From:	Tom West
To:	Tom, Stephanie@CIO; CA Broadband Council
Cc:	Calvin Sandeen; joy; Michael Nicholls; Mike DeWald
Subject:	Recommendation for Inclusion into the California Broadband for All Action Plan
Date:	Tuesday, November 10, 2020 12:14:45 PM
Attachments:	WiConduit Broadband For All Recommendation.pdf

Stephanie

On behalf of Calvin Sandeen, President/CEO and Founder of WiConduit and members of the Board, I am submitting the enclosed proposal recommending inclusion in the California Broadband for All Action Plan.

As you will note we feel very strongly the Action Plan must include actions the will lead to the implementation of an "Open Access" Middle-Mile Network capability across the state. And we believe the leaders of the CPUC sponsored Regional Planning Consortia are best equipped to lead this effort. These are individuals and organizations that have been deeply engaged in facilitating broadband deployment, access and adoption across the state for the past decade.

Thank you for your consideration.

Tom West

PS. Calvin is having a medical procedure and will laid up for several days. So, if you have questions prior to his return please feel free to contact me.

Tom West
NBNCBC
[redacted]
[redacted]

November 9, 2020

Stephanie Tom
Deputy Director
California Broadband Council
1325 J Street, Suite 1600
Sacramento, CA 95814-2941
Re: California Broadband for All Action Plan

Recommendation for Inclusion into the California Broadband for All Action Plan

WiConduit recommends the California Broadband for All Action Plan incorporate two joint initiatives into Phase 1 and implement them both within the first 18 months:

1. Develop a preliminary design and cost estimate for a statewide Open Access Middle Network using short, mid, and long-term phased approaches.

2. Develop preliminary designs and cost estimates for Countywide Open Access Middle Mile Networks for each of the 58 counties using short, mid, and long-term phased approaches that can eventually be connected to the State's Open Access Network.

Furthermore, WiConduit recommends the regional consortia spearhead these joint initiatives with assistance from CalTrans, county governments, state agencies, and other broadband stakeholders. WiConduit offers to coordinate these efforts.

A Major Problem

Over the last few years, the catastrophic wildfires, prolonged power outages, floods, and the coronavirus pandemic have spotlighted California's Digital Divide as it continues to grow and impact our public safety and livelihood. During past wildfires and floods, residents living in high fire threat areas or flood zones relied on receiving mandatory evacuation orders from first responders to evacuate their homes; however, thousands of residents without connectivity struggled to or did not receive notifications. As we experience the current coronavirus pandemic, students and parents are sheltering in place without high speed Internet connectivity at home and do not have the necessary resources to support an educational experience that is equal those in served communities; similarly, residents working from home without connectivity struggle to telecommute as well. The Federal Communications Commission (FCC) estimated 1,500,000 Californians do not have access to fast, affordable, and reliable broadband services at home in times when they need it most.

Rural communities across California face economic disenfranchisement and failed economies due to inadequate broadband access, and the recent disasters have heightened the need to invest in critical infrastructure within our rural economies to address economic recovery and resiliency. One of the key factors contributing to California's Digital Divide is the lack of comprehensive, cohesive, robust, redundant, and diverse middle and last-mile broadband infrastructure throughout California, primarily in rural and inner city areas.

The lack of infrastructure capable of supporting speeds and services necessary to survive and succeed in our current economic and social climate is negatively affecting California. As the world evolves and our dependency for bandwidth rises (growing at 10x over 10 years), our existing infrastructure is not capable of supporting our economy's current and future need for Internet access.

Need for a New Approach

Since the 1984 divestiture and breakup of the Bell System, we have relied on the U.S. telecommunications industry to meet our broadband needs. While the major telecommunications carriers in California continue to invest in bringing more capacity and capabilities into already highly connected densely populated areas (usually urban/suburban), they have minimized investments in less populated and low income areas (usually rural or inner city). For the private sector, the return on investment is not as profitable to deploy in these less populated and low income areas. A potential solution is to support the development of not-for-profit models operating in partnership with private sector companies to make broadband deployment more economically viable in high cost areas by using a lower overhead operating structure than the traditional higher cost operating models seen in the private sector.

In addition, the FCC, state commissions, and specifically the California Public Utilities Commission (CPUC) have relied on the U.S. telecommunications industry to meet the needs of unserved communities utilizing a privatized Single Provider Access network model whereby there is one major provider serving a given geographic area where profit is their primary incentive. This model comes close to being a monopoly and reduces competition in communities. After nearly four decades, this model has not closed the Digital Divide and will not moving forward.

A new approach is required, one in which the State of California takes leadership for closing the Digital Divide. Recently, the California Public Utilities Commission (CPUC) Commissioner Martha Guzman Aceves advocated for the development of an "Open Access" Middle-Mile Infrastructure to ensure fair competition across California. In addition, proposed legislation in the 2020 Legislative Session, such as SB 1130, called for Middle-Mile components in state funded broadband projects be "open access". Based on the direction California leadership is heading, we believe the State can take leadership to close the Digital Divide by supporting the development of a statewide and countywide publicly governed Open Access Middle-Mile Network that is owned, managed, and operated by a neutral and not-for-profit entity (ies).

What is an Open Access Network?

In Open Access Networks, an individual entity acts as the owner, manager, and operator of the network and leases capacity, generally at wholesale pricing, to multiple retail service providers delivering services over the same network to end users. Open Access Networks primarily have fiber-based infrastructure that are able to augment with fixed wireless technologies. Due to the successful case studies found in U.S. states and in other countries using Open Access Network models, its reputation as the next generation of broadband continues to grow based on its ability to increase competition in hard-to-serve areas cost effectively.

For Middle-Mile purposes, Open Access provides multiple service providers the accessibility to use the high-speed network to connect their last mile networks to end users. Rather than building their own infrastructure along major corridors, Open Access Middle-Mile infrastructure allows multiple service providers to enter last-mile markets cost effectively. For last-mile connectivity, Open Access is choice. The Open Access model provides end users the choice to subscribe to a variety of retail service providers delivering services on a single network owned and operated by a neutral third party. The Open Access model is mutually beneficial by providing ISPs and other retail service providers with the convenience to enter new markets at a very low cost, and communities in all regions with the ability to choose from a variety of high quality services at competitive and affordable pricing.

The New Model

Our overall goal is to create a new model that addresses and solves many of the primary issues that are wrong with California's current telecommunications market that have created and have not fixed the Digital Divide. A new model that can address these issues and fix the Digital Divide is for the State of California and its Counties to support the development of a publicly governed Open Access Middle-Mile Network that is owned, managed, and operated by a neutral and not-for-profit entity (ies). The table below provides a comparison between the existing model and a new model for California to adopt that highlights the key differences. The new model we are proposing begins with a starting point that has already been established and summarized in the next section. Using the starting point as a foundation, the next step involves fostering greater collaboration among California's regions to work together in implementing a multi-phased approach suggested in another upcoming section.

CALIFORNIA'S CURRENT BROADBAND MODEL THAT CREATED AND CANNOT FIX THE DIGITAL DIVIDE	CALIFORNIA'S NEW BROADBAND MODEL THAT CAN FIX THE DIGITAL DIVIDE
Shareholder Owned – For Profit - Single Access	**Publicly Governed – Not For Profit - Open Access**
Issue	Solution
Not working proactively to close the Digital Divide in areas that need broadband the most	Statewide broadband stakeholders working together diligently to create ubiquitous access and connect California's remaining unserved regions using a universal business model and on an equal timeframe.
Supported by outdated technology as well as degraded infrastructure and equipment that results in poor quality service and speeds	Prioritizes the deployment of high speed fiber optic based infrastructure and technology with the technical capability to withstand generations of future demand.
Creates monopolies that lead to high cost services and lack of universal affordability	Deploys Open Access Networks in order to increase service competition among providers and affordability to end users.
Does not respond appropriately to maintaining or fixing infrastructure issues which causes network failure and telecommunications outages	Represents the public's best interests while having the ability to design new networks with redundancy and resiliency in mind and reinvest a greater portion of the organization's revenue back into network maintenance to offset network failure.
Does not have the viable financial model to support rural and high cost areas where the profit margin or return on investment is too low	Can generate revenue from leasing network capacity, apply for state and federal grant funding, fundraise and receive donations, as well as create new funding through partnership with public entities that have public financing authority. The not-for-profit structure also reduces overhead costs dramatically and profit margin requirements.
Has extreme lobbying power and the ability to decrease the public's regulation of our current telecommunications market	Allows direct regulation over its own infrastructure while catalyzing competition and incentive among the private sector to work together.
Incapable of creating successful public-private-partnerships in areas of greatest needs	Public ownership of broadband infrastructure and Open Access models can support public-private-partnerships effectively in priority areas. Also pushes government agencies to adopt broadband friendly policies and streamline services in order to support cost effective deployment, as well as the success of the new public entity and existing private industry.
Creates monopolies and economic constraints on communities	Retains local/regional investment and results in regional economic development, job creation/retention, recovery, and resiliency by providing communities with state of the art broadband services that support local businesses and other anchor institutions with critical resources necessary to survive in today's economy.

Starting Point

At the CETF hosted Stakeholder meeting on September 27, 2018, the regional broadband consortia volunteered to develop regional lists and a statewide map of "Strategic Broadband Corridors" that Caltrans and California Transportation Commission (CTC) could consider for inclusion in the CTC Guidelines, 2018 Comprehensive Multimodal Corridor Plan Guidelines.[1] On December 5, 2018 CTC adopted the regional consortia's recommended "Strategic Broadband Corridors", Version 3.2, as part of its Guidelines. Caltrans also accepted them. At the request of Caltrans, the regional broadband consortia updated and submitted Version 4.0 on September 1, 2019 "Regional Consortia Updated Recommended Strategic Broadband Corridors" This updated report included each regional consortium's top three priority "Strategic Broadband corridors". More information can be seen in Exhibit A.

While the Strategic Corridors project fostered collaboration among CETF, Caltrans, CTC, CBC, CalCOG, RCRC, regional consortia, telecommunications providers and others, there has been no follow-up effort develop a plan to deploy broadband infrastructure along these routes. As a neutral not-for-profit organization, WiConduit volunteers to coordinate this effort to develop preliminary design and cost estimate for a statewide and countywide Open Access Middle-Mile Network in partnership with regional consortia, Caltrans, state agencies, and other broadband stakeholders.

Five Regional Planning Teams

Using the starting point as our foundation, WiConduit suggests that the State creates five regional planning teams to implement a multi-phased approach to create a statewide and countywide Open Access Middle Mile Network. Each team would be led by a Regional Consortium leader and consist of individuals representing Caltrans, broadband stakeholder groups, local governments, state, county, and other local agencies. Experts would be engaged as appropriate.

WiConduit envisions there could be five regional teams associated with creating their own regional networks that can eventually interlock into a unified statewide network. These five regional teams and their respective geographies include:

1. **North Western California** - Encompasses all of 14 and portions of two (2) counties between the Oregon border on the north; Pacific Ocean on the west; Interstate 80 on the south; and Interstate 5 on the east. The counties include; all of Del Norte, Humboldt, Trinity, Mendocino, Sonoma, Marin, Napa, Yolo, Colusa, Glenn, Lake, Tehama, Shasta, and Siskiyou counties; and, northern portions of Solano and Sacramento counties.

[1] https://catc.ca.gov/programs/sb1/solutions-for-congested-corridors-program/comprehensive-multimodal-corridor-plan-guidelines

2. **North Eastern California** - Encompasses all of eight (8) counties between Interstate 80 on the south, the Nevada border on the east; the Oregon border on the north; and, Interstate 5 on the west. The counties include: Sutter, Yuba, Nevada, Sierra, Butte, Plumas, Lassen, and Modoc.

3. **Central Western California** - Encompasses all of 11 and portions of nine (9) counties between Interstate 80 on the north; the Pacific Ocean on the west; the southern county lines of Ventura and Kern on the south and Route 99 on the east. The counties include: all of Contra Costa, Alameda, San Francisco, San Mateo, Santa Clara, Santa Cruz, Monterey, San Benito, San Luis Obispo, Santa Barbara, and Ventura counties; western portions of Kern, Kings, Fresno, Madera, Merced, Stanislaus and San Joaquin counties; and, southern portions of Sacramento and Solano counties.

4. **Central Eastern California** - Encompasses all of 10 and portions of seven (7) counties between Interstate 80 on the north; the Route 99 on the west; the Nevada border on the east; and, the northern county lines of Los Angeles, San Bernardino and Inyo counties on the south. The counties include: all of Placer, El Dorado, Alpine, Amador, Calaveras, Tuolumne, Mariposa, Mono, Inyo and Tulare counties; and eastern portions of Kern, Kings, Fresno, Madera, Merced, Stanislaus and San Joaquin counties.

5. **Southern California** - Encompasses all of the six (6) counties between the northern county lines of Los Angeles and San Bernardino on the north; the borders of Nevada and Arizona on the east; the border of Mexico on the south; and the Pacific Ocean on the west. The counties include: Los Angeles, Riverside, San Bernardino, Imperial, San Diego and Orange.

Multi-Phased Approach

The California Broadband for All Action Plan should involve the following multi-phased approach:

A. Statewide Open Access Middle Network

Phase 1: Each planning team would develop a Preliminary Design and Cost Estimate for its regional ring in the Statewide Middle-Mile Open Access Network. These would be integrated into an overall preliminary design and cost estimate for the Statewide Network.
Phase 2: The Governor and Legislature would develop a financial plan to fund the capital costs to implement the Statewide Middle-Mile Open Access Network.
Phase 3: The State of California would select or create a public and/or not-for-profit entity (ies) to implement the preliminary design and financial plan to create the Middle-Mile Open Access Network and to subsequently own and manage it.

B. Countywide Open Access Middle Mile Networks

Phase 1: Each planning team would work with the counties in its region to develop a preliminary design and cost estimate for its Countywide Open Access Middle Mile Network. These county networks would be linked into an overall Statewide Network.
Phase 2: Each county would develop a financial plan to fund the capital costs to implement its Countywide Open Access Network.
Phase 3: Each County would select or create a public and/or not-for-profit entity (ies) to implement the preliminary design and financial plan to create the Countywide Open Access Network and to subsequently own and manage it.

Phase 1: Preliminary Designs and Cost Estimates

The preliminary designs in this effort should capitalize on utilizing existing fiber-based infrastructure of carriers and/or previously funded infrastructure by federal or state grants before it proposes to deploy new fiber. The objective is to be cost effective and as least intrusive as possible by: 1) acquiring existing fiber optic middle mile and dark fiber from carriers using 20-40 year IRUs; and/or, 2) leasing waves long-term from carriers to serve as components of these Open Access Networks. Construction of fiber optic broadband infrastructure will become part of the design wherever there are remaining gaps in order to complete the networks.

The planning teams would utilize the priority strategic corridors, recommended by each regional consortium in Version 4.0 of the Strategic Broadband Corridors report adopted by the California Transportation Commission for inclusion in the "CTC 2018 Comprehensive Multimodal Corridor Plan Guidelines", as the pillars of these Preliminary Designs.

Phase 2: Financial Plans

The financial plans in this project will provide public and not-for-profit broadband entities with the estimated capital costs to acquire existing and construct new assets, as well as the long-term operational costs to own and manage statewide and countywide Open Access Networks.

Phase 3: Ownership and Management of the Networks

The State and each county would decide who is going to own and manage these networks on their behalf.

Time Lines

California Broadband For All Action Plan: Open Access Network Planning Timeline																
Year	2021				2022				2023				2024			
Preliminary Design and Cost Estimates																
Financial Plan																
Network Ownership and Management																

Phase 1 is projected take 12 to 18 months to complete the scope of work. Phase 2 should start in month 13 and be completed by month 24. Phase 3 should be completed simultaneously during Phase 1 and 2 and be completed by the 30th month.

Budget

We expect the state agencies that are involved with the development of California's Broadband for All Action Plan to provide the appropriate funding to support the proposed effort and engage with WiConduit staff as necessary for assistance on identifying other potential funding sources.

Benefits of this Project

This can be a major opportunity for the State of California and its counties to take leadership and ownership in closing the Digital Divide by supporting the development and success of publicly governed broadband network models that provide fast, affordable, and reliable Internet access directly to unserved communities. Supporting the development and success of publicly governed third party broadband network models allows the State of California and its Counties to remain heavily involved, while reducing their direct risks and ongoing responsibilities for the infrastructure. Undertaking this project will provide the State of California and its counties with a statewide and countywide Open Access Network blueprint that can support initiatives to bring last-mile connectivity to the unserved communities across the state.

Please consider the inclusion of our recommendation and proposed course of action into California's Broadband for All Action Plan. Whether or not you select WiConduit to be involved with the development of this effort, we still thank you for your time and consideration for this proposal. We applaud the State's direction to close the Digital Divide and are eager to support the leaders that are involved with the development of California's Broadband For All Action Plan.

Sincerely,

Calvin Sandeen
WiConduit | President/CEO and
[redacted]

CC:

Regional Consortia
Caltrans-Elizabeth Dooher

Exhibit A: California Regional Strategic Broadband Corridors

Prepared By:

Valley Vision, Connected Capital Area
Broadband Consortium and
Tom West, North Bay/North Coast Consortium

With Funding Support From:

The California Emerging Technology Fund

and Technical Support From:

Geographical Information Center,
California State University Chico

In Partnership With:

Regional Broadband Consortia
California Department of Transportation
California Transportation Commission
California Department of Technology
California Broadband Council
California Public Utilities Commission
California Forward
California Association of Councils of Government (CalCOG)

INTRODUCTION

This document provides recommendations to the California Department of Transportation (CalTrans) and the California Transportation Commission (CTC) on transportation corridors that are priorities for strategic development of joint use/dig once projects for needed broadband infrastructure and deployment, through collaboration with the State's network of Regional Broadband Consortia funded by the California Public Utilities Commission (CPUC) and the statewide network of Councils of Government (COGs) and local transportation agencies.

The Strategic Broadband Corridors Project (SBC Project) was initiated in September 2018 at a meeting on Strategic Corridors hosted by the California Department of Technology and the California Broadband Council to support implementation of the statutory "Dig Once" Policy (AB 1549 legislation) that required **Caltrans** to develop guidance to facilitate deployment of wired broadband in State rights-of-ways (ROW). The meeting brought together representatives from State Agencies, Internet Service Providers (ISPs), Regional Broadband Consortia, transportation organizations, and other organizations to develop approaches that would build upon and advance "Dig Once" policies to inform the CTC Draft Comprehensive Multimodal Corridor Planning Guidelines and CalTrans Draft Corridor Planning Guidebook.

At the meeting, stakeholders discussed the concept of "strategic corridors" to support broadband deployment in which conduit would be installed in conjunction with transportation projects even if no ISP or public agency would be in the trench at the time of construction. Caltrans highlighted its next steps in "Dig-Once" policy implementation, including the need to identify these so-called "corridor gaps." Representatives of the Regional Broadband Consortia volunteered to work together to develop regional lists and a statewide map of "Strategic Broadband Corridors" that CalTrans and the CTC could consider for inclusion. This was the origin of the SBC Project, the ultimate goal of which was to coordinate the planning and development of broadband and transportation projects with Caltrans and the CTC.

Following the meeting, the Broadband Consortia, led by Tom West of the North Bay/North Coast Consortium and Martha Van Rooijen of the Inland Empire Regional Broadband Consortium, identified a list of SBCs in an initial draft report in November. The Geographical Information Center (GIS) at the Center for Economic Development, California State University Chico and manager of the Northeastern California Connect Consortium and the Upstate California Broadband Consortium, providing a statewide map depicting the corridors. Following a series of meetings and communications with State Agency officials and the California Broadband Council through the fall, 2018, and revisions of the recommended corridors, in

December 2018 the CTC adopted the recommended “Strategic Broadband Corridors” report as part of its Guidelines and Caltrans also accepted them.

At the March 2019 California Broadband Council meeting, Caltrans provided an update on the identification of strategic corridors and the Dig Once program. The absence of existing opportunities and excess capacity was noted for the rural areas; the need for better dialogue with the industry was identified; and it was stated that Caltrans was working with the CPUC on next steps and industry engagement.

At a Digital Inclusion Roundtable hosted in June of 2019 in Sacramento by CETF and California Forward (CaFWD), Caltrans noted that while the draft report was a promising first step, it was overly broad. It listed *almost every major transportation corridor in California* and did not indicate which "strategic broadband corridors" might be most important for Caltrans to consider. It was recommended that the Consortia further narrow the list by choosing three “priority” corridors per region.

Valley Vision, manager of the Connected Capital Area Broadband Consortium, and its partners — CETF, CalCOG, CaFWD, and California State University Chico along with North Bay/North Coast Consortium — agreed to coordinate next steps. These included:

- Obtaining the list of updated strategic broadband corridors from the Broadband Consortia, with updating mapping of the corridors statewide by Chico State, and preparing the next version of the report;
- Convening of a Strategic Broadband Corridors Planning Session in September 2019 at Valley Vison in Sacramento attended by state agencies, CALCOG Regional Transportation Agencies Members, the Consortia, and ISPs to discuss issues and barriers to implementation of Dig Once Policies, including the need for permitting consistency across Caltrans Districts and need for clarification of transportation funding eligibility for broadband projects, and updates on the process of information sharing between Caltrans and the CPUC on mapping of existing broadband connectivity (accounting for confidentiality issues), among other areas;
- Discussion with Rural Counties Task Force members convened by CalCOG in September 2019 to discuss corridor projects and deployment issues, joint use and funding;
- Provision of SHOPP (State Highway Operation and Protection Program) project information by CalCOG for alignment with strategic corridors mapping.
- Presentation of a status report at the October 2019 California Broadband Council Meeting, which highlighted opportunities for dig once/joint use policies and coordinated planning across agencies and investments; funding eligibility for broadband

infrastructure deployment; permitting challenges and variations across Caltrans districts; constraints of CASF funding and potential for alignment with other state infrastructure investments; need for increased collaboration between broadband consortia and regional transportation agencies/councils of governments; and need for continued consultation and collaboration with the California Broadband Council and state agencies.

- Presentation of an update at a broadband-focused session at the California Economic Summit in November 2019 hosted by CA Forward, and discussion of policy recommendations for Broadband for All (Californians), which the Governor announced at the Summit; and
- Meeting at the Governor's Office in December to discuss Broadband for All initiatives, including Strategic Broadband Corridors, with the California Department of Technology, CETF, CA Forward, several consortia and other partners.

Throughout this process, several of the Regional Broadband Consortia participated in the Strategic Broadband Corridors Task Force convened by the California Broadband Council to assist with moving the process forward, including coordination with Caltrans and the CPUC. Caltrans initiated a coordination process on Dig Once design guidelines and broadband projects, review of California Encroachment process and dialogue with industry representatives and continued to work with the CPUC to develop an MOU for data sharing and project collaboration. Within the regions, the Broadband Consortia continued to work with Caltrans district offices and COGs/ transportation agencies to advance joint use/dig once policies and projects. The work continues into 2020.

This report provides the updated list of the recommended strategic broadband corridors, with three priority routes identified per region.

1. Identifies the three priority corridors for each region. The legend for priority corridors is:

Priority #1 Corridor
Priority #2 Corridor
Priority #3 Corridor

2. Updates the Statewide Map that includes all Strategic Corridor (*See*: Map 1 on page 15).

3. Adds a Statewide Map that includes only Priority Strategic Corridors (*See*: Map 2 on page 16).

STRATEGIC CORRIDORS BY REGIONAL BROADBAND CONSORTIA AREA

I. **REDWOOD COAST CONSORTIA (RCCC)**
   - Del Norte, Humboldt, Trinity Counties

II. **NORTH BAY NORTH COAST BROADBAND CONSORTIUM (NBNCBC)**
   - Marin, Mendocino, Napa and Sonoma Counties

PRIORITY STRATEGIC ROUTES	
Route	**Description**
CA-1	Starting at US-101 at Leggett (Mendocino County), going along the coast to Bay Bridge (Marin County).
CA- 128-101- 253-128	Rte 128 starting in Winters (Yolo County) thru Napa County to Geyersville (Sonoma County); Rte 101 Geyersville to Ukiah (Mendocino County); Rte 253 Ukiah to Boonville; and Rte 128 Boonville to Albion connecting to Rte 1.
US-101	Starting at the Oregon Border (Del Norte) going to in the Bay Area (200 Paul Street, San Francisco) through the counties of: 1. Del Norte (where it would interconnect with the existing fiber on US 199 going from Crescent City to the Oregon Border); 2. Humboldt (where it would interconnect with existing fiber on the CA 36 corridor and CA 299 fiber corridor currently being implemented. Both these routes go east to interconnect with fiber on i-5); 3. Mendocino; 4. Sonoma; and 5. Marin counties.

OTHER STRATEGIC ROUTES	
Route	**Description**
CA-3	Callahan to Douglas City (Rte 36)
CA-20	Starting at US-101 at Calpella (Mendocino County) and going east to Williams (Colusa County) where it interconnects with fiber on I-5.

CA 116 & 12	Starting at US-101 at Rohnert Park (Sonoma County) going east through Napa County to Suisun City (Solano County) to interconnect with fiber on I-80.
CA 29 & 53	Starting at CA-12 in Napa County going north to interconnect with the CA-20 in Clearlake (Lake County).
CA-162	Develop a non-diverse spur between US-101 corridor in Longvale and Covelo (Mendocino County).
CA-20	Go west between Willits on US-101 and Fort Bragg and interconnect to CA-1 (Mendocino County).
CA-116 & 12	Start on US-101 in Rohnert Park go west on CA-116 to Sebastopol and then on CA-12 to Bodega Bay to interconnect to the CA-1 (Sonoma County).

III. **NORTHEASTERN CALIFORNIA CONNECT CONSORTIUM (NECCC)**
- Siskiyou, Modoc-Lassen, Shasta. Tehama-Butte and Plumas Counties

IV. **UPSTATE CALIFORNIA CONNECT CONSORTIUM (UCCC)**
- Glenn, Colusa and Lake Counties

PRIORITY STRATEGIC ROUTES	
Route	**Description**
1-5	Sacramento North to Oregon border.
CA-20	Yuba City to US 101.
CA-44	Entire route.
CA-29	Rutherford North to Upper Lake.
CA-139	Entire Route.

OTHER STRATEGIC ROUTES	
Route	**Description**
CA-161	Entire route.
CA-162	From Jct. of route 99 to Oroville.
CA-172	Entire route.
CA-175	Middletown north to Jct. with route 29.
CA-191	Entire route.
CA-299	Redding East to Alturas.
CA-3	Yreka South to Callahan.
CA-32	Entire route.
CA-36	Red Bluff East to Johnstonville.
US-395	Nevada border North to Oregon border.
I-505	From Jct. of I 5 to Winters.
CA-53	From Jct. of route 20 to Lower Lake.

CA-70	Oroville East to Jct. of US 395.
CA-89	Old Station North to Jct. of I-5.
CA-96	From Jct. of I 5 to Somes Bar.
US-97	Weed to Jct. of route 161.
CA-99	Red Bluff to Woodland.
CA128	From Jct. of 29 to Winters.

V. EAST BAY BROADBAND CONSORTIUM (EBBC)

- Alameda, Contra Costa and Solano Counties

PRIORITY STRATEGIC ROUTES	
Route	**Description**
CA-12	Entire Solano County from west border through Fairfield and Rio Vista to Lodi (San Joaquin County).
CA-4	Entire Contra Costa County from I-80 through many under/unserved communities to Stockton (San Joaquin County).
CA-24	Oakland to Walnut Creek.

OTHER STRATEGIC ROUTES	
Route	**Description**
I-880 & 80	From the southern border of Alameda County through Contra Costa and Solano Counties into Sacramento County.
I-680	From the southern border of Alameda County to I-80 in Solano County.
I-580	Oakland to I-5.

VI. CONNECTED CAPITAL AREA BROADBAND CONSORTIUM (CCABC)

- Sacramento, Sutter, Yolo and Yuba Counties

PRIORITY STRATEGIC ROUTES	
Route	**Description**
I-5	Start south border of Sacramento County and go northwest to the northern border of Yolo County.
CA-113	From I-80 in Davis (Yolo County) north to Tudor (Sutter County) to interconnect with CA-99.
CA-45	From Knights Landing {Yolo County northwest to Meridian on CA-20 (Colusa County).

OTHER STRATEGIC ROUTES	
Route	**Description**
I-505	Start at I-80 (Solano County) and go northeast through Yolo County and interconnect with I-5 north of Zamora.

CA-99	From I-5 (Sacramento County) to Yuba City (Sutter County) to interconnect with CA-20.
CA-20	Along the southern border of Sutter Buttes Park (Sutter County).
CA-84	From Rio Vista (Solano County) on CA-12 to West Sacramento (Yolo County).
CA-160	From Rio Vista (Solano County) on CA-12 to downtown Sacramento (Sacramento County).
CA-104	From CA-99 (Sacramento County) east to eastern border of the County.
CA-220	From CA-84 (Solano County) east to CA-160 (Sacramento County) County).
CA-16	From Rancho Murrieta Golf and Country Club (Sacramento County) east to CA-49 (Amador County).
CA-65	From CA-70 (Yuba County) southeast to Lincoln (Placer County).
E-20	From the E-21 Jct. east to CA-49 Jct. (Yuba County).
E-21	From the northern border of Yuba County south to Collin's Lake (Yuba County).
E-49	Northeast corner of Yuba County.

VII. GOLD COUNTRY BROADBAND CONSORTIUM (GCBC)

- El Dorado, Nevada, Sierra, Placer and Alpine Counties

PRIORITY STRATEGIC CORRIDORS	
Route	**Description**
I-80	East from Roseville to Nevada Line (Nevada, Sierra and Placer counties).
CA-20	East and West out of Grass Valley (Nevada County).
CA-89	North from Truckee (Nevada County) to Sierraville, Satley, Calpine (Sierra County) and then continue to CA-70 (Plumas County).

VIII. GOLD COUNTRY BROADBAND CONSORTIUM (GCBC)

- Tahoe Basin Project

PRIORITY STRATEGIC CORRIDORS	
Route	**Description**
US 50	El Dorado County and City of South Lake Tahoe
CA-89	South from Truckee to Tahoe City and on south to CA-50 at South Lake Tahoe.
CA-267	Truckee to Kings Beach

PRIORITY STRATEGIC CORRIDORS	
Route	**Description**

CA-49	North from Nevada City (Nevada County) to Loyalton (Sierra County).
CA-49	South from Nevada City to Placerville (El Dorado County) and then continue on to County line.
CA-89	From South Lake Tahoe to CA-88 in Sorenson (Alpine County).
CA-20	East from Nevada City to intersect with 1-80 at Emigrant Gap and then on I- 80 to Truckee to CA-89 and then south to South Lake.
CA-267	South from Truckee to Kings Beach.
CA-28	From Kings Beach to Route CA-89 to Tahoe City.
US-50	East from El Dorado County border to the Nevada Line, through Twin Bridges.
CA-88	Jackson (Amador County) to Route CA-89 (Alpine County).
CA-4	East from Angels Camp (Calaveras County) to Route CA-89.
CA-174	South from Route CA 49 to Colfax on I-80.
CA-193	From Cool on CA-49 south to Placerville on US-50.
CA-65	Rocklin to Roseville off 1-80 to Lincoln to county border.

IX. CENTRAL SIERRA CONNECT BROADBAND CONSORTIUM (CSC)

- Amador, Calaveras, Tuolumne, Mariposa and Alpine Counties

PRIORITY STRATEGIC CORRIDORS	
Route	**Description**
CA-49	Starting just north of Nipinnawasee running north through Mariposa, Tuolumne, Calaveras and Amador counties to just north of Plymouth.
CA-108	From Northeast of Knights Ferry running through Tuolumne County to Dardanelle.
CA-88	Start Camanche Village and go through Amador County northeast to US-395 at Minden.
CA-4	From Telegraph City running northeast through Calaveras County to Bear Valley.

PRIORITY STRATEGIC CORRIDORS	
Route	**Description**
CA-26	From Rancho Calaveras to West Point.
CA-12	From Wallace to San Andreas.

X. INYO-MONO BROADBAND CONSORTIUM (IMBC)
- Inyo and Mono Counties

XI. EASTERN SIERRA CONNECT REGIONAL BROADBAND CONSORTIUM (ESCRBC)
- Kern County

PRIORITY STRATEGIC CORRIDORS	
Route	**Description**
CA-168	From Bishop to the community of Aspendell.
CA-136	From the Jct. of US 395 to Keeler.
CA-190	From the Jct. of US 395 to Death Valley National Park.

PRIORITY STRATEGIC CORRIDORS	
Route	**Description**
CA-120	From Lee Vining on US 395 west to Mono County line (at Yosemite National Park).
CA-203	From The Village in Mammoth Lakes into Reds Meadow/Devils Postpile.
CA-127	I-15 to Furnace Creek.
CA-178	Inyokern to Kernville.
CA-178	Kernville to CA-99.

XII. SAN JOAQUIN VALLEY REGIONAL BROADBAND CONSORTIUM (SJVRBC)
- San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings, Tulare and Kern Counties

PRIORITY STRATEGIC CORRIDORS	
Route	**Description**
CA-140	From Yosemite Village west through Mariposa and Merced to I-5.
CA-108	From CA-99 Modesto to CA-49 Jamestown
CA-65	From Exeter south to CA-99 In Bakersfield.

PRIORITY STRATEGIC CORRIDORS	
Route	**Description**
CA-99	From the northern border of San Joaquin County to I-5 in Kern County.
I-5	From the northern border of San Joaquin County to the southern border of Kern County.
I-205	From I-580 to I-5
CA-120	From I-5 east through Manteca to Yosemite Village to CA-140 and CA-41.
CA-12	From I-80 Fairfield to CA-49 Jackson
CA-4	From Oakley to CA-49 Angels Camp

CA-41	From Yosemite Village, CA-140 south through Fresno to Kettleman City on I-5.
CA-43	From Selma on CA-99 south to 1-5 in Kern County.
CA-198	From I-5 east through Lemoore, Hanford, Visalia, Sequoia NP, and Kings- Canyon NP to CA-180.
CA-180	From Mendota east through Fresno to CA-198 in Kings Canyon NP.
CA-152	From I-5 east to Fairmead on CA-99.

XIII. CENTRAL COAST BROADBAND CONSORTIUM (CCBC)

- Monterey, Santa Cruz and San Benito Counties

PRIORITY STRATEGIC CORRIDORS	
Route	**Description**
US-101	Through Monterey and San Benito Counties from Gilroy {Santa Clara County) to Paso Robles (San Luis Obispo County).
CA-25	Through San Benito County from Gilroy (Santa Clara County) to CA-198.
CA-1	Through Santa Cruz and Monterey Counties (including Swanton Road loop.

PRIORITY STRATEGIC CORRIDORS	
Route	**Description**
CA-17	Through Santa Cruz County from Los Gatos to Santa Cruz.
CA-152	Through Santa Cruz County from Gilroy (Santa Clara County) to Watsonville.

XIV. BROADBAND CONSORTIUM OF THE PACIFIC COAST (BCPC)

- San Luis Obispo, Santa Barbara and Ventura Counties

PRIORITY STRATEGIC CORRIDORS	
Route	**Description**
CA150	From Carpinteria on US-101 east to Santa Paula on CA-126.
CA-154	From US-101 north of Los Olivos southeast to Santa Barbara.
CA-41	From Morro Bay on CA-1 northeast to Kettleman City (Kings County) on I-5.

PRIORITY STRATEGIC CORRIDORS	
Route	**Description**
US-101	From northern border of San Luis Obispo County south to the southern border of Ventura County.
CA-1	From northern border of San Luis Obispo County south to the southern border of Ventura County.
CA-46	From Cambria on CA-1 east to Lost Hills (Kern County) on I-5.

CA-58	From Santa Margarita on US-101 east to Buttonwillow (Kern County) on 1-5.
CA-229	From San Miguel south to Garden Farms to interconnect with CA-58.
CA-166	From Guadalupe on CA-1 east to Cuyama and Maricopa (Kern County).
CA-135	From Orcutt southeast to Los Alamos.
CA-246	From Lompoc east to Santa Ynez.
CA-12	From the CA-154 south along the backside of the cities of Santa Barbara, Montecito and Carpinteria to the CA-150.
CA-176	From Santa Maria south to the CA-154.
CA-33	From Ventura north to Ojai on CA-150.
CA-33	From Ojai east through the mountains to the county line, CA-166, and then north.
CA-126	From Ventura east to Santa Clarita (Los Angeles County) on I-5.
CA-118	From Saticoy on CA-126 east to CA-118 in Moorpark.
CA-23	From Fillmore and CA-126 to CA-118 in Moorpark.

XV. INLAND EMPIRE REGIONAL BROADBAND CONSORTIUM (IERBC)

- Riverside and San Bernardino Counties

PRIORITY STRATEGIC CORRIDORS	
Route	**Description**
CA-247	San Bernardino County.
CA-62	Riverside and San Bernardino Counties.
CA-18	San Bernardino County.

PRIORITY STRATEGIC CORRIDORS	
Route	**Description**
I-10	Riverside and San Bernardino Counties.
I-15	Riverside and San Bernardino Counties.
I-40	San Bernardino County.
I-215	Riverside and San Bernardino Counties
E-220 (Proposed)	Planned extension between Victorville and Palmdale in San Bernardino County.
CA-38	San Bernardino County.
CA-60	Riverside County.
CA-66	San Bernardino County.
CA-74	Riverside County.
CA-78	Riverside County.
CA-79	Riverside County.
CA-86	Riverside County.
CA-91	Riverside County.

CA-71	Riverside County. Riverside County from CA-91 to I-210
CA-111	Riverside County.
CA-127	San Bernardino County.
CA-138	San Bernardino County.
CA-210	San Bernardino County.
CA-243	Riverside and San Bernardino Counties.
CA-371	Riverside County.
US 95	Riverside and San Bernardino Counties.
I-15	Nevada Stateline to I-210.
US-395	From CA-58 in Kramer south to I-15.

XVI. SOUTHERN BORDER BROADBAND CONSORTIUM (SBBC)

- San Diego and Imperial Counties

PRIORITY STRATEGIC CORRIDORS	
Route	**Description**
I-8	Starting off in Winterhaven on the Arizona border running west through Imperial County and ending in San Diego County.
I-805 & I-15	In San Diego County that intersect with the CA-163, CA-125, and CA-54.
CA-98 & 7	Running along the border with Mexico, in Imperial County.

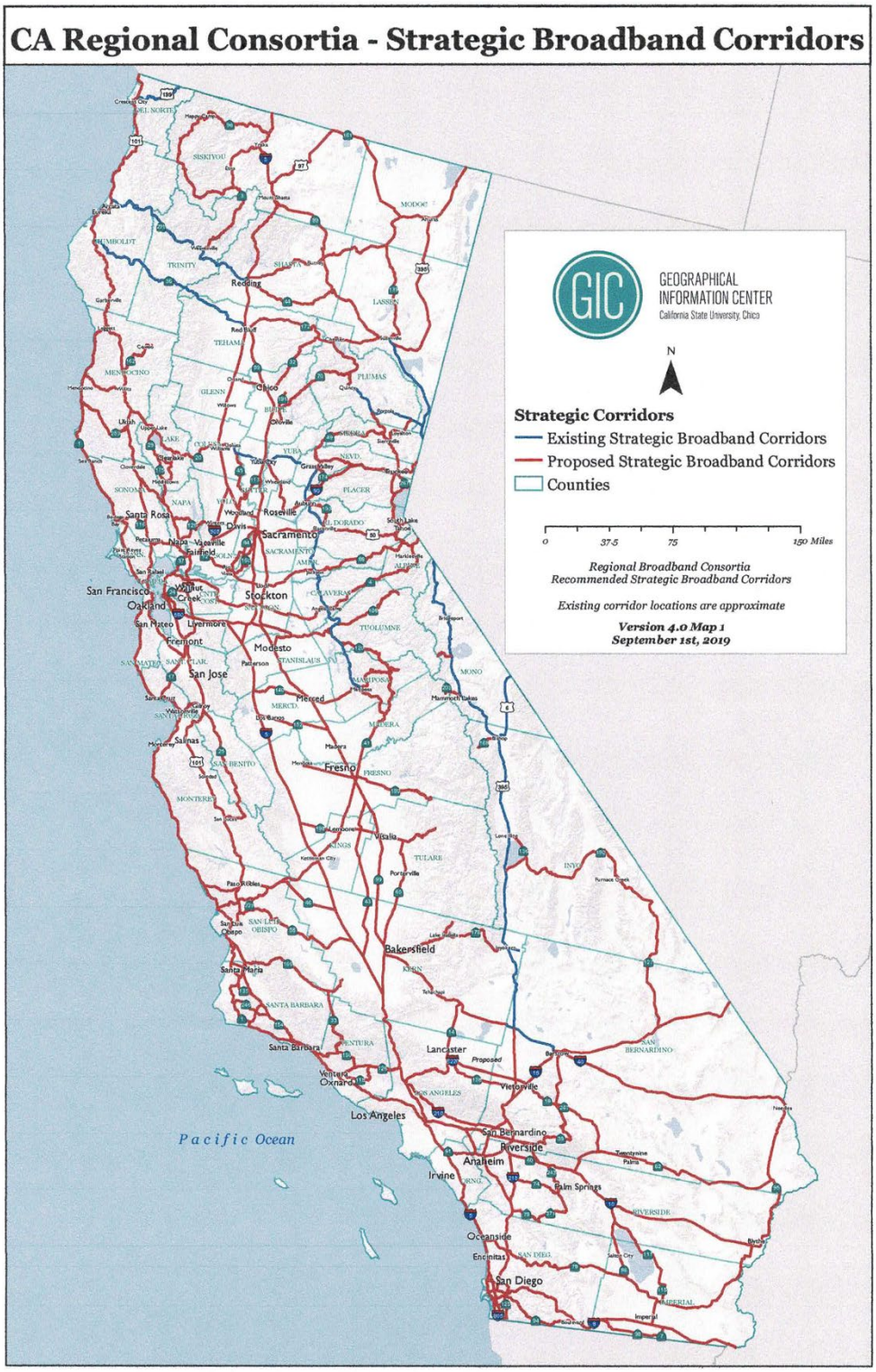
PRIORITY STRATEGIC CORRIDORS	
Route	**Description**
CA-78	Starting off Blythe (San Bernardino County going west through Imperial County and ending in Escondido (San Diego County on I-15; it interconnects with the CA-86, CA-111, and CA-115 in Imperial County.
CA-111 & 115	In Imperial County in very rural areas of the county.
I-5	On the coast (San Diego County), interconnecting the CA-56, CA-78 and CA-76.
CA-52, 54, 125 94	All intersect in San Diego County.

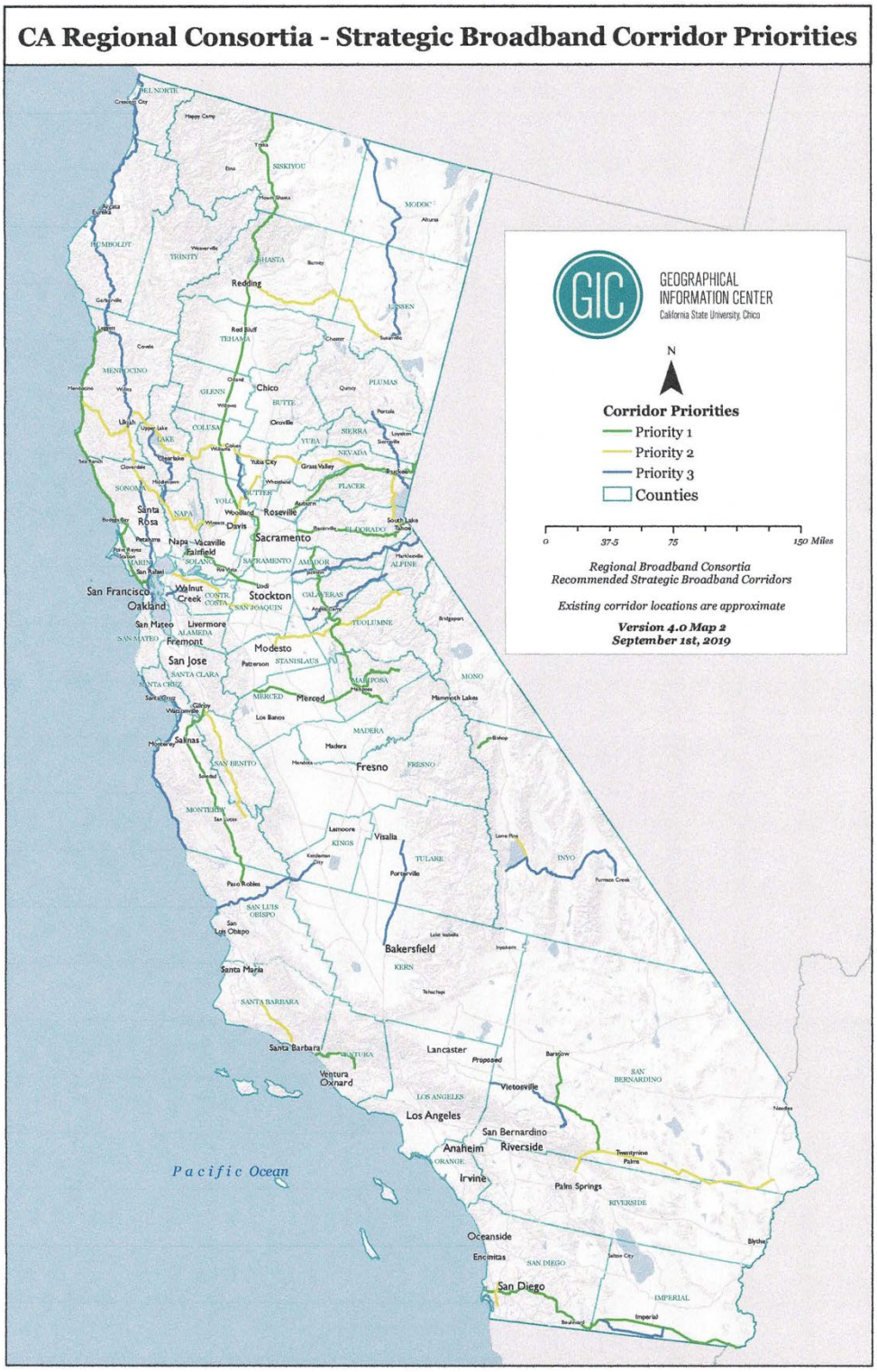
Note: Los Angeles County Regional Broadband Consortium did not participate at this time. San Francisco, San Mateo, Santa Clara and Orange counties are not represented by a consortium.

Map 1 and Map 2 follow.

Map 1 is an updated statewide map that was submitted November 1, 2018. It includes two changes. Route 1 in Mendocino and Sonoma counties was extended from Bodega Bay through Marin County to the Bay Bridge. Route 3 was added from Callahan to Douglas City.

Map 2 is a statewide map that shows only the three priority routes in each regional consortium region, prepared in September 2019 by Chico State.


CA Regional Consortia - Strategic Broadband Corridors
GIC
GEOGRAPHICAL INFORMATION CENTER
California State University, Chico
N
Strategic Corridors
Existing Strategic Broadband Corridors
Proposed Strategic Broadband Corridors
Counties
0
37.5
75
150 Miles
Regional Broadband Consortia
Recommended Strategic Broadband Corridors
Existing corridor locations are approximate
Version 4.0 Map 1
September 1st, 2019
Redding
Chico
Roseville
Sacramento
Santa Rosa
Napa
Vacaville
Fairfield
San Francisco
Oakland
Walnut Creek
Stockton
San Mateo
Livermore
Fremont
Modesto
San Jose
Merced
Salinas
Fresno
Visalia
Bakersfield
Santa Maria
Santa Barbara
Ventura
Oxnard
Lancaster
Proposed
Victorville
Los Angeles
San Bernardino
Riverside
Anaheim
Irvine
Palm Springs
Oceanside
Encinitas
San Diego
Imperial
Pacific Ocean


CA Regional Consortia - Strategic Broadband Corridor Priorities
GEOGRAPHICAL INFORMATION CENTER
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N
Corridor Priorities
Priority 1
Priority 2
Priority 3
Counties
0
37.5
75
150 Miles
Regional Broadband Consortia
Recommended Strategic Broadband Corridors
Existing corridor locations are approximate
Version 4.0 Map 2
September 1st, 2019
Redding
Chico
Roseville
Sacramento
Davis
Vacaville
Fairfield
Napa
Santa Rosa
San Francisco
Oakland
Walnut Creek
Stockton
San Mateo
Livermore
Fremont
Modesto
San Jose
Merced
Salinas
Fresno
Visalia
Bakersfield
Paso Robles
San Luis Obispo
Santa Maria
Santa Barbara
Ventura
Oxnard
Lancaster
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Victorville
Los Angeles
San Bernardino
Riverside
Anaheim
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