
- Enhance the ability to reach the economic development goals of the 14 counties by having the required network capacity available for new businesses that might locate in these counties.



COMPONENTS OF THE PLAN

The plan consists of four components.

1. The first component involves building, operating and maintaining three rings of fiber infrastructure that will traverse 493 miles of rural Central Valley. This new infrastructure will provide "next generation connectivity" between 14 rural interconnection points and CENIC's existing statewide CalREN backbone network and to commercial nationwide network facilities. As part of this component fiber rings will be built to connect anchor education institutions to the existing central valley infrastructure. The anchor education institutions in this project include: fourteen (14) K-12 county offices of education, eight (8) community colleges, the Stockton Multi-campus Center, CSU Bakersfield and CSU Fresno. UC Merced is already connected to the CalREN backbone via a fiber ring. Initially will one pair of the fiber bundle will be lit to provision each of these anchor education institutions with diverse connectivity between the interconnection points and two different CalREN hub sites in locations such as Bakersfield, Fresno, Stockton and Sacramento. Appendix C provides a map.
2. The second component of the plan involves building, operating and maintaining an advanced wireless infrastructure that will serve these 14 counties. An integral part of this plan is to use this wireless capability to connect other community anchor institutions to the fiber infrastructure including approximately 35 public libraries and 20 hospitals in the region and potentially the key public and emergency services in the 14 counties.
3. The third component of the plan involves entering into strategic relationships with incumbent local/regional commercial telecommunications companies and Internet Service Providers/Wireless Internet Service Providers, ISPs/WISPs, who will use the new wireless infrastructure and the new fiber network infrastructure to extend high-speed broadband services in two ways. First, they use this infrastructure to provision connections to other anchor tenants such as local schools, libraries, and major health care entities. Second, the commercial partner and participants will utilize this new wireless and fiber infrastructure to connect business and residential customers to a major commercial ISP infrastructure in Sacramento or Los Angeles at various network speeds. CENIC's working relationships with worldwide Tier 1 commercial providers will enable the local commercial providers to connect with the Internet Protocol (IP) services, metro and long haul transport, content and video delivery and data/voice services of these Tier 1 providers. As part of this component of the plan the commercial participants will be provided access to a redundant dedicated circuit around each of the three fiber rings connecting them from the interconnection points to the commercial provider backbone facilities. This component of the plan is designed to provide commercial participants with an inexpensive option for connectivity between their customers and these worldwide ISP providers in order to make it feasible for these local providers to offer last mile broadband services at more reasonable costs than presently possible.
4. The fourth component of the plan involves engaging with organizations such as the local community colleges, local K-12 Adult Education programs and other local non-profit organizations, that are focused on providing programs that advance the adoption of the use of broadband capabilities by all Californians, especially those in the Central Valley counties. The plan recognizes that broadband adoption goes hand in hand with infrastructure deployment, thus, this is a key component of the overall plan.

PROJECTED COST OF THE PLAN

The cost of implementing plan is projected at approximately \$150 million. 70 to 80 percent of the costs will be requested from the NTIA, 10-15 percent from the CPUC CASF Fund and the remaining 10 to 20 percent from the partners.

APPENDIX A

WHO IS CENIC:



CENIC is a non-profit 501c3 corporation founded in August of 1997. There are five Charter Associates: California Community Colleges, California K-12 System, California State University System, Private Universities, and the University of California System. A board of directors, drawn from these Charter Associates, governs CENIC. CENIC leverages the buying power of these K-20 educational institutions in order to provide cost-effective, high-bandwidth networking to serve the nearly 10 million faculty, students, and staff engaged in the work of these California research and education communities. CENIC's ability to provide such benefits is a result, in part, of the strategic vision of its founders. Their collective insights and expertise were able to forecast the growing dependency on fiber based networks and develop a viable approach to controlling future costs while ensuring the provision of state of the art networking services.

CENIC currently owns and operates CalREN, a network infrastructure consisting of over 2,900 miles of CENIC owned fiber extending from the Mexican border to Corning and San Diego into Arizona, plus over 300 managed circuits leased from commercial telecommunications carriers that connect institutions to the CalREN fiber-based infrastructure, depicted to the left.

In order to maintain its position as a world leader in networking services, CENIC is committed to the following goals:

- Continuously improving a robust, cost-effective, state-of-the-art communications network, accessible to participating education and research institutions,
- Working with member institutions to define a value chain of services, and developing innovative ways to deliver scalable solutions to members,
- Leading efforts of participating institutions to provide end-to-end service quality and interoperability among member institutions, and promoting adoption across network boundaries,
- Advancing the collective interests of the institutions by leveraging their diversity and relationships to accrue benefits to individual members,
- Providing a competitive advantage in the global marketplace to the education and research communities,
- Communicating the value of CENIC as California's recognized provider of network services for education and research,
- Providing opportunities for innovation in teaching, learning, and research through use of the network, and
- Strengthening participation in the state, national, and international education and research networking communities.

CENIC is an organization nimble enough to respond to the rapid evolution of new technologies while limiting risk to its users. Its philosophy is to provide robust, cost-effective, state-of-the-art communication networks that will deliver scalable solutions to meet the diverse needs of its 10 million users. CENIC is recognized as a leader at the state, national and international levels for implementing innovative and sustainable broadband networking solutions.

Following in the footsteps of its founding educational organizations, CENIC now recognizes the need to be responsive to the networking demands of California citizens and communities beyond its member research and education institutions, and to support its long-term strategic vision has created wholly owned subsidiaries, for the principal purpose and business to facilitate availability of ubiquitous broadband and technology services throughout the State.

Already through a subsidiary, CENIC has joined forces with a commercial firm to submit a project proposal for NTIA funding to extend broadband capabilities to counties in northern California. CENIC, in collaboration with commercial partners, now turns its attention to developing a project plan and NTIA funding proposal for 14 counties in the Central Valley.

APPENDIX B

CONTEXT FOR THE PLAN

The goal is to provide broadband capabilities to unserved and underserved areas throughout the United States. The soon to be released National Broadband Plan is expected to set as a long-range goal for this country achieving what has been described by the Harvard University Berkman Center as “next generation connectivity”. According to the Berkman Center in a recent study commissioned by the FCC entitled “*Next Generation Connectivity: A review of broadband Internet transitions and policy around the world*” achieving “next generation connectivity” involves two overlapping foci—deploying high bandwidth capacity (best done with the nearly unlimited capacity of fiber) and providing users ubiquitous, seamless connectivity. The vision in this *Central Valley Next Generation Broadband Infrastructure Project* is to assist California in becoming the first state to achieve “next generation connectivity” capabilities and provide ubiquitous access for all citizens by contributing toward that goal with this project for the Central Valley of California.

This plan encompasses a service area of 14 Central Valley California counties covering 36,146 square miles, or 27 percent of the state’s geography and a population of 3,827,379 million citizens, or just over 11 percent of the state’s population. The 14 counties are: Placer, El Dorado, Amador, San Joaquin, Stanislaus, Calaveras, Tuolumne, Mariposa, Merced, Madera, Fresno, Tulare, King and Kern County. This plan would reach over 1,660 communities within the proposed service area, most of which currently have access to limited network speeds (see table below).

County	General Information			Census Block Demographics						Percentage of Availability by Speed					
	Total County Sq Miles	Census Block (Sq Miles)	% of Total County Area	Blocks Served	Blocks Underserved	Blocks Unserved	Census Households	Census Businesses	Census Population	Unavailable	.5 to 1 Mbps	1 to 5 Mbps	5-10 Mbps	10-100 Mbps	0.1 to 1 Gbps
Amador	606	118	19%	1	14	41	150	3	382	21%	3%	57%	19%	0%	0%
Calaveras	1036	267	26%	11	114	315	2575	237	6633	19%	15%	15%	50%	0%	0%
El Dorado	1789	563	54%	8	123	1772	6913	914	17102	12%	13%	9%	64%	2%	0%
Fresno	6017	4694	78%	23	295	3350	9499	834	37133	3%	2%	4%	86%	5%	1%
Kern	8158	7119	87%	4	457	11711	13813	1292	49225	7%	3%	2%	10%	78%	0%
Kings	1392	1181	85%	1	90	1536	1981	207	7447	4%	4%	4%	86%	0%	0%
Madera	2152	1324	62%	5	116	1207	2634	201	16097	25%	2%	7%	61%	0%	5%
Mariposa	1462	698	48%	1	38	350	1173	93	3630	44%	3%	20%	33%	0%	0%
Merced	1971	1623	82%	0	156	2110	5669	388	19124	9%	3%	1%	32%	5%	0%
Placer	1530	853	57%	0	94	1080	2175	256	5592	8%	8%	5%	5%	57%	17%
San Joaquin	1426	733	51%	19	124	636	5281	379	20793	3%	1%	0%	91%	5%	0%
Stanislaus	1516	1094	72%	0	137	677	4225	383	13393	2%	1%	0%	97%	0%	0%
Tulare	4843	4362	90%	6	203	3319	14056	1133	47434	20%	3%	6%	71%	0%	0%
Tuolumne	2278	1591	70%	4	108	1155	4840	404	11509	20%	27%	23%	34%	0%	0%

SPECIFIC COUNTY INFORMATION (All Census Blocks)

Within **Amador** County our proposal could reach:

- 1,503 Businesses
- 12,759 Households
- 19 K-12 Schools/Higher Education
- 14 Public Safety Facilities/Offices
- 6 Public Libraries

Within **Calaveras** County our proposal could reach:

- 1,591 Businesses
- 16,469 Households
- 33 K-12 Schools/Higher Education
- 21 Public Safety Facilities/Offices
- 9 Public Libraries

Within **El Dorado** County our proposal could reach:

- 6,724 Businesses
- 58,939 Households
- 96 K-12 Schools/Higher Education
- 24 Public Safety Facilities/Offices
- 9 Public Libraries

Within **Fresno** County our proposal could reach:

- 27,420 Businesses
- 252,940 Households
- 472 K-12 Schools/Higher Education
- 78 Public Safety Facilities/Offices
- 54 Public Libraries

Within **Kern** County our proposal could reach:

- 20,732 Businesses
- 208,652 Households
- 413 K-12 Schools/Higher Education
- 98 Public Safety Facilities/Offices
- 34 Public Libraries

Within **King** County our proposal could reach:

- 2,785 Businesses
- 34,418 Households
- 98 K-12 Schools/Higher Ed
- 11 Public Safety Facilities/Offices
- 8 Public Libraries

Within **Madera** County our proposal could reach:

- 3,663 Businesses
- 36,155 Households
- 94 K-12 Schools/Higher Education
- 28 Public Safety Facilities/Offices
- 6 Public Libraries

Within **Mariposa** County our proposal could reach:

- 715 Businesses
- 6,613 Households
- 19 K-12 Schools/Higher Education
- 24 Public Safety Facilities/Offices
- 6 Public Libraries

Within **Merced** County our proposal could reach:

- 5,493 Businesses
- 63,815 Households
- 171 K-12 Schools/Higher Education
- 55 Public Safety Facilities/Offices
- 20 Public Libraries

Within **Placer** County our proposal could reach:

- 12,546 Businesses
- 93,382 Households
- 161 K-12 Schools/Higher Education
- 47 Public Safety Facilities/Offices
- 16 Public Libraries

In **San Joaquin** County our proposal could reach:

- 17,162 Businesses
- 181,629 Households
- 300 K-12 Schools/Higher Education
- 76 Public Safety Facilities/Offices
- 15 Public Libraries

Within **Stanislaus** County our proposal could reach:

- 15,271 Businesses
- 145,146 Households
- 278 K-12 Schools/Higher Ed
- 71 Public Safety Facilities/Offices
- 20 Public Libraries

Within **Tulare** County our proposal could reach:

- 11,381 Businesses
- 110,385 Households
- 251 K-12 Schools/Higher Education
- 72 Public Safety Facilities/Offices
- 22 Public Libraries

Within **Tuolumne** County our proposal could reach:

- 2,397 Businesses
- 21,004 Households
- 35 K-12 Schools/Higher Education
- 14 Public Safety Facilities/Offices
- 9 Public Libraries

DEFINITIONS FOR THE ABOVE DEMOGRAPHIC INFORMATION

K-12

Boarding schools, elementary or secondary
Primary, elementary, secondary, middle and high schools
Finishing schools, secondary
Handicapped, schools for, elementary or secondary
Montessori schools, elementary or secondary
Parochial schools, elementary or secondary
Preparatory schools, elementary or secondary
Private schools, elementary or secondary
Schools for the handicapped, elementary or secondary
Schools for the mentally retarded (except preschool, job training, vocational rehabilitation)
Schools for the physically disabled, elementary or secondary

Colleges/University Sites

Business colleges or schools offering baccalaureate or graduate degrees
Colleges, universities, and professional schools
Dental schools
Hospital & Hospitality management schools offering baccalaureate or graduate degrees
Law schools/Medical schools
Parochial schools, college level
Professional schools (e.g., business administration, dental, law, medical)
Schools, correspondence, college level

Healthcare Sites

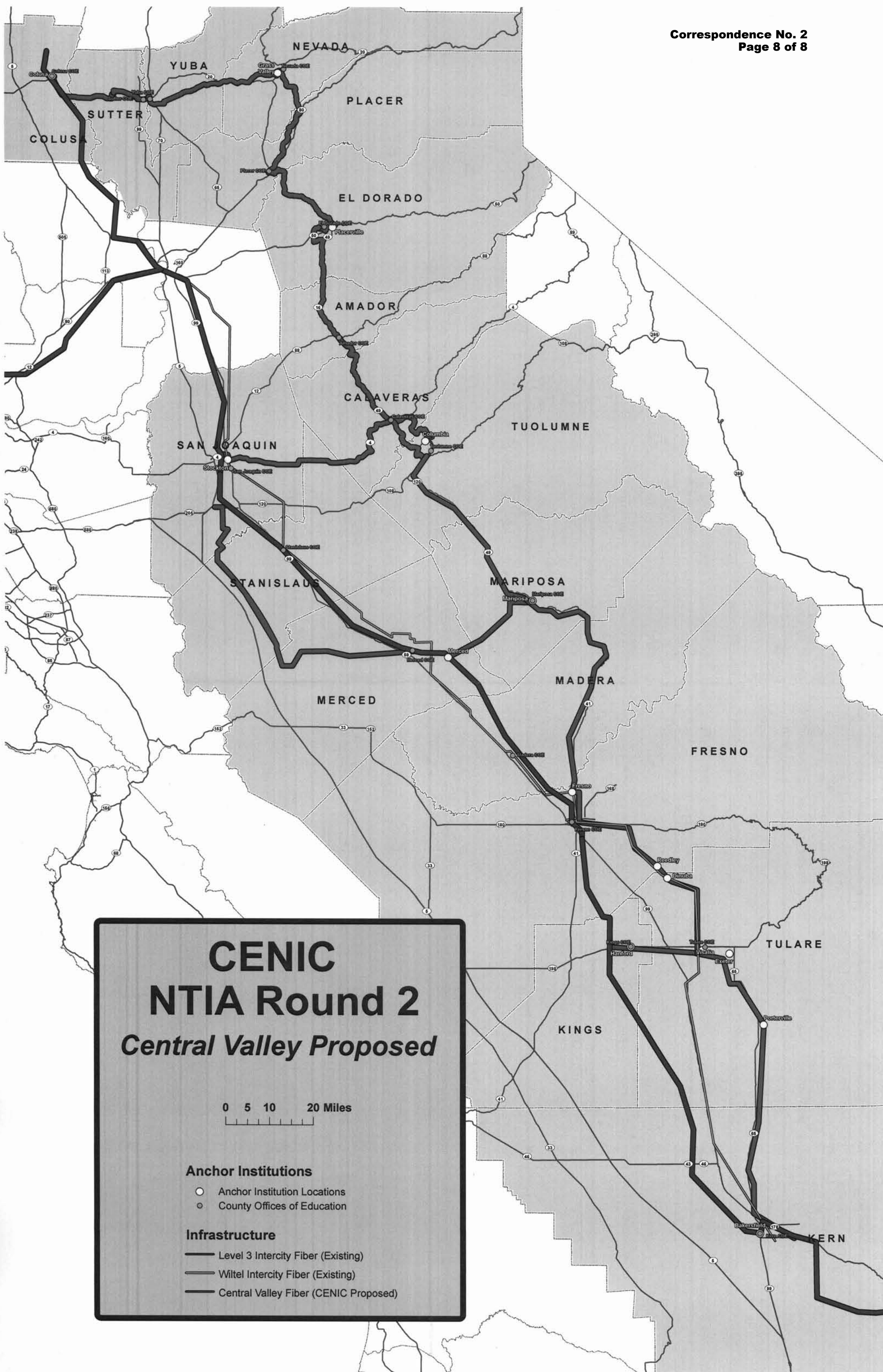
Offices of Physicians, Dentists or Other Health Practitioners
Outpatient Care Centers
Medical and Diagnostic Laboratories
Home Health Care Services
Other Ambulatory Health Care Services

Libraries

Circulating libraries
Lending libraries
Libraries (except motion picture stock footage, motion picture commercial distribution)
Motion picture film libraries, archives
Reference libraries

Emergency Services

Police Protection
Ambulance and Fire Services



CENIC
NTIA Round 2
Central Valley Proposed

0 5 10 20 Miles

Anchor Institutions

- Anchor Institution Locations
- County Offices of Education

Infrastructure

- Level 3 Intercity Fiber (Existing)
- Witel Intercity Fiber (Existing)
- Central Valley Fiber (CENIC Proposed)